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May 12, 2010

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VIA ELECTRONIC MAIL AND OVERNIGHT MAIL

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Re: Comments on April 12, 2010 Tentative Order No. R4-2010-XXXX (Waste Discharge Requirements) for Santa Susana Field Laboratory, NPDES No. CA0001309

Dear Mr. Ali:

On behalf of the Boeing Company (“Boeing”), we are pleased to submit the following comments on Tentative Order No. R4-2010-XXXX (“Tentative WDR”) for the Santa Susana Field Laboratory (“Santa Susana”), NPDES No. CA0001309, issued by the Los Angeles Regional Water Quality Control Board (“Regional Board”) on April 12, 2010. The Tentative WDR would supersede Order No. R4-2009-0058 (“2009 WDR”). A hearing on the Tentative WDR is scheduled for June 3, 2010.

Boeing appreciates the efforts of Board Staff in preparing the Tentative WDR. While we support some of the proposed changes, we take issue with others, as well as with certain provisions that are proposed to remain unchanged from the 2009 WDR. We remain concerned that, like the 2009 WDR, the Tentative WDR does not adequately account for the complexity of conditions and compliance efforts at Santa Susana, and request that the Tentative WDR be modified in accordance with our comments as set forth below.

I. Boeing’s compliance efforts

Before we reach our comments on the Tentative WDR, we would like to highlight the recent efforts Boeing has taken, under the Regional Board’s direction, to achieve compliance with its NPDES permit. These efforts are critical and substantial components of the coordinated endeavor to improve and protect water quality in and around Santa Susana.

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In December 2009, Boeing made a presentation¹ to the Regional Board regarding the progress Boeing has made in implementing the Interim Source Removal Action (“ISRA”).² Among the activities that Boeing has successfully completed in accordance with the approved ISRA workplan are excavations of 5,380 cubic yards of soil in ten areas in the Outfall 008 watershed and two areas in the Outfall 009 watershed, the latter on behalf of the National Aeronautics and Space Administration (“NASA”).³

Working cooperatively with NASA, the Regional Board, DTSC, Ventura County, and the Santa Susana Stormwater Expert Panel (“Stormwater Expert Panel”), Boeing has also (1) implemented soil stabilization and other site restoration measures to further minimize sediment transport in these areas and (2) developed performance monitoring plans to evaluate the success of these actions. For example, at Outfall 008, Boeing implemented the recommendations of the Stormwater Expert Panel by installing extensive vegetation and irrigation systems. These stabilization and restoration measures are a key element of ongoing ISRA efforts in light of the sediment disturbance and loss of vegetation resulting from soil excavation, and the performance monitoring plans are necessary to obtain an accurate assessment over time of the improvement in water quality achieved through these soil removal and restoration efforts. In addition, to keep the public informed of Boeing’s progress, Boeing conducted a site tour of Outfall 008 for interested members of the public and posted all significant documents and status reports on its website.⁴

Just recently, Boeing submitted to the Regional Board the 2009 Phase I Implementation Report, which summarized all the ISRA work completed last year, and the 2010 Addendum to the Final ISRA Workplan, which sets forth plans for ISRA activities to be performed over the next two years.⁵ Additional soil excavations in the Outfall 009 watershed are planned, as well as continued soil stabilization and sediment control measures and ongoing performance monitoring. Pursuant to the ISRA workplan, Boeing and NASA are continuing with efforts to move forward with the excavation and disposal

¹ Available at http://www.boeing.com/aboutus/environment/santa_susana/water_quality/isra_100114_ssfl_09_1208.pdf.

² The ISRA is required by the Regional Board’s California Water Code Section 13004 Cleanup and Abatement Order (“13304 Order”), issued on December 3, 2008. See http://www.dtsc-ssfl.com/files/lib_rwqcb/orders/3614_RWQCBOOrder12-03-2008.pdf; see also Tentative WDR at F-9. The ISRA is an interim cleanup action under Regional Board oversight; final remedial requirements for Santa Susana will be developed and implemented as part of a Resource Conservation and Recovery Act (“RCRA”) Corrective Action project under the oversight of the Department of Toxic Substances Control (“DTSC”).

³ A portion of the Outfall 009 watershed covers federal property administered by NASA.

⁴ See http://www.boeing.com/aboutus/environment/santa_susana/isra.html. Further discussion of Boeing’s ISRA activities and their role in improving permit compliance is at pages 4-5 below.

⁵ Available at http://www.boeing.com/aboutus/environment/santa_susana/isra.html.

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of soils from ISRA areas ELV-1C and ELV-1D, located on federal property administered by NASA. On April 15, 2010, Board Staff requested that Boeing and NASA postpone the excavation in light of “[i]ssues ... raised by interested parties[] that question the transportation and disposal decisions” in the excavation schedule submitted by Boeing. The excavation of the NASA ELV soils remains pending.⁶

Boeing has also done much work beyond the ISRA in the last year. Specifically, Boeing has:

- improved the containment and control capabilities at the outfall flow-through systems;
- performed a large-scale field test of the state of the art chemical treatment system at Outfall 018;
- operated a large-scale physical treatment system at Outfall 011;
- pursuant to the Stormwater Expert Panel recommendations, installed vegetation-based erosion control in the Northern Drainage as part of the DTSC-led cleanup effort there;
- implemented culvert maintenance actions in Outfall 009 as recommended by the Stormwater Expert Panel; and
- installed additional vegetation in the Outfall 001, 002, and 018 watersheds, using Stormwater Expert Panel recommendations, to minimize sediment transport.

Over the next year, Boeing plans to:

- install permanent chemical treatment systems at Outfalls 011 and 018 (at a cost of \$17 million);
- use the results of an Expert Panel-led pilot study to replace the media in the outfall flow-through systems;
- implement additional modifications to these flow-through systems to further increase their containment capacity;

⁶ Five waste characterization samples from ELV-1C and three samples from ELV-1D showed slightly elevated levels of cesium 137. No other radionuclides were detected above background concentrations. In September 2009, Boeing and NASA received a written determination from the California Department of Public Health (“CDPH”) that the ELV hazardous soils met the criteria for disposal in a Class I or Class II landfill. Upon this authorization, Boeing and NASA arranged for the proper disposal of these soils at the U.S. Ecology landfill in Grand View, Idaho. Staff noted in their April 15, 2010 request that “[t]he information provided to the Regional Board indicates that the disposal facilities have the waste profiles and that the facilities certified that they are permitted to accept the waste.” See http://www.boeing.com/aboutus/environment/santa_susana/isra.html; see also <http://ssfl.msfc.nasa.gov/>.

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- initiate information exchanges between the Santa Susana Stormwater and Groundwater Expert Panels, with the first exchange scheduled for May 24, 2010; and
- hold a public meeting where both of these Expert Panels can appear together to address community questions.

In undertaking these efforts, Boeing has invested over \$52 million between 2004 and the end of 2009. Boeing spent \$16 million in 2009 alone. In addition, Boeing will have spent an additional \$6 million in completing its ISRA obligations by the end of 2012.

Boeing understands that much remains to be done to achieve full compliance with its NPDES permit. However, these activities and expenditures confirm that Boeing is working hard to achieve that requirement.

II. Comments on the Tentative WDR

A. The Tentative WDR appropriately extends the benchmarks for Outfalls 008 and 009 through June 3, 2012.

The Tentative WDR proposes to extend the benchmarks for Outfall 008 and 009 through June 3, 2012. Tentative WDR at 23 (footnote to table). Boeing strongly supports this extension.

In December 2008, the Regional Board issued a Water Code Section 13304 Cleanup and Abatement Order requiring Boeing to conduct the ISRA at Santa Susana. Among other things, the ISRA consists of excavating soils that contribute constituents of concern (“COCs”) to stormwater discharges. These excavations (and other soil disturbance activities) can lead to temporary exceedances of limits for these COCs. Board Staff determined that the shortest practicable time to complete the ISRA was three years, or until mid-2012, and recommended that benchmarks be in place for that entire period. See Tentative WDR at F-9; Transcript of Regional Board Hearing on 2009 WDR (May 8, 2009) (“2009 WDR Hearing Transcript,” attached as Exhibit A) at 19 (lines 19-21), 19-20 (lines 20-25, 2), 24 (lines 11-13), 25 (lines 10-14), 28 (lines 18-25). However, the Board decided to provide benchmarks for one year and make a determination in 2010 regarding whether an extension was warranted. See 2009 WDR Hearing Transcript (Exhibit A) at 192 (lines 3-5), 258-59 (lines 24-25, 1-17), 260-61 (16-25, 1-22). We agree with Board Staff that an extension is warranted.

Benchmarks are a flexible and effective compliance tool for controlling COCs that may be exposed and mobilized as a result of ISRA-related soil excavation and disturbance, including during the rainy season. See 2009 WDR Hearing Transcript (Exhibit A) at 16 (lines 16-20), 155 (lines 9-12), 158 (lines 5-11), 160 (lines 14-22). The benchmarks allow Boeing to directly and immediately modify sediment control systems and other best management practices (“BMPs”) and adjust ISRA activities to respond to any exceedances. The benchmarks also allow for low-impact natural restoration efforts to

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develop, and allow additional time for the Regional Board and DTSC to evaluate disposal options for soils from the ELV area. See supra at 2-3 & n.6.

Critically, “flexible” does not mean reduced or delayed compliance. Just like numeric limits, benchmarks are final, enforceable water quality-based effluent limits based on the California State Implementation Plan (“SIP”) and California Toxics Rule (“CTR”). See Divers’ Envtl. Conservation Org. v. State Water Resources Control Bd., 145 C.A. 4th 246, 258, 262 (2006).⁷ In the Tentative WDR, as in past permits, benchmarks are as stringent as the numeric limits, and an exceedance is immediately enforceable by the required implementation of improved BMPs. See Tentative WDR at 20-23 (describing benchmark enforcement process); see also 2009 WDR Hearing Transcript (Exhibit A) at 11 (lines 5-12), 110-11 (lines 25, 1-20), 157-58 (lines 24-25, 1-4).⁸

The benchmarks for Outfalls 008 and 009 have worked as designed for the past year, since the Regional Board adopted the 2009 WDR and Boeing began ISRA activities. For Outfall 008, there have been five sampling events since Boeing completed ISRA soil removal activities late last year. The initial sampling events indicated benchmark exceedances of dioxin, lead, and gross alpha. The results also indicated above-normal concentrations of total suspended solids (“TSS”) resulting from the soil disturbance activities. However, consistent with the benchmark enforcement process, Boeing installed and modified engineering controls that yielded full compliance for the last two of the five sampling events. Thus, ISRA-related impacts appeared to be temporary in nature, and a combination of soil removal and engineering control systems minimized downstream impacts.

However, each storm event is unique in intensity and duration. The later rain events were less severe than the first three events and thus provided conditions more conducive to full compliance. An additional two years of benchmarks will allow time for (1) the natural low-impact controls (consisting primarily of revegetation measures) that were installed at the recommendation of the Stormwater Expert Panel to replace engineering controls, and (2) better assessment of compliance under multiple and variable rain events, particularly more severe rain events.

⁷ The Regional Board, Board Staff, and Staff counsel recognized that benchmarks are final, enforceable water quality-based effluent limits at the public hearing for the 2009 WDR. See 2009 WDR Hearing Transcript (Exhibit A) at 20 (lines 12-25), 27 (lines 5-8), 114 (lines 10-20), 115 (lines 14-18), 144 (lines 18-20), 204 (lines 17-19).

⁸ In previous permits, Boeing was allowed to exceed a benchmark twice before implementing improved BMPs (though Boeing’s practice was to do so after only one exceedance; see 2009 WDR Hearing Transcript (Exhibit A) at 11 (lines 13-18)). The Regional Board changed this to one exceedance in the 2009 WDR. See 2009 WDR Fact Sheet at 41; 2009 WDR Hearing Transcript (Exhibit A) at 192 (lines 5-7), 207-08 (lines 22-25, 1-20), 258-59 (lines 24-25, 1-17). The Tentative WDR retains this one-exceedance threshold. See Tentative WDR at 23 (footnote to table), F-29 (footnote to table), F-57 (footnote to table).

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Benchmarks also are working and still justified at Outfall 009. Work has proceeded at this location on both the ISRA and DTSC-led cleanup projects, albeit at a slower pace than originally planned due to the delay in the removal and disposal of the soils in the NASA ELV area. See supra at 2-3 & n.6. Results of the sampling events indicate that while there are COCs that continue to exceed benchmarks, the two that have exceeded benchmarks (TCDD and lead) are the same ones that are targeted for removal under the ISRA workplan. This is further evidence that the ISRA workplan has been accurately tailored to reflect the nature of this watershed. Boeing expects that, once ISRA activities restart at Outfall 009, those activities will be as effective as the ISRA activities in Outfall 008. Given the complexity of cleanup efforts at Outfall 009, the difficulty in obtaining the appropriate approvals to dispose of the NASA ELV soils, and the time needed for natural revegetation efforts to take effect, benchmarks are appropriate for another two years.

In short, extension of the benchmarks for Outfalls 008 and 009 to June 3, 2012 makes sense. The benchmarks provide the most effective tool for addressing any exceedances arising as a result of ISRA-related activities; they apply the same limits as the numeric limits; they are immediately enforceable; and they are working as designed. That Board Staff has proposed extending the benchmarks until 2012 is a testament to their efficacy. The Regional Board retains authority under the Tentative WDR's reopener provisions to modify the benchmarks for Outfalls 008 and 009 if Boeing does not comply with the ISRA. See Tentative WDR at 34; see also 2009 WDR Hearing Transcript (Exhibit A) at 157 (lines 16-17).

We do propose one modification to the Tentative WDR, and that is to replace the words "compliance schedule" on page 34 with "benchmarks" or "water quality-based effluent limits." As we have explained, the benchmarks are final, enforceable effluent limits based on the SIP and CTR; they are not compliance schedules that impose interim or less stringent standards. See Tentative WDR at 20 (identifying limits for Outfalls 008 and 009 as "Final Effluent Limitations"); 2009 WDR Hearing Transcript (Exhibit A) at 115 (lines 23-25) (Board Staff counsel indicating that benchmarks are not compliance schedules).

B. Effluent limits in the Tentative WDR must be reasonable.

- 1. Limits, including stormwater limits for TCDD and metals, must account for the factors set forth in Cal. Water Code § 13241 and for background conditions, seasonality, flow, and the characteristics of receiving streams.**

As discussed in Section I, Boeing is committed to improving water quality in the Los Angeles Region and to supporting strong, sensible water quality standards to further that goal. Boeing has devoted substantial resources to gathering and analyzing relevant information and to working with the Regional Board to establish suitable limits and compliance methods for Santa Susana.

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However, water quality standards and implementing effluent limits must be reasonable. See Cal. Water Code § 13000 (“The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable ...”); id. § 13241 (recognizing that “it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses”).

To be reasonable, water quality objectives and implementing effluent limits must consider the economic, social, and technological factors set forth in California Water Code section 13241. See Cal. Water Code § 13241; see also Cities of Arcadia v. State Water Resources Control Bd. (Super. Ct. Orange County, 2007, No. 06CCO2974). They must also account for natural (background) conditions (including COCs from atmospheric deposition, fires, and precipitation), seasonality, flow, and the characteristics of receiving streams. These conditions are especially important for stormwater, which has unpredictable and highly variable flows.⁹ Standards and limits, including those in the Tentative WDR, that do not account for these conditions can be unduly burdensome from economical and technological standpoints. Indeed, it is not clear that full compliance with limits that do not account for these conditions is even possible.

As part of the Regional Board’s 2008-2010 Basin Plan Triennial Review, Boeing submitted comments and supporting materials in November 2008, April 2009, and March 2010.¹⁰ In these submissions, Boeing presented “relevant and substantial evidence,” see 2008-2010 Triennial Review Tentative Resolution No. R10-XX (Apr. 1, 2010) at 2,¹¹ showing that (1) background conditions are significant contributors of regulated constituents, in particular metals and TCDD, in stormwater discharges from Santa Susana, and (2) meeting effluent limits that do not account for those background conditions has been, and continues to be,

⁹ As in past permits, the Regional Board has calculated the effluent limits in the Tentative WDR based on the SIP, which is applicable to normal and log-normal constituent concentration distributions, and to relatively steady discharges such as industrial process water discharges and discharges from publicly-owned treatment works (“PO1Ws”). However, COC concentrations in stormwater discharges are not normal or log-normal, but rather are characterized by a “heavy-tailed” or “extreme value” distribution. See, e.g., Gary Lorden, Comments on statistical aspects of Panel of Experts report, “The Feasibility of Numeric Effluent Limits Applicable to Storm Water Discharges” (Sept. 1, 2006) (available at http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/numericcom/lorden090106.pdf). The SIP-based effluent limits in the Tentative WDR are inappropriate as a result.

¹⁰ These comments are included as Exhibits B, C, and D, respectively, and are incorporated by reference into this letter.

¹¹ Available at http://www.swrcb.ca.gov/rvqcb4/water_issues/programs/basin_plan/BasinPlanTriennialReview/Draft%20%202008_Triennial%20Review%20Resolution%20_final.pdf.

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extremely difficult (if not impossible) despite Boeing's best efforts.¹² Boeing also supported the Board's prioritization of the development of a regional design storm, which would help account for background conditions, seasonality, flow, and the characteristics of receiving streams. See *infra* at 16-17.

Since Boeing filed its Triennial Review comments and supporting materials, new information has become available that further warrants the Regional Board's consideration of background conditions and appropriate adjustments to the Tentative WDR. This information consists of a cover letter and two reports issued by the Stormwater Expert Panel on March 29, 2010: the SSFL Stormwater Dioxin Background Report and the SSFL Metals Background Report: Sources of Metals in SSFL Watersheds.¹³

In the SSFL Dioxin Background Report and the associated cover letter, the Expert Panel explains that:

- Dioxins are ubiquitous in the environment and come from wildfires and atmospheric deposition from widespread offsite emissions. As a result, "natural background soils are a significant source of dioxins in stormwater" at Santa Susana.
- The current TEQ-based limits in place at Santa Susana, including those in the Tentative WDR, do not account for background conditions.

¹² As we explained in our March 2010 submission (Exhibit D), Board Staff agree that a review of water quality standards and implementing programs (including TMDLs) in light of background conditions is warranted, but not during the 2008-2010 Triennial Review period. Specifically, Board Staff recognize that many chemical constituents "are naturally occurring in the environment" and that in many cases "these constituents may be naturally elevated above the [applicable] water quality objective," thereby resulting in exceedances of applicable effluent limits. Staff recommend that the Regional Board "eventually consider developing" implementation provisions for water quality standards to account for background conditions. Revised Staff Report for 2008-2010 Triennial Review (Mar. 18, 2010) at 30 (available at http://www.swrcb.ca.gov/rwqcb4/water_issues/programs/basin_plan/BasinPlanTriennialReview/Addl_Documents2010_03_18/Revised%20Staff%20Report.pdf); see also Response to Comments on the Draft Triennial Review Staff Report and Tentative Resolution at 3-5 (Mar. 18, 2010) (available at http://www.swrcb.ca.gov/rwqcb4/water_issues/programs/basin_plan/BasinPlanTriennialReview/Addl_Documents2010_03_18/Response%20to%20Comments%20on%20the%20Tentative%20Resolution%20and%20Staff%20Report.pdf). Because consideration of background conditions is a necessary component of reasonable water quality standards and effluent limits, Boeing requests that the Regional Board consider those conditions now.

¹³ These reports are included as Exhibit E (cover letter), Exhibit F (dioxin report), and Exhibit G (metals report). They are also available at http://www.boeing.com/aboutus/environment/santa_susana/tech_reports.html.

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- As a result, the current limits “do not serve as definitive indicators of how effectively the [ISRA] and other stormwater quality management practices are for addressing local industrial sources of dioxins at” Santa Susana, and most likely “would be exceeded at many if not most municipal, industrial, construction, parks, and other open spaces in southern California.”
- To provide more appropriate limits that serve as better indicators of the efficacy of cleanup efforts at Santa Susana, “it is necessary to remove the background dioxin signature from the permit limits.”
- The best way to remove the background dioxin signature is to use 2,3,7,8-TCDD, which is more indicative of anthropogenic sources, as the single compliance parameter for regulating dioxins. Such regulation would be “technically appropriate and protective” and “consistent with other NPDES permits from elsewhere in the United States, as well as ... with the CTR criterion for dioxin, which is based on the single congener 2,3,7,8-TCDD.”

In the SSFL Metals Background Report: Sources of Metals in SSFL Watersheds and associated cover letter, the Expert Panel explains that:

- Heavy metals in stormwater originate from various sources, including natural soil components, rainfall, and dry atmospheric deposition from local and regional sources.
- Except for mercury, the concentrations of metals above current benchmarks at Outfalls 008 and 009 (lead, mercury, and copper) are less than, or the same as, the lowest exceedance percentages for any other land uses.
- Data show that wet weather metals concentrations in creeks in regional natural watersheds are generally one order of magnitude lower than concentrations in regional developed watersheds. Santa Susana “outfall metal concentrations were comparable to the concentrations at these undeveloped watersheds” (emphasis added).
- Metals limits based on the CTR, such as those in Boeing’s NPDES permit, are often unsuitable for highly variable stormwater flows. “Estimates of metals toxicity should therefore be based on direct measurements of the dissolved metal concentrations.”
- Due to the geology of Santa Susana, “natural soils” are “the likely primary sources of the metals in runoff at [Santa Susana] Outfalls 008 and 009.”
- High copper concentrations at Outfalls 008 and 009, and high lead and zinc concentrations at Outfall 008, “are likely due to the erosion of natural site soils.”

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In short, in light of the evidence Boeing and other stakeholders have presented regarding natural loading, including the two new Expert Panel reports, and in light of the substantial costs and difficulties associated with trying to comply with effluent limits and meet water quality standards that do not account for such loading, the Regional Board should establish a baseline for COCs in stormwater flows under natural conditions, and adjust the effluent limits in the Tentative WDR to account for that baseline.¹⁴ See also *infra* at 17 (requesting establishment of limits based on 2,3,7,8-TCDD).

Finally, as we have stated in our Triennial Review submissions, the Regional Board also should develop water quality standards that reflect localized natural conditions for individual stream reaches, or at least for groups of stream reaches, and incorporate those modified objectives as appropriate into the WDR when they are completed.

2. The Tentative WDR should not impose limits for 1,2-dichloroethane or total cyanide.

The Tentative WDR's proposal to add new effluent limitations—for 1,2-dichloroethane ("1,2-DCA") at Outfalls 001, 002, 011, 018, and 019 and for cyanide at Outfalls 003 through 010—is unreasonable and unnecessary for water quality protection, for five reasons.

First and most fundamentally, the basis for establishing these limits comes from the use of the Reasonable Potential Analysis ("RPA") as outlined in the SIP and EPA's Technical Support Document for Water Quality-Based Toxics Control ("TSD"). However, it is inappropriate to use the RPA procedures for determining water quality impacts in the stormwater context because those procedures were developed for steady-state discharges. Stormwater discharges are not steady-state discharges, but rather exhibit highly variable flow rates and water quality COC concentrations during and between storms. Limits based on the RPA are inappropriate for Santa Susana's stormwater discharges. See Flow Science, Boeing SSFL Technical Memo for RPA Procedures (May 2006) (submitted to Regional Board May 8, 2006).¹⁵

Second, in the case of 1,2-DCA, only one of 105 samples taken at Outfalls 001, 002, 011 and 018 from August 2004 through December 2009 exceeded a water quality standard. In the case of total cyanide, only two of 30 analyzed samples from Outfalls 003 through 010 exceeded a water quality standard, and these two exceedances did not occur at the same outfall. One exceedance at an outfall does not show a likelihood of exceeding a water quality standard such that a new effluent limit should be put in place.

¹⁴ In the event the Regional Board does not address background conditions in the Tentative WDR, Boeing requests that the Board include a reopener in the WDR to do so in the future.

¹⁵ Available at http://www.boeing.com/aboutus/environment/santa_susana/water_quality/tech_reports_10-11-10_ReasonablePotenAnalyMethodTechlMemo.pdf.

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Third, the proposed limits are not reasonably tailored. The Tentative WDR proposes to apply limits for both 1,2-DCA and total cyanide at outfalls where no exceedances have taken place. The only exceedance of 1,2-DCA water quality standards was at Outfall 018 (on February 16, 2009), but the Tentative WDR proposes a limit for that outfall and Outfalls 001, 002, 011, and 019. Similarly, although the only exceedances of total cyanide were at Outfalls 005 (February 6, 2009) and 008 (February 16, 2009), the Tentative WDR proposes to establish limits for those outfalls and Outfalls 003, 004, 007, and 010. There is no justification for imposing new limits at outfalls where the regulated COCs have never been detected above applicable standards.

Fourth, the Tentative WDR proposes a new limit for 1,2-DCA at Outfall 019 even though there have been no discharges from, and thus no RPA performed for, this outfall.

Fifth, the proposed limits for 1,2-DCA and total cyanide do not account for background conditions, seasonality, flow, or the characteristics of receiving streams (see supra at 6-10). It is not possible to accurately ascertain the reasonable potential of a discharge from anthropogenic sources to impact water quality standards without a full accounting of such conditions. To address these concerns, we ask that the Tentative WDR be amended to eliminate the proposed limits for 1,2-DCA and total cyanide.

Apart from 1,2-DCA and total cyanide, Boeing has submitted extensive information showing that many COCs for which a RPA has been conducted have never been detected at Santa Susana or, if they have been detected, have been detected below applicable limits. See, e.g., Boeing Report of Waste Discharge ("ROWD") (Dec. 2008) (listing COCs that have either never been detected or detected below applicable limits). The Tentative WDR does not address this information or explain why these COCs still warrant stringent effluent and monitoring requirements. If a RPA is conducted for the purpose of determining whether to include or including new COCs for monitoring, then the RPA also should provide a basis for removing from the monitoring regime those COCs that have been shown to present no risk to water quality objectives. If the Regional Board continues to use the RPA procedures despite Boeing's objections, Boeing asks that the Regional Board review historical monitoring data and use those procedures to remove or reduce sampling requirements for COCs in the Tentative WDR that have not exceeded the applicable water quality standard(s) in the last three years.

Finally, Boeing maintains that the Regional Board, not Boeing, should perform the RPA to the extent it may be required. See Boeing ROWD at Form 200, Section IV, at 12-13 (Tables 4 and 5).

C. The Tentative WDR inappropriately imposes monitoring requirements for *E. coli* and fecal coliform.

For the first time, the Regional Board has issued a Tentative WDR that discusses receiving waters' limits for *E. coli* and fecal coliform and includes those COCs in Boeing's

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monitoring requirements. See Tentative WDR at 26-27, E-8. However, because the Tentative WDR does not include these COCs in the effluent limits tables at pages 17-24, the WDR does not establish new effluent limits for them.

For the reasons we discuss below, effluent limits and monitoring requirements for *E. coli* and fecal coliform are inappropriate for Santa Susana. If the Regional Board determines that monitoring is appropriate and required, it should amend the Tentative WDR to require only monitoring for *E. coli* at locations under Boeing's control.

1. There is no basis for imposing bacterial limits or monitoring requirements at Santa Susana.

The Regional Board provides no basis for assuming that there is "reasonable potential" for stormwater runoff from Santa Susana to be a significant source of indicator bacteria at levels that exceed Basin Plan objectives. In fact, the Regional Board has stated in the Draft Los Angeles River Bacteria TMDL that it does not believe that Santa Susana is a significant source of bacteria. That TMDL mentions Boeing's NPDES permit and a Plains West Coast Terminals (tank farm) permit by name, and concludes that "neither discharger is required to monitor for bacteria in their current permit and are [sic] not known to be a significant source of bacteria to the watershed." Draft Los Angeles River Bacteria TMDL (April 20, 2010; scheduled for adoption in July 2010) at 25.¹⁶

There are no facts that would establish that Santa Susana is a significant source of indicator bacteria at levels that exceed Basin Plan objectives. Because Boeing collects sanitary waste and transports it from the site to an offsite POTW for treatment and disposal, there is no indication that human waste generated at the site will be exposed to or enter stormwater runoff. Moreover, because bacteria have not been measured in stormwater runoff from Santa Susana, there is no basis for concluding that reasonable potential exists, or for determining whether treatment would be required to meet any limits for *E. coli* and fecal coliform.

2. Any numeric limits for bacteria would be inappropriate and counterproductive.

The Tentative WDR does not impose numeric limits for bacteria, and for good reason: such limits would be inappropriate because natural sources are the likely source of any bacteria in stormwater discharges from Santa Susana. Moreover, any such limits would be counterproductive because those bacteria likely could not be successfully treated without causing significant harm.

¹⁶ Available at http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/bpa_80_New_td.shtml.

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To the extent that bacteria may be detected in waters receiving stormwater discharges from Santa Susana, it is highly likely that they would originate from natural sources. A number of studies show that non-human sources, such as birds and wildlife, contribute to bacteria in stormwater runoff. See, e.g., (CREST Nov. 2008; Grant et al. 2001; Griffith et al. 2009; Tiefenthaler et al. 2008).¹⁷ For example, data collected by Los Angeles County demonstrate that stormwater runoff from a variety of land use types, including vacant land and open space like Santa Susana, exhibit concentrations of indicator bacteria that exceed water quality objectives. See, e.g., Los Angeles County Department of Public Works, Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report.¹⁸ Similarly, a Bacteria Source Identification (“BSI”) study of the Los Angeles River found that the largest dry-weather *E. coli* loading increase occurred along the downstream portion of Reach 2 of Los Angeles River, see (CREST 2008), while a majority of the storm drain loading occurred along the upstream portion of this reach. The CREST BSI study also measured concentrations of human-specific bacteroidales and demonstrated that the increase in *E. coli* concentrations in this reach appeared to originate from non-human sources, potentially including regrowth in sediments and bioslimes, resuscitation of bacteria from POTW discharges, and/or birds and wildlife.¹⁹

Even if there were reason to believe that Santa Susana’s stormwater discharges contain indicator bacteria in excess of Basin Plan objectives (which there is not), it is far from clear that those bacteria could be successfully reduced. Treated water often has bacteria concentrations that exceed water quality objectives just downstream of the point where they are discharged to receiving waters. For example, Orange County recently studied BMPs for reducing bacteria concentrations in Aliso Creek. The study found that a BMP that included multimedia filtration and ultraviolet sterilization greatly reduced concentrations of indicator bacteria, but that bacteria levels rebounded within a short distance downstream of the BMPs. See (Orange County 2005).²⁰ The CREST BSI study (2008) (discussed above) also showed large increases in indicator bacteria concentrations in natural channels that appeared to be due to natural, non-human sources. Thus, it appears likely that even if stormwater runoff from Santa Susana were to meet water quality objectives for indicator bacteria, bacteria concentrations in those flows likely will increase due to natural sources even at short distances downstream of the site.

¹⁷ References to these and the other studies cited in this section can be found in Exhibit H.

¹⁸ Available at http://dpw.lacounty.gov/wmd/NPDES/Int_report/Tables/Table_4-12.pdf.

¹⁹ The human health risk posed by swimming exposures to bacteria from non-human sources is likely lower than the risk posed by exposure to bacteria from human sources, including treated and untreated sewage. See (Schoen and Ashbolt 2010; Colford et al. 2005).

²⁰ Specifically, effluent from the BMP exhibited geometric mean fecal coliform concentrations of 317 colony forming units (“cfu”)/100 milliliters (“mL”) at the BMP outlet, but concentrations increased to 2575 cfu/100 mL in a natural channel at a distance of 35 feet downstream from the BMP.

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In addition, the controls required to meet bacteria numeric limits probably would cause more harm than benefit. As explained above, it is likely that natural sources such as birds and other wildlife would be the primary cause of any permit exceedances. It would be infeasible and undesirable to control wildlife or eliminate habitat to avoid or reduce those exceedances. In addition, while additional treatment processes, including ultraviolet sterilization or other disinfection treatment methods, could be required to meet numeric limits, these processes have the potential to greatly increase energy use at the site, introduce chemicals for treatment, require construction of significant volumes of on-site storage, and/or alter flow patterns of runoff leaving the site. These measures could yield potentially significant environmental impacts whose harm could outweigh any purported benefit, especially given the available evidence that indicator bacteria concentrations likely would rebound after treated water is discharged to natural channels.²¹

- 3. If the Regional Board determines that the Tentative WDR must regulate bacteria, it should do so only by imposing monitoring requirements for *E. coli* at onsite locations under Boeing's control.**
 - a. The Tentative WDR should regulate only *E. coli*, not fecal coliform.**

Neither monitoring requirements nor numeric limits for fecal coliform should be included in the Tentative WDR. Fecal coliform is an ineffective indicator of human health risk.

²¹ If the Regional Board were to propose imposing bacteria numeric limits in the future, the Regional Board should use the natural source exclusion approach that it has adopted in the Los Angeles Basin Plan. By Resolution No. 2002-022, the Board amended the Implementation Section of the Basin Plan to allow a "reference system/antidegradation approach" or "natural sources exclusion approach," both of which "recognize that there are natural sources of bacteria, which may cause or contribute to exceedances of the single sample objectives for bacterial indicators [I]t is not the intent of the Regional Board to require treatment or diversion of natural water bodies or to require treatment of natural sources of bacteria from undeveloped areas." Regional Board, Resolution No. 2002-022 (Dec. 12, 2002) at 20 (available at http://www.epa.gov/waterscience/standards/wqslibrary/ca/ca_9_reg4bactimp.pdf).

The primary risk to human health from recreational contact most likely comes from exposure to human specific pathogens. See (Cabelli 1983; Fankhauser et al. 1998; Levine and Stephenson March 01 1990; Palmateer et al. 1991; Sobsey et al. 1995; World Health Organization 1999). Based on this principle, the Draft Los Angeles River Bacteria TMDL allows exceedances at a specific frequency (based on the frequency of bacteria exceedances in runoff from a "natural background" reference system) for discharges from U.S. Forest Service lands, California Department of Parks and Recreation Lands, National Park Service lands, and other similar open space areas. Draft Los Angeles River Bacteria TMDL at 51. The majority of the Santa Susana site is open space with abundant wildlife.

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Specifically, numerous studies have found that concentrations of fecal coliform in water are not associated with health risks, and that fecal coliform objectives should be abandoned in favor of alternative indicators of water quality. See, e.g., (Cabelli 1983; Colford et al. 2007; Gerba et al. 1979; Kay et al. 1994; McLaughlin and Rose 2000; Prüss 1998; Wade et al. 2003). Consistent with these studies, the Regional Board has proposed an amendment to the Basin Plan to remove fecal coliform from the indicator objectives for freshwaters in the Los Angeles Region. See generally Notice of Hearing on Proposed Amendment (April 22, 2010).²² In the same vein, the Draft Los Angeles River Bacteria TMDL regulates dry and wet weather discharges for only *E. coli*, not fecal coliform. Draft Los Angeles River Bacteria TMDL at 16. Thus, to the extent the Tentative WDR regulates bacteria, it should regulate only *E. coli* and only through monitoring requirements.

- b. Any regulation of bacteria should occur only at onsite locations under Boeing's control, and should not be duplicative.**

As currently written, the Tentative WDR imposes bacteria monitoring requirements at locations outside the boundaries of Santa Susana, where they receive stormwater runoff from multiple sources and land use types and are outside of Boeing's control.

Specifically, one of these monitoring locations, RSW-2 (Frontier Park), is located in the Arroyo Simi downstream of Santa Susana, and downstream of a concrete-lined channel section. See Exhibit I (map). The high flow suspension of recreational beneficial uses during rainfall events, which the Regional Board adopted in 2003 (Resolution No. 2003-010), appears to apply only to highly engineered channels in Los Angeles County.²³ However, the portion of the Arroyo Simi upstream of the RSW-2 sampling location is typical of channels to which the suspension is applied: it is concrete-lined, highly engineered, and unsafe to enter during high flow conditions. Furthermore, it receives drainage from a large land area downstream of Santa Susana and outside of Boeing's control. It is inappropriate in the Tentative WDR to require monitoring at this location. Finally, because the Tentative WDR appears to require monitoring at four onsite locations (Outfalls 001, 002, 011 and 018) to represent receiving water quality at RSW-1, it is unnecessary to require additional monitoring for bacteria at RSW-1.

²² See http://www.swrcb.ca.gov/rwqcb4/water_issues/programs/basin_plan/.

²³ These channels do not have to meet bacteria criteria during high-flow conditions. See U.S. Environmental Protection Agency, Suspension of Recreational Beneficial Uses in Engineered Channels during Unsafe Wet Weather Conditions (March 2006) (available at http://www.epa.gov/waterscience/standards/uses/uaa/casestudies/la_channels.htm).

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- c. **Monitoring should be limited to one sample per year and a determination made as to the source of the bacteria.**

If the Regional Board imposes monitoring requirements, monitoring should be limited to one sample per year. It is impractical to require follow-on sampling to determine a geometric mean due to the infrequent nature of stormwater discharges and the delay in receiving the results of the analysis (a normal turnaround time is at least 28 days). In the event that an exceedance of the bacteria monitoring objective in the Tentative WDR occurs, Boeing proposes to further evaluate whether the source of bacteria is human or non-human. Boeing would test for human-specific bacteroidales, consistent with the CREST (2008) approach. If the bacteria appeared to be from human sources, Boeing would investigate, identify, and eliminate those sources.

D. The WDR should include a site-specific design storm.

The Tentative WDR includes a reopener to “consider incorporation of a site specific or regional design storm (based on the evaluation of the results of the Design Storm Project) and subsequent policy considerations.” Tentative WDR at 34. Boeing supports this reopener but submits that the time to develop a site-specific design storm and incorporate it into the WDR is now.

Boeing has devoted substantial resources to developing a site-specific design storm for Santa Susana for the Regional Board’s consideration. As we have explained, and as Board Staff have recognized, see Revised Staff Report for 2008-2010 Triennial Review (Mar. 18, 2010) at 34,²⁴ wet weather events present special compliance challenges, and the regulated community is increasingly “concerned about the regulatory and financial burden associated with the Regional Board’s application of the Basin Plan surface water quality standards to storm water,” Revised Staff Report for 2008-2010 Triennial Review (Mar. 18, 2010) at 29. A design storm can be highly effective in addressing stormwater discharges, including at Santa Susana.

Furthermore, as we have explained, there is sufficient information to establish a Santa Susana-specific design storm now. In 2007, the Regional Board required the formation of the Stormwater Expert Panel “to review site conditions, modeled flow, contaminants of concern, and evaluate the BMPs capable of providing the required treatment to meet the effluent limits.” See Cease and Desist Order No. R4-2007-0056 at 10 (Nov. 1, 2007); see also Fact Sheet for Order No. R4-2007-0055 (Oct. 15, 2007) at 46; Order No. R4-2007-0055 (Nov. 1, 2007) at 55, 58.²⁵ In furtherance of this mandate, the Stormwater Expert

²⁴ Available at

http://www.swrcb.ca.gov/rwqcb4/water_issues/programs/basin_plan/BasinPlanTriennialReview/Addl_Documents2010_03_18/Revised%20Staff%20Report.pdf.

²⁵ Available at http://www.boeing.com/aboutus/environment/santa_susana/permits.html.

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Panel prepared its report, "Expert Panel Final Consensus Recommendation on a Site Specific Design Storm for Santa Susana," and recommended a design storm of 2.5 inches during a 24-hour period or 0.6 inches in an hour. This analysis relied on continuous hydrologic simulation and a separate corroborating model.²⁶

However, to date the Regional Board has not incorporated a design storm into Boeing's NPDES permit. To the extent a regional design storm is necessary for the development of site-specific design storm, we understand that the Regional Board has lacked sufficient resources to develop one. We thus appreciate Board Staff's proposed prioritization of the establishment of a design storm as part of the 2008-2010 Basin Plan Triennial Review process. See 2008-2010 Triennial Review Tentative Resolution No. R10-XX (Apr. 1, 2010) at 4; Revised Staff Report for 2008-2010 Triennial Review (Mar. 18, 2010) at 34-35, 43-44.

E. Miscellaneous issues

1. Substantive issues

TCDD (TEQ): At pages 18 and 22 (Table 6), the Tentative WDR imposes for toxic equivalents calculated from the measured concentrations of 17 dioxin congeners. Consistent with the Stormwater Expert Panel's SSFL Dioxin Background Report, see supra at 8-9, the Tentative WDR should impose a limit only on 2,3,7,8-TCDD as the single compliance parameter for regulating dioxins. Such a limit would better account for background conditions and would be consistent with other NPDES permits and the CTR.

Chronic toxicity benchmark for Outfalls 012-014: At page 22 (Table 6), the Tentative WDR inappropriately adds a benchmark for chronic toxicity for Outfalls 012-014. Chronic toxicity has not been included in previous monitoring programs for these outfalls and there are no data to support the imposition of such a limit. The basis for these limits comes from the use of RPA, which, as discussed above at page 10, is not appropriate here. Boeing requests that this limit be removed.

Effluent monitoring requirements (Attachment E): We have three comments. First, at page E-7 (Table E-2a), the sampling method has been changed from composite to grab sampling for 2,4,6-trichlorophenol, 2,4-dinitrotoluene, and bis(2-ethylhexyl)phthalate at Outfalls 003-010. However, because these COCs are semi-volatile organic compounds

²⁶ The Design Storm Task Force published its final report on the regional design storm for the Los Angeles Region in October 2007. Among other things, the report recommends a design storm for use in the Los Angeles Region for TMDL implementation planning purposes. See Drew Ackerman, et al., Southern California Coastal Water Research Project, Concept Development: Design Storm for Water Quality in the Los Angeles Region (Technical Report 520, Oct. 2007) (available at ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/520_designStorm.pdf).

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("SVOCs"), and to ensure consistency with other analyses, Boeing asks that they continue to be monitored using composite sampling.

Second, at page E-12 (Table E-2d), the sampling method again has been changed from composite to grab sampling for 2,4,6-trichlorophenol, 2,4-dinitrotoluene, bis(2-ethylhexyl)phthalate, PCBs, and monomethylhydrazine at Outfall 019. However, because these COCs are SVOCs and inorganic compounds, and to ensure consistency with other analyses, Boeing asks that they be continue to be monitored using composite sampling.

Third, prior to the Tentative WDR, Boeing has been required to monitor perchlorate once per discharge at Happy Valley (Outfall 008) and semiannually at all other stormwater-only outfalls. At page E-9 (Table E-2b), the Tentative WDR deletes this qualification, previously applied by footnote, and would require monitoring at all outfalls and for all discharges. There are no data to justify this change. Consistent with prior permits, Boeing asks that the following footnote be inserted for perchlorate:

Monitor once per discharge at Happy Valley (Outfall 008). Monitor semiannually at all other stormwater-only outfalls. If the results are nondetect for two years the discharger may submit a request for the monitoring frequency to be decreased to annually with Executive Office approval.

Calculation of gross alpha: The summary tables in the Effluent Monitoring Program of Attachment T of the Tentative WDR do not adequately reference footnote 7 on page E-14. However, the footnote indicates that compliance is determined for gross alpha and gross beta as follows:

Gross alpha and gross beta analysis must be performed. Gross alpha analysis must be <15 pCi/L. If gross alpha is >15 pCi/L, uranium analysis must be performed and must be less than 30 µg/L (20 pCi/L). Radium-228 analysis must be performed and combined radium-226 and Ra-228 activity must be <5 pCi/L. Radium 226 analysis can be performed, or if gross alpha is <5 pCi/L, one can assume Ra-226 activity = gross alpha activity for purposes of meeting the 5 pCi/L.

Based on Boeing's understanding of the requirements at 40 C.F.R. Part 141, total uranium is subtracted from the gross alpha value prior to comparison to the gross alpha limit of 15 pCi/L. The total uranium limit in the Tentative WDR is 30 µg/L (20 pCi/L). Boeing requests that footnote 7 be updated to reflect the subtraction of uranium from gross alpha.

Self monitoring report requirements: We have two comments. First, the Tentative WDR (page E-31 (¶ B.3)) indicates that quarterly monitoring reports are due to the Regional Board on or before May 1, August 1, November 1, and February 1 of each year. The annual report also is due on or before February 1 of each year. Under the 2009 WDR,

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quarterly reports are due on or before May 15, August 15, November 15, and February 15, with the annual report due on or before March 1 of each year. We do not see a reason for this change, and it will unnecessarily shorten the time for data analysis at the end of each quarter. The WDR should retain the existing due dates.

Second, the Tentative WDR (page E-33 (¶ D.3)) states that by February 1 of each year, Boeing must submit an annual report to the Regional Board. Again, the current deadline, March 1, should be retained.

Description of discharge: The Tentative WDR (page F-11) states that “[c]onstruction of the Outfall 018 TSTS began in November 2009 and was completed in the First Quarter 2010. The system has been fully operational through much of the 2009-2010 rainy season.” However, the chemical addition and adjustment component was not fully operational until March 2010. Boeing requests the following language be included:

The system was operational during all discharges that occurred at Outfall 018 during First Quarter 2010 with chemical adjustment occurring through March 2010. The results of the 2009-2010 storm season are being used to better define the treatment system that will be in place at Outfalls 011 and 018.

Relocation of Outfall 019: The Tentative WDR (page F-11) would relocate Outfall 019, currently located immediately upstream of Outfalls 011 and 001, to a point downstream of Outfall 001. Boeing supports this proposed relocation because it will improve compliance monitoring by separating stormwater and groundwater discharges. Such separation will make it easier to determine whether cleanup activities upstream of Outfalls 001 and 011 are successful, and whether monitoring is required during a rain event. If discharges are commingled, it will be impossible to tell during rain events whether the discharge is from treated groundwater only or a mix of stormwater and groundwater.

We note that relocation of Outfall 019 would not change any numeric limits. Because flows from Outfall 019 are from a process source, the current daily maximum and monthly average limits at Outfall 019 would remain in place. The daily maximum limits in place at Outfalls 001 and 011 also would remain unchanged and would be regulated in the same manner as all other stormwater-only outfalls.

2. Errata

Pages 9-10 (¶ III.I): The last sentence on page 9 of the Tentative WDR states that “[s]ubsequently, Regional Water Board revised the interim effluent limit for ammonia by adoption of Resolution 2003-009 on December 4, 2009.” This Resolution number (2003-016) should be added and the date of adoption should be changed to December 4, 2003. See Tentative WDR at F-22 (identifying correct date).

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Page 18 (Table 6): The limit for TCDD (TEQ) is followed by footnote 9. Footnote 9 (on page 24) is the chronic toxicity limit and does not apply to TCDD. Boeing requests clarification regarding this footnote.

Page 21 (Table 6): The limit for Ammonia-N on page 21 is missing footnote 11. This limit for Ammonia-N previously was applied only at Outfall 008. Boeing requests that the Regional Board add footnote 11 as it reads in the 2009 WDR.

Page 23 (Table 6): The limit for Nitrate + Nitrite – N refers to footnote 2 (page 24), but footnote 2 refers to mass calculation. Boeing requests clarification regarding this footnote.

Pages 26 and 39: Concerning temperature, the Tentative WDR (page 39) carries forward the 2009 WDR's "Compliance with Temperature Determination," concerning receiving water temperatures above 86 degrees. However, the Tentative WDR (page 26) also prohibits an increase in receiving stream water temperature above 80 degrees "as a result of waste discharged." This additional sentence is inconsistent and superfluous and we ask that it be deleted.

Pages 29-36: The 2009 WDR's limits for Chlordane, DCE, and PCBs expire on June 24, 2014, five years from the effective date of that permit. See 2009 WDR at 49-50. However, the Tentative WDR erroneously identifies the expiration date for these limits as April 10, 2014. This expiration date should be changed to June 24, 2014.

Pages E-12 and E-13 (Table E-2d): The entry for Zinc, Total Recoverable is listed twice for Outfall 019 on pages E-12 and E-13. Boeing asks that one duplicative entry be removed.

Page F-48 (¶ D.1): The Tentative permit erroneously refers to the RPA results for 1,2-dichloroethylene instead of for 1,2-dichloroethane. Boeing requests that the text be revised as follows:

Effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order. This Order also includes a new effluent limitation for ~~1,2-dichloroethylene~~ 1,2-dichloroethane. Data obtained demonstrated reasonable potential for that constituent.

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III. Conclusion

Boeing thanks the Regional Board and Board Staff for its consideration of these comments on the Tentative WDR.

Sincerely,



Peter H. Weiner
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List of Exhibits

- Exhibit A:** Transcript of Regional Board Hearing on 2009 WDR (May 8, 2009)
- Exhibit B:** Boeing, Comments on 2008-2010 Triennial Review (Nov. 10, 2008)
- Exhibit C:** Boeing, Prioritization of Comments on 2008-2010 Triennial Review (April 16, 2009)
- Exhibit D:** Boeing, Comments on Prioritized Issues for 2008-2010 Triennial Review (March 5, 2010)
- Exhibit E:** Santa Susana Stormwater Expert Panel, Cover Letter to Regional Board for Dioxin and Metals Background Reports (March 29, 2010)
- Exhibit F:** Santa Susana Stormwater Expert Panel, SSFL Stormwater Dioxin Background Report (March 29, 2010)
- Exhibit G:** Santa Susana Stormwater Expert Panel, Boeing SSFL Metals Background Report: Sources of Metals in SSFL Watersheds (Nov. 21, 2009)
- Exhibit H:** List of References cited in Section II.C (see footnote 17)
- Exhibit I:** MWH, Map of Arroyo Simi Receiving Water Sediment Sample Locations