MWH

BUILDING A BETTER WORLD

MEMORANDUM

TO: Art Lenox/Lori Blair, Boeing
Allen Elliott/Steve Slaten, NASA

DATE: June 19, 2009

REF: 1891614

CC: Bill McElroy, CH2M HILL

FROM: Dixie Hambrick/Alex Fischl, MWH

SUBJECT: Response to RWQCB and DTSC Comments on the Final ISRA Work Plan

This memorandum serves as an addendum to the May 2009 Final Interim Source Removal Action (ISRA) Work Plan (MWH, 2009a). It has been prepared to respond to Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control (DTSC) comments on the May 2009 Final ISRA Work Plan. The Work Plan summarizes the results of the ISRA evaluation process conducted before May 1, 2009 and presents recommended remedial actions to control releases of constituents of concern (COCs) to surface water within areas of the Outfall 008 and Outfall 009 watersheds at the Santa Susana Field Laboratory (SSFL). The Work Plan was prepared by MWH and CH2M HILL on behalf of The Boeing Company (Boeing) and the National Aeronautics and Space Administration (NASA) 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). This memorandum was prepared by MWH and CH2M HILL on behalf of Boeing and NASA.

The RWQCB comments were provided to Boeing and NASA in a letter dated on June 5, 2009 (RWQCB, 2009a). The DTSC comments were submitted in a letter to the RWQCB on June 4, 2009 (DTSC, 2009), which the RWQCB provided in a letter to Boeing on June 10, 2009 (RWQCB, 2009b). Both agency comment letters initially comment on how the Final ISRA Work Plan addressed their comments on the Preliminary ISRA Work Plan, then present comments on the Final ISRA Work Plan. Comments by the RWQCB and DTSC on the Preliminary ISRA Work Plan that were not adequately addressed in the Final ISRA Work Plan were restated as comments to the Final ISRA Work Plan in the letters. Comments from the RWQCB and DTSC

on the Final ISRA Work Plan are reproduced below in their entirety. Responses are provided below each comment.

1) RESPONSE TO RWQCB COMMENTS (RWQCB, 2009b)

RWQCB Comment #1: *The statement that NASA has funding constraints appears in several places in the document. Please clarify the significance of these constraints. Do they have the potential to significantly influence the project schedule?*

Response: Federal funds are in place to conduct those ISRA activities on NASA property that are scheduled for 2009, which consists of activities related to the removal of soil at ELV-1C and ELV-1D. Statements in the Final ISRA Work Plan about federal funding constraints for work to be performed on NASA property refer to funding for activities to be performed in 2010 and 2011, which consist of activities to be performed at the remainder of ISRA Areas on NASA property in the Outfall 009 watershed. Currently, NASA funding constraints are not anticipated to delay the ISRA project schedule.

RWQCB Comment #2: *Based on Figure 3-1, the area with the highest copper and lead concentrations in soil in the outfall 008 area appears to have been excavated during the perchlorate cleanup. Please explain the need to re-excavate this area.*

Response: The soils represented by the sample results in question are sidewalls of excavations completed during perchlorate cleanup that were subsequently covered with backfill soils during site restoration. These soils, although possibly slightly disturbed during site restoration activities in 2003, remain in place and thus are recommended for excavation as part of the ISRA program.

RWQCB Comment #3: *It is indicated in Appendix B that rainfall runoff carries approximately 1000 tons of soil through outfall 008 each year. Based on field measurements, verify the reasonableness of this estimate.*

Response: The Revised Universal Soil Loss Equation (RUSLE) model estimates the average annual sediment yield for the Outfall 008 watershed to be 1,000 tons (Appendix B, Table 2).

This value represents the average amount of sediment that is eroded and potentially transported to drainages within the Outfall 008 watershed each year as a result of rainfall. The average annual suspended sediment load estimated for stormwater discharges at the Outfall 008 sample point was calculated to be 5.2 tons per year (Appendix B, Table 7). This value was the result of multiplying the average annual runoff volume at Outfall 008 (15 acre feet per year) calculated using the calibrated Storm Water Management Model (SWMM) and the average TSS concentration measured in runoff at Outfall 008 (257 mg/L) calculated from eleven grab samples collected at the NPDES outfall sample point. The large difference between the amount of estimated erosion sediment being transported to the Outfall 008 drainages annually (1,000 tons) and the estimated suspended sediment load discharged at Outfall 008 annually (5.2 tons) can be explained by the facts that (a) the TSS sample and measurement do not account for bedload, which may be a significant transported mass in the drainage, and (b) depression storage throughout the catchment and in the drainages captures significant amounts of eroded sediment prior to it reaching the Outfall 008 sample point.

RWQCB Comment #4: *Section 5-5, "Confirmation Soil Sampling" indicates that samples will be collected at "varying depths". Staff understands that samples will be collected at a range of depths below the surface of the excavation. Please clarify the proposed sampling depths in the Final Work Plan.*

Response: Confirmation soil samples from excavation sidewalls will be collected at varying depths below ground surface, not at varying depths into the side wall. In future documents, this will be referred to as varying elevations within the sidewall.

RWQCB Comment #5: *The sequence of source cleanups in the watersheds for outfalls 008 and 009 is not clear in the Final Work Plan. The schedule of the NASA work in the eastern 009 area is not well integrated into the overall schedule discussion. The Final Work Plan shall include a combined schedule with both NASA and non-NASA work and also include a chart that indicates the organizational responsibilities for each area cleanup task.*

Response: The 2009 ISRA remedial actions include source removal from 7 locations within the Outfall 008 watershed on Boeing property and 2 locations within the Outfall 009 watershed on NASA property. Data gap sampling is currently being performed for the remaining ISRA

preliminary evaluation areas (PEAs) in the Outfall 009 watershed on Boeing and NASA property and is expected to be completed in 2010. Results of the data gap sampling will be used to refine the ISRA PEAs using the ISRA area identification process described in the Final ISRA Work Plan. A remedial alternatives evaluation will be performed on each ISRA area, with remedial actions planned for 2010 and 2011. Below is a responsibility matrix for the ISRA activities.

Location	Data Gap Sampling		Remedial Action Implementation	
	Year	Responsibility	Year	Responsibility
Outfall 008				
CYN-1, DRG-1, HVS-1, -2A, -2B, -2C, -3	2009	Boeing	2009	Boeing
Outfall 009				
ELV-1C, -1D	2009	NASA	2009	NASA[1]
PEA-B1-1	2009/2010	Boeing	2010/2011[2]	Boeing
PEA-IEL-1	2009/2010	Boeing	2010/2011[2]	Boeing
PEA-A1LF-1	2009/2010	Boeing	2010/2011[2]	Boeing
PEA-A1LF-2	2009/2010	Boeing	2010/2011[2]	Boeing
PEA-LOX-1	2009/2010	NASA	2010/2011[2]	NASA
PEA-LOX-2	2009/2010	Boeing	2010/2011[2]	Boeing
PEA-LOX-3	2009/2010	NASA	2010/2011[2]	NASA
PEA-A2LF-1	2009/2010	NASA	2010/2011[2]	NASA
PEA-A2LF-2	2009/2010	NASA	2010/2011[2]	NASA
PEA-A2LF-3	2009/2010	NASA	2010/2011[2]	NASA
PEA-AP/STP-1	2009/2010	NASA	2010/2011[2]	NASA

Notes:

[1] - NASA has contracted with Boeing to manage the activities related to this task on NASA property. NASA will provide support and input, as necessary.

[2] - Unknown at this time whether these ISRA preliminary evaluation areas (PEAs) will require remedial action. Data gap sampling for these PEAs has not yet been completed such that the ISRA Area identification process may be performed.

RWQCB Comment #6: *The Final Work Plan does not adequately describe radiological monitoring during the cleanup. Monitoring for radiological contamination is an important activity*

being conducted during soil excavation. The details of radiological screening shall be clearly presented in the Final Work Plan.

Response #6: Radiological screening is proposed to be conducted on excavated soils planned for offsite disposal. Section 6.3.2, Waste Characterization Samples, states "waste characterization samples will be analyzed for the required constituents for offsite disposal, including radiological screening. The procedures to perform radiological screening will be similar procedures to those established for ongoing cleanup activities in the Northern Drainage." Radiological screening protocols will be included in the Soil Management Plan (SMP), which will be submitted to the RWQCB for review and approval prior to implementation. Other radiological monitoring during ISRA implementation activities is not planned based on the soil, groundwater, and surface water monitoring data collected in these watersheds (MWH, 2009b). However, as will be described in the SMP, if subsurface debris is encountered during ISRA implementation, additional radiological screening measures will be performed. These additional radiological screening measures for the ISRA project will be consistent with DTSC-approved procedures for cleanup in the Northern Drainage, and as required in the Area I and II Landfills investigation work plan.

2) RESPONSE TO DTSC COMMENTS (DTSC, 2009b)

DTSC Comment #1: *The ISRA Work Plan indicates that several additional planning documents will be prepared including, Site Specific Health and Safety Plan, Erosion Control Plan, Soil Management Plan, and Transportation Plan prior to implementation of field work. Section 6.3* Additional Remedial Planning Activities *should be revised to include additional information requirements for the future Soil Management Plans (SMPs). The SMPs should include area specific chemical characterization and waste characterization sampling strategies. Strategies for hazardous waste and non hazardous waste off site disposal should be described. The SMPs should at a minimum include a discussion of the radiologic screening process and soil management procedures and discussion of contingencies to be followed when encountering unforeseen items such as explosives.*

Response: Section 6.3, Soil Management, states "a SMP will be prepared to support ISRA construction activities". The project-specific SMP will include a detailed description of the following soil management procedures:

- Soil excavation, handling, stockpiling, and disposal procedures;
- Soil characterization procedures;
- Air monitoring procedures;
- Soil tracking, documentation, and reporting procedures;
- Radiological screening procedures;
- Unexploded ordnance (UXO) monitoring procedures; and
- Stockpile Best Management Practices (BMPs).

The SMP will be submitted to the RWQCB for review and approval prior to implementation.

DTSC Comment #2: *The Chemicals of Concern (COCs) used to define preliminary excavation areas (PEAs) in Outfall 009 watershed include volatile organic compound (VOC) trichloroethene (TCE). Soil confirmation sampling description (page 5-4) should include clear reference to use of sampling method EPA Method 5035 for analysis of VOCs in soil.*

Response: Section 5.5, Confirmation Soil Sampling, states "Soil samples will be collected and analyzed following DTSC-approved field sampling and analytical methods as specified in the QAPP or recently DTSC-approved work plans for the RFI." The DTSC-approved analytical methods for VOC analysis is EPA Method 5035.

DTSC Comment #3: *The description of soil stock pile air emissions evaluation using a photo ionization detector (PID) is incomplete (page 6-3). The SMP should include at a minimum the soil stockpile PID action levels used to fulfill the requirements for Ventura County Air Pollution Control District.*

Response: Section 6.3, Soil Management, states "When soils are initially excavated and stockpiled, reactive organic compounds (ROC) emissions will be measured using a photo ionization detector (PID) to determine if mitigation measures are required according to Rule 74.29 of the Ventura County Air Pollution Control District (VCAPCD)." VCAPCD Rule 74.29, Section B.1, states "No person shall cause or allow the aeration of soil that contains

gasoline, diesel fuel, or jet fuel, if such aeration: a. Emits reactive organic compounds (ROC), as measured by a certified organic vapor analyzer, in excess of 50 parts per million by volume (ppmv) above background, as hexane, except nonrepeatable momentary readings." Therefore, the PID action level to fulfill the requirements for VCAPCD will be 50 ppmv. Soil stockpile management procedures, including air monitoring protocols and the VCAPCD soil stockpile PID action level, will be included in the SMP, which will be submitted to the RWQCB for review and approval, and DTSC for comment, prior to implementation.

REFERENCES

DTSC, 2009. Letter from Mr. Buck King to the RWQCB presenting the GSU Review Memorandum of the Final ISRA Work Plan, SSFL, Ventura County, California, dated June 4.

MWH, 2009a. Final ISRA Work Plan, SSFL, Ventura County, California. May.

MWH, 2009b. SSFL Radiological Investigation Summary for Outfalls 008 and 009, SSFL, Ventura County, California. June 12.

RWQCB, 2008. California Water Code Section 13304 Order to Perform Interim/Source Removal Action of Soil in the Areas of Outfall 008 and 009 Drainage Areas, The Boeing Company, SSFL, Ventura County, California. December 3.

RWQCB, 2009a. Comments and Requirements Related to the Final ISRA Work Plan Submitted In Response to California Water Code Section 13304 Order, The Boeing Company, SSFL, Ventura County, California. June 5.

RWQCB, 2009b. DTSC Comments on the Final ISRA Work Plan Submitted In Response to California Water Code Section 13304 Order, The Boeing Company, SSFL, Ventura County, California. June 10.