

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 15, 2011

LDC Report Date: August 19, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18148-1

Sample Identification

RD-02_071511_01
RD-52B_071511_01
RD-01_071511_01
RD-02_071511_01MS
RD-02_071511_01MSD

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18148-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18148-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18148-1	RD-02_071511_01 RD-52B_071511_01 RD-01_071511_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18148-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18148-1**

No Sample Data Qualified in this SDG

LDC #: 26013B76
 SDG #: 280-18148-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level IV

Date: 8/18/11
 Page: 1 of 1
 Reviewer: SVL
 2nd Reviewer: ✓

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/15/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-02_071511_01	11	MB 280-77504/28	21		31
2	RD-52B_071511_01	12		22		32
3	RD-01_071511_01	13		23		33
4	RD-02_071511_01MS	14		24		34
5	RD-02_071511_01MSD	15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____



Laboratory Data Consultants, Inc.

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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 1, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 9, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26013:

<u>SDG #</u>	<u>Fraction</u>
280-17952-1/IUG1365	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane,
280-18148-1/IUG1818	Semivolatiles, N-Nitrosodimethylamine,
280-18183-1/IUG1817	Polychlorinated Biphenyls, Metals, Wet Chemistry,
280-18230-1/IUG2058	Gasoline Range Organics, Diesel Range Organics,
280-17902-1/IUG1058	Perchlorate, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26013 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		GRO (8015B)		DRO (8015B)		CLO ₄ (6860)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)										
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S							
Matrix: Water/Soil																																										
A	280-17952-1/ IUG1365	08/09/11	08/30/11	13	0	10	0	4	0	4	0	2	0	4	0	1	0	4	0	5	0	4	0	4	0	4	0	1	0	1	0	3	0	1	0							
B	280-18148-1/ IUG1818	08/09/11	08/30/11	5	0	5	0	2	0	3	0	-	-	3	0	-	-	-	-	-	-	-	-	-	-	3	0	3	0	3	0	3	0	3	0							
C	280-18183-1/ IUG1817	08/09/11	08/30/11	12	0	8	0	5	0	3	0	-	-	3	0	-	-	4	0	4	0	4	0	4	0	3	0	-	2	0	3	0	2	0	2	0						
D	280-18230-1/ IUG2058	08/09/11	08/30/11	10	0	10	0	3	0	6	0	-	-	7	0	-	-	-	-	-	-	-	-	-	3	0	-	1	0	4	0	1	0	4	0	1	0					
E	280-17902-1/ IUG1058	08/10/11	08/30/11	11	0	6	0	3	0	4	0	1	0	4	0	1	0	3	0	5	0	5	0	-	3	0	-	2	0	2	0	2	0	2	0	-	-					
Total																																										
				51	0	39	0	17	0	20	0	3	0	21	0	2	0	11	0	14	0	4	0	4	0	16	0	1	0	9	0	15	0	7	0	7	0	0	0	0	0	230

EDD Client Select IV LDC #26013 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl SO ₄ (300.0)		F (300.0)		Br NO ₂ O-PO ₄		Cr(VI) (7196A)		CN- (9012A)		CLO ₄ (314.0)		pH (9040B)		S= (4500-S2 D)		Diss CLO ₄ (314.0)		NO ₃ (300.0)																
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S							
Matrix: Water/Soil																																								
A	280-17952-1	08/09/11	08/30/11	4	0	1	0	6	0	1	0	1	0	-	-	7	0	1	0	-	-	1	0	6	0															
B	280-18148-1	08/09/11	08/30/11	3	0	-	-	3	0	-	-	-	-	-	-	3	0	3	0	-	-	-	-	-	3	0														
C	280-18183-1	08/09/11	08/30/11	3	0	-	-	7	0	-	-	-	-	-	-	2	0	2	0	-	-	-	-	-	3	0														
D	280-18230-1	08/09/11	08/30/11	6	0	-	-	6	0	-	-	-	0	0	6	0	6	0	6	0	0	0	0	2	0															
D	280-18230-1	08/09/11	08/30/11	0	0	-	-	0	0	-	-	-	6	0	0	0	0	0	0	0	3	0	-	-	4	0														
E	280-17902-1	08/10/11	08/30/11	2	0	2	0	7	0	2	0	2	0	-	-	7	0	-	-	-	-	-	2	0	4	0														
Total																																								
				18	0	3	0	29	0	3	0	3	0	6	0	25	0	12	0	3	0	3	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: August 22, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-60_071811_01
TB_RD-60_071811
RD-63_071811_01
PZ-108_071811_01
RS-32_071811_01
RD-53_071811_01
RD-52A_071811_01
RD-18_071811_01
TB_RD-18_071811
RD-19_071811_01
WS-04A_071811_01
TB_RD-52A_071811
RD-52A_071811_01MS
RD-52A_071811_01MSD

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
TB_RD-60_071811 RD-63_071811_01	All TCL compounds	15	14	J (all detects) UJ (all non-detects)	P
RD-53_071811_01	Trichloroethene	15	14	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-79680/6	8/1/11	Acetone Methylene chloride	4.29 ug/L 0.418 ug/L	RD-53_071811_01 RD-52A_071811_01 RD-19_071811_01 WS-04A_071811_01 TB_RD-52A_071811

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-53_071811_01	Acetone	4.5 ug/L	10U ug/L
RD-52A_071811_01	Acetone	27 ug/L	40U ug/L
RD-19_071811_01	Acetone	5.8 ug/L	10U ug/L
WS-04A_071811_01	Acetone	5.1 ug/L	10U ug/L
TB_RD-52A_071811	Acetone Methylene chloride	4.4 ug/L 0.85 ug/L	10U ug/L 5.0U ug/L

Samples TB_RD-60_071811, TB_RD-18_071811, and TB_RD-52A_071811 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-60_071811	7/18/11	Methylene chloride	0.77 ug/L	RD-60_071811_01 RD-63_071811_01 PZ-108_071811_01
TB_RD-52A_071811	7/18/11	Acetone Methylene chloride	4.4 ug/L 0.85 ug/L	RS-32_071811_01 RD-53_071811_01 RD-52A_071811_01
TB_RD-18_071811	7/18/11	Acetone	2.7 ug/L	RD-18_071811_01 RD-19_071811_01 WS-04A_071811_01

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Methylene chloride	0.53 ug/L	PZ-108_071811_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RS-32_071811_01	Acetone	6.5 ug/L	10U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-53_071811_01	Acetone	4.5 ug/L	10U ug/L
RD-52A_071811_01	Acetone	27 ug/L	40U ug/L
RD-18_071811_01	Acetone	3.7 ug/L	10U ug/L
RD-19_071811_01	Acetone	5.8 ug/L	10U ug/L
WS-04A_071811_01	Acetone	5.1 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-60_071811_01	Toluene-d8	118 (88-110)	Trichloroethene	J (all detects)	A
RD-63_071811_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
PZ-108_071811_01	Toluene-d8	118 (88-110)	All TCL compounds except Trichloroethene	J (all detects)	A
RD-53_071811_01	Toluene-d8	113 (88-110)	Trichloroethene	J (all detects)	A
RD-18_071811_01	Toluene-d8 Bromofluorobenzene	125 (88-110) 118 (86-115)	All TCL compounds	J (all detects)	P
TB_RD-18_071811	Toluene-d8	118 (88-110)	All TCL compounds	J (all detects)	P
RD-19_071811_01	1,2-Dichloroethane-d4 Toluene-d8	124 (80-120) 86 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	P
WS-04A_071811_01	1,2-Dichloroethane-d4	122 (80-120)	All TCL compounds	J (all detects)	P
MB 280-79680/6	Dibromofluoromethane	84 (86-118)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-52A_071811_01MS/MSD (RD-52A_071811_01)	cis-1,2-Dichloroethene	-	73 (75-120)	-	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
	trans-1,2-Dichloroethene	-	79 (80-120)	-		

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-78942/5,6 (RD-60_071811_01 PZ-108_071811_01 RS-32_071811_01 RD-18_071811_01 TB_RD-18_071811 MB 280-78942/7)	Acetone Methyl ethyl ketone	- 136 (57-120)	141 (48-130) 134 (57-120)	- -	J (all detects) J (all detects)	P
LCS/D 280-79706/4,5 (RD-63_071811_01 MB 280-79706/8)	Methyl ethyl ketone	149 (57-120)	148 (57-120)	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18183-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1	TB_RD-60_071811 RD-63_071811_01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18183-1	RD-53_071811_01	Trichloroethene	J (all detects) UJ (all non-detects)	A	Technical holding time (H)
280-18183-1	RD-60_071811_01 RD-53_071811_01	Trichloroethene	J (all detects)	A	Surrogate spikes (%R) (S)
280-18183-1	RD-63_071811_01 TB_RD-18_071811 RD-18_071811_01 WS-04A_071811_01	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18183-1	PZ-108_071811_01	All TCL compounds except Trichloroethene	J (all detects)	A	Surrogate spikes (%R) (S)
280-18183-1	RD-19_071811_01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R) (S)
280-18183-1	RD-52A_071811_01	cis-1,2-Dichloroethene trans-1,2-Dichloroethene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18183-1	RD-60_071811_01 PZ-108_071811_01 RS-32_071811_01 RD-18_071811_01 TB_RD-18_071811	Acetone Methyl ethyl ketone	J (all detects) J (all detects)	P	Laboratory control samples (%R) (L)
280-18183-1	RD-63_071811_01	Methyl ethyl ketone	J (all detects)	P	Laboratory control samples (%R) (L)
280-18183-1	RD-60_071811_01 TB_RD-60_071811 RD-63_071811_01 PZ-108_071811_01 RS-32_071811_01 RD-53_071811_01 RD-52A_071811_01 RD-18_071811_01 TB_RD-18_071811 RD-19_071811_01 WS-04A_071811_01 TB_RD-52A_071811	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18183-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18183-1	RD-53_071811_01	Acetone	10U ug/L	A	B
280-18183-1	RD-52A_071811_01	Acetone	40U ug/L	A	B
280-18183-1	RD-19_071811_01	Acetone	10U ug/L	A	B
280-18183-1	WS-04A_071811_01	Acetone	10U ug/L	A	B
280-18183-1	TB_RD-52A_071811	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Field Blank Data Qualification Summary - SDG 280-18183-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18183-1	RS-32_071811_01	Acetone	10U ug/L	A	T
280-18183-1	RD-53_071811_01	Acetone	10U ug/L	A	T
280-18183-1	RD-52A_071811_01	Acetone	40U ug/L	A	T
280-18183-1	RD-18_071811_01	Acetone	10U ug/L	A	T
280-18183-1	RD-19_071811_01	Acetone	10U ug/L	A	T
280-18183-1	WS-04A_071811_01	Acetone	10U ug/L	A	T

LDC #: 26013C1a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18183-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/18/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 2, 9, 12 FB = FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(from 280-17952-1)

Validated Samples:

Water

1	RD-60_071811_01	11	WS-04A_071811_01	21	MB 280-78942/7	31
2	TB_RD-60_071811	12	TB_RD-52A_071811	22	MB 280-79680/6	32
3	RD-63_071811_01	13	RD-52A_071811_01MS	23	MB 280-79706/8	33
4	PZ-108_071811_01	14	RD-52A_071811_01MSD	24	MB 280-79721/9	34
5	RS-32_071811_01	15		25		35
6	RD-53_071811_01	16		26		36
7	RD-52A_071811_01	17		27		37
8	RD-18_071811_01	18		28		38
9	TB_RD-18_071811	19		29		39
10	RD-19_071811_01	20		30		40

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A
 Were all surrogate %R within QC limits?

Y N N/A
 If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications	Code : S
1		(DL)	TOL	118 (88-110)	J/dets/A	(qual S only)
3			TOL	111	J/dets/P	(all TOL)
4			TOL	118	J/dets/A	(all except S)
6		(DL)	TOL	113	↓	(qual S only)
8			TOL	125	J/dets/P	(all TOL)
			BFB	118 (86-115)	↓	
9			TOL	118 (88-110)	↓	
10			DCE	124 (80-120)	J/MS/P	
			TOL	86 (88-110)	↓	
11			DCE	122 (80-120)	J/dets/P	
			DFM	84 (86-118)	J/MS/P	↓
		MB 280-79180/6				

QC Limits (Soil)

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

QC Limits (Water)

- 85-120
- 75-120
- 70-120
- 85-115

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 18, 2011

LDC Report Date: August 19, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-63_071811_01
TB_RD-63_071811
RD-53_071811_01
RD-52A_071811_01
RD-18_071811_01
TB_RD-18_071811
WS-04A_071811_01
TB_RD-52A_071811
WS-04A_071811_01MS
WS-04A_071811_01MSD

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-63_071811, TB_RD-18_071811, and TB_RD-52A_071811 were identified as trip blanks. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1	RD-63_071811_01 TB_RD-63_071811 RD-53_071811_01 RD-52A_071811_01 RD-18_071811_01 TB_RD-18_071811 WS-04A_071811_01 TB_RD-52A_071811	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

LDC #: 26013C1b
 SDG #: 280-18183-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/18/11
 Page: 1 of 1
 Reviewer: JVL
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2 6 8

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-63_071811_01	11	MB 280-77693/5	21	31
2	TB_RD-63_071811	12		22	32
3	RD-53_071811_01	13		23	33
4	RD-52A_071811_01	14		24	34
5	RD-18_071811_01	15		25	35
6	TB_RD-18_071811	16		26	36
7	WS-04A_071811_01	17		27	37
8	TB_RD-52A_071811	18		28	38
9	WS-04A_071811_01MS	19		29	39
10	WS-04A_071811_01MSD	20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: August 19, 2011
Matrix: Water
Parameters: 1,2,3-Trichloropropane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18183-1/IUG1817

Sample Identification

RD-60_071811_01
TB_RD-60_071811
RD-53_071811_01
RD-52A_071811_01
TB_RD-52A_071811

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Samples TB_RD-60_071811 and TB_RD-52A_071811 were identified as trip blanks. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1/IUG1817	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18183-1/IUG1817

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1/ IUG1817	RD-60_071811_01 TB_RD-60_071811 RD-53_071811_01 RD-52A_071811_01 TB_RD-52A_071811	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18183-1/IUG1817

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18183-1/IUG1817

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	N/A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2, 5

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *Water*

1	RD-60_071811_01	11	11G2490-BIK1	21	31
2	TB_RD-60_071811	12	11G2891- J	22	32
3	RD-53_071811_01	13		23	33
4	RD-52A_071811_01	14		24	34
5	TB_RD-52A_071811	15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 18, 2011

LDC Report Date: August 22, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-53_071811_01

RD-52A_071811_01

WS-04A_071811_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1	RD-53_071811_01 RD-52A_071811_01 WS-04A_071811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

LDC #: 26013C2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18183-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *[Signature]*

2nd Reviewer: *[Signature]*

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	RD-53_071811_01	11	<i>MB 280-77668/1A</i>	21		31	
2	RD-52A_071811_01	12		22		32	
3	WS-04A_071811_01	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 18, 2011

LDC Report Date: August 22, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-53_071811_01
RD-52A_071811_01
WS-04A_071811_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-77600/1-A	7/20/11	N-Nitrosodimethylamine	0.00647 ug/L	All samples in SDG 280-18183-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D280-77600/2,3-A (All samples in SDG 280-18183-1)	N-Nitrosodimethylamine	125 (68-124)	-	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1	RD-53_071811_01 RD-52A_071811_01 WS-04A_071811_01	N-Nitrosodimethylamine	J (all detects)	P	Laboratory control samples (%R) (L)
280-18183-1	RD-53_071811_01 RD-52A_071811_01 WS-04A_071811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18183-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

LDC #: 26013C2b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18183-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVL

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)^M

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	SW	LCS 1p
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: WATCY

1	RD-53_071811_01	11	MB 280-77600/A-A	21		31	
2	RD-52A_071811_01	12		22		32	
3	WS-04A_071811_01	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Metals
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-63_071811_01
PZ-108_071811_01
RD-18_071811_01
RD-19_071811_01
RD-63_071811_01F
PZ-108_071811_01F
RD-18_071811_01F
RD-19_071811_01F
RD-63_071811_01MS
RD-63_071811_01MSD
RD-63_071811_01FMS
RD-63_071811_01FMSD

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020 and 6010B for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	0.216 mg/L	RD-63_071811_01F RD-18_071811_01F RD-19_071811_01F
PB (prep blank)	Sodium	0.207 mg/L	RD-63_071811_01 RD-18_071811_01 RD-19_071811_01
PB (prep blank)	Thallium	0.0000312 mg/L	RD-63_071811_01 PZ-108_071811_01 RD-18_071811_01 RD-19_071811_01

Data qualification by the preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-63_071811_01	Thallium	0.000049 mg/L	0.000049U mg/L
PZ-108_071811_01	Thallium	0.000024 mg/L	0.000024U mg/L
RD-18_071811_01	Thallium	0.000024 mg/L	0.000024U mg/L

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-108_071811_01F

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-108_071811_01F	Silver Thallium	0.000017 mg/L 0.000034 mg/L	0.000017U mg/L 0.000034U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V. .

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18183-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18183-1	RD-63_071811_01 PZ-108_071811_01 RD-18_071811_01 RD-19_071811_01 RD-63_071811_01F PZ-108_071811_01F RD-18_071811_01F RD-19_071811_01F	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Laboratory Blank Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18183-1	RD-63_071811_01	Thallium	0.000049U mg/L	A	B
280-18183-1	PZ-108_071811_01	Thallium	0.000024U mg/L	A	B
280-18183-1	RD-18_071811_01	Thallium	0.000024U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Field Blank Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18183-1	PZ-108_071811_01F	Silver Thallium	0.000017U mg/L 0.000034U mg/L	A	F

LDC #: 26013C4
 SDG #: 280-18183-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8-23-11
 Page: 1 of 1
 Reviewer: JC
 2nd Reviewer: W

METHOD: Metals (EPA SW 846 Method 6020/7000) ^{6010B}

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/18/11</u>
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV.	Field Blanks	SW	FB = FB_071211-19F(SD & 280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	RD-63_071811_01	11	RD-63_071811_01FMS	21		31	
2	PZ-108_071811_01	12	RD-63_071811_01FMSD	22		32	
3	RD-18_071811_01	13		23		33	
4	RD-19_071811_01	14		24		34	
5	RD-63_071811_01F	15		25		35	
6	PZ-108_071811_01F	16		26		36	
7	RD-18_071811_01F	17		27		37	
8	RD-19_071811_01F	18		28		38	
9	RD-63_071811_01MS	19		29		39	
10	RD-63_071811_01MSD	20		30		40	

Notes: Samples appended with "F" were analyzed for dissolved metals

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: NA
Reason Code: B
Associated Samples: 5, 7, 8

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	No Qualifiers
Na		0.216		1.08	

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 1, 3, 4

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	No Qualifiers
Na		0.207		1.035	

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 1-4

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	No Qualifiers
TI		0.0000312		0.0002	
				0.000049	
				0.000024	
				0.000024	

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Field Blanks

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Reason: F

Blank units: mg/L **Associated sample units:** mg/L

Sampling date: 7/12/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 6

Analyte	Blank ID	Action Limit	Sample Identification			
	FB_071211_19F (SDG: 280-17952-1)		6			
Ag	0.000018	0.00009	0.000017			
Tl	0.000033	0.000165	0.000034			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-60_071811_01
RD-63_071811_01
RD-53_071811_01
RD-52A_071811_01
RD-18_071811_01
RD-19_071811_01
WS-04A_071811_01
RD-60_071811_01DUP
RD-53_071811_01MS
RD-53_071811_01MSD
RD-53_071811_01DUP

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RD-53_071811_01	pH	97 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-52A_071811_01	pH	94.75 hours	48 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18183-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_01 and RD19-_071811_03A (from SDG IUG1670) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-19_071811_01	RD19-_071811_03A			
Fluoride	0.40	0.49	20 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18183-1	RD-53_071811_01 RD-52A_071811_01	pH	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18183-1	RD-60_071811_01 RD-63_071811_01 RD-53_071811_01 RD-52A_071811_01 RD-18_071811_01 RD-19_071811_01 WS-04A_071811_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Laboratory Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Field Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

LDC #: 26013C6
 SDG #: 280-18183-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/23/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/18/11
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	A	
IV.	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V.	Duplicates	A	D/D
VI.	Laboratory control samples	A	LCS/P
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	split = (6, RD-19-071811_03A (sn6: JUG1670))
X.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *water*

1	RD-60_071811_01	11	RD-53_071811_01DUP	21		31
2	RD-63_071811_01	12		22		32
3	RD-53_071811_01	13		23		33
4	RD-52A_071811_01	14		24		34
5	RD-18_071811_01	15		25		35
6	RD-19_071811_01	16		26		36
7	WS-04A_071811_01	17		27		37
8	RD-60_071811_01DUP	18		28		38
9	RD-53_071811_01MS	19		29		39
10	RD-53_071811_01MSD	20		30		40

Notes: _____

LDC# 26013C6

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Page: 11 of 11
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	RD-19_071811_01 <u>6</u>	RD-19_071811_03A		
Fluoride	0.40	0.49	20	

V:\FIELD DUPLICATES\FD_inorganic\26013C6.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 18, 2011

LDC Report Date: August 25, 2011

Matrix: Water

Parameters: Gasoline Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RS-32_071811_01
RD-53_071811_01
TB_RD-18_071811
TB_RD-52A_071811
RD-53_071811_01MS
RD-53_071811_01MSD

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Gasoline Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No gasoline range organic contaminants were found in the method blanks.

Samples TB_RD-18_071811 and TB_RD-52A_071811 were identified as trip blanks. No gasoline range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-53_071811_01	a,a,a-Trifluorotoluene	269 (82-110)	Gasoline range organics	J (all detects)	A

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RS-32_071811_01 and RS-32_071811_03 (from SDG IUG1663) were identified as field duplicates. No gasoline range organics were detected in any of the samples.

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RS-32_071811_01	RS-32_071811_03			
Gasoline Range Organics (C6-C12)	13	50U	117(≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1	RD-53_071811_01	Gasoline range organics	J (all detects)	A	Surrogate spikes (%R) (S)
280-18183-1	RS-32_071811_01 RD-53_071811_01 TB_RD-18_071811 TB_RD-52A_071811	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Field Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates / Split	SW	S = 1 + RS-32_071811_03 (1451663)
XIII.	Field blanks	ND	TB = 3, 4

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

W6 Accd

1	RS-32_071811_01	11	MP 280-78295/6	21		31
2	RD-53_071811_01	12		22		32
3	TB_RD-18_071811	13		23		33
4	TB_RD-52A_071811	14		24		34
5	RD-53_071811_01MS	15		25		35
6	RD-53_071811_01MSD	16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

- Y N NA Were field duplicate pairs identified in this SDG?
- Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration ug/L		($\leq 35\%$) RPD	Qualifications (Parent only)
	RS-32_071811_01	RS-32_071811_03		
GRO (C6-C12)	13	50U	117	NQ (.5xRL)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: August 19, 2011
Matrix: Water
Parameters: Diesel Range Organics
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-52A_071811_01
WS-04A_071811_01
RD-53_071811_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1	RD-52A_071811_01 WS-04A_071811_01 RD-53_071811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

LDC #: 26013C8

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18183-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

EPA SW 846 Method 8015B

Reviewer: JVG
2nd Reviewer: 1

METHOD: GC Diesel Range Organics (Oklahoma Department of Environmental Quality)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	A	KCS 1p
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

water

1	RD-52A 071811 01	11	MB 280-78239 / 1-A	21	31	
2	WS-04A 071811 01	12		22	32	
3	RD-53 071811 01	13		23	33	
4		14		24	34	
5		15		25	35	
6		16		26	36	
7		17		27	37	
8		18		28	38	
9		19		29	39	
10		20		30	40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 18, 2011

LDC Report Date: August 19, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18183-1

Sample Identification

RD-53_071811_01
RD-52A_071811_01
WS-04A_071811_01
RD-53_071811_01MS
RD-53_071811_01MSD

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18183-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Data Qualification Summary - SDG 280-18183-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18183-1	RD-53_071811_01 RD-52A_071811_01 WS-04A_071811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Field Blank Data Qualification Summary - SDG 280-18183-1**

No Sample Data Qualified in this SDG

LDC #: 26013C76
 SDG #: 280-18183-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level ~~IV~~ ✓

Date: 8/18/11
 Page: 1 of 1
 Reviewer: JYL
 2nd Reviewer: ✓

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS / D
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

INTEGRAL

1	RD-53_071811_01	11	MB 280-18183/25	21		31	
2	RD-52A_071811_01	12		22		32	
3	WS-04A_071811_01	13		23		33	
4	RD-53_071811_01MS	14		24		34	
5	RD-53_071811_01MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____



Laboratory Data Consultants, Inc.

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Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 1, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 9, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26013:

<u>SDG #</u>	<u>Fraction</u>
280-17952-1/IUG1365	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane,
280-18148-1/IUG1818	Semivolatiles, N-Nitrosodimethylamine,
280-18183-1/IUG1817	Polychlorinated Biphenyls, Metals, Wet Chemistry,
280-18230-1/IUG2058	Gasoline Range Organics, Diesel Range Organics,
280-17902-1/IUG1058	Perchlorate, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26013 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		GRO (8015B)		DRO (8015B)		CLO ₄ (6880)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																																			
A	280-17952-1/ IUG1365	08/09/11	08/30/11	13	0	10	0	4	0	4	0	2	0	4	0	1	0	4	0	5	0	-	-	4	0	4	0	1	0	1	0	3	0	1	0
B	280-18148-1/ IUG1818	08/09/11	08/30/11	5	0	5	0	2	0	3	0	-	-	3	0	-	-	-	-	-	-	-	-	3	0	-	-	3	0	3	0	3	0	3	0
C	280-18183-1/ IUG1817	08/09/11	08/30/11	12	0	8	0	5	0	3	0	-	-	3	0	-	-	4	0	4	0	4	0	3	0	-	-	2	0	3	0	2	0	2	0
D	280-18230-1/ IUG2058	08/09/11	08/30/11	10	0	10	0	3	0	6	0	-	-	7	0	-	-	-	-	-	-	-	-	3	0	-	-	1	0	4	0	1	0	1	0
E	280-17902-1/ IUG1058	08/10/11	08/30/11	11	0	6	0	3	0	4	0	1	0	4	0	1	0	3	0	5	0	-	-	3	0	-	-	2	0	2	0	2	0	-	-
Total																																			
				51	0	39	0	17	0	20	0	3	0	21	0	2	0	11	0	14	0	4	0	16	0	1	0	9	0	15	0	7	0	7	0

EDD Client Select IV LDC #26013 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl SO ₄ (300.0)		F (300.0)		Br NO ₂ O-PO ₄		Cr(VI) (7196A)		CN- (9012A)		CLO ₄ (314.0)		pH (9040B)		S= (4500-S2 D)		Diss CLO ₄ (314.0)		NO ₂ (300.0)											
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																			
A	280-17952-1	08/09/11	08/30/11	4	0	1	0	6	0	1	0	1	0	-	-	7	0	1	0	-	-	1	0	6	0										
B	280-18148-1	08/09/11	08/30/11	3	0	-	-	3	0	-	-	-	-	-	-	3	0	3	0	-	-	-	-	3	0										
C	280-18183-1	08/09/11	08/30/11	3	0	-	-	7	0	-	-	-	-	-	-	2	0	2	0	-	-	-	-	3	0										
D	280-18230-1	08/09/11	08/30/11	6	0	-	-	6	0	-	-	-	0	0	6	0	6	0	6	0	0	0	-	2	0										
D	280-18230-1	08/09/11	08/30/11	0	0	-	-	0	0	-	-	-	6	0	0	0	0	0	0	0	3	0	-	4	0										
E	280-17902-1	08/10/11	08/30/11	2	0	2	0	7	0	2	0	2	0	-	7	0	-	-	-	-	-	-	2	0	4	0									
Total																																			
				18	0	3	0	29	0	3	0	3	0	6	0	25	0	12	0	3	0	3	0	22	0	0	0	0	0	0	0	0	0	0	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 19, 2011
LDC Report Date: August 22, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18230-1

Sample Identification

RD-11_071911_01
TB_RD-11_071911
RD-12_071911_01
RD-06_071911_01
TB_RD-06_071911
RD-67_071911_01
RD-05C_071911_01
RD-05A_071911_01
RD-05B_071911_01
TB_RD-05B_071911
TB_RD-06_071911MS
TB_RD-06_071911MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-79680/6	8/1/11	Acetone Methylene chloride	4.29 ug/L 0.418 ug/L	RD-11_071911_01 TB_RD-11_071911 RD-06_071911_01 TB_RD-06_071911

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-11_071911_01	Acetone Methylene chloride	10 ug/L 0.51 ug/L	10U ug/L 5.0U ug/L
TB_RD-11_071911	Methylene chloride	0.98 ug/L	5.0U ug/L
RD-06_071911_01	Acetone Methylene chloride	4.6 ug/L 0.45 ug/L	10U ug/L 5.0U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_RD-06_071911	Acetone Methylene chloride	4.5 ug/L 0.91 ug/L	10U ug/L 5.0U ug/L

Samples TB_RD-11_071911, TB_RD-06_071911, and TB_RD-05B_071911 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-11_071911	7/19/11	Methylene chloride	0.98 ug/L	RD-11_071911_01 RD-12_071911_01
TB_RD-06_071911	7/19/11	Acetone Methylene chloride Toluene	4.5 ug/L 0.91 ug/L 0.18 ug/L	RD-06_071911_01 RD-67_071911_01 RD-05C_071911_01
TB_RD-05B_071911	7/19/11	Acetone	6.1 ug/L	RD-05B_071911_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-11_071911_01	Methylene chloride	0.51 ug/L	5.0U ug/L
RD-06_071911_01	Acetone Methylene chloride	4.6 ug/L 0.45 ug/L	10U ug/L 5.0U ug/L
RD-67_071911_01	Acetone	2.9 ug/L	10U ug/L
RD-05C_071911_01	Acetone	2.1 ug/L	10U ug/L
RD-05B_071911_01	Acetone	20 ug/L	20U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
TB_RD-11_071911	1,2-Dichloroethane-d4	122 (80-120)	All TCL compounds	J (all detects)	P
TB_RD-06_071911	Toluene-d8	82 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	A
RD-67_071911_01	Toluene-d8	114 (88-110)	All TCL compounds	J (all detects)	P
RD-05C_071911_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
RD-05A_071911_01	Toluene-d8	113 (88-110)	All TCL compounds	J (all detects)	P
RD-05B_071911_01	Toluene-d8	114 (88-110)	All TCL compounds	J (all detects)	P
TB_RD-05B_071911	Bromofluorobenzene	116 (86-115)	All TCL compounds	J (all detects)	P
MB 280-78908/7	Toluene-d8 Bromofluorobenzene	120 (88-110) 123 (86-115)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
TB_RD-06_071911MS/MSD (TB_RD-06_071911)	1,1,1-Trichloroethane	-	197 (78-120)	59 (≤20)	J (all detects)	A
	1,1-Dichloroethane	-	160 (77-120)	47 (≤21)	J (all detects)	
	1,1-Dichloroethene	-	178 (68-133)	57 (≤20)	J (all detects)	
	1,2-Dichloroethane	-	962 (74-120)	160 (≤20)	J (all detects)	
	Acetone	-	133 (48-130)	-	J (all detects)	
	Carbon tetrachloride	-	326 (80-120)	97 (≤21)	J (all detects)	
	Chloroform	-	800 (78-120)	157 (≤20)	J (all detects)	
	cis-1,2-Dichloroethene	-	1058 (75-120)	173 (≤20)	J (all detects)	
	Methylene chloride	-	-	22 (≤20)	J (all detects)	
	Trichloroethene	-	9617 (78-122)	196 (≤20)	J (all detects)	
Trichlorofluoromethane	-	-	25 (≤20)	J (all detects)		
TB_RD-06_071911MS/MSD (TB_RD-06_071911)	m,p-Xylenes	-	76 (78-120)	-	J (all detects)	A
	o-Xylene	-	76 (77-120)	-	UJ (all non-detects)	
	Tetrachloroethene	76 (77-120)	257 (77-120)	109 (≤20)		
	trans-1,2-Dichloroethene	-	73 (80-120)	-		

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-78942/5,6 (RD-67_071911_01 RD-05C_071911_01 MB 280-78942/7)	Acetone Methyl ethyl ketone	- 136 (57-120)	141 (48-130) 134 (57-120)	- -	J (all detects) J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18230-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18230-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18230-1	TB_RD-11_071911 RD-67_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01 TB_RD-05B_071911	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18230-1	TB_RD-06_071911	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18230-1	TB_RD-06_071911	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dichloroethane Carbon tetrachloride Chloroform cis-1,2-Dichloroethene Trichloroethene	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
280-18230-1	TB_RD-06_071911	Acetone	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18230-1	TB_RD-06_071911	Methylene chloride Trichlorofluoromethane	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
280-18230-1	TB_RD-06_071911	m,p-Xylenes o-Xylene trans-1,2-Dichloroethene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18230-1	TB_RD-06_071911	Tetrachloroethene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
280-18230-1	RD-67_071911_01 RD-05C_071911_01	Acetone Methyl ethyl ketone	J (all detects) J (all detects)	P	Laboratory control samples (%R) (L)
280-18230-1	RD-11_071911_01 TB_RD-11_071911 RD-12_071911_01 RD-06_071911_01 TB_RD-06_071911 RD-67_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01 TB_RD-05B_071911	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18230-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18230-1	RD-11_071911_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	B
280-18230-1	TB_RD-11_071911	Methylene chloride	5.0U ug/L	A	B
280-18230-1	RD-06_071911_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	B
280-18230-1	TB_RD-06_071911	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Field Blank Data Qualification Summary - SDG 280-18230-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18230-1	RD-11_071911_01	Methylene chloride	5.0U ug/L	A	T
280-18230-1	RD-06_071911_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	T
280-18230-1	RD-67_071911_01	Acetone	10U ug/L	A	T
280-18230-1	RD-05C_071911_01	Acetone	10U ug/L	A	T
280-18230-1	RD-05B_071911_01	Acetone	20U ug/L	A	T

LDC #: 26013D1a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18230-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JMG

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 2, 5, 10

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	3	RD-11_071911_01	11	TB_RD-06_071911MS	21	1	MB 280-78908/7	31	
2	3	TB_RD-11_071911	12	TB_RD-06_071911MSD	22	2	MB 280-78992/7	32	
3	4	RD-12_071911_01	13		23	3	MB 280-79680/6	33	
4	3	RD-06_071911_01	14		24	4	MB 280-79729/4	34	
5	3	TB_RD-06_071911	15		25			35	
6	2	RD-67_071911_01	16		26			36	
7	2	RD-05C_071911_01	17		27			37	
8	1	RD-05A_071911_01	18		28			38	
9	1	RD-05B_071911_01	19		29			39	
10	1	TB_RD-05B_071911	20		30			40	

VOCs = 1-3, 6-10
VOCs + IPA = 4, 5.

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethane	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethoxyvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N/A Were all surrogate %R within QC limits?

Y N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications	Code: S
		2	DCE	122 (80-120)	J det/p	
		5	TOL	82 (88-110)	J det/A	
		6	TOL	114 ()	J det/p	
		7	TOL	111 ()		
		8	TOL	113 ()		
		9	TOL	114 ()		
		10	BFB	116 (86-115)		
		MB 280-78908/7	TOL	120 (88-110)		
			BFB	123 (86-115)		

QC Limits (Water)

- 85-120
- 75-120
- 70-120
- 85-115

QC Limits (Soil)

- 85-115
- 85-120
- 60-120
- 75-125

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 19, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18230-1

Sample Identification

RD-11_071911_01
TB_RD-11_071911
RD-12_071911_01
RD-06_071911_01
TB_RD-06_071911
RD-67_071911_01
RD-05C_071911_01
RD-05A_071911_01
RD-05B_071911_01
TB_RD-05B_071911

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

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- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-11_071911, TB_RD-06_071911, and TB_RD-05B_071911 were identified as trip blanks. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18230-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18230-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18230-1	RD-11_071911_01 TB_RD-11_071911 RD-12_071911_01 RD-06_071911_01 TB_RD-06_071911 RD-67_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01 TB_RD-05B_071911	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18230-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18230-1

No Sample Data Qualified in this SDG

LDC #: 26013D1b
 SDG #: 280-18230-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/18/11
 Page: bf 1
 Reviewer: SVL
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2, 5, 10

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-11_071911_01	11	MB 280-78787/S	21	31
2	TB_RD-11_071911	12		22	32
3	RD-12_071911_01	13		23	33
4	RD-06_071911_01	14		24	34
5	TB_RD-06_071911	15		25	35
6	RD-67_071911_01	16		26	36
7	RD-05C_071911_01	17		27	37
8	RD-05A_071911_01	18		28	38
9	RD-05B_071911_01	19		29	39
10	TB_RD-05B_071911	20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 19, 2011

Matrix: Water

Parameters: 1,2,3-Trichloropropane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18230-1/IUG2058

Sample Identification

RD-11_071911_01
TB_RD-11_071911
RD-12_071911_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Sample TB_RD-11_071911 was identified as a trip blank. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18230-1/IUG2058	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18230-1/IUG2058

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18230-1/ IUG2058	RD-11_071911_01 TB_RD-11_071911 RD-12_071911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18230-1/IUG2058

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18230-1/IUG2058

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1 -	RD-11_071911_01	11	11G 2891- B1k1	21	31
2 -	TB_RD-11_071911	12		22	32
3 -	RD-12_071911_01	13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 22, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18230-1

Sample Identification

RD-11_071911_01
RD-12_071911_01
RD-06_071911_01
RD-05C_071911_01
RD-05A_071911_01
RD-05B_071911_01

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18230-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18230-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18230-1	RD-11_071911_01 RD-12_071911_01 RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18230-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18230-1

No Sample Data Qualified in this SDG

LDC #: 26013D2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18230-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *MG*2nd Reviewer: *[Signature]*

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-11_071911_01	11	<i>MB 250-77668/1A</i>	21		31	
2	RD-12_071911_01	12		22		32	
3	RD-06_071911_01	13		23		33	
4	RD-05C_071911_01	14		24		34	
5	RD-05A_071911_01	15		25		35	
6	RD-05B_071911_01	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 22, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18230-1

Sample Identification

RD-11_071911_01
RD-12_071911_01
RD-06_071911_01
RD-05C_071911_01
RD-05A_071911_01
RD-05B_071911_01
RD-67_071911_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
RD-11_071911_01 RD-67_071911_01	All TCL compounds	10	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-77600/1-A	7/20/11	N-Nitrosodimethylamine	0.00647 ug/L	RD-12_071911_01 RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D280-77600/2,3-A (RD-12_071911_01 RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01 MB 280-77600/1-A)	N-Nitrosodimethylamine	125 (68-124)	-	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18230-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18230-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18230-1	RD-11_071911_01 RD-67_071911_01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18230-1	RD-12_071911_01 RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01	N-Nitrosodimethylamine	J (all detects)	P	Laboratory control samples (%R) (L)
280-18230-1	RD-11_071911_01 RD-12_071911_01 RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01 RD-67_071911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18230-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18230-1

No Sample Data Qualified in this SDG

LDC #: 26013D2b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18230-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SW2nd Reviewer: SWMETHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)^M

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/19/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	diest specified
VIII.	Laboratory control samples	SW	LCS/LCSB
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

WATC1

1	RD-11_071911_01	11	MB 280-77600/1-A	21		31	
2	RD-12_071911_01	12	MB 280-79070/1-A	22		32	
3	RD-06_071911_01	13		23		33	
4	RD-05C_071911_01	14		24		34	
5	RD-05A_071911_01	15		25		35	
6	RD-05B_071911_01	16		26		36	
7	RD-67_071911_01	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 19, 2011
LDC Report Date: August 26, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level IV & V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18230-1

Sample Identification

RD-11_071911_01**
RD-11_071911_36**
FB_RD-11_071911_19**
RD-12_071911_01***
RD-12_071911_36***
FB_RD-12_071911_19***
RD-06_071911_01
RD-05C_071911_01
RD-05A_071911_01
RD-05B_071911_01
RD-11_071911_01MS
RD-11_071911_01MSD
RD-05B_071911_01MS
RD-05B_071911_01MSD
RD-05B_071911_01DUP

**Indicates sample underwent EPA Level IV review for Cyanide and Sulfide

***Indicates sample underwent EPA Level IV review for Cyanide

Introduction

This data review covers 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, EPA SW 846 Method 9040B for pH, EPA SW 846 Method 9012A for Total Cyanide, and Standard Method 4500-S2 D for Sulfide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a EPA Level IV review. A EPA Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RD-11_071911_01**	pH	73.25 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-12_071911_01***	pH	73 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-06_071911_01	pH	73.5 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-05C_071911_01	pH	69.75 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-05A_071911_01	pH	68.75 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-05B_071911_01	pH	69 hours	48 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

Initial calibration data were not evaluated for the samples reviewed by Level V criteria.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

Calibration verification data were not evaluated for the samples reviewed by Level V criteria.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Samples FB_RD-11_071911_19** and FB_RD-12_071911_19*** were identified as field blanks. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18230-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples RD-11_071911_01** and RD-11_071911_36** and samples RD-12_071911_01*** and RD-12_071911_36*** were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-11_071911_01**	RD-11_071911_36**			
Sulfide	0.088	0.091	3 (≤35)	-	-

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-12_071911_01***	RD-12_071911_36***			
Cyanide	0.0023	0.0020U	14 (≤35)	-	-

Samples RD-11_071911_01** and RD-11_071911_03 (from SDG IUG1761) and samples RD-12_071911_01*** and RD-12_071911_03 (from SDG IUG 1761) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-11_071911_01**	RD-11_071911_03			
Sulfide	0.088	0.084	5 (≤35)	-	-

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-12_071911_01***	RD-12_071911_03			
Cyanide	0.0023	0.0031	30 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Data Qualification Summary - SDG 280-18230-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18230-1	RD-11_071911_01** RD-12_071911_01*** RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01	pH	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18230-1	RD-11_071911_01** RD-11_071911_36** FB_RD-11_071911_19** RD-12_071911_01*** RD-12_071911_36*** FB_RD-12_071911_19*** RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Laboratory Blank Data Qualification Summary - SDG 280-18230-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Field Blank Data Qualification Summary - SDG 280-18230-1**

No Sample Data Qualified in this SDG

LDC #: 26013D6
 SDG #: 280-18230-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V / IV

Date: 8-23-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate, (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), Total Cyanide (SW846 EPA Method 9012A), Sulfide (SM4500-S2 D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/19/11
IIa.	Initial calibration	AN	Not reviewed for level V
IIb.	Calibration verification	AN	↓
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCSD
VII.	Sample result verification	AN	Not reviewed for level V
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(1,2), (4,5) see below
X	Field blanks	ND	FB=3,6

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinstate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

** Level 4 for Cyanide + Sulfide *** Level 4 for Cyanide

Validated Samples: Water

1	RD-11_071911_01 **	11	RD-11_071911_01MS	21		31	PO3W
2	RD-11_071911_36 **	12	RD-11_071911_01MSD	22		32	
3	FB_RD-11_071911_19 **	13	RD-05B_071911_01MS	23		33	
4	RD-12_071911_01 ***	14	RD-05B_071911_01MSD	24		34	
5	RD-12_071911_36 ***	15	RD-05B_071911_01DUP	25		35	
6	FB_RD-12_071911_19 ***	16		26		36	
7	RD-06_071911_01	17		27		37	
8	RD-05C_071911_01	18		28		38	
9	RD-05A_071911_01	19		29		39	
10	RD-05B_071911_01	20		30		40	

Notes: Splits = (1, RD-11-071911-03 (SD6:JUG1761))
(4, RD-12-071911-03) ↓

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients > 0.995?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were titrant checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were balance checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
III. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

LDC #: 260BDB

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: cr
 2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	1	2		
Sulfide	0.088	0.091	3	

Analyte	Concentration (mg/L)		RPD (≤35)	
	4	5		
Cyanide	0.0023	0.0020U	14	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)
	RD-11_071911_01 1	RD-11_071911_03 (SDG: IUG1761)	
Sulfide	0.088	0.084	5

Analyte	Concentration (mg/L)		RPD (≤ 35)
	RD-12_071911_01 1	RD-12_071911_03 (SDG: IUG1761)	
Cyanide	0.0023	0.0031	30

LDC #: 260308

**Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

Method: Inorganics, Method See Cover

The correlation coefficient (r) for the calibration of Sulfide was recalculated. Calibration date: 7/22/11

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{\text{Found} \times 100}{\text{True}}$ Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (ug/L)	Response	Recalculated		Reported		Acceptable (Y/N)
					r or r ²	r or r ²			
Initial calibration	S ↓	s1	0.061997	0.052	0.999	0.999	99		
		s2	0.123995	0.131					
		s3	0.309987	0.309					
		s4	0.619974	0.602					
		s5	1.239948	1.135					
Calibration verification	CCV ↓	CCV	0.6	0.57438	96	99			
Calibration verification	CCV ↓	CCV	200	202.202	101	101			
Calibration verification	↓	↓	↓	202.380	101	101			

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found} \times 100}{\text{True}}$$
 Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation;
 True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$
 Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	%R / RPD	
LCS	Laboratory control sample	CN	0.101	0.1	101	101	Y
11	Matrix spike sample	CN	0.2957 (SSR-SR)	0.1	96	96	Y
11/12	Duplicate sample	S	0.559	0.558	0	0	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 19, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18230-1

Sample Identification

RD-05C_071911_01

RD-05A_071911_01

RD-05B_071911_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18230-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18230-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18230-1	RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18230-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18230-1**

No Sample Data Qualified in this SDG

LDC #: 26013D8
 SDG #: 280-18230-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/18/11
 Page: 1 of 1
 Reviewer: OV
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (^{SW 846 Method SD 15B} Oklahoma Department of Environmental Quality)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/19/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client Spec</u>
VII.	Laboratory control samples	A	<u>LCS 1b</u>
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	RD-05C_071911_01	11	<u>MB 280-77790/1-A</u>	21		31
2	RD-05A_071911_01	12	<u>MB 280-78239/1-A</u>	22		32
3	RD-05B_071911_01	13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 19, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18230-1

Sample Identification

RD-06_071911_01
RD-05C_071911_01
RD-05A_071911_01
RD-05B_071911_01
RD-06_071911_01MS
RD-06_071911_01MSD

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18230-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18230-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18230-1	RD-06_071911_01 RD-05C_071911_01 RD-05A_071911_01 RD-05B_071911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18230-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18230-1**

No Sample Data Qualified in this SDG

LDC #: 26013D76
 SDG #: 280-18230-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level ~~IV~~ V

Date: 8/18/11
 Page: 1 of 1
 Reviewer: DVK
 2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1b
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	RD-06_071911_01	11	MB 280-77707/21	21	31
2	RD-05C_071911_01	12		22	32
3	RD-05A_071911_01	13		23	33
4	RD-05B_071911_01	14		24	34
5	RD-06_071911_01MS	15		25	35
6	RD-06_071911_01MSD	16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 1, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 12, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26034:

<u>SDG #</u>	<u>Fraction</u>
280-18297-1, 280-18336-1 280-18378-1, 280-18423-1 280-18477-1	Formaldehyde

The data validation was performed under EPA Level V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 20, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Formaldehyde
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18297-1

Sample Identification

HAR-26_072011_01
SH-04_072011_01
SH-02_072011_01
HAR-15_072011_01
SH-11_072011_01B

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-9408/A-1	7/22/11	Formaldehyde	0.0173 mg/L	All samples in SDG 280-18297-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-26_072011_01	Formaldehyde	0.016 mg/L	0.050U mg/L
SH-04_072011_01	Formaldehyde	0.018 mg/L	0.050U mg/L
SH-02_072011_01	Formaldehyde	0.019 mg/L	0.050U mg/L
HAR-15_072011_01	Formaldehyde	0.026 mg/L	0.050U mg/L
SH-11_072011_01B	Formaldehyde	0.016 mg/L	0.050U mg/L

Sample FB_071211_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde was found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Formaldehyde	0.025 mg/L	SH-04_072011_01 SH-02_072011_01 SH-11_072011_01B

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SH-04_072011_01	Formaldehyde	0.018 mg/L	0.050U mg/L
SH-02_072011_01	Formaldehyde	0.019 mg/L	0.050U mg/L
SH-11_072011_01B	Formaldehyde	0.016 mg/L	0.050U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18297-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18297-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18297-1	HAR-26_072011_01 SH-04_072011_01 SH-02_072011_01 HAR-15_072011_01 SH-11_072011_01B	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18297-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18297-1	HAR-26_072011_01	Formaldehyde	0.050U mg/L	A	B
280-18297-1	SH-04_072011_01	Formaldehyde	0.050U mg/L	A	B
280-18297-1	SH-02_072011_01	Formaldehyde	0.050U mg/L	A	B
280-18297-1	HAR-15_072011_01	Formaldehyde	0.050U mg/L	A	B
280-18297-1	SH-11_072011_01B	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18297-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18297-1	SH-04_072011_01	Formaldehyde	0.050U mg/L	A	F
280-18297-1	SH-02_072011_01	Formaldehyde	0.050U mg/L	A	F
280-18297-1	SH-11_072011_01B	Formaldehyde	0.050U mg/L	A	F

LDC #: 26034A71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/12/11

SDG #: 280-18297-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG
2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	FB = FB_07/21/11 (280-17954-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	HAR-26_072011_01	11	MB 240-9408/1-A	21		31
2	SH-04_072011_01	12		22		32
3	SH-02_072011_01	13		23		33
4	HAR-15_072011_01	14		24		34
5	SH-11_072011_01B	15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level/ID Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 7/22/11 Blank analysis date: 7/23/11

Associated samples: A11 Code: B

Conc. units: µg/L

Compound	Blank ID	Sample Identification				
		1	2	3	4	5
Formaldehyde	0.0173	0.016 / b.0504	0.018 / b.0504	0.019 / b.0504	0.026 / b.0504	0.016 / b.0504

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification				

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 1, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 12, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26034:

<u>SDG #</u>	<u>Fraction</u>
280-18297-1, 280-18336-1 280-18378-1, 280-18423-1 280-18477-1	Formaldehyde

The data validation was performed under EPA Level V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Formaldehyde
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18336-1

Sample Identification

PZ-060_072111_01
EB_PZ-60_072111A
PZ-035_072111_01A
HAR-32_072111_01
HAR-30_072111_01
RS-34_072111_01

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-9500/11-A	7/23/11	Formaldehyde	0.0215 mg/L	All samples in SDG 280-18336-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-060_072111_01	Formaldehyde	0.021 mg/L	0.050U mg/L
EB_PZ-60_072111A	Formaldehyde	0.015 mg/L	0.050U mg/L
PZ-035_072111_01A	Formaldehyde	0.017 mg/L	0.050U mg/L
HAR-32_072111_01	Formaldehyde	0.015 mg/L	0.050U mg/L
HAR-30_072111_01	Formaldehyde	0.018 mg/L	0.050U mg/L
RS-34_072111_01	Formaldehyde	0.016 mg/L	0.050U mg/L

Sample EB_PZ-60_072111A was identified as an equipment blank. No formaldehyde was found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-60_072111A	7/21/11	Formaldehyde	0.015 mg/L	PZ-060_072111_01 PZ-035_072111_01A

Sample FB_0712114_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde was found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_0712114_19	7/12/11	Formaldehyde	0.025 mg/L	PZ-060_072111_01 PZ-035_072111_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-060_072111_01	Formaldehyde	0.021 mg/L	0.050U mg/L
PZ-035_072111_01A	Formaldehyde	0.017 mg/L	0.050U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18336-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18336-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18336-1	PZ-060_072111_01 EB_PZ-60_072111A PZ-035_072111_01A HAR-32_072111_01 HAR-30_072111_01 RS-34_072111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18336-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18336-1	PZ-060_072111_01	Formaldehyde	0.050U mg/L	A	B
280-18336-1	EB_PZ-60_072111A	Formaldehyde	0.050U mg/L	A	B
280-18336-1	PZ-035_072111_01A	Formaldehyde	0.050U mg/L	A	B
280-18336-1	HAR-32_072111_01	Formaldehyde	0.050U mg/L	A	B
280-18336-1	HAR-30_072111_01	Formaldehyde	0.050U mg/L	A	B
280-18336-1	RS-34_072111_01	Formaldehyde	0.050U mg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18336-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18336-1	PZ-060_072111_01	Formaldehyde	0.050U mg/L	A	F
280-18336-1	PZ-035_072111_01A	Formaldehyde	0.050U mg/L	A	F

LDC #: 26034B71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18336-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVL

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	A	
XIII.	Field blanks	SW	EB = 2 FB = FB-071211-19 (280-17957-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	PZ-060_072111_01	11	MB 240-9500/11-A	21		31	
2	EB_PZ-60_072111A	12		22		32	
3	PZ-035_072111_01A	13		23		33	
4	HAR-32_072111_01	14		24		34	
5	HAR-30_072111_01	15		25		35	
6	RS-34_072111_01	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level I/II Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 7/22/11 Blank analysis date: 7/25/11 Associated samples: All Code: B
 Conc. units: mg/L

Compound	Blank ID	Sample Identification					
		1	2	3	4	5	6
Formaldehyde	0.0215	0.021 / 0.0504	0.015 / 0.0504	0.017 / 0.0504	0.015 / 0.0504	0.018 / 0.0504	0.016 / 0.0504

Blank extraction date: _____ Blank analysis date: _____ Associated samples: _____
 Conc. units: _____

Compound	Blank ID	Sample Identification					
		1	2	3	4	5	6

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 1, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 12, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26034:

<u>SDG #</u>	<u>Fraction</u>
280-18297-1, 280-18336-1 280-18378-1, 280-18423-1 280-18477-1	Formaldehyde

The data validation was performed under EPA Level V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 22, 2011

LDC Report Date: August 24, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18378-1

Sample Identification

PZ-158_072211_01
EB_PZ-158_072211
PZ-157_072211_01
EB_PZ-157_072211A

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-9500/11-A	7/23/11	Formaldehyde	0.0215 mg/L	All samples in SDG 280-18378-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-158_072211_01	Formaldehyde	0.015 mg/L	0.050U mg/L
EB_PZ-158_072211	Formaldehyde	0.017 mg/L	0.050U mg/L
PZ-157_072211_01	Formaldehyde	0.016 mg/L	0.050U mg/L
EB_PZ-157_072211A	Formaldehyde	0.017 mg/L	0.050U mg/L

Samples EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No formaldehyde was found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-158_072211	7/22/11	Formaldehyde	0.017 mg/L	PZ-158_072211_01
EB_PZ-157_072211A	7/22/11	Formaldehyde	0.017 mg/L	PZ-157_072211_01

Sample FB_0712114_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde was found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_0712114_19	7/12/11	Formaldehyde	0.025 mg/L	PZ-158_072211_01 PZ-157_072211_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-158_072211_01	Formaldehyde	0.015 mg/L	0.050U mg/L
PZ-157_072211_01	Formaldehyde	0.016 mg/L	0.050U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18378-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18378-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18378-1	PZ-158_072211_01 EB_PZ-158_072211 PZ-157_072211_01 EB_PZ-157_072211A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18378-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18378-1	PZ-158_072211_01	Formaldehyde	0.050U mg/L	A	B
280-18378-1	EB_PZ-158_072211	Formaldehyde	0.050U mg/L	A	B
280-18378-1	PZ-157_072211_01	Formaldehyde	0.050U mg/L	A	B
280-18378-1	EB_PZ-157_072211A	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18378-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18378-1	PZ-158_072211_01	Formaldehyde	0.050U mg/L	A	F
280-18378-1	PZ-157_072211_01	Formaldehyde	0.050U mg/L	A	F

LDC #: 26034C71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/8/11

SDG #: 280-18378-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	EB = 2, 4 FB = FB_071211-19 (280-17934-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	PZ-158_072211_01	11	MB 240-9500/11-A	21		31	
2	EB_PZ-158_072211	12		22		32	
3	PZ-157_072211_01	13		23		33	
4	EB_PZ-157_072211A	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level 1 Only

Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?

Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 7/23/11 Blank analysis date: 7/23/11 Associated samples: A11 Code: B

Conc. units: mg/L

Compound	Blank ID	1	2	3	4
Formaldehyde	0.0215	0.015 / 0.050U	0.017 / 0.050U	0.016 / 0.050U	0.017 / 0.050U

Blank extraction date: _____ Blank analysis date: _____ Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification			

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 1, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 12, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26034:

<u>SDG #</u>	<u>Fraction</u>
280-18297-1, 280-18336-1 280-18378-1, 280-18423-1 280-18477-1	Formaldehyde

The data validation was performed under EPA Level V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 25, 2011

LDC Report Date: August 24, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18423-1

Sample Identification

HAR-05_072511_01
HAR-23_072511_01
RD-58A_072511_01
RD-58A_072511_36
RD-58B_072511_01
RD-58C_072511_01
HAR-33_072511_01
HAR-05_072511_01MS
HAR-05_072511_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-9857/1-A	7/27/11	Formaldehyde	0.0150 mg/L	All samples in SDG 280-18423-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-05_072511_01	Formaldehyde	0.016 mg/L	0.050U mg/L
HAR-23_072511_01	Formaldehyde	0.012 mg/L	0.050U mg/L
RD-58A_072511_01	Formaldehyde	0.012 mg/L	0.050U mg/L
RD-58A_072511_36	Formaldehyde	0.011 mg/L	0.050U mg/L
RD-58B_072511_01	Formaldehyde	0.014 mg/L	0.050U mg/L
RD-58C_072511_01	Formaldehyde	0.014 mg/L	0.050U mg/L
HAR-33_072511_01	Formaldehyde	0.014 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18423-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-58A_072511_01 and RD-58A_072511_36 were identified as field duplicates. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)
	RD-58A_072511_01	RD-58A_072511_36	
Formaldehyde	0.012	0.011	9 (≤35)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18423-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18423-1	HAR-05_072511_01 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 HAR-33_072511_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18423-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18423-1	HAR-05_072511_01	Formaldehyde	0.050U mg/L	A	B
280-18423-1	HAR-23_072511_01	Formaldehyde	0.050U mg/L	A	B
280-18423-1	RD-58A_072511_01	Formaldehyde	0.050U mg/L	A	B
280-18423-1	RD-58A_072511_36	Formaldehyde	0.050U mg/L	A	B
280-18423-1	RD-58B_072511_01	Formaldehyde	0.050U mg/L	A	B
280-18423-1	RD-58C_072511_01	Formaldehyde	0.050U mg/L	A	B
280-18423-1	HAR-33_072511_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18423-1**

No Sample Data Qualified in this SDG

LDC #: 26034D71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18423-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JY

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 3.4
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	HAR-05_072511_01	11	MB 240-9857/1-21	31
2	HAR-23_072511_01	12		32
3	RD-58A_072511_01 <i>D</i>	13		33
4	RD-58A_072511_36 <i>D</i>	14		34
5	RD-58B_072511_01	15		35
6	RD-58C_072511_01	16		36
7	HAR-33_072511_01	17		37
8	HAR-05_072511_01MS	18		38
9	HAR-05_072511_01MSD	19		39
10		20		40

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level I/II Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 7/27/11 Blank analysis date: 7/27/11 Associated samples: All Code: B

Conc. units: mg/l

Compound	Blank ID	Sample Identification						
		1	2	3	4	5	6	7
Formaldehyde	0.0150	0.016 / 0.05011	0.012 / 0.05014	0.012 / 0.0504	0.011 / 0.05011	0.014 / 0.0504	0.014 / 0.0504	0.014 / 0.0504

Blank extraction date: _____ Blank analysis date: _____ Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification						
		1	2	3	4	5	6	7

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



Laboratory Data Consultants, Inc.

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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 1, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 12, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26034:

<u>SDG #</u>	<u>Fraction</u>
280-18297-1, 280-18336-1 280-18378-1, 280-18423-1 280-18477-1	Formaldehyde

The data validation was performed under EPA Level V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 26, 2011

LDC Report Date: August 24, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18477-1

Sample Identification

ES-26_072611_01

RD-55A_072611_01

ES-17_072611_01

ES-27_072611_01

RS-33_072611_01

ES-26_072611_01MS

ES-26_072611_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-10045/1-A	7/28/11	Formaldehyde	0.0154 mg/L	All samples in SDG 280-18477-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ES-26_072611_01	Formaldehyde	0.016 mg/L	0.050U mg/L
RD-55A_072611_01	Formaldehyde	0.011 mg/L	0.050U mg/L
ES-17_072611_01	Formaldehyde	0.015 mg/L	0.050U mg/L
ES-27_072611_01	Formaldehyde	0.017 mg/L	0.050U mg/L
RS-33_072611_01	Formaldehyde	0.015 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18477-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18477-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18477-1	ES-26_072611_01 RD-55A_072611_01 ES-17_072611_01 ES-27_072611_01 RS-33_072611_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18477-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18477-1	ES-26_072611_01	Formaldehyde	0.050U mg/L	A	B
280-18477-1	RD-55A_072611_01	Formaldehyde	0.050U mg/L	A	B
280-18477-1	ES-17_072611_01	Formaldehyde	0.050U mg/L	A	B
280-18477-1	ES-27_072611_01	Formaldehyde	0.050U mg/L	A	B
280-18477-1	RS-33_072611_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18477-1**

No Sample Data Qualified in this SDG

LDC #: 26034E71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/18/11

SDG #: 280-18477-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *DLG*

2nd Reviewer: *[Signature]*

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	ES-26_072611_01	11	<i>MB 240-10095/1-A</i>	21		31	
2	RD-55A_072611_01	12		22		32	
3	ES-17_072611_01	13		23		33	
4	ES-27_072611_01	14		24		34	
5	RS-33_072611_01	15		25		35	
6	ES-26_072611_01MS	16		26		36	
7	ES-26_072611_01MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A
- Y N N/A
- Y N N/A
- X N N/A

Were all samples associated with a given method blank?

Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?

Was a method blank performed with each extraction batch?

Were any contaminants found in the method blanks? If yes, please see findings below.

Level I/ID Only

- Y N N/A
- Y N N/A

(Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?

Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 7/28/11

Associated samples: All Code: B

Conc. units: mg/L

Compound	Blank ID	Sample Identification				
	M# 240-10045/A	1	2	3	4	5
Formaldehyde	0.0154	0.016 / 0.050u	0.011 / 0.050u	0.015 / 0.050u	0.017 / 0.050u	0.015 / 0.050u

Blank extraction date: _____

Blank analysis date: _____

Associated samples: _____

Compound	Blank ID	Sample Identification				

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

August 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 12, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26040:

SDG #

Fraction

280-18238-1/ H1G210414 Dioxins/Dibenzofurans
280-18341-1/ H1G240402

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 19, 2011
LDC Report Date: August 26, 2011
Matrix: Water
Parameters: Dioxins/Dibenzofurans
Validation Level: EPA Level IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18238-1/H1G210414

Sample Identification

RD-11_071911_01
RD-11_071911_36
FB_RD-11_071911_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1206041-MB	7/25/11	OCDD	2.2 pg/L	All samples in SDG 280-18238-1/H1G210414

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-11_071911_01	OCDD	1.9 pg/L	1.9U pg/L

Sample FB_RD-11_071911_19 was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18238-1/H1G210414	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples RD-11_071911_01 and RD-11_071911_36 were identified as field duplicates. No polychlorinated dioxin/dibenzofuran contaminants were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	RD-11_071911_01	RD-11_071911_36			
OCDD	1.9	1.5U	24 (≤ 35)	-	-

Samples RD-11_071911_01 and RD-11_071911_03 (from SDG IUG1761) were identified as split samples. No polychlorinated dioxin/dibenzofuran contaminants were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	RD-11_071911_01	RD-11_071911_03			
OCDD	1.9	1.8	5 (≤ 35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18238-1/H1G210414**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18238-1/H1G210414	RD-11_071911_01 RD-11_071911_36 FB_RD-11_071911_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18238-1/H1G210414**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18238-1/H1G210414	RD-11_071911_01	OCDD	1.9U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18238-1/H1G210414**

No Sample Data Qualified in this SDG

LDC #: 26040A21

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18238-1/H1G210414

Level: ~~V~~ IV

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: SVG2nd Reviewer: ✓

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II.	HRGC/HRMS Instrument performance check	NA	
III.	Initial calibration	NA	% RSD ≤ 20% unlabeled ≤ 30% labeled
IV.	Routine calibration/ICV	NA	CV/ICV ↓ ↓
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	A	ICS / B
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	NA	
X.	Target compound identifications	NA	
XI.	Compound quantitation RL/LOQ/LODs	NA	
XII.	System performance	NA	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates / Split	SW	D = 1, ✓ S = 1 + RD-11_071911_03
XV.	Field blanks	ND	FB = 3 (1 u G 1761)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

F		D	F				
1	RD-11_071911_01	D	11	1206041-MB	21		31
2	RD-11_071911_36	D	12		22		32
3	FB RD-11_071911_19		13		23		33
4			14		24		34
5			15		25		35
6			16		26		36
7			17		27		37
8			18		28		38
9			19		29		39
10			20		30		40

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the retention time windows established for all homologues?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers $\leq 25\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the static resolving power at least 10,000 (10% valley definition)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the mass resolution adequately check with PFK?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 20\%$ for unlabeled standards and $\leq 30\%$ for labeled standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did all calibration standards meet the Ion Abundance Ratio criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ for unlabeled standards and $\leq 30\%$ for labeled standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank performed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
IX. Internal standards				
Were internal standard recoveries within the 40-135% criteria?	✓			
Was the minimum S/N ratio of all internal standard peaks ≥ 10 ?	✓			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	✓			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	✓			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	✓			
Did compound spectra contain all characteristic ions listed in the table attached?	✓			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	✓			
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5 ?	✓			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	✓			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDF channel?	✓			
Was an acceptable lock mass recorded and monitored?				
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes:

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A
- Y N N/A
- Y N N/A

Were all samples associated with a method blank? Y

Was a method blank performed for each matrix and whenever a sample extraction was performed? Y

Was the method blank contaminated? Y

Blank extraction date: 7/25/11

Blank analysis date: 8/04/11

Associated samples: All

Code: B

Conc. units: pg/L

Compound	Blank ID	Sample Identification
	12-06041-	MB 1
G	2,2 *	1.9 / u
* EMPC		

Blank extraction date: _____

Blank analysis date: _____

Associated Samples: _____

Compound	Blank ID	Sample Identification

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC#: 26040A21

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field duplicate pairs identified in this SDG?
X N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	1	2		
G	1.9*	1.5U	24	

* EMPC

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VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y/N/NA Were field split pairs identified in this SDG?
Y/N/NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	RD-11_071911_01	RD-11_071911_03		
G	1.9*	1.8*	5	

* EMPC

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VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound

C_x = Concentration of compound,

S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (0.5/2.5/5 std)	Recalculated RRF (0.5/2.5/5 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/23/2009	2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.032	1.032	1.040	1.040	4.0	4.0
	M1A		2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.999	0.999	1.045	1.045	3.9	3.9
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.928	0.928	0.936	0.936	1.9	1.9
			1,2,3,4,6,7,8-HpCDF (13C-1,2,4,6,7,8-HpCDF)	1.446	1.446	1.481	1.481	1.9	1.9
			OCDD (13C-OCDD)	0.976	0.976	1.017	1.017	3.4	3.4

Cis/Cx	Area cpd	Area IS
100/5	20622	3995915
100/5	31858	6375378
100/2.5	89066	3840138
100/2.5	134555	3721983
100/5	151775	6217927

Conc	2,3,7,8-TCDD	2,3,7,8-TCDF	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDF	OCDD
0.5/2.5/5	1.032	0.999	0.928	1.446	0.976
2/10/20	1.025	1.088	0.913	1.465	0.999
10/50/100	0.997	1.007	0.929	1.476	1.015
40/200/400	1.038	1.049	0.952	1.500	1.027
200/1000/2000	1.109	1.082	0.956	1.518	1.069
X =	1.040	1.045	0.936	1.481	1.017
S =	0.0415	0.0412	0.0180	0.0284	0.0347

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$$

$$\text{ave. RRF} = |\text{ICAL average RRF}|$$

$$\text{RRF} = \text{CCV RRF}$$

$$\text{Ax} = \text{Area of compound}$$

$$\text{Cx} = \text{Concentration of compound}$$

$$\text{Ais} = \text{Area of associated internal standard}$$

$$\text{Cis} = \text{Concentration of internal standard}$$

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	a110804s3	08/04/11	2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.040	1.100	1.100	5.8	5.8
			2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	1.045	0.991	0.991	5.2	5.2
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.936	1.077	1.077	15.2	15.2
			1,2,3,4,6,7,8-HpCDF (13C-1,2,4,6,7,8-HpCDF)	1.481	1.497	1.497	1.1	1.1
			OCDD (13C-OCDD)	1.017	1.110	1.110	9.1	9.1

Compound (IS)	Concentration (IS/Cpd)	Area Cpd	Area IS
2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	100/10	220008	1999578
2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	100/10	309081	3117560
1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	100/50	1000891	1857961
1,2,3,4,6,7,8-HpCDF (13C-1,2,4,6,7,8-HpCDF)	100/50	1508594	2015773
OCDD (13C-OCDD)	100/50	2048967	3692029

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: August 26, 2011
Matrix: Water
Parameters: Dioxins/Dibenzofurans
Validation Level: EPA Level IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18341-1/H1G240402

Sample Identification

RS-34_072111_01
RS-34_072111_36
FB_RS-34_072111_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1206041-MB	7/25/11	OCDD	2.2 pg/L	All samples in SDG 280-18341-1/H1G240402

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
FB_RS-34_072111_19	OCDD	2.0 pg/L	2.0U pg/L

Sample FB_RS-34_072111_19 was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_RS-34_072111_19	7/21/11	OCDD	2.0 pg/L	RS-34_072111_01 RS-34_072111_36

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18341-1/H1G240402	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples RS-34_072111_01 and RS-34_072111_36 were identified as field duplicates. No polychlorinated dioxin/dibenzofuran contaminants were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	RS-34_072111_01	RS-34_072111_36			
1,2,3,4,6,7,8-HpCDD	1.5U	1.8	18 (≤35)	-	-
OCDD	17	16	6 (≤35)	-	-
OCDF	3.1	1.9U	48 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Samples RS-34_072111_01 and RS-34_072111_03 (from SDG IUG2193) were identified as split samples. No polychlorinated dioxin/dibenzofuran contaminants were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	RS-34_072111_01	RS-34_072111_03			
1,2,3,7,8-PeCDD	1.1U	0.73	40 (≤35)	NQ	-
Total PeCDD	Not reported	0.73	Not calculated	-	-
1,2,3,4,7,8-HxCDD	0.72U	0.48	40 (≤35)	NQ	-
1,2,3,6,7,8-HxCDD	0.97U	0.76	24 (≤35)	-	-
1,2,3,7,8,9-HxCDD	0.77U	0.61	23 (≤35)	-	-
Total HxCDD	Not reported	1.8	Not calculated	-	-
1,2,3,4,6,7,8-HpCDD	1.5U	1.3	14 (≤35)	-	-
Total HpCDD	Not reported	2.4	Not calculated	-	-
OCDD	17	3.9	125 (≤35)	NQ	-
1,2,3,7,8-PeCDF	1.0U	0.78	25 (≤35)	-	-
2,3,4,7,8-PeCDF	0.80U	0.42	62 (≤35)	NQ	-
Total PeCDF	Not reported	1.2	Not calculated	-	-
1,2,3,4,7,8-HxCDF	0.51U	0.63	21 (≤35)	-	-
1,2,3,6,7,8-HxCDF	0.44U	0.69	44 (≤35)	NQ	-
2,3,4,6,7,8-HxCDF	0.46U	0.58	23 (≤35)	-	-
1,2,3,7,8,9-HxCDF	0.68U	0.44	43 (≤35)	NQ	-
Total HxCDF	Not reported	2.3	Not calculated	-	-
1,2,3,4,6,7,8-HpCDF	0.68U	1.0	38 (≤35)	NQ	-
1,2,3,4,7,8,9-HpCDF	0.95U	0.60	45 (≤35)	NQ	-
Total HpCDF	Not reported	1.9	Not calculated	-	-
OCDF	3.1	0.99	103 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18341-1/H1G240402**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18341-1/H1G240402	RS-34_072111_01 RS-34_072111_36 FB_RS-34_072111_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18341-1/H1G240402**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18341-1/H1G240402	FB_RS-34_072111_19	OCDD	2.0U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18341-1/H1G240402**

No Sample Data Qualified in this SDG

LDC #: 26040B21

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18341-1/H1G240402

Level IV

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: JL
2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	HRGC/HRMS Instrument performance check	NA	
III.	Initial calibration	NA	8 RSD ≤ 20% unlabeled ≤ 30% labeled
IV.	Routine calibration/ICV	NA	CV/ICV ≤ ↓ ↓
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	client 9rec
VII.	Laboratory control samples	A	LCS 10
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	NA	
X.	Target compound identifications	NA	
XI.	Compound quantitation RL/LOQ/LODs	NA	
XII.	System performance	NA	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates / Split	SW	D = 1, 2 S = 1 + RS-3407211_03
XV.	Field blanks	SW	FB = 3 (1UG2193)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RS-34_072111_01	11	1206041-MB	21	31
2	RS-34_072111_36	12		22	32
3	FB_RS-34_072111_19	13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	/			
Were the retention time windows established for all homologues?	/			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers $\leq 25\%$?	/			
Is the static resolving power at least 10,000 (10% valley definition)?	/			
Was the mass resolution adequately check with PFK?	/			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	/			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	/			
Were all percent relative standard deviations (%RSD) $\leq 20\%$ for unlabeled standards and $\leq 30\%$ for labeled standards?	/			
Did all calibration standards meet the Ion Abundance Ratio criteria?	/			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10 ?	/			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	/			
Were all percent differences (%D) $\leq 20\%$ for unlabeled standards and $\leq 30\%$ for labeled standards?	/			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank performed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal standards				
Were internal standard recoveries within the 40-135% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks ≥ 10 ?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	/			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	/			
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	/			
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5 ?	/			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDF channel?	/			
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes:

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N A Were all samples associated with a method blank?

N A Was a method blank performed for each matrix and whenever a sample extraction was performed?

N A Was the method blank contaminated?

Blank extraction date: 7/25/11 **Blank analysis date:** 8/04/11 **Associated samples:** All **Code:** B

Conc. units: pg/L

Compound	Blank ID	Sample Identification			
	1206041-	MB	1	2	3
G	2,2*	(17)	(6)		2.0*/u
* EMPC					

Blank extraction date: _____ **Blank analysis date:** _____ **Associated Samples:** _____

Compound	Blank ID	Sample Identification			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC#: 26040B21

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?

Were target analytes detected in the field duplicate pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	1	2		
F	1.5U	1.8*	18	
G	17	16	6	
Q	3.1*	1.9U	48	NQ (<5xRL)

* EMPC

V:\FIELD DUPLICATES\26040B21.wpd

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field split pairs identified in this SDG?
 Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	RS-34_072111_01	RS-34_072111_03		
B	1.1U	0.73	40	NQ (<5xRL)
S	NR	0.73	NC	
C	0.72U	0.48*	40	NQ (<5xRL)
D	0.97U	0.76*	24	
E	0.77U	0.61	23	
T	NR	1.8*	NC	
F	1.5U	1.3*	14	
U	NR	2.4*	NC	
G	17	3.9	125	NQ (<5xRL)
I	1.0U	0.78	25	
J	0.80U	0.42*	62	NQ (<5xRL)
W	NR	1.2*	NC	
K	0.51U	0.63*	21	
L	0.44U	0.69	44	NQ (<5xRL)
M	0.46U	0.58	23	
N	0.68U	0.44*	43	NQ (<5xRL)
X	NR	2.3*	NC	
O	0.68U	1.0*	38	NQ (<5xRL)
P	0.95U	0.60*	45	NQ (<5xRL)

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field split pairs identified in this SDG?

Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	RS-34_072111_01	RS-34_072111_03		
Y	NR	1.9*	NC	
Q	3.1*	0.99*	103	NQ (<5xRL)

* EMPC

V:\FIELD DUPLICATES\26090A21s.wpd

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound

C_x = Concentration of compound,

S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (0.5/2.5/5 std)	Recalculated RRF (0.5/2.5/5 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/23/2009	2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.032	1.032	1.040	1.040	4.0	4.0
	M1A		2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.999	0.999	1.045	1.045	3.9	3.9
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.928	0.928	0.936	0.936	1.9	1.9
			1,2,3,4,6,7,8-HpCDE (13C-1,2,4,6,7,8-HpCDE)	1.446	1.446	1.481	1.481	1.9	1.9
			OCDD (13C-OCDD)	0.976	0.976	1.017	1.017	3.4	3.4

Cis/Cx	Area cpd	Area IS
100/.5	20622	3995915
100/.5	31858	6375378
100/2.5	89066	3840138
100/2.5	134555	3721983
100/5	151775	6217927

Conc	2,3,7,8-TCDD	2,3,7,8-TCDF	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDE	OCDD
0.5/2.5/5	1.032	0.999	0.928	1.446	0.976
2/10/20	1.025	1.088	0.913	1.465	0.999
10/50/100	0.997	1.007	0.929	1.476	1.015
40/200/400	1.038	1.049	0.952	1.500	1.027
200/1000/2000	1.109	1.082	0.956	1.518	1.069
X =	1.040	1.045	0.936	1.481	1.017
S =	0.0415	0.0412	0.0180	0.0284	0.0347

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 6, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26041:

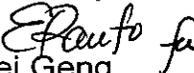
<u>SDG #</u>	<u>Fraction</u>
280-18286-1/ IUG2185/ IUG2520 280-18334-1/ IUG2424 280-18472-1, 280-18534-1 280-18597-1, 280-18622-1	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Diesel Range Organics, Hydrazine, Formaldehyde

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,


Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 20, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18286-1

Sample Identification

HAR-26_072011_01
TB_HAR-26_072011
SH-04_072011_01
SH-02_072011_01
HAR-15_072011_01
TB_SH-11_072011
SH-11_072011_01B
SH-07_072011_01B
TB_HAR-15_072011

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples TB_HAR-26_072011, TB_SH-11_072011, and TB_HAR-15_072011 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_HAR-26_072011	7/20/11	Methylene chloride	0.66 ug/L	HAR-26_072011_01
TB_SH-11_072011	7/20/11	Methylene chloride	0.84 ug/L	SH-11_072011_01B SH-07_072011_01B
TB_HAR-15_072011	7/20/11	Methylene chloride	0.60 ug/L	SH-04_072011_01 SH-02_072011_01 HAR-15_072011_01

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	SH-04_072011_01 SH-02_072011_01 SH-11_072011_01B SH-07_072011_01B

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SH-07_072011_01B	Chloroform	0.20 ug/L	1.0U ug/L
SH-04_072011_01	Methylene chloride	2.4 ug/L	10U ug/L
SH-02_072011_01	Methylene chloride	1.7 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
SH-02_072011_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18286-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Volatiles - Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18286-1	SH-02_072011_01	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18286-1	HAR-26_072011_01 TB_HAR-26_072011 SH-04_072011_01 SH-02_072011_01 HAR-15_072011_01 TB_SH-11_072011 SH-11_072011_01B SH-07_072011_01B TB_HAR-15_072011	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18286-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Volatiles - Field Blank Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18286-1	SH-07_072011_01B	Chloroform	1.0U ug/L	A	F
280-18286-1	SH-04_072011_01	Methylene chloride	10U ug/L	A	T
280-18286-1	SH-02_072011_01	Methylene chloride	10U ug/L	A	T

LDC #: 26041A1a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/22/11

SDG #: 280-18286-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 2, 6, 9 FB = FB_071211_19 (280-179521)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	HAR-26_072011_01	11	MB 280-79729/4	21		31
2	TB_HAR-26_072011	12		22		32
3	SH-04_072011_01	13		23		33
4	SH-02_072011_01	14		24		34
5	R HA-15_072011_01	15		25		35
6	TB_SH-11_072011	16		26		36
7	SH-11_072011_01B	17		27		37
8	SH-07_072011_01B	18		28		38
9	TB_HAR-15_072011	19		29		39
10		20		30		40

VOCs = 1-4, 6-8
 VOCs + IPA = 5, 9

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethane	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethane, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 20, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18286-1

Sample Identification

HAR-26_072011_01
TB_HAR-26_072011
SH-04_072011_01
SH-02_072011_01
HA-15_072011_01
TB_SH-11_072011
SH-11_072011_01B
SH-07_072011_01B
TB_HAR-15_072011

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_HAR-26_072011, TB_SH-11_072011, and TB_HAR-15_072011 were identified as trip blanks. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a trip blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18286-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18286-1	HAR-26_072011_01 TB_HAR-26_072011 SH-04_072011_01 SH-02_072011_01 HA-15_072011_01 TB_SH-11_072011 SH-11_072011_01B SH-07_072011_01B TB_HAR-15_072011	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18286-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18286-1**

No Sample Data Qualified in this SDG

LDC #: 26041A1b
 SDG #: 280-18286-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/22/11
 Page: 1 of 1
 Reviewer: VG
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCB 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	MD	TB = 2, 6, 9 TB = FB-071211-19 (280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	HAR-26_072011_01	11	MD 280-78787/5	21	31
2	TB_HAR-26_072011	12		22	32
3	SH-04_072011_01	13		23	33
4	SH-02_072011_01	14		24	34
5	HA-15_072011_01	15		25	35
6	TB_SH-11_072011	16		26	36
7	SH-11_072011_01B	17		27	37
8	SH-07_072011_01B	18		28	38
9	TB_HAR-15_072011	19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 20, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: 1,2,3-Trichloropropane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18286-1/IUG2185

Sample Identification

HAR-26_072011_01
TB_HAR-26_072011
SH-04_072011_01
EB_SH-04_072011
TB_SH-04_072011
SH-02_072011_01
TB_SH-11_072011
SH-11_072011_01B
SH-07_072011_01B

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Samples TB_HAR-26_072011, TB_SH-04_072011, and TB_SH-11_072011 were identified as trip blanks. No 1,2,3-trichloropropane was found.

Sample EB_SH-04_072011 was identified as an equipment blank. No 1,2,3-trichloropropane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18286-1/IUG2185	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18286-1/IUG2185**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18286-1/ IUG2185	HAR-26_072011_01 TB_HAR-26_072011 SH-04_072011_01 EB_SH-04_072011 TB_SH-04_072011 SH-02_072011_01 TB_SH-11_072011 SH-11_072011_01B SH-07_072011_01B	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18286-1/IUG2185**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18286-1/IUG2185**

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	N / A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SWND	TB = 2 5 7 EB = 4 FB = FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	HAR-26_072011_01	11	119 2955- blk 1	21		31	
2	TB_HAR-26_072011	12		22		32	
3	SH-04_072011_01	13		23		33	
4	EB_SH-04_072011	14		24		34	
5	TB_SH-04_072011	15		25		35	
6	SH-02_072011_01	16		26		36	
7	TB_SH-11_072011	17		27		37	
8	SH-11_072011_01B	18		28		38	
9	SH-07_072011_01B	19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 20, 2011
LDC Report Date: September 1, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V & IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18286-1

Sample Identification

HAR-26_072011_01**
HAR-26_072011_36**
FB_HAR-26_072011_19**
HAR-31_072011_01
SH-04_072011_01**
SH-04_072011_36**
EB_SH-04_072011**
FB_SH-04_072011_19**
SH-02_072011_01
HAR-15_072011_01
SH-11_072011_01B**
SH-11_072011_36B**
EB_SH-11_072011B**
FB_SH-11_072011_19B**
SH-07_072011_01B

**Indicates sample underwent Level IV review

Introduction

This data review covers 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-78106/1-A	7/23/11	Bis(2-ethylhexyl)phthalate	0.769 ug/L	HAR-26_072011_01** HAR-26_072011_36** FB_HAR-26_072011_19** SH-04_072011_01** SH-04_072011_36** EB_SH-04_072011** FB_SH-04_072011_19** SH-11_072011_01B** SH-11_072011_36B** EB_SH-11_072011B** FB_SH-11_072011_19B**

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
SH-04_072011_01**	Bis(2-ethylhexyl)phthalate	0.70 ug/L	10U ug/L

Samples EB_SH-04_072011** and EB_SH-11_072011B** were identified as equipment blanks. No semivolatile contaminants were found.

Samples FB_HAR-26_072011_19**, FB_SH-04_072011_19**, FB_SH-11_072011_19B**, and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No semivolatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits for samples on which a Level IV review was performed.

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18286-1	All compounds reported below the RL	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-26_072011_01** and HAR-26_072011_36**, samples SH-04_072011_01** and SH-04_072011_36**, and samples SH-11_072011_01B** and SH-11_072011_36B** were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-26_072011_01**	HAR-26_072011_36**			
Diethylphthalate	0.41	9.6U	184 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-04_072011_01**	SH-04_072011_36**			
Bis(2-ethylhexyl)phthalate	0.70	11U	176 (≤35)	NQ	-
Diethylphthalate	0.46	9.6U	184 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-11_072011_01B**	SH-11_072011_36B**			
Bis(2-ethylhexyl)phthalate	10U	0.59	178 (≤35)	NQ	-

Samples HAR-26_072011_01** and HAR-26_072011_03 (from SDG IUG1981), samples SH-04_072011_01** and SH-04_072011_03 (from SDG IUG1981), and samples SH-11_072011_01B** and SH-11_072011_03B (from SDG IUG1981) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-26_072011_01**	HAR-26_072011_03			
Diethylphthalate	0.41	9.5U	183 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-04_072011_01**	SH-04_072011_03			
Bis(2-ethylhexyl)phthalate	0.70	10U	174 (≤35)	NQ	-
Diethylphthalate	0.46	10U	182 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18286-1	HAR-26_072011_01** HAR-26_072011_36** FB_HAR-26_072011_19** HAR-31_072011_01 SH-04_072011_01** SH-04_072011_36** EB_SH-04_072011** FB_SH-04_072011_19** SH-02_072011_01 HAR-15_072011_01 SH-11_072011_01B** SH-11_072011_36B** EB_SH-11_072011B** FB_SH-11_072011_19B** SH-07_072011_01B	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RL (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18286-1	SH-04_072011_01**	Bis(2-ethylhexyl)phthalate	10U ug/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18286-1**

No Sample Data Qualified in this SDG

LDC #: 26041A2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/26/11

SDG #: 280-18286-1

Level V / V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG
2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area			Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	GC/MS Instrument performance check	* A	
III.	Initial calibration	* A	% RSD ≤ 30 %
IV.	Continuing calibration/ICV	* A	CV/ICV ≤ 25 %
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	* A	
XII.	Compound quantitation/CRQLs	* A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	* A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates (Split)	SW	D ₁ = 1, 2 D ₂ = 5, 6 D ₃ = 11, 12 Splits = 5 each
XVII.	Field blanks	ND	FB = 3, 8, 14 EB = 7, 13

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Level IV ** Water

1	HAR-26_072011_01	11	SH-11_072011_01B	21	MB 280-78106/1-A	31	S ₁ = 1 + HAR-26_072011_01
2	HAR-26_072011_36	12	SH-11_072011_36B	22	MB 280-78592/1-A	32	S ₂ = 5 + SH-04_072011_03
3	FB HAR-26_072011_19	13	EB SH-11_072011B	23		33	S ₃ = 11 + SH-11-072011_03
4	HAR-31_072011_01	14	FB SH-11_072011_19B	24		34	(all from 1UG1981)
5	SH-04_072011_01	15	SH-07_072011_01B	25		35	
6	SH-04_072011_36	16		26		36	
7	EB SH-04_072011	17		27		37	
8	FB SH-04_072011_19	18		28		38	
9	SH-02_072011_01	19		29		39	
10	HA-15_072011_01	20		30		40	

Phthalates + NB + A = 1, 5, 11
 Phthalates = 2-4, 6-8, 12-14
 NB = 10
 NB + A = 9, 15

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?		/		
Did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?			/	
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) > 0.05 ?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) $\leq 25\%$ and relative response factors (RRF) ≥ 0.05 ?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds from the associated calibration standard?	/			
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?				
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			/	
XIV: System performance				
System performance was found to be acceptable.	/			
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII: Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(e)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC), for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	1	2		
Diethylphthalate	0.41	9.6U	184	NQ (<5xRL)

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	5	6		
Bis(2-ethylhexyl)phthalate	0.70	11U	176	NQ (<5xRL)
Diethylphthalate	0.46	11U	184	NQ (<5xRL)

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	11	12		
Bis(2-ethylhexyl)phthalate	10U	0.59	178	NQ (<5xRL)

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N NA
Y N NA

Were field split pairs identified in this SDG?

Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-26_072011_01	HAR-26_072011_03		
Diethylphthalate	0.41	9.5U	183	NQ (5xRL)

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	SH-04_072011_01	SH-04_072011_03		
Bis(2-ethylhexyl)phthalate	0.70	10U	174	NQ (5xRL)
Diethylphthalate	0.46	10U	182	NQ (5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound
 A_{is} = Area of associated internal standard
 C_x = Concentration of compound,
 C_{is} = Concentration of internal standard
 S = Standard deviation of the RRFs,
 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/29/2011	NR (IS1)						
	MSS K		Nitrobenzene (IS2)	0.3799	0.3799	0.3661	0.3661	4.0	4.0
			Diethyl phthalate (IS3)	1.2146	1.2146	1.1563	1.1563	5.6	5.6
			Anthracene (IS4)	1.1287	1.1287	1.0729	1.0729	7.6	7.6
			Bis(2-ethex) phthalate (IS5)	0.6277	0.6277	0.5727	0.5727	11.4	11.4
			NR (IS6)						

Conc	IS/Cpd	Area cpd	Area IS
40/50			
40/50		386745	814355
40/50		720655	474681
40/50		1139823	807870
40/50		716146	912689
40/50			

Conc	Nitrobenzene	Diethyl phthal	Anthracene	Bis(2-ethex) ph
4.00		1.2051	1.1421	0.4577
10.00	0.3797	1.1843	1.1427	0.4819
20.00	0.3799	1.2338	1.1498	0.5991
50.00	0.3799	1.2146	1.1287	0.6277
80.00	0.3689	1.1613	1.0746	0.6245
120.00	0.3577	1.1111	1.0230	0.6105
160.00	0.3516	1.0775	0.9789	0.5979
200.00	0.3447	1.0627	0.9434	0.5822
X =	#DIV/0!	1.1563	1.0729	0.5727
S =	#DIV/0!	0.0650	0.0818	0.0655
				#DIV/0!

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	100	66.07	66	66	0
2-Fluorobiphenyl	↓	67.51	67	67	↓
Terphenyl-d14	↓	91.4	90	91	↓
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 20, 2011
LDC Report Date: August 22, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18286-1/IUG2520

Sample Identification

HAR-26_072011_01
SH-04_072011_01
SH-02_072011_01
HAR-15_072011_01
SH-11_072011_01B
SH-07_072011_01B

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples EB_SH-04_072011 and EB_SH-02_072011 (both from SDG 280-18286-2) were identified as equipment blanks. No N-nitrosodimethylamine was found.

Samples FB_071211_19 (from SDG 280-17952-1) and samples FB_SH-04_072011_19, FB_SH-02_072011_19, and FB_HAR-15_072011_19 (all 3 from SDG 280-18286-2) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18286-1/ IUG2520	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SH-04_072011_01 and SH-04_072011_36 (from SDG 280-18286-2), samples SH-02_072011_01 and SH-02_072011_36 (from SDG 280-18286-2), and samples HAR-15_072011_01 and HAR-15_072011_36 (from SDG 280-18286-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-04_072011_01	SH-04_072011_36			
N-Nitrosodimethylamine	0.14	0.14	0 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-02_072011_01	SH-02_072011_36			
N-Nitrosodimethylamine	0.087	0.093	7 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-15_072011_01	HAR-15_072011_36			
N-Nitrosodimethylamine	0.0071	0.0050U	35 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18286-1/IUG2520

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18286-1/ IUG2520	HAR-26_072011_01 SH-04_072011_01 SH-02_072011_01 HAR-15_072011_01 SH-11_072011_01B SH-07_072011_01B	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18286-1/IUG2520

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18286-1/IUG2520

No Sample Data Qualified in this SDG

LDC #: 26041A2b **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 280-18286 -1/IUG2520

Level V

Laboratory: Test America, Inc.

Date: 8/19/11

Page: 1 of 1

Reviewer: SVG

2nd Reviewer:

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M₀)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	In sufficient vol.
VIII.	Laboratory control samples	A	ICS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	D ₁ = 2 + SH-04-072011-36
XVI.	Field duplicates	SW	D ₂ = 3 + SH-02-072011-36 } (280-18286-2) D ₃ = 4 + HAR-15-072011-36
XVII.	Field blanks	ND	FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

FB = FB-SH-04-072011-19
FB = FB-SH-02-072011-19
FB = FB-HAR-15-072011-19 } 280-18286-2
EB = EB-SH-04-072011
EB = EB-SH-02-072011

Validated Samples:

Water

1	HAR-26_072011_01	11	11 G 3258-B/K1	21	31
2	SH-04_072011_01	12		22	32
3	SH-02_072011_01	13		23	33
4	HAR-15_072011_01	14		24	34
5	SH-11_072011_01B	15		25	35
6	SH-07_072011_01B	16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	SH-04_072011_01	SH-04_072011_36		
NDMA	0.14	0.14	0	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	SH-02_072011_01	SH-02_072011_36		
NDMA	0.087	0.093	7	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-15_072011_01	HAR-15_072011_36		
NDMA	0.0071	0.0050U	35	NG (<5xRt) ✓

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 20, 2011
LDC Report Date: August 31, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level IV & V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18286-1

Sample Identification

HAR-26_072011_01**
HAR-26_072011_36**
FB_HAR-26_072011_19**
SH-04_072011_01
SH-02_072011_01
HAR-15_072011_01
SH-11_072011_01B
SH-07_072011_01B
HAR-26_072011_01DUP
SH-07_072011_01BMS
SH-07_072011_01BMSD

**Indicates sample underwent Level IV review for Cyanide only.

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, EPA SW 846 Method 9040B for pH, and EPA SW 846 Method 9012A for Cyanide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
HAR-26_072011_01**	pH	50.75 hours	48 hours	J (all detects) UJ (all non-detects)	P
SH-04_072011_01	pH	50.5 hours	48 hours	J (all detects) UJ (all non-detects)	P
SH-02_072011_01	pH	49.75 hours	48 hours	J (all detects) UJ (all non-detects)	P
SH-11_072011_01B	pH	50 hours	48 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.0565 mg/L	HAR-26_072011_01** SH-04_072011_01 SH-02_072011_01 HAR-15_072011_01 SH-11_072011_01B SH-07_072011_01B

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-26_072011_01**	Ammonia as N	0.069 mg/L	0.069U mg/L
SH-04_072011_01	Ammonia as N	0.066 mg/L	0.066U mg/L
SH-02_072011_01	Ammonia as N	0.069 mg/L	0.069U mg/L
HAR-15_072011_01	Ammonia as N	0.25 mg/L	0.25U mg/L
SH-11_072011_01B	Ammonia as N	0.13 mg/L	0.13U mg/L

Samples FB_HAR-26_072011_19** and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable for samples on which a Level IV review was performed.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18286-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples HAR-26_072011_01** and HAR-26_072011_36** were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	HAR-26_072011_01**	HAR-26_072011_36**			
Cyanide	0.0020U	0.0026	26 (≤35)	-	-

Samples HAR-26_072011_01** and HAR-26_072011_03 (from SDG IUG1981) were identified as split samples. No contaminant concentrations were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18286-1	HAR-26_072011_01** SH-04_072011_01 SH-02_072011_01 SH-11_072011_01B	pH	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18286-1	HAR-26_072011_01** HAR-26_072011_36** FB_HAR-26_072011_19** SH-04_072011_01 SH-02_072011_01 HAR-15_072011_01 SH-11_072011_01B SH-07_072011_01B	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18286-1	HAR-26_072011_01**	Ammonia as N	0.069U mg/L	A	B
280-18286-1	SH-04_072011_01	Ammonia as N	0.066U mg/L	A	B
280-18286-1	SH-02_072011_01	Ammonia as N	0.069U mg/L	A	B
280-18286-1	HAR-15_072011_01	Ammonia as N	0.25U mg/L	A	B
280-18286-1	SH-11_072011_01B	Ammonia as N	0.13U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18286-1**

No Sample Data Qualified in this SDG

LDC #: 26041A6
 SDG #: 280-18286-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V / III

Date: 8/23/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), Cyanide (EPA SW846 Method 9012A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/20/11
IIa.	Initial calibration	A	Not reviewed for level V
IIb.	Calibration verification	A	↓
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS/P
VII.	Sample result verification	A	Not reviewed for level V
VIII.	Overall assessment of data	A	CSDG: IUG1981
IX.	Field duplicates	SW	(1,2) Split = (1, HAR-26-072011-03)
X	Field blanks	ND	FB = 3, FB - 071211-19 (280-17962-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

**Level 4 for Cyanide only

Validated Samples:

Water

1	HAR-26_072011_01**	11	SH-07_072011_01BMSD	21		31	
2	HAR-26_072011_36**	12		22		32	
3	FB_HAR-26_072011_19**	13		23		33	
4	SH-04_072011_01	14		24		34	
5	SH-02_072011_01	15		25		35	
6	HA-15_072011_01	16		26		36	
7	SH-11_072011_01B	17		27		37	
8	SH-07_072011_01B	18		28		38	
9	HAR-26_072011_01DUP	19		29		39	
10	SH-07_072011_01BMS	20		30		40	

Notes: _____

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients > 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.			✓	
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			✓	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.			✓	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.		/		

LDC# 26041A6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 11 of
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	1	2		
Cyanide	0.0020U	0.0026	26	

V:\FIELD DUPLICATES\FD_inorganic\26041A6.wpd

LDC #: 26041A6

**Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification**

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Method: Inorganics, Method 9012

The correlation coefficient (r) for the calibration of CN was recalculated. Calibration date: 7/23/11

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{\text{Found} \times 100}{\text{True}}$

Where,

Found = concentration of each analyte measured in the analysis of the ICV or CCV solution

True

= concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/l)	Area	Recalculated		Reported		Acceptable (Y/N)
					r or r ²				
Initial calibration	CN	s1	0	159	0.999967	0.999967			
		s2	10	7527					
		s3	20	15088					
		s4	50	37832					
		s5	100	74946					
		s6	200	151501					
		s7	400	297938					
Calibration verification		ICV	100	102.274	102	102			
Calibration verification		CCV	200	202.512	101	101			
Calibration verification		↓	↓	202.352	101	101			

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	%R / RPD	
LCS	Laboratory control sample	CN	0.101	0.1	101	101	Y
N	Matrix spike sample		(SSR-SR)				
N	Duplicate sample						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 20, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18286-1

Sample Identification

HAR-15_0720111_01

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-17952-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-17952-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-17952-1	HAR-15_0720111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-17952-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-17952-1**

No Sample Data Qualified in this SDG

LDC #: 26041A8

VALIDATION COMPLETENESS WORKSHEET

Date: 8/22/11

SDG #: 280-17952-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *MG*

2nd Reviewer: *[Signature]*

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	A	LCS 40
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	^R HA-15_072011_01	11	MB 280-78240 1-A	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 20, 2011

LDC Report Date: August 24, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18286-1

Sample Identification

HAR-15_072011_01

HAR-15_072011_01MS

HAR-15_072011_01MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
MB 280-78557/25	7/26/11	1,1-Dimethylhydrazine	2.16 ug/L	All samples in SDG 280-18286-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18286-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18286-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18286-1	HAR-15_072011_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18286-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18286-1**

No Sample Data Qualified in this SDG

LDC #: 26041A76

VALIDATION COMPLETENESS WORKSHEET

Date: 8/22/11

SDG #: 280-18286-1

Level IV ✓

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1B
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HA-15 072011_01	11	MB 280-78557/25	21		31	
2	HA-15 072011_01MS	12		22		32	
3	HA-15 072011_01MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____



Laboratory Data Consultants, Inc.

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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 6, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26041:

<u>SDG #</u>	<u>Fraction</u>
280-18286-1/ IUG2185/ IUG2520 280-18334-1/ IUG2424 280-18472-1, 280-18534-1 280-18597-1, 280-18622-1	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Diesel Range Organics, Hydrazine, Formaldehyde

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,


Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 21, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18334-1

Sample Identification

PZ-060_072111_01
EB_PZ-060_072111A
TB_PZ-060_072111A
PZ-035_072111_01A
TB_PZ-035_072111A
HAR-32_072111_01
RD-07_072111_01
RD-50_072111_01
TB_RD-520_072111
RD-54A_072111_01
RD-33A_072111_01
HAR-30_0722111_01
TB_HAR-30_072111
RS-34_072111_01
HAR-32_072111_01MS
HAR-32_072111_01MSD
RD-50_072111_01MS
RD-50_072111_01MSD

Introduction

This data review covers 18 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples TB_PZ-060_072111A, TB_PZ-035_072111A, TB_RD-520_072111, and TB_HAR-30_072111 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_PZ-060_072111A	7/21/11	Methylene chloride	0.56 ug/L	PZ-060_072111_01

Sample EB_PZ-060_072111A was identified as an equipment blank. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-060_072111A	7/21/11	Chloroform	0.39 ug/L	PZ-060_072111_01 PZ-035_072111_01A

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/21/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-060_072111_01 PZ-035_072111_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
PZ-035_072111_01A	Toluene-d8 Bromofluorobenzene	115 (88-110) 121 (86-115)	All TCL compounds	J (all detects)	P
TB_PZ-035_072111A	Toluene-d8 Bromofluorobenzene	123 (88-110) 126 (86-115)	All TCL compounds	J (all detects)	P
HAR-32_072111_01	Dibromofluoromethane	84 (86-118)	All TCL compounds except Trichloroethene 1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects) UJ (all non-detects)	A
RD-07_072111_01	Toluene-d8 Bromofluorobenzene	115 (88-110) 123 (86-115)	All TCL compounds	J (all detects)	P
RD-50_072111_01	Dibromofluoromethane Toluene-d8 Bromofluorobenzene	72 (86-118) 81 (88-110) 81 (86-115)	All TCL compounds	J (all detects) UJ (all non-detects)	A
HAR-30_0722111_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
TB_HAR-30_072111	Bromofluorobenzene	117 (86-115)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
HAR-32_072111_01MS/MSD (HAR-32_072111_01)	Acetone Methyl ethyl ketone Vinyl chloride	148 (48-130) - -	148 (48-130) 122 (57-120) 137 (49-136)	- - -	J (all detects) J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-79706/4,5 (PZ-035_072111_01A TB_PZ-035_072111A HAR-32_072111_01 RD-07_072111_01 RD-50_072111_01 TB_RD-520_072111 RD-54A_072111_01 RD-33A_072111_01 HAR-30_0722111_01 TB_HAR-30_072111 RS-34_072111_01 MB 280-79706/8)	Methyl ethyl ketone	149 (57-120)	148 (57-120)	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18334-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18334-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18334-1	PZ-035_072111_01A TB_PZ-035_072111A RD-07_072111_01 HAR-30_0722111_01 TB_HAR-30_072111	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18334-1	HAR-32_072111_01	All TCL compounds except Trichloroethene 1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18334-1	RD-50_072111_01	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18334-1	HAR-32_072111_01	Acetone Methyl ethyl ketone Vinyl chloride	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18334-1	PZ-035_072111_01A TB_PZ-035_072111A HAR-32_072111_01 RD-07_072111_01 RD-50_072111_01 TB_RD-520_072111 RD-54A_072111_01 RD-33A_072111_01 HAR-30_0722111_01 TB_HAR-30_072111 RS-34_072111_01	Methyl ethyl ketone	J (all detects)	P	Laboratory control samples (%R) (L)
280-18334-1	PZ-060_072111_01 EB_PZ-060_072111A TB_PZ-060_072111A PZ-035_072111_01A TB_PZ-035_072111A HAR-32_072111_01 RD-07_072111_01 RD-50_072111_01 TB_RD-520_072111 RD-54A_072111_01 RD-33A_072111_01 HAR-30_0722111_01 TB_HAR-30_072111 RS-34_072111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18334-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18334-1

No Sample Data Qualified in this SDG

LDC #: 26041B1a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18334-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *N/C*

2nd Reviewer: *[Signature]*

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/21/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS 1/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 2 TB = 3, 5, 9, 13 FB = FB_071211_19

280-1795

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	PZ-060_072111_01	11	RD-33A_072111_01	21	MB 280-79706/8	31
2	EB_PZ-060_072111A	12	HAR-30_0722111_01	22	MB 280-79729/4	32
3	TB_PZ-060_072111A	13	TB HAR-30_072111	23	MB 280-79966/6	33
4	PZ-035_072111_01A	14	RS-34_072111_01	24		34
5	TB_PZ-035_072111A	15	HAR-32_072111_01MS	25		35
6	HAR-32_072111_01	16	HAR-32_072111_01MSD	26		36
7	RD-07_072111_01	17	RD-50_072111_01MS	27		37
8	RD-50_072111_01	18	RD-50_072111_01MSD	28		38
9	TB_RD-520_072111	19		29		39
10	RD-54A_072111_01	20		30		40

VOCs = 1-3, 7-11
 VOCs + 1PA = 4-6, 12-14

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethane	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethane**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethane	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethane	KKKK. Propionitrile
J. 1,2-Dichloroethane, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 N/N/A Were all surrogate %R within QC limits?
 N/N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications Code: <u>S</u>
		4	TOL	115 (See below)	J/dets/p (qual all)
			BFB	121 ()	
		5	TOL	123 ()	
			BFB	126 ()	↓
		6	DFM	84 ()	J/MS/A (qual all except S, TTT)
		7	TOL	115 ()	J/dets/p (qual all)
			BFB	123 ()	↓
		8	DFM	72 ()	J/MS/A
			TOL	81 ()	↓
			BFB	81 ()	↓
		12	TOL	111 ()	J/dets/p
		13	BFB	117 ()	↓

QC Limits (Water)

- 88-110
- 86-115
- 80-120
- 86-118

QC Limits (Soil)

- 81-117
- 74-121
- 80-120
- 70-120

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18334-1

Sample Identification

PZ-060_072111_01
EB_PZ-060_072111A
TB_PZ-060_072111A
PZ-035_072111_01A
TB_PZ-035_072111A
HAR-32_072111_01
HAR-30_0722111_01
TB_HAR-30_072111
RS-34_072111_01
PZ-060_072111_01MS
PZ-060_072111_01MSD

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_PZ-060_072111A, TB_PZ-035_072111A, and TB_HAR-30_072111 were identified as trip blanks. No 1,4-dioxane was found.

Sample EB_PZ-060_072111A was identified as an equipment blank. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18334-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18334-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18334-1	PZ-060_072111_01 EB_PZ-060_072111A TB_PZ-060_072111A PZ-035_072111_01A TB_PZ-035_072111A HAR-32_072111_01 HAR-30_0722111_01 TB_HAR-30_072111 RS-34_072111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18334-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18334-1

No Sample Data Qualified in this SDG

LDC #: 26041B1b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18334-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JG

2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	UCS 'D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	EB = 2 TB = 3, 5, 8 FB = FB-071211, 19

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

(from 280-17952-1)

Validated Samples:

Water

1	PZ-060_072111_01	11	PZ-060_072111_01MSD	21	MB 280-79531/12	31	
2	EB_PZ-060_072111A	12		22		32	
3	TB_PZ-060_072111A	13		23		33	
4	PZ-035_072111_01A	14		24		34	
5	TB_PZ-035_072111A	15		25		35	
6	HAR-32_072111_01	16		26		36	
7	HAR-30_0722111_01	17		27		37	
8	TB_HAR-30_072111	18		28		38	
9	RS-34_072111_01	19		29		39	
10	PZ-060_072111_01MS	20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: August 29, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V & IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18334-1

Sample Identification

PZ-060_072111_01**
PZ-060_072111_36**
FB_PZ-060_072111_19**
EB_PZ-060_072111A**
PZ-035_072111_01A
HAR-32_072111_01
HAR-30_0722111_01
RS-34_072111_01

**Indicates sample underwent Level IV review

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
EB_PZ-060_072111A** RS-34_072111_01	All TCL compounds	13	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/29/11	Methyl methanesulfonate 1,4-Naphthoquinone Methapyrilene	90.4 70.6 54.4	EB_PZ-060_072111A** MB 280-79708/1-A	J (all detects) UJ (all non-detects)	A
7/18/11	Methyl methanesulfonate 1,4-Naphthoquinone Methapyrilene	92.2 70.7 40.8	PZ-060_072111_01** PZ-060_072111_36** FB_PZ-060_072111_19** MB 280-78211/1-A	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-78211/1-A	7/25/11	Benzyl alcohol	0.896 ug/L	PZ-060_072111_01** PZ-060_072111_36** FB_PZ-060_072111_19**
MB 280-78211/1-A	7/25/11	Bis(2-ethylhexyl)phthalate	2.29 ug/L	PZ-060_072111_01** PZ-060_072111_36** FB_PZ-060_072111_19** PZ-035_072111_01A HAR-32_072111_01
MB 280-79708/1-A	8/3/11	Bis(2-ethylhexyl)phthalate	2.00 ug/L	EB_PZ-060_072111A**

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-060_072111_01**	Bis(2-ethylhexyl)phthalate	3.4 ug/L	10U ug/L
PZ-060_072111_36**	Bis(2-ethylhexyl)phthalate	3.2 ug/L	11U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
FB_PZ-060_072111_19**	Benzyl alcohol Bis(2-ethylhexyl)phthalate	0.24 ug/L 2.4 ug/L	11U ug/L 11U ug/L
PZ-035_072111_01A	Bis(2-ethylhexyl)phthalate	3.7 ug/L	9.5U ug/L
HAR-32_072111_01	Bis(2-ethylhexyl)phthalate	3.1 ug/L	9.8U ug/L
EB_PZ-060_072111A**	Bis(2-ethylhexyl)phthalate	1.8 ug/L	9.7U ug/L

Sample EB_PZ-060_072111A** was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-060_072111A**	7/21/11	Bis(2-ethylhexyl)phthalate	1.8 ug/L	PZ-060_072111_01** PZ-060_072111_36** PZ-035_072111_01A

Samples FB_PZ-060_072111_19** and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_PZ-060_072111_19**	7/21/11	Benzyl alcohol	0.24 ug/L	PZ-060_072111_01** PZ-060_072111_36**
FB_PZ-060_072111_19**	7/21/11	Bis(2-ethylhexyl)phthalate	2.4 ug/L	PZ-060_072111_01** PZ-060_072111_36** PZ-035_072111_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-060_072111_01**	Bis(2-ethylhexyl)phthalate	3.4 ug/L	10U ug/L
PZ-060_072111_36**	Bis(2-ethylhexyl)phthalate	3.2 ug/L	11U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-035_072111_01A	Bis(2-ethylhexyl)phthalate	3.7 ug/L	9.5U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-79708/2,3-A (EB_PZ-060_072111A** MB 280-79708/1-A)	Hexachlorocyclopentadiene	9 (10-120)	-	-	J (all detects) R (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits for samples on which a Level IV review was performed.

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18334-1	All compounds reported below the RL	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-060_072111_01** and PZ-060_072111_36** were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-060_072111_01**	PZ-060_072111_36**			
Bis(2-ethylhexyl)phthalate	3.4	3.2	6 (≤35)	-	-

Samples PZ-060_072111_01** and PZ-060_072111_03 (from SDG IUG2193) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-060_072111_01**	PZ-060_072111_03			
Bis(2-ethylhexyl)phthalate	3.4	9.8U	97 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18334-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18334-1	EB_PZ-060_072111A** RS-34_072111_01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18334-1	EB_PZ-060_072111A** PZ-060_072111_01** PZ-060_072111_36** FB_PZ-060_072111_19**	Methyl methanesulfonate 1,4-Naphthoquinone Methapyrilene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-18334-1	EB_PZ-060_072111A**	Hexachlorocyclopentadiene	J (all detects) R (all non-detects)	P	Laboratory control samples (%R) (L)
280-18334-1	PZ-060_072111_01** PZ-060_072111_36** FB_PZ-060_072111_19** EB_PZ-060_072111A** PZ-035_072111_01A HAR-32_072111_01 HAR-30_0722111_01 RS-34_072111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RL (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18334-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18334-1	PZ-060_072111_01**	Bis(2-ethylhexyl)phthalate	10U ug/L	A	B
280-18334-1	PZ-060_072111_36**	Bis(2-ethylhexyl)phthalate	11U ug/L	A	B
280-18334-1	FB_PZ-060_072111_19**	Benzyl alcohol Bis(2-ethylhexyl)phthalate	11U ug/L 11U ug/L	A	B
280-18334-1	PZ-035_072111_01A	Bis(2-ethylhexyl)phthalate	9.5U ug/L	A	B
280-18334-1	HAR-32_072111_01	Bis(2-ethylhexyl)phthalate	9.8U ug/L	A	B
280-18334-1	EB_PZ-060_072111A**	Bis(2-ethylhexyl)phthalate	9.7U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18334-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18334-1	PZ-060_072111_01**	Bis(2-ethylhexyl)phthalate	10U ug/L	A	F
280-18334-1	PZ-060_072111_36**	Bis(2-ethylhexyl)phthalate	11U ug/L	A	F
280-18334-1	PZ-035_072111_01A	Bis(2-ethylhexyl)phthalate	9.5U ug/L	A	F

LDC #: 26041B2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18334-1

Level IV / V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JTC

2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/21/11
II.	GC/MS Instrument performance check	NA	
III.	Initial calibration	NA	% RSD $\leq 30\%$ ✓
IV.	Continuing calibration/ICV	NSW	CV/ICV $\leq 25\%$
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec
VIII.	Laboratory control samples	SW	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	NA	
XII.	Compound quantitation/CRQLs	NA	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	NA	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	SW	D = 1, ✓ S = 1 + PZ-060-072111-03 (10/52193)
XVII.	Field blanks	SW	FB = 3 EB = 4 FB = FB_071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	PZ-060_072111_01	** D	11	MB280-79708/1-A	21	31
2	PZ-060_072111_36	** D	12	MB280-78211/1-A	22	32
3	FB PZ-060_072111_19	**	13		23	33
4	EB PZ-060_072111A	**	14		24	34
5	PZ-035_072111_01A		15		25	35
6	HAR-32_072111_01		16		26	36
7	HAR-30_072111_01		17		27	37
8	RS-34_072111_01		18		28	38
9			19		29	39
10			20		30	40

App N = 1-3

APPIX - Phthalate + EB = 4

Phthalate + EB = 5.6

NB = 7.8

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**	
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene	
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene	
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene	
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether	
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline	
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine	
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid	
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol	
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine	
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine	
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Methyl methanesulfonate	
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU. 1,4-Naphthoquinone	
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrene	
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.	

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 12 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) > 0.05 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 25\%$ and relative response factors (RRF) ≥ 0.05 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within + 30 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field duplicates.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVII. Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Was a method blank analyzed for each matrix?
- Y N N/A Was a method blank analyzed for each concentration preparation level?
- Y N N/A Was a method blank associated with every sample?
- Y N N/A Was the blank contaminated? If yes, please see qualification below. AAA = 1-3 only

Blank extraction date: 7/25/11 Blank analysis date: 8/01/11 Code: B
 Conc. units: ug/L Associated Samples: EEE = 1-3, 5, 6

Compound	Blank ID	1	2	3	5	6
<u>MB 200-78211-A</u>				<u>3</u>		
<u>AAA</u>	<u>0.896</u>			<u>0.24/114</u>		
<u>EEE</u>	<u>2.29</u>	<u>3.4/104</u>	<u>3.2/114</u>	<u>2.4/↓</u>	<u>3.7/9.54</u>	<u>3.1/9.84</u>

Blank extraction date: 8/03/11 Blank analysis date: 8/07/11 Code: B
 Conc. units: ug/L Associated Samples: 4

Compound	Blank ID	4
<u>MB 200-79708-A</u>		
<u>EEE</u>	<u>2.00</u>	<u>1.8/1.74</u>

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 26041 B2a

VALIDATION FINDINGS WORKSHEET Field Blanks

Page: 1 of 1
Reviewer: ML
2nd Reviewer: [Signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y/N N/A Were field blanks identified in this SDG?
Y/N N/A Were target compounds detected in the field blanks?

Blank units: ug/L Associated sample units: ug/L

1, 2 = QQQ
1, 2, 5 = EEE

Code: F

Sampling date: 7/21/11

Field blank type: (circle one) Field Blank Rinsate / Other: EB Associated Samples: 1, 2, 5

Compound	Blank ID	FB A/K LP	Sample Identification					
			1	2	5			
QQQ	0.24							
EEE	2.4	1.8	3.4 / 10U	3.2 / 11U	3.7 / 4.5U			

Blank units: _____ Associated sample units: _____
Sampling date: _____
Field blank type: (circle one) _____ Field Blank / Rinsate / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification				
		1	2	5		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	1	2		
Bis(2-ethylhexyl)phthalate	3.4	3.2	6	

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-060_072111_01	PZ-060_072111_03		
Bis(2-ethylhexyl)phthalate	3.4	9.8U	97	NQ (.5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

$$A_x = \text{Area of Compound}$$

$$C_x = \text{Concentration of compound,}$$

$$S = \text{Standard deviation of the RRFs,}$$

$$A_{is} = \text{Area of associated internal standard}$$

$$C_{is} = \text{Concentration of internal standard}$$

$$X = \text{Mean of the RRFs}$$

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/18/2011	Phenol (IS1)	1.9183	1.9183	1.8819	1.8819	2.7	2.7
	MSS G		Naphthalene (IS2)	1.0855	1.0855	1.0724	1.0724	4.6	4.6
			Diethyl phthalate (IS3)	1.1956	1.1956	1.1654	1.1655	3.7	3.7
			Hexachlorobenzene (IS4)	0.2380	0.2380	0.2387	0.2387	2.6	2.6
			Chrysene (IS5)	1.1312	1.1312	1.1126	1.1126	2.2	2.2
			Benzo(a)pyrene (IS6)	1.1407	1.1407	1.0972	1.0972	7.6	7.6

Cis/Cx	Ax	Ais
40/50	443045	184770
40/50	971071	715665
40/50	595541	398484
40/50	176632	593636
40/50	832337	588641
40/50	780911	547692

Conc	Phenol	Naphthalene	Diethyl phthal	Hexachlorob	Chrysene	Benzo(a)py
4.00		1.1310	1.1721		1.1454	0.9244
10.00	1.9131	1.1222	1.2064	0.2480	1.1251	1.0183
20.00	1.8999	1.1126	1.2157	0.2444	1.1240	1.1056
50.00	1.9183	1.0855	1.1956	0.2380	1.1312	1.1407
80.00	1.9258	1.0759	1.1789	0.2397	1.1181	1.1625
120.00	1.8978	1.0333	1.1430	0.2364	1.0982	1.1513
160.00	1.8192	1.0169	1.1104	0.2351	1.0748	1.1412
200.00	1.7995	1.0017	1.1015	0.2294	1.0842	1.1333
X =	1.8819	1.0724	1.1655	0.2387	1.1126	1.0972
S =	0.0509	0.0497	0.0430	0.0061	0.0244	0.0832

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRF-s} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

$$A_x = \text{Area of Compound}$$

$$C_x = \text{Concentration of compound,}$$

$$S = \text{Standard deviation of the RRFs,}$$

$$A_{is} = \text{Area of associated internal standard}$$

$$C_{is} = \text{Concentration of internal standard}$$

$$X = \text{Mean of the RRFs}$$

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/28/2011	Phenol (IS1)	1.8889	1.8889	1.8020	1.8020	7.5	7.5
	MSS B		Naphthalene (IS2)	1.0812	1.0812	1.0322	1.0322	10.9	10.9
			Diethyl phthalate (IS3)	1.2600	1.2600	1.2157	1.2157	9.0	9.0
			Hexachlorobenzene (IS4)	0.2368	0.2368	0.2245	0.2245	7.6	7.6
			Bis(2-ethex) phthalate (IS5)	see r2 calc					
			Benzo(a)pyrene (IS6)	1.1374	1.1374	1.0763	1.0764	6.5	6.5

Cis/Cx	Ax	Ais
40/50	498715	211220
40/50	1135356	840062
40/50	768942	488226
40/50	239842	810275
40/50	813655	913460
40/50	1244028	874967

Conc	Phenol	Naphthalene	Diethyl phthal	Hexachlorob	Bis(2-ethex) ph	Benzo(a)py
4.00		1.1610	1.3042			0.9778
10.00	1.9703	1.1527	1.3318	0.2441		1.1312
20.00	1.9021	1.1137	1.3232	0.2399		1.1609
50.00	1.8889	1.0812	1.2600	0.2368		1.1374
80.00	1.8308	1.0125	1.2158	0.2158		1.1193
120.00	1.7539	0.9651	1.1545	0.2275		1.0540
160.00	1.6779	0.9114	1.0883	0.2087		1.0392
200.00	1.5900	0.8599	1.0480	0.1989		0.9910
X =	1.8020	1.0322	1.2157	0.2245	0.0000	1.0764
S =	0.1350	0.1130	0.1088	0.0171	#DIV/0!	0.0703

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GCMS Semivolatiles (EPA SW 846 Method 8270C)

Parameter: Bis(2-ethylhexyl) phthalate

Order of regression: Linear

Date	Column	Compound	Points	x area ratio	y conc ratio
28-Jul-11	Vf-5MS	Bis(2-ethylhexyl) phthalate	Point 1	0.042731157	0.100
			Point 2	0.145531992	0.250
			Point 3	0.324353002	0.500
			Point 4	0.890739605	1.250
			Point 5	1.443212534	2.000
			Point 6	2.137216436	3.000
			Point 7	2.802284824	4.000
			Point 8	3.411478221	5.000

RF
 0.4273
 0.5821
 0.6487
 0.7126
 0.7216
 0.7124
 0.7006
 0.6823
 Ave 0.6485

Regression Output: Regression Output:	Reported WLR
Constant	b = 0.04100
Std Err of Y Est	0.04
R Squared	r^2 = 0.99920
No. of Observations	6.00
Degrees of Freedom	4.00
X Coefficient(s)	m1 = 0.7151
Std Err of Coef.	0.01

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:
 $\% \text{ Difference} = 100 \cdot (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$

Where:
 ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 Ax = Area of compound
 Cis = Concentration of compound
 Ais = Area of associated internal standard
 Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	g6_2879	08/01/11	Phenol (IS1)	1.8819	1.8729	1.8729	0.5	0.5
			Naphthalene (IS2)	1.0724	1.0783	1.0783	0.6	0.6
			Diethyl phthalate (IS3)	1.1654	1.2157	1.2157	4.3	4.3
			Hexachlorobenzene (IS4)	0.2387	0.2449	0.2449	2.6	2.6
			Chrysene (IS5)	1.1126	1.1419	1.1419	2.6	2.6
			Benzo(a)pyrene (IS6)	1.0972	1.1279	1.1279	2.8	2.8

Compound (IS)	Cis/Cx	Ax	Ais
Phenol (IS1)	40/80	678602	181159
Naphthalene (IS2)	40/80	1542213	715103
Diethyl phthalate (IS3)	40/80	972300	399892
Hexachlorobenzene (IS4)	40/80	306769	626216
Chrysene (IS5)	40/80	1421785	622529
Benzo(a)pyrene (IS6)	40/80	1448837	642297

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:
 $\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (\text{Ax}) / (\text{Cis}) / (\text{Ais}) / (\text{Cx})$

Cx = Concentration of compound
 Ais = Area of associated internal standard
 Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	B6222	08/07/11	Phenol (IS1)	1.8020	1.8045	1.8045	0.1	0.1
			Naphthalene (IS2)	1.0322	0.9988	0.9988	3.2	3.2
			Diethyl phthalate (IS3)	1.2157	1.2038	1.2038	1.0	1.0
			Hexachlorobenzene (IS4)	0.2245	0.2335	0.2335	4.0	4.0
			Bis(2-ethex) phthalate (IS5)	80.0000	85.4000	85.3554	6.7	6.7
			Benzo(a)pyrene (IS6)	1.0763	1.0987	1.0987	2.1	2.1

Compound (IS)	Cis/Cx	Ax	Ais
Phenol (IS1)	40/80	1170594	324354
Naphthalene (IS2)	40/80	2564727	1283950
Diethyl phthalate (IS3)	40/80	1765694	733403
Hexachlorobenzene (IS4)	40/80	570860	1222321
Bis(2-ethex) phthalate (IS5)	40/80	1943161	1298365
Benzo(a)pyrene (IS6)	40/80	2993383	1362236

CCV1 Response ratio*40 m1 b conc
 Bis(2-ethex) phthalate (IS5) 59.86486081 0.71510 0.04100 85.3554

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	100	84.4	84	84	0
2-Fluorobiphenyl	↓	63.9	64	64	
Terphenyl-d14	↓	56.3	56	56	
Phenol-d5	150	122.8	82	82	
2-Fluorophenol	↓	110.9	74	74	
2,4,6-Tribromophenol	↓	164.8	110	110	
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SC/SA)$ Where: SSC = Spike concentration
 SA = Spike added

RPD = $100 * (LCS - LCSDC) / 2 * (LCS + LCSDC)$ LCS = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS/D 280-7821/2,2-A

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS		LCSD		Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
	Phenol	80.0	80.6	59.7	59.0	75	75	74	74	74	74	1	1	1
N-Nitroso-di-n-propylamine			64.0	62.9	80	80	79	79	79	79	2	2	2	2
4-Chloro-3-methylphenol			66.9	66.6	84	84	83	83	83	83	0	0	0	0
Acenaphthene			60.1	54.5	75	75	68	68	68	68	10	10	10	10
Pentachlorophthalenol														
Pyrene			64.3	63.6	80	80	79	79	79	79	1	1	1	1

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 21, 2011

LDC Report Date: August 22, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18334-1/IUG2424

Sample Identification

PZ-060_072111_01
EB_PZ-060_072111A
PZ-035_072111_01A
HAR-30_0722111_01
RS-34_072111_01

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples EB_PZ-060_072111A and EB_PZ-035_072111 (from SDG 280-18334-2) were identified as equipment blanks. No N-nitrosodimethylamine was found.

Samples FB_071211_19 (from SDG 280-17952-1) and FB_PZ-035_071211_19A (from SDG 280-18334-2) were identified as field blanks. No N-nitrosodimethylamine was found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_PZ-035_071211_19A	7/21/11	N-Nitrosodimethylamine	0.0013 ug/L	PZ-035_072111_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18334-1/ IUG2424	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-035_072111_01A and PZ-035_072111_36A (from SDG 280-18334-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-035_072111_01A	PZ-035_072111_36A			
N-Nitrosodimethylamine	0.023	0.033	36 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18334-1/IUG2424

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18334-1/ IUG2424	PZ-060_072111_01 EB_PZ-060_072111A PZ-035_072111_01A HAR-30_0722111_01 RS-34_072111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18334-1/IUG2424

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18334-1/IUG2424

No Sample Data Qualified in this SDG

LDC #: 26041B2b
 SDG #: 280-18334 -1/IUG2424
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/22/11
 Page: 1 of 1
 Reviewer: *[Signature]*
 2nd Reviewer: *[Signature]*

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	A	LCS 1p
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 3 + PZ-035_072111_06A (280-18334-2)
XVII.	Field blanks	SW	EB = 2 FB = FB_071211_19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

*EB = EB_PZ-035_072111_19
 FB = FB_PZ-035_072111_19A
 (both from 280-18334-2)*

Validated Samples: *Water*

1	PZ-060_072111_01	11	11 G 3258 - blk 1	21		31	
2	EB_PZ-060_072111A	12		22		32	
3	PZ-035_072111_01A	13		23		33	
4	HAR-30_0722111_01	14		24		34	
5	RS-34_072111_01	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-035_072111_01A	PZ-035_072111_36A		
NDMA	0.023	0.033	36	NQ (<5xRL)

(RL = 0.005)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Metals
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18334-1

Sample Identification

RD-50_072111_01
RD-54A_072111_01
RD-33A_072111_01
RD-50_072111_01F
RD-54A_072111_01F
RD-33A_072111_01F
RD-54A_072111_01MS
RD-54A_072111_01MSD
RD-50_072111_01FMS
RD-50_072111_01FMSD

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6020 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Tin, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Barium Thallium	0.000680 mg/L 0.0000238 mg/L	RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01
PB (prep blank)	Nickel Thallium	0.000859 mg/L 0.0000279 mg/L	RD-50_072111_01F RD-54A_072111_01F RD-33A_072111_01F

Data qualification by the preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-50_072111_01	Thallium	0.000054 mg/L	0.000054U mg/L
RD-54A_072111_01	Thallium	0.000021 mg/L	0.000021U mg/L
RD-33A_072111_01	Thallium	0.000025 mg/L	0.000025U mg/L
RD-50_072111_01F	Nickel Thallium	0.00073 mg/L 0.000097 mg/L	0.00073U mg/L 0.000097U mg/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-54A_072111_01F	Nickel Thallium	0.00085 mg/L 0.000030 mg/L	0.00085U mg/L 0.000030U mg/L
RD-33A_072111_01F	Nickel	0.00098 mg/L	0.00098U mg/L

No field blanks were identified in this SDG.

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18334-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-50_072111_01 and RD-50_072111_03 (from SDG IUG2193) and RD-50_072111_01F and RD-50_072111_03F (from SDG IUG2193) were identified as split samples. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-50_072111_01	RD-50_072111_03			
Antimony	0.00068	0.00039	54 (≤ 35)	NQ	-
Arsenic	0.010	0.011	10 (≤ 35)	-	-
Barium	0.050	0.051	2 (≤ 35)	-	-
Cobalt	0.00048	0.00046	4 (≤ 35)	-	-
Lead	0.00093	0.00089	4 (≤ 35)	-	-
Nickel	0.00055	0.00064	15 (≤ 35)	-	-
Selenium	0.0056	0.0053	6 (≤ 35)	-	-
Thallium	0.00020U	0.000054	115 (≤ 35)	NQ	-
Vanadium	0.0034	0.0030	12 (≤ 35)	-	-
Zinc	0.15	0.15	0 (≤ 35)	-	-

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-50_072111_01F	RD-50_072111_03F			
Antimony	0.00048	0.00048	0 (≤35)	-	-
Arsenic	0.0097	0.011	13 (≤35)	-	-
Barium	0.048	0.052	8 (≤35)	-	-
Cobalt	0.00042	0.00047	11 (≤35)	-	-
Lead	0.0011	0.0012	9 (≤35)	-	-
Nickel	0.00058	0.00073	23 (≤35)	-	-
Selenium	0.0046	0.0056	20 (≤35)	-	-
Silver	0.00010U	0.000026	117 (≤35)	NQ	-
Thallium	0.00020U	0.000097	69 (≤35)	NQ	-
Vanadium	0.0025	0.0031	21 (≤35)	-	-
Zinc	0.15	0.16	6 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Data Qualification Summary - SDG 280-18334-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18334-1	RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 RD-50_072111_01F RD-54A_072111_01F RD-33A_072111_01F	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Laboratory Blank Data Qualification Summary - SDG 280-18334-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18334-1	RD-50_072111_01	Thallium	0.000054U mg/L	A	B
280-18334-1	RD-54A_072111_01	Thallium	0.000021U mg/L	A	B
280-18334-1	RD-33A_072111_01	Thallium	0.000025U mg/L	A	B
280-18334-1	RD-50_072111_01F	Nickel Thallium	0.00073U mg/L 0.000097U mg/L	A	B
280-18334-1	RD-54A_072111_01F	Nickel Thallium	0.00085U mg/L 0.000030U mg/L	A	B
280-18334-1	RD-33A_072111_01F	Nickel	0.00098U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Field Blank Data Qualification Summary - SDG 280-18334-1**

No Sample Data Qualified in this SDG

LDC #: 26041A4

VALIDATION COMPLETENESS WORKSHEET

Date: 8-23-11

SDG #: 280-18334-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	(SD6: IUG2103)
XIV.	Field Duplicates	SW	split = (1, RD-50-072111-03), (4, RD-50-072111-03 F)
XV.	Field Blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	RD-50_072111_01	11		21		31	
2	RD-54A_072111_01	12		22		32	
3	RD-33A_072111_01	13		23		33	
4	RD-50_072111_01F	14		24		34	
5	RD-54A_072111_01F	15		25		35	
6	RD-33A_072111_01F	16		26		36	
7	RD-54A_072111_01MS	17		27		37	
8	RD-54A_072111_01MSD	18		28		38	
9	RD-50_072111_01FMS	19		29		39	
10	RD-50_072111_01FMSD	20		30		40	

Notes: Samples appended with "F" were analyzed for dissolved metals

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Sample Concentration units, unless otherwise noted: mg/L

Soil preparation factor applied: NA

Associated Samples: 1-3

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	Associated Samples		
					1	2	3
Ba		0.000680		0.0034			
Tl		0.0000238		0.0001	0.000054	0.000021	0.000025

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 4-6

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	Associated Samples		
					4	5	6
Ni		0.000859		0.0043	0.00073	0.00085	0.00098
Tl		0.0000279		0.0001	0.000097	0.000030	

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 26041B4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	1	RD-50_072111_03		
Antimony	0.00068	0.00039	54	NQ (<5xRL)
Arsenic	0.010	0.011	10	
Barium	0.050	0.051	2	
Cobalt	0.00048	0.00046	4	
Lead	0.00093	0.00089	4	
Nickel	0.00055	0.00064	15	
Selenium	0.0056	0.0053	6	
Thallium	0.00020U	0.000054	115	NQ (<5xRL)
Vanadium	0.0034	0.0030	12	
Zinc	0.15	0.15	0	

LDC#: 26041B4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	4	RD-50_072111_03F		
Antimony	0.00048	0.00048	0	
Arsenic	0.0097	0.011	13	
Barium	0.048	0.052	8	
Cobalt	0.00042	0.00047	11	
Lead	0.0011	0.0012	9	
Nickel	0.00058	0.00073	23	
Selenium	0.0046	0.0056	20	
Silver	0.00010U	0.000026	117	NQ (<5xRL)
Thallium	0.00020U	0.000097	69	NQ (<5xRL)
Vanadium	0.0025	0.0031	21	
Zinc	0.15	0.16	6	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: September 1, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level IV & V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18334-1

Sample Identification

PZ-060_072111_01**
PZ-060_072111_36**
FB_PZ-060_072111_19**
EB_PZ-060_072111A**
PZ-035_072111_01A
HAR-32_072111_01
RD-50_072111_01
RD-54A_072111_01
RD-33A_072111_01
HAR-30_0722111_01
RS-34_072111_01
PZ-060_072111_01MS
PZ-060_072111_01MSD
PZ-035_072111_01ADUP
HAR-32_072111_01MS
HAR-32_072111_01MSD
HAR-32_072111_01DUP
RS-34_072111_01MS
RS-34_072111_01MSD

**Indicates sample underwent Level IV review for Sulfide only.

Introduction

This data review covers 19 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, EPA SW 846 Method 9040B for pH, and Standard Method 4500-S2 D for Sulfide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.0565 mg/L	PZ-060_072111_01** EB_PZ-060_072111A** PZ-035_072111_01A HAR-32_072111_01 HAR-30_0722111_01 RS-34_072111_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-060_072111_01**	Ammonia as N	0.28 mg/L	0.28U mg/L
PZ-035_072111_01A	Ammonia as N	0.068 mg/L	0.068U mg/L
HAR-32_072111_01	Ammonia as N	0.067 mg/L	0.067U mg/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-30_0722111_01	Ammonia as N	0.055 mg/L	0.055U mg/L

Sample EB_PZ-060_072111A** was identified as an equipment blank. No contaminant concentrations were found.

Samples FB_PZ-060_072111_19** and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable for samples on which a Level IV review was performed.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18334-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples PZ-060_072111_01** and PZ-060_072111_36** were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

Samples PZ-060_072111_01** and PZ-060_072111_03 (from SDG IUG2193) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-060_072111_01**	PZ-060_072111_03			
Sulfide	0.0070U	0.027	118 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18334-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18334-1	PZ-060_072111_01** PZ-060_072111_36** FB_PZ-060_072111_19** EB_PZ-060_072111A** PZ-035_072111_01A HAR-32_072111_01 RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 HAR-30_0722111_01 RS-34_072111_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18334-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18334-1	PZ-060_072111_01**	Ammonia as N	0.28U mg/L	A	B
280-18334-1	PZ-035_072111_01A	Ammonia as N	0.068U mg/L	A	B
280-18334-1	HAR-32_072111_01	Ammonia as N	0.067U mg/L	A	B
280-18334-1	HAR-30_0722111_01	Ammonia as N	0.055U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18334-1**

No Sample Data Qualified in this SDG

LDC #: 26041B6
 SDG #: 280-18334-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V
AV

Date: *8/23/11*
 Page: *1* of *1*
 Reviewer: *[Signature]*
 2nd Reviewer: *[Signature]*

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), Sulfide (SM4500-S2 D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	<i>A</i>	Sampling dates: <i>7/21/11</i>
IIa.	Initial calibration	<i>A</i>	<i>Not reviewed for level V</i>
IIb.	Calibration verification	<i>A</i>	<i>↓</i>
III.	Blanks	<i>SW</i>	
IV.	Matrix Spike/Matrix Spike Duplicates	<i>A</i>	<i>MS/D</i>
V.	Duplicates	<i>A</i>	<i>DUP</i>
VI.	Laboratory control samples	<i>A</i>	<i>LCS/D</i>
VII.	Sample result verification	<i>A</i>	<i>Not reviewed for level V</i>
VIII.	Overall assessment of data	<i>A</i>	
IX.	Field duplicates	<i>SW-A-D</i>	<i>* (1,2), SPIE = (1, PZ-060-07211103 (S06: IUG29 B))</i>
X.	Field blanks	<i>ND</i>	<i>EB = 4; FB = 3, FB-072111-19</i>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinstate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(S06 280-17952-1)

Validated Samples: *Water* ****Level 4 for sulfide only**

1	PZ-060_072111_01**	11	RS-34_072111_01	21		31	
2	PZ-060_072111_36**	12	PZ-060_072111_01MS	22		32	
3	FB_PZ-060_072111_19**	13	PZ-060_072111_01MSD	23		33	
4	EB_PZ-060_072111A**	14	PZ-035_072111_01ADUP	24		34	
5	PZ-035_072111_01A	15	HAR-32_072111_01MS	25		35	
6	HAR-32_072111_01	16	HAR-32_072111_01MSD	26		36	
7	RD-50_072111_01	17	HAR-32_072111_01DUP	27		37	
8	RD-54A_072111_01	18	RS-34_072111_01MS	28		38	
9	RD-33A_072111_01	19	RS-34_072111_01MSD	29		39	
10	HAR-30_0722111_01	20		30		40	

Notes: _____

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients > 0.995?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were titrant checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were balance checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
III. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

LDC #: 26041B6

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/	/		
Target analytes were detected in the field blanks.				

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were blank analyses performed as required? If no, please see qualifications below.

Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units:

Associated Samples: 1, 4-6, 10, 11 CB

Analyte	Blank ID	Blank ID	Blank ID	Blank Action Limit
	PB	ICB/CCB (mg/L)		
NH3-N	0.0565			0.2825
			1	5
			6	10
			0.28	0.068
			0.067	0.055

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC# 26041B6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y/N/NA

Were field duplicate pairs identified in this SDG?

Y/N/NA

Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	1	PZ-060_072111_03		
Sulfide	0.0070U	0.027	118	NQ (<5xRL)

V:\FIELD DUPLICATES\FD_inorganic\26041B6.wpd

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$
 Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$
 Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	%R / RPD	
LC5	Laboratory control sample	Sulfide	0.606	0.608	100	100	Y
12	Matrix spike sample	[Signature]	0.524 (SSR-SR)	0.608	86	86	Y
12B	Duplicate sample	[Signature]	0.524	0.431	19	19	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 21, 2011

LDC Report Date: August 24, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18334-1

Sample Identification

PZ-060_072111_01
EB_PZ-060_072111A
HAR-30_0722111_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Sample EB_PZ-060_072111A was identified as an equipment blank. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18334-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18334-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18334-1	PZ-060_072111_01 EB_PZ-060_072111A HAR-30_0722111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18334-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18334-1**

No Sample Data Qualified in this SDG

LDC #: 26041B8
 SDG #: 280-18334-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/19/11
 Page: 1 of 1
 Reviewer: ORC
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/21/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client Spec</u>
VII.	Laboratory control samples	A	<u>LCS 1b</u>
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	<u>EB = 2 FB = FB_071211-19 (280-17952-1)</u>

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	PZ-060_072111_01	11	<u>MB 280-78240/1-A</u>	21		31	
2	EB_PZ-060_072111A	12		22		32	
3	HAR-30_0722111_01	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Hydrazines
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18334-1

Sample Identification

PZ-060_072111_01
EB_PZ-035_072111
PZ-035_072111_01A
HAR-32_072111_01
HAR-30_0722111_01
RS-34_072111_01
PZ-060_072111_01MS
PZ-060_072111_01MSD
PZ-035_072111_01AMS
PZ-035_072111_01AMSD

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound	Concentration	Associated Samples
MB 280-78557/25	7/26/11	1,1-Dimethylhydrazine	2.16 ug/L	PZ-060_072111_01 EB_PZ-035_072111 HAR-32_072111_01 HAR-30_0722111_01 RS-34_072111_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Sample EB_PZ-035_072111 was identified as an equipment blank. No hydrazines were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No hydrazines were found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18334-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18334-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18334-1	PZ-060_072111_01 EB_PZ-035_072111 PZ-035_072111_01A HAR-32_072111_01 HAR-30_0722111_01 RS-34_072111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18334-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18334-1**

No Sample Data Qualified in this SDG

LDC #: 26041B76

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18334-1

Level IV ✓

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JG

2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1b
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 2 FB = FB_071211_19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

1	PZ-060_072111_01	11	MB 280-78557/2c	21		31
2	EB PZ-035_072111	12	MB 280-78772/2c	22		32
3	PZ-035_072111_01A	13		23		33
4	HAR-32_072111_01	14		24		34
5	HAR-30_0722111_01	15		25		35
6	RS-34_072111_01	16		26		36
7	PZ-060_072111_01MS	17		27		37
8	PZ-060_072111_01MSD	18		28		38
9	3 MS	19		29		39
10	3 MSD	20		30		40

Notes: _____

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter		
2-6	W	<u>Hydrazine</u>	<u>1,1-Dimethylhydrazine</u>	<u>Monomethyl Hydrazine</u>
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
1	W	<u>Hydrazine</u>	<u>1,1-Dimethylhydrazine</u>	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine

Comments: _____



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 6, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26041:

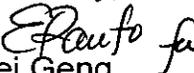
<u>SDG #</u>	<u>Fraction</u>
280-18286-1/ IUG2185/ IUG2520 280-18334-1/ IUG2424 280-18472-1, 280-18534-1 280-18597-1, 280-18622-1	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Diesel Range Organics, Hydrazine, Formaldehyde

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,


Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 26, 2011
LDC Report Date: September 1, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V & IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18472-1

Sample Identification

ES-26_072611_01
TB_ES-26_072611
RD-55A_072611_01
ES-17_072611_01**
ES-17_072611_36**
FB_ES-17_072611_19**
ES-27_072611_01
TB_ES-27_072611
RD-69_072611_01
RD-69_072611_36
RS-33_072611_01
TB_RS-33_072611
TB_ES-17_072611
ES-26_072611_01MS
ES-26_072611_01MSD
RS-33_072611_01MS
RS-33_072611_01MSD

**Indicates sample underwent Level IV review

Introduction

This data review covers 17 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/4/11	Acetonitrile	0.0107 (≥0.05)	ES-17_072611_01**	J (all detects)	A
	Isobutyl alcohol	0.0027 (≥0.05)	ES-17_072611_36** FB_ES-17_072611_19** MB 280-80391/4	UJ (all non-detects) J (all detects) UJ (all non-detects)	

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/8/11	Dichlorodifluoromethane	65.9	ES-17_072611_01** ES-17_072611_36**	J (all detects) UJ (all non-detects)	A
	Trichlorofluoromethane	35.5	FB_ES-17_072611_19** MB 280-80391/4		

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/8/11	Acetonitrile	0.0113 (≥0.05)	ES-17_072611_01** ES-17_072611_36**	J (all detects) UJ (all non-detects)	A
	Isobutyl alcohol	0.0029 (≥0.05)	FB_ES-17_072611_19** MB 280-80391/4	J (all detects) UJ (all non-detects)	

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB280-80391/4	8/8/11	Acetone	2.96 ug/L	ES-26_072611_01 TB_ES-26_072611 RD-55A_072611_01 ES-17_072611_01** ES-17_072611_36** FB_ES-17_072611_19** ES-27_072611_01 TB_ES-27_072611 RD-69_072611_01 RS-33_072611_01
MB280-80788/5	8/9/11	Methylene chloride	0.342 ug/L	RD-69_072611_36 TB_RS-33_072611 TB_ES-17_072611

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ES-26_072611_01	Acetone	6.0 ug/L	10U ug/L
TB_ES-26_072611	Acetone	2.1 ug/L	10U ug/L
RD-55A_072611_01	Acetone	2.7 ug/L	10U ug/L
FB_ES-17_072611_19**	Acetone	4.5 ug/L	10U ug/L
RD-69_072611_01	Acetone	4.3 ug/L	10U ug/L
TB_ES-17_072611	Methylene chloride	0.80 ug/L	5.0U ug/L
TB_RS-33_072611	Methylene chloride	0.72 ug/L	5.0U ug/L

Samples TB_ES-26_072611, TB_ES-27_072611, TB_RS-33_072611, and TB_ES-17_072611 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_ES-26_072611	7/26/11	Acetone	2.1 ug/L	ES-26_072611_01 RD-55A_072611_01
TB_ES-17_072611	7/26/11	Acetone Methylene chloride	3.0 ug/L 0.72 ug/L	ES-17_072611_01 ES-17_072611_36 FB_ES-17_072611_19
TB_RS-33_072611	7/26/11	Acetone Methylene chloride	2.5 ug/L 0.80 ug/L	RS-33_072611_01

Sample FB_ES-17_072611_19** was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_ES-17_072611_19	7/26/11	Acetone	4.5 ug/L	ES-17_072611_01 ES-17_072611_36

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ES-26_072611_01	Acetone	6.0 ug/L	10U ug/L
RD-55A_072611_01	Acetone	2.7 ug/L	10U ug/L
FB_ES-17_072611_19	Acetone	4.5 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
ES-26_072611_01	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	126 (80-120) 120 (88-110) 117 (86-115)	All TCL compounds	J (all detects)	A
RD-55A_072611_01	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	135 (80-120) 119 (88-110) 122 (86-115)	All TCL compounds	J (all detects)	P
ES-17_072611_01**	1,2-Dichloroethane-d4 Toluene-d8	121 (80-120) 111 (88-110)	All TCL compounds except Trichloroethene 1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects)	A
ES-17_072611_36**	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene 1,2-Dichloroethane-d4 Toluene-d8	26 (80-120) 116 (88-110) 117 (86-115) 126 (80-120) 114 (88-110)	All TCL compounds	J (all detects)	A
ES-27_072611_01	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene 1,2-Dichloroethane-d4 Toluene-d8	126 (80-120) 119 (88-110) 118 (86-115) 122 (80-120) 120 (88-110)	All TCL compounds	J (all detects)	A
ES-27_072611_01	1,2-Dichloroethane-d4 Toluene-d8	125 (80-120) 117 (88-110)	All TCL compounds	J (all detects)	P
RD-69_072611_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
ES-26_072611_01MS/MSD (ES-26_072611_01)	1,1,1-Trichloroethane	-	129 (78-120)	-	J (all detects)	A
	1,1-Dichloroethane	-	123 (77-120)	-	J (all detects)	
	1,1-Dichloroethene	-	-	34 (≤20)	J (all detects)	
	1,2-Dichloroethane	123 (74-120)	131 (74-120)	-	J (all detects)	
	Carbon tetrachloride	-	133 (80-120)	-	J (all detects)	
	Methyl ethyl ketone	-	122 (57-120)	-	J (all detects)	
ES-26_072611_01MS/MSD (ES-26_072611_01)	m,p-Xylenes	-	58 (78-120)	47 (≤20)	J (all detects) UJ (all non-detects)	A
	o-Xylene	-	75 (77-120)	23 (≤20)	J (all detects) UJ (all non-detects)	
RS-33_072611_01MS/MSD (RS-33_072611_01)	Acetone	134 (48-130)	-	-	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-80788/4 (TB ES-17_072611 MB 280-80788/5)	Dichlorodifluoromethane	144 (56-140)	-	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits for samples on which a Level IV review was performed.

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples ES-17_072611_01** and ES-17_072611_36** and samples RD-69_072611_01 and RD-69_072611_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	ES-17_072611_01**	ES-17_072611_36**			
1,1,1-Trichloroethane	4.4	4.7	7 (≤ 35)	-	-
1,1-Dichloroethane	3.5	3.9	11 (≤ 35)	-	-
1,1-Dichloroethene	15	16	6 (≤ 35)	-	-
cis-1,2-Dichloroethene	260	280	7 (≤ 35)	-	-
Dichlorodifluoromethane	6.2	6.1	2 (≤ 35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	ES-17_072611_01**	ES-17_072611_36**			
Trichloroethene	1900	1900	0 (≤35)	-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	3100	Not reported	Not calculable	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-69_072611_01	RD-69_072611_36			
Acetone	4.3	7.2	50 (≤35)	-	-

Samples ES-17_072611_01** and ES-17_072611_03 (from SDG IUG2498) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	ES-17_072611_01**	ES-17_072611_03			
1,1,1-Trichloroethane	4.4	40U	160 (≤35)	NQ	-
1,1-Dichloroethane	3.5	40U	168 (≤35)	NQ	-
1,1-Dichloroethene	15	40U	91 (≤35)	NQ	-
cis-1,2-Dichloroethene	260	220	17 (≤35)	-	-
Dichlorodifluoromethane	6.2	200U	188 (≤35)	NQ	-
Trichloroethene	1900	2000	5 (≤35)	-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	3100	Not reported	Not calculable	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
 Volatiles - Data Qualification Summary - SDG 280-18472-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-1	ES-17_072611_01** ES-17_072611_36** FB_ES-17_072611_19**	Acetonitrile Isobutyl alcohol	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (RRF) (R)
280-18472-1	ES-17_072611_01** ES-17_072611_36** FB_ES-17_072611_19**	Dichlorodifluoromethane Trichlorofluoromethane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-18472-1	ES-17_072611_01** ES-17_072611_36** FB_ES-17_072611_19**	Acetonitrile Isobutyl alcohol	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (R)
280-18472-1	ES-17_072611_01**	All TCL compounds except Trichloroethene 1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects)	A	Surrogate spikes (%R) (S)
280-18472-1	ES-26_072611_01 ES-17_072611_36** ES-27_072611_01	All TCL compounds	J (all detects)	A	Surrogate spikes (%R) (S)
280-18472-1	RD-55A_072611_01 ES-27_072611_01 RD-69_072611_01	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18472-1	ES-26_072611_01	1,1,1-Trichloroethane 1,1-Dichloroethane 1,2-Dichloroethane Carbon tetrachloride Methyl ethyl ketone	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18472-1	ES-26_072611_01	1,1-Dichloroethene	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
280-18472-1	ES-26_072611_01	m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
280-18472-1	RS-33_072611_01	Acetone	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18472-1	TB_ES-17_072611	Dichlorodifluoromethane	J (all detects)	P	Laboratory control samples (%R) (L)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-1	ES-26_072611_01 TB_ES-26_072611 RD-55A_072611_01 ES-17_072611_01** ES-17_072611_36** FB_ES-17_072611_19** ES-27_072611_01 TB_ES-27_072611 RD-69_072611_01 RD-69_072611_36 RS-33_072611_01 TB_RS-33_072611 TB_ES-17_072611	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and CRQLs (TR)

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Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18472-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18472-1	ES-26_072611_01	Acetone	10U ug/L	A	B
280-18472-1	TB_ES-26_072611	Acetone	10U ug/L	A	B
280-18472-1	RD-55A_072611_01	Acetone	10U ug/L	A	B
280-18472-1	FB_ES-17_072611_19**	Acetone	10U ug/L	A	B
280-18472-1	RD-69_072611_01	Acetone	10U ug/L	A	B
280-18472-1	TB_ES-17_072611	Methylene chloride	5.0U ug/L	A	B
280-18472-1	TB_RS-33_072611	Methylene chloride	5.0U ug/L	A	B

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Volatiles - Field Blank Data Qualification Summary - SDG 280-18472-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18472-1	ES-26_072611_01	Acetone	10U ug/L	A	T
280-18472-1	RD-55A_072611_01	Acetone	10U ug/L	A	T
280-18472-1	FB_ES-17_072611_19	Acetone	10U ug/L	A	T

LDC #: 26041C1a
 SDG #: 280-18472-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V / IV

Date: 8/19/11
 Page: 1 of 1
 Reviewer: SV6
 2nd Reviewer: ✓

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	NA	
III.	Initial calibration	NA	2 RSD ≤ 30% ✓
IV.	Continuing calibration/ICV	NSW	CV/ICV ≤ 25% ✓
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	NA	
XI.	Target compound identification	NA	
XII.	Compound quantitation/RL/LOQ/LODs	NA	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	NA	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / split	SW	D ₁ = 4, 5 D ₂ = 9, 10 S = 4 + ES-17-72611.0
XVII.	Field blanks	SW	TB = 2, 8, 12, 13 FB = 6 (1160498)

Note: A = Acceptable *ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:
 level IV ** Water

1	ES-26 072611 01	11	RS-33 072611 01	21	MB 280-80391/4	31
2	TB ES-26 072611	12	TB_RS-33 072611	22	MB 280-80788/5	32
3	RD-55A 072611 01	13	TB ES-17 072611	23		33
4	ES-17 072611 01 ** D ₁	14	ES-26 072611 01MS	24		34
5	ES-17 072611 36 ** D ₁	15	ES-26 072611 01MSD	25		35
6	FB TB ES-17 072611 19 **	16	RS-33 072611 01MS	26		36
7	ES-27 072611 01	17	RS-33 072611 01MSD	27		37
8	TB ES-27 072611	18		28		38
9	RD-69 072611 01 D ₂	19		29		39
10	RD-69 072611 36 D ₂	20		30		40

VOCs + IPA = 1-3, 7, 8, 11, 12
 VOCs, IPA, APPIX = 4, 13
 APPIX = 5, 6
 VOCs = 9, 10

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.9907?	/			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	/	/		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) < 25% and relative response factors (RRF) > 0.05?		/		
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	/			
VI. Surrogate spikes				
Were all surrogate %R within QC limits?		/		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	/			
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within + 30 seconds of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were relative intensities of the major ions within $\pm 20\%$ between the sample and the reference spectra?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
XIV: System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field duplicates.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVII: Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol (Isobutanol)
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y N/A Were all surrogate %R within QC limits?
 Y N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications (Code: S)
		1	DCE	126 (See below)	J dets / A (qual all tol)
			TOL	120 ()	
			BFB	117 ()	
		3	DCE	135 ()	J dets / P (qual all tol)
			TOL	119 ()	
			BFB	122 ()	
		4	DCE	121 ()	J dets / A (qual all except S, TTT)
			TOL	111 ()	
		5	DCE	126 ()	(qual all except S)
			TOL	116 ()	
			BFB	117 ()	
		5 (DL)	DCE	126 ()	(qual S only)
			TOL	114 ()	
		7	DCE	126 ()	(qual all except TTT)
			TOL	119 ()	
			BFB	118 ()	

QC Limits (Water)

- 88-110
- 86-115
- 80-120
- 86-118

QC Limits (Soil)

- 81-117
- 74-121
- 80-120
- 70-120

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	ES-17_072611_01	ES-17_072611_36		
1,1,1-Trichloroethane	4.4	4.7	7	
1,1-Dichloroethane	3.5	3.9	11	
1,1-Dichloroethene	15	16	6	
cis-1,2-Dichloroethene	260	280	7	
Dichlorodifluoromethane	6.2	6.1	2	
Trichloroethene	1900	1900	0	
1,1,2-Trichloro-1,2,2-trifluoroethane	3100	NR	NC	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RD69_072611_01	RD69_072611_36		
Acetone	4.3	7.2	50	NQ (<5xRL)

NR - Not reported
NC - Non-calculable

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	ES-17_072611_01	ES-17_072611_03		
1,1,1-Trichloroethane	4.4	40U	160	NQ (<5xRL)
1,1-Dichloroethane	3.5	40U	168	NQ (<5xRL)
1,1-Dichloroethene	15	40U	91	NQ (<5xRL)
cis-1,2-Dichloroethene	260	220	17	
Dichlorodifluoromethane	6.2	200U	188	NQ (<5xRL)
Trichloroethene	1900	2000	5	
1,1,2-Trichloro-1,2,2-trifluoroethane	3100	NR	NC	

NR - Not reported
NC - Non-calculable

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$ A_x = Area of Compound A_{is} = Area of associated internal standard
 average RRF = sum of the RRFs/number of standards C_x = Concentration of compound C_{is} = Concentration of internal standard
 $\%RSD = 100 * (S/X)$ S = Standard deviation of the RRFs X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/4/2011	Trichloroethene (IS1)	0.3958	0.3958	0.3866	0.3866	5.3	5.25
	GC MSV MS1		Ethylbenzene (IS2)	3.0470	3.0470	2.8711	2.8710	8.7	8.7
			1,1,2,2-TCA (IS3)	0.6266	0.6266	0.5900	0.5900	8.4	8.4

Cis/Cx	Ax	Ais
12.5/10	1024644	3236363
12.5/10	1661874	681763
12.5/10	413117	824187

Conc	Trichloroethene	Ethylbenzene	1,1,2,2-TCA
0.3	0.3930	2.8245	0.5576
1	0.3664	2.8079	0.5848
2	0.3642	2.9136	0.5879
5	0.4214	3.2568	0.6802
10	0.3958	3.0470	0.6266
30	0.3926	2.7998	0.5616
60	0.3728	2.4477	0.5313
X =	0.3866	2.8710	0.5900
S =	0.0203	0.2490	0.0497

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 4

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	11.5	12.81	111	111	0
Bromofluorobenzene	↓	12.51	109	109	↓
1,2-Dichloroethane-d4	↓	13.96	121	121	↓
Dibromofluoromethane	↓	10.69	93	93	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 26, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18472-1

Sample Identification

ES-26_072611_01
TB_ES-26_072611
RD-55A_072611_01
ES-17_072611_01
ES-27_072611_01
TB_ES-27_072611
RD-69_072611_01
RD-69_072611_36
RS-33_072611_01
TB_RS-33_072611
TB_ES-17_072611
ES-26_072611_01MS
ES-26_072611_01MSD

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_ES-26_072611, TB_ES-27_072611, TB_RS-33_072611, and TB_ES-17_072611 were identified as trip blanks. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-69_072611_01 and RD-69_072611_36 were identified as field duplicates. No 1,4-dioxane was detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18472-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-1	ES-26_072611_01 TB_ES-26_072611 RD-55A_072611_01 ES-17_072611_01 ES-27_072611_01 TB_ES-27_072611 RD-69_072611_01 RD-69_072611_36 RS-33_072611_01 TB_RS-33_072611 TB_ES-17_072611	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18472-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18472-1

No Sample Data Qualified in this SDG

LDC #: 26041C1b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18472-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer: 

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	MD	D = 7, 8
XVII.	Field blanks	MD	TB = 2, 6, 10, 11

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	ES-26_072611_01	11	TB ES-17_072611	21	MB 280-79725/5	31	
2	TB ES-26_072611	12	ES-26_072611_01MS	22	MB 280-80004/6	32	
3	RD-55A_072611_01	13	ES-26_072611_01MSD	23		33	
4	ES-17_072611_01	14		24		34	
5	ES-27_072611_01	15		25		35	
6	TB ES-27_072611	16		26		36	
7	RD-69_072611_01 D	17		27		37	
8	RD-69_072611_36 D	18		28		38	
9	RS-33_072611_01	19		29		39	
10	TB_RS-33_072611	20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 26, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V & IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18472-1

Sample Identification

ES-26_072611_01
RD-55A_072611_01
ES-17_072611_01
ES-27_072611_01
RS-33_072611_01**
RS-33_072611_36**
FB_RS-33_072611_19**
ES-26_072611_01MS
ES-26_072611_01MSD

**Indicates sample underwent Level IV review

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
 - J Indicates an estimated value.
 - R Quality control indicates the data is not usable.
 - NJ Presumptive evidence of presence of the compound at an estimated quantity.
 - UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
 - A Indicates the finding is based upon technical validation criteria.
 - P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample FB_RS-33_072611_19** was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_RS-33_072611_19**	7/26/11	Benzyl alcohol	0.28 ug/L	RS-33_072611_01** RS-33_072611_36**

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits for samples on which a Level IV review was performed.

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RS-33_072611_01** and RS-33_072611_36** were identified as field duplicates. No semivolatiles were detected in any of the samples.

Samples RS-33_072611_01** and RS-33_072611_03 (from SDG IUG2698) were identified as split samples. No semivolatiles were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18472-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-1	ES-26_072611_01 RD-55A_072611_01 ES-17_072611_01 ES-27_072611_01 RS-33_072611_01** RS-33_072611_36** FB_RS-33_072611_19**	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

LDC #: 26041C2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18472-1

Level V TV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: AVG

2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 30% r r
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	ND ND	D = 5, 6 S = 5 + RS-33-072611-03
XVII.	Field blanks	SW	FB = 7 (1462698)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinstate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water
Level IV **

1	ES-26_072611_01	11	MB 280-78740 / A	21	31
2	RD-55A_072611_01	12		22	32
3	ES-17_072611_01	13		23	33
4	ES-27_072611_01	14		24	34
5	RS-33_072611_01 ** D	15		25	35
6	RS-33_072611_36 ** D	16		26	36
7	FB_RS-33_072611_19 **	17		27	37
8	ES-26_072611_01MS	18		28	38
9	ES-26_072611_01MSD	19		29	39
10		20		30	40

Pathways, ND + A = 1, 3, 4
Pathways, NB = 2
APP IX + PATH + NB = 5, 6
APP IX = 6, 7

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?	/			
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) > 0.05 ?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) $\leq 25\%$ and relative response factors (RRF) ≥ 0.05 ?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	/			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within + 30 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
XIV: System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field duplicates.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
XVII: Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (*)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound
 A_{is} = Area of associated internal standard
 C_x = Concentration of compound,
 C_{is} = Concentration of internal standard
 S = Standard deviation of the RRFs,
 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/2/2011	Benzyl alcohol (IS1)	1.0301	1.0301	1.0142	1.0142	1.9	1.9
	MSS G		Naphthalene (IS2)	1.0940	1.0940	1.0754	1.0754	5.9	5.9
			Diethyl phthalate (IS3)	1.2250	1.2250	1.2109	1.2109	4.5	4.5
			Hexachlorobenzene (IS4)	0.2490	0.2490	0.2420	0.2420	4.1	4.1
			Bis(2-ethoxy)phthalate (IS5)	0.8082	0.8082	0.7859	0.7859	3.3	3.3
			Benzo(a)pyrene (IS6)	1.1548	1.1548	1.1129	1.1129	3.8	3.8

Cis/Cx	AX	Ais
40/50	224307	174200
40/50	947586	692914
40/50	592519	386939
40/50	183983	591184
40/50	613118	606929
40/50	859515	595460

Conc	Benzyl alcohol	Naphthalene	Diethyl phthal	Hexachlorob	Bis(2-en)phthal	Benzo(a)py
4.00		1.1372	1.2704		0.7336	1.0384
10.00	1.0277	1.1371	1.2662	0.2576	0.7724	1.0880
20.00	1.0269	1.1333	1.2605	0.2496	0.8082	1.1668
50.00	1.0301	1.0940	1.2250	0.2490	0.8082	1.1548
80.00	1.0231	1.0868	1.2115	0.2369	0.8032	1.1428
120.00	1.0123	1.0324	1.1755	0.2358	0.8015	1.1214
160.00	1.0013	1.0067	1.1493	0.2337	0.7874	1.1002
200.00	0.9779	0.9755	1.1287	0.2312	0.7723	1.0905
X =	1.0142	1.0754	1.2109	0.2420	0.7859	1.1129
S =	0.0190	0.0632	0.0549	0.0100	0.0258	0.0422

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (\text{Ax}) / (\text{Cis}) / (\text{Ais}) / (\text{Cx})$

ave. RRF = initial calibration average RRF
 RRF = continuing calibration RRF
 Ax = Area of compound
 Cis = Concentration of compound
 Ais = Area of associated internal standard
 Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	g6_2970	08/03/11	Benzyl alcohol (IS1)	1.0142	1.0401	1.0401	2.6	2.6
			Naphthalene (IS2)	1.0754	1.0752	1.0752	0.0	0.0
			Diethyl phthalate (IS3)	1.2109	1.1997	1.1997	0.9	0.9
			Hexachlorobenzene (IS4)	0.2420	0.2384	0.2384	1.5	1.5
			Bis(2-ethoxy)phthalate (IS5)	0.7859	0.8073	0.8073	2.7	2.7
			Benzo(a)pyrene (IS6)	1.1129	1.1300	1.1300	1.5	1.5
2	g6_3020	08/04/11	Benzyl alcohol (IS1)	1.0142	1.0256	1.0256	1.1	1.1
			Naphthalene (IS2)	1.0754	1.0648	1.0648	1.0	1.0
			Diethyl phthalate (IS3)	1.2109	1.2198	1.2198	0.7	0.7
			Hexachlorobenzene (IS4)	0.2420	0.2386	0.2386	1.4	1.4
			Bis(2-ethoxy)phthalate (IS5)	0.7859	0.8213	0.8213	4.5	4.5
			Benzo(a)pyrene (IS6)	1.1129	1.1432	1.1432	2.7	2.7

CCV1

CCV2

Compound (IS)	Cis/Cx	Ax	Ais	Ax	Ais
Benzyl alcohol (IS1)	40/80	457260	219818	468976	228634
Naphthalene (IS2)	40/80	1855704	862918	1905558	894760
Diethyl phthalate (IS3)	40/80	1148152	478528	1194897	489788
Hexachlorobenzene (IS4)	40/80	354265	743014	366026	766986
Bis(2-ethoxy)phthalate (IS5)	40/80	1203932	745630	1258580	766223
Benzo(a)pyrene (IS6)	40/80	1709627	756442	1753316	766842

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 5

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	100	70.14	70	70	0
2-Fluorobiphenyl	↓	66.05	66	66	↓
Terphenyl-d14	↓	82.65	83	83	↓
Phenol-d5	150	106.7	71	71	↓
2-Fluorophenol	↓	100.7	67	67	↓
2,4,6-Tribromophenol	↓	138.2	92	92	↓
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: M

2nd Reviewer: V

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SSC - SC) / SA$ Where: SSC = Spiked sample concentration SC = Sample concentration SA = Spike added

RPD = $100 * MSC - MSC1 * 2 / (MSC + MSDC)$ MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 8/9

Compound	Spike Added (ug/l)		Sample Concentration (ug/l)	Spiked Sample Concentration (ug/l)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD		MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
	Phenol	77.3		77.3	0	66.5	65.7	86	86	86	85
N-Nitroso-di-n-propylamine											
4-Chloro-3-methylphenol											
Acenaphthene											
Pentachlorophenol											
Pyrene											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: Me

2nd Reviewer: [Signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA)

Where: SSC = Spike concentration
SA = Spike added

RPD = |LCSC - LCSDC| * 2 / (LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCS 280-78740 / 2-A

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol	80.0	NA	59.0 64.1	NA	74 80	74				
N-Nitroso-di-n-propylamine			61.8		77	77				
4-Chloro-3-methylphenol			64.1		80	80				
Acenaphthene			60.7		76	76				
Benztetrathienyl										
Pyrene			66.3		83	83				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 26, 2011
LDC Report Date: August 22, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18472-1

Sample Identification

ES-26_072611_01
RD-55A_072611_01
ES-17_072611_01
ES-27_072611_01
RS-33_072611_01
ES-26_072611_01MS
ES-26_072611_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB_ES-17_072611_19 and FB_RS-33-072611_19 (both from SDG 280-18472-2) were identified as field blanks. No N-nitrosodimethylamine contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples ES-17_072611_01 and ES-17_072611_36 (from SDG 280-18472-2) and samples RS-33_072611_01 and RS-33_072611_36 (from SDG 280-18472-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	ES-17_072611_01	ES-17_072611_36			
N-Nitrosodimethylamine	0.53	0.42	23 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RS-33_072611_01	RS-33_072611_36			
N-Nitrosodimethylamine	0.21	0.25	17 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18472-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-1	ES-26_072611_01 RD-55A_072611_01 ES-17_072611_01 ES-27_072611_01 RS-33_072611_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18472-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

LDC #: 26041C2b
 SDG #: 280-18472 -1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/19/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 5 + ES-17-072611-36 (280-18472-2) D ₂ = 5 + RS-33-072611-36
XVII.	Field blanks	NB	FB = FB-ES-17-072611-19 ↓ = FB-RS-33-072611-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	ES-26_072611_01	11	MB 250-79070/A-A	21	31
2	RD-55A_072611_01	12		22	32
3	ES-17_072611_01	13	D ₁	23	33
4	ES-27_072611_01	14		24	34
5	RS-33_072611_01	15	D ₂	25	35
6	ES-26_072611_01MS	16		26	36
7	ES-26_072611_01MSD	17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?
 Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	ES-17_072611_01	ES-17_072611_36		
NDMA	0.53	0.42	23	

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	RS-33_072611_01	RS-33_072611_36		
NDMA	0.21	0.25	17	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 26, 2011
LDC Report Date: August 26, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18472-1

Sample Identification

ES-26_072611_01
RD-55A_072611_01
ES-17_072611_01
ES-27_072611_01
RS-33_072611_01
ES-26_072611_01MS
ES-26_072611_01MSD
ES-26_072611_01DUP

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.0721 mg/L	All samples in SDG 280-18472-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-55A_072611_01	Ammonia as N	0.10 mg/L	0.10U mg/L
ES-17_072611_01	Ammonia as N	0.087 mg/L	0.087U mg/L
ES-27_072611_01	Ammonia as N	0.078 mg/L	0.078U mg/L
RS-33_072611_01	Ammonia as N	0.080 mg/L	0.080U mg/L

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18472-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Data Qualification Summary - SDG 280-18472-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18472-1	ES-26_072611_01 RD-55A_072611_01 ES-17_072611_01 ES-27_072611_01 RS-33_072611_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Laboratory Blank Data Qualification Summary - SDG 280-18472-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18472-1	RD-55A_072611_01	Ammonia as N	0.10U mg/L	A	B
280-18472-1	ES-17_072611_01	Ammonia as N	0.087U mg/L	A	B
280-18472-1	ES-27_072611_01	Ammonia as N	0.078U mg/L	A	B
280-18472-1	RS-33_072611_01	Ammonia as N	0.080U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Field Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

LDC #: 26041C6
 SDG #: 280-18472-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/23/11
 Page: 1 of 2
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area			Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	A ^N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *Water*

1	ES-26_072611_01	11		21		31	
2	RD-55A_072611_01	12		22		32	
3	ES-17_072611_01	13		23		33	
4	ES-27_072611_01	14		24		34	
5	RS-33_072611_01	15		25		35	
6	ES-26_072611_01MS	16		26		36	
7	ES-26_072611_01MSD	17		27		37	
8	ES-26_072611_01DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: _____ **Associated Samples:** All CB

Analyte	Blank ID	Blank ID	Blank Action Limit
	PB	ICB/CCB (mg/L)	
NH3-N	0.0721		0.3605
		2	0.10
		3	0.087
		4	0.078
		5	0.080

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 26, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Diesel Range Organics
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18472-1

Sample Identification

ES-26_072611_01
ES-17_072611_01
ES-27_072611_01
ES-26_072611_01MS
ES-26_072611_01MSD

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18472-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-1	ES-26_072611_01 ES-17_072611_01 ES-27_072611_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

LDC #: 26041C8
 SDG #: 280-18472-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/19/11
 Page: 1 of 1
 Reviewer: SVL
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/26/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	<u>LCS 1b</u>
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinstate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: WATE

1	ES-26_072611_01	11	<u>MS280-78632/1-A</u>	21		31
2	ES-17_072611_01	12		22		32
3	ES-27_072611_01	13		23		33
4	ES-26_072611_01MS	14		24		34
5	ES-26_072611_01MSD	15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 26, 2011
LDC Report Date: August 24, 2011
Matrix: Water
Parameters: Hydrazines
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18472-1

Sample Identification

ES-26_072611_01
RD-55A_072611_01
ES-17_072611_01
ES-27_072611_01
RS-33_072611_01
ES-26_072611_01MS
ES-26_072611_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Data Qualification Summary - SDG 280-18472-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-1	ES-26_072611_01 RD-55A_072611_01 ES-17_072611_01 ES-27_072611_01 RS-33_072611_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Field Blank Data Qualification Summary - SDG 280-18472-1**

No Sample Data Qualified in this SDG

LDC #: 26041C76

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18472-1

Level IV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JY

2nd Reviewer: ✓

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1/2
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	ES-26_072611_01	11	MB 280-79895/25	21		31
2	RD-55A_072611_01	12		22		32
3	ES-17_072611_01	13		23		33
4	ES-27_072611_01	14		24		34
5	RS-33_072611_01	15		25		35
6	ES-26_072611_01MS	16		26		36
7	ES-26_072611_01MSD	17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____



Laboratory Data Consultants, Inc.

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Phone 760.634.0437

Web www.lab-data.com

Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 6, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26041:

<u>SDG #</u>	<u>Fraction</u>
280-18286-1/ IUG2185/ IUG2520 280-18334-1/ IUG2424 280-18472-1, 280-18534-1 280-18597-1, 280-18622-1	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Diesel Range Organics, Hydrazine, Formaldehyde

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,


Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: August 26, 2011
Matrix: Water
Parameters: Formaldehyde
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18534-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01
RD-104_0727/11_01
EB_PZ-154_072711
PZ-154_072711_01A

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-10216/6-A	7/29/11	Formaldehyde	0.0169 mg/L	All samples in SDG 280-18534-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-11_072711_01	Formaldehyde	0.038 mg/L	0.050U mg/L
HAR-20_072711_01	Formaldehyde	0.022 mg/L	0.050U mg/L
RD-104_0727/11_01	Formaldehyde	0.023 mg/L	0.050U mg/L
EB_PZ-154_072711	Formaldehyde	0.019 mg/L	0.050U mg/L
PZ-154_072711_01A	Formaldehyde	0.017 mg/L	0.050U mg/L

Sample EB_PZ-154_072711 was identified as equipment blanks. No formaldehyde was found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-154_072711	7/27/11	Formaldehyde	0.019 mg/L	PZ-154_072711_01A

Sample FB_071211_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Formaldehyde	0.025 mg/L	PZ-154_072711_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-154_072711_01A	Formaldehyde	0.017 mg/L	0.050U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18534-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Data Qualification Summary - SDG 280-18534-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18534-1	HAR-11_072711_01 HAR-20_072711_01 RD-104_072711_01 EB_PZ-154_072711 PZ-154_072711_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18534-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18534-1	HAR-11_072711_01	Formaldehyde	0.050U mg/L	A	B
280-18534-1	HAR-20_072711_01	Formaldehyde	0.050U mg/L	A	B
280-18534-1	RD-104_072711_01	Formaldehyde	0.050U mg/L	A	B
280-18534-1	EB_PZ-154_072711	Formaldehyde	0.050U mg/L	A	B
280-18534-1	PZ-154_072711_01A	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18534-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18534-1	PZ-154_072711_01A	Formaldehyde	0.050U mg/L	A	F

LDC #: 26041D71
 SDG #: 280-18534-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/19/11
 Page: 1 of 1
 Reviewer: SVG
 2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/27/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client spec</u>
VII.	Laboratory control samples	A	<u>LCS</u>
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	<u>EB = 4 TB = FB-071211-19 (280-17954-1)</u>

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

brated

1	HAR-11_072711_01	11		21		31	
2	HAR-20_072711_01	12		22		32	
3	RD-104_0727/11_01	13		23		33	
4	EB_PZ-154_072711	14		24		34	
5	PZ-154_072711_01A	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A
- Y N N/A
- Y N N/A
- Y N N/A

Were all samples associated with a given method blank?

Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?

Was a method blank performed with each extraction batch?

Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D-Only

- Y N N/A
- Y N N/A

(Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?

Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 7/29/11

Associated samples: All Code: B

Conc. units: mg/l

Compound	Blank ID	Sample Identification				
mg 240-10216/6-A	1	2	3	4	5	
Formaldehyde	0.0169	0.022 / 0.050U	0.023 / 0.050U	0.019 / 0.050U	0.017 / 0.050U	

Blank extraction date: _____

Blank analysis date: _____

Associated samples: _____

Compound	Blank ID	Sample Identification				

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



Laboratory Data Consultants, Inc.

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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 6, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26041:

<u>SDG #</u>	<u>Fraction</u>
280-18286-1/ IUG2185/ IUG2520 280-18334-1/ IUG2424 280-18472-1, 280-18534-1 280-18597-1, 280-18622-1	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Diesel Range Organics, Hydrazine, Formaldehyde

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 26, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18597-1

Sample Identification

RD-38B_072811_01
RD-38B_072811_36

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-10316/3-A	7/30/11	Formaldehyde	0.0143 mg/L	All samples in SDG 280-18597-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-38B_072811_01	Formaldehyde	0.015 mg/L	0.050U mg/L
RD-38B_072811_36	Formaldehyde	0.014 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18597-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-38B_072811_01	RD-38B_072811_36			
Formaldehyde	0.015	0.014	7 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18597-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18597-1	RD-38B_072811_01 RD-38B_072811_36	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18597-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18597-1	RD-38B_072811_01	Formaldehyde	0.050U mg/L	A	B
280-18597-1	RD-38B_072811_36	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18597-1**

No Sample Data Qualified in this SDG

LDC #: 26041E71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18597-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	KS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	d = 1, 2
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinstate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-38B_072811_01	D	11		21		31	
2	RD-38B_072811_36	D	12		22		32	
3			13		23		33	
4			14		24		34	
5			15		25		35	
6			16		26		36	
7			17		27		37	
8			18		28		38	
9			19		29		39	
10			20		30		40	

Notes: _____

LDC #: 2604 \ E71

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Page: 1 of 1
Reviewer: ML
2nd reviewer: _____

METHOD: GC HPLC
Y/N N/A Were field duplicate pairs identified in this SDG?
Y/N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (mg/L)		%RPD Limit <u>≤ 35%</u>	Qualification <u>Parent only</u> / All Samples
	1.	2.		
Formaldehyde	0.015	0.014	7	—

Compound	Concentration ()		%RPD Limit _____	Qualification Parent only / All Samples



Laboratory Data Consultants, Inc.

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Web www.lab-data.com

Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 6, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26041:

<u>SDG #</u>	<u>Fraction</u>
280-18286-1/ IUG2185/ IUG2520 280-18334-1/ IUG2424 280-18472-1, 280-18534-1 280-18597-1, 280-18622-1	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Diesel Range Organics, Hydrazine, Formaldehyde

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,


Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: August 24, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18622-1

Sample Identification

RD-55B_072911_01
HAR-21_072911_01
RS-08_072911_01
EB_PZ-155_072911
PZ-155_072911_01A
HAR-12_072911_01
HAR-14_072911_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB240-10379/1-A	7/31/11	Formaldehyde	0.0127 mg/L	All samples in SDG 280-18622-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-55B_072911_01	Formaldehyde	0.022 mg/L	0.050U mg/L
HAR-21_072911_01	Formaldehyde	0.041 mg/L	0.050U mg/L
RS-08_072911_01	Formaldehyde	0.017 mg/L	0.050U mg/L
EB_PZ-155_072911	Formaldehyde	0.013 mg/L	0.050U mg/L
PZ-155_072911_01A	Formaldehyde	0.017 mg/L	0.050U mg/L
HAR-12_072911_01	Formaldehyde	0.013 mg/L	0.050U mg/L
HAR-14_072911_01	Formaldehyde	0.014 mg/L	0.050U mg/L

Sample EB_PZ-155_072911 was identified as an equipment blank. No formaldehyde contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-155_072911	7/29/11	Formaldehyde	0.013 mg/L	PZ-155_072911_01A

Sample FB_071211_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Formaldehyde	0.025 mg/L	PZ-155_072911_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-155_072911_01A	Formaldehyde	0.017 mg/L	0.050U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18622-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18622-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18622-1	RD-55B_072911_01 HAR-21_072911_01 RS-08_072911_01 EB_PZ-155_072911 PZ-155_072911_01A HAR-12_072911_01 HAR-14_072911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18622-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18622-1	RD-55B_072911_01	Formaldehyde	0.050U mg/L	A	B
280-18622-1	HAR-21_072911_01	Formaldehyde	0.050U mg/L	A	B
280-18622-1	RS-08_072911_01	Formaldehyde	0.050U mg/L	A	B
280-18622-1	EB_PZ-155_072911	Formaldehyde	0.050U mg/L	A	B
280-18622-1	PZ-155_072911_01A	Formaldehyde	0.050U mg/L	A	B
280-18622-1	HAR-12_072911_01	Formaldehyde	0.050U mg/L	A	B
280-18622-1	HAR-14_072911_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18622-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18622-1	PZ-155_072911_01A	Formaldehyde	0.050U mg/L	A	F

LDC #: 26041F71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/19/11

SDG #: 280-18622-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *SV*

2nd Reviewer: *[Signature]*

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	A	W.S.
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	EB = 4 FB = FB-071211-19 (280-17954-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-55B_072911_01	11		21		31	
2	HAR-21_072911_01	12		22		32	
3	RS-08_072911_01	13		23		33	
4	EB PZ-155_072911	14		24		34	
5	PZ-155_072911_01A	15		25		35	
6	HAR-12_072911_01	16		26		36	
7	HAR-14_072911_01	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: _____

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1
Reviewer: DJG
2nd Reviewer: _____

Blanks

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A
- Y N N/A
- Y N N/A
- X N N/A

Were all samples associated with a given method blank?

Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?

Was a method blank performed with each extraction batch?

Were any contaminants found in the method blanks? If yes, please see findings below.

Level MD Only

- Y N N/A
- Y N N/A

(Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?

Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 7/31/11 Blank analysis date: 8/6/11

Associated samples: ANA Code: B

Conc. units: mg/L

Compound	Blank ID	Sample Identification						
		1	2	3	4	5	6	7
Formaldehyde	0.0127	0.022 / 0.050u	0.041 / 0.050u	0.017 / 0.050u	0.013 / 0.050u	0.017 / 0.050u	0.013 / 0.050u	0.014 / 0.050u

Blank extraction date: _____ Blank analysis date: _____

Conc. units: _____

Associated samples: _____

Compound	Blank ID	Sample Identification				

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".



Laboratory Data Consultants, Inc.

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Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26047:

<u>SDG #</u>	<u>Fraction</u>
IUG0829/HAL76/G1G140483 IUG1663 IUG1761/G1G210481 IUG2634	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Gasoline Range Organics, Hydrazine, Formaldehyde, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829

Sample Identification

PZ-139_071111_03
TB_PZ-139_071111B

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB_PZ-139_071111B was identified as a trip blank. No volatile contaminants were found.

Sample EB_PZ-139_071111A (from SDG 280-17902-1) was identified as an equipment blank. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-139_071111A	7/11/11	Chloroform	0.30 ug/L	PZ-139_071111_03

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-139_071111_03

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG0829	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_01 and PZ-139_071111_03 (from SDG 280-17920-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_01	PZ-139_071111_03			
1,1-Dichloroethene	0.57	0.52	9 (≤35)	-	-
Acetone	3.4	10U	99 (≤35)	NQ	-
cis-1,2-Dichloroethene	9.7	9.9	2 (≤35)	-	-
trans-1,2-Dichloroethene	0.53	0.51	4 (≤35)	-	-
Trichloroethene	210	180	15 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG IUG0829

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG0829	PZ-139_071111_03 TB_PZ-139_071111B	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG IUG0829

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG IUG0829

No Sample Data Qualified in this SDG

LDC #: 26047A1a
 SDG #: IUG0829
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/23/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / split	SW	S = 1 + PZ-139-071111-01 (280-17902-1)
XVII.	Field blanks	SW	EB = EB-PZ-139-071111 A *TB = 2 FB = FB-071211-19 (280-17952)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

* ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	PZ-139_071111_03	11	11G 1705 - Blk 1	21	(FFFF, GG GG, II)	31
2	TB_PZ-139_071111B	12	11G 2056 - ↓	22		32
3		13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJU. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methylacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-139_071111_01	PZ-139_071111_03		
1,1-Dichloroethene	0.57	0.52	9	
Acetone	3.4	10U	99	NQ (<5xRL)
cis-1,2-Dichloroethene	9.7	9.9	2	
trans-1,2-Dichloroethene	0.53	0.51	4	
Trichloroethene	210	180	15	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829

Sample Identification

PZ-139_071111_03
TB_PZ-139_071111B

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Sample TB_PZ-139_071111B was identified as a trip blank. No 1,4-dioxane was found.

Sample EB_PZ-139_071111A (from SDG 280-17902-1) was identified as equipment blanks. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG0829	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03 and PZ-139_071111_01 (from SDG 280-17902-1) were identified as split samples. No 1,4-dioxane was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Data Qualification Summary - SDG IUG0829**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG0829	PZ-139_071111_03 TB_PZ-139_071111B	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Field Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

LDC #: 26047A1b
 SDG #: IUG0829
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/23/11
 Page: 1 of 1
 Reviewer: SVL
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RT/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	ND	S = 1 + PZ-139_071111_01 (280-17902-1)
XVII.	Field blanks	ND	TB = 2 EB = EB_PZ-139_071111A ↓ FB = FB_071211-19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-139_071111_03	11	11 G 2038- Blk1	21		31	
2	TB_PZ-139_071111B	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829

Sample Identification

PZ-139_071111_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample EB_PZ-139_071111A (from SDG 280-17902-1) was identified as an equipment blank. No semivolatile contaminants were found.

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-139_071111A	7/11/11	Benzyl alcohol Diethylphthalate Bis(2-ethylhexyl)phthalate	2.1 ug/L 0.57 ug/L 3.9 ug/L	PZ-139_071111_03

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
11G1962-BSI/BSDI (All samples in SDG IUG0829)	4-Nitrophenol	127 (45-120)	-	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG0829	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03 and PZ-139_071111_01 (from SDG 280-17902-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_03	PZ-139_071111_01			
Bis(2-ethylhexyl)phthalate	2.5	50U	181 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG IUG0829**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG0829	PZ-139_071111_03	4-Nitrophenol	J (all detects)	P	Laboratory control samples (%R) (L)
IUG0829	PZ-139_071111_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	SW	LCS / b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RT/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	SW	S = 1 + PZ-139-071111-01 (280-17902-1)
XVII.	Field blanks	SW	EB = EB_PZ-139-071111A *FB = FB_071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

*NND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	PZ-139_071111_03	11	1161962-B1k1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(e)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(e)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y/N/NA Were field split pairs identified in this SDG?
Y/N/NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-139_071111_01	PZ-139_071111_03		
Bis(2-ethylhexyl)phthalate	2.5	50U	181	NQ (.5xRL)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829

Sample Identification

PZ-139_071111_03
PZ-139_071111_03RE

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
PZ-139_071111_03RE	N-Nitrosodimethylamine	13	7	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
11G2799-BLK1	7/24/11	N-Nitrosodimethylamine	0.0014 ug/L	PZ-139_071111_03RE

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-139_071111_03RE	N-Nitrosodimethylamine	0.0011 ug/L	0.0050U ug/L

Sample EB_PZ-139_071111A (from SDG 280-17902-1) were identified as an equipment blank. No N-nitrosodimethylamine was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
11G1130-BSI/BSDI (PZ-139_071111_03 11G1130-BLK1)	N-Nitrosodimethylamine	233 (60-140)	260 (60-140)	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG0829	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-139_071111_03RE	N-Nitrosodimethylamine	R	A

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03 and PZ-139_071111_01 (from SDG 280-17902-1) and samples PZ-139_071111_03RE and PZ-139_071111_01 (from SDG 280-17902-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_03	PZ-139_071111_01			
N-Nitrosodimethylamine	0.0012	0.0050U	123 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_03RE	PZ-139_071111_01			
N-Nitrosodimethylamine	0.0011	0.0050U	128 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG IUG0829**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG0829	PZ-139_071111_03RE	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	A	Technical holding time (H)
IUG0829	PZ-139_071111_03	N-Nitrosodimethylamine	J (all detects)	P	Laboratory control samples (%R) (L)
IUG0829	PZ-139_071111_03 PZ-139_071111_03RE	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)
IUG0829	PZ-139_071111_03RE	N-Nitrosodimethylamine	R	A	Overall assessment (D)

**Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG IUG0829**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUG0829	PZ-139_071111_03RE	N-Nitrosodimethylamine	0.0050U ug/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

LDC #: 26047A2b

VALIDATION COMPLETENESS WORKSHEET

SDG #: IUG0829

Level V

Laboratory: Test America, Inc.

Date: 8/24/11

Page: 1 of 1

Reviewer: MLP2nd Reviewer: ✓METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	SW	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/R _f /LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	SW	
XVI.	Field duplicates / Splits	SW	S ₁ = 1, PZ-139-071111-01 S ₂ = 2 ↓ (280-17902-1)
XVII.	Field blanks	MD	EB = EB-PZ-139-071111A ↓ FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	PZ-139 071111 03	11	11 G 1130 - blk 1	21		31
2	PZ-139 071111 03RE	12	11 G 2779 - ↓	22		32
3		13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-139_071111_01	PZ-139_071111_03		
NDMA	0.0050U	0.0012	123	NQ (.5xRL)

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-139_071111_01	PZ-139_071111_03RE		
NDMA	0.0050U	0.0011	128	NQ (.5xRL)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 30, 2011

Matrix: Water

Parameters: Dissolved Metals

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829

Sample Identification

PZ-139_071111_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020, 6010B, and 7470A for Dissolved Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the preparation blanks.

Sample EB_PZ-139_071111_01 (from SDG 280-17902-1) was identified as an equipment blank. No dissolved metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_PZ-139_071111_01	7/11/11	Barium	0.00059 mg/L	PZ-139_071111_03

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No dissolved metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-139_071111_03

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG IUG0829	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03 and PZ-139_071111_01 (from SDG 280-17902-1) were identified as split samples. No dissolved metal were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_03	PZ-139_071111_01			
Arsenic	0.0011	0.0011	0 (525)	-	-
Barium	0.018	0.019	5	-	-
Boron	0.051	0.049	4	-	-
Cadmium	0.00010U	0.000080	22	-	-
Calcium	66	57	15	-	-
Cobalt	0.00068	0.00058	16	-	-
Magnesium	31	28	10	-	-
Manganese	0.14	0.14	0	-	-
Molybdenum	0.0029	0.0027	7	-	-
Nickel	0.0055	0.0052	6	-	-
Potassium	2.1	2.3	9	-	-
Selenium	0.00095	0.00070U	30	-	-
Silver	0.00010U	0.000021	131	NQ	-
Sodium	120	130	8	-	-
Thallium	0.00020U	0.000058	110	NQ	-
Vanadium	0.0010	0.0013	26	-	-
Zinc	0.0040U	0.0042	5	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Data Qualification Summary - SDG IUG0829**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
IUG0829	PZ-139_071111_03	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Field Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

LDC #: 26047A4
 SDG #: IUG0829
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8-24-11
 Page: 1 of 1
 Reviewer: OC
 2nd Reviewer: W

METHOD: Dissolved Metals (EPA SW 846 Method 6020/7000) 60103/7470A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/11/11</u>
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	N	<u>Client specified</u>
VII.	Duplicate Sample Analysis	N	<u>J</u>
VIII.	Laboratory Control Samples (LCS)	A	<u>LCS/D</u>
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	<u>Not utilized</u>
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	<u>Split = PZ-139-071111-01 (SD6: 280-17902-1)</u>
XV.	Field Blanks	SW	<u>EB = EB-PZ-139-071111-01 (SD6: 280-17902-1)</u> <u>FB = FB-071211-19 F (SD6: 280-17952-1)</u>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

WARR

1	PZ-139_071111_03	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Field Blanks

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Reason: F

Blank units: mg/L Associated sample units: mg/L
Sampling date: 7/12/11 Soil factor applied: NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1

Analyte	Blank ID	Action Limit	No Qualifiers	Sample Identification
Ag	FB_071211_19F (SDG: 280-17952-1)	0.00009		
Tl	0.000033	0.000165		

Blank units: mg/L Associated sample units: mg/L
Sampling date: 7/11/11 Soil factor applied: NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1

Analyte	Blank ID	Action Limit	No Qualifiers	Sample Identification
Ba	EB_PZ-139_071111_01 (SDG: 280-17902-1)	0.00295		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC#: 26047A4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	PZ-139_071111_01	1		
Arsenic	0.0011	0.0011	0	
Barium	0.019	0.018	5	
Boron	0.049	0.051	4	
Cadmium	0.000080	0.00010U	22	
Calcium	57	66	15	
Cobalt	0.00058	0.00068	16	
Magnesium	28	31	10	
Manganese	0.14	0.14	0	
Molybdenum	0.0027	0.0029	7	
Nickel	0.0052	0.0055	6	
Potassium	2.3	2.1	9	
Selenium	0.00070U	0.00095	30	
Silver	0.000021	0.00010U	131	NQ (<5xRL)
Sodium	130	120	8	
Thallium	0.000058	0.00020U	110	NQ (<5xRL)
Vanadium	0.0013	0.0010	26	
Zinc	0.0042	0.0040U	5	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 30, 2011

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829

Sample Identification

PZ-139_071111_03B
PZ-139_071111_03BMS
PZ-139_071111_03BMSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate as Phosphorous, and Sulfate, and EPA SW 846 Method 7196A for Hexavalent Chromium and Dissolved Hexavalent Chromium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample EB_PZ-139_071111_01 (from SDG 280-17902-1) was identified as an equipment blank. No contaminant concentrations were found.

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG IUG0829	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03B and PZ-139_071111_01 (from SDG 280-17902-1) were identified as split samples. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_03B	PZ-139_071111_01			
Bromide	0.31	0.47	41 (≤35)	-	-
Chloride	27	24	12 (≤35)	-	-
Fluoride	1.4	1.3	7 (≤35)	-	-
Nitrate	3.8	3.6	5 (≤35)	-	-
Orthophosphate as P	0.57U	0.14	121 (≤35)	NQ	-
Sulfate	120	120	0 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
 Fluoride - Data Qualification Summary - SDG IUG0829**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
IUG0829	PZ-139_071111_03B	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Fluoride - Laboratory Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Fluoride - Field Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

LDC #: 26047A6
 SDG #: IUG0829
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8-24-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Bromide, Chloride, Fluoride, Nitrate, Nitrite-N, Orthophosphate-P, Sulfate (EPA Method 300.0), Hexavalent Chromium, Dissolved Hexavalent Chromium (EPA SW846 Method 7196A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II	Initial calibration	N	
III.	Calibration verification	N	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	N	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	SPITE = (1, PZ-139-071111-01 (SDG: 280-17902-1))
XI	Field blanks	ND	EB = EB, PZ-139-071111-01 (SDG: 280-17902-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

FB = FB, 071211-19 F (SDG: 280-17952-1)
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-139_071111_03B	11		21		31	
2	PZ-139_071111_03BMS	12		22		32	
3	PZ-139_071111_03BMSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	PZ-139_071111_01	1		
Bromide	0.47	0.31	41	
Chloride	24	27	12	
Fluoride	1.3	1.4	7	
Nitrate	3.6	3.8	5	
Orthophosphate as P	0.14	0.57U	121	NQ, (<5xRL)
Sulfate	120	120	0	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829/G1G140483

Sample Identification

PZ-139_071111_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1200061-MB	7/19/11	1,2,3,4,6,7,8-HpCDD Total HpCDD OCDD 2,3,7,8-TCDF Total TCDF 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF Total HxCDF 1,2,3,4,6,7,8-HpCDF Total HpCDF OCDF	1.7 pg/L 3.6 pg/L 9.4 pg/L 0.40 pg/L 1.6 pg/L 0.77 pg/L 0.61 pg/L 0.33 pg/L 1.7 pg/L 3.5 pg/L 3.9 pg/L 3.9 pg/L	All samples in SDG IUG0829/G1G140483

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-139_071111_03	OCDD Total HxCDF 1,2,3,4,6,7,8-HpCDF Total HpCDF OCDF	24 pg/L 2.5 pg/L 2.8 pg/L 2.8 pg/L 7.9 pg/L	24U pg/L 2.5U pg/L 2.8U pg/L 2.8U pg/L 7.9U pg/L

Sample EB_PZ-139_071111A (from SDG 280-17900-1) was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-139_071111A	7/11/11	OCDD	4.9 pg/L	All samples in SDG IUG0829/G1G140483

Sample FB_071211-19 (from SDG 280-17964-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211-19	7/12/11	OCDD	4.0 pg/L	All samples in SDG IUG0829/G1G140483

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-139_071111_03	OCDD	24 pg/L	24U pg/L

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG0829/G1G140483	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03 and PZ-139_071111_01 (from SDG 280-17900-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_03	PZ-139_071111_01			
OCDD	5.3	24	128 (≤35)	NQ	-
1,2,3,7,8,9-HxCDF	0.53U	2.5	130 (≤35)	NQ	-
Total HxCDF	Not reported	2.5	Not calculated	-	-

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	PZ-139_071111_03	PZ-139_071111_01			
1,2,3,4,6,7,8-HpCDF	0.49U	2.8	140 (≤35)	NQ	-
Total HpCDF	Not reported	2.8	Not calculated	-	-
OCDF	0.78U	7.9	164 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG IUG0829/G1G140483**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG0829/G1G140483	PZ-139_071111_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG IUG0829/G1G140483**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUG0829/G1G140483	PZ-139_071111_03	OCDD Total HxCDF 1,2,3,4,6,7,8-HpCDF Total HpCDF OCDF	24U pg/L 2.5U pg/L 2.8U pg/L 2.8U pg/L 7.9U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG IUG0829/G1G140483**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUG0829/G1G140483	PZ-139_071111_03	OCDD	24U pg/L	A	F

LDC #: 26047A21
 SDG #: IUG0829/G1G140483
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/23/11
 Page: 1 of 1
 Reviewer: JV6
 2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/11/11</u>
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	<u>client spec</u>
VII.	Laboratory control samples	A	<u>LCS</u>
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates <u>/split</u>	SW	<u>S = 1 + PZ-139_071111-01 (280-17900-1)</u>
XV.	Field blanks	SW	<u>EB = EB-PZ-139_071111A</u> ↓ <u>*FB = FB-071211-19 (280-17964-1)</u>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-139_071111_03	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field split pairs identified in this SDG?

Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	PZ-139_071111_01	PZ-139_071111_03		
G	5.3	24	128	NQ (<5xRL)
N	0.53U	2.5*	130	NQ (<5xRL)
X	NR	2.5*	NC	
O	0.49U	2.8*	140	NQ (<5xRL)
Y	NR	2.8*	NC	
Q	0.78U	7.9	164	NQ (<5xRL)

* EMPC

V:\FIELD DUPLICATES\26047A21s.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 30, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG0829

Sample Identification

PZ-139_071111_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks.

Sample EB_PZ-139_071111A (from SDG 280-17903-1) was identified as an equipment blank. No formaldehyde was found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-139_071111A	7/11/11	Formaldehyde	0.016 mg/L	PZ-139_071111_03

Sample FB_071211_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde was found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Formaldehyde	0.025 mg/L	PZ-139_071111_03

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG0829	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03 and PZ-139_071111_01 (from SDG 280-17903-1) were identified as split samples. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	PZ-139_071111_03	PZ-139_071111_01			
Formaldehyde	0.050U	0.015	108 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Data Qualification Summary - SDG IUG0829**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG0829	PZ-139_071111_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Laboratory Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Field Blank Data Qualification Summary - SDG IUG0829**

No Sample Data Qualified in this SDG

LDC #: 26047A71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/23/11

SDG #: IUG0829

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: MV

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area			Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL /LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates / split	SW	S = 1 + PZ-139_071111_01 (280-17903-1)
XIII.	Field blanks	SW	EB = EB_PZ-139_071111_A ↓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinsate
 FB = Field blank

*FB = FB_071211-19 (280-17954-1)
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Accept

1	PZ-139_071111_03	11	PBLK03195-MB	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

Y N NA
Y N NA

Were field split pairs identified in this SDG?
 Were target analytes detected in the field split pairs?

Compound	Concentration (mg/L)		RPD	Qualifications (Parent Only)
	PZ-139_071111_01	PZ-139_071111_03		
Formaldehyde	0.015	0.050U	108	NQ (<5xRL)

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc./Lancaster

Sample Delivery Group (SDG): IUG0829/HAL76

Sample Identification

PZ-139_071111_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per SW 846 Method 8315A Modified for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Derivatization	Required Holding Time (in Days) From Sample Collection Until Derivatization	Flag	A or P
PZ-139_071111_03	All TCL compounds	14	3	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

Sample EB_PZ-139_071111A (from SDG 280-17902-1) was identified as an equipment blank. No hydrazines were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No hydrazines were found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG0829/HAL76	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-139_071111_03 and PZ-139_071111_01 (from SDG 280-17902-1) were identified as split samples. No volatiles were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG IUG0829/HAL76**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG0829/HAL76	PZ-139_071111_03	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
IUG0829/HAL76	PZ-139_071111_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG IUG0829/HAL76**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG IUG0829/HAL76**

No Sample Data Qualified in this SDG

LDC #: 26047A76 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: IUG0829/HAL76

Level IV ✓

Date: 8/24/11

Laboratory: Test America, Inc. Lancaster

Page: 1 of 1

LC/MS/MS

EPA SW 846 Method 8315 Modified

Reviewer: NY

2nd Reviewer: ✓

METHOD: HPLC Hydrazines (Method DVWG-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: <u>7/11/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client Spec.</u>
VII.	Laboratory control samples	A	<u>LCS 10</u>
VIII.	Target compound identification	N	
IX.	Compound Quantitation and GRQLs <u>GRQLs</u>	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates <u>/split</u>	ND	S = 1 + PZ-139_071111_01 (280-17902-1)
XIII.	Field blanks	ND	EB = EB_PZ-139_071111A ↓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

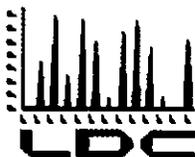
D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-139 071111 03	11	11196001 - Blk	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____



Laboratory Data Consultants, Inc.

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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

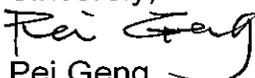
LDC Project # 26047:

<u>SDG #</u>	<u>Fraction</u>
IUG0829/HAL76/G1G140483 IUG1663 IUG1761/G1G210481 IUG2634	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Gasoline Range Organics, Hydrazine, Formaldehyde, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: August 30, 2011
Matrix: Water
Parameters: Total Petroleum Hydrocarbons as Gasoline
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): IUG1663

Sample Identification

RS-32_071811_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons as Gasoline.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG1663	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RS-32_071811_03 and RS-32_071811_01 (from SDG 280-18183-1) were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RS-32_071811_03	RS-32_071811_01			
Gasoline range organics (C6-C12)	50U	13	117 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
 Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG IUG1663**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG1663	RS-32_071811_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG IUG1663**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG IUG1663**

No Sample Data Qualified in this SDG

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/R/L/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates / Split	SW	S = 1 + RS-32-071811-01 (260-18183-1)
XIII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

WATER

1	RS-32_071811_03	11	11 G 3060-Blk1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RS-32_071811_01	RS-32_071811_03		
GRO (C6-C12)	13	50U	117	NQ (.5xRL)



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26047:

<u>SDG #</u>	<u>Fraction</u>
IUG0829/HAL76/G1G140483 IUG1663 IUG1761/G1G210481 IUG2634	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Gasoline Range Organics, Hydrazine, Formaldehyde, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
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Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 30, 2011

Matrix: Water

Parameters: Cyanide & Sulfide

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG1761

Sample Identification

RD-11_071911_03

RD-12_071911_03

RD-11_071911_03MS

RD-11_071911_03MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Cyanide and Standard Method 4500-S,C,D and Sulfide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Samples FB_RD-11_071911_19 and FB_RD-12_071911_19 (both from SDG 280-18230-1) were identified as field blanks. No cyanide or sulfide was found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG IUG1761	All analytes reported below the RL and above the MDL.	J (all detects)	A

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples RD-11_071911_03 and RD-11_071911_01 (from SDG 280-18230-1) and RD-12_071911_03 and RD-12_071911_01 (from SDG 280-18230-1) were identified as field duplicates. No cyanide or sulfide was detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	RD-11_071911_03	RD-11_071911_01			
Sulfide	0.084	0.088	5 (≤ 35)	-	-

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	RD-12_071911_03	RD-12_071911_01			
Cyanide	0.0031	0.0023	30 (≤ 35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Cyanide & Sulfide - Data Qualification Summary - SDG IUG1761**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
IUG1761	RD-11_071911_03 RD-12_071911_03	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Cyanide & Sulfide - Laboratory Blank Data Qualification Summary - SDG IUG1761**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Cyanide & Sulfide - Field Blank Data Qualification Summary - SDG IUG1761**

No Sample Data Qualified in this SDG

LDC #: 26047C6
 SDG #: IUG1761
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level ~~X~~ IV

Date: 8-24-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Cyanide (EPA SW846 Method 9014), Sulfide (SM4500-S, C, D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	N	
VII.	Laboratory control samples	A	LCS#
VIII.	Sample result verification	A	
IX.	Overall assessment of data	A	CS06: 280-18230-12
X.	SW Field duplicates	SW	(1, RD-11-071911-01), (2, RD-11-071911-01)
XI	Field blanks	ND	FB = RD-11-0719-02 FB RD-11-071911-19 FB RD-12-071911-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SDG: 280-18230

Validated Samples:

[Signature]

1	RD-11_071911_03	11		21		31	
2	RD-12_071911_03	12		22		32	
3	RD-11_071911_03MS	13		23		33	
4	RD-11_071911_03MSD	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients > 0.995?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were titrant checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were balance checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
III. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

LDC #: 2601706

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/	/		
Target analytes were detected in the field blanks.				

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	RD-11_071911_01	1		
Sulfide	0.088	0.084	5	

Analyte	Concentration (mg/L)		RPD (≤35)	
	RD-12_071911_01	2		
Cyanide	0.0023	0.0031	30	

LDC #: 2604766

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Method: Inorganics, Method Seeco
The correlation coefficient (r) for the calibration of CN was recalculated. Calibration date: 8/1/11

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = $\frac{\text{Found} \times 100}{\text{True}}$
Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated	Reported	Acceptable (Y/N)
					r or r ²	r or r ²	
Initial calibration	CN	s1	0.0	0	0.9998	0.9998	Y
		s2	0.005	0.026			
		s3	0.04	0.26			
		s4	0.1	0.66			
		s5	0.2	1.33			
		s6	0.3	1.93			
Calibration verification	S	CCV	0.2	0.19099	95	-	Y
Calibration verification	S	CCV	0.36518	0.3916	92	-	Y
Calibration verification							

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$
 Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, True = concentration of each analyte in the source.
 Found = SSR (spiked sample result) - SR (sample result).

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$
 Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	%R / RPD	
LC5	Laboratory control sample	S	0.631	0.580	109	109	Y
3	Matrix spike sample	CN	(SSR-SR) 0.193	0.2	97	97	Y
3/4	Duplicate sample	J	0.193	0.193	0	0.2	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 19, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG1761/G1G210481

Sample Identification

RD-11_071911_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1207063-MB	7/26/11	1,2,3,4,6,7,8-HpCDD Total HpCDD OCDD	0.48 pg/L 1.1 pg/L 1.6 pg/L	All samples in SDG IUG1761/G1G210481

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-11_071911_03	OCDD	1.8 pg/L	1.8U pg/L

Sample FB_RD-11_071911_19 (from SDG 280-18238-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG1761/G1G210481	All compounds reported below the RL.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-11_071911_03 and RD-11_071911_01 (from SDG 280-18238-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	RD-11_071911_03	RD-11_071911_01			
OCDD	1.8	1.9	5 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG IUG1761/G1G210481**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG1761/G1G210481	RD-11_071911_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG IUG1761/G1G210481**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUG1761/G1G210481	RD-11_071911_03	OCDD	1.8U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG IUG1761/G1G210481**

No Sample Data Qualified in this SDG

LDC #: 26047C21
 SDG #: IUG1761/G1G210481
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level ~~V~~ IV

Date: 8/20/11
 Page: 1 of 1
 Reviewer: SVG
 2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/19/11
II.	HRGC/HRMS Instrument performance check	NA	
III.	Initial calibration	NA	% RSD ≤ 20% unlabeled ≤ 30% labeled
IV.	Routine calibration/ICV	NA	↓ ↓
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	NA	
X.	Target compound identifications	NA	
XI.	Compound quantitation-RH/LOQ/LODs	NA	
XII.	System performance	NA	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates / split	SW	S = 1, RD-11-071911-01 (280-18238-1)
XV.	Field blanks	ND	FB = FB RD-11-071911-19 & ↓

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	RD-11_071911_03	11	1207063-MB	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the retention time windows established for all homologues?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers < 25%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the static resolving power at least 10,000 (10% valley definition)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the mass resolution adequately check with PFK?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled standards and < 30% for labeled standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did all calibration standards meet the Ion Abundance Ratio criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) ≤ 20% for unlabeled standards and ≤ 30% for labeled standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank performed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal standards				
Were internal standard recoveries within the 40-135% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks > 10?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	/			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	/			
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	/			
Was the signal to noise ratio for each target compound and labeled standard \geq 2.5?	/			
Does the maximum intensity of each specified characteristic ion coincide within \pm 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDF channel?	/			
Was an acceptable lock mass recorded and monitored?				
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

LDC#: 26047C21

VALIDATION FINDINGS WORKSHEET
Field Splits

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

X N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	RD-11_071911_01	RD-11_071911_03		
G	1.9*	1.8*	5	

* EMPC

V:\FIELD DUPLICATES\26047C21s.wpd

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8280A)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound

C_x = Concentration of compound,

S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (CS5)	Recalculated RRF (CS5)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/6/2011	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.995	0.995	0.964	0.965	3.56	3.66
	4d5		2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.053	1.053	1.062	1.061	4.22	3.91
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	1.154	1.154	1.193	1.194	8.50	8.58
			1,2,3,4,6,7,8-HpCDF (13C-1,2,3,4,6,7,8-HpCDF)	1.351	1.351	1.327	1.327	3.42	3.60
			OCDD (13C-OCDD)	1.134	1.133	1.112	1.112	3.01	3.07

Cis	Area cpd	Area IS
100/200	350470880	176153792
100/200	257144560	122158588
100/200	1066736544	92408760
100/200	1281476096	94858184
100/200	1763218112	155555336

Conc	2,3,7,8-TCDF	2,3,7,8-TCDD	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDF	OCDD
CS1 0.5/2.5/5.0	0.950	1.100	1.120	1.280	1.080
CS2 2.0/10/20	0.990	1.100	1.320	1.360	1.140
CS3 10/50/100	0.910	1.000	1.090	1.270	1.070
CS4 40/200/400	0.980	1.053	1.285	1.372	1.137
CS5 200/1000/2000	0.995	1.053	1.154	1.351	1.134
X =	0.965	1.061	1.194	1.327	1.112
S =	0.0353	0.0415	0.1024	0.0478	0.0341

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8280A)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (\text{Ax}) / (\text{Cis}) / (\text{Ais}) / (\text{Cx})$$

ave. RRF = |CAL average RRF
 RRF = CCV RRF
 Ax = Area of compound
 Cis = Concentration of internal standard
 Cx = Concentration of compound
 Ais = Area of associated internal standard
 Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	27J11a4d5 s2	04/29/11	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.964	1.051	1.051	9.0	9.0
			2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.062	1.069	1.069	0.7	0.7
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	1.193	1.071	1.071	10.2	10.2
			1,2,3,4,6,7,8-HpCDF (13C-1,2,4,6,7,8-HpCDF)	1.327	1.435	1.435	8.2	8.2
			OCDF (13C-OCDD)	1.112	1.175	1.175	5.7	5.7

Compound (IS)	Cis/Cx	Ax	Aiz
2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	100/10	20738650	197285100
2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	100/10	14295790	133745700
1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	100/50	58064600	108393900
1,2,3,4,6,7,8-HpCDF (13C-1,2,4,6,7,8-HpCDF)	100/50	68490600	95435700
OCDF (13C-OCDD)	200/100	81240200	138236700



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

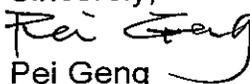
LDC Project # 26047:

<u>SDG #</u>	<u>Fraction</u>
IUG0829/HAL76/G1G140483 IUG1663 IUG1761/G1G210481 IUG2634	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Metals, Wet Chemistry, Gasoline Range Organics, Hydrazine, Formaldehyde, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 27, 2011

LDC Report Date: September 1, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2634

Sample Identification

HAR-20_072711_03

HAR-20_072711_03MS

HAR-20_072711_03MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/3/11 (VSTD025)	Carbon tetrachloride Dibromochloromethane 1,1,1,2-Tetrachloroethane	44 26 30	All samples in SDG IUG2634	J (all detects) UJ (all non-detects)	A
8/3/11 (EXT025)	Acetonitrile	30	All samples in SDG IUG2634	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/30/11	4-Methyl-2-pentanone	29	All samples in SDG IUG2634	J (all detects)	A
	Vinyl acetate	35		UJ (all non-detects)	
				J (all detects)	
				UJ (all non-detects)	

All of the continuing calibration relative response factors (RRF) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/3/11 (EXT025)	Acetonitrile	0.038 (≥0.05)	All samples in SDG IUG2634	J (all detects)	A
	Isobutyl alcohol	0.047 (≥0.05)		UJ (all non-detects)	
				J (all detects)	
				UJ (all non-detects)	

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample FB_HAR-20_072711_19 (from SDG 280-18527-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_HAR-20_072711_19	7/27/11	Acetone Chloroform	2.9 ug/L 0.41 ug/L	HAR-20_072711_03

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
HAR-20_072711_03	Toluene-d8	83 (88-110)	All TCL compounds	J (all detects)	A
				UJ (all non-detects)	

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
HAR-20_072711_03MS/MSD (HAR-20_072711_03)	Carbon tetrachloride	145 (65-140)	-	-	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCS %R (Limits)	RPD (Limits)	Flag	A or P
11H0358-BSI (All samples in SDG IUG2634)	1,1,1,2-Tetrachloroethane	134 (70-130)	-	-	J (all detects)	P
	Carbon tetrachloride	148 (65-140)	-	-	J (all detects)	
	trans-1,3-Dichloropropene	126 (70-125)	-	-	J (all detects)	

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2634	All compounds reported below the RL.	J (all detects)	A

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-20_072711_03 and HAR-20_072711_01 (from SDG 280-18527-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-20_072711_03	HAR-20_072711_01			
Acetone	7.5	10U	29 (≤35)	-	-
cis-1,2-Dichloroethene	21	20	5 (≤35)	-	-
trans-1,2-Dichloroethene	2.2	1.7	26 (≤35)	-	-
Trichloroethene	18	19	5 (≤35)	-	-
Vinyl chloride	0.54	0.54	0 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG IUG2634

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2634	HAR-20_072711_03	Carbon tetrachloride Dibromochloromethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
IUG2634	HAR-20_072711_03	Acetonitrile	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
IUG2634	HAR-20_072711_03	4-Methyl-2-pentanone Vinyl acetate	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
IUG2634	HAR-20_072711_03	Acetonitrile Isobutyl alcohol	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (R)
IUG2634	HAR-20_072711_03	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
IUG2634	HAR-20_072711_03	Carbon tetrachloride	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
IUG2634	HAR-20_072711_03	1,1,2,2-Tetrachloroethane Carbon tetrachloride trans-1,3-Dichloropropene	J (all detects) J (all detects) J (all detects)	P	Laboratory control samples (%R) (L)
IUG2634	HAR-20_072711_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG IUG2634

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG IUG2634

No Sample Data Qualified in this SDG

LDC #: 26047D1a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/24/11

SDG #: IUG2634

Level \checkmark IV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	$\% RSD \leq 30\%$
IV.	Continuing calibration/ICV	SW	$CV/IV \leq 25\%$
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	SW	$S = 1 + HAR-20-072711-01 (280-18527-1)$
XVII.	Field blanks	SW	$FB = FB-HAR-20-072711-19$ ↓

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1 ⁺	HAR-20_072711_03	11	11 H 0358-\$1k1	21		31	
2	HAR-20_072711_03MS	12		22		32	
3	HAR-20_072711_03MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	/			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) < 25% and relative response factors (RRF) > 0.05?		/		
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?		/		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?		/		
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds of the associated calibration standard?	/			
XI. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	-		/	
Were relative intensities of the major ions within $\pm 20\%$ between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			/	
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII. Field blanks				
Field blanks were identified in this SDG.	.			
Target compounds were detected in the field blanks.				

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y/N/NA Were field split pairs identified in this SDG?
Y/N/NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-20_072711_01	HAR-20_072711_03		
Acetone	7.5	10U	29	
cis-1,2-Dichloroethene	21	20	5	
trans-1,2-Dichloroethene	2.2	1.7	26	
Trichloroethene	18	19	5	
Vinyl chloride	0.54	0.54	0	

LDC #: 26047 D1A

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound
 A_{is} = Area of associated internal standard
 C_x = Concentration of compound,
 C_{is} = Concentration of internal standard
 S = Standard deviation of the RRFs,
 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Internal Standard)	Reported		Recalculated		Reported		Recalculated	
				RRF (25 std)	RRF (25 std)	Average RRF (Initial)	Average RRF (Initial)	%RSD	%RSD		
1	ICAL	6/29-30/11	Vinyl chloride (IS2)	0.346	0.346	0.348	0.348	13.59	13.59	13.57	13.57
	GCMS 43		Trichloroethene (IS3)	0.374	0.374	0.362	0.362	12.45	12.45	12.49	12.49
			Ethylbenzene (IS4)	1.622	1.622	1.548	1.548	14.71	14.71	14.70	14.70
			1,1,2,2-TCA (IS5)	0.664	0.664	0.662	0.662	13.84	13.84	13.85	13.85

Cis/Cx	Ax	Ais
25/25	317654	918992
25/25	511432	1368641
25/25	1869457	1165215
25/25	449672	677391

Conc	Vinyl chloride	Trichloroethene	Ethylbenzene	1,1,2,2-TCA
0.4	0.428			
0.5	0.359	0.387	1.688	0.696
1	0.400	0.406	1.731	0.764
2	0.354	0.400	1.700	0.733
5	0.336	0.319	1.437	0.652
10	0.386	0.398	1.739	0.762
25	0.346	0.374	1.622	0.664
50	0.356	0.367	1.409	0.637
100	0.301	0.332	1.081	0.562
200	0.291	0.272		0.489
300	0.271			
X =	0.348	0.362	1.548	0.662
S =	0.047	0.045	0.228	0.092

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:
 % Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$ Cx = Concentration of compound,
 $\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$ RRF = continuing calibration RRF Ais = Area of associated internal standard
 Ax = Area of compound, Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated % D
1	VSTD025	8/3/2011	Vinyl chloride (IS2)	0.348	0.380	0.380	9.2	9.2
	GCMS43		Trichloroethene (IS3)	0.362	0.353	0.353	2.5	2.4
			Ethylbenzene (IS4)	1.548	1.520	1.520	1.8	1.8
			1,1,2,2-TCA (IS5)	0.662	0.594	0.594	10.3	10.3

Cis/Cx	Compound (IS)	Ax	Ais
25/25	Vinyl chloride (IS2)	305687	804360
25/25	Trichloroethene (IS3)	381961	1082543
25/25	Ethylbenzene (IS4)	1380436	908045
25/25	1,1,2,2-TCA (IS5)	319673	538538

VALIDATION FINDINGS WORKSHEET Surrogate Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	25	20.68	83	83	0
Bromofluorobenzene	↓	25.36	101	101	↓
1,2-Dichloroethane-d4	↓				
Dibromofluoromethane	↓	24.27	97	97	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SSC - SC) / SA$ Where: SSC = Spiked sample concentration SC = Sample concentration
 SA = Spike added

RPD = $1 MSC - MSC \cdot 2 / (MSC + MSDC)$ MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 2/3

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)		Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	MS	MSD	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	25.0	25.0	0		21.6	19.7	86	86	79	79	9	9
Trichloroethene			19.2		45.4	40.0	105	105	83	83	13	13
Benzene			0		20.9	19.5	84	84	78	78	7	7
Toluene			↓		21.9	20.7	88	88	83	83	5	5
Chlorobenzene	8	8	↓		26.0	23.4	104	104	94	94	10	10

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26050:

<u>SDG #</u>	<u>Fraction</u>
280-17902-2, 280-17952-2 280-18148-2, 280-18374-1/ IUG2523, 280-18415-1 280-18711-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Diesel Range Organics, Hydrazine, Perchlorate

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B) (8260B-S)		1,4-Dioxane (8260B-S)		SVOA (8270C-SIM)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		Herb. (8151A)		DRO (8015B)		CLO ₄ (6860)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																																	
A	280-17902-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	
B	280-17952-2	09/16/11	09/07/11	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-18148-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	280-18374-1/ IUG2523	08/16/11	09/07/11	12	0	6	0	5	0	1	0	4	0	4	0	1	0	6	0	-	-	-	5	0	-	-	-	-	-	-	-	-	
E	280-18415-1	08/16/11	09/07/11	10	0	10	0	7	0	-	-	7	0	-	-	-	-	-	-	-	-	2	0	-	-	7	0	7	0	7	0		
F	280-18711-1	09/16/11	09/07/11	10	0	10	0	5	0	-	-	5	0	-	-	-	-	-	-	-	0	0	5	0	-	1	0	5	0	1	0		
F	280-18711-1	08/16/11	09/07/11	0	0	0	0	0	0	-	-	0	0	-	-	-	-	-	-	-	3	0	0	0	-	0	0	0	0	0	0		
Total																																	
T/PG				32	0	26	0	17	0	1	0	23	0	4	0	1	0	6	0	3	0	12	0	1	0	8	0	12	0	8	0	0	0

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CN- (9012A)		CLO ₄ (314.0)		pH (9040B)	
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																					
D	280-18374-1	08/16/11	09/07/11	-	-	7	0	5	0	5	0	7	0	5	0	-	-	1	0	-	-
E	280-18415-1	08/16/11	09/07/11	7	0	-	-	-	-	7	0	7	0	-	-	-	-	7	0	7	0
F	280-18711-1	08/16/11	09/07/11	5	0	-	-	-	-	5	0	5	0	-	-	0	0	5	0	5	0
F	280-18711-1	08/16/11	09/07/11	0	0	-	-	-	-	0	0	0	0	-	-	3	0	0	0	0	0
Total																					
T/PG				12	0	7	0	5	0	17	0	19	0	5	0	3	0	13	0	12	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-17902-2

Sample Identification

RD-68A_071111_36

FB_RD-68A_071111_19

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
All samples in SDG 280-17902-2	N-Nitrosodimethylamine	21	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample FB_RD-68A_071111_19 was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-17902-2	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-68A_071111_36 and RD-68A_071111_01 (from SDG 280-17902-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-17902-2

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-17902-2	RD-68A_071111_36 FB_RD-68A_071111_19	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-17902-2	RD-68A_071111_36 FB_RD-68A_071111_19	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-17902-2

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-17902-2

No Sample Data Qualified in this SDG

LDC #: 26050A2b
 SDG #: 280-17902-2
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/29/11
 Page: 1 of 1
 Reviewer: JG
 2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^HC)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 1 + RD-68A-071111-01 (280-17902-1)
XVII.	Field blanks	ND	FB = 2

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-68A_071111_36	11	MB 280-79215/1-A	21	31
2	FB_RD-68A_071111_19	12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 11, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Perchlorate

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-17902-2

Sample Identification

RD-68B_071111_01
RD-68B_071111_01MS
RD-68B_071111_01MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6860 for Perchlorate.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-17902-2	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Data Qualification Summary - SDG 280-17902-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-17902-2	RD-68B_071111_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Laboratory Blank Data Qualification Summary - SDG 280-17902-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Field Blank Data Qualification Summary - SDG 280-17902-2**

No Sample Data Qualified in this SDG

METHOD: LC/MS Perchlorate (EPA SW846 Method 6860)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	UCC
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	RD-68B_071111_01	11	MB 280-80240/11	21		31	
2	RD-68B_071111_01MS	12		22		32	
3	RD-68B_071111_01MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	



Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437

Web www.lab-data.com

Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

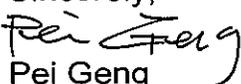
LDC Project # 26050:

<u>SDG #</u>	<u>Fraction</u>
280-17902-2, 280-17952-2 280-18148-2, 280-18374-1/ IUG2523, 280-18415-1 280-18711-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Diesel Range Organics, Hydrazine, Perchlorate

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B) (8260B-S)		1,4-Dioxane (8260B-S)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		Herb. (8151A)		DRO (8015B)		CLO ₄ (6880)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC)									
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S						
Matrix: Water/Soil																																					
A	280-17902-2	08/16/11	09/07/11	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-								
B	280-17952-2	08/16/11	09/07/11	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
C	280-18148-2	08/16/11	09/07/11	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
D	280-18374-1/ IUG2523	08/16/11	09/07/11	12	0	6	0	5	0	1	0	4	0	1	0	6	0	-	-	-	5	0	-	-	-	-	-	-	-								
E	280-18415-1	08/16/11	09/07/11	10	0	10	0	7	0	-	-	-	-	-	-	-	-	-	-	2	0	-	-	7	0	7	0	7	0								
F	280-18711-1	08/16/11	09/07/11	10	0	10	0	5	0	-	-	-	-	-	-	-	-	-	0	0	5	0	-	1	0	5	0	1	0								
F	280-18711-1	08/16/11	09/07/11	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	3	0	0	0	-	0	0	0	0	0	0								
Total																																					
				32	0	26	0	17	0	1	0	23	0	4	0	1	0	6	0	3	0	12	0	1	0	8	0	12	0	8	0	0	0	0	0	0	15

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CN- (9012A)		CLO ₄ (314.0)		pH (9040B)															
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S												
Matrix: Water/Soil																																			
D	280-18374-1	08/16/11	09/07/11	-	-	7	0	5	0	5	0	7	0	5	0	-	-	1	0	-	-														
E	280-18415-1	08/16/11	09/07/11	7	0	-	-	-	-	7	0	7	0	-	-	-	-	7	0	7	0														
F	280-18711-1	08/16/11	09/07/11	5	0	-	-	-	-	5	0	5	0	-	-	0	0	5	0	5	0														
F	280-18711-1	08/16/11	09/07/11	0	0	-	-	-	-	0	0	0	0	-	-	3	0	0	0	0	0														
Total																																			
				12	0	7	0	5	0	17	0	19	0	5	0	3	0	13	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 12, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-17952-2

Sample Identification

FB_HAR-19_071211_19

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
FB_HAR-19_071211_19	N-Nitrosodimethylamine	20	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample FB_HAR-19_071211_19 was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-17952-2	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-17952-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-17952-2	FB_HAR-19_071211_19	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-17952-2	FB_HAR-19_071211_19	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-17952-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-17952-2**

No Sample Data Qualified in this SDG

LDC #: 26050B2b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/24/11

SDG #: 280-17952-2

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVG

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250^M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/12/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	US 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	FB = 1

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	FB HAR-19_071211_19	11	MB 280-79215/1A	21	31
2		12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40



Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437

Web www.lab-data.com

Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26050:

<u>SDG #</u>	<u>Fraction</u>
280-17902-2, 280-17952-2 280-18148-2, 280-18374-1/ IUG2523, 280-18415-1 280-18711-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Diesel Range Organics, Hydrazine, Perchlorate

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmingington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B) (8260B-S)		1,4-Dioxane (8260B-S)		SVOA (8270C-SIM)		SVOA (8270C)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		Herb. (8151A)		DRO (8015B)		CLO ₂ (6880)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																			
A	280-17902-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
B	280-17952-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
C	280-18148-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
D	280-18374-1/ IUG2523	08/16/11	09/07/11	12	0	6	0	5	0	1	0	4	0	4	0	1	0	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E	280-18415-1	08/16/11	09/07/11	10	0	10	0	7	0	-	-	7	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
F	280-18711-1	08/16/11	09/07/11	10	0	10	0	5	0	-	-	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
F	280-18711-1	08/16/11	09/07/11	0	0	0	0	0	0	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total																																			
T/PG				32	0	26	0	17	0	1	0	23	0	4	0	1	0	6	0	3	0	3	0	12	0	1	0	8	0	12	0	8	0	0	0

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmingington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CN- (9012A)		CLO ₂ (314.0)		pH (9040B)	
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																					
D	280-18374-1	08/16/11	09/07/11	-	-	7	0	5	0	5	0	7	0	5	0	-	-	-	-	-	-
E	280-18415-1	08/16/11	09/07/11	7	0	-	-	-	-	7	0	7	0	-	-	-	-	-	-	-	-
F	280-18711-1	08/16/11	09/07/11	5	0	-	-	-	-	5	0	5	0	-	-	-	-	-	-	-	-
F	280-18711-1	08/16/11	09/07/11	0	0	-	-	-	-	0	0	0	0	-	-	-	-	-	-	-	-
Total																					
T/PG				12	0	7	0	5	0	17	0	19	0	5	0	3	0	13	0	12	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 15, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18148-2

Sample Identification

RD-02_071511_36

FB_RD-02_071511_19

RD-01_071511_36

FB_RD-01_071511_19

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
All samples in SDG 280-18148-2	N-nitrosodimethylamine	19	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB_RD-02_071511_19 and FB_RD-01_071511_19 were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18148-2	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-02_071511_36 and RD-02_071511-01 (from SDG 280-18148-1) and samples RD-01_071511_36 and RD-01_071511_01 (from SDG 280-18148-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-02_071511_36	RD-02_071511-01			
N-Nitrosodimethylamine	0.0077	0.0090	16 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-01_071511_36	RD-01_071511_01			
N-Nitrosodimethylamine	0.010	0.0096	4 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18148-2

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18148-2	RD-02_071511_36 FB_RD-02_071511_19 RD-01_071511_36 FB_RD-01_071511_19	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-18148-2	RD-02_071511_36 FB_RD-02_071511_19 RD-01_071511_36 FB_RD-01_071511_19	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18148-2

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18148-2

No Sample Data Qualified in this SDG

LDC #: 26050C2b **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 280-18148-2
 Laboratory: Test America, Inc.

Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: SVG
 2nd Reviewer: V

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/15/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS (D)
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 1 + RD-02-071511-01 D ₂ = 2 + RD-01-071511-01 > (280-18148-1)
XVII.	Field blanks	ND	FB = 2, 4

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-02_071511_36	11	MB-280-79538/A	21		31	
2	FB RD-02_071511_19	12		22		32	
3	RD-01_071511_36	13		23		33	
4	FB RD-01_071511_19	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RD-02_071511_01	RD-02_071511_36		
NDMA	0.0090	0.0077	16	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RD-01_071511_01	RD-01_071511_36		
NDMA	0.0096	0.010	4	



Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437

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Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26050:

<u>SDG #</u>	<u>Fraction</u>
280-17902-2, 280-17952-2 280-18148-2, 280-18374-1/ IUG2523, 280-18415-1 280-18711-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Diesel Range Organics, Hydrazine, Perchlorate

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

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- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B) (8260B-S)		1,4-Dioxane (8260B-S)		SVOA (8270C-SIM)		SVOA (8270C)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		Herb. (8151A)		DRO (8015B)		CLO ₂ (6880)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC 0077)				
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	
Matrix: Water/Soil																																		
A	280-17902-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
B	280-17952-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-18148-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	280-18374-1/ IUG2523	08/16/11	09/07/11	12	0	6	0	5	0	1	0	4	0	4	0	1	0	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18415-1	08/16/11	09/07/11	10	0	10	0	7	0	-	-	7	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F	280-18711-1	08/16/11	09/07/11	10	0	10	0	5	0	-	-	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F	280-18711-1	08/16/11	09/07/11	0	0	0	0	0	0	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total																																		
				32	0	26	0	17	0	1	0	23	0	4	0	1	0	6	0	3	0	12	0	1	0	8	0	12	0	8	0	0	0	0

Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CN- (9012A)		CLO ₂ (314.0)		pH (9040B)	
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																					
D	280-18374-1	08/16/11	09/07/11	-	-	7	0	5	0	5	0	7	0	5	0	-	-	1	0	-	-
E	280-18415-1	08/16/11	09/07/11	7	0	-	-	-	-	7	0	7	0	-	-	-	-	7	0	7	0
F	280-18711-1	08/16/11	09/07/11	5	0	-	-	-	-	5	0	5	0	-	-	0	0	5	0	5	0
F	280-18711-1	08/16/11	09/07/11	0	0	-	-	-	-	0	0	0	0	-	-	3	0	0	0	0	0
Total																					
				12	0	7	0	5	0	17	0	19	0	5	0	3	0	13	0	12	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 22, 2011
LDC Report Date: August 29, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-159_072211_01
TB_PZ-159_072211
ES-29_072211_01
ES-14_072211_01
PZ-158_072211_01
EB_PZ-158_072211
TB_PZ-158_072211
PZ-157_072211_01
TB-PZ-157_072211
EB_PZ-157_072211A
RD-57_072211_01
TB_RD-57_072211
PZ-159_072211_01MS
PZ-159_072211_01MSD

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples TB_PZ-159_072211, TB_PZ-158_072211, TB-PZ-157_072211, and TB_RD-57_072211 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_PZ-158_072211	7/22/11	tert-Butyl alcohol	6.2 ug/L	PZ-158_072211_01 EB_PZ-158_072211
TB_RD-57_072211	7/22/11	Toluene	0.23 ug/L	RD-57_072211_01

Samples EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-158_072211	7/22/11	tert-Butyl alcohol Chloroform	9.8 ug/L 0.41 ug/L	PZ-158_072211_01

Sample FB_071211_19 (from SDG 280-17952-1) were identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-159_072211_01 PZ-158_072211_01 PZ-157_072211_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB_PZ-158_072211	tert-Butyl alcohol	9.8 ug/L	25U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
TB_PZ-159_072211	Toluene-d8	111 (88-110)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
ES-14_072211_01	Toluene-d8	111 (88-110)	All TCL compounds except cis-1,2-Dichloroethene	J (all detects)	A
EB_PZ-158_072211	Toluene-d8	111 (88-110)	All TCL compounds Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
TB_PZ-158_072211	Toluene-d8	113 (88-110)	All TCL compounds Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
EB_PZ-157_072211A	Bromofluorobenzene Toluene-d8	116 (86-115) 117 (88-110)	All TCL compounds Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18374-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18374-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18374-1	TB_PZ-159_072211 EB_PZ-158_072211 TB_PZ-158_072211 EB_PZ-157_072211A	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A	Surrogate spikes (%R) (S)
280-18374-1	ES-14_072211_01	All TCL compounds except cis-1,2-Dichloroethene	J (all detects)	A	Surrogate spikes (%R) (S)
280-18374-1	PZ-159_072211_01 TB_PZ-159_072211 ES-29_072211_01 ES-14_072211_01 PZ-158_072211_01 EB_PZ-158_072211 TB_PZ-158_072211 PZ-157_072211_01 TB-PZ-157_072211 EB_PZ-157_072211A RD-57_072211_01 TB_RD-57_072211	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18374-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18374-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18374-1	EB_PZ-158_072211	tert-Butyl alcohol	25U ug/L	A	T

LDC #: 26050D1a
 SDG #: 280-18374-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/28/11
 Page: 1 of 1
 Reviewer: SYG
 2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 7, 9, 12 EB = 6, 10*

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinsate
 FB = Field blank

FB = FB-071211-19 (280-17952-1)
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-159_072211_01	11	RD-57_072211_01	21	MB 280-78269/8	31	(FFF, 6666, II)
2	TB_PZ-159_072211	12	TB_RD-57_072211	22	MB 280-78960/7	32	(FFF, 6666, II)
3	ES-29_072211_01	13	PZ-159_072211_01MS	23	MB 280-79966/6	33	
4	ES-14_072211_01	14	PZ-159_072211_01MSD	24		34	
5	PZ-158_072211_01	15		25		35	
6	EB_PZ-158_072211	16		26		36	
7	TB_PZ-158_072211	17		27		37	
8	PZ-157_072211_01	18		28		38	
9	TB-PZ-157_072211	19		29		39	
10	EB_PZ-157_072211A	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 22, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-158_072211_01
EB_PZ-158_072211
TB_PZ-158_072211
PZ-157_072211_01
TB-PZ-157_072211
EB_PZ-157_072211A

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_PZ-158_072211 and TB-PZ-157_072211 were identified as trip blanks. No 1,4-dioxane was found.

Samples EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18374-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18374-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18374-1	PZ-158_072211_01 EB_PZ-158_072211 TB_PZ-158_072211 PZ-157_072211_01 TB-PZ-157_072211 EB_PZ-157_072211A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18374-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18374-1

No Sample Data Qualified in this SDG

LDC #: 26050D1b
 SDG #: 280-18374-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS (D)
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	MD	EB = 2, 6 TB = 3, 5 FB = FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	PZ-158_072211_01	11	MB 280-79531/12	21		31
2	EB_PZ-158_072211	12	MB 280-79725/5	22		32
3	TB_PZ-158_072211	13		23		33
4	PZ-157_072211_01	14		24		34
5	TB-PZ-157_072211	15		25		35
6	EB_PZ-157_072211A	16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 22, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-159_072211_01
PZ-158_072211_01
EB_PZ-158_072211
PZ-157_072211_01
EB_PZ-157_072211A

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
EB_PZ-157_072211A	All TCL compounds	12	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-78211/1-A	7/25/11	Benzyl alcohol Bis(2-ethylhexyl)phthalate	0.896 ug/L 2.29 ug/L	PZ-159_072211_01 PZ-158_072211_01 EB_PZ-158_072211 PZ-157_072211_01
MB 280-79780/1-A	8/3/11	Bis(2-ethylhexyl)phthalate	2.00 ug/L	EB_PZ-157_072211A

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-159_072211_01	Benzyl alcohol Bis(2-ethylhexyl)phthalate	2.5 ug/L 2.3 ug/L	19U ug/L 48U ug/L
PZ-158_072211_01	Benzyl alcohol Bis(2-ethylhexyl)phthalate	0.79 ug/L 2.5 ug/L	20U ug/L 50U ug/L
EB_PZ-158_072211	Bis(2-ethylhexyl)phthalate	2.4 ug/L	49U ug/L
PZ-157_072211_01	Bis(2-ethylhexyl)phthalate	2.2 ug/L	48U ug/L
EB_PZ-157_072211A	Bis(2-ethylhexyl)phthalate	4.1 ug/L	49U ug/L

Samples EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-158_072211	7/22/11	Bis(2-ethylhexyl)phthalate	2.4 ug/L	PZ-158_072211_01
EB_PZ-157_072211A	7/22/11	Benzyl alcohol Bis(2-ethylhexyl)phthalate	0.34 ug/L 4.1 ug/L	PZ-157_072211_01

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-158_072211_01	Bis(2-ethylhexyl)phthalate	2.5 ug/L	50U ug/L
PZ-157_072211_01	Bis(2-ethylhexyl)phthalate	2.2 ug/L	48U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-79708/2,3-A (EB_PZ-157_072211A MB 280-79708/1-A)	Hexachlorocyclopentadiene	9 (10-120)	-	-	J (all detects) R (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18374-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18374-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18374-1	EB_PZ-157_072211A	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-18374-1	PZ-159_072211_01 PZ-158_072211_01 EB_PZ-158_072211 PZ-157_072211_01 EB_PZ-157_072211A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)
280-18374-1	EB_PZ-157_072211A	Hexachlorocyclopentadiene	J (all detects) R (all non-detects)	P	Laboratory control samples (%R) (L)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18374-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18374-1	PZ-159_072211_01	Benzyl alcohol Bis(2-ethylhexyl)phthalate	19U ug/L 48U ug/L	A	B
280-18374-1	PZ-158_072211_01	Benzyl alcohol Bis(2-ethylhexyl)phthalate	20U ug/L 50U ug/L	A	B
280-18374-1	EB_PZ-158_072211	Bis(2-ethylhexyl)phthalate	49U ug/L	A	B
280-18374-1	PZ-157_072211_01	Bis(2-ethylhexyl)phthalate	48U ug/L	A	B
280-18374-1	EB_PZ-157_072211A	Bis(2-ethylhexyl)phthalate	49U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18374-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18374-1	PZ-158_072211_01	Bis(2-ethylhexyl)phthalate	50U ug/L	A	F
280-18374-1	PZ-157_072211_01	Bis(2-ethylhexyl)phthalate	48U ug/L	A	F

LDC #: 26050D2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/24/11

SDG #: 280-18374-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JV

2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/22/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	SW	LCS /p
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 3, S FB = FB_071211_19

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	PZ-159_072211_01	+ 11	MB 280-76211/A-A	21		31	
2	PZ-158_072211_01	+ 12	MB 280-79708/A-A	22		32	
3	EB_PZ-158_072211	13		23		33	
4	PZ-157_072211_01	14		24		34	
5	EB_PZ-157_072211A	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Was a method blank analyzed for each matrix?
- Y N N/A Was a method blank analyzed for each concentration preparation level?
- Y N N/A Was a method blank associated with every sample?
- Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 7/25/11 Blank analysis date: 8/01/11

Conc. units: ug/L Associated Samples: 1-4 Code: B

Compound	Blank ID	Sample Identification			
MB	280-78211 / 1-A	1	2	3	4
000	0.896	2.5 / 194	0.79 / 204		
EEE	2.29	2.3 / 484	2.5 / 504	2.4 / 494	2.2 / 484

Blank extraction date: 8/07/11 Blank analysis date: 8/07/11

Conc. units: ug/L Associated Samples: 5 Code: B

Compound	Blank ID	Sample Identification			
MB	280-797804A	5			
EEE	2.00	4.1 / 494			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 22, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18374-1/IUG2523

Sample Identification

PZ-158_072211_01
EB_PZ-158_072211
PZ-157_072211_01
EB_PZ-157_072211A

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No N-nitrosodimethylamine was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18374-1/IUG2523	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18374-1/IUG2523**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18374-1/ IUG2523	PZ-158_072211_01 EB_PZ-158_072211 PZ-157_072211_01 EB_PZ-157_072211A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18374-1/IUG2523**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18374-1/IUG2523**

No Sample Data Qualified in this SDG

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)^M

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	Client →
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	EB = 2, 4 FB = FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-179521)

Validated Samples:

Water

1	PZ-158_072211_01	11	11 G 3671- Bk 1	21	31
2	EB_PZ-158_072211	12		22	32
3	PZ-157_072211_01	13		23	33
4	EB_PZ-157_072211A	14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 22, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-159_072211_01

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-78475/1-A	7/27/11	Benzo(a)anthracene Chrysene Fluoranthene Di-n-butylphthalate Di-n-octylphthalate	0.00454 ug/L 0.00456 ug/L 0.00587 ug/L 0.0283 ug/L 0.0631 ug/L	All samples in SDG 280-18374-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-159_072211_01	Fluoranthene Di-n-butylphthalate Di-n-octylphthalate	0.0097 ug/L 0.056 ug/L 0.090 ug/L	9.5U ug/L 9.5U ug/L 9.5U ug/L

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18374-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Compound	Flag	A or P	Reason
280-18374-1	PZ-159_072211_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18374-1	PZ-159_072211_01	Fluoranthene Di-n-butylphthalate Di-n-octylphthalate	9.5U ug/L 9.5U ug/L 9.5U ug/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18374-1**

No Sample Data Qualified in this SDG

LDC #: 26050D2c

VALIDATION COMPLETENESS WORKSHEET

Date: 8/28/11

SDG #: 280-18374-1

Level ~~W~~ V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *[Signature]*

2nd Reviewer: *[Signature]*

METHOD: GC/MS ^{Semivolatile} ~~Polynuclear Aromatic Hydrocarbons~~ (EPA SW846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-159_072211_01	11	<i>MB 280-78475/AA</i>	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzol(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JUU. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzol(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2-Dybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzol(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	OQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzol(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzol(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 22, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-158_072211_01
EB_PZ-158_072211
PZ-157_072211_01
EB_PZ-157_072211A

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls were found in the method blanks.

Sample EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18374-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18374-1	PZ-158_072211_01 EB_PZ-158_072211 PZ-157_072211_01 EB_PZ-157_072211A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-18374-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-18374-1**

No Sample Data Qualified in this SDG

LDC #: 26050D3b
 SDG #: 280-18374-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LES 1b
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	MD	EB = 2, 4

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *Water*

1	PZ-158_072211_01	11	MB 280-75320/1	21	31
2	EB_PZ-158_072211	12		22	32
3	PZ-157_072211_01	13		23	33
4	EB_PZ-157_072211A	14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 22, 2011
LDC Report Date: August 29, 2011
Matrix: Water
Parameters: Metals
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-159_072211_01F
PZ-158_072211_01F
EB_PZ-158_072211F
PZ-157_072211_01F
EB_PZ-157_072211AF
RD-57_072211_01
RD-57_072211_01F
PZ-159_072211_01FMS
PZ-159_072211_01FMSD
PZ-158_072211_01FMS
PZ-158_072211_01FMSD

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020 and 6010B for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Boron	0.0031 mg/L	PZ-159_072211_01F PZ-158_072211_01F EB_PZ-158_072211F PZ-157_072211_01F EB_PZ-157_072211AF
PB (prep blank)	Barium Thallium	0.00323 mg/L 0.0000291 mg/L	RD-57_072211_01

Data qualification by preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-57_072211_01	Thallium	0.000060 mg/L	0.000060U mg/L

Samples EB_PZ-158_072211F and EB_PZ-157_072211AF were identified as equipment blanks. No metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_PZ-158_072211F	7/22/11	Calcium	0.046 mg/L	PZ-158_072211_01F
EB_PZ-157_072211AF	7/22/11	Calcium Sodium Barium Molybdenum Nickel	0.040 mg/L 0.11 mg/L 0.00050 mg/L 0.00015 mg/L 0.00062 mg/L	PZ-157_072211_01F

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-159_072211_01F PZ-158_072211_01F PZ-157_072211_01F

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-159_072211_01F	Thallium	0.000041 mg/L	0.000041U mg/L
PZ-158_072211_01F	Thallium	0.000022 mg/L	0.000022U mg/L
PZ-157_072211_01F	Nickel	0.0015 mg/L	0.0015U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18374-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18374-1	PZ-159_072211_01F PZ-158_072211_01F EB_PZ-158_072211F PZ-157_072211_01F EB_PZ-157_072211AF RD-57_072211_01 RD-57_072211_01F	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Laboratory Blank Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18374-1	RD-57_072211_01	Thallium	0.000060U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Metals - Field Blank Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18374-1	PZ-159_072211_01F	Thallium	0.000041U mg/L	A	F
280-18374-1	PZ-158_072211_01F	Thallium	0.000022U mg/L	A	F
280-18374-1	PZ-157_072211_01F	Nickel	0.0015U mg/L	A	F

LDC #: 26050D4
 SDG #: 280-18374-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8-24-11
 Page: 1 of 1
 Reviewer: OC
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020/7000) 60103

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS/D
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV.	Field Blanks	SW	EB = 3, 5; FB = FB-071211-19F

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

CSD6: 280-17152-1

Validated Samples:

water

1	PZ-159_072211_01F	11	(X6) F	21		31	
2	PZ-158_072211_01F	12		22		32	
3	EB_PZ-158_072211F	13		23		33	
4	PZ-157_072211_01F	14		24		34	
5	EB_PZ-157_072211AF	15		25		35	
6	RD-57_072211_01	16		26		36	
7	PZ-159_072211_01FMS	17		27		37	
8	PZ-159_072211_01FMSD	18		28		38	
9	PZ-158_072211_01FMS	19		29		39	
10	PZ-158_072211_01FMSD	20		30		40	

Notes: F = dissolved metals

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Sample Concentration units, unless otherwise noted: mg/L

Soil preparation factor applied: NA
Associated Samples: 1-5
Reason Code: B

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	No Qual					
B		0.0031		0.0155						

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 6

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	6					
Ba		0.00323		0.01615						
Tl		0.0000291		0.0001	0.000060					

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Field Blanks

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks?

Blank units: mg/L Associated sample units: mg/L

Sampling date: 7/12/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other:

Reason: F

Associated Samples: 1, 2, 4

Analyte	Blank ID	Action Limit	Sample Identification	
	FB_071211_19F (SDG: 280-17952-1)		1	2
Ag	0.000018	0.00009		
Tl	0.000033	0.000165	0.000041	0.000022

Sampling date: 7/22/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other:

Associated Samples: 2

Analyte	Blank ID	Action Limit	Sample Identification	
	3		No Qualifiers	
Ca	0.046	0.23		

Sampling date: 7/22/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other:

Associated Samples: 4

Analyte	Blank ID	Action Limit	Sample Identification	
	5		4	
Ca	0.040	0.2		
Na	0.11	0.55		
Ba	0.00050	0.0025		
Mo	0.00015	0.00075		
Ni	0.00062	0.0031	0.0015	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 22, 2011
LDC Report Date: August 28, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-159_072211_01
ES-29_072211_01
ES-14_072211_01
PZ-158_072211_01
EB_PZ-158_072211
PZ-157_072211_01
EB_PZ-157_072211A
RD-57_072211_01
PZ-159_072211_01MS
PZ-159_072211_01MSD
PZ-159_072211_01DUP
RD-57_072211_01MS
RD-57_072211_01MSD
RD-57_072211_01DUP

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate and Sulfate, and EPA Method 314.0 for Perchlorate.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

Samples EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No contaminant concentrations were found.

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18374-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18374-1	PZ-159_072211_01 ES-29_072211_01 ES-14_072211_01 PZ-158_072211_01 EB_PZ-158_072211 PZ-157_072211_01 EB_PZ-157_072211A RD-57_072211_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18374-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18374-1**

No Sample Data Qualified in this SDG

LDC #: 26050D6
 SDG #: 280-18374-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8-24-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate-P, Sulfate (EPA Method 300.0), Perchlorate (EPA Method 314.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/22/11
II	Initial calibration	N	
III.	Calibration verification	N	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS/P
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	ND	EB=5, 7 ; FB=FB 07/21/11-19F

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

CSDG: 280-17952-1

Validated Samples: WATER

1	PZ-159_072211_01	11	PZ-159_072211_01DUP	21		31	
2	ES-29_072211_01	12	RD-57_072211_01MS	22		32	
3	ES-14_072211_01	13	RD-57_072211_01MSD	23		33	
4	PZ-158_072211_01	14	RD-57_072211_01DUP	24		34	
5	EB_PZ-158_072211	15		25		35	
6	PZ-157_072211_01	16		26		36	
7	EB_PZ-157_072211A	17		27		37	
8	RD-57_072211_01	18		28		38	
9	PZ-159_072211_01MS	19		29		39	
10	PZ-159_072211_01MSD	20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 22, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18374-1

Sample Identification

PZ-159_072211_01
PZ-158_072211_01
EB_PZ-158_072211
PZ-157_072211_01
EB_PZ-157_072211A

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Samples EB_PZ-158_072211 and EB_PZ-157_072211A were identified as equipment blanks. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18374-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18374-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18374-1	PZ-159_072211_01 PZ-158_072211_01 EB_PZ-158_072211 PZ-157_072211_01 EB_PZ-157_072211A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18374-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18374-1**

No Sample Data Qualified in this SDG

LDC #: 26050D8
 SDG #: 280-18374-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: JVB
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client spec
VII.	Laboratory control samples	A	LCS 17
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 3, 5 FB = FB_071711-19

(280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	PZ-159_072211_01	11	MB 280-76240 LA	21	31
2	PZ-158_072211_01	12		22	32
3	EB_PZ-158_072211	13		23	33
4	PZ-157_072211_01	14		24	34
5	EB_PZ-157_072211A	15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____



Laboratory Data Consultants, Inc.

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Phone 760.634.0437

Web www.lab-data.com

Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26050:

<u>SDG #</u>	<u>Fraction</u>
280-17902-2, 280-17952-2 280-18148-2, 280-18374-1/ IUG2523, 280-18415-1 280-18711-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Diesel Range Organics, Hydrazine, Perchlorate

The data validation was performed under EPA Level IV/IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		Herb. (8151A)		DRO (8015B)		CLO ₄ (6860)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC)								
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S					
Matrix: Water/Soil																																						
A	280-17902-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-						
B	280-17952-2	08/16/11	09/07/11	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
C	280-18148-2	08/16/11	09/07/11	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
D	280-18374-1/ IUG2523	08/16/11	09/07/11	12	0	6	0	5	0	1	0	4	0	4	0	1	0	6	0	-	-	-	5	0	-	-	-	-	-	-	-	-						
E	280-18415-1	08/16/11	09/07/11	10	0	10	0	7	0	-	-	7	0	-	-	-	-	-	-	-	-	2	0	-	-	7	0	7	0	7	0							
F	280-18711-1	08/16/11	09/07/11	10	0	10	0	5	0	-	-	5	0	-	-	-	-	-	-	-	0	5	0	-	-	1	0	5	0	1	0							
F	280-18711-1	08/16/11	09/07/11	0	0	0	0	0	0	-	-	0	0	-	-	-	-	-	-	-	3	0	0	-	-	0	0	0	0	0	0							
Total																																						
				32	0	26	0	17	0	1	0	23	0	4	0	1	0	6	0	3	0	3	0	12	0	1	0	8	0	12	0	8	0	0	0	0	0	154

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CN- (9012A)		CLO ₄ (314.0)		pH (9040B)																
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S													
Matrix: Water/Soil																																				
D	280-18374-1	08/16/11	09/07/11	-	-	7	0	5	0	5	0	7	0	5	0	-	-	1	0	-	-															
E	280-18415-1	08/16/11	09/07/11	7	0	-	-	-	-	7	0	7	0	-	-	-	-	7	0	7	0															
F	280-18711-1	08/16/11	09/07/11	5	0	-	-	-	-	5	0	5	0	-	-	0	0	5	0	5	0															
F	280-18711-1	08/16/11	09/07/11	0	0	-	-	-	-	0	0	0	0	-	-	3	0	0	0	0	0															
Total																																				
				12	0	7	0	5	0	17	0	19	0	5	0	3	0	13	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 25, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18415-1

Sample Identification

HAR-05_072511_01
TB_HAR-05_072511
HAR-23_072511_01
RD-58A_072511_01
RD-58A_072511_36
RD-58B_072511_01
RD-58C_072511_01
TB_RD-58C_072511
HAR-33_072511_01
TB_HAR-33_072511
HAR-05_072511_01MS
HAR-05_072511_01MSD
RD-58B_072511_01MS
RD-58B_072511_01MSD

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
RD-58A_072511_36	Trichloroethene	15	14	J (all detects) UJ (all non-detects)	A
HAR-33_072511_01	1,1,2-Trichloro-1,2,2-trifluoroethane	15	14	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-80391/4	8/8/11	Acetone	2.96 ug/L	RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 TB_RD-58C_072511 HAR-33_072511_01 TB_HAR-33_072511

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-58A_072511_01	Acetone	4.8 ug/L	10U ug/L
RD-58A_072511_36	Acetone	3.3 ug/L	10U ug/L
RD-58B_072511_01	Acetone	3.8 ug/L	10U ug/L
RD-58C_072511_01	Acetone	3.3 ug/L	10U ug/L
HAR-33_072511_01	Acetone	18 ug/L	18U ug/L
TB_HAR-33_072511	Acetone	3.0 ug/L	10U ug/L

Samples TB_HAR-05_072511, TB_RD-58C_072511, and TB_HAR-33_072511 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_HAR-05_072511	7/25/11	1,1-Dichloroethene Acetone	0.44 ug/L 2.1 ug/L	HAR-05_072511_01 HAR-23_072511_01
TB_HAR-33_072511	7/25/11	Acetone	3.0 ug/L	HAR-33_072511_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-23_072511_01	Acetone	2.6 ug/L	10U ug/L
HAR-33_072511_01	Acetone	18 ug/L	18U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
HAR-05_072511_01	Dibromofluoromethane	81 (86-118)	All TCL compounds	J (all detects) UJ (all non-detects)	A
TB_HAR-05_072511	Dibromofluoromethane	79 (86-118)	All TCL compounds	J (all detects) UJ (all non-detects)	P
RD-58A_072511_01	1,2-Dichloroethane-d4 Toluene-d8	126 (80-120) 117 (88-110)	All TCL compounds except Trichloroethene	J (all detects)	A
RD-58A_072511_36	1,2-Dichloroethane-d4 Toluene-d8	124 (80-120) 111 (88-110)	Trichloroethene	J (all detects)	A
RD-58B_072511_01	Dibromofluoromethane	84 (86-118)	All TCL compounds	J (all detects) UJ (all non-detects)	P
RD-58C_072511_01	Dibromofluoromethane	85 (86-118)	All TCL compounds	J (all detects) UJ (all non-detects)	P
HAR-33_072511_01	Dibromofluoromethane	84 (86-118)	1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects) UJ (all non-detects)	A
HAR-33_072511_01	1,2-Dichloroethane-d4	124 (80-120)	All TCL compounds except 1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects)	A
MB 280-80227/6	Dibromofluoromethane	82 (86-118)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MB 280-80566/4	Dibromofluoromethane	80 (86-118)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-58B_072511_01MS/MSD (RD-58B_072511_01)	1,2-Dichloroethane Carbon tetrachloride	125 (74-120) -	126 (74-120) 122 (80-120)	- -	J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18415-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-58A_072511_01 and RD-58A_072511_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-58A_072511_01	RD-58A_072511_36			
1,1,2-Trichloro-1,2,2-trifluoroethane	4.1	4.0	2 (≤35)	-	-
Acetone	4.8	3.3	37 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-58A_072511_01	RD-58A_072511_36			
cis-1,2-Dichloroethene	1.9	1.8	5 (≤35)	-	-
Trichloroethene	100	120	18 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18415-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18415-1	RD-58A_072511_36	Trichloroethene	J (all detects) UJ (all non-detects)	A	Technical holding times (H)
280-18415-1	HAR-33_072511_01	1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects) UJ (all non-detects)	A	Technical holding times (H)
280-18415-1	HAR-05_072511_01	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18415-1	TB_HAR-05_072511 RD-58B_072511_01 RD-58C_072511_01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R) (S)
280-18415-1	RD-58A_072511_01	All TCL compounds except Trichloroethene	J (all detects)	A	Surrogate spikes (%R) (S)
280-18415-1	RD-58A_072511_36	Trichloroethene	J (all detects)	A	Surrogate spikes (%R) (S)
280-18415-1	HAR-33_072511_01	1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18415-1	HAR-33_072511_01	All TCL compounds except 1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects)	A	Surrogate spikes (%R) (S)
280-18415-1	RD-58B_072511_01	1,2-Dichloroethane Carbon tetrachloride	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18415-1	HAR-05_072511_01 TB_HAR-05_072511 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 TB_RD-58C_072511 HAR-33_072511_01 TB_HAR-33_072511	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18415-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18415-1	RD-58A_072511_01	Acetone	10U ug/L	A	B

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18415-1	RD-58A_072511_36	Acetone	10U ug/L	A	B
280-18415-1	RD-58B_072511_01	Acetone	10U ug/L	A	B
280-18415-1	RD-58C_072511_01	Acetone	10U ug/L	A	B
280-18415-1	HAR-33_072511_01	Acetone	18U ug/L	A	B
280-18415-1	TB_HAR-33_072511	Acetone	10U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18415-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18415-1	HAR-23_072511_01	Acetone	10U ug/L	A	T
280-18415-1	HAR-33_072511_01	Acetone	18U ug/L	A	T

LDC #: 26050E1a
 SDG #: 280-18415-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: *SVL*
 2nd Reviewer: *[Signature]*

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/25/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation ^{RL} / RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 4, 5
XVII.	Field blanks	SW	TB = 2, 8, 10

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1 ⁺	HAR-05_072511_01	11	HAR-05_072511_01MS	21 ¹	MB 280-80227/6	31	
2 ⁺	TB HAR-05_072511	12	HAR-05_072511_01MSD	22 ²	MB 280-80391/4	32	
3 ⁺	HAR-23_072511_01	13	RD-58B_072511_01MS	23 ³	MB 280-80566/4	33	(TT only)
4 ²	RD-58A_072511_01 <i>D</i>	14	RD-58B_072511_01MSD	24		34	
5 ²	RD-58A_072511_36 <i>D</i>	15		25		35	
6 ²	RD-58B_072511_01	16		26		36	
7 ²	RD-58C_072511_01	17		27		37	
8 ²	TB RD-58C_072511	18		28		38	
9 ^{2/3}	HAR-33_072511_01	19		29		39	
10 ²	TB HAR-33_072511	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethane	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethane, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y N / N/A
 Were all surrogate %R within QC limits?
 Y N / N/A
 If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications (Code: S)
		1	DFM	81 (86-118)	J/MS/A (qual all) ↓
		2	DFM	79 () ↓	J/MS/P ↓
		4	DCE TOL	126 (80-120) 117 (88-110)	J dets/A (all except S) ↓
		5 (44)	DCE TOL	() 124 (80-120) 111 (88-110)	(qual S only) ↓
		6	DFM	84 (86-118)	J/MS/P (qual all TOL) ↓
		7	DFM	85 ()	J/MS/P ↓
		9 (44)	DFM	84 () ↓	J/MS/A (qual TTT only) ↓
		9	DCE	124 (80-120)	J dets/A (qual all except TTT) ↓
		MB 280-80 227/6	DFM	82 (86-118)	J/MS/P (qual all TOL) ↓
		MB 280-80 566/4	DFM	80 () ↓	↓

QC Limits (Water)

- 88-110
- 86-115
- 80-120
- 86-118

QC Limits (Soil)

- 81-117
- 74-121
- 80-120
- 70-120

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

- Y N NA Were field duplicate pairs identified in this SDG?
- Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	4	5		
1,1,2-Trichloro-1,2,2-trifluoroethane	4.1	4.0	2	
Acetone	4.8	3.3	37	NQ (<5xRL)
cis-1,2-Dichloroethene	1.9	1.8	5	
Trichloroethene	100	120	18	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 25, 2011
LDC Report Date: August 28, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18415-1

Sample Identification

HAR-05_072511_01
TB_HAR-05_072511
HAR-23_072511_01
RD-58A_072511_01
RD-58A_072511_36
RD-58B_072511_01
RD-58C_072511_01
TB_RD-58C_072511
HAR-33_072511_01
TB_HAR-33_072511

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_HAR-05_072511, TB_RD-58C_072511, and TB_HAR-33_072511 were identified as trip blanks. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18415-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-58A_072511_01 and RD-58A_072511_36 were identified as field duplicates. No 1,4-dioxane was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Data Qualification Summary - SDG 280-18415-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18415-1	HAR-05_072511_01 TB_HAR-05_072511 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 TB_RD-58C_072511 HAR-33_072511_01 TB_HAR-33_072511	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

LDC #: 26050E1b
 SDG #: 280-18415-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 4, 5
XVII.	Field blanks	ND	TB = 2, 8, 10

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-05_072511_01	11	MP 280-79725/C	21		31	
2	TB HAR-05_072511	12		22		32	
3	HAR-23_072511_01	13		23		33	
4	RD-58A_072511_01 D	14		24		34	
5	RD-58A_072511_36 D	15		25		35	
6	RD-58B_072511_01	16		26		36	
7	RD-58C_072511_01	17		27		37	
8	TB RD-58C_072511	18		28		38	
9	HAR-33_072511_01	19		29		39	
10	TB HAR-33_072511	20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 25, 2011
LDC Report Date: August 28, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18415-1

Sample Identification

HAR-05_072511_01
HAR-23_072511_01
RD-58A_072511_01
RD-58A_072511_36
RD-58B_072511_01
RD-58C_072511_01
HAR-33_072511_01
HAR-05_072511_01MS
HAR-05_072511_01MSD
HAR-05_072511_01DUP
HAR-33_072511_01DUP

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
HAR-05_072511_01 HAR-05_072511_01DUP	pH	54 hours	48 hours	J (all detects) UJ (all non-detects)	P
HAR-23_072511_01	pH	51.75 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-58A_072511_01 RD-58A_072511_36	pH	52 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-58B_072511_01	pH	50 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-58C_072511_01 HAR-33_072511_01	pH	53.5 hours	48 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.129 mg/L	All samples in SDG 280-18415-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-05_072511_01	Ammonia as N	0.11 mg/L	0.11U mg/L
HAR-23_072511_01	Ammonia as N	0.089 mg/L	0.089U mg/L
RD-58A_072511_01	Ammonia as N	0.078 mg/L	0.078U mg/L
RD-58B_072511_01	Ammonia as N	0.066 mg/L	0.066U mg/L
RD-58C_072511_01	Ammonia as N	0.15 mg/L	0.15U mg/L

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18415-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples RD-58A_072511_01 and RD-58A_072511_36 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD (Limits)	Flag	A or P
	RD-58A_072511_01	RD-58A_072511_36			
Fluoride	0.27 mg/L	0.26 mg/L	4 (≤ 35)	-	-
Nitrate	0.20 mg/L	0.19 mg/L	5 (≤ 35)	-	-
Ammonia as N	0.078 mg/L	0.055U mg/L	35 (≤ 35)	-	-
pH	7.03 units	7.15 units	2 (≤ 35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18415-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18415-1	HAR-05_072511_01 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 HAR-33_072511_01	pH	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18415-1	HAR-05_072511_01 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 HAR-33_072511_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18415-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18415-1	HAR-05_072511_01	Ammonia as N	0.11U mg/L	A	B
280-18415-1	HAR-23_072511_01	Ammonia as N	0.089U mg/L	A	B
280-18415-1	RD-58A_072511_01	Ammonia as N	0.078U mg/L	A	B
280-18415-1	RD-58B_072511_01	Ammonia as N	0.066U mg/L	A	B
280-18415-1	RD-58C_072511_01	Ammonia as N	0.15U mg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18415-1

No Sample Data Qualified in this SDG

LDC #: 26050E6
 SDG #: 280-18415-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/25/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	SW	
V.	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS/D
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(3,4)
XI.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinstate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *Water*

1	HAR-05_072511_01	11	HAR-33_072511_01DUP	21		31	
2	HAR-23_072511_01	12		22		32	
3	RD-58A_072511_01	13		23		33	
4	RD-58A_072511_36	14		24		34	
5	RD-58B_072511_01	15		25		35	
6	RD-58C_072511_01	16		26		36	
7	HAR-33_072511_01	17		27		37	
8	HAR-05_072511_01MS	18		28		38	
9	HAR-05_072511_01MSD	19		29		39	
10	HAR-05_072511_01DUP	20		30		40	

Notes: _____

LDC# 26050E6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	3	4		
Fluoride	0.27	0.26	4	
Nitrate	0.20	0.19	5	
Ammonia-N	0.078	0.055U	35	
pH (units)	7.03	7.15	2	

V:\FIELD DUPLICATES\FD_inorganic\26050E6.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 25, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18415-1

Sample Identification

HAR-05_072511_01
HAR-23_072511_01
RD-58A_072511_01
RD-58A_072511_36
RD-58B_072511_01
RD-58C_072511_01
HAR-33_072511_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18415-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-58A_072511_01 and RD-58A_072511_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-58A_072511_01	RD-58A_072511_36			
Bis(2-ethylhexyl)phthalate	9.9U	0.57	178 (≤35)	NQ	-
Di-n-octylphthalate	9.9U	2.1	130 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18415-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18415-1	HAR-05_072511_01 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 HAR-33_072511_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 3, 4
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-05_072511_01	11	1	MB 280-78950 / 1-A	21		31
2	HAR-23_072511_01	12	X	MB 280-79267 / 1-A	22		32
3	RD-58A_072511_01	13	D		23		33
4	RD-58A_072511_36	14	D		24		34
5	RD-58B_072511_01	15			25		35
6	RD-58C_072511_01	16			26		36
7	HAR-33_072511_01	17			27		37
8		18			28		38
9		19			29		39
10		20			30		40

MB = 1, 2
 Phthalates + NB = 3-7

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

- ~~Y~~ ~~N~~ ~~NA~~ Were field duplicate pairs identified in this SDG?
- ~~Y~~ ~~N~~ ~~NA~~ Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	3	4		
Bis(2-ethylhexyl)phthalate	9.9U	0.57	178	NQ (<5xRL)
Di-n-octylphthalate	9.9U	2.1	130	NQ (<5xRL)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 25, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18415-1

Sample Identification

HAR-05_072511_01

HAR-23_072511_01

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18415-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18415-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18415-1	HAR-05_072511_01 HAR-23_072511_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

LDC #: 26050E8
 SDG #: 280-18415-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	A	LCS / D
VIII.	Target compound identification	N	
IX.	Compound quantitation/REL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	HAR-05_072511_01	11	MB 280-78632 / 1-A	21		31	
2	HAR-23_072511_01	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 25, 2011
LDC Report Date: August 28, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18415-1

Sample Identification

HAR-05_072511_01
HAR-23_072511_01
RD-58A_072511_01
RD-58A_072511_36
RD-58B_072511_01
RD-58C_072511_01
HAR-33_072511_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample FB_HAR_23_072511_19 (from SDG 280-18415-2) was identified as a field blank. No N-nitrosodimethylamine was found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_HAR_23_072511_19	7/25/11	N-Nitrosodimethylamine	0.016 ug/L	HAR-23_072511_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-23_072511_01	N-Nitrosodimethylamine	0.015 ug/L	0.015U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18415-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-58A_072511_01 and RD-58A_072511_36 and samples HAR-23_072511_01 and HAR-23_072511_36 (from SDG 280-18415-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-23_072511_01	HAR-23_072511_36			
N-Nitrosodimethylamine	0.015	0.0050U	100 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18415-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18415-1	HAR-05_072511_01 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 HAR-33_072511_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18415-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18415-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18415-1	HAR-23_072511_01	N-Nitrosodimethylamine	0.015U ug/L	A	F

LDC #: 26050E2b
 SDG #: 280-18415-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)^M

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	RES ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 3, 4 D ₂ = 2 + HAR-23_072511-36
XVII.	Field blanks	SW	FB = FB_HAR-23_072511-19 (280-18415-2)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	HAR-05_072511_01	11	MB 280-79070/LA	21		31	
2	HAR-23_072511_01	12		22		32	
3	RD-58A_072511_01 D	13		23		33	
4	RD-58A_072511_36 D	14		24		34	
5	RD-58B_072511_01	15		25		35	
6	RD-58C_072511_01	16		26		36	
7	HAR-33_072511_01	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-23_072511_01	HAR-23_072511_36		
NDMA	0.015	0.0050U	100	NQ (<5xRL)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 25, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18415-1

Sample Identification

HAR-05_072511_01
HAR-23_072511_01
RD-58A_072511_01
RD-58A_072511_36
RD-58B_072511_01
RD-58C_072511_01
HAR-33_072511_01
HAR-05_072511_01MS
HAR-05_072511_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18415-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-58A_072511_01 and RD-58A_072511_36 were identified as field duplicates. No hydrazines were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18415-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18415-1	HAR-05_072511_01 HAR-23_072511_01 RD-58A_072511_01 RD-58A_072511_36 RD-58B_072511_01 RD-58C_072511_01 HAR-33_072511_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18415-1**

No Sample Data Qualified in this SDG

LDC #: 26050E76

VALIDATION COMPLETENESS WORKSHEET

Date: 8/24/11

SDG #: 280-18415-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: ML

2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS / D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	D = 3, 4
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-05_072511_01	11	MB 280-79636/25	21		31	
2	HAR-23_072511_01	12		22		32	
3	RD-58A_072511_01 <i>D</i>	13		23		33	
4	RD-58A_072511_36 <i>D</i>	14		24		34	
5	RD-58B_072511_01	15		25		35	
6	RD-58C_072511_01	16		26		36	
7	HAR-33_072511_01	17		27		37	
8	HAR-05_072511_01MS	18		28		38	
9	HAR-05_072511_01MSD	19		29		39	
10		20		30		40	

Notes: _____



Laboratory Data Consultants, Inc.

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Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 7, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 16, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26050:

<u>SDG #</u>	<u>Fraction</u>
280-17902-2, 280-17952-2 280-18148-2, 280-18374-1/ IUG2523, 280-18415-1 280-18711-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Diesel Range Organics, Hydrazine, Perchlorate

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss Metals (SW846)		Herb. (8151A)		DRO (8015B)		CLO ₂ (6860)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																			
A	280-17902-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
B	280-17952-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
C	280-18148-2	08/16/11	09/07/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
D	280-18374-1/ IUG2523	08/16/11	09/07/11	12	0	6	0	5	0	1	0	4	0	4	0	1	0	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E	280-18415-1	08/16/11	09/07/11	10	0	10	0	7	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
F	280-18711-1	08/16/11	09/07/11	10	0	10	0	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
F	280-18711-1	08/16/11	09/07/11	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total																																			
				32	0	26	0	17	0	1	0	23	0	4	0	1	0	6	0	3	0	3	0	12	0	1	0	8	0	12	0	8	0	0	0

EDD Client Select IV LDC #26050 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CN- (9012A)		CLO ₂ (314.0)		pH (9040B)		
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W
Matrix: Water/Soil																						
D	280-18374-1	08/16/11	09/07/11	-	-	7	0	5	0	5	0	7	0	5	0	-	-	-	-	-	-	
E	280-18415-1	08/16/11	09/07/11	7	0	-	-	-	-	7	0	7	0	-	-	-	-	-	-	-	-	
F	280-18711-1	08/16/11	09/07/11	5	0	-	-	-	-	5	0	5	0	-	-	-	-	-	-	-	-	
F	280-18711-1	08/16/11	09/07/11	0	0	-	-	-	-	0	0	0	0	-	-	-	-	-	-	-	-	
Total																						
				12	0	7	0	5	0	17	0	19	0	5	0	3	0	13	0	12	0	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 2, 2011
LDC Report Date: August 29, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-07_080211_01
TB_HAR-07_080211
RD-41B_080211_01
RD-41B_080211_36
HAR-28_080211_01
HAR-27_080211_01
TB_HAR-27_080211
HAR-08_080211_01
TB_HAR-08_080211
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD
RD-41B_080211_01MS
RD-41B_080211_01MSD

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-80808/4	8/10/11	Methylene chloride	0.446 ug/L	RD-41B_080211_01 RD-41B_080211_36 HAR-28_080211_01 HAR-27_080211_01 TB_HAR-27_080211 HAR-08_080211_01 TB_HAR-08_080211 HAR-29_080211_01
MB 280-81024/6	8/10/11	Methylene chloride	0.872 ug/L	HAR-07_080211_01 TB_HAR-07_080211

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_HAR-07_080211	Methylene chloride	0.34 ug/L	5.0U ug/L
RD-41B_080211_01 (5X)	Methylene chloride	3.0 ug/L	25U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-41B_080211_36 (5X)	Methylene chloride	5.9 ug/L	25U ug/L
HAR-28_080211_01	Methylene chloride	0.78 ug/L	5.0U ug/L
HAR-27_080211_01	Methylene chloride	0.69 ug/L	5.0U ug/L
TB_HAR-27_080211	Methylene chloride	1.2 ug/L	5.0U ug/L
HAR-08_080211_01	Methylene chloride	0.67 ug/L	5.0U ug/L
TB_HAR-08_080211	Methylene chloride	1.6 ug/L	5.0U ug/L
HAR-29_080211_01	Methylene chloride	0.48 ug/L	5.0U ug/L

Samples TB_HAR-07_080211, TB_HAR-27_080211, and TB_HAR-08_080211 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_HAR-07_080211	8/2/11	Acetone Methylene chloride	2.2 ug/L 0.34 ug/L	HAR-07_080211_01
TB_HAR-27_080211	8/2/11	Acetone Methylene chloride	3.3 ug/L 1.2 ug/L	RD-41B_080211_01 RD-41B_080211_36 HAR-28_080211_01 HAR-27_080211_01
TB_HAR-08_080211	8/2/11	Acetone Methylene chloride	15 ug/L 1.6 ug/L	HAR-08_080211_01 HAR-29_080211_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-41B_080211_01	Methylene chloride	3.0 ug/L	25U ug/L
RD-41B_080211_36	Methylene chloride	5.9 ug/L	25U ug/L
HAR-28_080211_01	Acetone Methylene chloride	2.4 ug/L 0.78 ug/L	10U ug/L 5.0U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-27_080211_01	Acetone Methylene chloride	13 ug/L 0.69 ug/L	13U ug/L 5.0U ug/L
HAR-08_080211_01	Acetone Methylene chloride	5.3 ug/L 0.67 ug/L	10U ug/L 5.0U ug/L
HAR-29_080211_01	Acetone Methylene chloride	43 ug/L 0.48 ug/L	43U ug/L 5.0U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-41B_080211_01	Bromofluorobenzene	118 (86-115)	cis-1,2-Dichloroethene	J (all detects)	A
HAR-08_080211_01	Toluene-d8	85 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since the sample concentration was greater than the spiked concentration, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-81024/4,5 (HAR-07_080211_01 TB_HAR-07_080211 MB 280-81024/6)	cis-1,2-Dichloroethene	-	-	22 (≤20)	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-41B_080211_01 and RD-41B_080211_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-41B_080211_01	RD-41B_080211_36			
1,1-Dichloroethene	5.8	5.2	11 (≤35)	-	-
Acetone	50U	110	75 (≤35)	NQ	-
cis-1,2-Dichloroethene	1200	1200	0 (≤35)	-	-
Methylene chloride	3.0	5.9	65 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-41B_080211_01	RD-41B_080211_36			
trans-1,2-Dichloroethene	120	120	0 (≤35)	-	-
Trichloroethene	270	250	8 (≤35)	-	-
Vinyl chloride	23	22	4 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18711-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-1	RD-41B_080211_01	cis-1,2-Dichloroethene	J (all detects)	A	Surrogate spikes (%R) (S)
280-18711-1	HAR-08_080211_01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R) (S)
280-18711-1	HAR-07_080211_01 TB_HAR-07_080211	cis-1,2-Dichloroethene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (RPD) (E)
280-18711-1	HAR-07_080211_01 TB_HAR-07_080211 RD-41B_080211_01 RD-41B_080211_36 HAR-28_080211_01 HAR-27_080211_01 TB_HAR-27_080211 HAR-08_080211_01 TB_HAR-08_080211 HAR-29_080211_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18711-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18711-1	TB_HAR-07_080211	Methylene chloride	5.0U ug/L	A	B
280-18711-1	RD-41B_080211_01 (5X)	Methylene chloride	25U ug/L	A	B
280-18711-1	RD-41B_080211_36 (5X)	Methylene chloride	25U ug/L	A	B
280-18711-1	HAR-28_080211_01	Methylene chloride	5.0U ug/L	A	B
280-18711-1	HAR-27_080211_01	Methylene chloride	5.0U ug/L	A	B
280-18711-1	TB_HAR-27_080211	Methylene chloride	5.0U ug/L	A	B
280-18711-1	HAR-08_080211_01	Methylene chloride	5.0U ug/L	A	B
280-18711-1	TB_HAR-08_080211	Methylene chloride	5.0U ug/L	A	B
280-18711-1	HAR-29_080211_01	Methylene chloride	5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18711-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18711-1	RD-41B_080211_01	Methylene chloride	25U ug/L	A	T
280-18711-1	RD-41B_080211_36	Methylene chloride	25U ug/L	A	T
280-18711-1	HAR-28_080211_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	T
280-18711-1	HAR-27_080211_01	Acetone Methylene chloride	13U ug/L 5.0U ug/L	A	T
280-18711-1	HAR-08_080211_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	T
280-18711-1	HAR-29_080211_01	Acetone Methylene chloride	43U ug/L 5.0U ug/L	A	T

LDC #: 26050F1a
 SDG #: 280-18711-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: SVL
 2nd Reviewer: ✓

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RE/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 3, 4
XVII.	Field blanks	SW	TB = 2, 7, 9

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-07_080211_01	11	HAR-07_080211_01MS	21	MB 280-80808/4	31	
2	TB HAR-07_080211	12	HAR-07_080211_01MSD	22	MB 280-81024/6	32	
3	RD-41B_080211_01 D	13	RD-41B_080211_01MS	23		33	
4	RD-41B_080211_36 D	14	RD-41B_080211_01MSD	24		34	
5	HAR-28_080211_01	15		25		35	
6	HAR-27_080211_01	16		26		36	
7	TB HAR-27_080211	17		27		37	
8	HAR-08_080211_01	18		28		38	
9	TB HAR-08_080211	19		29		39	
10	HAR-29_080211_01	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y/N/NA
Y/N/NA

Were field duplicate pairs identified in this SDG?
 Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	3	4		
1,1-Dichloroethene	5.8	5.2	11	
Acetone	50U	110	75	NQ (<5xRL)
cis-1,2-Dichloroethene	1200	1200	0	
Methylene chloride	3.0	5.9	65	NQ (<5xRL)
trans-1,2-Dichloroethene	120	120	0	
Trichloroethene	270	250	8	
Vinyl chloride	23	22	4	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 2, 2011
LDC Report Date: August 28, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-07_080211_01
TB_HAR-07_080211
RD-41B_080211_01
RD-41B_080211_36
HAR-28_080211_01
HAR-27_080211_01
TB_HAR-27_080211
HAR-08_080211_01
TB_HAR-08_080211
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_HAR-07_080211, TB_HAR-27_080211, and TB_HAR-08_080211 were identified as trip blanks. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-41B_080211_01 and RD-41B_080211_36 were identified as field duplicates. No 1,4-dioxane was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-41B_080211_01	RD-41B_080211_36			
1,4-Dioxane	1.3	0.81	46 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18711-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-1	HAR-07_080211_01 TB_HAR-07_080211 RD-41B_080211_01 RD-41B_080211_36 HAR-28_080211_01 HAR-27_080211_01 TB_HAR-27_080211 HAR-08_080211_01 TB_HAR-08_080211 HAR-29_080211_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18711-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18711-1

No Sample Data Qualified in this SDG

LDC #: 26050F1b
 SDG #: 280-18711-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: D/L
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS (D)
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/REL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 3, 4
XVII.	Field blanks	ND	TB = 2, 7, 9

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	HAR-07_080211_01	11	HAR-07_080211_01MS	21	MB 280-80516/27	31
2	TB HAR-07_080211	12	HAR-07_080211_01MSD	22	MB 280-81016/5	32
3	RD-41B_080211_01	13		23		33
4	RD-41B_080211_36	14		24		34
5	HAR-28_080211_01	15		25		35
6	HAR-27_080211_01	16		26		36
7	TB HAR-27_080211	17		27		37
8	HAR-08_080211_01	18		28		38
9	TB HAR-08_080211	19		29		39
10	HAR-29_080211_01	20		30		40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	3	4		
1,4-Dioxane	1.3	0.81	46	NQ (<5xRL)

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-07_080211_01
HAR-28_080211_01
HAR-27_080211_01
HAR-08_080211_01
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18711-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-1	HAR-07_080211_01 HAR-28_080211_01 HAR-27_080211_01 HAR-08_080211_01 HAR-29_080211_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18711-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18711-1

No Sample Data Qualified in this SDG

LDC #: 26050F2a
 SDG #: 280-18711-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/R _f /LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-07_080211_01	11	NB 280-79724/1-A	21		31	
2	HAR-28_080211_01	12		22		32	
3	HAR-27_080211_01	13		23		33	
4	HAR-08_080211_01	14		24		34	
5	HAR-29_080211_01	15		25		35	
6	HAR-07_080211_01MS	16		26		36	
7	HAR-07_080211_01MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

NB = All

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 2, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-07_080211_01
HAR-28_080211_01
HAR-27_080211_01
HAR-08_080211_01
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB_HAR-07_080211_19 and FB_HAR-08_080211_19 (both from SDG 280-18711-2) were identified as field blank. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-07_080211_01 and HAR-07_080211_36 (from SDG 280-18711-2) and samples HAR-08_080211_01 and HAR-08_080211_36 (from SDG 280-18711-2) were identified as split samples. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-07_080211_01	HAR-07_080211_36			
N-Nitrosodimethylamine	0.026	0.025	4 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-08_080211_01	HAR-08_080211_01			
N-Nitrosodimethylamine	0.015	0.015	0 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18711-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-1	HAR-07_080211_01 HAR-28_080211_01 HAR-27_080211_01 HAR-08_080211_01 HAR-29_080211_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18711-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18711-1

No Sample Data Qualified in this SDG

LDC #: 26050F2b
 SDG #: 280-18711-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: *ML*
 2nd Reviewer: *[Signature]*

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/R _L /LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 1 + HAR-07-080211-36 (280-18711-2) D ₂ = 4 + HAR-08-080211-36
XVII.	Field blanks	ND	FB = FB-HAR-07-080211-19 ↓ = FB-HAR-08-080211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *WATER*

1	HAR-07_080211_01	D ₁	11	MB 280-80350/1-A	21		31
2	HAR-28_080211_01		12		22		32
3	HAR-27_080211_01		13		23		33
4	HAR-08_080211_01	D ₂	14		24		34
5	HAR-29_080211_01		15		25		35
6	HAR-07_080211_01MS		16		26		36
7	HAR-07_080211_01MSD		17		27		37
8			18		28		38
9			19		29		39
10			20		30		40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y ~~N~~ ~~NA~~ Were field duplicate pairs identified in this SDG?
Y ~~N~~ ~~NA~~ Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<=35%) RPD	Qualifications (Parent only)
	HAR-07_080211_01	HAR-07_080211_36		
NDMA	0.026	0.025	4	

Compound	Concentration (ug/L)		(<=35%) RPD	Qualifications (Parent only)
	HAR-08_080211_01A	HAR-08_080211_36A		
NDMA	0.015	0.015	0	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-27_080211_01
HAR-27_080211_36
FB_HAR-27_080211_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
8/8/11	031B3101	DB-XLB	Dinoseb	28.0	All samples in SDG 280-18711-1	J (all detects) UJ (all non-detects)	A
8/8/11	031B3101	DB-35MS	Dinoseb	23.7	All samples in SDG 280-18711-1	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Sample FB_HAR-27_080211_19 was identified as a field blank. No herbicide contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/(Matrix Spike) Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
HAR-27_080211_01	Dinoseb	118.8	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-1	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples HAR-27_080211_01 and HAR-27_080211_36 were identified as field duplicates. No herbicides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-27_080211_01	HAR-27_080211_36			
Dinoseb	0.17	0.17U	0 (≤35)	-	-

Samples HAR-27_080211_01 and HAR-27_080211_03 (from SDG IUH0484) were identified as split samples. No herbicides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-27_080211_01	HAR-27_080211_03			
Dinoseb	0.17	0.19U	11 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Data Qualification Summary - SDG 280-18711-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-1	HAR-27_080211_01 HAR-27_080211_36 FB_HAR-27_080211_19	Dinoseb	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-18711-1	HAR-27_080211_01	Dinoseb	J (all detects)	A	Compound quantitation and RLs (RPD) (*IX)
280-18711-1	HAR-27_080211_01 HAR-27_080211_36 FB_HAR-27_080211_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Laboratory Blank Data Qualification Summary - SDG 280-18711-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Field Blank Data Qualification Summary - SDG 280-18711-1**

No Sample Data Qualified in this SDG

LDC #: 26050F5
 SDG #: 280-18711-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 8/24/11
 Page: 1 of 1
 Reviewer: SVB
 2nd Reviewer: ✓

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	Initial calibration	NA	70 RSD \leq 20% ✓
III.	Calibration verification/ICV	NSW	CV/ICV \leq 20%
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	A	US 1b
VIII.	Target compound identification	NA	
IX.	Compound quantitation/Rt/LOQ/LODs	SW	
X.	System Performance	NA	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 1, 2 split (1, HAR-27-080211-03(S06) 10H048
XIII.	Field blanks	ND	FB = 3

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-27_080211_01	D	11	MD 280-79868/1-A	21	31
2	HAR-27_080211_36	D	12		22	32
3	FB HAR-27_080211_19		13		23	33
4			14		24	34
5			15		25	35
6			16		26	36
7			17		27	37
8			18		28	38
9			19		29	39
10			20		30	40

Notes: _____

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
What type of continuing calibration calculation was performed? <u>%D</u> or <u>%R</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a continuing calibration analyzed daily?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 20%.0 or percent recoveries 80-120%?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Regional Quality Assurance and Quality Control				

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X: Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI: Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII: System performance				
System performance was found to be acceptable.	/			
XIII: Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV: Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV: Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	1	2		
Dinoseb	0.17	0.17U	0	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<=35%) RPD	Qualifications (Parent only)
	1	HAR- 27_080211_03		
Dinoseb	0.17	0.19U	11	

LDC#: 2600 FC

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/1/2011	GCS M DBXLB	Dinoseb	1	18.9	46273	2141190529
			2	47.2	114979	13220170441
			3	236.0	576535	332392606225
			4	472.0	1124476	1264446274576
			5	709.0	1755313	3081123727969
			6	945.0	2215645	4909082766025
			7	1890.0	3852775	14843875200625

CF
2448.3
2436.0
2442.9
2382.4
2475.8
2344.6
2038.5
Ave 2366.9

Regression Output

	Calculated	Reported
Constant	b = 13.45490	b = 13.5753212
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² 0.9994065	r ² 0.9994
Degrees of Freedom		
X Coefficient(s)	m1 = 0.00034143	m1 = 0.00034137
Std Err of Coef.	3.75022E-11	3.74940E-11
Correlation Coefficient	0.999703	

LDC#: 2400 FS

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 2 of 2
 Reviewer: Jule
 2nd Reviewer: [Signature]

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/1/2011	GCS M DB 35MS	Dinoseb	1	18.9	87576	7669555776
			2	47.2	194047	37654238209
			3	236.0	896627	803939977129
			4	472.0	1749999	3062496500001
			5	709.0	2543144	6467581404736
			6	945.0	3503883	12277196077689
			7	1890.0	6241494	38956247352036

CF
 4633.7
 4111.2
 3799.3
 3707.6
 3586.9
 3707.8
 3302.4
 Ave 3835.5

Regression Output	
	Reported
Constant	b = 3.34102
Std Err of Y Est	b = 3.4594000
Coefficient of Determination (r ²)	r ² 0.9994
Degrees of Freedom	r ² 0.9994
X Coefficient(s)	m1 = m2 =
Std Err of Coef.	0.00024676 8.76171E-12
Correlation Coefficient	0.00024671 8.76007E-12
	0.999692

LDC # 26 050 FS

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = $100 * (N - C) / N$

Where:

N = Initial Calibration Factor or Nominal Amount

C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Average RRF Conc	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated % D
1	031B3101	8/8/2011	Dinoseb (DB 35MS)	472	360.5	360.5	23.7	23.7
			Dinoseb (DB XLB)	472	340	340	28.0	28.0

$Y = m1X + m2(X^2) + b$

Y= Amount

X= Response

	Response	Response ²	m1	m2	b	m1X	m2(X ²)	Conc
CCV1 2,4-D (DB 35MS)	1379744	1.90369E+12	0.000247	8.7600E-12	3.4594	340.396664	16.6764	360.53
CCV1 2,4-D (DB XLB)	872829	7.61830E+11	0.000341	3.7494E-11	13.5753	297.95764	28.5641	340.10
Sample 1 2,4-D (DB 35MS)	12056	1.45347E+08	0.000341	3.7494E-11	13.5753	4.11556	0.00545	17.70

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100
 Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
2,4-DCPAA	PB-3SMS	500	413.193	83	83	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$ Where SSC = Spiked sample concentration SA = Spike added
 RPD = $\frac{((SSCLCS - SSCLCSD) * 2) / ((SSCLCS + SSCLCSD)) * 100}{LCS}$ LCS = Laboratory Control Sample LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS/b 280 - 79868 / 2,3-A

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCSD		LCS/LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)	4.60	4.60	4.78	5.70	16.4	10.4	115	115	10	10		
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)												
2,4,6-Trinitrotoluene (8330)												

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 26050FS

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: DM
2nd Reviewer: L

METHOD: GC HPLC

Y N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?
Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration = $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

- A= Area or height of the compound to be measured
- Fv= Final Volume of extract
- Df= Dilution Factor
- RF= Average response factor of the compound in the initial calibration
- Vs= Initial volume of the sample
- Ws= Initial weight of the sample
- %S= Percent Solid

Example:

Sample ID. # 1 Compound Name Dinoscib
 $\Rightarrow Y = mX + m2X^2 + b$

Concentration = $12456 = 0.00041(12056) + 37994e-11(12056)^2 + 13.5753$

$y = 17.70$
final conc. = $(17.70)(10ml) = 0.1720 \text{ mg/L}$

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations	Qualifications

Comments: 0.17

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 2, 2011
LDC Report Date: August 28, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level IV & V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-07_080211_01
HAR-28_080211_01
HAR-27_080211_01**
HAR-27_080211_36**
FB_HAR-27_080211_19**
HAR-08_080211_01
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD
HAR-07_080211_01DUP
HAR-27_080211_01MS
HAR-27_080211_01MSD

**Indicates sample underwent Level IV review for Cyanide only.

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA SW 846 Method 9012A for Cyanide, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.0636 mg/L	HAR-07_080211_01 HAR-28_080211_01 HAR-27_080211_01** HAR-08_080211_01 HAR-29_080211_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-07_080211_01	Ammonia as N	0.078 mg/L	0.078U mg/L
HAR-28_080211_01	Ammonia as N	0.089 mg/L	0.089U mg/L
HAR-08_080211_01	Ammonia as N	0.086 mg/L	0.086U mg/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-29_080211_01	Ammonia as N	0.083 mg/L	0.083U mg/L

Sample FB_HAR-27_080211_19** was identified as a field blank. No contaminant concentrations were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_HAR-27_080211_19**	8/2/11	Cyanide	0.0049 mg/L	HAR-27_080211_01** HAR-27_080211_36**

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-27_080211_01**	Cyanide	0.0023 mg/L	0.0023U mg/L
HAR-27_080211_36**	Cyanide	0.0051 mg/L	0.0051U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable for samples on which a Level IV review was performed.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18711-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples HAR-27_080211_01** and HAR-27_080211_36** were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	HAR-27_080211_01**	HAR-27_080211_36**			
Cyanide	0.0023	0.0051	76 (≤35)	NQ	-

Samples HAR-27_080211_01** and HAR-27_080211_03 (from SDG IUH0484) were identified as split samples. No contaminant concentrations were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	HAR-27_080211_01**	HAR-27_080211_03			
Cyanide	0.0023	0.0030	26 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18711-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18711-1	HAR-07_080211_01 HAR-28_080211_01 HAR-27_080211_01** HAR-27_080211_36** FB_HAR-27_080211_19** HAR-08_080211_01 HAR-29_080211_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18711-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18711-1	HAR-07_080211_01	Ammonia as N	0.078U mg/L	A	B
280-18711-1	HAR-28_080211_01	Ammonia as N	0.089U mg/L	A	B
280-18711-1	HAR-08_080211_01	Ammonia as N	0.086U mg/L	A	B
280-18711-1	HAR-29_080211_01	Ammonia as N	0.083U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18711-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18711-1	HAR-27_080211_01**	Cyanide	0.0023U mg/L	A	F
280-18711-1	HAR-27_080211_36**	Cyanide	0.0051U mg/L	A	F

LDC #: 26050F6
 SDG #: 280-18711-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V / IV

Date: 8/2/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Cyanide (EPA SW846 Method 9012A), Fluoride, Nitrate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/2/11
II	Initial calibration	A	Not reviewed for level V
III.	Calibration verification	A	↓
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS/D
VIII.	Sample result verification	A	Not reviewed for level V
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(3, 4) split = (3, HAR-27-080211-03 (SIX: JUP 6484))
XI.	Field blanks	SW	FB = 5

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *water* *** Level 4 for cyanide only*

1	HAR-07_080211_01	11	HAR-27_080211_01MS	21		31	
2	HAR-28_080211_01	12	HAR-27_080211_01MSD	22		32	
3	HAR-27_080211_01 **	13		23		33	
4	HAR-27_080211_36 **	14		24		34	
5	FB_HAR-27_080211_19 **	15		25		35	
6	HAR-08_080211_01	16		26		36	
7	HAR-29_080211_01	17		27		37	
8	HAR-07_080211_01MS	18		28		38	
9	HAR-07_080211_01MSD	19		29		39	
10	HAR-07_080211_01DUP	20		30		40	

Notes: _____

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients > 0.995?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were titrant checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were balance checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.	/			

Field Blanks

METHOD: Inorganics, EPA Method See Cover
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?
Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 8/2/11 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Reason: F

Associated Samples: 3, 4

Analyte	Blank ID	Action Limit	Sample Identification		
	5		3	4	
Cyanide	0.0049	0.0245	0.0023	0.0051	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC# 26050F6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	3	4		
Cyanide	0.0023	0.0051	76	NQ, (<5xRL)

V:\FIELD DUPLICATES\FD_inorganic\26050F6.wpd

LDC# 26050F6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer:

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	3	HAR-27_080211_03		
Cyanide	0.0023	0.0030	26	

V:\FIELD DUPLICATES\FD_inorganic\26050F6s.wpd

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$
 Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$
 Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	%R / RPD	
LCS	Laboratory control sample	CN	0.0996	0.1	100	100	Y
11	Matrix spike sample	↓	0.0949 (SSR-SR)	0.1	95	95	Y
11/12	Duplicate sample	↓	0.0972	0.0954	2	2	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 2, 2011
LDC Report Date: August 28, 2011
Matrix: Water
Parameters: Diesel Range Organics
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-07_080211_01
HAR-28_080211_01
HAR-27_080211_01
HAR-08_080211_01
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18711-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-1	HAR-07_080211_01 HAR-28_080211_01 HAR-27_080211_01 HAR-08_080211_01 HAR-29_080211_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18711-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18711-1**

No Sample Data Qualified in this SDG

LDC #: 26050F8
 SDG #: 280-18711-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/24/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RE/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-07_080211_01	11	MB 280-80081 A-A	21	31
2	HAR-28_080211_01	12		22	32
3	HAR-27_080211_01	13		23	33
4	HAR-08_080211_01	14		24	34
5	HAR-29_080211_01	15		25	35
6	HAR-07_080211_01MS	16		26	36
7	HAR-07_080211_01MSD	17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: August 28, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18711-1

Sample Identification

HAR-07_080211_01
HAR-28_080211_01
HAR-27_080211_01
HAR-08_080211_01
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18711-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-1	HAR-07_080211_01 HAR-28_080211_01 HAR-27_080211_01 HAR-08_080211_01 HAR-29_080211_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18711-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18711-1**

No Sample Data Qualified in this SDG

LDC #: 26050F76

VALIDATION COMPLETENESS WORKSHEET

Date: 8/24/11

SDG #: 280-18711-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: QVC
2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1/3
VIII.	Target compound identification	N	
IX.	Compound quantitation/R _f /LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	HAR-07_080211_01	11	MB 280-80312/25	21	31
2	HAR-28_080211_01	12		22	32
3	HAR-27_080211_01	13		23	33
4	HAR-08_080211_01	14		24	34
5	HAR-29_080211_01	15		25	35
6	HAR-07_080211_01MS	16		26	36
7	HAR-07_080211_01MSD	17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter		
1	W	Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
2-5	W	Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine

Comments: _____



Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

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Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 8, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

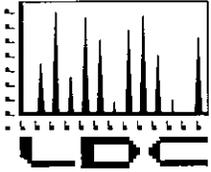
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 17, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26062:

<u>SDG #</u>	<u>Fraction</u>
IUG2363/G1G270490 280-18421-1/ H1G270438	Dioxins/Dibenzofurans
280-18286-2	N-Nitrosodimethylamine
280-18592-1/ IUG2905	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazines

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010



- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Diobenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 20, 2011
LDC Report Date: August 29, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18286-2

Sample Identification

SH-04_072011_36
EB_SH-04_072011
FB_SH-04_072011_19
SH-02_072011_36
EB_SH-02_072011
FB_SH-02_072011
HAR-15_072011_36
FB_HAR-15_072011_19

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples EB_SH-04_072011 and EB_SH-02_072011 were identified as equipment blanks. No N-nitrosodimethylamine was found.

Samples FB_SH-04_072011_19, FB_SH-02_072011, FB_HAR-15_072011_19, and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18286-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SH-04_072011_36 and SH-04_072011_01 (from SDG 280-18286-1), samples SH-02_072011_36 and SH-02_072011_01 (from SDG 280-18286-1), and samples HAR-15_072011_36 and HAR-15_072011_01 (from SDG 280-18286-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-04_072011_01	SH-04_072011_36			
N-Nitrosodimethylamine	0.14	0.14	0 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-02_072011_01	SH-02_072011_36			
N-Nitrosodimethylamine	0.087	0.093	7 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-15_072011_01	HAR-15_072011_36			
N-Nitrosodimethylamine	0.0071	0.0050U	35 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18286-2

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18286-2	SH-04_072011_36 EB_SH-04_072011 FB_SH-04_072011_19 SH-02_072011_36 EB_SH-02_072011 FB_SH-02_072011 HAR-15_072011_36 FB_HAR-15_072011_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18286-2

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18286-2

No Sample Data Qualified in this SDG

LDC #: 26062B2b
 SDG #: 2802-18286-2
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/25/11
 Page: 1 of 1
 Reviewer: SVL
 2nd Reviewer: V

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)^M

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area		Comments	
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	D ₁ = 1 + SH-04_072011-01
XVI.	Field duplicates	SW	D ₂ = 4 + SH-02_072011-01 (280-18286-1)
XVII.	Field blanks	ND	D ₃ = 7 + HAR-15_072011-01 FB = 2, 5 FB = 3, 6, 8 FB = FB_071211-19 (280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	SH-04_072011_36	11	MB 280-78011/A	21	31
2	EB_SH-04_072011	12		22	32
3	FB_SH-04_072011_19	13		23	33
4	SH-02_072011_36	14		24	34
5	EB_SH-02_072011	15		25	35
6	FB_SH-02_072011_19	16		26	36
7	HAR-15_072011_36	17		27	37
8	FB_HAR-15_072011_19	18		28	38
9		19		29	39
10		20		30	40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

- Y N NA Were field duplicate pairs identified in this SDG?
- Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	SH-04_072011_01	SH-04_072011_36		
NDMA	0.14	0.14	0	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	SH-02_072011_01	SH-02_072011_36		
NDMA	0.087	0.093	7	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-15_072011_01	HAR-15_072011_36		
NDMA	0.0071	0.0050U	35	NG (<5XRL)



Laboratory Data Consultants, Inc.

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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 8, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

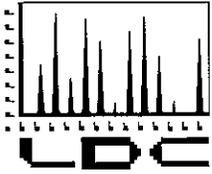
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 17, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26062:

<u>SDG #</u>	<u>Fraction</u>
IUG2363/G1G270490 280-18421-1/ H1G270438	Dioxins/Dibenzofurans
280-18286-2	N-Nitrosodimethylamine
280-18592-1/ IUG2905	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazines

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010



- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Diobenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 25, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18421/HIG270438

Sample Identification

HAR-33_072511_01

HAR-33_072511_36

FB_HAR-33_072511_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1209035-MB	7/28/11	OCDD OCDF	6.8 pg/L 4.1 pg/L	All samples in SDG 280-18421/HIG270438

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-33_072511_01	OCDD	2.4 pg/L	2.4U pg/L
HAR-33_072511_36	OCDD	1.5 pg/L	1.5U pg/L

Sample FB_HAR-33_072511_19 was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18421/HIG270438	All compounds reported below the RLs.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples HAR-33_072511_01 and HAR-33_072511_36 were identified as field duplicates. No polychlorinated dioxin/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	HAR-33_072511_03	HAR-33_072511_01			
OCDD	2.4	1.5	46 (≤35)	NQ	-

Samples HAR-33_072511_01 and HAR-33_072511_03 (from SDG IUG2363) were identified as split samples. No polychlorinated dioxin/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	HAR-33_072511_03	HAR-33_072511_01			
1,2,3,4,6,7,8-HpCDD	1.2U	0.88	31 (≤ 35)	-	-
Total HpCDD	Not reported	1.8	Not calculable	-	-
OCDD	2.4	7.7	105 (≤ 35)	NQ	-
2,3,4,6,7,8-HxCDF	0.52U	0.73	34 (≤ 35)	-	-
Total HxCDF	Not reported	0.73	Not calculable	-	-
OCDF	1.3U	0.99	27 (≤ 35)	-	-

NQ = One or both results were $< 5x$ the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011

Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18421/HIG270438

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18421/ HIG270438	HAR-33_072511_01 HAR-33_072511_36 FB_HAR-33_072511_19	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18421/HIG270438

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18421/ HIG270438	HAR-33_072511_01	OCDD	2.4U pg/L	A	B
280-18421/ HIG270438	HAR-33_072511_36	OCDD	1.5U pg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011

Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18421/HIG270438

No Sample Data Qualified in this SDG

LDC #: 26062C21

VALIDATION COMPLETENESS WORKSHEET

Date: 8/25/11

SDG #: 280-18421-1/H1G270438

Level IV

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: RV2nd Reviewer: ✓

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20% unlabeled ≤ 30% labeled
IV.	Routine calibration/ICV	A	↓ ↓
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS /D
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	A	
XI.	Compound quantitation RE /LOQ/LODs	A	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates /split	SW	D = 1, 2 S = 1 + HAR-33_072511_03
XV.	Field blanks	ND	FB = 3 (1UG2363)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinse
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	HAR-33_072511_01	D	11	120903C-MB	21		31	
2	HAR-33_072511_36	D	12		22		32	
3	FB_HAR-33_072511_19		13		23		33	
4			14		24		34	
5			15		25		35	
6			16		26		36	
7			17		27		37	
8			18		28		38	
9			19		29		39	
10			20		30		40	

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	/			
Were the retention time windows established for all homologues?	/			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers < 25% ?	/			
Is the static resolving power at least 10,000 (10% valley definition)?	/			
Was the mass resolution adequately check with PFK?	/			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	/			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	/			
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled standards and < 30% for labeled standards?	/			
Did all calibration standards meet the Ion Abundance Ratio criteria?	/			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10?	/			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	/			
Were all percent differences (%D) ≤ 20% for unlabeled standards and ≤ 30% for labeled standards?	/			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank performed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal standards				
Were internal standard recoveries within the 40-135% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks ≥ 10 ?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	/			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	/			
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	/			
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5 ?	/			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal (S/N ≥ 2.5 , at \pm seconds RT) detected in the corresponding PCDPE channel?	/			
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

LDC#: 26062C21

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y/N/NA
Y/N/NA

Were field duplicate pairs identified in this SDG?

Were target analytes detected in the field duplicate pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	1	2		
G	2.4*	1.5*	46	NQ (<5xRL)

* EMPC

V:\FIELD DUPLICATES\26062C21.wpd

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	HAR-33_072511_01	HAR-33_072511_03		
F	1.2U	0.88*	31	
U	NR	1.8*	NC	
G	2.4*	7.7	105	NQ (<5xRL)
M	0.52U	0.73	34	
X	NR	0.73	NC	
Q	1.3U	0.99	27	

* EMPC

V:\FIELD DUPLICATES\26062C21s.wpd

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$ A_x = Area of Compound A_{is} = Area of associated internal standard
 average RRF = sum of the RRFs/number of standards C_x = Concentration of compound, C_{is} = Concentration of internal standard
 %RSD = $100 * (S/X)$ S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (10/50/100 std)	Recalculated RRF (10/50/100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/8/2011	2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	0.976	0.976	1.012	1.012	4.7	4.7
	M1A		2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.916	0.916	0.932	0.932	5.6	5.6
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.891	0.891	0.894	0.894	4.5	4.5
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	0.984	0.984	0.989	0.989	3.8	3.8
			OCDF (13C-OCDF)	0.964	0.964	1.011	1.011	6.2	6.2

Cis/Cx	Ax	Ais
100/5	270311	2770116
100/5	370518	4042982
100/2.5	1314701	2949919
100/2.5	1220830	2480851
100/5	2313933	4802246

Conc	2,3,7,8-TCDD	2,3,7,8-TCDF	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDF
0.5/2.5/5	1.000	0.868	0.835	0.934	0.967
2/10/20	0.984	0.913	0.883	0.979	0.991
10/50/100	0.976	0.916	0.891	0.984	0.964
40/200/400	1.005	0.955	0.920	1.022	1.015
200/1000/2000	1.095	1.008	0.942	1.027	1.116
X =	1.012	0.932	0.894	0.989	1.011
S =	0.0479	0.0525	0.0406	0.0377	0.0624

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (Ax)(Cis) / (Ais)(Cx)$$

$$\text{ave. RRF} = \text{ICAL average RRF}$$

$$\text{RRF} = \text{CCV RRF}$$

$$Ax = \text{Area of compound}$$

$$Cx = \text{Concentration of compound}$$

$$Ais = \text{Area of associated internal standard}$$

$$Cis = \text{Concentration of internal standard}$$

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	a110811s5	08/11/11	2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.012	1.035	1.035	0.8	2.3
			2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.932	0.852	0.852	8.6	8.6
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.894	0.988	0.988	10.5	10.5
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	0.989	0.971	0.971	1.8	1.8
			OCDF (13C-OCDF)	1.011	1.183	1.183	17.0	17.0

Compound (IS)	Concentration (IS/Cpd)	Area Cpd	Area IS
2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	100/10	269284	2601474
2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	100/10	313021	3672519
1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	100/50	1014290	2053835
1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	100/50	940359	1936385
OCDF (13C-OCDF)	100/50	2080315	3518255



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 8, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

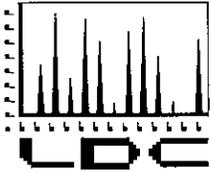
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 17, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26062:

<u>SDG #</u>	<u>Fraction</u>
IUG2363/G1G270490 280-18421-1/ H1G270438	Dioxins/Dibenzofurans
280-18286-2	N-Nitrosodimethylamine
280-18592-1/ IUG2905	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazines

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010



- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Diobenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A
TB_PZ-149_072811A
RD-32_072811_01
TB_RD-32_072811
RD-38B_072811_01
RD-38B_072811_36
RD-70_072811_01
RD-73_072811_01
TB_RD-73-072811
RD-62_072811_01
RD-61_072811_01
RD-32_072811_01MS
RD-32_072811_01MSD

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-80804/4	8/9/11	Methylene chloride	0.565 ug/L	All samples in SDG 280-18592-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
EB_PZ-149_072811	Methylene chloride	0.44 ug/L	1.0U ug/L
PZ-149_072811_01A	Methylene chloride	0.36 ug/L	1.0U ug/L
TB_PZ-149_072811A	Methylene chloride	0.98 ug/L	1.0U ug/L
RD-32_072811_01	Methylene chloride	0.36 ug/L	5.0U ug/L
TB_RD-32_072811	Methylene chloride	0.80 ug/L	5.0U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-38B_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-38B_072811_36	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-70_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L
TB_RD-73-072811	Methylene chloride	0.81 ug/L	5.0U ug/L
RD-62_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-61_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L

Samples TB_PZ-149_072811A, TB_RD-32_072811, and TB_RD-73-072811 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_PZ-149_072811A	7/28/11	Acetone Methylene chloride	87 ug/L 0.98 ug/L	EB_PZ-149_072811 PZ-149_072811_01A
TB_RD-32_072811	7/28/11	Methylene chloride	0.80 ug/L	RD-32_072811_01 RD-38B_072811_01 RD-38B_072811_36 RD-70_072811_01
TB_RD-73-072811	7/28/11	Methylene chloride	0.81 ug/L	RD-73_072811_01 RD-62_072811_01 RD-61_072811_01

Sample EB_PZ-149_072811 was identified as an equipment blank. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-149_072811	7/28/11	Chloroform Methylene chloride	0.39 ug/L 0.44 ug/L	PZ-149_072811_01A

Sample FB_071211_19 (from SDG 280-17952-1) were identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-149_072811_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB_PZ-149_072811	Methylene chloride	0.44 ug/L	1.0U ug/L
PZ-149_072811_01A	Methylene chloride	0.36 ug/L	1.0U ug/L
RD-32_072811_01	Methylene chloride	0.36 ug/L	5.0U ug/L
RD-38B_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-38B_072811_36	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-70_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-62_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L
RD-61_072811_01	Methylene chloride	0.35 ug/L	5.0U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
EB_PZ-149_072811	Toluene-d8 Toluene-d8	111 (88-110) 115 (88-110)	All TCL compounds	J (all detects)	A
TB_PZ-149_072811A	Toluene-d8 Toluene-d8	112 (88-110) 111 (88-110)	All TCL compounds	J (all detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-38B_072811_01	RD-38B_072811_36			
Methylene chloride	0.35	0.35	0 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18592-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 TB_PZ-149_072811A	All TCL compounds	J (all detects)	A	Surrogate spikes (%R) (S)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A TB_PZ-149_072811A RD-32_072811_01 TB_RD-32_072811 RD-38B_072811_01 RD-38B_072811_36 RD-70_072811_01 RD-73_072811_01 TB_RD-73-072811 RD-62_072811_01 RD-61_072811_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18592-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18592-1	EB_PZ-149_072811	Methylene chloride	1.0U ug/L	A	B
280-18592-1	PZ-149_072811_01A	Methylene chloride	1.0U ug/L	A	B
280-18592-1	TB_PZ-149_072811A	Methylene chloride	1.0U ug/L	A	B
280-18592-1	RD-32_072811_01	Methylene chloride	5.0U ug/L	A	B
280-18592-1	TB_RD-32_072811	Methylene chloride	5.0U ug/L	A	B
280-18592-1	RD-38B_072811_01	Methylene chloride	5.0U ug/L	A	B
280-18592-1	RD-38B_072811_36	Methylene chloride	5.0U ug/L	A	B
280-18592-1	RD-70_072811_01	Methylene chloride	5.0U ug/L	A	B
280-18592-1	TB_RD-73-072811	Methylene chloride	5.0U ug/L	A	B
280-18592-1	RD-62_072811_01	Methylene chloride	5.0U ug/L	A	B
280-18592-1	RD-61_072811_01	Methylene chloride	5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Field Blank Data Qualification Summary - SDG 280-18592-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18592-1	EB_PZ-149_072811	Methylene chloride	1.0U ug/L	A	T
280-18592-1	PZ-149_072811_01A	Methylene chloride	1.0U ug/L	A	F,T
280-18592-1	RD-32_072811_01	Methylene chloride	5.0U ug/L	A	T
280-18592-1	RD-38B_072811_01	Methylene chloride	5.0U ug/L	A	T
280-18592-1	RD-38B_072811_36	Methylene chloride	5.0U ug/L	A	T
280-18592-1	RD-70_072811_01	Methylene chloride	5.0U ug/L	A	T
280-18592-1	RD-62_072811_01	Methylene chloride	5.0U ug/L	A	T
280-18592-1	RD-61_072811_01	Methylene chloride	5.0U ug/L	A	T

LDC #: 26062D1a
 SDG #: 280-18592-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/25/11
 Page: 1 of 1
 Reviewer: NO
 2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	ASW	
VIII.	Laboratory control samples	A	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 6,7
XVII.	Field blanks	SW	EB = 1 TB = 3, 5, 10 FB = FB_071211-19

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	EB PZ-149 072811	11	RD-62 072811 01	21	MB 280-79444/7	31	(FFF, GGGG, II)
2	PZ-149 072811 01A	12	RD-61 072811 01	22	MB 280-80804/4	32	
3	TB PZ-149 072811A	13	RD-32 072811 01MS	23		33	
4	RD-32 072811 01	14	RD-32 072811 01MSD	24		34	
5	TB RD-32 072811	15		25		35	
6	RD-38B 072811 01 <i>b</i>	16		26		36	
7	RD-38B 072811 36 <i>b</i>	17		27		37	
8	RD-70 072811 01	18		28		38	
9	RD-73 072811 01	19		29		39	
10	TB RD-73-072811	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

- Y N NA Were field duplicate pairs identified in this SDG?
- Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	6	7		
Methylene chloride	0.35	0.35	0	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 28, 2011
LDC Report Date: August 30, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A
TB_PZ-149_072811A
RD-32_072811_01
TB_RD-32_072811
RD-38B_072811_01
RD-38B_072811_36
RD-62_072811_01
TB_RD-62_072811
RD-61_072811_01
RD-38B_072811_01MS
RD-38B_072811_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_PZ-149_072811A, TB_RD-32_072811, and TB_RD-62_072811 were identified as trip blanks. No 1,4-dioxane was found.

Sample EB_PZ-149_072811 was identified as an equipment blank. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No 1,4-dioxane was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A TB_PZ-149_072811A RD-32_072811_01 TB_RD-32_072811 RD-38B_072811_01 RD-38B_072811_36 RD-62_072811_01 TB_RD-62_072811 RD-61_072811_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

LDC #: 26062D1b
 SDG #: 280-18592-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/25/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 1/b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 6.7
XVII.	Field blanks	ND	EB = 1 TB = 3, 5, 9 FB = FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	EB_PZ-149_072811	11	RD-38B_072811_01MS	21	MB 280-800 20/5	31
2	PZ-149_072811_01A	12	RD-38B_072811_01MSD	22		32
3	TB_PZ-149_072811A	13		23		33
4	RD-32_072811_01	14		24		34
5	TB_RD-32_072811	15		25		35
6	RD-38B_072811_01 D	16		26		36
7	RD-38B_072811_36 D	17		27		37
8	RD-62_072811_01	18		28		38
9	TB_RD-62_072811	19		29		39
10	RD-61_072811_01	20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: 1,2,3-Trichloropropane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1/IUG2905

Sample Identification

RD-32_072811_01
TB_RD-32_072811
RD-38B_072811_01
RD-38B_072811_36
RD-62_072811_01
TB_RD-62_072811
RD-61_072811_01
RD-38B_072811_36DUP

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Samples TB_RD-32_072811 and TB_RD-62_072811 were identified as trip blanks. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1/IUG2905	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No 1,2,3-trichloropropane was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18592-1/IUG2905**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1/ IUG2905	RD-32_072811_01 TB_RD-32_072811 RD-38B_072811_01 RD-38B_072811_36 RD-62_072811_01 TB_RD-62_072811 RD-61_072811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18592-1/IUG2905**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18592-1/IUG2905**

No Sample Data Qualified in this SDG

26062D1c

LDC #: 26062D1c

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-18592-1/IUG2905

Level V

Laboratory: Test America, Inc.

Date: 8/25/11

Page: 1 of 1

Reviewer: JYG

2nd Reviewer: [Signature]

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/28/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates <u>Lab Dup</u>	N/A	
VIII.	Laboratory control samples	A	<u>LCS</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	<u>D = 3, 4</u>
XVII.	Field blanks	ND	<u>TB = 2, 6</u>

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-32_072811_01	11	11 H0226-BLK1	21		31
2	TB_RD-32_072811	12	11 H0310-I	22		32
3	RD-38B_072811_01	13		23		33
4	RD-38B_072811_36	14		24		34
5	RD-62_072811_01	15		25		35
6	TB_RD-62_072811	16		26		36
7	RD-61_072811_01	17		27		37
8	4 DUP	18		28		38
9		19		29		39
10		20		30		40

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 30, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A
RD-38B_072811_01
RD-38B_072811_36

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-78992/1-A	7/29/11	Benzyl alcohol	1.04 ug/L	EB_PZ-149_072811 PZ-149_072811_01A

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
EB_PZ-149_072811	Benzyl alcohol	0.88 ug/L	19U ug/L
PZ-149_072811_01A	Benzyl alcohol	0.31 ug/L	20U ug/L

Sample EB_PZ-149_072811 was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-149_072811	7/28/11	Benzyl alcohol	0.88 ug/L	PZ-149_072811_01A

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-149_072811_01A	Benzyl alcohol	0.31 ug/L	20U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-38B_072811_01	RD-38B_072811_36			
Bis(2-ethylhexyl)phthalate	0.61	9.7U	176 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A RD-38B_072811_01 RD-38B_072811_36	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18592-1	EB_PZ-149_072811	Benzyl alcohol	19U ug/L	A	B
280-18592-1	PZ-149_072811_01A	Benzyl alcohol	20U ug/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18592-1	PZ-149_072811_01A	Benzyl alcohol	20U ug/L	A	F

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 3.4
XVII.	Field blanks	SW	EB = 1 *FB = FB-071211-19

Note: A = Acceptable *ND = No compounds detected D = Duplicate (280-17952-1)
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	EB_PZ-149_072811	11	MB 280-78992/1-A	21		31	
2	PZ-149_072811_01A	12		22		32	
3	RD-38B_072811_01	13		23		33	
4	RD-38B_072811_36	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N N A Were field duplicate pairs identified in this SDG?
Y N N A Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	3	4		
Bis(2-ethylhexyl)phthalate	0.61	9.7U	176	NQ (<5xRL)

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A
RD-32_072811_01
RD-38B_072811_01
RD-38B_072811_36

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample EB_PZ-149_072811 were identified as an equipment blank. No N-nitrosodimethylamine was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-79896/2,3-A (All samples in SDG 280-18592-1)	N-Nitrosodimethylamine	126 (68-124)	138 (68-124)	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18592-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A RD-32_072811_01 RD-38B_072811_01 RD-38B_072811_36	N-Nitrosodimethylamine	J (all detects)	P	Laboratory control samples (%R) (L)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A RD-32_072811_01 RD-38B_072811_01 RD-38B_072811_36	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18592-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18592-1

No Sample Data Qualified in this SDG

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	SW	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW/ND	D = 1.5
XVII.	Field blanks	ND	EB = 1 FB = FB-071211-19

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	EB PZ-149 072811	11	MB 280-79896/1-A	21		31
2	PZ-149 072811 01A	12		22		32
3	RD-32 072811 01	13		23		33
4	RD-38B 072811 01	14		24		34
5	RD-38B 072811 36	15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-79720/1-A	8/3/11	Di-n-butylphthalate Di-n-octylphthalate	0.0151 ug/L 0.0311 ug/L	All samples in SDG 280-18592-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

Sample EB_PZ-149_072811 was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-149_072811	7/28/11	Diethylphthalate	0.018 ug/L	PZ-149_072811_01A

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound	Flag	A or P	Reason
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

LDC #: 26062D2c

VALIDATION COMPLETENESS WORKSHEET

Date: 8/25/11

SDG #: 280-18592-1

Level IV V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: MB

2nd Reviewer: [Signature]

METHOD: GC/MS ^{Semi-volatiles} Polynuclear Aromatic Hydrocarbons (EPA SW846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS 1p
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = ? FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	EB PZ-149 072811	11	MB 280-79720/1-A	21		31	
2	PZ-149 072811 01A	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloromethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 30, 2011

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls were found in the method blanks.

Sample EB_PZ-149_072811 was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

LDC #: 26062D3b
 SDG #: 280-18592-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/25/11
 Page: 1 of 1
 Reviewer: JVU
 2nd Reviewer: [Signature]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LES 10
IX.	Regional quality assurance and quality control	N	
X.	Florisol cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = 7

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	EB_PZ-149_072811	11	MB 280-7912/1-A	21		31
2	PZ-149_072811_01A	12		22		32
3		13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 29, 2011

Matrix: Water

Parameters: Dissolved Metals

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020 and 6010B for Dissolved Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the preparation blanks.

Sample EB_PZ-149_072811 was identified as an equipment blank. No dissolved metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_PZ-149_072811	7/28/11	Sodium	0.094 mg/L	PZ-149_072811_01A

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No dissolved metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-149_072811_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-149_072811_01A	Silver	0.000053 mg/L	0.000053U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18592-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Dissolved Metals - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Dissolved Metals - Field Blank Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18592-1	PZ-149_072811_01A	Silver	0.000053U mg/L	A	F

LDC #: 26062D4

VALIDATION COMPLETENESS WORKSHEET

Date: 8/24/11

SDG #: 280-18592-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

6010B

METHOD: Dissolved Metals (EPA SW 846 Method 6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	N	Client specified
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV.	Field Blanks	SW	EB=1; FB=FB_07121119F (SN6280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

water

1	EB_PZ-149_072811	11		21		31	
2	PZ-149_072811_01A	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Field Blanks

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks?

Blank units: mg/L. **Associated sample units:** mg/L

Sampling date: 7/12/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Reason: F

Associated Samples: 2

Analyte	Blank ID	Action Limit	Sample Identification
	FB_071211_19F (SDG: 280-17952-1)		2
Ag	0.000018	0.00009	0.000053
Tl	0.000033	0.000165	

Sampling date: 7/28/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Associated Samples: 2

Analyte	Blank ID	Action Limit	Sample Identification
	1		No Qualifiers
Na	0.094	0.47	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 28, 2011
LDC Report Date: August 29, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A
RD-32_072811_01
RD-32_072811_36
FB_RD-32_072811_19
RD-38B_072811_01
RD-38B_072811_36
RD-62_072811_01
RD-61_072811_01
RD-38B_072811_01MS
RD-38B_072811_01MSD
RD-62_072811MS
RD-62_072811MSD
RD-62_072811DUP

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, and Orthophosphate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.108 mg/L	RD-38B_072811_01 RD-38B_072811_36

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-38B_072811_01	Ammonia as N	0.11 mg/L	0.11U mg/L
RD-38B_072811_36	Ammonia as N	0.098 mg/L	0.098U mg/L

Sample EB_PZ-149_072811 were identified as an equipment blank. No contaminant concentrations were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18592-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples RD-32_072811_01 and RD-32_072811_36 and samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD (Limits)	Flag	A or P
	RD-32_072811_01	RD-32_072811_36			
Fluoride	0.30 mg/L	0.30 mg/L	0 (≤35)	-	-
Ammonia as N	0.11 mg/L	0.098 mg/L	12 (≤35)	-	-
pH	7.32 units	7.37 units	1 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A RD-32_072811_01 RD-32_072811_36 FB_RD-32_072811_19 RD-38B_072811_01 RD-38B_072811_36 RD-62_072811_01 RD-61_072811_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18592-1	RD-38B_072811_01	Ammonia as N	0.11U mg/L	A	B
280-18592-1	RD-38B_072811_36	Ammonia as N	0.098U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Field Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

LDC #: 26062D6
 SDG #: 280-18592-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8-24-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
IIa.	Initial calibration	N	
IIb.	Calibration verification	N	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS/D
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	* (3,4), (6,7)
X	Field blanks	ND	EB=1, FB=5, FB-0712119CS06:28-179521

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 *ND = No compounds detected
 R = Rinstate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *water*

1	EB_PZ-149_072811	11	RD-38B_072811_01MSD	21		31	
2	PZ-149_072811_01A	12	RD-62_072811MS	22		32	
3	RD-32_072811_01	13	RD-62_072811MSD	23		33	
4	RD-32_072811_36	14	RD-62_072811DUP	24		34	
5	FB_RD-32_072811_19	15		25		35	
6	RD-38B_072811_01	16		26		36	
7	RD-38B_072811_36	17		27		37	
8	RD-62_072811_01	18		28		38	
9	RD-61_072811_01	19		29		39	
10	RD-38B_072811_01MS	20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were blank analyses performed as required? If no, please see qualifications below.

Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 6, 7 **Reason:** B

Analyte	Blank ID	Blank ID	Blank Action Limit
	PB	ICB/CCB (mg/L)	
NH3-N	0.108		0.54
		6	7
		0.11	0.098

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC# 26062D6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	3	4		
Fluoride	0.30	0.30	0	
Ammonia as N	0.11	0.098	12	
pH (units)	7.32	7.37	1	

V:\FIELD DUPLICATES\FD_inorganic\26062D6.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 28, 2011
LDC Report Date: August 30, 2011
Matrix: Water
Parameters: Total Petroleum Hydrocarbons as Gasoline
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18592-1

Sample Identification

RD-32_072811_01
TB_RD-32_072811
RD-38B_072811_01
RD-38B_072811_36
RD-73_072811_01
TB_RD-73-072811
RD-32_072811_01MS
RD-32_072811_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Total Petroleum Hydrocarbons as Gasoline.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Samples TB_RD-32_072811 and TB_RD-73-072811 were identified as trip blanks. No total petroleum hydrocarbons as gasoline contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-73-072811	7/28/11	TPH as gasoline (C6-C12)	16 ug/L	RD-73_072811_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-73_072811_01	a,a,a-Trifluorotoluene	2852 (82-110)	TPH as gasoline	J (all detects)	P

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-38B_072811_01	RD-38B_072811_36			
TPH as gasoline (C6-C12)	26	29	11 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	RD-73_072811_01	TPH as gasoline	J (all detects)	P	Surrogate spikes (%R) (S)
280-18592-1	RD-32_072811_01 TB_RD-32_072811 RD-38B_072811_01 RD-38B_072811_36 RD-73_072811_01 TB_RD-73-072811	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 3, 4
XIII.	Field blanks	SW	TB = * 2, 6

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-32 072811 01	11	MB 280-79968/6	21		31
2	TB_RD-32 072811	12		22		32
3	RD-38B 072811 01 <i>D</i>	13		23		33
4	RD-38B 072811 36 <i>D</i>	14		24		34
5	RD-73 072811 01	15		25		35
6	TB_RD-73-072811	16		26		36
7	RD-32 072811 01MS	17		27		37
8	RD-32 072811 01MSD	18		28		38
9		19		29		39
10		20		30		40

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC GRO (EPA SW 846 Method 8015B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	3	4		
C6-C12	26	29	11	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 30, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A
RD-38B_072811_01
RD-38B_072811_36

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Sample EB_PZ-149_072811 was identified as an equipment blank. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No diesel range organic were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	RD-38B_072811_01	RD-38B_072811_36			
Diesel range organics (C12-C14)	0.083	0.082	1 (≤35)	-	-
Diesel range organics (C8-C30)	0.10	0.095	5 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18592-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	EB_PZ-149_072811 PZ-149_072811_01A RD-38B_072811_01 RD-38B_072811_36	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18592-1**

No Sample Data Qualified in this SDG

LDC #: 26062D8
 SDG #: 280-18592-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/25/11
 Page: 1 of 1
 Reviewer: RVG
 2nd Reviewer: ✓

METHOD: GC Diesel Range Organics (8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	A	LCS 1p
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 3,4
XIII.	Field blanks	ND	EB = 1 FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	EB PZ-149 072811	11	MB 280-79511/1-A	21		31	
2	PZ-149 072811 01A	12		22		32	
3	RD-38B 072811 01	13		23		33	
4	RD-38B 072811 36	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC GRO (EPA SW 846 Method 8015B)

Y ~~N~~ ~~NA~~
~~Y~~ ~~N~~ ~~NA~~

Were field duplicate pairs identified in this SDG?
 Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		(<35%) RPD	Qualifications (Parent only)
	3	4		
C12-C14	0.083	0.082	1	
C8-C30	0.10	0.095	5	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18592-1

Sample Identification

RD-38B_072811_01
RD-38B_072811_36
RD-38B_072811_01MS
RD-38B_072811_01MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18592-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-38B_072811_01 and RD-38B_072811_36 were identified as field duplicates. No hydrazines were detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18592-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18592-1	RD-38B_072811_01 RD-38B_072811_36	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18592-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18592-1

No Sample Data Qualified in this SDG

LDC #: 26062D76

VALIDATION COMPLETENESS WORKSHEET

Date: 8/25/11

SDG #: 280-18592-1

Level: ~~IV~~ V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: MT

2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LES 10
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	D = 1, 2
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-38B 072811 01	D	11	NIB 280-80034/25	21		31
2	RD-38B 072811 36	b	12		22		32
3	RD-38B 072811 01MS		13		23		33
4	RD-38B 072811 01MSD		14		24		34
5			15		25		35
6			16		26		36
7			17		27		37
8			18		28		38
9			19		29		39
10			20		30		40

Notes: _____



Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437

Web www.lab-data.com

Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 8, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

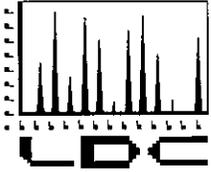
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 17, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26062:

<u>SDG #</u>	<u>Fraction</u>
IUG2363/G1G270490 280-18421-1/ H1G270438	Dioxins/Dibenzofurans
280-18286-2	N-Nitrosodimethylamine
280-18592-1/ IUG2905	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazines

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010



- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Diobenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng' in a cursive style.

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 25, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2363/G1G270490

Sample Identification

HAR-33_072511_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1209071-MB	7/28/11	1,2,3,4,6,7,8-HpCDD OCDD Total HpCDD Total TCDF	0.9 pg/L 3.6 pg/L 2.2 pg/L 0.5 pg/L	All samples in SDG IUG2363/G1G270490

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-33_072511_03	1,2,3,4,6,7,8-HpCDD OCDD Total HpCDD	0.88 pg/L 7.7 pg/L 1.8 pg/L	0.88U pg/L 7.7U pg/L 1.8U pg/L

Sample FB_HAR-33_072511_19 (from SDG 280-18421-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2363/G1G270490	All compounds reported below the RLs.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-33_072511_03 and HAR-33_072511_01 (from SDG 280-18421-1) were identified as split samples. No polychlorinated dioxin/dibenzofurans were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	HAR-33_072511_03	HAR-33_072511_01			
1,2,3,4,6,7,8-HpCDD	1.2U	0.88	31 (≤35)	-	-
Total HpCDD	Not reported	1.8	Not calculable	-	-
OCDD	2.4	7.7	105 (≤35)	NQ	-
2,3,4,6,7,8-HxCDF	0.52U	0.73	34 (≤35)	-	-
Total HxCDF	Not reported	0.73	Not calculable	-	-
OCDF	1.3U	0.99	27 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG IUG2363/G1G270490**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2363/ G1G270490	HAR-33_072511_03	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG IUG2363/G1G270490**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUG2363/ G1G270490	HAR-33_072511_03	1,2,3,4,6,7,8-HpCDD OCDD Total HpCDD	0.88U pg/L 7.7U pg/L 1.8U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG IUG2363/G1G270490**

No Sample Data Qualified in this SDG

LDC #: 26062A21

VALIDATION COMPLETENESS WORKSHEET

Date: 8/25/11

SDG #: IUG1233/31G270490 *flag*Level IV

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: OVG2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20 % unlabeled ≤ 30 % labeled
IV.	Routine calibration/ICV	A	CV/ICV \downarrow \downarrow
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	IGS FB
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	A	
XI.	Compound quantitation RT/LOQ/LODs	A	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates / Split	SW	S = 1 + HAR-33_072511_01 (280-18421-1)
XV.	Field blanks	ND	FB = FB # HAR-33_072511_19 \downarrow

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1 ⁺	HAR-33_072511_03	11	1209071-MB	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	/			
Were the retention time windows established for all homologues?	/			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers < 25% ?	/			
Is the static resolving power at least 10,000 (10% valley definition)?	/			
Was the mass resolution adequately check with PFK? .	/			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	/			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	/			
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled standards and < 30% for labeled standards?	/			
Did all calibration standards meet the Ion Abundance Ratio criteria?	/			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard ≥ 10?	/			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	/			
Were all percent differences (%D) ≤ 20% for unlabeled standards and ≤ 30% for labeled standards?	/			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank performed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			/	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?		/		
IX. Internal standards				
Were internal standard recoveries within the 40-135% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks ≥ 10 ?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	/			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	/			
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	/			
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5 ?	/			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDPE channel?	/			
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates <u>(Split)</u>				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	HAR-33_072511_01	HAR-33_072511_03		
F	1.2U	0.88*	31	
U	NR	1.8*	NC	
G	2.4*	7.7	105	NQ (<5xRL)
M	0.52U	0.73	34	
X	NR	0.73	NC	
Q	1.3U	0.99	27	

* EMPC

V:\FIELD DUPLICATES\26062A21s.wpd

LDC #: 26062A-21

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer:

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8280A)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound
 A_{is} = Area of associated internal standard
 C_x = Concentration of compound,
 C_{is} = Concentration of internal standard
 S = Standard deviation of the RRFs,
 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (CS5)	Recalculated RRF (CS5)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/6/2011	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.995	0.995	0.964	0.965	3.56	3.66
	4d5		2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.053	1.053	1.062	1.061	4.22	3.91
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	1.154	1.154	1.193	1.194	8.50	8.58
			1,2,3,4,6,7,8-HpCDF (13C-1,2,3,4,6,7,8-HpCDF)	1.351	1.351	1.327	1.327	3.42	3.60
			OCDD (13C-OCDD)	1.134	1.133	1.112	1.112	3.01	3.07

Cis	Area cpd	Area IS
100/200	350470880	176153792
100/200	257144560	122158588
100/200	1066736544	92408760
100/200	1281476096	94858184
100/200	1763218112	155555336

Conc	2,3,7,8-TCDF	2,3,7,8-TCDD	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDF	OCDD
0.5/2.5/5.0	0.950	1.100	1.120	1.280	1.080
2.0/10/20	0.990	1.100	1.320	1.360	1.140
10/50/100	0.910	1.000	1.090	1.270	1.070
40/200/400	0.980	1.053	1.285	1.372	1.137
200/1000/2000	0.995	1.053	1.154	1.351	1.134
X =	0.965	1.061	1.194	1.327	1.112
S =	0.0353	0.0415	0.1024	0.0478	0.0341

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 26062 A21

VALIDATION FINDINGS WORKSHEET Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: Me
2nd Reviewer: U

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * \frac{SSC}{SA}$ Where: SSC = Spiked sample concentration
SA = Spike added

RPD = $100 * \frac{LCS - LCSD}{LCS + LCSD}$

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS ID: 1209071 - 4S

Compound	Spike Added (pg/L)		Spiked Sample Concentration (pg/L)		LCS		LCSD		Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc	Reported	Recalc	Reported	Recalc
	2,3,7,8-TCDD	200	NA	206	NA	103	103							
1,2,3,7,8-PeCDD	1000	↓	1050	↓	105	105								
1,2,3,4,7,8-HxCDD	↓	↓	928	↓	93	93								
1,2,3,4,7,8,9-HpCDF	↓	↓	1140	↓	114	114								
OCDF	2000	↓	2320	↓	116	116								

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 6, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on August 19, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26075:

<u>SDG #</u>	<u>Fraction</u>
IUG1981	Semivolatiles, Cyanide

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 20, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG1981

Sample Identification

SH-04_072011_03

SH-11_072011_03

HAR-26_072011_03

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Samples EB_SH-04_072011 and EB_SH-11_072011B (both from SDG 280-18286-1) were identified as equipment blanks. No semivolatile contaminants were found.

Samples FB_HAR-26_072011_19, FB_SH-04_072011_19, FB_SH-11_072011_19B (all from SDG 280-18286-1), and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No semivolatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG1981	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples SH-04_072011_03 and SH-04_072011_01 (from SDG 280-18286-1), samples SH-11_072011_03 and SH-11_072011_01 (from SDG 280-18286-1), and samples HAR-26_072011_03 and HAR-26_072011_01 (from SDG 280-18286-1) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-26_072011_01	HAR-26_072011_03			
Diethylphthalate	0.41	9.5U	183 (≤35)	NQ	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SH-04_072011_01	SH-04_072011_03			
Bis(2-ethylhexyl)phthalate	0.70	10U	174 (≤35)	NQ	-
Diethylphthalate	0.46	10U	182 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG IUG1981**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG1981	SH-04_072011_03 SH-11_072011_03 HAR-26_072011_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RL (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG IUG1981**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG IUG1981**

No Sample Data Qualified in this SDG

LDC #: 26075A2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/26/11

SDG #: IUG1981

Level \checkmark IV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
II.	GC/MS Instrument performance check	N A	
III.	Initial calibration	N A	% RSD ≤ 30
IV.	Continuing calibration/ICV	N A	CV/ICV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	A	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N A	
XII.	Compound quantitation/RL/LOQ/LODs	N A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	S ₁ = 1 + SH-04-072011-01 S ₂ = 2 + SH-11-072011-01 S ₃ = 3 + HAR-26-072011-01 > (280-18286-1)
XVII.	Field blanks	ND	FB/EB (See below)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water (from 280-18286-1) (from 280-17952-1)

1	SH-04_072011_03	11	FB_HAR-26-072011-19	21	FB_071211-19	31	
2	SH-11_072011_03	12	FB*SH-04_072011-19	22		32	
3	HAR-26_072011_03	13	FB_SH-11_072011-19	23		33	
4		14	EB_SH-04_072011	24		34	
5	1162938-Blk1	15	EB_SH-11_072011B	25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

(Phthalates only)

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 12 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within + 30 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
XIV: System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field duplicates.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVII: Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(e)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-26_072011_01	HAR-26_072011_03		
Diethylphthalate	0.41	9.5U	183	NQ (5xRL)

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	SH-04_072011_01	SH-04_072011_03		
Bis(2-ethylhexyl)phthalate	0.70	10U	174	NQ (5xRL)
Diethylphthalate	0.46	10U	182	NQ (5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

$$A_x = \text{Area of Compound}$$

$$C_x = \text{Concentration of compound,}$$

$$S = \text{Standard deviation of the RRFs,}$$

$$A_{is} = \text{Area of associated internal standard}$$

$$C_{is} = \text{Concentration of internal standard}$$

$$X = \text{Mean of the RRFs}$$

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/27/2011	Diethyl phthalate (IS3)	1.683	1.683	1.509	1.509	7.79	7.79
	MS71		Di-n-butylphthalate (IS4)	1.487	1.487	1.308	1.308	15.28	15.29
			Butylbenzylphthalate (IS5)	0.678	0.678	0.621	0.621	14.61	14.59

Cis/Cx	Ax	Ais
40/50	244610	116270
40/50	422082	227097
40/50	216678	255487

Conc	Diethylphthalate	Di-n-butylphthalate	Butylbenzylphthalate
5.00	1.395	1.109	0.595
10.00	1.488	1.210	0.635
50.00	1.683	1.487	0.678
80.00	1.546	1.465	0.667
120.00	1.548	1.462	0.684
160.00	1.575	1.424	0.658
2.00	1.330	0.997	0.427
X =	1.509	1.308	0.621
S =	0.118	0.200	0.091

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$$

ave. RRF = initial calibration average RRF RRF = continuing calibration RRF
 Ax = Area of compound Ais = Area of associated internal standard
 Cx = Concentration of compound Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	SSTD050B	07/27/11	Diethyl phthalate (IS3)	1.509	1.720	1.720	14.0	13.9
	MS71		Di-n-butylphthalate (IS4)	1.308	1.549	1.549	18.4	18.5
			Butylbenzylphthalate (IS5)	0.621	0.684	0.684	10.1	10.2

Compound (IS)	Cis/Cx	Ax	Ais
Diethyl phthalate (IS3)	40/50	201469	93732
Di-n-butylphthalate (IS4)	40/50	364386	188184
Butylbenzylphthalate (IS5)	40/50	186906	218683

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	43.06	86	86	0
2-Fluorobiphenyl	↓	42.97	86	86	↓
Terphenyl-d14	↓	50.74	101	101	↓
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SC/SA)$ Where: SSC = Spike concentration
 SA = Spike added

RPD = $100 * (LCS - LCSDC) / (LCS + LCSDC)$ LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 115 2938- BSI / BSD1

Compound	Spike Added (ug/L)		Spike Concentration (ug/l)		LCS		LCSD		Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc	Reported	Recalc	Reported	Recalc
Phenol	100	100	95.9	99.7	96	96	100	100	4	4				
N-Nitroso-di-n-propylamine														
4-Chloro-3-methylphenol														
Acenaphthene														
Pentachlorophenol														
Pyrene														

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 20, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Cyanide

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG1981

Sample Identification

HAR-26_072011_03
HAR-26_072011_03MS
HAR-26_072011_03MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Cyanide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No cyanide was found in the initial, continuing and preparation blanks.

Sample FB_HAR-26_072011_19 (from SDG 280-18286-1) was identified as a field blank. No cyanide was found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG IUG1981	All analytes reported below the RL and above the MDL.	J (all detects)	A

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-26_072011_03 and HAR-26_072011_01 (from SDG 280-18286-1) were identified as split samples. No cyanide was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 Cyanide & Sulfide - Data Qualification Summary - SDG IUG1981**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
IUG1981	HAR-26_072011_03	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Cyanide & Sulfide - Laboratory Blank Data Qualification Summary - SDG IUG1981**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Cyanide & Sulfide - Field Blank Data Qualification Summary - SDG IUG1981**

No Sample Data Qualified in this SDG

LDC #: 26075A6
 SDG #: IUG1981
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V IV

Date: 8-24-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

EPA SW846

METHOD: Cyanide (SM9014)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/20/11
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/D
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	A	
VIII.	Overall assessment of data	A	
IX.	^{spike} Field duplicates	NO	(1, HAR-26_072011_01 (SP): 280-18286-1)
X.	Field blanks	NO	FB = FB-HAR-26_072011-19 ↓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	HAR-26_072011_03	11		21		31	
2	HAR-26_072011_03MS	12		22		32	
3	HAR-26_072011_03MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: Inorganics (EPA Method See Cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients > 0.995?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were titrant checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were balance checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
III. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.		/		
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/	/		
Target analytes were detected in the field blanks.				

LDC #: 26075A6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Method: Inorganics, Method 9012
The correlation coefficient (r) for the calibration of CN was recalculated. Calibration date: 7/28/11

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = $\frac{\text{Found} \times 100}{\text{True}}$
 Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated		Reported		Acceptable (Y/N)
					r or r ²	r or r ²			
Initial calibration	CN	s1	0.0	0	0.9994	0.9994			Y
		s2	0.005	0.035					
		s3	0.04	0.28					
		s4	0.1	0.71					
		s5	0.2	1.39					
		s6	0.3	1.99					
Calibration verification		ICV	0.1	0.10925		109	-		
Calibration verification		CCV	0.70476	0.7		102	-		
Calibration verification									

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$
 Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation:
 True = concentration of each analyte in the source.
 Found = SSR (spiked sample result) - SR (sample result).

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$
 Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / O (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	Reported %R / RPD	
65	Laboratory control sample	CN	0.745	0.72	107	107	Y
2	Matrix spike sample	↓	0.704 (SSR-SR)	0.72	102	102	Y
2/3	Duplicate sample	↓	0.704	0.705	0.5	0.3	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



Laboratory Data Consultants, Inc.

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Entrix
1000 Hart Road , Suite 130
Barrington IL 60010
ATTN: Ms. Cheryl Randle

September 6, 2011

SUBJECT: Mississippi Canyon 252, Data Validation

Dear Ms. Randle,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26086:

<u>SDG #</u>	<u>Fraction</u>
11-2654, 11-2656	Polynuclear Aromatic Hydrocarbons, Total Extractable Hydrocarbons (TEH) & Total Extractable Matter (TEM)

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Analytical Quality Assurance Plan (QAPP) for Mississippi Canyon 252 (Deepwater Horizon), Natural Resource Damage Assessment, Version 2.2, January 2011
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Mississippi Canyon 252
Collection Date: May 29 through June 10, 2011
LDC Report Date: August 30, 2011
Matrix: Sediment
Parameters: Total Extractable Hydrocarbons (TEH)
Validation Level: Level III
Laboratory: B & B Laboratories, Inc.
Sample Delivery Group (SDG): 11-2654

Sample Identification

SB9-20110529-S-LBNL1-TX-009
SB-20110602-S-NF009-TX-012
SB-20110603-S-NF010-TX-013
SB-20110603-S-NF012-TX-015
SB-20110604-S-NF013-TX-016
SB-20110605-S-LBNL17-TX-020
SB9-20110606-S-2.21-TX-026
SB9-20110607-S-D050S-TX-027
SB9-20110607-S-D024S-TX-028
SB9-20110609-S-LBNL10-TX-035
SB9-20110610-S-D062S-TX-036
SB9-20110606-S-LBNL7-TX-024
SB9-20110607-S-D043S-TX-029
SB9-20110608-S-S36-TX-031
SB9-20110608-S-D002S-TX-032
SB9-20110609-S-LBNL9-TX-034
SB-20110603-S-NF011-TX-014
SB-20110604-S-NF014-TX-017
SB-20110604-S-ALTNF015-TX-018
SB9-20110608-S-D002S-TX-032DUP

Introduction

This data review covers 20 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a B & B SOP 1016 for Total Extractable Hydrocarbons (TEH).

This review follows the Analytical Quality Assurance Plan (QAPP) for Mississippi Canyon 252 (Deepwater Horizon), Natural Resource Damage Assessment (Version 2.2)(January 20, 2011) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

Reason Codes:

- 1 Holding time/sample preservation
- 2 Chromatographic pattern in sample does not match pattern of calibration standard
- 3 Compound confirmation
- 4 Tentatively Identified Compound (TIC) (associated with NJ only)
- 5A Calibration (initial)
- 5B Calibration (continuing)
- 6 Field blank contamination
- 7 Lab blank contamination (e.g., method blank, instrument, etc.)
- 8 Matrix spike (MS & MSD) recoveries
- 9 Precision (all replicates)
- 10 Laboratory control sample recoveries
- 11 A more appropriate result is reported (associated with "R" and "DNR" only)
- 12 Reference material
- 13 Surrogate spike recoveries (a.k.a., labeled compounds and recovery standards)
- 14 Other (define in validation report)
- 15 GFAA post digestion spike recoveries
- 16 ICP serial dilution % difference
- 17 ICP interference check standard recovery
- 18 Trip blank contamination
- 19 Internal standard performance (e.g., area, retention time, recovery)
- 20 Linear range exceeded
- 21 Potential false positives
- 22 Elevated detection limit due to interference (i.e. laboratory, chemical, and/or matrix)
- 23 Sample result < MDL
- 24 Analyte not quantitated against an authentic standard

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034	n-C9 n-C10 n-C11 n-C12 Total extractable hydrocarbons	Cooler temperatures were reported at 10.9°C upon receipt by the laboratory.	Cooler temperature must be 4±2°C.	J (all detects) UJ (all non-detects)	A

The laboratory has indicated that sample jars for SB9-20110529-S-LBNL1-TX-009, SB-20110604-S-NF013-TX-016, SB9-20110606-S-2.21-TX-026, and SB-20110604-S-ALTNF015-TX-018 were received broken.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/4/11	n-C37 n-C38	15.2 15.5	SB9-20110607-S-D050S-TX-027 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total extractable hydrocarbons (TEH) were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Sample compositions were less than or equal to 70% moisture with the following exceptions:

Sample	Compound	% Moisture	Flag	A or P
SB-20110602-S-NF009-TX-012	All TCL compounds	77	J (all detects) UJ (all non-detects)	A
SB-20110603-S-NF010-TX-013	All TCL compounds	75	J (all detects) UJ (all non-detects)	A
SB-20110603-S-NF012-TX-015	All TCL compounds	77	J (all detects) UJ (all non-detects)	A
SB9-20110607-S-D024S-TX-028	All TCL compounds	78	J (all detects) UJ (all non-detects)	A
SB9-20110606-S-LBNL7-TX-024	All TCL compounds	72	J (all detects) UJ (all non-detects)	A
SB9-20110608-S-S36-TX-031	All TCL compounds	78	J (all detects) UJ (all non-detects)	A

Sample	Compound	% Moisture	Flag	A or P
SB9-20110608-S-D002S-TX-032 SB9-20110608-S-D002S-TX-032DUP	All TCL compounds	73	J (all detects) UJ (all non-detects)	A
SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017	All TCL compounds	75	J (all detects) UJ (all non-detects)	A
SB-20110604-S-ALTNF015-TX-018	All TCL compounds	77	J (all detects) UJ (all non-detects)	A

All compounds reported below the MDL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 11-2654	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Mississippi Canyon 252
Total Extractable Hydrocarbons (TEH) - Data Qualification Summary - SDG 11-2654**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
11-2654	SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034	n-C9 n-C10 n-C11 n-C12 Total extractable hydrocarbons	J (all detects) UJ (all non-detects)	A	Cooler temperatures (1)
11-2654	SB9-20110607-S-D050S-TX-027 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031	n-C37 n-C38	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (5B)
11-2654	SB-20110602-S-NF009-TX-012 SB-20110603-S-NF010-TX-013 SB-20110603-S-NF012-TX-015 SB9-20110607-S-D024S-TX-028 SB9-20110606-S-LBNL7-TX-024 SB9-20110608-S-S36-TX-031 SB9-20110608-S-D002S-TX-032 SB9-20110608-S-D002S-TX-032DUP SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018	All TCL compounds	J (all detects) UJ (all non-detects)	A	Compound quantitation and RLs (% moisture) (14)
11-2654	SB9-20110529-S-LBNL1-TX-009 SB-20110602-S-NF009-TX-012 SB-20110603-S-NF010-TX-013 SB-20110603-S-NF012-TX-015 SB-20110604-S-NF013-TX-016 SB-20110605-S-LBNL17-TX-020 SB9-20110606-S-2.21-TX-026 SB9-20110607-S-D050S-TX-027 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031 SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034 SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018 SB9-20110608-S-D002S-TX-032DUP	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A	Compound quantitation and RLs (23)

**Mississippi Canyon 252
Total Extractable Hydrocarbons (TEH) - Laboratory Blank Data Qualification
Summary - SDG 11-2654**

No Sample Data Qualified in this SDG

**Mississippi Canyon 252
Total Extractable Hydrocarbons (TEH) - Field Blank Data Qualification Summary -
SDG 11-2654**

No Sample Data Qualified in this SDG

LDC #: 26086A8

VALIDATION COMPLETENESS WORKSHEET

SDG #: 11-2654

Level III

Laboratory: B & B Laboratories, Inc.

Date: 5/30/11

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC TPH as Extractables (B & B SOP 1016)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	MW	Sampling dates: 5/29 - 6/10/11
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A/MW	lev ≤ 20%, CCV ≤ 15%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates dup	N/A	dict specified
VII.	Laboratory control samples	A	LCSD
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	results < MDL - FT (23)
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

MW Seds

1	SB9-20110529-S-LBNL1-TX-009	11	SB9-20110610-S-D062S-TX-036	21	2N/2586A MB
2	SB-20110602-S-NF009-TX-012	12	SB9-20110606-S-LBNL7-TX-024	22	
3	SB-20110603-S-NF010-TX-013	13	SB9-20110607-S-D043S-TX-029	23	
4	SB-20110603-S-NF012-TX-015	14	SB9-20110608-S-S36-TX-031	24	
5	SB-20110604-S-NF013-TX-016	15	SB9-20110608-S-D002S-TX-032	25	
6	SB-20110605-S-LBNL17-TX-020	16	SB9-20110609-S-LBNL9-TX-034	26	
7	SB9-20110606-S-2.21-TX-026	17	SB-20110603-S-NF011-TX-014	27	
8	SB9-20110607-S-D050S-TX-027	18	SB-20110604-S-NF014-TX-017	28	
9	SB9-20110607-S-D024S-TX-028	19	SB-20110604-S-ALTNF015-TX-018	29	
10	SB9-20110609-S-LBNL10-TX-035	20	SB9-20110608-S-D002S-TX-032DUP	30	

LDC #: 2608448
 SDG #: _____

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1
 Reviewer: g
 2nd Reviewer: l

METHOD: GC/MS BNA (EPA SW 846 Method 8270) ^{PPHs} 8015M1

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
 Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		2	To Moisture = 77		5/11/14 (14)
		3	75		
		4	77		
		9	78		
		12	72		
		14	78		
		15, 20	73		
		17	75		
		18	75		
		19	77		✓

Comments: See sample calculation verification worksheet for recalculations

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Mississippi Canyon 252
Collection Date: May 29 through June 10, 2010
LDC Report Date: August 30, 2011
Matrix: Sediment
Parameters: Polynuclear Aromatic Hydrocarbons
Validation Level: Level III
Laboratory: B & B Laboratories, Inc.
Sample Delivery Group (SDG): 11-2654

Sample Identification

SB9-20110529-S-LBNL1-TX-009
SB-20110602-S-NF009-TX-012
SB-20110603-S-NF010-TX-013
SB-20110603-S-NF012-TX-015
SB-20110604-S-NF013-TX-016
SB-20110605-S-LBNL17-TX-020
SB9-20110606-S-2.21-TX-026
SB9-20110607-S-D050S-TX-027
SB9-20110607-S-D024S-TX-028
SB9-20110609-S-LBNL10-TX-035
SB9-20110610-S-D062S-TX-036
SB9-20110606-S-LBNL7-TX-024
SB9-20110607-S-D043S-TX-029
SB9-20110608-S-S36-TX-031
SB9-20110608-S-D002S-TX-032
SB9-20110609-S-LBNL9-TX-034
SB-20110603-S-NF011-TX-014
SB-20110604-S-NF014-TX-017
SB-20110604-S-ALTNF015-TX-018
SB9-20110608-S-D002S-TX-032DUP

Introduction

This data review covers 20 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a B & B SOP 1006 for Polynuclear Aromatic Hydrocarbons.

This review follows the Analytical Quality Assurance Plan (QAPP) for Mississippi Canyon 252 (Deepwater Horizon), Natural Resource Damage Assessment (Version 2.2)(January 20, 2011) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

Reason Codes:

- 1 Holding time/sample preservation
- 2 Chromatographic pattern in sample does not match pattern of calibration standard
- 3 Compound confirmation
- 4 Tentatively Identified Compound (TIC) (associated with NJ only)
- 5A Calibration (initial)
- 5B Calibration (continuing)
- 6 Field blank contamination
- 7 Lab blank contamination (e.g., method blank, instrument, etc.)
- 8 Matrix spike (MS & MSD) recoveries
- 9 Precision (all replicates)
- 10 Laboratory control sample recoveries
- 11 A more appropriate result is reported (associated with "R" and "DNR" only)
- 12 Reference material
- 13 Surrogate spike recoveries (a.k.a., labeled compounds and recovery standards)
- 14 Other (define in validation report)
- 15 GFAA post digestion spike recoveries
- 16 ICP serial dilution % difference
- 17 ICP interference check standard recovery
- 18 Trip blank contamination
- 19 Internal standard performance (e.g., area, retention time, recovery)
- 20 Linear range exceeded
- 21 Potential false positives
- 22 Elevated detection limit due to interference (i.e. laboratory, chemical, and/or matrix)
- 23 Sample result < MDL
- 24 Analyte not quantitated against an authentic standard

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034	cis/trans-Decalin Naphthalene 2-Methylnaphthalene 1-Methylnaphthalene C1-Decalins C2-Decalins	Cooler temperatures were reported at 10.9°C upon receipt by the laboratory.	Cooler temperature must be 4±2°C.	J (all detects) UJ (all non-detects)	A

The laboratory has indicated that sample jars for SB9-20110529-S-LBNL1-TX-009, SB-20110604-S-NF013-TX-016, SB9-20110606-S-2.21-TX-026, and SB-20110604-S-ALTNF015-TX-018 were received broken.

II. GC/MS Instrument Performance Check

Instrument performance was checked. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/4/11	Benzo(g,h,i)perylene	26.4	SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031 SB9-20110609-S-LBNL9-TX-034 SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018	J (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/3/11	Fluorene	27.6	All samples in SDG 11-2654	J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
ENV 2586AMB	8/1/11	Naphthalene C1-Naphthalenes C2-Naphthalenes C3-Naphthalenes Biphenyl Dibenzofuran Fluorene Anthracene Phenanthrene Dibenzothiophene 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene 1,6,7-Trimethylnaphthalene	0.420 ng/g 0.305 ng/g 0.457 ng/g 0.763 ng/g 0.550 ng/g 0.480 ng/g 0.100 ng/g 0.0178 ng/g 0.158 ng/g 0.0371 ng/g 0.241 ng/g 0.241 ng/g 0.154 ng/g 0.0138 ng/g	All samples in SDG 11-2654

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
SB-20110603-S-NF010-TX-013	1,6,7-Trimethylnaphthalene	0.452 ng/g	0.452U ng/g
SB-20110603-S-NF012-TX-015	1,6,7-Trimethylnaphthalene	2.25 ng/g	2.25U ng/g
SB-20110604-S-NF013-TX-016	1,6,7-Trimethylnaphthalene	0.736 ng/g	0.736U ng/g
SB-20110605-S-LBNL17-TX-020	1,6,7-Trimethylnaphthalene	1.41 ng/g	1.41U ng/g
SB9-20110607-S-D050S-TX-027 (1.95X)	1,6,7-Trimethylnaphthalene	2.02 ng/g	2.02U ng/g
SB9-20110607-S-D024S-TX-028	1,6,7-Trimethylnaphthalene	1.34 ng/g	1.34U ng/g

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
SB9-20110610-S-D062S-TX-036	1,6,7-Trimethylnaphthalene	1.70 ng/g	1.70U ng/g
SB9-20110606-S-LBNL7-TX-024 (2.5X)	Anthracene 1,6,7-Trimethylnaphthalene	1.23 ng/g 1.22 ng/g	1.23U ng/g 1.22U ng/g
SB9-20110608-S-S36-TX-031	1,6,7-Trimethylnaphthalene	1.66 ng/g	1.66U ng/g
SB9-20110608-S-D002S-TX-032	1,6,7-Trimethylnaphthalene	0.310 ng/g	0.310U ng/g
SB9-20110609-S-LBNL9-TX-034	1,6,7-Trimethylnaphthalene	1.31 ng/g	1.31U ng/g
SB-20110604-S-NF014-TX-017	1,6,7-Trimethylnaphthalene	0.878 ng/g	0.878U ng/g
SB-20110604-S-ALTNF015-TX-018	1,6,7-Trimethylnaphthalene	0.302 ng/g	0.302U ng/g
SB9-20110608-S-D002S-TX-032DUP	1,6,7-Trimethylnaphthalene	0.358 ng/g	0.358U ng/g

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
SB-20110603-S-NF012-TX-015	Perylene-d12	5 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB-20110605-S-LBNL17-TX-020	Perylene-d12	5 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB9-20110607-S-D024S-TX-028	Perylene-d12	2 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB9-20110609-S-LBNL10-TX-035	Perylene-d12	4 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB9-20110610-S-D062S-TX-036	Perylene-d12	5 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB9-20110606-S-LBNL7-TX-024	Perylene-d12	4 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB9-20110607-S-D043S-TX-029	Perylene-d12	4 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
SB9-20110609-S-LBNL9-TX-034	Perylene-d12	9 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB-20110604-S-NF014-TX-017	Perylene-d12	5 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Percent differences (%D) of the standard reference material were within QC limits with the following exceptions:

SRM ID	Compound	%D (Limits)	Associated Samples	Flag	A or P
SRM 1941b	Pyrene	20.7 (≤20)	All samples in SDG 11-2654	J (all detects) UJ (all non-detects)	A
SRM 1941b	Benzo(a)anthracene Chrysene/Triphenylene Benzo(k,j)fluoranthene Carbazole Perylene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene	44.2 (≤20) 25.8 (≤20) 29.3 (≤20) 23.7 (≤20) 20.9 (≤20) 28.4 (≤20) 34.5 (≤20) 20.8 (≤20)	All samples in SDG 11-2654	J (all detects) J (all detects)	A

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
SB9-20110606-S-2.21-TX-026	Benzo(a)pyrene-d12	2308 (2324-9294)	Perylene Benzo(b)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene Benzo(e)pyrene Benzo(a)fluoranthene C30-Hopane Benzo(k,j)fluoranthene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Sample compositions were less than or equal to 70% moisture with the following exceptions:

Sample	Compound	% Moisture	Flag	A or P
SB-20110602-S-NF009-TX-012	All TCL compounds	77	J (all detects) UJ (all non-detects)	A
SB-20110603-S-NF010-TX-013	All TCL compounds	75	J (all detects) UJ (all non-detects)	A
SB-20110603-S-NF012-TX-015	All TCL compounds	77	J (all detects) UJ (all non-detects)	A
SB9-20110607-S-D024S-TX-028	All TCL compounds	78	J (all detects) UJ (all non-detects)	A
SB9-20110606-S-LBNL7-TX-024	All TCL compounds	72	J (all detects) UJ (all non-detects)	A
SB9-20110608-S-S36-TX-031	All TCL compounds	78	J (all detects) UJ (all non-detects)	A
SB9-20110608-S-D002S-TX-032 SB9-20110608-S-D002S-TX-032DUP	All TCL compounds	73	J (all detects) UJ (all non-detects)	A
SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017	All TCL compounds	75	J (all detects) UJ (all non-detects)	A
SB-20110604-S-ALTNF015-TX-018	All TCL compounds	77	J (all detects) UJ (all non-detects)	A

All compounds reported below the MDL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 11-2654	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Mississippi Canyon 252
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 11-2654**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
11-2654	SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034	cis/trans-Decalin Naphthalene 2-Methylnaphthalene 1-Methylnaphthalene C1-Decalins C2-Decalins	J (all detects) UJ (all non-detects)	A	Cooler temperatures (1)
11-2654	SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031 SB9-20110609-S-LBNL9-TX-034 SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018	Benzo(g,h,i)perylene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D) (5B)
11-2654	SB9-20110529-S-LBNL1-TX-009 SB-20110602-S-NF009-TX-012 SB-20110603-S-NF010-TX-013 SB-20110603-S-NF012-TX-015 SB-20110604-S-NF013-TX-016 SB-20110605-S-LBNL17-TX-020 SB9-20110606-S-2.21-TX-026 SB9-20110607-S-D050S-TX-027 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031 SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034 SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018 SB9-20110608-S-D002S-TX-032DUP	Fluorene	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (5B)
11-2654	SB-20110603-S-NF012-TX-015 SB-20110605-S-LBNL17-TX-020 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110609-S-LBNL9-TX-034 SB-20110604-S-NF014-TX-017	All TCL compounds	J (all detects) R (all non-detects)	P	Surrogate spikes (%R) (13)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
11-2654	SB9-20110529-S-LBNL1-TX-009 SB-20110602-S-NF009-TX-012 SB-20110603-S-NF010-TX-013 SB-20110603-S-NF012-TX-015 SB-20110604-S-NF013-TX-016 SB-20110605-S-LBNL17-TX-020 SB9-20110606-S-2.21-TX-026 SB9-20110607-S-D050S-TX-027 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031 SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034 SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018 SB9-20110608-S-D002S-TX-032DUP	Pyrene	J (all detects) UJ (all non-detects)	A	Standard reference material (%D) (12)
11-2654	SB9-20110529-S-LBNL1-TX-009 SB-20110602-S-NF009-TX-012 SB-20110603-S-NF010-TX-013 SB-20110603-S-NF012-TX-015 SB-20110604-S-NF013-TX-016 SB-20110605-S-LBNL17-TX-020 SB9-20110606-S-2.21-TX-026 SB9-20110607-S-D050S-TX-027 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031 SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034 SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018 SB9-20110608-S-D002S-TX-032DUP	Benzo(a)anthracene Chrysene/Triphenylene Benzo(k,j)fluoranthene Carbazole Perylene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene	J (all detects) J (all detects)	A	Standard reference material (%D) (12)
11-2654	SB9-20110606-S-2.21-TX-026	Perylene Benzo(b)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(g,h,i)perylene Benzo(e)pyrene Benzo(a)fluoranthene C30-Hopane Benzo(k,j)fluoranthene	J (all detects) UJ (all non-detects)	P	Internal standards (area) (19)
11-2654	SB-20110602-S-NF009-TX-012 SB-20110603-S-NF010-TX-013 SB-20110603-S-NF012-TX-015 SB9-20110607-S-D024S-TX-028 SB9-20110606-S-LBNL7-TX-024 SB9-20110608-S-S36-TX-031 SB9-20110608-S-D002S-TX-032 SB9-20110608-S-D002S-TX-032DUP SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018	All TCL compounds	J (all detects) UJ (all non-detects)	A	Compound quantitation and RLs (% moisture) (14)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
11-2654	SB9-20110529-S-LBNL1-TX-009 SB-20110602-S-NF009-TX-012 SB-20110603-S-NF010-TX-013 SB-20110603-S-NF012-TX-015 SB-20110604-S-NF013-TX-016 SB-20110605-S-LBNL17-TX-020 SB9-20110606-S-2.21-TX-026 SB9-20110607-S-D050S-TX-027 SB9-20110607-S-D024S-TX-028 SB9-20110609-S-LBNL10-TX-035 SB9-20110610-S-D062S-TX-036 SB9-20110606-S-LBNL7-TX-024 SB9-20110607-S-D043S-TX-029 SB9-20110608-S-S36-TX-031 SB9-20110608-S-D002S-TX-032 SB9-20110609-S-LBNL9-TX-034 SB-20110603-S-NF011-TX-014 SB-20110604-S-NF014-TX-017 SB-20110604-S-ALTNF015-TX-018 SB9-20110608-S-D002S-TX-032DUP	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A	Compound quantitation and RLs (23)

**Mississippi Canyon 252
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary
- SDG 11-2654**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
11-2654	SB-20110603-S-NF010-TX-013	1,6,7-Trimethylnaphthalene	0.452U ng/g	A	7
11-2654	SB-20110603-S-NF012-TX-015	1,6,7-Trimethylnaphthalene	2.25U ng/g	A	7
11-2654	SB-20110604-S-NF013-TX-016	1,6,7-Trimethylnaphthalene	0.736U ng/g	A	7
11-2654	SB-20110605-S-LBNL17-TX-020	1,6,7-Trimethylnaphthalene	1.41U ng/g	A	7
11-2654	SB9-20110607-S-D050S-TX-027 (1.95X)	1,6,7-Trimethylnaphthalene	2.02U ng/g	A	7
11-2654	SB9-20110607-S-D024S-TX-028	1,6,7-Trimethylnaphthalene	1.34U ng/g	A	7
11-2654	SB9-20110610-S-D062S-TX-036	1,6,7-Trimethylnaphthalene	1.70U ng/g	A	7
11-2654	SB9-20110606-S-LBNL7-TX-024 (2.5X)	Anthracene 1,6,7-Trimethylnaphthalene	1.23U ng/g 1.22U ng/g	A	7
11-2654	SB9-20110608-S-S36-TX-031	1,6,7-Trimethylnaphthalene	1.66U ng/g	A	7
11-2654	SB9-20110608-S-D002S-TX-032	1,6,7-Trimethylnaphthalene	0.310U ng/g	A	7
11-2654	SB9-20110609-S-LBNL9-TX-034	1,6,7-Trimethylnaphthalene	1.31U ng/g	A	7

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
11-2654	SB-20110604-S-NF014-TX-017	1,6,7-Trimethylnaphthalene	0.878U ng/g	A	7
11-2654	SB-20110604-S-ALTNF015-TX-018	1,6,7-Trimethylnaphthalene	0.302U ng/g	A	7
11-2654	SB9-20110608-S-D002S-TX-032DUP	1,6,7-Trimethylnaphthalene	0.358U ng/g	A	7

Mississippi Canyon 252

**Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG
11-2654**

No Sample Data Qualified in this SDG

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (B & B SOP 1006)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	W	Sampling dates: 5/29 - 6/10/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 20%
IV.	Continuing calibration/ICV	W	ICV ≤ 20%. CCV ≤ 25%
V.	Blanks	W	
VI.	Surrogate spikes	W	
VII.	Matrix spike/Matrix spike duplicates	DUP	N/A client specified
VIII.	Laboratory control samples	W	LOS/D, SPH.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	W	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	SN	results < MDL - FJ (23)
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

1	SB9-20110529-S-LBNL1-TX-009	11	SB9-20110610-S-D062S-TX-036	21	ENV 2586A4B
2	SB-20110602-S-NF009-TX-012	12	SB9-20110606-S-LBNL7-TX-024	22	
3	SB-20110603-S-NF010-TX-013	13	SB9-20110607-S-D043S-TX-029	23	
4	SB-20110603-S-NF012-TX-015	14	SB9-20110608-S-S36-TX-031	24	
5	SB-20110604-S-NF013-TX-016	15	SB9-20110608-S-D002S-TX-032	25	
6	SB-20110605-S-LBNL17-TX-020	16	SB9-20110609-S-LBNL9-TX-034	26	
7	SB9-20110606-S-2.21-TX-026	17	SB-20110603-S-NF011-TX-014	27	
8	SB9-20110607-S-D050S-TX-027	18	SB-20110604-S-NF014-TX-017	28	
9	SB9-20110607-S-D024S-TX-028	19	SB-20110604-S-ALTNF015-TX-018	29	
10	SB9-20110609-S-LBNL10-TX-035	20	SB9-20110608-S-D002S-TX-032DUP	30	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU. Benzo(b)thiophene
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Naphthobenzothiophene
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. Benzo(e)pyrene
XXX. 2,6-Dimethylnaphthalene	YY. 2,3,5-Trimethylnaphthalene	ZZZ. Perylene	AAA. Dibenzothiophene	BBBB. Benzo(a)fluoranthene
CCCC. Benzo(b)fluorene	DDDD. Cis/trans-Decalin	EEEE. Biphenyl	FFFF. Retene	GGGG. C30-Hopane
HHHH. 1,6,7-Trimethylnaphthalene	1111. Benzo(k,j,h)fluoranthene			

METHOD: GC/MS SVOAS (EPA SW 846 Method 8270C-SIM)

Blank extraction date: 8/1/11 Blank analysis date: 8/3/11

Associated Samples: All (7)

Conc. units: ng/g

Compound	Blank ID	Sample Identification															
		RL	3	4	5	6	8 (1.95X)	9	11	12(2.5X)	14	15	16	18			
S	ENV 2586AMB	0.870	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	>MRL	
C1-Ss	0.305	1.74															
C2-Ss	0.457	1.74															
C3-Ss	0.763	1.74															
EEEE	0.550	0.725															
JJ	0.480	1.02															
NN	0.100	0.965															
VV	0.0178	0.935								1.23/U							
UU	0.158	0.725								>MRL							
AAAA	0.0371	0.765															
W	0.241	1.74															
TTT	0.241	1.74															
XXX	0.154	1.74															
HHHH	0.0138	1.74	0.452/U	2.25/U	0.736/U	1.41/U	2.02/U	1.34/U	1.70/U	1.22/U	1.66/U	0.310/U	1.31/U	0.878/U			

others > MRL

Blanks

METHOD: GC/MS SVOAS (EPA SW 846 Method 8270C-SIM)

Blank extraction date: 8/1/11 Blank analysis date: 8/3/11
 Conc. units: ng/g

Associated Samples: All (7)

Compound	Blank ID	Sample Identification						
		RL	19	20				
	ENV 2586AMB							
S	0.420	0.870	>ML	>ML				
C1-Ss	0.305	1.74						
C2-Ss	0.457	1.74						
C3-Ss	0.763	1.74						
EEEE	0.550	0.725						
JJ	0.480	1.02						
NN	0.100	0.965						
VV	0.0178	0.935						
UU	0.158	0.725						
AAAA	0.0371	0.765						
W	0.241	1.74						
TTT	0.241	1.74						
XXX	0.154	1.74						
HHHH	0.0138	1.74	0.302/U	0.358/U				

LDC #: 2608BA26
SDG #: _____

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1
Reviewer: q
2nd Reviewer: 6

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N / N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
Y N / N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		2	% Moisture = 77		Y <u>N</u> / A (14)
		3	75		
		4	77		
		9	78		
		12	72		
		14	78		
		15, 20	73		
		17	75		
		18	75		
		19	77		Y <u>N</u> / A (14)

Comments: See sample calculation verification worksheet for recalculations



Laboratory Data Consultants, Inc.

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Fax 760.634.0439

Entrix
1000 Hart Road , Suite 130
Barrington IL 60010
ATTN: Ms. Cheryl Randle

September 6, 2011

SUBJECT: Mississippi Canyon 252, Data Validation

Dear Ms. Randle,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26086:

<u>SDG #</u>	<u>Fraction</u>
11-2654, 11-2656	Polynuclear Aromatic Hydrocarbons, Total Extractable Hydrocarbons (TEH) & Total Extractable Matter (TEM)

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Analytical Quality Assurance Plan (QAPP) for Mississippi Canyon 252 (Deepwater Horizon), Natural Resource Damage Assessment, Version 2.2, January 2011
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Mississippi Canyon 252
Collection Date: May 25 through June 11, 2010
LDC Report Date: August 30, 2011
Matrix: Sediment
Parameters: Polynuclear Aromatic Hydrocarbons
Validation Level: Level III
Laboratory: B & B Laboratories, Inc.
Sample Delivery Group (SDG): 11-2656

Sample Identification

SB9-20110527-S-NF008-TX-010
SB9-20110528-S-LBNL3-TX-019
SB9-20110528-S-D034S-TX-006
SB9-20110528-S-D031S-TX-007
SB9-20110528-S-ALTNF001-TX-008
SB-20110605-S-FF010-TX-023
SB9-20110610-S-FFMT4-TX-037
SB9-20110611-S-FFMT3-TX-038
SB9-20110609-S-HiPro-TX-033
SB9-20110525-S-D038SW-TX-001
SB9-20110525-S-D042S-TX-002
SB9-20110526-S-D044S-TX-003
SB-20110605-S-D019S-TX-021
SB-20110605-S-LBNL4-TX-022
SB9-20110526-S-NF006MOD-TX-004
SB9-20110526-S-D040S-TX-005
SB9-20110527-S-LBNL14-TX-011
SB-20110605-S-D019S-TX-021DUP

Introduction

This data review covers 18 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a B & B SOP 1006 for Polynuclear Aromatic Hydrocarbons.

This review follows the Analytical Quality Assurance Plan (QAPP) for Mississippi Canyon 252 (Deepwater Horizon), Natural Resource Damage Assessment (Version 2.2)(January 20, 2011) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

Reason Codes:

- 1 Holding time/sample preservation
- 2 Chromatographic pattern in sample does not match pattern of calibration standard
- 3 Compound confirmation
- 4 Tentatively Identified Compound (TIC) (associated with NJ only)
- 5A Calibration (initial)
- 5B Calibration (continuing)
- 6 Field blank contamination
- 7 Lab blank contamination (e.g., method blank, instrument, etc.)
- 8 Matrix spike (MS & MSD) recoveries
- 9 Precision (all replicates)
- 10 Laboratory control sample recoveries
- 11 A more appropriate result is reported (associated with "R" and "DNR" only)
- 12 Reference material
- 13 Surrogate spike recoveries (a.k.a., labeled compounds and recovery standards)
- 14 Other (define in validation report)
- 15 GFAA post digestion spike recoveries
- 16 ICP serial dilution % difference
- 17 ICP interference check standard recovery
- 18 Trip blank contamination
- 19 Internal standard performance (e.g., area, retention time, recovery)
- 20 Linear range exceeded
- 21 Potential false positives
- 22 Elevated detection limit due to interference (i.e. laboratory, chemical, and/or matrix)
- 23 Sample result < MDL
- 24 Analyte not quantitated against an authentic standard

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
SB9-20110609-S-HiPro-TX-033	cis/trans-Decalin Naphthalene 2-Methylnaphthalene 1-Methylnaphthalene C1-Decalins C2-Decalins	Cooler temperatures were reported at 10.9°C upon receipt by the laboratory.	Cooler temperature must be 4±2°C.	J (all detects) UJ (all non-detects)	A

The laboratory has indicated that sample jars for SB9-20110527-S-NF008-TX-010, SB9-20110528-S-D031S-TX-007, SB9-20110528-S-ALTNF001-TX-008, SB-20110605-S-FF010-TX-023, SB9-20110610-S-FFMT4-TX-037, SB9-20110609-S-HiPro-TX-033, SB9-20110525-S-D042S-TX-002, SB9-20110526-S-D044S-TX-003, SB9-20110526-S-NF006MOD-TX-004, SB9-20110526-S-D040S-TX-005, and SB9-20110527-S-LBNL14-TX-011 were received broken.

II. GC/MS Instrument Performance Check

Instrument performance was checked. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/4/11	Carbazole Naphthobenzothiophene Chrysene/Triphenylene	31.5 28.7 28.7	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB-20110605-S-FF010-TX-023 SB9-20110610-S-FFMT4-TX-037 SB9-20110611-S-FFMT3-TX-038	J (all detects) J (all detects) J (all detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/3/11	Benzo(a)anthracene	25.3	All samples in SDG 11-2656	J (all detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
ENV 2587AMB	8/2/11	cis/trans-Decalin C1-Decalins Naphthalene C1-Naphthalenes C2-Naphthalenes Biphenyl Dibenzofuran Fluorene Anthracene Phenanthrene 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene	0.315 ng/g 0.362 ng/g 0.412 ng/g 0.263 ng/g 0.168 ng/g 0.155 ng/g 0.175 ng/g 0.0800 ng/g 0.0150 ng/g 0.102 ng/g 0.209 ng/g 0.244 ng/g 0.0780 ng/g	All samples in SDG 11-2656

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
SB9-20110527-S-NF008-TX-010 (2.91X)	C1-Decalins	4.24 ng/g	4.24U ng/g
SB9-20110528-S-LBNL3-TX-019 (3.90X)	C1-Decalins Anthracene	3.16 ng/g 1.72 ng/g	3.16U ng/g 1.72U ng/g
SB9-20110528-S-D034S-TX-006 (68.2X)	cis/trans-Decalin C1-Decalins Naphthalene 1-Methylnaphthalene	27.8 ng/g 111 ng/g 58.2 ng/g 82.3 ng/g	27.8U ng/g 111U ng/g 58.2U ng/g 82.3U ng/g
SB9-20110528-S-D031S-TX-007 (50.7X)	cis/trans-Decalin Biphenyl Fluorene Anthracene 1-Methylnaphthalene	23.7 ng/g 35.6 ng/g 29.2 ng/g 25.3 ng/g 52.3 ng/g	23.7U ng/g 35.6U ng/g 29.2U ng/g 25.3U ng/g 52.3U ng/g

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
SB9-20110528-S-ALTNF001-TX-008 (43.9X)	cis/trans-Decalin C1-Decalins Naphthalene C1-Naphthalenes Biphenyl Fluorene Anthracene 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene	9.73 ng/g 32.3 ng/g 30.2 ng/g 32.0 ng/g 19.2 ng/g 26.1 ng/g 10.5 ng/g 37.3 ng/g 17.0 ng/g 43.5 ng/g	9.73U ng/g 32.3U ng/g 30.2U ng/g 32.0U ng/g 19.2U ng/g 26.1U ng/g 10.5U ng/g 37.3U ng/g 17.0U ng/g 43.5U ng/g
SB9-20110610-S-FFMT4-TX-037 (1.92X)	C1-Decalins	2.23 ng/g	2.23U ng/g
SB9-20110611-S-FFMT3-TX-038	C1-Decalins	1.50 ng/g	1.50U ng/g
SB9-20110609-S-HiPro-TX-033 (2.92X)	C1-Decalins Anthracene	3.12 ng/g 2.01 ng/g	3.12U ng/g 2.01U ng/g
SB9-20110525-S-D038SW-TX-001 (25X)	cis/trans-Decalin Dibenzofuran Anthracene	9.07 ng/g 25.2 ng/g 15.2 ng/g	9.07U ng/g 25.2U ng/g 15.2U ng/g
SB9-20110525-S-D042S-TX-002 (28.7X)	cis/trans-Decalin C1-Decalins C1-Naphthalenes Biphenyl Dibenzofuran Fluorene Anthracene 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene	5.80 ng/g 15.7 ng/g 39.7 ng/g 13.5 ng/g 13.7 ng/g 23.2 ng/g 17.1 ng/g 47.2 ng/g 20.0 ng/g 44.1 ng/g	5.80U ng/g 15.7U ng/g 39.7U ng/g 13.5U ng/g 13.7U ng/g 23.2U ng/g 17.1U ng/g 47.2U ng/g 20.0U ng/g 44.1U ng/g
SB-20110605-S-D019S-TX-021	C1-Decalins	1.68 ng/g	1.68U ng/g
SB9-20110526-S-NF006MOD-TX-004 (2.91X)	Anthracene	1.97 ng/g	1.97U ng/g
SB-20110605-S-D019S-TX-021DUP	C1-Decalins	1.50 ng/g	1.50U ng/g

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
SB9-20110527-S-NF008-TX-010	Perylene-d12	4 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
SB9-20110528-S-LBNL3-TX-019	Perylene-d12	3 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB9-20110609-S-HiPro-TX-033	Perylene-d12	4 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB-20110605-S-D019S-TX-021	Perylene-d12	6 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P
SB-20110605-S-D019S-TX-021DUP	Perylene-d12	6 (10-120)	All TCL compounds	J (all detects) R (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Percent differences (%D) of the standard reference material were within QC limits with the following exceptions:

SRM ID	Compound	%D (Limits)	Associated Samples	Flag	A or P
SRM 1941b	Benzo(a)anthracene Dibenzo(a,h)anthracene	40.3 (≤ 20) 21.5 (≤ 20)	All samples in SDG 11-2656	J (all detects) J (all detects)	A
SRM 1941b	Fluorene Benzo(a)pyrene Benzo(g,h,i)perylene	20.7 (≤ 20) 20.1 (≤ 20) 20.5 (≤ 20)	All samples in SDG 11-2656	J (all detects) UJ (all non-detects)	A

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Sample compositions were less than or equal to 70% moisture with the following exceptions:

Sample	Compound	% Moisture	Flag	A or P
SB9-20110527-S-NF008-TX-010	All TCL compounds	83	J (all detects) UJ (all non-detects)	A
SB9-20110528-S-LBNL3-TX-019	All TCL compounds	73	J (all detects) UJ (all non-detects)	A
SB9-20110528-S-D034S-TX-006 SB-20110605-S-D019S-TX-021 SB-20110605-S-D019S-TX-021DUP	All TCL compounds	71	J (all detects) UJ (all non-detects)	A
SB9-20110528-S-D031S-TX-007 SB9-20110526-S-D040S-TX-005	All TCL compounds	88	J (all detects) UJ (all non-detects)	A
SB9-20110611-S-FFMT3-TX-038	All TCL compounds	76	J (all detects) UJ (all non-detects)	A
SB9-20110609-S-HiPro-TX-033	All TCL compounds	85	J (all detects) UJ (all non-detects)	A
SB9-20110525-S-D042S-TX-002	All TCL compounds	77	J (all detects) UJ (all non-detects)	A
SB9-20110527-S-LBNL14-TX-011	All TCL compounds	84	J (all detects) UJ (all non-detects)	A

All compounds reported below the MDL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 11-2656	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Mississippi Canyon 252
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 11-2656**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
11-2656	SB9-20110609-S-HiPro-TX-033	cis/trans-Decalin Naphthalene 2-Methylnaphthalene 1-Methylnaphthalene C1-Decalins C2-Decalins	J (all detects) UJ (all non-detects)	A	Cooler temperatures (1)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB-20110605-S-FF010-TX-023 SB9-20110610-S-FFMT4-TX-037 SB9-20110611-S-FFMT3-TX-038	Carbazole Naphthobenzothiophene Chrysene/Triphenylene	J (all detects) J (all detects) J (all detects)	A	Continuing calibration (CCV %D) (5B)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110528-S-D034S-TX-006 SB9-20110528-S-D031S-TX-007 SB9-20110528-S-ALTNF001-TX-008 SB-20110605-S-FF010-TX-023 SB9-20110610-S-FFMT4-TX-037 SB9-20110611-S-FFMT3-TX-038 SB9-20110609-S-HiPro-TX-033 SB9-20110525-S-D038SW-TX-001 SB9-20110525-S-D042S-TX-002 SB9-20110526-S-D044S-TX-003 SB-20110605-S-D019S-TX-021 SB-20110605-S-LBNL4-TX-022 SB9-20110526-S-NF006MOD-TX-004 SB9-20110526-S-D040S-TX-005 SB9-20110527-S-LBNL14-TX-011 SB-20110605-S-D019S-TX-021DUP	Benzo(a)anthracene	J (all detects)	A	Continuing calibration (ICV %D) (5B)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110609-S-HiPro-TX-033 SB-20110605-S-D019S-TX-021 SB-20110605-S-D019S-TX-021DUP	All TCL compounds	J (all detects) R (all non-detects)	P	Surrogate spikes (%R) (13)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110528-S-D034S-TX-006 SB9-20110528-S-D031S-TX-007 SB9-20110528-S-ALTNF001-TX-008 SB-20110605-S-FF010-TX-023 SB9-20110610-S-FFMT4-TX-037 SB9-20110611-S-FFMT3-TX-038 SB9-20110609-S-HiPro-TX-033 SB9-20110525-S-D038SW-TX-001 SB9-20110525-S-D042S-TX-002 SB9-20110526-S-D044S-TX-003 SB-20110605-S-D019S-TX-021 SB-20110605-S-LBNL4-TX-022 SB9-20110526-S-NF006MOD-TX-004 SB9-20110526-S-D040S-TX-005 SB9-20110527-S-LBNL14-TX-011 SB-20110605-S-D019S-TX-021DUP	Benzo(a)anthracene Dibenzo(a,h)anthracene	J (all detects) J (all detects)	A	Standard reference material (%D) (12)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110528-S-D034S-TX-006 SB9-20110528-S-D031S-TX-007 SB9-20110528-S-ALTNF001-TX-008 SB-20110605-S-FF010-TX-023 SB9-20110610-S-FFMT4-TX-037 SB9-20110611-S-FFMT3-TX-038 SB9-20110609-S-HiPro-TX-033 SB9-20110525-S-D038SW-TX-001 SB9-20110525-S-D042S-TX-002 SB9-20110526-S-D044S-TX-003 SB-20110605-S-D019S-TX-021 SB-20110605-S-LBNL4-TX-022 SB9-20110526-S-NF006MOD-TX-004 SB9-20110526-S-D040S-TX-005 SB9-20110527-S-LBNL14-TX-011 SB-20110605-S-D019S-TX-021DUP	Fluorene Benzo(a)pyrene Benzo(g,h,i)perylene	J (all detects) UJ (all non-detects)	A	Standard reference material (%D) (12)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110528-S-D034S-TX-006 SB-20110605-S-D019S-TX-021 SB-20110605-S-D019S-TX-021DUP SB9-20110528-S-D031S-TX-007 SB9-20110526-S-D040S-TX-005 SB9-20110611-S-FFMT3-TX-038 SB9-20110609-S-HiPro-TX-033 SB9-20110525-S-D042S-TX-002 SB9-20110527-S-LBNL14-TX-011	All TCL compounds	J (all detects) UJ (all non-detects)	A	Compound quantitation and RLs (% moisture) (14)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110528-S-D034S-TX-006 SB9-20110528-S-D031S-TX-007 SB9-20110528-S-ALTNF001-TX-008 SB-20110605-S-FF010-TX-023 SB9-20110610-S-FFMT4-TX-037 SB9-20110611-S-FFMT3-TX-038 SB9-20110609-S-HiPro-TX-033 SB9-20110525-S-D038SW-TX-001 SB9-20110525-S-D042S-TX-002 SB9-20110526-S-D044S-TX-003 SB-20110605-S-D019S-TX-021 SB-20110605-S-LBNL4-TX-022 SB9-20110526-S-NF006MOD-TX-004 SB9-20110526-S-D040S-TX-005 SB9-20110527-S-LBNL14-TX-011 SB-20110605-S-D019S-TX-021DUP	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A	Compound quantitation and RLs (23)

**Mississippi Canyon 252
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary
- SDG 11-2656**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
11-2656	SB9-20110527-S-NF008-TX-010 (2.91X)	C1-Decalins	4.24U ng/g	A	7

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
11-2656	SB9-20110528-S-LBNL3-TX-019 (3.90X)	C1-Decalins Anthracene	3.16U ng/g 1.72U ng/g	A	7
11-2656	SB9-20110528-S-D034S-TX-006 (68.2X)	cis/trans-Decalin C1-Decalins Naphthalene 1-Methylnaphthalene	27.8U ng/g 111U ng/g 58.2U ng/g 82.3U ng/g	A	7
11-2656	SB9-20110528-S-D031S-TX-007 (50.7X)	cis/trans-Decalin Biphenyl Fluorene Anthracene 1-Methylnaphthalene	23.7U ng/g 35.6U ng/g 29.2U ng/g 25.3U ng/g 52.3U ng/g	A	7
11-2656	SB9-20110528-S-ALTNF001-TX-008 (43.9X)	cis/trans-Decalin C1-Decalins Naphthalene C1-Naphthalenes Biphenyl Fluorene Anthracene 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene	9.73U ng/g 32.3U ng/g 30.2U ng/g 32.0U ng/g 19.2U ng/g 26.1U ng/g 10.5U ng/g 37.3U ng/g 17.0U ng/g 43.5U ng/g	A	7
11-2656	SB9-20110610-S-FFMT4-TX-037 (1.92X)	C1-Decalins	2.23U ng/g	A	7
11-2656	SB9-20110611-S-FFMT3-TX-038	C1-Decalins	1.50U ng/g	A	7
11-2656	SB9-20110609-S-HiPro-TX-033 (2.92X)	C1-Decalins Anthracene	3.12U ng/g 2.01U ng/g	A	7
11-2656	SB9-20110525-S-D038SW-TX-001 (25X)	cis/trans-Decalin Dibenzofuran Anthracene	9.07U ng/g 25.2U ng/g 15.2U ng/g	A	7
11-2656	SB9-20110525-S-D042S-TX-002 (28.7X)	cis/trans-Decalin C1-Decalins C1-Naphthalenes Biphenyl Dibenzofuran Fluorene Anthracene 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene	5.80U ng/g 15.7U ng/g 39.7U ng/g 13.5U ng/g 13.7U ng/g 23.2U ng/g 17.1U ng/g 47.2U ng/g 20.0U ng/g 44.1U ng/g	A	7
11-2656	SB-20110605-S-D019S-TX-021	C1-Decalins	1.68U ng/g	A	7
11-2656	SB9-20110526-S-NF006MOD-TX-004 (2.91X)	Anthracene	1.97U ng/g	A	7
11-2656	SB-20110605-S-D019S-TX-021DUP	C1-Decalins	1.50U ng/g	A	7

Mississippi Canyon 252
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG
11-2656

No Sample Data Qualified in this SDG

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (B & B SOP 1006)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 5/25 - 6/11/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD = 20%
IV.	Continuing calibration/ICV	SW	ICV ≤ 20% . CCV ≤ 25%
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates /DUP	N/A	client specified
VIII.	Laboratory control samples	SW	LCS/D! SW
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	SW	results < HDL - FI (23)
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

MS Sed

1	SB9-20110527-S-NF008-TX-010	11	SB9-20110525-S-D042S-TX-002	21
2	SB9-20110528-S-LBNL3-TX-019	12	SB9-20110526-S-D044S-TX-003	22
3	SB9-20110528-S-D034S-TX-006	13	SB-20110605-S-D019S-TX-021	23
4	SB9-20110528-S-D031S-TX-007	14	SB-20110605-S-LBNL4-TX-022	24
5	SB9-20110528-S-LTNF001-TX-008	15	SB9-20110526-S-NF006MOD-TX-004	25
6	SB-20110605-S-FF010-TX-023	16	SB9-20110526-S-D040S-TX-005	26
7	SB9-20110610-S-FFMT4-TX-037	17	SB9-20110527-S-LBNL14-TX-011	27
8	SB9-20110611-S-FFMT3-TX-038	18	SB-20110605-S-D019S-TX-021DUP	28
9	SB9-20110609-S-HIPRO-TX-033	19		29
10	SB9-20110525-S-D038SW-TX-001	20		30

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU. Benzo(b)thiophene
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Naphthobenzothiophene
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. Benzo(e)pyrene
XXX. 2,6-Dimethylnaphthalene	YYY. 2,3,5-Trimethylnaphthalene	ZZZ. Perylene	AAA. Dibenzothiophene	BBBB. Benzo(a)fluoranthene
CCCC. Benzo(b)fluorene	DDDD. Cis/trans-Decalin	EEEE. Biphenyl	FFF. Retene	GGGG. C30-Hopane
HHHH. 1,6,7-Trimethylnaphthalene				

Blanks

Reviewer: Q

2nd Reviewer: L

METHOD: GC/MS SVOAS (EPA SW 846 Method 8270C-SIM)

Blank extraction date: 8/2/11 Blank analysis date: 8/7/11

Associated Samples: All (7)

Conc. units: ng/g

Compound	Blank ID	Sample Identification											
		1 (2.91X)	2 (3.90X)	3 (68.2X)	4 (50.7X)	5 (43.9X)	6	7 (1.92X)	8	9 (2.92X)	10 (25X)	11 (28.7X)	12 (2.04X)
DDDD	0.315	>MRL	>MRL	27.8/U	23.7/U	9.73/U	>MRL	>MRL	>MRL	>MRL	9.07/U	5.80/U	>MRL
C1-Decalins	0.362	4.24/U	3.16/U	111/U	>MRL	32.3/U		2.23/U	1.50/U	>MRL	>MRL	15.7/U	
S	0.412	>MRL	>MRL	58.2/U		30.2/U		>MRL	>MRL			>MRL	
C1-Ss	0.263			>MRL		32.0/U						39.7/U	
C2-Ss	0.168					>MRL						>MRL	
EEEE	0.155				35.6/U	19.2/U						13.5/U	
JJ	0.175				>MRL	>MRL					25.2/U	13.7/U	
NN	0.0800				29.2/U	26.1/U					>MRL	23.2/U	
VV	0.0150		1.72/U		25.3/U	10.5/U				2.01/U	15.2/U	17.1/U	
UU	0.102		>MRL		>MRL	>MRL				>MRL	>MRL	>MRL	
WW	0.209					37.3/U						47.2/U	
TTT	0.244			82.3/U	52.3/U	17.0/U						20.0/U	
XXX	0.0780			>MRL	>MRL	43.5/U						44.1/U	

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: GC/MS SVOAS (EPA SW 846 Method 8270C-SIM)

Blank extraction date: 8/2/11 Blank analysis date: 8/7/11
Conc. units: ng/g

Associated Samples: All (7)

Compound	Blank ID	Sample Identification						
		RL	13	14	15(2.91X)	16(5.81X)	17	18
	ENV 2587AMB							
DDDD	0.315	0.870	>MR<	>MR<	>MR<	>MR<	>MR<	>MR<
C1-Decalins	0.362	1.74	1.68/U				1.50/U	
S	0.412	0.870	>MR<				>MR<	
C1-Ss	0.263	1.74						
C2-Ss	0.168	1.74						
EEEE	0.155	0.725						
JJ	0.175	1.02						
NN	0.0800	0.965		✓				
VV	0.0150	0.935		1.97/U				
UU	0.102	0.725		>MR<				
W	0.209	1.74						
TTT	0.244	1.74						
XXX	0.0780	1.74	✓	✓	✓	✓	✓	✓

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y N/N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
 Y N/N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		1	70 Mesitylene = 83		Y/N/A (14)
		2	73		
		3	71		
		4	88		
		8	76		
		9	85		
		11	77		
		13, 18	71		
		16	88		
		17	87		

Comments: See sample calculation verification worksheet for recalculations

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Mississippi Canyon 252
Collection Date: May 25 through June 11, 2011
LDC Report Date: August 30, 2011
Matrix: Sediment
Parameters: Total Extractable Hydrocarbons (TEH)
Validation Level: Level III
Laboratory: B & B Laboratories, Inc.
Sample Delivery Group (SDG): 11-2656

Sample Identification

SB9-20110527-S-NF008-TX-010
SB9-20110528-S-LBNL3-TX-019
SB9-20110528-S-D034S-TX-006
SB9-20110528-S-D031S-TX-007
SB9-20110528-S-ALTNF001-TX-008
SB-20110605-S-FF010-TX-023
SB9-20110610-S-FFMT4-TX-037
SB9-20110611-S-FFMT3-TX-038
SB9-20110609-S-HiPro-TX-033
SB9-20110525-S-D038SW-TX-001
SB9-20110525-S-D042S-TX-002
SB9-20110526-S-D044S-TX-003
SB-20110605-S-D019S-TX-021
SB-20110605-S-LBNL4-TX-022
SB9-20110526-S-NF006MOD-TX-004
SB9-20110526-S-D040S-TX-005
SB9-20110527-S-LBNL14-TX-011
SB-20110605-S-D019S-TX-021DUP

Introduction

This data review covers 18 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a B & B SOP 1016 for Total Extractable Hydrocarbons (TEH).

This review follows the Analytical Quality Assurance Plan (QAPP) for Mississippi Canyon 252 (Deepwater Horizon), Natural Resource Damage Assessment (Version 2.2)(January 20, 2011) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

Reason Codes:

- 1 Holding time/sample preservation
- 2 Chromatographic pattern in sample does not match pattern of calibration standard
- 3 Compound confirmation
- 4 Tentatively Identified Compound (TIC) (associated with NJ only)
- 5A Calibration (initial)
- 5B Calibration (continuing)
- 6 Field blank contamination
- 7 Lab blank contamination (e.g., method blank, instrument, etc.)
- 8 Matrix spike (MS & MSD) recoveries
- 9 Precision (all replicates)
- 10 Laboratory control sample recoveries
- 11 A more appropriate result is reported (associated with "R" and "DNR" only)
- 12 Reference material
- 13 Surrogate spike recoveries (a.k.a., labeled compounds and recovery standards)
- 14 Other (define in validation report)
- 15 GFAA post digestion spike recoveries
- 16 ICP serial dilution % difference
- 17 ICP interference check standard recovery
- 18 Trip blank contamination
- 19 Internal standard performance (e.g., area, retention time, recovery)
- 20 Linear range exceeded
- 21 Potential false positives
- 22 Elevated detection limit due to interference (i.e. laboratory, chemical, and/or matrix)
- 23 Sample result < MDL
- 24 Analyte not quantitated against an authentic standard

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
SB9-20110609-S-HiPro-TX-033	n-C9 n-C10 n-C11 n-C12 Total extractable hydrocarbons	Cooler temperatures were reported at 10.9°C upon receipt by the laboratory.	Cooler temperature must be 4±2°C.	J (all detects) UJ (all non-detects)	A

The laboratory has indicated that sample jars for SB9-20110527-S-NF008-TX-010, SB9-20110528-S-D031S-TX-007, SB9-20110528-S-ALTNF001-TX-008, SB-20110605-S-FF010-TX-023, SB9-20110610-S-FFMT4-TX-037, SB9-20110609-S-HiPro-TX-033, SB9-20110525-S-D042S-TX-002, SB9-20110526-S-D044S-TX-003, SB9-20110526-S-NF006MOD-TX-004, SB9-20110526-S-D040S-TX-005, and SB9-20110527-S-LBNL14-TX-011 were received broken.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total extractable hydrocarbons (TEH) were found in the method blanks. No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Sample compositions were less than or equal to 70% moisture with the following exceptions:

Sample	Compound	% Moisture	Flag	A or P
SB9-20110527-S-NF008-TX-010	All TCL compounds	83	J (all detects) UJ (all non-detects)	A
SB9-20110528-S-LBNL3-TX-019	All TCL compounds	73	J (all detects) UJ (all non-detects)	A
SB9-20110528-S-D034S-TX-006 SB-20110605-S-D019S-TX-021 SB-20110605-S-D019S-TX-021DUP	All TCL compounds	71	J (all detects) UJ (all non-detects)	A
SB9-20110528-S-D031S-TX-007 SB9-20110526-S-D040S-TX-005	All TCL compounds	88	J (all detects) UJ (all non-detects)	A
SB9-20110611-S-FFMT3-TX-038	All TCL compounds	76	J (all detects) UJ (all non-detects)	A
SB9-20110609-S-HiPro-TX-033	All TCL compounds	85	J (all detects) UJ (all non-detects)	A
SB9-20110525-S-D042S-TX-002	All TCL compounds	77	J (all detects) UJ (all non-detects)	A
SB9-20110527-S-LBNL14-TX-011	All TCL compounds	84	J (all detects) UJ (all non-detects)	A

All compounds reported below the MDL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 11-2656	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Mississippi Canyon 252
Total Extractable Hydrocarbons (TEH) - Data Qualification Summary - SDG 11-2656**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
11-2656	SB9-20110609-S-HiPro-TX-033	n-C9 n-C10 n-C11 n-C12 Total extractable hydrocarbons	J (all detects) UJ (all non-detects)	A	Cooler temperatures (1)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110528-S-D034S-TX-006 SB-20110605-S-D019S-TX-021 SB-20110605-S-D019S-TX-021DUP SB9-20110528-S-D031S-TX-007 SB9-20110526-S-D040S-TX-005 SB9-20110611-S-FFMT3-TX-038 SB9-20110609-S-HiPro-TX-033 SB9-20110525-S-D042S-TX-002 SB9-20110527-S-LBNL14-TX-011	All TCL compounds	J (all detects) UJ (all non-detects)	A	Compound quantitation and RLs (% moisture) (14)
11-2656	SB9-20110527-S-NF008-TX-010 SB9-20110528-S-LBNL3-TX-019 SB9-20110528-S-D034S-TX-006 SB9-20110528-S-D031S-TX-007 SB9-20110528-S-ALTNF001-TX-008 SB-20110605-S-FF010-TX-023 SB9-20110610-S-FFMT4-TX-037 SB9-20110611-S-FFMT3-TX-038 SB9-20110609-S-HiPro-TX-033 SB9-20110525-S-D038SW-TX-001 SB9-20110525-S-D042S-TX-002 SB9-20110526-S-D044S-TX-003 SB-20110605-S-D019S-TX-021 SB-20110605-S-LBNL4-TX-022 SB9-20110526-S-NF006MOD-TX-004 SB9-20110526-S-D040S-TX-005 SB9-20110527-S-LBNL14-TX-011 SB-20110605-S-D019S-TX-021DUP	All compounds reported below the MDL and qualified J by the laboratory.	FJ (all detects)	A	Compound quantitation and RLs (23)

**Mississippi Canyon 252
Total Extractable Hydrocarbons (TEH) - Laboratory Blank Data Qualification
Summary - SDG 11-2656**

No Sample Data Qualified in this SDG

**Mississippi Canyon 252
Total Extractable Hydrocarbons (TEH) - Field Blank Data Qualification Summary -
SDG 11-2656**

No Sample Data Qualified in this SDG

LDC #: 26086B8

VALIDATION COMPLETENESS WORKSHEET

SDG #: 11-2656

Level III

Laboratory: B & B Laboratories, Inc.

Date: 5/29/11

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC TPH as Extractables (B & B SOP 1016)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 5/25 - 6/11/11
II.	Initial calibration	A	20%
III.	Calibration verification/ICV	A	1CV ≤ 20%. 2CV ≤ 15%
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	10 dup N/A	diast. specified
VII.	Laboratory control samples	A	< 0.5 3
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	SW	results < MDL - FJ (23)
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	SB9-20110527-S-NF008-TX-010	11	SB9-20110525-S-D042S-TX-002	21	ZNV 2587A MB
2	SB9-20110528-S-LBNL3-TX-019	12	SB9-20110526-S-D044S-TX-003	22	
3	SB9-20110528-S-D034S-TX-006	13	SB-20110605-S-D019S-TX-021	23	
4	SB9-20110528-S-D031S-TX-007	14	SB-20110605-S-LBNL4-TX-022	24	
5	SB9-20110528-S-LTNF001-TX-008	15	SB9-20110526-S-NF006MOD-TX-004	25	
6	SB-20110605-S-FF010-TX-023	16	SB9-20110526-S-D040S-TX-005	26	
7	SB9-20110610-S-FFMT4-TX-037	17	SB9-20110527-S-LBNL14-TX-011	27	
8	SB9-20110611-S-FFMT3-TX-038	18	SB-20110605-S-D019S-TX-021DUP	28	
9	SB9-20110609-S-HiPro-TX-033	19		29	
10	SB9-20110525-S-D038SW-TX-001	20		30	

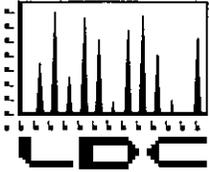
VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

METHOD: ^{TPHs} GC/MS-BNA (EPA SW 846 Method 8270) 82/15/17

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y N (N/A) Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
 Y N (N/A) Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		1	Retention Time = 8.3		Y/N/A (14)
		2	7.3		
		3	7.1		
		4	8.8		
		8	7.6		
		9	8.5		
		11	7.7		
		13, 18	7.1		
		16	8.8		
		17	8.7		

Comments: See sample calculation verification worksheet for recalculations



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

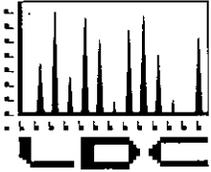
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 11, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gross Alpha & Beta
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17905-1/11-07064-OR

Sample Identification

RD-59A_071111_01
RD-59B_071111_01
RD-59C_071111_01
RD-59A_071111_01(P)
RD-59B_071111_01(P)
RD-59C_071111_01(P)
RD-59A_071111_01DUP
RD-59A_071111_01MS
RD-59A_071111_01MSD

Samples ending in "P" were reported for particulate only

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Isotope	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-59A_071111_01MS/MSD (RD-59A_071111_01 RD-59B_071111_01 RD-59C_071111_01)	Gross alpha	128.20 (80-120)	120.75 (80-120)	-	J (all detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17905-1/ 11-07064-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Data Qualification Summary - SDG 280-17905-1/11-07064-OR

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17905-1/ 11-07064-OR	RD-59A_071111_01 RD-59B_071111_01 RD-59C_071111_01	Gross alpha	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-17905-1/ 11-07064-OR	RD-59A_071111_01 RD-59B_071111_01 RD-59C_071111_01 RD-59A_071111_01(P) RD-59B_071111_01(P) RD-59C_071111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR

No Sample Data Qualified in this SDG

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	SW MS/D, Dup	
VI.	Laboratory control samples	A AS LCS	
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	RD-59A_071111_01	11		21		31	
2	RD-59B_071111_01	12		22		32	
3	RD-59C_071111_01	13		23		33	
4	RD-59A_071111_01(Diss)	14		24		34	
5	RD-59B_071111_01(Diss)	15		25		35	
6	RD-59C_071111_01(Diss)	16		26		36	
7	RD-59A_071111_01(Diss) DUP	17		27		37	
8	<i>(MS)</i>	18		28		38	
9	<i>↓ MSP</i>	19		29		39	
10		20		30		40	

Notes: *P = particulate*

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 11, 2011
LDC Report Date: September 1, 2011
Matrix: Water
Parameters: Tritium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Services
Sample Delivery Group (SDG): 280-17905-1/11-07065-OR

Sample Identification

RD-59A_071111_01
RD-59B_071111_01
RD-59C_071111_01
RD-59A_071111_01DUP

Introduction

This data review covers 4 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17905-1/11-07065-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Data Qualification Summary - SDG 280-17905-1/11-07065-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17905-1/ 11-07065-OR	RD-59A_071111_01 RD-59B_071111_01 RD-59C_071111_01	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Laboratory Blank Data Qualification Summary - SDG 280-17905-1/11-07065-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Field Blank Data Qualification Summary - SDG 280-17905-1/11-07065-OR**

No Sample Data Qualified in this SDG

LDC #: 26090A34

VALIDATION COMPLETENESS WORKSHEET

Date: 8/30/11

SDG #: 280-17905-1/11-07064-OR

Level V

Page: 1 of 1

Laboratory: Test America Laboratories, Inc./Eberline Analytical

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-59A_071111_01	11		21		31	
2	RD-59B_071111_01	12		22		32	
3	RD-59C_071111_01	13		23		33	
4	RD-59A_071111_01DUP	14		24		34	
5	RD-59C_071111_01MS	15		25		35	
6	RD-59C_071111_01MSD-	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 11, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gamma Spectroscopy
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17905-1/11-07064-OR

Sample Identification

RD-59A_071111_01
RD-59B_071111_01
RD-59C_071111_01
RD-59A_071111_01(P)
RD-59B_071111_01(P)
RD-59C_071111_01(P)
RD-59A_071111_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 7 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17905-1/ 11-07064-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17905-1/ 11-07064-OR	RD-59A_071111_01 RD-59B_071111_01 RD-59C_071111_01 RD-59A_071111_01(P) RD-59B_071111_01(P) RD-59C_071111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

No Sample Data Qualified in this SDG

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/11/11</u>
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	<u>Dup</u>
VI.	Laboratory control samples	A	<u>LCS</u>
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	RD-59A_071111_01	11		21		31
2	RD-59B_071111_01	12		22		32
3	RD-59C_071111_01	13		23		33
4	RD-59A_071111_01(<u>P</u> Diss)	14		24		34
5	RD-59B_071111_01(<u>D</u> iss)	15		25		35
6	RD-59C_071111_01(<u>D</u> iss)	16		26		36
7	RD-59A_071111_01(<u>D</u> iss)DUP	17		27		37
8	<u>(M1) M02</u>	18		28		38
9		19		29		39
10		20		30		40

Notes: P = particulate

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 11, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17905-1/11-07064-OR

Sample Identification

RD-59A_071111_01
RD-59B_071111_01
RD-59C_071111_01
RD-59A_071111_01(P)
RD-59B_071111_01(P)
RD-59C_071111_01(P)
RD-59A_071111_01DUP
RD-59A_071111_01MS
RD-59A_071111_01MSD

Samples appended with "P" were reported for particulate

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the isotope was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Tracer ID	Isotope	LCS %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	121.89 (30-110)	RD-59A_071111_01	J (all detects) UJ (all non-detects)	P

Tracer ID	Isotope	LCS %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	115.85	RD-59B_071111_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	120.51	RD-59A_071111_01MS	J (all detects) UJ (all non-detects)	P

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17905-1/11-07064-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Isotopic Uranium - Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17905-1/ 11-07064-OR	RD-59A_071111_01 RD-59B_071111_01	All isotopic uranium	J (all detects) UJ (all non-detects)	P	Tracer recovery (%R) (*VII)
280-17905-1/ 11-07064-OR	RD-59A_071111_01 RD-59B_071111_01 RD-59C_071111_01 RD-59A_071111_01(P) RD-59B_071111_01(P) RD-59C_071111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

No Sample Data Qualified in this SDG

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	MS/D, DUP
VI.	Laboratory control samples	A	LCS
VII.	Tracer Recovery	SW	
VIII.	Minimum Detectable Activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *water*

1	RD-59A_071111_01	11		21		31	
2	RD-59B_071111_01	12		22		32	
3	RD-59C_071111_01	13		23		33	
4	RD-59A_071111_01(P _{particulate})	14		24		34	
5	RD-59B_071111_01(D _{iss})	15		25		35	
6	RD-59C_071111_01(D _{iss})	16		26		36	
7	RD-59A_071111_01(D _{iss}) DUP	17		27		37	
8	RD-59A_071111_01 MS	18		28		38	
9	RD-59B_071111_01 MS	19		29		39	
10		20		30		40	

Notes: *P = particulate*

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 11, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17905-1/11-07064-OR

Sample Identification

RD-59A_071111_01
RD-59B_071111_01
RD-59C_071111_01
RD-59A_071111_01(P)
RD-59B_071111_01(P)
RD-59C_071111_01(P)
RD-59A_071111_01DUP
RD-59A_071111_01MS
RD-59A_071111_01MSD

Samples appended with "P" were reported for particulate

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA) with the following exceptions:

Method Blank ID	Isotope	Activity	Associated Samples
PB (prep blank)	Strontium-90	0.708 pCi/L	All samples in SDG 280-17905-1/ 11-07064-OR

Sample activities were compared to activities detected in the method blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated method blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17905-1/11-07064-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17905-1/ 11-07064-OR	RD-59A_071111_01 RD-59B_071111_01 RD-59C_071111_01 RD-59A_071111_01(P) RD-59B_071111_01(P) RD-59C_071111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Field Blank Data Qualification Summary - SDG 280-17905-1/11-07064-OR**

No Sample Data Qualified in this SDG

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/11/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	SW	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	MS/D, AP
VI.	Laboratory control samples	A	LCS
VII.	Carrier recovery	A	
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: WAPL

1	RD-59A_071111_01	11		21		31	
2	RD-59B_071111_01	12		22		32	
3	RD-59C_071111_01	13		23		33	
4	RD-59A_071111_01(P) (Diss)	14		24		34	
5	RD-59B_071111_01(Diss)	15		25		35	
6	RD-59C_071111_01(Diss)	16		26		36	
7	RD-59A_071111_01(Diss) DUP	17		27		37	
8	(X1) MS	18		28		38	
9	MS	19		29		39	
10		20		30		40	

Notes: P=particular

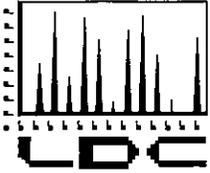
VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: Radiochemistry, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
 Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: pCi/L		Associated Samples: All		Reason Code: B	
Isotope	Blank ID	Blank Action Limit	Sample Identification		
	PB (pCi/L)		No Qual		
Sr-90	0.708	3.54			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

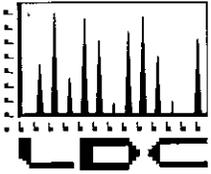
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 12, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gross Alpha & Beta
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17956-1/11-07075-OR

Sample Identification

FB_071211_19
RD-34C_071211_01
RD-34A_071211_01
RD-98_071211_01
RD-33B_071211_01
RD-33C_071211_01
FB_071211_19(P)
RD-34C_071211_01(P)
RD-34A_071211_01(P)
RD-98_071211_01(P)
RD-33B_071211_01(P)
RD-33C_071211_01(P)
RD-34C_071211_01DUP

Samples ending in "P" were reported for particulate only

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Samples FB_071211_19 and FB_071211_19(P) were identified as field blanks. No gross alpha or beta contaminants were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Isotope	%R (Limits)	Associated Samples	Flag	A or P
LCS	Gross alpha	79.281 (80-120)	All samples in SDG 280-17956-1/11-07075-OR	J (all detects) UJ (all non-detects)	P

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17956-1/ 11-07075-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Data Qualification Summary - SDG 280-17956-1/11-07075-OR

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17956-1/ 11-07075-OR	FB_071211_19 RD-34C_071211_01 RD-34A_071211_01 RD-98_071211_01 RD-33B_071211_01 RD-33C_071211_01 FB_071211_19(P) RD-34C_071211_01(P) RD-34A_071211_01(P) RD-98_071211_01(P) RD-33B_071211_01(P) RD-33C_071211_01(P)	Gross alpha	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
280-17956-1/ 11-07075-OR	FB_071211_19 RD-34C_071211_01 RD-34A_071211_01 RD-98_071211_01 RD-33B_071211_01 RD-33C_071211_01 FB_071211_19(P) RD-34C_071211_01(P) RD-34A_071211_01(P) RD-98_071211_01(P) RD-33B_071211_01(P) RD-33C_071211_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR

No Sample Data Qualified in this SDG

LDC #: 26090B22 **5** VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-17956-1/11-07076-OR Level V

Laboratory: Test America Laboratories, Inc./Eberline Analytical

Date: 8-30-11

Page: 1 of 1

Reviewer: CR

2nd Reviewer: W

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/12/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	D	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	dup
VI.	Laboratory control samples	ASW LCS	
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	ND	FB=1,7

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *Water*

1	FB_071211_19	11	RD-33B_071211_01(Diss)	21		31	
2	RD-34C_071211_01	12	RD-33C_071211_01(Diss)	22		32	
3	RD-34A_071211_01	13	RD-34C_071211_01(Diss) DUP	23		33	
4	RD-98_071211_01	14		24		34	
5	RD-33B_071211_01	15		25		35	
6	RD-33C_071211_01	16		26		36	
7	FB_071211_19(Diss)	17		27		37	
8	RD-34C_071211_01(Diss)	18		28		38	
9	RD-34A_071211_01(Diss)	19		29		39	
10	RD-98_071211_01(Diss)	20		30		40	

Notes: *P = particulate*

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 12, 2011
LDC Report Date: September 1, 2011
Matrix: Water
Parameters: Tritium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Services
Sample Delivery Group (SDG): 280-17956-1/11-07076-OR

Sample Identification

FB_071211_19
RD-34C_071211_01
RD-34A_071211_01
RD-98_071211_01
RD-33B_071211_01
RD-33C_071211_01
RD-34C_071211_01DUP

Introduction

This data review covers 7 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Sample FB_071211_19 was identified as a field blank. No tritium was found.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17956-1/11-07076-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Data Qualification Summary - SDG 280-17956-1/11-07076-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17956-1/ 11-07076-OR	FB_071211_19 RD-34C_071211_01 RD-34A_071211_01 RD-98_071211_01 RD-33B_071211_01 RD-33C_071211_01	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Laboratory Blank Data Qualification Summary - SDG 280-17956-1/11-07076-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Field Blank Data Qualification Summary - SDG 280-17956-1/11-07076-OR**

No Sample Data Qualified in this SDG

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/12/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	NO	FB=1

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: WAPZ

1	FB_071211_19	11		21		31	
2	RD-34C_071211_01	12		22		32	
3	RD-34A_071211_01	13		23		33	
4	RD-98_071211_01	14		24		34	
5	RD-33B_071211_01	15		25		35	
6	RD-33C_071211_01	16		26		36	
7	RD-34C_071211_01DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 12, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gamma Spectroscopy
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17956-1/11-07075-OR

Sample Identification

FB_071211_19
RD-34C_071211_01
RD-34A_071211_01
RD-98_071211_01
RD-33B_071211_01
RD-33C_071211_01
FB_071211_19(P)
RD-34C_071211_01(P)
RD-34A_071211_01(P)
RD-98_071211_01(P)
RD-33B_071211_01(P)
RD-33C_071211_01(P)
RD-34C_071211_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

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- UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.
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I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Samples FB_071211_19 and FB_071211_19(P) were identified as field blanks. No gamma emitting radionuclides were found.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17956-1/ 11-07075-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Data Qualification Summary - SDG 280-17956-1/11-07075-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17956-1/ 11-07075-OR	FB_071211_19 RD-34C_071211_01 RD-34A_071211_01 RD-98_071211_01 RD-33B_071211_01 RD-33C_071211_01 FB_071211_19(P) RD-34C_071211_01(P) RD-34A_071211_01(P) RD-98_071211_01(P) RD-33B_071211_01(P) RD-33C_071211_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR**

No Sample Data Qualified in this SDG

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/12/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	ADP
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	NO	FB=1,7

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *water*

1	FB_071211_19	11	RD-33B_071211_01(Diss)	21		31
2	RD-34C_071211_01	12	RD-33C_071211_01(Diss)	22		32
3	RD-34A_071211_01	13	RD-34C_071211_01(Diss) DUP	23		33
4	RD-98_071211_01	14		24		34
5	RD-33B_071211_01	15		25		35
6	RD-33C_071211_01	16		26		36
7	FB_071211_19(Diss)	17		27		37
8	RD-34C_071211_01(Diss)	18		28		38
9	RD-34A_071211_01(Diss)	19		29		39
10	RD-98_071211_01(Diss)	20		30		40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 12, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17956-1/11-07075-OR

Sample Identification

FB_071211_19
RD-34C_071211_01
RD-34A_071211_01
RD-98_071211_01
RD-33B_071211_01
RD-33C_071211_01
FB_071211_19(P)
RD-34C_071211_01(P)
RD-34A_071211_01(P)
RD-98_071211_01(P)
RD-33B_071211_01(P)
RD-33C_071211_01(P)
RD-34C_071211_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA) with the following exceptions:

Method Blank ID	Isotope	Activity	Associated Samples
PB (prep blank)	Uranium-234	0.100 pCi/L	All samples in SDG 280-17956-1/ 11-07075-OR

Sample activities were compared to activities detected in the method blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated method blanks with the following exceptions:

Sample	Isotope	Reported Activity	Modified Final Activity
FB_071211_19	Uranium-234	0.235 pCi/L	0.235U pCi/L
RD-34C_071211_01	Uranium-234	0.217 pCi/L	0.217U pCi/L
RD-33B_071211_01	Uranium-234	0.456 pCi/L	0.456U pCi/L
RD-34C_071211_01(P)	Uranium-234	0.246 pCi/L	0.246U pCi/L

Samples FB_071211_19 and FB_071211_19(P) were identified as field blanks. No contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Isotope	Activity	Associated Samples
FB_071211_19	7/12/11	Uranium-234	0.235 pCi/L	No associated samples in this SDG

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Tracer ID	Isotope	Tracer %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	26.17 (30-110)	RD-34C_071211_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	111.96 (30-110)	RD-34A_071211_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	19.14 (30-110)	FB_071211_19(P)	J (all detects) UJ (all non-detects)	P

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17956-1/11-07075-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Data Qualification Summary - SDG 280-17956-1/11-07075-OR

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17956-1/ 11-07075-OR	RD-34C_071211_01 RD-34A_071211_01 FB_071211_19(P)	All isotopic uranium	J (all detects) UJ (all non-detects)	P	Tracer recovery (%R) (*VIII)
280-17956-1/ 11-07075-OR	FB_071211_19 RD-34C_071211_01 RD-34A_071211_01 RD-98_071211_01 RD-33B_071211_01 RD-33C_071211_01 FB_071211_19(P) RD-34C_071211_01(P) RD-34A_071211_01(P) RD-98_071211_01(P) RD-33B_071211_01(P) RD-33C_071211_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR

SDG	Sample	Isotope	Modified Final Concentration	A or P	Code
280-17956-1/ 11-07075-OR	FB_071211_19	Uranium-234	0.235U pCi/L	A	B
280-17956-1/ 11-07075-OR	RD-34C_071211_01	Uranium-234	0.217U pCi/L	A	B
280-17956-1/ 11-07075-OR	RD-33B_071211_01	Uranium-234	0.456U pCi/L	A	B
280-17956-1/ 11-07075-OR	RD-34C_071211_01(P)	Uranium-234	0.246U pCi/L	A	B

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR

No Sample Data Qualified in this SDG

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/12/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	SW	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
VI.	Laboratory control samples	A	LCS
VII.	Tracer Recovery	SW	
VIII.	Minimum Detectable Activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	SW	FB=1,7

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: WATER

1	FB_071211_19	11	RD-33B_071211_01 ^P (Diss)	21		31	
2	RD-34C_071211_01	12	RD-33C_071211_01 ^P (Diss)	22		32	
3	RD-34A_071211_01	13	RD-34C_071211_01 ^P (Diss)DUP	23		33	
4	RD-98_071211_01	14		24		34	
5	RD-33B_071211_01	15		25		35	
6	RD-33C_071211_01	16		26		36	
7	FB_071211_19 ^P (Diss)	17		27		37	
8	RD-34C_071211_01 ^P (Diss)	18		28		38	
9	RD-34A_071211_01 ^P (Diss)	19		29		39	
10	RD-98_071211_01 ^P (Diss)	20		30		40	

Notes: P=particulate

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: Radiochemistry, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: <u>pCi/L</u>		Associated Samples: <u>All</u>			Reason Code: <u>B</u>		
Isotope	Blank ID	Blank Action Limit	Sample Identification				
	PB (pCi/L)		1	2	5	8	
U-234	0.100	0.5	0.235	0.217	0.456	0.246	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET

Field Blanks

METHOD: Radiochemistry, Method See Cover

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target analytes detected in the field blanks?

Blank units: pCi/L **Associated sample units:** pCi/L

Sampling date: 7/12/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Reason: F

Associated Samples: 2-6-16-16

Analyte	Blank ID	Action Limit	Sample Identification
	1		
U-234	0.235	1.175	0.217 <u>0.456</u> <u>CR</u>

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 12, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-17956-1/11-07075-OR

Sample Identification

FB_071211_19
RD-34C_071211_01
RD-34A_071211_01
RD-98_071211_01
RD-33B_071211_01
RD-33C_071211_01
FB_071211_19(P)
RD-34C_071211_01(P)
RD-34A_071211_01(P)
RD-98_071211_01(P)
RD-33B_071211_01(P)
RD-33C_071211_01(P)
RD-34C_071211_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Samples FB_071211_19 and FB_071211_19(P) were identified as field blanks. No strontium-90 was found with the following exceptions:

Field Blank ID	Sampling Date	Isotope	Activity	Associated Samples
FB_071211_19	7/12/11	Strontium-90	0.987 pCi/L	No associated samples in this SDG
FB_071211_19P	7/12/11	Strontium-90	2.144 pCi/L	No associated samples in this SDG

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-17956-1/11-07075-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Data Qualification Summary - SDG 280-17956-1/11-07075-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-17956-1/ 11-07075-OR	FB_071211_19 RD-34C_071211_01 RD-34A_071211_01 RD-98_071211_01 RD-33B_071211_01 RD-33C_071211_01 FB_071211_19(P) RD-34C_071211_01(P) RD-34A_071211_01(P) RD-98_071211_01(P) RD-33B_071211_01(P) RD-33C_071211_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Field Blank Data Qualification Summary - SDG 280-17956-1/11-07075-OR**

No Sample Data Qualified in this SDG

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/12/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
VI.	Laboratory control samples	A	LES
VII.	Carrier recovery	A	
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	SW	FB=1,7

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	FB_071211_19	11	RD-33B_071211_01(Diss)	21		31	
2	RD-34C_071211_01	12	RD-33C_071211_01(Diss)	22		32	
3	RD-34A_071211_01	13	RD-34C_071211_01(Diss) DUP	23		33	
4	RD-98_071211_01	14		24		34	
5	RD-33B_071211_01	15		25		35	
6	RD-33C_071211_01	16		26		36	
7	FB_071211_19(Diss)	17		27		37	
8	RD-34C_071211_01(Diss)	18		28		38	
9	RD-34A_071211_01(Diss)	19		29		39	
10	RD-98_071211_01(Diss)	20		30		40	

Notes: P = particulate

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Radiochemistry, Method See Cover
 Y N N/A Were field blanks identified in this SDG?
 Y N N/A Were target analytes detected in the field blanks?
Blank units: pCi/L **Associated sample units:** pCi/L
Sampling date: 7/12/11 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other:

Reason Code: F

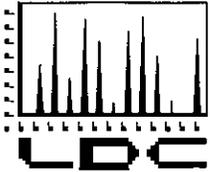
Associated Samples: 2-6 None

Analyte	Blank ID	Action Limit	Sample Identification
	1	No Qualifiers	
Sr-90	0.987	4.935	

Associated Samples: 8-12 None

Analyte	Blank ID	Action Limit	Sample Identification
	7	No Qualifiers	
Sr-90	2.144	10.72	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

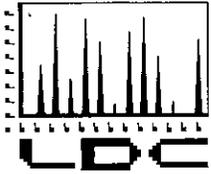
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

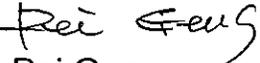
The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 13, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gross Alpha & Beta
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18017-1/11-07083-OR

Sample Identification

RD-56B_071311_01
RD-56A_071311_01
RD-86_071311_01
RD-96_071311_01
RD-13_071311_01
RD-20_071311_01
RD-56B_071311_01(P)
RD-56A_071311_01(P)
RD-86_071311_01(P)
RD-96_071311_01(P)
RD-13_071311_01(P)
RD-20_071311_01(P)
RD-86_071311_01DUP

Samples ending in "P" were reported for particulate only

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18017-1/ 11-07083-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Gross Alpha & Beta - Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18017-1/ 11-07083-OR	RD-56B_071311_01 RD-56A_071311_01 RD-86_071311_01 RD-96_071311_01 RD-13_071311_01 RD-20_071311_01 RD-56B_071311_01(P) RD-56A_071311_01(P) RD-86_071311_01(P) RD-96_071311_01(P) RD-13_071311_01(P) RD-20_071311_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

No Sample Data Qualified in this SDG

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/13/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-56B_071311_01	11	RD-13_071311_01(Diss) ^P	21		31	
2	RD-56A_071311_01	12	RD-20_071311_01(Diss)	22		32	
3	RD-86_071311_01	13	RD-86_071311_01(Diss)DUP	23		33	
4	RD-96_071311_01	14		24		34	
5	RD-13_071311_01	15		25		35	
6	RD-20_071311_01	16		26		36	
7	RD-56B_071311_01(Diss) ^P	17		27		37	
8	RD-56A_071311_01(Diss)	18		28		38	
9	RD-86_071311_01(Diss)	19		29		39	
10	RD-96_071311_01(Diss)	20		30		40	

Notes: P = particulate

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 13, 2011
LDC Report Date: September 1, 2011
Matrix: Water
Parameters: Tritium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Services
Sample Delivery Group (SDG): 280-18017-1/11-07084-OR

Sample Identification

RD-56B_071311_01
RD-56A_071311_01
RD-86_071311_01
RD-96_071311_01
RD-13_071311_01
RD-20_071311_01
RD-86_071311_01DUP

Introduction

This data review covers 7 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18017-1/11-07084-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Data Qualification Summary - SDG 280-18017-1/11-07084-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18017-1/ 11-07084-OR	RD-56B_071311_01 RD-56A_071311_01 RD-86_071311_01 RD-96_071311_01 RD-13_071311_01 RD-20_071311_01	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Laboratory Blank Data Qualification Summary - SDG 280-18017-1/11-07084-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Field Blank Data Qualification Summary - SDG 280-18017-1/11-07084-OR**

No Sample Data Qualified in this SDG

LDC #: 26090C34

4 **VALIDATION COMPLETENESS WORKSHEET**

Date: 8-30-11

SDG #: 280-18017-1/11-07088-OR

Level V

Page: 1 of 1

Laboratory: Test America Laboratories, Inc./Eberline Analytical

Reviewer: CE

2nd Reviewer: _____

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/13/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-56B_071311_01	11		21		31	
2	RD-56A_071311_01	12		22		32	
3	RD-86_071311_01	13		23		33	
4	RD-96_071311_01	14		24		34	
5	RD-13_071311_01	15		25		35	
6	RD-20_071311_01	16		26		36	
7	RD-86_071311_01DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 13, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gamma Spectroscopy
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18017-1/11-07083-OR

Sample Identification

RD-56B_071311_01
RD-56A_071311_01
RD-86_071311_01
RD-96_071311_01
RD-13_071311_01
RD-20_071311_01
RD-56B_071311_01(P)
RD-56A_071311_01(P)
RD-86_071311_01(P)
RD-96_071311_01(P)
RD-13_071311_01(P)
RD-20_071311_01(P)
RD-86_071311_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18017-1/ 11-07083-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18017-1/ 11-07083-OR	RD-56B_071311_01 RD-56A_071311_01 RD-86_071311_01 RD-96_071311_01 RD-13_071311_01 RD-20_071311_01 RD-56B_071311_01(P) RD-56A_071311_01(P) RD-86_071311_01(P) RD-96_071311_01(P) RD-13_071311_01(P) RD-20_071311_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

No Sample Data Qualified in this SDG

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/13/11</u>
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	<u>Rep</u>
VI.	Laboratory control samples	A	<u>LES</u>
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-56B_071311_01	11	RD-13_071311_01(Diss) ^P	21		31	
2	RD-56A_071311_01	12	RD-20_071311_01(Diss) ^N	22		32	
3	RD-86_071311_01	13	RD-86_071311_01(Diss)DUP	23		33	
4	RD-96_071311_01	14		24		34	
5	RD-13_071311_01	15		25		35	
6	RD-20_071311_01	16		26		36	
7	RD-56B_071311_01(Diss) ^P	17		27		37	
8	RD-56A_071311_01(Diss)	18		28		38	
9	RD-86_071311_01(Diss)	19		29		39	
10	RD-96_071311_01(Diss) ^N	20		30		40	

Notes: P = particulate

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 13, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18017-1/11-07083-OR

Sample Identification

RD-56B_071311_01
RD-56A_071311_01
RD-86_071311_01
RD-96_071311_01
RD-13_071311_01
RD-20_071311_01
RD-56B_071311_01(P)
RD-56A_071311_01(P)
RD-86_071311_01(P)
RD-96_071311_01(P)
RD-13_071311_01(P)
RD-20_071311_01(P)
RD-86_071311_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Tracer ID	Isotope	Tracer %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	122.74 (30-110)	RD-96_071311_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	29.63 (30-110)	RD-56B_071311_01(P)	J (all detects) UJ (all non-detects)	P

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18017-1/11-07083-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Data Qualification Summary - SDG 280-18017-1/11-07083-OR

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18017-1/ 11-07083-OR	RD-96_071311_01 RD-56B_071311_01(P)	All isotopic uranium	J (all detects) UJ (all non-detects)	P	Tracer recovery (%R) (*VIII)
280-18017-1/ 11-07083-OR	RD-56B_071311_01 RD-56A_071311_01 RD-86_071311_01 RD-96_071311_01 RD-13_071311_01 RD-20_071311_01 RD-56B_071311_01(P) RD-56A_071311_01(P) RD-86_071311_01(P) RD-96_071311_01(P) RD-13_071311_01(P) RD-20_071311_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR

No Sample Data Qualified in this SDG

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/13/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Tracer Recovery	SW	
VIII.	Minimum Detectable Activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	RD-56B_071311_01	11	RD-13_071311_01(P)	21		31	
2	RD-56A_071311_01	12	RD-20_071311_01(D)	22		32	
3	RD-86_071311_01	13	RD-86_071311_01(D)DUP	23		33	
4	RD-96_071311_01	14		24		34	
5	RD-13_071311_01	15		25		35	
6	RD-20_071311_01	16		26		36	
7	RD-56B_071311_01(P)	17		27		37	
8	RD-56A_071311_01(D)	18		28		38	
9	RD-86_071311_01(D)	19		29		39	
10	RD-96_071311_01(D)	20		30		40	

Notes: P = particulate

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 13, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18017-1/11-07083-OR

Sample Identification

RD-56B_071311_01
RD-56A_071311_01
RD-86_071311_01
RD-96_071311_01
RD-13_071311_01
RD-20_071311_01
RD-56B_071311_01(P)
RD-56A_071311_01(P)
RD-86_071311_01(P)
RD-96_071311_01(P)
RD-13_071311_01(P)
RD-20_071311_01(P)
RD-86_071311_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA) .

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18017-1/11-07083-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Strontium-90 - Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18017-1/ 11-07083-OR	RD-56B_071311_01 RD-56A_071311_01 RD-86_071311_01 RD-96_071311_01 RD-13_071311_01 RD-20_071311_01 RD-56B_071311_01(P) RD-56A_071311_01(P) RD-86_071311_01(P) RD-96_071311_01(P) RD-13_071311_01(P) RD-20_071311_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Strontium-90 - Field Blank Data Qualification Summary - SDG 280-18017-1/11-07083-OR**

No Sample Data Qualified in this SDG

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

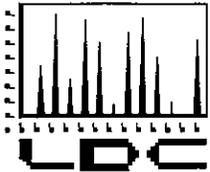
	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/13/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
VI.	Laboratory control samples	A	LES
VII.	Carrier recovery	A	
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *Water*

1	RD-56B_071311_01	11	RD-13_071311_01(Diss)	21		31	
2	RD-56A_071311_01	12	RD-20_071311_01(Diss)	22		32	
3	RD-86_071311_01	13	RD-86_071311_01(Diss)DUP	23		33	
4	RD-96_071311_01	14		24		34	
5	RD-13_071311_01	15		25		35	
6	RD-20_071311_01	16		26		36	
7	RD-56B_071311_01(Diss)	17		27		37	
8	RD-56A_071311_01(Diss)	18		28		38	
9	RD-86_071311_01(Diss)	19		29		39	
10	RD-96_071311_01(Diss)	20		30		40	

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

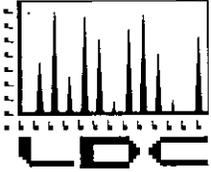
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 14, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gross Alpha & Beta
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18083-1/11-07100-OR

Sample Identification

RD-14_071411_01
EB_PZ-124_071411
PZ-124_071411_01A
RS-18_071411_01
RD-85_071411_01
RD-85_071411_36
RD-14_071411_01(P)
EB_PZ-124_071411(P)
PZ-124_071411_01A(P)
RS-18_071411_01(P)
RD-85_071411_01(P)
RD-85_071411_36(P)
RD-14_071411_01DUP

Samples ending in "P" were reported for particulate only

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Samples EB_PZ-124_071411 and EB_PZ-124_071411(P) were identified as equipment blanks. No gross alpha or beta contaminants were found.

Samples FB_071211_19 and FB_071211_19P (both from SDG 280-17905-1/11-07064-OR) were identified as field blanks. No gross alpha or beta contaminants were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Isotope	%R (Limits)	Associated Samples	Flag	A or P
LCS	Gross alpha	74.590 (80-120)	All samples in SDG 280-18083-1/11-07100-OR	J (all detects) UJ (all non-detects)	P

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18083-1/ 11-07100-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

Samples RD-85_071411_01 and RD-85_071411_36 and samples RD-85_071411_01(P) and RD-85_071411_36(P) were identified as field duplicates. No gross alpha or beta was detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/L)		RPD (Limits)	Flag	A or P
	RD-85_071411_01	RD-85_071411_36			
Gross alpha	9.813	9.922	1 (≤35)	-	-
Gross beta	11.899	5.869U	68 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Gross Alpha & Beta - Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18083-1/ 11-07100-OR	RD-14_071411_01 EB_PZ-124_071411 PZ-124_071411_01A RS-18_071411_01 RD-85_071411_01 RD-85_071411_36 RD-14_071411_01(P) EB_PZ-124_071411(P) PZ-124_071411_01A(P) RS-18_071411_01(P) RD-85_071411_01(P) RD-85_071411_36(P)	Gross alpha	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
280-18083-1/ 11-07100-OR	RD-14_071411_01 EB_PZ-124_071411 PZ-124_071411_01A RS-18_071411_01 RD-85_071411_01 RD-85_071411_36 RD-14_071411_01(P) EB_PZ-124_071411(P) PZ-124_071411_01A(P) RS-18_071411_01(P) RD-85_071411_01(P) RD-85_071411_36(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

No Sample Data Qualified in this SDG

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/14/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	dup
VI.	Laboratory control samples	SW	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(5,6), (11,12)
XI.	Field blanks	ND	EB=2,8; FB=FB07121-19 (P) / 11-07064-OR

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-14_071411_01	11	RD-85_071411_01(Diss) ^P	21		31	
2	EB_PZ-124_071411	12	RD-85_071411_36(Diss)	22		32	
3	PZ-124_071411_01A	13	RD-14_071411_01(Diss)DUP	23		33	
4	RS-18_071411_01	14		24		34	
5	RD-85_071411_01	15		25		35	
6	RD-85_071411_36	16		26		36	
7	RD-14_071411_01(Diss) ^P	17		27		37	
8	EB_PZ-124_071411(Diss)	18		28		38	
9	PZ-124_071411_01A(Diss)	19		29		39	
10	RS-18_071411_01(Diss)	20		30		40	

Notes: P = particulate

LDC# 26090D22

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Radiochemistry, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤ 35)	
	5	6		
Gross Alpha	9.813	9.922	1	
Gross Beta	11.899	5.869U	68	NQ (<5xRL)

V:\FIELD DUPLICATES\FD_inorganic\26090D22.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 14, 2011
LDC Report Date: September 1, 2011
Matrix: Water
Parameters: Tritium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Services
Sample Delivery Group (SDG): 280-18083-1/11-07076-OR

Sample Identification

RD-14_071411_01
EB_PZ-124_071411
PZ-124_071411_01A
RS-18_071411_01
RD-85_071411_01
RD-85_071411_36
RD-14_071411_01DUP

Introduction

This data review covers 7 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Sample EB_PZ-124_071411 was identified as an equipment blank. No tritium was found.

Sample FB_071211_19 (from SDG 280-170105-1/11-07065-OR) was identified as a field blank. No tritium was found.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18083-1/11-07076-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

Samples RD-85_071411_01 and RD-85_071411_36 were identified as field duplicates. No tritium was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Data Qualification Summary - SDG 280-18083-1/11-07076-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18083-1/ 11-07076-OR	RD-14_071411_01 EB_PZ-124_071411 PZ-124_071411_01A RS-18_071411_01 RD-85_071411_01 RD-85_071411_36	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Laboratory Blank Data Qualification Summary - SDG 280-18083-1/11-07076-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Field Blank Data Qualification Summary - SDG 280-18083-1/11-07076-OR**

No Sample Data Qualified in this SDG

LDC #: 26090D34

076 VALIDATION COMPLETENESS WORKSHEET

Date: 8-30-11

SDG #: 280-18083-1/11-07100-OR

Level V

Page: 1 of 1

Laboratory: Test America Laboratories, Inc./Eberline Analytical

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/14/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	Dup
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	ND	CS, 6)
XI.	Field blanks	ND	EB=2; FB= FB-07121-19 (280-17005-1/11-07065-OR)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-14_071411_01	11		21		31	
2	EB_PZ-124_071411	12		22		32	
3	PZ-124_071411_01A	13		23		33	
4	RS-18_071411_01	14		24		34	
5	RD-85_071411_01	15		25		35	
6	RD-85_071411_36	16		26		36	
7	RD-14_071411_01DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 14, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Gamma Spectroscopy
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18083-1/11-07100-OR

Sample Identification

RD-14_071411_01
EB_PZ-124_071411
PZ-124_071411_01A
RS-18_071411_01
RD-85_071411_01
RD-85_071411_36
RD-14_071411_01(P)
EB_PZ-124_071411(P)
PZ-124_071411_01A(P)
RS-18_071411_01(P)
RD-85_071411_01(P)
RD-85_071411_36(P)
RD-14_071411_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Samples EB_PZ-124_071411 and EB_PZ-124_071411(P) were identified as equipment blanks. No gamma emitting radionuclides were found.

Samples FB_071211_19 and FB_071211_19(P) (both from SDG 280-17905-1/11-07064-OR) were identified as field blanks. No gamma emitting radionuclides were found.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18083-1/ 11-07100-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples RD-85_071411_01 and RD-85_071411_36 and samples RD-85_071411_01(P) and RD-85_071411_36(P) were identified as field duplicates. No gamma emitting radionuclides were detected in any of the samples with the following exceptions:

Isotope	Concentration (pCi/L)		RPD (Limits)	Flags	A or P
	RD-85_071411_01(P)	RD-85_071411_36(P)			
Barium-133	0.724U	2.167	100 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18083-1/ 11-07100-OR	RD-14_071411_01 EB_PZ-124_071411 PZ-124_071411_01A RS-18_071411_01 RD-85_071411_01 RD-85_071411_36 RD-14_071411_01(P) EB_PZ-124_071411(P) PZ-124_071411_01A(P) RS-18_071411_01(P) RD-85_071411_01(P) RD-85_071411_36(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

No Sample Data Qualified in this SDG

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/14/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(5,6) & (11,12)
XI.	Field blanks	ND	EB=2,8; FB=FB-071211-19 (280-17905) ↓ (P) / 11-07064-OR

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinstate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	RD-14_071411_01	11	RD-85_071411_01(Diss) ^P	21		31	
2	EB_PZ-124_071411	12	RD-85_071411_36(Diss)	22		32	
3	PZ-124_071411_01A	13	RD-14_071411_01(Diss)DUP	23		33	
4	RS-18_071411_01	14		24		34	
5	RD-85_071411_01	15		25		35	
6	RD-85_071411_36	16		26		36	
7	RD-14_071411_01(Diss) ^P	17		27		37	
8	EB_PZ-124_071411(Diss)	18		28		38	
9	PZ-124_071411_01A(Diss)	19		29		39	
10	RS-18_071411_01(Diss)	20		30		40	

Notes: P = particulate

LDC# 26090D35

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Radiochemistry, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/g)		RPD (≤ 35)	
	11	12		
Barium-133	0.724U	2.167	100	NQ (<5xRL)

V:\FIELD DUPLICATES\FD_inorganic\26090D35.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 14, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18083-1/11-07100-OR

Sample Identification

RD-14_071411_01
EB_PZ-124_071411
PZ-124_071411_01A
RS-18_071411_01
RD-85_071411_01
RD-85_071411_36
RD-14_071411_01(P)
EB_PZ-124_071411(P)
PZ-124_071411_01A(P)
RS-18_071411_01(P)
RD-85_071411_01(P)
RD-85_071411_36(P)
RD-14_071411_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

T This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Samples EB_PZ-124_071411 and EB_PZ-124_071411(P) were identified as equipment blanks. No isotopic uranium contaminants were found.

Samples FB_071211_19 and FB_071211_19(P) (both from SDG 280-17905-1/11-07064-OR) were identified as field blanks. No isotopic uranium contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Isotope	Activity	Associated Samples
FB_071211_19	7/12/11	Uranium-234	0.235 pCi/L	PZ-124_071411_01A RS-18_071411_01

Sample activities were compared to activities detected in the field blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated field blanks.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Tracer ID	Isotope	Tracer %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	121.86 (30-110)	RD-14_071411_01DUP	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	129.69 (30-110)	RD-14_071411_01(P)	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	122.57 (30-110)	EB_PZ-124_071411	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	119.79 (30-110)	PZ-124_071411_01A(P)	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	113.01 (30-110)	RS-18_071411_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	111.36 (30-110)	RS-18_071411_01(P)	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	123.76 (30-110)	RD-85_071411_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	123.83 (30-110)	RD-85_071411_01(P)	J (all detects) UJ (all non-detects)	P

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18083-1/11-07100-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-85_071411_01 and RD-85_071411_36 and samples RD-85_071411_01(P) and RD-85_071411_36(P) were identified as field duplicates. No isotopic uranium was detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/L)		RPD (Limits)	Flags	A or P
	RD-85_071411_01	RD-85_071411_36			
Uranium-233/234	5.852	5.483	7 (≤ 35)	-	-
Uranium-235	0.197	0.432	75 (≤ 35)	NQ	-
Uranium-238	4.709	4.750	1 (≤ 35)	-	-

Isotope	Activity (pCi/L)		RPD (Limits)	Flags	A or P
	RD-85_071411_01(P)	RD-85_071411_36(P)			
Uranium-233/234	0.073U	0.143	65 (≤ 35)	NQ	-

NQ = One or both results were $< 5x$ the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Data Qualification Summary - SDG 280-18083-1/11-07100-OR

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18083-1/ 11-07100-OR	RD-14_071411_01(P) EB_PZ-124_071411 PZ-124_071411_01A(P) RS-18_071411_01 RS-18_071411_01(P) RD-85_071411_01 RD-85_071411_01(P)	All isotopic uranium	J (all detects) UJ (all non-detects)	P	Tracer recovery (%R) (*VIII)
280-18083-1/ 11-07100-OR	RD-14_071411_01 EB_PZ-124_071411 PZ-124_071411_01A RS-18_071411_01 RD-85_071411_01 RD-85_071411_36 RD-14_071411_01(P) EB_PZ-124_071411(P) PZ-124_071411_01A(P) RS-18_071411_01(P) RD-85_071411_01(P) RD-85_071411_36(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR

No Sample Data Qualified in this SDG

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area		Comments	
I.	Technical holding times	A	Sampling dates: 7/14/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Tracer Recovery	SW	
VIII.	Minimum Detectable Activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	SW	(5,6), (11,12)
XII.	Field blanks	SW	EB=2,8 ; FB=FB_071211-19 X (280-17905-1/1107064-OR)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *water*

1	RD-14_071411_01	11	RD-85_071411_01(Diss) ^P	21		31	
2	EB_PZ-124_071411	12	RD-85_071411_36(Diss)	22		32	
3	PZ-124_071411_01A	13	RD-14_071411_01(Diss)DUP	23		33	
4	RS-18_071411_01	14		24		34	
5	RD-85_071411_01	15		25		35	
6	RD-85_071411_36	16		26		36	
7	RD-14_071411_01(Diss) ^P	17		27		37	
8	EB_PZ-124_071411(Diss)	18		28		38	
9	PZ-124_071411_01A(Diss)	19		29		39	
10	RS-18_071411_01(Diss)	20		30		40	

Notes: *P = particulate*

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Radiochemistry, Method See Cover
 Y N N/A Were field blanks identified in this SDG?
 Y N N/A Were target analytes detected in the field blanks?
Blank units: pCi/L. **Associated sample units:** pCi/L
Sampling date: 7/12/11 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other:

Reason: F

Associated Samples: 3 4

Analyte	Blank ID	Action Limit	Sample Identification			
U-234	FB_071211_19 (SDG: 280-17956-1/11-07075-OR)	No Qualifiers				
	0.235	1.175				

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Radiochemistry, Method See CoverY N NA Were field duplicate pairs identified in this SDG?Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤ 35)	Qualifications (Parents Only)
	5	6		
U-233/234	5.852	5.483	7	
U-235	0.197	0.432	75	NQ (<5xRL)
U-238	4.709	4.750	1	

Isotope	Activity (pCi/L)		RPD (≤ 35)	Qualifications (Parents Only)
	11	12		
U-233/234	0.073U	0.143	65	NQ (<5xRL)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 14, 2011
LDC Report Date: September 8, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18083-1/11-07100-OR

Sample Identification

RD-14_071411_01
EB_PZ-124_071411
PZ-124_071411_01A
RS-18_071411_01
RD-85_071411_01
RD-85_071411_36
RD-14_071411_01(P)
EB_PZ-124_071411(P)
PZ-124_071411_01A(P)
RS-18_071411_01(P)
RD-85_071411_01(P)
RD-85_071411_36(P)
RD-14_071411_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

Samples EB_PZ-124_071411 and EB_PZ-124_071411(P) and were identified as equipment blanks. No strontium-90 was found.

Samples FB_071211_19 and FB_071211_19P (both from SDG 280-17905-1/11-07064-OR) were identified as field blanks. No strontium-90 was found with the following exceptions:

Field Blank ID	Sampling Date	Isotope	Activity	Associated Samples
FB_071211_19	7/12/11	Strontium-90	0.987 pCi/L	PZ-124_071411_01A RS-18_071411_01
FB_071211_19P	7/12/11	Strontium-90	2.144 pCi/L	PZ-124_071411_01A(P) RS-18_071411_01(P)

Sample activities were compared to activities detected in the field blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated field blanks.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18083-1/11-07100-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-85_071411_01 and RD-85_071411_36 and samples RD-85_071411_01(P) and RD-85_071411_36(P) were identified as field duplicates. No strontium-90 was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18083-1/ 11-07100-OR	RD-14_071411_01 EB_PZ-124_071411 PZ-124_071411_01A RS-18_071411_01 RD-85_071411_01 RD-85_071411_36 RD-14_071411_01(P) EB_PZ-124_071411(P) PZ-124_071411_01A(P) RS-18_071411_01(P) RD-85_071411_01(P) RD-85_071411_36(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Field Blank Data Qualification Summary - SDG 280-18083-1/11-07100-OR**

No Sample Data Qualified in this SDG

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/14/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Carrier recovery	A	
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	ND	(5,6), (11,12)
XII.	Field blanks	SW	EB=2,8 ; FB= FB_071211_19 (280-17905-1/11-07064-OR)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: water

1	RD-14_071411_01	11	RD-85_071411_01(Diss)	21		31	
2	EB_PZ-124_071411	12	RD-85_071411_36(Diss)	22		32	
3	PZ-124_071411_01A	13	RD-14_071411_01(Diss) DUP	23		33	
4	RS-18_071411_01	14		24		34	
5	RD-85_071411_01	15		25		35	
6	RD-85_071411_36	16		26		36	
7	RD-14_071411_01(Diss)	17		27		37	
8	EB_PZ-124_071411(Diss)	18		28		38	
9	PZ-124_071411_01A(Diss)	19		29		39	
10	RS-18_071411_01(Diss)	20		30		40	

Notes: P = particulate

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: Radiochemistry, Method See Cover
 Y N N/A Were field blanks identified in this SDG?
 Y N N/A Were target analytes detected in the field blanks?
Blank units: pCi/L Associated sample units: pCi/L
Sampling date: 7/12/11 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: Field Blank

Reason Code: F

Associated Samples: 3, 4

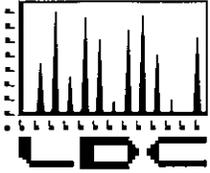
Analyte	Blank ID	Action Limit	Sample Identification		
	FB_071211_19 (SDG: 280-17956-1/11-07075-OR)		No Qualifiers		
Sr-90	0.987	4.935			

Associated Samples: 9, 10

Field blank type: (circle one) Field Blank / Rinsate / Other: Field Blank

Analyte	Blank ID	Action Limit	Sample Identification		
	FB_071211_19P (SDG: 280-17956-1/11-07075-OR)		No Qualifiers		
Sr-90	2.144	10.72			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

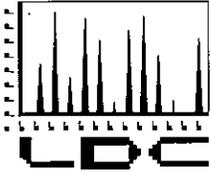
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 26, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18472-2

Sample Identification

ES-17_072611_36

FB-ES-17_072611_19

RS-33_072611_36

FB_RS-33_072611_19

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB-ES-17_072611_19 and FB_RS-33_072611_19 were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples ES-17_072611_36 and ES-17_072611_01 (from SDG 280-18472-1) and samples RS-33_072611_36 and RS-33_072611_01 (from SDG 280-18472-1) were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	ES-17_072611_36	ES-17_072611_01			
N-Nitrosodimethylamine	0.42	0.53	23 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RS-33_072611_36	RS-33_072611_01			
N-Nitrosodimethylamine	0.25	0.21	17 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18472-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-2	ES-17_072611_36 FB-ES-17_072611_19 RS-33_072611_36 FB_RS-33_072611_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18472-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18472-2**

No Sample Data Qualified in this SDG

LDC #: 26090E2b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18472-2

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer: W

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RI/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 1 + ES-17-072611-01 D ₂ = 3 + RS-33-072611-01 > (280-18472-1)
XVII.	Field blanks	ND	FB = 2, 4

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	ES-17_072611_36	11	MB 280-79359/1-A	21	31
2	FB ES-17_072611_19	12		22	32
3	RS-33_072611_36	13		23	33
4	FB RS-33_072611_19	14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	ES-17_072611_01	ES-17_072611_36		
NDMA	0.53	0.42	23	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RS-33_072611_01	RS-33_072611_36		
NDMA	0.21	0.25	17	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 26, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Perchlorate

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18472-2

Sample Identification

RD-55A_072611_01

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6860 for Perchlorate.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. LC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18472-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Data Qualification Summary - SDG 280-18472-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18472-2	RD-55A_072611_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Laboratory Blank Data Qualification Summary - SDG 280-18472-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Field Blank Data Qualification Summary - SDG 280-18472-2**

No Sample Data Qualified in this SDG

METHOD: LC/MS Perchlorate (EPA SW846 Method 6860)

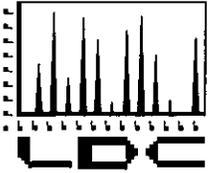
The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	RD-55A_072611_01	11	MD 280-81241/11	21	31
2		12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

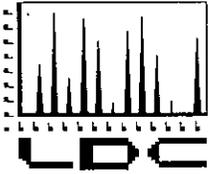
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18527-2

Sample Identification

RD-104_072711_36
FB_RD-104_072711_19
EB-RD-104_072711_
PZ-154_072711_36A
FB_PZ-154_072711_19A

3/11

1

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples EB-RD-104_072711 and EB-PZ-154_072711 (from SDG 280-18527-1) were identified as equipment blanks. No N-nitrosodimethylamine was found.

Samples FB_RD-104_072711_19, FB_PZ-154_072711_19A, and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-104_072711_36 and RD-104_072711_01 (from SDG 280-18527-1) and samples PZ-154_072711_36A and PZ-154_072711_01A (from SDG 280-18527-1) were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-104_072711_36	RD-104_072711_01			
N-Nitrosodimethylamine	0.0089	0.0087	2 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-154_072711_36A	PZ-154_072711_01A			
N-Nitrosodimethylamine	0.019	0.020	5 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18527-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-2	RD-104_072711_36 FB_RD-104_072711_19 EB-RD-104_072711 PZ-154_072711_36A FB_PZ-154_072711_19A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18527-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18527-2**

No Sample Data Qualified in this SDG

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	ICS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 1 + RD-104-072711-01 D ₂ = 4 + RZ-154-072711-01 > (280-18527-1)
XVII.	Field blanks	ND	FB = 2, 5 FB-071211-19 (280-17952-1) EB = 3 EB-PZ-154-072711 (280-18527-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-104_072711_36	11	MB 280-79359/1-A	21		31
2	FB_RD-104_072711_19	12	MB 280-79538/1-A	22		32
3	EB-RD-104_072711	13		23		33
4	PZ-154_072711_36A	14		24		34
5	FB_PZ-154_072711_19A	15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

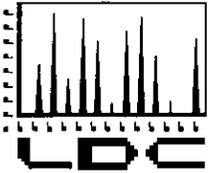
VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RD-104_072711_01	RD-104_072711_36		
NDMA	0.0087	0.0089	2	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-154_072711_01A	PZ-035_072111_36A		
NDMA	0.020	0.019	5	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

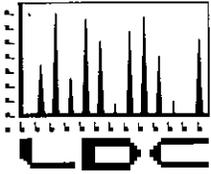
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 28, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18596-1/H1G300413

Sample Identification

EB_PZ-149_072811
PZ-149_072811_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1214031-MB	8/2/11	OCDD OCDF	3.5 pg/L 3.4 pg/L	All samples in SDG 280-18596-1/H1G300413

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB_PZ-149_072811	OCDD	3.3 pg/L	3.3U pg/L
PZ-149_072811_01A	OCDD	8.3 pg/L	8.3U pg/L

Sample EB_PZ-149_072811 was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-149_072811	7/28/11	OCDD	3.3 pg/L	PZ-149_072811_01A

Sample FB_071211-19 (from SDG 280-17964-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211-19	7/12/11	OCDD	4.0 pg/L	PZ-149_072811_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-149_072811_01A	OCDD	8.3 pg/L	8.3U pg/L

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1214031-LCS (All samples in SDG 280-18596-1/H1G300413)	OCDF	-	-	17 (≤15)	J (all detects) UJ (all non-detects)	P

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18596-1/H1G300413	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18596-1/H1G300413**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18596-1/ H1G300413	EB_PZ-149_072811 PZ-149_072811_01A	OCDF	J (all detects) UJ (all non-detects)	P	Laboratory control samples (RPD) (E)
280-18596-1/ H1G300413	EB_PZ-149_072811 PZ-149_072811_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18596-1/H1G300413**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18596-1/ H1G300413	EB_PZ-149_072811	OCDD	3.3U pg/L	A	B
280-18596-1/ H1G300413	PZ-149_072811_01A	OCDD	8.3U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18596-1/H1G300413**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18596-1/ H1G300413	PZ-149_072811_01A	OCDD	8.3U pg/L	A	F

LDC #: 26090G21

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18596-1/H1G300413

Level V

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: SVB

2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	client spec
VII.	Laboratory control samples	SW	LCS 1b
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	SW	EB = 1 FB = FB-07/21/11-19 (280-17964-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	EB_PZ-149_072811	11	1214031- MB	21	31
2	PZ-149_072811_01A	12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A

Were all samples associated with a method blank?

Y N N/A

Was a method blank performed for each matrix and whenever a sample extraction was performed?

Y N N/A

Was the method blank contaminated?

Blank extraction date: 8/02/08

Blank analysis date: 8/12/08

Associated samples: All Code: \$

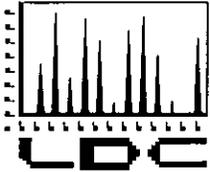
Conc. units: pg/l

Compound	Blank ID	Sample Identification	
	1214031-10B	1	2
G	3.5	3.3 / U	8.3 / U
Q	3.4		

Blank extraction date: _____ Blank analysis date: _____
Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

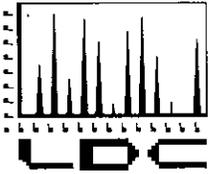
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26090 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		SVOA (8270C)		NDMA (1625)		PCBs (8082)		Metals (SW846)		Diss. Metals (SW846)		Herbs (8151A)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)		CLO ₄ (6860)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																					
E	280-18472-2	08/23/11	09/14/11	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
F	280-18527-2	08/23/11	09/14/11	-	-	-	-	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
G	280-18596-1/ H1G300413	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H	280-18611-1	08/23/11	09/14/11	10	0	10	0	7	0	7	0	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H	280-18611-1	08/23/11	09/14/11	-	-	-	-	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
I	280-18624-1/ H1H020427	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
J	280-18722-1	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
K	280-18782-1	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
L	280-18858-1	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
M	280-19055-1	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
N	280-19106-1	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
O	IUG2193	08/23/11	09/14/11	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total	T/PG			10	0	10	0	16	0	16	0	2	0	1	0	3	0	6	0	6	0	6	0	24	0	5	0	3	0	3	0	5	0	1	0	0	0

EDD Client Select IV LDC #26090 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl SO ₄ (300.0)		F NO ₃ (300.0)		Br NO ₂ O-PO ₄		CLO ₄ (314.0)		pH (9040B)		S= (4500 -S2 D)		Gross α&β (900.0)		Gamma Spec. (901.1)		Tritium (906.0)		Sr-90 (905.0)		Iso. U (908.0)									
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																			
A	280-17905-1 11-07064-OR/11-07065-OR	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	280-17956-1/ 11-07076-OR/11-07075-OR	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	280-18017-1/ 11-07083-OR/11-07084-OR	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	280-18083-1/ 11-07100-OR/11-07076-OR	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	280-18611-1	08/23/11	09/14/11	5	0	2	0	7	0	2	0	5	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O	IUG2193	08/23/11	09/14/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	T/PG			5	0	2	0	7	0	2	0	5	0	3	0	1	0	42	0	42	0	42	0	21	0	42	0	42	0	0	0	0	0	0	0

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18611-1

Sample Identification

RD-55B_072911_01
TB_RD-55B_072911
HAR-21_072911_01
RS-08_072911_01
EB-PZ-155_072911
PZ-155_072911_01A
TB-PZ-155_072911A
HAR-12_072911_01
TB-HAR-12_072911
HAR-14_072911_01
HAR-12_072911_01MS
HAR-12_072911_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
EB-PZ-155_072911 TB-PZ-155_072911A	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	15	14	J (all detects) UJ (all non-detects)	A
PZ-155_072911_01A	Acrolein Acrylonitrile 2-Chloroethylvinyl ether cis-1,2-Dichloroethene Trichloroethene	15	14	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-79446/6	8/1/11	Methylene chloride	0.381 ug/L	EB-PZ-155_072911 PZ-155_072911_01A TB-PZ-155_072911A

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB-PZ-155_072911A	Methylene chloride	0.77 ug/L	1.0U ug/L

Samples TB_RD-55B_072911, TB-PZ-155_072911A, and TB-HAR-12_072911 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-55B_072911	7/29/11	Acetone	14 ug/L	RD-55B_072911_01 HAR-21_072911_01 RS-08_072911_01
TB-PZ-155_072911A	7/29/11	1,1-Dichloroethene Acetone Methylene chloride	0.24 ug/L 2.6 ug/L 0.77 ug/L	EB-PZ-155_072911 PZ-155_072911_01A
TB-HAR-12_072911	7/29/11	Acetone	15 ug/L	HAR-12_072911_01 HAR-14_072911_01

Sample EB-PZ-155_072911 was identified as an equipment blank. No volatile contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-155_072911_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-55B_072911_01	Acetone	9.3 ug/L	10U ug/L
HAR-21_072911_01	Acetone	10 ug/L	10U ug/L
PZ-155_072911_01A	1,1-Dichloroethene	0.78 ug/L	1.0U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-12_072911_01	Acetone	6.6 ug/L	10U ug/L
HAR-14_072911_01	Acetone	11 ug/L	11U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-55B_072911_01	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
TB_RD-55B_072911	Toluene-d8	119 (88-110)	All TCL compounds	J (all detects)	P
HAR-21_072911_01	Toluene-d8 Toluene-d8	118 (88-110) 112 (88-110)	All TCL compounds	J (all detects)	A
RS-08_072911_01	Toluene-d8 Bromofluorobenzene	120 (88-110) 116 (86-115)	All TCL compounds	J (all detects)	P
EB-PZ-155_072911	1,2-Dichloroethane-d4 Dibromofluoromethane	73 (80-120) 85 (86-118)	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A
PZ-155_072911_01A	1,2-Dichloroethane-d4	78 (80-120)	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A
TB-PZ-155_072911A	1,2-Dichloroethane-d4 Bromofluorobenzene	76 (80-120) 85 (86-115)	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A
TB-PZ-155_072911A	Toluene-d8	114 (88-110)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
HAR-12_072911_01	Toluene-d8 Bromofluorobenzene	115 (88-110) 116 (86-115)	All TCL compounds	J (all detects)	A
TB-HAR-12_072911	Toluene-d8 Bromofluorobenzene	113 (88-110) 118 (86-115)	All TCL compounds	J (all detects)	P
HAR-14_072911_01	Toluene-d8	114 (88-110)	All TCL compounds	J (all detects)	P
MB280-80805/6	Toluene-d8 Bromofluorobenzene	114 (88-110) 116 (86-115)	All TCL compounds	J (all detects)	P

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
MB280-81503/6	1,2-Dichloroethane-d4 Bromofluorobenzene	76 (80-120) 85 (86-115)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D280-79446/5,7 (EB-PZ-155_072911 PZ-155_072911_01A TB-PZ-155_072911A MB280-79446/6)	Carbon tetrachloride Trichlorofluoromethane	79 (80-120) 46 (63-135)	- 31 (63-135)	- -	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P
LCS/D280-80805/4,5 (RD-55B_072911_01 TB_RD-55B_072911 HAR-21_072911_01 RS-08_072911_01 HAR-12_072911_01 HAR-14_072911_01 MB280-80805/6)	Acetone	-	135 (48-130)	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	EB-PZ-155_072911 TB-PZ-155_072911A	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A	Technical holding times (H)
280-18611-1	PZ-155_072911_01A	Acrolein Acrylonitrile 2-Chloroethylvinyl ether cis-1,2-Dichloroethene Trichloroethene	J (all detects) UJ (all non-detects)	A	Technical holding times (H)
280-18611-1	RD-55B_072911_01 TB_RD-55B_072911 RS-08_072911_01 TB-HAR-12_072911 HAR-14_072911_01	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18611-1	HAR-21_072911_01 HAR-12_072911_01	All TCL compounds	J (all detects)	A	Surrogate spikes (%R) (S)
280-18611-1	EB-PZ-155_072911 PZ-155_072911_01A TB-PZ-155_072911A	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18611-1	TB-PZ-155_072911A	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A	Surrogate spikes (%R) (S)
280-18611-1	EB-PZ-155_072911 PZ-155_072911_01A TB-PZ-155_072911A	Carbon tetrachloride Trichlorofluoromethane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
280-18611-1	RD-55B_072911_01 TB_RD-55B_072911 HAR-21_072911_01 RS-08_072911_01 HAR-12_072911_01 HAR-14_072911_01	Acetone	J (all detects)	P	Laboratory control samples (%R) (L)
280-18611-1	RD-55B_072911_01 TB_RD-55B_072911 HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 PZ-155_072911_01A TB-PZ-155_072911A HAR-12_072911_01 TB-HAR-12_072911 HAR-14_072911_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18611-1	TB-PZ-155_072911A	Methylene chloride	1.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18611-1	RD-55B_072911_01	Acetone	10U ug/L	A	T
280-18611-1	HAR-21_072911_01	Acetone	10U ug/L	A	T
280-18611-1	PZ-155_072911_01A	1,1-Dichloroethene	1.0U ug/L	A	T
280-18611-1	HAR-12_072911_01	Acetone	10U ug/L	A	T
280-18611-1	HAR-14_072911_01	Acetone	11U ug/L	A	T

LDC #: 26050H1a
 SDG #: 280-18611-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/29/11
 Page: 1 of 1
 Reviewer: JV
 2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: <u>7/29/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	SW	<u>LCS 1D</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	<u>TB = 2, 7, 9</u> <u>EB = 5</u> <u>FB = FB_071211-19</u>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	RD-55B_072911_01	11	HAR-12_072911_01MS	21	1	MB 282 79446/6	31	
2	TB_RD-55B_072911	12	HAR-12_072911_01MSD	22	2	-80805/6	32	
3	HAR-21_072911_01	13		23	3	-81503/6	33	(FFF, GGGG, II, S, OOR)
4	RS-08_072911_01	14		24			34	
5	EB-PZ-155_072911	15		25			35	
6	PZ-155_072911_01A	16		26			36	
7	TB-PZ-155_072911A	17		27			37	
8	HAR-12_072911_01	18		28			38	
9	TB_HAR-12_072911	19		29			39	
10	HAR-14_072911_01	20		30			40	

VOCs + IAA = 1, 2, 8-10
 VOCs = 3, 4
 STD W. = 5-7

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y (N) N/A Were all surrogate %R within QC limits?
 Y (N) N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications Code: <u>S</u>
		1	TOL	111 (88-110)	J dets/P (qual all)
		2	TOL	119 ()	↓
		3	TOL	118 ()	J dets/A (qual all except B, C)
		3 (DL)	TOL	112 ()	↓ (qual B, C, C)
		4	TOL	120 ()	J dets/P (qual all)
			BFB	116 (86-115)	
		5	DCE	73 (80-120)	J/MS/A (qual FFFF GGGG I L only)
			DFM	85 (86-118)	
		6	DCE	78 (80-120)	↓
		7	DCE	76 (80-120)	↓ (qual)
			BFB	85 (86-115)	↓
		7	TOL	114 (88-110)	J dets/A (qual all except above)

QC Limits (Water)

- 88-110
- 86-115
- 80-120
- 86-118

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 29, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18611-1

Sample Identification

RD-55B_072911_01
TB_RD-55B_072911
HAR-21_072911_01
RS-08_072911_01
EB-PZ-155_072911
PZ-155_072911_01A
TB-PZ-155_072911A
HAR-12_072911_01
TB-HAR-12_072911
HAR-14_072911_01

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-55B_072911 TB-PZ-155_072911A, and TB-HAR-12_072911 were identified as trip blanks. No 1,4-dioxane was found.

Sample EB-PZ-155_072911 was identified as an equipment blank. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	RD-55B_072911_01 TB_RD-55B_072911 HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 PZ-155_072911_01A TB-PZ-155_072911A HAR-12_072911_01 TB-HAR-12_072911 HAR-14_072911_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

LDC #: 26050H1b
 SDG #: 280-18611-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/26/11
 Page: 1 of 1
 Reviewer: JV
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/29/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	<u>Client spec</u>
VIII.	Laboratory control samples	A	<u>LCS 10</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	<u>TB = 2, 7, 9 EB = 5 FB = FB_07/21/11</u>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

ALERT

1	RD-55B_072911_01	11	<u>MB 280-80510/27</u>	21		31	
2	TB_RD-55B_072911	12	<u>MB 280-80020/5</u>	22		32	
3	HAR-21_072911_01	13		23		33	
4	RS-08_072911_01	14		24		34	
5	EB-PZ-155_072911	15		25		35	
6	PZ-155_072911_01A	16		26		36	
7	TB-PZ-155_072911A	17		27		37	
8	HAR-12_072911_01	18		28		38	
9	TB_HAR-12_072911	19		29		39	
10	HAR-14_072911_01	20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 29, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V & IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18611-1

Sample Identification

RD-55B_072911_01
HAR-21_072911_01
RS-08_072911_01
EB-PZ-155_072911
PZ-155_072911_01A
HAR-12_072911_01
HAR-14_072911_01**
HAR-14_072911_36**
FB_HAR-14_072911_19**
HAR-13_072911_01

**Indicates sample underwent Level IV review

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/29/11	Methyl methanesulfonate 1,4-Naphthoquinone Methapyrilene	90.4 70.6 54.4	HAR-14_072911_01** HAR-14_072911_36** FB_HAR-14_072911_19** MB280-79291/1-A	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-79291/1-A	8/1/11	Bis(2-ethylhexyl)phthalate	1.84 ug/L	All samples in SDG 280-18611-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-55B_072911_01	Bis(2-ethylhexyl)phthalate	2.3 ug/L	11U ug/L
HAR-21_072911_01	Bis(2-ethylhexyl)phthalate	2.2 ug/L	10U ug/L
RS-08_072911_01	Bis(2-ethylhexyl)phthalate	2.1 ug/L	11U ug/L
EB-PZ-155_072911	Bis(2-ethylhexyl)phthalate	1.9 ug/L	48U ug/L
PZ-155_072911_01A	Bis(2-ethylhexyl)phthalate	2.0 ug/L	50U ug/L
HAR-14_072911_01**	Bis(2-ethylhexyl)phthalate	2.0 ug/L	10U ug/L
HAR-14_072911_36**	Bis(2-ethylhexyl)phthalate	2.0 ug/L	10U ug/L
FB_HAR-14_072911_19**	Bis(2-ethylhexyl)phthalate	2.6 ug/L	9.9U ug/L
HAR-13_072911_01	Bis(2-ethylhexyl)phthalate	1.9 ug/L	9.9U ug/L

Sample EB-PZ-155_072911 was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-PZ-155_072911	7/29/11	Benzyl alcohol Bis(2-ethylhexyl)phthalate	0.34 ug/L 1.9 ug/L	PZ-155_072911_01A

Samples FB_HAR-14_072911_19** and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_HAR-14_072911_19**	7/29/11	Benzyl alcohol Bis(2-ethylhexyl)phthalate	1.4 ug/L 2.6 ug/L	HAR-12_072911_01 HAR-14_072911_01** HAR-14_072911_36** HAR-13_072911_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-155_072911_01A	Bis(2-ethylhexyl)phthalate	2.0 ug/L	50U ug/L
HAR-14_072911_01**	Bis(2-ethylhexyl)phthalate	2.0 ug/L	10U ug/L
HAR-14_072911_36**	Bis(2-ethylhexyl)phthalate Benzyl alcohol	2.0 ug/L 1.7 ug/L	10U ug/L 10U ug/L
HAR-13_072911_01	Bis(2-ethylhexyl)phthalate	1.9 ug/L	9.9U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits for samples on which a Level IV review was performed.

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-1	All compounds reported below the RL	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	HAR-14_072911_01** HAR-14_072911_36** FB_HAR-14_072911_19**	Methyl methanesulfonate 1,4-Naphthoquinone Methapyrilene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-18611-1	RD-55B_072911_01 HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 PZ-155_072911_01A HAR-12_072911_01 HAR-14_072911_01** HAR-14_072911_36** FB_HAR-14_072911_19** HAR-13_072911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RL (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18611-1	RD-55B_072911_01	Bis(2-ethylhexyl)phthalate	11U ug/L	A	B
280-18611-1	HAR-21_072911_01	Bis(2-ethylhexyl)phthalate	10U ug/L	A	B
280-18611-1	RS-08_072911_01	Bis(2-ethylhexyl)phthalate	11U ug/L	A	B
280-18611-1	EB-PZ-155_072911	Bis(2-ethylhexyl)phthalate	48U ug/L	A	B
280-18611-1	PZ-155_072911_01A	Bis(2-ethylhexyl)phthalate	50U ug/L	A	B
280-18611-1	HAR-14_072911_01**	Bis(2-ethylhexyl)phthalate	10U ug/L	A	B
280-18611-1	HAR-14_072911_36**	Bis(2-ethylhexyl)phthalate	10U ug/L	A	B
280-18611-1	FB_HAR-14_072911_19**	Bis(2-ethylhexyl)phthalate	9.9U ug/L	A	B
280-18611-1	HAR-13_072911_01	Bis(2-ethylhexyl)phthalate	9.9U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18611-1	PZ-155_072911_01A	Bis(2-ethylhexyl)phthalate	50U ug/L	A	F
280-18611-1	HAR-14_072911_01**	Bis(2-ethylhexyl)phthalate	10U ug/L	A	F
280-18611-1	HAR-14_072911_36**	Bis(2-ethylhexyl)phthalate Benzyl alcohol	10U ug/L 10U ug/L	A	F
280-18611-1	HAR-13_072911_01	Bis(2-ethylhexyl)phthalate	9.9U ug/L	A	F

LDC #: 26090H2a
 SDG #: 280-18611-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level \checkmark N/V

Date: 8/26/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area		Comments	
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	GC/MS Instrument performance check	N A	
III.	Initial calibration	N A	% RSD $\leq 30\%$
IV.	Continuing calibration/ICV	N SW	CV/1CV $\leq 25\%$
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	see lb
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N A	
XI.	Target compound identification	N A	
XII.	Compound quantitation/RL/LOQ/LODs	N A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	SW	D = 7, 8 S = 7 + HAR-14_07291203 (1492894)
XVII.	Field blanks	SW	EB = 4 FB = 9 *FB_071211_19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 *ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

level 10 ** *revised*

1	RD-55B_072911_01	11	MB 280-79291/1-A	21	31
2	HAR-21_072911_01	12		22	32
3	RS-08_072911_01	13		23	33
4	EB-PZ-155_072911	14		24	34
5	PZ-155_072911_01A	15		25	35
6	HAR-12_072911_01 ***	16		26	36
7	HAR-14_072911_01 ** D	17		27	37
8	HAR-14_072911_36 ** D	18		28	38
9	FB_HAR-14_072911_19 **	19		29	39
10	HAR-13_072911_01	20		30	40

Phthalates + NB = 1, 2, 3
 Full W = 4, 5
 NB = 6
 APPIX + NB = 7
 APPIX = 8, 9

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?	/			
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) > 0.05 ?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) $\leq 25\%$ and relative response factors (RRF) ≥ 0.05 ?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	/			
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/	/		
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds from the associated calibration standard?	/			
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		/		
XIV: System performance				
System performance was found to be acceptable.	/			
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII: Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**	
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene	
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene	
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene	
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether	
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline	
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine	
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid	
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol	
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine	
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine	
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Methyl methanesulfonate	
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	JUU. 1,4-Naphthoquinone	
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrene	
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.	

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

~~Y~~ ~~N~~ ~~NA~~ Were field duplicate pairs identified in this SDG?
~~Y~~ ~~N~~ ~~NA~~ Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	57	48 ✓		
Benzyl alcohol	1.7	10U	142	NQ (<5xRL)
Bis(2-ethylhexyl)phthalate	2.0	2.0	0	
N-nitrosodimethylamine	2.3	2.4	4	

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y ~~N~~ NA Were field split pairs identified in this SDG?
~~Y~~ N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-14_072911_01	HAR-14_072911_03		
Benzyl alcohol	1.7	9.5U	139	NQ (<5xRL)
Bis(2-ethylhexyl)phthalate	2.0	9.5U	130	NQ (<5xRL)
N-nitrosodimethylamine	2.3	9.5U	122	NQ (<5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound
 A_{is} = Area of associated internal standard
 C_x = Concentration of compound,
 C_{is} = Concentration of internal standard
 S = Standard deviation of the RRFs,
 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/28/2011	Phenol (IS1)	1.8889	1.8889	1.8020	1.8020	7.5	7.5
	MSS B		Naphthalene (IS2)	1.0812	1.0812	1.0322	1.0322	10.9	10.9
			Diethyl phthalate (IS3)	1.2600	1.2600	1.2157	1.2157	9.0	9.0
			Hexachlorobenzene (IS4)	0.2368	0.2368	0.2245	0.2245	7.6	7.6
			Bis(2-ethex) phthalate (IS5)	see r2 calc					
			Benzo(a)pyrene (IS6)	1.1374	1.1374	1.0763	1.0764	6.5	6.5

Cis/Cx	Ax	Ais
40/50	498715	211220
40/50	1135356	840062
40/50	768942	488226
40/50	239842	810275
40/50	813655	913460
40/50	1244028	874967

Conc	Phenol	Naphthalene	Diethyl phthal	Hexachlorob	Bis(2-ethex) ph	Benzo(a)py
4.00		1.1610	1.3042			0.9778
10.00	1.9703	1.1527	1.3318	0.2441		1.1312
20.00	1.9021	1.1137	1.3232	0.2399		1.1609
50.00	1.8889	1.0812	1.2600	0.2368		1.1374
80.00	1.8308	1.0125	1.2158	0.2158		1.1193
120.00	1.7539	0.9651	1.1545	0.2275		1.0540
160.00	1.6779	0.9114	1.0883	0.2087		1.0392
200.00	1.5900	0.8599	1.0480	0.1989		0.9910
X =	1.8020	1.0322	1.2157	0.2245	0.0000	1.0764
S =	0.1350	0.1130	0.1088	0.0171	#DIV/0!	0.0703

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 26090 #22

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: GCMS Semivolatiles (EPA SW 846 Method 8270C)

Parameter: Bis(2-ethylhexyl) phthalate
Order of regression: Linear

Date	Column	Compound	Points	x area ratio	y conc ratio
28-Jul-11	Vf-5MS	Bis(2-ethylhexyl) phthalate	Point 1	0.042731157	0.100
			Point 2	0.145531992	0.250
			Point 3	0.324353002	0.500
			Point 4	0.890739605	1.250
			Point 5	1.443212534	2.000
			Point 6	2.137216436	3.000
			Point 7	2.802284824	4.000
			Point 8	3.411478221	5.000

RF
0.4273
0.5921
0.6487
0.7126
0.7216
0.7124
0.7006
0.6823
Ave 0.6485

Regression Output: Regression Output:		Reported WLR
Constant	0.00380	b = 0.04100
Std Err of Y Est	0.04	
R Squared	0.99889	r ² = 0.99920
No. of Observations	6.00	
Degrees of Freedom	4.00	
X Coefficient(s)	0.69605	m1 = 0.7151
Std Err of Coef.	0.01	

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: A 6

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	100	80.8	81	81	0
2-Fluorobiphenyl	↓	76.0	76	76	↓
Terphenyl-d14	↓	78.8	79	79	↓
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SC/SA)$ Where: SSC = Spike concentration
 SA = Spike added

RPD = $100 * \frac{LCSC - LCSDC}{LCSC + LCSDC}$ LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: LCSD 180-77291/1-A

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol	80.0	86.0	63.4	58.9	79	79	74	74	7	7
N-Nitroso-di-n-propylamine			58.4	59.6	73	73	74	74	2	2
4-Chloro-3-methylphenol			65.7	66.9	82	82	84	84	2	2
Acenaphthene			60.5	63.0	76	76	79	79	4	4
Peptachteraphenol			69.2	70.5	87	87	88	88	2	2
Pyrene			67.0	68.2	84	84	85	85	2	2

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 29, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18611-1

Sample Identification

RD-55B_072911_01
HAR-21_072911_01
RS-08_072911_01
EB-PZ-155_072911
PZ-155_072911_01A
HAR-12_072911_01
HAR-14_072911_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 HAR-12_072911_01 HAR-14_072911_01	N-Nitrosodimethylamine	12	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample EB-PZ-155_072911 was identified as an equipment blank. No N-nitrosodimethylamine was found.

Sample FB_071211_19 (from SDG 280-17952-1) and samples FB_HAR-21_0729_19, FB_HAR-12_0729_19, and FB_HAR-14_0729_19 (all three from SDG 280-118611-2) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D280-79896/2,3-A (RD-55B_072911_01 PZ-155_072911_01A MB280-79896/1-A)	N-Nitrosodimethylamine	126 (68-124)	138 (68-124)	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-21_072911_01 and HAR-21_072911_36 (from SDG 280-18611-2), samples HAR-12_072911_01 and HAR-12_072911_36 (from SDG 280-18611-2), and samples HAR-14_072911_01 and HAR-14_072911_36 (from SDG 280-18611-2) were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-21_072911_01	HAR-21_072911_36			
N-Nitrosodimethylamine	0.040	0.039	3 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-12_072911_01	HAR-12_072911_36			
N-Nitrosodimethylamine	0.0067	0.0068	1 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-14_072911_01	HAR-14_072911_36			
N-Nitrosodimethylamine	2.0	2.5	22 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 HAR-12_072911_01 HAR-14_072911_01	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18611-1	RD-55B_072911_01 PZ-155_072911_01A	N-Nitrosodimethylamine	J (all detects)	P	Laboratory control samples (%R) (L)
280-18611-1	RD-55B_072911_01 HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 PZ-155_072911_01A HAR-12_072911_01 HAR-14_072911_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18611-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18611-1

No Sample Data Qualified in this SDG

LDC #: 26090H2b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/26/11

SDG #: 280-18611-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/29/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	SW	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	D = 2 + HAR-21-072911-36 (280-18611-2)
XVI.	Field duplicates	SW	D ₂ = 6 + HAR-12-072911-36 D ₃ = 7 + HAR-14-072911-36
XVII.	Field blanks	ND	EB = 4 FB = FB_071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate = FB-HAR-21-072911-19 (280-18611-2)
TB = Trip blank = FB-HAR-12-072911-19
EB = Equipment blank = FB-HAR-14-072911-19

Validated Samples:

Water

1	RD-55B_072911_01	11	MB 280-79896 A-A	21		31
2	HAR-21_072911_01	12	MB 280-80787 A-A	22		32
3	RS-08_072911_01	13		23		33
4	EB-PZ-155_072911	14		24		34
5	PZ-155_072911_01A	15		25		35
6	HAR-12_072911_01	16		26		36
7	HAR-14_072911_01	17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-21_072911_01 /	HAR-21_072911_36 /		
NDMA	0.040	0.039	3	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-12_072911_01 /	HAR-12_072911_36 /		
NDMA	0.0067	0.0068	1	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-14_072911_01 /	HAR-14_072911_36 /		
NDMA	2.0	2.5	22	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18611-1

Sample Identification

EB-PZ-155_072911
PZ-155_072911_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls were found in the method blanks.

Sample EB_PZ-155_072911 was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	EB-PZ-155_072911 PZ-155_072911_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

LDC #: 26090H3b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/26/11

SDG #: 280-18611-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *RVG*

2nd Reviewer: *[Signature]*

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS 1D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	MD	EB = 1

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

1	EB-PZ-155_072911	11	<i>Water</i>	21		31
2	PZ-155_072911_01A	12		22		32
3		13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Dissolved Metals

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18611-1

Sample Identification

EB-PZ-155_072911

PZ-155_072911_01A

EB-PZ-155_072911MS

EB-PZ-155_072911MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020 and 6010B for Dissolved Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium Magnesium Potassium Silver Thallium	0.0562 mg/L 0.0532 mg/L 0.359 mg/L 0.0000183 mg/L 0.0000370 mg/L	All samples in SDG 280-18611-1

Data qualification by the preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
EB-PZ-155_072911	Potassium Thallium	0.30 mg/L 0.000044 mg/L	0.30U mg/L 0.000044U mg/L
PZ-155_072911_01A	Thallium	0.000061 mg/L	0.000061U mg/L

Sample EB-PZ-155_072911 was identified as an equipment blank. No dissolved metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB-PZ-155_072911	7/29/11	Potassium Barium Thallium	0.30 mg/L 0.00078 mg/L 0.000044 mg/L	PZ-155_072911_01A

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No dissolved metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-155_072911_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-155_072911_01A	Thallium	0.000061 mg/L	0.000061U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18611-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18611-1	EB-PZ-155_072911 PZ-155_072911_01A	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18611-1	EB-PZ-155_072911	Potassium Thallium	0.30U mg/L 0.000044U mg/L	A	B
280-18611-1	PZ-155_072911_01A	Thallium	0.000061U mg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Field Blank Data Qualification Summary - SDG 280-18611-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18611-1	PZ-155_072911_01A	Thallium	0.000061U mg/L	A	F

LDC #: 26090H4

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-18611-1

Level V

Laboratory: Test America, Inc.

Date: 8/31/11

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Dissolved Metals (EPA SW 846 Method 6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV.	Field Blanks	SW	EB=1 ; FB=FB-071711-19F

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

(SDG: 280-17952-1)

Validated Samples:

water

1	EB-PZ-155_072911	11		21		31	
2	PZ-155_072911_01A	12		22		32	
3	EB-PZ-155_072911MS	13		23		33	
4	EB-PZ-155_072911MSD	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

VALIDATION FINDINGS WORKSHEET
 PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
 Sample Concentration units, unless otherwise noted: mg/L

Soil preparation factor applied: NA
 Associated Samples: All

Reason: B

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	1		2	
Ca		0.0562		0.281				
Mg		0.0532		0.266				
K		0.359		1.795	0.30			
Ag		0.0000183		0.00009				
Tl		0.0000370		0.0002	0.000044			0.000061

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Field Blanks

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Reason: F

Blank units: mg/L. **Associated sample units:** mg/L

Sampling date: 1=7/29/11 **FB=7/12/11** Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: 2 Associated Samples: 2

Analyte	Blank ID	Blank ID	Action Limit	Sample Identification
	1	FB_071211_19F (SDG: 280-17952-1)	2	
K	0.30		1.5	
Ba	0.00078		0.0039	
Ag		0.000018	0.00009	
Tl	0.000044	0.000033	0.00022	0.000061

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 8, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18611-1

Sample Identification

HAR-12_072911_01
HAR-12_072911_36
FB_HAR-12_072911_19
HAR-14_072911_01
HAR-14_072911_36
FB_HAR-14_072911_19

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
8/5/11	020F2001	DB35MS	Dinoseb	73.6	All samples in SDG 280-18611-1	J (all detects)	A
		DBXLB	Dinoseb	81.4		UJ (all non-detects) J (all detects) UJ (all non-detects)	

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Samples FB_HAR-12_072911_19 and FB_HAR-14_072911_19 were identified as field blanks. No herbicide contaminants were found.

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	HAR-12_072911_01 HAR-12_072911_36 FB_HAR-12_072911_19 HAR-14_072911_01 HAR-14_072911_36 FB_HAR-14_072911_19	Dinoseb	J (all detects) UJ (all non-detects)	A	Calibration verification (%D) (C)
280-18611-1	HAR-12_072911_01 HAR-12_072911_36 FB_HAR-12_072911_19 HAR-14_072911_01 HAR-14_072911_36 FB_HAR-14_072911_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Laboratory Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Field Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

LDC #: 26090H5

VALIDATION COMPLETENESS WORKSHEET

Date: 8/29/11

SDG #: 280-18611-1

Level IV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: VG
2nd Reviewer: ✓

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II	Initial calibration	NA	r ₂
III.	Calibration verification/ICV	NSW	CV/ICV ≤ 20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS 1b
VIII.	Target compound identification	NA	
IX.	Compound quantitation/RL/LOQ/LODs	NA	
X.	System Performance	NA	
XI.	Overall assessment of data	A	
XII.	Field duplicates / Split	ND	D ₁ = 1, 2 D ₂ = 4, 6 S ₁ = 1 + HAR-12-072911-03 S ₂ = 4 + HAR-14-072911-03
XIII.	Field blanks	ND	FB = 3, 6

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	HAR-12_072911_01	D ₁	11	MB 280-79568/1-A	21		31
2	HAR-12_072911_36	D ₂	12		22		32
3	FB HAR-12_072911_19		13		23		33
4	HAR-14_072911_01	D ₂	14		24		34
5	HAR-14_072911_36	D ₂	15		25		35
6	FB HAR-14_072911_19		16		26		36
7			17		27		37
8			18		28		38
9			19		29		39
10			20		30		40

Notes: 2,4,5-TP, 2,4,5-T, 2,4-D, Dinoseb

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	/			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?				
Did the initial calibration meet the curve fit acceptance criteria?				
Were the RT windows properly established?				
III. Continuing calibration				
What type of continuing calibration calculation was performed? <u>/</u> %D or %R	/			
Was a continuing calibration analyzed daily?	/			
Were all percent differences (%D) < 20%.0 or percent recoveries 80-120%?	/			
Were all the retention times within the acceptance windows?	/			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
V. Surrogate spikes				
Were all surrogate %R within the QC limits?	/			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
VIII. Regional Quality Assurance and Quality Control				

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?		/		
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.		/		
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

LDC#: 76090 HS

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 2
 Reviewer: DG
 2nd Reviewer: h

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
6/13/2011	GCS M DBXLB	2,4-D	1	18.9	5686	32330596
			2	45.9	14661	214944921
			3	229.0	61325	3760755625
			4	459.0	112658	12691824964
			5	688.0	167149	27938786201
			6	917.0	203912	41580103744
			7	1834.0	343373	117905017129

CF 300.8
 319.4
 267.8
 245.4
 242.9
 222.4
 187.2
 Ave 255.1

Regression Output		Calculated	Reported
Constant		b = 2.99381	b = 3.0586603
Std Err of Y Est			
Coefficient of Determination (r ²)		r ² 0.9996278	r ² 0.9996
Degrees of Freedom			
X Coefficient(s)		m1 = 0.00319399	m1 = 0.00319144
Std Err of Coef.		m2 = 6.21317E-09	m2 = 6.22165E-09
Correlation Coefficient		0.999814	

LDC#: 26090 HS

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 7 of 7
 Reviewer: MA
 2nd Reviewer: MA

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
6/13/2011	GCS M DB XLB 357ALS	2,4-D	1	18.8	6229	38800441
			2	47.0	16081	258598561
			3	235.0	69364	4811364496
			4	470.0	125226	15681551076
			5	705.0	187340	35096275600
			6	940.0	230069	52931744761
			7	1881.0	384209	147616555681

CF 331.3
 342.1
 295.2
 266.4
 265.7
 244.8
 204.3
 Ave 278.5

	Regression Output	
	Calculated	Reported
Constant	b = 4.66634	b = 4.6008455
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² 0.9995737	r ² 0.9996
Degrees of Freedom		
X Coefficient(s)	m1 = m2 =	m1 = m2 =
Std Err of Coef.	0.00287655 5.20336E-09	0.00288047 2.19129E-09
Correlation Coefficient	0.999787	

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = $100 * (N - C) / N$

Where:

N = Initial Calibration Factor or Nominal Amount

C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Average RRF Conc	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated % D
1	02012001	8/5/2011	2,4-D (DB 35MS)	470	506.5	506.5	7.8	7.7
			2,4-D (DB XLB)	470	499.9	499.9	6.3	6.3

$Y = m1X + m2(X^2) + b$

Y= Amount

X= Response

	Response	Response ²	m1	m2	b	m2(X ²)	m1X	Conc
CCV1	2,4-D (DB 35MS)	139348	0.002877	5.2034E-09	4.6663	101.0381	400.84149	506.55
CCV1	2,4-D (DB XLB)	125146	0.003191	6.2217E-09	3.0587	97.4405041	399.39595	499.90
Sample 1	2,4-D (DB 35MS)	12056	0.000341	3.7494E-11	13.5753	0.00545	4.11556	17.70
	139348	1.94179E+10	0.002877	2.1913E-09	4.6008	42.5502	400.84149	447.99

LDC #: 26090 HS

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: JVB
2nd reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
2,4-DCAA	DB-35MS	500	514.6	103	103	9
	- XLB		516.0	103	103	9

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 26090 HS

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 \cdot (SSC - SC) / SA$ Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added
RPD = $((SSCLCS - SSCLCSD) \cdot 2) / (SSCLCS + SSCLCSD) \cdot 100$ LCS = Laboratory Control Sample
LCS/LCSD samples: LCS/10 280-79568/2,3-A

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCS		LCS		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)	4.60	4.60	4.97	4.61	108	108	100	100	7	7		
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)												
2,4,6-Trinitrotoluene (8330)												

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 29, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18611-1

Sample Identification

RD-55B_072911_01
HAR-21_072911_01
RS-08_072911_01
EB-PZ-155_072911
PZ-155_072911_01A
HAR-12_072911_01
HAR-14_072911_01
RD-55B_072911_01DUP
PZ-155_072911_01AMS
PZ-155_072911_01AMSD
PZ-155_072911_01ADUP
HAR-12_072911_01MS
HAR-12_072911_01MSD
HAR-12_072911_01DUP

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, and Orthophosphate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.108 mg/L	RD-55B_072911_01 HAR-21_072911_01 RS-08_072911_01 HAR-12_072911_01 HAR-14_072911_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-55B_072911_01	Ammonia as N	0.18 mg/L	0.18U mg/L
HAR-21_072911_01	Ammonia as N	0.11 mg/L	0.11U mg/L
RS-08_072911_01	Ammonia as N	0.13 mg/L	0.13U mg/L
HAR-12_072911_01	Ammonia as N	0.080 mg/L	0.080U mg/L
HAR-14_072911_01	Ammonia as N	0.084 mg/L	0.084U mg/L

Samples EB-PZ-155_072911 was identified as an equipment blank. No contaminant concentrations were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18611-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18611-1	RD-55B_072911_01 HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 PZ-155_072911_01A HAR-12_072911_01 HAR-14_072911_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Laboratory Blank Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18611-1	RD-55B_072911_01	Ammonia as N	0.18U mg/L	A	B
280-18611-1	HAR-21_072911_01	Ammonia as N	0.11U mg/L	A	B
280-18611-1	RS-08_072911_01	Ammonia as N	0.13U mg/L	A	B
280-18611-1	HAR-12_072911_01	Ammonia as N	0.080U mg/L	A	B
280-18611-1	HAR-14_072911_01	Ammonia as N	0.084U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Fluoride - Field Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

LDC #: 26090H6
 SDG #: 280-18611-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8-31-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area		Comments	
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	SW	
V.	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS/D
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	ND	EB=4; FB=FB-07211-19 (SDG: 280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *water*

1	RD-55B_072911_01	11	PZ-155_072911_01ADUP	21		31
2	HAR-21_072911_01	12	HAR-12_072911_01MS	22		32
3	RS-08_072911_01	13	HAR-12_072911_01MSD	23		33
4	EB-PZ-155_072911	14	HAR-12_072911_01DUP	24		34
5	PZ-155_072911_01A	15		25		35
6	HAR-12_072911_01	16		26		36
7	HAR-14_072911_01	17		27		37
8	RD-55B_072911_01DUP	18		28		38
9	PZ-155_072911_01AMS	19		29		39
10	PZ-155_072911_01AMSD	20		30		40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 29, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: Diesel Range Organics
Validation Level: Level V
Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18611-1

Sample Identification

HAR-21_072911_01
RS-08_072911_01
EB-PZ-155_072911
PZ-155_072911_01A
HAR-12_072911_01
HAR-14_072911_01

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Sample EB-PZ-155_072911 was identified as an equipment blank. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	HAR-21_072911_01 RS-08_072911_01 EB-PZ-155_072911 PZ-155_072911_01A HAR-12_072911_01 HAR-14_072911_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

LDC #: 26090H8
 SDG #: 280-18611-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/26/11
 Page: 1 of 1
 Reviewer: PVG
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	see B
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 3 FB = FB_071211-19 (280-1795-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-21_072911_01	11	MB 280-795h/1-A	21	31
2	RS-08_072911_01	12		22	32
3	EB-PZ-155_072911	13		23	33
4	PZ-155_072911_01A	14		24	34
5	HAR-12_072911_01	15		25	35
6	HAR-14_072911_01	16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18611-1

Sample Identification

RD-55B_072911_01
HAR-21_072911_01
RS-08_072911_01
HAR-12_072911_01
HAR-14_072911_01
RD-55B_072911_01MS
RD-55B_072911_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18611-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-1	RD-55B_072911_01 HAR-21_072911_01 RS-08_072911_01 HAR-12_072911_01 HAR-14_072911_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18611-1**

No Sample Data Qualified in this SDG

LDC #: 26090H76
 SDG #: 280-18611-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level IV

Date: 8/26/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/29/11</u>
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	<u>LCS 1B</u>
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-55B_072911_01	11	<u>MB 280-8004/25</u>	21		31
2	HAR-21_072911_01	12		22		32
3	RS-08_072911_01	13		23		33
4	HAR-12_072911_01	14		24		34
5	HAR-14_072911_01	15		25		35
6	RD-55B_072911_01MS	16		26		36
7	RD-55B_072911_01MSD	17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

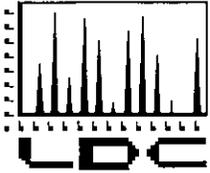
Notes: _____

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter		
1, 4, 5		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
2, 3		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

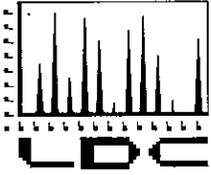
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18624-1/H1H020427

Sample Identification

EB_PZ-155_072911
PZ-155_072911_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1214031-MB	8/2/11	OCDD OCDF	3.5 pg/L 3.4 pg/L	All samples in SDG 280-18624-1/ H1H020427

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-155_072911_01A	OCDD	3.1 pg/L	3.1U pg/L

Sample EB_PZ-155_072911 was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

Sample FB_071211_19 (from SDG 280-17964) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	OCDD	4.0 pg/L	PZ-155_072911_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-155_072911_01A	OCDD	3.1 pg/L	3.1U pg/L

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1214031-LCS/D (All samples in SDG 280-18624-1/ H1H020427)	OCDF	-	-	17 (≤15)	J (all detects) UJ (all non-detects)	P

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18624-1/H1H020427	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18624-1/H1H020427**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18624-1/ H1H020427	EB_PZ-155_072911 PZ-155_072911_01A	OCDF	J (all detects) UJ (all non-detects)	P	Laboratory control samples (RPD) (E)
280-18624-1/ H1H020427	EB_PZ-155_072911 PZ-155_072911_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18624-1/H1H020427**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18624-1/ H1H020427	PZ-155_072911_01A	OCDD	3.1U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18624-1/H1H020427**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18624-1/ H1H020427	PZ-155_072911_01A	OCDD	3.1U pg/L	A	F

LDC #: 26090121

VALIDATION COMPLETENESS WORKSHEET

Date: 8/20/11

SDG #: 280-18624-1/H1H020427

Level V

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: JVG

2nd Reviewer: JVG

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	SW	LCs Φ
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	SW	EB = 1 FB = FB_071211-19 (280-17964)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinstate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	EB_PZ-155_072911	11	1214031-MB#	21	31
2	PZ-155_072911_01A	12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

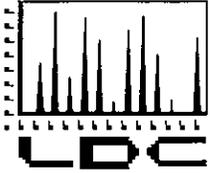
Notes: _____

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDD
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes:



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

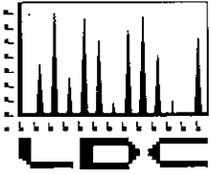
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18722-1

Sample Identification

HAR-07_080211_01
HAR-28_080211_01
HAR-27_080211_01
HAR-08_080211_01
HAR-29_080211_01
HAR-07_080211_01MS
HAR-07_080211_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-10838/1-A	8/4/11	Formaldehyde	0.0186 mg/L	All samples in SDG 280-18722-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-07_080211_01	Formaldehyde	0.017 mg/L	0.050U mg/L
HAR-28_080211_01	Formaldehyde	0.018 mg/L	0.050U mg/L
HAR-27_080211_01	Formaldehyde	0.021 mg/L	0.050U mg/L
HAR-08_080211_01	Formaldehyde	0.016 mg/L	0.050U mg/L
HAR-29_080211_01	Formaldehyde	0.017 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18722-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18722-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18722-1	HAR-07_080211_01 HAR-28_080211_01 HAR-27_080211_01 HAR-08_080211_01 HAR-29_080211_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18722-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18722-1	HAR-07_080211_01	Formaldehyde	0.050U mg/L	A	B
280-18722-1	HAR-28_080211_01	Formaldehyde	0.050U mg/L	A	B
280-18722-1	HAR-27_080211_01	Formaldehyde	0.050U mg/L	A	B
280-18722-1	HAR-08_080211_01	Formaldehyde	0.050U mg/L	A	B
280-18722-1	HAR-29_080211_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18722-1**

No Sample Data Qualified in this SDG

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-07_080211_01	11	MP 240-10 838/-A	21		31	
2	HAR-28_080211_01	12		22		32	
3	HAR-27_080211_01	13		23		33	
4	HAR-08_080211_01	14		24		34	
5	HAR-29_080211_01	15		25		35	
6	HAR-07_080211_01MS	16		26		36	
7	HAR-07_080211_01MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A
- Y N N/A
- Y N N/A
- Y N N/A

Were all samples associated with a given method blank?

Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?

Was a method blank performed with each extraction batch?

Were any contaminants found in the method blanks? If yes, please see findings below.

Level I/II Only

- Y N N/A
- Y N N/A

(Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?

Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/04/11 Blank analysis date: 8/04/11 Associated samples: All Code: B

Conc. units: mg/L

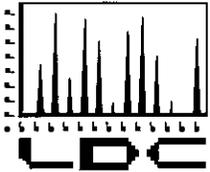
Compound	Blank ID	Sample Identification				
	MB 240-16838/1-A	1	2	3	4	5
Formaldehyde	0.0186	0.017 / 0.0504	0.018 / 0.0504	0.021 / 0.0504	0.016 / 0.0504	0.017 / 0.0504

Blank extraction date: _____ Blank analysis date: _____

Conc. units: _____ Associated samples: _____

Compound	Blank ID	Sample Identification				

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

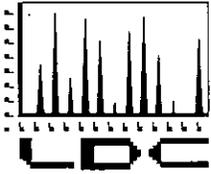
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18782-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
RD-51A_080311_01
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-10957/11-A	8/5/11	Formaldehyde	0.0144 mg/L	All samples in SDG 280-18782-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB_PZ-146_080311	Formaldehyde	0.015 mg/L	0.050U mg/L
RD-51A_080311_01	Formaldehyde	0.015 mg/L	0.050U mg/L
RD-51B_080311_01	Formaldehyde	0.023 mg/L	0.050U mg/L
RD-51C_080311_01	Formaldehyde	0.023 mg/L	0.050U mg/L
RD-37_080311_01	Formaldehyde	0.026 mg/L	0.050U mg/L
RD-39B_080311_01	Formaldehyde	0.019 mg/L	0.050U mg/L

Sample EB_PZ-146_080311 was identified as an equipment blank. No formaldehyde contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-146_080311	8/3/11	Formaldehyde	0.015 mg/L	PZ-146_080311_01

Sample FB_071211_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	8/3/11	Formaldehyde	0.025 mg/L	PZ-146_080311_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-146_080311_01	Formaldehyde	0.077 mg/L	0.077U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18782-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18782-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18782-1	PZ-146_080311_01 EB_PZ-146_080311 RD-51A_080311_01 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 RD-39B_080311_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18782-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18782-1	EB_PZ-146_080311	Formaldehyde	0.050U mg/L	A	B
280-18782-1	RD-51A_080311_01	Formaldehyde	0.050U mg/L	A	B
280-18782-1	RD-51B_080311_01	Formaldehyde	0.050U mg/L	A	B
280-18782-1	RD-51C_080311_01	Formaldehyde	0.050U mg/L	A	B
280-18782-1	RD-37_080311_01	Formaldehyde	0.050U mg/L	A	B
280-18782-1	RD-39B_080311_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18782-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18782-1	PZ-146_080311_01	Formaldehyde	0.077U mg/L	A	F

LDC #: 26090K71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/29/11

SDG #: 280-18782-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JG

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	EB = 2 FB = FB_071211-19 (280-17954-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	PZ-146_080311_01	11	MB 240-10957/11-A	21	31
2	EB_PZ-146_080311	12		22	32
3	RD-51A_080311_01	13		23	33
4	RD-51B_080311_01	14		24	34
5	RD-51C_080311_01	15		25	35
6	RD-37_080311_01	16		26	36
7	RD-39B_080311_01	17		27	37
8	RD-37_080311_01MS	18		28	38
9	RD-37_080311_01MSD	19		29	39
10		20		30	40

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level I/II Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical/ extraction batch of ≤20 samples?

Blank extraction date: 8/05 Blank analysis date: 8/05 A

Associated samples: All Crds : B

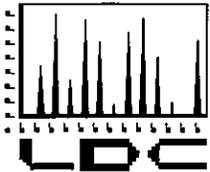
Conc. units: mg/L

Compound	Blank ID	Sample Identification						
	<u>MB 240-10957/A</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>Formaldehyde</u>	<u>0.0144</u>	<u>0.015</u> <u>0.0504</u>	<u>0.015</u> <u>0.0504</u>	<u>0.015</u> <u>0.0504</u>	<u>0.023</u> <u>0.0504</u>	<u>0.023</u> <u>0.0504</u>	<u>0.026</u> <u>0.0504</u>	<u>0.019</u> <u>0.0504</u>

Blank extraction date: _____ Blank analysis date: _____ Associated samples: _____

Compound	Blank ID	Sample Identification						

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

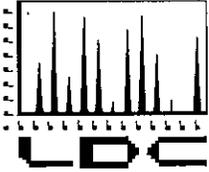
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18858-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-11083/10-A	8/6/11	Formaldehyde	0.0169 mg/L	All samples in SDG 280-18858-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-36B_080411_01	Formaldehyde	0.015 mg/L	0.050U mg/L
RD-36C_080411_01	Formaldehyde	0.017 mg/L	0.050U mg/L
RD-36D_080411_01	Formaldehyde	0.017 mg/L	0.050U mg/L
HAR-09_080411_01	Formaldehyde	0.027 mg/L	0.050U mg/L
RD-43C_080411_01	Formaldehyde	0.020 mg/L	0.050U mg/L
RD-43C_080411_36	Formaldehyde	0.021 mg/L	0.050U mg/L
RD-43B_080411_01	Formaldehyde	0.018 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18858-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-43C_080411_01	RD-43C_080411_36			
Formaldehyde	0.020	0.021	5 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18858-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18858-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18858-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18858-1	RD-36B_080411_01	Formaldehyde	0.050U mg/L	A	B
280-18858-1	RD-36C_080411_01	Formaldehyde	0.050U mg/L	A	B
280-18858-1	RD-36D_080411_01	Formaldehyde	0.050U mg/L	A	B
280-18858-1	HAR-09_080411_01	Formaldehyde	0.050U mg/L	A	B
280-18858-1	RD-43C_080411_01	Formaldehyde	0.050U mg/L	A	B
280-18858-1	RD-43C_080411_36	Formaldehyde	0.050U mg/L	A	B
280-18858-1	RD-43B_080411_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18858-1**

No Sample Data Qualified in this SDG

LDC #: 26090L71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/29/11

SDG #: 280-18858-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVL

2nd Reviewer: ✓

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 5,6
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *Water*

1	RD-36B_080411_01	11	<i>MB 240-11083/10-A</i>	21		31	
2	RD-36C_080411_01	12		22		32	
3	RD-36D_080411_01	13		23		33	
4	HAR-09_080411_01	14		24		34	
5	RD-43C_080411_01 <i>D</i>	15		25		35	
6	RD-43C_080411_36 <i>D</i>	16		26		36	
7	RD-43B_080411_01	17		27		37	
8	RD-43B_080411_01MS	18		28		38	
9	RD-43B_080411_01MSD	19		29		39	
10		20		30		40	

Notes: _____

LDC #: 2609DL7)

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1
Reviewer: DM
2nd Reviewer: [Signature]

Blanks

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/06/11 Blank analysis date: 8/06/11

Associated samples: A11 Col. : 8

Conc. units: mg/L

Compound	Blank ID	Sample Identification					
	<u>MB 240-11083/0-A</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>Formaldehyde</u>	<u>0.0169</u>	<u>0.017</u>	<u>0.017</u>	<u>0.027</u>	<u>0.020</u>	<u>0.021</u>	<u>0.018</u>
		<u>0.0504</u>	<u>0.0504</u>	<u>0.0504</u>	<u>0.0504</u>	<u>0.0504</u>	<u>0.0504</u>

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Compound	Blank ID	Sample Identification					

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

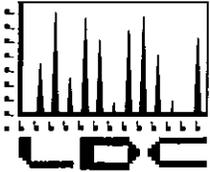
VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?
 Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		RPD (≤35%)	Qualifications (Parent Only)
	RD-43C_080411_01	RD-43C_080411_36		
Formaldehyde	0.020	0.021	5	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

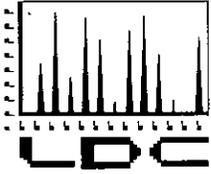
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

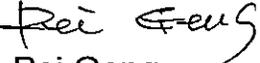
The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 10, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19055-1

Sample Identification

HAR-25_081011_01
RD-45A_081011_01
RD-45B_081011_01
RD-45C_081011_01

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-11811/1-A	8/12/11	Formaldehyde	0.0137 mg/L	All samples in SDG 280-19055-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-25_081011_01	Formaldehyde	0.013 mg/L	0.050U mg/L
RD-45A_081011_01	Formaldehyde	0.013 mg/L	0.050U mg/L
RD-45B_081011_01	Formaldehyde	0.016 mg/L	0.050U mg/L
RD-45C_081011_01	Formaldehyde	0.014 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19055-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-19055-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19055-1	HAR-25_081011_01 RD-45A_081011_01 RD-45B_081011_01 RD-45C_081011_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-19055-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19055-1	HAR-25_081011_01	Formaldehyde	0.050U mg/L	A	B
280-19055-1	RD-45A_081011_01	Formaldehyde	0.050U mg/L	A	B
280-19055-1	RD-45B_081011_01	Formaldehyde	0.050U mg/L	A	B
280-19055-1	RD-45C_081011_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-19055-1**

No Sample Data Qualified in this SDG

LDC #: 26090M71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/29/11

SDG #: 280-19055-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: OVL

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/10/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: WATCF

1	HAR-25_081011_01	11	MB 240 - 11811 / -X	21		31	
2	RD-45A_081011_01	12		22		32	
3	RD-45B_081011_01	13		23		33	
4	RD-45C_081011_01	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 26090 M7/

VALIDATION FINDINGS WORKSHEET

Blanks

Page: 1 of 1
Reviewer: JVL
2nd Reviewer: [Signature]

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level W/D Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical / extraction batch of <20 samples?

Blank extraction date: 8/12/11

Associated samples: A1 Code: B

Conc. units: mg/L

Compound	Blank ID	Sample Identification		
	MP 240-11811 A	1	2	4
Formaldehyde	0.0137	0.013 / 0.016 / 0.014	0.016 / 0.014	0.014 / 0.014
		0.0504 / 0.0504	0.0504 / 0.0504	0.0504 / 0.0504

Blank extraction date: _____

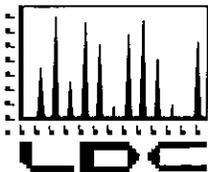
Blank analysis date: _____

Conc. units: _____

Associated samples: _____

Compound	Blank ID	Sample Identification		

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

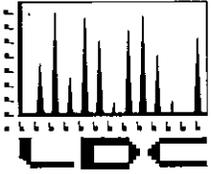
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19106-1

Sample Identification

WS-09A_081111_01

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-11811/1-A	8/12/11	Formaldehyde	0.0137 mg/L	WS-09A_081111_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
WS-09A_081111_01	Formaldehyde	0.019 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19106-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Data Qualification Summary - SDG 280-19106-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19106-1	WS-09A_081111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-19106-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19106-1	WS-09A_081111_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
 Formaldehyde - Field Blank Data Qualification Summary - SDG 280-19106-1**

No Sample Data Qualified in this SDG

LDC #: 26090N71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/29/11

SDG #: 280-19106-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVC

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

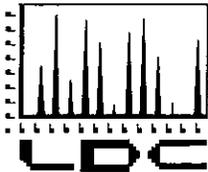
D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	WS-09A_081111_01	11	mpb 280-11811/1-A	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 13, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

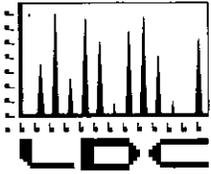
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 23, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26090:

<u>SDG #</u>	<u>Fraction</u>
280-17905-1/11-07064-OR/11-07065-OR 280-17956-1/11-07076-OR/11-07075-OR 280-18017-1/11-07083-OR/11-07084-OR 280-18083-1/11-07100-OR/11-07076-OR	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18472-2	N-Nitrosodimethylamine, Perchlorate
280-18527-2	N-Nitrosodimethylamine
280-18596-1/H1G300413 280-18624-1/H1H020427	Dioxins/Dibenzofurans
280-18611-1	Volatiles, 1,4-Dioxane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Herbicides, Wet Chemistry, Hydrazine
280-18722-1, 280-18782-1 280-18858-1, 280-19055-1 280-19106-1	Formaldehyde
IUG2193	Semivolatiles, Metals, Wet Chemistry, Dioxins/Dibenzofurans

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 21, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Sulfide

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2193

Sample Identification

PZ-060_072111_03

Introduction

This data review covers one water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 4500-S2 D for Sulfide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No Sulfide was found in the initial, continuing and preparation blanks.

Sample EB_PZ-260_072111A (from SDG 280-18334-1) was identified as an equipment blank. No sulfide was found.

Samples FB_PZ-060_072111_19 (from SDG 280-18334-1) and FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No sulfide was found.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG IUG2193	All analytes reported below the RL and above the MDL.	J (all detects)	A

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-060_072111_03 and PZ-060_072111_01 (from SDG 280-18334-1) were identified as split samples. No sulfide was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-060_072111_03	PZ-060_072111_01			
Sulfide	0.027	0.0070U	118 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Sulfide & Sulfide - Data Qualification Summary - SDG IUG2193**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
IUG2193	PZ-060_072111_03	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Sulfide & Sulfide - Laboratory Blank Data Qualification Summary - SDG IUG2193**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Sulfide & Sulfide - Field Blank Data Qualification Summary - SDG IUG2193**

No Sample Data Qualified in this SDG

Method: Inorganics (EPA Method See Cover)

Validation Area	Yes	No	NA	Findings/Comments
<i>I. Technical holding times</i>				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
<i>II. Calibration</i>				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial calibration correlation coefficients > 0.995?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	/			
Were titrant checks performed as required? (Level IV only)			/	
Were balance checks performed as required? (Level IV only)			/	
<i>III. Blanks</i>				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
<i>IV. Matrix spike/Matrix spike duplicates and Duplicates</i>				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	/		/	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.			/	
<i>V. Laboratory control samples</i>				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	/			
<i>VI. Regional Quality Assurance and Quality Control</i>				
Were performance evaluation (PE) samples performed?			/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.		/		

LDC# 2609006

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	PZ-060_072111_01	1		
Sulfide	0.0070U	0.027	118	NQ (<5xRL)

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LDC #: 269006

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Method: Inorganics, Method Seacal

The correlation coefficient (r) for the calibration of Sr was recalculated. Calibration date: 7/26/11

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = $\frac{\text{Found} \times 100}{\text{True}}$ Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/l)	Area	Recalculated		Reported		Acceptable (Y/N)
					r or r ²	r or r ²			
Initial calibration	S	s1	0	0	0.99976	0.99977			Y
		s2	0.05	0.023					
		s3	0.1	0.047					
		s4	0.348	0.158					
		s5	0.58	0.246					
		s6	0.928	0.393					
		s7	1.16	0.486					
Calibration verification		ICV	0.36518	0.796	92	-			
Calibration verification		CCV	0.585	0.580	102	-			
Calibration verification		↓	0.58507	↓	101	-			

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100 \quad \text{Where, Found} =$$

concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
 True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100 \quad \text{Where, S} = \text{Original sample concentration}$$

$$D = \text{Duplicate sample concentration}$$

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	%R / RPD	
LCS	Laboratory control sample	S	0.631	0.580	109	109	Y
N	Matrix spike sample		(SSR-SR)				
N	Duplicate sample						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 21, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2193

Sample Identification

PZ-060_072111_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
7/27/11	2-Picoline	47	PZ-060_072111_03	J (all detects) UJ (all non-detects)	A
	N-Nitrosomethylethylamine	50			
	N-Nitrosodiethylamine	32			
	o,o,o-Triethylphosphorothioate	33			
	Hexachloropropene	54			
	1,4-Phenylenediamine	41			
	1,2,4,5-Tetrachlorobenzene	39			
	Isosafrole	36			
	Pentachloronitrobenzene	118			
	4-Nitroquinoline-n-oxide	45			
	Methapyrilene	76			

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/14/11	o-Toluidine a,a-Dimethylphenethylamine 1,4-Phenlenediamine 1-Naphthylamine	93 26 50 30	PZ-060_072111_03	J (all detects) UJ (all non-detects)	A
8/3/11	a,a-Dimethylphenethylamine 1,4-Phenlenediamine 3,3-Dimethylbenzidine	32 41 54	11G2938-Blk1	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample EB_PZ-060_072111_19 (from SDG 280-18334-1) was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-060_072111_19	7/21/11	Bis(2-ethylhexyl)phthalate	1.8 ug/L	PZ-060_072111_03

Samples FB_PZ-060-072111_19 (from SDG 280-18334-1) and FB_071211_19 (280-17952-1) were identified as field blanks. No semivolatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_PZ-060_072111_19	7/21/11	Benzyl alcohol Bis(2-ethylhexyl)phthalate	0.24 ug/L 2.4 ug/L	PZ-060_072111_03

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2193	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples PZ-060_072111_03 and PZ-060_072111_01 (from SDG 280-18334-1) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-060_072111_01	PZ-060_072111_03			
Bis(2-ethylhexyl)phthalate	3.4	9.8U	97 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG IUG2193

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2193	PZ-060_072111_03	2-Picoline N-Nitrosomethylethylamine N-Nitrosodiethylamine o,o,o-Triethylphosphorothioate Hexachloropropene 1,4-Phenylenediamine 1,2,4,5-Tetrachlorobenzene Isosafrole Pentachloronitrobenzene 4-Nitroquinoline-n-oxide Methapyrilene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
IUG2193	PZ-060_072111_03	o-Toluidine a,a-Dimethylphenethylamine 1,4-Phenylenediamine 1-Naphthylamine	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
IUG2193	PZ-060_072111_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RL (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG IUG2193

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG IUG2193

No Sample Data Qualified in this SDG

LDC #: 2609002a
 SDG #: IUG2193
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 8/20/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	GC/MS Instrument performance check	NA	
III.	Initial calibration	NA	RSD ≤ 30% ✓
IV.	Continuing calibration/ICV	SW	CCV/ICV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	A	ICS 1/3
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	NA	
XII.	Compound quantitation/RL/LOQ/LODs	NA	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	NA	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	SW	S = 1 + PZ-060_072111-01 (280-18334-1)
XVII.	Field blanks	SW	FB = FB-PZ-060_072111-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 *ND = No compounds detected
 R = Rinsate
 FB = Field blank
 EB = Equipment blank
 D = Duplicate
 TB = Trip blank
 *FB = FB-071211-19 (280-17952-1)

Validated Samples: Water

1	PZ-060_072111_03	11	1192938 - blk1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?	/			
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) > 0.05 ?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) $\leq 25\%$ and relative response factors (RRF) ≥ 0.05 ?		/		
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds from the associated calibration standard?	/			
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		/		
XIV: System performance				
System performance was found to be acceptable.	/			
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII: Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**	XXX. a,a-Dimethylphenethylamine
B. Bis(2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene	YYY. 1,4-Phenylenediamine
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene	ZZZ. 1-Naphthylamine
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene	AAAA. 2-Picoline
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether	BBBB. N-Nitrosomethylethylamine
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline	CCCC. N-Nitrosodiethylamine
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine	DDDD. o,o,o'-Triethylphosphorothioate
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid	EEEE. Hexachloropropene
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol	FFFF. 1,2,4,5-Tetrachlorobenzene
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine	GGGG. Isosafrole
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine	HHHH. Pentachloronitrobenzene
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Methyl methanesulfonate	IIII. 4-Nitroquinoline-n-oxide
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU. 1,4-Naphthoquinone	JJJJ. 3,3-Dimethylbenzidine
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrene	
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. o-Toluidine	

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
 Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
 Were all %D and RRFs within the validation criteria of $\leq 25\%$ %D and ≥ 0.05 RRF?

N N/A
 N N/A
 Y N N/A

#	Date	Standard ID	Compound	Finding %D (Limit: $\leq 25.0\%$)	Finding RRF (Limit: > 0.05)	Associated Samples	Qualifications
	4/14/11	A1STD050A (101)	WVW XXX YYY ZZZ	93 26 50 30			JMS/A (C)
	7/27/11	A1STD050 (101)	AAA BBB CCC DDD EEE YYY FFF GGG	47 50 32 33 54 41 39 36			
			HHH III VVV	118 45 76			
	8/03/11	A1ICV050 (101)	XXX YYY JJJ	32 41 54		11 G 2938-b/k/	

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-060_072111_01	PZ-060_072111_03		
Bis(2-ethylhexyl)phthalate	3.4	9.8U	97	NQ (.5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

$$A_x = \text{Area of Compound}$$

$$C_x = \text{Concentration of compound,}$$

$$S = \text{Standard deviation of the RRFs,}$$

$$A_{is} = \text{Area of associated internal standard}$$

$$C_{is} = \text{Concentration of internal standard}$$

$$X = \text{Mean of the RRFs}$$

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL MS71	7/27/2011	1,3-Dichlorobenzene (IS1)	1.540	1.540	1.542	1.542	6.20	6.20
			Naphthalene (IS2)	1.064	1.064	1.080	1.080	8.39	8.39
			Diethyl phthalate (IS3)	1.683	1.683	1.509	1.509	7.79	7.79
			Hexachlorobenzene (IS4)	0.252	0.252	0.240	0.240	8.33	8.31
			Chrysene (IS5)	1.081	1.081	1.071	1.071	2.81	2.82
			Benzo(g,h,i)perylene (IS6)	0.800	0.800	0.821	0.821	6.48	6.45

Cis/Cx	Ax	Ais
40/50	64592	33561
40/50	189968	142835
40/50	244610	116270
40/50	71643	227097
40/50	345187	255487
40/50	209564	209660

Conc	1,3-DCB	Naphthalene	Diethyl phthalate	Hexachlorobenzene	Chrysene	Benzo(g,h,i)per
5.00	1.460	0.996	1.395	0.219	1.107	0.789
10.00	1.450	1.001	1.488	0.226	1.107	0.775
50.00	1.540	1.064	1.683	0.252	1.081	0.800
80.00	1.587	1.144	1.546	0.261	1.064	0.797
120.00	1.670	1.176	1.548	0.262	1.043	0.833
160.00	1.648	1.196	1.575	0.248	1.027	0.933
2.00	1.442	0.985	1.330	0.215	1.067	0.822
X =	1.542	1.080	1.509	0.240	1.071	0.821
S =	0.096	0.091	0.118	0.020	0.030	0.053

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (\text{Ax}) / (\text{Cis}) / (\text{Ais}) / (\text{Cx})$$

ave. RRF = initial calibration average RRF RRF = continuing calibration RRF
 Ax = Area of compound Ais = Area of associated internal standard
 Cx = Concentration of compound Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	SSTD050B MS71	07/27/11	Phenol (IS1)	1.542	1.546	1.546	0.3	0.3
			Naphthalene (IS2)	1.080	1.083	1.083	0.3	0.3
			Diethyl phthalate (IS3)	1.509	1.720	1.720	14.0	14.0
			Hexachlorobenzene (IS4)	0.240	0.235	0.258	2.3	2.3
			Chrysene (IS5)	1.071	1.094	1.094	2.1	2.1
			Benzo(g,h,i)perylene (IS6)	0.821	0.782	0.782	4.8	4.8

Compound (IS)	Cis/Cx	Ax	Ais
Phenol (IS1)	40/50	50369	26058
Naphthalene (IS2)	40/50	151090	111610
Diethyl phthalate (IS3)	40/50	201469	93732
Hexachlorobenzene (IS4)	40/50	60617	188184
Chrysene (IS5)	40/50	298948	218683
Benzo(g,h,i)perylene (IS6)	40/50	175316	179361

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	40.92	82	82	0
2-Fluorobiphenyl	↓	38.83	78	78	↓
Terphenyl-d14	↓	43.94	88	88	↓
Phenol-d5	100	59.10	59	59	↓
2-Fluorophenol	↓	64.87	65	65	↓
2,4,6-Tribromophenol	↓	82.34	82	82	↓
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVL

2nd Reviewer: [Signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SC/SA)$

Where: SSC = Spike concentration
SA = Spike added

RPD = $|LCSC - LCSDC| * 2 / (LCSC + LCSDC)$

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 116 2938 BSI / BSD1

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol	100	100	71.7	69.3	77	72	69	69	3	3
N-Nitroso-di-n-propylamine			84.8	77.1	85	85	77	77	9	9
4-Chloro-3-methylphenol			85.3	79.3	85	85	79	79	7	7
Acenaphthene			88.7	88.5	89	89	89	89	0.2	0.2
Pentachlorophenol										
Pyrene			99.6	101	100	100	107	101	1	1

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 21, 2011

LDC Report Date: August 31, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2193

Sample Identification

RS-34_072111_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1208036-MB	7/27/11	1,2,3,4,6,7,8-HpCDD Total HpCDD OCDD 1,2,3,4,6,7,8-HpCDF Total HpCDF	0.46 pg/L 1.4 pg/L 2.3 pg/L 0.22 pg/L 0.22 pg/L	RS-34_072111_03

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RS-34_072111_03	1,2,3,4,6,7,8-HpCDD Total HpCDD OCDD 1,2,3,4,6,7,8-HpCDF Total HpCDF	1.3 pg/L 2.4 pg/L 3.9 pg/L 1.0 pg/L 1.9 pg/L	1.3U pg/L 2.4U pg/L 3.9U pg/L 1.0U pg/L 1.9U pg/L

Sample FB_RS-34_072111_01 (from SDG 280-1834-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_RS-34_072111_01	7/21/11	OCDD	2.0 pg/L	All samples in SDG IUG2193

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RS-34_072111_03	OCDD	3.9 pg/L	3.9U pg/L

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2193	All compounds reported below the RLs.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples RS-34_072111_03 and RS-34_072111_01 (from SDG 280-18341) were identified as split samples. No polychlorinated dioxin/dibenzofuran was detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flag	A or P
	RS-34_072111_01	RS-34_072111_03			
1,2,3,7,8-PeCDD	1.1U	0.73	40	NQ	-
Total PeCDD	Not reported	0.73	Not calculable	-	-
1,2,3,4,7,8-HxCDD	0.72U	0.48	40	NQ	-
1,2,3,6,7,8-HxCDD	0.97U	0.76	24	-	-
1,2,3,7,8,9-HxCDD	0.77U	0.61	23	-	-
Total HxCDD	Not reported	1.8	Not calculable	-	-
1,2,3,4,6,7,8-HpCDD	1.5U	1.3	14	-	-
Total HpCDD	Not reported	2.4	Not calculable	-	-
OCDD	17	3.9	125	NQ	-
1,2,3,7,8-PeCDF	1.0U	0.78	25	-	-
2,3,4,7,8-PeCDF	0.80U	0.42	62	NQ	-
Total PeCDF	Not reported	1.2	Not calculable	-	-
1,2,3,4,7,8-HxCDF	0.51U	0.63	21	-	-
1,2,3,6,7,8-HxCDF	0.44U	0.69	44	NQ	-
2,3,4,6,7,8-HxCDF	0.46U	0.58	23	-	-
1,2,3,7,8,9-HxCDF	0.68U	0.44	43	NQ	-
Total HxCDF	Not reported	2.3	Not calculable	-	-
1,2,3,4,6,7,8-HpCDF	0.68U	1.0	38	NQ	-
1,2,3,4,7,8,9-HpCDF	0.95U	0.60	45	NQ	-
Total HpCDF	Not reported	1.9	Not calculable	-	-
OCDF	3.1	0.99	103	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG IUG2193**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2193	RS-34_072111_03	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG IUG2193**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUG2193	RS-34_072111_03	1,2,3,4,6,7,8-HpCDD Total HpCDD OCDD 1,2,3,4,6,7,8-HpCDF Total HpCDF	1.3U pg/L 2.4U pg/L 3.9U pg/L 1.0U pg/L 1.9U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG IUG2193**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUG2193	RS-34_072111_03	OCDD	3.9U pg/L	A	F

LDC #: 26090021

VALIDATION COMPLETENESS WORKSHEET

Date: 8/29/11

SDG #: IUG2193

Level ~~V~~ IV

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: SVG

2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area		Comments	
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	HRGC/HRMS Instrument performance check	NA	
III.	Initial calibration	NA	% RSD ≤ 20 % Unlabeled ≤ 20 % labeled
IV.	Routine calibration/ICV	NA	CV/ICV ↓
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec.
VII.	Laboratory control samples	A	LCS
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	NA	
XI.	Compound quantitation RL/LOQ/LODs	NA	
XII.	System performance	NA	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates / Split	SW	S = 1 + RS-34_072111_01 (280-18341)
XV.	Field blanks	SW	FB = FB_RS-34_072111_19 ↓

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: WATER

1	RS-34_072111_03	11	1208036-MB	21	31
2		12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	/			
Were the retention time windows established for all homologues?	/			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers < 25% ?	/			
Is the static resolving power at least 10,000 (10% valley definition)?	/			
Was the mass resolution adequately check with PFK?	/			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	/			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	/			
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled standards and < 30% for labeled standards?	/			
Did all calibration standards meet the Ion Abundance Ratio criteria?	/			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10?	/			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	/			
Were all percent differences (%D) ≤ 20% for unlabeled standards and ≤ 30% for labeled standards?	/			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank performed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	✓			
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
IX. Internal standards				
Were internal standard recoveries within the 40-135% criteria?	✓			
Was the minimum S/N ratio of all internal standard peaks > 10?	✓			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	✓			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	✓			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	✓			
Did compound spectra contain all characteristic ions listed in the table attached?	✓			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	✓			
Was the signal to noise ratio for each target compound and labeled standard \geq 2.5?	✓			
Does the maximum intensity of each specified characteristic ion coincide within \pm 2 seconds (includes labeled standards)?	✓			
For PCDF identification, was any signal (S/N \geq 2.5, at \pm seconds RT) detected in the corresponding PCDF channel?	✓			
Was an acceptable lock mass recorded and monitored?	✓			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates / Split				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y/N/NA Were field split pairs identified in this SDG?

Y/N/NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	RS-34_072111_01	RS-34_072111_03		
B	1.1U	0.73	40	NQ (<5xRL)
S	NR	0.73	NC	
C	0.72U	0.48*	40	NQ (<5xRL)
D	0.97U	0.76*	24	
E	0.77U	0.61	23	
T	NR	1.8*	NC	
F	1.5U	1.3*	14	
U	NR	2.4*	NC	
G	17	3.9	125	NQ (<5xRL)
I	1.0U	0.78	25	
J	0.80U	0.42*	62	NQ (<5xRL)
W	NR	1.2*	NC	
K	0.51U	0.63*	21	
L	0.44U	0.69	44	NQ (<5xRL)
M	0.46U	0.58	23	
N	0.68U	0.44*	43	NQ (<5xRL)
X	NR	2.3*	NC	
O	0.68U	1.0*	38	NQ (<5xRL)
P	0.95U	0.60*	45	NQ (<5xRL)

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field split pairs identified in this SDG?

Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	RS-34_072111_01	RS-34_072111_03		
Y	NR	1.9*	NC	
Q	3.1*	0.99*	103	NQ (<5xRL)

* EMPC

V:\FIELD DUPLICATES\26090A21s.wpd

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound

C_x = Concentration of compound,

S = Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (20/100 std)	Recalculated RRF (20/100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	10/20/2010	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	1.00056	1.00056	0.97151	0.97151	7.367	7.367
	3d5		2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.03503	1.03503	1.00877	1.00877	6.221	6.221
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	1.13741	1.13741	1.11052	1.11052	4.340	4.340
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	1.01157	1.01157	0.98108	0.98108	3.858	3.858
			OCDF (13C-OCDF)	1.55732	1.55732	1.47706	1.47706	6.876	6.876

Cis/Cx	Area cpd	Area IS
50/20	1473679	3682130
50/20	981583	2370903
50/100	3460575	1521258
50/100	2898789	1432816
50/100	6409991	2058016

Conc	2,3,7,8-TCDF	2,3,7,8-TCDD	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDF
d5_5 50/20	1.00056	1.03503	1.13741	1.01157	1.55732
d5_6 50/20	1.00535	1.04070	1.12919	0.99047	1.53287
d5_4 50/100	0.91142	0.95176	1.05950	0.94154	1.33625
d5_3 50/100	0.88383	0.93471	1.06034	0.94124	1.40240
d5_2 50/100	1.05637	1.08163	1.16617	1.02060	1.55646
X =	0.97151	1.00877	1.11052	0.98108	1.47706
S =	0.0716	0.0628	0.0482	0.0378	0.1016

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$

ave. RRF = ICAL average RRF
 RRF = CCV RRF
 Ax = Area of compound
 Cx = Concentration of compound
 Ais = Area of associated internal standard
 Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	28JL11A3D5_2	07/28/11	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.97151	0.94815	0.94815	2.4	2.4
			2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.00877	1.05143	1.05143	4.2	4.2
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	1.11052	1.05625	1.05625	4.9	4.9
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	0.98108	0.97532	0.97532	0.6	0.6
			OCDF (13C-OCDD)	1.47706	1.31043	1.31043	11.3	11.3

Compound (IS)	Concentration (IS/Cpd)	Area Cpd	Area IS
2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	100/10	267539	2821698
2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	100/10	197365	1877106
1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	100/50	808125	1530178
1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	100/50	683187	1400947
OCDF (13C-OCDD)	100/50	1578417	2409011

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: Metals
Validation Level: Level V
Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2193

Sample Identification

RD-50_072111_03
RD-50_072111_03F
RD-50_072111_03MS
RD-50_072111_03MSD
RD-50_072111_03FMS
RD-50_072111_03FMSD

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6020 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Tin, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the preparation blanks.

No field blanks were identified in this SDG.

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG IUG2193	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-50_072111_03 and RD-50_072111_01 (from SDG 280-18334-1) and samples RD-50_072111_03F and RD-50_072111_01F (from SDG 280-18334-1) were identified as split samples. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-50_072111_03	RD-50_072111_01			
Antimony	0.00039	0.00068	54 (≤35)	NQ	-
Arsenic	0.011	0.010	10 (≤35)	-	-
Barium	0.051	0.050	2 (≤35)	-	-
Cobalt	0.00046	0.00048	4 (≤35)	-	-
Lead	0.00089	0.00093	4 (≤35)	-	-
Nickel	0.00064	0.00055	15 (≤35)	-	-
Selenium	0.0053	0.0056	6 (≤35)	-	-
Thallium	0.000054	0.00020U	115 (≤35)	NQ	-

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-50_072111_03	RD-50_072111_01			
Vanadium	0.0030	0.0034	12 (≤35)	-	-
Zinc	0.15	0.15	0 (≤35)	-	-

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RD-50_072111_03F	RD-50_072111_01F			
Antimony	0.00048	0.00048	0 (≤35)	-	-
Arsenic	0.011	0.0097	13 (≤35)	-	-
Barium	0.052	0.048	8 (≤35)	-	-
Cobalt	0.00047	0.00042	11 (≤35)	-	-
Lead	0.0012	0.0011	9 (≤35)	-	-
Nickel	0.00073	0.00058	23 (≤35)	-	-
Selenium	0.0056	0.0046	20 (≤35)	-	-
Silver	0.000026	0.00010U	117 (≤35)	NQ	-
Thallium	0.000097	0.00020U	69 (≤35)	NQ	-
Vanadium	0.0031	0.0025	21 (≤35)	-	-
Zinc	0.16	0.15	6 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
 Metals - Data Qualification Summary - SDG IUG2193**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
IUG2193	RD-50_072111_03 RD-50_072111_03F	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Metals - Laboratory Blank Data Qualification Summary - SDG IUG2193**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Metals - Field Blank Data Qualification Summary - SDG IUG2193**

No Sample Data Qualified in this SDG

LDC #: 2609004

VALIDATION COMPLETENESS WORKSHEET

Date: 8-31-11

SDG #: IUG2193

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *QZ*2nd Reviewer: *[Signature]*

METHOD: Metals (EPA SW 846 Method 6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/P
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	CS06: 280-18334-1
XIV.	Field Duplicates	SW	Split: (1, RD-50.072111_01), (2, RD-50.072111_01F)
XV.	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

water

1	RD-50_072111_03	11		21		31	
2	RD-50_072111_03F	12		22		32	
3	RD-50_072111_03MS	13		23		33	
4	RD-50_072111_03MSD	14		24		34	
5	RD-50_072111_03FMS	15		25		35	
6	RD-50_072111_03FMSD	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: Samples appended with "F" were analyzed for dissolved metals

LDC#: 2609004

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	RD-50_072111_01	1		
Antimony	0.00068	0.00039	54	NQ (<5xRL)
Arsenic	0.010	0.011	10	
Barium	0.050	0.051	2	
Cobalt	0.00048	0.00046	4	
Lead	0.00093	0.00089	4	
Nickel	0.00055	0.00064	15	
Selenium	0.0056	0.0053	6	
Thallium	0.00020U	0.000054	115	NQ (<5xRL)
Vanadium	0.0034	0.0030	12	
Zinc	0.15	0.15	0	

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LDC#: 2609004

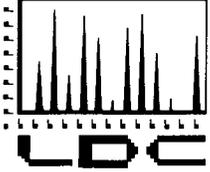
VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	RD-50_072111_01F	2		
Antimony	0.00048	0.00048	0	
Arsenic	0.0097	0.011	13	
Barium	0.048	0.052	8	
Cobalt	0.00042	0.00047	11	
Lead	0.0011	0.0012	9	
Nickel	0.00058	0.00073	23	
Selenium	0.0046	0.0056	20	
Silver	0.00010U	0.000026	117	NQ (<5xRL)
Thallium	0.00020U	0.000097	69	NQ (<5xRL)
Vanadium	0.0025	0.0031	21	
Zinc	0.15	0.16	6	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

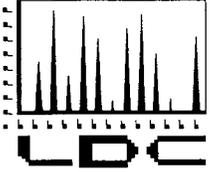
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss. Metals (SW846)		Herbs (8151A)		GRO (8015B)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	280-18527-1/ IUG2793	08/24/11	09/15/11	8	0	9	0	3	0	5	0	5	0	2	0	2	0	2	0	-	-	-	-	5	0	-	-	3	0	-	-	-	-	-	-		
BA	280-18527-1/ IUG2793	08/24/11	09/15/11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	0	0	-	-	0	0	-	-	-	-	-	-	
B	280-18672-1/ H1H030429	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	
C	280-18673-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	280-18721-1/ H1H040443	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	
E	280-18777-1/ IUH0707	08/24/11	09/15/11	10	0	10	0	7	0	7	0	2	0	7	0	2	0	2	0	2	0	-	-	2	0	7	0	-	-	5	0	5	0	7	0	-	-
F	280-18781-1/ H1H050406	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0
G	280-18850-1/ IUH0782	08/24/11	09/15/11	11	0	11	0	10	0	7	0	7	0	8	0	-	-	-	-	-	-	3	0	4	0	7	0	-	-	7	0	6	0	6	0	-	-
H	280-19011-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	T/PG			32	0	30	0	20	0	19	0	2	0	20	0	4	0	4	0	4	0	3	0	6	0	19	0	13	0	15	0	11	0	13	0	9	0

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄ (314.0)		pH (9040B)		Cr (VI) (7196A)		Diss. Cr (VI) (7196A)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	280-18527-1	08/24/11	09/15/11	3	0	3	0	2	0	5	0	6	0	2	0	3	0	-	-	-	-	-	-
E	280-18777-1	08/24/11	09/15/11	5	0	2	0	2	0	7	0	7	0	2	0	5	0	5	0	2	0	2	0
G	280-18850-1	08/24/11	09/15/11	7	0	-	-	-	-	7	0	7	0	-	-	8	0	6	0	-	-	-	-
Total	T/PG			15	0	5	0	4	0	19	0	20	0	4	0	16	0	11	0	2	0	2	0

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: September 7, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level IV & V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18527-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01**
HAR-20_072711_36**
FB_HAR-20_072711_19**
ES-01_072711_01
RD-104_072711_01
TB_RD-104_072711
EB_PZ-154_072711
PZ-154_072711_01A
TB_PZ-154_072711A
TB_HAR-11_072711
HAR-11_072711_01MS
HAR-11_072711_01MSD

**Indicates sample underwent Level IV review

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level V review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
PZ-154_072711_01A	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Trichloroethene Vinyl chloride	15	14	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/4/11	Acetonitrile Isobutanol	0.0106 (≥0.05) 0.0025 (≥0.05)	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** MB 280-80788/5	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
8/5/11	Methyl methacrylate	0.0266 (≥0.05)	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** MB 280-80788/5	J (all detects) UJ (all non-detects)	A

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/5/11 (G7082)	Dichlorodifluoromethane	29.8	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** MB 280-80788/5	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/5/11 (G6892)	Trichlorofluoromethane	25.2	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** MB 280-80788/5	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/5/11 (G7082)	Acetonitrile	0.0109 (≥0.05)	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** MB 280-80788/5	J (all detects) UJ (all non-detects)	A
	Isobutyl alcohol	0.0024 (≥0.05)		J (all detects) UJ (all non-detects)	
8/5/11 (G7083)	Methyl methacrylate	0.0323 (≥0.05)	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** MB 280-80788/5	J (all detects) UJ (all non-detects)	A

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-80788/5	8/9/11	Methylene chloride	0.342 ug/L	HAR-11_072711_01 HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** ES-01_072711_01 RD-104_072711_01 TB_RD-104_072711 EB_PZ-154_072711 PZ-154_072711_01A TB_HAR-11_072711
280-81024/6	8/10/11	Methylene chloride	0.872 ug/L	ES-01_072711_01 TB_PZ-154_072711A

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-154_072711_01A	Methylene chloride	2.4 ug/L	2.4U ug/L

Samples TB_RD-104_072711, TB_PZ-154_072711A, and TB_HAR-11_072711 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-104_0727	7/27/11	Acetone	2.3 ug/L	RD-104_072711_01
TB_PZ-154_072711A	7/27/11	Tetrahydrofuran	5.4 ug/L	EB_PZ-154_072711 PZ-154_072711_01A
TB_HAR-11_072711	7/27/11	Acetone cis-1,2-Dichloroethene	2.3 ug/L 0.27 ug/L	HAR-11_072711_01 HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** ES-01_072711_01

Sample EB_PZ-154_072711 was identified as an equipment blank. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-154_072711	7/27/11	Acetone	2.7 ug/L	PZ-154_072711_01A

Samples FB_HAR-20_072711_19** and FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_HAR-20_072711_19**	7/27/11	Acetone Chloroform	2.9 ug/L 0.41 ug/L	HAR-20_072711_01** HAR-20_072711_36**
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	RD-104_072711_01 PZ-154_072711_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-20_072711_01**	Acetone	7.5 ug/L	10U ug/L
HAR-20_072711_36**	Acetone	3.3 ug/L	10U ug/L
PZ-154_072711_01A	Acetone Chloroform	4.8 ug/L 2.1 ug/L	10U ug/L 2.1U ug/L
RD-104_072711_01	Acetone	2.5 ug/L	10U ug/L
HAR-11_072711_01	Acetone	7.7 ug/L	10U ug/L
FB_HAR-20_072711_19**	Acetone	2.9 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
ES-01_072711_01	Toluene-d8	114 (88-110)	cis-1,2-Dichloroethene Trichloroethene	J (all detects) J (all detects)	A
EB_PZ-154_072711	Toluene-d8	114 (88-110)	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) J (all detects) J (all detects)	A
PZ-154_072711_01A	Toluene-d8	111 (88-110)	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) J (all detects) J (all detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
HAR-11_072711_01MS/MSD (HAR-11_072711_01)	Trichlorofluoromethane Vinyl chloride	- -	136 (63-135) 138 (49-136)	- -	J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-80788-4 (HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** EB_PZ-154_072711 PZ-154_072711_01A TB_HAR-11_072711 MB 280-80788/5)	Dichlorodifluoromethane	144 (56-140)	-	-	J (all detects)	P
LCS/D 280-81024/4,5 (TB_PZ-154_072711A MB 280-81024/6)	1,1,2,2-Tetrachloroethane 1,2,4-Trimethylbenzene 1,2-Dichlorobenzene 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene Bromobenzene Cumene	- - - - - - -	- - - - - - -	22 (≤20) 21 (≤20) 22 (≤20) 24 (≤20) 21 (≤20) 21 (≤20) 22 (≤20)	J (all detects) UJ (all non-detects)	P

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D 280-81024/4,5 (ES-01_072711_01 TB_PZ-154_072711A MB 280-81024/6)	cis-1,2-Dichloroethene	-	-	22 (≤20)	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits on which a Level IV review was performed. Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria for samples on which a Level IV review was performed.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level V criteria.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-20_072711_01** and HAR-20_072711_36** were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-20_072711_01**	HAR-20_072711_36**			
Acetone	7.5	3.3	78 (≤35)	NQ	-
cis-1,2-Dichloroethene	21	23	9 (≤35)	-	-
trans-1,2-Dichloroethene	2.2	2.3	4 (≤35)	-	-
Trichloroethene	18	20	11 (≤35)	-	-
Vinyl chloride	0.54	0.68	23 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Samples HAR-20_072711_01** and HAR-20_072711_03 (from IUG2634) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-20_072711_01**	HAR-20_072711_03			
Acetone	7.5	10U	29 (≤35)	-	-
cis-1,2-Dichloroethene	21	20	5 (≤35)	-	-
trans-1,2-Dichloroethene	2.2	1.7	26 (≤35)	-	-
Trichloroethene	18	19	5 (≤35)	-	-
Vinyl chloride	0.54	0.54	0 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18527-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	PZ-154_072711_01A	cis-1,2-Dichloroethene trans-1,2-Dichloroethene Trichloroethene Vinyl chloride	J (all detects) UJ (all non-detects)	A	Technical holding times (H)
280-18527-1	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19**	Acetonitrile Isobutanol Methyl methacrylate	J (all detects) UJ (all non-detects)	A	Initial calibration (RRF) (R)
280-18527-1	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19**	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-18527-1	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19**	Trichlorofluoromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
280-18527-1	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19**	Acetonitrile Isobutyl alcohol Methyl methacrylate	J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (R)
280-18527-1	ES-01_072711_01	cis-1,2-Dichloroethene Trichloroethene	J (all detects) J (all detects)	A	Surrogate spikes (%R) (S)
280-18527-1	EB_PZ-154_072711 PZ-154_072711_01A	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) J (all detects) J (all detects)	A	Surrogate spikes (%R) (S)
280-18527-1	HAR-11_072711_01	Trichlorofluoromethane Vinyl chloride	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18527-1	HAR-20_072711_01** HAR-20_072711_36** FB_HAR-20_072711_19** EB_PZ-154_072711 PZ-154_072711_01A TB_HAR-11_072711	Dichlorodifluoromethane	J (all detects)	P	Laboratory control samples (%R) (L)
280-18527-1	TB_PZ-154_072711A	1,1,2,2-Tetrachloroethane 1,2,4-Trimethylbenzene 1,2-Dichlorobenzene 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene Bromobenzene Cumene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (E)
280-18527-1	ES-01_072711_01 TB_PZ-154_072711A	cis-1,2-Dichloroethene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (E)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	HAR-20_072711_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18527-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18527-1	PZ-154_072711_01A	Methylene chloride	2.4U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Field Blank Data Qualification Summary - SDG 280-18527-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18527-1	HAR-20_072711_01**	Acetone	10U ug/L	A	T, F
280-18527-1	HAR-20_072711_36**	Acetone	10U ug/L	A	T, F
280-18527-1	PZ-154_072711_01A	Acetone Chloroform	10U ug/L 2.1U ug/L	A	F
280-18527-1	RD-104_072711_01	Acetone	10U ug/L	A	T, F
280-18527-1	HAR-11_072711_01	Acetone	10U ug/L	A	T
280-18527-1	FB_HAR-20_072711_19**	Acetone	10U ug/L	A	T

LDC #: 26097A1a
 SDG #: 280-18527-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V TV

Date: 8/31/11
 Page: 1 of 1
 Reviewer: RV
 2nd Reviewer: RV

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/27/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	% RSD ≤ 30 %
IV.	Continuing calibration/ICV	SW	CV/100 ≤ 25 %
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	SW	D = 2, 3 S = 2 + HAR-20_072711D3 (1492634)
XVII.	Field blanks	SW	FB = 4 TB = 7, 10, 11 EB = 8 FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Level IV ** Water

1	HAR-11_072711_01	11	TB HAR-11_072711	21	MB 280-79706/8	31	(FFFF, GGGG, II)
2	HAR-20_072711_01 ** D	12	HAR-11_072711_01MS	22	MB 280-80758/5	32	
3	HAR-20_072711_36 ** D	13	HAR-11_072711_01MSD	23	MB 280-81024/6	33	
4	FB HAR-20_072711_19 **	14		24	MB 280-81034/5	34	(QQQ, PPPP, S.C)
5	ES-01_072711_01	15		25		35	
6	RD-104_072711_01	16		26		36	
7	TB RD-104_072711	17		27		37	
8	EB PZ-154_072711	18		28		38	
9	PZ-154_072711_01A	19		29		39	
10	TB PZ-154_072711A	20		30		40	

VOCS = 1, 5-7, 11
 APP IX = 2-4, 6
 Std Water = 8-10

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>			
Were all samples analyzed within the 12 hour clock criteria?	<input checked="" type="checkbox"/>			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>			
Was a curve fit used for evaluation?	<input checked="" type="checkbox"/>			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990 ?	<input checked="" type="checkbox"/>			
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) > 0.05 ?		<input checked="" type="checkbox"/>		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	<input checked="" type="checkbox"/>			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>			
Were all percent differences (%D) $< 25\%$ and relative response factors (RRF) > 0.05 ?		<input checked="" type="checkbox"/>		
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	<input checked="" type="checkbox"/>			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>			
VI. Surrogate spikes				
Were all surrogate %R within QC limits?		<input checked="" type="checkbox"/>		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>			
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		<input checked="" type="checkbox"/>		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within + 30 seconds of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were relative intensities of the major ions within $\pm 20\%$ between the sample and the reference spectra?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
XIV: System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field duplicates.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XVII: Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol (Isobutanol)
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. <i>Methyl methacrylate</i>
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO. <i>Tetrahydrofuran</i>
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP. <i>Cymene</i>
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

~~Y~~ ~~N~~ ~~NA~~
~~Y~~ ~~N~~ ~~NA~~

Were field duplicate pairs identified in this SDG?

Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	2	3		
Acetone	7.5	3.3	78	NQ (<5xRL)
cis-1,2-Dichloroethene	21	23	9	
trans-1,2-Dichloroethene	2.2	2.3	4	
Trichloroethene	18	20	11	
Vinyl chloride	0.54	0.68	23	

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-20_072711_01	HAR-20_072711_03		
Acetone	7.5	10U	29	
cis-1,2-Dichloroethene	21	20	5	
trans-1,2-Dichloroethene	2.2	1.7	26	
Trichloroethene	18	19	5	
Vinyl chloride	0.54	0.54	0	

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (\text{Ax}) / (\text{Cis}) / (\text{Ais}) / (\text{Cx})$$

ave. RRF = initial calibration average RRF Cx = Concentration of compound,
 RRF = continuing calibration RRF Ais = Area of associated internal standard
 Ax = Area of compound Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	G7082	8/9/2011	Trichloroethene (IS1)	0.341	0.342	0.342	0.2	0.2
	GC MSV G		Ethylbenzene (IS2)	1.890	1.983	1.983	4.9	4.9
			1,1,2,2-TCA (IS3)	0.561	0.520	0.520	7.3	7.3

CCV1

Cis/Cx	Compound (IS)	Ax	Ais
50/50	Trichloroethene (IS1)	504258	1842374
50/50	Ethylbenzene (IS2)	625851	394576
50/50	1,1,2,2-TCA (IS3)	214266	515197

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards
 %RSD = $100 * (S/X)$

$$A_x = \text{Area of Compound}$$

$$C_x = \text{Concentration of compound}$$

$$S = \text{Standard deviation of the RRFs}$$

$$A_{is} = \text{Area of associated internal standard}$$

$$C_{is} = \text{Concentration of internal standard}$$

$$X = \text{Mean of the RRFs}$$

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/4/2011	Trichloroethene (IS1)	0.3840	0.3840	0.3414	0.3414	12.0	12.0
	GC MSV G		Ethylbenzene (IS2)	2.0857	2.0857	1.8899	1.8899	11.8	11.8
			1,1,2,2-TCA (IS3)	0.6099	0.6099	0.5608	0.5608	8.1	8.1

Cis/Cx	Ax	Ais
12.5/10	422411	1375078
12.5/10	495090	296717
12.5/10	177362	363494

Conc	Trichloroethene	Ethylbenzene	1,1,2,2-TCA
0.3	0.3185	1.8501	0.5645
1	0.2771	1.5028	0.5167
2	0.3551	1.9756	0.5960
5	0.3291	1.8370	0.5509
10	0.3840	2.0857	0.6099
30	0.3284	1.7925	0.4880
60	0.3973	2.1857	0.5995
X =	0.3414	1.8899	0.5608
S =	0.0410	0.2224	0.0457

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	11.0	10.45	95	95	0
Bromofluorobenzene	↓	9.77	89	89	↓
1,2-Dichloroethane-d4	↓	9.96	91	91	↓
Dibromofluoromethane	↓	10.36	94	94	↓

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: JVL

2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SSC - SC) / SA$

Where: SSC = Spiked sample concentration
SA = Spike added

SC = Sample concentration

RPD = $|MSC - MSC1| * 2 / (MSC + MSC1)$

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD sample: 12/13

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)		Spiked Sample Concentration (ug/L)		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD	MS	MSD	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
	Percent Recovery		Percent Recovery		Percent Recovery		Percent Recovery		Percent Recovery		RPD	
1,1-Dichloroethene	5.00	5.00	0		6.69	5.49	122	122	110	110	10	10
Trichloroethene					5.10	4.75	102	102	95	95	7	7
Benzene					5.21	4.77	104	104	95	95	9	9
Toluene					4.99	4.69	100	100	94	94	6	6
Chlorobenzene					4.84	4.46	97	97	89	89	8	8

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * \frac{SSC}{SA}$ Where: SSC = Spiked sample concentration
SA = Spike added

RPD = $\frac{|LCS - LCSDC| * 2}{(LCS + LCSDC)}$

LCS = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 10/280-80788/45

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS		LCSD		Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.		
1,1-Dichloroethene	5.0	5.0	4.86	NA	97	97	86	86						
Trichloroethene			4.27		84	84								
Benzene			4.23		85	85								
Toluene														
Chlorobenzene			4.13		83	83								

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18527-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01
ES-01_072711_01
RD-104_072711_01
TB_RD-104_072711
EB_PZ-154_072711
PZ-154_072711_01A
TB_PZ-154_072711A
TB_HAR-11_072711
RD-104_072711_01MS
RD-104_072711_01MSD

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-104_072711, TB_PZ-154_072711A, and TB_HAR-11_072711 were identified as trip blanks. No 1,4-dioxane was found.

Sample EB_PZ-154_072711 was identified as an equipment blank. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18527-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	HAR-11_072711_01 HAR-20_072711_01 ES-01_072711_01 RD-104_072711_01 TB_RD-104_072711 EB_PZ-154_072711 PZ-154_072711_01A TB_PZ-154_072711A TB_HAR-11_072711	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

LDC #: 26097A1b
 SDG #: 280-18527-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: SV
 2nd Reviewer: ✓

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area			Comments
I.	Technical holding times	A	Sampling dates: <u>7/27/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	<u>LCS / D</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	<u>TB = 5, 8, 9 EB = 6 FB = FB_071211-19</u> <u>(280-17952-1)</u>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	HAR-11_072711_01	11	RD-104_072711_01MSD	21	<u>MB 280-8004/6</u>	31
2	HAR-20_072711_01	12		22		32
3	ES-01_072711_01	13		23		33
4	RD-104_072711_01	14		24		34
5	TB RD-104_072711	15		25		35
6	EB PZ-154_072711	16		26		36
7	PZ-154_072711_01A	17		27		37
8	TB PZ-154_072711A	18		28		38
9	TB HAR-11_072711	19		29		39
10	RD-104_072711_01MS	20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 27, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: 1,2,3-Trichloropropane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18527-1/IUG2793

Sample Identification

RD-77_072711_01

ES-01_072711_01

TB_ES-01_072711

RD-77_072711_01MS

RD-77_072711_01MSD

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Sample TB_ES-01_072711 was identified as a trip blank. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-1/IUG2793	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18527-1/IUG2793

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1/ IUG2793	RD-77_072711_01 ES-01_072711_01 TB_ES-01_072711	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18527-1/IUG2793

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18527-1/IUG2793

No Sample Data Qualified in this SDG

LDC #: 26097A1c

VALIDATION COMPLETENESS WORKSHEET

Date: 8/27/11

SDG #: 280-18527-1/IUG2793

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *ML*

2nd Reviewer: *[Signature]*

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	N / A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 3

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	RD-77_072711_01	11	11 H0089-BIK1	21	31
2	ES-01_072711_01	12	11 H0226-J	22	32
3	TB_ES-01_072711	13		23	33
4	RD-77_072711_01MS	14		24	34
5	RD-77_072711_01MSD	15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 27, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18527-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01
RD-104_072711_01
EB_PZ-154_072711
PZ-154_072711_01A

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-78992/1-A	7/29/11	Benzyl alcohol	1.04 ug/L	EB_PZ-154_072711 PZ-154_072711_01A

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

Sample EB_PZ-154_072711 was identified as an equipment blank. No semivolatile contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18527-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	HAR-11_072711_01 HAR-20_072711_01 RD-104_072711_01 EB_PZ-154_072711 PZ-154_072711_01A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

LDC #: 26097A2a
 SDG #: 280-18527-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/21/11
 Page: 1 of 1
 Reviewer: SVB
 2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/27/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	<u>client spec</u>
VIII.	Laboratory control samples	A	<u>LCS/D</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	<u>EB = 4 FB = FB_071211-19 (280-17952-1)</u>

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1 ⁺	HAR-11_072711_01	11	<u>MB 280-78992/1-A21</u>	31
2 ⁻	HAR-20_072711_01	12		32
3 ⁺	RD-104_072711_01	13		33
4 ⁻	EB_PZ-154_072711	14		34
5 ⁺	PZ-154_072711_01A	15		35
6		16		36
7		17		37
8		18		38
9		19		39
10		20		40

Phthalates + NB = 1-3
Full water = 4,5

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis(2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	J.J. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	K.K. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	L.L.L. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	J.J. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18527-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01
RD-104_072711_01
EB_PZ-154_072711
PZ-154_072711_01A

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples EB_PZ-154_072711 and EB_RD-104_072711 (from SDG 280-18527-2) were identified as equipment blanks. No N-nitrosodimethylamine was found.

Samples FB_RD-104_072711_19, FB_PZ-154_072711_19A, and FB_071211_19 (all three from SDG 280-18527-2) and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-104_072711_01 and RD-104_072711_36 (from SDG 280-18527-2) and samples PZ-154_072711_01A and PZ-154_072711_36A (from SDG 280-18527-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-104_072711_01	RD-104_072711_36			
N-Nitrosodimethylamine	0.0087	0.0089	2 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-154_072711_01A	PZ-154_072711_36A			
N-Nitrosodimethylamine	0.020	0.019	5 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18527-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	HAR-11_072711_01 HAR-20_072711_01 RD-104_072711_01 EB_PZ-154_072711 PZ-154_072711_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18527-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18527-1

No Sample Data Qualified in this SDG

LDC #: 26097A2b
 SDG #: 280-18527-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JM
 2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)^M

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 3 + RD-104-072711-3C D ₂ = 5 + PZ-154-072711-36A (280-18527-2)
XVII.	Field blanks	ND	EB = 4 FB = FB-071211-19 (280-17952-#)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank
 = FB-RD-104-072711-19
 = FB-PZ-154-072711-19 (280-18527-2)
 EB = EB-RD-104-072711

Validated Samples:

Water

1	HAR-11_072711_01	11	MB 280-79070/1-A	21		31	
2	HAR-20_072711_01	12	MB 280-79360/1-A	22		32	
3	RD-104_072711_01	13	MB 280-79540/1-A	23		33	
4	EB_PZ-154_072711	14		24		34	
5	PZ-154_072711_01A	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RD-104_072711_01	RD-104_072711_36		
NDMA	0.0087	0.0089	2	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	PZ-154_072711_01A	PZ-035_072111_36A		
NDMA	0.020	0.019	5	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 27, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18527-1

Sample Identification

EB_PZ-154_072711
PZ-154_072711_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls were found in the method blanks.

Sample EB_PZ-154_072711 was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-18527-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	EB_PZ-154_072711 PZ-154_072711_01A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

LDC #: 26097A3b
 SDG #: 280-18527-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JVC
 2nd Reviewer: 

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec
VIII.	Laboratory control samples	A	LCS D
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = 1 FB

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	EB_PZ-154_072711	11	MB 280-7912/1-A	21		31	
2	PZ-154_072711_01A	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Dissolved Metals
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18527-1

Sample Identification

EB_PZ-154_072711
PZ-154_072711_01A
EB_PZ-154_072711MS
EB_PZ-154_072711MSD
PZ-154_072711_01AMS
PZ-154_072711_01AMSD

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B and 6020 for Dissolved Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

Sample EB_PZ-154_072711 was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_PZ-154_072711	7/27/11	Chromium Molybdenum Nickel Silver Thallium	0.00061 mg/L 0.00015 mg/L 0.00070 mg/L 0.000027 mg/L 0.000032 mg/L	PZ-154_072711_01A

Sample FB-071211_19F (from SDG 280-17952-1) was identified as a rinsate. No metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-154_072711_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-154_072711_01A	Nickel Silver Thallium	0.0029 mg/L 0.000033 mg/L 0.000060 mg/L	0.0029U mg/L 0.000033U mg/L 0.000060U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18527-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Data Qualification Summary - SDG 280-18527-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18527-1	EB_PZ-154_072711 PZ-154_072711_01A	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Field Blank Data Qualification Summary - SDG 280-18527-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18527-1	PZ-154_072711_01A	Nickel Silver Thallium	0.0029U mg/L 0.000033U mg/L 0.000060U mg/L	A	F

LDC #: 26097A4
 SDG #: 280-18527-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/31/11
 Page: 6 of 1
 Reviewer: OC
 2nd Reviewer: ✓

METHOD: Dissolved Metals (EPA SW 846 Method 6020/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV.	Field Blanks	SW	EB=1 ; FB=FB_072711-19 FCS06:

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

28017952-1

Validated Samples:

Water

1	EB_PZ-154_072711	11		21		31	
2	PZ-154_072711_01A	12		22		32	
3	EB_PZ-154_072711MS	13		23		33	
4	EB_PZ-154_072711MSD	14		24		34	
5	PZ-154_072711_01AMS	15		25		35	
6	PZ-154_072711_01AMSD	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Field Blanks

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?
 Y N N/A Were target analytes detected in the field blanks?

Reason: F

Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 1=7/27/11 **FB=7/12/11** Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: 2

Analyte	Blank ID	Blank ID	Action Limit	Sample Identification						
	1	FB_071211_19F (SDG: 280-17952-1)								
Cr	0.00061		0.00305							
Mo	0.00015		0.00075							
Ni	0.00070		0.0035				0.0029			
Ag	0.00027	0.000018	0.00009				0.000033			
Tl	0.000032	0.000033	0.000165				0.000060			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18527-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01
ES-01_072711_01
RD-104_072711_01
EB_PZ-154_072711
PZ-154_072711_01A
HAR-11_072711_01MS
HAR-11_072711_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, and Sulfate, and EPA Method 314.0 for Perchlorate.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.0721 mg/L	HAR-11_072711_01 HAR-20_072711_01 RD-104_072711_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-11_072711_01	Ammonia as N	0.15 mg/L	0.15U mg/L
HAR-20_072711_01	Ammonia as N	0.096 mg/L	0.096U mg/L
RD-104_072711_01	Ammonia as N	0.075 mg/L	0.075U mg/L

Samples EB_PZ-154_072711 and EB_PZ-060_072111A (from SDG 280-18334-1) were identified as equipment blanks. No contaminant concentrations were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18527-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18527-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18527-1	HAR-11_072711_01 HAR-20_072711_01 ES-01_072711_01 RD-104_072711_01 EB_PZ-154_072711 PZ-154_072711_01A	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18527-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18527-1	HAR-11_072711_01	Ammonia as N	0.15U mg/L	A	B
280-18527-1	HAR-20_072711_01	Ammonia as N	0.096U mg/L	A	B
280-18527-1	RD-104_072711_01	Ammonia as N	0.075U mg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18527-1

No Sample Data Qualified in this SDG

LDC #: 26097A6
 SDG #: 280-18527-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate, Orthophosphate (EPA Method 300.0), Perchlorate (EPA Method 314.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II	Initial calibration	N	
III.	Calibration verification	N	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	N	
VII.	Laboratory control samples	A	LCS/D
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	ND	EB=5; EB-PZ-060-07211A; FB=FB-07211-19 (SOG: 280-18334-1) (SOG: 280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	HAR-11_072711_01	11		21		31	
2	HAR-20_072711_01	12		22		32	
3	ES-01_072711_01	13		23		33	
4	RD-104_072711_01	14		24		34	
5	EB_PZ-154_072711	15		25		35	
6	PZ-154_072711_01A	16		26		36	
7	HAR-11_072711_01MS	17		27		37	
8	HAR-11_072711_01MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 27, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Diesel Range Organics
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18527-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01
RD-104_072711_01
EB_PZ-154_072711
PZ-154_072711_01A

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Sample EB_PZ-154_072711 was identified as an equipment blank. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18527-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	HAR-11_072711_01 HAR-20_072711_01 RD-104_072711_01 EB_PZ-154_072711 PZ-154_072711_01A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

LDC #: 26097A8
 SDG #: 280-18527-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JV
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	X	Sampling dates: <u>7/27/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client spec</u>
VII.	Laboratory control samples	A	<u>LCS ID</u>
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	<u>EB = 4</u> <u>FB = FB_071211_19 (280-17952-1)</u>

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	HAR-11_072711_01	11	<u>MB 280-78828/1-A</u>	21		31	
2	HAR-20_072711_01	12		22		32	
3	RD-104_072711_01	13		23		33	
4	EB_PZ-154_072711	14		24		34	
5	PZ-154_072711_01A	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 27, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18527-1

Sample Identification

HAR-11_072711_01
HAR-20_072711_01
RD-104_072711_01
HAR-11_072711_01MS
HAR-11_072711_01MSD

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No hydrazines were found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18527-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18527-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18527-1	HAR-11_072711_01 HAR-20_072711_01 RD-104_072711_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18527-1**

No Sample Data Qualified in this SDG

LDC #: 26097A76

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18527-1

Level ~~IV~~ V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVB

2nd Reviewer: V

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS ID
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	MD	FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

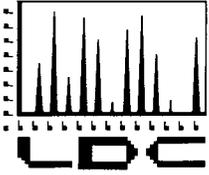
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	HAR-11_072711_01	11	MB 280-79895/25	21		31	
2	HAR-20_072711_01	12		22		32	
3	RD-104_072711_01	13		23		33	
4	HAR-11_072711_01MS	14		24		34	
5	HAR-11_072711_01MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

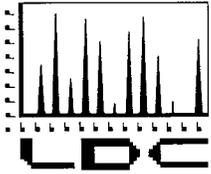
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 1, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18672-1/H1H030429

Sample Identification

EB_PZ-141_080111
PZ-141_080111_01A
PZ-144_080111_01
EB-PZ-144_080111A

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1217058-MB	8/5/11	OCDF	7.7 pg/L	All samples in SDG 280-18672-1/H1H030429

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Samples EB_PZ-141_080111 and EB-PZ-144_080111A were identified as equipment blanks. No polychlorinated dioxin/dibenzofuran contaminants were found.

Sample FB_071211_19 (from SDG 280-17964) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	OCDD	4.0 pg/L	PZ-141_080111_01A PZ-144_080111_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18672-1/H1H030429	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18672-1/H1H030429**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18672-1/ H1H030429	EB_PZ-141_080111 PZ-141_080111_01A PZ-144_080111_01 EB-PZ-144_080111A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18672-1/H1H030429**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18672-1/H1H030429**

No Sample Data Qualified in this SDG

LDC #: 26097B21
 SDG #: 280-18672-1/H1H030429
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/01/11</u>
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client spec</u>
VII.	Laboratory control samples	A	<u>LES / D</u>
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	SW	* EB = 1, 4 FB = PB-071211-19

Note: A = Acceptable *ND = No compounds detected D = Duplicate (280-17964-1)
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	EB_PZ-141_080111	11	1217058-11B	21		31	
2	PZ-141_080111_01A	12		22		32	
3	PZ-144_080111_01	13		23		33	
4	EB-PZ-144_080111A	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

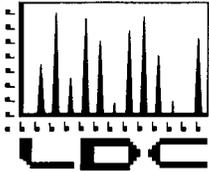
Notes: _____

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

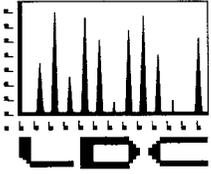
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss. Metals (SW846)		Herbs (8151A)		GRO (8015B)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																					
A	280-18527-1/ IUG2793	08/24/11	09/15/11	8	0	9	0	3	0	5	0	-	-	5	0	2	0	2	0	-	-	-	-	5	0	-	-	3	0	-	-	-	-	-	-		
BVA	280-18527-1/ IUG2793	08/24/11	09/15/11	3	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	-	-	0	0	-	-	0	0	-	-	-	-	-	-		
B	280-18672-1/ H1H030429	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	
C	280-18673-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	280-18721-1/ H1H040443	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	
E	280-18777-1/ IUH0707	08/24/11	09/15/11	10	0	10	0	7	0	7	0	2	0	7	0	2	0	2	0	2	0	-	-	2	0	7	0	-	-	5	0	5	0	7	0	-	-
F	280-18781-1/ H1H050406	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0
G	280-18850-1/ IUH0782	08/24/11	09/15/11	11	0	11	0	10	0	7	0	7	0	8	0	-	-	-	-	-	-	-	-	4	0	7	0	-	-	7	0	6	0	6	0	-	-
H	280-19011-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	T/PG			32	0	30	0	20	0	19	0	2	0	20	0	4	0	4	0	4	0	3	0	6	0	19	0	13	0	15	0	11	0	13	0	9	0

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄ (314.0)		pH (9040B)		Diss. Cr (VI) (7196A)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																					
A	280-18527-1	08/24/11	09/15/11	3	0	3	0	2	0	5	0	6	0	2	0	3	0	-	-	-	
E	280-18777-1	08/24/11	09/15/11	5	0	2	0	2	0	7	0	7	0	2	0	5	0	2	0	2	0
G	280-18850-1	08/24/11	09/15/11	7	0	-	-	-	-	7	0	7	0	-	-	8	0	6	0	-	
Total	T/PG			15	0	5	0	4	0	19	0	20	0	4	0	16	0	11	0	2	0

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 1, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18673-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
EB_PZ-141_080111
PZ-141_080111_01A
PZ-144_080111_01
EB_PZ-144_080111A

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315A for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-10669/8-A	8/3/11	Formaldehyde	0.0182 mg/L	All samples in SDG 280-18673-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-48B_080111_01	Formaldehyde	0.031 mg/L	0.050U mg/L
RD-48A_080111_01	Formaldehyde	0.027 mg/L	0.050U mg/L
RD-48C_080111_01	Formaldehyde	0.025 mg/L	0.050U mg/L
EB_PZ-141_080111	Formaldehyde	0.017 mg/L	0.050U mg/L
PZ-141_080111_01A	Formaldehyde	0.019 mg/L	0.050U mg/L
PZ-144_080111_01	Formaldehyde	0.016 mg/L	0.050U mg/L
EB_PZ-144_080111A	Formaldehyde	0.017 mg/L	0.050U mg/L

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No formaldehyde was found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_080111	8/1/11	Formaldehyde	0.017 mg/L	PZ-141_080111_01A
EB_PZ-144_080111A	8/1/11	Formaldehyde	0.017 mg/L	PZ-144_080111_01

Sample FB_071211_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Formaldehyde	0.025 mg/L	PZ-141_080111_01A PZ-144_080111_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-141_080111_01A	Formaldehyde	0.019 mg/L	0.050U mg/L
PZ-144_080111_01	Formaldehyde	0.016 mg/L	0.050U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18673-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18673-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18673-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A PZ-144_080111_01 EB_PZ-144_080111A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18673-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18673-1	RD-48B_080111_01	Formaldehyde	0.050U mg/L	A	B
280-18673-1	RD-48A_080111_01	Formaldehyde	0.050U mg/L	A	B
280-18673-1	RD-48C_080111_01	Formaldehyde	0.050U mg/L	A	B
280-18673-1	EB_PZ-141_080111	Formaldehyde	0.050U mg/L	A	B
280-18673-1	PZ-141_080111_01A	Formaldehyde	0.050U mg/L	A	B
280-18673-1	PZ-144_080111_01	Formaldehyde	0.050U mg/L	A	B
280-18673-1	EB_PZ-144_080111A	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18673-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18673-1	PZ-141_080111_01A	Formaldehyde	0.050U mg/L	A	F
280-18673-1	PZ-144_080111_01	Formaldehyde	0.050U mg/L	A	F

LDC #: 26097C71
 SDG #: 280-18673-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/31/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	EB = 4, 7 FB = FB_071211_19 (280-17954-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

None

1	RD-48B_080111_01	11		21		31	
2	RD-48A_080111_01	12		22		32	
3	RD-48C_080111_01	13		23		33	
4	EB_PZ-141_080111	14		24		34	
5	PZ-141_080111_01A	15		25		35	
6	PZ-144_080111_01	16		26		36	
7	EB_PZ-144_080111A	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level 1/2/3 Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/02/11 Blank analysis date: 8/04/11

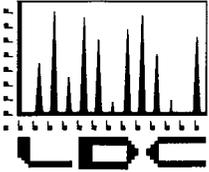
Associated samples: All Code: B

Compound	Blank ID	Sample Identification						
	MB 240 - 10669 / 8-A	1	2	3	4	5	6	7
Formaldehyde	0.0182	0.031 / 0.050U	0.027 / 0.050U	0.025 / 0.050U	0.017 / 0.050U	0.019 / 0.050U	0.016 / 0.050U	0.017 / 0.050U

Blank extraction date: Blank analysis date: Associated samples:

Compound	Blank ID	Sample Identification						

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

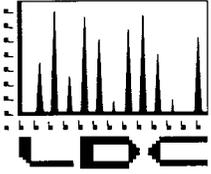
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Pei Geng'.

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss. Metals (SW846)		Herbs (8151A)		GRO (8015B)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)				
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																						
A	280-18527-1/ IUG2793	08/24/11	09/15/11	8	0	9	0	3	0	5	0	-	-	5	0	2	0	2	0	-	-	-	-	5	0	-	-	3	0	-	-	-	-	-	-			
BA	280-18527-1/ IUG2793	08/24/11	09/15/11	3	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	-	-	0	0	-	-	0	0	-	-	-	-	-	-			
B	280-18672-1/ H1H030429	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0		
C	280-18673-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	0	-	-	-	-	-	-	-			
D	280-18721-1/ H1H040443	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0		
E	280-18777-1/ IUH0707	08/24/11	09/15/11	10	0	10	0	7	0	7	0	2	0	7	0	2	0	2	0	2	0	-	-	2	0	7	0	-	-	5	0	5	0	7	0	-	-	
F	280-18781-1/ H1H050406	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	
G	280-18850-1/ IUH0782	08/24/11	09/15/11	11	0	11	0	10	0	7	0	-	-	8	0	-	-	-	-	-	-	3	0	4	0	7	0	-	-	7	0	6	0	6	0	-	-	
H	280-19011-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-		
Total				32	0	30	0	20	0	19	0	2	0	20	0	4	0	4	0	4	0	3	0	6	0	19	0	13	0	15	0	11	0	13	0	9	0	220

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ -O-PO ₄ (300.0)		Br NO ₂ (314.0)		pH (9040B)		Diss. Cr (VI) (7196A)																		
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S															
Matrix: Water/Soil																																				
A	280-18527-1	08/24/11	09/15/11	3	0	3	0	2	0	5	0	6	0	2	0	3	0	-	-	-																
E	280-18777-1	08/24/11	09/15/11	5	0	2	0	2	0	7	0	7	0	2	0	5	0	5	0	2	0															
G	280-18850-1	08/24/11	09/15/11	7	0	-	-	-	-	7	0	7	0	-	-	8	0	6	0	-																
Total				15	0	5	0	4	0	19	0	20	0	4	0	16	0	11	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	98

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 2, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Dioxins/Dibenzofurans
Validation Level: EPA Level IV
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18721-1/H1H040443

Sample Identification

HAR-07_080211_01
HAR-07_080211_36
FB_HAR-07_080211_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1217058-MB	8/5/11	OCDF	7.7 pg/L	All samples in SDG 280-18721-1/H1H040443

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Sample FB_HAR-07_080211_19 was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18721-1/H1H040443	All compounds reported below the RLs.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples HAR-07_080211_01 and HAR-07_080211_36 were identified as field duplicates. No volatiles were detected in any of the samples.

Samples HAR-07_080211_01 and HAR-07_080211_03 (from SDG IUH0484) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flags	A or P
	HAR-07_080211_01	HAR-07_080211_03			
1,2,3,4,6,7,8-HpCDD	2.8U	0.98	96 (≤35)	NQ	-
Total HpCDD	Not reported	1.9	Not calculable	-	-
OCDD	4.1U	3.8	8 (≤35)	-	-
1,2,3,4,7,8-HxCDF	1.0U	3.1	102 (≤35)	NQ	-
1,2,3,6,7,8-HxCDF	1.0U	0.97	3 (≤35)	-	-
Total HxCDF	Not reported	6.3	Not calculable	-	-
1,2,3,4,6,7,8-HpCDF	1.3U	1.2	8 (≤35)	-	-
1,2,3,4,7,8,9-HpCDF	2.3U	2.2	4 (≤35)	-	-
Total HpCDF	Not reported	5.6	Not calculable	-	-
OCDF	3.6U	2.5	36 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18721-1/H1H040443**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18421/ HIG270438	HAR-07_080211_01 HAR-07_080211_36 FB_HAR-07_080211_19	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18721-1/H1H040443**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18721-1/H1H040443**

No Sample Data Qualified in this SDG

LDC #: 26097D21
 SDG #: 280-18721-1/H1H040443
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 8/31/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/02/11</u>
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration	A	% RSD < 20% unlabeled = 30% labeled
IV.	Routine calibration/ICV	A	CV/ICV ↓ ↓
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS / D
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	A	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	System performance	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates / split	SWB	*D = 1, 2 S = 1 + HAR-07_080211-03
XV.	Field blanks	ND	FB = 3 (11H0484)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 * ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	HAR-07_080211_01	11	12 17058-MB	21		31	
2	HAR-07_080211_36	12		22		32	
3	FB HAR-07_080211_19	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	/			
Were the retention time windows established for all homologues?	/			
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers < 25% ?	/			
Is the static resolving power at least 10,000 (10% valley definition)?	/			
Was the mass resolution adequately check with PFK?	/			
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	/			
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	/			
Were all percent relative standard deviations (%RSD) ≤ 20% for unlabeled standards and < 30% for labeled standards?	/			
Did all calibration standards meet the Ion Abundance Ratio criteria?	/			
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10?	/			
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	/			
Were all percent differences (%D) ≤ 20% for unlabeled standards and ≤ 30% for labeled standards?	/			
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank performed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/	/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal standards				
Were internal standard recoveries within the 40-135% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks ≥ 10 ?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	/			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	/			
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	/			
Was the signal to noise ratio for each target compound and labeled standard ≥ 2.5 ?	/			
Does the maximum intensity of each specified characteristic ion coincide within ± 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDF channel?	/			
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.		/		
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field split pairs identified in this SDG?

Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	HAR-07_080211_01	HAR-07_080211_03		
F	2.8U	0.98*	96	NQ (<5xRL)
U	NR	1.9*	NC	
G	4.1U	3.8	8	
K	1.0U	3.1	102	NQ (<5xRL)
L	1.0U	0.97	3	
X	NR	6.3*	NC	
O	1.3U	1.2*	8	
P	2.3U	2.2	4	
Y	NR	5.6*	NC	
Q	3.6U	2.5	36	NQ (<5xRL)

* EMPC

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$ A_x = Area of Compound A_{is} = Area of associated internal standard
 average RRF = sum of the RRFs/number of standards C_x = Concentration of compound, C_{is} = Concentration of internal standard
 %RSD = $100 * (S/X)$ S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (0.5/2.5/5 std)	Recalculated RRF (0.5/2.5/5 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/30/2010	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.944	0.944	0.986	0.986	5.3	5.3
	M2A		2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	0.897	0.897	1.021	1.021	9.2	9.3
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.939	0.939	0.943	0.943	2.9	2.9
	RTX-5		1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	1.096	1.096	1.037	1.037	4.2	4.2
			OCDF (13C-OCDF)	1.238	1.238	1.167	1.167	4.4	4.4

Cis/Cx	Area cpd	Area IS
100/5	13459	2852888
100/5	9289	2070083
100/2.5	40427	1721480
100/2.5	45039	1643630
100/5	98181	3172926

Conc	2,3,7,8-TCDF	2,3,7,8-TCDD	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDF
0.5/2.5/5	0.944	0.897	0.939	1.096	1.238
2/10/20	1.075	1.160	0.989	1.073	1.184
10/50/100	0.965	1.029	0.934	1.009	1.120
40/200/400	0.961	0.991	0.940	1.003	1.115
200/1000/2000	0.984	1.026	0.915	1.006	1.180
X =	0.986	1.021	0.943	1.037	1.167
S =	0.0519	0.0945	0.0274	0.0438	0.0510

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORSHEET
Continuing Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$
 $\text{RRF} = (\text{Ax}) / (\text{Cis}) / (\text{Ais}) / (\text{Cx})$
 ave. RRF = ICAL average RRF Cx = Concentration of compound
 RRF = CCV RRF Ais = Area of associated internal standard
 Ax = Area of compound Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	b110815s2	08/15/11	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.986	1.140	1.140	15.7	15.6
			2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.021	1.165	1.165	14.1	14.1
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.943	1.045	1.045	10.8	10.8
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	1.037	1.088	1.088	4.9	4.9
			OCDF (13C-OCDD)	1.167	1.283	1.283	9.9	9.9
1	b110815s2	08/15/11	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	0.986	1.095	1.095	6.4	11.1
			2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.021	1.199	1.199	17.5	17.4
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	0.943	1.105	1.105	17.2	17.1
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	1.037	1.086	1.086	4.7	4.7
			OCDF (13C-OCDD)	1.167	1.211	1.211	3.7	3.7

Compound (IS)	Concentration (IS/Cpd)	Area Cpd	Area IS	Area Cpd	Area IS
2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	100/10	311819	2735545	253168	2311340
2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	100/10	212677	1826248	175885	1467349
1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	100/50	909234	1739696	595897	1078425
1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	100/50	827252	1520070	484780	892500
OCDF (13C-OCDD)	100/50	1739102	2711240	912452	1507229

LDC #: 26097 021

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: JM
2nd Reviewer: [Signature]

METHOD: GC/MS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * \frac{SSC}{SA}$ Where: SSC = Spiked sample concentration
SA = Spike added

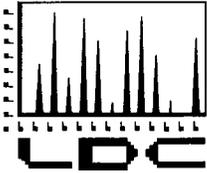
RPD = $\frac{LCS - LCSD}{LCS + LCSD} * 100$

LCS = Laboratory control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: 1217058 LCS/d

Compound	Spike Added (pg/L)		Spiked Sample Concentration (pg/L)		LCS		LCSD		Percent Recovery		Recalc.		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
2,3,7,8-TCDD	200	200	226	219	113	113	109	109	3.4	3.4				
1,2,3,7,8-PeCDD	1000	1000	1069.9	1074.3	107	107	98	98	0.41	0.41				
1,2,3,4,7,8-HxCDD	↓	↓	964	976	96	96	98	98	1.3	1.3				
1,2,3,4,7,8,9-HpCDF	↓	↓	976	1010	98	98	101	101	3.0	3.0				
OCDF	2000	2000	2253.6	2346.7	118	118	117	117	0.33	0.33				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

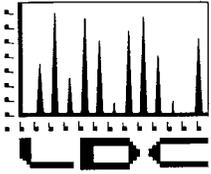
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C -SIM)		NDMA (1625)		PCBs (8082)		Diss. Metals (SW846)		Herbs (8151A)		GRO (8015B)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)				
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	
A	280-18527-1/ IUG2793	08/24/11	09/15/11	8	0	9	0	3	0	5	0	-	-	5	0	2	0	2	0	-	-	-	-	5	0	-	3	0	-	-	-	-	-	-	-	-		
BVA	280-18527-1/ IUG2793	08/24/11	09/15/11	3	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	-	-	0	0	-	0	0	-	-	-	-	-	-	-	-	-	
B	280-18672-1/ H1H030429	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-18673-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	280-18721-1/ H1H040443	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18777-1/ IUH0707	08/24/11	09/15/11	10	0	10	0	7	0	7	0	2	0	7	0	2	0	2	0	2	0	-	-	2	0	7	0	-	5	0	7	0	5	0	7	0	-	-
F	280-18781-1/ H1H050406	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	280-18850-1/ IUH0782	08/24/11	09/15/11	11	0	11	0	10	0	7	0	7	0	8	0	-	-	-	-	-	-	-	-	4	0	7	0	-	7	0	6	0	6	0	6	0	-	-
H	280-19011-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	T/PG			32	0	30	0	20	0	19	0	2	0	20	0	4	0	4	0	4	0	3	0	6	0	19	0	13	0	15	0	11	0	13	0	9	0	22

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₂ (300.0)		Br NO ₂ O-PO ₄		CLO ₄ (314.0)		pH (9040B)		Cr (VI) (7196A)		Diss. Cr (VI) (7196A)		
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W
A	280-18527-1	08/24/11	09/15/11	3	0	3	0	2	0	5	0	6	0	2	0	3	0	-	-	-	-	-	-	-
E	280-18777-1	08/24/11	09/15/11	5	0	2	0	2	0	7	0	7	0	2	0	5	0	5	0	2	0	2	0	2
G	280-18850-1	08/24/11	09/15/11	7	0	-	-	-	-	7	0	7	0	-	-	8	0	6	0	-	-	-	-	-
Total	T/PG			15	0	5	0	4	0	19	0	20	0	4	0	16	0	11	0	2	0	2	0	2

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 3, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
TB_PZ-146_080311
RD-51A_080311_01
TB_RD-51A_080311
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
TB_RD-37_080311
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81114/5	8/11/11	Acetone Methylene chloride	1.97 ug/L 0.793 ug/L	All samples in SDG 280-18777-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-146_080311_01	Acetone Methylene chloride	19 ug/L 0.36 ug/L	19U ug/L 1.0U ug/L
EB_PZ-146_080311	Methylene chloride	0.38 ug/L	1.0U ug/L
TB_PZ-146_080311	Acetone Methylene chloride	3.0 ug/L 1.5 ug/L	10U ug/L 1.5U ug/L
RD-51A_080311_01	Methylene chloride	0.32 ug/L	5.0U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_RD-51A_080311	Acetone Methylene chloride	14 ug/L 1.2 ug/L	14U ug/L 5.0U ug/L
RD-51B_080311_01	Acetone	3.7 ug/L	10U ug/L
RD-51C_080311_01	Acetone Methylene chloride	4.1 ug/L 0.37 ug/L	10U ug/L 5.0U ug/L
RD-37_080311_01	Methylene chloride	0.38 ug/L	5.0U ug/L
TB_RD-37_080311	Acetone Methylene chloride	8.2 ug/L 1.2 ug/L	10U ug/L 5.0U ug/L
RD-39B_080311_01	Acetone Methylene chloride	5.6 ug/L 0.37 ug/L	10U ug/L 5.0U ug/L

Samples TB_PZ-146_080311, TB_RD-51A_080311, and TB_RD-37_080311 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_PZ-146_080311	8/3/11	Acetone Methylene chloride	3.0 ug/L 1.5 ug/L	PZ-146_080311_01 EB_PZ-146_080311
TB_RD-51A_080311	8/3/11	Acetone Methylene chloride	14 ug/L 1.2 ug/L	RD-51A_080311_01 RD-51B_080311_01 RD-51C_080311_01
TB_RD-37_080311	8/3/11	Acetone Methylene chloride	8.2 ug/L 1.2 ug/L	RD-37_080311_01 RD-39B_080311_01

Sample EB_PZ-146_080311 was identified as an equipment blank. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-146_080311	8/3/11	Chloroform Methylene chloride	0.59 ug/L 0.38 ug/L	PZ-146_080311_01

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-146_080311_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-146_080311_01	Acetone Methylene chloride	19 ug/L 0.36 ug/L	19U ug/L 10U ug/L
EB_PZ-146_080311	Methylene chloride	0.38 ug/L	1.0U ug/L
RD-51A_080311_01	Methylene chloride	0.32 ug/L	5.0U ug/L
RD-51B_080311_01	Acetone	3.7 ug/L	10U ug/L
RD-51C_080311_01	Acetone Methylene chloride	4.1 ug/L 0.37 ug/L	10U ug/L 5.0U ug/L
RD-37_080311_01	Methylene chloride	0.38 ug/L	5.0U ug/L
RD-39B_080311_01	Acetone Methylene chloride	5.6 ug/L 0.37 ug/L	10U ug/L 5.0U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Data Qualification Summary - SDG 280-18777-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311 TB_PZ-146_080311 RD-51A_080311_01 TB_RD-51A_080311 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 TB_RD-37_080311 RD-39B_080311_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18777-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18777-1	PZ-146_080311_01	Acetone Methylene chloride	19U ug/L 1.0U ug/L	A	B
280-18777-1	EB_PZ-146_080311	Methylene chloride	1.0U ug/L	A	B
280-18777-1	TB_PZ-146_080311	Acetone Methylene chloride	10U ug/L 1.5U ug/L	A	B
280-18777-1	RD-51A_080311_01	Methylene chloride	5.0U ug/L	A	B
280-18777-1	TB_RD-51A_080311	Acetone Methylene chloride	14U ug/L 5.0U ug/L	A	B
280-18777-1	RD-51B_080311_01	Acetone	10U ug/L	A	B
280-18777-1	RD-51C_080311_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	B
280-18777-1	RD-37_080311_01	Methylene chloride	5.0U ug/L	A	B
280-18777-1	TB_RD-37_080311	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	B
280-18777-1	RD-39B_080311_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18777-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18777-1	PZ-146_080311_01	Acetone Methylene chloride	19U ug/L 10U ug/L	A	T, F
280-18777-1	EB_PZ-146_080311	Methylene chloride	1.0U ug/L	A	T
280-18777-1	RD-51A_080311_01	Methylene chloride	5.0U ug/L	A	T
280-18777-1	RD-51B_080311_01	Acetone	10U ug/L	A	T
280-18777-1	RD-51C_080311_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	T
280-18777-1	RD-37_080311_01	Methylene chloride	5.0U ug/L	A	T
280-18777-1	RD-39B_080311_01	Acetone Methylene chloride	10U ug/L 5.0U ug/L	A	T

LDC #: 26097E1a
 SDG #: 280-18777-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: *MG*
 2nd Reviewer: *V*

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	4CS / B
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 2 TB = 3, 5, 9 FB = FB_071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	PZ-146_080311_01	11	RD-37_080311_01MS	21	MB 280-80229 / 2	31	(FFF, G666, II)
2	EB_PZ-146_080311	12	RD-37_080311_01MSD	22	MB 280-81114 / 5	32	
3	TB_PZ-146_080311	13		23		33	
4	RD-51A_080311_01	14		24		34	
5	TB_RD-51A_080311	15		25		35	
6	RD-51B_080311_01	16		26		36	
7	RD-51C_080311_01	17		27		37	
8	RD-37_080311_01	18		28		38	
9	TB_RD-37_080311	19		29		39	
10	RD-39B_080311_01	20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 3, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
TB_PZ-146_080311
RD-51A_080311_01
TB_RD-51A_080311
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
TB_RD-37_080311
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_PZ-146_080311, TB_RD-51A_080311, and TB_RD-37_080311 were identified as trip blanks. No 1,4-dioxane was found.

Sample EB_PZ-146_080311 was identified as an equipment blank. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as an equipment blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18777-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311 TB_PZ-146_080311 RD-51A_080311_01 TB_RD-51A_080311 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 TB_RD-37_080311 RD-39B_080311_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18777-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18777-1

No Sample Data Qualified in this SDG

LDC #: 26097E1b
 SDG #: 280-18777-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/31/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LES 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	EB = 2 TB = 3, 5, 9 FB = FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-179524)

Validated Samples:

Water

1	PZ-146_080311_01	11	RD-37_080311_01MS	21	MB 280-81016/c	31	
2	EB_PZ-146_080311	12	RD-37_080311_01MSD	22		32	
3	TB_PZ-146_080311	13		23		33	
4	RD-51A_080311_01	14		24		34	
5	TB_RD-51A_080311	15		25		35	
6	RD-51B_080311_01	16		26		36	
7	RD-51C_080311_01	17		27		37	
8	RD-37_080311_01	18		28		38	
9	TB_RD-37_080311	19		29		39	
10	RD-39B_080311_01	20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 3, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: 1,2,3-Trichloropropane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18777-1/IUH0707

Sample Identification

RD-51A_080311_01
TB_RD-51A_080311
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
TB_RD-37_080311
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Samples TB_RD-51A_080311 and TB_RD-37_080311 were identified as trip blanks. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1/IUH0707	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18777-1/IUH0707

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1/ IUH0707	RD-51A_080311_01 TB_RD-51A_080311 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 TB_RD-37_080311 RD-39B_080311_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18777-1/IUH0707

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18777-1/IUH0707

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/31/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2, 6

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-51A_080311_01	11	11 H1010- BIK1	21		31	
2	TB_RD-51A_080311	12		22		32	
3	RD-51B_080311_01	13		23		33	
4	RD-51C_080311_01	14		24		34	
5	RD-37_080311_01	15		25		35	
6	TB_RD-37_080311	16		26		36	
7	RD-39B_080311_01	17		27		37	
8	RD-37_080311_01MS	18		28		38	
9	RD-37_080311_01MSD	19		29		39	
10		20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
RD-51A_080311_01
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample EB_PZ-146_080311 was identified as an equipment blank. No semivolatile contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311 RD-51A_080311_01 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 RD-39B_080311_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

LDC #: 26097E2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18777-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: MB

2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	EB = 2 FB = FB_071211-19 (280-19752-1) 17952

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

+	1	PZ-146_080311_01	11	MB 280-80029 A-A	21	31
-	2	EB_PZ-146_080311	12		22	32
-	3	RD-51A_080311_01	13		23	33
-	4	RD-51B_080311_01	14		24	34
-	5	RD-51C_080311_01	15		25	35
-	6	RD-37_080311_01	16		26	36
-	7	RD-39B_080311_01	17		27	37
	8	RD-37_080311_01MS	18		28	38
	9	RD-37_080311_01MSD	19		29	39
	10		20		30	40

Full Water = 1,2
 Phthalates + NB = 3-7

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 3, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
RD-51A_080311_01
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample EB_PZ-146_080311 was identified as an equipment blank. No N-nitrosodimethylamine was found.

Samples FB_071211_19 (from SDG 280-17952-1) and FB_RD-51B_080311_19 (from SDG 280-18777-2) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-51B_080311_01 and RD-51B_080311_36 (from SDG 280-18777-2) were identified as split samples. No N-nitrosodimethylamine were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-51B_080311_01	RD-51B_080311_36			
N-Nitrosodimethylamine	0.0081	0.0050U	47 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311 RD-51A_080311_01 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 RD-39B_080311_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18777-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

LDC #: 26097E2b
 SDG #: 280-18777-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/31/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	UCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 4 + RD-51B-080311-36 (280-18777-2)
XVII.	Field blanks	ND	EB = 2 FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-146_080311_01	11	MP 280-80081/1-A	21	31
2	EB_PZ-146_080311	12		22	32
3	RD-51A_080311_01	13		23	33
4	RD-51B_080311_01	14		24	34
5	RD-51C_080311_01	15		25	35
6	RD-37_080311_01	16		26	36
7	RD-39B_080311_01	17		27	37
8	RD-37_080311_01MS	18		28	38
9	RD-37_080311_01MSD	19		29	39
10		20		30	40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	RD-51B_080311_01	RD-51B_080311_36		
NDMA	0.0081	0.0050U	47	NQ (<math>< 5 \times RL</math>)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-80582/1-A	8/9/11	Fluoranthene Pyrene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	0.00645 ug/L 0.0228 ug/L 0.471 ug/L 0.0420 ug/L 0.684 ug/L	All samples in SDG 280-18777-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
PZ-146_080311_01	Bis(2-ethylhexyl)phthalate Di-n-octylphthalate	0.15 ug/L 0.13 ug/L	11U ug/L 11U ug/L
EB_PZ-146_080311	Di-n-butylphthalate Di-n-octylphthalate	0.019 ug/L 0.082 ug/L	10U ug/L 10U ug/L

Sample EB_PZ-146_080311 was identified as an equipment blank. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-146_080311	8/3/11	Di-n-butylphthalate Di-n-octylphthalate	0.019 ug/L 0.082 ug/L	PZ-146_080311_01

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-146_080311_01	Di-n-octylphthalate	0.13 ug/L	11U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18777-1	PZ-146_080311_01	Bis(2-ethylhexyl)phthalate Di-n-octylphthalate	11U ug/L 11U ug/L	A	B
280-18777-1	EB_PZ-146_080311	Di-n-butylphthalate Di-n-octylphthalate	10U ug/L 10U ug/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18777-1	PZ-146_080311_01	Di-n-octylphthalate	11U ug/L	A	F

LDC #: 26097E2c

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-18777-1

Level V

Laboratory: Test America, Inc.

Date: 8/31/11

Page: 1 of 1

Reviewer: SVG

2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 2 FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	PZ-146_080311_01	11	MB 280-80582/1-A	21		31	
2	EB_PZ-146_080311	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU.
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls were found in the method blanks.

Sample EB_PZ-146_080311 was identified as an equipment blank. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

LDC #: 26097E3b
 SDG #: 280-18777-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec.
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = 2

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	PZ-146_080311_01	11	MB 280-79927/A-A	21	31
2	EB_PZ-146_080311	12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Dissolved Metals

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
PZ-146_080311_01MS
PZ-146_080311_01MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B and 6020 for Dissolved Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium Iron Magnesium Sodium Barium Silver Thallium	0.187 mg/L 0.0289 mg/L 0.0817 mg/L 0.282 mg/L 0.000382 mg/L 0.0000348 mg/L 0.0000287 mg/L	All samples in SDG 280-18777-1

Data qualification by the preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-146_080311_01	Silver Thallium	0.000035 mg/L 0.000076 mg/L	0.000035U mg/L 0.000076U mg/L
EB_PZ-146_080311	Calcium Magnesium Sodium Silver	0.088 mg/L 0.037 mg/L 0.42 mg/L 0.000081 mg/L	0.088U mg/L 0.037U mg/L 0.42U mg/L 0.000081U mg/L

Sample EB_PZ-146_080311 was identified as an equipment blank. No metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_PZ-146_080311	8/3/11	Boron Calcium Magnesium Potassium Sodium Manganese Silver	0.0069 mg/L 0.088 mg/L 0.037 mg/L 0.32 mg/L 0.42 mg/L 0.00049 mg/L 0.000081 mg/L	PZ-146_080311_01

Sample FB-071211_19F (from SDG 280-17952-1) was identified as a rinsate. No metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB-071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-146_080311_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-146_080311_01	Silver Thallium	0.000035 mg/L 0.000076 mg/L	0.000035U mg/L 0.000076U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-146_080311_01MS/MSD (All samples in SDG 280-18777-1)	Silver	-	73 (75-125)	-	J (all detects) UJ (all non-detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18777-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311	Silver	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18777-1	PZ-146_080311_01	Silver Thallium	0.000035U mg/L 0.000076U mg/L	A	B
280-18777-1	EB_PZ-146_080311	Calcium Magnesium Sodium Silver	0.088U mg/L 0.037U mg/L 0.42U mg/L 0.000081U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Field Blank Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18777-1	PZ-146_080311_01	Silver Thallium	0.000035U mg/L 0.000076U mg/L	A	F

LDC #: 26097E4
 SDG #: 280-18777-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8-3-11
 Page: 1 of 1
 Reviewer: OC
 2nd Reviewer: ✓

METHOD: Dissolved Metals (EPA SW 846 Method 6020/7000) ⁶⁰¹⁰³

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/3/11</u>
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	SW	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV.	Field Blanks	SW	EB=2; FB=FB_07121119F

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

water

1	PZ-146_080311_01	11		21		31	
2	EB_PZ-146_080311	12		22		32	
3	PZ-146_080311_01MS	13		23		33	
4	PZ-146_080311_01MSD	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Reason: B

Sample Concentration units, unless otherwise noted: mg/L

Soil preparation factor applied: NA

2nd Reviewer: [Signature]

Associated Samples: All

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	1	2								
Ca		0.187		0.935		0.088								
Fe		0.0289		0.1445										
Mg		0.0817		0.4085		0.037								
Na		0.282		1.41		0.42								
Ba		0.000382		0.002										
Ag		0.0000348		0.0002	0.000035	0.000081								
Tl		0.0000287		0.0001	0.000076									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Field Blanks

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Reason: F

Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 2-8/3/11 **FB=7/12/11** Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: Associated Samples: 1

Analyte	Blank ID	Blank ID	Action Limit	Sample Identification
	2	FB_071211_19F (SDG: 280-17952-1)		1
B	0.0069		0.0345	
Ca	0.088		0.44	
Mg	0.037		0.185	
K	0.32		1.6	
Na	0.42		2.1	
Mn	0.00049		0.00245	
Ag	0.000081	0.000018	0.000405	0.000035
Tl		0.000033	0.000165	0.000076

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 3, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
RD-51A_080311_01
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD
RD-37_080311_01DUP
RD-39B_080311_01MS
RD-39B_080311_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, and Sulfate, EPA SW 846 Method 7196A for Hexavalent Chromium and Dissolved Hexavalent Chromium, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
PZ-146_080311_01 EB_PZ-146_080311	Hexavalent chromium	29 hours	24 hours	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
	Dissolved hexavalent chromium	29 hours	24 hours		

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample EB_PZ-146_080311 was identified as an equipment blank. No contaminant concentrations were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18777-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18777-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311	Hexavalent chromium Dissolved hexavalent chromium	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Technical holding time (H)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311 RD-51A_080311_01 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 RD-39B_080311_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18777-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18777-1

No Sample Data Qualified in this SDG

LDC #: 26097E6
 SDG #: 280-18777-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8-31-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Bromide, Chloride, Fluoride, Nitrate, Nitrite, Orthophosphate, Sulfate (EPA Method 300.0), Hexavalent Chromium & Dissolved Hexavalent Chromium (EPA SW846 Method 7196A), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/3/11
II	Initial calibration	N	
III.	Calibration verification	N	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCSD
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	NO	EB= 2; FB= FB-071211-19 (28017952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

1	PZ-146_080311_01	11	RD-39B_080311_01MS	21		31	
2	EB_PZ-146_080311	12	RD-39B_080311_01MSD	22		32	
3	RD-51A_080311_01	13		23		33	
4	RD-51B_080311_01	14		24		34	
5	RD-51C_080311_01	15		25		35	
6	RD-37_080311_01	16		26		36	
7	RD-39B_080311_01	17		27		37	
8	RD-37_080311_01MS	18		28		38	
9	RD-37_080311_01MSD	19		29		39	
10	RD-37_080311_01DUP	20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Gasoline Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

RD-37_080311_01
TB_RD-37_080311
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Gasoline Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No gasoline range organic contaminants were found in the method blanks.

Sample TB_RD-37_080311 was identified as a trip blank. No gasoline range organic contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-37_080311	8/3/11	TPH as gasoline (C6-C12)	23 ug/L	RD-37_080311_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-37_080311_01	TPH as gasoline (C6-C12)	19 ug/L	100U ug/L

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-37_080311_01MS/MSD (RD-37_080311_01)	TPH as gasoline (C6-C12)	-	78 (79-149)	-	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	RD-37_080311_01	TPH as gasoline (C6-C12)	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18777-1	RD-37_080311_01 TB_RD-37_080311	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Field Blank Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18777-1	RD-37_080311_01	TPH as gasoline (C6-C12)	100U ug/L	A	T

LDC #: 26097E7

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18777-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *ML*

2nd Reviewer: *[Signature]*

METHOD: Gasoline Range Organics (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	A	LCS /b
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	A	
XIII.	Field blanks	SW	TB = 2

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1 ⁺	RD-37_080311_01	11	MB 280-80449/b	21	31
2 ⁺	TB_RD-37_080311	12		22	32
3	RD-37_080311_01MS	13		23	33
4	RD-37_080311_01MSD	14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
RD-51A_080311_01
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Sample EB_PZ-146_080311 was identified as an equipment blank. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311 RD-51A_080311_01 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 RD-39B_080311_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

LDC #: 26097E8
 SDG #: 280-18777-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: ML
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/31/11</u>
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	<u>LCS</u>
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	<u>EB = 2</u> <u>FB = FB-071211-19 (280-17952-1)</u>

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	PZ-146_080311_01	11	<u>MB 280-80081/A</u>	21	31
2	EB_PZ-146_080311	12		22	32
3	RD-51A_080311_01	13		23	33
4	RD-51B_080311_01	14		24	34
5	RD-51C_080311_01	15		25	35
6	RD-37_080311_01	16		26	36
7	RD-39B_080311_01	17		27	37
8	RD-37_080311_01MS	18		28	38
9	RD-37_080311_01MSD	19		29	39
10		20		30	40

Notes: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 13, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-1

Sample Identification

PZ-146_080311_01
EB_PZ-146_080311
RD-51A_080311_01
RD-51B_080311_01
RD-51C_080311_01
RD-37_080311_01
RD-39B_080311_01
RD-37_080311_01MS
RD-37_080311_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

Sample EB_PZ-146_080311 was identified as an equipment blank. No hydrazines were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No hydrazines were found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18777-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-1	PZ-146_080311_01 EB_PZ-146_080311 RD-51A_080311_01 RD-51B_080311_01 RD-51C_080311_01 RD-37_080311_01 RD-39B_080311_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18777-1**

No Sample Data Qualified in this SDG

LDC #: 26097E76
 SDG #: 280-18777-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level ~~IV~~ V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JG
 2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS / B
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 2 FB = FB_071211-19 (280-17952-1)

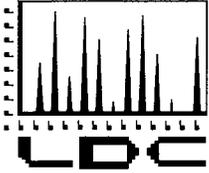
Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	PZ-146_080311_01	11	MB 280-80638/39	21	31
2	EB_PZ-146_080311	12		22	32
3	RD-51A_080311_01	13		23	33
4	RD-51B_080311_01	14		24	34
5	RD-51C_080311_01	15		25	35
6	RD-37_080311_01	16		26	36
7	RD-39B_080311_01	17		27	37
8	RD-37_080311_01MS	18		28	38
9	RD-37_080311_01MSD	19		29	39
10		20		30	40

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

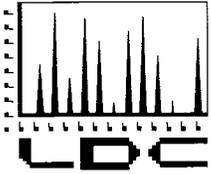
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C -SIM)		NDMA (1625)		PCBs (8082)		Diss. Metals (SW846)		Herbs (8151A)		GRO (8015B)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																							
A	280-18527-1/ IUG2793	08/24/11	09/15/11	8	0	9	0	3	0	5	0	-	-	5	0	2	0	2	0	-	-	-	-	5	0	-	-	3	0	-	-	-	-	-	-	-	-		
BVA	280-18527-1/ IUG2793	08/24/11	09/15/11	3	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	-	-	0	0	-	-	0	0	-	-	-	-	-	-	-	-	-	
B	280-18672-1/ H1H030429	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-18673-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	280-18721-1/ H1H040443	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18777-1/ IUH0707	08/24/11	09/15/11	10	0	10	0	7	0	7	0	2	0	7	0	2	0	2	0	2	0	-	-	2	0	7	0	-	5	0	5	0	7	0	-	-	-	-	
F	280-18781-1/ H1H050406	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G	280-18850-1/ IUH0782	08/24/11	09/15/11	11	0	11	0	10	0	7	0	7	0	8	0	-	-	-	-	-	-	-	3	0	4	0	7	0	-	7	0	6	0	6	0	-	-	-	
H	280-19011-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	T/PG			32	0	30	0	20	0	19	0	2	0	20	0	4	0	4	0	4	0	3	0	6	0	19	0	13	0	15	0	11	0	13	0	9	0	0	

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CLO ₄ (314.0)		pH (9040B)		Diss. Cr (VI) (7196A)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																							
A	280-18527-1	08/24/11	09/15/11	3	0	3	0	2	0	5	0	6	0	2	0	3	0	-	-	-	-	-	-
E	280-18777-1	08/24/11	09/15/11	5	0	2	0	2	0	7	0	7	0	2	0	5	0	5	0	2	0	2	0
G	280-18850-1	08/24/11	09/15/11	7	0	-	-	-	-	7	0	7	0	-	-	8	0	6	0	-	-	-	-
Total	T/PG			15	0	5	0	4	0	19	0	20	0	4	0	16	0	11	0	2	0	2	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18781-1/H1H050406

Sample Identification

PZ-146_080311_01

EB_PZ-146_080311

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1217058-MB	8/5/11	OCDF	7.7 pg/L	All samples in SDG 280-18781-1/H1H050406

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Sample EB_PZ-146_080311 was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

Sample FB_071211_19 (from SDG 280-17964) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	OCDD	4.0 pg/L	PZ-146_080311_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18781-1/H1H050406	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18781-1/H1H050406**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18781-1/ H1H050406	PZ-146_080311_01 EB_PZ-146_080311	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18781-1/H1H050406**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18781-1/H1H050406**

No Sample Data Qualified in this SDG

LDC #: 26097F21

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18781-1/H1H050406

Level V

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: JG

2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS 1B
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	SW	*EB = 2 FB = FB-071211-19

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

*ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

(280-17964-1)

Validated Samples:

index

1	PZ-146_080311_01	11		21		31	
2	EB PZ-146_080311	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

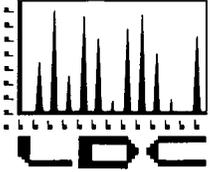
Notes: _____

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

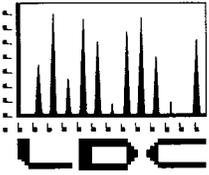
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss. Metals (SW846)		Herbs (8151A)		GRO (8015B)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																							
A	280-18527-1/ IUG2793	08/24/11	09/15/11	8	0	9	0	3	0	5	0	-	-	5	0	2	0	2	0	-	-	-	-	5	0	-	-	3	0	-	-	-	-	-	-				
BA	280-18527-1/ IUG2793	08/24/11	09/15/11	3	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	-	-	0	0	-	-	0	0	-	-	-	-	-	-				
B	280-18672-1/ H1H030429	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0			
C	280-18673-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
D	280-18721-1/ H1H040443	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0		
E	280-18777-1/ IUH0707	08/24/11	09/15/11	10	0	10	0	7	0	7	0	2	0	7	0	2	0	2	0	2	0	-	-	7	0	-	-	5	0	-	-	5	0	7	0	-	-		
F	280-18781-1/ H1H050406	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	
G	280-18850-1/ IUH0782	08/24/11	09/15/11	11	0	11	0	10	0	7	0	7	0	8	0	-	-	-	-	-	-	-	3	0	4	0	7	0	-	-	7	0	6	0	6	0	-	-	
H	280-19011-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total	T/PG			32	0	30	0	20	0	19	0	2	0	20	0	4	0	4	0	4	0	3	0	6	0	19	0	13	0	15	0	11	0	13	0	9	0	0	220

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₂ (300.0)		Br NO ₂ O-PO ₄		ClO ₄ (314.0)		pH (9040B)		Diss. Cr (VI) (7196A)																				
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																								
A	280-18527-1	08/24/11	09/15/11	3	0	3	0	2	0	5	0	6	0	2	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E	280-18777-1	08/24/11	09/15/11	5	0	2	0	2	0	7	0	7	0	2	0	5	0	5	0	5	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	
G	280-18850-1	08/24/11	09/15/11	7	0	-	-	-	-	7	0	7	0	-	-	8	0	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total	T/PG			15	0	5	0	4	0	19	0	20	0	4	0	16	0	11	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	98

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 4, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
TB_RD-36D_080411
RD-66_080411_01
TB_RD-66_080411
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
TB_RD-43B_080411
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81034/5	8/11/11	Methylene chloride	0.746 ug/L	All samples in SDG 280-18850-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-36B_080411_01	Methylene chloride	0.39 ug/L	5.0U ug/L
RD-36C_080411_01	Methylene chloride	0.68 ug/L	5.0U ug/L
RD-36D_080411_01	Methylene chloride	0.39 ug/L	5.0U ug/L
TB_RD-36D_080411	Methylene chloride	1.2 ug/L	5.0U ug/L
RD-66_080411_01	Methylene chloride	0.35 ug/L	5.0U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_RD-66_080411	Methylene chloride	0.70 ug/L	5.0U ug/L
HAR-09_080411_01	Methylene chloride	0.36 ug/L	5.0U ug/L
RD-43C_080411_01	Methylene chloride	0.43 ug/L	5.0U ug/L
RD-43C_080411_36	Methylene chloride	0.38 ug/L	5.0U ug/L
RD-43B_080411_01	Methylene chloride	0.51 ug/L	5.0U ug/L
TB_RD-43B_080411	Methylene chloride	1.2 ug/L	5.0U ug/L

Samples TB_RD-36D_080411, TB_RD-66_080411, and TB_RD-43B_080411 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-36D_080411	8/4/11	Methylene chloride	1.2 ug/L	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01
TB_RD-66_080411	8/4/11	Methylene chloride	0.70 ug/L	RD-66_080411_01 HAR-09_080411_01
TB_RD-43B_080411	8/4/11	Methylene chloride	1.3 ug/L	RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-36B_080411_01	Methylene chloride	0.39 ug/L	5.0U ug/L
RD-36C_080411_01	Methylene chloride	0.68 ug/L	5.0U ug/L
RD-36D_080411_01	Methylene chloride	0.39 ug/L	5.0U ug/L
RD-66_080411_01	Methylene chloride	0.35 ug/L	5.0U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-09_080411_01	Methylene chloride	0.36 ug/L	5.0U ug/L
RD-43C_080411_01	Methylene chloride	0.43 ug/L	5.0U ug/L
RD-43C_080411_36	Methylene chloride	0.38 ug/L	5.0U ug/L
RD-43B_080411_01	Methylene chloride	0.51 ug/L	5.0U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
TB_RD-66_080411	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P
TB_RD-43B_080411	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-43C_080411_01	RD-43C_080411_36			
Methylene chloride	0.43	0.38	12 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18850-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	TB_RD-66_080411 TB_RD-43B_080411	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 TB_RD-36D_080411 RD-66_080411_01 TB_RD-66_080411 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01 TB_RD-43B_080411	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18850-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18850-1	RD-36B_080411_01	Methylene chloride	5.0U ug/L	A	B
280-18850-1	RD-36C_080411_01	Methylene chloride	5.0U ug/L	A	B
280-18850-1	RD-36D_080411_01	Methylene chloride	5.0U ug/L	A	B
280-18850-1	TB_RD-36D_080411	Methylene chloride	5.0U ug/L	A	B
280-18850-1	RD-66_080411_01	Methylene chloride	5.0U ug/L	A	B
280-18850-1	TB_RD-66_080411	Methylene chloride	5.0U ug/L	A	B
280-18850-1	HAR-09_080411_01	Methylene chloride	5.0U ug/L	A	B
280-18850-1	RD-43C_080411_01	Methylene chloride	5.0U ug/L	A	B
280-18850-1	RD-43C_080411_36	Methylene chloride	5.0U ug/L	A	B
280-18850-1	RD-43B_080411_01	Methylene chloride	5.0U ug/L	A	B
280-18850-1	TB_RD-43B_080411	Methylene chloride	5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18850-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18850-1	RD-36B_080411_01	Methylene chloride	5.0U ug/L	A	T
280-18850-1	RD-36C_080411_01	Methylene chloride	5.0U ug/L	A	T
280-18850-1	RD-36D_080411_01	Methylene chloride	5.0U ug/L	A	T
280-18850-1	RD-66_080411_01	Methylene chloride	5.0U ug/L	A	T
280-18850-1	HAR-09_080411_01	Methylene chloride	5.0U ug/L	A	T
280-18850-1	RD-43C_080411_01	Methylene chloride	5.0U ug/L	A	T
280-18850-1	RD-43C_080411_36	Methylene chloride	5.0U ug/L	A	T
280-18850-1	RD-43B_080411_01	Methylene chloride	5.0U ug/L	A	T

LDC #: 26097G1a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18850-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *DC*

2nd Reviewer: *✓*

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 8, 9
XVII.	Field blanks	SW	TB = 4, 6, 11

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

WCF or

1	RD-36B_080411_01	11	TB_RD-43B_080411	21	<i>MB 280-81034/5</i>	31
2	RD-36C_080411_01	12	RD-43B_080411_01MS	22		32
3	RD-36D_080411_01	13	RD-43B_080411_01MSD	23		33
4	TB_RD-36D_080411	14		24		34
5	RD-66_080411_01	15		25		35
6	TB_RD-66_080411	16		26	36	
7	HAR-09_080411_01	17		27	37	
8	RD-43C_080411_01 <i>D</i>	18		28	38	
9	RD-43C_080411_36 <i>D</i>	19		29	39	
10	RD-43B_080411_01	20		30	40	

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y/N N/A

Was a method blank associated with every sample in this SDG?

Y/N N/A

Was a method blank analyzed at least once every 12 hours for each matrix and concentration?

Y/N N/A

Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 8/11/11

Conc. units: ug/L

Associated Samples: All

Code: 8

Compound	Blank ID	Sample Identification									
		1	2	3	4	5	6	7	8	9	
Methylene chloride (E)	280-81034/5 0.746	0.39 / 5.04	0.68 / 5.04	0.39 / 5.04	1.2 / 5.04	0.35 / 5.04	0.70 / 5.04	0.36 / 5.04	0.43 / 5.04	0.38 / 5.04	
Acetone											
CROI											

Blank analysis date: _____

Conc. units: _____

Same as above

Associated Samples: _____

Compound	Blank ID	Sample Identification									
		10	11	12	13	14	15	16	17	18	19
Methylene chloride (E)	280-81034/5 0.746	1.3 / 5.04	0.51 / 5.04	1.2 / 5.04							
Acetone											
CROI											

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y N NA Were field duplicate pairs identified in this SDG?
 Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	8	9		
Methylene chloride	0.43	0.38	12	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 4, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
TB_RD-36D_080411
RD-66_080411_01
TB_RD-66_080411
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
TB_RD-43B_080411
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-36D_080411, TB_RD-66_080411, and TB_RD-43B_080411 were identified as trip blanks. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-43B_080411_01MS/MSD (RD-43B_080411_01)	1,4-Dioxane	-	-	27 (≤20)	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No 1,4-dioxane was detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18850-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	RD-43B_080411_01	1,4-Dioxane	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 TB_RD-36D_080411 RD-66_080411_01 TB_RD-66_080411 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01 TB_RD-43B_080411	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18850-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18850-1

No Sample Data Qualified in this SDG

LDC #: 26097G1b
 SDG #: 280-18850-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 8/21/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	les /p
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 8, 9
XVII.	Field blanks	ND	TB = 4, 6, 11

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-36B_080411_01	11	TB RD-43B_080411	21	MB 280-81016	31
2	RD-36C_080411_01	12	RD-43B_080411_01MS	22	MB 280-81016/5	32
3	RD-36D_080411_01	13	RD-43B_080411_01MSD	23		33
4	TB RD-36D_080411	14		24		34
5	RD-66_080411_01	15		25		35
6	TB RD-66_080411	16		26		36
7	HAR-09_080411_01	17		27		37
8	RD-43C_080411_01	18		28		38
9	RD-43C_080411_36	19		29		39
10	RD-43B_080411_01	20		30		40

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 4, 2011
LDC Report Date: September 2, 2011
Matrix: Water
Parameters: 1,2,3-Trichloropropane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18850-1/IUH0782

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
TB_RD-36D_080411
RD-66_080411_01
TB_RD-66_080411
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
TB_RD-43B_080411
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Samples TB_RD-36D_080411, TB_RD-66_080411, and TB_RD-43B_080411 were identified as trip blanks. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1/IUH0782	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No 1,2,3-trichloropropane was detected in any of the samples.

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/6/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	A	Client spec ✓
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	d = 7, 8
XVII.	Field blanks	ND	TB = 4, 6, 10

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-36B_080411_01	11	RD-43B_080411_01MS	21	11H1010-Blk1	31
2	RD-36C_080411_01	12	RD-43B_080411_01MSD	22	11H1190-	32
3	RD-36D_080411_01	13		23		33
4	TB_RD-36D_080411	14		24		34
5	RD-66_080411_01	15		25		35
6	TB_RD-66_080411	16		26		36
7	RD-43C_080411_01 <i>D</i>	17		27		37
8	RD-43C_080411_36 <i>D</i>	18		28		38
9	RD-43B_080411_01	19		29		39
10	TB_RD-43B_080411	20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-43C_080411_01	RD-43C_080411_36			
Bis(2-ethylhexyl)phthalate	1.8	1.7	6 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18850-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18850-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18850-1

No Sample Data Qualified in this SDG

LDC #: 26097G2a
 SDG #: 280-18850-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/31/11
 Page: 1 of 1
 Reviewer: JG
 2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/14/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	<u>ICS</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	<u>D = 5, 6</u>
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-36B_080411_01	11	<u>11B 280-80163/A</u>	21		31	
2	RD-36C_080411_01	12		22		32	
3	RD-36D_080411_01	13		23		33	
4	HAR-09_080411_01	14		24		34	
5	RD-43C_080411_01	<u>D</u> 15		25		35	
6	RD-43C_080411_36	<u>D</u> 16		26		36	
7	RD-43B_080411_01	17		27		37	
8	RD-43B_080411_01MS	18		28		38	
9	RD-43B_080411_01MSD	19		29		39	
10		20		30		40	

Phthalates + NB =

Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N N A
~~Y~~ N N A

Were field duplicate pairs identified in this SDG?

Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	5	6		
Bis(2-ethylhexyl)phthalate	1.8	1.7	6	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
RD-66_080411_01
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample FB_HAR-09_080411_19 (from SDG 280-18850-2) was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-09_080411_01 and HAR-09_080411_36 (from SDG 280-18850-2) and samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-09_080411_01	HAR-09_080411_36			
N-Nitrosodimethylamine	0.013	0.012	8 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18850-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 RD-66_080411_01 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18850-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18850-1

No Sample Data Qualified in this SDG

LDC #: 26097G2b
 SDG #: 280-18850-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/21/11
 Page: 1 of 1
 Reviewer: MB
 2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/04/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	<u>LES 1b</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	<u>SNB</u>	<u>D₁ = 6.7 D₂ = 5 + HAR-09-080411-36</u>
XVII.	Field blanks	<u>ND</u>	<u>FB = FB - HAR-09-080411-19 → (280-18850-2)</u>

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-36B_080411_01	11	<u>MB 280-80787/1-A</u>	21		31	
2	RD-36C_080411_01	12	<u>MB 280-81035/1-A</u>	22		32	
3	RD-36D_080411_01	13		23		33	
4	RD-66_080411_01	14		24		34	
5	HAR-09_080411_01	15		25		35	
6	RD-43C_080411_01 <u>P</u>	16		26		36	
7	RD-43C_080411_36 <u>b</u>	17		27		37	
8	RD-43B_080411_01	18		28		38	
9	RD-43B_080411_01MS	19		29		39	
10	RD-43B_080411_01MSD	20		30		40	

LDC#: 26117B2b/26097G2b **VALIDATION FINDINGS WORKSHEET**
Field Duplicates

Page: 1 of 1
 Reviewer: JVZ
 2nd Reviewer: [Signature]

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	HAR-09_080411_01	HAR-09_080411_36		
NDMA	0.013	0.012	8	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18850-1

Sample Identification

HAR-09_080411_01

HAR-09_080411_36

FB_HAR-09_080411_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-09_080411_01	HAR-09_080411_36			
Dinoseb	0.22	0.23	4 (≤35)	-	-

Samples HAR-09_080411_01 and HAR-09_080411_03 (from SDG 1UH0622) were identified as split samples. No herbicides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-09_080411_01	HAR-09_080411_03			
Dinoseb	0.22	0.50U	78 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Data Qualification Summary - SDG 280-18850-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	HAR-09_080411_01 HAR-09_080411_36 FB_HAR-09_080411_19	Dinoseb	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-18850-1	HAR-09_080411_01 HAR-09_080411_36 FB_HAR-09_080411_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Laboratory Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Field Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

LDC #: 26097G5
 SDG #: 280-18850-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level TV

Date: 8/21/11
 Page: 1 of 1
 Reviewer: SV
 2nd Reviewer: [Signature]

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II	Initial calibration	A	r ²
III.	Calibration verification/ICV	SW	CV/ICV ≤ 20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client spec
VII.	Laboratory control samples	A	LCS / B
VIII.	Target compound identification	A	
IX.	Compound quantitation/RL/LOQ/LODs	A	
X.	System Performance	A	
XI.	Overall assessment of data	A	
XII.	Field duplicates / Split	SW	D = 1, 2 S = 1 + HAR-09_080411_03
XIII.	Field blanks	ND	FB = 3 (14H0622)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	HAR-09_080411_01	11	MB 280-80357/1-A	21		31	
2	HAR-09_080411_36	12		22		32	
3	FB HAR-09_080411_19	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 2,4,5-T ; 2,4-D ; Dinoseb ; Silvex

VALIDATION FINDINGS WORKSHEET
Field Duplicates/ Field Split

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Field Duplicates

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-09_080411_01	HAR-09_080411_36		
Dinoseb	0.22	0.23	4	

Field Split

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-09_080411_01	HAR-09_080411_03		
Dinoseb	0.22	0.50U	78	NQ (<5xRL)

LDC#: 76097 G5

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/1/2011	GCS M DB 35MS	Dinoseb	1	18.9	87576	7669555776
			2	47.2	194047	37654238209
			3	236.0	896627	803939977129
			4	472.0	1749999	3062496500001
			5	709.0	2543144	6467581404736
			6	945.0	3503883	12277196077689
			7	1890.0	6241494	38956247352036

CF
4633.7
4111.2
3799.3
3707.6
3586.9
3707.8
3302.4

Ave 3835.5

Regression Output

	Calculated	Reported
Constant	b = 3.34102	b = 3.4594000
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² 0.9993833	r ² 0.9994
Degrees of Freedom		
X Coefficient(s)	m1 = 0.00024676	m1 = 0.00024671
Std Err of Coef.	8.76171E-12	8.76001E-12
Correlation Coefficient	0.999692	

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/1/2011	GCS M DBXLB	Dinoseb	1	18.9	46273	2141190529
			2	47.2	114979	13220170441
			3	236.0	576535	332392606225
			4	472.0	1124476	1264446274576
			5	709.0	1755313	3081123727969
			6	945.0	2215645	4909082766025
			7	1890.0	3852775	14843875200625

CF
2448.3
2436.0
2442.9
2382.4
2475.8
2344.6
2038.5
Ave 2366.9

	Regression Output	
	Calculated	Reported
Constant	b = 13.45490	b = 13.5753212
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² 0.9994065	r ² 0.9994
Degrees of Freedom		
X Coefficient(s)	m1 = 0.00034143	m1 = 0.00034137
Std Err of Coef.	m2 = 3.75022E-11	m2 = 3.74940E-11
Correlation Coefficient	0.999703	

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Where:
 N = Initial Calibration Factor or Nominal Amount
 C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

$$\text{Percent difference (\%D)} = 100 * (N - C)/N$$

#	Standard ID	Calibration Date	Compound	Average RRF Conc	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated % D
1	003b0301	8/10/2011	Dinoseb (DB 35MS)	472	337.3	337.3	28.6	28.6
			Dinoseb (DB XLB)	472	320	320	32.2	32.2
2	009b0701	8/10/2011	Dinoseb (DB 35MS)	472	368.8	368.8	21.9	21.9
			Dinoseb (DB XLB)	472	353	353	25.2	25.2

$$Y = m1X + m2(X^2) + b$$

Y= Amount

X= Response

	Response	Response ²	m1	m2	b	m2(X ²)	m1X	Conc
CCV1	Dinoseb (DB 35MS)	1293702	0.000247	8.7600E-12	3.4594	14.6613	319.16922	337.29
CCV1	Dinoseb (DB XLB)	824218	0.000341	3.7494E-11	13.5753	25.4710	281.36330	320.41
CCV2	Dinoseb (DB 35MS)	1410351	0.000247	8.7600E-12	3.4594	17.4244	347.94770	368.83
CCV2	Dinoseb (DB XLB)	905643	0.000341	3.7494E-11	13.5753	30.7522	309.15935	353.49
Sample 1	Dinoseb (DB 35MS)	79783	0.000247	8.7600E-12	3.4594	0.05576	19.68326	23.198

LDC #: 2609765

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer: [Signature]

METHOD: / GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100
Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # |

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	
DCPA	DB35MS	SS	339.5	68	68	0
	DBXLB	↓	334.3	67	67	↓

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$\% \text{Recovery} = 100 * ((\text{SSC} - \text{SC}) / \text{SA})$

Where SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

$\text{RPD} = (((\text{SSCLCS} - \text{SSCLCSD}) * 2) / (\text{SSCLCS} + \text{SSCLCSD})) * 100$

LCS = Laboratory Control Sample

LCS D = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS D 250 - 80357 / 2, 3-A

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCS D		LCS		LCS D		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.								
Gasoline (8015)														
Diesel (8015)														
Benzene (8021B)														
Methane (RSK-175)														
2,4-D (8151)	4.60	4.60	4.40	4.37	106	106	139	139	26	26				
Dinoseb (8151)														
Naphthalene (8310)														
Anthracene (8310)														
HMX (8330)														
2,4,6-Trinitrotoluene (8330)														

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC HPLC

Y N N/A
 Y N N/A

Were all reported results recalculated and verified for all level IV samples?
 Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration = $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$
 A = Area or height of the compound to be measured
 Fv = Final Volume of extract
 Df = Dilution Factor
 RF = Average response factor of the compound
 Vs = Initial volume of the sample
 Ws = Initial weight of the sample
 %S = Percent Solid

Example:

Sample ID: # 1 Compound Name: Dinosol (DB 25MG)
 $y = mx + m_2x^2 + b$
 $y = \text{ant}$
 $x = \text{response}$
 Concentration = $y = (0.00247)(79783) + [(8.76 \times 10^{-12})(79783)^2] + 34594$
 $y = 19.683 + 0.05576 + 34594$
 $= 23.198$

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations	Qualifications
			final conc = $(23.198)(10 \text{ ml})$		
			= 0.22 ug/l	(1051.6 ul)	

Comments: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 4, 2011
LDC Report Date: September 6, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
RD-66_080411_01
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
RD-36B_080411_01DUP
RD-43B_080411_01MS
RD-43B_080411_01MSD
RD-43B_080411_01DUP

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18850-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD (Limits)	Flag	A or P
	RD-43C_080411_01	RD-43C_080411_36			
Fluoride	0.32 mg/L	0.32 mg/L	0 (≤ 35)	-	-
Ammonia as N	0.058 mg/L	0.057 mg/L	2 (≤ 35)	-	-
pH	7.44 units	7.44 units	0 (≤ 35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18850-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 RD-66_080411_01 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

LDC #: 26097G6
 SDG #: 280-18850-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8-31-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate, (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/4/11</u>
II	Initial calibration	N	
III.	Calibration verification	N	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	<u>MS/D</u>
VI.	Duplicates	A	<u>DUP</u>
VII.	Laboratory control samples	A	<u>LCSD</u>
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	<u>SW</u>	<u>(6,7)</u>
XI	Field blanks	<u>N</u>	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: water

1	RD-36B_080411_01	11	RD-43B_080411_01MSD	21		31	
2	RD-36C_080411_01	12	RD-43B_080411_01DUP	22		32	
3	RD-36D_080411_01	13		23		33	
4	RD-66_080411_01	14		24		34	
5	HAR-09_080411_01	15		25		35	
6	RD-43C_080411_01	16		26		36	
7	RD-43C_080411_36	17		27		37	
8	RD-43B_080411_01	18		28		38	
9	RD-36B_080411_01DUP	19		29		39	
10	RD-43B_080411_01MS	20		30		40	

Notes: _____

LDC# 26097G6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 11 of 11
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	6	7		
Fluoride	0.32	0.32	0	
Ammonia as N	0.058	0.057	2	
pH (units)	7.44	7.44	0	

V:\FIELD DUPLICATES\FD_inorganic\26097G6.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Gasoline Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
TB_RD-36D_080411

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Gasoline Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No gasoline range organic contaminants were found in the method blanks.

Sample TB_RD-36D_080411 was identified as a trip blank. No gasoline range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-36B_080411_01	a,a,a-Trifluorotoluene	250 (82-110)	Gasoline range organics	J (all detects)	P

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Data Qualification Summary - SDG 280-18850-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	RD-36B_080411_01	Gasoline range organics	J (all detects)	A	Surrogate spikes (%R) (S)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 TB_RD-36D_080411	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gasoline Range Organics - Field Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

LDC #: 26097G7

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-18850-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *MB*

2nd Reviewer: *W*

METHOD: Gasoline Range Organics (EPA SW 846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	ICS / D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	TB = 4

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-36B_080411_01	11	MB 280-80449/6	21	31
2	RD-36C_080411_01	12		22	32
3	RD-36D_080411_01	13		23	33
4	TB_RD-36D_080411	14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No diesel range organic were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18850-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

LDC #: 26097G8

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-18850-1

Level V

Laboratory: Test America, Inc.

Date: 8/31/11

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Validation Area			Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	UGS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	D = 5, 6
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-36B_080411_01	11	MB 280-80081/1-A	21	31
2	RD-36C_080411_01	12		22	32
3	RD-36D_080411_01	13		23	33
4	HAR-09_080411_01	14		24	34
5	RD-43C_080411_01	15		25	35
6	RD-43C_080411_36	16		26	36
7	RD-43B_080411_01	17		27	37
8	RD-43B_080411_01MS	18		28	38
9	RD-43B_080411_01MSD	19		29	39
10		20		30	40

Notes: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18850-1

Sample Identification

RD-36B_080411_01
RD-36C_080411_01
RD-36D_080411_01
HAR-09_080411_01
RD-43C_080411_01
RD-43C_080411_36
RD-43B_080411_01
RD-43B_080411_01MS
RD-43B_080411_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples RD-43C_080411_01 and RD-43C_080411_36 were identified as field duplicates. No hydrazines were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18850-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-1	RD-36B_080411_01 RD-36C_080411_01 RD-36D_080411_01 HAR-09_080411_01 RD-43C_080411_01 RD-43C_080411_36 RD-43B_080411_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18850-1**

No Sample Data Qualified in this SDG

LDC #: 26097G76
 SDG #: 280-18850-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV *V*

Date: 8/31/11
 Page: 1 of 1
 Reviewer: *Wp*
 2nd Reviewer: *Wp*

METHOD: HPLC Hydrazines (Method DWWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS / b
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	b = 5, 6
XIII.	Field blanks	N	

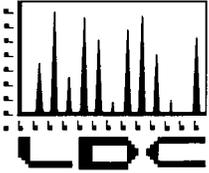
Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-36B_080411_01	11	<i>mb 280-80638/39</i>	21		31	
2	RD-36C_080411_01	12		22		32	
3	RD-36D_080411_01	13		23		33	
4	HAR-09_080411_01	14		24		34	
5	RD-43C_080411_01 <i>D</i>	15		25		35	
6	RD-43C_080411_36 <i>b</i>	16		26		36	
7	RD-43B_080411_01	17		27		37	
8	RD-43B_080411_01MS	18		28		38	
9	RD-43B_080411_01MSD	19		29		39	
10		20		30		40	

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 16, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

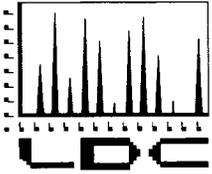
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26097:

<u>SDG #</u>	<u>Fraction</u>
280-18527-1/IUG2793	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Metals, Wet Chemistry, Hydrazine
280-18672-1/H1H030429 280-18721-1/H1H040443 280-18781-1/H1H050406	Dioxins/Dibenzofurans
280-18673-1 280-19011-1	Formaldehyde
280-18777-1/IUH0707	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine
280-18850-1/IUH0782	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Herbicides, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Hydrazine

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009



- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8250B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss. Metals (SW846)		Herbs (8151A)		GRO (8015B)		DRO (8015B)		Formaldehyde (8315)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Hydrazine (DVWC)		Dioxin (8290)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																							
A	280-18527-1/ IUG2793	08/24/11	09/15/11	8	0	9	0	3	0	5	0	-	-	5	0	2	0	2	0	-	-	-	-	5	0	-	-	3	0	-	-	-	-	-	-				
BVA	280-18527-1/ IUG2793	08/24/11	09/15/11	3	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	-	-	0	0	-	-	0	0	-	-	-	-	-	-				
B	280-18672-1/ H1H030429	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0			
C	280-18673-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	0	-	-	-	-	-	-	-				
D	280-18721-1/ H1H040443	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0			
E	280-18777-1/ IUH0707	08/24/11	09/15/11	10	0	10	0	7	0	7	0	2	0	7	0	2	0	2	0	2	0	-	-	2	0	7	0	-	-	5	0	5	0	7	0	-	-		
F	280-18781-1/ H1H050406	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0		
G	280-18850-1/ IUH0782	08/24/11	09/15/11	11	0	11	0	10	0	7	0	7	0	8	0	-	-	-	-	-	-	-	3	0	4	0	7	0	-	-	7	0	6	0	6	0	-	-	
H	280-19011-1	08/24/11	09/15/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-			
Total	T/PG			32	0	30	0	20	0	19	0	2	0	20	0	4	0	4	0	4	0	3	0	6	0	19	0	13	0	15	0	11	0	13	0	9	0	0	220

EDD Client Select IV LDC #26097 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CLO ₄ (314.0)		pH (9040B)		Diss. Cr (VI) (7196A)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																							
A	280-18527-1	08/24/11	09/15/11	3	0	3	0	2	0	5	0	6	0	2	0	3	0	-	-	-	-	-	-
E	280-18777-1	08/24/11	09/15/11	5	0	2	0	2	0	7	0	7	0	2	0	5	0	5	0	2	0	2	0
G	280-18850-1	08/24/11	09/15/11	7	0	-	-	-	-	7	0	7	0	-	-	8	0	6	0	-	-	-	-
Total	T/PG			15	0	5	0	4	0	19	0	20	0	4	0	16	0	11	0	2	0	2	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 9, 2011

LDC Report Date: September 2, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19011-1

Sample Identification

HAR-01_080911_01
EB_PZ-140_080911
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315A for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-11607/1-A	8/11/11	Formaldehyde	0.0142 mg/L	All samples in SDG 280-19011-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-01_080911_01	Formaldehyde	0.016 mg/L	0.050U mg/L
PZ-140_080911_01A	Formaldehyde	0.017 mg/L	0.050U mg/L
PZ-140_080911_36A	Formaldehyde	0.015 mg/L	0.050U mg/L
PZ-147_080911_01	Formaldehyde	0.015 mg/L	0.050U mg/L
EB_PZ-147_080911	Formaldehyde	0.017 mg/L	0.050U mg/L

Samples EB_PZ-140_080911 and EB_PZ-147_080911 were identified as equipment blanks. No formaldehyde was found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-147_080911	8/9/11	Formaldehyde	0.017 mg/L	PZ-147_080911_01

Sample FB_071211_19 (from SDG 280-17954-1) was identified as a field blank. No formaldehyde contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Formaldehyde	0.025 mg/L	PZ-140_080911_01A PZ-147_080911_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-140_080911_01A	Formaldehyde	0.017 mg/L	0.050U mg/L
PZ-147_080911_01	Formaldehyde	0.015 mg/L	0.050U mg/L

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19011-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as split samples. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-140_080911_01A	PZ-140_080911_36A			
Formaldehyde	0.017	0.015	13 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-19011-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19011-1	HAR-01_080911_01 EB_PZ-140_080911 PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-19011-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19011-1	HAR-01_080911_01	Formaldehyde	0.050U mg/L	A	B
280-19011-1	PZ-140_080911_01A	Formaldehyde	0.050U mg/L	A	B
280-19011-1	PZ-140_080911_36A	Formaldehyde	0.050U mg/L	A	B
280-19011-1	PZ-147_080911_01	Formaldehyde	0.050U mg/L	A	B
280-19011-1	EB_PZ-147_080911	Formaldehyde	0.050U mg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-19011-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19011-1	PZ-140_080911_01A	Formaldehyde	0.050U mg/L	A	F
280-19011-1	PZ-147_080911_01	Formaldehyde	0.050U mg/L	A	F

LDC #: 26097H71

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: 280-19011-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *[Signature]*

2nd Reviewer: *[Signature]*

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	URS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 3, 4
XIII.	Field blanks	SW	EB = *2, 6 FB = FB-071211-19 (280-17954-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-01_080911_01	11	MB 240-11607/A-A	21	31
2	EB_PZ-140_080911	12		22	32
3	PZ-140_080911_01A D	13		23	33
4	PZ-140_080911_36A D	14		24	34
5	PZ-147_080911_01	15		25	35
6	EB_PZ-147_080911	16		26	36
7	PZ-147_080911_01MS	17		27	37
8	PZ-147_080911_01MSD	18		28	38
9		19		29	39
10		20		30	40

Notes: _____

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/B-Only

- Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?
- Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/1/11 Blank analysis date: 8/1/11 Associated samples: A1/Cadd: B

Conc. units: mg/L

Compound	Blank ID	Sample Identification					
	<u>MB 240-116071-A</u>	<u>1</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	
<u>Formaldehyde</u>	<u>0.0142</u>	<u>0.016</u> <u>6.050U</u>	<u>0.017</u> <u>6.050U</u>	<u>0.015</u> <u>6.050U</u>	<u>0.015</u> <u>6.050U</u>	<u>0.017</u> <u>6.050U</u>	

Blank extraction date: _____ Blank analysis date: _____ Associated samples: _____
Conc. units: _____

Compound	Blank ID	Sample Identification					

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

Y ~~N~~ ~~NA~~ Were field duplicate pairs identified in this SDG?
Y ~~N~~ ~~NA~~ Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		($\leq 35\%$) RPD	Qualifications (Parent Only)
	PZ-140_080911_01A	PZ-140_080911_36A		
Formaldehyde	0.017	0.015	13	



Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437

Web www.lab-data.com

Fax 760.634.0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 12, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 26, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

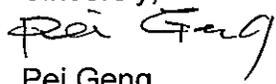
LDC Project # 26111:

<u>SDG #</u>	<u>Fraction</u>
IUG2498	Volatiles, Semivolatiles
IUG2894/1H01021	Semivolatiles, Herbicides

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 26, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2498

Sample Identification

ES-17_072611_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/2/11 (VSTD025A)	Acetone 2-Butanone Carbon tetrachloride Dibromochloromethane 1,1,1,2-Tetrachloroethane	28 28 44 30 34	All samples in SDG IUG2498	J (all detects) UJ (all non-detects)	A
8/2/11 (EXT025)	Acetonitrile Allyl chloride Propionitrile	36 29 26	All samples in SDG IUG2498	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/30/11	Vinyl acetate 4-Methyl-2-pentanone	35 29	All samples in SDG IUG2498	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
8/2/11 (EXT025)	Acetonitrile Propionitrile	0.034 (≥0.05) 0.042 (≥0.05)	All samples in SDG IUG2498	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample FB_ES-17_072611_19 was identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_ES-17_072611_19	7/26/11	Acetone	4.5 ug/L	ES-17_072611_03

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
11H0185-BS1 (All samples in SDG IUG2498)	1,1,1,2-Tetrachloroethane	141 (70-130)	-	-	J (all detects)	P
	Carbon tetrachloride	150 (65-140)	-	-	J (all detects)	
	trans-1,3-Dichloropropene	129 (70-125)	-	-	J (all detects)	

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2498	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples ES-17_072611_03 and ES-17_072611_01 (from SDG 280-18472-1) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	ES-17_072611_03	ES-17_072611_01			
1,1,1-Trichloroethane	40U	4.4	160 (≤35)	NQ	-
1,1-Dichloroethane	40U	3.5	168 (≤35)	NQ	-
1,1-Dichloroethene	40U	15	91 (≤35)	NQ	-
cis-1,2-Dichloroethene	220	260	17 (≤35)	-	-
Dichlorodifluoromethane	200U	6.2	188 (≤35)	NQ	-
Trichloroethene	2000	1900	5 (≤35)	-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	Not reported	3100	Not calculable	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG IUG2498

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2498	ES-17_072611_03	Acetone 2-Butanone Carbon tetrachloride Dibromochloromethane 1,1,1,2-Tetrachloroethane Acetonitrile Allyl chloride Propionitrile	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
IUG2498	ES-17_072611_03	Vinyl acetate 4-Methyl-2-pentanone	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
IUG2498	ES-17_072611_03	Acetonitrile Propionitrile	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF) (R)
IUG2498	ES-17_072611_03	1,1,1,2-Tetrachloroethane Carbon tetrachloride trans-1,3-Dichloropropene	J (all detects) J (all detects) J (all detects)	P	Laboratory control samples (%R) (L)
IUG2498	ES-17_072611_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG IUG2498

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG IUG2498

No Sample Data Qualified in this SDG

LDC #: 26111A1a

VALIDATION COMPLETENESS WORKSHEET

SDG #: IUG2498

Level IV

Laboratory: Test America, Inc.

Date: 8/31/11

Page: 1 of 1

Reviewer: DV

2nd Reviewer: ✓

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	7% RSD ≤ 30% ✓
IV.	Continuing calibration/ICV	SW	CV/ICV ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	SW	S = 1 + ES-17_072611_01 (280-18472-1)
XVII.	Field blanks	SW	FB = FB-ES-17_072611-19 ↓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	ES-17_072611_03	11	11#0185-BLK1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

APPX

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	/			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) < 25% and relative response factors (RRF) > 0.05?		/		
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?		/		
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds of the associated calibration standard?	/			
XI. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		/		
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. <i>Allyl chloride</i>
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y N NA
Y N NA

Were field split pairs identified in this SDG?

Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	ES-17_072611_01	ES-17_072611_03		
1,1,1-Trichloroethane	4.4	40U	160	NQ (<5xRL)
1,1-Dichloroethane	3.5	40U	168	NQ (<5xRL)
1,1-Dichloroethene	15	40U	91	NQ (<5xRL)
cis-1,2-Dichloroethene	260	220	17	
Dichlorodifluoromethane	6.2	200U	188	NQ (<5xRL)
Trichloroethene	1900	2000	5	
1,1,2-Trichloro-1,2,2-trifluoroethane	3100	NR	NC	

NR - Not reported
NC - Non-calculable

V:\FIELD DUPLICATES\26111A1as.wpd

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards
 %RSD = 100 * (S/X)

$$A_x = \text{Area of Compound}$$

$$C_x = \text{Concentration of compound,}$$

$$S = \text{Standard deviation of the RRFs,}$$

$$A_{is} = \text{Area of associated internal standard}$$

$$C_{is} = \text{Concentration of internal standard}$$

$$X = \text{Mean of the RRFs}$$

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (25 std)	Recalculated RRF (25 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/29-30/11	Vinyl chloride (IS2)	0.346	0.346	0.348	0.348	13.59	13.57
	GCMS 43		Trichloroethene (IS3)	0.374	0.374	0.362	0.362	12.45	12.49
			Ethylbenzene (IS4)	1.622	1.622	1.548	1.548	14.71	14.70
			1,1,2,2-TCA (IS5)	0.664	0.664	0.662	0.662	13.84	13.85

Cis/Cx	Ax	Ais
25/25	317654	918992
25/25	511432	1368641
25/25	1889457	1165215
25/25	449672	677391

Conc	Vinyl chloride	Trichloroethene	Ethylbenzene	1,1,2,2-TCA
0.4	0.428			
0.5	0.359	0.387	1.668	0.696
1	0.400	0.406	1.731	0.764
2	0.354	0.400	1.700	0.733
5	0.336	0.319	1.437	0.652
10	0.386	0.398	1.739	0.762
25	0.346	0.374	1.622	0.664
50	0.356	0.367	1.409	0.637
100	0.301	0.332	1.081	0.562
200	0.291	0.272		0.489
300	0.271			
X =	0.348	0.362	1.548	0.662
S =	0.047	0.045	0.228	0.092

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	25	24.55	98	98	0
Bromofluorobenzene	↓	24.31	97	97	↓
1,2-Dichloroethane-d4					
Dibromofluoromethane	↓	23.46	94	94	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * \frac{SSC}{SA}$ Where: SSC = Spiked sample concentration
SA = Spike added

RPD = $|\frac{LCSC - LCSDC}{LCSC}| * 2 / (\frac{LCSC}{LCS} + \frac{LCSDC}{LCSDC})$ LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 11 H 0185- b51

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/l)		LCS		LCSDC		Percent Recovery		Percent Recovery		RPD	
	LCS	LCSDC	LCS	LCSDC	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.		
1,1-Dichloroethene	25.0	NA	24.3	NA	97	97								
Trichloroethene			27.6		110	110								
Benzene			22.8		91	91								
Toluene			24.8		99	99								
Chlorobenzene			27.9		112	112								

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 26, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2498

Sample Identification

RS-33_072611_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/8/11	4-Nitroquinoline-n-oxide	36	All samples in SDG IUG2498	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/3/11	a,a-Dimethylphenethylamine 1,4-Phenylenediamine 3,3'-Dimethylbenzidine	32 41 54	All samples in SDG IUG2498	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample FB_RS-33_072611_19 (from SDG 280-18472-1) was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_RS-33_072611_19	7/26/11	Benzyl alcohol	0.28 ug/L	RS-33_072611_03

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2498	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples RS-33_072611_03 and RS-33_072611_01 (from SDG 280-18472-1) were identified as split samples. No semivolatiles were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG IUG2498**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2498	RS-33_072611_03	4-Nitroquinoline-n-oxide	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
IUG2498	RS-33_072611_03	a,a-Dimethylphenethylamine 1,4-Phenylenediamine 3,3'-Dimethylbenzidine	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
IUG2498	RS-33_072611_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RL (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG IUG2498**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG IUG2498**

No Sample Data Qualified in this SDG

LDC #: 26111A2a

VALIDATION COMPLETENESS WORKSHEET

Date: 8/31/11

SDG #: IUG2698

Level IV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JLB

2nd Reviewer: ✓

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	$\% RSD \leq 30\%$ r✓
IV.	Continuing calibration/ICV	SW	$CV/ICV \leq 25\%$
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec (Insufficient vol.)
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/RL/LOQ/LODs	A	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates / Split	ND	S = 1 + RS-33_072611_01 (280-18472-1)
XVII.	Field blanks	SW	FB = FB_RS-33_072611_19 ↓

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinstate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

W/6/11							
1	RS-33_072611_03	11	11G 3674 - B/L	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	/			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		/		
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds from the associated calibration standard?	/			
XI. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Tentatively Identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within $\pm 20\%$ between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			/	
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.		/		
XVII. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**	XXX. a,a-Dimethylphenethylamine
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene	YYY. 1,4-Phenylenediamine
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene	ZZZ. 1-Naphthylamine
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene	AAAA. 2-Picoline
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether	BBBB. N-Nitrosomethylamine
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline	CCCC. N-Nitrosodiethylamine
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine	DDDD. o,o,o-Triethylphosphorothioate
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid	EEEE. Hexachloropropene
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol	FFFF. 1,2,4,5-Tetrachlorobenzene
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine	GGGG. Isosafrole
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine	HHHH. Pentachloronitrobenzene
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Methyl methanesulfonate	IIII. 4-Nitroquinoline-n-oxide
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU. 1,4-Naphthoquinone	JJJJ. 3,3'-Dimethylbenzidine
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrene	
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. o-Toluidine	

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:
 % Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$ RRF = continuing calibration RRF
 $\text{RRF} = (\text{Ax}) / (\text{Cis}) / (\text{Ais}) / (\text{Cx})$ Ax = Area of compound Ais = Area of associated internal standard
 Cx = Concentration of compound Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	SSTD050	08/08/11	Phenol (IS1)	1.534	1.561	1.561	1.8	1.8
	MS71		Naphthalene (IS2)	1.093	1.093	1.093	0.0	0.0
			Diethylphthalate (IS3)	1.507	1.440	1.440	4.4	4.4
			Hexachlorobenzene (IS4)	0.243	0.235	0.235	3.3	3.3
			Chrysene (IS5)	1.090	1.083	1.083	0.6	0.6
			Benzo(g,h,i)perylene (IS6)	0.763	0.774	0.774	1.4	1.4

CCV1

Compound (IS)	Cis/Cx	Ax	Ais
Phenol (IS1)	40/50	23198	11891
Naphthalene (IS2)	40/50	55215	47742
Diethylphthalate (IS3)	40/50	65850	36578
Hexachlorobenzene (IS4)	40/50	20261	68637
Chrysene (IS5)	40/50	107673	79506
Benzo(g,h,i)perylene (IS6)	40/50	70922	73323

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

$$\text{average RRF} = \text{sum of the RRFs} / \text{number of standards}$$

$$\%RSD = 100 * (S/X)$$

$$A_x = \text{Area of Compound}$$

$$C_x = \text{Concentration of compound,}$$

$$S = \text{Standard deviation of the RRFs,}$$

$$A_{is} = \text{Area of associated internal standard}$$

$$C_{is} = \text{Concentration of internal standard}$$

$$X = \text{Mean of the RRFs}$$

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/3/2011	Phenol (IS1)	1.517	1.517	1.534	1.534	11.74	11.74
	MS71		Naphthalene (IS2)	1.133	1.133	1.093	1.092	3.92	3.91
			Diethylphthalate (IS3)	1.615	1.615	1.507	1.507	10.58	10.59
			Hexachlorobenzene (IS4)	0.246	0.246	0.243	0.243	5.42	5.45
			Chrysene (IS5)	1.141	1.141	1.090	1.090	4.21	4.21
			Benzo(g,h,i)perylene (IS6)	0.758	0.758	0.763	0.763	3.34	3.35

Cis/Cx	Ax	Ais
40/50	36558	19282
40/50	98974	69867
40/50	106314	52670
40/50	32945	107078
40/50	173620	121764
40/50	108936	114949

Conc	Phenol	Naphthalene	Diethylphthalate	Hexachlorobenzene	Chrysene	Benzo(g,h,i)per
5.00	1.359	1.044	1.339	0.218	1.045	0.769
10.00	1.395	1.035	1.419	0.233	1.061	0.759
50.00	1.517	1.133	1.615	0.246	1.141	0.758
80.00	1.594	1.107	1.611	0.247	1.104	0.725
120.00	1.726	1.142	1.664	0.256	1.139	0.754
160.00	1.799	1.115	1.629	0.253	1.115	0.763
2.00	1.350	1.071	1.273	0.249	1.027	0.811
X =	1.534	1.092	1.507	0.243	1.090	0.763
S =	0.180	0.043	0.160	0.013	0.046	0.026

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$

Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	45.05	90	90	0
2-Fluorobiphenyl	↓	46.28	93	93	
Terphenyl-d14	↓	48.11	96	96	
Phenol-d5	100	83.98	84	84	
2-Fluorophenol	↓	74.20	74	74	
2,4,6-Tribromophenol	↓	97.02	97	97	
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 26 III #2a
 SDG #: SA-600

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
 Reviewer: NY
 2nd Reviewer: [Signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SC/SA)$

Where: SSC = Spike concentration
 SA = Spike added

RPD = $100 * (LCS - LCSD) / (LCS + LCSD)$ LCS = Laboratory control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 11 G 3674 681 / 6807

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS		LCSD		Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol	100.0	100.0	69.6	69.2	70	70	69	69	69	69	0.7	0.6	0.7	0.6
N-Nitroso-di-n-propylamine			89.6	80.9	90	90	81	81	81	81	10	10	10	10
4-Chloro-3-methylphenol			104	93.9	104	104	94	94	94	94	10	10	10	10
Acenaphthene			97.5	89.7	98	98	90	90	90	90	8	8	8	8
Pentachlorobenzene														
Pyrene			98.5	92.7	99	99	93	93	93	93	6	6	6	6

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 12, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 26, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

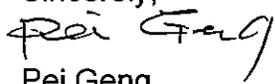
LDC Project # 26111:

<u>SDG #</u>	<u>Fraction</u>
IUG2498	Volatiles, Semivolatiles
IUG2894/1H01021	Semivolatiles, Herbicides

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2894

Sample Identification

HAR-14_072911_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/8/11	4-Nitroquinoline-n-oxide	36	All samples in SDG IUG2894	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8/3/11	a, a-Dimethylphenethylamine 1,4-Phenylenediamine 3,3'-Dimethylbenzidine	32 41 54	All samples in SDG IUG2894	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample FB_HAR-14_072911_19 (from SDG 280-18611-1) was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_HAR-14_072911_19	7/29/11	Benzyl alcohol Bis(2-ethylhexyl)phthalate	1.4 ug/L 2.6 ug/L	All samples in SDG IUG2894

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2894	All compounds reported below the RL	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-14_072911_03 and HAR-14_072911_01 (from SDG 280-18611-1) were identified as split samples. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-14_072911_03	HAR-14_072911_01			
Benzyl alcohol	9.5U	1.7	139 (≤35)	NQ	-
Bis(2-ethylhexyl)phthalate	9.5U	2.0	130 (≤35)	NQ	-
N-nitrosodimethylamine	9.5U	2.3	122 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG IUG2894**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2894	HAR-14_072911_03	4-Nitroquinoline-n-oxide	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
IUG2894	HAR-14_072911_03	a,a-Dimethylphenethylamine 1,4-Phenylenediamine 3,3'-Dimethylbenzidine	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D) (C)
IUG2894	HAR-14_072911_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RL (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG IUG2894**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG IUG2894**

No Sample Data Qualified in this SDG

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/29/11</u>
II.	GC/MS Instrument performance check	NA	
III.	Initial calibration	NA	$\sigma\% \text{ RSD} \leq 30\%$ <u>rv</u>
IV.	Continuing calibration/ICV	N	$\text{CV/ICV} \leq 25\%$
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	<u>Client Spec.</u>
VIII.	Laboratory control samples	A	<u>LCS</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	NA	
XII.	Compound quantitation/RL/LOQ/LODs	NA	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	NA	
XV.	Overall assessment of data	A	
XVI.	Field duplicates <u>/spirit</u>	SW	$S = 1 + \text{HAR-14-072911-01} (280-18611-1)$
XVII.	Field blanks	SW	$\text{FB} = \text{FB-HAR-14-072911-19}$ ↓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	HAR-14_072911_03	11	11 H0771-Blk 1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	/			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		/		
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
IX: Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?		/		
X: Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds from the associated calibration standard?	/			
XI: Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII: Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII: Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			/	
XIV: System performance				
System performance was found to be acceptable.	/			
XV: Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI: Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII: Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**	XXX. a,a-Dimethylphenethylamine
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene	YYY. 1,4-Phenylenediamine
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene	ZZZ. 1-Naphthylamine
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene	AAAA. 2-Picoline
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether	BBBB. N-Nitrosomethylethylamine
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline	CCCC. N-Nitrosodiethylamine
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine	DDDD. o,o,o'-Triethylphosphorothioate
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid	EEEE. Hexachloropropene
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol	FFFF. 1,2,4,5-Tetrachlorobenzene
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(e)anthracene	RRR. Pyridine	GGGG. Isosafrole
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine	HHHH. Pentachloronitrobenzene
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Methyl methanesulfonate	IIII. 4-Nitroquinoline-n-oxide
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU. 1,4-Naphthoquinone	JJJJ. 3,3'-Dimethylbenzidine
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV. Methapyrene	
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW. o-Toluidine	

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

~~Y~~ ~~N~~ ~~NA~~ Were field split pairs identified in this SDG?
~~Y~~ ~~N~~ ~~NA~~ Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	HAR-14_072911_01	HAR-14_072911_03		
Benzyl alcohol	1.7	9.5U	139	NQ (<5xRL)
Bis(2-ethylhexyl)phthalate	2.0	9.5U	130	NQ (<5xRL)
N-nitrosodimethylamine	2.3	9.5U	122	NQ (<5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (50 std)	Recalculated RRF (50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	7/20/2011	Phenol (IS1)	1.899	1.889	1.895	1.895	8.10	8.10
	MS65		Naphthalene (IS2)	1.106	1.106	1.067	1.067	4.81	4.80
			Diethylphthalate (IS3)	1.524	1.524	1.427	1.427	7.26	7.27
			Hexachlorobenzene (IS4)	0.243	0.243	0.241	0.241	6.34	6.36
			Bis(2-ethylhexyl)phthalate (IS5)	0.782	0.782	0.701	0.701	9.32	9.32
			Benzo(g,h,i)perylene (IS6)	0.808	0.808	0.829	0.829	1.98	2.01

Cis/Cx	Ax	Ais
40/50	204714	86708
40/50	576956	417210
40/50	599383	314650
40/50	196000	644000
40/50	784572	802373
40/50	782747	774725

Conc	Phenol	Naphthalene	Diethylphthalate	Hexachlorobenzene	bis(2-ethylhexyl)phthalate	Benzo(g,h,i)perylene
2.00	1.699	1.101	1.408	0.218	0.627	0.858
5.00	1.753	1.096	1.465	0.230	0.705	0.822
10.00	1.801	1.105	1.557	0.232	0.738	0.820
50.00	1.899	1.106	1.524	0.243	0.782	0.808
80.00	1.964	1.065	1.435	0.251	0.755	0.840
120.00	2.045	1.021	1.341	0.259	0.694	0.835
160.00	2.111	0.974	1.257	0.257	0.605	0.819
X =	1.895	1.067	1.427	0.241	0.701	0.829
S =	0.153	0.051	0.104	0.015	0.065	0.017

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC/MS SVOA (EPA SW 846 Method 8270C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

Where:
 % Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$ RRF = continuing calibration RRF
 $\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$ Ax = Area of compound Ais = Area of associated internal standard
 Cx = Concentration of compound Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	SSTD050	08/08/11	Phenol (IS1)	1.534	1.561	1.561	1.8	1.8
	MS71		Naphthalene (IS2)	1.093	1.093	1.093	0.0	0.0
			Diethylphthalate (IS3)	1.507	1.440	1.440	4.4	4.4
			Hexachlorobenzene (IS4)	0.243	0.235	0.235	3.3	3.3
			Chrysene (IS5)	1.090	1.083	1.083	0.6	0.6
			Benzo(g,h,i)perylene (IS6)	0.763	0.774	0.774	1.4	1.4

CCV1

Compound (IS)	Cis/Cx	Ax	Ais
Phenol (IS1)	40/50	23198	11891
Naphthalene (IS2)	40/50	65215	47742
Diethylphthalate (IS3)	40/50	65850	36578
Hexachlorobenzene (IS4)	40/50	20261	68837
Chrysene (IS5)	40/50	107673	79506
Benzo(g,h,i)perylene (IS6)	40/50	70922	73323

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	50	45.66	91	91	0
2-Fluorobiphenyl	↓	46.13	92	92	
Terphenyl-d14	↓	48.22	96	96	
Phenol-d5	100	86.69	87	87	
2-Fluorophenol	↓	74.72	75	75	
2,4,6-Tribromophenol	↓	96.99	97	97	
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVC

2nd Reviewer: [Signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SC/SA)$

Where: SSC = Spike concentration
SA = Spike added

RPD = $100 * (LCS - LCSDC) / (LCS + LCSDC)$

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 11 # 0771- B S I

Compound	Spike Added (ug/L)		Spike Concentration (log/L)		LCS		LCSD		Percent Recovery		Percent Recovery		I.C.S.D	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Phenol	100	NA	67.6	NA	63	63								
N-Nitroso-di-n-propylamine			76.4		76	76								
4-Chloro-3-methylphenol			89.0		89	89								
Acenaphthene			82.3		82	82								
Pentachlorophenol														
Pyrene			98.9		99	99								

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUG2894/1H01021

Sample Identification

HAR-12_072911_03

HAR-14_072911_03

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Samples FB_HAR-12_072911_19 and FB_HAR-4_072911_19 (both from SDG 280-18611-1) were identified as field blanks. No herbicide contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/(Matrix Spike) Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUG2894/1H01021	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-12_072911_03 and HAR-12_072911_01 (from SDG 280-18611-1) and samples HAR-14_072911_03 and HAR-14_072911_01 (from SDG 280-18611-1) were identified as split samples. No herbicides were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 Herbicides - Data Qualification Summary - SDG IUG2894/1H01021**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUG2894/ 1H01021	HAR-12_072911_03 HAR-14_072911_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Herbicides - Laboratory Blank Data Qualification Summary - SDG
 IUG2894/1H01021**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Herbicides - Field Blank Data Qualification Summary - SDG IUG2894/1H01021**

No Sample Data Qualified in this SDG

LDC #: 26111B5

VALIDATION COMPLETENESS WORKSHEET

Date: 8/29/11

SDG #: IUG2894/1H01021

Level IV

Page: 1 of 1

Laboratory: Test America, Inc. Weck Laboratories, Inc.

Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	Initial calibration	NA	2 RSD ≤ 20% ✓
III.	Calibration verification/ICV	NA	COV/AV ≤ 20% ✓
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client req
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates (Split)	ND	S ₁ = 1 + HAR-12-072911-01 (280-18611-1) S ₂ = 2 + HAR-14-072911-01
XIII.	Field blanks	ND	FB = FB-HAR-12-072911-19 ↓ = FB-HAR-14-072911-19

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	HAR-12_072911_03	11	W1H0102-BIK1	21		31	
2	HAR-14_072911_03	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: (2,4-D, 2,4,5-T; 2,4,5-TP, Dinoseb)

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	/			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	/			
Did the initial calibration meet the curve fit acceptance criteria?	/			
Were the RT windows properly established?	/			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? %D or %R	/			
Was a continuing calibration analyzed daily?	/			
Were all percent differences (%D) < 20% or percent recoveries 80-120%?	/			
Were all the retention times within the acceptance windows?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	/			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX. Regional Quality Assurance and Quality Control				

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?			/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.		/		
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
 average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)
 Where: A = Area of compound
 C = Concentration of compound
 S = Standard deviation of calibration factors
 X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (50 std)	Recalculated CF (50 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/11/2011	Dinoseb (Signal 1)	2586000	2585571	2449167	2449167	3.37	3.37
	GC07		Dinoseb (Signal 2)	19010000	19008509	18260000	18260000	3.81	3.81

Conc	Signal 1	Signal 2
50	129278555	950425430

Conc	Dinoseb	
	Signal 1	Signal 2
25	2357000	17220000
50	2586000	19010000
100	2402000	17750000
500	2486000	18560000
1000	2396000	18120000
2000	2468000	18900000
X =	2449167	18260000
S =	82438.8662	696189.6293

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 260113

VALIDATION FINDINGS WORKSHEET Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

$$\text{Percent difference (\%D)} = 100 * (N - C)/N$$

Where:

N = Initial Calibration Factor or Nominal Amount

C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Conc (Actual)	Reported Conc (CC)	Recalculated Conc (CC)	Reported %D	Recalculated %D
1			Dinoseb (Signal 1)	See ICAL				
			Dinoseb (Signal 2)					

Compound	CF	Area CCV1
Dinoseb (Signal 1)	2449167	
Dinoseb (Signal 2)	18260000	

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100
 Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: # 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	
DCAA	Sigmad ✓	2000	2088.52	104	102	2

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG
2nd Reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * ((SSC - SC) / SA)$ Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added

RPD = $((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD) * 100$ LCS = Laboratory Control Sample LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: W1H010 > - B51 / B50 /

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCSD		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.								
Gasoline (8015)														
Diesel (8015)														
Benzene (8021B)														
Methane (RSK-175)														
2,4-D (8151)	4.00	4.00	3.29	3.66	82	82	91	91.5					11	11
Dinoseb (8151)														
Naphthalene (8310)														
Anthracene (8310)														
HMX (8330)														
2,4,6-Trinitrotoluene (8330)														

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 12, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 26, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

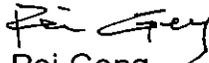
LDC Project # 26117:

<u>SDG #</u>	<u>Fraction</u>
280-18533-1/H1G290419	Dioxins/Dibenzofurans
280-18850-2	N-Nitrosodimethylamine

The data validation was performed under EPA Level V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 27, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18533-1/H1G290419

Sample Identification

EB-PZ-154_072711
PZ-154_072711_01A

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1214031-MB	8/2/11	OCDD OCDF	3.5 pg/L 3.4 pg/L	All samples in SDG 280-18533-1/H1G290419

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
EB-PZ-154_072711	OCDD	3.6 pg/L	3.6U pg/L
PZ-154_072711_01A	OCDD	1.7 pg/L	1.7U pg/L

Sample EB-PZ-154_072711 was identified as an equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB-PZ-154_072711	7/27/11	OCDD	3.6 pg/L	PZ-154_072711_01A

Sample FB_071211-19 (from SDG 280-17964-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211-19	7/12/11	OCDD	4.0 pg/L	PZ-154_072711_01A

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-154_072711_01A	OCDD	1.7 pg/L	1.7U pg/L

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1214031-LCS/D (All samples in SDG 280-18533-1/H1G290419)	OCDF	-	-	17 (≤15)	J (all detects) UJ (all non-detects)	P

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18533-1/H1G290419	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-18533-1/H1G290419**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18533-1/ H1G290419	EB-PZ-154_072711 PZ-154_072711_01A	OCDF	J (all detects) UJ (all non-detects)	P	Laboratory control samples (RPD) (E)
280-18533-1/ H1G290419	EB-PZ-154_072711 PZ-154_072711_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-18533-1/H1G290419**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18533-1/ H1G290419	EB-PZ-154_072711	OCDD	3.6U pg/L	A	B
280-18533-1/ H1G290419	PZ-154_072711_01A	OCDD	1.7U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-18533-1/H1G290419**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18533-1/ H1G290419	PZ-154_072711_01A	OCDD	1.7U pg/L	A	F

LDC #: 26117A21

VALIDATION COMPLETENESS WORKSHEET

Date: 8/02/11

SDG #: 280-18533-1/H1G290419

Level V

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: *[Signature]*
2nd Reviewer: *[Signature]*

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client Spec
VII.	Laboratory control samples	SW	LCC / b
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	SW	EB = 1 FB = FB_071211-19 (280-17964)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	EB-PZ-154_072711	T ₁₁	1214831- MB	21		31	
2	PZ-154_072711_01A	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____



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MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 12, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 26, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26117:

<u>SDG #</u>	<u>Fraction</u>
280-18533-1/H1G290419	Dioxins/Dibenzofurans
280-18850-2	N-Nitrosodimethylamine

The data validation was performed under EPA Level V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 6, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18850-2

Sample Identification

HAR-09_080411_36

FB_HAR-09_080411_19

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample FB_HAR-09_080411_19 was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18850-2	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-09_080411_36 and HAR-09_080411_01 (from SDG 280-18850-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-09_080411_36	HAR-09_080411_01			
N-Nitrosodimethylamine	0.012	0.013	8 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18850-2

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18850-2	HAR-09_080411_36 FB_HAR-09_080411_19	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18850-2

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18850-2

No Sample Data Qualified in this SDG

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 1 + HAR-09_080411-01 (280-18850-1)
XVII.	Field blanks	ND	FB = 2

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-09_080411_36	11	11B 280-81030/1-A	21	31
2	FB HAR-09_080411_19	12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

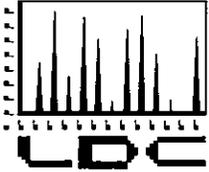
LDC#: ~~26117B2b/26097G2b~~ **VALIDATION FINDINGS WORKSHEET**
Field Duplicates

Page: 1 of 1
 Reviewer: NT
 2nd Reviewer: [Signature]

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-09_080411_01	HAR-09_080411_36		
NDMA	0.013	0.012	8	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

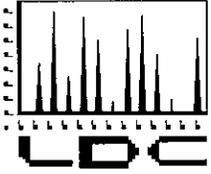
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Gross Alpha & Beta
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18195-1/11-07109-OR

Sample Identification

RD-60_071811_01
RD-63_071811_01
RD-18_071811_01
RD-19_071811_01
RD-60_071811_01(P)
RD-63_071811_01(P)
RD-18_071811_01(P)
RD-19_071811_01(P)
RD-60_071811_01DUP

Samples ending in "P" were reported for particulate only

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18195-1/ 11-07109-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_01 and RD-19_071811_03A (from SDG IUG1671) and samples RD-19_071811_01(P) and RD-19_071811_03A(P) (from SDG IUG1671) were identified as split samples. No gross alpha or beta was detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/L)		RPD (Limits)	Flag	A or P
	RD-19_071811_01	RD-19_071811_03A			
Gross alpha	27.406	17.4	45 (≤35)	J (all detects)	A
Gross beta	13.512	11.6	15 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Data Qualification Summary - SDG 280-18195-1/11-07109-OR

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18195-1/ 11-07109-OR	RD-60_071811_01 RD-63_071811_01 RD-18_071811_01 RD-19_071811_01 RD-60_071811_01(P) RD-63_071811_01(P) RD-18_071811_01(P) RD-19_071811_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)
280-18195-1/ 11-07109-OR	RD-19_071811_01	Gross alpha	J (all detects)	A	Field duplicates (RPD) (*XI)

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR

No Sample Data Qualified in this SDG

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/18/11</u>
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not required, Dp: A
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	CSDG: IUG1671
X.	Field duplicates	SW	split = (4, RD-19071811_03A), (8, RD-19071811_03A) (P)
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	RD-60_071811_01	11		21		31	
2	RD-63_071811_01	12		22		32	
3	RD-18_071811_01	13		23		33	
4	RD-19_071811_01	14		24		34	
5	RD-60_071811_01(DISS) ^P	15		25		35	
6	RD-63_071811_01(DISS) ^P	16		26		36	
7	RD-18_071811_01(DISS) ^P	17		27		37	
8	RD-19_071811_01(DISS) ^P	18		28		38	
9	RD-60_071811_01DUP	19		29		39	
10	RD-60_071811_01DUP(DISS) ^P	20		30		40	

Notes: P = particulate

LDC# 26136A22

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 11 of 11
Reviewer: [Signature]
2nd Reviewer: [Signature]

Radiochemistry, Method See Cover

Y N N A Were field duplicate pairs identified in this SDG?
Y N N A Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤ 35)	Qualifications (Parents Only)
	4	RD-19_071811_03A		
Gross Alpha	27.406	17.4	45	Jdet/A (*X)
Gross Beta	13.512	11.6	15	

V:\FIELD DUPLICATES\FD_inorganic\26136A22.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Tritium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18195-1/11-07110-OR

Sample Identification

RD-60_071811_01
RD-63_071811_01
RD-18_071811_01
RD-19_071811_01
RD-60_071811_01DUP

Introduction

This data review covers 5 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18195-1/ 11-07110-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_01 and RD-19_071811_03A (from SDG IUG1671) were identified as split samples. No tritium was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Data Qualification Summary - SDG 280-18195-1/11-07110-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18195-1/ 11-07110-OR	RD-19_071811_03A	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Laboratory Blank Data Qualification Summary - SDG 280-18195-1/11-07110-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Field Blank Data Qualification Summary - SDG 280-18195-1/11-07110-OR**

No Sample Data Qualified in this SDG

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/18/11</u>
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N	<u>Not required</u>
VI.	Duplicate Sample Analysis	A	<u>RP</u>
VII.	Laboratory control samples	A	<u>LCS</u>
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	<u>ND</u>	<u>Split = (4, RD-19-0718103A (506JU&671))</u>
XII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	RD-60_071811_01	11		21		31	
2	RD-63_071811_01	12		22		32	
3	RD-18_071811_01	13		23		33	
4	RD-19_071811_01	14		24		34	
5	RD-60_071811_01DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Gamma Spectroscopy
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18195-1/11-07109-OR

Sample Identification

RD-60_071811_01
RD-63_071811_01
RD-18_071811_01
RD-19_071811_01
RD-60_071811_01(P)
RD-63_071811_01(P)
RD-18_071811_01(P)
RD-19_071811_01(P)
RD-60_071811_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18195-1/ 11-07109-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_01 and RD-19_071811_03A (from SDG IUG1671) and samples RD-19_071811_01(P) and RD-19_071811_03A(P) (from SDG IUG1671) were identified as split samples. No gamma emitting radionuclides were detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011

Gamma Spectroscopy - Data Qualification Summary - SDG 280-18195-1/11-07109-OR

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18195-1/ 11-07109-OR	RD-60_071811_01 RD-63_071811_01 RD-18_071811_01 RD-19_071811_01 RD-60_071811_01(P) RD-63_071811_01(P) RD-18_071811_01(P) RD-19_071811_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011

Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR

No Sample Data Qualified in this SDG

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not required, Dup: A
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	(SDG: 20671)
X.	Field duplicates	ND	split = (4, RD-19-071811-03A), (8, RD-19-071811-03ACP)
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	RD-60_071811_01	11		21		31	
2	RD-63_071811_01	12		22		32	
3	RD-18_071811_01	13		23		33	
4	RD-19_071811_01	14		24		34	
5	RD-60_071811_01(P)	15		25		35	
6	RD-63_071811_01(P)	16		26		36	
7	RD-18_071811_01(P)	17		27		37	
8	RD-19_071811_01(P)	18		28		38	
9	RD-60_071811_01DUP	19		29		39	
10	RD-60_071811_01DUP(P)	20		30		40	

Notes: P = particulate

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18195-1/11-07109-OR

Sample Identification

RD-60_071811_01
RD-63_071811_01
RD-18_071811_01
RD-19_071811_01
RD-60_071811_01(P)
RD-63_071811_01(P)
RD-18_071811_01(P)
RD-19_071811_01(P)
RD-60_071811_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Tracer ID	Isotope	Tracer %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	124.12 (30-110)	RD-60_071811_01DUP	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	113.54 (30-110)	RD-60_071811_01(P)	J (all detects) UJ (all non-detects)	P

Tracer ID	Isotope	Tracer %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	116.91 (30-110)	RD-63_071811_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	110.32 (30-110)	RD-63_071811_01(P)	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	117.42 (30-110)	RD-18_071811_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	122.23 (30-110)	RD-19_071811_01	J (all detects) UJ (all non-detects)	P

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18195-1/11-07109-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_01 and RD-19_071811_03A (from SDG IUG1671) and samples RD-19_071811_01(P) and RD-19_071811_03A (from SDG IUG1671) were identified as split samples. No isotopic uranium was detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/L)		RPD (Limits)	Flags	A or P
	RD-19_071811_01	RD-19_071811_03A			
Uranium-233/234	14.160	14.8	4 (≤35)	-	-

Isotope	Activity (pCi/L)		RPD (Limits)	Flags	A or P
	RD-19_071811_01	RD-19_071811_03A			
Uranium-235	0.820	0.66	22 (≤ 35)	-	-
Uranium-238	12.710	13.8	8 (≤ 35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Data Qualification Summary - SDG 280-18195-1/11-07109-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18195-1/ 11-07109-OR	RD-60_071811_01(P) RD-63_071811_01 RD-63_071811_01(P) RD-18_071811_01 RD-19_071811_01	All isotopic uranium	J (all detects) UJ (all non-detects)	P	Tracer recovery (%R) (*VIII)
280-18195-1/ 11-07109-OR	RD-60_071811_01 RD-63_071811_01 RD-18_071811_01 RD-19_071811_01 RD-60_071811_01(P) RD-63_071811_01(P) RD-18_071811_01(P) RD-19_071811_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR**

No Sample Data Qualified in this SDG

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Radiochemistry, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤35)	
	4	RD-19_071811_03A		
Uranium-233/234	14.160	14.8	4	
Uranium-235	0.820	0.66	22	
Uranium-238	12.710	13.8	8	

LDC #: 26136A59 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 280-18195-1/11-07109-OR Level V

Laboratory: Test America Laboratories, Inc./Eberline Analytical

Date: 9-12-11

Page: 1 of 1

Reviewer: OR

2nd Reviewer: [Signature]

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/18/11</u>
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not required Dup: A
VI.	Laboratory control samples	A	LCS
VII.	Tracer Recovery	SW	
VIII.	Minimum Detectable Activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	(506: <u>1061671</u>)
XI.	Field duplicates	SW	split = (4, RD-19-071811-03A), (8, RD-19-071811-03A(P))
XII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

water

1	RD-60_071811_01	11		21		31	
2	RD-63_071811_01	12		22		32	
3	RD-18_071811_01	13		23		33	
4	RD-19_071811_01	14		24		34	
5	RD-60_071811_01(DISS)	15		25		35	
6	RD-63_071811_01(DISS)	16		26		36	
7	RD-18_071811_01(DISS)	17		27		37	
8	RD-19_071811_01(DISS)	18		28		38	
9	RD-60_071811_01DUP	19		29		39	
10	RD-60_071811_01DUP(DISS)	20		30		40	

Notes: R = particulate

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18195-1/11-07109-OR

Sample Identification

RD-60_071811_01
RD-63_071811_01
RD-18_071811_01
RD-19_071811_01
RD-60_071811_01(P)
RD-63_071811_01(P)
RD-18_071811_01(P)
RD-19_071811_01(P)
RD-60_071811_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18195-1/ 11-07109-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_01 and RD-19_071811_03A (from SDG IUG1671) and samples RD-19_071811_01(P) and RD-19_071811_03A(P) (from SDG IUG1671) were identified as split samples. No strontium-90 was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Data Qualification Summary - SDG 280-18195-1/11-07109-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18195-1/ 11-07109-OR	RD-60_071811_01 RD-63_071811_01 RD-18_071811_01 RD-19_071811_01 RD-60_071811_01(P) RD-63_071811_01(P) RD-18_071811_01(P) RD-19_071811_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Field Blank Data Qualification Summary - SDG 280-18195-1/11-07109-OR**

No Sample Data Qualified in this SDG

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

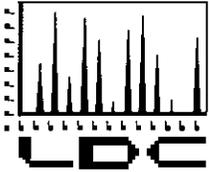
	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not required, Dup: A
VI.	Laboratory control samples	A	LCS
VII.	Carrier recovery	A	
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	CS06-FUG1671)
XI.	Field duplicates	ND	spike = (4, RD-19-071811-03A), (8, RD-19-071811-03A) ACP
XII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	RD-60_071811_01	11		21		31	
2	RD-63_071811_01	12		22		32	
3	RD-18_071811_01	13		23		33	
4	RD-19_071811_01	14		24		34	
5	RD-60_071811_01(DISS)	15		25		35	
6	RD-63_071811_01(DISS)	16		26		36	
7	RD-18_071811_01(DISS)	17		27		37	
8	RD-19_071811_01(DISS)	18		28		38	
9	RD-60_071811_01DUP	19		29		39	
10	RD-60_071811_01DUP(DISS)	20		30		40	

Notes: P = particulate



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

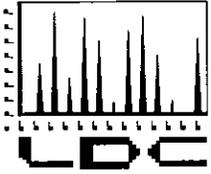
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)	1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Formaldehyde (8315)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC)		Dioxins (8290)		CN- (9014)								
					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S					
Matrix: Water/Soil																																									
C	280-18666-1/ IUH0336	08/30/11	09/22/11	10	0	10	0	4	0	7	0	4	0	7	0	4	0	4	0	7	0	7	0	-	-	-	-	7	0	3	0	3	0	-	-	-	-				
D	280-18896-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-				
E	280-18942-1/ IUH1124	08/30/11	09/22/11	9	0	9	0	8	0	3	0	-	4	0	-	-	-	-	-	3	0	-	-	-	-	4	0	4	0	4	0	-	-	-	-	-	-				
F	280-18947-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
G	280-19104-1	08/30/11	09/22/11	2	0	2	0	-	-	1	0	-	1	0	-	-	-	-	-	1	0	-	-	-	-	1	0	1	0	1	0	-	-	-	-	-	-	-			
H	280-19010-1/ H1H110461	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
J	IUH0484	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	1	0	1	0		
K	IUH0622	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total A/PG																																									
				21	0	21	0	12	0	11	0	4	0	12	0	4	0	4	0	4	0	11	0	10	0	2	0	12	0	8	0	8	0	6	0	1	0	1	0	0	147

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)	Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₃ -O-PO ₄		CrVI (7196A)		Diss CrVI (7196A)		ClO ₂ (314.0)		pH (9040B)		Gross α&β (900.0)		Gamma Spec. (901.0)		Tritium (906.0)		Sr-90 (905.0)		Iso U (908.0)									
					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S						
Matrix: Water/Soil																																								
A	280-18195-1/ 11-07109-OR/ 11-07110-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	0	8	0	4	0	8	0	8	0	-	-	-	-			
B	280-18338-1/ 11-07143-OR/ 11-07144-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	10	0	5	0	8	0	8	0	-	-	-	-			
C	280-1866-1	08/30/11	09/22/11	3	0	7	0	4	0	7	0	7	0	4	0	4	0	4	0	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E	280-18942-1	08/30/11	09/22/11	3	0	3	0	-	-	3	0	5	0	-	-	-	-	-	-	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G	280-19104-1	08/30/11	09/22/11	1	0	-	-	-	-	1	0	1	0	-	-	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
I	IUG1671/8995	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	1	0	2	0	2	0	2	0	-	-	-	-	
Total A/PG																																								
				7	0	10	0	4	0	11	0	13	0	4	0	4	0	4	0	4	0	7	0	7	0	20	0	20	0	10	0	18	0	18	0	0	0	0	0	157

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Gross Alpha & Beta
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18338-1/11-07143-OR

Sample Identification

RD-07_072111_01
RD-50_072111_01
RD-54A_072111_01
RD-33A_072111_01
RD-57_072111_01
RD-07_072111_01(P)
RD-50_072111_01(P)
RD-54A_072111_01(P)
RD-33A_072111_01(P)
RD-57_072111_01(P)
RD-07_072111_01DUP

Samples ending in "P" were reported for particulate only

Introduction

This data review covers 11 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Isotope	%R (Limits)	Associated Samples	Flag	A or P
LCS	Gross alpha	78.789 (80-120)	All samples in SDG 280-18338-1/11-07143-OR	J (all detects) UJ (all non-detects)	P

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18338-1/ 11-07143-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Gross Alpha & Beta - Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18338-1/ 11-07143-OR	RD-07_072111_01 RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 RD-57_072111_01 RD-07_072111_01(P) RD-50_072111_01(P) RD-54A_072111_01(P) RD-33A_072111_01(P) RD-57_072111_01(P)	Gross alpha	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
280-18338-1/ 11-07143-OR	RD-07_072111_01 RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 RD-57_072111_01 RD-07_072111_01(P) RD-50_072111_01(P) RD-54A_072111_01(P) RD-33A_072111_01(P) RD-57_072111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/21/11</u>
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	N: Not required ; Dup: A
VI.	Laboratory control samples	SW	LES
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: WARR

1	RD-07_072111_01	11	RD-07_072111_01DUP	21		31	
2	RD-50_072111_01	12	RD-07_072111_01(Diss) DUP	22		32	
3	RD-54A_072111_01	13		23		33	
4	RD-33A_072111_01	14		24		34	
5	RD-57_072111_01	15		25		35	
6	RD-07_072111_01(Diss) ^P	16		26		36	
7	RD-50_072111_01(Diss) ^P	17		27		37	
8	RD-54A_072111_01(Diss) ^P	18		28		38	
9	RD-33A_072111_01(Diss) ^P	19		29		39	
10	RD-57_072111_01(Diss) ^P	20		30		40	

Notes: P=particular

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Tritium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18338-1/11-07144-OR

Sample Identification

RD-07_072111_01
RD-50_072111_01
RD-54A_072111_01
RD-33A_072111_01
RD-57_072111_01
RD-07_072111_01DUP

Introduction

This data review covers 6 water samples listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18338-1/ 11-07144-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Data Qualification Summary - SDG 280-18338-1/11-07144-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18338-1/ 11-07144-OR	RD-07_072111_01 RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 RD-57_072111_01	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Laboratory Blank Data Qualification Summary - SDG 280-18338-1/11-07144-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Field Blank Data Qualification Summary - SDG 280-18338-1/11-07144-OR**

No Sample Data Qualified in this SDG

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>7/21/11</u>
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N	<u>Not required</u>
VI.	Duplicate Sample Analysis	A	<u>DUP</u>
VII.	Laboratory control samples	A	<u>LCS</u>
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinstate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: WGR

1	RD-07_072111_01	11		21		31	
2	RD-50_072111_01	12		22		32	
3	RD-54A_072111_01	13		23		33	
4	RD-33A_072111_01	14		24		34	
5	RD-57_072111_01	15		25		35	
6	RD-07_072111_01DUP	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Gamma Spectroscopy
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18338-1/11-07143-OR

Sample Identification

RD-07_072111_01
RD-50_072111_01
RD-54A_072111_01
RD-33A_072111_01
RD-57_072111_01
RD-07_072111_01(P)
RD-50_072111_01(P)
RD-54A_072111_01(P)
RD-33A_072111_01(P)
RD-57_072111_01(P)
RD-07_072111_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 11 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18338-1/ 11-07143-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18338-1/ 11-07143-OR	RD-07_072111_01 RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 RD-57_072111_01 RD-07_072111_01(P) RD-50_072111_01(P) RD-54A_072111_01(P) RD-33A_072111_01(P) RD-57_072111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not Required, Apit
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks		

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	RD-07_072111_01	11	RD-07_072111_01DUP	21		31	
2	RD-50_072111_01	12	RD-07_072111_01(Diss)-DUP	22		32	
3	RD-54A_072111_01	13		23		33	
4	RD-33A_072111_01	14		24		34	
5	RD-57_072111_01	15		25		35	
6	RD-07_072111_01(Diss)	16		26		36	
7	RD-50_072111_01(Diss)	17		27		37	
8	RD-54A_072111_01(Diss)	18		28		38	
9	RD-33A_072111_01(Diss)	19		29		39	
10	RD-57_072111_01(Diss)	20		30		40	

Notes: P = particular

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18338-1/11-07143-OR

Sample Identification

RD-07_072111_01
RD-50_072111_01
RD-54A_072111_01
RD-33A_072111_01
RD-07_072111_01(P)
RD-50_072111_01(P)
RD-54A_072111_01(P)
RD-33A_072111_01(P)
RD-07_072111_01DUP
RD-07_072111_01(P)DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 10 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Tracer ID	Isotope	Tracer %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	117.96 (30-110)	RD-50_072111_01	J (all detects) UJ (all non-detects)	P
Uranium-232	All isotopic uranium	112.71 (30-110)	RD-54A_072111_01(P)	J (all detects) UJ (all non-detects)	P

Tracer ID	Isotope	Tracer %R (Limits)	Associated Samples	Flag	A or P
Uranium-232	All isotopic uranium	112.64 (30-110)	RD-33A_072111_01	J (all detects) UJ (all non-detects)	P

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18338-1/11-07143-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Isotopic Uranium - Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18338-1/ 11-07143-OR	RD-50_072111_01 RD-54A_072111_01(P) RD-33A_072111_01	All isotopic uranium	J (all detects) UJ (all non-detects)	P	Tracer recovery (%R) (*VIII)
280-18338-1/ 11-07143-OR	RD-07_072111_01 RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 RD-07_072111_01(P) RD-50_072111_01(P) RD-54A_072111_01(P) RD-33A_072111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not required, Dup: A
VI.	Laboratory control samples	A	LCS
VII.	Tracer Recovery	SW	
VIII.	Minimum Detectable Activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	RD-07_072111_01	11	RD-07_072111_01DUP	21		31	
2	RD-50_072111_01	12	RD-07_072111_01(Diss) DUP	22		32	
3	RD-54A_072111_01	13	(X16) Dup	23		33	
4	RD-33A_072111_01	14		24		34	
5	RD-57_072111_01	15		25		35	
6	RD-07_072111_01(Diss)	16		26		36	
7	RD-50_072111_01(Diss)	17		27		37	
8	RD-54A_072111_01(Diss)	18		28		38	
9	RD-33A_072111_01(Diss)	19		29		39	
10	RD-57_072111_01(Diss)	20		30		40	

Notes: P = particulate

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 21, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18338-1/11-07143-OR

Sample Identification

RD-07_072111_01
RD-50_072111_01
RD-54A_072111_01
RD-33A_072111_01
RD-07_072111_01(P)
RD-50_072111_01(P)
RD-54A_072111_01(P)
RD-33A_072111_01(P)
RD-07_072111_01DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18338-1/ 11-07143-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18338-1/ 11-07143-OR	RD-07_072111_01 RD-50_072111_01 RD-54A_072111_01 RD-33A_072111_01 RD-07_072111_01(P) RD-50_072111_01(P) RD-54A_072111_01(P) RD-33A_072111_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Field Blank Data Qualification Summary - SDG 280-18338-1/11-07143-OR**

No Sample Data Qualified in this SDG

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/21/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	N: Not required ; Dup A
VI.	Laboratory control samples	A	LCS
VII.	Carrier recovery	A	
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	
XI.	Field duplicates	N	
XII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

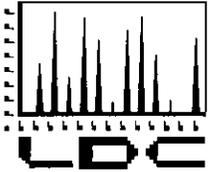
D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-07_072111_01	11	RD-07_072111_01DUP	21		31	
2	RD-50_072111_01	42	RD-07_072111_01(Diss) DUP	22		32	
3	RD-54A_072111_01	13		23		33	
4	RD-33A_072111_01	14		24		34	
5	RD-57_072111_01	15		25		35	
6	RD-07_072111_01(P)	16		26		36	
7	RD-50_072111_01(Diss)	17		27		37	
8	RD-54A_072111_01(Diss)	18		28		38	
9	RD-33A_072111_01(Diss)	19		29		39	
10	RD-57_072111_01(Diss)	20		30		40	

Notes: P = particulate



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

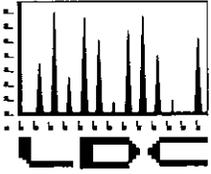
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Form aldehyde (8315)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Dioxins (8290)		CN- (9014)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																			
C	280-18666-1/ IUH0336	08/30/11	09/22/11	10	0	4	0	7	0	4	0	7	0	4	0	4	0	7	0	7	0	-	-	-	7	0	3	0	3	0	-	-	-		
D	280-18896-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-		
E	280-18942-1/ IUH1124	08/30/11	09/22/11	9	0	8	0	3	0	-	4	0	-	-	-	-	-	-	-	3	0	-	-	4	0	4	0	4	0	-	-	-	-		
F	280-18947-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-		
G	280-19104-1	08/30/11	09/22/11	2	0	2	0	-	1	0	-	1	0	-	-	-	-	-	-	1	0	-	-	1	0	1	0	1	0	-	-	-	-		
H	280-19010-1/ H1H110461	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
J	IUH0484	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	1	0	1	0		
K	IUH0622	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-		
Total																																			
				21	0	21	0	12	0	11	0	4	0	12	0	4	0	4	0	4	0	11	0	2	0	12	0	8	0	8	0	6	0	1	0

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CrVI (7196A)		Diss CrVI (7196A)		ClO ₄ (314.0)		pH (9040B)		Gross α&β (900.0)		Gamma Spec. (901.0)		Tritium (906.0)		Sr-90 (905.0)		Iso U (908.0)				
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																				
A	280-18195-1/ 11-07109-OR/ 11-07110-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	0	8	0	4	0	8	0	8	0		
B	280-18338-1/ 11-07143-OR/ 11-07144-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	10	0	5	0	8	0	8	0		
C	280-1866-1	08/30/11	09/22/11	3	0	7	0	4	0	7	0	7	0	4	0	4	0	4	0	4	0	3	0	3	0	-	-	-	-	-	-	-	-	-		
E	280-18942-1	08/30/11	09/22/11	3	0	3	0	-	-	3	0	5	0	-	-	-	-	-	-	-	3	0	3	0	-	-	-	-	-	-	-	-	-	-		
G	280-19104-1	08/30/11	09/22/11	1	0	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	-	-	-		
I	IUG1671/8995	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	1	0	2	0	2	0	2	0	
Total																																				
				7	0	10	0	4	0	11	0	13	0	4	0	4	0	4	0	4	0	7	0	7	0	20	0	20	0	10	0	18	0	18	0	0

Shaded cells indicate Level IV validation (all other calls are Level V validation). These sample counts do not include MS/MSD, and DUPs

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 1, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18666-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
TB_RD-48C_080111
EB_PZ-141_080111
PZ-141_080111_01A
TB_PZ-141_080111A
PZ-144_080111_01
EB_PZ-144_080111A
TB_PZ-144_080111A
PZ-141_080111_01AMS
PZ-141_080111_01AMSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
EB_PZ-141_080111	All aromatic compounds	9	7	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples TB_RD-48C_080111, TB_PZ-141_080111A, and TB_PZ-144_080111A were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-48C_080111	8/1/11	Methylene chloride	0.67 ug/L	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No volatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_080111	8/1/11	Acetone Chloroform	9.0 ug/L 0.41 ug/L	PZ-141_080111_01A

Sample FB_071211_19 (from SDG 280-17952-1) were identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-141_080111_01A PZ-144_080111_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-141_080111_01A	Chloroform	0.28 ug/L	1.0U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-48B_080111_01	Toluene-d8	115 (88-110)	All TCL compounds	J (all detects)	P
RD-48A_080111_01	Toluene-d8	114 (88-110)	All TCL compounds	J (all detects)	P
RD-48C_080111_01	Toluene-d8 Bromofluorobenzene	114 (88-110) 118 (86-115)	All TCL compounds	J (all detects)	P
TB_RD-48C_080111	Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8	84 (86-118) 77 (80-120) 125 (88-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
EB_PZ-141_080111	Toluene-d8 Toluene-d8 Bromofluorobenzene	116 (88-120) 116 (88-120) 117 (86-115)	All TCL compounds	J (all detects)	A
PZ-141_080111_01A	1,2-Dichloroethane-d4 Bromofluorobenzene	77 (80-120) 85 (86-115)	Trichloroethene	J (all detects) UJ (all non-detects)	A
PZ-141_080111_01A	Toluene-d8	114 (88-110)	All TCL compounds except Trichloroethene Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
TB_PZ-141_080111A	Toluene-d8 Bromofluorobenzene	119 (88-110) 118 (86-115)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
PZ-144_080111_01	Toluene-d8 Bromofluorobenzene	122 (88-110) 120 (86-115)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
EB_PZ-144_080111A	Toluene-d8	116 (88-110)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
TB_PZ-144_080111A	Toluene-d8 Bromofluorobenzene	114 (88-110) 116 (86-115)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A
MB 280-80223/8	Toluene-d8	115 (88-110)	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	P
MB 280-80805/6	Toluene-d8 Bromofluorobenzene	114 (88-110) 116 (86-115)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	P
MB 280-81490/5	1,2-Dichloroethane-d4	79 (80-120)	Trichloroethene	J (all detects) UJ (all non-detects)	P
MB 280-81491/5	Toluene-d8	112 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-141_080111_01AMS/MSD (PZ-141_080111_01A)	cis-1,3-Dichloropropene	74 (76-120)	-	-	J (all detects) UJ (all non-detects)	A
	sec-Butylbenzene	78 (80-120)	-	-	J (all detects) UJ (all non-detects)	

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS 280-80805/4 (RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A MB 280-80805/6)	Acetone	-	135 (48-130)	-	J (all detects)	P
LCS 280-80805/4 (EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A MB 280-80805/6)	2-Hexanone	-	123 (57-121)	-	J (all detects)	P
LCS 280-80805/4 (EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A MB 280-80805/6)	Carbon disulfide	49 (56-120)	50 (56-120)	-	J (all detects) UJ (all non-detects)	P
LCS 280-81491/4 (TB_RD-48C_080111 MB 280-81491/4)	1,1,1-Trichloroethane 1,2-Dichloroethane Carbon tetrachloride Trichlorofluoromethane	72 (78-120) - 73 (80-120) -	- - - -	- 22 (≤20) - 23 (≤20)	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
 Volatiles - Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	EB_PZ-141_080111	Benzene Toluene Chlorobenzene Ethylbenzene Styrene Xylenes, total Bromobenzene n-Propylbenzene o-Chlorotoluene 1,3,5-Trimethylbenzene p-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene m,p-Xylenes o-Xylene Cumene p-Cymene	J (all detects) UJ (all non-detects)	A	Technical holding times (H)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18666-1	TB_RD-48C_080111	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R) (S)
280-18666-1	EB_PZ-141_080111	All TCL compounds	J (all detects)	A	Surrogate spikes (%R) (S)
280-18666-1	TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A	Surrogate spikes (%R) (S)
280-18666-1	PZ-141_080111_01A	Trichloroethene	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18666-1	PZ-141_080111_01A	All TCL compounds except Trichloroethene Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects)	A	Surrogate spikes (%R) (S)
280-18666-1	PZ-141_080111_01A	cis-1,3-Dichloropropene sec-Butylbenzene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A	Acetone	J (all detects)	P	Laboratory control samples (%R) (L)
280-18666-1	EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A	2-Hexanone	J (all detects)	P	Laboratory control samples (%R) (L)
280-18666-1	EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A	Carbon disulfide	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
280-18666-1	TB_RD-48C_080111	1,1,1-Trichloroethane Carbon tetrachloride	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R) (L)
280-18666-1	TB_RD-48C_080111	1,2-Dichloroethane Trichlorofluoromethane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Laboratory control samples (RPD) (E)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 TB_RD-48C_080111 EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18666-1	PZ-141_080111_01A	Chloroform	1.0U ug/L	A	F

LDC #: 26136C1a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18666-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/01/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 4, 7, 10* EB = 5, 9* FB = FB.07211-19 (250-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

* ND = No compounds detected
R = Rinstate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-48B_080111_01	11	PZ-141_080111_01AMS	21	MB 280-80223/8	31	(FPF, 6666, II)
2	RD-48A_080111_01	12	PZ-141_080111_01AMSD	22	MB 280-80229/8	32	
3	RD-48C_080111_01	13		23	MB 280-80805/6	33	
4	TB_RD-48C_080111	14		24	MB 280-81490/5	34	(S)
5	EB_PZ-141_080111	15		25	MB 280-81491/5	35	
6	PZ-141_080111_01A	16		26		36	
7	TB_PZ-141_080111A	17		27		37	
8	PZ-144_080111_01	18		28		38	
9	EB_PZ-144_080111A	19		29		39	
10	TB_PZ-144_080111A	20		30		40	

VOCs + IPA = 1-4
STW = 5-10

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethane	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. <i>Cumene</i>
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO. <i>p-Cymene</i>
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. p -Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

Aromatics

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N/A) Were all surrogate %R within QC limits?

Y (N/A) If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications	Code: S
1		TOL		115 (88-110)	J dets / P	(all TOL)
2				114 ()		
3		↓		114 ()		
		BFB		118 (86-115)	↓	
4		DFM		84 (86-118)	J / UJ / P	
		DCE		77 (80-120)		
		TOL		125 (88-120)	↓	
5		TOL		116 ()	J dets / A	(qual FFFF, GGG, IZ)
5		TOL		116 ()		
		BFB		117 (86-115)	↓	(qual all except above)
6		DCE		77 (80-120)	J / UJ / A	(qual S only)
		BFB		85 (86-115)	↓	
6		TOL		114 (88-110)	J dets / A	(qual all except S FFFF, GGG, IZ)

QC Limits (Water)

- 88-110
- 86-115
- 80-120
- 86-118

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Y (N) N/A Were all surrogate %R within QC limits?
 Y (N) N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications Code: S
		7	TOL	119 (88-110)	J acts/A
			BFB	118 (86-115)	Equal all except FFFF, GGGG, II
		8	TOL	122 (88-110)	
			BFB	120 (86-115)	
		9	TOL	116 (88-110)	
		10	TOL	114 (88-110)	
			BFB	116 (86-115)	
		MB 280-80223/8	TOL	115 (88-110)	J acts/p (qual FFFF, GGGG, II)
		MB 280-80805/6	TOL	114 (88-110)	
			BFB	116 (86-115)	(qual all except FFFF, GGGG, II)
		MB 280-81490/5	DCE	79 (80-120)	J/UT/p (qual S only)
		MB 280-81491/5	TOL	112 (88-110)	J acts/p (qual all TOL)

QC Limits (Water)

- 88-110
- 86-115
- 80-120
- 86-118

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 1, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18666-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
TB_RD-48C_080111
EB_PZ-141_080111
PZ-141_080111_01A
TB_PZ-141_080111A
PZ-144_080111_01
EB_PZ-144_080111A
TB_PZ-144_080111A

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-48C_080111, TB_PZ-141_080111A, and TB_PZ-144_080111A were identified as trip blanks. No 1,4-dioxane was found.

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 TB_RD-48C_080111 EB_PZ-141_080111 PZ-141_080111_01A TB_PZ-141_080111A PZ-144_080111_01 EB_PZ-144_080111A TB_PZ-144_080111A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18666-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18666-1

No Sample Data Qualified in this SDG

LDC #: 26136C1b

VALIDATION COMPLETENESS WORKSHEET

Date: 8/14/11

SDG #: 280-18666-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *SVL*2nd Reviewer: *[Signature]*

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS / b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	MD	TB = 4, 7, 10 EB = 5, 9 FB = FB_071211-19

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	RD-48B_080111_01	T1	MB 280-80510/27	21		31	
2	RD-48A_080111_01	12		22		32	
3	RD-48C_080111_01	13		23		33	
4	TB_RD-48C_080111	14		24		34	
5	EB_PZ-141_080111	15		25		35	
6	PZ-141_080111_01A	16		26		36	
7	TB_PZ-141_080111A	17		27		37	
8	PZ-144_080111_01	18		28		38	
9	EB_PZ-144_080111A	19		29		39	
10	TB_PZ-144_080111A	20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 1, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: 1,2,3-Trichloropropane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18666-1/IUH0336

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
TB_RD-48C_080111
RD-48B_080111_01DUP

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Sample TB_RD-48C_080111 was identified as a trip blank. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1/UH0336	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18666-1/IUH0336

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1/ IUH0336	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 TB_RD-48C_080111	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18666-1/IUH0336

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18666-1/IUH0336

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	N/A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 4

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-48B_080111_01	11	11 H 0609 - Blk	21		31	
2	RD-48A_080111_01	12		22		32	
3	RD-48C_080111_01	13		23		33	
4	TB_RD-48C_080111	14		24		34	
5	1DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 1, 2011
LDC Report Date: September 15, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18666-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
EB_PZ-141_080111
PZ-141_080111_01A
EB_PZ-144_080111A
PZ_144_080111_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-79482/1-A	8/2/11	Bis(2-ethylhexyl)phthalate	1.80 ug/L	All samples in SDG 280-18666-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-48B_080111_01	Bis(2-ethylhexyl)phthalate	2.6 ug/L	11U ug/L
RD-48A_080111_01	Bis(2-ethylhexyl)phthalate	6.3 ug/L	11U ug/L
RD-48C_080111_01	Bis(2-ethylhexyl)phthalate	2.7 ug/L	9.6U ug/L
EB_PZ-141_080111	Bis(2-ethylhexyl)phthalate	2.1 ug/L	53U ug/L
PZ-141_080111_01A	Bis(2-ethylhexyl)phthalate	2.0 ug/L	47U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
EB_PZ-144_080111A	Bis(2-ethylhexyl)phthalate	5.8 ug/L	53U ug/L
PZ_144_080111_01	Bis(2-ethylhexyl)phthalate	2.8 ug/L	51U ug/L

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_080111	8/1/11	Bis(2-ethylhexyl)phthalate	2.1 ug/L	PZ-141_080111_01A
EB_PZ-144_080111A	8/1/11	Bis(2-ethylhexyl)phthalate	5.8 ug/L	PZ_144_080111_01

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-141_080111_01A	Bis(2-ethylhexyl)phthalate	2.0 ug/L	47U ug/L
PZ_144_080111_01	Bis(2-ethylhexyl)phthalate	2.8 ug/L	51U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS 280-79482/2-A (EB_PZ-141_080111 PZ-141_080111_01A EB_PZ-144_080111A PZ_144_080111_01 MB 280-79482/1-A)	Hexachlorocyclopentadiene	8 (10-120)	9 (10-120)	-	J (all detects) R (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	EB_PZ-141_080111 PZ-141_080111_01A EB_PZ-144_080111A PZ_144_080111_01	Hexachlorocyclopentadiene	J (all detects) R (all non-detects)	P	Laboratory control samples (%R) (L)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A EB_PZ-144_080111A PZ_144_080111_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18666-1	RD-48B_080111_01	Bis(2-ethylhexyl)phthalate	11U ug/L	A	B
280-18666-1	RD-48A_080111_01	Bis(2-ethylhexyl)phthalate	11U ug/L	A	B
280-18666-1	RD-48C_080111_01	Bis(2-ethylhexyl)phthalate	9.6U ug/L	A	B
280-18666-1	EB_PZ-141_080111	Bis(2-ethylhexyl)phthalate	53U ug/L	A	B
280-18666-1	PZ-141_080111_01A	Bis(2-ethylhexyl)phthalate	47U ug/L	A	B
280-18666-1	EB_PZ-144_080111A	Bis(2-ethylhexyl)phthalate	53U ug/L	A	B
280-18666-1	PZ_144_080111_01	Bis(2-ethylhexyl)phthalate	51U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18666-1	PZ-141_080111_01A	Bis(2-ethylhexyl)phthalate	47U ug/L	A	F
280-18666-1	PZ_144_080111_01	Bis(2-ethylhexyl)phthalate	51U ug/L	A	F

LDC #: 26136C2a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18666-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: QV6

2nd Reviewer: ✓

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec
VIII.	Laboratory control samples	SW	LCS/p
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 4, 6 FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-48B_080111_01	11	MP 280-79452/1-A	21	31
2	RD-48A_080111_01	12		22	32
3	RD-48C_080111_01	13		23	33
4	EB_PZ-141_080111	14		24	34
5	PZ-141_080111_01A	15		25	35
6	EB_PZ-144_080111A	16		26	36
7	TB_PZ-144_080111A	17		27	37
8	PZ-144_080111-01	18		28	38
9		19		29	39
10		20		30	40

Phthalates + NB = 1-3
Full water = 4

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 1, 2011
LDC Report Date: September 15, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18666-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
EB_PZ-141_080111
PZ-141_080111_01A
EB_PZ-144_080111A
PZ-144_080111_01

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No N-nitrosodimethylamine was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS 280-79896/2,3-A (RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 MB 280-79896/1-A)	N-Nitrosodimethylamine	126 (68-124)	138 (68-124)	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111	N-Nitrosodimethylamine	J (all detects)	P	Laboratory control samples (%R) (L)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A EB_PZ-144_080111A PZ-144_080111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18666-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18666-1

No Sample Data Qualified in this SDG

LDC #: 26136C2b
 SDG #: 280-18666-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/14/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	SW	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	EB = 4, 6 FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	RD-48B_080111_01	11	MB 280-79896/1-A	21	31
2	RD-48A_080111_01	12	MB 280-80350/1-A	22	32
3	RD-48C_080111_01	13		23	33
4	EB_PZ-141_080111	14		24	34
5	PZ-141_080111_01A	15		25	35
6	EB_PZ-144_080111A	16		26	36
7	PZ-144_080111A	17		27	37
8	PZ-144_080111-01	18		28	38
9		19		29	39
10		20		30	40

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 1, 2011

LDC Report Date: September 20, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18666-1

Sample Identification

EB_PZ-141_080111
PZ-141_080111_01A
EB_PZ-144_080111A
PZ-144_080111_01

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-79720/1-A	8/3/11	Di-n-butylphthalate Di-n-octylphthalate	0.0151 ug/L 0.0311 ug/L	All samples in SDG 280-18666-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
EB_PZ-141_080111	Di-n-octylphthalate	0.017 ug/L	11U ug/L
PZ-141_080111_01A	Di-n-butylphthalate	0.094 ug/L	9.7U ug/L
PZ-144_080111_01	Di-n-butylphthalate Di-n-octylphthalate	0.077 ug/L 0.044 ug/L	10U ug/L 10U ug/L

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-141_080111	8/1/11	Di-n-octylphthalate	0.017 ug/L	PZ-141_080111_01A

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	EB_PZ-141_080111 PZ-141_080111_01A EB_PZ-144_080111A PZ-144_080111_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18666-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18666-1	EB_PZ-141_080111	Di-n-octylphthalate	11U ug/L	A	B
280-18666-1	PZ-141_080111_01A	Di-n-butylphthalate	9.7U ug/L	A	B
280-18666-1	PZ-144_080111_01	Di-n-butylphthalate Di-n-octylphthalate	10U ug/L 10U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18666-1

No Sample Data Qualified in this SDG

LDC #: 26136C2c

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18666-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVG

2nd Reviewer: *[Signature]*

METHOD: GC/MS Semivolatiles(EPA SW846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS ✓
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 1, 3* FB = FB_071211-19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	EB_PZ-141_080111	11	MB 280-79720/A	21	31
2	PZ-141_080111_01A	12		22	32
3	EB_PZ-144_080111A	13		23	33
4	TB_PZ-144_080111A	14		24	34
5	PZ-144_080111_01	15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 1, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Polychlorinated Biphenyls

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18666-1

Sample Identification

EB_PZ-141_080111
PZ-141_080111_01A
EB_PZ-144_080111A
PZ-144_080111_01

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls were found in the method blanks.

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	EB_PZ-141_080111 PZ-141_080111_01A EB_PZ-144_080111A PZ-144_080111_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client specs
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	EB = 1, 3

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	EB PZ-141_080111	11	MB 280-79530/1-A	21		31
2	PZ-141_080111_01A	12		22		32
3	EB PZ-144_080111A	13		23		33
4	TB PZ-144_080111A	14		24		34
5	PZ-144_080111-01	15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 1, 2011
LDC Report Date: September 13, 2011
Matrix: Water
Parameters: Dissolved Metals
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18666-1

Sample Identification

EB_PZ-141_080111
PZ-141_080111_01A
PZ-144_080111_01
EB_PZ-144_080111A
EB_PZ-141_080111MS
EB_PZ-141_080111MSD
PZ-141_080111_01AMS
PZ-141_080111_01AMSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020, 6010B, and 7470A for Dissolved Metals. The Dissolved Metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium Magnesium Potassium Silver Thallium	0.0562 mg/L 0.0532 mg/L 0.359 mg/L 0.0000183 mg/L 0.0000370 mg/L	All samples in SDG 280-18666-1

Data qualification by preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
EB_PZ-141_080111	Calcium Potassium Silver Thallium	0.052 mg/L 0.32 mg/L 0.000027 mg/L 0.000054 mg/L	0.052U mg/L 0.32U mg/L 0.000027U mg/L 0.000054U mg/L
PZ-141_080111_01A	Silver Thallium	0.000029 mg/L 0.00014 mg/L	0.000029U mg/L 0.00014U mg/L
EB_PZ-144_080111A	Potassium	0.28 mg/L	0.28U mg/L

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_PZ-141_080111	8/1/11	Calcium Potassium Boron Sodium Manganese Silver Thallium Zinc	0.052 mg/L 0.32 mg/L 0.012 mg/L 0.69 mg/L 0.00039 mg/L 0.000027 mg/L 0.000054 mg/L 0.0022 mg/L	PZ-141_080111_01A
EB_PZ-141_080111A	8/1/11	Potassium	0.28 mg/L	PZ-144_080111_01

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-141_080111_01A PZ-144_080111_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-141_080111_01A	Silver Thallium Zinc	0.000029 mg/L 0.00014 mg/L 0.0050 mg/L	0.000029U mg/L 0.00014U mg/L 0.0050U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18666-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18666-1	EB_PZ-141_080111 PZ-141_080111_01A PZ-144_080111_01 EB_PZ-144_080111A	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18666-1	EB_PZ-141_080111	Calcium Potassium Silver Thallium	0.052U mg/L 0.32U mg/L 0.000027U mg/L 0.000054U mg/L	A	B
280-18666-1	PZ-141_080111_01A	Silver Thallium	0.000029U mg/L 0.00014U mg/L	A	B
280-18666-1	EB_PZ-144_080111A	Potassium	0.28U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Field Blank Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-18666-1	PZ-141_080111_01A	Silver Thallium Zinc	0.000029U mg/L 0.00014U mg/L 0.0050U mg/L	A	F

LDC #: 26136C4

VALIDATION COMPLETENESS WORKSHEET

Date: 9-12-11

SDG #: 280-18666-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: OL2nd Reviewer: w

METHOD: Dissolved Metals (EPA SW 846 Method 6020/7000)

60109/7170A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/1/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV.	Field Blanks	SW	EB=1,4; FB=FB_0721L19F

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinstate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

(SAP: 280-17952-1)

Validated Samples:

wael

1	EB_PZ-141_080111	11		21		31	
2	PZ-141_080111_01A	12		22		32	
3	EB PZ-144_080111_01	13		23		33	
4	EB TB PZ-144_080111A	14		24		34	
5	EB_PZ-141_080111MS	15		25		35	
6	EB_PZ-141_080111MSD	16		26		36	
7	PZ-141_080111_01AMS	17		27		37	
8	PZ-141_080111_01AMSD	18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

METHOD: Trace metals (EPA SW-864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?
 Y N N/A Were target analytes detected in the field blanks?

Reason: F

Blank units: mg/L. **Associated sample units:** mg/L.

Sampling date: 7/12/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Associated Samples: 2, 3

Analyte	Blank ID	Action Limit	Sample Identification
	FB_071211_19F (SDG: 280-17952-1)		2
Ag	0.000018	0.00009	0.000029
Tl	0.000033	0.000165	0.00014

Sampling date: 8/1/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Associated Samples: 2

Analyte	Blank ID	Action Limit	Sample Identification
	1		2
Ca	0.052	0.26	
K	0.32	1.6	
B	0.012	0.06	
Na	0.69	3.45	
Mn	0.00039	0.00195	
Ag	0.000027	0.000135	See FB
Tl	0.000054	0.00027	See FB
Zn	0.0022	0.011	0.0050

Sampling date: 8/1/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Associated Samples: 3

Analyte	Blank ID	Action Limit	Sample Identification
	4		No Qualifiers
K	0.28	1.4	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 1, 2011
LDC Report Date: September 13, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18666-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
EB_PZ-141_080111
PZ-141_080111_01A
PZ-144_080111_01
EB_PZ-144_080111A
RD-48B_080111_01DUP
RD-48A_080111_01MS
RD-48A_080111_01MSD
RD-48A_080111_01DUP
PZ-141_080111_01AMS
PZ-141_080111_01AMSD
PZ-141_080111_01ADUP

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Fluoride, Nitrate, Nitrite, and Orthophosphate, EPA Method 314.0 for Perchlorate, EPA SW 846 Method 9040B for pH, and EPA SW 846 Method 7196A for Hexavalent Chromium and Dissolved Hexavalent Chromium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
EB_PZ-141_080111 EB_PZ-144_080111A	Hexavalent chromium Dissolved hexavalent chromium	26.75 hours 26.75 hours	24 hours 24 hours	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P
PZ-141_080111_01A PZ-144_080111_01	Hexavalent chromium Dissolved hexavalent chromium	25 hours 25 hours	24 hours 24 hours	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P
PZ-141_080111_01AMS PZ-141_080111_01AMSD	Hexavalent chromium	25 hours	24 hours	J (all detects) UJ (all non-detects)	P
PZ-141_080111_01ADUP	Dissolved hexavalent chromium	25 hours	24 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Ammonia as N	0.0636 mg/L	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-48B_080111_01	Ammonia as N	0.19 mg/L	0.19U mg/L
RD-48C_080111_01	Ammonia as N	0.14 mg/L	0.14U mg/L

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No contaminant concentrations were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18666-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18666-1	EB_PZ-141_080111 EB_PZ-144_080111A PZ-141_080111_01A PZ-144_080111_01	Hexavalent chromium Dissolved hexavalent chromium	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A PZ-144_080111_01 EB_PZ-144_080111A	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Analyte	Modified Final Concentration	A or B	Code
280-18666-1	RD-48B_080111_01	Ammonia as N	0.19U mg/L	A	B
280-18666-1	RD-48C_080111_01	Ammonia as N	0.14U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

LDC #: 26136C6
 SDG #: 280-18666-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 9-12-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Bromide, Chloride, Fluoride, Nitrate, Nitrite, ^{ortho-}Phosphate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), Hexavalent Chromium (Method 7196A) ^{Dissolved Cr⁶⁺}

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/1/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	SW	
V.	Matrix Spike/Matrix Spike Duplicates	A	MSP/D
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS/D
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	ND	EB = 4, 7 ; FB = FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	RD-48B_080111_01	11	RD-48A_080111_01DUP	21		31	
2	RD-48A_080111_01	12	PZ-141_080111_01AMS	22		32	
3	RD-48C_080111_01	13	PZ-141_080111_01AMSD	23		33	
4	EB_PZ-141_080111	14	PZ-141_080111_01ADUP	24		34	
5	PZ-141_080111_01A	15		25		35	
6	PZ-144_080111_01	16		26		36	
7	EB_PZ-144_080111A	17		27		37	
8	RD-48B_080111_01DUP	18		28		38	
9	RD-48A_080111_01MS	19		29		39	
10	RD-48A_080111_01MSD	20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Were blank analyses performed as required? if no, please see qualifications below.
- N N/A Were any activities in the blanks greater than the minimum detectable activity? if yes, please see qualifications below.

Conc. units: mg/L		Associated Samples: 1-3		Reason: B
Analyte	Blank ID	Blank ID	Blank Action Limit	
	PB	ICB/CCB (mg/L)		
NH3-N	0.0636		0.318	
		1	3	
		0.19	0.14	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 1, 2011
LDC Report Date: September 16, 2011
Matrix: Water
Parameters: Diesel Range Organics
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18666-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
EB_PZ-141_080111
PZ-141_080111_01A
PZ-144_080111_01
EB_PZ-144_080111A

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A PZ-144_080111_01 EB_PZ-144_080111A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

LDC #: 26136C8

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18666-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS 10
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 4, 7 FB = FB-071211-19 (280-17952-1)

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-48B_080111_01	11	MB 280-79511/1-A	21	31
2	RD-48A_080111_01	12		22	32
3	RD-48C_080111_01	13		23	33
4	EB_PZ-141_080111	14		24	34
5	PZ-141_080111_01A	15		25	35
6	PZ-144_080111_01	16		26	36
7	EB_PZ-144_080111A	17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 1, 2011
LDC Report Date: September 15, 2011
Matrix: Water
Parameters: Hydrazines
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18666-1

Sample Identification

RD-48B_080111_01
RD-48A_080111_01
RD-48C_080111_01
EB_PZ-141_080111
PZ-141_080111_01A
PZ-144_080111_01
EB_PZ-144_080111A
RD-48B_080111_01MS
RD-48B_080111_01MSD
PZ-141_080111_01AMS

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

Samples EB_PZ-141_080111 and EB_PZ-144_080111A were identified as equipment blanks. No hydrazines were found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18666-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18666-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18666-1	RD-48B_080111_01 RD-48A_080111_01 RD-48C_080111_01 EB_PZ-141_080111 PZ-141_080111_01A PZ-144_080111_01 EB_PZ-144_080111A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18666-1**

No Sample Data Qualified in this SDG

LDC #: 26136C76

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18666-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/01/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS /p
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	EB = 4, 7

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-48B_080111_01	11	PZ-141_080111_01AMSD	21	MB 280-80111/25	31	
2	RD-48A_080111_01	12		22	MB 280-80312/25	32	
3	RD-48C_080111_01	13		23		33	
4	EB_PZ-141_080111	14		24		34	
5	PZ-141_080111_01A	15		25		35	
6	PZ-144_080111_01	16		26		36	
7	EB_PZ-144_080111A	17		27		37	
8	RD-48B_080111_01MS	18		28		38	
9	RD-48B_080111_01MSD	19		29		39	
10	PZ-141_080111_01AMS	20		30		40	

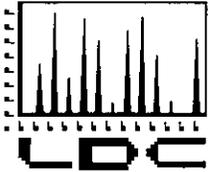
Notes: _____

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter		
1-3	W	Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
4-7	W	Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine
		Hydrazine	1,1-Dimethylhydrazine	Monomethyl Hydrazine

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

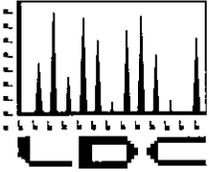
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 5, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18896-1

Sample Identification

RD-43A_080511_01
RD-03_080511_01
RD-49C_080511_01
HAR-16_080511_01
HAR-04_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-11113/9-A	8/7/11	Formaldehyde	0.0164 mg/L	All samples in SDG 280-18896-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-43A_080511_01	Formaldehyde	0.017 mg/L	0.050U mg/L
RD-03_080511_01	Formaldehyde	0.019 mg/L	0.050U mg/L
RD-49C_080511_01	Formaldehyde	0.019 mg/L	0.050U mg/L
HAR-16_080511_01	Formaldehyde	0.015 mg/L	0.050U mg/L
HAR-04_080511_01	Formaldehyde	0.015 mg/L	0.050U mg/L
HAR-04_080511_36	Formaldehyde	0.017 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18896-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples HAR-04_080511_01 and HAR-04_080511_36 were identified as split samples. No formaldehyde was detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	HAR-04_080511_01	HAR-04_080511_36			
Formaldehyde	0.015	0.017	13 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18896-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18896-1	RD-43A_080511_01 RD-03_080511_01 RD-49C_080511_01 HAR-16_080511_01 HAR-04_080511_01 HAR-04_080511_36	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18896-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18896-1	RD-43A_080511_01	Formaldehyde	0.050U mg/L	A	B
280-18896-1	RD-03_080511_01	Formaldehyde	0.050U mg/L	A	B
280-18896-1	RD-49C_080511_01	Formaldehyde	0.050U mg/L	A	B
280-18896-1	HAR-16_080511_01	Formaldehyde	0.050U mg/L	A	B
280-18896-1	HAR-04_080511_01	Formaldehyde	0.050U mg/L	A	B
280-18896-1	HAR-04_080511_36	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18896-1**

No Sample Data Qualified in this SDG

LDC #: 26136D71

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18896-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: TV6

2nd Reviewer: [Signature]

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 5, 6
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinstate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-43A_080511_01	#11	MB 240-1113 A-A	21		31
2	RD-03_080511_01	12		22		32
3	RD-49C_080511_01	13		23		33
4	HAR-16_080511_01	14		24		34
5	HAR-04_080511_01	D		25		35
6	HAR-04_080511_36	D		26		36
7	HAR-16_080511_01MS	17		27		37
8	HAR-16_080511_01MSD	18		28		38
9		19		29		39
10		20		30		40

Notes: _____

Blanks

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a given method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- Y N N/A Was a method blank performed with each extraction batch?
- Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level I/II Only

Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?

Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/07/11 Blank analysis date: 8/09/11

Associated samples: A11 Code: B

Compound	Blank ID	Sample Identification					
		1	2	3	4	5	6
Formaldehyde	0.0164	0.017 / 0.050 U	0.019 / 0.050 U	0.019 / 0.050 U	0.015 / 0.050 U	0.015 / 0.050 U	0.017 / 0.050 U

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Compound	Blank ID	Sample Identification					
		1	2	3	4	5	6

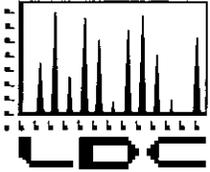
ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

Y ~~N~~ ~~NA~~ Were field duplicate pairs identified in this SDG?
Y ~~N~~ ~~NA~~ Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		RPD	Qualifications (Parent Only)
	HAR-04_080511_01	HAR-04_080511_36		
Formaldehyde	0.015	0.017	13	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

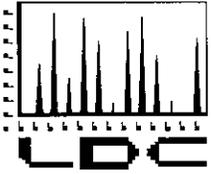
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
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- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 8, 2011
LDC Report Date: September 21, 2011
Matrix: Water
Parameters: Volatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18942-1

Sample Identification

RD-44_080811_01
TB_RD-44_080811
RD-46A_080811_01
TB_RD-46A-080811
RD-46B_080811_01
PZ-076_080811_01
PZ-077_080811_01
HAR-03_080811_01
TB_HAR-03_080811
RD-44_080811_01MS
RD-44_080811_01MSD

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81933/5	8/17/11	Methylene chloride	0.512 ug/L	All samples in SDG 280-18942-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_RD-44_080811	Methylene chloride	0.35 ug/L	5.0U ug/L
TB_RD-46A-080811	Methylene chloride	0.37 ug/L	5.0U ug/L
TB_HAR-03_080811	Methylene chloride	0.33 ug/L	5.0U ug/L

Samples TB_RD-44_080811, TB_RD-46A-080811, and TB_HAR-03_080811 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-44_080811	8/8/11	Acetone Methylene chloride	12 ug/L 0.35 ug/L	RD-44_080811_01
TB_RD-46A-080811	8/8/11	Acetone Methylene chloride	2.0 ug/L 0.37 ug/L	RD-46A_080811_01 RD-46B_080811_01 PZ-076_080811_01
TB_HAR-03_080811	8/8/11	Methylene chloride	0.33 ug/L	PZ-077_080811_01 HAR-03_080811_01

Sample FB_071211_19 (from SDG 280-17952-1) were identified as a field blank. No volatile contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-076_080811_01 PZ-077_080811_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-44_080811_01	Acetone	2.6 ug/L	10U ug/L
RD-46B_080811_01	Acetone	1.9 ug/L	10U ug/L
PZ-077_080811_01	Acetone	2.5 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
TB_RD-44_080811	Toluene-d8	112 (88-110)	All TCL compounds	J (all detects)	P
TB_RD-46A-080811	Toluene-d8	111 (88-110)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
RD-44_080811_01MS/MSD (RD-44_080811_01)	Carbon tetrachloride	121 (80-120)	-	-	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS 280-81933/4 (All samples in SDG 280-18942-1)	Acetone	141 (48-130)	-	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Data Qualification Summary - SDG 280-18942-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-1	TB_RD-44_080811 TB_RD-46A-080811	All TCL compounds	J (all detects)	P	Surrogate spikes (%R) (S)
280-18942-1	RD-44_080811_01	Carbon tetrachloride	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18942-1	RD-44_080811_01 TB_RD-44_080811 RD-46A_080811_01 TB_RD-46A-080811 RD-46B_080811_01 PZ-076_080811_01 PZ-077_080811_01 HAR-03_080811_01 TB_HAR-03_080811	Acetone	J (all detects)	P	Laboratory control samples (%R) (L)
280-18942-1	RD-44_080811_01 TB_RD-44_080811 RD-46A_080811_01 TB_RD-46A-080811 RD-46B_080811_01 PZ-076_080811_01 PZ-077_080811_01 HAR-03_080811_01 TB_HAR-03_080811	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18942-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18942-1	TB_RD-44_080811	Methylene chloride	5.0U ug/L	A	B
280-18942-1	TB_RD-46A-080811	Methylene chloride	5.0U ug/L	A	B
280-18942-1	TB_HAR-03_080811	Methylene chloride	5.0U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Field Blank Data Qualification Summary - SDG 280-18942-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18942-1	RD-44_080811_01	Acetone	10U ug/L	A	T

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18942-1	RD-46B_080811_01	Acetone	10U ug/L	A	T
280-18942-1	PZ-077_080811_01	Acetone	10U ug/L	A	F

LDC #: 26136E1a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18942-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/08/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 2, 4, 9 FB = FB_071211_19 (280-17952)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-44_080811_01	11	RD-44_080811_01MSD	21	MB 280-81933/5	31
2	TB_RD-44_080811	12		22		32
3	RD-46A_080811_01	13		23		33
4	TB_RD-46A-080811	14		24		34
5	RD-46B_080811_01	15		25		35
6	PZ-076_080811_01	16		26		36
7	PZ-077_080811_01	17		27		37
8	HAR-03_080811_01	18		28		38
9	TB_HAR-03_080811	19		29		39
10	RD-44_080811_01MS	20		30		40

VOCs = 1, 6, 7
 VOCs + IPA = 2, 3, 4, 5, 8, 9

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropane	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-1

Sample Identification

RD-44_080811_01
TB_RD-44_080811
RD-46A_080811_01
TB_RD-46A-080811
RD-46B_080811_01
PZ-076_080811_01
PZ-077_080811_01
HAR-03_080811_01
TB_HAR-03_080811

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-44_080811, TB_RD-46A-080811, and TB_HAR-03_080811 were identified as trip blanks. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Data Qualification Summary - SDG 280-18942-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-1	RD-44_080811_01 TB_RD-44_080811 RD-46A_080811_01 TB_RD-46A-080811 RD-46B_080811_01 PZ-076_080811_01 PZ-077_080811_01 HAR-03_080811_01 TB_HAR-03_080811	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18942-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18942-1**

No Sample Data Qualified in this SDG

LDC #: 26136E1b
 SDG #: 280-18942-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/14/11
 Page: 1 of 1
 Reviewer: JVC
 2nd Reviewer: L

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/08/11</u>
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	<u>client spec</u>
VIII.	Laboratory control samples	A	<u>LAS / D</u>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	<u>TB = 2, 4, 9 FB = FB_071211_19 (280-17952-1)</u>

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	RD-44_080811_01	11	<u>MB 280-81475/5</u>	21	31
2	TB_RD-44_080811	12		22	32
3	RD-46A_080811_01	13		23	33
4	TB_RD-46A-080811	14		24	34
5	RD-46B_080811_01	15		25	35
6	PZ-076_080811_01	16		26	36
7	PZ-077_080811_01	17		27	37
8	HAR-03_080811_01	18		28	38
9	TB_HAR-03_080811	19		29	39
10		20		30	40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 8, 2011
LDC Report Date: September 15, 2011
Matrix: Water
Parameters: 1,2,3-Trichloropropane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18942-1/IUH1124

Sample Identification

TB_RD-44_080811
RD-46A_080811_01
TB_RD-46A-080811
RD-46B_080811_01
PZ-076_080811_01
PZ-077_080811_01
HAR-03_080811_01
TB_HAR-03_080811

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Samples TB_RD-44_080811, TB_RD-46A-080811, and TB_HAR-03_080811 were identified as trip blanks. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-1/IUH1124	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18942-1/IUH1124

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-1/ IUH1124	TB_RD-44_080811 RD-46A_080811_01 TB_RD-46A-080811 RD-46B_080811_01 PZ-076_080811_01 PZ-077_080811_01 HAR-03_080811_01 TB_HAR-03_080811	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18942-1/IUH1124

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18942-1/IUH1124

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/08/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 1, 3, 8

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	TB_RD-44_080811	11	11 H 1399 - BIKI	21		31	
2	RD-46A_080811_01	12		22		32	
3	TB_RD-46A-080811	13		23		33	
4	RD-46B_080811_01	14		24		34	
5	PZ-076_080811_01	15		25		35	
6	PZ-077_080811_01	16		26		36	
7	HAR-03_080811_01	17		27		37	
8	TB_HAR-03_080811	18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-1

Sample Identification

RD-46A_080811_01

RD-46B_080811_01

HAR-03_080811_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81250/1-A	8/13/11	Bis(2-ethylhexyl)phthalate	1.85 ug/L	All samples in SDG 280-18942-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-46A_080811_01	Bis(2-ethylhexyl)phthalate	1.9 ug/L	9.8U ug/L
RD-46B_080811_01	Bis(2-ethylhexyl)phthalate	1.9 ug/L	9.5U ug/L
HAR-03_080811_01	Bis(2-ethylhexyl)phthalate	1.8 ug/L	9.8U ug/L

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18942-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-1	RD-46A_080811_01 RD-46B_080811_01 HAR-03_080811_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18942-1**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18942-1	RD-46A_080811_01	Bis(2-ethylhexyl)phthalate	9.8U ug/L	A	B
280-18942-1	RD-46B_080811_01	Bis(2-ethylhexyl)phthalate	9.5U ug/L	A	B
280-18942-1	HAR-03_080811_01	Bis(2-ethylhexyl)phthalate	9.8U ug/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18942-1**

No Sample Data Qualified in this SDG

LDC #: 26136E2a

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-18942-1

Level V

Laboratory: Test America, Inc.

Date: 9/14/11

Page: 1 of 1

Reviewer: *AVC*2nd Reviewer: *V*

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/08 / 11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec
VIII.	Laboratory control samples	A	LCS D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-46A_080811_01	11	MB 280-81250/1-A	21		31	
2	RD-46B_080811_01	12		22		32	
3	HAR-03_080811_01	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

phthalates + NB = 1-3

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenyl ether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Was a method blank analyzed for each matrix?
- Y N N/A Was a method blank analyzed for each concentration preparation level?
- Y N N/A Was a method blank associated with every sample?
- Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 8/13/11 Blank analysis date: 8/17/11

Conc. units: ug/L Associated Samples: All Code: B

Compound	Blank ID	Sample Identification		
MB	280-81250	1-A	2	3
EEE	1-85	1.9 / 9.8U	1.9 / 9.5U	1.8 / 9.8U

Blank extraction date: _____ Blank analysis date: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

BLANKS.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 21, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-1

Sample Identification

RD-44_080811_01
HAR-32_080811_01
RD-46A_080811_01
RD-46B_080811_01
HAR-03_080811_01

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
HAR-32_080811_01 RD-46A_080811_01	N-nitrosodimethylamine	8	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81482/1-A	8/15/11	N-Nitrosodimethylamine	0.00736 ug/L	RD-46B_080811_01 HAR-03_080811_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Sample FB_HAR-32_080811_19 (from SDG 280-18942-2) was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-32_080811_01 and HAR-32_080811_36 (from SDG 280-18942-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-32_080811_01	HAR-32_080811_36			
N-Nitrosodimethylamine	0.024	0.023	4 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18942-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-1	HAR-32_080811_01 RD-46A_080811_01	N-nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-18942-1	RD-44_080811_01 HAR-32_080811_01 RD-46A_080811_01 RD-46B_080811_01 HAR-03_080811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18942-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18942-1

No Sample Data Qualified in this SDG

LDC #: 26136E2b

VALIDATION COMPLETENESS WORKSHEET

Date: 9/19/11

SDG #: 280-18942-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVG

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/08/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec.
VIII.	Laboratory control samples	A	LCS 1b
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 2 + HAR-32-080811-36 (280-18942-2)
XVII.	Field blanks	ND	FB = FB-HAR-32-080811-19 ✓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	RD-44_080811_01	11	MB 280-81215/1-A	21		31
2	HAR-32_080811_01	12	MB 280-81482/1-A	22		32
3	RD-46A_080811_01	13	MB 280-81623/1-A	23		33
4	RD-46B_080811_01	14		24		34
5	HAR-03_080811_01	15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	HAR-32_080811_01	HAR-32_080811_36		
NDMA	0.024	0.023	4	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 8, 2011
LDC Report Date: September 14, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-1

Sample Identification

RD-46A_080811_01
RD-46B_080811_01
PZ-076_080811_01
PZ-077_080811_01
HAR-03_080811_01
HAR-03_080811_01DUP
RD-46A_080811_01DUP

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Fluoride, and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
RD-46A_080811_01 RD-46A_080811_01DUP HAR-03_080811_01 HAR-03_080811_01DUP	pH	49.5 hours	48 hours	J (all detects) UJ (all non-detects)	P
RD-46B_080811_01	pH	50.5 hours	48 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride	0.0730 mg/L	RD-46A_080811_01 RD-46B_080811_01 HAR-03_080811_01
PB (prep blank)	Chloride	0.298 mg/L	RD-46B_080811_01 PZ-076_080811_01 PZ-077_080811_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RD-46B_080811_01	Fluoride	0.21 mg/L	0.21U mg/L

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18942-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18942-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18942-1	RD-46A_080811_01 HAR-03_080811_01 RD-46B_080811_01	pH	J (all detects) UJ (all non-detects)	P	Technical holding time (H)
280-18942-1	RD-46A_080811_01 RD-46B_080811_01 PZ-076_080811_01 PZ-077_080811_01 HAR-03_080811_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18942-1

SDG	Sample	Analyte	Modified Final Concentration	A or B	Code
280-18942-1	RD-46B_080811_01	Fluoride	0.21U mg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18942-1

No Sample Data Qualified in this SDG

LDC #: 26136E6
 SDG #: 280-18942-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 9/2/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Chloride, Fluoride, Nitrate, (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	ASW	Sampling dates: 8/8/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	SW	
V.	Matrix Spike/Matrix Spike Duplicates	N	Client specified
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS/D
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A/N	
X.	Field duplicates	N	
XI.	Field blanks	ND	FB=FB_071211-19 (SDG: 280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: water

1	RD-46A_080811_01	11		21		31	
2	RD-46B_080811_01	12		22		32	
3	PZ-076_080811_01	13		23		33	
4	PZ-077_080811_01	14		24		34	
5	HAR-03_080811_01	15		25		35	
6	HAR-03_080811_01DUP	16		26		36	
7	(M1)DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Blanks

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were blank analyses performed as required? If no, please see qualifications below.

Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples: 1, 2, 5** **Reason: B**

Analyte	Blank ID	Blank ID	Blank ID	Blank Action Limit
	PB	ICB/CCB (mg/L)		2
F	0.0730		0.365	0.21

Conc. units: mg/L **Associated Samples: 2, 3, 4**

Analyte	Blank ID	Blank ID	Blank ID	Blank Action Limit
	PB	ICB/CCB (mg/L)		No Qualifiers
Cl	0.298		1.49	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-1

Sample Identification

RD-46A_080811_01

RD-46B_080811_01

HAR-03_080811_01

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18942-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-1	RD-46A_080811_01 RD-46B_080811_01 HAR-03_080811_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18942-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18942-1**

No Sample Data Qualified in this SDG

LDC #: 26136E8
 SDG #: 280-18942-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 8/14/11
 Page: 1 of 1
 Reviewer: TVG
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/08/11</u>
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client spec</u>
VII.	Laboratory control samples	A	<u>LCS 10</u>
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	RD-46A_080811_01	11	<u>MD 280-80756 / -A</u>	21		31	
2	RD-46B_080811_01	12		22		32	
3	HAR-03_080811_01	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-1

Sample Identification

RD-44_080811_01
RD-46A_080811_01
RD-46B_080811_01
HAR-03_080811_01
RD-46A_080811_01MS
RD-46A_080811_01MSD

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Data Qualification Summary - SDG 280-18942-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-1	RD-44_080811_01 RD-46A_080811_01 RD-46B_080811_01 HAR-03_080811_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18942-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Hydrazines - Field Blank Data Qualification Summary - SDG 280-18942-1**

No Sample Data Qualified in this SDG

LDC #: 26136E76

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18942-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JG

2nd Reviewer: [Signature]

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/08/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS / D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

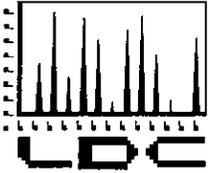
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-44_080811_01	11	MB 280- 80 886 / 23	21		31
2	RD-46A_080811_01	12		22		32
3	RD-46B_080811_01	13		23		33
4	HAR-03_080811_01	14		24		34
5	RD-46A_080811_01MS	15		25		35
6	RD-46A_080811_01MSD	16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

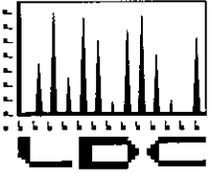
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Formaldehyde

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18947-1

Sample Identification

RD-44_080811_01

RD-46A_08081_01

RD-46B_080811_01

HAR-03_080811_01

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8315 for Formaldehyde.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No formaldehyde was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 240-11458/5-A	8/10/11	Formaldehyde	0.0149 mg/L	All samples in SDG 280-18947-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-44_080811_01	Formaldehyde	0.014 mg/L	0.050U mg/L
RD-46A_08081_01	Formaldehyde	0.015 mg/L	0.050U mg/L
RD-46B_080811_01	Formaldehyde	0.014 mg/L	0.050U mg/L
HAR-03_080811_01	Formaldehyde	0.015 mg/L	0.050U mg/L

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18947-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Data Qualification Summary - SDG 280-18947-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18947-1	RD-44_080811_01 RD-46A_08081_01 RD-46B_080811_01 HAR-03_080811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Laboratory Blank Data Qualification Summary - SDG 280-18947-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18947-1	RD-44_080811_01	Formaldehyde	0.050U mg/L	A	B
280-18947-1	RD-46A_08081_01	Formaldehyde	0.050U mg/L	A	B
280-18947-1	RD-46B_080811_01	Formaldehyde	0.050U mg/L	A	B
280-18947-1	HAR-03_080811_01	Formaldehyde	0.050U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Formaldehyde - Field Blank Data Qualification Summary - SDG 280-18947-1**

No Sample Data Qualified in this SDG

LDC #: 26136F71

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18947-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *MB*

2nd Reviewer: *[Signature]*

METHOD: HPLC Formaldehyde (EPA SW846 Method 8315)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/08/11
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	SW	
V.	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound Quantitation RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-44_080811_01	11	MB 240-11458/5-A	21		31	
2	RD-46A_080811_01	12		22		32	
3	RD-46B_080811_01	13		23		33	
4	HAR-03_080811_01	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A

Were all samples associated with a given method blank?

Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?

Was a method blank performed with each extraction batch?

Were any contaminants found in the method blanks? If yes, please see findings below.

Level I/II/III/IV Only

Y N N/A

(Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?

Y N N/A

Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 8/10/11

Blank analysis date: 8/11/11

Conc. units: mg/L

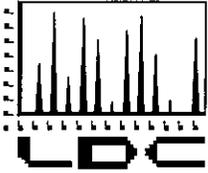
Associated samples: All Code: B

Compound	Blank ID	1	2	3	4	Sample Identification
MB 240-11 458/5A						
Formaldehyde	0.0149	0.014	0.015	0.014	0.015	0.015 / 0.050U / 0.050U

Blank extraction date: _____ Blank analysis date: _____ Associated samples: _____
Conc. units: _____

Compound	Blank ID	Sample Identification			

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

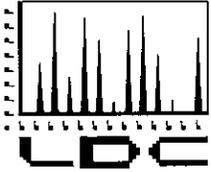
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)	1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Form aldehyde (8315)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMWH (DVWC 0077)		Dioxins (8290)		CN- (9014)								
					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S					
Matrix: Water/Soil																																							
C	280-18666-1/ IUH0336	08/30/11	09/22/11	10	0	10	0	4	0	7	0	4	0	7	0	4	0	4	0	7	0	0	0	0	7	0	3	0	3	0	3	0	0	0	0	0			
D	280-18896-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
E	280-18942-1/ IUH1124	08/30/11	09/22/11	9	0	9	0	8	0	3	0	-	4	0	-	-	-	-	3	0	-	-	-	-	4	0	4	0	4	0	-	-	-	-	-	-			
F	280-18947-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G	280-19104-1	08/30/11	09/22/11	2	0	2	0	-	-	1	0	-	1	0	-	-	-	-	1	0	-	-	-	1	0	1	0	1	0	1	0	-	-	-	-	-	-		
H	280-19010-1/ H1H110461	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J	IUH0484	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K	IUH0622	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																																							
				21	0	21	0	12	0	11	0	4	0	12	0	4	0	4	0	11	0	10	0	2	0	12	0	8	0	8	0	8	0	6	0	1	0	0	147

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)	Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CrVI (7196A)		Diss CrVI (7196A)		ClO ₂ (314.0)		pH (9040B)		Gross α&β (900.0)		Gamma Spec. (901.0)		Tritium (906.0)		Sr-90 (905.0)		Iso U (908.0)							
					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																						
A	280-18195-1/ 11-07109-OR/ 11-07110-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	0	8	0	4	0	8	0	8	0	0	0	0		
B	280-18338-1/ 11-07143-OR/ 11-07144-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	10	0	5	0	8	0	8	0	0	0	0	
C	280-1866-1	08/30/11	09/22/11	3	0	7	0	4	0	7	0	4	0	4	0	4	0	4	0	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18942-1	08/30/11	09/22/11	3	0	3	0	-	-	3	0	5	0	-	-	-	-	-	-	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G	280-19104-1	08/30/11	09/22/11	1	0	-	-	-	-	1	0	1	0	-	-	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I	IUG16718995	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	1	0	2	0	2	0	2	0	0	0	
Total																																						
				7	0	10	0	4	0	11	0	13	0	4	0	4	0	4	0	7	0	7	0	7	0	20	0	20	0	10	0	18	0	18	0	0	0	157

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 9, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19010/H1H110461

Sample Identification

EB_PZ-140_080911
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Routine Calibration (Continuing)

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks.

Samples EB_PZ-140_080911 and EB_PZ-147_080911 were identified as equipment blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-140_080911	8/9/11	1,2,3,4,6,7,8-HpCDD OCDD	8.3 pg/L 98 pg/L	PZ-140_080911_01A PZ-140_080911_36A

Sample FB_071211_19 (from SDG 280-17964-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_071211_19	7/12/11	OCDD	4.0 pg/L	PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-140_080911_01A	1,2,3,4,6,7,8-HpCDD OCDD	4.6 pg/L 63 pg/L	4.6U pg/L 63U pg/L
PZ-140_080911_36A	OCDD	34 pg/L	34U pg/L

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

Internal standards data were not reviewed for Level V.

X. Target Compound Identifications

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19010-1/H1H110461	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No polychlorinated dioxin/dibenzofuran were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flags	A or P
	PZ-140_080911_01A	PZ-140_080911_36A			
1,2,3,4,6,7,8-HpCDD	4.6	2.7U	52 (≤35)	NQ	-
OCDD	63	36	55 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG 280-19010-1/H1H110461**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19010-1/ H1H110461	EB_PZ-140_080911 PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG 280-19010/H1H110461**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG 280-19010/H1H110461**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19010-1/ H1H110461	PZ-140_080911_01A	1,2,3,4,6,7,8-HpCDD OCDD	4.6U pg/L 63U pg/L	A	F
280-19010-1/ H1H110461	PZ-140_080911_36A	OCDD	34U pg/L	A	F

LDC #: 26136H21
 SDG #: 280-19010-1/H1H110461
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/14/11
 Page: 1 of 1
 Reviewer: SVG
 2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II.	HRGC/HRMS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Routine calibration/ICV	N	
V.	Blanks	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	N	
X.	Target compound identifications	N	
XI.	Compound quantitation RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D = 2, 3
XV.	Field blanks	SW	EB = 1 5 FB = FB_071211_19 (280-1796-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	EB_PZ-140_080911	11	1224028-MB	21	31
2	PZ-140_080911_01A	12		22	32
3	PZ-140_080911_36A	13		23	33
4	PZ-147_080911_01	14		24	34
5	EB_PZ-147_080911	15		25	35
6	PZ-147_080911_01MS	16		26	36
7	PZ-147_080911_01MSD	17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

LDC#: 26136H21

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: JW
2nd Reviewer: [Signature]

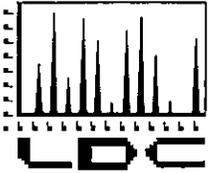
METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	2	3		
F	4.6*	2.7U	52	NQ (<5xRL)
G	63	36	55	NQ (<5xRL)

* EMPC

V:\FIELD DUPLICATES\26062C21.wpd



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

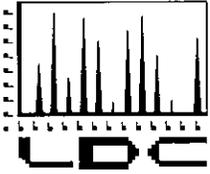
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19104-1

Sample Identification

WS-09A_081111_01
TB_WS-09A_081111
WS-09A_081111_01MS
WS-09A_081111_01MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB_WS-09A_081111 was identified as a trip blank. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_WS-09A_081111	8/11/11	Methylene chloride	0.73 ug/L	WS-09A_081111_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since the sample concentration was greater than the spiked concentration, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19104-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-19104-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19104-1	WS-09A_081111_01 TB_WS-09A_081111	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-19104-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-19104-1

No Sample Data Qualified in this SDG

LDC #: 26136G1a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-19104-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: OM2nd Reviewer: W

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 2

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

NAACI

1	WS-09A_081111_01	11	MB 280-62465/G	21	31
2	TB_WS-09A_081111	12		22	32
3	WS-09A_081111_01MS	13		23	33
4	WS-09A_081111_01MSD	14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethane	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Diisopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19104-1

Sample Identification

WS-09A_081111_01
TB_WS-09A_081111

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Sample TB_WS-09A_081111 was identified as a trip blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19104-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Data Qualification Summary - SDG 280-19104-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19104-1	WS-09A_081111_01 TB_WS-09A_081111	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-19104-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-19104-1**

No Sample Data Qualified in this SDG

LDC #: 26136G1b

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-19104-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JMG

2nd Reviewer: [Signature]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LES / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: WATER

1	WS-09A_081111_01	11	NIB 280-82328/5	21		31	
2	TB_WS-09A_081111	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Semivolatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19104-1

Sample Identification

WS-09A_081111_01

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19104-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-19104-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19104-1	WS-09A_081111_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-19104-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-19104-1

No Sample Data Qualified in this SDG

LDC #: 26136G2a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-19104-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: CM2nd Reviewer: W

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS 1p
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

WGA

1	WS-09A_081111_01	11	MB 280-81628/-A	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

NB

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19104-1

Sample Identification

WS-09A_081111_01

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19104-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-19104-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19104-1	WS-09A_081111_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-19104-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-19104-1

No Sample Data Qualified in this SDG

LDC #: 26136G2b

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-19104-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVB

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LES / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

WATCO

1	WS-09A_081111_01	11	MP 280-81908/1-A	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: September 14, 2011

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19104-1

Sample Identification

WS-09A_081111_01

WS-09A_081111_01MS

WS-09A_081111_01MSD

WS-09A_081111_01DUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-19104-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Wet Chemistry - Data Qualification Summary - SDG 280-19104-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-19104-1	WS-09A_081111_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-19104-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-19104-1**

No Sample Data Qualified in this SDG

LDC #: 26136G6
 SDG #: 280-19104-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 9-12-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Fluoride, Nitrate, (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/11
II	Initial calibration	N	
III.	Calibration verification	N	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	DR
VII.	Laboratory control samples	A	LS/D
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	WS-09A_081111_01	11	[Signature]	21		31	
2	WS-09A_081111_01MS	12		22		32	
3	WS-09A_081111_01MSD	13		23		33	
4	WS-09A_081111_01DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19104-1

Sample Identification

WS-09A_081111_01

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19104-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-19104-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19104-1	WS-09A_081111_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-19104-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-19104-1**

No Sample Data Qualified in this SDG

LDC #: 26136G8
 SDG #: 280-19104-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 9/14/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/1/11</u>
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client spec</u>
VII.	Laboratory control samples	A	<u>LCS / p</u>
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	WS-09A_081111_01	11	MB 280-81658/1-A	21		31
2		12		22		32
3		13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 11, 2011

LDC Report Date: September 15, 2011

Matrix: Water

Parameters: Hydrazines

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19104-1

Sample Identification

WS-09A_081111_01

WS-09A_081111_01MS

WS-09A_081111_01MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19104-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-19104-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19104-1	WS-09A_081111_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-19104-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-19104-1

No Sample Data Qualified in this SDG

LDC #: 26136G76

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-19104-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: *[Signature]*

2nd Reviewer: *[Signature]*

METHOD: HPLC Hydrazines (Method DWWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/11/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	I	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 1b
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

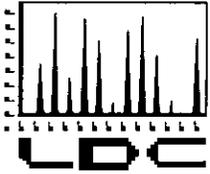
D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	WS-09A_081111_01	11	<i>MB 280-81243/</i>	21		31
2	WS-09A_081111_01MS	12		22		32
3	WS-09A_081111_01MSD	13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

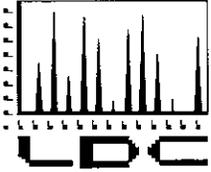
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Form aldehyde (8315)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Dioxins (8290)		CN- (9014)				
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																				
C	280-18666-1/ IUH0336	08/30/11	09/22/11	10	0	10	0	4	0	4	0	7	0	4	0	4	0	4	0	7	0	-	-	7	0	3	0	3	0	-	-	-	-			
D	280-18896-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-			
E	280-18942-1/ IUH1124	08/30/11	09/22/11	9	0	9	0	8	0	3	0	4	0	-	-	-	-	-	3	0	-	-	4	0	4	0	4	0	-	-	-	-	-			
F	280-18947-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-		
G	280-19104-1	08/30/11	09/22/11	2	0	2	0	-	-	1	0	-	-	-	-	-	-	-	1	0	-	-	1	0	1	0	1	0	-	-	-	-	-	-		
H	280-19010-1/ H1H110461	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	0	-		
J	IUH0484	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	1	0	1	0		
K	IUH0622	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-		
Total																																				
				21	0	21	0	12	0	12	0	4	0	12	0	4	0	4	0	4	0	11	0	11	0	10	0	8	0	8	0	6	0	1	0	147

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		C-VI (7196A)		Diss C-VI (7196A)		ClO ₂ (314.0)		pH (9040B)		Gross α&β (900.0)		Gamma Spec. (901.0)		Tritium (906.0)		Sr-90 (905.0)		Iso U (908.0)				
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																				
A	280-18195-1/ 11-07109-OR/ 11-07110-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	0	8	0	4	0	8	0	8	0		
B	280-18338-1/ 11-07143-OR/ 11-07144-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	10	0	5	0	8	0	8	0		
C	280-1866-1	08/30/11	09/22/11	3	0	7	0	4	0	7	0	4	0	4	0	4	0	4	0	4	0	3	0	3	0	-	-	-	-	-	-	-	-	-		
E	280-18942-1	08/30/11	09/22/11	3	0	3	0	-	-	3	0	5	0	-	-	-	-	-	-	-	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	
G	280-19104-1	08/30/11	09/22/11	1	0	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	-	-	-		
I	IUG1671/8995	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	1	0	2	0	2	0	2	0	
Total																																				
				7	0	10	0	4	0	11	0	13	0	4	0	4	0	4	0	4	0	7	0	7	0	20	0	20	0	10	0	18	0	18	0	157

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Tritium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): IUG1671/8995

Sample Identification

RD-19_071811_03A

Introduction

This data review covers one water sample listed on the cover sheet. The analyses were per EPA Method 906.0 for Tritium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG IUG1671/8995	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_03A and RD-19_071811_01 (from SDG 280-18195-1/11-07110-OR) were identified as split samples. No tritium was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Data Qualification Summary - SDG IUG1671/8995**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
IUG1671/8995	RD-19_071811_03A	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Laboratory Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Tritium - Field Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

LDC #: 26136134

VALIDATION COMPLETENESS WORKSHEET

Date: 9-2-11

SDG #: IUG1671 / 8995

Level V

Page: 1 of 1

Laboratory: Test America Laboratories, Inc.

Eberline Analytical

Reviewer: *ca*

2nd Reviewer: *w*

METHOD: Tritium (EPA Method 906.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/N	MS: not required, Dup: client specified
VI.	Laboratory control samples	A	LS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	ND	split = (1, RD-19-071811-01) (SDG: 26136134-1/11-0718-01)
XI.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

water

1	RD-19_071811_03A	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Gamma Spectroscopy
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): IUG1671/8995

Sample Identification

RD-19_071811_03A
RD-19_071811_03A(P)
RD-19_071811_03ADUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 901.1 for Gamma Spectroscopy.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the isotope was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG IUG1671/8995	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_03A and RD-19_071811_01 (from SDG 280-18195-1/11-07109-OR) and samples RD-19_071811_03A(P) and RD-19_071811_01(P) (from SDG 280-18195-1/11-07109-OR) were identified as split samples. No gamma emitting radionuclides were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Data Qualification Summary - SDG IUG1671/8995**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
IUG1671/8995	RD-19_071811_03A RD-19_071811_03A(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

Eberline Analytical

METHOD: Gamma Spectroscopy (EPA Method 901.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not required, D.P: A
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	(SDG: 280-1895-1/11-071811-OR)
X.	Field duplicates	ND	Split = (1, RD-19-071811-01), (2, RD-19-071811-01(P))
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	RD-19_071811_03A	11		21		31	
2	RD-19_071811_03A(Diss) ^P	12		22		32	
3	RD-19_071811_03ADUP	13		23		33	
4	RD-19_071811_03A(Diss)DUP ^P	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: P = particulate

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): IUG1671/8995

Sample Identification

RD-19_071811_03A
RD-19_071811_03A(P)
RD-19_071811_03ADUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG IUG1671/8995	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_03A and RD-19_071811_01 (from SDG 280-18195-1/11-07109-OR) and samples RD-19_071811_03A(P) and RD-19_071811_01(P) (from SDG 280-18195-1/11-07109-OR) were identified as split samples. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RD-19_071811_03A	RD-19_071811_01			
Uranium-233/234	14.8	14.160	4 (≤35)	-	-
Uranium-235	0.66	0.820	22 (≤35)	-	-
Uranium-238	13.8	12.710	8 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Data Qualification Summary - SDG IUG1671/8995**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
IUG1671/8995	RD-19_071811_03A RD-19_071811_03A(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Field Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

LDC #: 26136159

VALIDATION COMPLETENESS WORKSHEET

Date: 9-12-11

SDG #: IUG1671 / 8995

Level V

Page: bf

Laboratory: Test America Laboratories, Inc.

Reviewer: JC

Eberline Analytical

2nd Reviewer: [Signature]

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: not required; Rp: A
VI.	Laboratory control samples	A	LS
VII.	Tracer Recovery	A	
VIII.	Minimum Detectable Activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	(SDG: 280-18195-1/11-07109-OR)
XI.	Field duplicates	SW	split = (1, RD-19-071811-01), (2, RD-19-071811-01CP)
XII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: *water*

1	RD-19_071811_03A	11		21		31	
2	RD-19_071811_03A ^P (Diss)	12		22		32	
3	RD-19_071811_03ADUP	13		23		33	
4	RD-19_071811_03A^P(Diss)DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: *P = pericardial*

LDC# 26136159

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Radiochemistry, Method See Cover

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?

Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤ 35)	
	RD-19_071811_01	1		
Uranium-233/234	14.160	14.8	4	
Uranium-235	0.820	0.66	22	
Uranium-238	12.710	13.8	8	

V:\FIELD DUPLICATES\FD_inorganic\26136159.wpd

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): IUG1671/8995

Sample Identification

RD-19_071811_03A
RD-19_071811_03A(P)
RD-19_071811_03ADUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG IUG1671/8995	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_03A and RD-19_071811_01 (from SDG 280-18195-1/11-07109-OR) and samples RD-19_071811_03A(P) and RD-19_071811_01(P) (from SDG 280-18195-1/11-07109-OR) were identified as split samples. No strontium-90 was detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Data Qualification Summary - SDG IUG1671/8995**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
IUG1671/8995	RD-19_071811_03A RD-19_071811_03A(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Field Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

LDC #: 26136161

VALIDATION COMPLETENESS WORKSHEET

Date: 9/12/11

SDG #: IUG1671 / 8995

Level V

Page: 1 of 1

Laboratory: Test America Laboratories, Inc. /
Eberline Analytical

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: not required; Dp: A
VI.	Laboratory control samples	A	LCS
VII.	Carrier recovery	A	
VIII.	Minimum detectable activity (MDA)	A	
IX.	Sample result verification	N	
X.	Overall assessment of data	A	(SDG: 280-18195-1/11-07109-OR)
XI.	Field duplicates	ND	split: (1, RD-19_071811_01), (2, RD-19_071811_01(P))
XII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	RD-19_071811_03A	11		21		31	
2	RD-19_071811_03A(P) Diss	12		22		32	
3	RD-19_071811_03ADUP	13		23		33	
4	RD-19_071811_03A(P) Diss DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: P = particulate

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 18, 2011
LDC Report Date: September 12, 2011
Matrix: Water
Parameters: Gross Alpha & Beta
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): IUG1671/8995

Sample Identification

RD-19_071811_03A
RD-19_071811_03A(P)
RD-19_071811_03ADUP

Samples ending in "P" were reported for particulate only

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 900.0 for Gross Alpha and Beta Radioactivity.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

IX. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG IUG1671/8995	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Samples RD-19_071811_03A and RD-19_071811_01 (from SDG 280-18195-1/11-07109-OR) and samples RD-19_071811_03A(P) and RD-19_071811_01(P) (from SDG 280-18195-1/11-07109-OR) were identified as split samples. No gross alpha or beta was detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/L)		RPD (Limits)	Flag	A or P
	RD-19_071811_03A	RD-19_071811_01			
Gross alpha	17.4	27.406	45 (≤35)	J (all detects)	A
Gross beta	11.6	13.512	15 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 Gross Alpha & Beta - Data Qualification Summary - SDG IUG1671/8995**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
IUG1671/8995	RD-19_071811_03A RD-19_071811_03A(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)
IUG1671/8995	RD-19_071811_03A	Gross alpha	J (all detects)	A	Field duplicates (RPD) (*XI)

**Boeing SSFL GW 3rd Qtr, 2011
 Gross Alpha & Beta - Laboratory Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Gross Alpha & Beta - Field Blank Data Qualification Summary - SDG IUG1671/8995**

No Sample Data Qualified in this SDG

LDC #: 26136122

VALIDATION COMPLETENESS WORKSHEET

Date: 9/2/11

SDG #: IUG1671 / 8995

Level V

Page: 1 of 1

Laboratory: Test America Laboratories, Inc.

Reviewer: OZ

Ebedire Analytical

2nd Reviewer: *W*

METHOD: Gross Alpha & Beta (EPA SW 846 Method 900.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/18/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N/A	MS: Not required, D.P.: A
VI.	Laboratory control samples	A	LCS
VII.	Minimum detectable activity (MDA)	A	
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	(SD: 280-1815-1/11-07109-OR)
X.	Field duplicates	SW	spike= (1, RD-19-071811-01), (2, RD-19-071811-01(P))
XI.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	RD-19_071811_03A	11		21		31	
2	RD-19_071811_03A(Diss)	12		22		32	
3	RD-19_071811_03ADUP	13		23		33	
4	RD-19_071811_03A(Diss)DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: *P=particulate*

LDC# 26136122

VALIDATION FINDINGS WORKSHEET
Field Duplicates

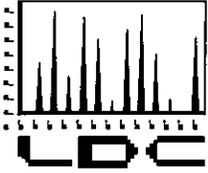
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Radiochemistry, Method See Cover

Y/N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Isotope	Activity (pCi/L)		RPD (≤ 35)	Qualifications (Parents Only)
	RD-19_071811_01	1		
Gross Alpha	27.406	17.4	45	Jdet/A (*X)
Gross Beta	13.512	11.6	15	

V:\FIELD DUPLICATES\FD_inorganic\26136122.wpd



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

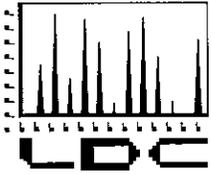
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)	1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Form aldehyde (8315)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Dioxins (8290)		CN- (9014)						
					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																					
C	280-18666-1/ IUH0336	08/30/11	09/22/11	10	0	10	0	4	0	7	0	4	0	7	0	4	0	7	0	7	0	-	-	7	0	3	0	3	0	-	-	-	-				
D	280-18896-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-				
E	280-18942-1/ IUH1124	08/30/11	09/22/11	9	0	9	0	8	0	3	0	-	4	0	-	3	0	-	3	0	-	-	4	0	4	0	4	0	-	-	-	-	-				
F	280-18947-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-			
G	280-19104-1	08/30/11	09/22/11	2	0	2	0	-	1	0	-	1	0	-	1	0	-	1	0	-	-	-	1	0	1	0	1	0	-	-	-	-	-	-			
H	280-19010-1/ H1H110461	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	0	-	-			
J	IUH0484	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	1	0	1	0	-	-		
K	IUH0622	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-		
Total																																					
				21	0	21	0	12	0	11	0	4	0	12	0	4	0	4	0	11	0	10	0	2	0	12	0	8	0	8	0	6	0	1	0	0	147

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)	Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CrVI (7196A)		Diss CrVI (7196A)		ClO ₄ (314.0)		pH (9040B)		Gross α&β (900.0)		Gamma Spec. (901.0)		Tritium (906.0)		Sr-90 (905.0)		Iso U (908.0)						
					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																					
A	280-18195-1/ 11-07109-OR/ 11-07110-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
B	280-18338-1/ 11-07143-OR/ 11-07144-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-1866-1	08/30/11	09/22/11	3	0	7	0	4	0	7	0	4	0	4	0	4	0	4	0	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18942-1	08/30/11	09/22/11	3	0	3	0	-	3	0	5	0	-	-	-	-	-	-	-	-	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	
G	280-19104-1	08/30/11	09/22/11	1	0	-	-	-	1	0	1	0	-	-	-	-	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	
I	IUG1671/8995	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total																																					
				7	0	10	0	4	0	11	0	13	0	4	0	4	0	4	0	7	0	7	0	7	0	20	0	10	0	18	0	18	0	0	0	0	157

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: Dioxins/Dibenzofurans

Validation Level: EPA Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUH0484

Sample Identification

HAR-07_080211_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and the USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues.

The chromatographic resolution between 2,3,7,8-TCDD and the peaks representing any other unlabeled TCDD isomers was resolved with a valley of less than or equal to 25%.

The exact mass of 380.9760 of PFK was verified.

The static resolving power was at least 10,000 (10% valley definition).

III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The minimum S/N ratio for each target compound was greater than or equal to 2.5 and greater than or equal to 10 for each recovery and internal standard compound.

IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
1220099-BLK	8/8/11	1,2,3,4,6,7,8-HpCDD	1.6 pg/L	All samples in SDG IUH0484
		OCDD	8.5 pg/L	
		1,2,3,7,8-PeCDF	1.9 pg/L	
		1,2,3,4,7,8-HxCDF	3.6 pg/L	
		1,2,3,6,7,8-HxCDF	1.1 pg/L	
		2,3,4,6,7,8-HxCDF	0.88 pg/L	
		1,2,3,7,8,9-HxCDF	1.1 pg/L	
		1,2,3,4,6,7,8-HpCDF	2.0 pg/L	
		1,2,3,4,7,8,9-HpCDF	2.4 pg/L	
		OCDF	2.3 pg/L	
		Total HpCDD	3.1 pg/L	
		Total PeCDF	1.9 pg/L	
		Total HxCDF	9.7 pg/L	
		Total HpCDF	6.1 pg/L	

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-07_080211_03	1,2,3,4,6,7,8-HpCDD	0.98 pg/L	0.98U pg/L
	OCDD	3.8 pg/L	3.8U pg/L
	1,2,3,4,7,8-HxCDF	3.1 pg/L	3.1U pg/L
	1,2,3,6,7,8-HxCDF	0.97 pg/L	0.97U pg/L
	1,2,3,4,6,7,8-HpCDF	1.2 pg/L	1.2U pg/L
	1,2,3,4,7,8,9-HpCDF	2.2 pg/L	2.2U pg/L
	OCDF	2.5 pg/L	2.5U pg/L
	Total HpCDD	1.9 pg/L	1.9U pg/L
	Total HxCDF	6.3 pg/L	6.3U pg/L
	Total HpCDF	5.6 pg/L	5.6U pg/L

Sample FB_HAR-07_080211_19 (from SDG 280-18721-1) was identified as a field blank. No polychlorinated dioxin/dibenzofuran contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries were within QC limits.

X. Target Compound Identifications

All target compound identifications were within validation criteria.

XI. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUH0484	All compounds reported below the RLs.	J (all detects)	A

XII. System Performance

The system performance was acceptable.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-07_080211_03 and HAR-07_080211_01 (from SDG 280-18721-1) were identified as split samples. No polychlorinated dioxin/dibenzofuran were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/L)		RPD (Limits)	Flags	A or P
	HAR-07_080211_03	HAR-07_080211_01			
1,2,3,4,6,7,8-HpCDD	0.98	2.8U	96	NQ	-
Total HpCDD	1.9	Not reported	Not calculable	-	-
OCDD	3.8	4.1U	8	-	-
1,2,3,4,7,8-HxCDF	3.1	1.0U	102	NQ	-
1,2,3,6,7,8-HxCDF	0.97	1.0U	3	-	-
Total HxCDF	6.3	Not reported	Not calculable	-	-
1,2,3,4,6,7,8-HpCDF	1.2	1.3U	8	-	-
1,2,3,4,7,8,9-HpCDF	2.2	2.3U	4	-	-
Total HpCDF	5.6	Not reported	Not calculable	-	-
OCDF	2.5	3.6U	36	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Data Qualification Summary - SDG IUH0484**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUH0484	HAR-07_080211_03	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG IUH0484**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
IUH0484	HAR-07_080211_03	1,2,3,4,6,7,8-HpCDD OCDD 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF OCDF Total HpCDD Total HxCDF Total HpCDF	0.98U pg/L 3.8U pg/L 3.1U pg/L 0.97U pg/L 1.2U pg/L 2.2U pg/L 2.5U pg/L 1.9U pg/L 6.3U pg/L 5.6U pg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG IUH0484**

No Sample Data Qualified in this SDG

LDC #: 26136J21
 SDG #: IUH0484
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V TV

Date: 9/14/11
 Page: 1 of 1
 Reviewer: JVL
 2nd Reviewer: [Signature]

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	HRGC/HRMS Instrument performance check	NA	
III.	Initial calibration	NA	2 RSD \leq 20 2 unlabeled \leq 30 2 labeled
IV.	Routine calibration/ICV	NA	CV/100 \leq ↓ ↓
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	NA	
XI.	Compound quantitation RL/LOQ/LODs	NA	
XII.	System performance	NA	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates / split	SW	S = 1 + HAR-07-080211-01 (280-18721-1)
XV.	Field blanks	ND	FB = FB-HAR-07-080211-19 ↓

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	HAR-07_080211_03	11	1220099-MB	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. GC/MS Instrument performance check				
Was PFK exact mass 380.9760 verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the retention time windows established for all homologues?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomers $\leq 25\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the static resolving power at least 10,000 (10% valley definition)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the mass resolution adequately check with PFK?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the presence of 1,2,8,9-TCDD and 1,3,4,6,8-PeCDF verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Initial calibration				
Was the initial calibration performed at 5 concentration levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 20\%$ for unlabeled standards and $\leq 30\%$ for labeled standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did all calibration standards meet the Ion Abundance Ratio criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was the signal to noise ratio for each target compound ≥ 2.5 and for each recovery and internal standard > 10 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a routine calibration performed at the beginning and end of each 12 hour period?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ for unlabeled standards and $\leq 30\%$ for labeled standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did all routine calibration standards meet the Ion Abundance Ratio criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank performed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/	/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	
IX. Internal Standards				
Were internal standard recoveries within the 40-135% criteria?	/			
Was the minimum S/N ratio of all internal standard peaks > 10?	/			
X. Target compound identification				
For 2,3,7,8 substituted congeners with associated labeled standards, were the retention times of the two quantitation peaks within -1 to 3 sec. of the RT of the labeled standard?	/			
For 2,3,7,8 substituted congeners without associated labeled standards, were the relative retention times of the two quantitation peaks within 0.005 time units of the RRT measured in the routine calibration?	/			
For non-2,3,7,8 substituted congeners, were the retention times of the two quantitation peaks within RT established in the performance check solution?	/			
Did compound spectra contain all characteristic ions listed in the table attached?	/			
Was the Ion Abundance Ratio for the two quantitation ions within criteria?	/			
Was the signal to noise ratio for each target compound and labeled standard \geq 2.5?	/			
Does the maximum intensity of each specified characteristic ion coincide within \pm 2 seconds (includes labeled standards)?	/			
For PCDF identification, was any signal ($S/N \geq 2.5$, at \pm seconds RT) detected in the corresponding PCDF channel?	/			
Was an acceptable lock mass recorded and monitored?	/			
XI. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: _____

Blanks

Reviewer: JVG

2nd Reviewer: _____

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y / N / N/A Were all samples associated with a method blank?
- Y / N / N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
- Y / N / N/A Was the method blank contaminated?

Blank extraction date: 8/08/11 Blank analysis date: 08/11/11 Associated samples: All Code: B

Conc. units: pg/L

Compound	Blank ID		Sample Identification						
	1220099-BLK	5x	1						
F. 1,2,3,4,6,7,8-HpCDD	1.6	8.00	0.98*/U						
G. OCDD	8.5*	42.50	3.8/U						
I. 1,2,3,7,8-PeCDF	1.9	9.50							
K. 1,2,3,4,7,8-HxCDF	3.6	18.00	3.1/U						
L. 1,2,3,6,7,8-HxCDF	1.1*	5.50	0.97/U						
M. 2,3,4,6,7,8-HxCDF	0.88*	4.40							
N. 1,2,3,7,8,9-HxCDF	1.1*	5.50							
O. 1,2,3,4,6,7,8-HpCDF	2.0*	10.00	1.2*/U						
P. 1,2,3,4,7,8,9-HpCDF	2.4	12.00	2.2/U						
Q. OCDF	2.3*	11.5	2.5/U						
U. Total HpCDD	3.1	15.5	1.9*/U						
W. Total PeCDF	1.9	9.5							
X. Total HxCDF	9.7*	48.5	6.3*/U						
Y. Total HpCDF	6.1*	30.5	5.6*/U						

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Splits

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

Y/N/NA Were field split pairs identified in this SDG?

Y/N/NA Were target analytes detected in the field split pairs?

Compound	Concentration (pg/L)		%RPD (≤ 35)	Qualifications (Parent Only)
	HAR-07_080211_01	HAR-07_080211_03		
F	2.8U	0.98*	96	NQ (<5xRL)
U	NR	1.9*	NC	
G	4.1U	3.8	8	
K	1.0U	3.1	102	NQ (<5xRL)
L	1.0U	0.97	3	
X	NR	6.3*	NC	
O	1.3U	1.2*	8	
P	2.3U	2.2	4	
Y	NR	5.6*	NC	
Q	3.6U	2.5	36	NQ (<5xRL)

* EMPC

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$
 average RRF = sum of the RRFs/number of standards
 $\%RSD = 100 * (S/X)$

A_x = Area of Compound
 A_{is} = Area of associated internal standard
 C_x = Concentration of compound,
 C_{is} = Concentration of internal standard
 S = Standard deviation of the RRFs,
 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (20/100 std)	Recalculated RRF (.20/100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	10/27/2010	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	1.02991	1.02991	1.01573	1.01573	3.511	3.511
	3d5		2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.16359	1.16359	1.10816	1.10816	4.897	4.897
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	1.23467	1.23467	1.15691	1.15691	4.421	4.421
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	1.16792	1.16792	1.04888	1.04888	8.833	8.833
			OCDD (13C-OCDD)	1.29675	1.29675	1.19407	1.19407	7.263	7.263

Cis/Cx	Ax	Ais
50/5.0	214442	2082151
50/5.0	148369	1275095
100/20	711335	1152266
100/20	557536	954749
200/100	885919	1366369

Conc	2,3,7,8-TCDF	2,3,7,8-TCDD	1,2,3,6,7,8-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD
cs1	1.01573	1.08789	1.11141	0.96245	1.07582
cs2	0.95440	1.02414	1.11444	0.94913	1.13897
cs3	1.02991	1.16359	1.23467	1.16792	1.29675
cs4	1.04178	1.12802	1.17769	1.09816	1.23304
cs5	1.03685	1.13714	1.14634	1.06673	1.22579
X =	1.01573	1.10816	1.15691	1.04888	1.19407
S =	0.0357	0.0543	0.0511	0.0927	0.0867

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORSHEET
 Continuing Calibration Results Verification

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA SW 846 Method 8290)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$ $\text{ave. RRF} = \text{ICAL average RRF}$ $\text{Cx} = \text{Concentration of compound}$
 $\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$ $\text{RRF} = \text{CCV RRF}$ $\text{Ais} = \text{Area of associated internal standard}$
 $\text{Ax} = \text{Area of compound}$ $\text{Cis} = \text{Concentration of internal standard}$

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial RRF)	Reported (CC RRF)	Recalculated (CC RRF)	Reported %D	Recalculated %D
1	10AU113D5_21	08/11/11	2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	1.01573	0.91955	0.91955	9.5	9.5
			2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	1.10816	1.12293	1.12293	1.3	1.3
			1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	1.15691	1.09717	1.09717	5.2	5.2
			1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	1.04888	1.03658	1.03658	1.2	1.2
			OCDD (13C-OCDD)	1.19407	1.11558	1.11558	6.6	6.6

Compound (IS)	Concentration (IS/Cpd)	Area Cpd	Area IS
2,3,7,8-TCDF (13C-2,3,7,8-TCDF)	100/10	154991	1685510
2,3,7,8-TCDD (13C-2,3,7,8-TCDD)	100/10	109228	972709
1,2,3,6,7,8-HxCDD (13C-1,2,3,6,7,8-HxCDD)	100/50	493231	899096
1,2,3,4,6,7,8-HpCDD (13C-1,2,4,6,7,8-HpCDD)	100/50	366012	706189
OCDD (13C-OCDD)	100/50	572821	1026951

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUH0484

Sample Identification

HAR-27_080211_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Sample FB_HAR-27_080211_19 (from SDG 280-18711-1) was identified as a field blank. No herbicide contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/(Matrix Spike) Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUH0484	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-27_080211_03 and HAR-27_080211_01 (from SDG 280-18711-1) were identified as split samples. No herbicides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-27_080211_03	HAR-27_080211_01			
Dinoseb	0.19U	0.17	11 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Data Qualification Summary - SDG IUH0484**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUH0484	HAR-27_080211_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Laboratory Blank Data Qualification Summary - SDG IUH0484**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Field Blank Data Qualification Summary - SDG IUH0484**

No Sample Data Qualified in this SDG

LDC #: 26136J5
 SDG #: IUH0484
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level TV

Date: 9/14/11
 Page: 1 of 1
 Reviewer: JYB
 2nd Reviewer: [Signature]

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/02/11</u>
II	Initial calibration	A	<u>2 RSD ≤ 20%</u>
III.	Calibration verification/ICV	A	<u>CV/ICV ≤ 20%</u>
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	<u>Client spec</u>
VII.	Laboratory control samples	A	<u>LCS</u>
VIII.	Target compound identification	MA	
IX.	Compound Quantitation and CRQLs	MA	
X.	System Performance	MA	
XI.	Overall assessment of data	A	
XII.	Field duplicates / <u>Split</u>	SW	<u>S = 1 + HAR-27-080211-01 (280-18711-1)</u>
XIII.	Field blanks	ND	<u>FB = FB-HAR-27-080211-19</u> ↓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-27_080211_03	11	WIH0364-B/K1	21	31
2		12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: _____

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	/			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		/		
Did the initial calibration meet the curve fit acceptance criteria?			/	
Were the RT windows properly established?	/			
III. Continuing calibration				
What type of continuing calibration calculation was performed? <u>%D</u> or <u>%R</u>	/			
Was a continuing calibration analyzed daily?	/			
Were all percent differences (%D) < 20%.0 or percent recoveries 80-120%?	/			
Were all the retention times within the acceptance windows?	/			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
V. Surrogate spikes				
Were all surrogate %R within the QC limits?	/			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
VIII. Regional Quality Assurance and Quality Control				

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	HAR-27_080211_01	HAR-27_080211_03		
Dinoseb	0.17	0.19U	11	

LDC #: 26136 JS

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
 average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)

Where: A = Area of compound
 C = Concentration of compound
 S = Standard deviation of calibration factors
 X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported RRF (100 std)	Recalculated RRF (100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/17-18/11	2,4-D (ECD1)	572200	572166	572800	572800	8.63	8.63
	GCS 07		2,4-D (ECD2)	5758000	5758250	5886833	5886833	3.61	3.62

Compound	C	A
2,4-D (ECD1)	200	114433224
2,4-D (ECD2)	200	1151649983

2,4-D

Conc	ECD1	ECD2
235	617200.00	5999000.00
470	634100.00	6183000.00
705	572200.00	5758000.00
940	580700.00	6014000.00
	520700.00	5609000.00
	511900.00	5758000.00
S =	572800.00	5886833.33
X =	49427	213005

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Where:
 Percent difference (%D) = $100 * (N - C) / N$
 N = Initial Calibration Factor or Nominal Amount
 C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	N (Conc)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	08161170	8/18/2011	2,4-D (ECD1)	200.000	193.079	193.073	3.5	3.5
			2,4-D (ECD2)	200.000	180.982	180.982	9.5	9.5
2	08161180	8/18/2011	2,4-D (ECD1)	400.000	410.406	410.392	2.6	2.6
			2,4-D (ECD2)	400.000	409.449	409.451	2.4	2.4

Compound	CCV1		CCV2	
	C (CF)	Response	C (CF)	Response
2,4-D (ECD1)	572800	110592104	572800	235072755
2,4-D (ECD2)	5886833	1065411687	5886833	2410369017

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100
Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
DCAA	EC67	2000	2036.86	102	102	0

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$

Where SSC = Spiked sample concentration
 SA = Spike added

SC = Sample concentration

RPD = $((SSCLCS - SSCLCD) * 2) / (SSCLCS + SSCLCD) * 100$

LCS = Laboratory Control Sample

LCS D = Laboratory Control Sample duplicate

LCS/LCSD samples: W1H0264-BS1

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCS D		LCS		LCS D		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.								
Gasoline (8015)														
Diesel (8015)														
Benzene (8021B)														
Methane (RSK-175)														
2,4-D (8151)	4.00	NA	3.40	NA	85	85								
Dinoseb (8151)	2.00	↓	1.51	↓	76	76								
Naphthalene (8310)														
Anthracene (8310)														
HMX (8330)														
2,4,6-Trinitrotoluene (8330)														

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: September 21, 2011

Matrix: Water

Parameters: Total Cyanide

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUH0484

Sample Identification

HAR-27_080211_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Total Cyanide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total cyanide was found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Cyanide	0.00264 mg/L	All samples in SDG IUH0484

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-27_080211_03	Cyanide	0.0030 mg/L	0.0030U mg/L

Sample FB_HAR-27_080211_19 (from SDG 280-18711-1) was identified as a field blank. No total cyanide was found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_HAR-27_080211_19	8/2/11	Cyanide	0.0049 mg/L	All samples in SDG IUH0484

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-27_080211_03	Cyanide	0.0030 mg/L	0.0030U mg/L

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG IUH0484	All analytes reported below the RL and above the MDL.	J (all detects)	A

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-27-080211-01 (from SDG 280-18711-1) and HAR-27_080211_03 were identified as split samples. No total cyanide was detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	HAR-27-080211-01	HAR-27_080211_03			
Cyanide	0.0023	0.0030	26 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 Total Cyanide - Data Qualification Summary - SDG IUH0484**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
IUH0484	HAR-27_080211_03	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Total Cyanide - Laboratory Blank Data Qualification Summary - SDG IUH0484**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
IUH0484	HAR-27_080211_03	Cyanide	0.0030U mg/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
 Total Cyanide - Field Blank Data Qualification Summary - SDG IUH0484**

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
IUH0484	HAR-27_080211_03	Cyanide	0.0030U mg/L	A	F

LDC #: 26136J6

VALIDATION COMPLETENESS WORKSHEET

Date: 9/6/11

SDG #: IUH0484

Level ~~V~~ IV

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: ~~Total~~ ^{Total} Cyanide (Method 9014) _{swgdb}

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/2/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	N	Client specified
VI.	Duplicates	N	↓
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	A	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	split = (1, HAR-27-080211-01 (SN: 2501871H))
XI	Field blanks	SW	FB = FB - HAR-27-080211-19 ↓

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

water

1	HAR-27_080211_03	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: Inorganics (EPA Method See Cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial calibration correlation coefficients > 0.995?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?				
Were titrant checks performed as required? (Level IV only)			/	
Were balance checks performed as required? (Level IV only)			/	
III. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	/			
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.			/	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			/	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.			/	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?				
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.	/			

Field Blanks

METHOD: Inorganics, EPA Method See Cover
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?
Blank units: mg/L. **Associated sample units:** mg/L
Sampling date: 8/2/11 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Reason: F

Associated Samples: All

Analyte	Blank ID	Action Limit	Sample Identification		
	FB_HAR-27_080211_19		1		
Cyanide	0.0049	0.0245	0.0030		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC# 26136J6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 11 of 11
Reviewer: [Signature]
2nd Reviewer: [Signature]

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	HAR-27_080211_01	1		
Cyanide	0.0023	0.0030	26	

V:\FIELD DUPLICATES\FD_inorganic\26136J6.wpd

LDC #: 2613556

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

Method: Inorganics, Method 9014

The correlation coefficient (r) for the calibration of CN was recalculated. Calibration date: 8/6/11

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = $\frac{\text{Found} \times 100}{\text{True}}$
Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated		Reported		Acceptable (Y/N)
					r	r ²	r	r ²	
Initial calibration	CN	s1	0.0	-0.001	0.99977	0.99977			Y
		s2	0.005	0.029					
		s3	0.04	0.23					
		s4	0.1	0.65					
		s5	0.2	1.34					
		s6	0.3	1.98					
Calibration verification		ICV	0.1	0.10203		102			
Calibration verification		CCV	0.2	0.20285		101			
Calibration verification									

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method SEE COVER

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).

True = concentration of each analyte in the source.

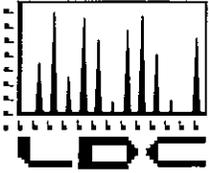
A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
 D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Acceptable (Y/N)
					%R / RPD	%R / RPD	
4CS	Laboratory control sample	CN	0.101	0.1	101	101	Y
N	Matrix spike sample		(SSR-SR)				
N	Duplicate sample						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 22, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

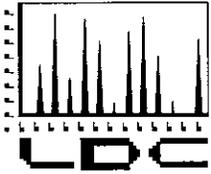
Dear Mr. Reiners,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 24, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26136:

<u>SDG #</u>	<u>Fraction</u>
280-18195-1/ 11-07109-OR/11-07110-OR, 280-18338-1/ 11-07143-OR/11-07144-OR IUG1671/8995	Gross Alpha & Beta, Gamma Spectroscopy, Tritium, Strontium-90, Isotopic Uranium
280-18666-1/IUH0336	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Hydrazine, Wet Chemistry
280-18896-1, 280-18947-1	Formaldehyde
280-18942-1/IUH1124	Volatiles, 1,4-Dioxane, 1,2,3- Trichloropropane, Semivolatiles, N- Nitrosodimethylamine, Wet Chemistry, Hydrazine
280-19104-1	Volatiles, 1,4-Dioxane, Semivolatiles, N- Nitrosodimethylamine, Diesel Range Organics, Hydrazine, Wet Chemistry
280-19010-1/H1H110461	Dioxins/Dibenzofurans
IUH0484	Herbicides, Dioxins/Dibenzofurans, Cyanide
IUH0622	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:



- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010
- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Form aldehyde (8315)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		Dioxins (8290)		CN- (9014)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																					
C	280-18666-1/ IUH0336	08/30/11	09/22/11	10	0	10	0	4	0	7	0	4	0	7	0	4	0	4	0	7	0	0	0	0	0	7	0	3	0	3	0	0	0	0	0		
D	280-18896-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
E	280-18942-1/ IUH124	08/30/11	09/22/11	9	0	9	0	8	0	3	0	-	4	0	-	-	-	-	3	0	-	-	-	-	4	0	4	0	4	0	-	-	-	-			
F	280-18947-1	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
G	280-19104-1	08/30/11	09/22/11	2	0	2	0	-	-	1	0	-	1	0	-	-	-	-	1	0	-	-	-	1	0	1	0	1	0	1	0	-	-	-			
H	280-19010-1/ H1H110461	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
J	IUH0484	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	1	0	1	0		
K	IUH0622	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-			
Total																																					
				21	0	21	0	12	0	11	0	4	0	12	0	4	0	4	0	11	0	10	0	2	0	12	0	8	0	8	0	6	0	1	0	0	147

EDD Client Select IV LDC #26136 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		Diss CrVI (7196A)		ClO ₄ (314.0)		pH (9040B)		Gross α&β (900.0)		Gamma Spec. (901.0)		Tritium (906.0)		Sr-90 (905.0)		Iso U (908.0)						
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S					
Matrix: Water/Soil																																				
A	280-18195-1/ 11-07109-OR/ 11-07110-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	0	8	0	4	0	8	0	8	0	0	0		
B	280-18338-1/ 11-07143-OR/ 11-07144-OR	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	10	0	5	0	8	0	8	0	0	0		
C	280-1866-1	08/30/11	09/22/11	3	0	7	0	4	0	7	0	7	0	4	0	4	0	4	0	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-		
E	280-18942-1	08/30/11	09/22/11	3	0	3	0	-	-	3	0	5	0	-	-	-	-	-	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-		
G	280-19104-1	08/30/11	09/22/11	1	0	-	-	-	-	1	0	1	0	-	-	-	-	-	1	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-		
I	IUG1671/8995	08/30/11	09/22/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	1	0	2	0	2	0	0	0		
Total																																				
				7	0	10	0	4	0	11	0	13	0	4	0	4	0	4	0	7	0	7	0	20	0	20	0	10	0	18	0	18	0	0	0	157

Shaded cells indicate Level IV validation (all other cells are Level I validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 4, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IUH0622

Sample Identification

HAR-09_080411_03

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Sample FB_HAR-09_080411_19 (from SDG 280-18850-1) was identified as a field blank. No herbicide contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/(Matrix Spike) Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG IUH0622	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Samples HAR-09_080411_03 and HAR-09_080411_01 (from SDG 280-18850-1) were identified as split samples. No herbicides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-09_080411_03	HAR-09_080411_01			
Dinoseb	0.50U	0.22	78 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Data Qualification Summary - SDG IUH0622**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
IUH0622	HAR-09_080411_03	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Laboratory Blank Data Qualification Summary - SDG IUH0622**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Field Blank Data Qualification Summary - SDG IUH0622**

No Sample Data Qualified in this SDG

LDC #: 26136K5

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: IUH0622

Level ~~V~~ IV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JL

2nd Reviewer: W

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/04/11
II	Initial calibration	A	2 RSD \leq 20%
III.	Calibration verification/ICV	A	COV/10V \leq 20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client spec
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	NA	
IX.	Compound Quantitation and CRQLs	NA	
X.	System Performance	NA	
XI.	Overall assessment of data	A	
XII.	Field duplicates / Split	SW	S = 1 + HAR-09-080411-01 (2SD-18850-1)
XIII.	Field blanks	ND	FB = FB-HAR-09-080411-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-09_080411_03	11	W H0364-Blk	21	31
2		12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

Notes: 2,4,5-T ; 2,4-D ; Dinoseb ; Silvex

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Continuing calibration				
What type of continuing calibration calculation was performed? <u> </u> %D or <u> </u> %R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 20% or percent recoveries 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
V. Surrogate spikes				
Were all surrogate %R within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VIII. Regional Quality Assurance and Quality Control				

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

VALIDATION FINDINGS WORKSHEET
Field Split

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

Y N NA Were field split pairs identified in this SDG?
Y N NA Were target analytes detected in the field split pairs?

Compound	Concentration (ug/L)		(\leq 35%) RPD	Qualifications (Parent only)
	HAR-09_080411_01	HAR-09_080411_03		
Dinoseb	0.22	0.50U	78	NQ (<5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
 average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)
 Where: A = Area of compound
 C = Concentration of compound
 S = Standard deviation of calibration factors
 X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported RRF (100 std)	Recalculated RRF (100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	8/17-18/11	2,4-D (ECD1)	572200	572166	572800	572800	8.63	8.63
	GCS 07		2,4-D (ECD2)	5758000	5758250	5886833	5886833	3.61	3.62

Compound	C	A
2,4-D (ECD1)	200	114433224
2,4-D (ECD2)	200	1151649983

2,4-D

Conc	ECD1	ECD2
235	617200.00	5999000.00
470	634100.00	6183000.00
705	572200.00	5758000.00
940	580700.00	6014000.00
	520700.00	5609000.00
	511900.00	5758000.00
S =	572800.00	5886833.33
X =	49427	213005

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = $100 * (N - C) / N$

Where:

N = Initial Calibration Factor or Nominal Amount

C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	N (Conc)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	08161170	8/18/2011	2,4-D (ECD1)	200.000	193.079	193.073	3.5	3.5
			2,4-D (ECD2)	200.000	180.982	180.982	9.5	9.5
2	08161180	8/18/2011	2,4-D (ECD1)	400.000	410.406	410.392	2.6	2.6
			2,4-D (ECD2)	400.000	409.449	409.451	2.4	2.4

CCV1		CCV2	
Compound	C (CF)	Response	Response
2,4-D (ECD1)	572800	110592104	235072755
2,4-D (ECD2)	5886833	1065411687	2410369017

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS * 100$ Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: A

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
BCAA	BCD 2	2000	1866.991	93	93	0

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

METHOD: GC HPLC

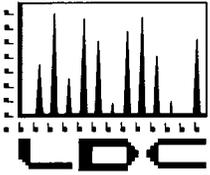
The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$ Where SSC = Spiked sample concentration SC = Sample concentration SA = Spike added
 RPD = $((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD) * 100$ LCS = Laboratory Control Sample LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: W140364 - B51

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCSD		LCS		LCSD		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.								
Gasoline (8015)														
Diesel (8015)														
Benzene (8021B)														
Methane (RSK-175)														
2,4-D (8151)	4.0	NA	3.40	NA	85	85								
Dinoseb (8151)	2.0	↓	1.52	↓	76	76								
Naphthalene (8310)														
Anthracene (8310)														
HMX (8330)														
2,4,6-Trinitrotoluene (8330)														

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

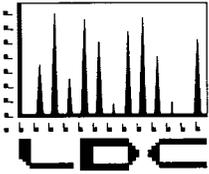
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 8, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
280-18425-1/11-07164-OR	Strontium-90, Isotopic Uranium
280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Project Manager/Senior Chemist

Attachment 1

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B) (8260B-S)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		SVOA (8270C)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		CLO4 (6860)		CN- (9014)						
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S			
Matrix: Water/Soil																																						
B	280-18611-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
C	280-18711-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-			
D	280-18777-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
E	280-18895-1/ IUH0937	09/08/11	09/29/11	13	0	13	0	11	0	6	0	6	0	10	0	-	-	-	-	-	6	0	3	0	5	0	6	0	5	0	-	-	-	-	-			
F	280-18895-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-			
G	280-18942-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-			
H	280-19002-1/ IUH1270	09/08/11	09/29/11	10	0	10	0	2	0	6	0	6	0	5	0	7	0	5	0	5	0	6	0	3	0	6	0	1	0	1	0	-	-	3	0	-		
I	280-19002-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-			
J	280-19045-1/ IUH1505	09/08/11	09/29/11	7	0	7	0	2	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	3	0	4	0	4	0	4	0	-	-	-	-	-		
K	280-19045-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-			
L	IUH0728/ 1H09039	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-		
M	IUH1239/ 1H11052	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-		
Total	A/PG			30	0	30	0	15	0	16	0	16	0	5	0	43	0	5	0	5	0	16	0	11	0	15	0	11	0	10	0	8	0	3	0	0	0	223

Attachment 1

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄ (7196A)		CrVI (7196A)		Diss CrVI (7196A)		CLO ₄ (314.0)		pH (9040B)		Sr-90 (905.0)		Iso U (908.0)		CLO4 (6860)		CN- (9014)							
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																					
A	280-18425-1/ 11-07164-OR	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	-	-	-	-	-	-	-	-	
E	280-18895-1	09/08/11	09/29/11	6	0	1	0	0	0	6	0	6	0	-	-	-	-	-	-	-	10	0	5	0	-	-	-	-	-	-	-	-	-	-	-	-	
H	280-19002-1	09/08/11	09/29/11	1	0	5	0	5	0	6	0	6	0	5	0	5	0	5	0	5	0	2	0	1	0	-	-	-	-	-	-	-	-	-	-	-	
J	280-19045-1	09/08/11	09/29/11	4	0	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	-	
Total	A/PG			11	0	6	0	5	0	16	0	16	0	5	0	5	0	5	0	16	0	10	0	10	0	2	0	2	0	0	0	0	0	0	0	0	99

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 25, 2011
LDC Report Date: September 16, 2011
Matrix: Water
Parameters: Isotopic Uranium
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical

Sample Delivery Group (SDG): 280-18425-1/11-07164-OR

Sample Identification

RD-57_072511_01
RD-57_072511_01(P)
RD-57_072511_01(P)DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 908.0 for Isotopic Uranium.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Sample ID	Tracer Isotope	%R (Limits)	Affected Isotope	Flag	A or P
RD-57_072511_01	Uranium-232	142.53 (30-110)	All isotopic uranium	J (all detects) UJ (all non-detects)	P

Sample ID	Tracer Isotope	%R (Limits)	Affected Isotope	Flag	A or P
RD-57_072511_01(P)	Uranium-232	123.67 (30-110)	All isotopic uranium	J (all detects) UJ (all non-detects)	P
RD-57_072511_01(P)DUP	Uranium-232	129.76 (30-110)	All isotopic uranium	J (all detects) UJ (all non-detects)	P

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18425-1/11-07164-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Data Qualification Summary - SDG 280-18425-1/11-07164-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18425-1/ 11-07164-OR	RD-57_072511_01 RD-57_072511_01(P)	All isotopic uranium	J (all detects) UJ (all non-detects)	P	Tracer recovery (%R) (*VIII)
280-18425-1/ 11-07164-OR	RD-57_072511_01 RD-57_072511_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 280-18425-1/11-07164-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Isotopic Uranium - Field Blank Data Qualification Summary - SDG 280-18425-1/11-07164-OR**

No Sample Data Qualified in this SDG

LDC #: 26171A59 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 280-18425-1/11-07164 -OR Level V
 Laboratory: Test America Laboratories, Inc. / Eberline Analytical

Date: 9/15/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Isotopic Uranium (EPA Method 908.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N	Not required
VI.	Duplicate Sample Analysis	A	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Tracer Recovery	SW	
IX.	Minimum Detectable Activity (MDA)	A	
X.	Sample result verification	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *WASH*

1	RD-57_072511_01	11		21		31	
2	RD-57_072511_01 (DUP)	12		22		32	
3	RD-57_072511_01 (CP) DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: *B = particulate*

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: July 25, 2011
LDC Report Date: September 16, 2011
Matrix: Water
Parameters: Strontium-90
Validation Level: Level V
Laboratory: TestAmerica, Inc./Eberline Analytical
Sample Delivery Group (SDG): 280-18425-1/11-07164-OR

Sample Identification

RD-57_072511_01
RD-57_072511_01(P)
RD-57_072511_01(P)DUP

Samples appended with "P" were reported for particulate

Introduction

This data review covers 3 water samples listed on the cover sheet. The analyses were per EPA Method 905.0 for Strontium-90.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the isotope was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA).

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Carrier Recovery

All carrier recoveries were within validation criteria.

IX. Minimum Detectable Activity (MDA)

All minimum detectable activities met required detection limits.

X. Sample Result Verification

All isotopes reported below the RL and above the MDA were qualified as follows:

Sample	Isotope	Flag	A or P
All samples in SDG 280-18425-1/ 11-07164-OR	All isotopes reported below the RL and above the MDA.	J (all detects)	A

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Data Qualification Summary - SDG 280-18425-1/11-07164-OR**

SDG	Sample	Isotope	Flag	A or P	Reason (Code)
280-18425-1/ 11-07164-OR	RD-57_072511_01 RD-57_072511_01(P)	All isotopes reported below the RL and above the MDA.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Laboratory Blank Data Qualification Summary - SDG 280-18425-1/11-07164-OR**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Strontium-90 - Field Blank Data Qualification Summary - SDG 280-18425-1/11-07164-OR**

No Sample Data Qualified in this SDG

METHOD: Strontium-90 (EPA Method 905.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11 - 7/29/11
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Blanks	A	
V.	Matrix Spike/(Matrix Spike) Duplicates	N	Not required
VI.	Duplicate Sample Analysis	A	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Carrier recovery	A	
IX.	Minimum detectable activity (MDA)	A	
X.	Sample result verification	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

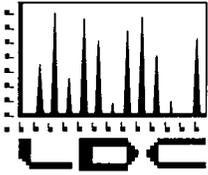
Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Wax

1	RD-57_072511_01	11		21		31	
2	RD-57_072511_01(Disc)	12		22		32	
3	RD-57_072511_01(Disc) DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: P Particulate



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

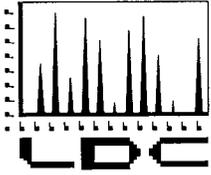
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 8, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
280-18425-1/11-07164-OR	Strontium-90, Isotopic Uranium
280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Project Manager/Senior Chemist

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: July 29, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18611-2

Sample Identification

HAR-21_072911_36

FB_HAR-21_072911_19

HAR-12_072911_36

FB_HAR-12_072911_19

HAR-14_072911_36

FB_HAR-14_072911_19

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB_HAR-21_072911_19, FB_HAR-12_072911_19, and FB_HAR-14_072911_19 were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18611-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-21_072911_36 and HAR-21_072911_01 (from SDG 280-18611-1), samples HAR-12_072911_36 and HAR-12_072911_01 (from SDG 280-18611-1), and samples HAR-14_072911_36 and HAR-14_072911_01 (from SDG 280-18611-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-21_072911_36	HAR-21_072911_01			
N-Nitrosodimethylamine	0.039	0.040	3 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-12_072911_36	HAR-12_072911_01			
N-Nitrosodimethylamine	0.0068	0.0067	1 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-14_072911_36	HAR-14_072911_01			
N-Nitrosodimethylamine	2.5	2.0	22 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18611-2

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18611-2	HAR-21_072911_36 FB_HAR-21_072911_19 HAR-12_072911_36 FB_HAR-12_072911_19 HAR-14_072911_36 FB_HAR-14_072911_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18611-2

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18611-2

No Sample Data Qualified in this SDG

LDC #: 26171B2b
 SDG #: 280-18611-2
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/15/11
 Page: 1 of 1
 Reviewer: VC
 2nd Reviewer: ✓

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/29/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec
VIII.	Laboratory control samples	A	LC5/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	D ₁ = 1 + HAR-21-072911-01 (280-18611-1)
XVI.	Field duplicates	SW	D ₂ = 3 + HAR-12-072911-01 D ₃ = 5 + HAR-14-072911-01
XVII.	Field blanks	MD	FB = 2, 4, 6

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	HAR-21_072911_36	11	MB 280-80097/A	21		31	
2	FB_HAR-21_072911_19	12		22		32	
3	HAR-12_072911_36	13		23		33	
4	FB_HAR-12_072911_19	14		24		34	
5	HAR-14_072911_36	15		25		35	
6	FB_HAR-14_072911_19	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

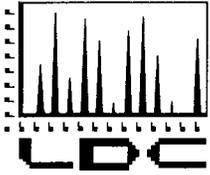
METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-21_072911_01A	HAR-21_072911_36A		
NDMA	0.040	0.039	3	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-12_072911_01A	HAR-12_072911_36A		
NDMA	0.0067	0.0068	1	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-14_072911_01A	HAR-14_072911_36A		
NDMA	2.0	2.5	22	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

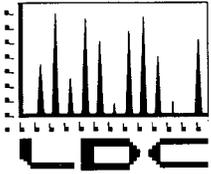
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 8, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
280-18425-1/11-07164-OR	Strontium-90, Isotopic Uranium
280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		CLO4 (6860)		CN- (9014)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																			
B	280-18611-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-18711-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	
D	280-18777-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18895-1/ IUH0937	09/08/11	09/29/11	13	0	13	0	11	0	6	0	6	0	10	0	-	-	-	-	-	6	0	3	0	5	0	6	0	5	0	-	-	-	-	
F	280-18895-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-		
G	280-18942-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-		
H	280-19002-1/ IUH1270	09/08/11	09/29/11	10	0	10	0	2	0	6	0	5	0	7	0	5	0	5	0	5	0	6	0	3	0	6	0	1	0	1	0	-	3	0	
I	280-19002-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-		
J	280-19045-1/ IUH1505	09/08/11	09/29/11	7	0	7	0	2	0	4	0	4	0	4	0	-	-	-	-	-	4	0	3	0	4	0	4	0	4	0	-	-	-	-	
K	280-19045-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-		
L	IUH0728/ 1H09039	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	
M	IUH1239/ 1H11052	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	
Total	A/P/G			30	0	30	0	15	0	16	0	5	0	43	0	5	0	5	0	5	0	16	0	11	0	15	0	11	0	10	0	8	0	3	0

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CrVI (7196A)		Diss CrVI (7196A)		CLO ₄ (314.0)		pH (9040B)		Sr-90 (905.0)		Iso U (908.0)									
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S						
Matrix: Water/Soil																																			
A	280-18425-1/ 11-07164-OR	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	-	-	-	-	-	-	
E	280-18895-1	09/08/11	09/29/11	6	0	1	0	0	0	6	0	6	0	-	-	-	-	-	-	-	10	0	5	0	-	-	-	-	-	-	-	-	-	-	
H	280-19002-1	09/08/11	09/29/11	1	0	5	0	5	0	6	0	6	0	5	0	5	0	5	0	2	0	2	0	1	0	-	-	-	-	-	-	-	-	-	
J	280-19045-1	09/08/11	09/29/11	4	0	-	-	-	-	4	0	4	0	-	-	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	
Total	A/P/G			11	0	6	0	5	0	16	0	16	0	5	0	5	0	5	0	16	0	10	0	2	0	2	0	2	0	0	0	0	0	0	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: September 20, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18711-2

Sample Identification

HAR-07_080211_36

FB_HAR-07_080211_19

HAR-08_080211_36

FB_HAR-08_080211_19

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB_HAR-07_080211_19 and FB_HAR-08_080211_19 were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-07_080211_36 and HAR-07_080211_01 (from SDG 280-18777-1) and samples HAR-08_080211_36 and HAR-08_080211-01 (from SDG 280-18777-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-07_080211_01	HAR-07_080211_36			
N-Nitrosodimethylamine	0.026	0.025	4 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-08_080211-01	HAR-08_080211_36			
N-Nitrosodimethylamine	0.015	0.015	0 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18711-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-2	HAR-07_080211_36 FB_HAR-07_080211_19 HAR-08_080211_36 FB_HAR-08_080211_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18711-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18711-2**

No Sample Data Qualified in this SDG

LDC #: 26171C2b
 SDG #: 280-18711-2
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/19/11
 Page: 1 of 1
 Reviewer: SVG
 2nd Reviewer: W

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LOS D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	D ₁ = 1 + HAR-07-080211-01 (280-18711-1)
XVI.	Field duplicates	SW	D ₂ = 3 + HAR-08-080211-01
XVII.	Field blanks	ND	FB = 2 ✓

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

1	HAR-07_080211_36	11	MB 280-80324 / A	21		31	
2	FB_HAR-07_080211_19	12		22		32	
3	HAR-08_080211_36	13		23		33	
4	FB_HAR-08_080211_19	14		24		34	
5	HAR-08_080211_01	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-07_080211_01	HAR-07_080211_36		
NDMA	0.026	0.025	4	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-08_080211_01 /	HAR-08_080211_36 /		
NDMA	0.015	0.015	0	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 2, 2011

LDC Report Date: September 21, 2011

Matrix: Water

Parameters: Perchlorate

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18711-2

Sample Identification

HAR-29_080211_01

HAR-29_080211_01MS

HAR-29_080211_01MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6860 for Perchlorate.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. LC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18711-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Data Qualification Summary - SDG 280-18711-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18711-2	HAR-29_080211_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Laboratory Blank Data Qualification Summary - SDG 280-18711-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Field Blank Data Qualification Summary - SDG 280-18711-2**

No Sample Data Qualified in this SDG

METHOD: LC/MS Perchlorate (EPA SW 846 Method 6860)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

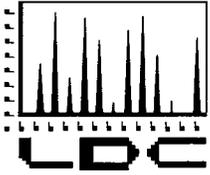
	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1 [†]	HAR-29 080211 01	11	MB 280 - 820 52 / 4	21		31	
2	HAR-29 080211 01MS	12		22		32	
3	HAR-29 080211 01MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

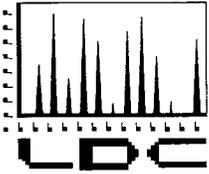
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 8, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
280-18425-1/11-07164-OR	Strontium-90, Isotopic Uranium
280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Project Manager/Senior Chemist

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		CLO4 (6860)		CN- (9014)					
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																			
B	280-18611-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
C	280-18711-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-		
D	280-18777-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18895-1/ IUH0937	09/08/11	09/29/11	13	0	13	0	11	0	6	0	10	0	-	-	-	-	6	0	3	0	5	0	6	0	5	0	-	-	-	-	-	-	-	
F	280-18895-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	-	
G	280-18942-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	
H	280-19002-1/ IUH1270	09/08/11	09/29/11	10	0	10	0	2	0	6	0	5	0	7	0	5	0	6	0	3	0	6	0	1	0	1	0	-	-	-	-	3	0	-	-
I	280-19002-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	
J	280-19045-1/ IUH1505	09/08/11	09/29/11	7	0	7	0	2	0	4	0	4	0	-	-	-	-	4	0	3	0	4	0	4	0	4	0	-	-	-	-	-	-	-	-
K	280-19045-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-
L	IUH0728/ 1HD9039	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	IUH1239/ 1H11052	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	A/PG			30	0	30	0	15	0	16	0	5	0	43	0	5	0	16	0	11	0	15	0	11	0	10	0	8	0	3	0	0	0	0	223

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄ (7196A)		CrVI (7196A)		Diss CrVI (7196A)		CLO ₄ (314.0)		pH (9040B)		Sr-90 (905.0)		Iso U (908.0)									
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
Matrix: Water/Soil																																			
A	280-18425-1/ 11-07164-OR	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	-	-	-	-	-	-	
E	280-18895-1	09/08/11	09/29/11	6	0	1	0	0	0	6	0	6	0	-	-	-	-	-	-	-	10	0	5	0	-	-	-	-	-	-	-	-	-	-	-
H	280-19002-1	09/08/11	09/29/11	1	0	5	0	5	0	6	0	6	0	5	0	5	0	5	0	2	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-
J	280-19045-1	09/08/11	09/29/11	4	0	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-
Total	A/PG			11	0	6	0	5	0	16	0	16	0	5	0	5	0	16	0	10	0	2	0	2	0	2	0	0	0	0	0	0	0	0	99

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 3, 2011

LDC Report Date: September 16, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18777-2

Sample Identification

RD-51B_080311_36

FB_RD-51B_080311_19

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample FB_RD-51B_080311_19 was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18777-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-51B_080311_36 and RD-51B_080311_01 (from SDG 280-18777-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-51B_080311_36	RD-51B_080311_01			
N-Nitrosodimethylamine	0.0050U	0.0081	47 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18777-2

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18777-2	RD-51B_080311_36 FB_RD-51B_080311_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18777-2

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18777-2

No Sample Data Qualified in this SDG

LDC #: 26171D2b

VALIDATION COMPLETENESS WORKSHEET

Date: 9/14/11

SDG #: 280-18777-2

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVG

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/03/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client spec
VIII.	Laboratory control samples	A	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 1 + RD-51B_080311-01 (280-18777-1)
XVII.	Field blanks	NB	FB = 2

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

1	RD-51B_080311_36	11	MB 280-80573/A	21	31
2	FB_RD-51B_080311_19	12		22	32
3		13		23	33
4		14		24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

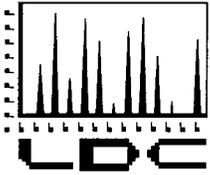
VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?
 Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RD-51B_080311_01	RD-51B_080311_36		
NDMA	0.0081	0.0050U	47	NQ (<5xRL)



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

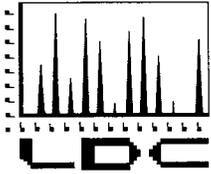
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LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
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280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD		Client Select IV		LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)																													
LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)	1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		CLO4 (6860)		CN- (9014)				
					W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	
Matrix: Water/Soil																																	
B	280-18611-2	09/08/11	09/29/11	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-18711-2	09/08/11	09/29/11	-	-	-	-	-	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	
D	280-18777-2	09/08/11	09/29/11	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18895-1/ IUH0937	09/08/11	09/29/11	13	0	13	0	11	0	6	0	-	-	-	-	-	-	6	0	3	0	5	0	6	0	5	0	-	-	-	-	-	
F	280-18895-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	-	-	-	
G	280-18942-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	
H	280-19002-1/ IUH1270	09/08/11	09/29/11	10	0	10	0	2	0	6	0	5	0	7	0	5	0	6	0	3	0	6	0	1	0	1	0	-	-	-	-	3	0
I	280-19002-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	
J	280-19045-1/ IUH1505	09/08/11	09/29/11	7	0	7	0	2	0	4	0	-	-	4	0	-	-	4	0	3	0	4	0	4	0	4	0	-	-	-	-	-	
K	280-19045-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	
L	IUH0728/ 1HD9039	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	
M	IUH1239/ 1H11052	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	-	-	-	-	-	
Total	A/PG			30	0	30	0	15	0	16	0	5	0	43	0	5	0	16	0	11	0	15	0	11	0	10	0	8	0	3	0	0	223

EDD		Client Select IV		LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)																													
LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)	Cl (300.0)		SO ₄ (300.0)	F (300.0)		NO ₃ (300.0)	Br NO ₂ O-PO ₄		CrVI (7196A)	Diss CrVI (7196A)		CLO ₄ (314.0)	pH (9040B)		Sr-90 (905.0)	Iso U (908.0)		W	S	W	S	W	S	W	S	W	S		
					W	S		W	S		W	S		W	S		W	S		W	S											W	S
Matrix: Water/Soil																																	
A	280-18425-1/ 11-07164-OR	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0	-	-	-	-	-	-	-	-	-	
E	280-18895-1	09/08/11	09/29/11	6	0	1	0	0	6	0	-	-	-	-	-	10	0	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	280-19002-1	09/08/11	09/29/11	1	0	5	0	5	0	6	0	5	0	5	0	2	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
J	280-19045-1	09/08/11	09/29/11	4	0	-	-	-	4	0	4	0	-	-	-	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	A/PG			11	0	6	0	5	0	16	0	5	0	5	0	16	0	10	0	2	0	2	0	0	0	0	0	0	0	0	0	0	99

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 5, 2011

LDC Report Date: September 26, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18895-1

Sample Identification

RD-71_080511_01
RD-78_080511_01
RD-43A_080511_01
TB_RD-43A_080511
RD-35A_080511_01
RD-35B_080511_01
RD-03_080511_01
TB_RD-03_080511
RD-49C_080511_01
HAR-16_080511_01
TB_HAR-16_080511
HAR-04_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD
HAR-04_080511_36MS
HAR-04_080511_36MSD

Introduction

This data review covers 17 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81489/5	8/12/11	Methylene chloride	0.576 ug/L	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01 TB_RD-43A_080511 RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 TB_RD-03_080511 RD-49C_080511_01 HAR-16_080511_01 TB_HAR-16_080511 HAR-04_080511_01 HAR-04_080511_36

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB_RD-43A_080511	Methylene chloride	0.84 ug/L	5.0U ug/L
RD-35A_080511_01	Methylene chloride	0.95 ug/L	10U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RD-35B_080511_01 (10X)	Methylene chloride	7.5 ug/L	50U ug/L
TB_RD-03_080511	Methylene chloride	0.93 ug/L	5.0U ug/L
HAR-16_080511_01 (10X)	Methylene chloride	8.4 ug/L	50U ug/L
TB_HAR-16_080511	Methylene chloride	0.89 ug/L	5.0U ug/L
HAR-04_080511_01	Methylene chloride	1.2 ug/L	10U ug/L
HAR-04_080511_36	Methylene chloride	1.2 ug/L	10U ug/L

Samples TB_RD-43A_080511, TB_RD-03_080511, and TB_HAR-16_080511 were identified as trip blanks. No volatile contaminants were found with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB_RD-43A_080511	8/5/11	Acetone Methylene chloride	5.1 ug/L 0.84 ug/L	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01
TB_RD-03_080511	8/5/11	Methylene chloride	0.93 ug/L	RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 RD-49C_080511_01
TB_HAR-16_080511	8/5/11	Acetone Methylene chloride	2.7 ug/L 0.89 ug/L	HAR-16_080511_01 HAR-04_080511_01 HAR-04_080511_36

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
RD-78_080511_01	Acetone	4.2 ug/L	10U ug/L
RD-35A_080511_01	Methylene chloride	0.95 ug/L	10U ug/L
RD-35B_080511_01	Methylene chloride	7.5 ug/L	50U ug/L
HAR-16_080511_01	Methylene chloride	8.4 ug/L	50U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-04_080511_01	Methylene chloride	1.2 ug/L	10U ug/L
HAR-04_080511_36	Methylene chloride	1.2 ug/L	10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RD-71_080511_01	1,2-Dichloroethane-d4	77 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
RD-78_080511_01	Bromofluorobenzene	81 (86-115)	All TCL compounds	J (all detects) UJ (all non-detects)	P
RD-43A_080511_01	Bromofluorobenzene	81 (86-115)	All TCL compounds	J (all detects) UJ (all non-detects)	P
TB_RD-43A_080511	1,2-Dichloroethane-d4 Bromofluorobenzene	79 (80-120) 81 (86-115)	All TCL compounds	J (all detects) UJ (all non-detects)	P
RD-35A_080511_01	Bromofluorobenzene Bromofluorobenzene Toluene-d8	81 (86-115) 78 (86-115) 86 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	A
RD-35B_080511_01	Bromofluorobenzene Toluene-d8 Bromofluorobenzene Toluene-d8	80 (86-115) 87 (88-110) 79 (86-115) 87 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	A
RD-03_080511_01	Bromofluorobenzene Toluene-d8	81 (86-115) 87 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	P
TB_RD-03_080511	Bromofluorobenzene Toluene-d8	80 (86-115) 87 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	P
RD-49C_080511_01	Bromofluorobenzene	81 (86-115)	All TCL compounds	J (all detects) UJ (all non-detects)	P
HAR-16_080511_01	Bromofluorobenzene Toluene-d8 Bromofluorobenzene Toluene-d8	81 (86-115) 87 (88-110) 80 (86-115) 87 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	A
TB_HAR-16_080511	Bromofluorobenzene Toluene-d8	78 (86-115) 87 (88-110)	All TCL compounds	J (all detects) UJ (all non-detects)	P

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
HAR-04_080511_01	Bromofluorobenzene	79 (86-115)	All TCL compounds	J (all detects) UJ (all non-detects)	A
HAR-04_080511_36	Bromofluorobenzene	79 (86-115)	All TCL compounds except Trichloroethene	J (all detects) UJ (all non-detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
HAR-16_080511_01MS/MSD (HAR-16_080511_01)	1,1,2-Trichloroethane	-	122 (76-120)	-	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
LCS 280-81489/4	1,1,2-Trichloroethane	125 (76-120)	All samples in SDG 280-18895-1	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-04_080511_01 and HAR-04_080511_36 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-04_080511_01	HAR-04_080511_36			
1,1,1-Trichloroethene	2.1	2.4	13 (≤ 35)	-	-
cis-1,2-Dichloroethen	29	34	16 (≤ 35)	-	-
Methylene chloride	1.2	1.2	0 (≤ 35)	-	-
Trichloroethene	600	690	14 (≤ 35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-18895-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01 TB_RD-43A_080511 RD-03_080511_01 TB_RD-03_080511 RD-49C_080511_01 TB_HAR-16_080511	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R) (S)
280-18895-1	HAR-16_080511_01 HAR-04_080511_01 RD-35B_080511_01 RD-35A_080511_01	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18895-1	HAR-04_080511_36	All TCL compounds except Trichloroethene	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-18895-1	HAR-16_080511_01	1,1,2-Trichloroethane	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-18895-1	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01 TB_RD-43A_080511 RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 TB_RD-03_080511 RD-49C_080511_01 HAR-16_080511_01 TB_HAR-16_080511 HAR-04_080511_01 HAR-04_080511_36	1,1,2-Trichloroethane	J (all detects)	P	Laboratory control samples (%R) (L)
280-18895-1	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01 TB_RD-43A_080511 RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 TB_RD-03_080511 RD-49C_080511_01 HAR-16_080511_01 TB_HAR-16_080511 HAR-04_080511_01 HAR-04_080511_36	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-18895-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-18895-1	TB_RD-43A_080511	Methylene chloride	5.0U ug/L	A	B
280-18895-1	RD-35A_080511_01	Methylene chloride	10U ug/L	A	B
280-18895-1	RD-35B_080511_01 (10X)	Methylene chloride	50U ug/L	A	B
280-18895-1	TB_RD-03_080511	Methylene chloride	5.0U ug/L	A	B
280-18895-1	HAR-16_080511_01 (10X)	Methylene chloride	50U ug/L	A	B
280-18895-1	TB_HAR-16_080511	Methylene chloride	5.0U ug/L	A	B
280-18895-1	HAR-04_080511_01	Methylene chloride	10U ug/L	A	B
280-18895-1	HAR-04_080511_36	Methylene chloride	10U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Field Blank Data Qualification Summary - SDG 280-18895-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-18895-1	RD-78_080511_01	Acetone	10U ug/L	A	T
280-18895-1	RD-35A_080511_01	Methylene chloride	10U ug/L	A	T
280-18895-1	RD-35B_080511_01	Methylene chloride	50U ug/L	A	T
280-18895-1	HAR-16_080511_01	Methylene chloride	50U ug/L	A	T
280-18895-1	HAR-04_080511_01	Methylene chloride	10U ug/L	A	T
280-18895-1	HAR-04_080511_36	Methylene chloride	10U ug/L	A	T

LDC #: 26171E1a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/15/11

SDG #: 280-18895-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JG
2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LES
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 12, 13
XVII.	Field blanks	SW	TB = 4, 8, 11

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-71_080511_01	11	TB_HAR-16_080511	21	MPB 280-81489/5	31	
2	RD-78_080511_01	12	HAR-04_080511_01	22	MPB 280-81695/7	32	(S only)
3	RD-43A_080511_01	13	HAR-04_080511_36	23		33	
4	TB_RD-43A_080511	14	HAR-16_080511_01MS	24		34	
5	RD-35A_080511_01	15	HAR-16_080511_01MSD	25		35	
6	RD-35B_080511_01	16	HAR-04_080511_36MS	26		36	
7	RD-03_080511_01	17	HAR-04_080511_36MSD	27		37	
8	TB_RD-03_080511	18		28		38	
9	RD-49C_080511_01	19		29		39	
10	HAR-16_080511_01	20		30		40	

VOCs = 1, 2, 5, 6, 9-13
VOCs + IPA = 3, 4, 7, 8

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications	Code: S
		1	DCE	77 (80-120)	J/NJ/A	(qual all TOL)
		2	BFB	81 (86-115)		
		3	BFB	81 (86-115)		
		4	DCE	79 (80-120)		
			BFB	81 (86-115)		
		5	BFB	81 (86-115)	J/NJ/A	(qual all except S)
		5	BFB	78 (86-115)		
			TOL	86 (86-110)		(qual S only)
		6	BFB	80 (86-115)		(qual all except BFB)
			TOL	87 (88-110)		
		6	BFB	79 (86-115)		(qual BFB only)
			TOL	87 (88-110)		

QC Limits (Water)

- 88-110
- 86-115
- 80-120
- 86-118

- SMC1 (TOL) = Toluene-d8
- SMC2 (BFB) = Bromofluorobenzene
- SMC3 (DCE) = 1,2-Dichloroethane-d4
- SMC4 (DFM) = Dibromofluoromethane

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	12	13		
1,1,1-Trichloroethene	2.1	2.4	13	
cis-1,2-Dichloroethene	29	34	16	
Methylene chloride	1.2	1.2	0	
Trichloroethene	600	690	14	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 5, 2011

LDC Report Date: September 26, 2011

Matrix: Water

Parameters: 1,4-Dioxane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18895-1

Sample Identification

RD-71_080511_01
RD-78_080511_01
RD-43A_080511_01
TB_RD-43A_080511
RD-35A_080511_01
RD-35B_080511_01
RD-03_080511_01
TB_RD-03_080511
RD-49C_080511_01
HAR-16_080511_01
TB_HAR-16_080511
HAR-04_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD

Introduction

This data review covers 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_RD-43A_080511, TB_RD-03_080511, and TB_HAR-16_080511 were identified as trip blanks. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-04_080511_01 and HAR-04_080511_36 were identified as field duplicates. No 1,4-dioxane was detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-18895-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01 TB_RD-43A_080511 RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 TB_RD-03_080511 RD-49C_080511_01 HAR-16_080511_01 TB_HAR-16_080511 HAR-04_080511_01 HAR-04_080511_36	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-18895-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-18895-1

No Sample Data Qualified in this SDG

LDC #: 26171E1b

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-18895-1

Level V

Laboratory: Test America, Inc.

Date: 9/15/11

Page: 1 of 1

Reviewer: OV2nd Reviewer: lw**METHOD:** GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS 10
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 12, 13
XVII.	Field blanks	ND	TB = 4, 8, 11

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-71_080511_01	11	TB_HAR-16_080511	21	MB 280-81388/12	31
2	RD-78_080511_01	12	HAR-04_080511_01	22	MB 280-81475/5	32
3	RD-43A_080511_01	13	HAR-04_080511_36	23		33
4	TB_RD-43A_080511	14	HAR-16_080511_01MS	24		34
5	RD-35A_080511_01	15	HAR-16_080511_01MSD	25		35
6	RD-35B_080511_01	16		26		36
7	RD-03_080511_01	17		27		37
8	TB_RD-03_080511	18		28		38
9	RD-49C_080511_01	19		29		39
10	HAR-16_080511_01	20		30		40

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 5, 2011
LDC Report Date: September 26, 2011
Matrix: Water
Parameters: 1,2,3-Trichloropropane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18895-1/IUH0937

Sample Identification

RD-71_080511_01
RD-78_080511_01
RD-43A_080511_01
TB_RD-43A_080511
RD-35A_080511_01
RD-35B_080511_01
RD-03_080511_01
TB_RD-03_080511
HAR-16_080511_01
TB_HAR-16_080511
HAR-04_080511_01
HAR-04_080511_01DUP
HAR-16_080511_01MS
HAR-16_080511_01MSD

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Sample TB_RD-43A_080511, TB_RD-03_080511 and TB_HAR-16_080511 were identified as trip blanks. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1/IUH0937	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011
1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-18895-1/IUH0937

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1/ IUH0937	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01 TB_RD-43A_080511 RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 TB_RD-03_080511 HAR-16_080511_01 TB_HAR-16_080511 HAR-04_080511_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-18895-1/IUH0937

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-18895-1/IUH0937

No Sample Data Qualified in this SDG

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	A/A	
VIII.	Laboratory control samples	A	ICS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 4, 8, 10

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	RD-71_080511_01	11	³	HAR-04_080511_01	21	¹	11 H 1589 - BIK 1	31	
2	RD-78_080511_01	12	³	11 DUP	22	¹	11 H 1797 - ↓	32	
3	RD-43A_080511_01	13		9 MS	23	³	11 H 1399 - ↓	33	
4	TB_RD-43A_080511	14		9 MSD	24			34	
5	RD-35A_080511_01	15			25			35	
6	RD-35B_080511_01	16			26			36	
7	RD-03_080511_01	17			27			37	
8	TB_RD-03_080511	18			28			38	
9	HAR-16_080511_01	19			29			39	
10	TB_HAR-16_080511	20			30			40	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 5, 2011
LDC Report Date: September 26, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18895-1

Sample Identification

RD-43A_080511_01
RD-03_080511_01
RD-49C_080511_01
HAR-16_080511_01
HAR-04_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-04_080511_01 and HAR-04_080511_36 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-04_080511_01	HAR-04_080511_36			
Bis(2-ethylhexyl)phthalate	1.8	1.9	5 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-18895-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1	RD-43A_080511_01 RD-03_080511_01 RD-49C_080511_01 HAR-16_080511_01 HAR-04_080511_01 HAR-04_080511_36	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

LDC #: 26171E2a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/15/11

SDG #: 280-18895-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: OV2nd Reviewer: ✓

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 5, 6
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-43A_080511_01	11	MB 280-80163 / 1-A	21	31
2	RD-03_080511_01	12		22	32
3	RD-49C_080511_01	13		23	33
4	HAR-16_080511_01	14		24	34
5	HAR-04_080511_01	15		25	35
6	HAR-04_080511_36	16		26	36
7	HAR-16_080511_01MS	17		27	37
8	HAR-16_080511_01MSD	18		28	38
9		19		29	39
10		20		30	40

Phthalates + NB = 1-3

Phthalates + NB + A = 4, 5, 6

NB + A =

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	5	6		
Bis(2-ethylhexyl)phthalate	1.8	1.9	5	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 5, 2011
LDC Report Date: September 26, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18895-1

Sample Identification

RD-71_080511_01
RD-78_080511_01
RD-43A_080511_01
RD-35A_080511_01
RD-35B_080511_01
RD-03_080511_01
RD-49C_080511_01
HAR-16_080511_01
HAR-04_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB_RD-49C_080511_19 and FB_HAR-16_080511_19 (both from SDG 280-18895-2) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since the sample concentration was greater than the spiked concentration, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-04_080511_01 and HAR-04_080511_36, samples RD-49C_080511_01 and RD-49C_080511_36 (from SDG 280-18895-2), and samples HAR-16_080511_01 and HAR-16_080511_36 (from SDG 280-18895-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-49C_080511_01	RD-49C_080511_36			
N-Nitrosodimethylamine	0.011	0.013	17 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-16_080511_01	HAR-16_080511_36			
N-Nitrosodimethylamine	2.4	2.1	13 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18895-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1	RD-71_080511_01 RD-78_080511_01 RD-43A_080511_01 RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 RD-49C_080511_01 HAR-16_080511_01 HAR-04_080511_01 HAR-04_080511_36	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18895-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18895-1

No Sample Data Qualified in this SDG

LDC #: 26171E2b

VALIDATION COMPLETENESS WORKSHEET

Date: 9/15/11

SDG #: 280-18895-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: TYG

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	* D ₃ = 9, 10 D ₁ = 7 + RD-49C-080511-36 (280-18895-2) D ₂ = 8 + HAR-16-080511-36
XVII.	Field blanks	ND	FB = FB-RD-49C-080511-19 = FB-HAR-16-080511-19

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

* ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	RD-71_080511_01	11	HAR-16_080511_01MS	21	MB 280-81035/1-A	31
2	RD-78_080511_01	12	HAR-16_080511_01MSD	22	MB 280-81215/1-A	32
3	RD-43A_080511_01	13		23		33
4	RD-35A_080511_01	14		24		34
5	RD-35B_080511_01	15		25		35
6	RD-03_080511_01	16		26		36
7	RD-49C_080511_01	17		27		37
8	HAR-16_080511_01	18		28		38
9	HAR-04_080511_01	19		29		39
10	HAR-04_080511_36	20		30		40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	RD-49C_080511_01	RD-49C_080511_36		
NDMA	0.011	0.013	17	

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-16_080511_01	HAR-16_080511_36		
NDMA	2.4	2.1	13	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 5, 2011

LDC Report Date: September 20, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18895-1

Sample Identification

HAR-16_080511_01

HAR-16_080511_36

FB_HAR-16_080511_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
8/10/11	003B0301	DB-35MS	Dinoseb	28.6	MB 280-80351/1-A	J (all detects) UJ (all non-detects)	A
8/10/11	003B0301	DB-XLB	Dinoseb	32.2	MB 280-80351/1-A	J (all detects) UJ (all non-detects)	A
8/10/11	009B0701	DB-35MS	Dinoseb	21.9	HAR-16_080511_01 HAR-16_080511_36 FB_HAR-16_080511_19	J (all detects) UJ (all non-detects)	A
8/10/11	009B0701	DB-XLB	Dinoseb	25.2	HAR-16_080511_01 HAR-16_080511_36 FB_HAR-16_080511_19	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks.

Sample FB_HAR-16_080511_19 was identified as a field blank. No herbicide contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/(Matrix Spike) Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples HAR-16_080211_01 and HAR-16_080511_36 were identified as field duplicates. No herbicides were detected in any of the samples.

Samples HAR-16_080511_01 and HAR-16_080511_03 (from SDG IUH0728) were identified as split samples. No herbicides were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Data Qualification Summary - SDG 280-18895-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1	HAR-16_080511_01 HAR-16_080511_36 FB_HAR-16_080511_19	Dinoseb	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-18895-1	HAR-16_080511_01 HAR-16_080511_36 FB_HAR-16_080511_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Laboratory Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Field Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

LDC #: 26171E5

VALIDATION COMPLETENESS WORKSHEET

Date: 9/15/11

SDG #: 280-18895-1

Level IV

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: SVB

2nd Reviewer: [Signature]

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	Initial calibration	A	ry
III.	Calibration verification/ICV	SW	CCV/ICV ≤ 20%
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	ICS / b
VIII.	Target compound identification	NA	
IX.	Compound Quantitation and CRQLs	NA	
X.	System Performance	NA	
XI.	Overall assessment of data	A	
XII.	Field duplicates / Split	ND	D = 1, 2 S = 1 + HAR-16-080511-03 (144728)
XIII.	Field blanks	ND	FB = 3

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	HAR-16_080511_01	11	MB 280-80357 / A	21		31	
2	HAR-16_080511_36	12		22		32	
3	FB HAR-16_080511_19	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: 2,4-D, 2,4,5-T, 2,4,5-TP, Dimefob

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	/	/		
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	/			
Did the initial calibration meet the curve fit acceptance criteria?	/			
Were the RT windows properly established?	/			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? <u> </u> %D or <u> </u> %R	/			
Was a continuing calibration analyzed daily?	/			
Were all percent differences (%D) < 20% or percent recoveries 80-120%?	/	/		
Were all the retention times within the acceptance windows?	/			
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.			/	
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	/			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX. Regional Quality Assurance and Quality Control				

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.		/		
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.		/		

LDC#: 24171ES

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 7
Reviewer: JK
2nd Reviewer: [Signature]

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/1/2011	GCS M DB 35MS	Dinoseb	1	18.9	87576	7669555776
			2	47.2	194047	37654238209
			3	236.0	896627	803939977129
			4	472.0	1749999	3062496500001
			5	709.0	2543144	6467581404736
			6	945.0	3503883	12277196077689
			7	1890.0	6241494	38956247352036

CF
4633.7
4111.2
3799.3
3707.6
3586.9
3707.8
3302.4

Ave 3835.5

	Regression Output	
	Calculated	Reported
Constant	b = 3.34102	b = 3.4594000
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² 0.9993833	r ² 0.9994
Degrees of Freedom		
X Coefficient(s)	m1 = 0.00024676	m1 = 0.00024671
Std Err of Coef.	8.76171E-12	8.76001E-12
Correlation Coefficient	0.999692	

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/1/2011	GCS M DBXLB	Dinoseb	1	18.9	46273	2141190529
			2	47.2	114979	13220170441
			3	236.0	576535	332392606225
			4	472.0	1124476	126446274576
			5	709.0	1755313	3081123727969
			6	945.0	2215645	4909082766025
			7	1890.0	3852775	14843875200625

CF
 2448.3
 2436.0
 2442.9
 2382.4
 2475.8
 2344.6
 2038.5

Ave 2366.9

	Regression Output	
	Calculated	Reported
Constant	b = 13.45490	b = 13.5753212
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² 0.9994065	r ² 0.9994
Degrees of Freedom		
X Coefficient(s)	m1 = 0.00034143	m1 = 0.00034137
Std Err of Coef.	m2 = 3.75022E-11	m2 = 3.74940E-11
Correlation Coefficient	0.999703	

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Where:
 $\text{Percent difference (\%D)} = 100 * (N - C) / N$
 N = Initial Calibration Factor or Nominal Amount
 C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	Average RRF Conc	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated % D
1	003b0301	8/10/2011	Dinoseb (DB 35MS)	472	337.3	337.3	28.6	28.6
			Dinoseb (DB XLB)	472	320	320	32.2	32.2
2	009b0701	8/10/2011	Dinoseb (DB 35MS)	472	368.8	368.8	21.9	21.9
			Dinoseb (DB XLB)	472	353	353	25.2	25.2

$Y = m1X + m2(X^2) + b$

Y= Amount

X= Response

	Response	Response ²	m1	m2	b	m2(X ²)	m1X	Conc
CCV1	Dinoseb (DB 35MS)	1293702	0.000247	8.7600E-12	3.4594	14.6613	319.16922	337.29
CCV1	Dinoseb (DB XLB)	824218	0.000341	3.7494E-11	13.5753	25.4710	281.36330	320.41
CCV2	Dinoseb (DB 35MS)	1410351	0.000247	8.7600E-12	3.4594	17.4244	347.94770	368.83
CCV2	Dinoseb (DB XLB)	905643	0.000341	3.7494E-11	13.5753	30.7522	309.15935	353.49
Sample 1	Dinoseb (DB 35MS)	79783	0.000247	8.7600E-12	3.4594	0.0576	19.68326	23.198

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100
 Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	
BCAA	DB-3MS	500	350.997	70	76	9 ↓
	DB-XLB		337.229	67	67	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$

Where SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

RPD = $((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD) * 100$

LCS = Laboratory Control Sample

LCS D = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS 280-80357 / 2,3-A

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCS D		LCS D		LCS D	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)	4.60	4.60	4.90	6.37	106	106	139	138.5	76	76		
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)												
2,4,6-Trinitrotoluene (8330)												

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 5, 2011
LDC Report Date: September 19, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18895-1

Sample Identification

RD-71_080511_01
RD-71_080511_36
RD-78_080511_01
RD-43A_080511_01
RD-35A_080511_01
RD-35B_080511_01
RD-03_080511_01
RD-49C-080511_01
HAR-16_080511_01
HAR-04_080511_36
RD-35A_080511_01MS
RD-35A_080511_01MSD
RD-35A_080511_01DUP
HAR-16_080511_01MS
HAR-16_080511_01MSD
HAR-16_080511_01DUP
HAR-04_080511_01

Introduction

This data review covers 17 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Chloride, Fluoride and Nitrate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Raw data were not reviewed for this SDG. The review was based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-18895-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples RD-71_080511_01 and RD-71_080511_36 and samples HAR-04_080511_01 and HAR-04_080511_36 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD (Limits)	Flags	A or P
	HAR-04_080511_01	HAR-04_080511_36			
Fluoride	1.3 mg/L	1.3 mg/L	0 (≤ 35)	-	-
Nitrate	14 mg/L	14 mg/L	0 (≤ 35)	-	-
Perchlorate	0.41 ug/L	0.47 ug/L	14 (≤ 35)	-	-
Ammonia as N	0.055 mg/L	0.055U mg/L	0 (≤ 35)	-	-
pH	6.68 units	6.63 units	1 (≤ 35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-18895-1**

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-18895-1	RD-71_080511_01 RD-71_080511_36 RD-78_080511_01 RD-43A_080511_01 RD-35A_080511_01 RD-35B_080511_01 RD-03_080511_01 RD-49C-080511_01 HAR-16_080511_01 HAR-04_080511_36 HAR-04_080511_01	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

LDC #: 26171E6
 SDG #: 280-18895-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 9/5/11
 Page: 1 of 1
 Reviewer: CR
 2nd Reviewer: W

METHOD: Ammonia-N (EPA Method 350.1), Chloride, Sulfate, Fluoride, Nitrate, (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/5/11
II	Initial calibration	N	
III.	Calibration verification	N	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LES/D
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	* (1,2), (17,10)
XI	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 *ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: W&N

1	RD-71_080511_01	11	RD-35A_080511_01MS	21		31	
2	RD-71_080511_36	12	RD-35A_080511_01MSD	22		32	
3	RD-78_080511_01	13	RD-35A_080511_01DUP	23		33	
4	RD-43A_080511_01	14	HAR-16_080511_01MS	24		34	
5	RD-35A_080511_01	15	HAR-16_080511_01MSD	25		35	
6	RD-35B_080511_01	16	HAR-16_080511_01DUP	26		36	
7	RD-03_080511_01	17	HAR-04_080511_01	27		37	
8	RD-49C_080511_01 TB RD-03_080511_01	18		28		38	
9	HAR-16_080511_01	19		29		39	
10	HAR-04_080511_36	20		30		40	

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Inorganics, Method See Cover

- Y N NA Were field duplicate pairs identified in this SDG?
- Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)	
	<u>17</u>	<u>10</u>		
Fluoride	1.3	1.3	0	
Nitrate as N	14	14	0	
Perchlorate (ug/L)	0.41	0.47	14	
Ammonia as N	0.055	0.055U	0	
pH (units)	6.68	6.63	1	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 5, 2011

LDC Report Date: September 26, 2011

Matrix: Water

Parameters: Diesel Range Organics

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18895-1

Sample Identification

RD-43A_080511_01
RD-03_080511_01
RD-49C_080511_01
HAR-16_080511_01
HAR-04_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples HAR-04_080511_01 and HAR-04_080511_36 were identified as field duplicates. No diesel range organic were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-18895-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1	RD-43A_080511_01 RD-03_080511_01 RD-49C_080511_01 HAR-16_080511_01 HAR-04_080511_01 HAR-04_080511_36	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

LDC #: 26171E8
 SDG #: 280-18895-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 9/15/11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/05/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	<u>LCS 1D</u>
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	<u>D = 5, 6</u>
XIII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RD-43A_080511_01	11	<u>MB 280-80756/1-A</u>	21		31
2	RD-03_080511_01	12		22		32
3	RD-49C_080511_01	13		23		33
4	HAR-16_080511_01	14		24		34
5	HAR-04_080511_01 <u>D</u>	15		25		35
6	HAR-04_080511_36 <u>D</u>	16		26		36
7	HAR-16_080511_01MS	17		27		37
8	HAR-16_080511_01MSD	18		28		38
9		19		29		39
10		20		30		40

Notes: _____

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 5, 2011
LDC Report Date: September 16, 2011
Matrix: Water
Parameters: Hydrazines
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18895-1

Sample Identification

RD-43A_080511_01
RD-03_080511_01
RD-49C_080511_01
HAR-16_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD
HAR-04_080511_01

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method DVWC-0077 for Hydrazines.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical or advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrazines were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples HAR-04_080511_36 and HAR-04_080511_01 were identified as field duplicates. No hydrazines were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Data Qualification Summary - SDG 280-18895-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-1	RD-43A_080511_01 RD-03_080511_01 RD-49C_080511_01 HAR-16_080511_01 HAR-04_080511_36 HAR-04_080511_01	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Laboratory Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
Hydrazines - Field Blank Data Qualification Summary - SDG 280-18895-1**

No Sample Data Qualified in this SDG

LDC #: 26171E76
 SDG #: 280-18895-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/15/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer:

METHOD: HPLC Hydrazines (Method DVWC-0077)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

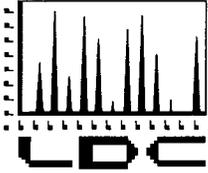
	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS 16
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	ND	D = 7, 10
XIII.	Field blanks	N	FB

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	RD-43A_080511_01	11	MB 280-80886 /-A	21		31	
2	RD-03_080511_01	12		22		32	
3	RD-49C_080511_01	13		23		33	
4	HAR-16_080511_01	14		24		34	
5	HAR-16_080511_36	15		25		35	
6	FB HAR-16_080511_19	16		26		36	
7	HAR-04_080511_36	17		27		37	
8	HAR-16_080511_01MS	18		28		38	
9	HAR-16_080511_01MSD	19		29		39	
10	HAR-04_080511_01	20		30		40	

Notes: _____



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

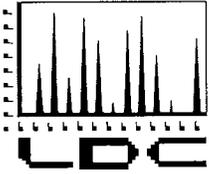
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 8, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
280-18425-1/11-07164-OR	Strontium-90, Isotopic Uranium
280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		CLO4 (6860)		CN- (9014)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix: Water/Soil																																			
B	280-18611-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C	280-18711-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
D	280-18777-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18895-1/ IUH0937	09/08/11	09/29/11	13	0	11	0	6	0	6	0	6	0	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F	280-18895-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
G	280-18942-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	280-19002-1/ IUH1270	09/08/11	09/29/11	10	0	2	0	2	0	6	0	5	0	7	0	5	0	5	0	5	0	6	0	3	0	6	0	1	0	1	0	-	-	3	0
I	280-19002-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J	280-19045-1/ IUH1505	09/08/11	09/29/11	7	0	2	0	4	0	4	0	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K	280-19045-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
L	IUH0728/ 1H09039	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
M	IUH1239/ 1H1052	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	A/P/G			30	0	30	0	15	0	16	0	5	0	43	0	5	0	5	0	16	0	11	0	15	0	11	0	10	0	8	0	3	0	0	

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CrVI (7196A)		Diss CrVI (7196A)		CLO ₄ (314.0)		pH (9040B)		Sr-90 (905.0)		Iso U (908.0)								
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S					
Matrix: Water/Soil																																		
A	280-18425-1/ 11-07164-OR	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E	280-18895-1	09/08/11	09/29/11	6	0	1	0	0	0	6	0	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	280-19002-1	09/08/11	09/29/11	1	0	5	0	5	0	6	0	6	0	5	0	5	0	5	0	2	0	2	0	1	0	-	-	-	-	-	-	-	-	
J	280-19045-1	09/08/11	09/29/11	4	0	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	A/P/G			11	0	6	0	5	0	16	0	16	0	5	0	5	0	5	0	16	0	10	0	2	0	2	0	0	0	0	0	0	0	0

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 5, 2011
LDC Report Date: September 20, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18895-2

Sample Identification

RD-49C_080511_36
FB_RD-49C_080511_19
HAR-16_080511_36
FB_HAR-16_080511_19

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Samples FB_RD-49C_080511_19 and FB_HAR-16_080511_19 were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples RD-49C_080511_36 and RD-49C_080511_01 (from SDG 280-188925-1) and samples HAR-16_080511_36 and HAR-16_080511-01 (from SDG 280-188925-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	RD-49C_080511_01	RD-49C_080511_36			
N-Nitrosodimethylamine	0.011	0.013	17 (≤35)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-16_080511-01	HAR-16_080511_36			
N-Nitrosodimethylamine	2.4	2.1	13 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18895-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-2	RD-49C_080511_36 FB_RD-49C_080511_19 HAR-16_080511_36 FB_HAR-16_080511_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18895-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18895-2**

No Sample Data Qualified in this SDG

LDC #: 26171F2b
 SDG #: 280-18895-2
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

M

Date: 9/19/11
 Page: 1 of 1
 Reviewer: *[Signature]*
 2nd Reviewer: *[Signature]*

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec
VIII.	Laboratory control samples	A	165 / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D ₁ = 1 + RD-49C-080511-01 (280-18895-1) D ₂ = 3 + HAR-16-080511-01 ↓
XVII.	Field blanks	ND	FB = 2, 4

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

+	1	RD-49C_080511_36	D ₁	11	MB 280-81214/1-A	21	31
-	2	FB_RD-49C_080511_19		12		22	32
+	3	HAR-16_080511_36	D ₂	13		23	33
-	4	FB_HAR-16_080511_19		14		24	34
	5			15		25	35
	6			16		26	36
	7			17		27	37
	8			18		28	38
	9			19		29	39
	10			20		30	40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

N NA
 N NA

Were field duplicate pairs identified in this SDG?
 Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	RD-49C_080511_01	RD-49C_080511_36		
NDMA	0.011	0.013	17	

Compound	Concentration (ug/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	HAR-16_080511_01	HAR-16_080511_36		
NDMA	2.4	2.1	13	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 5, 2011
LDC Report Date: September 21, 2011
Matrix: Water
Parameters: Perchlorate
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-18895-2

Sample Identification

RD-35A_080511_01
HAR-16_080511_01
HAR-04_080511_01
HAR-04_080511_36
HAR-16_080511_01MS
HAR-16_080511_01MSD

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6860 for Perchlorate.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. LC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since the sample concentration was greater than the spiked concentration, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18895-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-04_080511_01 and HAR-04_080511_36 were identified as field duplicates. No perchlorate was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	HAR-04_080511_01	HAR-04_080511_36			
Perchlorate	0.61	0.63	3 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Perchlorate - Data Qualification Summary - SDG 280-18895-2

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18895-2	RD-35A_080511_01 HAR-16_080511_01 HAR-04_080511_01 HAR-04_080511_36	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Perchlorate - Laboratory Blank Data Qualification Summary - SDG 280-18895-2

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Perchlorate - Field Blank Data Qualification Summary - SDG 280-18895-2

No Sample Data Qualified in this SDG

METHOD: LC/MS Perchlorate (EPA SW846 Method 6860)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/05/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 3, 4
XVII.	Field blanks	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples: Water

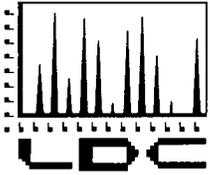
1	RD-35A_080511_01	11	MB 280-82984/21	21		31
2	HAR-16_080511_01	12		22		32
3	HAR-04_080511_01 D	13		23		33
4	HAR-04_080511_36 D	14		24		34
5	HAR-16_080511_01MS	15		25		35
6	HAR-16_080511_01MSD	16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: LC/MS Perchlorate (EPA SW 846 Method 6860)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	3	4		
Perchlorate	0.61	0.63	3	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

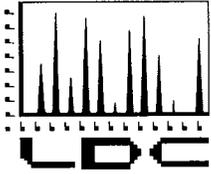
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 8, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
280-18425-1/11-07164-OR	Strontium-90, Isotopic Uranium
280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Project Manager/Senior Chemist

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846)		DRO (8015B)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC)		MMH (DVWC)		CLO4 (6860)		CN- (9014)								
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S					
Matrix: Water/Soil																																								
B	280-18611-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
C	280-18711-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
D	280-18777-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
E	280-18895-1/ IUH0937	09/08/11	09/29/11	13	0	11	0	6	0	6	0	6	0	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
F	280-18895-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G	280-18942-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H	280-19002-1/ IUH1270	09/08/11	09/29/11	10	0	2	0	6	0	6	0	5	0	7	0	5	0	5	0	5	0	6	0	3	0	6	0	1	0	1	0	-	-	-	-	-	-	-	-	
I	280-19002-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J	280-19045-1/ IUH1505	09/08/11	09/29/11	7	0	2	0	4	0	4	0	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K	280-19045-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L	IUH0728/ 1H09039	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	IUH1239/ 1H11052	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	A/P/G			30	0	30	0	15	0	16	0	5	0	43	0	5	0	5	0	16	0	16	0	11	0	15	0	11	0	10	0	8	0	3	0	0	0	0	0	223

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄		CrVI (7196A)		CLO ₄ (314.0)		pH (9040B)		Sr-90 (905.0)		Iso U (908.0)			
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
Matrix: Water/Soil																											
A	280-18425-1/ 11-07164-OR	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	280-18895-1	09/08/11	09/29/11	6	0	1	0	0	0	6	0	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	280-19002-1	09/08/11	09/29/11	1	0	5	0	5	0	6	0	6	0	5	0	5	0	5	0	2	0	1	0	-	-	-	
J	280-19045-1	09/08/11	09/29/11	4	0	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	A/P/G			11	0	6	0	5	0	16	0	16	0	5	0	5	0	16	0	16	0	10	0	2	0	0	99

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 20, 2011

Matrix: Water

Parameters: N-Nitrosodimethylamine

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-2

Sample Identification

HAR-32_080811_36

FB_HAR-32_080811_19

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
All samples in SDG 280-18942-2	N-Nitrosodimethylamine	8	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks.

Sample FB_HAR-32_080811_19 was identified as a field blank. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples HAR-32_080811_36 and HAR-32_080811_01 (from SDG 280-18942-1) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-32_080811_01	HAR-32_080811_36			
N-Nitrosodimethylamine	0.024	0.023	4 (≤35)	-	-

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-18942-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-2	HAR-32_080811_36 FB_HAR-32_080811_19	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-18942-2	HAR-32_080811_36 FB_HAR-32_080811_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-18942-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-18942-2**

No Sample Data Qualified in this SDG

LDC #: 26171G2b

VALIDATION COMPLETENESS WORKSHEET

Date: 9/16/11

SDG #: 280-18942-2

Level V

Page: (of 1)

Laboratory: Test America, Inc.

Reviewer: JVB

2nd Reviewer: METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 1625^M_C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/08/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Client Spec
VIII.	Laboratory control samples	A	LCS 6
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	d = 1 + HAR-32_080811_01 (280-18942-1)
XVII.	Field blanks	ND	FB = 2

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	HAR-32_080811_36	T1	MB 280-81621/1-A	21		31	
2	FB_HAR-32_080811_19	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<=35%) RPD	Qualifications (Parent only)
	HAR-32_080811_01	HAR-32_080811_36		
NDMA	0.024	0.023	4	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 8, 2011

LDC Report Date: September 19, 2011

Matrix: Water

Parameters: Perchlorate

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-18942-2

Sample Identification

HAR-03_080811_01
HAR-03_080811_01MS
HAR-03_080811_01MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6860 for Perchlorate.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. LC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No perchlorate was found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since the sample concentration was greater than the spiked concentration, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-18942-2	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Data Qualification Summary - SDG 280-18942-2**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-18942-2	HAR-03_080811_01	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Laboratory Blank Data Qualification Summary - SDG 280-18942-2**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Perchlorate - Field Blank Data Qualification Summary - SDG 280-18942-2**

No Sample Data Qualified in this SDG

METHOD: LC/MS Perchlorate (EPA SW846 Method 6860)

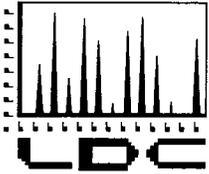
The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/08/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration		
IV.	Continuing calibration/ICV	↓	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification		
XII.	Compound quantitation/RL/LOQ/LODs		
XIII.	Tentatively identified compounds (TICs)		
XIV.	System performance		
XV.	Overall assessment of data	A	
XVI.	Field duplicates		
XVII.	Field blanks	↓	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: *Water*

1	HAR-03_080811_01	11	<i>MB 280-82984/21</i>	21		31	
2	HAR-03_080811_01MS	12		22		32	
3	HAR-03_080811_01MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

MWH Americas, Inc.
618 Michillinda Ave. Suite 200
Arcadia, CA 91007
ATTN: Mr. Steve Reiners

September 29, 2011

SUBJECT: Boeing SSFL GW 3rd Qtr, 2011, Data Validation

Dear Mr. Reiners,

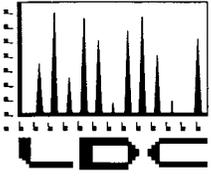
Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 8, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26171:

<u>SDG #</u>	<u>Fraction</u>
280-18425-1/11-07164-OR	Strontium-90, Isotopic Uranium
280-18611-2, 280-18777-2	N-Nitrosodimethylamine
280-18711-2, 280-18895-2 280-18942-2, 280-19002-2 280-19045-2	N-Nitrosodimethylamine, Perchlorate
280-18895-1/ IUH0937 280-19045-1/ IUH1505	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
280-19002-1/ IUH1270	Volatiles, 1,4-Dioxane, 1,2,3-Trichloropropane, Semivolatiles, N-Nitrosodimethylamine, Polychlorinated Biphenyls, Dissolved Metals, Diesel Range Organics, Herbicides, Hydrazine, Wet Chemistry
IUH0728/1H09039 IUH1239/1H11052	Herbicides

The data validation was performed under EPA Level IV/V guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit, March 2009, Rev. 4
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County CA, April 2010



- Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1, December 2009
- Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County CA, April 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Project Manager/Senior Chemist

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		1,4-Dioxane (8260B-S)		1,2,3-TCP (524.2)		SVOA (8270C)		SVOA (8270C-SIM)		NDMA (1625)		PCBs (8082)		Diss Metals (SW846) (8015B)		DRO (8015B)		Herb (8151)		Hydra-zine (DVWC)		1,1-DMH (DVWC 0077)		MMH (DVWC 0077)		CLO4 (6860)		CN- (9014)						
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S					
Matrix: Water/Soil																																						
B	280-18611-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
C	280-18711-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
D	280-18777-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
E	280-18895-1/ IUH0937	09/08/11	09/29/11	13	0	13	0	11	0	6	0	6	0	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
F	280-18895-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G	280-18942-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
H	280-19002-1/ IUH1270	09/08/11	09/29/11	10	0	10	0	2	0	6	0	5	0	7	0	5	0	5	0	6	0	6	0	3	0	6	0	1	0	1	0	-	-	3	0			
I	280-19002-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
J	280-19045-1/ IUH1505	09/08/11	09/29/11	7	0	7	0	2	0	4	0	-	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
K	280-19045-2	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
L	IUH0728/ 1H09039	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
M	IUH1239/ 1H11052	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	A/PG			30	0	30	0	15	0	16	0	5	0	43	0	5	0	5	0	16	0	16	0	11	0	15	0	11	0	10	0	8	0	3	0	0	0	223

EDD Client Select IV LDC #26171 (MWH Americas, Inc.-Farmington Hills, MI / Boeing SSFL GW 3rd Qtr)

LDC	SDG#	DATE REC'D	(3) DATE DUE	NH ₃ -N (350.1)		Cl (300.0)		SO ₄ (300.0)		F (300.0)		NO ₃ (300.0)		Br NO ₂ O-PO ₄ (7196A)		CrVI (7196A)		CLO ₄ (314.0)		pH (9040B)		Sr-90 (905.0)		Iso U (908.0)														
				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S									
Matrix: Water/Soil																																						
A	280-18425-1/ 11-07164-OR	09/08/11	09/29/11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E	280-18895-1	09/08/11	09/29/11	6	0	1	0	0	0	6	0	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	280-19002-1	09/08/11	09/29/11	1	0	5	0	5	0	6	0	6	0	5	0	5	0	5	0	2	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
J	280-19045-1	09/08/11	09/29/11	4	0	-	-	-	-	4	0	4	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	A/PG			11	0	6	0	5	0	16	0	16	0	5	0	5	0	5	0	16	0	10	0	2	0	2	0	2	0	0	0	0	0	0	0	0	0	99

Shaded cells indicate Level IV validation (all other cells are Level V validation). These sample counts do not include MS/MSD, and DUPs

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 9, 2011

LDC Report Date: September 20, 2011

Matrix: Water

Parameters: Volatiles

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19002-1

Sample Identification

HAR-01_080911_01
TB_HAR-01_080911
RS-20_080911_01A
EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
TB_PZ-140_080911A
PZ-147_080911_01
EB_PZ-147_080911
TB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD
PZ-147_080911_01DLMS
PZ-147_080911_01DLMSD

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples TB_HAR-01_080911, TB_PZ-140_080911A, and TB_PZ-147_080911 were identified as trip blanks. No volatile contaminants were found.

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No volatile contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No volatile contaminants were found with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
FB_071211_19	7/12/11	Acetone Chloroform	3.5 ug/L 0.45 ug/L	PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
HAR-01_080911_01	1,2-Dichloroethane-d4	75 (80-120)	All TCL compounds except Trichloroethene	J (all detects) UJ (all non-detects)	A
PZ-140_080911_36A	Dibromofluoromethane	85 (89-118)	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether Trichloroethene	J (all detects) UJ (all non-detects)	A
PZ-147_080911_01	1,2-Dichloroethane-d4 Dibromofluoromethane	76 (80-120) 83 (86-118)	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-147_080911_01MS/MSD (PZ-147_080911_01)	1,1,1-Trichloroethane	75 (78-120)	-	-	J (all detects) UJ (all non-detects)	A
	1,1-Dichloropropene	74 (75-120)	-	-		
	1,2,3-Trichlorobenzene	64 (66-123)	-	-		
	1,2,4-Trichlorobenzene	65 (73-121)	-	-		
	1,2,4-Trimethylbenzene	69 (77-120)	-	-		
	1,2-Dibromo-3-chloropropane	60 (65-120)	60 (65-120)	-		
	1,2-Dichlorobenzene	74 (76-120)	-	-		
	1,3,5-Trimethylbenzene	69 (77-120)	-	-		
	1,3-Dichlorobenzene	74 (75-120)	-	-		
	1,4-Dichlorobenzene	72 (77-120)	-	-		
	Bromoform	67 (74-121)	-	-		
	Carbon tetrachloride	72 (80-120)	79 (80-120)	-		
	Chlorobenzene	77 (78-120)	-	-		
	cis-1,2-Dichloroethene	59 (75-120)	-	-		
	Dibromochloromethane	73 (76-120)	-	-		
	Ethylbenzene	72 (78-120)	-	-		
	Hexachlorobutadiene	55 (73-123)	72 (73-123)	27 (≤25)		
	m,p-Xylenes	71 (78-120)	-	-		
	n-Butylbenzene	62 (76-120)	-	24 (≤21)		
	n-Propylbenzene	66 (76-120)	-	-		
	o-Chlorotoluene	74 (76-120)	-	-		
	o-Xylene	72 (77-120)	-	-		
	p-Chlorotoluene	72 (78-120)	-	-		
	p-Cymene	64 (76-120)	-	21 (≤20)		
	sec-Butylbenzene	65 (80-120)	79 (80-120)	-		
	Styrene	68 (77-120)	-	-		
	tert-Butylbenzene	69 (76-120)	-	-		
	Tetrachloroethene	71 (77-120)	-	-		
	Xylenes, total	71 (77-120)	-	-		

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-147_080911_01DLMS/MSD (PZ-147_080911_01)	2-Hexanone	-	129 (57-121)	-	J (all detects)	A
	Acetone	131 (48-130)	140 (48-130)	-	J (all detects)	
	Chloroethane	-	137 (51-133)	-	J (all detects)	
	Dichlorodifluoromethane	-	147 (56-140)	-	J (all detects)	
	Vinyl chloride	-	138 (49-136)	-	J (all detects)	
PZ-147_080911_01DLMS/MSD (PZ-147_080911_01)	cis-1,2-Dichloroethene	68 (75-120)	-	-	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	PZ-140_080911_01A	PZ-140_080911_36A	
cis-1,2-Dichloroethene	8.5	7.3	15 (≤35)
Trichloroethene	110	110	0 (≤35)

Boeing SSFL GW 3rd Qtr, 2011
Volatiles - Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	HAR-01_080911_01	All TCL compounds except Trichloroethene	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-19002-1	PZ-140_080911_36A	All TCL compounds except Acrolein Acrylonitrile 2-Chloroethylvinyl ether Trichloroethene	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-19002-1	PZ-147_080911_01	Acrolein Acrylonitrile 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R) (S)
280-19002-1	PZ-147_080911_01	1,1,1-Trichloroethane 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-chloropropane 1,2-Dichlorobenzene 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Bromoform Carbon tetrachloride Chlorobenzene cis-1,2-Dichloroethene Dibromochloromethane Ethylbenzene m,p-Xylenes n-Propylbenzene o-Chlorotoluene o-Xylene p-Chlorotoluene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Xylenes, total	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)
280-19002-1	PZ-147_080911_01	Hexachlorobutadiene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
280-19002-1	PZ-147_080911_01	n-Butylbenzene p-Cymene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
280-19002-1	PZ-147_080911_01	2-Hexanone Acetone Chloroethane Dichlorodifluoromethane Vinyl chloride	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R) (Q)

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	HAR-01_080911_01 TB_HAR-01_080911 RS-20_080911_01A EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A TB_PZ-140_080911A PZ-147_080911_01 EB_PZ-147_080911 TB_PZ-147_080911	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Laboratory Blank Data Qualification Summary - SDG 280-19002-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

Volatiles - Field Blank Data Qualification Summary - SDG 280-19002-1

No Sample Data Qualified in this SDG

LDC #: 26171H1a
 SDG #: 280-19002-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V

Date: 9/19/11
 Page: 1 of 1
 Reviewer: *[Signature]*
 2nd Reviewer: *[Signature]*

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS 1D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 6, 7
XVII.	Field blanks	SW	*TB = 2, 8, 12 *EB = 5, 11 FB = FB_071211-19

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinstate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	HAR-01_080911_01	11	EB PZ-147_080911	21	MB 280-81931/5	31	
2	TB HAR-01_080911	12	TB PZ-147_080911	22	MB 280-81012/5	32	(FFF, GGGG, II)
3	RS-20_080911_01A	13	PZ-147_080911_01MS	23	MB 280-82128/	33	(S)
4	TB RS-20_080911_01A	14	PZ-147_080911_01MSD	24		34	
5	EB PZ-140_080911A	15	PZ-147_080911_01DLMS	25		35	
6	PZ-140_080911_01A <i>D</i>	16	PZ-147_080911_01DLMSD	26		36	
7	PZ-140_080911_36A <i>D</i>	17		27		37	
8	TB PZ-140_080911A	18		28		38	
9	PZ-147_080911_01	19		29		39	
10	PZ-147_080911_01DL	20		30		40	

VOCs + IPA = 1, 2
 VOCs = 3
 Std Water = 5-9, 11, 12

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. Chlorotoluene Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. <i>p-Cymene</i>
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. Chlorotoluene Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD : GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Was a MS/MSD analyzed every 20 samples of each matrix?

Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

Y N N/A
Y N N/A

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications																														
	12/14	N	75 (78-120)	()	()	9	J/MS/A																														
		QQ	74 (75-120)	()	()																																
		NNN	64 (66-123)	()	()																																
		KKK	65 (73-121)	()	()																																
		DDP	69 (77-120)	()	()																																
		MM	60 (65-120)	60 (65-120)	()																																
		JJJ	74 (76-120)	()	()																																
		AAA	69 (77-120)	()	()																																
		FFF	74 (75-120)	()	()																																
		HHH	72 (77-120)	()	()																																
		X	67 (74-121)	()	()																																
		O	72 (80-120)	79 (80-120)	()																																
		DD	77 (78-120)	()	()																																
		QQQ	59 (75-120)	()	()																																
		T	73 (76-120)	()	()																																
		EE	72 (78-120)	()	()																																
		LLL	55 (73-123)	72 (73-123)	27 (25)																																
		RRR	71 (78-120)	()	()																																
<table border="1"> <thead> <tr> <th>Compound</th> <th>QC Limits (Soil)</th> <th>RPD (Soil)</th> <th>QC Limits (Water)</th> <th>RPD (Water)</th> </tr> </thead> <tbody> <tr> <td>H. 1,1-Dichloroethene</td> <td>59-172%</td> <td>< 22%</td> <td>61-145%</td> <td>< 14%</td> </tr> <tr> <td>S. Trichloroethene</td> <td>62-137%</td> <td>< 24%</td> <td>71-120%</td> <td>< 14%</td> </tr> <tr> <td>V. Benzene</td> <td>66-142%</td> <td>< 21%</td> <td>76-127%</td> <td>< 11%</td> </tr> <tr> <td>CC. Toluene</td> <td>59-139%</td> <td>< 21%</td> <td>76-125%</td> <td>< 13%</td> </tr> <tr> <td>DD. Chlorobenzene</td> <td>60-133%</td> <td>< 21%</td> <td>75-130%</td> <td>< 13%</td> </tr> </tbody> </table>								Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)	H. 1,1-Dichloroethene	59-172%	< 22%	61-145%	< 14%	S. Trichloroethene	62-137%	< 24%	71-120%	< 14%	V. Benzene	66-142%	< 21%	76-127%	< 11%	CC. Toluene	59-139%	< 21%	76-125%	< 13%	DD. Chlorobenzene	60-133%	< 21%	75-130%	< 13%
Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)																																	
H. 1,1-Dichloroethene	59-172%	< 22%	61-145%	< 14%																																	
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VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD : GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
 Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.
 Was a MS/MSD analyzed every 20 samples of each matrix?
 Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	13/14	III	62 (76-120)	()	24 (21)	9	J/UJ/A
		YY	66 ()	()	()		
		ZZ	74 ()	()	()		
		SSS	72 (77-120)	()	()		
		BBB	72 (78-120)	()	()		
		NNN	64 (76-120)	()	21 (20)		
		EEE	65 (80-120)	79 (80-120)	()		
		FF	68 (77-120)	()	()		
		CCC	69 (76-120)	()	()		
		AAA	71 (77-120)	()	()		
		S	-63 (78-122)	51 (78-122)	()		* No qual
		GG	71 (77-120)	()	()		J/UJ/A
		Z	()	()	()		
15/16		F	121 (48-130)	129 (57-121)	()		J acts/A
		D	()	137 (51-133)	()		
		QQQ	68 (75-120)	()	()		J/UJ/A
		JJ	()	147 (56-140)	()		J acts/A

Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
H. 1,1-Dichloroethene	59-172%	< 22%	61-145%	< 14%
S. Trichloroethene	62-137%	< 24%	71-120%	< 14%
V. Benzene	66-142%	< 21%	76-127%	< 11%
CC. Toluene	59-139%	< 21%	76-125%	< 13%
DD. Chlorobenzene	60-133%	< 21%	75-130%	< 13%

* percent conc > 4x spike amt

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS VOA (EPA SW 846 Method 8260B)

Y/N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	6	7		
cis-1,2-Dichloroethene	8.5	7.3	15	
Trichloroethene	110	110	0	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 20, 2011
Matrix: Water
Parameters: 1,4-Dioxane
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

HAR-01_080911_01
TB_HAR-01_080911
EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
TB_PZ-140_080911A
PZ-147_080911_01
EB_PZ-147_080911
TB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD
RS-20_080911_01A

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B using Selected Ion Monitoring (SIM) for 1,4-Dioxane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,4-dioxane was found in the method blanks.

Samples TB_HAR-01_080911, TB_PZ-140_080911A, and TB_PZ-147_080911 were identified as trip blanks. No 1,4-dioxane was found.

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No 1,4-dioxane was found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No 1,4-dioxane was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No 1,4-dioxane was detected in any of the samples.

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	HAR-01_080911_01 TB_HAR-01_080911 EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A TB_PZ-140_080911A PZ-147_080911_01 EB_PZ-147_080911 TB_PZ-147_080911 RS-20_080911_01A	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 280-19002-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 280-19002-1

No Sample Data Qualified in this SDG

LDC #: 26171H1b
 SDG #: 280-19002-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/19/11
 Page: 1 of 1
 Reviewer: NG
 2nd Reviewer: W

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8260B-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	X	
XVI.	Field duplicates	ND	D = 4, 5
XVII.	Field blanks	ND	TB = 2, 6, 9 EB = 3, 8 FB = FB_071211_19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(280-17952-1)

Validated Samples:

Water

1	HAR-01_080911_01	11	PZ-147_080911_01MSD	21	MB 280-81985/12	31
2	TB_HAR-01_080911	12	RS-20_080911_01A	22		32
3	EB_PZ-140_080911A	13		23		33
4	PZ-140_080911_01A D	14		24		34
5	PZ-140_080911_36A D	15		25		35
6	TB_PZ-140_080911A	16		26		36
7	PZ-147_080911_01	17		27		37
8	EB_PZ-147_080911	18		28		38
9	TB_PZ-147_080911	19		29		39
10	PZ-147_080911_01MS	20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 9, 2011

LDC Report Date: September 20, 2011

Matrix: Water

Parameters: 1,2,3-Trichloropropane

Validation Level: Level V

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19002-1/IUH1270

Sample Identification

RS-20_080911_01A
TB_RS-20_080911_01A
RS-20_080911_01ADUP

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for 1,2,3-Trichloropropane.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No 1,2,3-trichloropropane was found in the method blanks.

Sample TB_RS-20_080911_01A was identified as a trip blank. No 1,2,3-trichloropropane was found.

VI. Surrogate Spikes

Surrogate spikes were not required by the method.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1/IUH1270	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Data Qualification Summary - SDG 280-19002-1/IUH1270

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1/ IUH1270	RS-20_080911_01A TB_RS-20_080911_01A	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Laboratory Blank Data Qualification Summary - SDG 280-19002-1/IUH1270

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

1,2,3-Trichloropropane - Field Blank Data Qualification Summary - SDG 280-19002-1/IUH1270

No Sample Data Qualified in this SDG

LDC #: 26171H1c **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 280-19002-1/IUH1270

Level V

Laboratory: Test America, Inc.

Date: 9/19/11

Page: 1 of 1

Reviewer: RV

2nd Reviewer: [Signature]

METHOD: GC/MS 1,2,3-Trichloropropane (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	N/A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	RS-20_080911_01A	11	11 H1747-BIK1	21		31
2	TB RS-20_080911_01A	12		22		32
3	RS-20_080911_01ADUP	13		23		33
4		14		24		34
5		15		25		35
6		16		26		36
7		17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 20, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

HAR-01_080911_01
EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81250/1-A	8/13/11	Bis(2-ethylhexyl)phthalate	1.85 ug/L	All samples in SDG 280-19002-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
HAR-01_080911_01	Bis(2-ethylhexyl)phthalate	1.8 ug/L	9.5U ug/L
EB_PZ-140_080911A	Bis(2-ethylhexyl)phthalate	1.8 ug/L	51U ug/L
PZ-140_080911_01A	Bis(2-ethylhexyl)phthalate	2.0 ug/L	51U ug/L
PZ-140_080911_36A	Bis(2-ethylhexyl)phthalate	1.9 ug/L	50U ug/L
PZ-147_080911_01	Bis(2-ethylhexyl)phthalate	1.8 ug/L	47U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
EB_PZ-147_080911	Bis(2-ethylhexyl)phthalate	1.7 ug/L	48U ug/L

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-140_080911A	8/9/11	Bis(2-ethylhexyl)phthalate	1.8 ug/L	PZ-140_080911_01A PZ-140_080911_36A
EB_PZ-147_080911	8/9/11	Bis(2-ethylhexyl)phthalate	1.7 ug/L	PZ-147_080911_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-140_080911_01A	Bis(2-ethylhexyl)phthalate	2.0 ug/L	51U ug/L
PZ-140_080911_36A	Bis(2-ethylhexyl)phthalate	1.9 ug/L	50U ug/L
PZ-147_080911_01	Bis(2-ethylhexyl)phthalate	1.8 ug/L	47U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-147_080911_01MS/MSD (PZ-147_080911_01)	Dibenzo(a,h)anthracene Benzo(g,h,i)perylene	- -	- -	39 (≤30) 46 (≤30)	J (all detects) J (all detects)	A

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-147_080911_01MS/MSD (PZ-147_080911_01)	Indeno(1,2,3-cd)pyrene	54 (56-120)	-	49 (≤30)	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-140_080911_01A	PZ-140_080911_36A			
Diethylphthalate	1.3	0.71	59	NQ	-
Bis(2-ethylhexyl)phthalate	2.0	1.9	5	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	PZ-147_080911_01	Dibenzo(a,h)anthracene Benzo(g,h,i)perylene	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD) (Q)
280-19002-1	PZ-147_080911_01	Indeno(1,2,3-cd)pyrene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
280-19002-1	HAR-01_080911_01 EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-19002-1	HAR-01_080911_01	Bis(2-ethylhexyl)phthalate	9.5U ug/L	A	B
280-19002-1	EB_PZ-140_080911A	Bis(2-ethylhexyl)phthalate	51U ug/L	A	B
280-19002-1	PZ-140_080911_01A	Bis(2-ethylhexyl)phthalate	51U ug/L	A	B
280-19002-1	PZ-140_080911_36A	Bis(2-ethylhexyl)phthalate	50U ug/L	A	B
280-19002-1	PZ-147_080911_01	Bis(2-ethylhexyl)phthalate	47U ug/L	A	B
280-19002-1	EB_PZ-147_080911	Bis(2-ethylhexyl)phthalate	48U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P	Code
280-19002-1	PZ-140_080911_01A	Bis(2-ethylhexyl)phthalate	51U ug/L	A	F
280-19002-1	PZ-140_080911_36A	Bis(2-ethylhexyl)phthalate	50U ug/L	A	F
280-19002-1	PZ-147_080911_01	Bis(2-ethylhexyl)phthalate	47U ug/L	A	F

LDC #: 26171H2a

VALIDATION COMPLETENESS WORKSHEET

Date: 9/19/11

SDG #: 280-19002-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG
2nd Reviewer: [Signature]

METHOD: GC/MS Semivolatiles (EPA SW846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 3, 4
XVII.	Field blanks	SW	EB = 2, 6 FB = FB_071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Water

1	HAR-01_080911_01	11	MB 280-81250/1-A	21		31	
2	EB_PZ-140_080911A	12		22		32	
3	PZ-140_080911_01A	13		23		33	
4	PZ-140_080911_36A	14		24		34	
5	PZ-147_080911_01	15		25		35	
6	EB_PZ-147_080911	16		26		36	
7	PZ-147_080911_01MS	17		27		37	
8	PZ-147_080911_01MSD	18		28		38	
9		19		29		39	
10		20		30		40	

Phthalates + NB = 1
Full Water = 2-6

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes: * = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Was a method blank analyzed for each matrix?
- Y N N/A Was a method blank analyzed for each concentration preparation level?
- Y N N/A Was a method blank associated with every sample?
- Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 8/13/11 Blank analysis date: 8/17/11

Conc. units: ug/L Associated Samples: A-11 Code: B

Compound	Blank ID	Sample Identification				
<u>MB 20-81250/A</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
<u>EEE</u>	<u>1.85</u>	<u>1.8/9.5U</u>	<u>1.8/51U</u>	<u>2.0/51U</u>	<u>1.9/50U</u>	<u>1.8/47U</u>
						<u>1.7/48U</u>

Blank extraction date: _____ Blank analysis date: _____
 Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification				

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C)

Y ~~N~~ ~~NA~~ Were field duplicate pairs identified in this SDG?
Y ~~N~~ ~~NA~~ Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	3	4		
Diethylphthalate	1.3	0.71	59	NQ (<5xRL)
Bis(2-ethylhexyl)phthalate	2.0	1.9	5	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 20, 2011
Matrix: Water
Parameters: N-Nitrosodimethylamine
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

HAR-01_080911_01
RS-20_080911_01A
EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1625M for N-Nitrosodimethylamine.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
HAR-01_080911_01	N-Nitrosodimethylamine	10	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No N-nitrosodimethylamine was found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 280-81482/1-A	8/15/11	N-Nitrosodimethylamine	0.00736 ug/L	RS-20_080911_01A EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No N-nitrosodimethylamine was found.

Samples FB_HAR-01_08091119 (from SDG 280-19002-2) and FB_071211-19 (from SDG 280-17952-1) were identified as field blanks. No N-nitrosodimethylamine was found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A and samples HAR-01_080911_01 and HAR-01_080911_36 (from SDG 280-19002-2) were identified as field duplicates. No N-nitrosodimethylamine was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-01_080911_01	HAR-01_080911_36			
N-Nitrosodimethylamine	0.027	0.032	17 (≤ 35)	-	-

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	HAR-01_080911_01	N-Nitrosodimethylamine	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-19002-1	HAR-01_080911_01 RS-20_080911_01A EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Laboratory Blank Data Qualification Summary – SDG 280-19002-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011

N-Nitrosodimethylamine - Field Blank Data Qualification Summary - SDG 280-19002-1

No Sample Data Qualified in this SDG

LDC #: 26171H2b

VALIDATION COMPLETENESS WORKSHEET

SDG #: 280-19002-1

Level V

Laboratory: Test America, Inc.

Date: 9/19/11

Page: 1 of 1

Reviewer: SVG

2nd Reviewer: [Signature]

METHOD: GC/MS N-Nitrosodimethylamine (EPA Method 16250)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/09/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LC5 / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	*D ₁ = 4, 5 D ₂ = 1 + HAR-01-080911-36 (280-19002-2)
XVII.	Field blanks	ND	EB = 3, 7 FB = FB_HAR-01-080911-19 ↓ = FB_071211-19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

*ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	HAR-01_080911_01	D ₁ 11	MB 280-81482/1-A	21	31
2	RS-20_080911_01A	12	MB 280-82274/1-A	22	32
3	EB_PZ-140_080911A	13		23	33
4	PZ-140_080911_01A	D ₁ 14		24	34
5	PZ-140_080911_36A	D ₁ 15		25	35
6	PZ-147_080911_01	16		26	36
7	EB_PZ-147_080911	17		27	37
8	PZ-147_080911_01MS	18		28	38
9	PZ-147_080911_01MSD	19		29	39
10		20		30	40

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS NDMA (EPA Method 1625M)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<=35%) RPD	Qualifications (Parent only)
	HAR-01_080911_01	HAR-01_080911_36		
NDMA	0.027	0.032	17	IdentA (#) ✓

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 20, 2011
Matrix: Water
Parameters: Semivolatiles
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Semivolatiles.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
PZ-140_080911_36A PZ-147_080911_01	All TCL compounds	10	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Calibration verification data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
MB 280-81122/1-A	8/12/11	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	0.193 ug/L 0.0206 ug/L 0.133 ug/L	EB_PZ-140_080911A PZ-140_080911_01A EB_PZ-147_080911
MB 280-82216/1-A	8/19/11	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Diethylphthalate Di-n-octylphthalate	0.133 ug/L 0.194 ug/L 0.0240 ug/L 0.0879 ug/L	PZ-140_080911_36A PZ-147_080911_01

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
EB_PZ-140_080911A	Di-n-butylphthalate Di-n-octylphthalate	0.022 ug/L 0.10 ug/L	10U ug/L 10U ug/L
PZ-140_080911_01A	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	0.42 ug/L 0.077 ug/L 0.13 ug/L	9.8U ug/L 9.8U ug/L 9.8U ug/L
EB_PZ-147_080911	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	0.24 ug/L 0.018 ug/L 0.044 ug/L	9.7U ug/L 9.7U ug/L 9.7U ug/L
PZ-140_080911_36A	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	0.15 ug/L 0.048 ug/L 0.053 ug/L	9.5U ug/L 9.5U ug/L 9.5U ug/L
PZ-147_080911_01	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Diethylphthalate Di-n-octylphthalate	0.15 ug/L 0.042 ug/L 0.060 ug/L 0.059 ug/L	10U ug/L 10U ug/L 10U ug/L 10U ug/L

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No semivolatile contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
EB_PZ-140_080911A	8/9/11	Di-n-butylphthalate Diethylphthalate Di-n-octylphthalate	0.022 ug/L 0.021 ug/L 0.10 ug/L	PZ-140_080911_01A PZ-140_080911_36A
EB_PZ-147_080911	8/9/11	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Diethylphthalate Di-n-octylphthalate	0.24 ug/L 0.018 ug/L 0.017 ug/L 0.044 ug/L	PZ-147_080911_01

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No semivolatile contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-140_080911_01A	Di-n-butylphthalate Di-n-octylphthalate	0.077 ug/L 0.13 ug/L	9.8U ug/L 9.8U ug/L

Sample	Compound	Reported Concentration	Modified Final Concentration
PZ-140_080911_36A	Di-n-butylphthalate Di-n-octylphthalate	0.048 ug/L 0.053 ug/L	9.5U ug/L 9.5U ug/L
PZ-147_080911_01	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Diethylphthalate Di-n-octylphthalate	0.15 ug/L 0.042 ug/L 0.060 ug/L 0.059 ug/L	10U ug/L 10U ug/L 10U ug/L 10U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for Level V.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RLs	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	PZ-140_080911_01A	PZ-140_080911_36A			
2-Methylnaphthalene	9.8U	0.0054	200 (≤35)	NQ	-
Naphthalene	0.0069	10U	200 (≤35)	NQ	-
Bis(2-ethylhexyl)phthalate	0.42	0.15	95 (≤35)	NQ	-
Butylbenzylphthalate	0.043	0.034	23 (≤35)	-	-
Di-n-butylphthalate	0.077	0.048	46 (≤35)	NQ	-
Diethylphthalate	1.4	0.71	65 (≤35)	NQ	-
Di-n-octylphthalate	0.13	0.053	84 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	PZ-140_080911_36A PZ-147_080911_01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-19002-1	EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19002-1	EB_PZ-140_080911A	Di-n-butylphthalate Di-n-octylphthalate	10U ug/L 10U ug/L	A	B
280-19002-1	PZ-140_080911_01A	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	9.8U ug/L 9.8U ug/L 9.8U ug/L	A	B
280-19002-1	EB_PZ-147_080911	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	9.7U ug/L 9.7U ug/L 9.7U ug/L	A	B
280-19002-1	PZ-140_080911_36A	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Di-n-octylphthalate	9.5U ug/L 9.5U ug/L 9.5U ug/L	A	B
280-19002-1	PZ-147_080911_01	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Diethylphthalate Di-n-octylphthalate	10U ug/L 10U ug/L 10U ug/L 10U ug/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Semivolatiles - Field Blank Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19002-1	PZ-140_080911_01A	Di-n-butylphthalate Di-n-octylphthalate	9.8U ug/L 9.8U ug/L	A	F
280-19002-1	PZ-140_080911_36A	Di-n-butylphthalate Di-n-octylphthalate	9.5U ug/L 9.5U ug/L	A	F

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19002-1	PZ-147_080911_01	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate Diethylphthalate Di-n-octylphthalate	10U ug/L 10U ug/L 10U ug/L 10U ug/L	A	F

LDC #: 26171H2c

VALIDATION COMPLETENESS WORKSHEET

Date: 9/19/11

SDG #: 280-19002-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JVG
2nd Reviewer: ✓

METHOD: GC/MS Semivolatiles(EPA SW846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/09/11
II.	GC/MS Instrument performance check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 2, 3
XVII.	Field blanks	SW	EB = 1, 5 *FB = FB_071211_19 (280-17952-1)

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

*ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

water

1	EB_PZ-140_080911A	11	MB 280-81122 / 1-A	21		31
2	PZ-140_080911_01A	12	MB 280-82216 / 1-A	22		32
3	PZ-140_080911_36A	13		23		33
4	PZ-147_080911_01	14		24		34
5	EB_PZ-147_080911	15		25		35
6	PZ-147_080911_01MS	16		26		36
7	PZ-147_080911_01MSD	17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Was a method blank analyzed for each matrix?
- Y N N/A Was a method blank analyzed for each concentration preparation level?
- Y N N/A Was a method blank associated with every sample?
- Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 8/12/11 Blank analysis date: 8/18/11 Associated Samples: 1, 2, 5 Code: B

Compound	Blank ID	Sample Identification				
MB	81122	1	2	5		
EFE	0.193	0.022 / 10U	0.42 / 9.8U	0.24 / 9.7U		
XX	0.0206	0.10 / ↓	0.077 / ↓	0.018 / ↓		
FFF	0.133		0.13 / ↓	0.044 / ↓		

Blank extraction date: 8/19/11 Blank analysis date: 8/22/11 Associated Samples: 3, 4 Code: B

Compound	Blank ID	Sample Identification			
MB	82216	3	4		
EFE	0.133	0.15 / 9.5U	0.15 / 10U		
XX	0.0194	0.048 / ↓	0.042 / ↓		
LL	0.0240	<u>0.71</u>	0.060 / ↓		
FFF	0.0879	0.053 / 4.5U	0.059 / ↓		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".
 BLANKS.wpd

VALIDATION FINDINGS WORKSHEET
Field Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L Associated sample units: ug/L
Sampling date: 8/09/11

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 2, 3 Code: F

Compound	Blank ID	Sample Identification		
	<u>1</u>	<u>2</u>	<u>3</u>	
<u>XX</u>	<u>0.022</u>	<u>0.077/4.84</u>	<u>0.048/9.54</u>	
<u>LL</u>	<u>0.021</u>	<u>1.4</u>	<u>0.71</u>	
<u>FFF</u>	<u>0.10</u>	<u>0.13/9.84</u>	<u>0.053/9.54</u>	

Blank units: ug/L Associated sample units: ug/L

Sampling date: 8/09/11

Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: 4 Code: F

Compound	Blank ID	Sample Identification		
	<u>5</u>	<u>4</u>		
<u>EEE</u>	<u>0.24</u>	<u>0.15/10.4</u>		
<u>XX</u>	<u>0.018</u>	<u>0.042/</u>		
<u>LL</u>	<u>0.017</u>	<u>0.060/</u>		
<u>FFF</u>	<u>0.044</u>	<u>0.059/</u>		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC MS SVOCs (EPA SW 846 Method 8270C-SIM)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?
Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	2	3		
2-Methylnaphthalene	9.8U	0.0054	200	NQ (<5xRL)
Naphthalene	0.0069	10U	200	NQ (<5xRL)
Bis(2-ethylhexyl)phthalate	0.42	0.15	95	NQ (<5xRL)
Butylbenzylphthalate	0.043	0.034	23	
Di-n-butylphthalate	0.077	0.048	46	NQ (<5xRL)
Diethylphthalate	1.4	0.71	65	NQ (<5xRL)
Di-n-octylphthalate	0.13	0.053	84	NQ (<5xRL)

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 21, 2011
Matrix: Water
Parameters: Polychlorinated Biphenyls
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level V.

III. Initial Calibration

Initial calibration data were not reviewed for Level V.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level V.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls were found in the method blanks.

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No polychlorinated biphenyl contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Data Qualification Summary - SDG 280-19002-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 280-19002-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 280-19002-1**

No Sample Data Qualified in this SDG

LDC #: 26171H3b

VALIDATION COMPLETENESS WORKSHEET

Date: 9/19/11

SDG #: 280-19002-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: NT

2nd Reviewer: [Signature]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	N	
IV.	Continuing calibration/ICV	N	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	ND	D = 2, 3
XVI.	Field blanks	ND	EB = 1 5 8

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

Validated Samples:

Water

1	EB_PZ-140_080911A	11	MB 280-81002/TA	21		31
2	PZ-140_080911_01A D	12		22		32
3	PZ-140_080911_36A D	13		23		33
4	PZ-147_080911_01	14		24		34
5	EB_PZ-147_080911	15		25		35
6	PZ-147_080911_01MS	16		26		36
7	PZ-147_080911_01MSD	17		27		37
8		18		28		38
9		19		29		39
10		20		30		40

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 19, 2011
Matrix: Water
Parameters: Dissolved Metals
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020, 6010B, and 7470A for Dissolved Metals. The Dissolved Metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS tune data were not reviewed for Level V.

III. Calibration

Calibration data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Thallium	0.0000255 mg/L	All samples in SDG 280-19002-1

Data qualification by preparation blanks (PBs) was based on the maximum contaminant concentration in the PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
EB_PZ-140_080911A	Thallium	0.000035 mg/L	0.000035U mg/L
PZ-140_080911_01A	Thallium	0.000073 mg/L	0.000073U mg/L
PZ-140_080911_36A	Thallium	0.000029 mg/L	0.000029U mg/L

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No metal contaminants were found with the following exceptions:

Equipment Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
EB_PZ-140_080911A	8/9/11	Chromium Molybdenum Nickel Thallium	0.0016 mg/L 0.00053 mg/L 0.0025 mg/L 0.000035 mg/L	PZ-140_080911_01A PZ-140_080911_36A
EB_PZ-147_080911	8/9/11	Calcium Sodium Chromium Molybdenum Nickel	0.037 mg/L 0.12 mg/L 0.0014 mg/L 0.00053 mg/L 0.0024 mg/L	PZ-147_080911_01

Sample FB_071211_19F (from SDG 280-17952-1) was identified as a field blank. No metal contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_071211_19F	7/12/11	Silver Thallium	0.000018 mg/L 0.000033 mg/L	PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
PZ-140_080911_01A	Molybdenum Nickel Thallium	0.0023 mg/L 0.0027 mg/L 0.000073 mg/L	0.0023U mg/L 0.0027U mg/L 0.000073U mg/L
PZ-140_080911_36A	Molybdenum Nickel Thallium	0.0021 mg/L 0.0025 mg/L 0.000029 mg/L	0.0021U mg/L 0.0025U mg/L 0.000029U mg/L
PZ-147_080911_01	Molybdenum Nickel	0.0015 mg/L 0.00069 mg/L	0.0015U mg/L 0.00069U mg/L

V. ICP Interference Check Sample (ICS) Analysis

Interference check sample analysis data were not reviewed for Level V.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Internal standard data were not reviewed for Level V.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution data were not reviewed for Level V.

XII. Sample Result Verification

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-19002-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-140_080911_01A	PZ-140_080911_36A			
Arsenic	0.00065	0.00060	8 (≤ 35)	-	-
Barium	0.068	0.071	4 (≤ 35)	-	-

Analyte	Concentration (mg/L)		RPD (Limits)	Flags	A or P
	PZ-140_080911_01A	PZ-140_080911_36A			
Boron	0.046	0.045	2 (≤35)	-	-
Cadmium	0.000040U	0.000044	10 (≤35)	-	-
Calcium	130	130	0 (≤35)	-	-
Cobalt	0.0018	0.0018	0 (≤35)	-	-
Magnesium	41	41	0 (≤35)	-	-
Manganese	0.13	0.12	8 (≤35)	-	-
Molybdenum	0.0023	0.0021	9 (≤35)	-	-
Nickel	0.0027	0.0025	8 (≤35)	-	-
Potassium	3.2	3.2	0 (≤35)	-	-
Selenium	0.00096	0.00070U	31 (≤35)	-	-
Sodium	75	75	0 (≤35)	-	-
Thallium	0.000073	0.000029	86 (≤35)	NQ	-
Vanadium	0.00090	0.00098	9 (≤35)	-	-
Zinc	0.0026	0.0020U	26 (≤35)	-	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-19002-1	EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-19002-1	EB_PZ-140_080911A	Thallium	0.000035U mg/L	A	B
280-19002-1	PZ-140_080911_01A	Thallium	0.000073U mg/L	A	B
280-19002-1	PZ-140_080911_36A	Thallium	0.000029U mg/L	A	B

Boeing SSFL GW 3rd Qtr, 2011
Dissolved Metals - Field Blank Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-19002-1	PZ-140_080911_01A	Molybdenum Nickel Thallium	0.0023U mg/L 0.0027U mg/L 0.000073U mg/L	A	F
280-19002-1	PZ-140_080911_36A	Molybdenum Nickel Thallium	0.0021U mg/L 0.0025U mg/L 0.000029U mg/L	A	F
280-19002-1	PZ-147_080911_01	Molybdenum Nickel	0.0015U mg/L 0.00069U mg/L	A	F

LDC #: 26171H4

VALIDATION COMPLETENESS WORKSHEET

Date: 9-15-11

SDG #: 280-19002-1

Level V

Page: 1 of 1

Laboratory: Test America, Inc.

Reviewer: JZ

2nd Reviewer: [Signature]

METHOD: Dissolved Metals (EPA SW 846 Method 6020/7000)

6003/2470A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/9/11
II.	ICP/MS Tune	N	
III.	Calibration	N	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	
VI.	Matrix Spike Analysis	A	MS/D
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(2,3)
XV.	Field Blanks	SW	EB=1,5 ; FB=FB-071211-19F

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

(SDG: 280-17952-1)

Validated Samples:

water

1	EB_PZ-140_080911A	11		21	PBW	31	
2	PZ-140_080911_01A	12		22		32	
3	PZ-140_080911_36A	13		23		33	
4	PZ-147_080911_01	14		24		34	
5	EB_PZ-147_080911	15		25		35	
6	PZ-147_080911_01MS	16		26		36	
7	PZ-147_080911_01MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) **Soil preparation factor applied:** NA
Sample Concentration units, unless otherwise noted: ug/L **Associated Samples:** All **Reason:** B

Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (mg/L)	Maximum ICB/CCB ^a (ug/L)	Action Limit	1	2	3						
TI		0.0000255		0.0001	0.000035	0.000073	0.000029						

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Reason: F

Blank units: mg/L Associated sample units: mg/L

Sampling date: 7/12/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: Field Blank

Associated Samples: 2-4

Analyte	Blank ID	Action Limit	Sample Identification		
	FB_071211_19F (SDG: 280-17952-1)		2	3	
Ag	0.000018	0.00009			
Tl	0.000033	0.000165	See EB	See EB	

Sampling date: 8/9/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: Field Blank

Associated Samples: 2, 3

Analyte	Blank ID	Action Limit	Sample Identification		
	1		2	3	
Cr	0.0016	0.008			
Mn	0.00053	0.00265	0.0023	0.0021	
Ni	0.0025	0.0125	0.0027	0.0025	
Tl	0.000035	0.000175	0.000073	0.000029	

Sampling date: 8/9/11 Soil factor applied NA

Field blank type: (circle one) Field Blank / Rinsate / Other: Field Blank

Associated Samples: 4

Analyte	Blank ID	Action Limit	Sample Identification		
	5		4		
Ca	0.037	0.185			
Na	0.12	0.6			
Cr	0.0014	0.007			
Mn	0.00053	0.00265	0.0015		
Ni	0.0024	0.012	0.00069		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC#: 26171H4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?

Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (µg/L)		RPD (≤35)	
	2	3		
Arsenic	0.00065	0.00060	8	
Barium	0.068	0.071	4	
Boron	0.046	0.045	2	
Cadmium	0.000040U	0.000044	10	
Calcium	130	130	0	
Cobalt	0.0018	0.0018	0	
Magnesium	41	41	0	
Manganese	0.13	0.12	8	
Molybdenum	0.0023	0.0021	9	
Nickel	0.0027	0.0025	8	
Potassium	3.2	3.2	0	
Selenium	0.00096	0.00070U	31	
Sodium	75	75	0	
Thallium	0.000073	0.000029	86	NQ (<5xRL)
Vanadium	0.00090	0.00098	9	
Zinc	0.0026	0.0020U	26	

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011

Collection Date: August 9, 2011

LDC Report Date: September 20, 2011

Matrix: Water

Parameters: Herbicides

Validation Level: Level IV

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-19002-1

Sample Identification

HAR-01_080911_01

HAR-01_080911_36

FB_HAR-01_080911_19

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8151A for Herbicides.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
8/14/11	031F3101	DB-35MS	Dinoseb	30.7	All samples in SDG 280-19002-1	J (all detects) UJ (all non-detects)	A
8/14/11	031F3101	DB-XLB	Dinoseb	27.5	All samples in SDG 280-19002-1	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No herbicide contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB 280_80845/1-A	8/11/11	Dinoseb	0.181 ug/L	All samples in SDG 280-19002-1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-01_080911_01	Dinoseb	0.18 ug/L	0.95U ug/L
HAR-01_080911_36	Dinoseb	0.23 ug/L	0.96U ug/L
FB_HAR-01_080911_19	Dinoseb	0.17 ug/L	0.95U ug/L

Sample FB_HAR-01_080911_19 was identified as a field blank. No herbicide contaminants were found with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
FB_HAR-01_080911_19	8/9/11	Dinoseb	0.17 ug/L	HAR-01_080911_01 HAR-01_080911_36

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
HAR-01_080911_01	Dinoseb	0.18 ug/L	0.95U ug/L
HAR-01_080911_36	Dinoseb	0.23 ug/L	0.96U ug/L

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/(Matrix Spike) Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples HAR-01_080911_01 and HAR-01_080911_36 were identified as field duplicates. No herbicides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-01_080911_01	HAR-01_080911_36			
Dinoseb	0.18	0.23	24 (≤35)	-	-

Samples HAR-01_080911_01 and HAR-01_080911_03 (from SDG IUH1050) were identified as split samples. No herbicides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flags	A or P
	HAR-01_080911_01	HAR-01_080911_03			
Dinoseb	0.18	0.50U	94 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Data Qualification Summary - SDG 280-19002-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	HAR-01_080911_01 HAR-01_080911_36 FB_HAR-01_080911_19	Dinoseb	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D) (C)
280-19002-1	HAR-01_080911_01 HAR-01_080911_36 FB_HAR-01_080911_19	All compounds reported below the RL.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Laboratory Blank Data Qualification Summary - SDG 280-19002-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19002-1	HAR-01_080911_01	Dinoseb	0.95U ug/L	A	B
280-19002-1	HAR-01_080911_36	Dinoseb	0.96U ug/L	A	B
280-19002-1	FB_HAR-01_080911_19	Dinoseb	0.95U ug/L	A	B

**Boeing SSFL GW 3rd Qtr, 2011
Herbicides - Field Blank Data Qualification Summary - SDG 280-19002-1**

SDG	Sample	Compound	Modified Final Concentration	A or P	Code
280-19002-1	HAR-01_080911_01	Dinoseb	0.95U ug/L	A	F
280-19002-1	HAR-01_080911_36	Dinoseb	0.96U ug/L	A	F

LDC #: 26171H5
 SDG #: 280-19002-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 9/15/11
 Page: 1 of 1
 Reviewer: JV
 2nd Reviewer: ✓

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/09/11
II.	Initial calibration	A	r ✓
III.	Calibration verification/ICV	SW	ccv/icv ≤ 20 %
IV.	Blanks	SW	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Client spec
VII.	Laboratory control samples	A	LCS B
VIII.	Target compound identification	NA	
IX.	Compound Quantitation and CRQLs	NA	
X.	System Performance	NA	
XI.	Overall assessment of data	A	
XII.	Field duplicates / Split	SW	D = 1, 2 S = 1 + HAR-01_080911_03 (200-1109)
XIII.	Field blanks	SW	FB = 3

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

Water

1	HAR-01_080911_01	11	MB 280-80845 / -A	21		31	
2	HAR-01_080911_36	12		22		32	
3	FB HAR-01_080911_19	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	/			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?				
Did the initial calibration meet the curve fit acceptance criteria?				
Were the RT windows properly established?				
IV. Continuing calibration				
What type of continuing calibration calculation was performed? <u>/</u> %D or %R				
Was a continuing calibration analyzed daily?				
Were all percent differences (%D) < 20%.0 or percent recoveries 80-120%?				
Were all the retention times within the acceptance windows?				
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	/			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		/		
Was a MS/MSD analyzed every 20 samples of each matrix?		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX. Regional Quality Assurance and Quality Control				

Validation Area	Yes	No	NA	Findings/Comments
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XII. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XV. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET
Field Duplicates/ Field Split

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

Y N NA
Y N NA

Were field duplicate pairs identified in this SDG?
 Were target analytes detected in the field duplicate pairs?

Field Duplicates

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-01_080911_01	HAR-01_080911_36		
Dinoseb	0.18	0.23	24	

Field Split

Compound	Concentration (ug/L)		(<35%) RPD	Qualifications (Parent only)
	HAR-01_080911_01	HAR-01_080911_03		
Dinoseb	0.18	0.50U	94	NQ (<5xRL)

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/13/2011	GCS V DB 35MS	Dinoseb	1	18.9	4718	22259524
			2	47.2	16350	267322500
			3	236.0	87281	7617972961
			4	472.0	190308	36217134864
			5	709.0	270895	73384101025
			6	945.0	377160	142249665600
			7	1890.0	681437	464356384969

CF
 249.6
 346.4
 369.8
 403.2
 382.1
 399.1
 360.5

 Ave 358.7

	Regression Output	
	Calculated	Reported
Constant	b = 16.02155	b = 16.1363227
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² = 0.9993072	r ² = 0.9993
Degrees of Freedom		
X Coefficient(s)	m1 = 0.00228267	m1 = 0.00228225
Std Err of Coef.	m2 = 6.75884E-10	m2 = 6.75750E-10
Correlation Coefficient	0.999654	

LDC#: 26171 HS

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 2 of 2
 Reviewer: JL
 2nd Reviewer: 1

Method: GC Herbicides (EPA SW 846 Method 8151)

Calibration Date	Instrument/Column	Compound	Standard	(Y) Conc	(X) Response	(X ²) Response
8/13/2011	GCS M	Dinoseb	1	18.9	2768	7661824
			2	47.2	14628	213978384
	3		236.0	98839	9769147921	
	4		472.0	207349	42993607801	
	5		709.0	294246	86580708516	
	6		945.0	406445	165197538025	
	7		1890.0	744837	554782156569	

CF
 146.5
 309.9
 418.8
 439.3
 415.0
 430.1
 394.1
 Ave 364.8

	Regression Output	
	Calculated	Reported
Constant	b = 17.01570	b = 17.1277919
Std Err of Y Est		
Coefficient of Determination (r ²)	r ² = 0.9996036	r ² = 0.9996
Degrees of Freedom		
X Coefficient(s)	m1 = 5.31642E-10	m1 = 5.31511E-10
Std Err of Coef.	0.00211520	0.00211483
Correlation Coefficient	0.999802	

LDC #: 26171 HS

VALIDATION FINDINGS WORKSHEET

Surrogate Results Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: # 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	
DCAA ↓	DB-35MS L-XLB	500 ↓	456.786 450.037	91	91	9
				90	90	2

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer: [Signature]

METHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$

Where SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

RPD = $((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD) * 100$

LCS = Laboratory Control Sample

LCS D = Laboratory Control Sample duplicate

LCS/LCSD samples: _____

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS		LCS D		LCS D		LCS D	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)	4.60	4.60	3.93	4.20	85	85	91	91	7	7		
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)												
2,4,6-Trinitrotoluene (8330)												

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

METHOD: GC HPLC

Y/N N/A
X/N N/A

Were all reported results recalculated and verified for all level IV samples?
 Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration = $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

- A= Area or height of the compound to be measured
- Fv= Final Volume of extract
- Df= Dilution Factor
- RF= Average response factor of the compound
 In the initial calibration
- Vs= Initial volume of the sample
- Ws= Initial weight of the sample
- %S= Percent Solid

Example:

Sample ID: 1 Compound Name: Dinoseb
 $y = m1X + m2X^2 + b$ $y = amt$ $X = response$
 Concentration = $\left[\frac{0.0022 \times (1261)}{10} \right] + \left[\frac{6.7575 \times 10^{-10} (1261)^2}{10} \right] + 16.1363$
 $X = 19.015$
 Final conc. = $(19.015)(10 \text{ ml}) = 0.1809 \text{ ug/L}$

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations	Qualifications
			(1050.9)		

Comments:

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 26, 2011
Matrix: Water
Parameters: Wet Chemistry
Validation Level: Level IV & V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

HAR-01_080911_01**
HAR-01_080911_36**
FB_HAR-01_080911_19**
EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD
RS-20_080911L01A
PZ-147_080911_01DUP
HAR-01_080911_01MS
HAR-01_080911_01MSD

**Indicates sample underwent Level IV review for Cyanide only.

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 350.1 for Ammonia as Nitrogen, EPA Method 300.0 for Bromide, Chloride, Sulfate, Fluoride, Nitrite, Nitrate, and Orthophosphate, EPA Method 314.0 for Perchlorate, and EPA SW 846 Method 9040B for pH, Method 7196A for Hexavalent Chromium and Dissolved Hexavalent Chromium, and Method 9012A for Total Cyanide.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

Samples indicated by a double asterisk on the front cover underwent a Level IV review. A Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level V criteria since this review is based on QC data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
HAR-01_080911_01**	pH	78 hours	48 hours	J (all detects) UJ (all non-detects)	P
EB_PZ-140_080911A	Hexavalent chromium	33.5 hours	24 hours	J (all detects) UJ (all non-detects)	P
	Dissolved hexavalent chromium	33.5 hours	24 hours	J (all detects) UJ (all non-detects)	
PZ-140_080911_01A PZ-140_080911_36A	Hexavalent chromium	32.25 hours	24 hours	J (all detects) UJ (all non-detects)	P
	Dissolved hexavalent chromium	32.25 hours	24 hours	J (all detects) UJ (all non-detects)	
PZ-147_080911_01 EB_PZ-147_080911 PZ-147_080911_01MS PZ-147_080911_01MSD PZ-147_080911_01DUP	Hexavalent chromium	32.5 hours	24 hours	J (all detects) UJ (all non-detects)	P
	Dissolved hexavalent chromium	32.5 hours	24 hours	J (all detects) UJ (all non-detects)	

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No contaminant concentrations were found.

Samples FB_HAR-01_080911_19** and FB_071211_19 (from SDG 280-17952-1) were identified as field blanks. No contaminant concentrations were found with the following exceptions:

Field Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
FB_HAR-01_080911_19**	8/9/11	Cyanide	0.0021 mg/L	HAR-01_080911_01** HAR-01_080911_36**

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HAR-01_080911_01**	Cyanide	0.0022 mg/L	0.0022U mg/L
HAR-01_080911_36**	Cyanide	0.0030 mg/L	0.0030U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable for samples on which a Level IV review was performed.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 280-19002-1	All analytes reported below the RL and above the MDL.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level V criteria.

IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples HAR-01_080911_01** and HAR-01_080911_36** and samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	HAR-01_080911_01**	HAR-01_080911_36**			
Cyanide	0.0022	0.0030	31 (≤35)	-	-

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	PZ-140_080911_01A	PZ-140_080911_36A			
Bromide	0.61	0.61	0 (≤35)	-	-
Fluoride	0.43	0.43	0 (≤35)	-	-
Nitrate	11	11	0 (≤35)	-	-
Chloride	180	180	0 (≤35)	-	-

Samples HAR-01_080911_01** and HAR-01_080911_03 (from SDG IUH10501) were identified as split samples. No contaminant concentrations were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	HAR-01_080911_01**	HAR-01_080911_03			
Cyanide	0.0022	0.0022U	0 (≤35)	-	-

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
280-19002-1	HAR-01_080911_01**	pH	J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-19002-1	EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	Hexavalent chromium Dissolved hexavalent chromium	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Technical holding times (H)
280-19002-1	HAR-01_080911_01** HAR-01_080911_36** FB_HAR-01_080911_19** EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911 RS-20_080911L01A	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification (TR)

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 280-19002-1

No Sample Data Qualified in this SDG

Boeing SSFL GW 3rd Qtr, 2011
Wet Chemistry - Field Blank Data Qualification Summary - SDG 280-19002-1

SDG	Sample	Analyte	Modified Final Concentration	A or P	Code
280-19002-1	HAR-01_080911_01**	Cyanide	0.0022U mg/L	A	F
280-19002-1	HAR-01_080911_36**	Cyanide	0.0030U mg/L	A	F

LDC #: 26171H6
 SDG #: 280-19002-1
 Laboratory: Test America Inc.

VALIDATION COMPLETENESS WORKSHEET
 Level V/IV

Date: 9-15-11
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Ammonia-N (EPA Method 350.1), Bromide, Chloride, Sulfate, Fluoride, Nitrite, Nitrate, ~~Orthophosphorus as PO₄~~ Orthophosphate (EPA Method 300.0), Perchlorate (EPA Method 314.0), pH (EPA SW846 Method 9040B), Hexavalent Chromium (Method 7196A), Total Cyanide (Method 9014)

9012A

↑
 Diss. C₆⁶⁺

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/9/11
II.	Initial calibration	A	Not reviewed for level V
III.	Calibration verification	A	↓
IV.	Blanks	A	
V.	Matrix Spike/Matrix Spike Duplicates	A	MS/D
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	CS/D
VIII.	Sample result verification	A	Not reviewed for level V
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(1,2), (5,6); split=(1, HAR-01-08091103 (SDG: IUT 2050))
XI.	Field blanks	SW	EB=4,8; FB=3, FB-071211-19

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinse
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank

(SDG: 280-17952-1)

** Level 4 for cyanide only

Validated Samples:

1	HAR-01_080911_01**	11	RS-20-08091101A	21		31
2	HAR-01_080911_36**	12	(7) Dup	22		32
3	FB_HAR-01_080911_19**	13	(1) MS	23		33
4	EB_PZ-140_080911A	14	↓ MSD	24		34
5	PZ-140_080911_01A	15		25		35
6	PZ-140_080911_36A	16		26		36
7	PZ-147_080911_01	17		27		37
8	EB_PZ-147_080911	18		28		38
9	PZ-147_080911_01MS	19		29		39
10	PZ-147_080911_01MSD	20		30		40

Notes: _____

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.				
II. Calibration				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial calibration correlation coefficients > 0.995?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	/			
Were titrant checks performed as required? (Level IV only)			/	
Were balance checks performed as required? (Level IV only)				
III. Blanks				
Was a method blank associated with every sample in this SDG?	/	/		
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.				
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	/	/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			/	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL (≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.			/	
V. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	/			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	

Validation Area	Yes	No	NA	Findings/Comments
<i>VII. Sample Result Verification</i>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	/			
<i>VIII. Overall assessment of data</i>				
Overall assessment of data was found to be acceptable.	/			
<i>IX. Field duplicates</i>				
Field duplicate pairs were identified in this SDG.	/			
Target analytes were detected in the field duplicates.	/			
<i>X. Field blanks</i>				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.	/			

Field Blanks

METHOD: Inorganics, EPA Method. See Cover
 N N/A Were field blanks identified in this SDG?
 N N/A Were target analytes detected in the field blanks?
Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 8/27/11 Soil factor applied NA
Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Reason: **F**

Associated Samples: 1, 2

Analyte	Blank ID	Action Limit	Sample Identification		
	3		1	2	
Cyanide	0.0021	0.0105	0.0022	0.0030	

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤35)
	1	2	
Cyanide	0.0022	0.0030	31

Analyte	Concentration (mg/L)		RPD (≤35)
	5	6	
Bromide	0.61	0.61	0
Fluoride	0.43	0.43	0
Nitrate	11	11	0
Chloride	180	180	0

LDC# 26171H6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: oe
2nd Reviewer: n

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD (≤ 35)	
	1	HAR-01_080911_03		
Cyanide	0.0022	0.0022U	0	

V:\FIELD DUPLICATES\FD_inorganic\26191H6s.wpd

LDC #: 2617146

**Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification**

Method: Inorganics, Method 902A

The correlation coefficient (r) for the calibration of CN was recalculated. Calibration date: 8/17/11

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{\text{Found} \times 100}{\text{True}}$ Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/l)	Area	Recalculated		Reported		Acceptable (Y/N)
					r	r ²	r	r ²	
Initial calibration	CN	s1	0	364.763123	0.999971	0.999972	104	104	Y
		s2	10	6951.80957					
		s3	20	13494.62109					
		s4	50	33294.13672					
		s5	100	66894.67969					
		s6	200	133654.7644					
		s7	400	270997.0313					
Calibration verification		ICV	100	104,237	104	104	104	104	
Calibration verification		CCV	200	202,174	101	101	101	101	
Calibration verification		↓	↓	205,946	103	103	103	103	

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found =

concentration of each analyte measured in the analysis of the sample.

True = SSR (spiked sample result) - SR (sample result).

Where, True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S =

Original sample concentration

D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated		Reported		Acceptable (Y/N)
					%R / RPD	%R / RPD	%R / RPD	%R / RPD	
CS	Laboratory control sample	CN	0.0968	0.1	97		97		
N	Matrix spike sample		(SSR-SR)						
N	Duplicate sample								

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Boeing SSFL GW 3rd Qtr, 2011
Collection Date: August 9, 2011
LDC Report Date: September 21, 2011
Matrix: Water
Parameters: Diesel Range Organics
Validation Level: Level V
Laboratory: TestAmerica, Inc.
Sample Delivery Group (SDG): 280-19002-1

Sample Identification

HAR-01_080911_01
EB_PZ-140_080911A
PZ-140_080911_01A
PZ-140_080911_36A
PZ-147_080911_01
EB_PZ-147_080911
PZ-147_080911_01MS
PZ-147_080911_01MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows the Quality Assurance Project Plan, Santa Susana Field Laboratory (SSFL) RCRA Facility Investigation Surficial Media Operable Unit (March 2009, Revision 4), the Regulated Unit Water Quality Sampling and Analysis Plan, Areas I and III, Post-Closure Permit PC-94/95-03-02, Santa Susana Field Laboratory, Ventura County, CA (April 2010), the Site-Wide Water Quality Sampling and Analysis Plan, Santa Susana Field Laboratory, Ventura County, CA, Revision 1 (December 2009), the Regulated Unit Water Quality Sampling and Analysis Plan, Area II, Post-Closure Permit PC-94/95-3-03, Santa Susana Field Laboratory, Ventura County, CA (April 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration data were not reviewed for Level V.

III. Calibration Verification

Calibration verification data were not reviewed for Level V.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

Samples EB_PZ-140_080911A and EB_PZ-147_080911 were identified as equipment blanks. No diesel range organic contaminants were found.

Sample FB_071211_19 (from SDG 280-17952-1) was identified as a field blank. No diesel range organic contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
PZ-147_080911_01MS/MSD (PZ-147_080911_01)	C8-C11	-	0 (10-115)	200 (≤30)	J (all detects) R (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compounds reported below the RLs were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 280-19002-1	All compounds reported below the RLs.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples PZ-140_080911_01A and PZ-140_080911_36A were identified as field duplicates. No diesel range organic were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	RS-33_111810_01	RS-33_111810_03			
C12-C14	0.091	0.069	27 (≤35)	-	-
C8-C30	0.11	0.25U	78 (≤35)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Data Qualification Summary - SDG 280-19002-1**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
280-19002-1	PZ-147_080911_01	C8-C11	J (all detects) R (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD) (Q)
280-19002-1	HAR-01_080911_01 EB_PZ-140_080911A PZ-140_080911_01A PZ-140_080911_36A PZ-147_080911_01 EB_PZ-147_080911	All compounds reported below the RLs.	J (all detects)	A	Compound quantitation and RLs (TR)

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG 280-19002-1**

No Sample Data Qualified in this SDG

**Boeing SSFL GW 3rd Qtr, 2011
 Diesel Range Organics - Field Blank Data Qualification Summary - SDG 280-19002-1**

No Sample Data Qualified in this SDG

LDC #: 26171H8
 SDG #: 280-19002-1
 Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level V

Date: 9/9/11
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: [Signature]

METHOD: GC Diesel Range Organics (EPA SW846 Method 8015B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: <u>8/09/11</u>
II.	Initial calibration	N	
III.	Calibration verification/ICV	N	
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	SW	
VII.	Laboratory control samples	A	LCS 14
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 3, 4
XIII.	Field blanks	ND	EB = 2, 6 FB = FB_071211-19 (280-17952-1)

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	HAR-01_080911_01	11	MD 280-86756/1-A	21	31
2	EB_PZ-140_080911A	12		22	32
3	PZ-140_080911_01A	13	D	23	33
4	PZ-140_080911_36A	14	D	24	34
5	PZ-147_080911_01	15		25	35
6	EB_PZ-147_080911	16		26	36
7	PZ-147_080911_01MS	17		27	37
8	PZ-147_080911_01MSD	18		28	38
9		19		29	39
10		20		30	40

Notes: _____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: GC GRO (EPA SW 846 Method 8015B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		($\leq 35\%$) RPD	Qualifications (Parent only)
	3	4		
C12-C14	0.091	0.069	27	
C8-C30	0.11	0.25U	78	NQ (<5xRL)