Chain of Custody and Supporting Documentation

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MWHAL20090224_00

2 of 3

CHAIN OF CUSTODY RECORD

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Note: Values in the cells bellow are Turn Around Times, Legend:
Numerical values for analyses equate to turn around time in days H - Hold EH - Extract/Extrude & Hold Instructions/TAT Time: Date: Page: Comments MS/MSD ✓ Level IV Data Validation Package Boeing PM: 4. Received by: Metals 6020 Zn Wate Company: Geotracker EDF Metals 6020 Water Lead Metals 6020 Water Arsenic Metals 6020 Soil Zind 9 9 유 Requested Analyses 2 6 9 9 우 2 9 우 9 Metals 6020 Soil Lead Time: Date: 10 9 9 9 9 9 Metals 6020 Soil Coppe 5 9 9 9 9 9 Metals 6020 Soil Cadmium 10 9 9 9 9 9 Metals 6020 Soil Arsenic Project Information Metals 6020 Cu Wate Collector: A. Leavitt 3. Relinquished by: Metals 6020 Cd Water Contact #: Company: 9 Dioxin by 1613B - Soil 10 2 9 9 9 9 9 9 9 D2216 Moisture Soil r 2/25/09 No. of Containers Time: 0848 ISRA Sampling, Feb 2009 Date: GEL Laboratories, LLC Charleston, SC 29407 2040 Savage Road 1891614.050104 (323) 304-4969 (843) 769-7388 12:58 (925) 627-4627 13:50 13:18 13:59 10:51 10:09 11:13 13:33 Brian Martasin TIME 0:00 Cheryl Jones 9:21 Project Manager: Alex Fischi Boeing 2/24/2009 2/24/2009 2/24/2009 2/24/2009 2/24/2009 2/24/2009 2/24/2009 2/24/2009 2/24/2009 2/24/2009 Date Company: Project Information 2. Received by: Sampling Event: Project Number: Field Contact #: Field Contact: Lab Address: Cllent Name: PM Phone #: Lab Contact: Lab Phone: Lab Name: Matrix 2/24/09 Soil Soil Soll Soil sarah.vonraesfeld@mwhglobal.c Soil Soil Soil Soil Soil Sol Date: sean.leffler@mwhglobal.com Address: 2121 N. California Blvd Report to: Sarah Von Raesfeld Walnut Creek Customer Information Suite 600 1. Relinquished by: 94596 SSFL Company: MWH S HZBS0094S001 HZBS0088D001 HZBS0090S001 HZBS0091S001 Sample Name HZBS0088S001 ► HZBS0089S001 HZBS0093S001 HZBS0087S001 HZBS0086S001 HZBS0079S001 Comments: Company: MWH Emall: Site:

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ddress;	Address: 2121 N. California Blvd	Project Manage	ger. Alex Flechi			-	:	·						Lacand
:	Suite BOD	PM Phone #:	(025) 627-4627						<u>. </u>					Numerical values for
	Walnut Creek	Field Contact:	Brian Martasin	:	-							÷ 		around time in days
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		Let Name:	GEL Laboratories, LLC	ies, LLC	-en	:-					: : - ; -	_	**	EH - Extract/Extrude & Hold
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	sean.ieffer@mwhglobal.com	Lab Address:	2040 Savege Road	Youd		oodn b	× 11	tals 8	- 14	iotal		٠,٠	%	Note: Values in the cells
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SAMPLE RECEIPT & REVIEW FORM

Suspected Hazard Information Maximum Counts Observed*: Suspective In or III by RSO? COC/Samples marked containing PCBs? Shipped as a DOT Hazardous? Sumples identified as Foreign Soil? Sumples dentified as Foreign Soil? Sumple Receipt Criteria Suspected Hazard Information Maximum Counts Observed*: Suspective Information Maximum Counts Observed*: Suspective Information Maximum Counts Observed*: Suspective Information In		1				236268H
Suspected Hazard Information S	Clien	<u> </u>			5	SDG/ARCOC/Work Order: 225101 JT 8/31/09
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Classified Radioactive II or III by RSO? COC/Samples marked containing PCBs? Shipped as a DOT Hazardous? Samples identified as Foreign Soil? Sample Receipt Criteria Sample Receipt Criteria Shipping containers received intact and sealed? Shipping containers received intact and sealed? Circle Applicable: seals broken damaged container leaking container other (describe) Preservation Method: and Class Shipping Containers (Required for Non-Conforming Items) Circle Applicable: seals broken damaged container leaking container other (describe) Preservation Method: and Class Shipped: Circle Applicable: Samples requiring cold preservation within 0 ≤ 6 deg. C? Chain of custody documents included with shipment? Circle Applicable: seals broken damaged container leaking container other (describe) Sample ID's, containers affected and observed pH:	Suspe		Yes	No		
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7 Are Encore containers present? (If yes, immediately deliver to Volatiles laboratory)	7	Are Encore containers present?			~	
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12 COC form is properly signed in relinquished/received sections?	12	COC form is properly signed in relinquished/received sections?	V			
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Site:	SSFL	Client Name:	e: Boeing	ing		Collector:	B. Martasin						Boein	Boeing PM:		
Company: MWH	MWH	Sampling Event:		ISRA Sampling, June	June 2008	Contact #:							-			
Report to:	Report to: Sarah Von Raesfeld	Project Number:	-	1891614.054521						Requested Analyses	Analyses				Instruc	Instructions/TAT
Address:	Address: 2121 N. Celifornia Blvd	Project Ma	Project Manager: Alex Fischi	(Fischi											Legend:	
	Suite 600	PM Phone #:		(925) 627-4627											Numeric equale t	Numerical values for analyses equale to turn around time in days
	Walnut Creek	Field Contact:	Г	Brian Martasin										_	H. H	
	Š	Field Contact #:	\vdash	(323) 304 4969											EH-EX	EH - Extract & Hold
	94596	Lab Name:		GEL Laboratories, LL	, LLC		Med			N						
Emall:	sarah.vonraesfeld@mwhglobal.c	al.c Lab Contact:		Cheryl Jones		-	_	N		_	TPH				_	
	sean.leffler@mwhglobal.com	Lab Address:	Т	2040 Savage Road	pe	Dio	Met 5010	letals Met	Aetal:	s 747	by S					
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CHAIN OF CUSTODY RECORD

Legend: Numerical values for analyses equate to turn around time in days Page: 2 of 2 Instructions/TAT H - Hold EH - Extract & Hold Comments MS/MSD Boeing PM: 9 Requested Analyses 10 10 10 10 10 10 2 10 10 10 10 10 10 Collector: B. Martasin Project Information Contact #: 10 10 10 5 5 9 No. of Containers Sampling Event: ISRA Sampling, June 2009 9 GEL Laboratories, LLC Charleston, SC 29407 2040 Savage Road Project Number: 1891614,054521 (925) 627-4627 (323) 304-4969 (843) 769-7388 11:17 15:15 Ē 14:05 -6/1/2009-----14:25 Brien Martesin 8:57 10:58 8:26 9:4 Cheryl Jones Project Manager: Alex Fischi Boeing 6/1/2009 8/1/2009 8/1/2009 6/1/2008 6/1/2009 6/1/2009 6/1/2009 Date Project Information Field Contact #: Field Contact: PM Phone #: Client Name: Lab Contact: Lab Address: Lab Name: Lab Phone: Matrix Water Water Soil Soli Boil Soll sarah.vonraesfeld@mwnglobal.c sean.leffler@mwhglobal.com Address: 2121 N. California Blvd Report to: Sarah Von Raesfeld Customer Information Walnut Creek Sulte 600 94596 SSFL Company: MWH ₹ HZBS0112S001 HZBS0113S001 HZBS0118S001 HZBS0124S001 Sample Name HZBS0123S001 HZBS01158001 EBQW2215 FBQW2231 Email: Site:

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	6-1-09 R.M.	R.M. Stalling	6/2/08					
Company: MWH	Time: 1615	company Ge /	Tigi:	Company:	Time:	Company:	Time:	
Comments:						Geotracker EDF	Mali	



SAMPLE RECEIPT & REVIEW FORM 236 268H

Clien	#35FI				SDG/ARCOC/Work Order: 230764 OT 8131/09
	ved By: RMS				Date Received: 6/8/09
	ected Hazard Information	Yes	.0	*If (Counts > x2 area background on samples not marked "radioactive", contact
_		Y	ž	the 1	Radiation Safety Group of further investigation.
	Samples marked as radioactive?	_	_	Max	imum Counts Observed*:
	fied Radioactive II or III by RSO?		4	<u> </u>	20,00
	Samples marked containing PCBs? ed as a DOT Hazardous?	-	1	#Y	
	les identified as Foreign Soil?	\vdash	1	Haz	ard Class Shipped: UN#:
Danip.					
	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within $0 \le 6$ deg. C?				Preservation Method: (ice bags blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?	/			Sample ID's, containers affected and observed pH: If Preservation added, Lot#
6	VOA vials free of headspace (defined as < 6mm bubble)?	\			Sample ID's and containers affected:
7	Are Encore containers present?			/	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	1			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	1			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	1			Sample ID's affected:
11	Number of containers received match number indicated on COC?	1			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	/			
Comn	ents:				
T _x	9457 3161 5372				
	PM (or PMA) review: Initia	ıls		T	Date 4/2/09

Subject: ISRA add-ons

From: Sarah Von Raesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>

Date: Fri, 28 Aug 2009 17:47:45 -0600

To: Jackie Trudell < jacqueline.trudell@gel.com>

Hi Jackie,

Please analyze the following samples on a 5 day TAT: HZBS0089S001 - analyze for cadmium and zinc HZBS0111S001 - analyze for lead, cadmium, and zinc.

Let me know what SDG these will be logged into and I will get you a change form.

Thanks, Sarah



BUILDING A BETTER WORLD

Sarah Von Raesfeld

Environmental Chemist

MWH Americas, Inc. 2121 N. California Blvd.

Direct Line: 925 627 4654

Telephone: 925 627 4500

Suite 600

Facsimile:

925 627 4501

Walnut Creek, California 94596

Requesting Firm: MWH
Address: 2121 No. California Blvd.
Walnut Creek, CA 94596
Phone: 925-627-4654
Fax: 925-627-4501

				E-mail:Sara	h.VonRaesfeld@mwhglobal.com
To:	Jackie Truc	dell		Phon	ne: 843-769-7388
Laboratory	GEL Labor	ratories, LLC		E- ma jacqu	ail: eline.trudell@gel.com
From:	Sarah Von	Raesfeld			
Requestor	signature:	She	-		
Subject:	Chain-of-0	Custody Form Analytics	al Request Cha	inge No. o	of Pages: 7 6
					SUR
Per Request: Please make deliverables fo	the change or these sam	s listed below to the oples.	chain-of-custod	y analytical requ	uest form. Include this form with the final
COC No.		Client Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MWHAL2009	0224_00	HZBS0089S001	02/24/09		Run Cd and Zn.
MWHBM2009	90601_00	HZBS0111S001	06/01/09		Run Cd, Pb, and Zn
The reason for	these chan	ges:		¥	
Incorrectly ma	rked on CC	OC form			
Lack of sample	e volume				
Change in ana	lytical requ	est		X	
Other:					

Thank you

Date: 09/02/09

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Company:	WWH		Sampling Event:		ISRA Sampling, Feb 2009	ì	. Co. €	Collector	A, Leavitt	= :	:		:	80	Boeing PM:		-
Report to:			Project Number:	+	1891614.050104	4	5									:	:
Address:	2121 N. Celifornia Blvd		Project Manager.	+	Alou Flant		+	1	-	2	Requested Analyses	d Analy				F	Instructions/TAT
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			PM Phone #:		(925) 827-4627		-						_				gend:
	Walnut Creak		Field Contact:	1	Brisn Martasin							_	_			z	Numarical values for
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Í	estan, vontaesfeld@mwhglobal.o		Lab Contact:		Cheryl Jones		<u> </u>			1	M		М			Í	pid
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LABORATORY TASK ORDER (LTO) FORM

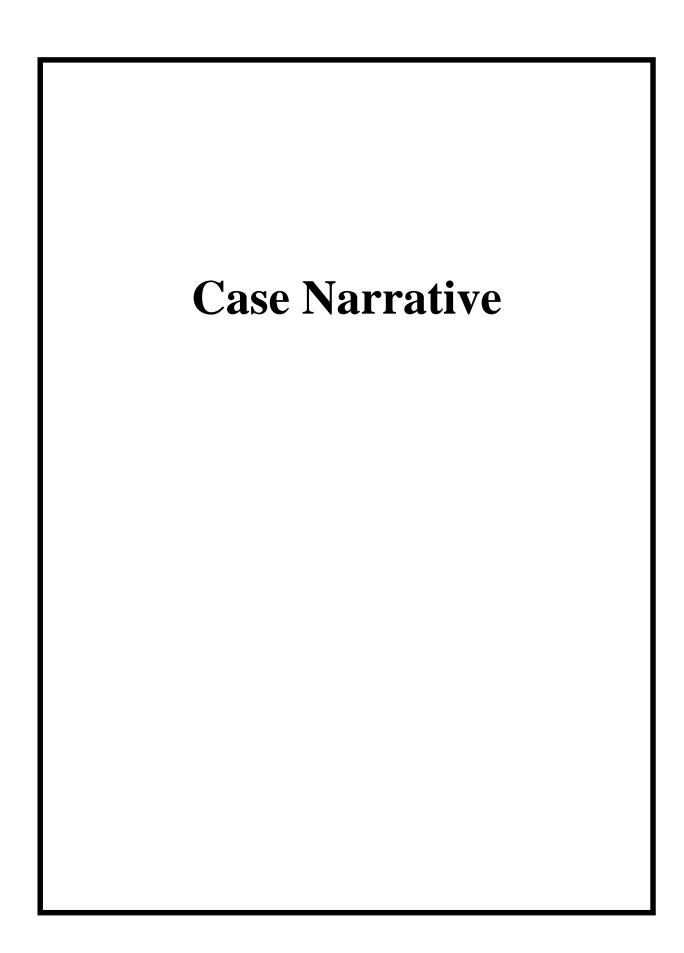
INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sa	mpling, August 2009	Start:	8/24/2009	End	9/30/2009
LTO DATE:			LTO	NUMBER:	í	
Consultant Name:	,	MWH	Contract Laboratory: _		GEL	
Address:		N. California Blvd. Ste. 600	Address:		040 Savage	
-	Wa	alnut Creek, CA 94596	_	Cha	rleston, SC 2	29407
Contact Name:		Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	ell
Phone Number:		925-627-4654	Phone Number:		843-769-738	38
Fax Number:		925-627-4501	Fax Number: _		843-766-117	
E-mail Address:	Sarah.	VonRaesfeld@mwhglobal.com	E-mail Address: _	<u>jacque</u>	line.trudell@	gel.com
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Date Required.			Requested Analyses.	(১ Water	pecify # of Sam	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			-
			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)	-		
Other Location (specify in			EPA 8310 (PAH)			
comments)		_ (enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information:			Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	_ (Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	No	_(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	_(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?	No	_(Yes/No)	% Moisture (D2216)	0	170	0
O			Lead (6020)	10	65	0
Sample Matrix:			Copper (6020)	10	75	0
Soil_	X	_ (select all applicable)	Zinc (6020)	5	20	0
Water _ Vapor	Х	_ (select all applicable) (select all applicable)	Mercury by 7471A/7470A	5	25	0
· -	475	= ' ' ' ' '	40			
Est. Total # of Samples:	175	_ Est. Total # of EDDs	PORTING REQUIREMENTS			
Project TAT:		LABORATORT REI	Laboratory Results/Repo	rts Delivera	ables:	
Normal:	X	(10 Business days)	Draft Results Fax?:		(Yes/No)	
RUSH:	5	(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other:		(Specify # of Days)	-		_(::::::)	
Report Due Date:		(openiy # of Bayo)	Specify Fax/E-mail Contact Name, #, E-mail Address:	Sarah.VonRae	esfeld@mwhglob	oal.com
			Send Original Reports To:			
Special Reporting Requ	uireme	ents:	Project Site		(enter "X")	
Contingent Analysis?	No	_(Yes/No)	Consultant Office		_ (enter "X")	
TIC (VOC) Required?	No	(Yes/No)	Other Location (specify			
TIC (SVOC) Required?	No	(Yes/No)	in comments)	Χ	(enter "X")	
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Name:	Sarah Vo	on Raesfeld	Name:			
-	09/02/09		Date:			
Date.	55,52,08	·	Date			_

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	3
Data Qualifiers Definitions	19
Laboratory Certifications	21
Percent Moisture	23
Metals Analysis	27 28 33 36 52 55 230
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Data Qualifiers Definitions	19
Laboratory Certifications	21
Percent Moisture	23
Metals Analysis	27 28 33 36 52 55 230
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Case Narrative for Boeing - SSFL (MWH) Work Order: 236268

SDG: 236268H

September 15, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 25, 2009 and June 02, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
236268001	HZBS0089S001
236268002	HZBS0111S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

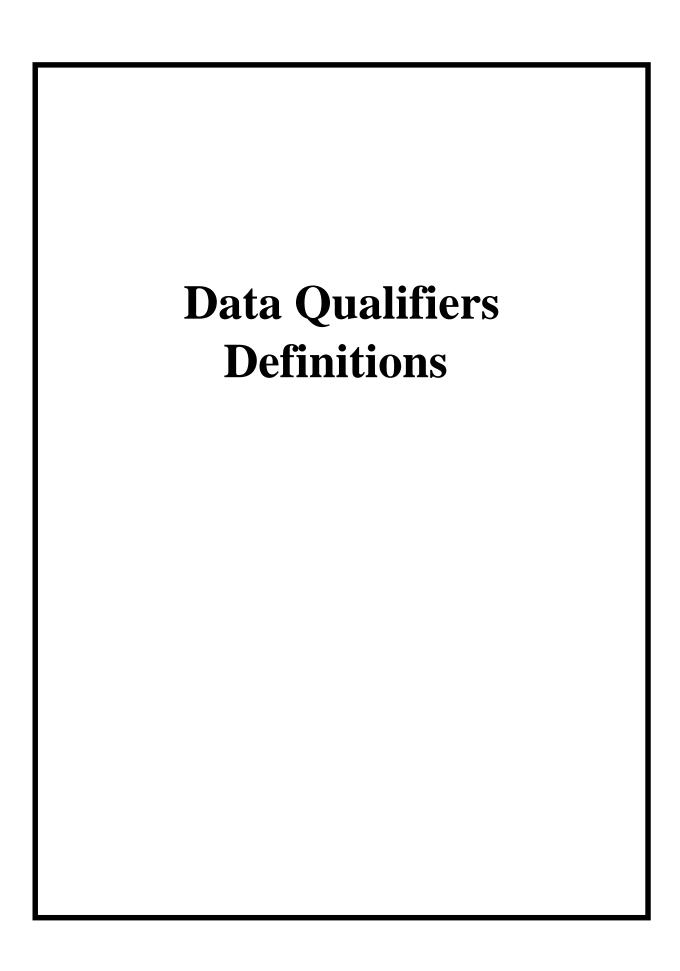
Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals and Percent Moisture.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

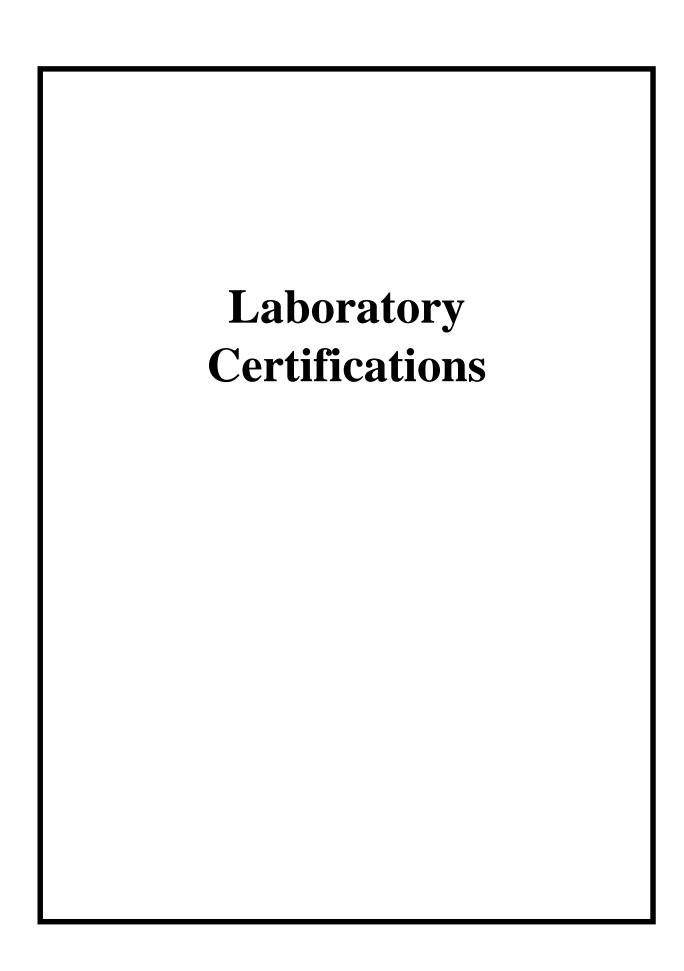
Jacqueline Trudell
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d $\,$ 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- ${
 m N/A}$ Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



List of current GEL Certifications as of 05 September 2009

State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641
-	



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 236268H

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014 Project: Boeing SSFL RFI ISRA

DATA VALIDATION REPORT SDG: 236268H

I. INTRODUCTION

Task Order Title: Boeing SSFL RFI ISRA

Contract Task Order: 1261.500D.00 Sample Delivery Group: 236268H

Project Manager: Dixie Hambrick

Matrix: soil QC Level: V

No. of Samples: 2

No. of Reanalyses/Dilutions: 0

Laboratory: GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
HZBS0089S001	236268001	N/A	Soil	2/24/2009 10:51:00 AM	6020
HZBS0111S001	236268002	N/A	Soil	6/1/2009	6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Quali	fier Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

DATA VALIDATION REPORT

T-II The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.

Not applicable

T- The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.

Not applicable

R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
М	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

DATA VALIDATION REPORT

Qualification Code Reference Table Cont.

D The analysis with this flag should not be used because another more technically sound analysis is available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

Project: Boeing SSFL RFI ISRA

DATA VALIDATION REPORT SDG: 236268H

III. Method Analyses

A. EPA METHOD 6020—Metals

Reviewed By: P. Meeks

Date Reviewed: September 17, 2009

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, six months for ICP-MS metals, was exceeded for HZBS0089S001; therefore, both results for this sample were qualified as estimated, "J." The analytical holding time for the remaining sample was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on HZBS0089S001. The RPDs were within the laboratory-established control limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZBS0089S001. Recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: Serial dilution analyses were performed on HZBS0089S001. The %Ds for lead and zinc exceeded the control limit; therefore, lead and zinc detected in the soil samples was qualified as estimated, "J." The cadmium %D was within the methodestablished control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. The soil analytes were reported form the laboratory's standard 2x dilution for soils. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the MDL.

Project: Boeing SSFL RFI ISRA

DATA VALIDATION REPORT SDG: 236268H

 Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- o Field Blanks and Equipment Rinsates: FBQW2229 (225106) was the field blank and EBQW2204 (225106) was the equipment rinsate associated with HZBS0089S001 and FBQW2231 (230761) was the field blank and EBQW2215 (230761) was the equipment rinsate associated with HZBS0111S001. There were no applicable detects in the field QC samples.
- o Field Duplicates: there were no field duplicate samples identified in this SDG.

Validated Sample Result Forms: 236268H

Analysis Metho	od 6020						
Sample Name	HZBS0089S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236268001	Sample	Date: 2/	/24/2009 10:51:00 A	м ,	Validation Le	evel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cadmium	7440439	1.62	0.213	0.0213 mg/kg		J	Н
Lead	7439921	14.9	0.439	0.11 mg/kg			
Zinc	7440666	80.6	2.13	0.427 mg/kg	Е	J	Н,А
Sample Name	HZBS0111S001		Matrix 7	Гуре: Soil	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236268002	Sample	Date: 6/	/1/2009 8:28:00 AM	7	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cadmium	7440439	0.354	0.212	0.0212 mg/kg			
Lead	7439921	11.6	0.425	0.106 mg/kg	Е	J	A
Zinc	7440666	72.2	2.12	0.425 mg/kg	Е	J	A

Friday, October 02, 2009 Page 1 of 1

Chain of Custody and Supporting Documentation

O BOEING

CHAIN OF CUSTODY RECORD

coc#: 236436

MWHAG20090901_00

***************************************				***************************************				-		***************************************	-	1	2000	•	
ustomer	Customer Information	Project Information	ation			Project Information	t Info	matio	_						
Site:	SSFL	Client Name:	Boeing			Collector: A. Goldenberg	or:	. Golde	enberg				Boeing PM:		
Company: MWH	MWH	Sampling Event:		ISRA Sampling, August 2009	gust 2009	Contact #:	##								
Report to:	Sarah Von Raesfeld	Project Number:		1891614.05462					Rec	uested	Requested Analyses		***************************************	Instruct	Instructions/TAT
Address:	2121 N. California Blvd	Project Manager:	r: Alex Fischi	schl										10000	
	Suite 600	PM Phone #:	(925)	(925) 627-4627										Numerica	Numerical values for
	Walnut Creek	Field Contact:	Alex Fischl	ischl						=				analyses around tir	analyses equate to turn around time in days
	CA	Field Contact #:	_	(925) 627-4627										H- Hold	H- Hold
	94596	Lab Name:	GELL	GEL Laboratories, LLC	TIC						_			EH - Extra Hold	act/Extrude &
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie	Jackie Trudell					Me						
	sean.leffler@mwhglobal.com	Lab Address:	2040	2040 Savage Road					etals		_			Note: Val	Note: Values in the cells
			Charle	Charleston, SC 29407	407				6020					bellow are Times	bellow are Turn Around Times
		Lab Phone:	(843)	(843) 769-7388					Wate						
Sample Name	ше	Matrix	Date	Time	No. of Containers	Water ure Soil	Copper	il Lead	er Lead					Comments	nts
EBQW2246	Water		9/1/2009	13:15	3	5		-	9						
HZET0300D001	Soil Soil		9/1/2009	11:50	1	2	2	2		-					
HZET0300S001	Soil		9/1/2009	11:50	1	2	2	2		_					
HZET0301S001	Soil		9/1/2009	11:38	-	25	ď	2		L.	-				

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Mlon m. 8-409	60-1-6	gyllegr. 912109	912109				
Company: MWH	Time:	Company:	Time: 835	Company:	Time:	Company:	Time:
Comments:					Geot	Geotracker EDF	

SAMPLE RECEIPT & REVIEW FORM

Client	: SSFL			SDG/ARCOC/Work Order: 236436
Recei	ved By: JP			Date Received: 9/2/119
Suspe	cted Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/	Samples marked as radioactive?		/	Maximum Counts Observed*: 20 com
Classi	fied Radioactive II or III by RSO?		/	
COC/	Samples marked containing PCBs?		/	
Shipp	ed as a DOT Hazardous?		/	Hazard Class Shipped: UN#:
Sampl	es identified as Foreign Soil?			
	Sample Receipt Criteria	Yes	NA	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within $0 \le 6$ deg. C?	V	/	Preservation Method: U o (ice bags) blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?	/		
4	Sample containers intact and sealed?	\		Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?	✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		/	Sample ID's and containers affected:
7	Are Encore containers present?			(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	/		Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	\ \		Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?		/	Sample ID's affected:
11	Number of containers received match number indicated on COC?			Sample ID's affected: Looler arrived with 3 empty vials with no
12	COC form is properly signed in relinquished/received sections?			
Comm	nents: Fed Ey 945	7	3	1580558
				T Data 9/2/199

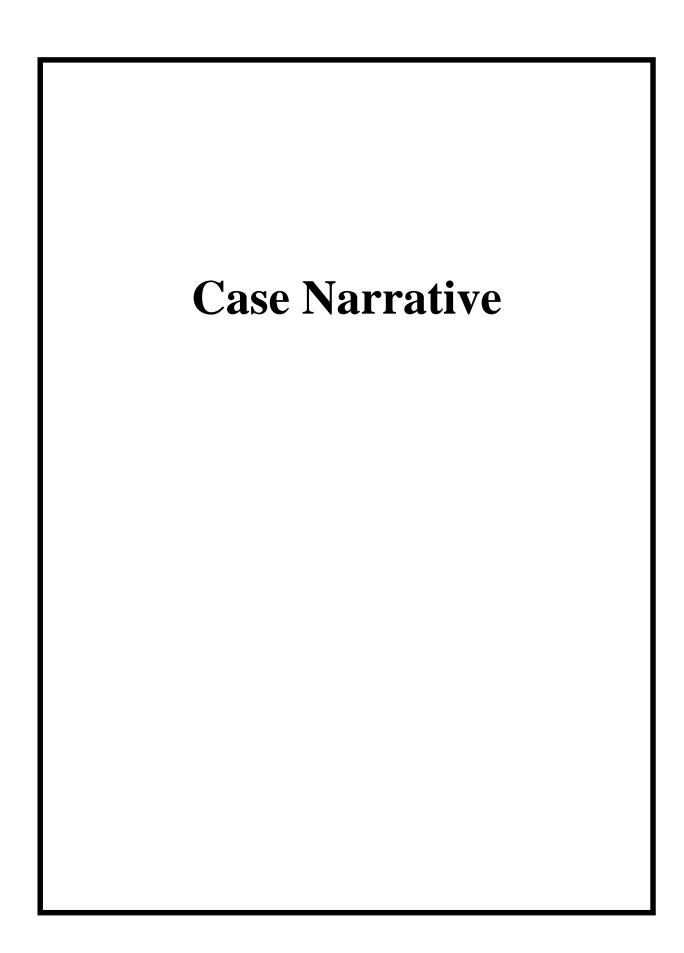
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name: 1	SRA Sar	mpling, August 2009	Start:	8/24/2009	End:	9/30/2009	
LTO DATE:			LTO	NUMBER:			
Consultant Name:		MWH	Contract Laboratory:		GEL		
Address:		. California Blvd. Ste. 600	Address:		040 Savage F		
_	Wa	Inut Creek, CA 94596	-	Charleston, SC 29407			
Contact Name:	5	Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude		
Phone Number:		925-627-4654	Phone Number:		843-769-738		
Fax Number:		925-627-4501	_ Fax Number: _		843-766-117		
E-mail Address: _	Sarah.\	VonRaesfeld@mwhglobal.com	E-mail Address: _	<u>jacque</u>	line.trudell@g	gel.com	
Date Required:		SAMPLE CON	ITAINER ORDER FORM Requested Analyses:	(Sr	ecify # of Sam	alas)	
_				Water	Soil	Contingent	
			Dioxins (1613B)	15	124	0	
Date Sample Pickup:			EPA 8015M (DRO)				
· -			EPA 8015M (JET FUEL)				
Ship Containers To:			EPA 8015M (CC)				
Project Site _		(enter "X")	TCE (8260B)	5	12	0	
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)				
Other Location (specify in			EPA 8310 (PAH)				
comments)_		_(enter "X")	EPA 8082 (PCB)	3	5	0	
			Nickel (6020)	5	10	0	
Container Information:			Chromium (6020)	5	10	0	
Trip Blank (VOA only)	No	_(Yes/No)	Silver (6020)	5	10	0	
Temp Blank (VOA Only)	No	_(Yes/No)	Cadmium (6020)	10	35	0	
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0	
MS/MSD Extra Bottles? _	No	_(Yes/No)	% Moisture (D2216)	0 10	170	0	
Sample Matrix:			Lead (6020) Copper (6020)	10	65 75	0	
Soil	Х	(select all applicable)	Zinc (6020)	5	20	0	
Water	X	(select all applicable)	Mercury by 7471A/7470A	<u>5</u>	25	0	
Vater_ Vapor		(select all applicable)	merodry by 147127470AL				
Est. Total # of Samples:	175	Est. Total # of EDDs 4	0				
· <u>-</u>			ORTING REQUIREMENTS				
Project TAT:			Laboratory Results/Repo	rts Delivera	ables:		
Normal: _	X	(10 Business days)	Draft Results Fax?:		(Yes/No)		
RUSH: _	5	(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)		
Other:		(Specify # of Days)	Specify Fax/E-mail Contact				
Report Due Date:				Sarah.VonRae	sfeld@mwhgloba	al.com	
			Send Original Reports To:				
Special Reporting Requ	uireme	nts:	Project Site _		(enter "X")		
Contingent Analysis? _	No	_(Yes/No)	Consultant Office		(enter "X")		
TIC (VOC) Required?	No	(Yes/No)	Other Location (specify				
TIC (SVOC) Required?	No	(Yes/No)	in comments)	Χ	(enter "X")		
Data Validation Pckge.:	Tier III	(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	-		
		SPECIAL INST	RUCTIONS/LTO NOTES				
		CONFIRMATION O	F TRANSMITTAL & RECEIPT	.			
LTO Sent By:			LTO Received By-				
•	Sarah V	n Pagefold	•				
-		n Raesfeld	Name: _				
Date: <u>(</u>	09/02/09		Date: _			•	

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	3
Data Qualifiers Definitions	7
Laboratory Certifications	9
Percent Moisture	11
Metals AnalysisCase Narrative	15 16
Sample Data Summary	21
Quality Control SummaryStandards	26 48
Raw DataMiscellaneous	52 269



Case Narrative for Boeing - SSFL (MWH) Work Order: 236436 SDG: 236436

September 16, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 02, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
236436001	EBQW2246
236436002	HZET0300D001
236436003	HZET0300S001
236436004	HZET0301S001

Items of Note

There are no items to note.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

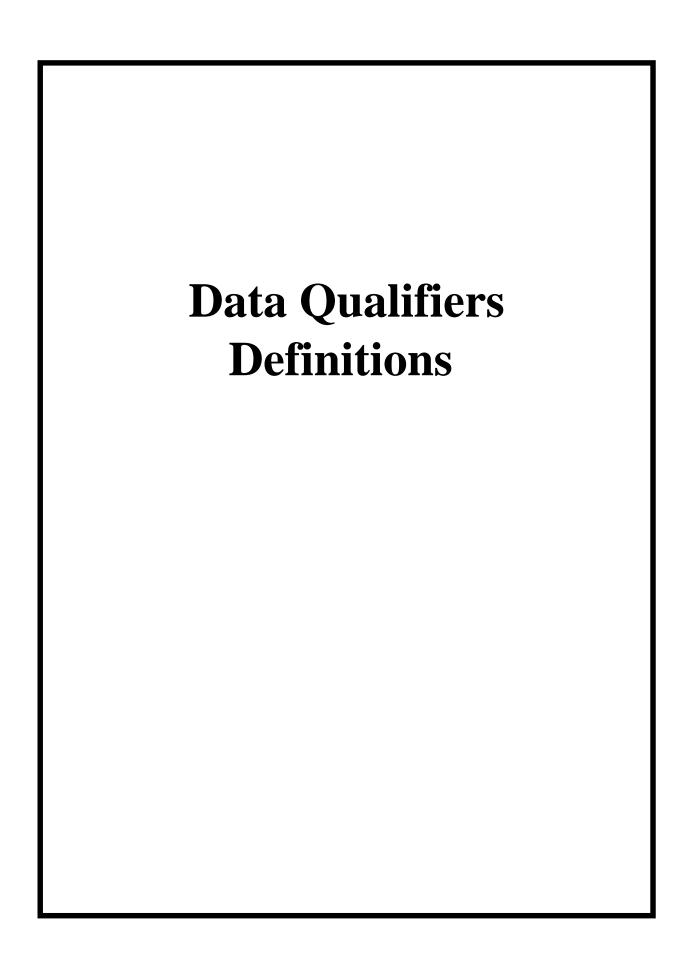
Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals and Percent Moisture.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Jacqueline Trudell Project Manager

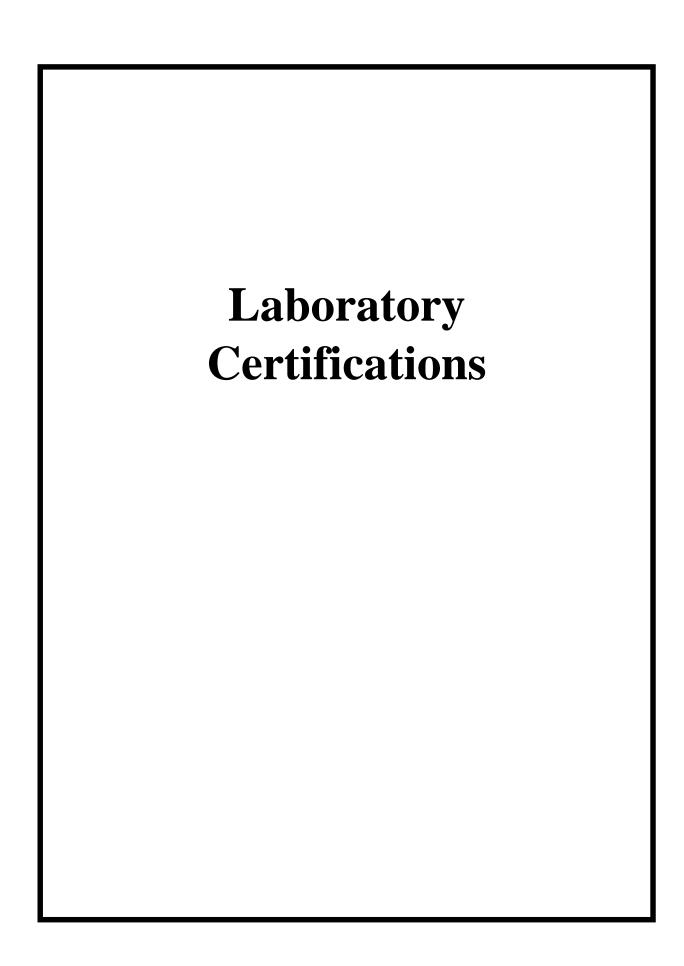
Jacquelin a Judel



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- ${
 m N/A}$ Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



List of current GEL Certifications as of 16 September 2009

State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 236436

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014 DATA VALIDATION REPORT Project: Boeing SSFL RFI ISRA SDG: 236436

I. INTRODUCTION

Task Order Title: Boeing SSFL RFI ISRA

Contract Task Order: 1261.500D.00

Sample Delivery Group: 236436

Project Manager: Dixie Hambrick

Matrix: soil/water

QC Level: V

No. of Samples: 4
No. of Reanalyses/Dilutions: 0

Laboratory: GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
			·		·
EBQW2246	236436001	N/A	Water	9/1/2009 13:15	6020
HZET0300D001	236436002	N/A	Soil	9/1/2009 11:50	6020
HZET0300S001	236436003	N/A	Soil	9/1/2009 11:50	6020
HZET0301S001	236436004	N/A	Soil	9/1/2009 11:38	6020

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qual	ifier Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Project: Boeing SSFL RFI ISRA SDG: 236436

DATA VALIDATION REPORT

T-II The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.

Not applicable

T- The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.

Not applicable

R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Project: Boeing SSFL RFI ISRA SDG: 236436

DATA VALIDATION REPORT

Qualification Code Reference Table Cont.

D The analysis with this flag should not be used because another more technically sound analysis is available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

Project: Boeing SSFL RFI ISRA

DATA VALIDATION REPORT SDG: 236436

III. Method Analyses

A. EPA METHOD 6020—Metals

Reviewed By: P. Meeks

Date Reviewed: September 21, 2009

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the MEC^{X} Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, 180 days for ICP-MS metals, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no applicable detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries and the aqueous RPDs were within laboratory-established QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on HZET0300D001. Both RPDs exceeded the laboratory-established control limits; therefore, copper and lead detected in the soil samples were qualified as estimated, "J."
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0300D001. As the spiked amounts were less than 4x the native amounts in the sample, the MS/MSD results were not assessed.
- Serial Dilution: Serial dilution analyses were performed on HZET0300D001. The %D for lead exceeded the control limit; therefore, lead detected in the soil samples was qualified as estimated, "J." The copper %D was within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. In order to report the analyte within the linear range of the instrument, copper in HZET0300D001 was reported from a 200x dilution and from a 50x dilution in HZET0300S001. The remaining soil analytes were reported form the laboratory's standard 2x dilution. Any result reported between the MDL

DATA VALIDATION REPORT Project: Boeing SSFL RFI ISRA SDG: 236436

and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the MDL.

 Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank and EBQW2246 was the equipment rinsate associated with the soil samples in this SDG. There were no detects in the field QC samples.
- Field Duplicates: HZET0300S001 and HZET0300S001 were identified as field duplicate samples. The copper RPD was 124% and the lead RPD was less than 100%.

Validated Sample Result Forms: 236436

Sample Name	EBQW2246		Matrix '	Type: WATER	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236436001	Sample	Date: 9	/1/2009 1:15:00 PM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	0.33	1	0.33 ug/L	U	U	
Lead	7439921	0.5	2	0.5 ug/L	U	U	
Sample Name	HZET0300D001		Matrix 7	Гуре: SOIL	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236436002	Sample	Date: 9	/1/2009 11:50:00 AM		Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	1550	22.7	7.5 mg/kg	*	J	Е
ead	7439921	54.3	0.455	0.114 mg/kg	*E	J	E, A
Sample Name	HZET0300S001		Matrix 7	Гуре: SOIL	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236436003	Sample	Date: 9	/1/2009 11:50:00 AM	1 1	Validation Le	vel: V
analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	362	5.36	1.77 mg/kg	*	J	Е
ead	7439921	47.1	0.429	0.107 mg/kg	*E	J	E, A
Sample Name	HZET0301S001		Matrix 7	Гуре: SOIL	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236436004	Sample	Date: 9	/1/2009 11:38:00 AM	1 1	Validation Le	vel: V
Analyte	CAS No	Result	RL	MDL Result	Lab		Validation Notes
J		Value		Units	Qualifier	Qualifier	
Copper	7440508	Value 4.61	0.205	0.0675 mg/kg	*	Qualifier J	Е

Chain of Custody and Supporting Documentation

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CHAIN OF CUSTODY RECORD

MWHAG20090903_00

COC #:

SSFL pany: MWH ess: 2121 N. California Blvd Suite 600 Walnut Creek CA 94596 Is sarah.vonraesfeld@mwhglobal.c	Project Information Client Name: Bo Sampling Event: ISF	ion		Project Information	Inform	deito								
N. California Blvd 600 It Creek S. Conraesfeld@mwhglobal.c	nt Name:					anon								
N. California Blvd 600 at Creek .vonraesfeld@mwhglobal.c	pling Event:	Boeing		Collector:	-	A. Goldenberg	erg				Boe	Boeing PM:	_	
s: 2121 N. California Blvd Suite 600 Walnut Creek CA 94596 sarah.vonraesfeld@mwhglobal.c		ISRA Sampling, August 2009	August 2009	Contact #:	#						_		+	
Suite 600 Walnut Creek CA 94596 sarah.vonraesfeld@mwhglobal.c	Project Number:	1891614.05462					Regu	Requested Analyses	Analy	Ses			-	Instructions/TAT
Suite 600 Walnut Creek CA 94596 sarah.vonraesfeld@mwhglobal.c	Project Manager:	Alex Fischl						_						
Walnut Creek CA 94596 sarah.vonraesfeld@mwhglobal.c	PM Phone #:	(925) 627-4627							_				-	Legend: Numerical values for
94596 sarah.vonraesfeld@mwhglobal.c	Field Contact:	Alex Fischl											_	analyses equate to turn around time in days
94596 sarah.vonraesfeld@mwhglobal.c	Field Contact #:	(925) 627-4627												Hod.
sarah.vonraesfeld@mwhglobal.c	Lab Name:	GEL Laboratories, LLC	s, LLC											EH - Extract/Extrude &
Ī	Lab Contact:	Jackie Trudell				_	M	_						_
sean.lemer@mwnglobal.com	Lab Address:	2040 Savage Road	ad	D2			etals		-					Motor Vehicle in the collection
		Charleston, SC 29407	9407				6020	_						
Lab Pi	Lab Phone:	(843) 769-7388				_	Soil							. Heek
Sample Name Matrix		Date Time	No. of Containers	ure Soil li Water	r Water d Water	u Water	Arsenic	romium admium	Copper	il Nickel	Arsenio	er Silve	Mercury Mercury	Comments
EBQW2247 Water	8/3	9/3/2009 10:25	8	2	-	-		-	┼	\perp		-	-	
HZET0500S001 Soil	6/3	9/3/2009 8:03	-	5			2	5	2	5	_	+	2	
HZET0501S001	8/8	9/3/2009 8:15	-	2	\vdash		2	5 5	ß	5	L	\vdash	2	
HZET0502D001 Soil	6/6	9/3/2009 9:45	-	5			2	5 5	2	5	-	H	5	
HZET0502S001 Soil	8/3	9/3/2009 9:45	-	2			2	5 5	2	5			5	
HZET0503S001 Soil	8/8	9/3/2009 10:10	-	5			2	5 5	c,	5	L		5	
HZET0504S001 Soil	6/6	9/3/2009 10:00	-	5			25	5 5	2	5	L		2	
HZET0505S001 Soil	6/6	9/3/2009 9:50	-	5	\vdash		2	5 5	2	5		\vdash	2	
HZET0506S001 Soil	8/3	9/3/2009 9:30	-	2			5	5 5	2	5 5		-	2	
HZET0507S001 Soil	8/6	9/3/2009 9:15	2	5			2	5 5	2	5			5	MS/MSD
1. Relinquished by: Date: 2. R	2. Received by:		Date:	3. Relinquished by:	lished b			Date:		4	A Doceman			

Time:

Company:

Time:

Company:

9/4/09 1984¢ Time:

Company:

Time:

Company:

Comments:

Data Validation Package 🗸 Level IV

Geotracker EDF

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SAMPLE RECEIPT & REVIEW FORM

Client:	SSEI				SDG/ARCOC/Work Order: 236642
	0).			-	
Leceive	ed By: JD			*15.0	Date Received: 914100 Counts > x2 area background on samples not marked "radioactive", contact
uspec	ted Hazard Information	Yes	Ž	the I	Radiation Safety Group of further investigation.
	amples marked as radioactive?		/	Max	imum Counts Observed*: 30com
	ed Radioactive II or III by RSO?		4		
	amples marked containing PCBs?		\mathcal{L}		ard Class Shinned: UN#:
	d as a DOT Hazardous?		4	Haza	ard Class Shipped: UN#:
ample	s identified as Foreign Soil?				
	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items) Circle Applicable:
	Shipping containers received intact and sealed?	/			seals broken damaged container leaking container other (describe)
	Samples requiring cold preservation within $0 \le 6$ deg. C?	/			Preservation Method: ice bags blue ice dry ice none other (describe)
	Chain of custody documents included with shipment?		H		
4	Sample containers intact and sealed?	1			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?	V			Sample ID's, containers affected and observed pH: If Preservation added, Lot#: Sample ID's and containers affected:
6	VOA vials free of headspace (defined as < 6mm bubble)?		/		(If yes, immediately deliver to Volatiles laboratory)
7	Are Encore containers present?			~	·
8	Samples received within holding time?	/			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	/		L	Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	\setminus			Sample ID's affected: Sample ID's affected:
11	Number of containers received match number indicated on COC?			_	Sample 12 o and
12	COC form is properly signed in relinquished/received sections?	V			
Comm Feo	nents: 1 9457 3161 41	3-	7		
^					. 1
_	PM (or PMA) review: Ini	tials		III	Date 914109

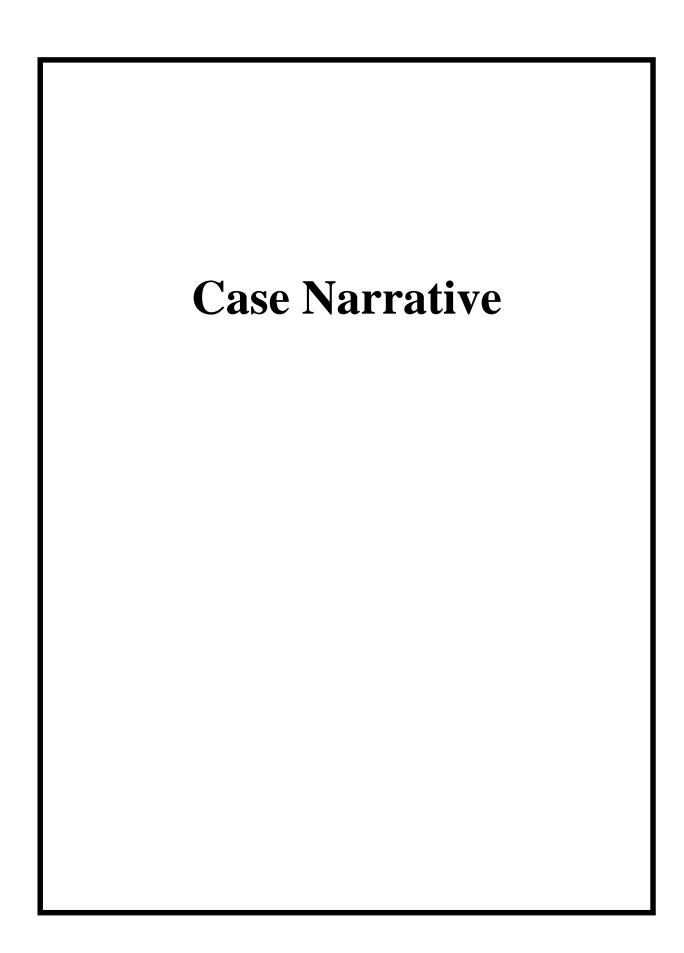
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name:	ISRA Sar	mpling, August 2009	Start:_	8/24/2009	End:	9/30/2009
LTO DATE:			LTO	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
Address:		. California Blvd. Ste. 600	Address:		040 Savage F	
	Wa	Inut Creek, CA 94596	_	Cha	rleston, SC 2	9407
Contact Name		Sarah Van Daarfald	Lab Cantact Name		la alcia Turrala	
Contact Name: Phone Number:		Sarah Von Raesfeld 925-627-4654	Lab Contact Name: _ Phone Number:		Jackie Trude 843-769-738	
Fax Number:		925-627-4501	Frione Number: _		843-766-117	
E-mail Address:	Sarah.\	VonRaesfeld@mwhglobal.com	E-mail Address:		line.trudell@g	
	-		NTAINER ORDER FORM	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Date Required:		SAIVIFEE CO	Requested Analyses:	(Specify # of Samples)		
•			· · · · · · · · · · · · · · · · · · · ·	Water	Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
			EPA 8015M (JET FUEL)			
Ship Containers To:		(, , , , , , , , , , , , , , , , , , ,	EPA 8015M (CC)			
Project Site		(enter "X")	TCE (8260B)	5	12	0
Consultant Office Other Location (specify in		(enter "X")	EPA 8270C SIM (SVOC) EPA 8310 (PAH)			
comments)		(enter "X")	EPA 8082 (PCB)	3	5	0
•		_(emer x)	Nickel (6020)	5	10	0
Container Information:			Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	No	(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles?	No	_(Yes/No)	% Moisture (D2216)	0	170	0
OI- M-(-!			Lead (6020)	10	65	0
Sample Matrix:	V	(Copper (6020)	10	75	0
Soil ₋ Water	X	_ (select all applicable) _ (select all applicable)	Zinc (6020) _ Mercury by 7471A/7470A	5 5	20 25	0
Vvaler_ Vapor	^	(select all applicable)	Mercury by 1471A/1470A	<u> </u>	23	
· -						
Est. Total # of Samples:	175	_ Est. Total # of EDDs _	40_PORTING REQUIREMENTS			
Project TAT:		LABORATORT RE	Laboratory Results/Repo	rts Delivera	ables:	
Normal:	Х	(10 Business days)	Draft Results Fax?:		(Yes/No)	
RUSH:	5	- (Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other:		- (Specify # of Days)	On a sife a Faculty was it Occurs at		_	
Report Due Date:		_	Specify Fax/E-mail Contact Name, #, E-mail Address:	Sarah VonRae	sfeld@mwhglob	al.com
			Send Original Reports To:		5.0.ug.	
Special Reporting Req	uireme	nts:	Project Site		(enter "X")	
Contingent Analysis?	No	(Yes/No)	Consultant Office		(enter "X")	
TIC (VOC) Required?	No	(Yes/No)	Other Location (specify		-	
TIC (SVOC) Required?	No	_(Yes/No)	in comments)	Х	(enter "X")	
Data Validation Pckge.:		(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	_(
-			TRUCTIONS/LTO NOTES		_	
C. LOIAL MOTIONO, LTO NOTES						
		CONFIRMATION C	OF TRANSMITTAL & RECEIPT	•		
LTO Sent By:			LTO Received By-			
Name:	Sarah Vo	n Raesfeld	Name:			
·-	09/02/09	_	Date:			_
Date: -	55, 5 <u>2</u> , 65		Date			-

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	4
Data Qualifiers Definitions	8
Laboratory Certifications	8
Percent Moisture	12
Metals Analysis Case Narrative Sample Data Summary Quality Control Summary Standards Raw Data Miscellaneous	16 17 24 35 105 125 734



Case Narrative for Boeing - SSFL (MWH) Work Order: 236642

SDG: 236642

September 16, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on September 04, 2009 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following samples:

Laboratory	Sample
Identification	Description
236642001	EBQW2247
236642002	HZET0500S001
236642003	HZET0501S001
236642004	HZET0502D001
236642005	HZET0502S001
236642006	HZET0503S001
236642007	HZET0504S001
236642008	HZET0505S001
236642009	HZET0506S001
236642010	HZET0507S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

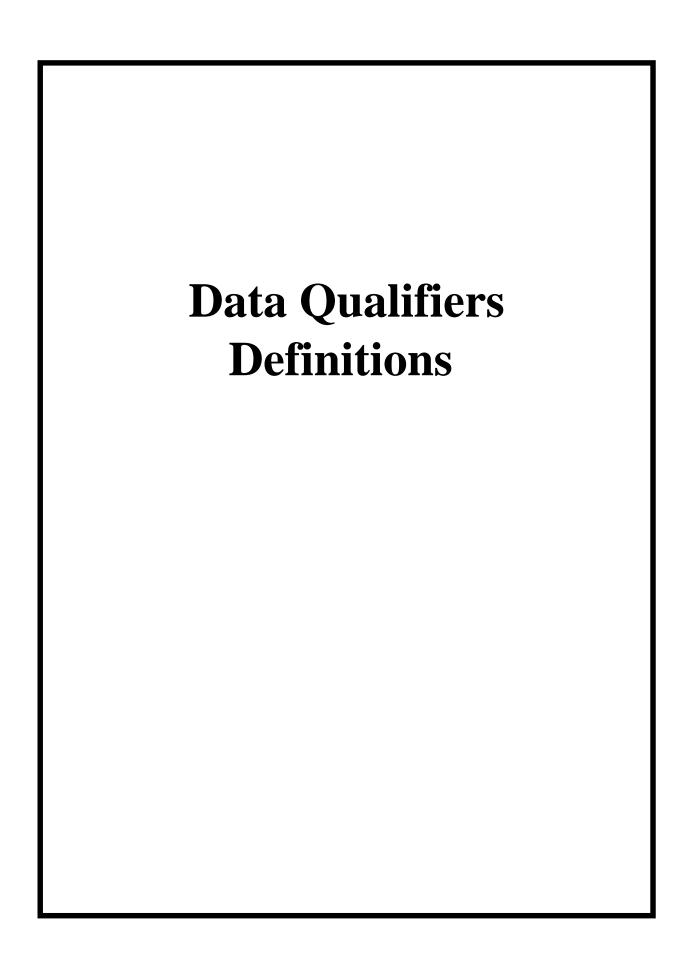
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals and Percent Moisture.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Jacqueline Trudell

Gazqueline a Judel

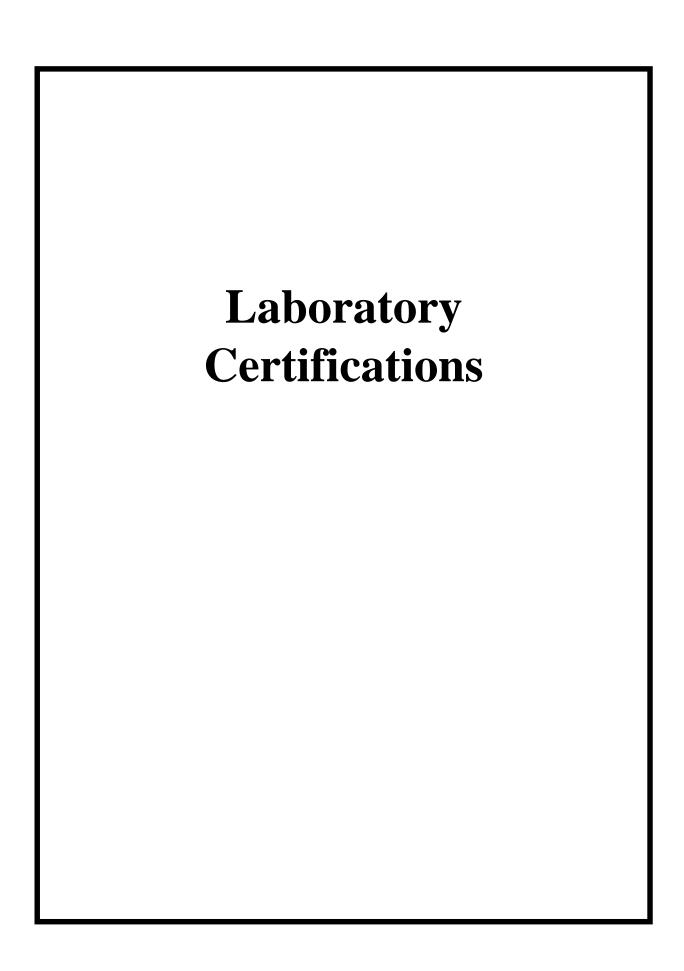
Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or ${\tt MDL/IDL} \, < \, {\tt sample} \, \, {\tt value} \, < \, {\tt PQL}$
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- ${
 m N/A}$ Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



List of current GEL Certifications as of 16 September 2009

State	Certification		
Arizona	AZ0668		
Arkansas	88-0651		
CLIA	42D0904046		
California – NELAP	01151CA		
Colorado	GEL		
Connecticut	PH-0169		
Dept. of Navy	NFESC 413		
EPA Region 5	WG-15J		
Florida – NELAP	E87156		
Georgia	E87156 (FL/NELAP)		
Georgia DW	967		
Hawaii	N/A		
ISO 17025	2567.01		
Idaho	SC00012		
Illinois – NELAP	200029		
Indiana	C-SC-01		
Kansas – NELAP	E-10332		
Kentucky	90129		
Louisiana – NELAP	03046		
Maryland	270		
Massachusetts	M-SC012		
Nevada	SC00012		
New Jersey – NELAP	SC002		
New Mexico	FL NELAP E87156		
New York – NELAP	11501		
North Carolina	233		
North Carolina DW	45709		
Oklahoma	9904		
Pennsylvania – NELAP	68-00485		
South Carolina	10120001/10120002		
Tennessee	TN 02934		
Texas – NELAP	T104704235-07B-TX		
U.S. Dept. of Agriculture	S-52597		
Utah – NELAP	GEL		
Vermont	VT87156		
Virginia	00151		
Washington	C1641		



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 236642

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

Project: Boeing SSFL RFI ISRA SDG: 236642

DATA VALIDATION REPORT

I. INTRODUCTION

Task Order Title: Boeing SSFL RFI ISRA

Contract Task Order: 1261.500D.00

Sample Delivery Group: 236642

Project Manager: Dixie Hambrick

Matrix: soil/water

QC Level: V

No. of Samples: 10

No. of Reanalyses/Dilutions: 0 Laboratory: GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
EBQW2247	236642001	N/A	Water	9/3/2009 10:25	6010B, 6020, 7470A
HZET0500S001	236642002	N/A	Soil	9/3/2009 08:03	6010B, 6020, 7471A
HZET0501S001	236642003	N/A	Soil	9/3/2009 08:15	6010B, 6020, 7471A
HZET0502D001	236642004	N/A	Soil	9/3/2009 09:45	6010B, 6020, 7471A
HZET0502S001	236642005	N/A	Soil	9/3/2009 09:45	6010B, 6020, 7471A
HZET0503S001	236642006	N/A	Soil	9/3/2009 10:10	6010B, 6020, 7471A
HZET0504S001	236642007	N/A	Soil	9/3/2009 10:00	6010B, 6020, 7471A
HZET0505S001	236642008	N/A	Soil	9/3/2009 09:50	6010B, 6020, 7471A
HZET0506S001	236642009	N/A	Soil	9/3/2009 09:30	6010B, 6020, 7471A
HZET0507S001	236642010	N/A	Soil	9/3/2009 09:15	6010B, 6020, 7471A

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Quali	fier Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

Project: Boeing SSFL RFI ISRA SDG: 236642

DATA VALIDATION REPORT

T-II The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.

Not applicable

T- The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.

Not applicable

R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
1	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Project: Boeing SSFL RFI ISRA SDG: 236642

DATA VALIDATION REPORT

Qualification Code Reference Table Cont.

D The analysis with this flag should not be used because another more technically sound analysis is available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

Project: Boeing SSFL RFI ISRA

DATA VALIDATION REPORT SDG: 236642

III. Method Analyses

A. EPA METHOD 6020—Metals

Reviewed By: P. Meeks

Date Reviewed: September 21, 2009

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the MEC^{\times} Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 6020, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding times, 180 days for ICP and ICP-MS metals and 28 days for mercury, were met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Chromium was detected in the aqueous method blank at 2.67 μg/L; therefore, chromium detected in EBQW2247 was qualified as nondetected, "U," at the reporting limit. Method blanks and CCBs had no other applicable detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on HZET0507S001 and EBQW2247. All RPDs were within the laboratory-established control limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on HZET0507S001. And a Matrix spike analysis was performed on EBQW2247. For HZET0507S001, both copper results were below the control limit and the nickel MSD recovery was above the control limit; therefore, copper and nickel detected in the soil samples were qualified as estimated, "J." The remaining recoveries and all RPDs were within the laboratory-established control limits.
- Serial Dilution: Serial dilution analyses were performed on HZET0507S001 and EBQW2247. The %Ds were within the method-established control limit.
- Internal Standards Performance: Review is not applicable at a Level V validation.
- Sample Result Verification: Review is not applicable at a Level V validation. As the samples in this SDG were validated at Level V, the QC information necessary to make an absolute determination of bias in the samples was not reviewed; therefore, when qualifications were applied, no bias was assigned. Due to matrix interference, nickel in all

DATA VALIDATION REPORT Project: Boeing SSFL RFI ISRA SDG: 236642

soil samples was reported from 10x dilutions. The remaining soil ICP-MS analytes were reported form the laboratory's standard 2x dilution. Any result reported between the MDL and the reporting limit was qualified as estimated, "J." Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was the field blank and EBQW2247 was the equipment rinsate associated with the soil samples in this SDG. There were no applicable detects in the field QC samples.
 - Field Duplicates: HZET0502S001 and HZET0502S001 were identified as field duplicate samples. All detects were in common and all RPDs were less than 100%.

Validated Sample Result Forms: 236642

Sample Name	EBQW2247		Matrix	Type:	WATER	Resi	ult Type: Pri	mary Result
Lab Sample Name:	236642001	Sample	Date:	9/3/2009 1	0:25:00 AM	I 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	1	5		1 ug/L	U	U	
Sample Name	HZET0500S001		Matrix	Type:	SOIL	Resi	ult Type: Pri	mary Result
Lab Sample Name:	236642002	Sample	Date:	9/3/2009 8	3:03:00 AM	7	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	1.14	0.547	0.10	09 mg/kg			
Sample Name	HZET0501S001		Matrix	Type:	SOIL	Resi	ult Type: Pri	mary Result
Lab Sample Name:	236642003	Sample	Date:	9/3/2009 8	3:15:00 AM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.582	0.489	0.09	79 mg/kg			
Sample Name	HZET0502D001		Matrix	Type:	SOIL	Resi	ult Type: Pri	mary Result
Lab Sample Name:	236642004	Sample	Date:	9/3/2009 9	9:45:00 AM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.312	0.489	0.09	78 mg/kg			
Sample Name	HZET0502S001		Matrix	Type:	SOIL	Resi	ult Type: Pri	mary Result
Lab Sample Name:	236642005	Sample	Date:	9/3/2009 9	9:45:00 AM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.24	0.516	0.10	03 mg/kg			
Sample Name	HZET0503S001		Matrix	Type:	SOIL	Resi	ult Type: Pri	mary Result
Lab Sample Name:	236642006	Sample	Date:	9/3/2009 1	0:10:00 AM	I 1	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.343	0.517	0.10	03 mg/kg			
Sample Name	HZET0504S001		Matrix	Type:	SOIL	Resi	ult Type: Pri	mary Result
Lab Sample Name:	236642007	Sample	Date:	9/3/2009 1	0:00:00 AM	I T	Validation Le	vel: V
			DI	MDI	Result	Lab		
Analyte	CAS No	Result Value	RL	MDL	Units	Lab Qualifier	Validation Qualifier	Validation Notes

Analysis Method 6010B

Sample Name	HZET0505S001		Matrix '	Type: SOIL	Result Type: Primary Result
Lab Sample Name:	236642008	Sample	Date: 9	/3/2009 9:50:00 AM	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Validation Validation Notes Qualifier Qualifier
Silver	7440224	0.289	0.505	0.101 mg/kg	
Sample Name	HZET0506S001		Matrix '	Type: SOIL	Result Type: Primary Result
Lab Sample Name:	236642009	Sample	Date: 9	/3/2009 9:30:00 AM	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Validation Validation Notes Qualifier Qualifier
Silver	7440224	0.373	0.489	0.0977 mg/kg	
Sample Name	HZET0507S001		Matrix '	Type: SOIL	Result Type: Primary Result
Lab Sample Name:	236642010	Sample	Date: 9	/3/2009 9:15:00 AM	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Validation Validation Notes Qualifier Qualifier
Silver	7440224	0.412	0.583	0.117 mg/kg	

Sample Name	EBQW2247		Matrix 7	Гуре: WATER	Result Type: Primary Result				
Lab Sample Name:	236642001	Sample	Date: 9	/3/2009 10:25:00 AM	ı ,	Validation Le	evel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
Arsenic	7440382	1.6	5	1.6 ug/L	U	U			
Cadmium	7440439	0.11	1	0.11 ug/L	U	U			
Chromium	7440473	10	10	10 ug/L	J	U	B, result changed from 2.49 and MD from 2		
Copper	7440508	0.791	1	0.33 ug/L	J	J			
Nickel	7440020	0.5	2	0.5 ug/L	U	U			
Sample Name	HZET0500S001		Matrix 7	Гуре: SOIL	Res	ult Type: Pr	imary Result		
Lab Sample Name:	236642002	Sample	Date: 9	/3/2009 8:03:00 AM	•	Validation Le	evel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
Arsenic	7440382	4.21	1.11	0.222 mg/kg					
Cadmium	7440439	0.133	0.222	0.0222 mg/kg	J	J			
Chromium	7440473	14.3	0.666	0.222 mg/kg					
Copper	7440508	5.94	0.222	0.0733 mg/kg	N	J	Q		
Nickel	7440020	11.5	2.22	0.555 mg/kg	N	J	Q		
Sample Name	HZET0501S001	1 Matrix Type: SOIL		Res	ult Type: Pr	rimary Result			
Lab Sample Name:	236642003	Sample Date: 9/3/2009 8:15:00 AM		Validation Level: V					
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
Arsenic	7440382	4.19	0.992	0.198 mg/kg					
Cadmium	7440439	0.247	0.198	0.0198 mg/kg					
Chromium	7440473	12.4	0.595	0.198 mg/kg					
Copper	7440508	9.72	0.198	0.0655 mg/kg	N	J	Q		
Nickel	7440020	9.7	1.98	0.496 mg/kg	N	J	Q		
Sample Name	HZET0502D001		Matrix '	Гуре: SOIL	Res	ult Type: Pr	rimary Result		
Lab Sample Name:	236642004	Sample	Date: 9	/3/2009 9:45:00 AM	•	Validation Le	evel: V		
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes		
Arsenic	7440382	3.43	1.01	0.203 mg/kg					
Cadmium	7440439	0.12	0.203	0.0203 mg/kg	J	J			
Chromium	7440473	13.3	0.608	0.203 mg/kg					
Copper	7440508	7.35	0.203	0.0668 mg/kg	N	J	Q		

Sample Name	HZET0502S001		Matrix 7	ype: SOIL	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236642005	Sample	Date: 9/	3/2009 9:45:00 AM	7	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	2.52	1.04	0.208 mg/kg			
Cadmium	7440439	0.119	0.208	0.0208 mg/kg	J	J	
Chromium	7440473	12.8	0.625	0.208 mg/kg			
Copper	7440508	6.71	0.208	0.0687 mg/kg	N	J	Q
lickel	7440020	9.89	2.08	0.521 mg/kg	N	J	Q
Sample Name	HZET0503S001		Matrix T	Type: SOIL	Resi	ult Type: Pr	imary Result
Lab Sample Name:	236642006	Sample	Date: 9/	3/2009 10:10:00 AM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
arsenic	7440382	4.02	1.04	0.208 mg/kg			
admium	7440439	0.275	0.208	0.0208 mg/kg			
hromium	7440473	22.7	0.624	0.208 mg/kg			
opper	7440508	11.9	0.208	0.0687 mg/kg	N	J	Q
ckel	7440020	17.7	2.08	0.52 mg/kg	N	J	Q
Sample Name	HZET0504S001		Matrix 7	Type: SOIL	Resi	ult Type: Pr	imary Result
ab Sample Name:	236642007	Sample	Date: 9/	3/2009 10:00:00 AM		Validation Le	vel: V
nalyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
senic							
Scinc	7440382	2.95	0.978	0.196 mg/kg			
	7440382 7440439	2.95 0.131	0.978 0.196	0.196 mg/kg 0.0196 mg/kg	J	J	
ndmium					J	J	
admium hromium	7440439	0.131	0.196	0.0196 mg/kg	J N	1	Q
admium hromium opper	7440439 7440473	0.131	0.196 0.587	0.0196 mg/kg 0.196 mg/kg			Q Q
admium hromium opper ickel	7440439 7440473 7440508	0.131 10.9 4.49	0.196 0.587 0.196 1.96	0.0196 mg/kg 0.196 mg/kg 0.0646 mg/kg	N N	J	Q
admium hromium opper ickel Sample Name	7440439 7440473 7440508 7440020	0.131 10.9 4.49 6.78	0.196 0.587 0.196 1.96 Matrix 7	0.0196 mg/kg 0.196 mg/kg 0.0646 mg/kg 0.489 mg/kg	N N Rest	J	Q imary Result
Cadmium Chromium Copper Vickel Sample Name Lab Sample Name:	7440439 7440473 7440508 7440020 HZET0505S001	0.131 10.9 4.49 6.78	0.196 0.587 0.196 1.96 Matrix 7	0.0196 mg/kg 0.196 mg/kg 0.0646 mg/kg 0.489 mg/kg Type: SOIL	N N Rest	J J ult Type: Pr	Q imary Result
admium hromium opper ickel Sample Name Lab Sample Name:	7440439 7440473 7440508 7440020 HZET0505S001 236642008	0.131 10.9 4.49 6.78 Sample Result	0.196 0.587 0.196 1.96 Matrix 7	0.0196 mg/kg 0.196 mg/kg 0.0646 mg/kg 0.489 mg/kg Type: SOIL 3/2009 9:50:00 AM MDL Result	N N Resu V	J J ult Type: Pr Validation Le	Q imary Result vel: V
Cadmium Chromium Copper Nickel Sample Name Lab Sample Name: Analyte Arsenic	7440439 7440473 7440508 7440020 HZET0505S001 236642008 CAS No	0.131 10.9 4.49 6.78 Sample Result Value	0.196 0.587 0.196 1.96 Matrix 7 Date: 9/	0.0196 mg/kg 0.196 mg/kg 0.0646 mg/kg 0.489 mg/kg SOIL 3/2009 9:50:00 AM MDL Result Units	N N Resu V	J J ult Type: Pr Validation Le	Q imary Result vel: V
Cadmium Chromium Chromium Copper Nickel Sample Name Lab Sample Name: Analyte Arsenic Cadmium Chromium	7440439 7440473 7440508 7440020 HZET0505S001 236642008 CAS No	0.131 10.9 4.49 6.78 Sample Result Value	0.196 0.587 0.196 1.96 Matrix 7 Date: 9/	0.0196 mg/kg 0.196 mg/kg 0.0646 mg/kg 0.489 mg/kg SOIL 3/2009 9:50:00 AM MDL Result Units 0.201 mg/kg	N N Rest	J J ult Type: Pr Validation Le Validation Qualifier	Q imary Result vel: V
Cadmium Chromium Copper Cickel Sample Name Lab Sample Name: Analyte Arsenic Cadmium	7440439 7440473 7440508 7440020 HZET0505S001 236642008 CAS No 7440382 7440439	0.131 10.9 4.49 6.78 Sample Result Value 3.07 0.0728	0.196 0.587 0.196 1.96 Matrix T Date: 9/ RL 1 0.201	0.0196 mg/kg 0.196 mg/kg 0.0646 mg/kg 0.489 mg/kg SOIL 3/2009 9:50:00 AM MDL Result Units 0.201 mg/kg 0.0201 mg/kg	N N Rest	J J ult Type: Pr Validation Le Validation Qualifier	Q imary Result vel: V

Sample Name	HZET0506S001		Matrix '	Гуре: SOIL	Resi	ult Type: Pri	imary Result
Lab Sample Name:	236642009	Sample	Date: 9	/3/2009 9:30:00 AM	•	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	5.94	0.986	0.197 mg/kg			
Cadmium	7440439	0.12	0.197	0.0197 mg/kg	J	J	
Chromium	7440473	17.1	0.592	0.197 mg/kg			
Copper	7440508	12.3	0.197	0.0651 mg/kg	N	J	Q
Nickel	7440020	12.1	1.97	0.493 mg/kg	N	J	Q
Sample Name	HZET0507S001		Matrix 7	Гуре: SOIL	Resi	ult Type: Pri	imary Result
Lab Sample Name:	236642010	Sample	Date: 9	/3/2009 9:15:00 AM	7	Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	4.42	1.16	0.233 mg/kg			
Cadmium	7440439	0.3	0.233	0.0233 mg/kg			
Chromium	7440473	25	0.698	0.233 mg/kg			
Copper	7440508	12.9	0.233	0.0767 mg/kg	N	J	Q
Nickel	7440020	19.9	2.33	0.581 mg/kg	N	J	Q
Analysis Method	d 7470A						
Sample Name	EBQW2247		Matrix 7	Type: WATER	Resi	ult Type: Pri	imary Result
Lab Sample Name:	236642001	Sample	Date: 9	/3/2009 10:25:00 AM		Validation Le	vel: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.066	0.2	0.066 ug/L	U	U	

Analysis Method 7471A

Sample Name	HZET0500S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	236642002	Sample	Date: 9	/3/2009 8:03:00 AM	•	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Mercury	7439976	0.0371	0.0129	0.0044 mg/kg		
Sample Name	HZET0501S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	236642003	Sample	Date: 9	/3/2009 8:15:00 AM	7	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Mercury	7439976	0.0647	0.0121	0.00411 mg/kg		
Sample Name	HZET0502D001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	236642004	Sample	Date: 9	/3/2009 9:45:00 AM	•	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Notes Qualifier
Mercury	7439976	0.0541	0.0113	0.00386 mg/kg		
Sample Name	HZET0502S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	236642005	Sample	Date: 9	/3/2009 9:45:00 AM	7	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Mercury	7439976	0.0459	0.0122	0.00416 mg/kg		
Sample Name	HZET0503S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	236642006	Sample	Date: 9	/3/2009 10:10:00 AM	1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Mercury	7439976	0.00981	0.0123	0.00417 mg/kg	J	1
Sample Name	HZET0504S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	236642007	Sample	Date: 9	/3/2009 10:00:00 AN	1	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Notes Qualifier
Mercury	7439976	0.0311	0.0119	0.00405 mg/kg		
Sample Name	HZET0505S001		Matrix '	Type: SOIL	Res	ult Type: Primary Result
Lab Sample Name:	236642008	Sample	Date: 9	/3/2009 9:50:00 AM	•	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Mercury	7439976	0.0252	0.0113	0.00383 mg/kg		
· · · J						

Analysis Method 7471A

Sample Name	HZET0506S001	N	Iatrix '	Type: SOIL	Resu	ult Type: Primary Result
Lab Sample Name:	236642009	Sample Da	ate: 9	9/3/2009 9:30:00 AM	V	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Mercury	7439976	0.0188	0.0111	0.00376 mg/kg		
Sample Name	HZET0507S001	N	Iatrix '	Type: SOIL	Resu	ult Type: Primary Result
Lab Sample Name:	236642010	Sample Da	ate: 9	9/3/2009 9:15:00 AM	V	Validation Level: V
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Validation Notes Qualifier
Mercury	7439976	0.00846	0.0124	0.00423 mg/kg	J	J

Chain of Custody and Supporting Documentation

CHUKINE

CHAIN OF CUSTODY RECORD

MWHAG20090903_01

COC #:

	***************************************					7	721.104	Page:	1 of 1
Custome	Customer Information	Project Information	ation		Project In	Project Information		*	AND THE PROPERTY AND TH
Site:	SSFL	Client Name:	Boeing		Collector	Collector: A Goldenhern			
Company: MWH	: MWH	Sampling Event:	: ISRA Sampling, August 2009	August 2009	Contact #		Boeing PM:		
eport to:	Report to: Sarah Von Raesfeld	Project Number:	+		9				
Address:	2121 N. California Blvd	Project Manager:	-			Requested Analyses		Instructions/TAT	s/TAT
	Suite 600	PM Phone #:					_	Legend:	
	Walnut Creek	Field Contact:	Benjamin Stewart	-				Numerical values for analyses equate to turn	alues for uate to turn
	S	Field Contact #:			_			around time in days	in days
	94596	Lab Name:	GEL Laboratories, LLC	s, LLC				H - Hold EH - Extract/Extrude &	Extrade &
Email:	sarah.vonraesfeld@mwhglobal.c Lab Contact:	l.c Lab Contact:	Jackie Trudell		F			Hold	3
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road	ad	PCB b				
			Charleston, SC 29407	9407	y SV			Note: Values in the cells bellow are Turn Around	in the cells
		Lab Phone:	(843) 769-7388		V8082			Times.	
Sample Name	зте	Matrix	Date Time	No. of Containers	2 - Solid				
HZSO0001S001		Solid 9/	9/3/2009 14:30	6	1 4			Comments	
				,					

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	1	
May Kill	62.56	aylayi	9/4/00 084C		i .	* veceived by:	Date:
Company: MWH	Time: (7:22	Company:	Time:	Company:	Time:	Company:	Time:
Comments:							
					Geotr	Geotracker EDF	
					Later	Data Velidation B	



SAMPLE RECEIPT & REVIEW FORM

Clien	1. KK E1			-	CDC//DCCCCCV 10.1 72/// LL1
					SDG/ARCOC/Work Order: Z36646
Kecei	ved By: JD			1.54.	Date Received: 914109
Suspe	cted Hazard Information	Yes	Š		Counts > x2 area background on samples not marked "radioactive", contact Radiation Safety Group of further investigation.
COC/	Samples marked as radioactive?		/	Max	imum Counts Observed*: 30cm
Classi	fied Radioactive II or III by RSO?		/		
COC	Samples marked containing PCBs?				
Shipp	ed as a DOT Hazardous?			Haza	ard Class Shipped: UN#:
Samp	les identified as Foreign Soil?				·······································
	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?		\		Circle Applicable: seals broken darnaged container leaking container 3:her (describe)
2	Samples requiring cold preservation within $0 \le 6$ deg. C?	1			Preservation Method: (ice bags) blue ice dry ice none other (describe)
3	Chain of custody documents included with shipment?				Circle Applicable:
4	Sample containers intact and sealed?	\ \			seals broken darnaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?	/	\		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected: (If yes, immediately deliver to Volatiles laboratory)
7	Are Encore containers present?			/	
8	Samples received within holding time?	/			Id's and tests affected: Sample ID's and containers affected:
9	Sample ID's on COC match ID's on bottles?	/			Sample ID's affected:
10	Date & time on COC match date & time on bottles?	V			Sample ID's affected:
11	Number of containers received match number indicated on COC?	/			Sample to 3 and
12	COC form is properly signed in relinquished/received sections?	V			
Comi Fec	nents: 1 9457 3161 41	37	1		
<u>l</u>				না	Date 91409

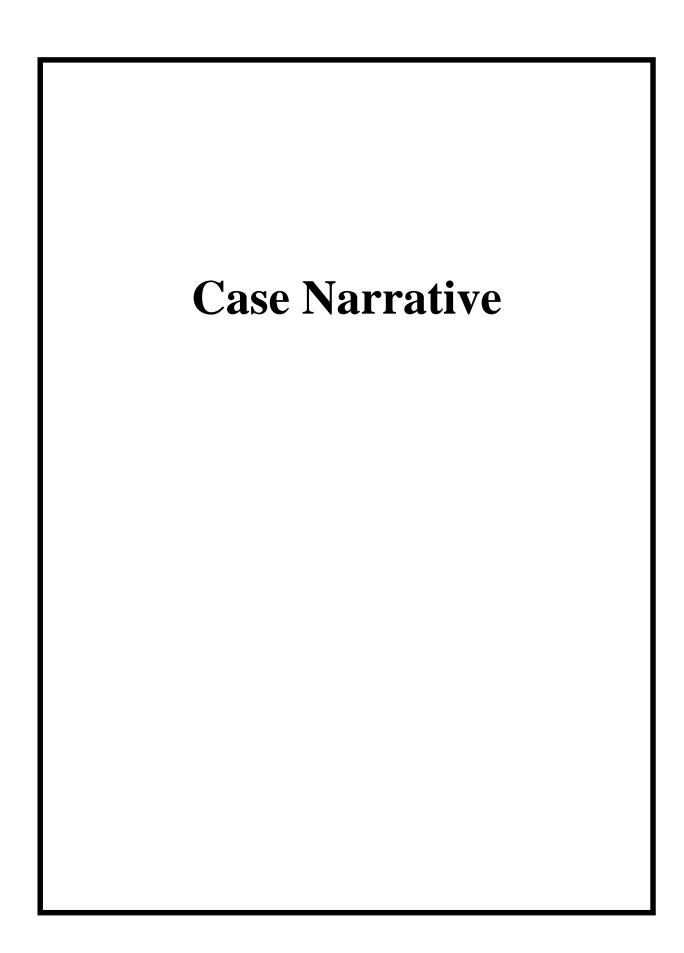
LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingedms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name: 1	SRA Sar	mpling, August 2009	Start:	8/24/2009	End:	9/30/2009
LTO DATE:			LTO	NUMBER:		
Consultant Name:		MWH	Contract Laboratory:		GEL	
Address:		. California Blvd. Ste. 600	Address:		040 Savage F	
_	Wa	Inut Creek, CA 94596	-	Cha	rleston, SC 2	9407
Contact Name:	5	Sarah Von Raesfeld	Lab Contact Name:		Jackie Trude	
Phone Number:		925-627-4654	Phone Number:		843-769-738	
Fax Number:		925-627-4501	_ Fax Number: _		843-766-117	
E-mail Address: _	Sarah.\	VonRaesfeld@mwhglobal.com	E-mail Address: _	<u>jacque</u>	line.trudell@g	gel.com
Date Required:		SAMPLE CON	ITAINER ORDER FORM Requested Analyses:	(Sr	ecify # of Sam	alas)
_				Water	Soil	Contingent
			Dioxins (1613B)	15	124	0
Date Sample Pickup:			EPA 8015M (DRO)			
· -			EPA 8015M (JET FUEL)			
Ship Containers To:			EPA 8015M (CC)			
Project Site _		(enter "X")	TCE (8260B)	5	12	0
Consultant Office		(enter "X")	EPA 8270C SIM (SVOC)			
Other Location (specify in			EPA 8310 (PAH)			
comments)_		_(enter "X")	EPA 8082 (PCB)	3	5	0
			Nickel (6020)	5	10	0
Container Information:			Chromium (6020)	5	10	0
Trip Blank (VOA only)	No	_(Yes/No)	Silver (6020)	5	10	0
Temp Blank (VOA Only)	No	_(Yes/No)	Cadmium (6020)	10	35	0
DI Water Required?	No	(Yes/No)	Arsenic (6020)	5	10	0
MS/MSD Extra Bottles? _	No	_(Yes/No)	% Moisture (D2216)	0 10	170	0
Sample Matrix:			Lead (6020) Copper (6020)	10	65 75	0
Soil	Х	(select all applicable)	Zinc (6020)	5	20	0
Water	X	(select all applicable)	Mercury by 7471A/7470A	<u>5</u>	25	0
Vater_ Vapor		(select all applicable)	merodry by 147127470AL			
Est. Total # of Samples:	175	Est. Total # of EDDs 4	0			
· <u>-</u>			ORTING REQUIREMENTS			
Project TAT:			Laboratory Results/Repo	rts Delivera	ables:	
Normal: _	X	(10 Business days)	Draft Results Fax?:		(Yes/No)	
RUSH: _	5	(Specify- 24 / 48 / 72HRS)	Draft Results E-mail?:	Yes	(Yes/No)	
Other:		(Specify # of Days)	Specify Fax/E-mail Contact			
Report Due Date:				Sarah.VonRae	sfeld@mwhgloba	al.com
			Send Original Reports To:			
Special Reporting Requ	uireme	nts:	Project Site _		(enter "X")	
Contingent Analysis? _	No	_(Yes/No)	Consultant Office		(enter "X")	
TIC (VOC) Required?	No	(Yes/No)	Other Location (specify			
TIC (SVOC) Required?	No	(Yes/No)	in comments)	Χ	(enter "X")	
Data Validation Pckge.:	Tier III	(Boeing Tier I, II or III)	# of Copies Reports Req.:	1	-	
		SPECIAL INST	RUCTIONS/LTO NOTES			
		CONFIRMATION O	F TRANSMITTAL & RECEIPT	.		
LTO Sent By:			LTO Received By-			
•	Sarah V	n Pagefold	•			
-		n Raesfeld	Name: _			
Date: 0	09/02/09		Date: _			•

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	3
Data Qualifiers Definitions	7
Laboratory Certifications	9
GC Semivolatile PCB Analysis Sample Data Summary Quality Control Summary Sample Data Standards Data Quality Control Data	11 17 19 24 30 170
Miscellaneous Data	190



Case Narrative for Boeing - SSFL (MWH) Work Order: 236646 SDG: 236646

September 16, 2009

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary:

Sample Receipt

The sample arrived at GEL Laboratories LLC, Charleston, South Carolina on September 04, 2009 for analysis. The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

The laboratory received the following sample:

LaboratorySampleIdentificationDescription236646001HZSO0001S001

Items of Note

Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

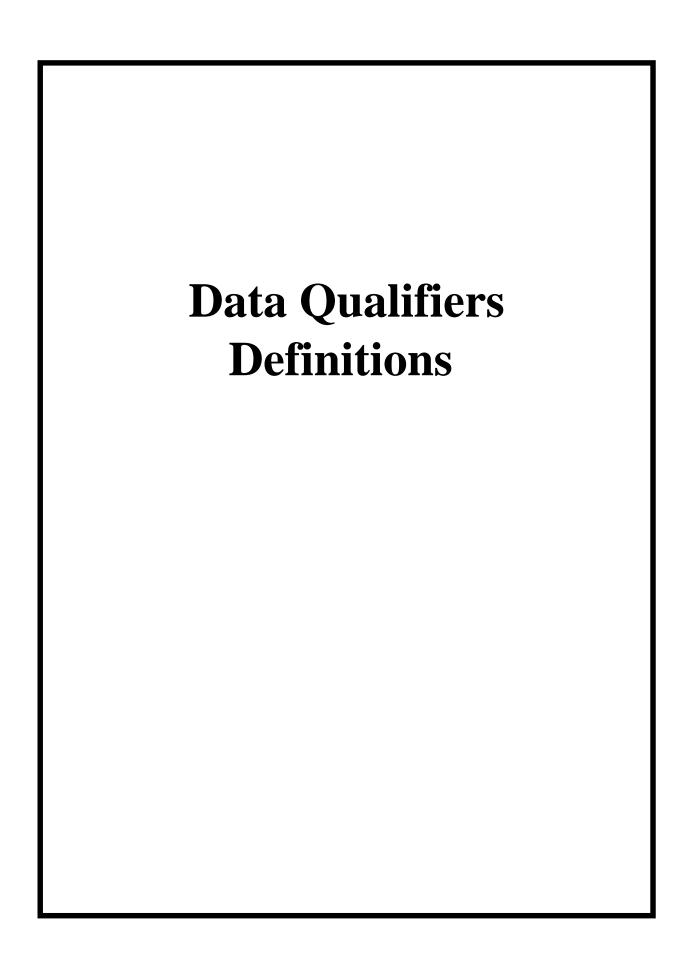
Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: GC Semivolatile PCB.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

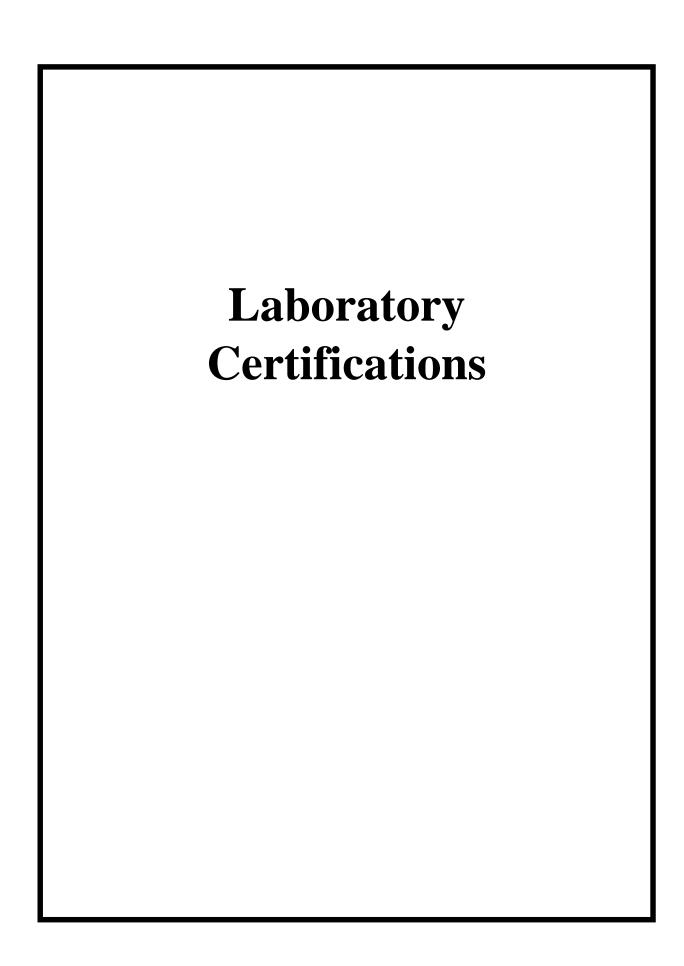
Jacqueline Trudell Project Manager



Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- ${
 m N/A}$ Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



List of current GEL Certifications as of 16 September 2009

State	Certification
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641



DATA VALIDATION REPORT

Boeing SSFL RFI ISRA

SAMPLE DELIVERY GROUP: 236646

Prepared by

MEC^X, LP 12269 East Vassar Drive Aurora, CO 80014

Project: Boeing SSFL RFI ISRA SDG: 236646

DATA VALIDATION REPORT

I. INTRODUCTION

Task Order Title: Boeing SSFL RFI ISRA

Contract Task Order: 1261.500D.00

Sample Delivery Group: 236646

Project Manager: Dixie Hambrick

Matrix: soil C Level: V

QC Level: V No. of Samples: 1

No. of Reanalyses/Dilutions: 0

Laboratory: GEL

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
HZSO0001S001	236646001	N/A	Soil	9/3/2009 14:30	8082

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

1

Project:

Qualifie	r Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
T-I	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a compound with a CAS number and fit greater than 80%.	Not applicable

T-II The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents a class of compound but not of sufficient identification quality to represent a specific compound.

Not applicable

T- The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. The tentative identification represents an unknown compound.

Not applicable

R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
С	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
В	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
1	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D The analysis with this flag should not be used because another more be use technically sound analysis is technically available.

P Instrument performance for pesticides was poor.

*II, *III Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

The analysis with this flag should not be used because another more technically sound analysis is available.

Post Digestion Spike recovery was not within control limits.

Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

Project: Boeing SSFL RFI ISRA SDG: 236646

III. Method Analyses

A. EPA METHOD 8082—PCBs

Reviewed By: P. Meeks

Date Reviewed: September 21, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{\times} Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0), EPA Method 8082, and the National Functional Guidelines for Organic Data Review (10/99).

- Holding Times: Extraction and analytical holding times were met. The sample was extracted within 14 days of collection and analyzed within 40 days of extraction.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratoryestablished QC limits.
- Surrogate Recovery: As the sample was analyzed at a 500x dilution, the surrogate was considered to be diluted out and the recovery was not assessed.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample from this SDG. Evaluation of method accuracy was based on the blank spike results.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: FBQW2239 (235913) was identified as the field blank associated with the sample in this SDG. There were no detects above the MDL in FBQW2239. The sample in this SDG had no associated field blank.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Compound Identification: Review is not applicable at a Level V validation. The laboratory analyzed for Aroclors by Method 8082.
- Compound Quantification and Reported Detection Limits: Review is not applicable at a Level V validation. In order to report Aroclor-1254 within the linear range of the calibration, the sample was analyzed at a 500x dilution. Any result reported between the MDL and the

DATA VALIDATION REPORT Project: Boeing SSFL RFI ISRA SDG: 236646

reporting limit was qualified as estimated, "J." Reported nondetects are valid to the reporting limit.

Validated Sample Result Forms: 236646

Sample Name	HZSO0001S001		Matrix Type: SOIL			Result Type: Primary Result		
Lab Sample Name:	236646001	Sample Date: 9/3/2009 2:30:00 PM			Validation Level: V			
Analyte	CAS No	Result Value	RL	MDL Result Units	Lab Qualifier	Validation Qualifier	Validation Notes	
Aroclor-1016	12674112	2880	2880	960 ug/kg	U	U		
roclor-1221	11104282	2880	2880	960 ug/kg	U	U		
Aroclor-1232	11141165	2880	2880	960 ug/kg	U	U		
Aroclor-1242	53469219	2880	2880	960 ug/kg	U	U		
roclor-1248	12672296	2880	2880	960 ug/kg	U	U		
Aroclor-1254	11097691	13800	2880	960 ug/kg				
Aroclor-1260	11096825	2880	2880	960 ug/kg	U	U		