EPA North Meadow Field Sampling Plan
University of California, Berkeley
Richmond Field Station, Richmond, CA
October 25, 2017

Introduction

Field sampling investigations conducted in 2014 and 2015 discovered low concentrations of polychlorinated biphenyls (PCBs) contaminants in two imported soil piles in the UC Berkeley Richmond Field Station (RFS) EPA North Meadow (EPA N), designated as EPA Northwest (EPA NW) and EPA Northeast (EPA NE) piles [See Figure 1 and Attachment 1]. The two soil piles originated from construction activities associated the construction of Building 201 by Wareham Property Group in the early 1990s. It is likely that the soil originated from excavation of the historic Western Storm Drain (WSD) which was removed and relocated as part of the construction project. Subsequent field investigations in the early 2000s determined that the storm drain was contaminated with PCBs from a probable disposal of PCB oil through the storm drain. Significant PCB contamination was found in Meeker Slough sediments at the WSD outfall and much of the contaminated sediments and portions of the distal WSD were removed for off-site disposal in 2003.

The extent (total mass) of PCB contamination in the two EPA N soil piles is unknown. In order to determine how the soil piles can be managed and whether off-site disposal is needed, additional sampling is required, which is the purpose of this proposed sampling plan.

Figure 1: EPA North Meadow soil piles (PCBs in mg/kg in yellow, NGVD elevations in light blue)

EPA North Meadow Soil Piles Current Conditions

The EPA North Meadow is one of four large meadows in the western portion of the RFS separated by roadways that make up the approximately 20 acres of remnant coastal terrace prairie (CTP). EPA NE and EPA NW soil piles were placed on top of the CTP meadow and graded to an even elevation. The piles are separated by a lower area of remaining remnant native grassland that includes a seasonal wet meadow. The north edge of the meadow consists of non-native landscaping. The two soil piles are covered with mostly non-native weeds and are maintained as a mowed area through most of the year (when soils are dry enough for mowing).

The entire EPA N meadow is approximately 81,000 square feet (1.86 acre). Both piles cover approximately 24,000 square feet (0.56 acre) with a perimeter of 640 (EPA NW) and 690 (EPA NE) feet. The soil piles together cover approximately 60% of the meadow.

The EPA N Meadow slopes gently uphill from south to north at a grade of approximately 1 foot elevation in 300 feet distance from 13.5 feet to 14.5 feet NGVD29. The two piles were graded to final elevations of approximately 1.5 feet above the historic prairie. The EPA NE pile includes a higher central mounded area (~0.7 acres) approximately 2.5 in depth. Therefore, a simple upward bound on the approximate volume for the piles assuming they are slabs of uniform thickness of 1.5 feet deep, with EPA N containing an extra 0.7 acre of soil at 1.0 feet deep, is calculated as follows:

EPA NW: (24,000 SF X 1.5 F) (1 CY/27 SF) = 1,300 CY
EPA NE: [(21,000 SF X 1.5 F) + (3,000 SF X 2.5 F) = 1,450 CY

Previous Investigations

The EPA North Meadow was first investigated for chemicals of potential concern in October 2014 during implementation of the Phase IV Field Sampling Plan (FSP), dated October 6, 2014 (Tetra Tech). Five locations were sampled using discrete sampling methodology on October 22, 2014: UM28, UM32, UM33, UM36 and UM37. Due to PCBs being identified in sample UM33 at a concentration of 4.76 mg/kg, atypical of RFS background concentrations and above the Toxic Substances Control Act (TSCA) self-implementing cleanup criterion of 1 mg/kg, step out sampling using discrete sampling methodology, was conducted on September 8, 2015 at nine additional locations (UM43- UM51). All samples surrounding previous sampling location UM33 were found to contain PCBs at concentrations greater than the TSCA self-implementing criterion with Aroclor 1248 being the prevalent Aroclor; however, Aroclors 1254 and 1260 were also detected. Attachment 2 provides the October 6, 2015 sampling report Phase IV, EPA Meadow North, Supplementary PCB Sampling Results, which includes all analytical results and figures.

Field Sampling Goal

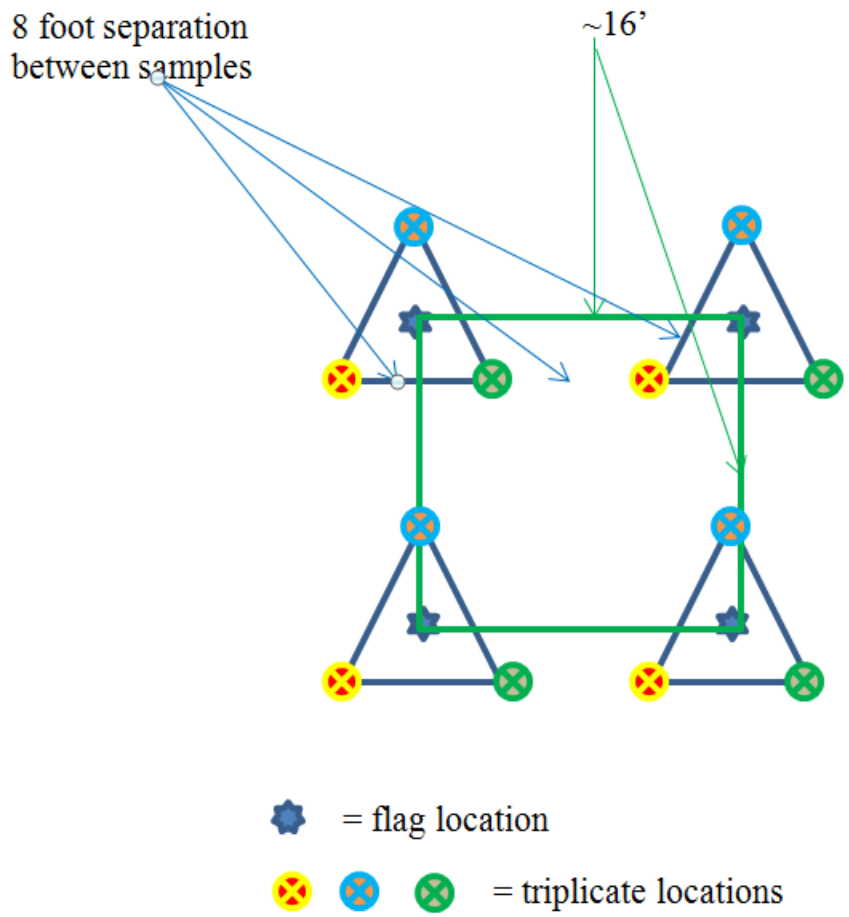
The goal of this sampling event is to determine the mean concentration (“as found”) of PCBs in the two soil piles in order to be provide data needed to inform what is required for the ultimate disposition of the soils including whether off-site disposal will be required and if so, to what disposal site.

Field Sampling Protocols

Soil for characterization of as found PCBs in the two piles will be collected using incremental sampling methodology (ISM). A 75-increment grid was generated for each soil pile (see Figure 3) using Visual Sample Plan (VSP), a software tool that supports the development of statistically defensible sampling

and data analysis plans used for site characterization developed by DOD, EPA, and DOE (see https://www.serdp-estcp.org/Tools-and-Training/Munitions-Response/Visual-Sample-Plan). For purposes of meeting the goals of this field sampling activity, each soil pile will be considered a separate decision unit (DU). Triplicate 75-increment samples will be collected in the EPA NE decision unit. One 75-increment sample will be collected from the EPA NW decision unit. Sampling points are separated by approximately 19.7 feet in EPA NW and 16.3 feet in EPA NE (to accommodate triplicates along the DU edge).

In the EPA NE DU, flags will be located at the center point of the triplicate samples. The triplicate samples will be placed equidistance from the center according to the following scheme:



A template will be created using PVC pipes to maintain consistency in spacing at each sampling location.

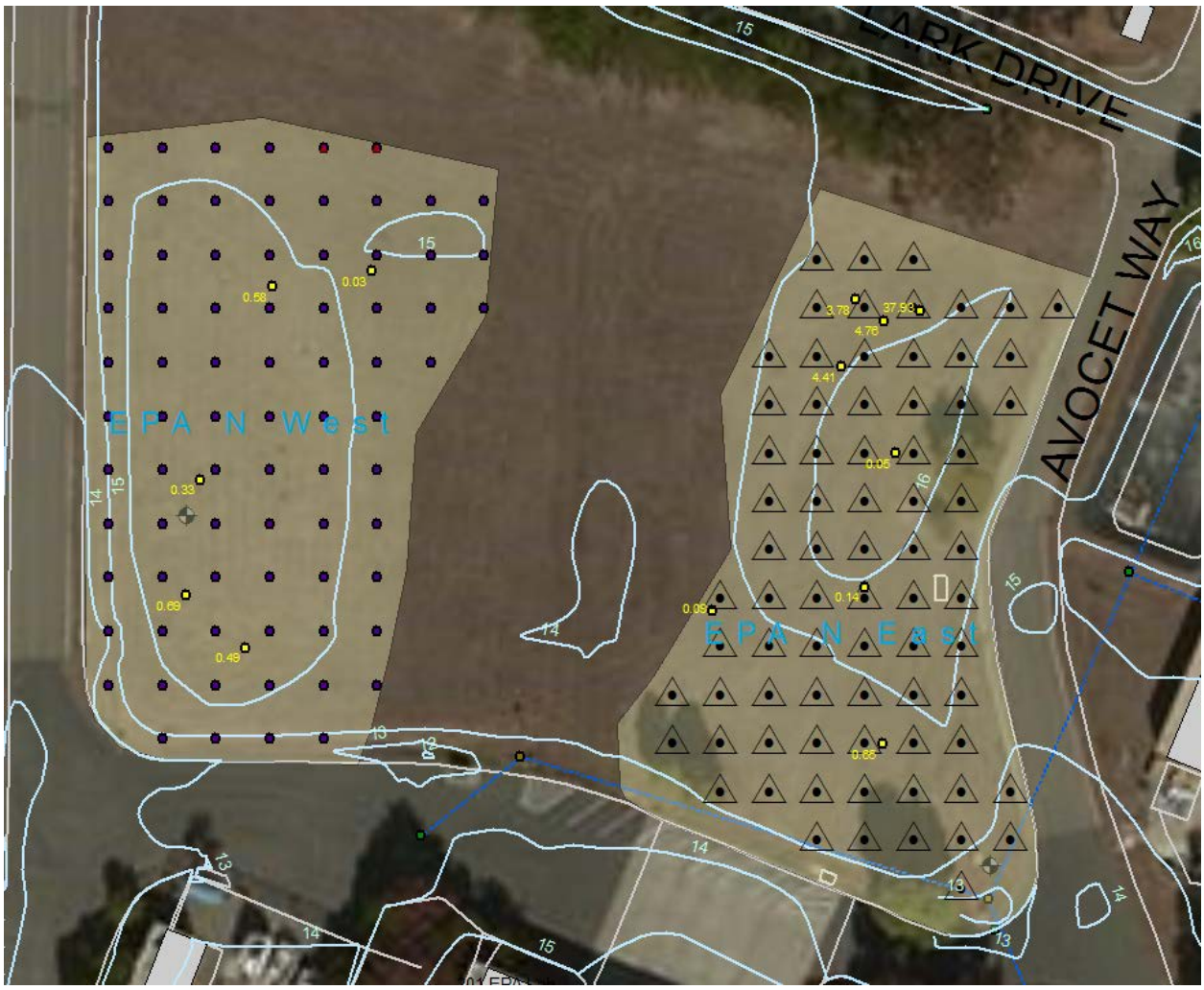


Figure 3. 75 increment grid for incremental sampling methodology increment locations.

Soil samples will be collected with the assistance of an auger attachment mounted to small Bobcat track loader. The auger attachment was used effectively in 2015 to loosen the soil for the shallow sample and used to arrive at the bottom sample depth for the deeper sample.

Field observations will be used to insure that clean native soils beneath the soil piles will not be included in the soil samples. Soil samples will be collected above the native prairie plain as shown in Figure 4. Native prairie can be identified due to differences in soil appearance and gravel content as well as presence of native bunchgrasses along the perimeter of the soil piles. Further, prior to sampling a number of small cross-sections will be cut with the backhoe to establish a clear visual characterization of the historic prairie plain underneath the soil pile.

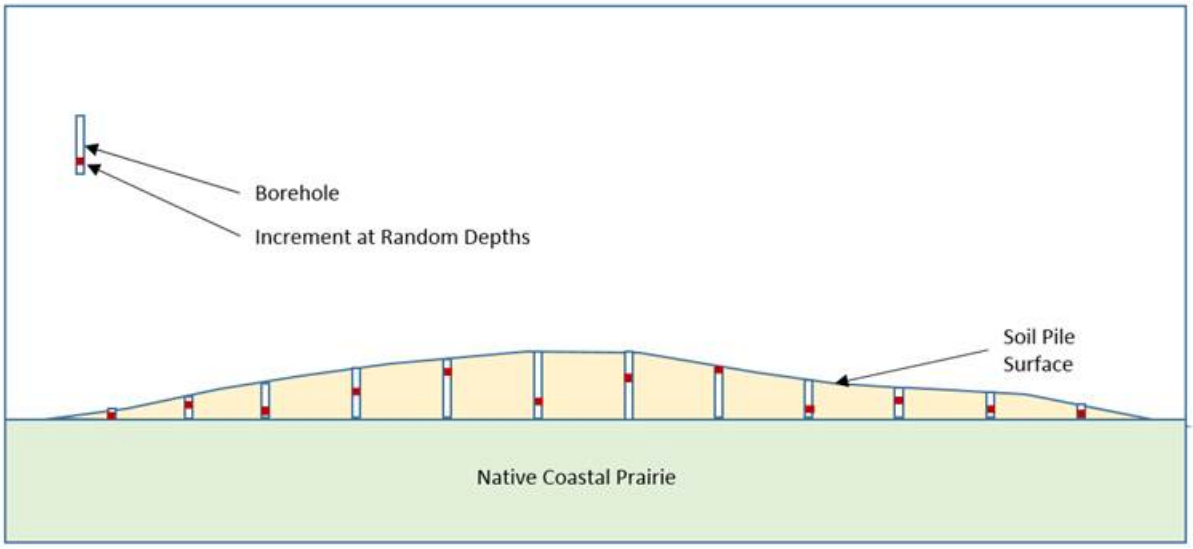


Figure 4: Schematic of soil sampling increments (red) in the soil pile (yellow) above historic native prairie (green)

At each sample increment, a disposable plastic scoop will be used to collect the soil increment from a random depth. Increments will be collected from both shallow and deeper depths, varying randomly through all of the triplicate samples. The sampling protocol follows these steps:

1. The auger bit will bring up cuttings from the entire depth of each borehole into a pile surrounding the borehole.

2. The field sampler will use a disposable plastic scoop to collect each soil increment from a random location within each cuttings pile.

3. Increments for each DU and triplicate will be placed within a 32-ounce glass jar (~ 1.5 kg total mass).

4. The jars will be labeled and packed into an insulated cooler. The sample will be transported under chain-of custody procedures directly to Enthalpy Laboratory in Berkeley, California.

All sample collection protocols are consistent with the Final Phase IV Field Sampling Plan with the exception that ISM methodology is being used as it is acceptable to EPA Region IX.

Analyses and Results

Soil samples will be processed according to Enthalpy's internal ISM protocol. UC will request that a minimum of 75 subsample increments be collected from each dried sample to a final analytical aliquot of 30 grams. Samples will be analyzed for PCBs by EPA method 8082A using EPA Method with 3540C Soxhlet extraction. One of the triplicate ISM samples will be subsampled three times for separate analysis as a laboratory triplicate to evaluate the subsampling process and analytical variability. The

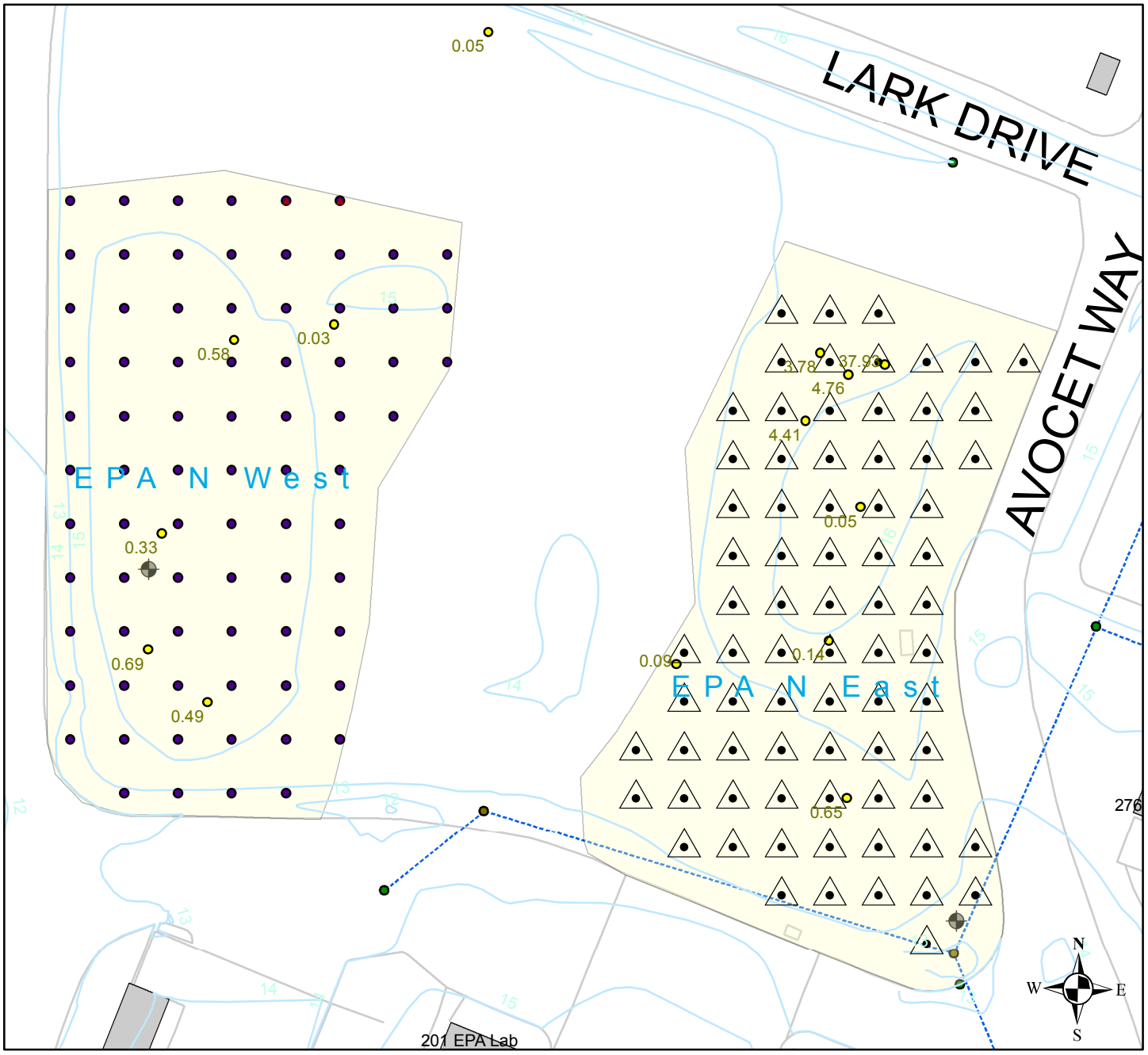
total number of analyses is six (one for the EPA NW DU, two triplicate EPA NE DU samples, and three laboratory triplicates samples collected from the third EPA NE DU triplicate sample).

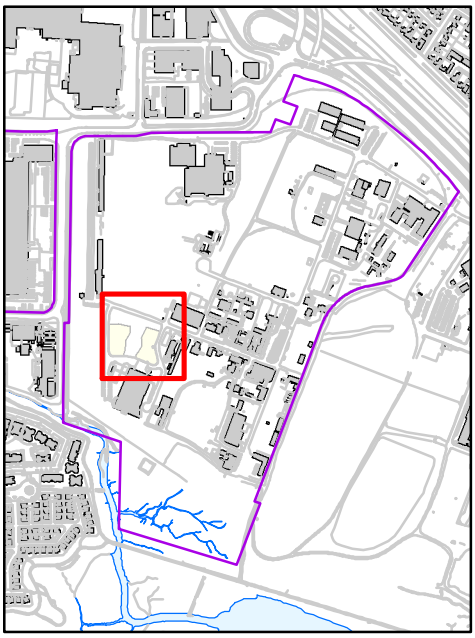
Sample results will be compared to the TSCA self-implementing cleanup criteria of 1 mg/kg and any other goals based on follow-up conference with DTSC and EPA.

Attachments

1. RFS EPA North Meadow Soil Pile ISM Figure

2. October 6, 2015 FSP Phase IV, EPA Meadow North, Supplementary PCB Sampling Results (Tetra Tech)





0 20 40 80 120 160 Feet

RFS EPA North Meadow Soil Piles ISM

- Increments for Triplicate ISM (centers)
- EPA NE triplicate locations (triangle apices)
- EPA NW increments (no triplicates)
- PCBs in soil (mg/kg)
- EPA North Meadow Soil Pile DUs
- Groundwater well
- Storm Drian Pipe
- Storm Drain Catch Basin

Berkeley EH&S

UCB EH&S KEK 2017.10.11

TETRA TECH, INC.

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.

1999 Harrison Street, Suite 500, Oakland, CA 94612
Tel 510.302.6300 Fax 510.433.0830
www.tetratech.com

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

1999 Harrison Street, Suite 500, Oakland, CA 94612
Tel 510.302.6300 Fax 510.433.0830
www.tetratech.com

Soil Sampling Locations

Sample result exceeds TSCA self-implementing cleanup criteria of 1 mg/kg.

Designated Natural Open Space

Meadow Boundary

Existing Buildings

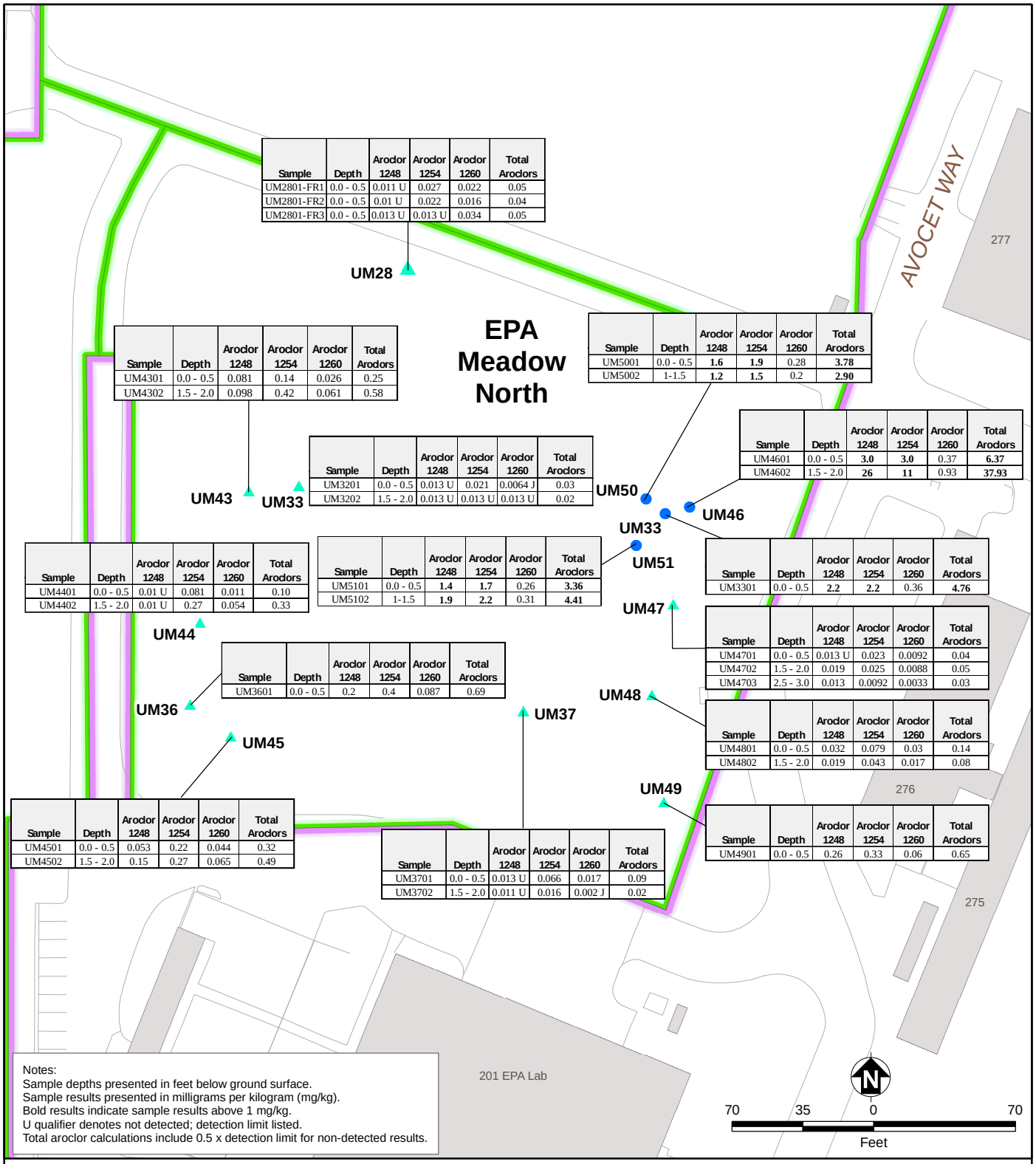
Asphalt/Concrete Pads

Roads and Other Landscape Features

TETRA TECH

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
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
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
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

Notes:
Sample depths presented in feet below ground surface.
Sample results presented in milligrams per kilogram (mg/kg).
Bold results indicate sample results above 1 mg/kg.
U qualifier denotes not detected; detection limit listed.
Total aroclor calculations include 0.5 x detection limit for non-detected results.

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

TETRA TECH

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

	PCBs (mg/kg)			
Screening Criteria	**Aroclor-1248**	**Aroclor-1254**	**Aroclor-1260**	**Total Aroclors**
Commercial worker	*0.528*	*0.528*	*0.528*	*NA*
Construction worker	*3.50*	*2.02*	*3.50*	*NA*
Maintenance worker	*3.50*	*3.50*	*3.50*	*NA*
Off-Site Receptor	*5,620*	*5,620*	*5,620*	*NA*
TSCA Cleanup Criteria (1)	*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	**2.2**	**2.2**	0.36	**4.76**
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	**3.0**	**3.0**	0.37	**6.37**
UM4602	**26**	**11**	0.93	**37.93**

	PCBs (mg/kg)			
Screening Criteria	**Aroclor-1248**	**Aroclor-1254**	**Aroclor-1260**	**Total Aroclors**
Commercial worker	*0.528*	*0.528*	*0.528*	*NA*
Construction worker	*3.50*	*2.02*	*3.50*	*NA*
Maintenance worker	*3.50*	*3.50*	*3.50*	*NA*
Off-Site Receptor	*5,620*	*5,620*	*5,620*	*NA*
TSCA Cleanup Criteria (1)	*1*	*1*	*1*	*1*
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	**1.6**	**1.9**	0.28	**3.78**
UM5002	**1.2**	**1.5**	0.2	**2.90**
UM5101	**1.4**	**1.7**	0.26	**3.36**
UM5102	**1.9**	**2.2**	0.31	**4.41**

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.
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	Project : 103S225322.01
1999 Harrison Street	Location : Upland Meadow PCB Samp.
Oakland, CA 94612	Level : IV

Sample ID	Lab ID
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: _____ Date: 09/22/2015

Mike Dahlquist
Project Manager
mike.dahlquist@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

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

269650

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. 5369

Page 1 of 2

5369

Project name:	TtEMI technical contact:	Lab PO#:	Lab:	Field samplers:
Upland Meadows PCB Samp	Sara Woolley	150AK33	C+T	Dayna Aragon

Project (CTO) number:	TtEMI project manager:	Field samplers' signatures:
1035225322.01	Jason Brodersen	[signature]

Preservative Added: None

	Sample ID	Sample Location (Pt. ID)	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar 4oz	VOA	SVOA	PCBs	Metals	TPH Purgeables	TPH Extractables
1	20150908UM4301		9/8/15	1000	soil						1			X			
2	4302		↓	1003	↓						1			X			
3	4401			1005							1			X			
4	4402			1008							1			X			
5	4501			1010							1			X			
6	4502			1012							1			↓			
7	4601			1014							1						
8	4602			1016							1						
9	4701			1017							1						
10	4702			1018							1						
11	4703			1026							1						
12	4801 ↓		↓	1020	↓						1			↓			

	Signature	Name (print)	Company Name	Date	Time
Relinquished by:	[signature]	Dayna Aragon	Tetra Tech	9/8/15	1130
Received by:	[signature]	Pat Gonzalez	C&T	9/18/15	11:30
Relinquished by:					
Received by:					
Relinquished by:					
Received by:					

Turnaround time/remarks:

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

269650

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

6084

Project name: Upland Meadows PCB Sampling	**Lab PO#:** 150AK33
Project (CTO) number: 10352253.22.01	**TtEMI technical contact:** Sara Woolley
	TtEMI project manager: Jason Brodersen
	Lab: CT
	Field samplers: Dayna Aragon
	Field samplers' signatures: Dayna

	Sample ID	Sample Location (Pt. ID)	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar 4oz	VOA	SVOA	Test PCBs	Metals	TPH Purgeables	TPH Extractables
13	20150908UM4802		9/8/15	1022	soil						1			X			
14	4901			1024							1			X			
15	5001			1028							1			X			
16	5002			1030							1			X			
17	5101			1032							1			X			
18	5102			1034							1			X			

Preservative Added: Ice

Analysis Required

	Name (print)	Company Name	Date	Time
Relinquished by: Dayna	Dayna Aragon	Tetra Tech	9/8/15	1130
Received by:	Pat Gonzalez	Pat Hamilton, CT	9/8/15	1130
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

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

Date Opened 9/8 By (print) SL (sign)
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

Rev 10, 9/12

Results & QC Summary

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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
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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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

Curtis & Tompkins, Ltd.

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
Field ID:	ZZZZZZZZZZ	Batch#:	227337
MSS Lab ID:	269777-001	Sampled:	09/14/15
Matrix:	Soil	Received:	09/14/15
Units:	ug/Kg	Prepared:	09/18/15
Basis:	dry	Analyzed:	09/19/15
Diln Fac:	1.000		

Type: MS Moisture: 10%
Lab ID: QC804308

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<3.299	187.9	254.3	135	60-161
Aroclor-1260	<2.157	187.9	254.2	133	42-166

Surrogate	%REC	Limits
TCMX	118	46-141
Decachlorobiphenyl	79	25-135

Type: MSD Moisture: 10%
Lab ID: QC804309

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	185.4	271.2	146	60-161	8	43
Aroclor-1260	185.4	268.3	145	42-166	7	51

Surrogate	%REC	Limits
TCMX	123	46-141
Decachlorobiphenyl	90	25-135

RPD= Relative Percent Difference