



October 6, 2015

Lynn Nakashima  
Berkeley Regional Office  
700 Heinz Avenue, Suite 200C  
Berkeley, California 94710

**Subject: Phase IV, EPA Meadow North, Supplementary PCB Sampling Results  
Richmond Field Station Site  
Berkeley Global Campus at Richmond Bay  
University of California, Berkeley**

Dear Ms. Nakashima:

On behalf of the University of California, Berkeley, Tetra Tech, Inc. collected soil samples at the Richmond Field Station Site at the Berkeley Global Campus at Richmond Bay. The sampling was conducted as recommended in the Draft Phase IV Sampling Results Technical Memorandum, dated June 5, 2015, and incorporated comments received from DTSC on August 7, 2015. The objective of the sampling effort was to collect additional samples from the EPA Meadow North following detections of polychlorinated biphenyls (PCB) above the Toxic Substance Control Act (TSCA) self-implementing cleanup criteria of 1 milligram/kilogram (mg/kg) at sample location UM33 during the initial Phase IV sampling.

The sampling and reporting for this project were conducted consistent with the Final Phase IV Field Sampling Plan, dated October 6, 2014. Sampling was conducted on September 8, 2015. Sampling was targeted at areas consisting of fill material over existing native coastal prairie, located primarily along the eastern and western edges of the meadow. The fill material is distinguishable on the aerial within Figure 1. Three locations were identified adjacent to UM33 and six locations were spread throughout the remainder of the target area. Samples were collected at two depths at seven locations, three depths at one location, and one depth at one location for a total of 18 samples. Sample locations are presented on Figure 1; sample depths are provided in Figure 2.

### **Field Sampling Protocols**

Soil samples were collected with the assistance of an auger attachment mounted to small Bobcat track loader. The auger attachment was used to loosen the soil for the shallow sample and used to arrive at the bottom sample depth for the deeper sample. At each sample depth interval, a disposable plastic scoop was used to collect the soil sample. The sampling protocol followed these steps:

1. The field sampler used a disposable plastic scoop to collect the soil sample.
2. One 16-ounce jar of soil was collected for each sample.
3. The jars were labeled and packed into an insulated cooler. The sample was transported under chain-of custody procedures directly to Curtis and Tompkins Laboratory in Berkeley, California.


All sample collection protocols were consistent with the Final Phase IV Field Sampling Plan.

## Analyses and Results

Soil samples were analyzed for PCBs by EPA method 8082A. Sample results were compared to the TSCA self-implementing cleanup criteria of 1 mg/kg. All sample results from the three locations adjacent to UM33 exceeded the 1 mg/kg criteria; all other results were below the criteria. Table 1 presents the complete analytical results for the PCBs detected (Aroclors 1248, 1254, and 1260.) Sample results for Aroclors 1248, 1254, and 1260 from this supplemental sampling and the Phase IV samples at the EPA Meadow North are presented on Figure 2. Complete laboratory analytical results from the supplemental sampling are presented in Attachment 1.

If you have any questions or comments regarding this submittal, please call me at (510) 302-6283.

Sincerely,

  
Jason Brodersen, PG  
Program Manager

Enclosure: Figures 1 and 2, Table 1, Attachment 1



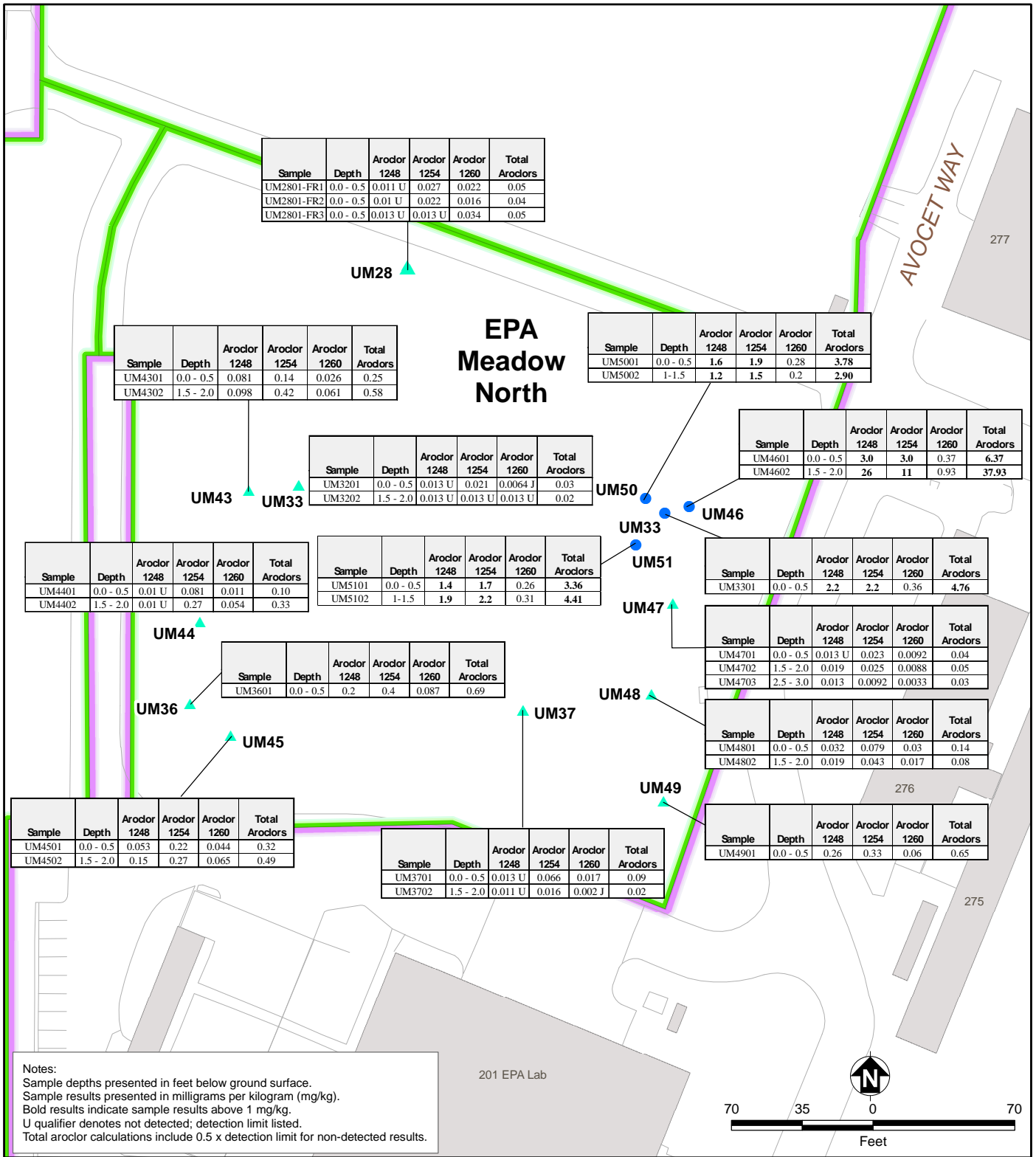


- ▲ Soil Sampling Locations
- Sample result exceeds TSCA self-implementing cleanup criteria of 1 mg/kg.
- Designated Natural Open Space
- Meadow Boundary
- Existing Buildings
- Asphalt/Concrete Pads
- Roads and Other Landscape Features



Richmond Field Station Site  
University of California, Berkeley

**FIGURE 1**  
**PHASE IV, EPA MEADOW NORTH**  
**SUPPLEMENTARY PCB**  
**SAMPLING RESULTS**



Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM2801-FR1	0.0 - 0.5	0.011 U	0.027	0.022	0.05
UM2801-FR2	0.0 - 0.5	0.01 U	0.022	0.016	0.04
UM2801-FR3	0.0 - 0.5	0.013 U	0.013 U	0.034	0.05

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM4301	0.0 - 0.5	0.081	0.14	0.026	0.25
UM4302	1.5 - 2.0	0.098	0.42	0.061	0.58

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM5001	0.0 - 0.5	1.6	1.9	0.28	3.78
UM5002	1-1.5	1.2	1.5	0.2	2.90

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM4601	0.0 - 0.5	3.0	3.0	0.37	6.37
UM4602	1.5 - 2.0	26	11	0.93	37.93

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM3201	0.0 - 0.5	0.013 U	0.021	0.0064 J	0.03
UM3202	1.5 - 2.0	0.013 U	0.013 U	0.013 U	0.02

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM4401	0.0 - 0.5	0.01 U	0.081	0.011	0.10
UM4402	1.5 - 2.0	0.01 U	0.27	0.054	0.33

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM5101	0.0 - 0.5	1.4	1.7	0.26	3.36
UM5102	1-1.5	1.9	2.2	0.31	4.41

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM3301	0.0 - 0.5	2.2	2.2	0.36	4.76

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM4701	0.0 - 0.5	0.013 U	0.023	0.0092	0.04
UM4702	1.5 - 2.0	0.019	0.025	0.0088	0.05
UM4703	2.5 - 3.0	0.013	0.0092	0.0033	0.03

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM3601	0.0 - 0.5	0.2	0.4	0.087	0.69

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM4801	0.0 - 0.5	0.032	0.079	0.03	0.14
UM4802	1.5 - 2.0	0.019	0.043	0.017	0.08

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM4501	0.0 - 0.5	0.053	0.22	0.044	0.32
UM4502	1.5 - 2.0	0.15	0.27	0.065	0.49

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM3701	0.0 - 0.5	0.013 U	0.066	0.017	0.09
UM3702	1.5 - 2.0	0.011 U	0.016	0.002 J	0.02

Sample	Depth	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total Aroclors
UM4901	0.0 - 0.5	0.26	0.33	0.06	0.65

- ▲ Soil Sampling Locations
- Sample result exceeds TSCA self-implementing cleanup criteria of 1 mg/kg.
- ▭ Designated Natural Open Space
- ▭ Meadow Boundary
- ▭ Existing Buildings
- ▭ Asphalt/Concrete Pads
- Roads and Other Landscape Features

J Estimated result  
 mg/kg Milligram per kilogram  
 PCB Polychlorinated biphenyl  
 U Not detected



Richmond Field Station Site  
 University of California, Berkeley

**FIGURE 2**  
**PHASE IV, EPA MEADOW NORTH**  
**SUPPLEMENTARY PCB**  
**SAMPLING RESULTS**



**TABLE 1  
PCB SOIL SAMPLING RESULTS**

<i>Screening Criteria</i>	<b>PCBs (mg/kg)</b>			
	<b>Aroclor-1248</b>	<b>Aroclor-1254</b>	<b>Aroclor-1260</b>	<b>Total Aroclors</b>
<i>Commercial worker</i>	0.528	0.528	0.528	NA
<i>Construction worker</i>	3.50	2.02	3.50	NA
<i>Maintenance worker</i>	3.50	3.50	3.50	NA
<i>Off-Site Receptor</i>	5,620	5,620	5,620	NA
<i>TSCA Cleanup Criteria <sup>(1)</sup></i>	1	1	1	1
UM2801-FR1	0.011 U	0.027	0.022	0.05
UM2801-FR2	0.01 U	0.022	0.016	0.04
UM2801-FR3	0.013 U	0.013 U	0.034	0.05
UM3201	0.013 U	0.021	0.0064	0.03
UM3202	0.013 U	0.013 U	0.013 U	0.02
UM3301	<b>2.2</b>	<b>2.2</b>	0.36	<b>4.76</b>
UM3601	0.2	0.4	0.087	0.69
UM3701	0.013 U	0.066	0.017	0.09
UM3702	0.011 U	0.016	0.002	0.02
UM4301	0.081	0.14	0.026	0.25
UM4302	0.098	0.42	0.061	0.58
UM4401	0.01 U	0.081	0.011	0.10
UM4402	0.01 U	0.27	0.054	0.33
UM4501	0.053	0.22	0.044	0.32
UM4502	0.15	0.27	0.065	0.49
UM4601	<b>3.0</b>	<b>3.0</b>	0.37	<b>6.37</b>
UM4602	<b>26</b>	<b>11</b>	0.93	<b>37.93</b>

<i>Screening Criteria</i>	<b>PCBs (mg/kg)</b>			
	<b>Aroclor-1248</b>	<b>Aroclor-1254</b>	<b>Aroclor-1260</b>	<b>Total Aroclors</b>
<i>Commercial worker</i>	0.528	0.528	0.528	NA
<i>Construction worker</i>	3.50	2.02	3.50	NA
<i>Maintenance worker</i>	3.50	3.50	3.50	NA
<i>Off-Site Receptor</i>	5,620	5,620	5,620	NA
<i>TSCA Cleanup Criteria <sup>(1)</sup></i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
UM4701	0.013 U	0.023	0.0092	0.04
UM4702	0.019	0.025	0.0088	0.05
UM4703	0.013	0.0092	0.0033	0.03
UM4801	0.032	0.079	0.03	0.14
UM4802	0.019	0.043	0.017	0.08
UM4901	0.26	0.33	0.06	0.65
UM5001	<b>1.6</b>	<b>1.9</b>	0.28	<b>3.78</b>
UM5002	<b>1.2</b>	<b>1.5</b>	0.2	<b>2.90</b>
UM5101	<b>1.4</b>	<b>1.7</b>	0.26	<b>3.36</b>
UM5102	<b>1.9</b>	<b>2.2</b>	0.31	<b>4.41</b>

**Notes:**

**Bold values** indicate that the result exceeds the TSCA Self-Implementing Cleanup Criteria. Screening criteria based on the Final Soil Management Plan, Table C-1, July 18, 2014.

1 Toxic Substances Control Act (TSCA) criteria for high occupancy areas with no cap (EPA 2005).

mg/kg Milligrams per kilogram  
NA Not available

J Estimated value  
U Not detected

References:

RWQCB. 2013. "February 2013 Update to Environmental Screening Levels." February. Available on-line at: [http://www.waterboards.ca.gov/rwqcb2/water\\_issues/programs/esl.shtml](http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml).  
EPA. 2005. Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act. November. Available on-line at: <http://www.epa.gov/osw/hazard/tsd/pcbs/pubs/pcb-guid3-06.pdf>

**Attachment 1**  
**Analytical Results**





Curtis & Tompkins, Ltd.  
Analytical Laboratories, Since 1878





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 269650

ANALYTICAL REPORT

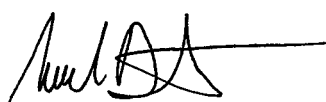
PCBs

Tetra Tech EMI  
1999 Harrison Street  
Oakland, CA 94612

Project : 103S225322.01  
Location : Upland Meadow PCB Samp.  
Level : IV

<u>Sample ID</u>	<u>Lab ID</u>
20150908UM4301	269650-001
20150908UM4302	269650-002
20150908UM4401	269650-003
20150908UM4402	269650-004
20150908UM4501	269650-005
20150908UM4502	269650-006
20150908UM4601	269650-007
20150908UM4602	269650-008
20150908UM4701	269650-009
20150908UM4702	269650-010
20150908UM4703	269650-011
20150908UM4801	269650-012
20150908UM4802	269650-013
20150908UM4901	269650-014
20150908UM5001	269650-015
20150908UM5002	269650-016
20150908UM5101	269650-017
20150908UM5102	269650-018

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature:   
Mike Dahlquist  
Project Manager  
mike.dahlquist@ctberk.com

Date: 09/22/2015

CA ELAP# 2896, NELAP# 4044-001

**CASE NARRATIVE  
PCBS (EPA 8082)**

Laboratory number: 269650  
Client: Tetra Tech EMI  
Project: 103S225322.01  
Location: Upland Meadow PCB Samp.  
Request Date: 09/08/15  
Samples Received: 09/08/15

This data package contains sample and QC results for eighteen soil samples, requested for the above referenced project on 09/08/15. See attached cooler receipt form for any sample receipt problems or discrepancies.

**PCBs (EPA 8082):**

All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

Matrix spikes QC803593, QC803594 (batch 227162) were not analyzed because the parent sample required a dilution that would have diluted out the spikes.

No other analytical problems were encountered.

## Chain of Custody





**Tetra Tech EM Inc.**  
San Francisco Office

135 Main St. Suite 1800  
San Francisco, CA 94105  
415-543-4880  
Fax 415-543-5480

269650

# Chain of Custody Record No. 5369

Page 1 of 2

Lab PO#: 150AK 33		Lab: C+T		Preservative Added	
Project name: Upland Meadows PCB Samp. Sara Wesley		Field samplers: Dayna Aragon		Analysis Required	
Project (C/O) number: 10352253.22.01		Field samplers' signatures: <i>[Signature]</i>			
TIEMI technical contact: Sara Wesley		TIEMI project manager: Jessin Broderick			
Sample ID	Sample Location (Pt. ID)	Date	Time	Matrix	MS / MSD
20150908MM4301		9/8/15	1000	Soil	
4302			1003		
4401			1005		
4402			1008		
4501			1010		
4502			1012		
4601			1014		
4602			1016		
4701			1017		
4702			1018		
4703			1026		
4801			1020		

Relinquished by: <i>[Signature]</i>	Name (print): Dayna Aragon	Company Name: Tetra Tech	Date: 9/8/15	Time: 11:30
Received by: <i>[Signature]</i>	Name (print): Pat Gonzalez	Company Name: CBT	Date: 9/18/15	Time: 11:30
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

Fed Ex #:



**Tetra Tech EM Inc.**  
San Francisco Office

135 Main St. Suite 1800  
San Francisco, CA 94105  
415-543-4880  
Fax 415-543-5480

# Chain of Custody Record No. 6084

269670

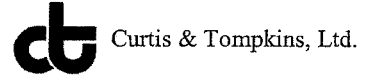
Page 7 of 7

Lab PO#: 150AK-33			Lab: C-T			No./Container Types				Preservative Added						
Project name: Upland Meadows PCB Sampling			TIEMI technical contact: Sara Woolley			Field samplers: Dayna Aragon				Analysis Required						
Project (CTO) number: 1032253.22.01			TIEMI project manager: Jason Brodersen			Field samplers' signatures: Dayna										
Sample ID	Sample Location (Pt. ID)	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sieve	Glass Jar	VOA	SVOA	resPCBs	Metals	TPH Purgeables	TPH Extractables
20150908UM4802		9/8/15	1022	soil						1			X			
4901		↓	1024	↓						1			X			
5001		↓	1028	↓						1			X			
5002		↓	1030	↓						1			X			
5101		↓	1032	↓						1			X			
5102		↓	1034	↓						1			X			

Relinquished by:	Dayna Aragon	Company Name	Tetra Tech	Date	9/8/15	Time	1130
Received by:	Pat Gonzalez	Company Name	Pat Gonzalez C&T	Date	9/8/15	Time	1130
Relinquished by:							
Received by:							
Relinquished by:							
Received by:							

Turnaround time/remarks:

**COOLER RECEIPT CHECKLIST**



Login # 269650 Date Received 9/8/15 Number of coolers 1  
 Client Tetra Tech Project \_\_\_\_\_

Date Opened 9/8 By (print) SL (sign) [Signature]  
 Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) \_\_\_\_\_ YES  NO
- Shipping info \_\_\_\_\_
- 2A. Were custody seals present? ....  YES (circle) on cooler on samples  NO  
 How many \_\_\_\_\_ Name \_\_\_\_\_ Date \_\_\_\_\_
- 2B. Were custody seals intact upon arrival? \_\_\_\_\_ YES NO  N/A
3. Were custody papers dry and intact when received? \_\_\_\_\_  YES NO
4. Were custody papers filled out properly (ink, signed, etc)? \_\_\_\_\_  YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) \_\_\_\_\_  YES NO
6. Indicate the packing in cooler: (if other, describe) \_\_\_\_\_

- Bubble Wrap       Foam blocks       Bags       None  
 Cloth material       Cardboard       Styrofoam       Paper towels

7. Temperature documentation: \* Notify PM if temperature exceeds 6°C  
 Type of ice used:  Wet       Blue/Gel       None      Temp(°C) 5.6  
 Samples Received on ice & cold without a temperature blank; temp. taken with IR gun  
 Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? \_\_\_\_\_ YES  NO  
 If YES, what time were they transferred to freezer? \_\_\_\_\_
9. Did all bottles arrive unbroken/unopened? \_\_\_\_\_  YES NO
10. Are there any missing / extra samples? \_\_\_\_\_ YES  NO
11. Are samples in the appropriate containers for indicated tests? \_\_\_\_\_ YES NO
12. Are sample labels present, in good condition and complete? \_\_\_\_\_ YES NO
13. Do the sample labels agree with custody papers? \_\_\_\_\_ YES NO
14. Was sufficient amount of sample sent for tests requested? \_\_\_\_\_ YES NO
15. Are the samples appropriately preserved? \_\_\_\_\_ YES NO  N/A
16. Did you check preservatives for all bottles for each sample? \_\_\_\_\_ YES NO  N/A
17. Did you document your preservative check? \_\_\_\_\_ YES NO  N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? \_\_\_\_\_ YES NO  N/A
19. Did you change the hold time in LIMS for preserved terracores? \_\_\_\_\_ YES NO  N/A
20. Are bubbles > 6mm absent in VOA samples? \_\_\_\_\_ YES NO  N/A
21. Was the client contacted concerning this sample delivery? \_\_\_\_\_ YES  NO  
 If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

**COMMENTS**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



## Results & QC Summary

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4301	Batch#:	227162
Lab ID:	269650-001	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/14/15
Basis:	dry	Analyzed:	09/15/15
Diln Fac:	1.000		

Moisture: 4%

Analyte	Result	RL	MDL
Aroclor-1016	ND	10	2.5
Aroclor-1221	ND	20	6.7
Aroclor-1232	ND	10	3.3
Aroclor-1242	ND	10	3.0
Aroclor-1248	81	10	3.2
Aroclor-1254	140	10	2.6
Aroclor-1260	26	10	1.6

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	79	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4302	Batch#:	227162
Lab ID:	269650-002	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/14/15
Basis:	dry	Analyzed:	09/15/15
Diln Fac:	1.000		

Moisture: 8%

Analyte	Result	RL	MDL
Aroclor-1016	ND	10	2.6
Aroclor-1221	ND	21	6.9
Aroclor-1232	ND	10	3.4
Aroclor-1242	ND	10	3.1
Aroclor-1248	98	10	3.3
Aroclor-1254	420	10	2.6
Aroclor-1260	61	10	1.7

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	82	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit



**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4401	Batch#:	227162
Lab ID:	269650-003	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/14/15
Basis:	dry	Analyzed:	09/15/15
Diln Fac:	1.000		

Moisture: 5%

Analyte	Result	RL	MDL
Aroclor-1016	ND	10	2.5
Aroclor-1221	ND	20	6.8
Aroclor-1232	ND	10	3.3
Aroclor-1242	ND	10	3.0
Aroclor-1248	ND	10	3.2
Aroclor-1254	81	10	2.6
Aroclor-1260	11	10	1.6

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	76	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4402	Batch#:	227162
Lab ID:	269650-004	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/14/15
Basis:	dry	Analyzed:	09/15/15
Diln Fac:	1.000		

Moisture: 8%

Analyte	Result	RL	MDL
Aroclor-1016	ND	10	2.6
Aroclor-1221	ND	21	6.9
Aroclor-1232	ND	10	3.4
Aroclor-1242	ND	10	3.1
Aroclor-1248	ND	10	3.3
Aroclor-1254	270	10	2.6
Aroclor-1260	54	10	1.7

Surrogate	%REC	Limits
TCMX	107	46-141
Decachlorobiphenyl	75	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4501	Batch#:	227162
Lab ID:	269650-005	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/14/15
Basis:	dry	Analyzed:	09/15/15
Diln Fac:	1.000		

Moisture: 4%

Analyte	Result	RL	MDL
Aroclor-1016	ND	10	2.5
Aroclor-1221	ND	20	6.7
Aroclor-1232	ND	10	3.2
Aroclor-1242	ND	10	3.0
Aroclor-1248	53	10	3.2
Aroclor-1254	220	10	2.5
Aroclor-1260	44	10	1.6

Surrogate	%REC	Limits
TCMX	99	46-141
Decachlorobiphenyl	74	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit



**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4502	Batch#:	227337
Lab ID:	269650-006	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Moisture: 8%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.3
Aroclor-1221	ND	26	8.8
Aroclor-1232	ND	13	4.3
Aroclor-1242	ND	13	3.9
Aroclor-1248	150	13	4.2
Aroclor-1254	270	13	3.4
Aroclor-1260	65	13	2.1

Surrogate	%REC	Limits
TCMX	97	46-141
Decachlorobiphenyl	80	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4601	Batch#:	227337
Lab ID:	269650-007	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/20/15
Diln Fac:	10.00		

Moisture: 4%

Analyte	Result	RL	MDL
Aroclor-1016	ND	88	31
Aroclor-1221	ND	180	84
Aroclor-1232	ND	88	41
Aroclor-1242	ND	88	38
Aroclor-1248	3,000	88	40
Aroclor-1254	3,000	88	32
Aroclor-1260	370	88	20

Surrogate	%REC	Limits
TCMX	DO	46-141
Decachlorobiphenyl	DO	25-135

DO= Diluted Out

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4602	Batch#:	227337
Lab ID:	269650-008	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/20/15
Diln Fac:	50.00		

Moisture: 5%

Analyte	Result	RL	MDL
Aroclor-1016	ND	440	160
Aroclor-1221	ND	890	430
Aroclor-1232	ND	440	210
Aroclor-1242	ND	440	190
Aroclor-1248	26,000	440	200
Aroclor-1254	11,000	440	160
Aroclor-1260	930	440	100

Surrogate	%REC	Limits
TCMX	DO	46-141
Decachlorobiphenyl	DO	25-135

DO= Diluted Out

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4701	Batch#:	227337
Lab ID:	269650-009	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Moisture: 7%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.2
Aroclor-1221	ND	26	8.6
Aroclor-1232	ND	13	4.2
Aroclor-1242	ND	13	3.9
Aroclor-1248	ND	13	4.1
Aroclor-1254	23	13	3.3
Aroclor-1260	9.2 J	13	2.1

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	86	25-135

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit



**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4702	Batch#:	227337
Lab ID:	269650-010	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Moisture: 6%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.2
Aroclor-1221	ND	26	8.5
Aroclor-1232	ND	13	4.2
Aroclor-1242	ND	13	3.8
Aroclor-1248	19	13	4.1
Aroclor-1254	25	13	3.3
Aroclor-1260	8.8 J	13	2.1

Surrogate	%REC	Limits
TCMX	119	46-141
Decachlorobiphenyl	97	25-135

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4703	Batch#:	227337
Lab ID:	269650-011	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Moisture: 6%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.1
Aroclor-1221	ND	25	8.4
Aroclor-1232	ND	13	4.1
Aroclor-1242	ND	13	3.8
Aroclor-1248	13	13	4.0
Aroclor-1254	9.2 J	13	3.2
Aroclor-1260	3.3 J	13	2.0

Surrogate	%REC	Limits
TCMX	108	46-141
Decachlorobiphenyl	86	25-135

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4801	Batch#:	227337
Lab ID:	269650-012	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Moisture: 5%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.2
Aroclor-1221	ND	25	8.5
Aroclor-1232	ND	13	4.1
Aroclor-1242	ND	13	3.8
Aroclor-1248	32	13	4.1
Aroclor-1254	79	13	3.3
Aroclor-1260	30	13	2.1

Surrogate	%REC	Limits
TCMX	99	46-141
Decachlorobiphenyl	80	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4802	Batch#:	227337
Lab ID:	269650-013	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Moisture: 6%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.2
Aroclor-1221	ND	26	8.6
Aroclor-1232	ND	13	4.2
Aroclor-1242	ND	13	3.8
Aroclor-1248	19	13	4.1
Aroclor-1254	43	13	3.3
Aroclor-1260	17	13	2.1

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	74	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM4901	Batch#:	227337
Lab ID:	269650-014	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Moisture: 5%

Analyte	Result	RL	MDL
Aroclor-1016	ND	13	3.1
Aroclor-1221	ND	25	8.4
Aroclor-1232	ND	13	4.1
Aroclor-1242	ND	13	3.8
Aroclor-1248	260	13	4.0
Aroclor-1254	330	13	3.2
Aroclor-1260	60	13	2.1

Surrogate	%REC	Limits
TCMX	101	46-141
Decachlorobiphenyl	71	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit



**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM5001	Batch#:	227337
Lab ID:	269650-015	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/21/15
Diln Fac:	10.00		

Moisture: 6%

Analyte	Result	RL	MDL
Aroclor-1016	ND	89	31
Aroclor-1221	ND	180	85
Aroclor-1232	ND	89	41
Aroclor-1242	ND	89	38
Aroclor-1248	1,600	89	41
Aroclor-1254	1,900	89	32
Aroclor-1260	280	89	21

Surrogate	%REC	Limits
TCMX	DO	46-141
Decachlorobiphenyl	DO	25-135

DO= Diluted Out

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM5002	Batch#:	227337
Lab ID:	269650-016	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/21/15
Diln Fac:	10.00		

Moisture: 8%

Analyte	Result	RL	MDL
Aroclor-1016	ND	92	33
Aroclor-1221	ND	180	88
Aroclor-1232	ND	92	43
Aroclor-1242	ND	92	39
Aroclor-1248	1,200	92	42
Aroclor-1254	1,500	92	34
Aroclor-1260	200	92	21

Surrogate	%REC	Limits
TCMX	DO	46-141
Decachlorobiphenyl	DO	25-135

DO= Diluted Out

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM5101	Batch#:	227337
Lab ID:	269650-017	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/21/15
Diln Fac:	10.00		

Moisture: 6%

Analyte	Result	RL	MDL
Aroclor-1016	ND	89	32
Aroclor-1221	ND	180	85
Aroclor-1232	ND	89	42
Aroclor-1242	ND	89	38
Aroclor-1248	1,400	89	41
Aroclor-1254	1,700	89	33
Aroclor-1260	260	89	21

Surrogate	%REC	Limits
TCMX	DO	46-141
Decachlorobiphenyl	DO	25-135

DO= Diluted Out

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	20150908UM5102	Batch#:	227337
Lab ID:	269650-018	Sampled:	09/08/15
Matrix:	Soil	Received:	09/08/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/21/15
Diln Fac:	10.00		

Moisture: 6%

Analyte	Result	RL	MDL
Aroclor-1016	ND	89	32
Aroclor-1221	ND	180	85
Aroclor-1232	ND	89	42
Aroclor-1242	ND	89	38
Aroclor-1248	1,900	89	41
Aroclor-1254	2,200	89	33
Aroclor-1260	310	89	21

Surrogate	%REC	Limits
TCMX	DO	46-141
Decachlorobiphenyl	DO	25-135

DO= Diluted Out

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC803588	Batch#:	227162
Matrix:	Soil	Prepared:	09/14/15
Units:	ug/Kg	Analyzed:	09/15/15

Analyte	Result	RL	MDL
Aroclor-1016	ND	4.8	1.2
Aroclor-1221	ND	9.7	3.2
Aroclor-1232	ND	4.8	1.6
Aroclor-1242	ND	4.8	1.4
Aroclor-1248	ND	4.8	1.5
Aroclor-1254	ND	4.8	1.2
Aroclor-1260	ND	4.8	0.78

Surrogate	%REC	Limits
TCMX	110	46-141
Decachlorobiphenyl	104	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC803589	Batch#:	227162
Matrix:	Soil	Prepared:	09/14/15
Units:	ug/Kg	Analyzed:	09/15/15

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	165.8	182.5	110	64-140
Aroclor-1260	165.8	191.0	115	65-146

Surrogate	%REC	Limits
TCMX	104	46-141
Decachlorobiphenyl	104	25-135



**Batch QC Report**

<b>Polychlorinated Biphenyls (PCBs)</b>			
Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Field ID:	ZZZZZZZZZZ	Batch#:	227162
MSS Lab ID:	269729-008	Sampled:	09/11/15
Matrix:	Soil	Received:	09/11/15
Units:	ug/Kg	Prepared:	09/14/15
Basis:	as received	Analyzed:	09/15/15
Diln Fac:	1.000		

Type: MS Lab ID: QC803590

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<1.186	167.5	186.9	112	60-161
Aroclor-1260	1.494	167.5	198.4	118	42-166

Surrogate	%REC	Limits
TCMX	110	46-141
Decachlorobiphenyl	101	25-135

Type: MSD Lab ID: QC803591

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	166.9	152.2	91	60-161	20	43
Aroclor-1260	166.9	184.6	110	42-166	7	51

Surrogate	%REC	Limits
TCMX	103	46-141
Decachlorobiphenyl	95	25-135

RPD= Relative Percent Difference

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC804306	Batch#:	227337
Matrix:	Soil	Prepared:	09/18/15
Units:	ug/Kg	Analyzed:	09/19/15

Analyte	Result	RL	MDL
Aroclor-1016	ND	12	2.9
Aroclor-1221	ND	24	7.9
Aroclor-1232	ND	12	3.8
Aroclor-1242	ND	12	3.5
Aroclor-1248	ND	12	3.8
Aroclor-1254	ND	12	3.0
Aroclor-1260	ND	12	1.9

Surrogate	%REC	Limits
TCMX	122	46-141
Decachlorobiphenyl	98	25-135

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	269650	Location:	Upland Meadow PCB Samp.
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322.01	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC804307	Batch#:	227337
Matrix:	Soil	Prepared:	09/18/15
Units:	ug/Kg	Analyzed:	09/19/15

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	169.4	212.6	126	64-140
Aroclor-1260	169.4	212.7	126	65-146

Surrogate	%REC	Limits
TCMX	120	46-141
Decachlorobiphenyl	99	25-135

