Chain of Custody and Supporting Documentation

236268H
~~225106~~ JT 8/31/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHAL20090224_00

Page: 1 of 3

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, Feb 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.050104
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Brian Martasin
	CA	Field Contact #:	(323) 304-4969
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	A. Leavitt	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water			Comments
EBQW2204	Water	2/24/2009	15:15	3			10	10	10						10	10	10			
FBQW2229	Water	2/24/2009	15:00	3			10	10	10						10	10	10			Batch # 010709007WF173
HZBS0062S001	Soil	2/24/2009	11:01	1	10								10							
HZBS0063S001	Soil	2/24/2009	11:48	1	10								10							
HZBS0064S001	Soil	2/24/2009	10:28	2	10	H							10							
HZBS0065S001	Soil	2/24/2009	11:39	1	10								10							MS/MSD
HZBS0067D001	Soil	2/24/2009	0:00	1	10	10														
HZBS0067S001	Soil	2/24/2009	8:20	1	10	10														
HZBS0070S001	Soil	2/24/2009	14:45	2	10	10					10		10	10						
HZBS0073S001	Soil	2/24/2009	8:47	2	10	10							10							MS/MSD

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells bellow are Turn Around Times.

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	2/24/09		2/25/09				
Company: MWH	Time: 1615	Company: GEL	Time: 0840	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

236268H
~~225106~~ JT 8/31/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHAL20090224_00

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Leavitt	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, Feb 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.050104				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

	Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water			Comments
						Requested Analyses															Instructions/TAT
✓	HZBS0079S001	Soil	2/24/2009	9:21	2	H	10							H							Legend: Numerical values for analyses equate to turn around time in days H - Hold EH - Extract/Extrude & Hold Note: Values in the cells bellow are Turn Around Times.
✓	HZBS0086S001	Soil	2/24/2009	13:50	1	10					10	10	10	10							
✓	HZBS0087S001	Soil	2/24/2009	13:16	1	10					10	10	10	10							
✓	HZBS0088D001	Soil	2/24/2009	0:00	1	10					10	10	10	10	10						
✓	HZBS0088S001	Soil	2/24/2009	13:59	1	10					10	10	10	10	10						
✓	HZBS0089S001	Soil	2/24/2009	10:51	2	10	10							10							
✓	HZBS0090S001	Soil	2/24/2009	10:09	2	10	10							10	10						
✓	HZBS0091S001	Soil	2/24/2009	11:13	1	10								10							
✓	HZBS0093S001	Soil	2/24/2009	13:33	1	10					10	10	10	10							
✓	HZBS0094S001	Soil	2/24/2009	12:58	2	10					10	10	10	10							MS/MSD

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	2/24/09		2/25/09				
Company: MWH	Time: 1615	Company: GEL	Time: 0840	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

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2362681H

CHAIN OF CUSTODY RECORD

COC #: MWHAL20090224_00

Page: 3 of 3

Customer Information		Project Information		Project Information	
Site:	SSFL	Client Name:	Boeing	Collector:	A. Leavitt
Company:	MWH	Sampling Event:	ISRA Sampling, Feb 2009	Contact #:	
Report to:	Sarah Von Raesfeld	Project Number:	169161.050104	Boeing PM:	
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl		
	Suite 600	PM Phone #:	(925) 627-4627		
	Walnut Creek	Field Contact:	Brian Martasin		
	CA	Field Contact #:	(323) 304-4969		
	94596	Lab Name:	GEL Laboratories, LLC		
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones		
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road		
			Charleston, SC 29407		
		Lab Phone:	(843) 769-7366		

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days
H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells below are Turn Around Times.

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Distrib by 16135 - Soil	Distrib by 16135 - Water	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water			Comments
HZBS00965C01	Soil	2/24/2009	13:40	1	10					10	10	10	10							

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	2/24/09		2/25/09				
Company: MWH	Time: 1615	Company: GEL	Time: 0840	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

6

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

236268H

Client: SSFL	**SDG/ARCOC/Work Order:** ~~225106~~ JT 8/31/09
Received By: Ricky Albee	**Date Received:** 2/25/09

Suspected 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*: 60 cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples 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 damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 3°, 4°
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: See comments
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:
12	COC form is properly signed in relinquished/received sections?	✓			

Comments: FedEx 9457 3158 4163-3°
9457 3158 4174-4°

* Did not receive HZBS009050015P (page 3 of coc)
Received HZBS009550001, not on coc. 1 container, collected 2/24/09 @ 1340

PM (or PMA) review: Initials JT Date 2/25/09

2362681
~~2307617~~ JT 8/31/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHBM20090601_00

Page: 1 of 2

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	B. Martasin	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract & Hold

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals 6010B Water Aluminum	Metals 6020 Be Water	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Se Water	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water	Metals 7470A Water Mercury	PCB by SW8082 - Water	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Water	VOC by SW8260B - Water	Comments
HZBS0123D001	Soil	6/1/2009	0:00	1	10	10																	
HZBS0110S001	Soil	6/1/2009	8:00	1	10	10																	
HZBS0109S001	Soil	6/1/2009	8:09	1	H	H																	
HZBS0114S001	Soil	6/1/2009	8:18	1	H	H																	
HZBS0116S001	Soil	6/1/2009	8:25	1	10	10																	
HZBS0111S001	Soil	6/1/2009	8:28	1	10	10																	
HZBS0117S001	Soil	6/1/2009	8:41	1	H	H																	
HZBS0119S001	Soil	6/1/2009	8:55	1	H	H																	
HZBS0120S001	Soil	6/1/2009	9:03	1	10	10																	
HZBS0121S001	Soil	6/1/2009	9:15	1	H	H																	

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	6-1-09	R.M. Stallings	6/2/09				
Company: MWH	Time: 1615	Company: GEL	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

236268H

~~230761~~ ST 6/3/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHBM20090601_00

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054521
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Brian Martasin
	CA	Field Contact #:	(323) 304-4969
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	B. Martasin	Boeing PM:	
Contact #:			

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals 6010B Water Aluminum	Metals 6020 Be Water	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Se Water	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water	Metals 7470A Water Mercury	PCB by SW8082 - Water	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Water	VOC by SW8260B - Water	Comments
HZBS0118S001	Soil	6/1/2009	9:26	1	10	10																	MS/MSD
HZBS0112S001	Soil	6/1/2009	9:44	1	10	10																	
HZBS0113S001	Soil	6/1/2009	9:57	1	H	H																	
HZBS0124S001	Soil	6/1/2009	10:58	1	10	10							10	10									
HZBS0123S001	Soil	6/1/2009	11:17	1	10	10																	
FBQW2231	Water	6/1/2009	14:05	10			10	10	10	10	10	10			10	10	10	10	10	10	10	10	
EBQW2215	Water	6/1/2009	14:25	3			10				10					10							
HZBS0115S001	Soil	6/1/2009	15:15	1	10	10																	

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract & Hold

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	6-1-09	R.M. Stelling	6/2/09				
Company: MWH	Time: 1615	Company: Gel	Time: 915	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

236268H

Client: SSFL	SDG/ARCOC/Work Order: ~~236268~~ or 8131109
Received By: RMS	Date Received: 6/2/09

Suspected 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*:
Classified Radioactive II or III by RSO?		✓	20cpm
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples 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 damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 4, 6
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:
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Fx: 9457 3161 5372
" 5383

PM (or PMA) review: Initials JT Date 6/2/09

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

MWH

BUILDING A BETTER WORLD

Sarah Von Raesfeld
Environmental Chemist
MWH Americas, Inc.
2121 N. California Blvd.
Suite 600
Walnut Creek, California 94596
Telephone: 925 627 4500
Direct Line: 925 627 4654
Facsimile: 925 627 4501

Requesting Firm: MWH
Address: 2121 No. California Blvd.
Walnut Creek, CA 94596
Phone: 925-627-4654
Fax: 925-627-4501
E-mail:Sarah.VonRaesfeld@mwhglobal.com

Date: 09/02/09

To: Jackie Trudell **Phone: 843-769-7388**

Laboratory GEL Laboratories, LLC **E-mail:** jacqueline.trudell@gel.com

From: Sarah Von Raesfeld

Requestor signature:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages:** 7 6

SVR

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	Client Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MWHAL20090224_00	HZBS0089S001	02/24/09		Run Cd and Zn.
MWHBM20090601_00	HZBS0111S001	06/01/09		Run Cd, Pb, and Zn

The reason for these changes:

Incorrectly marked on COC form _____

Lack of sample volume _____

Change in analytical request X

Other: _____

Thank you

BOEING

CHAIN OF CUSTODY RECORD

COC #: 225106

MWHAL20090224_00

Page: 1 of 3

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Leavitt	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, Feb 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1691614.050104				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones				
	sean.lemer@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Requested Analyses

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water			Comments
EBQW2204	Water	2/24/2009	15:15	3			10	10	10						10	10	10			
FBQW2229	Water	2/24/2009	15:00	3			10	10	10						10	10	10			
HZBS0062S001	Soil	2/24/2009	11:01	1	10	10						10	10							Batch # 010709007WF173
HZBS0063S001	Soil	2/24/2009	11:48	1	10								10							
HZBS0064S001	Soil	2/24/2009	10:28	2	10								10							
HZBS0065S001	Soil	2/24/2009	11:39	1	10								10							
HZBS0067D001	Soil	2/24/2009	0:00	1	10	10														MS/MSD
HZBS0067S001	Soil	2/24/2009	8:20	1	10	10														
HZBS0070S001	Soil	2/24/2009	14:45	2	10	10					10		10	10						
HZBS0073S001	Soil	2/24/2009	8:47	2	10	10							10							MS/MSD

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note. Values in the cells bellow are Turn Around Times.

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	2/24/09		2/25/09				
Company: MWH	Time: 1615	Company: GEL	Time: 0840	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

③ SVR 04/14/09

④ SVR 05/01/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: 225106

MWHAL20090224_00

Page: 2 of 3

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Leavitt	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, Feb 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.050104				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Brian Martasin				
	CA	Field Contact #:	(323) 304-4969				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones				
	sean.lemer@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals 6020 Cd Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water		Comments
HZBS0079S001	Soil	2/24/2009	9:21	2 ②	10	10							10						
HZBS0086S001	Soil	2/24/2009	13:50	1	10					10	10	10	10						
HZBS0087S001	Soil	2/24/2009	13:18	1	10					10	10	10	10						
HZBS0088D001	Soil	2/24/2009	0:00	1	10					10	10	10	10	10					
HZBS0088S001	Soil	2/24/2009	13:59	1	10					10	10	10	10	10					
HZBS0089S001	Soil	2/24/2009	10:51	2	10	10					10		10	10 ⑤					
HZBS0090S001	Soil	2/24/2009	10:09	2	10	10							10	10					
HZBS0091S001	Soil	2/24/2009	11:13	1	10	10 ④							10						
HZBS0093S001	Soil	2/24/2009	13:33	1	10					10	10	10	10						
HZBS0094S001	Soil	2/24/2009	12:58	2	① 10 ②				10										MS/MSD

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells bellow are Turn Around Times.

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	2/24/09		2/25/09				
Company: MWH	Time: 1615	Company: GEL	Time: 0840	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☒ Level IV

① SVR 02/26/09
② SVR 03/23/09
④ SVR 05/01/09
⑤ SVR 09/02/09

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHAL20090224_00

Customer Information		Project Information		Project Information	
Site:	SSFL	Client Name:	Boeing	Collector:	A. Leavitt
Company:	MWH	Sampling Event:	ISRA Sampling, Feb 2009	Contact #:	
Report to:	Sarah Von Reesfeld	Project Number:	1691614.050104	Boeing PM:	
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl		
	Suite 800	PM Phone #:	(925) 627-4627		
	Walnut Creek	Field Contact:	Brian Meriesin		
	CA	Field Contact #:	(323) 304-4969		
	94596	Lab Name:	GEL Laboratories, LLC		
Email:	sarah.vonreesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones		
	sean.lemar@mwhglobal.com	Lab Address:	2040 Savage Road		
			Charleston, SC 29407		
		Lab Phone:	(843) 769-7366		

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells bellow are Turn Around Times.

Sample Name	Matrix	Date	Time	No. of Containers	8270 Modified Soil	Diesel by 8015B - Soil	Diesel by 8015B - Water	Metals 6020 Oil Water	Metals 8270 Oil Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Soil Zinc	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Zn Water			Comments
HZB60056S001	Soil	2/24/2009	1340	1	10					10	10	10	10							

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	2/24/09		2/25/09				
Company: MWH	Time: 1615	Company: GEL	Time: 0840	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

2307617

CHAIN OF CUSTODY RECORD

COC #: MWHBM20090601_00

Page: 1 of 2

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009
Report to:	Sarah Von Raesfeld	Project Number:	1891614.054621
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4527
	Walnut Creek	Field Contact:	Brian Martasin
	CA	Field Contact #:	(323) 304-4969
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones
	sean.jeffers@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7368

Project Information			
Collector:	B. Martasin	Boeing PM:	
Contact #:			

Requested Analyses

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dissolv by 19139 - Soil	Dissolv by 19139 - Water	Metals 6010B Water Aluminum	Metals 6020 Be Water	Metals 6020 Cd Water	Metals 6020 Cr Water	Metals 6020 Se Water	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Water Arsenic	Metals 6020 Zn Water	Metals 7470A Water Mercury	PCB by SW8082 - Water	SVOCs by SW8270C SIM - Water	TPH by SW8015BM - Water	VOC by SW8260B - Water	Metals 6020 Soil Zinc (2)	Metals 6020 Soil Cr, Ni, Cu (2)	Instructions/TAT
HZB601123D001	Soil	6/1/2009	0:00	1	10	10																		Legend: Numerical values for analyses equals to turn around time in days
HZB601106001	Soil	6/1/2009	8:00	1	10	10																		H - Hold
HZB601085001	Soil	6/1/2009	8:09	1	15 (2)	15																		EH - Extract & Hold
HZB601146001	Soil	6/1/2009	8:18	1	H	H																		
HZB601168001	Soil	6/1/2009	8:28	1	10 (1)	~~10~~																		
HZB601113001	Soil	6/1/2009	8:29	1	10	10																		
HZB601178001	Soil	6/1/2009	8:41	1	H	H								10										
HZB601196001	Soil	6/1/2009	8:55	1	H	H																		
HZB601206001	Soil	6/1/2009	9:03	1	10	10																		
HZB601218001	Soil	6/1/2009	9:18	1	H	H																		

Comments

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	6-1-09	R.M. Kelley	6/2/09				
Company: MWH	Time: 16:15	Company: GEL	Time: 9:15	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

(1) Cancel analysis SVR 06/08/09

(2) SVR 07/01/09

(3) SVR 09/02/09

16

230761%

BOEING

CHAIN OF CUSTODY RECORD

COC #: MWHBM20090601_00

Customer Information		Project Information	
Site:	SSFL	Client Name:	Boeing
Company:	MWH	Sampling Event:	ISRA Sampling, June 2009
Report to:	Sarah Von Reesfeld	Project Number:	1691814.054521
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl
	Suite 600	PM Phone #:	(925) 627-4627
	Walnut Creek	Field Contact:	Brian Martesin
	CA	Field Contact #:	(323) 304-4969
	94596	Lab Name:	GEL Laboratories, LLC
Email:	sarah.vonreesfeld@mwhglobal.c	Lab Contact:	Cheryl Jones
	sean.lieber@mwhglobal.com	Lab Address:	2040 Savage Road
			Charleston, SC 29407
		Lab Phone:	(843) 769-7388

Project Information			
Collector:	B. Martesin	Boeing PM:	
Contact #:			

Requested Analyses

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Dioxin by 1613B - Soil	Dioxin by 1613B - Water	Metals 6010B Water Aluminum	Metals 6020 Be Water	Metals 6020 Cd Water	Metals 6020 Cr Water	Metals 6020 Sb Water	Metals 6020 Solid Copper	Metals 6020 Solid Lead	Metals 6020 Water Arsenic	Metals 6020 Water Lead	Metals 6020 Water Zn Water	Metals 7470A Water Mercury	PCB by SW8082 - Water	SVOCs by SW8270C SIM - Water	TPH by SW8015M - Water	VOC by SW8260B - Water
HZBS01189001	Soil	6/1/2009	9:26	1	10	10																
HZBS01129001	Soil	6/1/2009	9:44	1	10	10																
HZBS01138001	Soil	6/1/2009	9:57	1	H	H																
HZBS01248001	Soil	6/1/2009	10:59	1	10	10								10	10							
HZBS01233001	Soil	6/1/2009	11:17	1	10	10																
FBQW2231	Water	6/1/2009	14:08	10			10	10	10	10	10	10			10	10	10	10	10	10	10	10
EBQW2218	Water	6/1/2009	14:28	3			10				10					10						
HZBS01158001	Soil	6/1/2009	15:15	1	10	10																

Instructions/TAT

Legend:
Numerical values for analyses equals to turn around time in days

H - Hold
EH - Extract & Hold

Comments

MS/MSD

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Company: MWH	Time: 1615	Company: GEL	Time: 9:45	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

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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 Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600	Address:	2040 Savage Rd.
	Walnut Creek, CA 94596		Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
Phone Number:	925-627-4654	Phone Number:	843-769-7388
Fax Number:	925-627-4501	Fax Number:	843-766-1178
E-mail Address:	Sarah.VonRaesfeld@mwhglobal.com	E-mail Address:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date: _____

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name: _____
Date: _____

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Case Narrative **1**

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Case Narrative

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 Identification	Sample 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 A Trudell

Jacqueline Trudell
Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

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

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

Qualifier	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

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-III	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
H	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
C	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.
B	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.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	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 technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*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.	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.

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 laboratory-established 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 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. The soil analytes were reported form the laboratory's standard 2× 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.

- 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: 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.

    - Field Duplicates: there were no field duplicate samples identified in this SDG.

Validated Sample Result Forms: 236268H

Analysis Method 6020

Sample Name HZBS0089S001 **Matrix Type:** Soil **Result Type:** Primary Result

Lab Sample Name: 236268001 **Sample Date:** 2/24/2009 10:51:00 AM **Validation Level:** 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	H
Lead	7439921	14.9	0.439	0.11	mg/kg			
Zinc	7440666	80.6	2.13	0.427	mg/kg	E	J	H,A

Sample Name HZBS0111S001 **Matrix Type:** Soil **Result Type:** Primary Result

Lab Sample Name: 236268002 **Sample Date:** 6/1/2009 8:28:00 AM **Validation Level:** 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	E	J	A
Zinc	7440666	72.2	2.12	0.425	mg/kg	E	J	A

Chain of Custody and Supporting Documentation

CHAIN OF CUSTODY RECORD

COC #: 236436 MWHAG20090901_00

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Goldenberg	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Alex Fischl				
	CA	Field Contact #:	(925) 627-4627				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	D2216 Moisture Soil	Metals 6020 Cu Water	Metals 6020 Soil Copper	Metals 6020 Soil Lead	Metals 6020 Water Lead	Comments
EBQW2246	Water	9/1/2009	13:15	3		10			10	
HZET0300D001	Soil	9/1/2009	11:50	1	5		5	5		
HZET0300S001	Soil	9/1/2009	11:50	1	5		5	5		
HZET0301S001	Soil	9/1/2009	11:38	1	5		5	5		

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells bellow are Turn Around Times.

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
Allison M. Pate	9-1-09	J. Fischl	9/2/09				
Company: MWH	Time:	Company: GEL	Time: 835	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL	**SDG/ARCOC/Work Order:** 236436
Received By: JP	**Date Received:** 9/2/09

Suspected 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*: 204pm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples 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 damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 4°
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: cooler arrived with 3 empty vials with no label
12	COC form is properly signed in relinquished/received sections?	✓			

Comments: Fed Ex 9457 3158 0558

PM (or PMA) review: Initials JT Date 9/2/09

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 Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600 Walnut Creek, CA 94596	Address:	2040 Savage Rd. Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
Phone Number:	925-627-4654	Phone Number:	843-769-7388
Fax Number:	925-627-4501	Fax Number:	843-766-1178
E-mail Address:	Sarah.VonRaesfeld@mwhglobal.com	E-mail Address:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date:

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name:
Date:

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Case Narrative

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 Identification	Sample 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 A Trudell

Jacqueline Trudell
Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

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

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

Qualifier	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

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-III	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
H	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
C	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.
B	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.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	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 technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*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.	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.

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 4× 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 200× dilution and from a 50× dilution in HZET0300S001. The remaining soil analytes were reported form the laboratory's standard 2× 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 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

Analysis Method 6020

Sample Name EBQW2246 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 236436001 **Sample Date:** 9/1/2009 1:15:00 PM **Validation Level:** 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 Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236436002 **Sample Date:** 9/1/2009 11:50:00 AM **Validation Level:** 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**	**E**
Lead	7439921	54.3	0.455	0.114	mg/kg	*E	**J**	**E, A**

Sample Name HZET0300S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236436003 **Sample Date:** 9/1/2009 11:50:00 AM **Validation Level:** 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**	**E**
Lead	7439921	47.1	0.429	0.107	mg/kg	*E	**J**	**E, A**

Sample Name HZET0301S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236436004 **Sample Date:** 9/1/2009 11:38:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Copper	7440508	4.61	0.205	0.0675	mg/kg	*	**J**	**E**
Lead	7439921	5	0.409	0.102	mg/kg	*E	**J**	**E, A**

Chain of Custody and Supporting Documentation

CHAIN OF CUSTODY RECORD

BOEING

COC #: 236642

MWHAG20090903_00

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Goldenberg	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Alex Fischl				
	CA	Field Contact #:	(925) 627-4627				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	6020 Ni Water	D2216 Moisture Soil	Metals 6020 Cd Water	Metals 6020 Cr Water	Metals 6020 Cu Water	Metals 6020 Soil Arsenic	Metals 6020 Soil Cadmium	Metals 6020 Soil Chromium	Metals 6020 Soil Copper	Metals 6020 Soil Nickel	Metals 6020 Soil Silver	Metals 6020 Water Arsenic	Metals 6020 Water Silver	Metals 7470A Water Mercury	Metals 7471A Soil Mercury	Comments
EBQW2247	Water	9/3/2009	10:25	3	5		5	5	5							5	5	5		
HZET0500S001	Soil	9/3/2009	8:03	1		5				5	5	5	5	5	5				5	
HZET0501S001	Soil	9/3/2009	8:15	1		5				5	5	5	5	5	5				5	
HZET0502D001	Soil	9/3/2009	9:45	1		5				5	5	5	5	5	5				5	
HZET0502S001	Soil	9/3/2009	9:45	1		5				5	5	5	5	5	5				5	
HZET0503S001	Soil	9/3/2009	10:10	1		5				5	5	5	5	5	5				5	
HZET0504S001	Soil	9/3/2009	10:00	1		5				5	5	5	5	5	5				5	
HZET0505S001	Soil	9/3/2009	9:50	1		5				5	5	5	5	5	5				5	
HZET0506S001	Soil	9/3/2009	9:30	1		5				5	5	5	5	5	5				5	
HZET0507S001	Soil	9/3/2009	9:15	2		5				5	5	5	5	5	5				5	MS/MSD

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells bellow are Turn Around Times.

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	9-3-09		9/4/09 0840				
Company: MWH	Time: 1730	Company:	Time:	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

5

GEL | Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL	**SDG/ARCOC/Work Order:** 236642
Received By: JD	**Date Received:** 9/4/09

Suspected 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*: 30cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples 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 damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 5.0
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:
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:
Fed Ex 9457 3161 4137

PM (or PMA) review: Initials JJ Date 9/4/09

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 Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600 Walnut Creek, CA 94596	Address:	2040 Savage Rd. Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
Phone Number:	925-627-4654	Phone Number:	843-769-7388
Fax Number:	925-627-4501	Fax Number:	843-766-1178
E-mail Address:	Sarah.VonRaesfeld@mwhglobal.com	E-mail Address:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date:

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name:
Date:

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Case Narrative

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 Identification	Sample 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

Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

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

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

Qualifier	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

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-III	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
H	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
C	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.
B	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.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	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 technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*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.	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.

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 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 laboratory-established 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

soil samples was reported from 10× dilutions. The remaining soil ICP-MS analytes were reported form the laboratory's standard 2× 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

Analysis Method 6010B

Sample Name EBQW2247 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 236642001 **Sample Date:** 9/3/2009 10:25:00 AM **Validation Level:** 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 **Result 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 Qualifier	Validation Notes
Silver	7440224	1.14	0.547	0.109	mg/kg			

Sample Name HZET0501S001 **Matrix Type:** SOIL **Result Type:** Primary 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
Silver	7440224	0.582	0.489	0.0979	mg/kg			

Sample Name HZET0502D001 **Matrix Type:** SOIL **Result 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 Qualifier	Validation Notes
Silver	7440224	0.312	0.489	0.0978	mg/kg			

Sample Name HZET0502S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642005 **Sample Date:** 9/3/2009 9:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.24	0.516	0.103	mg/kg			

Sample Name HZET0503S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642006 **Sample Date:** 9/3/2009 10:10:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.343	0.517	0.103	mg/kg			

Sample Name HZET0504S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642007 **Sample Date:** 9/3/2009 10:00:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.367	0.495	0.099	mg/kg			

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 Qualifier	Validation Qualifier	Validation Notes
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 Qualifier	Validation Qualifier	Validation Notes
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 Qualifier	Validation Qualifier	Validation Notes
Silver	7440224	0.412	0.583	0.117	mg/kg			

Analysis Method 6020

Sample Name EBQW2247 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 236642001 **Sample Date:** 9/3/2009 10:25:00 AM **Validation Level:** 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 MDL 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 Type:** SOIL **Result 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 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 **Matrix Type:** SOIL **Result Type:** Primary 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 Type:** SOIL **Result 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 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**
Nickel	7440020	9.66	2.03		0.506 mg/kg	N	**J**	**Q**

Analysis Method 6020

Sample Name HZET0502S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642005 **Sample Date:** 9/3/2009 9:45:00 AM **Validation Level:** 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
Nickel	7440020	9.89	2.08	0.521	mg/kg	N	J	Q

Sample Name HZET0503S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642006 **Sample Date:** 9/3/2009 10:10:00 AM **Validation Level:** 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			
Cadmium	7440439	0.275	0.208	0.0208	mg/kg			
Chromium	7440473	22.7	0.624	0.208	mg/kg			
Copper	7440508	11.9	0.208	0.0687	mg/kg	N	J	Q
Nickel	7440020	17.7	2.08	0.52	mg/kg	N	J	Q

Sample Name HZET0504S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642007 **Sample Date:** 9/3/2009 10:00:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	2.95	0.978	0.196	mg/kg			
Cadmium	7440439	0.131	0.196	0.0196	mg/kg	J	J	
Chromium	7440473	10.9	0.587	0.196	mg/kg			
Copper	7440508	4.49	0.196	0.0646	mg/kg	N	J	Q
Nickel	7440020	6.78	1.96	0.489	mg/kg	N	J	Q

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 Qualifier	Validation Qualifier	Validation Notes
Arsenic	7440382	3.07	1	0.201	mg/kg			
Cadmium	7440439	0.0728	0.201	0.0201	mg/kg	J	J	
Chromium	7440473	11.4	0.602	0.201	mg/kg			
Copper	7440508	3.85	0.201	0.0662	mg/kg	N	J	Q
Nickel	7440020	6.48	2.01	0.501	mg/kg	N	J	Q

Analysis Method 6020

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 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 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 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 7470A

Sample Name EBQW2247 **Matrix Type:** WATER **Result Type:** Primary Result

Lab Sample Name: 236642001 **Sample Date:** 9/3/2009 10:25:00 AM **Validation Level:** 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 **Result 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 Qualifier	Validation Notes
Mercury	7439976	0.0371	0.0129	0.0044	mg/kg			

Sample Name HZET0501S001 **Matrix Type:** SOIL **Result Type:** Primary 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
Mercury	7439976	0.0647	0.0121	0.00411	mg/kg			

Sample Name HZET0502D001 **Matrix Type:** SOIL **Result 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 Qualifier	Validation Notes
Mercury	7439976	0.0541	0.0113	0.00386	mg/kg			

Sample Name HZET0502S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642005 **Sample Date:** 9/3/2009 9:45:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0459	0.0122	0.00416	mg/kg			

Sample Name HZET0503S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642006 **Sample Date:** 9/3/2009 10:10:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.00981	0.0123	0.00417	mg/kg	J	**J**	

Sample Name HZET0504S001 **Matrix Type:** SOIL **Result Type:** Primary Result

Lab Sample Name: 236642007 **Sample Date:** 9/3/2009 10:00:00 AM **Validation Level:** V

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0311	0.0119	0.00405	mg/kg			

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 Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0252	0.0113	0.00383	mg/kg			

Analysis Method 7471A

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 Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.0188	0.0111	0.00376	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 Qualifier	Validation Qualifier	Validation Notes
Mercury	7439976	0.00846	0.0124	0.00423	mg/kg	J	**J**	

Chain of Custody and Supporting Documentation

BOEING

CHAIN OF CUSTODY RECORD

COC #: 236646 MWHAG20090903_01

Page: 1 of 1

Customer Information		Project Information		Project Information			
Site:	SSFL	Client Name:	Boeing	Collector:	A. Goldenberg	Boeing PM:	
Company:	MWH	Sampling Event:	ISRA Sampling, August 2009	Contact #:			
Report to:	Sarah Von Raesfeld	Project Number:	1891614.05462				
Address:	2121 N. California Blvd	Project Manager:	Alex Fischl				
	Suite 600	PM Phone #:	(925) 627-4627				
	Walnut Creek	Field Contact:	Benjamin Stewart				
	CA	Field Contact #:	(818) 266-1378				
	94596	Lab Name:	GEL Laboratories, LLC				
Email:	sarah.vonraesfeld@mwhglobal.c	Lab Contact:	Jackie Trudell				
	sean.leffler@mwhglobal.com	Lab Address:	2040 Savage Road				
			Charleston, SC 29407				
		Lab Phone:	(843) 769-7388				

Sample Name	Matrix	Date	Time	No. of Containers	PCB by SW8082 - Solid
HZSO0001S001	Solid	9/3/2009	14:30	3	5

Requested Analyses

Instructions/TAT

Legend:
Numerical values for analyses equate to turn around time in days

H - Hold
EH - Extract/Extrude & Hold

Note: Values in the cells bellow are Turn Around Times.

Comments

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
	9-3-09		9/4/09 0840				
Company: MWH	Time: 17:22	Company:	Time:	Company:	Time:	Company:	Time:

Comments:

Geotracker EDF ☐

Data Validation Package ☑ Level IV

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SSFL	**SDG/ARCOC/Work Order:** 236646
Received By: JD	**Date Received:** 9/4/09

Suspected 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*: 30cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples 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 damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 5°
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:
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:
Fed Ex 9457 3161 4137

PM (or PMA) review: Initials JT Date 9/4/09

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 Sampling, August 2009 **Start:** 8/24/2009 **End:** 9/30/2009

LTO DATE: **LTO NUMBER:**

Consultant Name:	MWH	**Contract Laboratory:**	GEL
Address:	2121 N. California Blvd. Ste. 600 Walnut Creek, CA 94596	Address:	2040 Savage Rd. Charleston, SC 29407
Contact Name:	Sarah Von Raesfeld	**Lab Contact Name:**	Jackie Trudell
Phone Number:	925-627-4654	Phone Number:	843-769-7388
Fax Number:	925-627-4501	Fax Number:	843-766-1178
E-mail Address:	Sarah.VonRaesfeld@mwhglobal.com	E-mail Address:	jacqueline.trudell@gel.com

SAMPLE CONTAINER ORDER FORM

Date Required:

Date Sample Pickup:

Ship Containers To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) _____ *(enter "X")*

Container Information:

Trip Blank (VOA only) No *(Yes/No)*
Temp Blank (VOA Only) No *(Yes/No)*
DI Water Required? No *(Yes/No)*
MS/MSD Extra Bottles? No *(Yes/No)*

Sample Matrix:

Soil X *(select all applicable)*
Water X *(select all applicable)*
Vapor _____ *(select all applicable)*

Est. Total # of Samples: 175 Est. Total # of EDDs 40

Requested Analyses: **(Specify # of Samples)**

	Water	Soil	Contingent
Dioxins (1613B)	**15**	**124**	**0**
EPA 8015M (DRO)	--	--	--
EPA 8015M (JET FUEL)	--	--	--
EPA 8015M (CC)	--	--	--
TCE (8260B)	**5**	**12**	**0**
EPA 8270C SIM (SVOC)	--	--	--
EPA 8310 (PAH)	--	--	--
EPA 8082 (PCB)	**3**	**5**	**0**
Nickel (6020)	**5**	**10**	**0**
Chromium (6020)	**5**	**10**	**0**
Silver (6020)	**5**	**10**	**0**
Cadmium (6020)	**10**	**35**	**0**
Arsenic (6020)	**5**	**10**	**0**
% Moisture (D2216)	**0**	**170**	**0**
Lead (6020)	**10**	**65**	**0**
Copper (6020)	**10**	**75**	**0**
Zinc (6020)	**5**	**20**	**0**
Mercury by 7471A/7470A	**5**	**25**	**0**

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
RUSH: 5 (Specify- 24 / 48 / 72HRS)
Other : _____ (Specify # of Days)
Report Due Date:

Special Reporting Requirements:

Contingent Analysis? No *(Yes/No)*
TIC (VOC) Required? No *(Yes/No)*
TIC (SVOC) Required? No *(Yes/No)*
Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Sarah.VonRaesfeld@mwhglobal.com

Send Original Reports To:

Project Site _____ *(enter "X")*
Consultant Office _____ *(enter "X")*
Other Location (specify in comments) X *(enter "X")*
# of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Sarah Von Raesfeld
Date: 09/02/09

LTO Received By-

Name:
Date:

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Case Narrative

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:

Laboratory Identification	Sample Description
236646001	HZSO0001S001

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 A Trudell

Jacqueline Trudell
Project Manager

Data Qualifiers Definitions

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
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.

Laboratory Certifications

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

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
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.

Data Qualifier Reference Table

Qualifier	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-III	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
H	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
C	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.
B	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.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	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 technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*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.	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.

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^X 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 laboratory-established QC limits.

- Surrogate Recovery: As the sample was analyzed at a 500× 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 500× dilution. Any result reported between the MDL and the

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

Validated Sample Result Forms: 236646

Analysis Method 8082

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**	
Aroclor-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**	
Aroclor-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**	