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Via FedEx

August 31, 2012
In reply refer to SHEA-112345

Ms. Cassandra Owens
Regional Water Quality Control board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Subject: ISRA Performance Monitoring and Potential BMP Subarea Monitoring for the Outfalls 008 and 009 Watersheds, 2011/2012 Rainy Season, The Boeing Company, Santa Susana Field Laboratory, Canoga, CA (Order No. R4-2010-0090; NPDES No. CA0001309, CI No. 6027; and, California Water Code §13304 Order; NPDES NO. CA0001309, CI NO. 1111, Site ID No. 2040109)

Dear Ms. Owens:

Per the requirements of The Boeing Company's (Boeing) National Pollutant Discharge Elimination System (NPDES) Permit and a California Water Code §13304 Cleanup and Abatement Order dated December 3, 2008, Boeing is providing the attached ISRA Performance Monitoring and Best Management Practices (BMP) Monitoring Report for the Outfalls 008 and 009 Watersheds for the 2011/2012 rain season. This document has been developed with input and in accordance with recommendations from the Santa Susana Site Surface Water Expert Panel and prepared for Boeing and the National Aeronautics and Space Administration (NASA). The attached report will be posted on the Boeing External website at the following address:
http://www.boeing.com/aboutus/environment/santa_susana/isra.html

If you have any questions or require any further, please contact Debbie Taege at 818-466-8849.

Sincerely,

Tom Gallacher
Director, Santa Susana Field Laboratory
Environment, Health and Safety

Attachment: ISRA Performance Monitoring and Potential BMP Subarea Monitoring for the Outfalls 008 and 009 Watersheds, 2011/2012 Rainy Season

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ISRA PERFORMANCE MONITORING AND POTENTIAL BMP SUBAREA MONITORING FOR THE OUTFALLS 008 AND 009 WATERSHEDS, 2011/2012 RAINY SEASON
SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA

August 2012

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[1] The "Expert Panel" documents listed here were prepared first by Geosyntec, based on detailed discussion with and guidance from the Expert Panel, and then the drafts were reviewed, edited, and approved by the Expert Panel prior to finalizing. This process is necessary in order to accommodate the Expert Panel members' limited availability.

ABBREVIATIONS AND ACRONYMS

AILF	Area I Landfill
A2LF	Area II Landfill
AP/STP	Ash Pile and Building 515 Sewage Treatment Plant
BMP	Best Management Practice
BEF	bioaccumulation equivalency factor
Boeing	The Boeing Company
CAO	Cleanup and Abatement Order
CM	culvert modification
COC	constituents of concern
cy	cubic yards
DTSC	Department of Toxic Substances Control
DNQ	data not qualified
ELV	Expendable Launch Vehicle
EMPC	estimated maximum possible concentration
ENTS	Engineered Natural Treatment Systems
Expert Panel	Santa Susana Site Surface Water Expert Panel
Geosyntec	Geosyntec Consultants
H&A	Haley & Aldrich, Inc.
HVS	Happy Valley South
ISRA	Interim Source Removal Action
LID	low impact development
LOX	liquid oxygen
MWH	MWH Americas, Inc.
NASA	National Aeronautics and Space Administration
NPDES	National Pollutant Discharge Elimination System
PSD	particle size distribution
PVC	polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RMMP	Restoration, Mitigation, and Monitoring Plan
RTL	radiological trigger level

ABBREVIATIONS AND ACRONYMS (continued)

RWQCB	Los Angeles Regional Water Quality Control Board
SAP	sampling and analysis plan
SCE	Southern California Edison
SRG	soil remediation goal
Santa Susana Site	Santa Susana Field Laboratory
TA	Test America Laboratories, Inc.
TEF	toxic equivalency factor
TEQ	toxic equivalency
TSS	total suspended solids
WWE	Wright Water Engineers, Inc.

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1.0 INTRODUCTION

This report summarizes the Interim Source Removal Action (ISRA) performance monitoring and potential Best Management Practices (BMP) subarea monitoring activities and results from the 2011/2012 rainy season within the Outfalls 008 and 009 watersheds at the Santa Susana Field Laboratory (Santa Susana Site), Ventura County, California. This report also includes an overall summary of ISRA performance monitoring and potential BMP subarea monitoring results collected to date, an evaluation of the potential BMP sites based on subarea monitoring results, and recommendations for modifications to the ISRA performance monitoring and potential BMP subarea monitoring programs.

ISRA performance monitoring involves the monitoring of stormwater runoff at completed ISRA areas and select culvert modifications (CMs), and supplements the ISRA program being performed pursuant to a California Water Code Section 13304 Cleanup and Abatement Order (CAO) issued by the Los Angeles Regional Water Quality Control Board (RWQCB) dated December 3, 2008 (RWQCB, 2008). Potential BMP subarea monitoring involves the monitoring of stormwater at areas receiving runoff from potential source areas and other infrastructure (e.g., roads, buildings, parking areas) where installation of BMPs is being considered and is performed per the BMP Plan (MWH Americas, Inc. [MWH] *et al.*, 2010), which was prepared pursuant to the National Pollutant Discharge Elimination System (NPDES) Permit (Order R4-2010-0090) adopted by the RWQCB on June 3, 2010 (RWQCB, 2010a). The purpose of the ISRA and BMP programs, which are being implemented with oversight and participation of the RWQCB, is to improve compliance with NPDES permit limits at Outfalls 008 and 009 and water quality in these watersheds through the dual approach of remediation of surface soils that are above defined thresholds for NPDES constituents of concern (COCs), and through control and/or treatment of stormwater runoff from prioritized subareas, respectively, where single stormwater treatment solutions are not feasible at the point of compliance. Neither of these studies is an extension of the NPDES program, and therefore data collected as part of these studies are not a measurement of NPDES compliance within the watersheds.

The 2011/2012 rainy season represents the third year of ISRA performance monitoring and the second year of BMP monitoring. The results and recommendations from previous rainy seasons are presented in annual reports (MWH, 2010d, MWH *et al.*, 2011). In addition, the Final 2011 BMP Plan Addendum (Geosyntec Consultants [Geosyntec] and the Santa Susana Site Surface Water Expert Panel [Expert Panel], 2011d) was prepared subsequent to the 2010/2011 rainy season annual report and provides additional detail on the BMP recommendations presented in the 2010/2011 Rainy Season Summary Report (MWH *et al.*, 2011).

ISRA performance monitoring and potential BMP subarea monitoring activities were conducted during the 2011/2012 rainy season by MWH on behalf of The Boeing Company (Boeing) and the National Aeronautics and Space Administration (NASA) according to the sampling and analysis plan (SAP). For the 2011/2012 rainy season, an addendum to the 2010/2011 BMP and ISRA Performance Monitoring SAP (MWH, 2010e) was prepared, the 2011/2012 Rainy Season SAP Updates, Potential BMP Monitoring and Performance Monitoring Programs (MWH, 2011b), which presented the changes to monitoring locations, frequency, and reporting. Both documents constitute the SAP for the 2011/2012 rainy season and for the remainder of this report, the SAP will be referred to as the 2011/2012 BMP and ISRA SAP (MWH, 2010e, 2011b). This summary report was prepared for Boeing and NASA by MWH and Geosyntec with input from and in accordance with the recommendations from the Expert Panel.

1.1 PROJECT BACKGROUND

The Santa Susana Site is located approximately 29 miles northwest of downtown Los Angeles, California, in the southeast corner of Ventura County. Stormwater discharges at the Santa Susana Site are monitored at 16 outfalls according to the NPDES Permit. Stormwater discharges from the site are exclusively the result of stormwater runoff and are intermittent following rain events. The locations of Outfalls 008 and 009 watersheds, the subject outfalls of the ISRA program and the BMP Plan, are shown in Figure 1-1.

The NPDES Permit established monitoring at Outfalls 008 and 009 in August 2004, and NPDES permit limits were first established for these two outfalls in 2005-2006. Constituents for which there have been NPDES permit limit and benchmark exceedances at Outfalls 008 and 009 between 2004 and April 2012, based on the limits in effect at the time of discharge, include copper, lead, and dioxins at Outfall 008, and copper, lead, dioxins, pH, and oil and grease at Outfall 009 (Boeing, 2005, 2006, 2007, 2008, 2009, 2010, 2011b, 2012a, 2012b). In addition, based on an evaluation of all stormwater samples collected at Outfalls 008 and 009 since August 2004, including sample data collected for monitoring before the NPDES permit limits/benchmarks were established, COCs have been identified to include copper, lead, and dioxins at Outfall 008, and cadmium, copper, lead, mercury, and dioxins at Outfall 009. Since the exceedances of oil and grease and pH at Outfall 009 each occurred only once and were attributed to natural causes (Boeing, 2005 and 2006), they are not considered COCs. Results of samples collected at Outfalls 008 and 009 above NPDES permit limits/benchmarks since August 2004 are presented in Tables 1-1 and 1-2, respectively. For the purpose of this report, total suspended solids (TSS) is also included as a COC for Outfalls 008 and 009 since it may be associated with the other COCs; however, TSS is not regulated at Outfall 008 or 009 by the NPDES permit.

In response to exceedances of NPDES permit limits and benchmarks at Outfalls 008 and 009, the RWQCB issued the ISRA CAO dated December 3, 2008 and included the requirement to prepare a BMP Plan in the NPDES permit adopted on June 3, 2010. These two activities are described in further detail below.

1.2 ISRA PROGRAM

The ISRA program is being performed pursuant to a CAO issued by the RWQCB dated December 3, 2008 (RWQCB, 2008). The objective of the CAO is to improve stormwater quality within the Outfalls 008 and 009 watersheds by requiring the identification and evaluation of areas of contaminated soil containing COCs that have resulted in exceedances of NPDES permit limits and benchmarks in stormwater, and implementation of an appropriate source removal alternative (e.g., excavation and offsite disposal, capping with a clay cap, or constructing diversion and collection structures). As stated in Section 1.1, the COCs for stormwater are copper, lead, and dioxins at Outfall 008, and cadmium, copper, lead, mercury, and dioxins at Outfall 009. To accomplish this objective, ISRA Work Plans and work plan addenda (MWH, 2009a-c, 2010c, and NASA, 2009) describing the ISRA identification and remedial planning process were submitted to and approved by the RWQCB. The work plans also present the soil remediation goals (SRGs) for the ISRA project, which are near to or consistent with Department of Toxic Substances Control (DTSC)-approved soil background concentrations (MWH, 2005).

Phase I ISRA activities were completed during the early portion of the 2009/2010 rainy season and included excavation and restoration[2] at ten ISRA areas in the Outfall 008 watershed and two ISRA areas in the Outfall 009 watershed. In addition, culvert inlet upgrades were performed at 12 CMs within the Outfall 009 watershed as part of the Santa Susana Site stormwater maintenance program. With the exception of CM-7, culvert inlets were retrofitted with inlet weirs to allow temporary ponding/sedimentation and media mounds with underdrains to facilitate filtration of stormwater. Phase II ISRA activities were completed during the early portion of the 2010/2011 rainy season and included excavation and restoration at 11 ISRA areas in the Outfall 009 watershed and construction of a detention basin at the B-1 area for sediment control. Phase I and Phase II ISRA activities were presented in summary reports (MWH, 2010B, 2011a). Phase III ISRA activities, which include excavation and restoration at the remaining

[2] Restoration involved the installation of erosion control BMPs including fiber rolls, hay bales, silt fences, and hydroseed mulch on and near the restored excavations. In addition, containerized plants (for the purpose of providing additional long-term erosion control benefit) were installed following a planting plan developed by the Expert Panel.

ISRA areas, began in 2011 and are ongoing. The status of Phase III ISRA activities is presented in Section 1.3.1.

Following completion of remedial actions, performance monitoring is proposed to be performed at each ISRA area for a minimum of 2 years. A summary of the performance monitoring program is provided below.

1.2.1 ISRA Performance Monitoring Program

ISRA performance monitoring involves the collection of stormwater samples both up- and downstream of each completed ISRA area and select CM systems to obtain water quality performance data to assess the contribution of COCs to stormwater within the Outfalls 008 and 009 watersheds following completion of remedial or CM activities. The performance data associated with the CM systems were also collected to assess the effectiveness of the CMs at promoting sediment settling and removing COCs. Performance monitoring will continue through two rainy seasons for each monitoring location; however, the actual study duration will depend on the quantity and quality of data collected at the performance monitoring locations and the associated outfall. This program is not meant to be a comprehensive study of COCs in stormwater within the Outfalls 008 and 009 watersheds or an extension of the NPDES program. Furthermore, the overall effectiveness of the ISRA remedial activities and the CM systems will be based on compliance with the NPDES Permit at the outfall monitoring locations.

Performance monitoring was initiated during the 2009/2010 rainy season at the 12 ISRA areas completed during Phase I implementation and five of the CM systems, including CM-1, CM-3, CM-8, CM-9, and CM-11. During the 2010/2011 rainy season, performance monitoring continued at ISRA areas completed during Phase I implementation and the five CM systems, and was initiated at the 11 ISRA areas completed during Phase II implementation. The performance monitoring results from previous rainy seasons are presented in annual reports (MWH, 2010d, MWH *et al.*, 2011) and summarized in Section 2.1.

During the 2011/2012 rainy season, performance monitoring continued at the 23 ISRA areas completed during Phase I and II implementation and two of the five CM systems, and was initiated at the one ISRA area completed during Phase III implementation (IEL-2) and the B-1 CM completed in Fall 2011. A summary of the performance monitoring and sampling plan for the 2011/2012 rainy season is provided in Section 1.4. A summary of the results from the 2011/2012 rainy season is provided in Section 2.2. An up- and downstream evaluation of ISRA performance monitoring results collected to date and recommendations for modifications to the ISRA performance monitoring program are included in Sections 2.3 and 2.4, respectively.

1.3 BMP PLAN

The BMP Plan, prepared in October 2010 pursuant to the NPDES Permit, describes the process for improving stormwater runoff quality and minimizing NPDES Permit exceedances in the Outfalls 008 and 009 watersheds at the Santa Susana Site (MWH *et al.*, 2010). The BMP Plan presents the refined strategy for the subject outfall drainages based on ongoing source removal actions (e.g., Northern Drainage cleanup, ISRAs, and demolition activities), and recently obtained data/information (e.g., NPDES data, performance monitoring data, dioxin and metals stormwater background studies). The refined strategy is to target stormwater BMPs[3] at locations where either existing data and/or new data generated as part of the plan indicate that BMPs may be required, while considering the list of guiding principles established by the Expert Panel (MWH *et al.*, 2010). The BMP Plan also describes the types of BMPs available, grouping BMPs as either source, erosion, and sediment controls, or treatment controls (i.e., Engineered Natural Treatment Systems [ENTS]), and provides the approach and criteria for identifying BMP sites and selecting the BMP type(s) for each location.

Additionally, the BMP Plan summarizes BMP activities that are planned, are underway, or have been recently completed in the Outfalls 008 and 009 watersheds, referred to as short-term activities (e.g., ISRA remediation and erosion control activities, Northern Drainage restoration activities, and several erosion and treatment control recommendations from the Expert Panel). An updated list of the short-term activities and their current status is provided in Section 1.3.1. In addition, the BMP Plan identifies activities that will be performed as part of the BMP evaluation and implementation planning process at the identified potential BMP sites, referred to as long-term activities. Several long-term activities are ongoing or have been completed since submittal of the BMP Plan, including developing and implementing a potential BMP subarea monitoring program, evaluating existing surface water data, developing a prioritized ranking of

[3] Stormwater BMPs include source, erosion, sediment, and treatment controls. Source controls are practices that aim to reduce the quantity and improve the quality of stormwater runoff at or near the source of the constituents of concern. This may include schedules of activities (such as demolition activities and remediation activities to minimize exposure to potential runoff), structural devices (either constructed or natural), maintenance procedures, and managerial or operational practices such as removing the sources of contamination. Erosion controls (a subset of source controls) are practices that protect sediment from eroding under rainfall, flowing water and/or wind conditions. Effective erosion controls are techniques in preventing water pollution and soil loss through minimization of soil or vegetation disturbance; the use of physical barriers, such as vegetation, rock, and runoff diversions to reduce the energy of the water that is causing the erosion; and stabilization measures of disturbed areas. These measures are often implemented in conjunction with sediment controls. Sediment controls are practices designed to keep already eroded soil from discharging and causing water pollution to receiving waters. Sediment control measures are usually passive systems that rely on filtering or settling of particles from the stormwater runoff. Treatment controls are engineered systems designed to remove pollutants by gravity settling of sediments, filtration, biological uptake, media adsorption or other physical, biological or chemical processes.

sites for placing new BMPs, and developing BMP sizing criteria. A summary of the potential BMP subarea monitoring program, the potential BMP site ranking analysis approach, and the BMP sizing criteria is provided in Sections 1.3.2, 1.3.3, and 1.3.4.

1.3.1 Short-Term BMP Activities Updates

The status as of August 2012 for the short-term BMP activities that are being performed to improve surface water quality in the Outfalls 008 and 009 watersheds is provided below. These activities are shown on Figures 1-2, 1-3, and 1-4.

ISRA Activities. Phase III ISRA activities are currently in-progress. In 2011, ISRA activities were completed at one ISRA area (IEL-2) and began at five ISRA areas (AP/STP-1B, -1C-2, -1E-1, -1E-2, and -1E-3) within the Outfall 009 watershed, resulting in approximately 2,100 cubic yards (cy, *ex situ* estimate) of soil removed. Erosion and sediment control BMPs including fiber rolls, hay bales, silt fences, and hydroseed mulch were installed on and near IEL-2 and adjacent soil borrow area. At the five in-progress ISRA areas, sand bags and fiber rolls were installed prior to the start of implementation activities and excavations were covered with plastic and secured with sand bags when activities were put on hold for the 2011/2012 rainy season. In addition, erosion controls were installed and maintained at the completed ISRA areas.

Phase III ISRA activities are continuing within the Outfall 009 watershed with nine ISRA areas planned for completion in 2012 and nine ISRA areas planned for completion after 2012, resulting in a total volume of soil to be removed of approximately 13,000 cy (*ex situ* estimate).

Additionally, modifications were performed to the B-1 area detention basin during Summer/Fall 2011 based on performance observations during the 2010/2011 rainy season. The modifications included installation of an underdrain beneath the basin, relocation of the discharge pipe riser, and reorientation of the discharge pipe to direct the effluent into the B-1 drainage where a CM was installed in Fall 2011 (see below for additional information on the B-1 CM).

Northern Drainage Restoration Activities. The Restoration, Mitigation, and Monitoring Plan (RMMP) finalized in October 2011 (Haley & Aldrich, Inc. [H&A], 2011) and jointly developed by Boeing, NASA, H&A, MWH, Geosyntec, Padre, and the Expert Panel presents the Phase II channel stabilization measures for the Northern Drainage. The RMMP designs present the proposed placement of 11 stabilization practices that consist of: installing riprap check structures, maintaining existing riprap structures, breaking-up of in stream boulders, installing grouted/vegetated culvert outlet energy dissipaters, reinforcing bank toes with vegetated riprap, reinforcing bank toes with fibershine, incorporating soil bioengineering by utilizing live plant staking, installing containerized plantings, lining gullies with riprap, stabilizing roads using Geocell filled with gravel, and utilizing HDPE slope drains. The RMMP also describes

mitigation planting and monitoring program elements. Permit approvals for the work were received in July 2012, construction began in August 2012, and implementation of structural measures is tentatively scheduled to be completed by October 2012. Installation of vegetative practices is tentatively scheduled for after the beginning of the wet season, between November 2012 and February 2013.

Outfall 008 BMPs. Additional BMP controls are being installed within the Outfall 008 watershed in response to field observations during the 2011/2012 rainy season. The BMP controls, which are summarized in a memorandum (Geosyntec and Expert Panel, 2012a), include installing check dams and rubber water bars along the existing road, refreshing the riprap apron at the Outfall 008 flume, extending and adding supplemental gravel to the existing culvert standpipe, adding riprap/gravel check structures, and replacing hay bales and silt fences. Installation of the BMPs has started and is tentatively scheduled to be completed by September 2012.

Road Rehabilitation/Maintenance. Dirt road rehabilitation/maintenance activities were completed in Fall 2011 along the access road below (north of) the Area II Landfill (A2LF) in the Outfall 009 watershed. Activities included installation of rolling dips along the road and placement of fiber rolls and riprap at culvert discharge points.

Additional Miscellaneous Erosion Control Installations. Installation and maintenance of additional erosion control BMPs (e.g., hydroseed mulch, straw wattles, culvert outlet protection, etc.) are performed continuously at the Santa Susana Site based on recommendations following routine inspections conducted per the site-wide SWPPP or individual construction SWPPPs to identify and mitigate sources of pollution to surface water. Performance of inspections prior to and during rain events to identify soil erosion features are critical in identifying BMP maintenance locations and implementing corrective actions in a timely manner to minimize the transportation of soil in surface water runoff.

Culvert Modifications (CMs). Installation of a culvert inlet media filter, or a CM, at the culvert adjacent to the entrance road in the B-1 area was completed in September 2011 and upgraded in November/December 2011 (Geosyntec, 2011). The CM includes a riser outlet structure that is surrounded by a bed of filter media that is underlain by a slotted polyvinyl chloride (PVC) well screen underdrain collection pipe. This CM will benefit from adjacent hillside erosion controls as well as the existing upstream detention basin, which will provide pretreatment and peak flow reduction before the CM.

Installation of filter fabric around the weir boards at each CM was performed in January 2012 to reduce the flow through the weir boards and facilitate flow through the filter media beds. In addition, supplemental gravel was installed to cover filter fabric exposed over the filter media bed at CM-2, -3, -4, -8, -10, and -11.

An assessment of sediment accumulation upstream of the culverts is performed periodically throughout the rainy season, and sediment removal is performed as necessary. Sediment removal is planned for Summer 2012 at CM-1, -2, -3,-4, -6,-7 -8, -9, -10 and -11.

Lower Parking Lot Biofilter. A treatment control BMP to control runoff from the paved, 5-acre soil stockpile area in the Lower Parking Lot is under construction and scheduled to be completed in October 2012. The BMP was planned to be installed in 2011, but the BMP had to be relocated outside the Southern California Edison (SCE) easement that resulted in additional design activities, delaying the project. The Lower Parking Lot was originally identified by Boeing and the Expert Panel as a key area for stormwater capture and treatment because of the soil stockpiling and management activities, a potential source of COCs to stormwater, that are expected to continue in the Lower Parking Lot throughout the duration of site remediation activities. The BMP design includes a buried concrete cistern, a sedimentation basin, and a biofilter containing treatment media. Effluent from the biofilter will be discharged into the Northern Drainage north of the biofilter site. This BMP will also treat low, first flush flows from a 23-acre developed drainage area that is upslope of the Lower Parking Lot via connection to a buried 24-inch storm drain line located beneath the lot.

The wooden retaining wall below the gunite-lined slope south of the Lower Parking Lot area was replaced in Spring 2012 after observing sediment migration during rain events. Filter fabric was installed behind the wood to provide additional stabilization of the slope.

Asphalt Removal[4] and Site Restoration. Within the Outfall 009 watershed, approximately 3.9 acres of impervious surfaces were removed between Summer 2011 and Summer 2012. Activities included removal of approximately 1.5 acres of asphalt pavement as part of the Building 1324 parking lot demolition (Summer/Fall 2011), approximately 1.8 acres of asphalt pavement on Sage Ranch and the Santa Susana Site adjacent to the Lower Parking Lot (Summer/Fall 2011), approximately 0.12 acres of asphalt pavement and concrete foundation as part of the Area II Ultraviolet Peroxidation Unit demolition (Fall 2011), and approximately 0.45 acres of asphalt pavement and concrete foundation as part of the Building 1300 demolition (Summer 2012). Sediment and erosion control BMPs, including fiber rolls, silt fencing, gravel bags, and hydroseed mulch were implemented following removal activities. Removal of asphalt

[4] Stormwater runoff from asphalt pavement may contribute metals and dioxins concentrations that are above background due to: (1) regional atmospheric deposition (which over time builds up and more effectively washes off pavement during rain events unlike open ground areas where stormwater runoff may partially infiltrate or be sequestered by plants), (2) contributions from the asphalt emulsion and/or pavement sealant themselves, and/or (3) contributions from vehicles (e.g., brake dust, oil leaks, and exhaust particulates).

pavement and concrete foundation as part of the Building 1436 demolition is tentatively scheduled for Summer 2013.

Electric Pole Runoff Control. The Panel identified creosote-coated wood poles as a source of dioxin to stormwater in 2008, and recommended controls to mitigate this source at that time. A creosote-coated wood electric pole survey was conducted in Fall 2011 to identify the remaining creosote-coated poles within the Outfalls 008 and 009 watersheds. The majority of creosote-coated power poles that were identified are either owned by a utility and are active data or power lines, or are owned by Boeing but located within a utility easement. These poles cannot be removed or have runoff controls installed around the pole without the permission of the utility. The Boeing-owned creosote-coated power poles on Boeing property will be removed as part of the site-wide demolition program.

Helipad. The Helipad was recommended for BMP installation by the Expert Panel as a result of the BMP site ranking analysis (Geosyntec and Expert Panel, 2011c). The current conceptual design, which is slightly modified from the design presented in the 2011 BMP Plan Addendum, includes asphalt and road base removal, followed by excavation of infiltration depressions and application of erosion control and revegetation measures, including but not limited to wattles and hydroseed mulch. Design and planning activities recently resumed following receipt of a letter from DTSC dated August 23, 2012 approving the use of the December 2011 EPA radiological trigger levels (RTLs) (DTSC, 2012). A temporary BMP was installed at the Helipad in November 2011; this BMP includes two rows of sand bag berms to promote ponding and settling of water borne particulates prior to discharging into the Helipad spillway and slope drain, which discharges into the lower drainage shortly upstream of Outfall 009.

Expendable Launch Vehicle (ELV) Area. The ELV area was recommended for BMP installation by the Expert Panel because of its planned future use as a NASA soil management and contractor staging area and as a result of the BMP site ranking analysis (Geosyntec and Expert Panel, 2011c), with a conceptual design presented in the 2011 BMP Plan Addendum (Geosyntec and Expert Panel, 2011d). The Expert Panel's initial conceptual design included soil removal at planned ELV ISRA areas with implementation of pre- and post-construction erosion and sediment control measures, reconstruction of the existing 520-foot asphalt drainage ditch south of ELV, and installation of a detention basin and a culvert inlet media filter at the culvert inlet at the corner of Helipad and Service Area Roads. Currently, NASA is evaluating BMP options for this area in consultation with the Expert Panel, and the final design will likely be a modification from the conceptual design described above. Options recently developed by the Expert Panel are presented in Section 3.3 under the header New BMP Recommendations. Design and planning activities recently resumed following receipt of the DTSC letter about use of EPA RTLs (see Helipad section above for details).

Liquid Oxygen (LOX) Area. The LOX area was recommended for BMP installation by the Expert Panel as a result of the BMP site ranking analysis (Geosyntec and Expert Panel, 2011c), with a conceptual design presented in the 2011 BMP Plan Addendum (Geosyntec and Expert Panel, 2011d). The conceptual design includes the construction of an approximately 700-foot long sand bag berm along the northern bank of the Northern Drainage channel, installation of HDPE slope drains and Geocell crossings, and placement of riprap. During Fall 2011, the sand bag berm and Geocell along the eastern portion of the LOX truck turn-around area were installed. The slope drains and riprap, which require permit approval to be installed, are included with the Northern Drainage RMMP permitting package and planned for construction in Summer/Fall 2012.

Area I Landfill (AILF) Area. The AILF area was recommended for BMP installation by the Expert Panel as a result of the BMP site ranking analysis (Geosyntec and Expert Panel, 2011c), with a conceptual design presented in the 2011 BMP Plan Addendum (Geosyntec and Expert Panel, 2011d). The conceptual design included a vegetated swale atop the hillside; however, as an equivalent alternative, approximately 1.5 acres of surrounding asphalt (Building 1324 parking lot) was removed and the remaining flat area was stabilized with wattles and hydroseed mulch. The conceptual design also included channel armoring, but after further investigation the channel was found to be in stable condition. Maintenance of CM-9 located downstream of the AILF is planned for 2013. The Expert Panel believes these implemented and planned measures suffice at this time based on their review of the most recent stormwater quality data from monitoring locations downstream of the AILF, which found these samples to be consistently low for NPDES COCs.

1.3.2 Potential BMP Subarea Monitoring Program, Outfalls 008/009 Watersheds

A potential BMP subarea monitoring program was developed that involves the collection of stormwater samples at locations receiving runoff from potential source areas and other infrastructure (e.g., roads, buildings, parking areas) within the Outfalls 008 and 009 watersheds. The potential BMP subarea monitoring program is being conducted to collect data to assess the potential for contribution of COCs from the potential source areas to stormwater runoff and to identify locations for new BMPs, as described in the BMP Plan (MWH, et al., 2010). Monitoring locations also include sites where treatment controls are being considered or planned (e.g., Lower Parking Lot Biofilter and the ELV area), to confirm the need for such BMPs and to provide baseline data for later evaluation of BMP performance. In addition, monitoring of stormwater runoff quality from natural undisturbed or "stormwater background" areas located on Sage Ranch and the Santa Susana Site was performed to provide reference monitoring data or

site-specific stormwater background data[5]. This program is not meant to be a comprehensive study of COCs in stormwater within the Outfalls 008 and 009 watersheds or an extension of the NPDES program.

Potential BMP subarea monitoring was initiated during the 2010/2011 rainy season, with results and BMP recommendations presented in the annual report (MWH *et al.*, 2011) and summarized in Section 3.1. During the 2011/2012 rainy season, BMP subarea monitoring continued. A summary of the potential BMP subarea monitoring program for the 2011/2012 rainy season is provided in Section 1.4. A summary of the results from the 2011/2012 rainy season is provided in Section 3.2. Recommendations for BMP sites and modifications to the subarea monitoring program are included in Sections 3.3 and 3.4, respectively.

1.3.3 Potential BMP Site Ranking Analysis Approach

An approach was developed by the Expert Panel for ranking the potential BMP sites to prioritize the locations based on water quality considerations. A letter summarizing the BMP site ranking analysis approach was submitted to the RWQCB on June 22, 2011 (Expert Panel, 2011). The approach involves an evaluation of available data from the Outfalls 008 and 009 watersheds, including performance monitoring data, potential BMP subarea monitoring data, and NPDES monitoring data. The evaluation follows these steps:

1. Comparing potential BMP subarea monitoring results with site-specific stormwater background data and NPDES permit limits, in terms of concentrations and particulate strength;

2. Calculating constituent (metals, dioxins, TSS)-specific weighting factors for each potential BMP site based on the results of Step 1 using a statistical methodology that accounts for sample size and number of results that are above the thresholds in Step 1, with the highest weighting factors assigned to sites that most frequently exceed both thresholds;

3. Calculating multi-constituent ranking scores for each potential BMP site based on the constituent-specific weighting factors; and

4. Ranking the potential BMP sites based on these multi-constituent ranking scores.

[5] The site-specific stormwater background dataset is for the assessment of stormwater only and is not considered part of the ongoing soil background sampling activities being conducted under DTSC oversight.

After the data evaluation described above is completed, the top-ranked potential BMP subarea monitoring sites are then evaluated on a site-by-site basis through consideration of additional factors beyond the multi-constituent rankings, including NPDES monitoring results at the outfall, BMP implementation opportunities and constraints, status of source removal activities, status of building and asphalt demolition, proximity of subarea discharge relative to the NPDES compliance monitoring location, construction status of planned BMPs, and performance and maintenance of existing BMPs. The potential BMP site ranking and selection process described above is planned to occur on a yearly basis through the end of the BMP Plan coverage period, currently scheduled for 2014.

1.3.4 BMP Sizing Criteria

The existing Santa Susana Site BMP sizing criteria developed by the Expert Panel is for the capture of runoff from the 1-year 24-hour storm event, or alternatively 90% long-term runoff volume capture (these are roughly equivalent). These criteria will be used for the sizing of new treatment controls for the BMP Plan, and will also be evaluated by the Expert Panel on a site-by-site basis as individual projects are developed. These site-specific considerations will include constructability constraints (including available space and right-of-way access), stormwater monitoring results, anticipated BMP functional lifetime, and other information.

1.4 2011/2012 RAINY SEASON PERFORMANCE AND POTENTIAL BMP SUBAREA MONITORING

Performance monitoring and potential BMP subarea monitoring conducted during the 2011/2012 rainy season were performed per the 2011/2012 BMP and ISRA SAP (MWH, 2010e, 2011b). The SAP describes surface water sampling locations, collection methods, frequency, analytes, and Quality Assurance/Quality Control (QA/QC) protocols. Performance monitoring and BMP monitoring inspections were performed during daylight hours as soon as possible after the rain event began and at 24 hour intervals during extended rain events. During inspections, if sufficient stormwater runoff was observed at a sample location, a sample was collected from the flowing water if the work could be performed safely following the procedures and sample frequency presented in the SAP. During sample collection, every effort was made to collect representative stormwater runoff and to minimize sediment disturbance.

ISRA performance monitoring during the 2011/2012 rainy season involved the collection of stormwater runoff samples both up- and downstream of the 12 ISRA areas completed in 2009, the 11 ISRA areas completed in 2010, the one ISRA area completed in 2011, and three of the CM systems (CM-1, CM-9, and the B-1 CM). The actual performance monitoring inspection and sample locations from the 2011/2012 rainy season are listed in Table 1-3 and shown on

Figure 1-5. The table and figure are slightly revised from the SAP based on field conditions and observations.

Split samples of select performance monitoring samples were collected during the 2011/2012 rainy season for the RWQCB. The collection of RWQCB split samples was performed using the splitting protocol presented in a memorandum prepared by Wright Water Engineers, Inc. (WWE) and the Expert Panel (WWE and Expert Panel, 2010), which was approved by the RWQCB (RWQCB, 2010b). RWQCB split sample collection activities included collecting a sample with sufficient volume to generate a primary and split sample, shipping the entire sample volume to a California State certified laboratory (Test America Laboratories Inc.-Irvine [TA]). TA conducted the split sampling following the approved protocols and shipped the split samples to the RWQCB laboratory for analysis. This implementation process was detailed in a letter submitted to the RWQCB (Boeing, 2011a). An evaluation of the performance of the splitter is presented in Section 2.2.3.

Potential BMP subarea monitoring during the 2011/2012 rainy season involved the collection of stormwater runoff samples at 21 "planned"[6] or "potential"[7] BMP sites and four locations identified to monitor stormwater runoff quality from natural undisturbed or "stormwater background" areas. The actual performance monitoring inspection and sample locations from the 2011/2012 rainy season are listed in Table 1-4 and shown on Figure 1-5. The table and figure are slightly revised from the SAP based on field conditions and observations.

Data validation was performed on select performance monitoring and potential BMP subarea monitoring samples during the 2011/2012 rainy season at either a Level II or a Level IV[8] to evaluate data for program, method and laboratory quality control compliance, and to determine the validity and usability of the data. During the 2011/2012 rainy season, a Level II validation was performed on all dioxin results for the potential BMP subarea monitoring program and for

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[6] "Planned" treatment BMPs include those that are expected to be designed and constructed in 2012, irrespective of subarea monitoring results.

[7] "Potential" treatment BMPs include those that will be considered based on comparison of subarea monitoring results with onsite stormwater background concentrations and NPDES permit limits; if deemed necessary, new BMPs will be designed in late 2012 and constructed thereafter.

[8] A Level II validation involves a review of field methods and a high-level review of laboratory methods. A Level IV validation is a definitive evaluation of the data and involves a very detailed review of the field and laboratory processes. A Level IV validation requires the validator to reproduce a percentage of the results from the raw data files to ensure that systemic errors, errors of omission, or transcription errors are not present in the final reported data.

dioxin results above the permit limit for the performance monitoring program. The primary purpose of performing a Level II validation on the dioxin results was to address blank contamination and estimated maximum possible concentration (EMPC) values[9]. In addition, a Level II validation was performed to investigate four metals results for the potential BMP monitoring program and 24 metals results for the performance monitoring program that were flagged by the laboratory as having method blank contamination.

A summary of the performance monitoring activities and results for the 2011/2012 rainy season is provided in Section 2.2. An up- and downstream evaluation of ISRA performance monitoring results collected to date and recommendations for modifications to the ISRA performance monitoring program are included in Sections 2.3 and 2.4, respectively. A summary of the potential BMP subarea monitoring activities and results for the 2011/2012 rainy season is provided in Section 3.2. The recommendations for BMP sites and modifications to the subarea monitoring program are included in Section 3.3 and 3.4, respectively.

1.5 2011/2012 RAINY SEASON DISCHARGE EVENT SUMMARY

The Santa Susana Site NPDES Permit definition of a discharge (rain) event is one that produces more than 0.1 inches of rainfall in a 24-hour period and must be preceded by at least 72 hours of dry weather. By this measure, ten rain events occurred at the Santa Susana Site during the 2011/2012 rainy season. The dates of each rain event and the total measured rainfall recorded at a RWQCB approved weather station within Area IV, as reported in the NPDES Discharge Monitoring Reports (Boeing, 2012a, 2012b) are provided in Table 1-5. The table also includes average rainfall intensity and maximum one hour rainfall intensity, and a summary of sampling activities for the NPDES, performance monitoring, and potential BMP subarea monitoring programs.

During the 2011/2012 rainy season, the amount of rain received (11.41 inches) is approximately 30% below the average yearly rainfall for the region (~18 inches/year for the period between 1960 and 2006). For comparison, the previous three rainy seasons were measured at 11.10 inches in 2008/2009, 19.04 inches in 2009/2010, and 23.51 inches in 2010/2011 from the Santa Susana Site rain gauge. Approximately 52% of the rainfall received during the 2011/2012 rainy season occurred during three late season rain events; the March 16-17, 2012

[9] An EMPC value is assigned to a dioxin isomer when a peak is within the retention time window of a target dioxin or furan isomer; however, at least one of the identification criteria from the method was not met for that peak. Therefore this peak cannot be positively identified as a dioxin/furan. The Level II validation process would evaluate the EMPC values and revise these values to non-detects at either the level of interference or the reporting limit, whichever is higher.

rain event, the March 25, 2012 rain event, and the April 10-13, 2012 rain event, which measured 1.51 inches, 2.12 inches and 2.37 inches of rainfall, respectively.

1.6 NPDES MONITORING, 2011/2012 RAINY SEASON

NPDES monitoring and sampling of Outfalls 008 and 009 conducted during the 2011/2012 rainy season was performed in accordance with the NPDES permit adopted on June 3, 2010. During the 2011/2012 rainy season, one sample was collected at Outfall 008 and nine samples were collected at Outfall 009. The dates and associated rain event information for these samples are presented in Table 1-5. The concentrations of the outfall-specific COCs and field measurements for Outfalls 008 and 009 are presented in Tables 1-6 and 1-7, respectively[10]. During the 2011/2012 rainy season, the one sample collected from Outfall 008 contained copper and lead above the NPDES permit limit, one sample collected from Outfall 009 contained lead above the NPDES permit limit, and three samples collected from Outfall 009 contained dioxins above the NPDES permit limit. The NPDES results are further discussed during the evaluation of performance monitoring and BMP monitoring results in Sections 2.0 and 3.0, respectively. A complete set of NPDES sampling results and an evaluation of the data for Outfalls 008 and 009 are presented in the NPDES Discharge Monitoring Reports (Boeing, 2012a, 2012b).

1.7 REPORT CONTENT

This summary report includes the following four sections and seven appendices:

- Section 1 presents project background information, the scope and objectives of the ISRA performance monitoring and potential BMP subarea monitoring programs, a summary of the rainfall discharge summary for the 2011/2012 rainy season, and a summary of the Outfalls 008 and 009 NPDES sampling results for the 2011/2012 rainy season.

- Section 2 presents a summary of the ISRA performance monitoring results from the 2009/2010, 2010/2011, and 2011/2012 rainy seasons, and recommendations for modifications to the ISRA performance monitoring program for 2012/2013 rainy season.

- Section 3 presents a summary of the potential BMP subarea monitoring results from the 2010/2011 and 2011/2012 rainy seasons, the results of the Expert Panel's analysis of this

[10] Per the NPDES permit adopted on June 3, 2010, dioxin toxic equivalency (TEQ) concentrations for NPDES samples were calculated during the 2010/2011 rainy season by multiplying each congener concentration by its respective toxic equivalency factor (TEF) and bioaccumulation equivalency factor (BEF), and excluding congener data not qualified (DNQ) results. Dioxin TEQ concentrations in samples collected prior to the 2010/2011 rainy season were calculated per the previous NPDES permits by multiplying each congener concentration only by its respective TEF, excluding congener DNQ results.

data, and the Expert Panel's recommendations for modifications to the potential BMP subarea monitoring program for 2012/2013 rainy season.

- Section 4 presents the updated milestone schedule.
- Appendix A provides the 2011/2012 rainy season rain event and sampling charts.
- Appendix B provides laboratory and validation reports for performance monitoring and potential BMP subarea monitoring samples collected during the 2011/2012 rainy season.
- Appendix C provides time-series and correlation charts for the performance monitoring program.
- Appendix D provides the ISRA sample splits comparison memorandum prepared by the Expert Panel.
- Appendix E provides the ISRA performance monitoring data analysis memorandum prepared by the Expert Panel.
- Appendix F provides time-series and correlation charts for the potential BMP subarea monitoring program.
- Appendix G provides the BMP site ranking analysis memorandum prepared by the Expert Panel.

2.0 ISRA PERFORMANCE MONITORING SUMMARY

ISRA performance monitoring involves the collection of stormwater samples both up- and downstream of completed ISRA areas and select CM systems to obtain water quality performance data to assess the contribution of COCs to stormwater within the Outfalls 008 and 009 watersheds following completion of remedial or CM activities. Performance monitoring is proposed to continue through two rainy seasons for each monitoring location; however, the actual study duration will depend on the quantity and quality of data collected at the performance monitoring locations and the associated outfall. The data collected during the 2011/2012 rainy season represents the third year of rainy season monitoring for the Phase I ISRAs and the two CM systems, the second year of rainy season monitoring for the Phase II ISRAs, and the first year of rainy season monitoring at the one Phase III ISRA area. The results from the 2009/2010 and 2010/2011 rainy seasons are presented in annual reports (MWH, 2010d, MWH *et al.*, 2011) and are summarized in Section 2.1. Section 2.2 presents the 2011/2012 rainy season performance monitoring activities and results, Section 2.3 presents an up- and downstream evaluation of performance monitoring data collected to date, and Section 2.4 presents recommendations for modifications to the ISRA performance monitoring program.

2.1 PRE-2011/2012 RAINY SEASON SAMPLING SUMMARY

Performance monitoring during the 2009/2010 rainy season consisted of stormwater runoff inspections and sampling at the 12 Phase I ISRA areas and five of the CM systems, including CM-1, CM-3, CM-8, CM-9, and CM-11. During the 2009/2010 rainy season, 62 ISRA performance samples were collected and analyzed from a total of 28 locations. Performance monitoring during the 2010/2011 rainy season consisted of stormwater runoff inspections and sampling at the 12 Phase I ISRA areas, the 11 Phase II ISRA areas, and the five CM systems. During the 2010/2011 rainy season, 91 performance monitoring samples were collected and analyzed from a total of 25 locations. The monitoring locations and sampling dates are shown on Figures 2-1 through 2-7. The results and recommendations from the two previous rainy seasons are presented in annual reports (MWH, 2010d, MWH *et al.*, 2011). It should be noted that subsequent to submittal of the 2009/2010 rainy season report all dioxin toxic equivalency (TEQ) concentrations were recalculated using toxic equivalency factor (TEF) and bioaccumulation equivalency factor (BEF) and validation was performed on dioxin results above the permit limit. The updated 2009/2010 rainy season performance monitoring sample results were presented in 2010/2011 rainy season report (MWH *et al.*, 2011).

Below is a summary of the pre-2011/2012 rainy season performance monitoring and NPDES sample results, and general trends observed in the results.

Outfall 008 Watershed Findings:

- During the 2009/2010 rainy season, lead and dioxin were periodically detected above NPDES permit limits in both ISRA performance monitoring and NPDES monitoring, and copper was detected above the NPDES permit limit in one ISRA performance monitoring sample. During the 2010/2011 rainy season, lead was detected above the NPDES permit limit in one ISRA performance monitoring sample (an upstream location) and one NPDES sample, and copper and dioxins were not detected above NPDES permit limits. Most detections above NPDES permit limits occurred in samples collected during rain events early in the rainy season.

- Performance monitoring samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. A correlation between dioxins and TSS concentrations was limited by the high number of non-detect results.

- In general, Outfall 008 NPDES concentrations for lead and copper are greater than performance monitoring sample concentrations at ISRA sites for most sampling events, indicating that contributions of these COCs may be from natural channel bed materials (soils and associated minerals) being re-suspended in the drainage or erosion of the channels between the upland subareas and the downstream outfall location where concentrated water velocities and shear stresses are greater and/or from dirt roads. The relationship of dioxins and TSS concentrations between ISRA performance monitoring and Outfall 008 NPDES samples is less consistent based on available data (i.e., either the performance monitoring or the outfall sample results are consistently greater than the other). These results may indicate that a consistent relationship is not apparent due to data variability, or they may indicate that the ISRA areas may occasionally contribute to concentrations observed at the outfall.

- In general, for Outfall 008 COCs, both performance monitoring and NPDES results indicate a decreasing trend (improving water quality) over time when comparing 2009/2010 and 2010/2011 results. This may be a result of the source removal, erosion control measures within the channel and road restoration areas, and re-vegetation activities performed in the Outfall 008 watershed shown on Figure 1-2.

Outfall 009 Watershed Findings:

- During the 2009/2010 rainy season, lead and dioxin were periodically detected above NPDES permit limits in both ISRA performance monitoring and NPDES monitoring, mercury was detected above the NPDES permit limit in one ISRA performance monitoring sample, and cadmium was not detected above the NPDES permit limit. During the 2010/2011 rainy season, copper, lead, and dioxins were periodically detected above NPDES permit limits in both ISRA performance monitoring and NPDES

monitoring locations, and cadmium and mercury were not detected above NPDES permit limits.

- Performance monitoring samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. Correlations between cadmium, mercury, and dioxins concentrations and TSS concentrations were limited by the high number of non-detect results (all mercury results are non-detect).

- The relationship of Outfall 009 COCs between ISRA performance monitoring and Outfall 009 NPDES samples collected to date is not consistent based on available data (i.e., neither the performance monitoring or the outfall sample results are consistently greater than the other). These results may indicate that a consistent relationship is not apparent due to data variability, or they may indicate that the ISRA areas may occasionally contribute to concentrations observed at the outfall.

- Concentrations of Outfall 009 COCs in performance monitoring samples collected to date do not appear to show either an increasing or decreasing trend with time when comparing 2009/2010 or 2010/2011 results.

Dekaport Splitter Conclusions:

- In general, the Dekaport splitter appears to improve the correlation of split to primary sample results for the NPDES COCs evaluated (copper, lead, dioxins, and TSS) compared to collecting a split by filling an additional container in the field from the flowing surface water, with the greatest improvement seen for TSS.

- Most primary sample results were greater than the split sample results for copper and lead, potentially indicating a laboratory bias.

Up- and Downstream Evaluation Conclusions:

- Downstream ISRA and CM concentrations tend to be lower than corresponding upstream samples, suggesting positive performance of the ISRA soil removals and erosion controls and of the CM treatment systems. Exceptions include turbidity (both ISRA and CM data) and dioxin (both ISRA and CM data), which have no statistically significant downstream increase or decrease.

2.2 2011/2012 RAINY SEASON ACTIVITIES AND RESULTS

Performance monitoring during the 2011/2012 rainy season consisted of stormwater runoff inspections and sampling at the 12 Phase I ISRA areas, the 11 Phase II ISRA areas, one Phase III ISRA area, and three of the CM systems, including CM-1, CM-9, and the B-1 CM. The activities were conducted according to the 2011/2012 Rainy Season SAP (MWH, 2010e, 2011b) and involved the collection of stormwater runoff samples both up- and downstream of the ISRA

areas and CM systems. A summary of the 2011/2012 inspection and sampling activities and results are presented below.

2.2.1 Inspection and Sampling Activities

Stormwater runoff was observed and sampled at performance monitoring locations during 8 of the 10 NPDES permit definition rain events of the 2011/2012 rainy season. Four performance samples were collected and analyzed from a total of three locations within the Outfall 008 watershed and 36 performance samples were collected and analyzed from a total of 12 locations within the Outfall 009 watershed. Additionally, two samples were collected and placed on hold within the Outfall 009 watershed. The samples placed on hold were not subsequently analyzed because the associated up- or down-stream sample was not collected the same day, per the 2011/2012 Rainy Season SAP. The RWQCB collected 18 split samples during 5 of the 8 rain events during which performance monitoring samples were collected. Of the 18 split samples, 17 were analyzed and one placed on hold and not subsequently analyzed, consistent with the associated primary sample. A summary of the number of primary performance monitoring samples collected during each rain event is presented in Table 1-5. The performance monitoring samples collected during the 2011/2012 rainy season, including RWQCB splits, are listed in Table 2-1. The monitoring locations and dates on which ISRA performance monitoring samples were collected are shown on Figures 2-1 through 2-7. Charts showing rainfall in inches per hour for the 2011/2012 rain events during which a performance monitoring sample was collected, along with the performance monitoring sampling times and Outfall 008 and 009 flow rates and sampling times, are included in Appendix A.

Performance monitoring samples were not collected from six of the primary monitoring locations within the Outfall 008 watershed and 11 of the primary monitoring locations within the Outfall 009 watershed during the 2011/2012 rainy season because flowing stormwater was not present during inspections. The six locations within the Outfall 008 watershed include upstream of DRG-1 (2 locations), upstream of CYN-1, upstream of HVS-3/-4, upstream of HVS-2C, and upstream of HVS-2A/-2D. The 11 locations within the Outfall 009 watershed include upstream of AP/STP-1A/-1D/-1F (three locations), downstream of all Ash Pile and Building 515 Sewage Treatment Plant (AP/STP) ISRA areas (one location), up- and downstream of A2LF-1 (two locations), upstream of B1-1B/-1C/-1D (one location), up- and downstream of IEL-1 (two locations), upstream west of CM-1 (one location), and upstream of CTLI-1A (one location).

Field measurements of primary performance monitoring samples included turbidity, temperature, pH, and conductivity. Laboratory analysis of primary and split performance monitoring samples included NPDES COCs associated with the ISRA or CM areas and TSS, as described in the 2011/2012 Rainy Season SAP (MWH, 2010d, 2011b). The analytical suite and

laboratory method planned for each location (Table 1-3) was performed with the following exceptions:

- Dioxins analysis was not performed on one primary sample collected on March 17, 2012 due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling (sample location HZSW0007).

- Dioxins analysis was not performed on two primary samples collected on March 17, 2012 due to laboratory error during extraction of samples for analysis (sample locations A1SW0004 and A1SW0009).

- Dioxin analysis was not performed on one primary sample collected on April 11, 2012 because the sample container for dioxins analysis broke during shipment between the primary laboratory and the laboratory performing dioxins analysis (sample location B1SW0014).

2.2.2 Sample Results

ISRA performance monitoring analytical results, including RWQCB split samples, field measurements, and rainfall event measurements from the 2011/2012 rainy season are presented in Tables 2-2 and 2-3. Outfall 008 performance monitoring results are separated into two tables, Tables 2-2A and 2-2B, since there are two primary up- and downstream evaluation areas, including the drainage associated with ISRA areas CYN-1/DRG-1 and the drainage associated with the eight Happy Valley South (HVS) ISRA areas. Outfall 009 performance monitoring results are presented in seven tables, Tables 2-3A through 2-3E, since there are five separate up- and downstream evaluation areas, including the four associated with ISRA areas A2LF-3/CM-1, B1-1/B1-2, CTLI-1, and IEL-2, and the drainage associated with CM-9. Laboratory and validation reports for performance monitoring samples (primary and RWQCB splits) are included in Appendix B.

Performance monitoring sample results were compared to NPDES outfall results to assess whether there is a general pattern of water quality changes as runoff travels down the watersheds and to provide a context for evaluating possible contributions to NPDES samples at the outfalls. To support this evaluation, (1) time-series charts showing performance monitoring results versus sample collection date are provided in Appendix C-1 for each NPDES COC detected above the NPDES permit limit at each up- and downstream evaluation area, and (2) time-series charts showing performance monitoring and NPDES monitoring results versus sample collection date are provided in Appendix C-2 for each NPDES COC detected within each outfall. Additionally, to assess the general understanding that the NPDES COCs are associated with soils and are mobilized by stormwater runoff when these soils are eroded and suspended in the water column, correlation charts are provided in Appendix C-3 showing performance monitoring results versus

TSS for each NPDES COC detected within each outfall. The charts include all performance monitoring sample results collected to date to assess whether there is a general trend of water quality changes over time.

The Expert Panel also performed an evaluation of the performance of the Dekaport splitter and a statistical evaluation of upstream versus downstream concentrations for the entire performance monitoring data set. The Expert Panel's conclusions and recommendations based on this evaluation are presented in Sections 2.2.3 and 2.3, respectively.

2.2.2.1 Outfall 008 Watershed Sample Results

Within the Outfall 008 watershed, performance monitoring samples were analyzed for one or more of the Outfall 008 COCs, including copper, lead, and dioxins. Below is a summary of the Outfall 008 performance monitoring and NPDES sample results, and general trends observed in the results; the summary below does not consider RWQCB split samples.

- Dioxins were not detected in ISRA performance monitoring or Outfall 008 NPDES samples at concentrations above the NPDES permit limit during the 2011/2012 rainy season. Copper and lead were detected above the NPDES permit limit in one ISRA performance monitoring sample and one Outfall 008 NPDES sample; both samples were collected during a rain event late in the rainy season (April 2012), the only rain event that produced sampleable runoff at the outfall all season.

- Performance monitoring samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. A correlation between dioxins and TSS concentrations was limited by the high number of non-detect results.

- In general, Outfall 008 NPDES concentrations for lead and copper are greater than performance monitoring concentrations at the ISRA sites for most sampling events, indicating that contributions of these COCs may be from natural channel bed materials (soils and associated minerals) being re-suspended in the drainage or erosion of the channels between the upland subareas and the downstream outfall location where concentrated water velocities and shear stresses are greater and/or from dirt roads. The relationship of dioxins and TSS concentrations between ISRA performance monitoring and Outfall 008 NPDES samples is less consistent based on available data (i.e., neither the performance monitoring nor the outfall sample results are consistently greater than the other). These results may indicate that a consistent relationship is not apparent due to data variability, or they may indicate that the ISRA areas may occasionally contribute to concentrations observed at the outfall.

- In general, concentrations of Outfall 008 COCs in NPDES results indicate a decreasing trend over time (improving water quality) when comparing 2009/2010 and 2010/2011 results. However, this decreasing trend was not observed when comparing 2010/2011 and 2011/2012 results.

2.2.2.2 Outfall 009 Watershed Sample Results

Within the Outfall 009 watershed, performance monitoring samples were analyzed for one or more of the Outfall 009 COCs, including cadmium, copper, lead, mercury, and dioxins. Below is a summary of the Outfall 009 performance monitoring and NPDES sample results, and general trends observed in the results; the summary below does not consider RWQCB split samples.

- Cadmium, copper, and mercury were not detected in ISRA performance monitoring or Outfall 009 NPDES samples at concentrations above the NPDES permit limit during the 2011/2012 rainy season. Lead and/or dioxins were detected above the NPDES permit limit in 26 performance monitoring samples associated with ISRA areas A2LF-3/CM-1, B1-1/B1-2, CM-9, and CTLI-1A/B, and three Outfall 009 NPDES samples during the 2011/2012 rainy season.

- Performance monitoring samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. Correlations between cadmium, mercury, and dioxins concentrations and TSS concentrations were limited by the high number of non-detect results (all mercury results are non-detect).

- The relationship of Outfall 009 COCs between ISRA performance monitoring and Outfall 009 NPDES samples collected to date is not consistent based on available data (i.e., neither the performance monitoring or the outfall sample results are consistently greater than the other). These results may indicate that a consistent relationship is not apparent due to data variability, or they may indicate that the ISRA areas may occasionally contribute to concentrations observed at the outfall.

- Concentrations of Outfall 009 COCs in performance monitoring samples collected to date do not appear to show either an increasing or decreasing trend with time when comparing 2009/2010, 2010/2011, and 2011/2012 results.

2.2.3 Splitter Performance Evaluation

The RWQCB collected split samples of select performance monitoring samples during the 2009/2010, 2010/2011, and 2011/2012 rainy seasons. Initially, RWQCB split samples were collected by filling a secondary container (the split) after filling the primary container (the sample) following the procedures specified in the SAP, which does not result in the collection of a true split. As such, a Dekaport (cone) splitter was implemented during the 2010/2011 rainy

season following the protocol specified in the 2010/2011 rainy season SAP and presented in a memorandum prepared by WWE and the Expert Panel (WWE and Expert Panel, 2010), with the implementation process detailed in a letter submitted to the RWQCB (Boeing, 2011a).

An evaluation of the performance of the Dekaport splitter was performed by the Expert Panel, with results presented in a memorandum (Geosyntec and Expert Panel, 2012b) included in Appendix D. The memorandum evaluated the correlation between split and primary samples for copper, lead, dioxins and TSS; an evaluation of split and primary samples cadmium and mercury results was not performed because the dataset is limited by the high number of non-detect results. In general, implementation of the Dekaport splitter appears to improve the correlation of split to primary sample results for the NPDES COCs evaluated, with the exception of copper. Since the Dekaport splitter is designed specifically to minimize split sampling errors in TSS water samples, the reduction of scatter in the recent TSS data indicates that the splitter is performing satisfactorily. Lead split versus sample results showed the strongest correlation. The dioxin split versus sample correlation was limited by the large number of non-detect results. Where split versus sample differences remain, this may be explained by various factors such as differences between laboratory QA/QC, analysis and/or reporting practices. The statistical variability between NPDES COC data and TSS data can be an alert for checking laboratory QA/QC or reporting practices; this variability is something that the Expert Panel recommends tracking as additional data are collected. Finally, a comparison of primary sample results (those analyzed by TA) and split results (those analyzed by the RWQCB laboratory) was performed and although a statistically significant bias was not identified due to the low number of samples collected, it was apparent that most primary sample results were greater than the split sample results for copper and lead. Therefore, the Expert Panel recommends that Boeing and the RWQCB consider a small inter-laboratory study to evaluate this difference, such as sending blind standards to each laboratory for quality evaluation purposes (i.e., spiked samples with known concentrations that are sent to each lab without their awareness).

2.3 UP- AND DOWNSTREAM EVALUATION

An evaluation of upstream versus downstream performance monitoring sample results was performed by the Expert Panel, with results presented in a memorandum (Geosyntec and Expert Panel, 2012c) included in Appendix E. The memorandum evaluated data collected during the 2009/2010 to 2011/2012 rainy seasons to identify if (1) any of the excavated and stabilized ISRA areas are contributing NPDES COCs (i.e., increasing concentrations as stormwater runoff sheetflows across each area), and 2) the CM treatment BMPs are reducing NPDES COCs (decreasing concentrations as stormwater ponds and filters through the media mounds and travels through each culvert liner). The evaluation used only paired data, or locations with both an

upstream and downstream sample collected from the same storm event; RWQCB split samples were not used.

In general, data indicate that downstream ISRA and CM concentrations tend to be lower than corresponding upstream samples, suggesting positive performance of the ISRA soil removals and erosion controls and of the CM treatment systems. Exceptions include TSS (ISRA data), dioxin (CM data), lead (ISRA data), and copper (ISRA data) of which TSS, dioxin (only at CM-8 and CM-11), copper, and lead did not have statistically significant differences between upstream and downstream concentrations. It should be noted that for the ISRA areas, having comparable upstream and downstream concentrations is considered a positive outcome as it suggests that these actions resulted in indistinguishable stormwater quality changes in comparison to unimpacted (upstream) runoff quality. Dioxin (ISRA), lead (CM data) and TSS (CM data) were found to show downstream concentration reductions, with statistically significant reductions (water quality improvements) for TSS at background sites CM-8 and CM-11, as well as for lead at all CMs. The reductions in downstream TSS concentrations at the CMs are supported by observations noting significant sediment capture at each site. It should also be noted that because of their small size due to site constraints, weirboard overflow regularly occurs and this limits the treatment capability of the CMs. Also the Expert Panel's assessment of CM-1 performance, particularly for dioxins, should be viewed as preliminary at this time as several of the Panel's upstream BMP recommendations have yet to be completed, and these modifications are expected to improve runoff capture at this CM.

2.4 PERFORMANCE MONITORING PROGRAM RECOMMENDATIONS

The performance monitoring program was proposed to be performed through two rainy seasons for each monitoring location; however, the actual study duration is dependent on the quantity and quality of data collected at the performance monitoring locations and the associated outfall. The Expert Panel evaluated the dataset for the 12 Phase I ISRA areas (10 in the Outfall 008 watershed and 2 in the Outfall 009 watershed) and the two CM systems for which the 2011/2012 rainy season was the third rainy season of monitoring, and included the results of this evaluation in the memorandum (Geosyntec and Expert Panel, 2012c) included in Appendix E. This memorandum concluded that for most of these monitoring locations, sufficient data have been collected to show a general decrease in downstream results, as compared to upstream results. Based on these findings, below are the recommendations for the performance monitoring program for the 2012/2013 rainy season:

- Discontinue performance monitoring at locations that have been monitored for at least two years, including locations that monitor Outfall 008 ISRA areas, B-1 ISRA areas, A2LF-1, CTLI-1A/-1B, IEL-1, AP/STP-1A/-1D/-1F. The two exceptions to this are that

monitoring will continue at CM-1 and CM-9 to allow for continued assessment of media filter performance.

- Continue performance monitoring at locations which have not been monitored for two years.

- Establish new performance monitoring locations at ISRA areas and treatment BMPs completed in 2012.

3.0 POTENTIAL BMP SUBAREA MONITORING PROGRAM

The potential BMP subarea monitoring program was developed following submittal of the BMP Plan, and involves the collection of stormwater samples at locations receiving runoff from potential source areas and other infrastructure (e.g., roads, buildings, parking areas) within the Outfalls 008 and 009 watersheds. The 2011/2012 rainy season represents the second year of BMP monitoring. The results from the 2010/2011 rainy season are presented in the annual report (MWH *et al.*, 2011) and are summarized in Section 3.1. Section 3.2 presents the 2011/2012 rainy season BMP monitoring activities and results and Section 3.3 presents the results of the potential BMP site ranking analysis.

3.1 2010/2011 RAINY SEASON SAMPLING SUMMARY

Potential BMP subarea monitoring during the 2010/2011 rainy season consisted of stormwater runoff inspections and sampling at 18 "planned" or "potential" BMP sites and 5 locations identified to monitor stormwater runoff quality from natural undisturbed or "stormwater background" areas. During the 2010/2011 rainy season, 13 potential BMP subarea monitoring samples were collected and analyzed from the 3 locations within the Outfall 008 watershed and 54 potential BMP subarea monitoring samples were collected and analyzed from a total of 19 locations within the Outfall 009 watershed. The monitoring locations and sampling dates are shown on Figures 2-1 through 2-7. The results and recommendations are presented in the annual report (MWH *et al.*, 2011).

Below is a summary of the 2010/2011 rainy season BMP monitoring and NPDES sample results, general trends observed in the results, and the potential BMP ranking analysis.

Outfall 008 Watershed Findings:

- Lead, copper, and dioxins were not detected in potential BMP subarea monitoring or Outfall 008 NPDES samples at concentrations above the NPDES permit limit during the 2010/2011 rainy season with the exception of lead in one Outfall 008 NPDES sample collected during a rain event early in the rainy season (December).

- Potential BMP subarea monitoring samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. A correlation between dioxins and TSS concentrations is not possible because all dioxin results were below the detection limit.

- Outfall 008 NPDES results for lead, copper, and TSS are greater than potential BMP subarea monitoring samples during all sampling events, indicating that contributions of these COCs may be from natural channel bed materials (soils and associated minerals)

being re-suspended in the drainage or erosion of the channels between the upland subareas and the downstream outfall location where concentrated water velocities and shear stresses are greater and/or from dirt roads. The relationship of dioxins concentrations between potential BMP subarea monitoring and Outfall 008 NPDES samples is not discernible due to the high number of non-detect results.

Outfall 009 Watershed Findings:

- Cadmium and mercury were not detected in potential BMP subarea monitoring or Outfall 009 NPDES samples at concentrations above the NPDES permit limit during the 2010/2011 rainy season (excludes two mercury J-flagged results). Copper, lead, and/or dioxins were detected above the NPDES permit limit in 13 samples collected from 7 potential BMP subarea monitoring locations and 2 Outfall 009 NPDES samples during the 2010/2011 rainy season. In general, the subarea monitoring sites that receive runoff from primarily paved surfaces had the highest COC concentrations[11], a finding that generally supports the benefits of Boeing's ongoing asphalt removal/demolition projects.

- Potential BMP subarea monitoring and stormwater background samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. Correlations between cadmium, mercury, and dioxins concentrations and TSS concentrations were limited by the high number of non-detect results.

- Potential BMP subarea monitoring and Outfall 009 NPDES concentrations for lead, copper, and TSS are generally greater than stormwater background samples for all sampling events, supporting the general characterization of these sites as potential locations for stormwater quality control.

- The relationship of Outfall 009 COCs between potential BMP subarea monitoring and Outfall 009 NPDES results is not consistent based on available data (i.e., neither the performance monitoring or the outfall sample results are consistently greater than the other). These results may indicate that a consistent relationship is not apparent due to data variability, or they may indicate that the BMP subareas may occasionally contribute to concentrations observed at the outfall.

[11] Although not tested specifically at this site, stormwater runoff from asphalt pavement may contribute metals and dioxins concentrations that are above background due to: (1) regional atmospheric deposition (which over time builds up and more effectively washes off pavement during rain events unlike open ground areas where stormwater runoff may partially infiltrate or be sequestered by plants), (2) contributions from the asphalt emulsion and/or pavement sealant themselves, and/or (3) contributions from vehicles (e.g., brake dust, oil leaks, and exhaust particulates).

Using the results of the 2010/2011 rainy season, the Expert Panel ranked the potential BMP sites to prioritize the locations based on water quality considerations following the approach summarized in Section 1.3.3. The potential BMP sites were ranked based on the multi-constituent score, with the top-ranked sites recommended for consideration for new or enhanced stormwater control placement. Based on the ranking results, and utilizing best professional judgment (including consideration of information on planned ISRA, BMP, and demolition measures), new BMPs were recommended at the Helipad, ELV/CM-1, LOX, and AILF. The conceptual designs for the BMP concepts and the implementation schedule was presented in the 2011 Final BMP Plan Addendum (Geosyntec and Expert Panel, 2011d). The current status of these BMPs is provided in Section 1.3.1.

3.2 2011/2012 RAINY SEASON ACTIVITIES AND RESULTS

Potential BMP subarea monitoring during the 2011/2012 rainy season consisted of stormwater runoff inspections and sampling at 21 "planned" or "potential" BMP sites and four locations identified to monitor stormwater runoff quality from natural undisturbed or "stormwater background" areas. The activities were conducted according to the 2011/2012 Rainy Season SAP (MWH, 2010e, 2011b), and are summarized below.

3.2.1 Inspection and Sampling Activities

Stormwater runoff was observed and sampled at potential BMP monitoring locations during 8 of the 10 NPDES permit definition rain events of the 2011/2012 rainy season and during one rain event that was not considered a rain event per the NPDES permit definition. Three potential BMP subarea monitoring samples were collected and analyzed from the two locations within the Outfall 008 watershed and 85 potential BMP subarea monitoring samples were collected and analyzed from a total of 22 locations within the Outfall 009 watershed. Additionally, one potential BMP subarea monitoring sample was collected and placed on hold within the Outfall 009 watershed. The sample on hold was not subsequently analyzed because the associated up- or down-stream sample was not collected the same day, per the 2011/2012 Rainy Season SAP. A summary of the number of potential BMP subarea monitoring samples collected during each rain event is presented in Table 1-5. The potential BMP subarea monitoring samples collected during the 2011/2012 rainy season are listed in Table 3-1. The monitoring locations and dates on which potential BMP subarea monitoring samples were collected are shown on Figures 2-1 through 2-7. Charts showing rainfall in inches per hour for the 2011/2012 rain events during which a potential BMP subarea monitoring sample was collected, along with the potential BMP subarea monitoring sampling times and Outfall 008 and 009 flow rates and sampling times, are included in Appendix A.

Potential BMP subarea monitoring samples were not collected from three of the planned locations within the Outfall 009 watershed during the 2011/2012 rainy season because flowing stormwater was not present during inspections. The three locations are within the Outfall 009 watershed and include the Sage Ranch background location north of the B-1 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) site (BGBMP0005) and the two locations downstream of the A2LF RFI site (A2BMP0001 and A2BMP0002).

Field measurements of potential BMP subarea monitoring samples included turbidity, temperature, pH, and conductivity. Laboratory analysis of potential BMP subarea monitoring samples included total and dissolved metals, dioxins, TSS, particle size distribution (PSD), and turbidity as described in the 2011/2012 Rainy Season SAP (MWH, 2010e, 2011b). The analytical suite and laboratory method planned for each location (Table 1-4) was performed with the following exceptions:

- Dioxins analysis was not performed on one sample collected on March 17, 2012 due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling (sample location HZBMP0001).

- PSD was not performed on one sample collected on March 17, 2012 due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling (sample location HZBMP0001).

- Dioxins analysis was not performed on two samples collected on March 17, 2012 due to laboratory error during extraction of samples for analysis (sample location A1BMP0002).

3.2.2 Sample Results

Potential BMP subarea monitoring analytical results, including field measurements and rainfall event measurements from the 2011/2012 rainy season are presented in Tables 3-2 and 3-3. Laboratory and validation reports for potential BMP subarea monitoring samples are included in Appendix B.

Potential BMP subarea monitoring sample results for NPDES COCs were compared to NPDES outfall results to assess whether there is a general pattern of water quality changes as runoff travels down the watersheds and to provide a context for evaluating possible contributions to NPDES samples at the outfalls. To support this evaluation, time-series charts showing potential BMP subarea, stormwater background, and NPDES monitoring results versus sample collection date are provided in Appendix F-1 for each NPDES COC detected within each outfall. Additionally, to assess the general understanding that the NPDES COCs are associated with soils and are mobilized by stormwater runoff when these soils are eroded and suspended in the water

column, correlation charts are provided in Appendix F-2 showing potential BMP subarea monitoring results and stormwater background sample results for NPDES COCs versus TSS are provided for each NPDES COC detected within each outfall. These charts are included in Appendix F. Stormwater background monitoring locations are located in the Outfall 009 watershed (see Table 1-4) and are therefore included only in the Outfall 009 charts described above. The charts do not include results for ISRA or CM locations that were included in the complete stormwater background datasets utilized in the Expert Panel's BMP site ranking analysis presented in Section 3.3. PSD data will be summarized in the 2012 BMP Plan Addendum because the primary purpose for collecting PSD data is for use in BMP design.

3.2.2.1 Outfall 008 Watershed Sample Results

Below is a summary of the Outfall 008 potential BMP subarea monitoring and NPDES sample results for the Outfall 008 NPDES COCs, and general trends observed in the results. The results for other analytes (e.g., dissolved metals) in potential BMP subarea monitoring samples were or will be used for stormwater treatability assessment, BMP design, metal particulate strength calculations, and future BMP site ranking analyses.

- Dioxins were not detected in potential BMP subarea monitoring or Outfall 008 NPDES sample at concentrations above the NPDES permit limit during the 2011/2012 rainy season. Copper and lead were detected above the NPDES permit limit in one potential BMP subarea monitoring sample and one Outfall 008 NPDES sample; both samples were collected during a rain event late in the rainy season (April 2012), the only rain event that produced runoff at the outfall all season.

- Potential BMP subarea monitoring samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. A correlation between dioxins and TSS concentrations is not possible because all dioxin results were below the detection limit.

- Outfall 008 NPDES results for lead, copper, and TSS are generally greater than potential BMP subarea monitoring samples, indicating that contributions of these COCs may be from natural channel bed materials (soils and associated minerals) being re-suspended in the drainage or erosion of the channels between the upland subareas and the downstream outfall location where concentrated water velocities and shear stresses are greater and/or from dirt roads. The relationship of dioxins concentrations between potential BMP subarea monitoring and Outfall 008 NPDES samples is not discernible due to the high number of non-detect results.

3.2.2.2 Outfall 009 Watershed Sample Results

Below is a summary of the Outfall 009 potential BMP subarea monitoring, stormwater background, and NPDES sample results for the Outfall 009 NPDES COCs, and general trends observed in the results. The results for other analytes (e.g., dissolved metals) in potential BMP subarea monitoring samples were or will be used for stormwater treatability assessment, BMP design, metal particulate strength calculations, and future BMP site ranking analyses.

- Cadmium and mercury were not detected in potential BMP subarea monitoring or Outfall 009 NPDES samples at concentrations above the NPDES permit limit during the 2011/2012 rainy season (excludes several cadmium J-flagged results). Lead, copper, and/or dioxins were detected above the NPDES permit limit in 64 samples collected at 16 potential BMP subarea monitoring locations and three Outfall 009 NPDES samples during the 2011/2012 rainy season. Refer to Section 3.3 for the list of the highest ranked subareas based on the results of the Expert Panel's potential BMP subarea ranking analysis. In general, the subarea monitoring sites that receive runoff from primarily paved surfaces had the highest COC concentrations[12], a finding that generally supports the benefits of Boeing's ongoing asphalt removal/demolition projects.

- Potential BMP subarea monitoring and stormwater background samples collected to date show positive correlations between copper and lead concentrations and TSS concentrations, confirming the general understanding that these COCs are associated with soil particulate matter. Correlations between cadmium, mercury, and dioxins concentrations and TSS concentrations were limited by the high number of non-detect results.

- Potential BMP subarea monitoring and Outfall 009 NPDES concentrations for cadmium, lead, copper, and dioxins are generally greater than stormwater background samples for all sampling events, supporting the general characterization of these sites as potential locations for stormwater quality control.

- With the exception of dioxins, in which case the potential BMP subarea monitoring results are generally higher than the Outfall 009 NPDES results, the relationship of Outfall 009 COCs between potential BMP subarea monitoring and Outfall 009 NPDES results is not consistent based on available data (i.e., neither the performance monitoring or the outfall sample results are consistently greater than the other). These results may

[12] As stated previously, stormwater runoff from asphalt pavement may contribute metals and dioxins concentrations that are above background due to: (1) regional atmospheric deposition (which over time builds up and more effectively washes off pavement during rain events unlike open ground areas where stormwater runoff may partially infiltrate or be sequestered by plants), (2) contributions from the asphalt emulsion and/or pavement sealant themselves, and/or (3) contributions from vehicles (e.g., brake dust, oil leaks, and exhaust particulates).

indicate that a consistent relationship is not apparent due to data variability, or they may indicate that the BMP subareas may occasionally contribute to concentrations observed at the outfall.

3.3 POTENTIAL BMP RANKING RESULTS AND RECOMMENDATIONS

The Expert Panel ranked the potential BMP sites to prioritize the locations based on water quality considerations following the approach summarized in Section 1.3.3. The Expert Panel's ranking analysis memorandum (Geosyntec and Expert Panel, 2012d) is included as Appendix G. The potential BMP sites were ranked based on the multi-constituent score, with the top-ranked sites recommended for consideration for new or enhanced stormwater control placement.

Site Specific Evaluation of Top-Ranked Sites

Based on these analysis results, the following monitoring locations were identified as the highest ranked[13] subareas, with multi-constituent scores ranging from 0.43 to 0.94. Besides their multi-constituent scores, the following list is also of significance because it included:

- All subareas that were ranked first through fourth for each of the constituent categories (metals and dioxins);
- All of the top seven subareas with the highest observed dioxin concentrations (noting that the scores do not explicitly account for concentration *magnitude*s, but rather account for *frequency* of exceeding the concentration-based background and permit limit thresholds);
- All four subareas where 2,3,7,8-TCDD was detected (two of which are in the same flow path as the subareas listed below, albeit not the exact same IDs); and
- The highest ranked subarea for TSS, four of the top four ranked subareas for metals, and seven of the top seven ranked subareas for dioxins.

In some cases, these results reflect conditions prior to or following implementation of temporary measures or corrective actions and this is described in parentheses following the location designation (in bold). This list also includes all of the subareas that will receive runoff treatment by the new Boeing treatment control – the Lower Parking Lot sedimentation basin and biofilter – that is under construction and is scheduled to be completed in October 2012. Note that all 11 monitoring locations described below (the top-ranked locations based on available data) are located in the Outfall 009 watershed, with none in the Outfall 008 watershed. In fact, of

[13] In the case of ties, the average rank was assigned to both subareas.

63 subareas evaluated, no locations in the Outfall 008 watershed were ranked above 29. This, combined with existing plans for new erosion and sediment controls, allowed the Expert Panel to focus new BMP recommendations entirely on the Outfall 009 watershed this year. Further, water quality at background locations was very good with no location ranked above 29 and very few exceedences of NPDES permit limits.

1. **EVBMP0003** (CM-1 influent west): This monitoring subarea reflects flow from approximately 11.8 acres including the ELV building and surrounding paved areas (including the NASA staging area), vegetated ELV hillside and ISRA areas (most of which are temporarily covered with tarps as of August, 2012), and the paved Area II (NASA) Road. ISRA area ELV-1C is located within this drainage area, and although the soil has not yet been removed, the ISRA area has been covered with a plastic tarp and sandbags to prevent contact with rainfall. Based on 14 events, this subarea ranks 1st overall (multi-constituent score = 0.94), 1st for dioxins, 1st for metals, and 32nd for TSS. CM-1, to which EVBMP0003 drains, is an existing CM that also treats runoff from a 53 acre undisturbed subwatershed (estimated at around than 7% capture[14]). Based on four events, the CM-1 effluent subarea (A2SW0002-A) is ranked 15.5 overall (multi-constituent score = 0.43), 19.5 for dioxins, 18.5 for lead, and 28.5 for TSS. The ELV areas currently drain to EVBMP0003 and CM-1 due to an existing broken asphalt channel below the ELV hillside that diverts runoff onto the road and toward CM-1. Working with the Expert Panel, NASA has developed initial plans to reconstruct the channel and to direct runoff from the paved ELV areas west of the helipad toward the helipad where asphalt will be removed and detention/infiltration basins will be created. The Expert Panel continues to recommend this plan, in addition to new actions, to address runoff from this subarea.

2. **B1BMP0004** (B-1 media filter inlet north): This monitoring subarea reflects runoff from approximately 3.7 acres of paved road and post-ISRA restored hillside. Based on 2 events, this subarea is ranked 2nd overall (multi-constituent score = 0.72), 5th for dioxins, 9th for metals, and 74th (lowest) for TSS. This subarea drains to a series of rock check dams and the B-1 media filter which, after filtering runoff, discharges to a natural vegetated drainage across the main entrance road. Based on four events, the B-1 media filter effluent (B1SW0014-B) is ranked 27th overall (multi-constituent score = 0.27), 19.5 for dioxins, 32.5 for metals, and 74th for TSS. Runoff from the paved area and road to the north, which otherwise enters a pipe that conveys runoff under the road and toward

[14] Overflows also get partial treatment through sedimentation.

B1BMP0004, is slowed by sand bags surrounding the grate inlet. The Expert Panel recommends new actions (minor improvements and maintenance of existing features) to address runoff from this subarea.

3. **ILBMP0001** (Lower Parking Lot 24-inch storm drain): This monitoring subarea reflects flow from 23 acres of paved parking areas, building rooftops, paved storage areas, and undeveloped hillsides. Runoff from these areas is conveyed by a storm drain collection system to a 24-inch storm drain located beneath the Lower Parking Lot. This storm drain discharges via a concrete outlet spillway to the northern drainage on Sage Ranch property. Based on ten events, this subarea is ranked 3rd overall (multi-constituent score = 0.68), 4th for dioxins, 14th for metals, and 39.5 for TSS. The sedimentation basin and biofilter planned for the Lower Lot will treat approximately 40% of the average annual runoff volume from this subarea. Additionally, the removal of Building 1300 is complete (replaced by trailers), Building 1436 is planned to be demolished in 2013, and a portion of the upper parking lot will be removed in 2013. In combination, these activities will reduce both the impervious area in this drainage area as well as the potential sources associated with building uses. In addition, the Expert Panel recommends new actions to further address runoff from this subarea, such as distributed treatment at the storm drain inlets and/or low impact development (LID)-type features around the remaining buildings and lots.

4. **EVBMP0001-A** (composite of Helipad Road and lower ELV ditch): This monitoring subarea reflects flow from the 1.8 acre paved Area II (NASA) Helipad Road and ELV-1C and ELV-1D ISRA areas, composited (50/50) with flow from the 0.7 acre portion of the ELV vegetated hillside that enters, and remains in, the ELV asphalt ditch. Based on five events, this subarea was ranked 4th overall (multi-constituent score = 0.67), 3rd for dioxins, 16.5 for metals, and 15th for TSS. The highest measured TCDD TEQ (no DNQ) concentration (2.1×10^{-4} µg/L) was found here, including the detection of the 2,3,7,8-TCDD congener (2.2×10^{-5} µg/L). Prior to compositing with flows from the lower ELV ditch (EVBMP0001), this subarea reflected runoff from only the Helipad Road gutter, and based on three events, was ranked 34th overall, 31.5 for dioxins, 25th for metals, and 15th for TSS, suggesting that flow from the lower ELV ditch contributes the majority of dioxins at this location. NASA had intended to remove soils at ISRA areas ELV-1C and ELV-1D in the summer of 2012 but determined it could not take action until DTSC approved use of use of the December 2011 EPA RTLs for the soils. Soil removal at ISRA areas ELV-1C and ELV-1D is planned for late 2012, or early 2013. The Expert Panel recommends new actions to address runoff from this subarea.

5. **EVBMP0002** (Helipad – pre sandbag berms): This monitoring subarea is in Area II (NASA) and reflects flow from the 4.1 acre paved helipad area. Based on six events, this

subarea is ranked 5.5 overall (tied with ILBMP0002 with a multi-constituent score = 0.66), 6th for dioxins, 15th for metals, and 31st for TSS. This subarea's ranking dropped to 36th overall , 29.5 for dioxins, 40th for metals, and 74th for TSS after implementation of the temporary sandbag berm controls (EVBMP0002-A, based on five events), suggesting that long-term controls at this subarea are needed and are expected to further improve water quality. In the short term (planned for 2012), NASA intends to hole-punch the asphalt behind the berms (to encourage infiltration) and to heighten the existing sandbag berms. Long-term plans (2013) by NASA (with Expert Panel input) include the removal of 3.7 acres of asphalt, creation of scalloped depressions (to form detention/infiltration basins), and routing of runoff from paved ELV areas towards these basins. NASA had intended to implement BMPs here in the summer of 2012 but determined that it could not take action until DTSC approved use of the December 2011 EPA RTLs for the soils. If the recommended actions cannot be completed in 2012, the Expert Panel recommends extending the height of the sandbag berms to better capture runoff from larger rains from this subarea, which would cause overflows with the current berm height. Hole punching in the asphalt could also assist with some increased infiltration.

6. **ILBMP0002** (road runoff to CM-9): This subarea reflects runoff from a 2.5 acre drainage area including paved road and undeveloped hillsides. Based on seven events, this subarea is ranked 5.5 overall (tied with EVBMP0002 with a multi-constituent score = 0.66), 12th for dioxins, 3rd for metals, and 15th for TSS. ILBMP0002 drains to CM-9, which filters runoff through a horizontal media bed (estimated at 10% capture with the current culvert modification size). Based on four events, the effluent from CM-9 (A1SW0009-B) is ranked 15.5 overall, 19.5 for dioxins, 18.5 for metals, and 15th for TSS. The Expert Panel recommends new actions to address runoff from this subarea to increase the runoff capture and treatment.

7. **A1SW0009-A** (CM-9 downstream underdrain outlet, post-Building 1324 asphalt removal, pre-filter fabric over weir boards): This subarea reflects treated runoff (estimated at 15% capture[15]) from a 16.4 acres drainage area, consisting of road runoff (ILBMP0002), a stabilized dirt road, rocky hillsides, and the AILF. Based on one event, this subarea is ranked 7th overall (multi-constituent score = 0.63), 19.5 for dioxins, 2nd for metals, and 74th for TSS. In January of 2012, filter fabric was installed over the weir boards to decrease the outflow rate and increase the residence time. Based on four events, this subarea (A1SW0009-B) is now ranked 15.5 (multi-constituent score = 0.43),

[15] Overflows also get partial treatment through sedimentation.

19.5 for dioxins, 18.5 for metals, and 15th for TSS after these improvements. The Expert Panel recommends new actions to address runoff from this subarea.

8. **APBMP0001-A** (Ash Pile culvert inlet/road runoff): This Area II (NASA) subarea reflects runoff from 34 acres, including several flat ISRA areas distributed throughout a relatively flat drainage area as well as the adjacent road, which was observed to be the only contributor to runoff at this subarea. Based on two events, this subarea is ranked 8th overall (multi-constituent score = 0.60), 19.5 for dioxins, 4th for metals, and 74th for TSS. Both samples were collected after five ISRA areas had been partially excavated and covered with plastic prior to the rainy season. It is anticipated that the AP/STP ISRA excavation will be completed in 2012. The Expert Panel recommends no new actions at this time to address runoff from this subarea.

9. **LPBMP0001-A** (Lower Parking Lot sheetflow, post-gravel bag berms): This subarea reflects runoff from 5.1 acres of mostly paved parking and road areas, after the gravel bag berms were installed in September of 2011 to slow runoff and allow for some detention. Soil stockpile activities are also planned to occur here, but were not present during this most recent monitoring period. Based on six events, this subarea is ranked 9th overall (multi-constituent score = 0.52), 2nd for dioxins, 30th for metals, and 27th for TSS. This same subarea, based on two events prior to the installation of the gravel bag berms (LPBMP0001), was ranked 12.5 overall (multi-constituent score = 0.50), 19.5 for dioxins, 9th for metals, and 15th for TSS. This area will soon be treated with a sedimentation basin and biofilter BMP, in anticipation of increased soil stockpile activity, and as such, the Expert Panel currently recommends no new actions to address runoff from this subarea.

10. **B1BMP0003** (B-1 parking lot/road runoff to culvert inlet): This 5.2 acre subarea reflects runoff from an asphalt parking lot (0.8 acres), paved road, completed B-1 ISRA areas, and undeveloped hillsides. Based on 12 events, this subarea is ranked 17th overall (multi-constituent score = 0.43), 7th for dioxins, 38th for metals, and 33rd for TSS. Asphalt removal of the upper lot is planned for completion by 2013, and this is anticipated to significantly decrease the impervious area that drains toward this monitoring location, resulting in decreased runoff. The Expert Panel recommends no new actions at this time to address runoff from this subarea.

11. **LXBMP0004** (LOX southwest downstream of sandbag berm): This 10.6 acre subarea reflects runoff from the ISRA LOX areas, downstream of the temporary sandbag berm. Based on five events, this site is ranked 28th overall (multi-constituent score = 0.26), 40.5 for dioxins, 9th for metals, and 1st for TSS. The northern drainage RMMP, planned for 2012, will stabilize this embankment and add slope drains. The LOX ISRA excavation is also tentatively planned for 2013. This is anticipated to reduce the TSS

loading, and as such, the Expert Panel currently recommends no new actions to address runoff from this subarea.

Multi-constituent scores can be further used to evaluate water quality pre- and post-modification (where "modification" is used to describe new or enhanced stormwater quality management or source control activities) at specific subareas. As shown in Table 3-4, a clear improvement in rank is shown for the post-modification subareas at CM-9 and the helipad subarea. Subareas sampled pre-modification are ranked from 8.5 to 30.5 positions higher than the same subareas sampled post-modification, demonstrating that the improvements in fact resulted in better water quality.

Table 3-4. Specific BMP Area Ranking Improvements

BMP Area	Modification	Rank Pre-Modification	Rank Post-Modification	Rank Change
CM-9	Filter fabric installed over weir boards, asphalt removed (Building 1324 parking lot)	7.0	15.5	+8.5
Helipad	Temporary sand-bag berms installed	5.5	36.0	+30.5

Additionally, Table 3-5 summarizes instances where the monitored effluent is ranked lower than the monitored influent, demonstrating that treatment through the CM/media filters listed resulted in improved water quality. For example, four influent streams within the B-1 area (ranked 2 – 18) are all ranked higher than the B-1 effluent, which is ranked 27. A similar occurrence is observed for the influent/effluent ranks for CM-1, CM-9, CM-3, CM-8, and CM-11.

Table 3-5. Current Controlled Locations, Ranking Comparisons

BMP Area	Influent		Effluent		Rank Change
	Description	Rank	Description	Rank	
CM-1	ELV road runoff/CM-1 upstream west	1	CM-1 effluent (post-filter fabric over weir boards)	15.5	+14.5
CM-9	Road runoff to CM-9	5.5	CM-9 downstream-underdrain outlet (post-filter fabric over weir boards, post-Building 1324 parking lot asphalt removal)	15.5	+10
B-1	B-1 media filter inlet north	2	B-1 media filter effluent	27	+25
B-1	B-1 combined media filter influent	10	B-1 media filter effluent	27	+17
B-1	B-1 north road runoff	12.5	B-1 media filter effluent	27	+14.5

BMP Area	Influent		Effluent		Rank Change
	Description	Rank	Description	Rank	
B-1	B-1 media filter inlet south	18	B-1 media filter effluent	27	+9
CM-3	CM-3 upstream	37.5	CM-3 downstream (post-filter fabric over weir boards)	47	+9.5
CM-8	CM-8 upstream	48	CM-8 downstream (post-filter fabric over weir boards)	50	+2
CM-11	CM-11 upstream	42	CM-11 downstream (post-filter fabric over weir boards)	44	+2

New BMP Recommendations

Based on the above ranking results, and utilizing best professional judgment (including consideration of information on planned ISRA and demolition measures), the following new BMPs are recommended by the Expert Panel and observations during field visits. Additional detail on these BMP concepts and implementation schedule will be provided in the BMP Work Plan Addendum, which will be submitted to the RWQCB in September 2012. Since the majority of these improvements would be completed during the summer of 2013, these recommendations may be reevaluated based on monitoring data from the 2012/2013 rainy season.

1. **ELV/CM-1 (NASA):** The Expert Panel recommends that NASA proceed with repairing the ELV asphalt ditch, as recommended in the Expert Panel's 2011 BMP recommendation report (Geosyntec and Expert Panel, 2011d). Additionally, the Expert Panel recommends consideration of a treatment BMP (e.g., sedimentation basin/media filter) to address runoff collected in the repaired ELV ditch; a potential location for this new BMP could be on the south side of the Area II road, at the former groundwater treatment system location or around the nearby AP/STP ISRA areas after soil removal. This would treat runoff from both the ELV hillside, which currently bypasses the ELV culvert inlet, as well as the 0.7 acre area which enters the lower ELV ditch and culvert beneath Helipad Road. Both subareas have been identified as high-priority. The Expert Panel also recommends improving the existing upstream CM-1 sandbag berm and CM-1 media filter. Bypassing runoff from the background eastern tributary around the CM-1 media bed (e.g., by reconstructing CM-1 at the base of ISRA area A2LF-3), if feasible, would also allow for more focused treatment of the other high priority western drainage. The planned diversion of the upper paved ELV area to the helipad will also decrease flows to CM-1.

2. **24-inch drain beneath Lower Parking Lot (Boeing):** The Expert Panel recommends biofiltration where possible, particularly around storm drain inlets near the surface storage areas. If space is limited, upflow media filters or equivalent above-ground natural treatment systems could also be installed. The Expert Panel also recommends a grass swale along the edge of the remaining upper parking lot, and biofilters or LID features around any new building trailers.
3. **B-1 Area (Boeing):** The Expert Panel recommends minor improvements and maintenance activities to enhance the performance of the existing media filter. The Expert Panel recommends curb cuts along the entrance road northwest of the existing rock check dams to allow runoff from the pavement to enter the north side of the B-1 media filter, rather than the south side, which has less sedimentation area compared to the north and would benefit from balancing loading between the north and south sides. Since the downslopes areas are steep, the curb cuts would need some energy dissipation in the form of rock placement. Similarly, the Expert Panel also recommends curb cuts along the top of the planted area across the road from the B-1 media filter to provide additional retention of runoff before entering the northern drainage. The Expert Panel also recommends that the existing pretreatment rock check dams be maintained and the B-1 hillside be reseeded, mulched and temporarily irrigated.
4. **CM-9 (Boeing):** The Expert Panel recommends that the steep roadside embankments on both sides of the Area II road be stabilized with toe wattles, hydroseed, and/or other methods, to hold these loose soils in place and reduce sediment delivery to the road gutter and to the downstream pipe at ILBMP0002. The Expert Panel also recommends wattles along the channel or dirt road below and west of the former Building 1300. The Expert Panel recommends that the ILBMP0002 pipe be connected to a perforated pipe, and extended along the slope, to the southwest, to distribute flows and allow for infiltration of low flows along the hillside. The addition of a pretreatment forebay in or near the drainage, and improvement of the CM-9 media filter (possibly reconfiguring to a vertical media filter similar to that at B-1 but with greater media thickness and/or contact time) are also recommended by the Expert Panel.

Additionally, the Expert Panel reviewed 2011/2012 NPDES compliance monitoring results, including Outfall 008 where the only sample collected (the Outfall 008 drainage area produces far less runoff than the Outfall 009 area) slightly exceeded for lead and copper, and TSS was relatively high. Based on visual observations and performance/BMP monitoring results, the west tributary in the Outfall 008 area has very good water quality whereas the east tributary appears to be contributing greater sediment loads. Since the above priority BMP subareas do not address water quality in the Outfall 008 watershed, the Expert Panel recommends additional corrective actions here. These recommended measures, for both the dirt road and adjacent to the outfall

flume, were communicated to Boeing and their consultants, and are currently (August 2012) being implemented.

Recommended measures for the dirt road include:

- Erosion controls on a steep section of an access road to an existing monitoring well;
- Extending the culvert inlet riser pipe to allow greater ponding depth; and
- Replacement of an existing hay bale barrier and silt fences near this monitoring well with riprap and gravel berms (along the eastern tributary).

Recommended measures in the vicinity of the outfall flume include:

- Replacement of existing silt fence near the outfall;
- Stabilization of loose sediment along the slopes surrounding the outfall flume;
- Installation of rock berms along the downstream outlet of the east tributary;
- Rebuilding the upstream entrance wing wall on the south side of the channel, immediately above the flume, to prevent erosion; and
- Refreshing of the existing rock bed immediately upstream of the outfall flume.

Although this analysis primarily focuses on the selection of potential stormwater treatment control locations, the Expert Panel continues to strongly recommend the rigorous application of erosion and sediment control practices and stream channel stabilization measures throughout the Outfalls 008 and 009 watersheds, including and especially at areas where substantial soil removal may be planned at steep areas and/or in proximity to drainage courses (such as at ELV, LOX, or the A2LF ISRA areas). The Expert Panel also continues to recommend the stabilization of unpaved roads and the implementation of source controls (including source removal, such as through the ISRA and demo programs). Finally, it is important that routine maintenance be undertaken at all CM locations and where sedimentation basins have been constructed (e.g. above B-1).

The Expert Panel believes that these new and planned activities (Boeing's Lower Parking Lot biofilter, the Northern Drainage RMMP, NASA's helipad asphalt removal and infiltration basin BMP, and NASA's ISRA activities in Area II), taken together, will improve the likelihood of NPDES compliance at Outfalls 008 and 009, based on currently available information.

3.4 POTENTIAL BMP MONITORING PROGRAM RECOMMENDATIONS

Based on the data collected for the potential BMP monitoring program, the following changes to the monitoring program are recommended for the 2012/2013 rainy season:

- Discontinue monitoring at all background locations.
- Discontinue monitoring at A2BMP0004 since the influent pipe is sampled upstream.
- Discontinue monitoring at LXBMP0006 if LOX ISRA areas are completed and performance monitoring is planned.
- Modify monitoring at EVBMP0001 such that three unique samples are collected instead of one composite: from the helipad road gutter, from the asphalt ELV ditch, and from the Area II road runoff sheetflow.
- Add one BMP monitoring location in the vegetated drainage west of the B-1 area upstream of the culvert under the Sage Ranch dirt road. This location would provide water quality data for the runoff from the B-1 area after flowing through the vegetated area.

4.0 UPDATED MILESTONES SCHEDULE

The milestone schedule presented in the BMP Plan has been updated, and is provided below. The schedule accounts for phasing of implementation to allow completion of ongoing work within the Outfalls 008 and 009 watersheds, including ISRA and Northern Drainage cleanup.

2012:

August – December 2012	Continue planning, designing, permitting, and implementing where feasible and practicable. Short Term BMP Implementation Activities listed in 1.3.1 that can be completed in 2012.
August – October 2012	Implement the Northern Drainage RMMP, Lower Parking Lot BMP, and LOX BMP field work and restoration activities.
September 2012	Submit 2012 BMP Plan Addendum that identifies new stormwater controls (for subsequent design) and proposed implementation schedule.
2012/2013 Rainy Season	Collect stormwater samples.

2013:

Winter – Spring 2013	Complete required archeological and/or biological surveys for proposed work areas, grading plans and engineering design calculations, as necessary. Submit permitting packages or permitting amendments for potential implementation areas within drainages. Prepare supporting plans for implementation, including Soil Management Plan, Traffic Management Plan, and Health and Safety Plan, as necessary.
Summer – Fall 2013	Submit annual report and recommendation of BMP upgrades, as necessary. Implement the Helipad BMP and ELV BMP field work and restoration activities following approval by RWQCB, approval of necessary permits,

	contractor selection and completion of required studies/surveys.
Fall 2013	Submit an evaluation of monitoring results identifying locations, conceptual design(s), and implementation schedule for new recommended BMPs.
2013/2014 Rainy Season	Collect stormwater samples.

2014:

Summer 2014	Submit annual report and recommendation of BMP upgrades as necessary.
Fall 2014	Submit BMP Upgrade Plan that provides a review of performance monitoring results and upgrades to the BMP if required.

As described in the BMP Plan, following ISRA implementation, Northern Drainage activities, and BMPs/treatment control implementation, effectiveness of these measures will be evaluated primarily by the results of stormwater samples collected at Outfalls 008 and 009, supplemented by ISRA performance data, or any subarea data to be collected as part of this BMP Plan. These sampling results will be reviewed annually to determine whether additional upgrades may be warranted. If required, a BMP Upgrade Plan Addendum will be submitted for RWQCB review and approval.

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TABLES

Table 1-1
Summary of NPDES Permit Limit Exceedances - Outfall 008
(Page 1 of 1)

Analyte	Units	2010 Compliance Limit	Sample Date	Result	Data Type
Copper	µg/L	14.0	2/18/2005	15	Monitoring-only
Copper	µg/L	14.0	4/13/2012	18	Compliance
Lead	µg/L	5.2	10/20/2004	9.8	Monitoring-only
Lead	µg/L	5.2	10/27/2004	9	Monitoring-only
Lead	µg/L	5.2	12/28/2004	6.4	Monitoring-only
Lead	µg/L	5.2	2/18/2005	13	Monitoring-only
Lead	µg/L	5.2	10/18/2005	120	Monitoring-only
Lead	µg/L	5.2	1/1/2006	20	Monitoring-only
Lead	µg/L	5.2	4/15/2006	18	Compliance
Lead	µg/L	5.2	1/25/2008	6.3	Benchmark
Lead	µg/L	5.2	1/18/2010	7.9	Benchmark
Lead	µg/L	5.2	2/5/2010	10	Benchmark
Lead	µg/L	5.2	2/28/2010	7.0	Benchmark
Lead	µg/L	5.2	12/19/2010	6.7	Compliance
Lead	µg/L	5.2	4/13/2012	10	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/18/2005	4.46E-08	Monitoring-only
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/28/2006	3.19E-07	Monitoring-only
Dioxins / TCDD TEQ	µg/L	2.80E-08	1/18/2010	2.35E-06	Benchmark

Notes:

NPDES Permit exceedances are sample results that are greater than the NPDES limit and were collected after the discharge limit was established and before limit was updated to a benchmark (performance based) limit for the outfalls (compliance data above).

Dioxins / TCDD TEQ - A sum of 17 dioxin / furan congener results adjusted for toxicity. The TEQ is calculated for samples collected before July 2010 by multiplying the result of each congener by its respective World Health Organization's (1998 WHO's) toxic equivalency factor (TEF), which is based on the relative potency of the congener to cause a toxic response relative to 2,3,7,8-TCDD. Samples collected after July 2010 are also multiplied by the Great lakes water quality initiative bioaccumulation equivalenc factor (BEF), which correspond to the differences in biological uptake from the water column for the various dioxin congeners. TCDD TEQ values do not include laboratory data not quantified (DNQ) as specified in the NPDES permit.

TCDD TEQ - tetrachlorobenzo-p-dioxin toxic equivalent (normalized to 2,3,7,8-TCDD)

Table 1-2
Summary of NPDES Permit Limit Exceedances - Outfall 009
(Page 1 of 2)

Analyte	Units	2010 Compliance Limit	Sample Date	Result	Data Type
Cadmium	µg/L	4.0	10/17/2005	9.2	Monitoring-only
Copper	µg/L	14	10/17/2005	39	Monitoring-only
Copper	µg/L	14	2/18/2006	22	Monitoring-only
Copper	µg/L	14	4/4/2006	26	Compliance
Lead	µg/L	5.2	12/28/2004	11	Monitoring-only
Lead	µg/L	5.2	2/18/2005	10	Monitoring-only
Lead	µg/L	5.2	10/17/2005	260	Monitoring-only
Lead	µg/L	5.2	2/18/2006	33	Monitoring-only
Lead	µg/L	5.2	4/4/2006	64	Compliance
Lead	µg/L	5.2	9/22/2007	8.6	Compliance
Lead	µg/L	5.2	2/3/2008	6.0	Benchmark
Lead	µg/L	5.2	12/15/2008	19	Benchmark
Lead	µg/L	5.2	2/6/2009	7.5	Benchmark
Lead	µg/L	5.2	2/13/2009	20	Benchmark
Lead	µg/L	5.2	12/7/2009	5.7	Benchmark
Lead	µg/L	5.2	1/19/2010	9.3	Benchmark
Lead	µg/L	5.2	2/28/2010	8.9	Benchmark
Lead	µg/L	5.2	10/6/2010	11	Compliance
Lead	µg/L	5.2	3/25/2012	7.2	Compliance
Mercury	µg/L	0.13	1/4/2005	0.20	Monitoring-only
Mercury	µg/L	0.13	10/17/2005	0.21	Monitoring-only
Oil & Grease	µg/L	15	1/11/2005	16	Compliance
pH	pH units	6.5 - 8.5	10/17/2005	8.80	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	1/4/2005	1.72E-06	Monitoring-only
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/18/2005	5.20E-08	Monitoring-only
Dioxins / TCDD TEQ	µg/L	2.80E-08	10/17/2005	9.10E-04	Monitoring-only
Dioxins / TCDD TEQ	µg/L	2.80E-08	11/9/2005	6.14E-07	Monitoring-only
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/18/2006	1.56E-05	Monitoring-only
Dioxins / TCDD TEQ	µg/L	2.80E-08	4/4/2006	1.77E-05	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/19/2007	7.64E-07	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	9/22/2007	3.13E-06	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/3/2008	3.58E-07	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	11/26/2008	3.99E-07	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	12/15/2008	1.83E-06	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/6/2009	9.55E-07	Benchmark

Table 1-2
Summary of NPDES Permit Limit Exceedances - Outfall 009
(Page 2 of 2)

Analyte	Units	2010 Compliance Limit	Sample Date	Result	Data Type
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/13/2009	1.22E-05	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	10/14/2009	1.60E-06	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	12/7/2009	1.10E-07	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	1/19/2010	3.43E-06	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/5/2010	7.21E-07	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	2/28/2010	1.09E-06	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	3/7/2010	2.90E-08	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	4/5/2010	1.58E-06	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	4/12/2010	1.47E-06	Benchmark
Dioxins / TCDD TEQ	µg/L	2.80E-08	10/6/2010	3.90E-08	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	3/20/2011	8.26E-08	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	3/18/2012	1.61E-07	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	3/25/2012	5.62E-08	Compliance
Dioxins / TCDD TEQ	µg/L	2.80E-08	4/11/2012	3.72E-08	Compliance

Notes:

NPDES Permit exceedances are sample results that are greater than the NPDES limit and were collected after the discharge limit was established and before limit was updated to a benchmark (performance based) limit for the outfalls (compliance data above).

Dioxins / TCDD TEQ - A sum of 17 dioxin / furan congener results adjusted for toxicity. The TEQ is calculated for samples collected before July 2010 by multiplying the result of each congener by its respective World Health Organization's (1998 WHO's) toxic equivalency factor (TEF), which is based on the relative potency of the congener to cause a toxic response relative to 2,3,7,8-TCDD. Samples collected after July 2010 are also multiplied by the Great lakes water quality initiative bioaccumulation equivalenc factor (BEF), which correspond to the differences in biological uptake from the water column for the various dioxin congeners. TCDD TEQ values do not include laboratory data not quantified (DNQ) as specified in the NPDES permit.

TCDD TEQ - tetrachlorobenzo-p-dioxin toxic equivalent (normalized to 2,3,7,8-TCDD)

Table 1-3
ISRA Performance Monitoring Inspection Locations and Analytical Plan
2011/2012 Rainy Season

Object ID	Location	Purpose	Areas Monitored	Notes	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)
Outfall 008 Watershed										
HZSW0003	Happy Valley	DS	CYN-1, DRG-1	CYN/DRG tributary drainage		X	X		X	X
HZSW0004	Happy Valley	Secondary	CYN-1, DRG-1	CYN/DRG tributary drainage	To Be Determined*					
HZSW0005	Happy Valley	US	DRG-1	CYN/DRG tributary drainage					X	X
HZSW0006	Happy Valley	US/BG	CYN-1, DRG-1	Intermittent stream flow		X	X		X	X
HZSW0007	Happy Valley	DS	All HVS	HVS tributary drainage		X	X		X	X
HZSW0008	Happy Valley	US/BG	HVS-1	Intermittent stream flow over bedrock			X		X	X
HZSW0009	Happy Valley	Secondary	HVS-1	Intermittent stream flow	To Be Determined*					
HZSW0010	Happy Valley	Secondary	HVS-3, -4	HVS tributary drainage	To Be Determined*					
HZSW0011	Happy Valley	US/BG	HVS-3, -4	Intermittent stream flow		X			X	X
HZSW0012	Happy Valley	US/BG	HVS-2C	Intermittent stream flow over bedrock			X			X
HZSW0013	Happy Valley	Secondary	HVS-2C	Intermittent stream flow	To Be Determined*					
HZSW0014	Happy Valley	US/BG	HVS-2B-1, -2B-2	Intermittent stream flow		X	X			X
HZSW0015	Happy Valley	Secondary	HVS-2B-1, -2D	Intermittent stream flow	To Be Determined*					
HZSW0016	Happy Valley	Secondary	All HVS	Intermittent stream flow over bedrock	To Be Determined*					
HZSW0018	Happy Valley	Secondary	HVS-2A	Intermittent stream flow	To Be Determined*					
HZSW0019	Happy Valley	Secondary	CYN-1	Intermittent stream flow over bedrock	To Be Determined*					
HZSW0020	Happy Valley	US/BG	HVS-2A, -2D	Intermittent stream flow			X		X	X
Outfall 009 Watershed										
A1SW0004	A1LF	US	A1LF/CM-9	AILF tributary drainage	X	X	X	X	X	X
A1SW0009	A1LF	DS	A1LF/CM-9	CM-9 under drain	X	X	X	X	X	X
A2SW0001	A2LF	US	A2LF-3/CM-1	Sheet flow from road, west of CM-1			X		X	X
A2SW0002	A2LF	DS	A2LF-3/CM-1	Culvert outlet			X		X	X
A2SW0003	A2LF	US	A2LF-1	Intermittent stream flow					X	X

Table 1-3
ISRA Performance Monitoring Inspection Locations and Analytical Plan
2011/2012 Rainy Season

Object ID	Location	Purpose	Areas Monitored	Notes	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)
Outfall 009 Watershed (continued)										
A2SW0004	A2LF	DS	A2LF-1	Intermittent stream flow					X	X
A2SW0007	A2LF	US	A2LF-3/CM-1	Tributary drainage, east of CM-1			X		X	X
APSW0001	AP/STP	US	AP/STP-1A	Intermittent stream flow			X		X	X
APSW0002	AP/STP	Secondary	AP/STP-1A	Intermittent stream flow	To Be Determined*					
APSW0003	AP/STP	US	AP/STP-1D	Intermittent stream flow					X	X
APSW0004	AP/STP	Secondary	AP/STP-1D	Intermittent stream flow	To Be Determined*					
APSW0005	AP/STP	US/BG	AP/STP-1F	Intermittent stream flow					X	X
APSW0007	AP/STP	US/BG	AP/STP-1B, -1C-1	AP/STP tributary drainage	X	X	X	X	X	X
APSW0008	AP/STP	US/BG	AP/STP-1C-1, -1C-2	Intermittent stream flow	X	X	X	X	X	X
APSW0009	AP/STP	Secondary	AP/STP-1B-, -1C-1, -1C-2	AP/STP tributary drainage	To Be Determined*					
APSW0010	AP/STP	Secondary	AP/STP-1E-1	Intermittent stream flow	To Be Determined*					
APSW0011	AP/STP	Secondary	AP/STP-1E-2	AP/STP tributary drainage	To Be Determined*					
APSW0012	AP/STP	US/BG	AP/STP-1E-3	Intermittent stream flow					X	X
APSW0013	AP/STP	DS	All AP/STP	AP/STP tributary drainage	X	X	X	X	X	X
B1SW0002	B-1	Secondary	B1-2	B-1 tributary drainage	To Be Determined*					
B1SW0003	B-1	US/BG	B1-1B, -1C, -1D, -2	Intermittent stream flow over bedrock	X	X	X	X	X	X
B1SW0004	B-1	Secondary	B1-1D	Intermittent stream flow	To Be Determined*					
B1SW0005	B-1	Secondary	B1-1D	Intermittent stream flow	To Be Determined*					
B1SW0006	B-1	Secondary	B1-1B, -1C	Intermittent stream flow	To Be Determined*					
B1SW0007	B-1	Secondary	B1-1B, -1C	Intermittent stream flow	To Be Determined*					
B1SW0008	B-1	US	B1-1A	Intermittent stream flow	X				X	X
B1SW0009	B-1	Secondary	B1-1A	Intermittent stream flow	To Be Determined*					

Table 1-3
ISRA Performance Monitoring Inspection Locations and Analytical Plan
2011/2012 Rainy Season

Object ID	Location	Purpose	Areas Monitored	Notes	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)
Outfall 009 Watershed (continued)										
B1SW0013	B-1	Secondary	All B-1, B-1 Media Filter	Swale along road downstream of retention basin discharge	To Be Determined*					
B1SW0014	B-1	DS	All B-1, B-1 Media Filter	B-1 Media Filter under drain	X	X	X	X	X	X
B1SW0015	B-1	Secondary	All B-1, B-1 Media Filter	B-1 tributary drainage	To Be Determined*					
ILSW0001	IEL	US	IEL-1	Intermittent stream flow		X		X		X
ILSW0002	IEL	DS	IEL-1	Intermittent stream flow		X		X		X
ILSW0003	IEL	US	IEL-2	Intermittent stream flow	X		X	X		X
ILSW0004	IEL	DS	IEL-2	Intermittent stream flow	X		X	X		X
LFSW0001	CTL-I	US/BG	CTLI-1A, -1B	Intermittent stream flow over bedrock		X	X		X	X
LFSW0002	CTL-I	DS	CTLI-1A, -1B	Tributary drainage		X	X		X	X

Abbreviations:

DS - Downstream
US - Upstream
BG - Background Assessment
CM - Culvert Modification
X = Collect and Analyze

Notes:

* Analytical suite of secondary monitoring locations will be based on the evaluation of data from primary performance monitoring locations and only sampled as warranted by the primary data.

Table 1-4
Potential BMP Monitoring Inspection Locations and Analytical Plan
2011/2012 Rainy Season
Page 1 of 2

Object ID	Location	Purpose	Areas Monitored	Notes	Metals (Total Recoverable) (Method 200.7/200.8)	Metals (Total Dissolved) (Method 200.7/200.8)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Particle Size Distribution (Method ASTM D422)	Turbidity (Method 180.1)
Outfall 008 Watershed										
HZBMP0001	Happy Valley	Potential BMP Location	HVS	HVS tributary drainage; co-located with HZSW0007	1	X	1	1	X	X
HZBMP0003	Happy Valley	Potential BMP Location	CYN, DRG	CYN/DRG tributary drainage; co-located with HZSW0003	1	X	1	1	X	X
Outfall 009 Watershed										
A1BMP0002	A1LF	Planned BMP Location	CM-9, A1LF, IEL	Tributary drainage; co-located with A1SW0004	1	X	1	1	X	X
A2BMP0001	A2LF	Potential BMP Location	A2LF	Tributary drainage, west	X	X	X	X	X	X
A2BMP0002	A2LF	Potential BMP Location	A2LF	Tributary drainage, east	X	X	X	X	X	X
A2BMP0003	A2LF	Potential BMP Location	AP/STP, ELV, A2LF	Tributary drainage	X	X	X	X	X	X
A2BMP0004	ELV	Potential BMP Location	Helipad	Tributary drainage	X	X	X	X	X	X
A2BMP0005	ELV	Potential BMP Location	AP/STP, ELV	Tributary drainage	X	X	X	X	X	X
APBMP0001	Ash Pile	Planned BMP Location	AP/STP, ELV	Culvert inlet	X	X	X	X	X	X
B1BMP0003	B-1	Potential BMP Location	B-1, Parking Lot	Culvert inlet	X	X	X	X	X	X
B1BMP0004	B-1	US BMP Location	B-1 Media Filter	Tributary drainage; co-located with B1SW0015	2	X	2	2	X	X
B1BMP0005	B-1	US BMP Location	B-1 Media Filter	Swale along road downstream of retention basin discharge; co-located with B1SW0013	2	X	2	2	X	X
BGBMP0002	CM-3 Subarea	US BMP Location	CM-3, Soil Borrow Area	Tributary drainage	X	X	X	X	X	X
BGBMP0003	Sage Ranch	Background	Sage Ranch	Tributary drainage	X	X	X	X	X	X
BGBMP0004	Sage Ranch	Background	Sage Ranch	Tributary drainage	X	X	X	X	X	X
BGBMP0005	Sage Ranch	Background	Sage Ranch	Tributary drainage / culvert Inlet	X	X	X	X	X	X
EVBMP0001	ELV	Planned BMP Location	ELV, Helipad Road	Culvert inlet	X	X	X	X	X	X
EVBMP0002	ELV, Helipad	Planned BMP Location	Helipad	Spillway inlet	X	X	X	X	X	X
EVBMP0003	A2LF	US BMP Location	CM-1, ELV, Area II Road	Sheetflow along road; Co-located with A2SW0001	1	X	1	1	X	X
ILBMP0001	Lower Parking Lot	Planned BMP Location	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X
ILBMP0002	A1LF	US BMP Location	CM-9, IEL, Area II Road	Culvert inlet	X	X	X	X	X	X

Table 1-4
Potential BMP Monitoring Inspection Locations and Analytical Plan
2011/2012 Rainy Season
Page 2 of 2

Object ID	Location	Purpose	Areas Monitored	Notes	Metals (Total Recoverable) (Method 200.7/200.8)	Metals (Total Dissolved) (Method 200.7/200.8)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Particle Size Distribution (Method ASTM D422)	Turbidity (Method 180.1)
Outfall 009 Watershed (continued)										
LPBMP0001	Lower Parking Lot	Planned BMP Location	Soil Stockpile Area	Sheetflow on asphalt	X	X	X	X	X	X
LXBMP0004	LOX	DS BMP Location	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X
LXBMP0005	LOX	DS BMP Location	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X
LXBMP0006	LOX	Planned BMP Location	LOX	Sheetflow along dirt road	X	X	X	X	X	X

Abbreviations:
X = Collect and Analyze DS - Downstream US - Upstream CM - Culvert Modification

1 = Co-located with a primary performance monitoring sample, therefore, results or select results (metals) will always be used from the co-located sample (refer to Table 1-3).

2 = Co-located with a secondary performance monitoring sample, therefore, results or select results (metals) will sometimes be used from the co-located sample (refer to Table 1-3).

Table 1-5
Rain Event and Sampling Summary within the Outfalls 008 and 009 Watersheds
2011/2012 Rainy Season
(Page 1 of 1)

Rain Event	Total Rainfall[1] (inches)	Average Rainfall Intensity[1] (inches / hour)	Maximum 1-Hour Rainfall Intensity[1] (inches / hour)	Outfall 008 Watershed					Outfall 009 Watershed				
				NPDES Samples	BMP Monitoring Samples	Performance Monitoring Samples[2]			NPDES Samples	BMP Monitoring Samples	Performance Monitoring Samples[2]		
						Analyzed	Hold	Total			Analyzed	Hold	Total
October 5, 2011	0.90	0.090	0.18	0	0	0	0	0	1	5	6	0	6
November 4-6, 2011	0.58	0.041	0.23	0	0	0	0	0	1	0	0	0	0
November 11-12, 2011	0.76	0.035	0.26	0	0	0	0	0	1	1	1	0	1
November 19-21, 2011	0.78	0.031	0.29	0	0	0	0	0	1	3	1	1	2
December 12-17, 2011	0.80	0.006	0.21	0	0	0	0	0	1	11	2	0	2
January 21-23, 2012	1.06	0.017	0.15	0	0	0	0	0	1	12	6	0	6
February 27, 2012[3]	0.00	--	--	0	0	0	0	0	0	2	0	0	0
March 16-18, 2012	1.51	0.052	0.31	0	1	1	0	1	1	15	5	0	5
March 25, 2012	2.12	0.079	0.51	0	0	0	0	0	1	18	7	1	8
April 10-13, 2012	2.37	0.034	0.36	1	2	3	0	3	1	19	8	0	8
April 23-26, 2012	0.26	0.003	0.09	0	0	0	0	0	0	0	0	0	0
Non Rain Event Total[4]	0.27	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	**11.41**	**--**	**--**	**1**	**3**	**4**	**0**	**4**	**9**	**86**	**36**	**2**	**38**

Notes:

[1] Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

[2] The numbers of Performance Monitoring samples shown do not include RWQCB split samples.

[3] On February 27, 2012, rainfall was not measured at the Area IV weather station and is not considered a rain event per the NPDES Permit definition; however, a short period of intense rainfall occurred in the northeastern portion of SSFL and runoff was observed and sampled at two BMP subarea monitoring locations.

[4] On the following six days, rainfall was measured but was either not considered a rain event per the NPDES Permit definition: September 10 & 20, 2011, February 7, 13, & 15, 2012, and March 31, 2012

Table 1-6
NPDES Sample Results, Outfall 008
2011/2012 Rainy Season

		Object Name:	**OUTFALL 008**
		Sample Name:	Outfall 008
		Sample Date:	4/13/2012
		Sample Type:	NPDES
		Location:	Outfall
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**
DIOXINS			
TCDD TEQ_NoDNQ	ug/L	2.80E-08	5.20E-10
INORGANICS			
Copper	ug/L	14	**18**
Lead	ug/L	5.2	**10**
MISCELANEOUS			
Total Suspended Solids	mg/L	-/-	200
FIELD MEASUREMENTS			
Conductivity	mS	-/-	
Temperature	deg C	-/-	52
pH	SU	6.5-8.5/-	7.4
Turbidity	NTU	-/-	
RAINFALL MEASUREMENTS			
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.034
Intensity (Ave) - Rain Event	in/hr	-/-	0.034
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.36
Intensity (Max) - Rain Event	in/hr	-/-	0.36
Total - Pre-Sampling	in	-/-	2.37
Total - Rain Event	in	-/-	2.37
FLOW MEASUREMENTS			
Total Volume - Pre-Sampling	mil gal	-/-	0.07376
Total volume - Event	mil gal	-/-	0.07466
Peak Discharge - Pre-Sampling	cfs	-/-	1.965
Peak Discharge - Event	cfs	-/-	1.965
Watershed Inches - Pre-Sampling	in	-/-	0.0011897
Watershed Inches - Event	in	-/-	0.0012043

Notes:

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

See Appendix B for explanation of data validation qualifiers.

Table 1-7
NPDES Sample Results, Outfall 009
2011/2012 Rainy Season

		Object Name:	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009	OUTFALL 009
		Sample Name:	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009	Outfall 009
		Sample Date:	10/5/2011	11/6/2011	11/12/2011	11/20/2011	12/12/2011	01/24/2012	03/18/2012	03/25/2012	04/11/2012
		Sample Type:	NPDES	NPDES	NPDES	NPDES	NPDES	NPDES	NPDES	NPDES	NPDES
		Location:	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall	Outfall
ANALYTE	**UNITS**	**NPDES PERMIT LIMIT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS											
TCDD TEQ_NoDNQ	ug/L	2.80E-08	2.30E-10	3.20E-10	ND	4.20E-10	2.00E-10	1.50E-10	**1.61E-07**	**5.62E-08**	**3.72E-08**
INORGANICS											
Cadmium	ug/L	4	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 U	<0.10 *	<0.10 U	0.12 J (DNQ)	<0.10 *
Copper	ug/L	14	6.5 *	3.5 *	2.8 *	1.6 Ja* (DNQ)	2.3	1.7 J,DX* (DNQ)	4.2	5.1	4.5 *
Lead	ug/L	5.2	2.7 *	1.5 *	2.4 *	1.1 *	1.3	0.48 J,DX* (DNQ)	4.0	**7.2**	3.2 *
Mercury	ug/L	0.13	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
MISC											
Total Suspended Solids	mg/L	-/-	6.0 J (DNQ)	6.0 J (DNQ)	2.0 J (DNQ)	4.0 J (DNQ)	6.0 J (DNQ)	3.0 J (DNQ)	14	33 *	16
FIELD MEASUREMENTS											
Conductivity	mS	-/-	--	--	--	--	--	--	--	--	--
Temperature	deg C	-/-	60 *	58 *	58 *	60 *	53 *	52 *	50 *	46 *	53 *
pH	SU	6.5-8.5/-	7.1 *	7.9 *	6.9 *	7.4 *	6.9 *	7.6 *	6.7 *	7.0 *	6.7 *
Turbidity	NTU	-/-	--	--	--	--	--	--	--	--	--
RAINFALL MEASUREMENTS											
Intensity (Ave) - Pre-Sampling	in/hr	-/-	0.090	0.073	0.077	0.036	0.049	0.017	0.041	0.141	0.037
Intensity (Ave) - Rain Event	in/hr	-/-	0.090	0.041	0.035	0.031	0.006	0.017	0.052	0.079	0.099
Intensity (Max) - Pre-Sampling	in/hr	-/-	0.18	0.23	0.26	0.29	0.21	0.15	0.31	0.51	0.25
Intensity (Max) - Rain Event	in/hr	-/-	0.18	0.23	0.26	0.29	0.21	0.15	0.31	0.51	0.36
Total - Pre-Sampling	in	-/-	0.90	0.44	0.74	0.76	0.63	1.06	1.51	2.12	1.06
Total - Rain Event	in	-/-	0.90	0.45	0.76	0.77	0.80	1.06	1.51	2.12	2.37
FLOW MEASUREMENTS											
Total Volume - Pre-Sampling	mil gal	-/-	0.0517	0.01218	0.101965	0.06441	0.05829	0.06743	0.261395	1.066215	0.378745
Total volume - Event	mil gal	-/-	0.05181	0.035885	0.105865	0.161955	0.1122	0.06918	0.28963	1.6518	2.8092
Peak Discharge - Pre-Sampling	cfs	-/-	0.818	0.437	0.735	0.762	1.37	0.196	1.914	17.398	5.100
Peak Discharge - Event	cfs	-/-	0.818	0.437	0.735	0.762	1.37	0.196	1.914	17.398	43.835
Watershed Inches - Pre-Sampling	in	-/-	0.0000965	0.0000227	0.0001902	0.0001202	0.0001088	0.0001258	0.0004877	0.0019892	0.0007066
Watershed Inches - Event	in	-/-	0.0000967	0.0000669	0.0001975	0.0003022	0.0002093	0.0001291	0.0005404	0.0030817	0.0052411

Notes:

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

See Appendix B for explanation of data validation qualifiers.

Table 2-1
Performance Monitoring Sample Collection and Analysis Matrix
2011/2012 Rainy Season
Page 1 of 2

Watershed	Object ID	Sample ID	Collection Date	Collection Time	Areas Monitored	Notes	Purpose	Sample Type	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Comments
008	HZSW0007	HZSW0007S010	03/17/12	10:00	All HVS	HVS tributary drainage	DS	Primary	X	X				X	1
008	HZSW0003	HZSW0003S012	04/13/12	13:00	CYN-1, DRG-1	CYN/DRG tributary drainage	DS	Primary	X	X			X	X	
008	HZSW0007	HZSW0007S011	04/13/12	11:00	All HVS	HVS tributary drainage	DS	Primary	X	X			X	X	
008	HZSW0014	HZSW0014S003	04/13/12	9:15	HVS-2B-1, -2B-2	Intermittent stream flow	US/BG	Primary	X	X				X	
009	A1SW0009	A1SW0009S001	10/05/11	13:55	A1LF/CM-9	CM-9 under drain	DS	Primary	X	X	X	X	X	X	V1
009	A1SW0009	A1SW0009S001-RWQCB	10/05/11	13:55	A1LF/CM-9	CM-9 under drain	DS	RWQCB Split	X	X	X	X	X	X	V1
009	A2SW0001	A2SW0001S008	10/05/11	11:25	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	Primary			X		X	X	V1
009	A2SW0001	A2SW0001S008-RWQCB	10/05/11	11:25	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	RWQCB Split			X		X	X	V1
009	B1SW0002	B1SW0002S002	10/05/11	12:10	B1-2	B-1 tributary drainage	US	Primary	X	X	X	X	X	X	V1
009	B1SW0002	B1SW0002S002-RWQCB	10/05/11	12:10	B1-2	B-1 tributary drainage	US	RWQCB Split	X	X	X	X	X	X	V1
009	B1SW0013	B1SW0013S001	10/05/11	10:41	All B-1, B-1 media filter	Swale along road downstream of retention basin discharge	US	Primary	X	X	X	X	X	X	V1
009	B1SW0013	B1SW0013S001-RWQCB	10/05/11	10:41	All B-1, B-1 media filter	Swale along road downstream of retention basin discharge	US	RWQCB Split	X	X	X	X	X	X	V1
009	B1SW0014	B1SW0014S001	10/05/11	11:09	All B-1, B-1 media filter	B-1 media filter under drain	DS	Primary	X	X	X	X	X	X	V1
009	B1SW0014	B1SW0014S001-RWQCB	10/05/11	11:09	All B-1, B-1 media filter	B-1 media filter under drain	DS	RWQCB Split	X	X	X	X	X	X	V1
009	B1SW0015	B1SW0015S001	10/05/11	11:35	All B-1, B-1 media filter	B-1 tributary drainage	DS	Primary	X	X	X	X	X	X	V1
009	B1SW0015	B1SW0015S001-RWQCB	10/05/11	11:35	All B-1, B-1 media filter	B-1 tributary drainage	DS	RWQCB Split	X	X	X	X	X	X	V1
009	A2SW0002	A2SW0002S016	11/12/11	8:25	A2LF-3/CM-1	Culvert outlet	DS	Primary			X		X	X	V1
009	A2SW0001	A2SW0001S009	11/20/11	15:10	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	Primary			X		X	X	V1
009	A2SW0001	A2SW0001S009-RWQCB	11/20/11	15:10	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	RWQCB Split			X		X	X	
009	A2SW0001	A2SW0001S010	12/12/11	10:15	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	Primary			X		X	X	V1
009	A2SW0002	A2SW0002S017	12/12/11	9:55	A2LF-3/CM-1	Culvert outlet	DS	Primary			X		X	X	V1
009	B1SW0014	B1SW0014S002	01/21/12	8:07	All B-1, B-1 media filter	B-1 media filter under drain	DS	Primary	X	X	X	X	X	X	V1
009	B1SW0014	B1SW0014S002-RWQCB	01/21/12	8:07	All B-1, B-1 media filter	B-1 media filter under drain	DS	RWQCB Split	X	X	X	X	X	X	V1
009	A2SW0002	A2SW0002S018	01/21/12	8:16	A2LF-3/CM-1	Culvert outlet	DS	Primary			H		H	H	4
009	A2SW0002	A2SW0002S018-RWQCB	01/21/12	8:16	A2LF-3/CM-1	Culvert outlet	DS	RWQCB Split			H		H	H	4
009	A1SW0009	A1SW0009S002	01/23/12	10:40	A1LF/CM-9	CM-9 under drain	DS	Primary	X	X	X	X	X	X	V1
009	A1SW0009	A1SW0009S002-RWQCB	01/23/12	10:40	A1LF/CM-9	CM-9 under drain	DS	RWQCB Split	X	X	X	X	X	X	V1
009	ILSW0003	ILSW0003S001	01/23/12	12:15	IEL-2	Intermittent stream flow	US	Primary	X		X	X		X	
009	ILSW0003	ILSW0003S001-RWQCB	01/23/12	12:15	IEL-2	Intermittent stream flow	US	RWQCB Split	X		X	X		X	
009	ILSW0004	ILSW0004S001	01/23/12	12:15	IEL-2	Intermittent stream flow	US	Primary	X		X	X		X	
009	ILSW0004	ILSW0004S001-RWQCB	01/23/12	12:15	IEL-2	Intermittent stream flow	US	RWQCB Split	X		X	X		X	
009	A2SW0001	A2SW0001S011	01/23/12	8:55	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	Primary			X		X	X	V1
009	A2SW0001	A2SW0001S011-RWQCB	01/23/12	8:55	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	RWQCB Split			X		X	X	V1

Table 2-1
Performance Monitoring Sample Collection and Analysis Matrix
2011/2012 Rainy Season
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Watershed	Object ID	Sample ID	Collection Date	Collection Time	Areas Monitored	Notes	Purpose	Sample Type	Cadmium (Total Recoverable) (Method 200.8)	Copper (Total Recoverable) (Method 200.8)	Lead (Total Recoverable) (Method 200.8)	Mercury (Total Recoverable) (Method 245.1)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Comments
009	A2SW0002	A2SW0002S019	01/23/12	3:30	A2LF-3/CM-1	Culvert outlet	DS	Primary			X		X	X	V1
009	A2SW0002	A2SW0002S019-RWQCB	01/23/12	3:30	A2LF-3/CM-1	Culvert outlet	DS	RWQCB Split			X		X	X	V1
009	B1SW0014	B1SW0014S003	03/17/12	9:45	All B-1, B-1 media filter	B-1 media filter under drain	DS	Primary	X	X	X	X	X	X	V1
009	A1SW0004	A1SW0004S017	03/17/12	10:00	A1LF/CM-9	Tributary drainage	US	Primary	X	X	X	X	X	X	2
009	A1SW0009	A1SW0009S003	03/17/12	9:30	A1LF/CM-9	CM-9 under drain	DS	Primary	X	X	X	X	X	X	2
009	A2SW0001	A2SW0001S012	03/17/12	8:40	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	Primary			X		X	X	V1
009	A2SW0002	A2SW0002S020	03/17/12	10:30	A2LF-3/CM-1	Culvert outlet	DS	Primary			X		X	X	V1
009	B1SW0008	B1SW0008S001	03/25/12	12:00	B1-1A	Intermittent stream flow	US	Primary	X				X	X	V1
009	B1SW0014	B1SW0014S004	03/25/12	10:00	All B-1, B-1 media filter	B-1 media filter under drain	DS	Primary	X	X	X	X	X	X	V1,V2
009	B1SW0014	B1SW0014S004-RWQCB	03/25/12	10:00	All B-1, B-1 media filter	B-1 media filter under drain	DS	RWQCB Split	X	X	X	X	X	X	V1
009	A2SW0001	A2SW0001S013	03/25/12	11:50	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	Primary			X		X	X	V1
009	A2SW0002	A2SW0002S021	03/25/12	12:20	A2LF-3/CM-1	Culvert outlet	DS	Primary			X		X	X	V1
009	LFSW0002	LFSW0002S002	03/25/12	14:00	CLTI-1A/-1B	Tributary drainage	US	Primary	X	X	X	X	X	X	V2
009	ILSW0003	ILSW0003S002	03/25/12	14:30	IEL-2	Intermittent stream flow	US	Primary	H		H	H		H	4
009	A1SW0004	A1SW0004S018	03/25/12	11:35	A1LF/CM-9	Tributary drainage	US	Primary	X	X	X	X	X	X	V1,V2
009	A1SW0009	A1SW0009S004	03/25/12	11:50	A1LF/CM-9	CM-9 under drain	DS	Primary	X	X	X	X	X	X	V1,V2
009	B1SW0008	B1SW0008S002	04/11/12	11:00	B1-1A	Intermittent stream flow	US	Primary	X				X	X	
009	B1SW0014	B1SW0014S005	04/11/12	9:40	All B-1, B-1 media filter	B-1 media filter under drain	DS	Primary	X	X	X	X	X	X	3
009	A1SW0004	A1SW0004S019	04/11/12	8:10	A1LF/CM-9	Tributary drainage	US	Primary	X	X	X	X	X	X	
009	A1SW0004	A1SW0004S019-RWQCB	04/11/12	8:10	A1LF/CM-9	Tributary drainage	US	RWQCB Split	X	X	X	X	X	X	
009	A1SW0009	A1SW0009S005	04/11/12	7:50	A1LF/CM-9	CM-9 under drain	DS	Primary	X	X	X	X	X	X	
009	A1SW0009	A1SW0009S005-RWQCB	04/11/12	7:50	A1LF/CM-9	CM-9 under drain	DS	RWQCB Split	X	X	X	X	X	X	
009	A2SW0001	A2SW0001S014	04/13/12	9:15	A2LF-3/CM-1	Sheetflow from road, west of CM-1	US	Primary			X		X	X	V1
009	ILSW0003	ILSW0003S003	04/13/12	10:10	IEL-2	Intermittent stream flow	US	Primary	X		X	X		X	
009	ILSW0003	LFSW0002S003	04/13/12	13:50	IEL-2	Intermittent stream flow	US	Primary		X	X		X	X	
009	A2SW0002	A2SW0002S022	04/13/12	8:25	A2LF-3/CM-1	Culvert outlet	DS	Primary			X		X	X	V1
009	A2SW0002	A2SW0002S022-RWQCB	04/13/12	8:25	A2LF-3/CM-1	Culvert outlet	DS	RWQCB Split			X		X	X	V1

Notes:

1 - Dioxins not analyzed due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling.
2 - Dioxins not analyzed due to laboratory error.
3 - Dioxins not analyzed due to bottle breaking during shipment.
4 - Sample not analyzed because the associated up- or downstream sample was not collected the same day.

DS - Downstream
H - Sample was collected and put on hold, and not analyzed.
RWQCB - Regional Water Quality Control Board
US - Upstream
V1 - Level II data validation performed (dioxins).
V2 - Level II data validation performed (copper).
X - Sample was analyzed.

OF008 Sample Totals

Primary - Collected	4
Primary - Analyzed	4
Primary - On Hold	0
RWQCB Split - Collected	0
RWQCB Split - Analzyed	0
RWQCB Split - On Hold	0
Total Analzyed	**4**

OF009 Sample Totals

Primary - Collected	38
Primary - Analyzed	38
Primary - On Hold	0
RWQCB Split - Collected	18
RWQCB Split - Analzyed	18
RWQCB Split - On Hold	0
Total Analzyed	**56**

Table 2-2a (HVS)
Performance Monitoring Sample Results, Outfall 008 Watershed
2011/2012 Rainy Season

		Object Name:	HZSW0007	HZSW0007	HZSW0014
		Sample Name:	HZSW0007S010	HZSW0007S011	HZSW0014S003
		Sample Date:	3/17/2012	4/13/2012	4/13/2012
		Sample Type:	Perf Mon	Perf Mon	Perf Mon
		Location:	DS (HVS)	DS (HVS)	US (HVS-2B-1, -2)
		Rain Event:	March 16-18, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**
DIOXINS					
TCDD TEQ_NoDNQ	µg/L	2.80E-08	Note 1	ND *	--
INORGANICS					
Copper	µg/L	14	9.2 *	**15 ***	7.9 *
Lead	µg/L	5.2	5.0 *	**19 ***	3.7 *
MISCELANEOUS					
Total Suspended Solids	mg/L	-	160 *	600 *	26 *
FIELD MEASUREMENTS					
Conductivity (Field)	mS	-	0.119 *	0.077 *	0.091 *
pH (Field)	pH Units	6.5 - 8.5	**4.78 ***	6.79 *	**6.11 ***
Temperature	°C	30	52.2 *	9.12 *	12.46 *
Turbidity (Field)	NTU	-	345 *	NR	60 *
RAINFALL MEASUREMENTS †					
Intensity (Ave) - Pre-Sampling	in/hr	-	0.080	0.036	0.028
Intensity (Ave) - Rain Event	in/hr	-	0.052	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.31	0.36	0.36
Intensity (Max) - Rain Event	in/hr	-	0.31	0.36	0.36
Total - Pre-Sampling	in	-	1.12	2.22	1.65
Total - Rain Event	in	-	1.51	2.37	2.37

Notes:

1 - Dioxins not analyzed due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-2b (CYN,DRG)
Performance Monitoring Sample Results, Outfall 008 Watershed
2011/2012 Rainy Season

		Object Name:	**HZSW0003**
		Sample Name:	**HZSW0003S012**
		Sample Date:	**4/13/2012**
		Sample Type:	**Perf Mon**
		Location:	**DS (CYN-1, DRG-1)**
		Rain Event:	**April 10-13, 2012**
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**
DIOXINS			
TCDD TEQ_NoDNQ	µg/L	2.80E-08	ND *
INORGANICS			
Copper	µg/L	14	1.8 J,DX*
Lead	µg/L	5.2	1.0 J,DX*
MISCELANEOUS			
Total Suspended Solids	mg/L	-	<10 *
FIELD MEASUREMENTS			
Conductivity (Field)	mS	-	0.079 *
pH (Field)	pH Units	6.5 - 8.5	6.88 *
Temperature	°C	30	10.06 *
Turbidity (Field)	NTU	-	26.2 *
RAINFALL MEASUREMENTS †			
Intensity (Ave) - Pre-Sampling	in/hr	-	0.037
Intensity (Ave) - Rain Event	in/hr	-	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.36
Intensity (Max) - Rain Event	in/hr	-	0.36
Total - Pre-Sampling	in	-	2.35
Total - Rain Event	in	-	2.37

Notes:

* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3a (B-1)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	B1SW0002	B1SW0002	B1SW0013	B1SW0013	B1SW0014	B1SW0014
		Sample Name:	B1SW0002S002	B1SW0002S002-RWQCB	B1SW0013S001	B1SW0013S001-RWQCB	B1SW0014S001	B1SW0014S001-RWQCB
		Sample Date:	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011
		Sample Type:	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split
		Location:	US (B1-2)	US (B1-2)	US (B-1)	US (B-1)	DS (B-1)	DS (B-1)
		Rain Event:	October 5, 2011	October 5, 2011	October 5, 2011	October 5, 2011	October 5, 2011	October 5, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS								
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**2.72E-06**	**6.19E-07**	**2.64E-06**	**2.48E-06**	**1.34E-07**	ND
INORGANICS								
Cadmium	µg/L	4.0	0.24 *	0.25 *	<0.10 *	<0.020 *	<0.10 *	<0.020 *
Copper	µg/L	14	10 *	9.3 *	5.9 *	5.3 *	5.9 *	5.3 *
Lead	µg/L	5.2	**12 ***	**10 ***	3.9 *	3.4 *	**6.9 ***	**6.4 ***
Mercury	µg/L	0.13	<0.10 *	<0.1 *	<0.10 *	<0.1 *	<0.10 *	<0.1 *
MISCELANEOUS								
Total Suspended Solids	mg/L	-	110 *	170 *	49 *	54.0 *	80 *	105 *
FIELD MEASUREMENTS								
Conductivity (Field)	mS	-	0.082 *	--	0.041 *	--	0.420 *	--
pH (Field)	pH Units	6.5 - 8.5	6.50 *	--	**5.21 ***	--	**5.49 ***	--
Temperature	°C	30	16.83 *	--	15.84 *	--	16.01 *	--
Turbidity (Field)	NTU	-	143 *	--	64.4 *	--	88.8 *	--
RAINFALL MEASUREMENTS †								
Intensity (Ave) - Pre-Sampling	in/hr	-	0.096	0.096	0.081	0.081	0.087	0.087
Intensity (Ave) - Rain Event	in/hr	-	0.090	0.090	0.090	0.090	0.090	0.090
Intensity (Max) - Pre-Sampling	in/hr	-	0.18	0.18	0.18	0.18	0.18	0.18
Intensity (Max) - Rain Event	in/hr	-	0.18	0.18	0.18	0.18	0.18	0.18
Total - Pre-Sampling	in	-	0.78	0.78	0.54	0.54	0.62	0.62
Total - Rain Event	in	-	0.90	0.90	0.90	0.90	0.90	0.90

Notes:

1 - Dioxins not analyzed due to bottle breaking during shipment.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3a (B-1)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	B1SW0015	B1SW0015	B1SW0014	B1SW0014	B1SW0014	B1SW0008	B1SW0014
		Sample Name:	B1SW0015S001	B1SW0015S001-RWQCB	B1SW0014S002	B1SW0014S002-RWQCB	B1SW0014S003	B1SW0008S001	B1SW0014S004
		Sample Date:	10/5/2011	10/5/2011	1/21/2012	1/21/2012	3/17/2012	3/25/2012	3/25/2012
		Sample Type:	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon	Perf Mon
		Location:	DS (B-1)	DS (B-1)	DS (B-1)	DS (B-1)	DS (B-1)	US (B1-1A)	DS (B-1)
		Rain Event:	October 5, 2011	October 5, 2011	January 21-23, 2012	January 21-23, 2012	March 16-18, 2012	March 25, 2012	March 25, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**1.82E-06**	ND	**2.80E-07**	**1.62E-07**	**1.45E-07**	**4.49E-08**	**1.79E-07**
INORGANICS									
Cadmium	µg/L	4.0	0.22 *	0.16 *	<0.10 *	<0.020 *	<0.10 *	0.22 J,DX*	<0.10 *
Copper	µg/L	14	9.0 *	8.1 *	3.5 *	2.2 *	4.1 *	--	3.3
Lead	µg/L	5.2	**5.9 ***	**5.3 ***	2.4 *	1.4 *	**6.7 ***	--	1.8 *
Mercury	µg/L	0.13	<0.10 *	<0.1 *	<0.10 *	<0.200 *	<0.10 *	--	<0.10 *
MISCELANEOUS									
Total Suspended Solids	mg/L	-	37 *	65.0 *	26 *	<10.0 *	71 *	280 BU*	27 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.106 *	--	0.127 *	--	0.027 *	0.027 *	0.084 *
pH (Field)	pH Units	6.5 - 8.5	**6.46 ***	--	6.99 *	--	**4.78 ***	**4.99 ***	**6.31 ***
Temperature	°C	30	16.25 *	--	21.09 *	--	13.32 *	10.46 *	10.29 *
Turbidity (Field)	NTU	-	173 *	--	47.5 *	--	130 *	634 *	55.4 *
RAINFALL MEASUREMENTS †									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.091	0.091	0.073	0.073	0.080	0.121	0.046
Intensity (Ave) - Rain Event	in/hr	-	0.090	0.090	0.017	0.017	0.052	0.079	0.079
Intensity (Max) - Pre-Sampling	in/hr	-	0.18	0.18	0.12	0.12	0.31	0.51	0.49
Intensity (Max) - Rain Event	in/hr	-	0.18	0.18	0.15	0.15	0.31	0.51	0.51
Total - Pre-Sampling	in	-	0.69	0.69	0.52	0.52	1.10	1.09	0.32
Total - Rain Event	in	-	0.90	0.90	1.06	1.06	1.51	2.12	2.12

Notes:

1 - Dioxins not analyzed due to bottle breaking during shipment.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3a (B-1)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	B1SW0014	B1SW0008	B1SW0014
		Sample Name:	B1SW0014S004-RWQCB	B1SW0008S002	B1SW0014S005
		Sample Date:	3/25/2012	4/11/2012	4/11/2012
		Sample Type:	Perf Mon Split	Perf Mon	Perf Mon
		Location:	DS (B-1)	US (B1-1A)	DS (B-1)
		Rain Event:	March 25, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**
DIOXINS					
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**4.30E-08**	1.10E-10 *	Note 1
INORGANICS					
Cadmium	µg/L	4.0	<0.10 *	<0.50 *	<0.20 *
Copper	µg/L	14	2.1 *	--	4.0 *
Lead	µg/L	5.2	1.1 *	--	3.0 *
Mercury	µg/L	0.13	<0.2 *	--	<0.10 *
MISCELANEOUS					
Total Suspended Solids	mg/L	-	28.0 *	57 *	46 *
FIELD MEASUREMENTS					
Conductivity (Field)	mS	-	--	1.053 *	0.053 *
pH (Field)	pH Units	6.5 - 8.5	--	7.15 *	7.92 *
Temperature	°C	30	--	11.98 *	11.55 *
Turbidity (Field)	NTU	-	--	109 *	50.3 *
RAINFALL MEASUREMENTS †					
Intensity (Ave) - Pre-Sampling	in/hr	-	0.046	0.076	0.091
Intensity (Ave) - Rain Event	in/hr	-	0.079	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.49	0.25	0.25
Intensity (Max) - Rain Event	in/hr	-	0.51	0.36	0.36
Total - Pre-Sampling	in	-	0.32	1.06	1.06
Total - Rain Event	in	-	2.12	2.37	2.37

Notes:

1 - Dioxins not analyzed due to bottle breaking during shipment.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3b (CM-9)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	ILSW0003	ILSW0003	ILSW0004	ILSW0004	ILSW0003
		Sample Name:	ILSW0003S001	ILSW0003S001-RWQCB	ILSW0004S001	ILSW0004S001-RWQCB	ILSW0003S003
		Sample Date:	1/23/2012	1/23/2012	1/23/2012	1/23/2012	4/13/2012
		Sample Type:	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon
		Location:	US (IEL-2)	US (IEL-2)	DS (IEL-2)	DS (IEL-2)	US (IEL-2)
		Rain Event:	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
INORGANICS							
Cadmium	µg/L	4.0	0.37 J,DX*	0.48 *	0.35 J,DX*	0.61 *	0.54 J,DX MB*
Lead	µg/L	5.2	2.1 *	3.6 *	2.6 *	3.5 *	3.5 *
Mercury	µg/L	0.13	<0.10 *	< 0.02 *	<0.10 *	< 0.02 *	<0.10 *
MISCELANEOUS							
Total Suspended Solids	mg/L	-	83 *	91.0 *	110 *	148 *	22 *
FIELD MEASUREMENTS							
Conductivity (Field)	mS	-	0.097 *	--	0.084 *	--	0.075 *
pH (Field)	pH Units	6.5 - 8.5	**6.23 ***	--	**6.33 ***	--	**6.46 ***
Temperature	°C	30	12.55 *	--	12.78 *	--	11.06 *
Turbidity (Field)	NTU	-	156 *	--	157 *	--	104 *
RAINFALL MEASUREMENTS †							
Intensity (Ave) - Pre-Sampling	in/hr	-	0.016	0.016	0.016	0.016	0.033
Intensity (Ave) - Rain Event	in/hr	-	0.017	0.017	0.017	0.017	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.15	0.15	0.15	0.15	0.36
Intensity (Max) - Rain Event	in/hr	-	0.15	0.15	0.15	0.15	0.36
Total - Pre-Sampling	in	-	0.93	0.93	0.93	0.93	1.97
Total - Rain Event	in	-	1.06	1.06	1.06	1.06	2.37

Notes:

* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3c (CM-9)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	A1SW0009	A1SW0009	A1SW0009	A1SW0009	A1SW0004	A1SW0009	A1SW0004
		Sample Name:	A1SW0009S001	A1SW0009S001-RWQCB	A1SW0009S002	A1SW0009S002-RWQCB	A1SW0004S017	A1SW0009S003	A1SW0004S018
		Sample Date:	10/5/2011	10/5/2011	1/23/2012	1/23/2012	3/17/2012	3/17/2012	3/25/2012
		Sample Type:	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon	Perf Mon
		Location:	DS (CM-9, A1LF)	DS (CM-9, A1LF)	DS (CM-9, A1LF)	DS (CM-9, A1LF)	US (CM-9, A1LF)	DS (CM-9, A1LF)	US (CM-9, A1LF)
		Rain Event:	October 5, 2011	October 5, 2011	January 21-23, 2012	January 21-23, 2012	March 16-18, 2012	March 16-18, 2012	March 25, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**3.59E-08**	ND	**1.11E-07**	**1.01E-07**	Note 1	Note 1	**7.68E-08**
INORGANICS									
Cadmium	µg/L	4.0	<0.10 *	<0.020 *	<0.10 *	<0.020 *	0.52 J,DX*	0.39 J,DX*	1.4 *
Copper	µg/L	14	7.9 *	7.5 *	6.1 *	5.2 *	6.7 *	**22 ***	**15**
Lead	µg/L	5.2	**9.1 ***	**8.2 ***	**8.2 ***	**6.8 ***	4.7 *	**36 ***	**15 ***
Mercury	µg/L	0.13	<0.10 *	<0.1 *	<0.10 *	<0.02 *	<0.10 *	<0.10 *	<0.10 *
MISCELANEOUS									
Total Suspended Solids	mg/L	-	11 *	42.0 *	48 *	37.0 *	320 *	450 *	300 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.066 *	--	0.055 *	--	0.092 *	0.030 *	0.151 *
pH (Field)	pH Units	6.5 - 8.5	6.70 *	--	**5.87 ***	--	**5.83 ***	**5.77 ***	**6.44 ***
Temperature	°C	30	17.66 *	--	12.83 *	--	13.46 *	14.07 *	11.17 *
Turbidity (Field)	NTU	-	88.1 *	--	72.9 *	--	NR	NR	337 *
RAINFALL MEASUREMENTS †									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.091	0.091	0.016	0.016	0.080	0.080	0.113
Intensity (Ave) - Rain Event	in/hr	-	0.090	0.090	0.017	0.017	0.052	0.052	0.079
Intensity (Max) - Pre-Sampling	in/hr	-	0.18	0.18	0.15	0.15	0.31	0.31	0.49
Intensity (Max) - Rain Event	in/hr	-	0.18	0.18	0.15	0.15	0.31	0.31	0.51
Total - Pre-Sampling	in	-	0.90	0.90	0.90	0.90	1.12	1.08	0.97
Total - Rain Event	in	-	0.90	0.90	1.06	1.06	1.51	1.51	2.12

Notes:

1 - Dioxins not analyzed due to laboratory error.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3c (CM-9)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	A1SW0009	A1SW0004	A1SW0009	A1SW0009
		Sample Name:	A1SW0009S004	A1SW0004S019	A1SW0009S005	A1SW0009S005-RWQCB
		Sample Date:	3/25/2012	4/11/2012	4/11/2012	4/11/2012
		Sample Type:	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split
		Location:	DS (CM-9, A1LF)	US (CM-9, A1LF)	DS (CM-9, A1LF)	DS (CM-9, A1LF)
		Rain Event:	March 25, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS						
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**1.35E-07**	1.10E-10 *	1.70E-10 *	1.45E-10 *
INORGANICS						
Cadmium	µg/L	4.0	0.11 J,DX*	<0.50 *	<0.20 *	0.11 *
Copper	µg/L	14	9.8	7.1 J,DX*	6.1 *	6.0 *
Lead	µg/L	5.2	**16 ***	<1.0 *	1.0 J,DX*	0.86 *
Mercury	µg/L	0.13	<0.10 *	<0.10 *	<0.10 *	<0.20 *
MISCELANEOUS						
Total Suspended Solids	mg/L	-	110 *	27 *	16 *	10.0 *
FIELD MEASUREMENTS						
Conductivity (Field)	mS	-	0.066 *	0.190 *	0.143 *	--
pH (Field)	pH Units	6.5 - 8.5	6.73 *	7.72 *	7.31 *	--
Temperature	°C	30	11.50 *	11.06 *	11.72 *	--
Turbidity (Field)	NTU	-	251 *	6.4 *	10.2 *	--
RAINFALL MEASUREMENTS †						
Intensity (Ave) - Pre-Sampling	in/hr	-	0.118	0.104	0.108	0.108
Intensity (Ave) - Rain Event	in/hr	-	0.079	0.037	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.49	0.25	0.25	0.25
Intensity (Max) - Rain Event	in/hr	-	0.51	0.36	0.36	0.36
Total - Pre-Sampling	in	-	1.04	1.06	1.06	1.06
Total - Rain Event	in	-	2.12	2.37	2.37	2.37

Notes:

1 - Dioxins not analyzed due to laboratory error.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3d (CTLI-1)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	LFSW0002	LFSW0002
		Sample Name:	LFSW0002S002	LFSW0002S003
		Sample Date:	3/25/2012	4/13/2012
		Sample Type:	Perf Mon	Perf Mon
		Location:	DS (CTLI)	DS (CTLI)
		Rain Event:	March 25, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**
DIOXINS				
TCDD TEQ_NoDNQ	µg/L	2.80E-08	ND *	ND *
INORGANICS				
Cadmium	µg/L	4.0	--	--
Copper	µg/L	14	7.3	4.3 *
Lead	µg/L	5.2	**6.7 ***	3.7 *
Mercury	µg/L	0.13	--	--
MISCELANEOUS				
Total Suspended Solids	mg/L	-	87 *	46 *
FIELD MEASUREMENTS				
Conductivity (Field)	mS	-	0.075 *	0.089 *
pH (Field)	pH Units	6.5 - 8.5	6.54 *	**6.23 ***
Temperature	°C	30	10.28 *	10.65 *
Turbidity (Field)	NTU	-	478 *	32.8 *
RAINFALL MEASUREMENTS †				
Intensity (Ave) - Pre-Sampling	in/hr	-	0.157	0.037
Intensity (Ave) - Rain Event	in/hr	-	0.079	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.51	0.36
Intensity (Max) - Rain Event	in/hr	-	0.51	0.36
Total - Pre-Sampling	in	-	1.73	2.37
Total - Rain Event	in	-	2.12	2.37

Notes:

* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3e (CM-1)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	A2SW0001	A2SW0001	A2SW0002	A2SW0001	A2SW0001	A2SW0001
		Sample Name:	A2SW0001S008	A2SW0001S008-RWQCB	A2SW0002S016	A2SW0001S009	A2SW0001S009-RWQCB	A2SW0001S010
		Sample Date:	10/5/2011	10/5/2011	11/12/2011	11/20/2011	11/20/2011	12/12/2011
		Sample Type:	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon
		Location:	US (CM-1, A2LF-3)	US (CM-1, A2LF-3)	DS (CM-1, A2LF-3)	US (CM-1, A2LF-3)	US (CM-1, A2LF-3)	US (CM-1, A2LF-3)
		Rain Event:	October 5, 2011	October 5, 2011	November 11-12, 2011	November 19-21, 2011	November 19-21, 2011	December 12-17, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS								
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**3.60E-07**	ND	**5.64E-08**	**6.70E-08**	**3.63E-08**	**5.69E-08**
INORGANICS								
Lead	µg/L	5.2	**40 ***	**36 ***	1.7 *	3.8 *	3.0 *	**5.4 ***
MISCELANEOUS								
Total Suspended Solids	mg/L	-	200 *	222 *	11 *	5.0 J *	12.0 *	12 *
FIELD MEASUREMENTS								
Conductivity (Field)	mS	-	0.020 *	--	0.185 *	0.024 *	--	1.8 *
pH (Field)	pH Units	6.5 - 8.5	**6.03 ***	--	**4.82 ***	**4.72 ***	--	**5.92 ***
Temperature	°C	30	15.72 *	--	14.12 *	11.29 *	--	7.5 *
Turbidity (Field)	NTU	-	200 *	--	0 *	17.9 *	--	55 *
RAINFALL MEASUREMENTS †								
Intensity (Ave) - Pre-Sampling	in/hr	-	0.090	0.090	0.065	0.041	0.041	0.068
Intensity (Ave) - Rain Event	in/hr	-	0.090	0.090	0.035	0.031	0.031	0.006
Intensity (Max) - Pre-Sampling	in/hr	-	0.18	0.18	0.26	0.29	0.29	0.21
Intensity (Max) - Rain Event	in/hr	-	0.18	0.18	0.26	0.29	0.29	0.21
Total - Pre-Sampling	in	-	0.67	0.67	0.74	0.74	0.74	0.56
Total - Rain Event	in	-	0.90	0.90	0.76	0.77	0.77	0.80

Notes:

* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3e (CM-1)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
Page 2 of 3

		Object Name:	A2SW0002	A2SW0001	A2SW0001	A2SW0002	A2SW0002	A2SW0001	A2SW0002
		Sample Name:	A2SW0002S017	A2SW0001S011	A2SW0001S011-RWQCB	A2SW0002S019	A2SW0002S019-RWQCB	A2SW0001S012	A2SW0002S020
		Sample Date:	12/12/2011	1/23/2012	1/23/2012	1/23/2012	1/23/2012	3/17/2012	3/17/2012
		Sample Type:	Perf Mon	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon Split	Perf Mon	Perf Mon
		Location:	DS (CM-1, A2LF-3)	US (CM-1, A2LF-3)	US (CM-1, A2LF-3)	DS (CM-1, A2LF-3)	DS (CM-1, A2LF-3)	US (CM-1, A2LF-3)	DS (CM-1, A2LF-3)
		Rain Event:	December 12-17, 2011	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	March 16-18, 2012	March 16-18, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**8.28E-08**	**1.12E-07**	**7.69E-08**	2.60E-09	**1.02E-07**	**1.99E-06**	**4.33E-06**
INORGANICS									
Lead	µg/L	5.2	**6.3 ***	**5.4 ***	4.2 *	3.2 *	2.9 *	**13 ***	**14 ***
MISCELANEOUS									
Total Suspended Solids	mg/L	-	18 *	28 *	16.0 *	8.0 J,DX*	<10.0 *	36 *	76 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.185 *	7.4 *	--	0.047 *	--	0.011 *	0.025 *
pH (Field)	pH Units	6.5 - 8.5	**5.80 ***	**5.68 ***	--	5.54 *	--	**5.99 ***	**6.20 ***
Temperature	°C	30	7.6 *	10.2 *	--	9.93 *	--	13.0 *	13.6 *
Turbidity (Field)	NTU	-	104 *	30.5 *	--	82.0 *	--	135 *	104 *
RAINFALL MEASUREMENTS †									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.069	0.012	0.012	0.010	0.010	0.075	0.080
Intensity (Ave) - Rain Event	in/hr	-	0.006	0.017	0.017	0.017	0.017	0.052	0.052
Intensity (Max) - Pre-Sampling	in/hr	-	0.21	0.12	0.12	0.12	0.12	0.31	0.31
Intensity (Max) - Rain Event	in/hr	-	0.21	0.15	0.15	0.15	0.15	0.31	0.31
Total - Pre-Sampling	in	-	0.54	0.70	0.70	0.53	0.53	0.95	1.16
Total - Rain Event	in	-	0.80	1.06	1.06	1.06	1.06	1.51	1.51

Notes:

* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 2-3e (CM-1)
Performance Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name:	A2SW0001	A2SW0002	A2SW0001	A2SW0002	A2SW0002
		Sample Name:	A2SW0001S013	A2SW0002S021	A2SW0001S014	A2SW0002S022	A2SW0002S022-RWQCB
		Sample Date:	3/25/2012	3/25/2012	4/13/2012	4/13/2012	4/13/2012
		Sample Type:	Perf Mon	Perf Mon	Perf Mon	Perf Mon	Perf Mon Split
		Location:	US (CM-1, A2LF-3)	DS (CM-1, A2LF-3)	US (CM-1, A2LF-3)	DS (CM-1, A2LF-3)	DS (CM-1, A2LF-3)
		Rain Event:	March 25, 2012	March 25, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS							
TCDD TEQ_NoDNQ	µg/L	2.80E-08	**4.41E-07**	**4.10E-07**	**1.24E-07**	**8.22E-08**	**2.65E-06**
INORGANICS							
Lead	µg/L	5.2	**12 ***	**9.4 ***	**21 ***	3.7 *	3.3 *
MISCELANEOUS							
Total Suspended Solids	mg/L	-	51 *	36 *	36 *	14 *	12.0 *
FIELD MEASUREMENTS							
Conductivity (Field)	mS	-	0.020 *	0.020 *	0.056 *	0.081 *	--
pH (Field)	pH Units	6.5 - 8.5	**4.23 ***	**4.62 ***	**5.85 ***	**5.67 ***	--
Temperature	°C	30	11.51 *	11.37 *	11.26 *	11.66 *	--
Turbidity (Field)	NTU	-	55.9 *	50.8 *	946 *	28.1 *	--
RAINFALL MEASUREMENTS †							
Intensity (Ave) - Pre-Sampling	in/hr	-	0.118	0.135	0.028	0.037	0.037
Intensity (Ave) - Rain Event	in/hr	-	0.079	0.079	0.037	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.49	0.51	0.36	0.36	0.36
Intensity (Max) - Rain Event	in/hr	-	0.51	0.51	0.36	0.36	0.36
Total - Pre-Sampling	in	-	1.04	1.26	1.65	2.37	2.37
Total - Rain Event	in	-	2.12	2.12	2.37	2.37	2.37

Notes:

* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Upstream Sample Location
Downstream Sample Location
Results above NPDES Permit Limit in bold with darker shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-1
BMP Monitoring Sample Collection and Analysis Matrix
2011/2012 Rainy Season

Watershed	Object ID	Sample ID	Collection Date	Collection Time	Areas Monitored	Notes	Metals (Total Recoverable) (Method 200.7/200.8)	Metals (Total Dissolved) (Method 200.7/200.8)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Particle Size Distribution (Method ASTM D422)	Turbidity (Method 180.1)	Comments
008	HZBMP0001	HZBMP0001S005	03/17/12	10:00	HVS	HVS tributary drainage; co-located with HZSW0007	X	X		X	X	X	1,P,V1,V3
008	HZBMP0001	HZBMP0001S006	04/13/12	11:00	HVS	HVS tributary drainage; co-located with HZSW0007	X	X	X	X	X	X	P,V1
008	HZBMP0003	HZBMP0003S006	04/13/12	13:00	CYN, DRG	CYN/DRG tributary drainage; co-located with HZSW0003	X	X	X	X	X	X	P,V1
009	B1BMP0003	B1BMP0003S001	10/05/11	10:10	B-1, Parking Lot	Culvert inlet	X	X	X	X	X	X	V1
009	EVBMP0001	EVBMP0001S003	10/05/11	10:50	ELV, Helipad Road	Culvert inlet	X	X	X	X	X	X	V1
009	EVBMP0002	EVBMP0002S007	10/05/11	10:05	Helipad	Spillway inlet	X	X	X	X	X	X	V1
009	ILBMP0001	ILBMP0001S003	10/05/11	13:43	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1
009	ILBMP0002	ILBMP0002S003	10/05/11	13:20	CM-9, IEL, Area II Road	Culvert inlet	X	X	X	X	X	X	V1
009	ILBMP0001	ILBMP0001S004	11/12/11	8:00	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1
009	B1BMP0004	B1BMP0004S001	11/20/11	14:28	B-1 Media Filter	Tributary drainage	X	X	X	X	X	X	V1
009	B1BMP0005	B1BMP0005S001	11/20/11	14:11	B-1 Media Filter	Swale along road downstream of retention basin discharge	X	X	X	X	X	X	V1
009	EVBMP0003	EVBMP0003S001	11/20/11	15:10	CM-1, ELV, Area II Road	Sheetflow along road; Co-located with A2SW0001	X	X	X	X	X	X	P,V1
009	A2BMP0003	A2BMP0003S001	12/12/11	13:00	AP/STP, ELV, A2LF	Tributary drainage	X	X	X	X	X	X	V1
009	B1BMP0003	B1BMP0003S002	12/12/11	9:45	B-1, Parking Lot	Culvert inlet	X	X	X	X	X	X	V1
009	B1BMP0004-5-Comp	B1BMP0004-5-Comp-S001	12/12/11	10:20, 10:55	B-1 Media Filter	Composite of B1BMP0004 and B1BMP005	X	X	X	X	X	X	V1
009	EVBMP0001	EVBMP0001S004	12/12/11	11:00	ELV, Helipad Road	Culvert inlet	X	X	X	X	X	X	V1
009	EVBMP0002	EVBMP0002S008	12/12/11	9:05	Helipad	Spillway inlet	X	X	X	X	X	X	V1
009	EVBMP0003	EVBMP0003S002	12/12/11	10:10	CM-1, ELV, Area II Road	Sheetflow along road; Co-located with A2SW0001	X	X	X	X	X	X	P,V1
009	ILBMP0001	ILBMP0001S005	12/12/11	8:50	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1
009	LPBMP0001	LPBMP0001S003	12/12/11	9:20	Soil Stockpile Area	Sheetflow on asphalt	X	X	X	X	X	X	V1
009	LXBMP0004	LXBMP0004S001	12/12/11	10:45	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1
009	LXBMP0005	LXBMP0005S001	12/12/11	9:55	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1
009	A2BMP0003	A2BMP0003S002	01/21/12	10:00	AP/STP, ELV, A2LF	Tributary drainage	X	X	X	X	X	X	V1
009	B1BMP0004-5-Comp	B1BMP0004-5-Comp-S002	01/21/12	8:28	B-1 Media Filter	Composite of B1BMP0004 and B1BMP005	X	X	X	X	X	X	V1
009	EVBMP0002	EVBMP0002S009	01/21/12	8:45	Helipad	Spillway inlet	X	X	X	X	X	X	V1
009	ILBMP0001	ILBMP0001S006	01/21/12	9:20	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1

Table 3-1
BMP Monitoring Sample Collection and Analysis Matrix
2011/2012 Rainy Season

Watershed	Object ID	Sample ID	Collection Date	Collection Time	Areas Monitored	Notes	Metals (Total Recoverable) (Method 200.7/200.8)	Metals (Total Dissolved) (Method 200.7/200.8)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Particle Size Distribution (Method ASTM D422)	Turbidity (Method 180.1)	Comments
009	ILBMP0002	ILBMP0002S004	01/21/12	8:30	CM-9, IEL, Area II Road	Culvert inlet	H	H	H	H	H	H	4
009	B1BMP0003	B1BMP0003S003	01/23/12	8:10	B-1, Parking Lot	Culvert inlet	X	X	X	X	X	X	V1
009	EVBMP0001	EVBMP0001S005	01/23/12	9:55	ELV, Helipad Road	Culvert inlet	X	X	X	X	X	X	V1
009	EVBMP0003	EVBMP0003S003	01/23/12	9:05	CM-1, ELV, Area II Road	Sheetflow along road; Co-located with A2SW0001	X	X	X	X	X	X	P,V1
009	ILBMP0002	ILBMP0002S004	01/23/12	8:30	CM-9, IEL, Area II Road	Culvert inlet	X	X	X	X	X	X	V1
009	LPBMP0001	LPBMP0001S004	01/23/12	8:35	Soil Stockpile Area	Sheetflow on asphalt	X	X	X	X	X	X	V1
009	LXBMP0004	LXBMP0004S002	01/23/12	11:00	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1
009	LXBMP0005	LXBMP0005S002	01/23/12	10:45	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1
009	ILBMP0001	ILBMP0001S007	02/27/12	13:45	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1,V2
009	LPBMP0001	LPBMP0001S005	02/27/12	12:50	Soil Stockpile Area	Sheetflow on asphalt	X	X	X	X	X	X	V1,V2
009	A1BMP0002	A1BMP0002S001	03/17/12	9:45	CM-9, A1LF, IEL	Tributary drainage; co-located with A1SW0004	X	X		X	X	X	3,P,V1,V3
009	A2BMP0003	A2BMP0003S003	03/17/12	9:30	AP/STP, ELV, A2LF	Tributary drainage	X	X	X	X	X	X	V1,V3
009	A2BMP0004	A2BMP0004S001	03/17/12	10:35	Helipad	Tributary drainage	X	X	X	X	X	X	V1
009	A2BMP0005	A2BMP0005S001	03/17/12	10:00	AP/STP, ELV	Tributary drainage	X	X	X	X	X	X	V1
009	B1BMP0003	B1BMP0003S004	03/17/12	8:25	B-1, Parking Lot	Culvert inlet	X	X	X	X	X	X	V1
009	B1BMP0004-5-Comp	B1BMP0004-5-Comp-S003	03/17/12	9:05	B-1 Media Filter	Composite of B1BMP0004 and B1BMP005	X	X	X	X	X	X	V1
009	BGBMP0003	BGBMP0003S003	03/17/12	13:15	Sage Ranch	Tributary drainage	X	X	X	X	X	X	V1
009	EVBMP0001	EVBMP0001S006	03/17/12	9:11	ELV, Helipad Road	Culvert inlet	X	X	X	X	X	X	V1
009	EVBMP0002	EVBMP0002S010	03/17/12	9:00	Helipad	Spillway inlet	X	X	X	X	X	X	V1
009	EVBMP0003	EVBMP0003S004	03/17/12	8:40	CM-1, ELV, Area II Road	Sheetflow along road; Co-located with A2SW0001	X	X	X	X		X	2,P,V1
009	ILBMP0001	ILBMP0001S008	03/17/12	10:30	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1
009	ILBMP0002	ILBMP0002S005	03/17/12	8:45	CM-9, IEL, Area II Road	Culvert inlet	X	X	X	X	X	X	V1
009	LPBMP0001	LPBMP0001S006	03/17/12	10:10	Soil Stockpile Area	Sheetflow on asphalt	X	X	X	X	X	X	V1
009	LXBMP0005	LXBMP0005S003	03/17/12	13;30	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1
009	LXBMP0004	LXBMP0004S003	03/17/12	9:02	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1
009	A1BMP0002	A1BMP0002S002	03/25/12	11:40	CM-9, A1LF, IEL	Tributary drainage; co-located with A1SW0004	X	X	X	X	X	X	P,V1,V2,V3
009	A2BMP0003	A2BMP0003S004	03/25/12	13:35	AP/STP, ELV, A2LF	Tributary drainage	X	X	X	X	X	X	V1,V2
009	A2BMP0004	A2BMP0004S002	03/25/12	13:15	Helipad	Tributary drainage	X	X	X	X	X	X	V1,V2
009	A2BMP0005	A2BMP0005S002	03/25/12	12:40	AP/STP, ELV	Tributary drainage	X	X	X	X	X	X	V1,V2

Table 3-1
BMP Monitoring Sample Collection and Analysis Matrix
2011/2012 Rainy Season
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Watershed	Object ID	Sample ID	Collection Date	Collection Time	Areas Monitored	Notes	Metals (Total Recoverable) (Method 200.7/200.8)	Metals (Total Dissolved) (Method 200.7/200.8)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Particle Size Distribution (Method ASTM D422)	Turbidity (Method 180.1)	Comments
009	APBMP0001	APBMP0001S001	03/25/12	14:40	AP/STP, ELV	Culvert inlet	X	X	X	X	X	X	V1,V2
009	B1BMP0003	B1BMP0003S005	03/25/12	9:45	B-1, Parking Lot	Culvert inlet	X	X	X	X	X	X	V1,V2
009	B1BMP0004-5-Comp	B1BMP0004-5-Comp-S004	03/25/12	11:00, 11:30	B-1 Media Filter	Composite of B1BMP0004 and B1BMP005	X	X	X	X	X	X	V1,V2
009	BGBMP0003	BGBMP0003S004	03/25/12	12:30	Sage Ranch	Tributary drainage	X	X	X	X	X	X	V1,V2
009	EVBMP0001	EVBMP0001S007	03/25/12	11:25	ELV, Helipad Road	Culvert inlet	X	X	X	X	X	X	V1,V2,V3
009	EVBMP0002	EVBMP0002S011	03/25/12	11:00	Helipad	Spillway inlet	X	X	X	X	X	X	V1,V2
009	EVBMP0003	EVBMP0003S005	03/25/12	11:50	CM-1, ELV, Area II Road	Sheetflow along road; Co-located with A2SW0001	X	X	X	X	X	X	P,V1,V2
009	ILBMP0001	ILBMP0001S009	03/25/12	9:15	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1,V2
009	ILBMP0002	ILBMP0002S006	03/25/12	11:15	CM-9, IEL, Area II Road	Culvert inlet	X	X	X	X	X	X	V1,V2
009	LPBMP0001	LPBMP0001S007	03/25/12	9:30	Soil Stockpile Area	Sheetflow on asphalt	X	X	X	X	X	X	V1,V2
009	LXBMP0003	LXBMP0003S006	03/25/12	12:20	Sage Ranch	Tributary drainage	X	X	X	X	X	X	V1,V2
009	LXBMP0004	LXBMP0004S004	03/25/12	12:10	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1,V2
009	LXBMP0005	LXBMP0005S004	03/25/12	12:25	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1,V2
009	A1BMP0002	A1BMP0002S003	04/11/12	8:12	CM-9, A1LF, IEL	Tributary drainage; co-located with A1SW0004	X	X	X	X	X	X	P, V1
009	A2BMP0003	A2BMP0003S005	04/11/12	9:00	AP/STP, ELV, A2LF	Tributary drainage	X	X	X	X	X	X	V1
009	A2BMP0004	A2BMP0004S003	04/11/12	8:45	Helipad	Tributary drainage	X	X	X	X	X	X	V1
009	A2BMP0005	A2BMP0005S003	04/11/12	8:05	AP/STP, ELV	Tributary drainage	X	X	X	X	X	X	V1
009	B1BMP0004-5-Comp	B1BMP0004-5-Comp-S005	04/11/12	10:15	B-1 Media Filter	Composite of B1BMP0004 and B1BMP005	X	X	X	X	X	X	V1
009	EVBMP0002	EVBMP0002S012	04/11/12	7:45	Helipad	Spillway inlet	X	X	X	X	X	X	V1
009	ILBMP0001	ILBMP0001S010	04/11/12	8:45	IEL	Culvert discharge under spillway chute	X	X	X	X	X	X	V1
009	APBMP0001	APBMP0001S002	04/13/12	10:45	AP/STP, ELV	Culvert inlet	X	X	X	X	X	X	V1
009	B1BMP0003	B1BMP0003S006	04/13/12	7:45	B-1, Parking Lot	Culvert inlet	X	X	X	X	X	X	V1
009	BGBMP0002	BGBMP0002S004	04/13/12	14:15	CM-3, Soil Borrow Area	Tributary drainage	X	X	X	X	X	X	V1
009	BGBMP0003	BGBMP0003S005	04/13/12	9:50	Sage Ranch	Tributary drainage	X	X	X	X	X	X	V1
009	BGBMP0004	BGBMP0004S003	04/13/12	13:15	Sage Ranch	Tributary drainage	X	X	X	X	X	X	V1
009	EVBMP0001	EVBMP0001S008	04/13/12	10:15	ELV, Helipad Road	Culvert inlet	X	X	X	X	X	X	V1
009	EVBMP0003	EVBMP0003S006	04/13/12	9:30	CM-1, ELV, Area II Road	Sheetflow along road; Co-located with A2SW0001	X	X	X	X	X	X	P, V1
009	ILBMP0002	ILBMP0002S007	04/13/12	11:15	CM-9, IEL, Area II Road	Culvert inlet	X	X	X	X	X	X	V1
009	LPBMP0001	LPBMP0001S008	04/13/12	7:30	Soil Stockpile Area	Sheetflow on asphalt	X	X	X	X	X	X	V1
009	LXBMP0004	LXBMP0004S005	04/13/12	7:40	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1

Table 3-1
BMP Monitoring Sample Collection and Analysis Matrix
2011/2012 Rainy Season

Watershed	Object ID	Sample ID	Collection Date	Collection Time	Areas Monitored	Notes	Metals (Total Recoverable) (Method 200.7/200.8)	Metals (Total Dissolved) (Method 200.7/200.8)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540)	Particle Size Distribution (Method ASTM D422)	Turbidity (Method 180.1)	Comments
009	LXBMP0005	LXBMP0005S005	04/13/12	10:20	LOX	Sheetflow downstream of the LOX BMP (break in sandbag berm)	X	X	X	X	X	X	V1
009	LXBMP0006	LXBMP0006S001	04/13/12	9:30	LOX	Sheetflow along dirt road	X	X	X	X	X	X	V1

Notes:

1 - Dioxins not analyzed due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling.
2 - Particle size distribution not analyzed due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling.
3 - Dioxins not analyzed due to laboratory error.
4 - Sample not analyzed because the associated up- or downstream sample was not collected the same day.
H - Sample was collected and put on hold, and not analyzed.
P - Used Cd, Cu, Hg, Pb and/or Dioxin analysis from co-located performance monitoring sample.

V1 - Level II data validation performed (dioxins).
V2 - Level II data validation performed (copper).
V3 - Level II data validation performed (silver).
X - Sample was analyzed.

OF008 Sample Totals

Collected	3
Analyzed	3
On Hold	0
Total Analzyed	**3**

OF009 Sample Totals

Collected	84
Analyzed	83
On Hold	1
Total Analzyed	**83**

Table 3-2
BMP Monitoring Sample Results, Outfall 008 Watershed
2011/2012 Rainy Season
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		Object Name Sample Name Sample Date	HZBMP0001 HZBMP0001S005 3/17/2012	HZSW0007 HZSW0007S010 3/17/2012	HZBMP0001 HZBMP0001S006 4/13/2012	HZSW0007 HZSW0007S011 4/13/2012	HZBMP0003 HZBMP0003S006 4/13/2012	HZSW0003 HZSW0003S012 4/13/2012
		Sample Type Location Rain Event	BMP HVS March 16-18, 2012	Perf Mon DS (HVS) March 16-18, 2012	BMP HVS April 10-13, 2012	Perf Mon DS (HVS) April 10-13, 2012	BMP CYN, DRG April 10-13, 2012	Perf Mon DS (CYN-1, DRG-1) April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS								
TCDD TEQ_NoDNQ	µg/L	2.80E-08	*see HZSW0007S010*	Note 1	*see HZSW0007S011*	ND	*see HZSW0007S012*	ND
INORGANICS								
Aluminum	mg/L	-	7400 *	--	24000 *	--	690 *	--
Aluminum, dissolved	mg/L	-	450 *	--	490 *	--	340 *	--
Antimony	µg/L	6.0	0.65 J,DX *	--	<1.5 *	--	<0.60 *	--
Antimony, dissolved	µg/L	-	0.60 J,DX *	--	0.30 J,DX*	--	0.45 J,DX*	--
Arsenic	µg/L	-	<7.0 *	--	11 *	--	<7.0 *	--
Arsenic, dissolved	µg/L	-	<7.0 *	--	<7.0 *	--	<7.0 *	--
Barium	mg/L	-	0.066 *	--	0.22 *	--	0.011 *	--
Barium, dissolved	mg/L	-	0.018 *	--	0.0098 J,DX*	--	0.0084 J,DX*	--
Beryllium	µg/L	-	<0.90 *	--	1.7 J,DX*	--	<0.90 *	--
Beryllium, dissolved	µg/L	-	<0.90 *	--	<0.90 *	--	<0.90 *	--
Boron	mg/L	1.0	0.076 J,DX MB *	--	0.052 *	--	0.051 *	--
Boron, dissolved	mg/L	-	0.11 *	--	0.030 J,DX MB*	--	0.047 J,DX MB*	--
Cadmium	µg/L	4.0	<0.20 *	--	0.60 J,DX MB*	--	<0.20 *	--
Cadmium, dissolved	µg/L	-	<0.20 *	--	<0.10 *	--	<0.10 *	--
Chromium	µg/L	-	13 *	--	40 *	--	<2.0 *	--
Chromium, dissolved	µg/L	-	<2.0 *	--	<2.0 *	--	<2.0 *	--
Cobalt	µg/L	-	3.2 J,DX *	--	13 *	--	<2.0 *	--
Cobalt, dissolved	µg/L	-	<2.0 *	--	<2.0 *	--	<2.0 *	--
Copper	µg/L	14	*see HZSW0007S010*	9.2 *	*see HZSW0007S011*	**15 ***	*see HZSW0007S012*	1.8 J,DX*
Copper, dissolved	µg/L	-	6.7 *	--	2.1 *	--	1.7 J,DX*	--
Iron	mg/L	-	7.8 *	--	30 *	--	0.66 *	--
Iron, dissolved	mg/L	-	0.33 *	--	0.37 *	--	0.25 *	--
Lead	µg/L	5.2	*see HZSW0007S010*	5.0 *	*see HZSW0007S011*	**19 ***	*see HZSW0007S012*	1.0 J,DX*
Lead, dissolved	µg/L	-	0.47 J,DX *	--	0.20 J,DX*	--	0.23 J,DX*	--
Manganese	µg/L	-	150 *	--	670 *	--	15 J,DX*	--
Manganese, dissolved	µg/L	-	15 J,DX *	--	<7.0 *	--	<7.0 *	--
Mercury	µg/L	0.13	<0.10 *	--	<0.10 *	--	<0.10 *	--
Mercury, dissolved	µg/L	-	0.12 J,DX *	--	<0.10 *	--	<0.10 *	--
Nickel	µg/L	100	9.4 J,DX *	--	27 *	--	3.8 J,DX*	--
Nickel, dissolved	µg/L	-	<2.0 *	--	2.2 J,DX*	--	2.7 J,DX*	--
Selenium	µg/L	-	<1.0 *	--	<2.5 *	--	<1.0 *	--
Selenium, dissolved	µg/L	-	<1.0 *	--	0.52 J,DX*	--	0.68 J,DX*	--
Silver	µg/L	-	1.9 J,DX	--	<0.50 *	--	<0.20 *	--
Silver, dissolved	µg/L	-	<0.20 *	--	<0.10 *	--	<0.10 *	--
Thallium	µg/L	2.0	<0.40 *	--	<1.0 *	--	<0.40 *	--
Thallium, dissolved	µg/L	-	<0.40 *	--	<0.20 *	--	<0.20 *	--
Vanadium	µg/L	-	20 *	--	54 *	--	<3.0 *	--
Vanadium, dissolved	µg/L	-	<3.0 *	--	<3.0 *	--	<3.0 *	--
Zinc	µg/L	159	26 J,DX *	--	110 *	--	<8.0 *	--
Zinc, Dissolved	µg/L	-	<8.0 *	--	7.5 J,DX*	--	5.8 J,DX*	--

Table 3-2
BMP Monitoring Sample Results, Outfall 008 Watershed
2011/2012 Rainy Season

		Object Name Sample Name Sample Date	HZBMP0001 HZBMP0001S005 3/17/2012	HZSW0007 HZSW0007S010 3/17/2012	HZBMP0001 HZBMP0001S006 4/13/2012	HZSW0007 HZSW0007S011 4/13/2012	HZBMP0003 HZBMP0003S006 4/13/2012	HZSW0003 HZSW0003S012 4/13/2012
		Sample Type Location Rain Event	BMP HVS March 16-18, 2012	Perf Mon DS (HVS) March 16-18, 2012	BMP HVS April 10-13, 2012	Perf Mon DS (HVS) April 10-13, 2012	BMP CYN, DRG April 10-13, 2012	Perf Mon DS (CYN-1, DRG-1) April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC								
Total Suspended Solids	mg/L	-	*see HZSW0007S010*	160 *	*see HZSW0007S011*	600 *	*see HZSW0007S012*	<10 *
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--
Turbidity	NTU	-	490 BU *	--	750 *	--	15 *	--
FIELD MEASUREMENTS								
Conductivity (Field)	mS	-	*see HZSW0007S010*	0.119 *	*see HZSW0007S011*	0.077 *	*see HZSW0007S012*	0.079 *
pH (Field)	pH units	6.5 - 8.5	*see HZSW0007S010*	**4.79 ***	*see HZSW0007S011*	6.79 *	*see HZSW0007S012*	6.88 *
Temperature	°C	30	*see HZSW0007S010*	12.22 *	*see HZSW0007S011*	9.12 *	*see HZSW0007S012*	10.06 *
Turbidity (Field)	NTU	-	*see HZSW0007S010*	345 *	*see HZSW0007S011*	NR	*see HZSW0007S012*	26.2 *
RAINFALL MEASUREMENTS †								
Intensity (Ave) - Pre-Sampling	in/hr	-	0.080	0.080	0.036	0.036	0.037	0.037
Intensity (Ave) - Rain Event	in/hr	-	0.052	0.052	0.037	0.037	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.31	0.31	0.36	0.36	0.36	0.36
Intensity (Max) - Rain Event	in/hr	-	0.31	0.31	0.36	0.36	0.36	0.36
Total - Pre-Sampling	in	-	1.12	1.12	2.22	2.22	2.35	2.35
Total - Rain Event	in	-	1.51	1.51	2.37	2.37	2.37	2.37

Notes:

1 - Dioxins not analyzed due to insufficient sample volume submitted to laboratory because the surface flow ceased during sampling.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	B1BMP0003	EVBMP0001	EVBMP0002	ILBMP0001	ILBMP0002	ILBMP0001
		Sample Name	B1BMP0003S001	EVBMP0001S003	EVBMP0002S007	ILBMP0001S003	ILBMP0002S003	ILBMP0001S004
		Sample Date	10/5/2011	10/5/2011	10/5/2011	10/5/2011	10/5/2011	11/12/2011
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP
		Location	B-1, Parking Lot	ELV, Helipad Road	Helipad	IEL	CM-9, IEL, Area II Road	IEL
		Rain Event	October 5, 2011	October 5, 2011	October 5, 2011	October 5, 2011	October 5, 2011	November 11-12, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS								
TCDD	ug/L	2.80E-08	**2.75E-07**	**3.75E-08**	**1.35E-07**	**2.34E-06**	**1.73E-07**	**2.85E-08**
INORGANICS								
Aluminum	ug/l	-	1200 *	2300 *	910 *	1900 *	1100 *	1100 *
Aluminum, dissolved	ug/l	-	57 *	61 *	90 *	51 *	72 *	<40 *
Antimony	ug/l	6.0	0.78 *	0.66 *	0.70 *	1.1 *	0.53 *	0.73 J*
Antimony, dissolved	ug/l	-	0.67 *	0.32 *	<0.30 *	0.61 *	0.33 *	0.71 J*
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Barium	mg/l	-	0.033 *	0.039 *	0.024 *	0.030 *	0.020 *	0.021 *
Barium, dissolved	mg/l	-	0.012 *	0.014 *	0.0060 *	<0.0060 *	0.0069 *	0.021 *
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	<0.020 *	0.021 *	<0.020 *	<0.020 *	<0.020 *	0.039 J*
Boron, dissolved	mg/l	-	<0.020 *	<0.020 *	<0.020 *	<0.020 *	<0.020 *	<0.020 *
Cadmium	ug/l	4.0	0.16 *	0.16 *	0.28 *	0.86 *	<0.10 *	0.47 J*
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	0.12 *	0.23 *	<0.10 *	0.28 J*
Chromium	ug/l	-	2.7 *	5.1 *	<2.0 *	4.7 *	4.8 *	2.8 J*
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	<2.0 *	2.7 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	**16 ***	11 *	13 *	**18 ***	11 *	9.9 *
Copper, dissolved	ug/l	-	12 *	7.0 *	7.0 *	7.6 *	8.8 *	7.0 *
Iron	mg/l	-	1.8 *	3.5 *	1.2 *	2.7 *	1.4 *	1.4 *
Iron, dissolved	mg/l	-	0.070 *	0.095 *	0.071 *	0.049 *	0.074 *	0.026 J*
Lead	ug/l	5.2	5.0 *	**13 ***	**26 ***	**12 ***	**17 ***	3.2 *
Lead, dissolved	ug/l	-	0.47 *	2.8 *	4.1 *	0.48 *	3.0 *	0.36 J*
Manganese	ug/l	-	50 *	140 *	62 *	67 *	46 *	41 *
Manganese, dissolved	ug/l	-	26 *	84 *	39 *	19 *	23 *	22 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	3.7 *	5.5 *	5.0 *	4.4 *	2.5 *	3.5 J*
Nickel, dissolved	ug/l	-	3.4 *	2.0 *	3.7 *	<2.0 *	2.1 *	<2.0 *
Selenium	ug/l	-	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *
Selenium, dissolved	ug/l	-	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *
Silver	ug/l	-	<0.10 *	<0.10 *	<0.10 *	0.15 *	<0.10 *	<0.10 *
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.20 *	0.35 *	<0.20 *	<0.20 *
Thallium, dissolved	ug/l	-	0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	8.2 *	9.8 *	8.2 *	6.9 *	6.6 *	5.5 J*
Vanadium, dissolved	ug/l	-	4.6 *	<3.0 *	5.3 *	<3.0 *	4.0 *	<3.0 *
Zinc	ug/l	-	78 *	69 *	90 *	260 *	54 *	190 *
Zinc, Dissolved	ug/l	-	37 *	29 *	47 *	100 *	30 *	99 B-1*

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name Sample Name Sample Date	B1BMP0003 B1BMP0003S001 10/5/2011	EVBMP0001 EVBMP0001S003 10/5/2011	EVBMP0002 EVBMP0002S007 10/5/2011	ILBMP0001 ILBMP0001S003 10/5/2011	ILBMP0002 ILBMP0002S003 10/5/2011	ILBMP0001 ILBMP0001S004 11/12/2011
		Sample Type Location Rain Event	BMP B-1, Parking Lot October 5, 2011	BMP ELV, Helipad Road October 5, 2011	BMP Helipad October 5, 2011	BMP IEL October 5, 2011	BMP CM-9, IEL, Area II Road October 5, 2011	BMP IEL November 11-12, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC								
Total Suspended Solids	mg/l	-	91 *	150 *	120 *	42 *	42 *	4.0 J*
pH (Lab)	SU	8.5	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--
Turbidity	NTU	-	19 *	24 *	21 *	39 *	28 *	39 *
FIELD MEASUREMENTS								
Conductivity (Field)	mS	-	0.058 *	0.181 *	0.042 *	0.040 *	0.030 *	0.325 *
pH (Field)	pH Units	6.5 - 8.5	**4.97 ***	6.67 *	6.72 *	7.15 *	6.81 *	**3.57 ***
Temperature	deg c	86	16.71 *	15.01 *	14.76 *	17.76 *	17.69 *	15.32 *
Turbidity (Field)	NTU	-	83.7 *	90.0 *	122 *	96.6 *	91.3 *	36.0 *
RAINFALL								
Intensity (Ave) - Pre-Sampling	in/hr	-	0.073	0.083	0.072	0.093	0.096	0.067
Intensity (Ave) - Rain Event	in/hr	-	0.090	0.090	0.090	0.090	0.090	0.035
Intensity (Max) - Pre-Sampling	in/hr	-	0.18	0.18	0.18	0.18	0.18	0.26
Intensity (Max) - Rain Event	in/hr	-	0.18	0.18	0.18	0.18	0.18	0.26
Total - Pre-Sampling	in	-	0.45	0.57	0.44	0.90	0.90	0.74
Total - Rain Event	in	-	0.90	0.90	0.90	0.90	0.90	0.76

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
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		Object Name	B1BMP0004	B1BMP0005	EVBMP0003	A2SW0001	A2BMP0003	B1BMP0003
		Sample Name	B1BMP0004S001	B1BMP0005S001	EVBMP0003S001	A2SW0001S009	A2BMP0003S001	B1BMP0003S002
		Sample Date	11/20/2011	11/20/2011	11/20/2011	11/20/2011	12/12/2011	12/12/2011
		Sample Type	BMP	BMP	BMP	Perf Mon	BMP	BMP
		Location	B-1 Media Filter	B-1 Media Filter	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	AP/STP, ELV, A2LF	B-1, Parking Lot
		Rain Event	November 19-21, 2011	November 19-21, 2011	November 19-21, 2011	November 19-21, 2011	December 12-17, 2011	December 12-17, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS								
TCDD	ug/L	2.80E-08	**1.76E-07**	2.50E-10	*see A2SW0001S009*	**6.70E-08**	2.30E-10	**1.16E-07**
INORGANICS								
Aluminum	ug/l	-	900 M1*	5000 *	480 *	--	160 *	4800 *
Aluminum, dissolved	ug/l	-	65 *	300 *	48 Ja*	--	<40 *	120 *
Antimony	ug/l	6.0	<0.30 *	<0.30 *	<0.30 *	--	0.67 *	0.40 *
Antimony, dissolved	ug/l	-	0.57 Ja*	<0.30 *	<0.30 *	--	<0.30 *	0.52 *
Arsenic	ug/l	-	<7.0 *	8.0 Ja*	<7.0 *	--	<7.0 *	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	--	<7.0 *	<7.0 *
Barium	mg/l	-	0.014 *	0.051 *	0.0097 Ja*	--	0.017 *	0.055 *
Barium, dissolved	mg/l	-	0.0065 Ja*	0.0066 Ja*	<0.0060 *	--	0.015 *	<0.0060 *
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *	<0.90 *
Boron	mg/l	1.0	0.022 Ja*	<0.020 *	<0.020 *	--	0.023 *	<0.020 *
Boron, dissolved	mg/l	-	<0.020 *	<0.020 *	<0.020 *	--	0.024 *	<0.020 *
Cadmium	ug/l	4.0	<0.10 *	0.12 Ja*	<0.10 *	--	<0.10 *	0.22 *
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *	<0.10 *
Chromium	ug/l	-	<2.0 *	7.4 *	<2.0 *	--	<2.0 *	9.1 *
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *	<2.0 *
Cobalt	ug/l	-	<2.0 *	2.2 Ja*	<2.0 *	--	<2.0 *	3.2 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *	<2.0 *
Copper	ug/l	14	3.3 *	3.6 *	2.8 *	--	2.3 *	8.6 *
Copper, dissolved	ug/l	-	2.8 *	1.7 Ja*	2.4 *	--	2.7 *	2.8 *
Iron	mg/l	-	0.94 *	6.7 *	0.66 *	--	0.23 *	7.3 *
Iron, dissolved	mg/l	-	0.055 *	0.29 *	0.046 *	--	0.039 *	0.12 *
Lead	ug/l	5.2	2.2 *	3.2 *	*see A2SW0001S009*	3.8 *	0.85 *	**5.6 ***
Lead, dissolved	ug/l	-	0.49 Ja*	0.20 Ja*	0.48 Ja*	--	<0.20 *	<0.20 *
Manganese	ug/l	-	31 *	140 *	15 Ja*	--	<7.0 *	150 *
Manganese, dissolved	ug/l	-	13 Ja*	15 Ja*	<7.0 *	--	<7.0 *	9.9 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *	<0.10 *
Nickel	ug/l	100	<2.0 *	4.2 Ja*	<2.0 *	--	<2.0 *	6.2 *
Nickel, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *	<2.0 *
Selenium	ug/l	-	<0.50 *	<0.50 *	<0.50 *	--	<0.50 *	1.7 *
Selenium, dissolved	ug/l	-	<0.50 *	<0.50 *	<0.50 *	--	<0.50 *	<0.50 *
Silver	ug/l	-	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *	<0.10 *
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *	<0.10 *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.20 *	--	0.23 *	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	--	<0.20 *	<0.20 *
Vanadium	ug/l	-	3.3 Ja*	13 *	<3.0 *	--	<3.0 *	14 *
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	--	<3.0 *	<3.0 *
Zinc	ug/l	-	36 *	28 *	15 Ja*	--	4.0 *	48 *
Zinc, Dissolved	ug/l	-	22 *	<4.0 *	5.4 Ja*	--	<4.0 *	<4.0 *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
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		Object Name	B1BMP0004	B1BMP0005	EVBMP0003	A2SW0001	A2BMP0003	B1BMP0003
		Sample Name	B1BMP0004S001	B1BMP0005S001	EVBMP0003S001	A2SW0001S009	A2BMP0003S001	B1BMP0003S002
		Sample Date	11/20/2011	11/20/2011	11/20/2011	11/20/2011	12/12/2011	12/12/2011
		Sample Type	BMP	BMP	BMP	Perf Mon	BMP	BMP
		Location	B-1 Media Filter	B-1 Media Filter	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	AP/STP, ELV, A2LF	B-1, Parking Lot
		Rain Event	November 19-21, 2011	November 19-21, 2011	November 19-21, 2011	November 19-21, 2011	December 12-17, 2011	December 12-17, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC								
Total Suspended Solids	mg/l	-	7.0 Ja*	110 *	*see A2SW0001S009*	5.0 J*	7.0 *	110 *
pH (Lab)	SU	8.5	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--
Turbidity	NTU	-	21 *	160 *	13 *	--	5.8 *	67 *
FIELD MEASUREMENTS								
Conductivity (Field)	mS	-	0.037 *	0.091 *	*see A2SW0001S009*	0.024 *	13.8 *	0 *
pH (Field)	pH Units	6.5 - 8.5	**4.15 ***	**3.53 ***	*see A2SW0001S009*	**4.72 ***	**5.9 ***	**5.34 ***
Temperature	deg c	86	11.34 *	15.02 *	*see A2SW0001S009*	11.29 *	8.8 *	12.16 *
Turbidity (Field)	NTU	-	28.5 *	2.12 *	*see A2SW0001S009*	17.9 *	0.4 *	103 *
RAINFALL								
Intensity (Ave) - Pre-Sampling	in/hr	-	0.040	0.040	0.041	0.041	0.057	0.068
Intensity (Ave) - Rain Event	in/hr	-	0.031	0.031	0.031	0.031	0.006	0.006
Intensity (Max) - Pre-Sampling	in/hr	-	0.29	0.29	0.29	0.29	0.21	0.21
Intensity (Max) - Rain Event	in/hr	-	0.29	0.29	0.29	0.29	0.21	0.21
Total - Pre-Sampling	in	-	0.70	0.68	0.74	0.74	0.63	0.53
Total - Rain Event	in	-	0.77	0.77	0.77	0.77	0.80	0.80

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name Sample Name Sample Date	B1BMP0004-5 B1BMP0004-5-COMP-S001 12/12/2011	EVBMP0001 EVBMP0001S004 12/12/2011	EVBMP0002 EVBMP0002S008 12/12/2011	EVBMP0003 EVBMP0003S002 12/12/2011	A2SW0001 A2SW0001S010 12/12/2011	ILBMP0001 ILBMP0001S005 12/12/2011
		Sample Type Location Rain Event	BMP B-1 Media Filter December 12-17, 2011	BMP ELV, Helipad Road December 12-17, 2011	BMP Helipad December 12-17, 2011	BMP CM-1, ELV, Area II Road December 12-17, 2011	Perf Mon US (CM-1, A2LF-3) December 12-17, 2011	BMP IEL December 12-17, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS								
TCDD	ug/L	2.80E-08	**2.01E-07**	**5.11E-08**	**3.87E-08**	*see A2SW0001S010*	**5.69E-08**	**1.33E-07**
INORGANICS								
Aluminum	ug/l	-	3600 *	340 *	510 *	1000 *	--	3100 *
Aluminum, dissolved	ug/l	-	270 *	52 *	<40 *	54 *	--	<40 *
Antimony	ug/l	6.0	0.37 *	0.35 *	0.32 *	0.41 *	--	0.51 *
Antimony, dissolved	ug/l	-	0.59 *	0.30 *	<0.30 *	<0.30 *	--	<0.30 *
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--	<7.0 *
Barium	mg/l	-	0.038 *	0.0087 *	0.020 *	0.016 *	--	0.047 *
Barium, dissolved	mg/l	-	0.0072 *	<0.0060 *	0.0095 *	<0.0060 *	--	0.0060 *
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *
Boron	mg/l	1.0	<0.020 *	<0.020 *	<0.020 *	<0.020 *	--	<0.020 *
Boron, dissolved	mg/l	-	<0.020 *	<0.020 *	<0.020 *	<0.020 *	--	<0.020 *
Cadmium	ug/l	4.0	0.14 *	<0.10 *	0.13 *	0.12 *	--	0.13 *
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Chromium	ug/l	-	6.0 *	<2.0 *	<2.0 *	2.6 *	--	5.1 *
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Cobalt	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Copper	ug/l	14	5.2 *	3.8 *	3.7 *	4.9 *	--	8.0 *
Copper, dissolved	ug/l	-	2.8 *	4.3 *	6.3 *	4.8 *	--	5.3 *
Iron	mg/l	-	4.9 *	0.47 *	0.77 *	1.3 *	--	4.4 *
Iron, dissolved	mg/l	-	0.27 *	0.086 *	0.022 *	0.10 *	--	0.058 *
Lead	ug/l	5.2	5.0 *	2.6 *	4.8 *	*see A2SW0001S010*	**5.4 ***	**8 ***
Lead, dissolved	ug/l	-	0.33 *	0.68 *	0.31 *	0.84 *	--	<0.20 *
Manganese	ug/l	-	130 *	14 *	25 *	32 *	--	95 *
Manganese, dissolved	ug/l	-	32 *	<7.0 *	14 *	14 *	--	19 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Nickel	ug/l	100	22 *	<2.0 *	<2.0 *	2.7 *	--	4.5 *
Nickel, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Selenium	ug/l	-	<0.50 *	1.4 *	1.3 *	<0.50 *	--	1.5 *
Selenium, dissolved	ug/l	-	<0.50 *	<0.50 *	<0.50 *	<0.50 *	--	<0.50 *
Silver	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.20 *	<0.20 *	--	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	--	<0.20 *
Vanadium	ug/l	-	9.9 *	<3.0 *	<3.0 *	4.0 *	--	9.2 *
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	--	<3.0 *
Zinc	ug/l	-	42 *	9.0 *	24 *	22 *	--	45 *
Zinc, Dissolved	ug/l	-	8.3 *	<4.0 *	14 *	11 *	--	4.1 *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
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		Object Name	B1BMP0004-5	EVBMP0001	EVBMP0002	EVBMP0003	A2SW0001	ILBMP0001
		Sample Name	B1BMP0004-5-COMP-S001	EVBMP0001S004	EVBMP0002S008	EVBMP0003S002	A2SW0001S010	ILBMP0001S005
		Sample Date	12/12/2011	12/12/2011	12/12/2011	12/12/2011	12/12/2011	12/12/2011
		Sample Type	BMP	BMP	BMP	BMP	Perf Mon	BMP
		Location	B-1 Media Filter	ELV, Helipad Road	Helipad	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	IEL
		Rain Event	December 12-17, 2011	December 12-17, 2011	December 12-17, 2011	December 12-17, 2011	December 12-17, 2011	December 12-17, 2011
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC								
Total Suspended Solids	mg/l	-	100 *	6.0 *	23 *	*see A2SW0001S010*	12 *	150 *
pH (Lab)	SU	8.5	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--
Turbidity	NTU	-	110 *	10 *	12 *	24 *	--	49 *
FIELD MEASUREMENTS								
Conductivity (Field)	mS	-	0/0 *	2.7 *	28.8 *	*see A2SW0001S010*	1.8 *	0.025 *
pH (Field)	pH Units	6.5 - 8.5	**5.81/5.88 ***	**5.9 ***	**5.14 ***	*see A2SW0001S010*	**5.92 ***	**4.82 ***
Temperature	deg c	86	10.87/10.85 *	8.5 *	8.4 *	*see A2SW0001S010*	7.5 *	14.96 *
Turbidity (Field)	NTU	-	78/463 *	10.9 *	36.2 *	*see A2SW0001S010*	55 *	161.0 *
RAINFALL								
Intensity (Ave) - Pre-Sampling	in/hr	-	0.067	0.067	0.066	0.068	0.068	0.064
Intensity (Ave) - Rain Event	in/hr	-	0.006	0.006	0.006	0.006	0.006	0.006
Intensity (Max) - Pre-Sampling	in/hr	-	0.21	0.21	0.21	0.21	0.21	0.21
Intensity (Max) - Rain Event	in/hr	-	0.21	0.21	0.21	0.21	0.21	0.21
Total - Pre-Sampling	in	-	0.60	0.60	0.47	0.56	0.56	0.44
Total - Rain Event	in	-	0.80	0.80	0.80	0.80	0.80	0.80

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name Sample Name Sample Date	LPBMP0001 LPBMP0001S003 12/12/2011	LXBMP0004 LXBMP0004S001 12/12/2011	LXBMP0005 LXBMP0005S001 12/12/2011	A2BMP0003 A2BMP0003S002 1/21/2012	B1BMP0003 B1BMP0003S003 1/23/2012	B1BMP0004-5 B1BMP0004-5-Comp-S002 1/21/2012
		Sample Type Location Rain Event	BMP Soil Stockpile Area December 12-17, 2011	BMP LOX December 12-17, 2011	BMP LOX December 12-17, 2011	BMP AP/STP, ELV, A2LF January 21-23, 2012	BMP B-1, Parking Lot January 21-23, 2012	BMP B-1 Media Filter January 21-23, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS								
TCDD	ug/L	2.80E-08	**2.59E-07**	3.20E-10	2.10E-10	1.60E-10	**1.01E-07**	**2.29E-07**
INORGANICS								
Aluminum	ug/l	-	640 *	5900 *	6800 *	200 *	220 *	430 *
Aluminum, dissolved	ug/l	-	76 *	160 *	<40 *	53 *	<40 *	<40 *
Antimony	ug/l	6.0	0.31 *	0.49 *	0.51 *	0.63 J,DX*	0.56 J,DX*	0.39 J,DX*
Antimony, dissolved	ug/l	-	<0.30 *	<0.30 *	<0.30 *	<0.30 *	1.1 J,DX*	<0.30 *
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 IB*	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Barium	mg/l	-	0.012 *	0.071 *	0.10 *	0.013 *	0.013 *	0.017 *
Barium, dissolved	mg/l	-	0.0063 *	0.0083 *	0.027 *	0.013 *	0.0078 J,DX*	0.011 *
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	<0.020 *	<0.020 *	0.028 *	0.031 J,DX*	<0.020 *	<0.020 *
Boron, dissolved	mg/l	-	<0.020 *	<0.020 *	0.025 *	0.042 J,DX*	<0.020 *	<0.020 *
Cadmium	ug/l	4.0	<0.10 *	0.12 *	0.13 *	<0.10 *	<0.10 *	0.12 J,DX*
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Chromium	ug/l	-	<2.0 *	13 *	10 *	<2.0 *	<2.0 *	<2.0 *
Chromium, dissolved	ug/l	-	<2.0 *	3.2 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	<2.0 *	3.2 *	3.6 *	<2.0 *	<2.0 *	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	7.1 *	12 *	12 *	2.5 *	7.7 *	5.1 *
Copper, dissolved	ug/l	-	8.1 *	4.7 *	3.3 *	2.5 *	6.8 *	3.3 *
Iron	mg/l	-	0.78 *	8.2 *	9.4 *	0.28 MB*	0.28 *	0.52 MB*
Iron, dissolved	mg/l	-	0.10 *	0.17 *	0.070 *	0.048 *	0.036 J,DX*	0.034 J,DX*
Lead	ug/l	5.2	2.0 *	**8.8 ***	**5.5 ***	0.65 J,DX*	1.7 *	3.2 *
Lead, dissolved	ug/l	-	0.30 *	0.27 *	<0.20 *	<0.20 *	0.29 J,DX*	0.45 J,DX*
Manganese	ug/l	-	38 *	160 *	190 *	9.1 J,DX*	14 J,DX*	61 *
Manganese, dissolved	ug/l	-	25 *	10 *	14 *	<7.0 *	7.2 J,DX*	57 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	<2.0 *	6.8 *	8.0 *	<2.0 *	<2.0 *	2.5 J,DX*
Nickel, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Selenium	ug/l	-	1.2 *	1.9 *	<0.50 *	0.54 J,DX*	<0.50 *	<0.50 *
Selenium, dissolved	ug/l	-	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *
Silver	ug/l	-	<0.10 *	<0.10 *	<0.10 *	0.31 J,DX*	<0.10 *	<0.10 *
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 LQ*	<0.10 *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	<3.0 *	16 *	17 *	<3.0 *	<3.0 *	<3.0 *
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *
Zinc	ug/l	-	14 *	43 *	36 *	<4.0 *	21 *	68 *
Zinc, Dissolved	ug/l	-	5.2 *	<4.0 *	<4.0 *	<4.0 *	46 *	45 *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
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		Object Name	LPBMP0001	LXBMP0004	LXBMP0005	A2BMP0003	B1BMP0003	B1BMP0004-5
		Sample Name	LPBMP0001S003	LXBMP0004S001	LXBMP0005S001	A2BMP0003S002	B1BMP0003S003	B1BMP0004-5-Comp-S002
		Sample Date	12/12/2011	12/12/2011	12/12/2011	1/21/2012	1/23/2012	1/21/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP
		Location	Soil Stockpile Area	LOX	LOX	AP/STP, ELV, A2LF	B-1, Parking Lot	B-1 Media Filter
		Rain Event	December 12-17, 2011	December 12-17, 2011	December 12-17, 2011	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC								
Total Suspended Solids	mg/l	-	10 *	84 *	20 *	6.0 J,DX*	12 *	14 *
pH (Lab)	SU	8.5	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--
Turbidity	NTU	-	18 *	130 *	190 *	6.6 *	8.9 *	10 *
FIELD MEASUREMENTS								
Conductivity (Field)	mS	-	0 *	0.75 *	0.274 *	0.107 *	0.045 *	0.075 *
pH (Field)	pH Units	6.5 - 8.5	**5.04 ***	**5.64 ***	**5.28 ***	7.51 *	**5.34 ***	**5.14 ***
Temperature	deg c	86	13.54 *	8.73 *	10.33 *	12.36 *	12.38 *	16.32 *
Turbidity (Field)	NTU	-	112 *	362 *	379 *	18 *	21.7 *	1.82 *
RAINFALL								
Intensity (Ave) - Pre-Sampling	in/hr	-	0.067	0.067	0.069	0.059	0.012	0.070
Intensity (Ave) - Rain Event	in/hr	-	0.006	0.006	0.006	0.017	0.017	0.017
Intensity (Max) - Pre-Sampling	in/hr	-	0.21	0.21	0.21	0.12	0.12	0.12
Intensity (Max) - Rain Event	in/hr	-	0.21	0.21	0.21	0.15	0.15	0.15
Total - Pre-Sampling	in	-	0.49	0.59	0.54	0.53	0.67	0.52
Total - Rain Event	in	-	0.80	0.80	0.80	1.06	1.06	1.06

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	EVBMP0001	EVBMP0002	EVBMP0003	A2SW0001	ILBMP0001	ILBMP0002	LPBMP0001
		Sample Name	EVBMP0001S005	EVBMP0002S009	EVBMP0003S003	A2SW0001S011	ILBMP0001S006	ILBMP0002S004	LPBMP0001S004
		Sample Date	1/23/2012	1/21/2012	1/23/2012	1/23/2012	1/21/2012	1/23/2012	1/23/2012
		Sample Type	BMP	BMP	BMP	Perf Mon	BMP	BMP	BMP
		Location	ELV, Helipad Road	Helipad	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	IEL	CM-9, IEL, Area II Road	Soil Stockpile Area
		Rain Event	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	**2.28E-06**	4.30E-10	*see A2SW0001S011*	**1.12E-07**	7.70E-10	**6.36E-08**	**2.00E-06**
INORGANICS									
Aluminum	ug/l	-	4000 *	340 *	940 *	--	570 *	620 *	560 *
Aluminum, dissolved	ug/l	-	<40 *	<40 *	140 *	--	70 *	72 *	100 *
Antimony	ug/l	6.0	<0.30 *	0.58 J,DX*	0.37 J,DX*	--	1.0 J,DX*	0.54 J,DX*	0.46 J,DX*
Antimony, dissolved	ug/l	-	<0.30 *	0.41 J,DX*	<0.30 *	--	0.83 J,DX*	0.76 J,DX*	0.48 J,DX*
Arsenic	ug/l	-	<7.0 IB*	<7.0 *	<7.0 *	--	<7.0 *	<7.0 IB*	<7.0 IB*
Arsenic, dissolved	ug/l	-	<7.0 IB*	<7.0 *	<7.0 *	--	<7.0 *	<7.0 *	<7.0 IB*
Barium	mg/l	-	0.050 *	0.016 *	0.013 *	--	0.016 *	0.012 *	0.013 *
Barium, dissolved	mg/l	-	<0.0060 *	<0.0060 *	<0.0060 *	--	0.0099 J,DX*	<0.0060 *	0.0086 J,DX*
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	<0.020 *	<0.020 *	<0.020 *	--	<0.020 *	<0.020 *	<0.020 *
Boron, dissolved	mg/l	-	<0.020 *	<0.020 *	<0.020 *	--	<0.020 *	<0.020 *	<0.020 *
Cadmium	ug/l	4.0	0.15 J,DX*	<0.10 *	<0.10 *	--	0.40 J,DX*	<0.10 *	<0.10 *
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	--	0.41 J,DX*	<0.10 *	<0.10 *
Chromium	ug/l	-	8.0 *	<2.0 *	2.6 J,DX*	--	<2.0 *	3.3 J,DX*	<2.0 *
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	2.1 J,DX*	<2.0 *	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	5.8 *	3.6 *	3.8 *	--	9.3 *	7.6 *	8.1 *
Copper, dissolved	ug/l	-	1.6 J,DX*	4.7 *	3.7 *	--	8.4 *	6.1 *	7.4 *
Iron	mg/l	-	5.0 *	0.35 MB*	0.93 *	--	0.72 MB*	0.59 *	0.53 *
Iron, dissolved	mg/l	-	0.041 *	0.026 J,DX*	0.12 *	--	0.058 *	0.081 *	0.098 *
Lead	ug/l	5.2	**14 ***	1.9 *	*see A2SW0001S011*	**5.4 ***	2.8 *	**9.8 ***	1.6 *
Lead, dissolved	ug/l	-	0.43 J,DX*	0.54 J,DX*	0.62 J,DX*	--	0.33 J,DX*	1.9 *	0.30 J,DX*
Manganese	ug/l	-	110 *	15 J,DX*	16 J,DX*	--	23 *	17 J,DX*	37 *
Manganese, dissolved	ug/l	-	<7.0 *	10 J,DX*	<7.0 *	--	14 J,DX*	<7.0 *	28 *
Mercury	ug/l	0.13	<0.10 *	<0.10 IB*	<0.10 *	--	<0.10 IB*	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	5.4 J,DX*	<2.0 *	<2.0 *	--	3.1 J,DX*	<2.0 *	<2.0 *
Nickel, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *
Selenium	ug/l	-	<0.50 *	<0.50 *	<0.50 *	--	<0.50 *	<0.50 *	<0.50 *
Selenium, dissolved	ug/l	-	<0.50 *	<0.50 *	<0.50 *	--	0.53 J,DX*	<0.50 *	<0.50 *
Silver	ug/l	-	<0.10 *	0.34 J,DX*	<0.10 *	--	0.36 J,DX*	<0.10 *	<0.10 *
Silver, dissolved	ug/l	-	<0.10 LQ*	0.28 J,DX*	<0.10 LQ*	--	0.23 J,DX*	<0.10 LQ*	<0.10 LQ*
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.20 *	--	<0.20 *	<0.20 *	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	--	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	12 *	<3.0 *	4.1 J,DX*	--	<3.0 *	4.0 J,DX*	3.1 J,DX*
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	--	<3.0 *	<3.0 *	<3.0 *
Zinc	ug/l	-	31 *	13 J,DX*	24 *	--	170 *	33 *	13 J,DX*
Zinc, Dissolved	ug/l	-	<4.0 *	14 J,DX*	7.1 J,DX*	--	150 *	18 J,DX*	6.0 J,DX*

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	EVBMP0001	EVBMP0002	EVBMP0003	A2SW0001	ILBMP0001	ILBMP0002	LPBMP0001
		Sample Name	EVBMP0001S005	EVBMP0002S009	EVBMP0003S003	A2SW0001S011	ILBMP0001S006	ILBMP0002S004	LPBMP0001S004
		Sample Date	1/23/2012	1/21/2012	1/23/2012	1/23/2012	1/21/2012	1/23/2012	1/23/2012
		Sample Type	BMP	BMP	BMP	Perf Mon	BMP	BMP	BMP
		Location	ELV, Helipad Road	Helipad	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	IEL	CM-9, IEL, Area II Road	Soil Stockpile Area
		Rain Event	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012	January 21-23, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	200 *	7.0 J,DX*	*see A2SW0001S011*	28 *	15 *	8.0 J,DX*	11 *
pH (Lab)	SU	8.5	--	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	65 *	6.9 *	22 *	--	24 *	18 *	11 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	7.2 *	0.089 *	*see A2SW0001S011*	7.4 *	0.075 *	0.078 *	0.054 *
pH (Field)	pH Units	6.5 - 8.5	**6.09 ***	7.68 *	*see A2SW0001S011*	**5.68 ***	**5.35 ***	**5.02 ***	**6.1 ***
Temperature	deg c	86	9.7 *	14.4 *	*see A2SW0001S011*	10.2 *	16.3 *	10.8 *	16.4 *
Turbidity (Field)	NTU	-	504 *	28 *	*see A2SW0001S011*	30.5 *	32.2 *	34.9 *	20.9 *
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.015	0.068	0.013	0.012	0.013	0.012	0.012
Intensity (Ave) - Rain Event	in/hr	-	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Intensity (Max) - Pre-Sampling	in/hr	-	0.15	0.12	0.15	0.12	0.15	0.15	0.12
Intensity (Max) - Rain Event	in/hr	-	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Total - Pre-Sampling	in	-	0.84	0.53	0.71	0.70	0.75	0.68	0.68
Total - Rain Event	in	-	1.06	1.06	1.06	1.06	1.06	1.06	1.06

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	LXBMP0004	LXBMP0005	ILBMP0001	LPBMP0001	A1BMP0002	A1SW0004	A2BMP0003
		Sample Name	LXBMP0004S002	LXBMP0005S002	ILBMP0001S007	LPBMP0001S005	A1BMP0002S001	A1SW0004S017	A2BMP0003S003
		Sample Date	1/23/2012	1/23/2012	2/27/2012	2/27/2012	3/17/2012	3/17/2012	3/17/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	Perf Mon	BMP
		Location	LOX	LOX	IEL	Soil Stockpile Area	CM-9, A1LF	US (CM-9, A1LF)	AP/STP, ELV, A2LF
		Rain Event	January 21-23, 2012	January 21-23, 2012	February 27, 2012	February 27, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	4.50E-10	ND	6.00E-10	**1.49E-07**	*see A1SW0004S017*	Note 1	**1.57E-07**
INORGANICS									
Aluminum	ug/l	-	4400 *	2700 *	420 *	14000 *	6200 *	--	6200 *
Aluminum, dissolved	ug/l	-	190 *	<40 *	57 *	230 *	77 *	--	71 *
Antimony	ug/l	6.0	0.42 J,DX*	0.44 J,DX*	1.1 J,DX*	0.36 J,DX*	1.5 J,DX *	--	0.60 J,DX *
Antimony, dissolved	ug/l	-	0.30 J,DX*	0.38 J,DX*	0.61 J,DX*	0.65 J,DX*	0.98 J,DX *	--	<0.30 *
Arsenic	ug/l	-	<7.0 IB*	<7.0 *	<7.0 *	16 *	<7.0 *	--	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 IB*	<7.0 IB*	<7.0 *	<7.0 *	<7.0 *	--	<7.0 *
Barium	mg/l	-	0.064 *	0.061 *	0.021 *	0.14 *	0.072 *	--	0.077 *
Barium, dissolved	mg/l	-	0.0079 J,DX*	0.027 *	0.017 *	0.056 *	0.017 *	--	0.0065 J,DX *
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	1.1 J,DX*	<0.90 *	--	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *
Boron	mg/l	1.0	<0.020 *	0.030 J,DX*	0.038 J,DX MB*	0.036 J,DX MB*	0.054 J,DX MB *	--	0.020 J,DX MB *
Boron, dissolved	mg/l	-	<0.020 *	0.030 J,DX*	0.073 MB*	0.12 MB*	0.047 J,DX *	--	<0.020 *
Cadmium	ug/l	4.0	0.11 J,DX*	<0.10 *	0.90 J,DX*	0.19 J,DX*	*see A1SW0004S017*	0.52 J,DX*	0.26 J,DX *
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	2.2 *	3.2 *	0.20 J,DX *	--	<0.10 *
Chromium	ug/l	-	8.1 *	3.8 J,DX*	2.4 J,DX*	25 *	14 *	--	11 *
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Cobalt	ug/l	-	<2.0 *	<2.0 *	<2.0 *	7.7 J,DX*	4.5 J,DX *	--	3.5 J,DX *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Copper	ug/l	14	9.9 *	5.6 *	**21**	**21**	*see A1SW0004S017*	6.7 *	11 *
Copper, dissolved	ug/l	-	2.4 *	2.4 *	15 *	26 *	10 *	--	1.9 J,DX *
Iron	mg/l	-	4.6 *	2.8 *	0.97 *	15 *	8.4 *	--	9.4 *
Iron, dissolved	mg/l	-	0.15 *	0.056 *	0.15 *	0.19 *	0.10 *	--	0.061 *
Lead	ug/l	5.2	**7.6 ***	1.9 *	**9.3 ***	**22 ***	*see A1SW0004S017*	4.7 *	**22 ***
Lead, dissolved	ug/l	-	0.25 J,DX*	<0.20 *	1.5 *	7.7 *	0.22 J,DX *	--	0.25 J,DX *
Manganese	ug/l	-	110 *	61 *	54 *	410 *	220 *	--	200 *
Manganese, dissolved	ug/l	-	<7.0 *	<7.0 *	45 *	150 *	13 J,DX *	--	<7.0 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	*see A1SW0004S017*	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Nickel	ug/l	100	5.6 J,DX*	2.5 J,DX*	5.5 J,DX*	22 *	13 *	--	9.7 J,DX *
Nickel, dissolved	ug/l	-	<2.0 *	<2.0 *	4.7 J,DX*	8.6 J,DX*	<2.0 *	--	<2.0 *
Selenium	ug/l	-	<0.50 *	<0.50 *	0.81 J,DX*	<0.50 *	1.1 J,DX *	--	<0.50 *
Selenium, dissolved	ug/l	-	<0.50 *	0.52 J,DX*	<0.50 *	0.67 J,DX*	0.66 J,DX *	--	<0.50 *
Silver	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	4.7	--	1.2 U (B)
Silver, dissolved	ug/l	-	<0.10 LQ*	<0.10 LQ*	<0.10 *	<0.10 *	0.15 J,DX *	--	0.15 J,DX *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.20 IB*	<0.20 IB*	0.48 J,DX *	--	0.26 J,DX *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	--	<0.20 *
Vanadium	ug/l	-	11 *	6.1 J,DX*	<3.0 *	34 *	18 *	--	19 *
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	4.5 J,DX*	<3.0 *	--	<3.0 *
Zinc	ug/l	-	38 *	15 J,DX*	290 *	100 *	79 *	--	75 *
Zinc, Dissolved	ug/l	-	<4.0 *	5.6 J,DX*	190 *	87 *	5.5 J,DX *	--	<4.0 *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
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		Object Name	LXBMP0004	LXBMP0005	ILBMP0001	LPBMP0001	A1BMP0002	A1SW0004	A2BMP0003
		Sample Name	LXBMP0004S002	LXBMP0005S002	ILBMP0001S007	LPBMP0001S005	A1BMP0002S001	A1SW0004S017	A2BMP0003S003
		Sample Date	1/23/2012	1/23/2012	2/27/2012	2/27/2012	3/17/2012	3/17/2012	3/17/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	Perf Mon	BMP
		Location	LOX	LOX	IEL	Soil Stockpile Area	CM-9, A1LF	US (CM-9, A1LF)	AP/STP, ELV, A2LF
		Rain Event	January 21-23, 2012	January 21-23, 2012	February 27, 2012	February 27, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	130 *	54 *	12 *	130 *	*see A1SW0004S017*	320 *	670 *
pH (Lab)	SU	8.5	--	--	7.06 BV QP*	6.69 BV QP*	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	160 MB*	170 MB*	--	--	--
Turbidity	NTU	-	130 *	71 *	15 *	260 *	19 *	--	36 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.125 *	0.204 *	NR	NR	*see A1SW0004S017*	0.092 *	0.036 *
pH (Field)	pH Units	6.5 - 8.5	**5.19 ***	**5.08 ***	NR	NR	*see A1SW0004S017*	**5.83 ***	**5.57 ***
Temperature	deg c	86	12.01 *	10.66 *	NR	NR	*see A1SW0004S017*	13.46 *	15.57 *
Turbidity (Field)	NTU	-	216 *	110 *	NR	NR	*see A1SW0004S017*	NR	NR
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.016	0.016	NC	NC	0.080	0.080	0.080
Intensity (Ave) - Rain Event	in/hr	-	0.017	0.017	NC	NC	0.052	0.052	0.052
Intensity (Max) - Pre-Sampling	in/hr	-	0.15	0.15	NC	NC	0.31	0.31	0.31
Intensity (Max) - Rain Event	in/hr	-	0.15	0.15	NC	NC	0.31	0.31	0.31
Total - Pre-Sampling	in	-	0.92	0.90	NM	NM	1.10	1.12	1.08
Total - Rain Event	in	-	1.06	1.06	NM	NM	1.51	1.51	1.51

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	A2BMP0004	A2BMP0005	B1BMP0003	B1BMP0004-5	BGBMP0003	EVBMP0001	EVBMP0002
		Sample Name	A2BMP0004S001	A2BMP0005S001	B1BMP0003S004	B1BMP0004-5-Comp-S003	BGBMP0003S003	EVBMP0001S006	EVBMP0002S010
		Sample Date	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	BMP
		Location	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	B-1, Parking Lot	B-1 Media Filter	Sage Ranch	ELV, Helipad Road	Helipad
		Rain Event	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	**5.71E-08**	**1.87E-06**	**3.00E-06**	**2.62E-06**	ND	**2.10E-04**	**3.15E-08**
INORGANICS									
Aluminum	ug/l	-	790 *	2700 *	2600 *	3800 *	95 *	1900 *	610 *
Aluminum, dissolved	ug/l	-	76 *	240 *	<40 *	170 *	54 *	94 *	61 *
Antimony	ug/l	6.0	<0.30 *	0.55 J,DX *	0.74 J,DX *	<0.60 *	0.30 J,DX *	<0.30 *	<0.30 *
Antimony, dissolved	ug/l	-	0.35 J,DX *	0.56 J,DX *	<0.30 *	<0.60 *	0.48 J,DX *	<0.30 *	<0.30 *
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Barium	mg/l	-	0.020 *	0.036 *	0.057 *	0.054 *	0.013 *	0.030 *	0.013 *
Barium, dissolved	mg/l	-	0.0074 J,DX *	0.0099 J,DX *	<0.0060 *	0.0084 J,DX *	0.011 *	<0.0060 *	<0.0060 *
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	<0.020 *	0.077 MB *	<0.020 J,DX *	<0.020 *	0.040 J,DX MB *	<0.020 *	<0.020 *
Boron, dissolved	mg/l	-	<0.020 *	0.065 *	<0.020 *	<0.020 *	0.030 J,DX *	<0.020 *	<0.020 *
Cadmium	ug/l	4.0	<0.10 *	0.12 J,DX *	0.13 J,DX *	0.24 J,DX *	<0.10 *	<0.10 *	<0.10 *
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.20 *	<0.10 *	<0.10 *	<0.10 *
Chromium	ug/l	-	<2.0 *	5.0 *	5.5 *	6.0 *	<2.0 *	3.5 J,DX *	<2.0 *
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	<2.0 *	<2.0 *	<2.0 *	2.5 J,DX *	<2.0 *	<2.0 *	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	6.7 *	8.7 *	13 *	8.4 *	3.0 *	5.2 *	3.4 *
Copper, dissolved	ug/l	-	1.7 J,DX *	4.4 *	3.9 *	3.1 J,DX *	2.8 *	1.9 J,DX *	1.9 J,DX *
Iron	mg/l	-	1.1 *	3.8 *	3.1 *	5.4 *	0.10 *	2.8 *	0.83 *
Iron, dissolved	mg/l	-	0.061 *	0.19 *	0.025 J,DX *	0.12 *	0.045 *	0.068 *	0.055 *
Lead	ug/l	5.2	4.2 *	**11 ***	**7.3 ***	**9.6 ***	0.25 J,DX *	**8.8 ***	3.8 *
Lead, dissolved	ug/l	-	0.44 J,DX *	0.76 J,DX *	<0.20 *	<0.40 *	<0.20 *	0.45 J,DX *	0.36 J,DX *
Manganese	ug/l	-	23 *	82 *	70 *	190 *	9.4 J,DX *	83 *	18 J,DX *
Manganese, dissolved	ug/l	-	<7.0 *	<7.0 *	10 J,DX *	76 *	<7.0 *	<7.0 *	<7.0 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	<2.0 *	4.7 J,DX *	4.4 J,DX *	5.9 J,DX *	<2.0 *	3.5 J,DX *	2.7 J,DX *
Nickel, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Selenium	ug/l	-	<0.50 *	<0.50 *	<0.50 *	<1.0 *	<0.50 *	<0.50 *	<0.50 *
Selenium, dissolved	ug/l	-	<0.50 *	0.64 J,DX *	<0.50 *	1.0 J,DX *	<0.50 *	<0.50 *	<0.50 *
Silver	ug/l	-	0.14 J,DX MB *	0.34 J,DX MB *	0.30 J,DX MB *	0.54 J,DX MB *	0.12 J,DX MB *	0.15 J,DX MB *	<0.10 *
Silver, dissolved	ug/l	-	1.0 *	0.96 J,DX *	0.25 J,DX *	0.50 J,DX *	1.0 *	<0.10 *	<0.10 *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.20 *	<0.40 *	<0.20 *	<0.20 *	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.40 *	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	<3.0 *	8.9 J,DX *	6.2 J,DX *	11 *	<3.0 *	6.2 J,DX *	3.2 J,DX *
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *
Zinc	ug/l	-	19 J,DX *	33 *	66 *	75 *	<4.0 *	27 *	17 J,DX *
Zinc, Dissolved	ug/l	-	6.1 J,DX *	4.5 J,DX *	9.6 J,DX *	33 J,DX *	<4.0 *	<4.0 *	4.1 J,DX *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	A2BMP0004	A2BMP0005	B1BMP0003	B1BMP0004-5	BGBMP0003	EVBMP0001	EVBMP0002
		Sample Name	A2BMP0004S001	A2BMP0005S001	B1BMP0003S004	B1BMP0004-5-Comp-S003	BGBMP0003S003	EVBMP0001S006	EVBMP0002S010
		Sample Date	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	BMP
		Location	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	B-1, Parking Lot	B-1 Media Filter	Sage Ranch	ELV, Helipad Road	Helipad
		Rain Event	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	31 *	86 *	56 *	91 *	<10 *	60 *	10 *
pH (Lab)	SU	8.5	--	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	13 *	70 *	8.0 *	79 *	2.0 *	15 *	11 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.028 *	0.074 *	0.0051 *	0.020	0.053 *	0.007 *	0.061 *
pH (Field)	pH Units	6.5 - 8.5	**5.70 ***	**5.90 ***	**4.31 ***	5.18	6.58 *	**6.04 ***	**3.73 ***
Temperature	deg c	86	15.32 *	13.5 *	17.62 *	13.04	14.62 *	13.3 *	21.44 *
Turbidity (Field)	NTU	-	NR	NR	47.7 *	266	NR	243 *	NR
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.080	0.080	0.072	0.080	0.073	0.080	0.080
Intensity (Ave) - Rain Event	in/hr	-	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Intensity (Max) - Pre-Sampling	in/hr	-	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Intensity (Max) - Rain Event	in/hr	-	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Total - Pre-Sampling	in	-	1.17	1.12	0.89	1.05	1.26	1.05	1.04
Total - Rain Event	in	-	1.51	1.51	1.51	1.51	1.51	1.51	1.51

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	EVBMP0003	A2SW0001	ILBMP0001	ILBMP0002	LPBMP0001	LXBMP0004	LXBMP0005
		Sample Name	EVBMP0003S004	A2SW0001S012	ILBMP0001S008	ILBMP0002S005	LPBMP0001S006	LXBMP0004S003	LXBMP0005S003
		Sample Date	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012
		Sample Type	BMP	Perf Mon	BMP	BMP	BMP	BMP	BMP
		Location	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	IEL	CM-9, IEL, Area II Road	Soil Stockpile Area	LOX	LOX
		Rain Event	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	*see A2SW0001S012*	**1.99E-06**	**2.06E-07**	**5.23E-07**	**5.90E-06**	2.66E-08	1.50E-10
INORGANICS									
Aluminum	ug/l	-	2500 *	--	1100 *	36000 *	8100 *	5500 *	3100 *
Aluminum, dissolved	ug/l	-	83 *	--	62 *	100 *	850 *	170 *	200 *
Antimony	ug/l	6.0	0.46 J,DX *	--	0.44 J,DX *	0.30 J,DX *	0.40 J,DX *	<0.30 *	0.31 J,DX *
Antimony, dissolved	ug/l	-	<0.60 *	--	0.33 J,DX *	<0.30 *	<0.30 *	<0.30 *	<0.30 *
Arsenic	ug/l	-	<7.0 *	--	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	--	<7.0 *	<7.0 *	7.0 J,DX *	<7.0 *	<7.0 *
Barium	mg/l	-	0.036 *	--	0.015 *	0.19 *	0.087 *	0.068 *	0.045 *
Barium, dissolved	mg/l	-	<0.0060 *	--	<0.0060 *	<0.0060 *	0.0073 J,DX *	<0.0060 *	0.011 *
Beryllium	ug/l	-	<0.90 *	--	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	--	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	0.020 J,DX MB *	--	0.021 J,DX MB *	<0.020 *	<0.020 *	<0.020 *	0.030 J,DX MB *
Boron, dissolved	mg/l	-	<0.020 *	--	<0.020 *	<0.020 *	<0.020 *	<0.020 *	<0.020 *
Cadmium	ug/l	4.0	0.16 J,DX *	--	0.42 J,DX *	0.74 J,DX *	0.35 J,DX *	0.18 J,DX *	<0.10 *
Cadmium, dissolved	ug/l	-	<0.20 *	--	0.19 J,DX *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Chromium	ug/l	-	4.8 J,DX *	--	2.2 J,DX *	100 *	16 *	9.8 *	4.6 J,DX *
Chromium, dissolved	ug/l	-	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	<2.0 *	--	<2.0 *	54 *	4.7 J,DX *	3.5 J,DX *	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	9.1 *	--	9.4 *	**59 ***	**15 ***	11 *	7.3 *
Copper, dissolved	ug/l	-	3.5 J,DX *	--	7.2 *	3.2 *	3.8 *	2.9 *	2.2 *
Iron	mg/l	-	3.7 *	--	1.2 *	64 *	12 *	8.2 *	4.0 *
Iron, dissolved	mg/l	-	0.073 *	--	0.051 *	0.073 *	0.58 *	0.13 *	0.16 *
Lead	ug/l	5.2	*see A2SW0001S012*	**13 ***	3.3 *	**82 ***	**32 ***	**9.8 ***	2.6 *
Lead, dissolved	ug/l	-	0.85 J,DX *	--	0.24 J,DX *	0.45 J,DX *	1.0 *	0.27 J,DX *	<0.20 *
Manganese	ug/l	-	75 *	--	34 *	1300 *	260 *	200 *	82 *
Manganese, dissolved	ug/l	-	<7.0 *	--	11 J,DX *	<7.0 *	16 J,DX *	7.0 J,DX *	7.2 J,DX *
Mercury	ug/l	0.13	<0.10 *	--	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	--	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	4.9 J,DX *	--	2.3 J,DX *	**150 ***	11 *	8.1 J,DX *	4.4 J,DX *
Nickel, dissolved	ug/l	-	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Selenium	ug/l	-	<0.50 *	--	0.57 J,DX *	<0.50 *	<0.50 *	<0.50 *	<0.50 *
Selenium, dissolved	ug/l	-	<1.0 *	--	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *
Silver	ug/l	-	0.18 J,DX MB *	--	<0.10 *	<0.10 *	0.35 J,DX MB *	<0.10 *	<0.10 *
Silver, dissolved	ug/l	-	<0.20 *	--	0.27 J,DX *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Thallium	ug/l	2.0	<0.20 *	--	<0.20 *	0.21 J,DX *	0.21 J,DX *	<0.20 *	<0.20 *
Thallium, dissolved	ug/l	-	<0.40 *	--	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	8.4 J,DX *	--	3.3 J,DX *	87 *	23 *	16 *	8.0 J,DX *
Vanadium, dissolved	ug/l	-	<3.0 *	--	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *
Zinc	ug/l	-	56 *	--	120 *	260 *	100 *	50 *	18 J,DX *
Zinc, Dissolved	ug/l	-	8.3 J,DX *	--	75 *	5.7 J,DX *	7.0 J,DX *	<4.0 *	<4.0 *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	EVBMP0003	A2SW0001	ILBMP0001	ILBMP0002	LPBMP0001	LXBMP0004	LXBMP0005
		Sample Name	EVBMP0003S004	A2SW0001S012	ILBMP0001S008	ILBMP0002S005	LPBMP0001S006	LXBMP0004S003	LXBMP0005S003
		Sample Date	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012	3/17/2012
		Sample Type	BMP	Perf Mon	BMP	BMP	BMP	BMP	BMP
		Location	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	IEL	CM-9, IEL, Area II Road	Soil Stockpile Area	LOX	LOX
		Rain Event	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012	March 16-18, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	*see A2SW0001S012*	36 *	16 *	210 *	180 *	520 *	37 *
pH (Lab)	SU	8.5	--	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	18 BU *	--	16 *	120 *	160 *	110 *	99 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	*see A2SW0001S012*	0.011 *	0.015 *	0.046 *	0.018 *	0.158 *	0.076 *
pH (Field)	pH Units	6.5 - 8.5	*see A2SW0001S012*	**5.99 ***	**5.48 ***	**5.13 ***	**5.44 ***	**5.01 ***	**6.35 ***
Temperature	deg c	86	*see A2SW0001S012*	13 *	13.24 *	15.61 *	13.09 *	12.22 *	14.31 *
Turbidity (Field)	NTU	-	*see A2SW0001S012*	135 *	37.7 *	NR	662 *	NR	10.10 *
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.075	0.075	0.080	0.076	0.080	0.080	0.072
Intensity (Ave) - Rain Event	in/hr	-	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Intensity (Max) - Pre-Sampling	in/hr	-	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Intensity (Max) - Rain Event	in/hr	-	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Total - Pre-Sampling	in	-	0.95	0.95	1.16	0.98	1.13	1.04	1.26
Total - Rain Event	in	-	1.51	1.51	1.51	1.51	1.51	1.51	1.51

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	A1BMP0002	A1SW0004	A2BMP0003	A2BMP0004	A2BMP0005	APBMP0001	B1BMP0003
		Sample Name	A1BMP0002S002	A1SW0004S018	A2BMP0003S004	A2BMP0004S002	A2BMP0005S002	APBMP0001S001	B1BMP0003S005
		Sample Date	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012
		Sample Type	BMP	Perf Mon	BMP	BMP	BMP	BMP	BMP
		Location	CM-9, A1LF	US (CM-9, A1LF)	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	AP/STP	B-1, Parking Lot
		Rain Event	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	*see A1SW0004S018*	**7.68E-08**	**4.58E-07**	**1.19E-07**	**7.25E-08**	**1.34E-07**	**4.40E-07**
INORGANICS									
Aluminum	ug/l	-	5800 *	--	20000 *	2300 *	1400 *	3500 *	340 *
Aluminum, dissolved	ug/l	-	77 *	--	67 *	<40 *	95 *	56 *	<40 *
Antimony	ug/l	6.0	0.57 J,DX*	--	<0.60 *	0.30 J,DX*	0.42 J,DX*	0.31 J,DX*	0.82 J,DX*
Antimony, dissolved	ug/l	-	0.61 J,DX*	--	<0.30 *	<0.30 *	0.32 J,DX*	0.30 J,DX*	1.0 J,DX*
Arsenic	ug/l	-	7.0 J,DX*	--	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	--	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Barium	mg/l	-	0.063 *	--	0.23 *	0.034 *	0.020 *	0.059 *	0.011 *
Barium, dissolved	mg/l	-	0.015 *	--	<0.0060 *	<0.0060 *	0.0083 J,DX*	0.0072 J,DX*	<0.0060 *
Beryllium	ug/l	-	<0.90 *	--	1.3 J,DX*	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	--	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	0.046 J,DX*	--	0.044 J,DX*	<0.020 *	0.072 MB*	0.026 J,DX*	0.020 J,DX*
Boron, dissolved	mg/l	-	0.049 J,DX MB*	--	0.030 J,DX MB*	<0.020 *	0.072 MB*	0.025 J,DX*	<0.020 *
Cadmium	ug/l	4.0	*see A1SW0004S018*	1.4 *	1.0 J,DX*	0.16 J,DX*	<0.10 *	0.30 J,DX*	<0.10 *
Cadmium, dissolved	ug/l	-	0.13 J,DX*	--	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Chromium	ug/l	-	14 *	--	34 *	2.9 J,DX*	<2.0 *	8.5 *	<2.0 *
Chromium, dissolved	ug/l	-	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	4.1 J,DX*	--	13 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	--	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	*see A1SW0004S018*	**15**	**28**	7.8	5.4	9.9	11
Copper, dissolved	ug/l	-	3.5 *	--	1.7 J,DX*	1.6 J,DX*	2.8 *	6.9 *	7.8 *
Iron	mg/l	-	8.2 *	--	28 *	2.8 *	1.7 *	4.7 *	0.41 *
Iron, dissolved	mg/l	-	0.16 *	--	0.094 *	0.037 J,DX*	0.15 *	0.066 *	0.036 J,DX*
Lead	ug/l	5.2	*see A1SW0004S018*	**15 ***	**68 ***	**10 ***	4.3 *	**31 ***	1.4 *
Lead, dissolved	ug/l	-	1.3 *	--	0.27 J,DX*	0.22 J,DX*	0.44 J,DX*	0.54 J,DX*	0.28 J,DX*
Manganese	ug/l	-	240 *	--	630 *	60 *	34 *	190 *	12 J,DX*
Manganese, dissolved	ug/l	-	9.0 J,DX*	--	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Mercury	ug/l	0.13	*see A1SW0004S018*	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	0.11 J,DX*	--	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	13 *	--	26 *	3.0 J,DX*	<2.0 *	5.6 J,DX*	<2.0 *
Nickel, dissolved	ug/l	-	2.3 J,DX*	--	<2.0 *	<2.0 *	<2.0 *	<2.0 *	2.5 J,DX*
Selenium	ug/l	-	<0.50 *	--	<1.0 *	0.56 J,DX*	0.55 J,DX*	<0.50 *	<0.50 *
Selenium, dissolved	ug/l	-	0.73 J,DX*	--	<0.50 *	<0.50 *	<0.50 *	<0.50 *	0.70 J,DX*
Silver	ug/l	-	4.4	--	0.35 J,DX MB*	0.10 J,DX MB*	<0.10 *	<0.10 *	0.13 J,DX MB*
Silver, dissolved	ug/l	-	0.11 J,DX*	--	<0.10 *	<0.10 *	<0.10 *	<0.10 IB*	<0.10 *
Thallium	ug/l	2.0	<0.20 *	--	<0.40 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	--	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	17 *	--	53 *	6.6 J,DX*	5.6 J,DX*	11 *	<3.0 *
Vanadium, dissolved	ug/l	-	<3.0 *	--	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *
Zinc	ug/l	-	57 *	--	220 *	45 *	17 J,DX*	69 *	28 *
Zinc, Dissolved	ug/l	-	<4.0 *	--	<4.0 *	5.9 J,DX*	<4.0 *	7.3 J,DX*	15 J,DX*

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
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		Object Name	A1BMP0002	A1SW0004	A2BMP0003	A2BMP0004	A2BMP0005	APBMP0001	B1BMP0003
		Sample Name	A1BMP0002S002	A1SW0004S018	A2BMP0003S004	A2BMP0004S002	A2BMP0005S002	APBMP0001S001	B1BMP0003S005
		Sample Date	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012
		Sample Type	BMP	Perf Mon	BMP	BMP	BMP	BMP	BMP
		Location	CM-9, A1LF	US (CM-9, A1LF)	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	AP/STP	B-1, Parking Lot
		Rain Event	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	*see A1SW0004S018*	300 *	1400 *	130 *	61 *	48 *	24 *
pH (Lab)	SU	8.5	--	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	100 *	--	280 *	50 *	37 *	19 *	17 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	*see A1SW0004S018*	1.151 *	0.038 *	0.024 *	0.068 *	0.048 *	0.035 *
pH (Field)	pH Units	6.5 - 8.5	*see A1SW0004S018*	**6.44 ***	**5.56 ***	**5.41 ***	**4.9 ***	**5.7 ***	**5.95 ***
Temperature	deg c	86	*see A1SW0004S018*	11.17 *	10.99 *	11.41 *	11.23 *	12.57 *	10.96 *
Turbidity (Field)	NTU	-	*see A1SW0004S018*	337 *	289 *	40.2 *	32.5 *	56.1 *	31.5 *
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.115	0.115	0.158	0.159	0.148	0.152	0.040
Intensity (Ave) - Rain Event	in/hr	-	0.079	0.079	0.079	0.079	0.079	0.079	0.079
Intensity (Max) - Pre-Sampling	in/hr	-	0.49	0.49	0.51	0.51	0.51	0.51	0.21
Intensity (Max) - Rain Event	in/hr	-	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Total - Pre-Sampling	in	-	1.00	1.00	1.68	1.63	1.43	1.78	0.27
Total - Rain Event	in	-	2.12	2.12	2.12	2.12	2.12	2.12	2.12

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	B1BMP0004-5	BGBMP0003	EVBMP0001	EVBMP0002	EVBMP0003	A2SW0001	ILBMP0001
		Sample Name	B1BMP0004-5-Comp-S004	BGBMP0003S004	EVBMP0001S007	EVBMP0002S011	EVBMP0003S005	A2SW0001S013	ILBMP0001S009
		Sample Date	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	Perf Mon	BMP
		Location	B-1 Media Filter	Sage Ranch	ELV, Helipad Road	Helipad	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	IEL
		Rain Event	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	**1.46E-06**	ND	**7.18E-06**	**3.75E-08**	*see A2SW0001S013*	**4.41E-07**	**1.93E-06**
INORGANICS									
Aluminum	ug/l	-	2600 *	580 *	7200 *	490 *	4700 *	--	1200 *
Aluminum, dissolved	ug/l	-	59 *	40 J,DX*	57 *	<40 *	60 *	--	40 J,DX*
Antimony	ug/l	6.0	0.73 J,DX*	<0.30 *	0.81 J,DX*	0.50 J,DX*	0.68 J,DX*	--	1.7 J,DX*
Antimony, dissolved	ug/l	-	0.35 J,DX*	<0.30 *	<0.30 *	<0.30 *	<0.30 *	--	1.1 J,DX*
Arsenic	ug/l	-	8.0 J,DX*	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--	<7.0 *
Barium	mg/l	-	0.036 *	0.013 *	0.075 *	0.011 *	0.054 *	--	0.026 *
Barium, dissolved	mg/l	-	0.0066 J,DX*	0.0061 J,DX*	<0.0060 *	<0.0060 *	<0.0060 *	--	0.0090 J,DX*
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--	<0.90 *
Boron	mg/l	1.0	0.030 J,DX*	0.029 J,DX*	<0.020 *	0.021 J,DX*	0.020 J,DX*	--	0.029 J,DX*
Boron, dissolved	mg/l	-	0.026 J,DX MB*	0.027 J,DX MB*	<0.020 *	<0.020 *	<0.020 *	--	0.029 J,DX MB*
Cadmium	ug/l	4.0	0.14 J,DX*	<0.10 *	0.41 J,DX*	<0.10 *	0.27 J,DX*	--	0.66 J,DX*
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	0.35 J,DX*
Chromium	ug/l	-	4.2 J,DX*	<2.0 *	15 *	<2.0 *	7.8 *	--	3.4 J,DX*
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Cobalt	ug/l	-	<2.0 *	<2.0 *	3.3 J,DX*	<2.0 *	3.0 J,DX*	--	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--	<2.0 *
Copper	ug/l	14	8.0	4.7	**15**	7.7	10	--	**17**
Copper, dissolved	ug/l	-	2.8 *	1.7 J,DX*	2.0 *	5.0 *	2.0 *	--	9.2 *
Iron	mg/l	-	3.3 *	0.72 *	9.5 *	0.58 *	6.2 *	--	1.5 *
Iron, dissolved	mg/l	-	0.11 *	0.050 *	0.070 *	0.031 J,DX*	0.075 *	--	0.11 *
Lead	ug/l	5.2	5.0 *	1.6 *	**41 ***	4.0 *	*see A2SW0001S013*	**12 ***	**10 ***
Lead, dissolved	ug/l	-	0.26 J,DX*	<0.20 *	0.52 J,DX*	0.60 J,DX*	0.46 J,DX*	--	0.70 J,DX*
Manganese	ug/l	-	80 *	20 *	210 *	16 J,DX*	130 *	--	44 *
Manganese, dissolved	ug/l	-	11 J,DX*	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--	21 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Nickel	ug/l	100	3.3 J,DX*	<2.0 *	11 *	2.4 J,DX*	5.5 J,DX*	--	4.5 J,DX*
Nickel, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	2.6 J,DX*	<2.0 *	--	4.7 J,DX*
Selenium	ug/l	-	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *	--	0.58 J,DX*
Selenium, dissolved	ug/l	-	<0.50 *	0.65 J,DX*	<0.50 *	<0.50 *	<0.50 *	--	0.66 J,DX*
Silver	ug/l	-	0.17 J,DX MB*	<0.10 *	1.1 U (B)	<0.10 *	0.57 J,DX MB*	--	0.30 J,DX MB*
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--	<0.10 *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	0.35 J,DX*	<0.20 *	0.57 J,DX*	--	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	--	<0.20 *
Vanadium	ug/l	-	7.8 J,DX*	<3.0 *	20 *	3.1 J,DX*	13 *	--	4.1 J,DX*
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	--	<3.0 *
Zinc	ug/l	-	41 *	4.8 J,DX*	100 *	27 *	61 *	--	260 *
Zinc, Dissolved	ug/l	-	8.6 J,DX*	<4.0 *	<4.0 *	15 J,DX*	<4.0 *	--	170 *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	B1BMP0004-5	BGBMP0003	EVBMP0001	EVBMP0002	EVBMP0003	A2SW0001	ILBMP0001
		Sample Name	B1BMP0004-5-Comp-S004	BGBMP0003S004	EVBMP0001S007	EVBMP0002S011	EVBMP0003S005	A2SW0001S013	ILBMP0001S009
		Sample Date	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	Perf Mon	BMP
		Location	B-1 Media Filter	Sage Ranch	ELV, Helipad Road	Helipad	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)	IEL
		Rain Event	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	170 *	24 *	480 *	61 *	*see A2SW0001S013*	51 *	70 *
pH (Lab)	SU	8.5	--	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	57 *	13 *	95 *	11 *	69 *	--	30 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.012/NR	0.024 *	0.021 *	0.083 *	*see A2SW0001S013*	0.02	0.083 *
pH (Field)	pH Units	6.5 - 8.5	4.74/4.89 *	**5.24 ***	**4.08 ***	**3.39 ***	*see A2SW0001S013*	**4.23**	**4.64 ***
Temperature	deg c	86	11.21/10.29 *	10.96 *	11.76 *	12.38 *	*see A2SW0001S013*	11.51	13.90 *
Turbidity (Field)	NTU	-	58.2/144 *	31.5 *	114 *	13.4 *	*see A2SW0001S013*	55.9	80.5 *
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.101	0.142	0.110	0.101	0.118	0.118	0.017
Intensity (Ave) - Rain Event	in/hr	-	0.079	0.079	0.079	0.079	0.079	0.079	0.079
Intensity (Max) - Pre-Sampling	in/hr	-	0.49	0.51	0.49	0.49	0.49	0.49	0.49
Intensity (Max) - Rain Event	in/hr	-	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Total - Pre-Sampling	in	-	0.81	1.35	0.93	0.81	1.04	1.04	0.88
Total - Rain Event	in	-	2.12	2.12	2.12	2.12	2.12	2.12	2.12

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	ILBMP0002	LPBMP0001	LXBMP0003	LXBMP0004	LXBMP0005	A1BMP0002	A1SW0004
		Sample Name	ILBMP0002S006	LPBMP0001S007	LXBMP0003S006	LXBMP0004S004	LXBMP0005S004	A1BMP0002S003	A1SW0004S019
		Sample Date	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	4/11/2012	4/11/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	Perf Mon
		Location	CM-9, IEL, Area II Road	Soil Stockpile Area	LOX	LOX	LOX	CM-9, A1LF	US (CM-9, A1LF)
		Rain Event	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	**2.46E-06**	**3.21E-07**	1.50E-10	**3.26E-08**	2.00E-10	*see A1SW0004S019*	1.10E-10
INORGANICS									
Aluminum	ug/l	-	11000 *	560 *	23000 *	6800 *	5700 *	<40 *	--
Aluminum, dissolved	ug/l	-	75 *	100 *	180 *	110 *	120 *	<40 *	--
Antimony	ug/l	6.0	0.57 J,DX*	0.74 J,DX*	<0.30 *	0.48 J,DX*	0.36 J,DX*	1.7 J,DX*	--
Antimony, dissolved	ug/l	-	<0.30 *	0.56 J,DX*	<0.30 *	<0.30 *	<0.30 *	1.6 J,DX*	--
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--
Barium	mg/l	-	0.078 *	0.017 *	0.23 *	0.070 *	0.078 *	0.035 *	--
Barium, dissolved	mg/l	-	<0.0060 *	0.011 *	0.0064 J,DX*	<0.0060 *	0.020 *	0.029 *	--
Beryllium	ug/l	-	<0.90 *	<0.90 *	1.4 J,DX*	<0.90 *	<0.90 *	<0.90 *	--
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--
Boron	mg/l	1.0	0.021 J,DX*	0.027 J,DX*	0.034 J,DX*	0.021 J,DX*	0.038 J,DX*	0.092 MB*	--
Boron, dissolved	mg/l	-	<0.020 *	0.022 J,DX MB*	0.026 J,DX MB*	<0.020 *	0.033 J,DX MB*	0.078 MB*	--
Cadmium	ug/l	4.0	0.41 J,DX*	<0.10 *	0.44 J,DX*	0.19 J,DX*	0.11 J,DX*	*see A1SW0004S019*	<0.50 *
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.20 *	--
Chromium	ug/l	-	30 *	<2.0 *	39 *	13 *	8.1 *	<2.0 *	--
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--
Cobalt	ug/l	-	9.3 J,DX*	<2.0 *	13 *	2.9 J,DX*	3.0 J,DX*	<2.0 *	--
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--
Copper	ug/l	14	**28**	14	**20**	**15**	11	*see A1SW0004S019*	7.1 J,DX*
Copper, dissolved	ug/l	-	2.8 *	8.2 *	2.1 *	2.4 *	2.3 *	9.3 *	--
Iron	mg/l	-	16 *	0.65 *	28 *	8.6 *	7.0 *	0.086 *	--
Iron, dissolved	mg/l	-	0.12 *	0.13 *	0.22 *	0.19 *	0.14 *	0.040 *	--
Lead	ug/l	5.2	**47 ***	1.7 *	**18 ***	**14 ***	4.7 *	*see A1SW0004S019*	<1.0 *
Lead, dissolved	ug/l	-	1.3 *	0.43 J,DX*	<0.20 *	0.28 J,DX*	<0.20 *	<0.40 *	--
Manganese	ug/l	-	300 *	44 *	500 *	180 *	160 *	<7.0 *	--
Manganese, dissolved	ug/l	-	<7.0 *	31 *	<7.0 *	<7.0 *	7.5 J,DX*	<7.0 *	--
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	*see A1SW0004S019*	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--
Nickel	ug/l	100	30 *	2.7 J,DX*	29 *	9.4 J,DX*	6.7 J,DX*	3.4 J,DX*	--
Nickel, dissolved	ug/l	-	<2.0 *	3.5 J,DX*	2.0 J,DX*	<2.0 *	<2.0 *	2.8 J,DX*	--
Selenium	ug/l	-	<0.50 *	0.72 J,DX*	<0.50 *	<0.50 *	0.77 J,DX*	<1.0 *	--
Selenium, dissolved	ug/l	-	<0.50 *	0.82 J,DX*	<0.50 *	<0.50 *	0.52 J,DX*	<1.0 IB*	--
Silver	ug/l	-	0.27 J,DX MB*	0.25 J,DX MB*	0.39 J,DX MB*	0.11 J,DX MB*	0.17 J,DX MB*	<0.20 *	--
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.20 *	--
Thallium	ug/l	2.0	<0.20 *	<0.20 *	0.40 J,DX*	<0.20 *	<0.20 *	<0.40 *	--
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.40 *	--
Vanadium	ug/l	-	30 *	3.8 J,DX*	55 *	18 *	14 *	<3.0 *	--
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	--
Zinc	ug/l	-	160 *	21 *	91 *	59 *	31 *	<8.0 *	--
Zinc, Dissolved	ug/l	-	7.3 J,DX*	12 J,DX*	<4.0 *	<4.0 *	<4.0 *	<8.0 *	--

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	ILBMP0002	LPBMP0001	LXBMP0003	LXBMP0004	LXBMP0005	A1BMP0002	A1SW0004
		Sample Name	ILBMP0002S006	LPBMP0001S007	LXBMP0003S006	LXBMP0004S004	LXBMP0005S004	A1BMP0002S003	A1SW0004S019
		Sample Date	3/25/2012	3/25/2012	3/25/2012	3/25/2012	3/25/2012	4/11/2012	4/11/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	Perf Mon
		Location	CM-9, IEL, Area II Road	Soil Stockpile Area	LOX	LOX	LOX	CM-9, A1LF	US (CM-9, A1LF)
		Rain Event	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	March 25, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	370 *	24 *	1000 *	310 *	180 *	*see A1SW0004S019*	27 *
pH (Lab)	SU	8.5	--	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	100 *	31 *	350 *	200 *	160 *	1.9 *	--
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.087 *	0.07 *	0.021 *	0.028 *	0.152 *	*see A1SW0004S019*	0.190 *
pH (Field)	pH Units	6.5 - 8.5	**4.88 ***	**5.57 ***	**5.12 ***	6.97 *	6.81 *	*see A1SW0004S019*	7.72 *
Temperature	deg c	86	11.57 *	11.94 *	10.48 *	11.04 *	10.98 *	*see A1SW0004S019*	11.06 *
Turbidity (Field)	NTU	-	325 *	39.2 *	800 *	477 *	391 *	*see A1SW0004S019*	6.4 *
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.017	0.033	0.135	0.128	0.138	0.104	0.104
Intensity (Ave) - Rain Event	in/hr	-	0.079	0.079	0.079	0.079	0.079	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.21	0.49	0.51	0.51	0.51	0.25	0.25
Intensity (Max) - Rain Event	in/hr	-	0.51	0.51	0.51	0.51	0.51	0.36	0.36
Total - Pre-Sampling	in	-	0.88	0.22	1.26	1.18	1.30	1.06	1.06
Total - Rain Event	in	-	2.12	2.12	2.12	2.12	2.12	2.37	2.37

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	A2BMP0003	A2BMP0004	A2BMP0005	B1BMP0004	EVBMP0002	ILBMP0001	APBMP0001
		Sample Name	A2BMP0003S005	A2BMP0004S003	A2BMP0005S003	B1BMP0004-5-Comp-S005	EVBMP0002S012	ILBMP0001S010	APBMP0001S002
		Sample Date	4/11/2012	4/11/2012	4/11/2012	4/11/2012	4/11/2012	4/11/2012	4/13/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	BMP
		Location	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	B-1 Media Filter	Helipad	IEL	AP/STP
		Rain Event	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	3.80E-10	2.30E-10	**3.41E-08**	2.20E-10	3.30E-10	**7.80E-08**	**1.16E-07**
INORGANICS									
Aluminum	ug/l	-	350 *	190 *	720 *	1900 *	150 *	680 *	1000 *
Aluminum, dissolved	ug/l	-	83 *	48 J,DX*	150 *	240 *	<40 *	230 *	<40 *
Antimony	ug/l	6.0	<0.30 *	<0.30 *	<0.60 *	<0.60 *	<0.30 *	<0.60 *	<0.30 *
Antimony, dissolved	ug/l	-	<0.30 *	<0.30 *	<0.60 *	<0.60 *	<0.30 *	0.73 J,DX*	<0.30 *
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	7.5 J,DX*	<7.0 *	<7.0 *	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Barium	mg/l	-	0.011 *	0.0078 J,DX*	0.020 *	0.026 *	0.0078 J,DX*	0.015 *	0.018 *
Barium, dissolved	mg/l	-	0.0076 J,DX*	<0.0060 *	0.014 *	0.011 *	<0.0060 *	0.012 *	<0.0060 *
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	0.048 J,DX MB*	0.027 J,DX MB*	0.16 MB*	0.042 J,DX MB*	<0.020 *	0.024 J,DX MB*	0.024 J,DX*
Boron, dissolved	mg/l	-	0.038 J,DX MB*	<0.020 *	0.13 MB*	0.030 J,DX MB*	<0.020 *	0.027 J,DX MB*	<0.020 *
Cadmium	ug/l	4.0	<0.10 *	<0.10 *	<0.20 *	<0.20 *	<0.10 *	<0.20 *	0.12 J,DX MB*
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.20 *	<0.20 *	<0.10 *	0.32 J,DX*	<0.10 *
Chromium	ug/l	-	<2.0 *	<2.0 *	<2.0 *	2.1 J,DX*	<2.0 *	<2.0 *	<2.0 *
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	<2.0 *	<2.0 *	<2.0 *	2.2 J,DX*	<2.0 *	<2.0 *	<2.0 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	2.1 *	2.3 *	3.9 J,DX*	2.8 J,DX*	2.6 *	4.2 *	3.3 *
Copper, dissolved	ug/l	-	2.2 *	1.8 J,DX*	3.3 J,DX*	2.0 J,DX*	2.1 *	12 *	1.6 J,DX*
Iron	mg/l	-	0.40 *	0.26 *	0.67 *	1.8 *	0.20 *	0.69 *	1.4 *
Iron, dissolved	mg/l	-	0.087 *	0.069 *	0.17 *	0.20 *	0.034 J,DX*	0.21 *	0.056 *
Lead	ug/l	5.2	0.80 J,DX*	0.78 J,DX*	1.6 J,DX*	1.3 J,DX*	1.1 *	1.2 J,DX*	**6.5 ***
Lead, dissolved	ug/l	-	0.30 J,DX*	0.38 J,DX*	0.80 J,DX*	0.92 J,DX*	0.35 J,DX*	0.63 J,DX*	0.43 J,DX*
Manganese	ug/l	-	<7.0 *	<7.0 *	14 J,DX*	100 *	8.3 J,DX*	18 J,DX*	66 *
Manganese, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	66 *	<7.0 *	15 J,DX*	14 J,DX*
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	0.13 J,DX*	<0.10 *	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	2.2 J,DX*	2.7 J,DX*	3.1 J,DX*	4.5 J,DX*	2.3 J,DX*	3.6 J,DX*	3.1 J,DX*
Nickel, dissolved	ug/l	-	2.5 J,DX*	2.3 J,DX*	2.7 J,DX*	3.3 J,DX*	<2.0 *	3.1 J,DX*	<2.0 *
Selenium	ug/l	-	<0.50 *	<0.50 *	<1.0 *	<1.0 *	<0.50 *	<1.0 *	<0.50 *
Selenium, dissolved	ug/l	-	<0.50 IB*	<0.50 *	<1.0 *	<1.0 *	<0.50 IB*	<0.50 IB*	<0.50 *
Silver	ug/l	-	<0.10 *	<0.10 *	<0.20 *	<0.20 *	<0.10 *	<0.20 *	0.18 J,DX MB*
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.20 *	<0.20 *	<0.10 *	<0.10 *	<0.10 *
Thallium	ug/l	2.0	<0.20 *	<0.20 *	<0.40 *	<0.40 *	<0.20 *	<0.40 *	<0.20 *
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.40 *	<0.40 *	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	<3.0 *	<3.0 *	5.0 J,DX*	4.8 J,DX*	<3.0 *	3.8 J,DX*	3.2 J,DX*
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *
Zinc	ug/l	-	4.6 J,DX*	11 J,DX*	<8.0 *	14 J,DX*	14 J,DX*	16 J,DX*	24 *
Zinc, Dissolved	ug/l	-	<4.0 *	9.0 J,DX*	<8.0 *	<8.0 *	8.5 J,DX*	100 *	5.8 J,DX*

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	A2BMP0003	A2BMP0004	A2BMP0005	B1BMP0004	EVBMP0002	ILBMP0001	APBMP0001
		Sample Name	A2BMP0003S005	A2BMP0004S003	A2BMP0005S003	B1BMP0004-5-Comp-S005	EVBMP0002S012	ILBMP0001S010	APBMP0001S002
		Sample Date	4/11/2012	4/11/2012	4/11/2012	4/11/2012	4/11/2012	4/11/2012	4/13/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	BMP
		Location	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	AP/STP, ELV, A2LF	B-1 Media Filter	Helipad	IEL	AP/STP
		Rain Event	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	18 *	16 *	18 *	41 *	12 *	49 *	58 *
pH (Lab)	SU	8.5	--	--	--	68 *	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	7.7 *	5.0 *	17 *	37 *	4.2 *	52 *	18 *
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.048 *	0.034 *	0.153 *	NR	0.036 *	0.770 *	0.061 *
pH (Field)	pH Units	6.5 - 8.5	**6.04 ***	**6.23 ***	**6.0 ***	**NR**	**8.88 ***	7.80 *	**5.9 ***
Temperature	deg c	86	11.83 *	12.55 *	13.85 *	NR	12.4 *	12.08 *	10.61 *
Turbidity (Field)	NTU	-	1.8 *	0.0 *	81 *	NR	14.2 *	45.9 *	48.34 *
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.096	0.099	0.105	0.087	0.109	0.099	0.035
Intensity (Ave) - Rain Event	in/hr	-	0.037	0.037	0.037	0.037	0.037	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.25	0.25	0.25	0.25	0.25	0.25	0.36
Intensity (Max) - Rain Event	in/hr	-	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Total - Pre-Sampling	in	-	1.06	1.06	1.06	1.06	1.06	1.06	2.15
Total - Rain Event	in	-	2.37	2.37	2.37	2.37	2.37	2.37	2.37

Notes:

1 - Dioxins not analyzed due to laboratory error.
NC - Not calculated because rainfall not measured.
NM - Rainfall was not measured at the Area IV weather station.
NR - Not recorded; field meter not functioning properly.
* - Data not validated.

For an explanation of qualifiers, refer to laboratory and data validation reports included in Appendix B.

Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	B1BMP0003	BGBMP0002	BGBMP0003	BGBMP0004	EVBMP0001	EVBMP0003	A2SW0001
		Sample Name	B1BMP0003S006	BGBMP0002S004	BGBMP0003S005	BGBMP0004S003	EVBMP0001S008	EVBMP0003S006	A2SW0001S014
		Sample Date	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	Perf Mon
		Location	B-1, Parking Lot	CM-3, Soil Borrow Area	Sage Ranch	Sage Ranch	ELV, Helipad Road	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)
		Rain Event	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS									
TCDD	ug/L	2.80E-08	**6.62E-08**	ND	ND	1.20E-10	**7.70E-08**	*see A2SW0001S014*	**1.24E-07**
INORGANICS									
Aluminum	ug/l	-	520 *	630 *	2800 *	4500 *	780 *	4400 *	--
Aluminum, dissolved	ug/l	-	78 *	290 *	67 *	290 *	<40 *	43 J,DX*	--
Antimony	ug/l	6.0	0.41 J,DX*	<0.60 *	<0.60 *	<0.60 *	0.31 J,DX*	0.43 J,DX*	--
Antimony, dissolved	ug/l	-	0.41 J,DX*	<0.30 *	<0.30 *	<0.30 *	<0.30 *	<0.30 *	--
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--
Barium	mg/l	-	0.013 *	0.014 *	0.038 *	0.064 *	0.013 *	0.050 *	--
Barium, dissolved	mg/l	-	0.0079 J,DX*	0.010 *	0.0094 J,DX*	0.015 *	<0.0060 *	<0.0060 *	--
Beryllium	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *	--
Boron	mg/l	1.0	<0.020 *	0.053 *	0.026 J,DX*	0.042 J,DX*	<0.020 *	<0.020 *	--
Boron, dissolved	mg/l	-	<0.020 *	0.050 MB*	0.025 J,DX MB*	0.039 J,DX MB*	<0.020 *	<0.020 *	--
Cadmium	ug/l	4.0	<0.10 *	<0.20 *	<0.20 *	<0.20 *	<0.10 *	0.21 J,DX MB*	--
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--
Chromium	ug/l	-	<2.0 *	<2.0 *	5.2 *	7.6 *	<2.0 *	8.6 *	--
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--
Cobalt	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	2.0 J,DX*	--
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *	--
Copper	ug/l	14	4.9 *	1.6 J,DX*	4.6 *	6.6 *	2.6 *	7.0 *	--
Copper, dissolved	ug/l	-	4.2 *	1.6 J,DX*	1.8 J,DX*	2.2 *	1.9 J,DX*	1.0 J,DX*	--
Iron	mg/l	-	0.62 *	0.60 *	3.7 *	6.0 *	1.0 *	6.2 *	--
Iron, dissolved	mg/l	-	0.074 *	0.19 *	0.067 *	0.24 *	0.047 *	0.054 *	--
Lead	ug/l	5.2	1.4 *	1.2 J,DX*	2.8 *	**7.6 ***	3.6 *	*see A2SW0001S014*	**21 ***
Lead, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	0.27 J,DX*	0.35 J,DX*	--
Manganese	ug/l	-	25 *	14 J,DX*	70 *	140 *	27 *	130 *	--
Manganese, dissolved	ug/l	-	14 J,DX*	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *	--
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--
Nickel	ug/l	100	2.6 J,DX*	3.5 J,DX*	6.5 J,DX*	8.6 J,DX*	2.6 J,DX*	6.8 J,DX*	--
Nickel, dissolved	ug/l	-	2.0 J,DX*	2.7 J,DX*	<2.0 *	2.8 J,DX*	<2.0 *	2.2 J,DX*	--
Selenium	ug/l	-	0.57 J,DX*	<1.0 *	<1.0 *	<1.0 *	<0.50 *	<0.50 *	--
Selenium, dissolved	ug/l	-	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *	<0.50 *	--
Silver	ug/l	-	<0.10 *	<0.20 *	<0.20 *	<0.20 *	<0.10 *	0.12 J,DX MB*	--
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *	--
Thallium	ug/l	2.0	<0.20 *	<0.40 *	<0.40 *	<0.40 *	<0.20 *	<0.20 *	--
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *	--
Vanadium	ug/l	-	<3.0 *	<3.0 *	7.6 J,DX*	12 *	3.0 J,DX*	12 *	--
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *	--
Zinc	ug/l	-	23 *	<8.0 *	15 J,DX*	28 J,DX*	17 J,DX*	65 *	--
Zinc, Dissolved	ug/l	-	15 J,DX*	<4.0 *	<4.0 *	<4.0 *	14 J,DX*	<4.0 *	--

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season
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		Object Name	B1BMP0003	BGBMP0002	BGBMP0003	BGBMP0004	EVBMP0001	EVBMP0003	A2SW0001
		Sample Name	B1BMP0003S006	BGBMP0002S004	BGBMP0003S005	BGBMP0004S003	EVBMP0001S008	EVBMP0003S006	A2SW0001S014
		Sample Date	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP	BMP	Perf Mon
		Location	B-1, Parking Lot	CM-3, Soil Borrow Area	Sage Ranch	Sage Ranch	ELV, Helipad Road	CM-1, ELV, Area II Road	US (CM-1, A2LF-3)
		Rain Event	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC									
Total Suspended Solids	mg/l	-	14 *	19 *	53 *	240 *	56 *	*see A2SW0001S014*	36 *
pH (Lab)	SU	8.5	--	--	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--	--	--
Turbidity	NTU	-	13 *	12 *	23 *	140 *	17 *	77 *	--
FIELD MEASUREMENTS									
Conductivity (Field)	mS	-	0.059 *	0.07 *	0.047 *	0.068 *	0.045 *	*see A2SW0001S014*	0.056 *
pH (Field)	pH Units	6.5 - 8.5	**5.49 ***	**6.33 ***	**5.87 ***	**6.07 ***	**6.09 ***	*see A2SW0001S014*	**5.85 ***
Temperature	deg c	86	14.11 *	9.99 *	11.24 *	9.88 *	10.75 *	*see A2SW0001S014*	11.26 *
Turbidity (Field)	NTU	-	18.7 *	8.5 *	31.6 *	204 *	21.6 *	*see A2SW0001S014*	946 *
RAINFALL									
Intensity (Ave) - Pre-Sampling	in/hr	-	0.023	0.020	0.031	0.037	0.033	0.029	0.028
Intensity (Ave) - Rain Event	in/hr	-	0.037	0.037	0.037	0.037	0.037	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.25	0.25	0.36	0.36	0.36	0.36	0.36
Intensity (Max) - Rain Event	in/hr	-	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Total - Pre-Sampling	in	-	1.33	1.07	1.86	2.36	2.00	1.74	1.65
Total - Rain Event	in	-	2.37	2.37	2.37	2.37	2.37	2.37	2.37

Notes:

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NM - Rainfall was not measured at the Area IV weather station.
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* - Data not validated.

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Results above NPDES Permit Limit in bold and gray shading

† Total rainfall, average rainfall intensity, and maximum 1-hour rainfall intensity were calculated based on rainfall recorded at a RWQCB-approved weather station within Area IV.

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	ILBMP0002	LPBMP0001	LXBMP0004	LXBMP0005	LXBMP0006
		Sample Name	ILBMP0002S007	LPBMP0001S008	LXBMP0004S005	LXBMP0005S005	LXBMP0006S001
		Sample Date	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP
		Location	CM-9, IEL, Area II Road	Soil Stockpile Area	LOX	LOX	LOX
		Rain Event	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
DIOXINS							
TCDD	ug/L	2.80E-08	**2.53E-07**	**2.05E-07**	3.30E-10	2.50E-10	**5.63E-08**
INORGANICS							
Aluminum	ug/l	-	14000 *	740 *	3000 *	4500 *	13000 *
Aluminum, dissolved	ug/l	-	330 *	47 J,DX*	150 *	120 *	200 *
Antimony	ug/l	6.0	<0.60 *	<0.30 *	0.40 J,DX*	0.47 J,DX*	1.1 J,DX*
Antimony, dissolved	ug/l	-	<0.30 *	<0.30 *	0.32 J,DX*	0.55 J,DX*	1.3 J,DX*
Arsenic	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Arsenic, dissolved	ug/l	-	<7.0 *	<7.0 *	<7.0 *	<7.0 *	<7.0 *
Barium	mg/l	-	0.17 *	0.012 *	0.039 *	0.071 *	0.14 *
Barium, dissolved	mg/l	-	0.0064 J,DX*	<0.0060 *	0.011 *	0.020 *	0.0065 J,DX*
Beryllium	ug/l	-	1.1 J,DX*	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Beryllium, dissolved	ug/l	-	<0.90 *	<0.90 *	<0.90 *	<0.90 *	<0.90 *
Boron	mg/l	1.0	0.032 J,DX*	<0.020 *	0.023 J,DX*	0.038 J,DX*	0.062 *
Boron, dissolved	mg/l	-	<0.020 *	<0.020 *	0.022 J,DX MB*	0.033 J,DX MB*	0.053 MB*
Cadmium	ug/l	4.0	1.1 J,DX MB*	<0.10 *	<0.10 *	<0.10 *	0.40 J,DX MB*
Cadmium, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Chromium	ug/l	-	29 *	<2.0 *	5.0 *	6.4 *	30 *
Chromium, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Cobalt	ug/l	-	9.0 J,DX*	<2.0 *	<2.0 *	2.4 J,DX*	10 *
Cobalt, dissolved	ug/l	-	<2.0 *	<2.0 *	<2.0 *	<2.0 *	<2.0 *
Copper	ug/l	14	**26 ***	5.1 *	7.0 *	8.4 *	**26 ***
Copper, dissolved	ug/l	-	3.1 *	2.1 *	2.9 *	2.1 *	3.3 *
Iron	mg/l	-	19 *	0.95 *	4.1 *	5.9 *	20 *
Iron, dissolved	mg/l	-	0.24 *	0.055 *	0.14 *	0.13 *	0.20 *
Lead	ug/l	5.2	**55 ***	3.1 *	**5.3 ***	4.4 *	**24 ***
Lead, dissolved	ug/l	-	0.34 J,DX*	<0.20 *	<0.20 *	<0.20 *	0.22 J,DX*
Manganese	ug/l	-	460 *	31 *	83 *	130 *	410 *
Manganese, dissolved	ug/l	-	<7.0 *	16 J,DX*	<7.0 *	<7.0 *	<7.0 *
Mercury	ug/l	0.13	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Mercury, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Nickel	ug/l	100	23 *	2.8 J,DX*	4.6 J,DX*	6.3 J,DX*	23 *
Nickel, dissolved	ug/l	-	2.2 J,DX*	<2.0 *	2.2 J,DX*	3.5 J,DX*	2.3 J,DX*
Selenium	ug/l	-	<1.0 *	<0.50 *	0.68 J,DX*	0.83 J,DX*	0.78 J,DX*
Selenium, dissolved	ug/l	-	<0.50 *	<0.50 *	<0.50 *	0.80 J,DX*	<0.50 *
Silver	ug/l	-	0.42 J,DX MB*	<0.10 *	<0.10 *	<0.10 *	0.32 J,DX MB*
Silver, dissolved	ug/l	-	<0.10 *	<0.10 *	<0.10 *	<0.10 *	<0.10 *
Thallium	ug/l	2.0	<0.40 *	<0.20 *	<0.20 *	<0.20 *	0.31 J,DX*
Thallium, dissolved	ug/l	-	<0.20 *	<0.20 *	<0.20 *	<0.20 *	<0.20 *
Vanadium	ug/l	-	36 *	3.0 J,DX*	8.4 J,DX*	11 *	42 *
Vanadium, dissolved	ug/l	-	<3.0 *	<3.0 *	<3.0 *	<3.0 *	<3.0 *
Zinc	ug/l	-	180 *	15 J,DX*	23 *	32 *	92 *
Zinc, Dissolved	ug/l	-	5.6 J,DX*	<4.0 *	5.3 J,DX*	<4.0 *	<4.0 *

Table 3-3
BMP Monitoring Sample Results, Outfall 009 Watershed
2011/2012 Rainy Season

		Object Name	ILBMP0002	LPBMP0001	LXBMP0004	LXBMP0005	LXBMP0006
		Sample Name	ILBMP0002S007	LPBMP0001S008	LXBMP0004S005	LXBMP0005S005	LXBMP0006S001
		Sample Date	4/13/2012	4/13/2012	4/13/2012	4/13/2012	4/13/2012
		Sample Type	BMP	BMP	BMP	BMP	BMP
		Location	CM-9, IEL, Area II Road	Soil Stockpile Area	LOX	LOX	LOX
		Rain Event	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012	April 10-13, 2012
ANALYTE	**UNITS**	**NPDES Permit Limit**	**RESULT**	**RESULT**	**RESULT**	**RESULT**	**RESULT**
MISC							
Total Suspended Solids	mg/l	-	1800 *	51 *	260 *	170 *	1300 *
pH (Lab)	SU	8.5	--	--	--	--	--
Specific Conductivity (Lab)	umhos/cm	-	--	--	--	--	--
Turbidity	NTU	-	350 *	24 *	81 *	140 *	360 *
FIELD MEASUREMENTS							
Conductivity (Field)	mS	-	0.057 *	0.157 *	0.090 *	0.143 *	0.058 *
pH (Field)	pH Units	6.5 - 8.5	**6.10 ***	**5.27 ***	**5.22 ***	**6.01 ***	**5.63 ***
Temperature	deg c	86	10.1 *	14.21 *	13.94 *	10.89 *	11.26 *
Turbidity (Field)	NTU	-	451 *	24.7 *	152 *	188 *	115 *
RAINFALL							
Intensity (Ave) - Pre-Sampling	in/hr	-	0.036	0.023	0.023	0.033	0.020
Intensity (Ave) - Rain Event	in/hr	-	0.037	0.037	0.037	0.037	0.037
Intensity (Max) - Pre-Sampling	in/hr	-	0.36	0.25	0.25	0.36	0.25
Intensity (Max) - Rain Event	in/hr	-	0.36	0.36	0.36	0.36	0.36
Total - Pre-Sampling	in	-	2.24	1.32	1.33	2.02	1.10
Total - Rain Event	in	-	2.37	2.37	2.37	2.37	2.37

Notes:

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NM - Rainfall was not measured at the Area IV weather station.
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