TETRA TECH, INC.

March 1, 2013

Greg Haet
EH&S Associate Director, Environmental Protection
Office of Environment, Health & Safety
University of California, Berkeley
University Hall, 3rd Floor #1150
Berkeley, CA 94720

Subject: **Sampling Results for Western Stege Marsh Near-Surface Sediment Samples, February 4, 2013 Sampling Event**
University of California, Berkeley, Richmond Field Station, Richmond, California

Dear Mr. Haet:

Tetra Tech, Inc. (Tetra Tech) was contracted by the University of California (UC) Berkeley to conduct sampling activities at Richmond Field Station (RFS), in Richmond, California. The objective of the sampling effort was to characterize near-surface sediment in remediated portions of the Western Stege Marsh, as well as evaluate incidental sediment contact by marsh restoration workers. This sampling event, conducted on February 4, 2013, replicates the near-surface sediment sampling conducted in January 2008, February 2009, February 2010, February 2011, and February 2012. This letter provides the rationale for the selected sampling locations, a summary of field sampling protocols, and sample results. A figure presenting the sampling locations is presented at the end of this letter. Complete analytical results are presented in Attachment 1.

Sample Locations

Incremental sampling methodology (ISM) (previously referred to as "multi-incremental") sampling was selected for this project to provide a comprehensive and thorough evaluation of chemical concentrations in a specific area of potential exposure, or decision unit. The ISM sampling strategy for this project was based on selecting a decision unit to best represent potential exposure by workers performing restoration activities within remediated marsh areas.

In January 2008, UC Berkeley provided Tetra Tech with site-specific boundaries of the areas where marsh restoration activities may be performed. Based on this information, one decision unit, identified as Western Stege Marsh Decision Unit 1, was identified to evaluate possible exposure areas within remediated portions of the marsh under this sampling activity. This decision unit was sampled in January 2008, February 2009, February 2010, February 2011, February 2012, and during this event on February 4, 2013. The location and extent of the Western Stege Marsh Decision Unit 1 is presented on the figure at the end of this sampling letter. The decision unit encompassed an area recommended for sampling by the

1999 Harrison Street, Suite 500, Oakland, CA 94612
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March 13, 2008 Agency for Toxic Substances Control and Disease Registry (ATSDR) and California Department of Public Health Public Health Assessment (PHA) - Evaluation of Exposure to Contaminants at the University of California, Berkeley, Richmond Field Station. The PHA determined that there was an unknown potential health risk to marsh restoration workers due to recontamination of sediment in the remediated marsh. Because the decision unit is intended to characterize near-surface soils, surface sample depths of 0 to 2 inches below ground surface (bgs) were conducted. The rational for this sampling interval is that the sediment which workers may be exposed to during planting or weeding on the marsh plain. The near-surface sediment also represents any sediment that may be migrating within slough channels and being deposited on top of clean bay mud used as backfill in 2002-2004. Two previous sampling events were conducted in this decision unit in 2005 and 2006 using a discrete sampling methodology.

Field Sampling Protocols

The near-surface sediment sample was collected on February 4, 2013. The decision unit was identified in the field based on the description above and consistent with previous sampling events. One ISM surface soil sample was collected from the decision unit. The ISM soil sample consisted of 50 subsamples, or increment locations, collected from 0 to 2 inches bgs.

The ISM sampling technique was used to obtain sufficient near-surface soft sediments from the decision unit to account for both compositional and distributional heterogeneity of any possible contamination. The sampling protocol followed these steps:

1. The field sampler began at a corner of the decision unit and sampled in an orthogonal pattern, moving from north to south to collect subsamples from 50 locations with the decision unit. The location of these subsamples was not critical as long as they were distributed throughout the decision unit. The subsamples were collected using one disposable trowel for the decision unit.

2. The 50 subsamples were placed into a clean, stainless steel bowl as they were collected, and mixed to form one composited ISM sample.

3. The sediment from the bowl was then redistributed into a 1-inch thick uniform layer on a clean, stainless steel baking pan.

4. 50 incremental subsamples of the soil were randomly collected from across the uniform layer described in Step 3 using a disposable spoon and placed in the sample containers provided by the laboratory to form the final sample that was submitted to the analytical laboratory for the analyses listed below.

Following collection, the sample jar was labeled, wrapped with protective bubble wrap material and placed into a sealable plastic bag. A copy of the chain-of-custody form is presented in Attachment 1. The sample was immediately delivered to Curtis and Tompkins, Ltd. in Berkeley, California after the sampling event, on February 4, 2013.

Sample Results

The sample was submitted for analysis of metals, pesticides, and polychlorinated biphenyls (PCB) using the methods listed below.

- Preparation of Sample: EPA 3665A and 3050B
- Metals by EPA 6010; Mercury by EPA 7471A
- Pesticide analysis by EPA 8081A
- PCB analysis by EPA 8082

Sample results are presented below along with California Human Health Screening Levels (CHHSL) ["Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties" California Environmental Protection Agency, January 2005].

All organic constituents were reported at concentrations less than the laboratory reporting limits or less than their respective commercial/industrial screening levels. Metals analysis detected 21 of 24 inorganic compounds; only arsenic was reported at a concentration exceeding its background (16 mg/kg, as established by DTSC for RFS and the Campus Bay site) or commercial/industrial screening level. A summary of the sampling results is presented in the tables following this letter.

The February 2013 sampling results were compared to the 2008 through 2012 sampling results from the same decision unit, as well as averages from discrete samples collected from the same area during sampling events in 2005 and 2006. The analytical results from the 2013 sampling event are very similar to the previously collected data except that neither PCBs nor pesticides were detected in the February 2013 sample. No trends have been identified.

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

Sincerely,

Jason Brodersen, P.G.
Project Manager

Enclosures: Analytical Summary Tables
Sample Location Figure

Attachment 1: Analytical Results

1999 Harrison Street, Suite 500, Oakland, CA 94612
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POLYCHLORINATED BIPHENYLS (PCB) RESULTS
REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

Sample Location	PCBs (1)		
	Aroclor-1248	**Aroclor-1254**	**Aroclor-1260**
CHHSL Residential	*0.089*	*0.089*	*0.089*
CHHSL Commercial	*0.3*	*0.3*	*0.3*
WSM 16 discrete sample mean* March 1, 2005	0.19[a]	0.14[a]	0.054
WSM 30 discrete sample mean * June 13, 2006	0.22[c]	ND	0.016[d]
WSM DU1-001 January 17, 2008	0.081	0.053	0.021 J
WSM DU1-002 February 4, 2009	0.18	0.10	0.05
WSM DU1-003 February 18, 2010	0.31	0.16	0.036 J
WSM DU1-004 February 22, 2011	0.048 U	0.048 U	0.048 U
WSM DU1-005 February 3, 2012	0.034 U	0.096	0.068
WSM DU1-006 February 4, 2013	0.010 U	0.010 U	0.010 U

Notes:

a Thirteen detections
b Eleven detections
c Nineteen detections
d Twelve detections
J Estimated Value
ND Not detected
U Not detected
(1) All other PCBs not detected

* For detect-only data, the mean is the arithmetic mean. For chemicals with non-detect measurements, this is the arithmetic mean with one-half the detection limit substituted for non-detect measurements.

PESTICIDE RESULTS
REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

Sample Location	Pesticides (1)											
	Aldrin	**Heptachlor expoxide**	**Endosulfan I**	**Dieldrin**	**Endrin**	**Endosulfan sulfate**	**4,4'-DDD**	**4,4'-DDE**	**4,4'-DDT**	**Alpha-Chlordane**	**Gamma-Chlordane**	**Methoxychlor**
CHHSL Residential *CHHSL Commercial*	*0.033* *0.13*	*0.13* *0.52*	*NA* *NA*	*0.035* *0.13*	*21* *230*	*NA* *NA*	*2.3* *9.0*	*1.6* *6.3*	*1.6* *6.3*	*0.43* *1.7*	*0.5* *2.0*	*340* *3,800*
WSM 16 discrete sample mean* March 1, 2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WSM 30 discrete sample mean * June 13, 2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WSM DU1-001 January 17, 2008	0.017 U	0.017 U	0.017 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.017 U	0.017 U	0.17 U
WSM DU1-002 February 4, 2009	0.060 U	0.060 U	0.060 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.060 U	0.060 U	0.60 U
WSM DU1-003 February 18, 2010	0.032 U	0.032 U	0.032 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.032 U	0.032 U	0.32 U
WSM DU1-004 February 22, 2011	0.017 CJ	0.033 CJ	0.0037 UJ	0.029 CJ	0.046 CJ	0.031 UJ	0.038 UJ	0.066 U	0.044 CJ	0.023 UJ	0.034 U	0.012 UJ
WSM DU1-005 February 3, 2012	0.0023 CJ	0.0031 J	0.006 U	0.012 U	0.012 U	0.012 U	0.0037 J	0.0036 CJ	0.0041 CJ	0.0015 CJ	0.0015 CJ	0.06 U
WSM DU1-006 February 4, 2013	0.017 U	0.017 U	0.017 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.017 U	0.017 U	0.17 U

Notes:

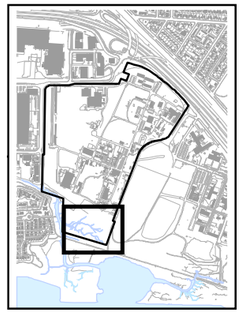
C Relative percent difference between columns exceeds 40%
J Estimated Value
NA Not available – samples collected in 2005 and 2006 were not analyzed for pesticides.
U Not detected (method blank contamination)
(1) All other pesticides were not detected.

METALS RESULTS
REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

Sample Location	Metals																					
	Aluminum	**Antimony**	**Arsenic (1)**	**Barium**	**Beryllium**	**Cadmium**	**Calcium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Magnesium**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Potassium**	**Selenium**	**Silver**	**Sodium**	**Thallium**	**Vanadium**	**Zinc**
CHHSL Residential	*NA*	*30*		*5,200*	*16*	*1.7*	*NA*	*100,000*	*660*	*3,000*	*NA*	*80*	*NA*	*NA*	*18*	*380*	*1,600*	*NA*	*380*	*380*	*NA*	*5.0*	*530*	*23,000*
CHHSL Commercial	*NA*	*380*		*63,000*	*190*	*7.5*	*NA*	*100,000*	*3,200*	*38,000*	*NA*	*320*	*NA*	*NA*	*180*	*4,800*	*16,000*	*NA*	*4800*	*4,800*	*NA*	*63*	*6,700*	*100,000*
Background			*16*																					
WSM 16 discrete sample mean* March 1, 2005	NA	ND	55.7	ND	0.84	1.2[a]	NA	86.44	ND	118	NA	51.56	NA	NA	2.59	ND	85.75	NA	1.15[b]	ND	NA	ND	ND	276
WSM 30 discrete sample mean * June 13, 2006	NA	6.2[c]	55.3	78.1	0.61	1.24[d]	NA	89.4	14.8	136	NA	82.1	NA	NA	3.5	2.4[e]	81.4	NA	1.03[f]	0.29[g]	NA	0.51[f]	81.5	321
WSM DU1-001 January 17, 2008	28,000	2.4	15	53	0.53	0.38 J	2,700	74	13	67	46,000	32	15,000	470	1.6	0.50 U	69	3,300	1.0 U	0.50 U	8,200	1.0 U	67	140
WSM DU1-002 February 4, 2009	8,800	1.3	22	31	0.89 U	0.52 J	2,600	39	10	79	26,000	44	9,600	620	1.8	1.3	48	3,900	0.73 J	0.89 U	30,000	0.89 U	39	210
WSM DU1-003 February 18, 2010	24,000	3.9	26	61	0.60	0.68 J	3,900	81	12	100	38,000	52	13,000	330	2.6	0.89 J	73	4,900	1.2 J	0.96 U	21,000	1.9 U	71	260
WSM DU1-004 February 22, 2011	23,000	11	35	57	0.67	0.50 J	3,700	78	13	110	36,000	59	13,000	360	3.0	1.8	75	4,900	2.0 U	0.34 J	23,000	2.0 U	68	280
WSM DU1-005 February 3, 2012	20,000	0.45 J	29	51	0.76 J	0.49 J	3,500	72	12	90	38,000	52	12,000	590	2.3	1.6	68	4,700	1.1	0.47 J	22,000	0.11 J	54	230
WSM DU1-006 February 4, 2013	28,000	1.2 U	28	60	0.61	0.31 J	3,600	84	16	96	45,000	56	13,000	510	2.0	1.8	83	4,600	1.2 U	0.43 J	14,000	1.2 U	77	240

Notes:

NA Not available
ND Not detected
(1) Arsenic screening value based on DTSC-approved ambient concentration developed for the adjacent Campus Bay site.
a Fifteen detections
b Eight detections
c Eleven detections
d Twenty-two detections
e Twenty-six detections
f Only thirteen detections
g Two detections
J Estimated Value
U Not detected
* For detect-only data, the mean is the arithmetic mean. For chemicals with non-detect measurements, this is the arithmetic mean with one-half the detection limit substituted for non-detect measurements.



Decision Unit Boundaries (approximate)

Biologically Active Permeable Barrier Wall

Multi-Increment Sampling Locations (approximate)

Note:
Image date March 2008, courtesy of Muir Consulting

80 0 80
Feet

TETRA TECH EM INC.

Richmond Field Station
University of California, Berkeley

WESTERN STEGE MARSH NEAR SURFACE SAMPLING AREA

2010-03-16 V:\Misc_GIS\Richmond_Field_Station\Projects\Coastal_Prairie_Sampling\WSM.mxd TtEMI-OAK CF


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 242876
ANALYTICAL REPORT

Tetra Tech EMI	Project : 103S225322
1999 Harrison Street	Location : PHA 2013
Oakland, CA 94612	Level : III

Sample ID	Lab ID
RFS-WSM-DU1-006	242876-001

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: 02/19/2013

Mike J. Dahlquist
Project Manager
(510) 486-0900

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**242876**
Client:	**Tetra Tech EMI**
Project:	**103S225322**
Location:	**PHA 2013**
Request Date:	**02/04/13**
Samples Received:	**02/04/13**

This data package contains sample and QC results for one soil sample, requested for the above referenced project on 02/04/13. See attached cooler receipt form for any sample receipt problems or discrepancies.

Pesticides (EPA 8081A):

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

All samples underwent florisil cleanup using EPA Method 3620C.

Low response was observed for endrin in the ICV analyzed 02/05/13 18:45; average ICV drift met method requirements, and this analyte was not detected at or above the RL in the associated samples.

High response was observed for delta-BHC in the CCV analyzed 02/07/13 08:56; average CCV drift met method requirements, and this analyte was not detected at or above the RL in the associated sample.

High response was observed for heptachlor in the CCV analyzed 02/06/13 23:10; average CCV drift met method requirements, and this analyte was not detected at or above the RL in the associated sample.

High responses were observed for a number of analytes in the CCV analyzed 02/06/13 12:33; average CCV drift met method requirements.

High responses were observed for beta-BHC and delta-BHC in the CCV analyzed 02/06/13 09:27; average CCV drift met method requirements.

RFS-WSM-DU1-006 (lab # 242876-001) was diluted due to the color of the sample extract.

No other analytical problems were encountered.

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.

High response was observed for Aroclor-1016 in the CCV analyzed 02/06/13 18:34; this analyte was not detected at or above the RL in the associated

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**242876**
Client:	**Tetra Tech EMI**
Project:	**103S225322**
Location:	**PHA 2013**
Request Date:	**02/04/13**
Samples Received:	**02/04/13**

PCBs (EPA 8082):
sample.

No other analytical problems were encountered.

Metals (EPA 6010B and EPA 7471A):
High recovery was observed for calcium in the MS of RFS-WSM-DU1-006 (lab # 242876-001); the BS/BSD were within limits. High RPD was also observed for calcium in the MS/MSD of RFS-WSM-DU1-006 (lab # 242876-001); the RPD was acceptable in the BS/BSD.

High % difference was observed for arsenic in the serial dilution of RFS-WSM-DU1-006 (lab # 242876-001).

Many analytes were detected between the MDL and the RL in the method blank for batch 195450; these analytes were detected in the sample at a level at least 10 times that of the blank.

No other analytical problems were encountered.

Moisture (ASTM D2216/CLP):
No analytical problems were encountered.

Chain of Custody

242876

Tetra Tech EM Inc.
Oakland Office

Chain of Custody Record · No. 9691

Page 1 of 1

1999 Harrison Street, Suite 500
Oakland, CA 94612
510.302.6300 Phone
510.433.0830 Fax

Lab PO#: 1030A816	**Lab:** Curtis + Tompkins	
Project name: PHA 2013	**TtEMI technical contact:** Sara Woolley	**Field samplers:** Dayna Aragon, Rebecca Johnson
Project (CTO) number: 103522 5322	**TtEMI project manager:** Jason Brodersen	**Field samplers' signatures:**

Preservative Added: – none –

No./Container Types | **Analysis Required**

Sample ID	Point ID/Depth	Date	Time	Matrix	MS / MSD	40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	250 ml Poly	Encore	VOA	SVOA	Pest 8081	Metals 6010/7471A	TPH Purgeables	TPH Extractables	PCB 8082
RFS-WSM-DU1-006		2/4/13	1250	sediment						X					X	X			X

	Name (print)	Company Name	Date	Time
Relinquished by:	Dayna Aragon	TetraTech	2/4/13	1330
Received by:	Pat Gonzalez	CAT	2/4/13	13:30
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks: standard TAT

Fed Ex #:

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

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 242876 Date Received 2/4/13 Number of coolers 0
Client Tetra Tech Project 1035225322

Date Opened 2/4/13 By (print) EL (sign) E Le
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) _____

☐ 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, 11/11

Laboratory Job Number 242876

ANALYTICAL REPORT

Pesticides

Matrix: Soil

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8081A
Field ID:	RFS-WSM-DU1-006	Batch#:	195278
Lab ID:	242876-001	Sampled:	02/04/13
Matrix:	Soil	Received:	02/04/13
Units:	ug/Kg	Prepared:	02/06/13
Basis:	as received	Analyzed:	02/07/13
Diln Fac:	10.00		

Moisture: ** MISSING MOISTURE DATA **

Analyte	Result	RL	MDL
alpha-BHC	ND	17	2.0
beta-BHC	ND	17	4.1
gamma-BHC	ND	17	2.1
delta-BHC	ND	17	2.7
Heptachlor	ND	17	2.1
Aldrin	ND	17	2.0
Heptachlor epoxide	ND	17	2.2
Endosulfan I	ND	17	1.7
Dieldrin	ND	32	3.9
4,4'-DDE	ND	32	5.8
Endrin	ND	32	5.5
Endosulfan II	ND	32	4.9
Endosulfan sulfate	ND	32	5.2
4,4'-DDD	ND	32	7.2
Endrin aldehyde	ND	32	3.3
4,4'-DDT	ND	32	4.7
alpha-Chlordane	ND	17	2.0
gamma-Chlordane	ND	17	2.4
Methoxychlor	ND	170	31
Toxaphene	ND	590	90

Surrogate	%REC	Limits
TCMX	DO	46-120
Decachlorobiphenyl	DO	38-125

DO= Diluted Out
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8081A
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC675644	Batch#:	195278
Matrix:	Soil	Prepared:	02/05/13
Units:	ug/Kg	Analyzed:	02/06/13

Analyte	Result	RL	MDL
alpha-BHC	ND	1.7	0.20
beta-BHC	ND	1.7	0.41
gamma-BHC	ND	1.7	0.21
delta-BHC	ND	1.7	0.28
Heptachlor	ND	1.7	0.19
Aldrin	ND	1.7	0.20
Heptachlor epoxide	ND	1.7	0.22
Endosulfan I	ND	1.7	0.17
Dieldrin	ND	3.3	0.39
4,4'-DDE	ND	3.3	0.58
Endrin	ND	3.3	0.55
Endosulfan II	ND	3.3	0.50
Endosulfan sulfate	ND	3.3	0.51
4,4'-DDD	ND	3.3	0.72
Endrin aldehyde	ND	3.3	0.33
4,4'-DDT	ND	3.3	0.47
alpha-Chlordane	ND	1.7	0.20
gamma-Chlordane	ND	1.7	0.24
Methoxychlor	ND	17	3.1
Toxaphene	ND	60	9.1

Surrogate	%REC	Limits
TCMX	64	46-120
Decachlorobiphenyl	54	38-125

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8081A
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC675648	Batch#:	195278
Matrix:	Soil	Prepared:	02/05/13
Units:	ug/Kg	Analyzed:	02/06/13

Analyte	Spiked	Result	%REC	Limits
gamma-BHC	13.18	10.60	80	52-120
Heptachlor	13.18	9.118	69	44-123
Aldrin	13.18	9.633	73	50-120
Dieldrin	26.35	20.05	76	52-127
Endrin	26.35	27.82	106	43-130
4,4'-DDT	26.35	19.75	75	51-136

Surrogate	%REC	Limits
TCMX	64	46-120
Decachlorobiphenyl	54	38-125

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8081A
Field ID:	ZZZZZZZZZZ	Batch#:	195278
MSS Lab ID:	242872-012	Sampled:	01/24/13
Matrix:	Soil	Received:	02/04/13
Units:	ug/Kg	Prepared:	02/05/13
Basis:	as received		

Type: MS Lab ID: QC675649

Analyte	MSS Result	Spiked	Result	%REC	Limits	Diln Fac	Analyzed
gamma-BHC	<0.2151	13.33	11.97	90	39-137	1.000	02/06/13
Heptachlor	<0.1907	13.33	14.07	106	37-136	1.000	02/06/13
Aldrin	128.1	13.33	119.9	-61 NM	42-130	5.000	02/07/13
Dieldrin	128.6	26.67	131.5	11 NM	31-151	1.000	02/06/13
Endrin	1.966	26.67	28.46	99	34-143	1.000	02/06/13
4,4'-DDT	<0.4711	26.67	27.42	103	30-158	1.000	02/06/13

Surrogate	%REC	Limits	Diln Fac	Analyzed
TCMX	83	46-120	1.000	02/06/13
Decachlorobiphenyl	66	38-125	1.000	02/06/13

Type: MSD Lab ID: QC675650

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Diln Fac	Analyzed
gamma-BHC	13.24	10.05	76	39-137	17	42	1.000	02/06/13
Heptachlor	13.24	11.48	87	37-136	20	46	1.000	02/06/13
Aldrin	13.24	129.4	9 NM	42-130	8	41	5.000	02/07/13
Dieldrin	26.47	120.5	-31 NM	31-151	9	41	1.000	02/06/13
Endrin	26.47	22.39	77	34-143	23	54	1.000	02/06/13
4,4'-DDT	26.47	22.06	83	30-158	21	42	1.000	02/06/13

Surrogate	%REC	Limits	Diln Fac	Analyzed
TCMX	65	46-120	1.000	02/06/13
Decachlorobiphenyl	50	38-125	1.000	02/06/13

NM= Not Meaningful: Sample concentration > 4X spike concentration
RPD= Relative Percent Difference

Initial & Continuing Calibration Data

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 PEST Soil: EPA 8081A

Inst : GC21
Calnum : 243052352001
Units : pg/uL

Name : GC21_PEST_036
Date : 05-FEB-2013 15:31
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	036_014	243052352014	PEST_1/2	05-FEB-2013 15:31	S20647 (2X)
L2	036_015	243052352015	PEST_1	05-FEB-2013 15:52	S20647
L3	036_016	243052352016	PEST_2	05-FEB-2013 16:14	S20648
L4	036_017	243052352017	PEST_3	05-FEB-2013 16:35	S21065
L5	036_018	243052352018	PEST_4	05-FEB-2013 16:57	S20650
L6	036_019	243052352019	PEST_5	05-FEB-2013 17:19	S20651
L7	036_020	243052352020	PEST_6	05-FEB-2013 17:40	S20652
L8	036_021	243052352021	PEST_7	05-FEB-2013 18:02	S20653

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	L8	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
alpha-BHC	A	2108.0	1574.5	1667.6	1642.4	1800.3	1948.7	2014.8	1898.0	AVRG		5.46E-4		1831.8	10	0.990	20	
gamma-BHC	A	1983.0	1404.5	1545.8	1557.5	1629.6	1754.9	1801.9	1679.8	AVRG		5.99E-4		1669.6	11	0.990	20	
beta-BHC	A	775.00	506.00	583.80	600.30	603.20	627.08	599.28	593.70	AVRG		0.00164		611.04	12	0.990	20	
delta-BHC	A		763.00	1027.2	918.20	1172.2	1284.7	1343.7	1370.2	AVRG		8.88E-4		1125.6	20	0.990	20	
Heptachlor	A	1188.0	870.00	969.60	780.30	960.80	1063.2	1130.9	1155.3	AVRG		9.85E-4		1014.8	14	0.990	20	
Aldrin	A	2147.0	1529.5	1616.6	1546.4	1576.0	1705.5	1704.9	1441.6	AVRG		6.03E-4		1658.4	13	0.990	20	
Heptachlor epoxide	A	1872.0	1379.5	1405.4	1329.9	1360.3	1468.6	1453.5	1274.6	AVRG		6.93E-4		1443.0	13	0.990	20	
gamma-Chlordane	A	1844.0	1485.5	1383.4	1351.2	1344.4	1443.0	1455.0	1281.4	AVRG		6.90E-4		1448.5	12	0.990	20	
alpha-Chlordane	A	1674.0	1297.5	1309.0	1246.4	1268.1	1367.4	1383.6	1231.6	AVRG		7.42E-4		1347.2	11	0.990	20	
4,4'-DDE	A	1620.5	1226.8	1205.0	1189.0	1210.2	1300.2	1259.8	1038.2	AVRG		7.96E-4		1256.2	13	0.990	20	
Endosulfan I	A	1628.0	1298.5	1289.6	1189.2	1254.5	1328.7	1381.9	1244.0	AVRG		7.54E-4		1326.8	10	0.990	20	
Dieldrin	A	1915.0	1448.8	1441.3	1408.3	1509.8	1545.5	1388.1	1056.3	AVRG		6.83E-4		1464.1	16	0.990	20	
Endrin	A	1318.5	966.75	975.80	929.25	972.98	1035.2	999.17	798.83	AVRG		0.00100		999.56	15	0.990	20	
4,4'-DDD	A	941.50	714.75	762.20	700.05	756.53	838.22	883.69	803.59	AVRG		0.00125		800.07	10	0.990	20	
Endosulfan II	A	1488.0	1125.3	1173.8	1037.7	1180.7	1262.8	1217.5	996.36	AVRG		8.44E-4		1185.2	13	0.990	20	
4,4'-DDT	A	695.00	553.00	682.70	641.95	785.30	875.60	940.37	860.78	AVRG		0.00133		754.34	18	0.990	20	
Endrin aldehyde	A	731.00	601.00	736.30	537.65	720.33	787.40	823.81	818.51	AVRG		0.00139		719.50	14	0.990	20	
Methoxychlor	A	313.40	225.00	254.92	258.95	299.98	331.56	293.10	222.03	AVRG		0.00364		274.87	15	0.990	20	
Endosulfan sulfate	A	621.50	556.75	720.10	694.70	862.05	970.12	1023.4	919.94	LINR	1.22583	0.00106		796.07	0.996	0.990	20	
TCMX	A	1582.5	1183.3	1233.6	1245.3	1266.8	1316.8	1359.8	1276.3	AVRG		7.65E-4		1308.0	9	0.990	20	
Decachlorobiphenyl	A	941.00	693.75	691.20	692.00	669.65	723.68	703.10	673.02	AVRG		0.00138		723.43	12	0.990	20	
alpha-BHC	B	35859	28963	31012	30689	32679	34054	34889		AVRG		3.07E-5		32592	8	0.990	20	
gamma-BHC	B	31886	26007	27674	27300	29087	30120	31985		AVRG		3.43E-5		29151	8	0.990	20	
beta-BHC	B	12546	10382	11357	10806	11204	12114	11127		AVRG		8.80E-5		11362	7	0.990	20	
delta-BHC	B	27206	24180	24699	23740	25533	27238	29139		AVRG		3.85E-5		25962	8	0.990	20	

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	L8	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Heptachlor	B	29056	24922	25758	25826	26843	28084	30047		AVRG		3.67E-5		27219	7	0.990	20	
Aldrin	B	32314	29320	30579	27221	29356	30847	33076		AVRG		3.29E-5		30387	7	0.990	20	
Heptachlor epoxide	B	26696	24317	25389	22717	24249	25807	27190		AVRG		3.97E-5		25195	6	0.990	20	
gamma-Chlordane	B	30668	23385	24906	23292	25301	27187	29056		AVRG		3.81E-5		26257	11	0.990	20	
alpha-Chlordane	B	25937	22800	23017	21778	23924	25315	27458		AVRG		4.11E-5		24318	8	0.990	20	
4,4'-DDE	B	24047	21641	22801	21501	24615	26835			AVRG		4.24E-5		23573	9	0.990	20	
Endosulfan I	B	25616	21793	22048	21602	22403	23784	24757		AVRG		4.32E-5		23143	7	0.990	20	
Dieldrin	B	26640	21833	23329	23288	27366	29550			AVRG		3.95E-5		25334	12	0.990	20	
Endrin	B	14810	13171	13720	13657	14908	16403	16199		AVRG		6.80E-5		14695	9	0.990	20	
4,4'-DDD	B	14094	13251	15178	13830	15901	18049	18228		AVRG		6.45E-5		15504	13	0.990	20	
Endosulfan II	B	23103	19086	19260	18590	21288	23499			AVRG		4.81E-5		20804	10	0.990	20	
4,4'-DDT	B	13145	11931	12555	14834	15332	17549	18165		AVRG		6.76E-5		14787	16	0.990	20	
Endrin aldehyde	B	14227	12489	14662	11785	15267	17580	17085		AVRG		6.79E-5		14728	15	0.990	20	
Methoxychlor	B	4605.7	4142.7	4373.6	5098.9	5797.8	6070.8			AVRG		1.99E-4		5014.9	16	0.990	20	
Endosulfan sulfate	B	15789	13591	14571	14724	17497	19941	17276		AVRG		6.17E-5		16198	13	0.990	20	
TCMX	B	24577	18897	19837	19754	20387	21098	20390		AVRG		4.83E-5		20706	9	0.990	20	
Decachlorobiphenyl	B	11922	10901	11088	11425	13018	14654			AVRG		8.22E-5		12168	12	0.990	20	
Average EPA 8081A	A													(n=23)	14		20	
Average EPA 8081A	B													(n=23)	10		20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D
alpha-BHC	A	1.0000	15	2.0000	-14	5.0000	-9	10.000	-10	20.000	-2	25.000	6	50.000	10	100.00	4
gamma-BHC	A	1.0000	19	2.0000	-16	5.0000	-7	10.000	-7	20.000	-2	25.000	5	50.000	8	100.00	1
beta-BHC	A	1.0000	**27**	2.0000	-17	5.0000	-4	10.000	-2	20.000	-1	25.000	3	50.000	-2	100.00	-3
delta-BHC	A			2.0000	**-32**	5.0000	-9	10.000	-18	20.000	4	25.000	14	50.000	19	100.00	**22**
Heptachlor	A	1.0000	17	2.0000	-14	5.0000	-4	10.000	**-23**	20.000	-5	25.000	5	50.000	11	100.00	14
Aldrin	A	1.0000	**29**	2.0000	-8	5.0000	-3	10.000	-7	20.000	-5	25.000	3	50.000	3	100.00	-13
Heptachlor epoxide	A	1.0000	**30**	2.0000	-4	5.0000	-3	10.000	-8	20.000	-6	25.000	2	50.000	1	100.00	-12
gamma-Chlordane	A	1.0000	**27**	2.0000	3	5.0000	-4	10.000	-7	20.000	-7	25.000	0	50.000	0	100.00	-12
alpha-Chlordane	A	1.0000	**24**	2.0000	-4	5.0000	-3	10.000	-7	20.000	-6	25.000	2	50.000	3	100.00	-9
4,4'-DDE	A	2.0000	**29**	4.0000	-2	10.000	-4	20.000	-5	40.000	-4	50.000	3	100.00	0	200.00	-17
Endosulfan I	A	1.0000	**23**	2.0000	-2	5.0000	-3	10.000	-10	20.000	-5	25.000	0	50.000	4	100.00	-6
Dieldrin	A	2.0000	**31**	4.0000	-1	10.000	-2	20.000	-4	40.000	3	50.000	6	100.00	-5	200.00	**-28**
Endrin	A	2.0000	**32**	4.0000	-3	10.000	-2	20.000	-7	40.000	-3	50.000	4	100.00	0	200.00	-20
4,4'-DDD	A	2.0000	18	4.0000	-11	10.000	-5	20.000	-13	40.000	-5	50.000	5	100.00	10	200.00	0
Endosulfan II	A	2.0000	**26**	4.0000	-5	10.000	-1	20.000	-12	40.000	0	50.000	7	100.00	3	200.00	-16
4,4'-DDT	A	2.0000	-8	4.0000	**-27**	10.000	-9	20.000	-15	40.000	4	50.000	16	100.00	**25**	200.00	14
Endrin aldehyde	A	2.0000	2	4.0000	-16	10.000	2	20.000	**-25**	40.000	0	50.000	9	100.00	14	200.00	14
Methoxychlor	A	10.000	14	20.000	-18	50.000	-7	100.00	-6	200.00	9	250.00	**21**	500.00	7	1000.0	-19
Endosulfan sulfate	A	2.0000	**27**	4.0000	-11	10.000	-12	20.000	-20	40.000	-6	50.000	5	100.00	9	200.00	-2
TCMX	A	2.0000	**21**	4.0000	-10	10.000	-6	20.000	-5	40.000	-3	50.000	1	100.00	4	200.00	-2
Decachlorobiphenyl	A	2.0000	**30**	4.0000	-4	10.000	-4	20.000	-4	40.000	-7	50.000	0	100.00	-3	200.00	-7
alpha-BHC	B	1.0000	10	2.0000	-11	5.0000	-5	10.000	-6	20.000	0	25.000	4	50.000	7		
gamma-BHC	B	1.0000	9	2.0000	-11	5.0000	-5	10.000	-6	20.000	0	25.000	3	50.000	10		
beta-BHC	B	1.0000	10	2.0000	-9	5.0000	0	10.000	-5	20.000	-1	25.000	7	50.000	-2		
delta-BHC	B	1.0000	5	2.0000	-7	5.0000	-5	10.000	-9	20.000	-2	25.000	5	50.000	12		
Heptachlor	B	1.0000	7	2.0000	-8	5.0000	-5	10.000	-5	20.000	-1	25.000	3	50.000	10		
Aldrin	B	1.0000	6	2.0000	-4	5.0000	1	10.000	-10	20.000	-3	25.000	2	50.000	9		
Heptachlor epoxide	B	1.0000	6	2.0000	-3	5.0000	1	10.000	-10	20.000	-4	25.000	2	50.000	8		
gamma-Chlordane	B	1.0000	17	2.0000	-11	5.0000	-5	10.000	-11	20.000	-4	25.000	4	50.000	11		
alpha-Chlordane	B	1.0000	7	2.0000	-6	5.0000	-5	10.000	-10	20.000	-2	25.000	4	50.000	13		
4,4'-DDE	B	2.0000	2	4.0000	-8	10.000	-3	20.000	-9	40.000	4	50.000	14				
Endosulfan I	B	1.0000	11	2.0000	-6	5.0000	-5	10.000	-7	20.000	-3	25.000	3	50.000	7		
Dieldrin	B	2.0000	5	4.0000	-14	10.000	-8	20.000	-8	40.000	8	50.000	17				
Endrin	B	2.0000	1	4.0000	-10	10.000	-7	20.000	-7	40.000	1	50.000	12	100.00	10		
4,4'-DDD	B	2.0000	-9	4.0000	-15	10.000	-2	20.000	-11	40.000	3	50.000	16	100.00	18		
Endosulfan II	B	2.0000	11	4.0000	-8	10.000	-7	20.000	-11	40.000	2	50.000	13				
4,4'-DDT	B	2.0000	-11	4.0000	-19	10.000	-15	20.000	0	40.000	4	50.000	19	100.00	**23**		
Endrin aldehyde	B	2.0000	-3	4.0000	-15	10.000	0	20.000	-20	40.000	4	50.000	19	100.00	16		
Methoxychlor	B	10.000	-8	20.000	-17	50.000	-13	100.00	2	200.00	16	250.00	**21**				
Endosulfan sulfate	B	2.0000	-3	4.0000	-16	10.000	-10	20.000	-9	40.000	8	50.000	**23**	100.00	7		
TCMX	B	2.0000	19	4.0000	-9	10.000	-4	20.000	-5	40.000	-2	50.000	2	100.00	-2		
Decachlorobiphenyl	B	2.0000	-2	4.0000	-10	10.000	-9	20.000	-6	40.000	7	50.000	20				

TKB 02/06/13 : Corrected automatically drawn baseline in all levels.

Analyst: TKB Date: 02/06/13 Reviewer: EAH Date: 02/06/13

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression

243052352001

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Name : GC21_PEST_036
Calnum : 243052352001 Cal Date : 05-FEB-2013

ICV 243052352023 (036_023 05-FEB-2013) stds: S20524

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
alpha-BHC	A	20.00	19.16	pg/uL	-4	15	
gamma-BHC	A	20.00	18.54	pg/uL	-7	15	
beta-BHC	A	20.00	19.37	pg/uL	-3	15	
delta-BHC	A	20.00	21.16	pg/uL	6	15	
Heptachlor	A	20.00	22.06	pg/uL	10	15	
Aldrin	A	20.00	18.65	pg/uL	-7	15	
Heptachlor epoxide	A	20.00	18.88	pg/uL	-6	15	
gamma-Chlordane	A	20.00	18.07	pg/uL	-10	15	
alpha-Chlordane	A	20.00	18.48	pg/uL	-8	15	
4,4'-DDE	A	20.00	18.12	pg/uL	-9	15	
Endosulfan I	A	20.00	18.83	pg/uL	-6	15	
Dieldrin	A	20.00	18.58	pg/uL	-7	15	
Endrin	A	20.00	16.69	pg/uL	**-17**	15	v-
4,4'-DDD	A	20.00	18.28	pg/uL	-9	15	
Endosulfan II	A	20.00	19.22	pg/uL	-4	15	
4,4'-DDT	A	20.00	20.03	pg/uL	0	15	
Endrin aldehyde	A	20.00	20.06	pg/uL	0	15	
Methoxychlor	A	200.0	213.5	pg/uL	7	15	
Endosulfan sulfate	A	20.00	18.00	pg/uL	-10	15	
alpha-BHC	B	20.00	19.28	pg/uL	-4	15	
gamma-BHC	B	20.00	18.84	pg/uL	-6	15	
beta-BHC	B	20.00	19.91	pg/uL	0	15	
delta-BHC	B	20.00	19.01	pg/uL	-5	15	
Heptachlor	B	20.00	17.91	pg/uL	-10	15	
Aldrin	B	20.00	18.63	pg/uL	-7	15	
Heptachlor epoxide	B	20.00	18.78	pg/uL	-6	15	
gamma-Chlordane	B	20.00	18.61	pg/uL	-7	15	
alpha-Chlordane	B	20.00	18.96	pg/uL	-5	15	
4,4'-DDE	B	20.00	19.05	pg/uL	-5	15	
Endosulfan I	B	20.00	18.75	pg/uL	-6	15	
Dieldrin	B	20.00	18.63	pg/uL	-7	15	
Endrin	B	20.00	17.92	pg/uL	-10	15	
4,4'-DDD	B	20.00	18.67	pg/uL	-7	15	
Endosulfan II	B	20.00	18.48	pg/uL	-8	15	
4,4'-DDT	B	20.00	18.06	pg/uL	-10	15	
Endrin aldehyde	B	20.00	19.14	pg/uL	-4	15	
Methoxychlor	B	200.0	214.7	pg/uL	7	15	
Endosulfan sulfate	B	20.00	18.59	pg/uL	-7	15	
Average EPA 8081A	A	n=21			8	15	
Average EPA 8081A	B	n=21			6	15	

Analyst: TKB Date: 02/06/13 Reviewer: EAH Date: 02/06/13

-=low bias v=ICV

CURTIS & TOMPKINS PERFORMANCE EVALUATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEM IDF : 1.0
Seqnum : 243052352012 File : 036_012 Time : 05-FEB-2013 14:48

Standards: S20501

Analyte	Ch	Area	% Breakdown	Limit	Flags
4,4'-DDT	A	78756	7	15	
4,4'-DDE	A	4587			
4,4'-DDD	A	1182			
Endrin	A	52148	3	15	
Endrin aldehyde	A	521			
Endrin ketone	A	1348			
4,4'-DDT	B	1584626	4	15	
4,4'-DDE	B	6374			
4,4'-DDD	B	52019			
Endrin	B	718253	13	15	
Endrin aldehyde	B	37383			
Endrin ketone	B	65944			

Analyst: TKB Date: 02/06/13 Reviewer: EAH Date: 02/06/13

CURTIS & TOMPKINS PERFORMANCE EVALUATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEM IDF : 1.0
Seqnum : 243052352060 File : 036_060 Time : 06-FEB-2013 09:05

Standards: S21116

Analyte	Ch	Area	% Breakdown	Limit	Flags
4,4'-DDT	A	86259	6	15	
4,4'-DDE	A	3364			
4,4'-DDD	A	1742			
Endrin	A	56500	8	15	
Endrin aldehyde	A	1853			
Endrin ketone	A	2771			
4,4'-DDT	B	2050846	5	15	
4,4'-DDE	B	11784			
4,4'-DDD	B	93818			
Endrin	B	1132430	14	15	
Endrin aldehyde	B	75661			
Endrin ketone	B	116026			

Analyst: TKB Date: 02/06/13 Reviewer: EAH Date: 02/06/13

CURTIS & TOMPKINS PERFORMANCE EVALUATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEM IDF : 1.0
Seqnum : 243052352067 File : 036_067 Time : 06-FEB-2013 12:12

Standards: S21116

Analyte	Ch	Area	% Breakdown	Limit	Flags
4,4'-DDT	A	88437	6	15	
4,4'-DDE	A	4771			
4,4'-DDD	A	1356			
Endrin	A	60467	9	15	
Endrin aldehyde	A	3139			
Endrin ketone	A	2817			
4,4'-DDT	B	2125061	4	15	
4,4'-DDE	B	14194			
4,4'-DDD	B	79691			
Endrin	B	1107260	14	15	
Endrin aldehyde	B	84114			
Endrin ketone	B	99897			

Analyst: TKB Date: 02/06/13 Reviewer: EAH Date: 02/06/13

CURTIS & TOMPKINS PERFORMANCE EVALUATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEM IDF : 1.0
Seqnum : 243052352077 File : 036_077 Time : 06-FEB-2013 19:13

Standards: S21116

Analyte	Ch	Area	% Breakdown	Limit	Flags
4,4'-DDT	A	79336	6	15	
4,4'-DDE	A	2953			
4,4'-DDD	A	2411			
Endrin	A	55564	9	15	
Endrin aldehyde	A	2310			
Endrin ketone	A	3399			
4,4'-DDT	B	2270132	3	15	
4,4'-DDE	B	6139			
4,4'-DDD	B	55211			
Endrin	B	1279661	11	15	
Endrin aldehyde	B	59593			
Endrin ketone	B	93237			

Analyst: TKB Date: 02/07/13 Reviewer: EAH Date: 02/07/13

CURTIS & TOMPKINS PERFORMANCE EVALUATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEM IDF : 1.0
Seqnum : 243052352087 File : 036_087 Time : 06-FEB-2013 22:48

Standards: S21116

Analyte	Ch	Area	% Breakdown	Limit	Flags
4,4'-DDT	A	76995	7	15	
4,4'-DDE	A	3507			
4,4'-DDD	A	1961			
Endrin	A	55520	8	15	
Endrin aldehyde	A	2027			
Endrin ketone	A	2591			
4,4'-DDT	B	2148719	4	15	
4,4'-DDE	B	9388			
4,4'-DDD	B	85966			
Endrin	B	1153200	14	15	
Endrin aldehyde	B	84044			
Endrin ketone	B	109512			

Analyst: TKB Date: 02/07/13 Reviewer: EAH Date: 02/07/13

CURTIS & TOMPKINS PERFORMANCE EVALUATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEM IDF : 1.0
Seqnum : 243052352101 File : 036_101 Time : 07-FEB-2013 08:35

Standards: S21116

Analyte	Ch	Area	% Breakdown	Limit	Flags
4,4'-DDT	A	52375	7	15	
4,4'-DDE	A	2971			
4,4'-DDD	A	1022			
Endrin	A	33506	9	15	
Endrin aldehyde	A	1268			
Endrin ketone	A	2068			
4,4'-DDT	B	1187597	7	15	
4,4'-DDE	B	8480			
4,4'-DDD	B	74682			
Endrin	B	573746	**19**	15	
Endrin aldehyde	B	58385			
Endrin ketone	B	79961			

Analyst: TKB Date: 02/07/13 Reviewer: EAH Date: 02/07/13

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEST_2 IDF : 1.0
Seqnum : 243052352061 File : 036_061 Time : 06-FEB-2013 09:27
Cal : 243052352001 Caldate : 05-FEB-2013
Standards: S20648

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
alpha-BHC	A	1831.8	1936.2	5.000	5.285	pg/uL	6	15	
gamma-BHC	A	1669.6	1849.8	5.000	5.540	pg/uL	11	15	
beta-BHC	A	611.04	713.80	5.000	5.841	pg/uL	**17**	15	c+ ***
delta-BHC	A	1125.6	1366.6	5.000	6.071	pg/uL	**21**	15	c+ ***
Heptachlor	A	1014.8	933.20	5.000	4.598	pg/uL	-8	15	
Aldrin	A	1658.4	1706.6	5.000	5.145	pg/uL	3	15	
Heptachlor epoxide	A	1443.0	1487.0	5.000	5.153	pg/uL	3	15	
gamma-Chlordane	A	1448.5	1447.4	5.000	4.996	pg/uL	0	15	
alpha-Chlordane	A	1347.2	1373.2	5.000	5.097	pg/uL	2	15	
4,4'-DDE	A	1256.2	1200.7	10.00	9.558	pg/uL	-4	15	
Endosulfan I	A	1326.8	1350.4	5.000	5.089	pg/uL	2	15	
Dieldrin	A	1464.1	1469.1	10.00	10.03	pg/uL	0	15	
Endrin	A	999.56	1011.7	10.00	10.12	pg/uL	1	15	v-
4,4'-DDD	A	800.07	832.00	10.00	10.40	pg/uL	4	15	
Endosulfan II	A	1185.2	1199.0	10.00	10.12	pg/uL	1	15	
4,4'-DDT	A	754.34	717.20	10.00	9.508	pg/uL	-5	15	
Endrin aldehyde	A	719.50	789.70	10.00	10.98	pg/uL	10	15	
Methoxychlor	A	274.87	285.80	50.00	51.99	pg/uL	4	15	
Endosulfan sulfate	A	796.07	757.90	10.00	9.234	pg/uL	-8	15	
TCMX	A	1308.0	1383.4	10.00	10.58	pg/uL	6	15	
Decachlorobiphenyl	A	723.43	693.80	10.00	9.590	pg/uL	-4	15	
alpha-BHC	B	32592	35882	5.000	5.505	pg/uL	10	15	
gamma-BHC	B	29151	31556	5.000	5.412	pg/uL	8	15	
beta-BHC	B	11362	13004	5.000	5.722	pg/uL	14	15	
delta-BHC	B	25962	26534	5.000	5.110	pg/uL	2	15	
Heptachlor	B	27219	30336	5.000	5.573	pg/uL	11	15	
Aldrin	B	30387	34069	5.000	5.606	pg/uL	12	15	
Heptachlor epoxide	B	25195	27415	5.000	5.441	pg/uL	9	15	
gamma-Chlordane	B	26257	27400	5.000	5.218	pg/uL	4	15	
alpha-Chlordane	B	24318	25795	5.000	5.304	pg/uL	6	15	
4,4'-DDE	B	23573	25598	10.00	10.86	pg/uL	9	15	
Endosulfan I	B	23143	24467	5.000	5.286	pg/uL	6	15	
Dieldrin	B	25334	27486	10.00	10.85	pg/uL	8	15	
Endrin	B	14695	15881	10.00	10.81	pg/uL	8	15	
4,4'-DDD	B	15504	19333	10.00	12.47	pg/uL	**25**	15	c+ ***
Endosulfan II	B	20804	22622	10.00	10.87	pg/uL	9	15	
4,4'-DDT	B	14787	12058	10.00	8.155	pg/uL	**-18**	15	c- ***
Endrin aldehyde	B	14728	16820	10.00	11.42	pg/uL	14	15	
Methoxychlor	B	5014.9	4898.3	50.00	48.84	pg/uL	-2	15	
Endosulfan sulfate	B	16198	16863	10.00	10.41	pg/uL	4	15	
TCMX	B	20706	23066	10.00	11.14	pg/uL	11	15	
Decachlorobiphenyl	B	12168	12385	10.00	10.18	pg/uL	2	15	
Average EPA 8081A	A	(n=23)					7	15	
Average EPA 8081A	B	(n=23)					10	15	

TKB 02/06/13 : Corrected automatically drawn baseline.

Analyst: TKB Date: 02/06/13 Reviewer: EAH Date: 02/06/13

+=high bias -=low bias c=CCV v=ICV

243052352061

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEST_3 IDF : 1.0
Seqnum : 243052352068 File : 036_068 Time : 06-FEB-2013 12:33
Cal : 243052352001 Caldate : 05-FEB-2013
Standards: S21065

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
alpha-BHC	A	1831.8	2124.2	10.00	11.60	pg/uL	**16**	15	c+ ***
gamma-BHC	A	1669.6	1972.8	10.00	11.82	pg/uL	**18**	15	c+ ***
beta-BHC	A	611.04	726.90	10.00	11.90	pg/uL	**19**	15	c+ ***
delta-BHC	A	1125.6	1462.1	10.00	12.99	pg/uL	**30**	15	c+ ***
Heptachlor	A	1014.8	1066.2	10.00	10.51	pg/uL	5	15	
Aldrin	A	1658.4	1896.1	10.00	11.43	pg/uL	14	15	
Heptachlor epoxide	A	1443.0	1601.4	10.00	11.10	pg/uL	11	15	
gamma-Chlordane	A	1448.5	1571.8	10.00	10.85	pg/uL	9	15	
alpha-Chlordane	A	1347.2	1479.4	10.00	10.98	pg/uL	10	15	
4,4'-DDE	A	1256.2	1323.4	20.00	21.07	pg/uL	5	15	
Endosulfan I	A	1326.8	1420.9	10.00	10.71	pg/uL	7	15	
Dieldrin	A	1464.1	1639.1	20.00	22.39	pg/uL	12	15	
Endrin	A	999.56	1084.7	20.00	21.70	pg/uL	9	15	v-
4,4'-DDD	A	800.07	790.80	20.00	19.77	pg/uL	-1	15	
Endosulfan II	A	1185.2	1271.8	20.00	21.46	pg/uL	7	15	
4,4'-DDT	A	754.34	833.25	20.00	22.09	pg/uL	10	15	
Endrin aldehyde	A	719.50	763.60	20.00	21.23	pg/uL	6	15	
Methoxychlor	A	274.87	342.23	100.0	124.5	pg/uL	**25**	15	c+ ***
Endosulfan sulfate	A	796.07	844.55	20.00	19.07	pg/uL	-5	15	
TCMX	A	1308.0	1496.0	20.00	22.87	pg/uL	14	15	
Decachlorobiphenyl	A	723.43	801.40	20.00	22.16	pg/uL	11	15	
alpha-BHC	B	32592	31831	10.00	9.767	pg/uL	-2	15	
gamma-BHC	B	29151	26253	10.00	9.006	pg/uL	-10	15	
beta-BHC	B	11362	11371	10.00	10.01	pg/uL	0	15	
delta-BHC	B	25962	23207	10.00	8.939	pg/uL	-11	15	
Heptachlor	B	27219	28946	10.00	10.63	pg/uL	6	15	
Aldrin	B	30387	28395	10.00	9.344	pg/uL	-7	15	
Heptachlor epoxide	B	25195	24026	10.00	9.536	pg/uL	-5	15	
gamma-Chlordane	B	26257	25279	10.00	9.628	pg/uL	-4	15	
alpha-Chlordane	B	24318	23039	10.00	9.474	pg/uL	-5	15	
4,4'-DDE	B	23573	23141	20.00	19.63	pg/uL	-2	15	
Endosulfan I	B	23143	22748	10.00	9.829	pg/uL	-2	15	
Dieldrin	B	25334	25293	20.00	19.97	pg/uL	0	15	
Endrin	B	14695	15128	20.00	20.59	pg/uL	3	15	
4,4'-DDD	B	15504	16889	20.00	21.79	pg/uL	9	15	
Endosulfan II	B	20804	19885	20.00	19.12	pg/uL	-4	15	
4,4'-DDT	B	14787	16137	20.00	21.83	pg/uL	9	15	
Endrin aldehyde	B	14728	13052	20.00	17.72	pg/uL	-11	15	
Methoxychlor	B	5014.9	6278.9	100.0	125.2	pg/uL	**25**	15	c+ ***
Endosulfan sulfate	B	16198	15431	20.00	19.05	pg/uL	-5	15	
TCMX	B	20706	20177	20.00	19.49	pg/uL	-3	15	
Decachlorobiphenyl	B	12168	11124	20.00	18.28	pg/uL	-9	15	
Average EPA 8081A	A	(n=23)					13	15	
Average EPA 8081A	B	(n=23)					6	15	

TKB 02/06/13 : Corrected automatically drawn baseline.

Analyst: TKB Date: 02/06/13 Reviewer: EAH Date: 02/06/13

+=high bias -=low bias c=CCV v=ICV

243052352068

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEST_2 IDF : 1.0
Seqnum : 243052352080 File : 036_080 Time : 06-FEB-2013 20:17
Cal : 243052352001 Caldate : 05-FEB-2013
Standards: S20648

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
alpha-BHC	A	1831.8	1819.0	5.000	4.965	pg/uL	-1	15	
gamma-BHC	A	1669.6	1719.2	5.000	5.148	pg/uL	3	15	
beta-BHC	A	611.04	675.60	5.000	5.528	pg/uL	11	15	
delta-BHC	A	1125.6	1326.8	5.000	5.894	pg/uL	**18**	15	c+ ***
Heptachlor	A	1014.8	819.80	5.000	4.039	pg/uL	**-19**	15	c- ***
Aldrin	A	1658.4	1667.2	5.000	5.026	pg/uL	1	15	
Heptachlor epoxide	A	1443.0	1427.8	5.000	4.947	pg/uL	-1	15	
gamma-Chlordane	A	1448.5	1377.6	5.000	4.755	pg/uL	-5	15	
alpha-Chlordane	A	1347.2	1323.4	5.000	4.912	pg/uL	-2	15	
4,4'-DDE	A	1256.2	1141.3	10.00	9.085	pg/uL	-9	15	
Endosulfan I	A	1326.8	1289.6	5.000	4.860	pg/uL	-3	15	
Dieldrin	A	1464.1	1440.4	10.00	9.838	pg/uL	-2	15	
Endrin	A	999.56	937.60	10.00	9.380	pg/uL	-6	15	v-
4,4'-DDD	A	800.07	726.90	10.00	9.086	pg/uL	-9	15	
Endosulfan II	A	1185.2	1205.0	10.00	10.17	pg/uL	2	15	
4,4'-DDT	A	754.34	658.30	10.00	8.727	pg/uL	-13	15	
Endrin aldehyde	A	719.50	780.00	10.00	10.84	pg/uL	8	15	
Methoxychlor	A	274.87	257.04	50.00	46.76	pg/uL	-6	15	
Endosulfan sulfate	A	796.07	733.70	10.00	8.979	pg/uL	-10	15	
TCMX	A	1308.0	1280.3	10.00	9.788	pg/uL	-2	15	
Decachlorobiphenyl	A	723.43	671.90	10.00	9.288	pg/uL	-7	15	
alpha-BHC	B	32592	33776	5.000	5.182	pg/uL	4	15	
gamma-BHC	B	29151	29471	5.000	5.055	pg/uL	1	15	
beta-BHC	B	11362	12232	5.000	5.383	pg/uL	8	15	
delta-BHC	B	25962	23933	5.000	4.609	pg/uL	-8	15	
Heptachlor	B	27219	29692	5.000	5.454	pg/uL	9	15	
Aldrin	B	30387	31226	5.000	5.138	pg/uL	3	15	
Heptachlor epoxide	B	25195	26053	5.000	5.170	pg/uL	3	15	
gamma-Chlordane	B	26257	28032	5.000	5.338	pg/uL	7	15	
alpha-Chlordane	B	24318	24292	5.000	4.995	pg/uL	0	15	
4,4'-DDE	B	23573	23718	10.00	10.06	pg/uL	1	15	
Endosulfan I	B	23143	23326	5.000	5.039	pg/uL	1	15	
Dieldrin	B	25334	26000	10.00	10.26	pg/uL	3	15	
Endrin	B	14695	14643	10.00	9.964	pg/uL	0	15	
4,4'-DDD	B	15504	16777	10.00	10.82	pg/uL	8	15	
Endosulfan II	B	20804	21870	10.00	10.51	pg/uL	5	15	
4,4'-DDT	B	14787	12401	10.00	8.386	pg/uL	**-16**	15	c- ***
Endrin aldehyde	B	14728	15981	10.00	10.85	pg/uL	9	15	
Methoxychlor	B	5014.9	4668.6	50.00	46.55	pg/uL	-7	15	
Endosulfan sulfate	B	16198	15770	10.00	9.736	pg/uL	-3	15	
TCMX	B	20706	21796	10.00	10.53	pg/uL	5	15	
Decachlorobiphenyl	B	12168	11613	10.00	9.544	pg/uL	-5	15	
Average EPA 8081A	A	(n=23)					7	15	
Average EPA 8081A	B	(n=23)					5	15	

TKB 02/07/13 : Corrected automatically drawn baseline.

Analyst: TKB Date: 02/07/13 Reviewer: EAH Date: 02/07/13

+=high bias -=low bias c=CCV v=ICV

243052352080

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEST_3 IDF : 1.0
Seqnum : 243052352088 File : 036_088 Time : 06-FEB-2013 23:10
Cal : 243052352001 Caldate : 05-FEB-2013
Standards: S21065

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
alpha-BHC	A	1831.8	1967.9	10.00	10.74	pg/uL	7	15	
gamma-BHC	A	1669.6	1785.9	10.00	10.70	pg/uL	7	15	
beta-BHC	A	611.04	649.80	10.00	10.63	pg/uL	6	15	
delta-BHC	A	1125.6	1289.6	10.00	11.46	pg/uL	15	15	
Heptachlor	A	1014.8	834.70	10.00	8.226	pg/uL	**-18**	15	c- ***
Aldrin	A	1658.4	1681.3	10.00	10.14	pg/uL	1	15	
Heptachlor epoxide	A	1443.0	1450.2	10.00	10.05	pg/uL	1	15	
gamma-Chlordane	A	1448.5	1442.4	10.00	9.958	pg/uL	0	15	
alpha-Chlordane	A	1347.2	1375.7	10.00	10.21	pg/uL	2	15	
4,4'-DDE	A	1256.2	1278.8	20.00	20.36	pg/uL	2	15	
Endosulfan I	A	1326.8	1326.0	10.00	9.994	pg/uL	0	15	
Dieldrin	A	1464.1	1525.3	20.00	20.84	pg/uL	4	15	
Endrin	A	999.56	1007.8	20.00	20.16	pg/uL	1	15	v-
4,4'-DDD	A	800.07	751.35	20.00	18.78	pg/uL	-6	15	
Endosulfan II	A	1185.2	1211.1	20.00	20.44	pg/uL	2	15	
4,4'-DDT	A	754.34	730.65	20.00	19.37	pg/uL	-3	15	
Endrin aldehyde	A	719.50	683.00	20.00	18.99	pg/uL	-5	15	
Methoxychlor	A	274.87	298.59	100.0	108.6	pg/uL	9	15	
Endosulfan sulfate	A	796.07	737.05	20.00	16.80	pg/uL	**-16**	15	c- ***
TCMX	A	1308.0	1398.1	20.00	21.38	pg/uL	7	15	
Decachlorobiphenyl	A	723.43	692.75	20.00	19.15	pg/uL	-4	15	
alpha-BHC	B	32592	35344	10.00	10.84	pg/uL	8	15	
gamma-BHC	B	29151	30941	10.00	10.61	pg/uL	6	15	
beta-BHC	B	11362	12944	10.00	11.39	pg/uL	14	15	
delta-BHC	B	25962	25245	10.00	9.724	pg/uL	-3	15	
Heptachlor	B	27219	34750	10.00	12.77	pg/uL	**28**	15	c+ ***
Aldrin	B	30387	31786	10.00	10.46	pg/uL	5	15	
Heptachlor epoxide	B	25195	27231	10.00	10.81	pg/uL	8	15	
gamma-Chlordane	B	26257	27962	10.00	10.65	pg/uL	6	15	
alpha-Chlordane	B	24318	25797	10.00	10.61	pg/uL	6	15	
4,4'-DDE	B	23573	25854	20.00	21.94	pg/uL	10	15	
Endosulfan I	B	23143	25385	10.00	10.97	pg/uL	10	15	
Dieldrin	B	25334	28934	20.00	22.84	pg/uL	14	15	
Endrin	B	14695	17625	20.00	23.99	pg/uL	**20**	15	c+ ***
4,4'-DDD	B	15504	17834	20.00	23.00	pg/uL	15	15	
Endosulfan II	B	20804	24821	20.00	23.86	pg/uL	**19**	15	c+ ***
4,4'-DDT	B	14787	18736	20.00	25.34	pg/uL	**27**	15	c+ ***
Endrin aldehyde	B	14728	16050	20.00	21.80	pg/uL	9	15	
Methoxychlor	B	5014.9	7209.6	100.0	143.8	pg/uL	**44**	15	c+ ***
Endosulfan sulfate	B	16198	18493	20.00	22.83	pg/uL	14	15	
TCMX	B	20706	22090	20.00	21.34	pg/uL	7	15	
Decachlorobiphenyl	B	12168	14756	20.00	24.25	pg/uL	**21**	15	c+
Average EPA 8081A	A	(n=23)					7	15	
Average EPA 8081A	B	(n=23)					14	15	

Analyst: TKB Date: 02/07/13 Reviewer: EAH Date: 02/07/13

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PEST Soil
EPA 8081A

Inst : GC21 Run Name : PEST_2 IDF : 1.0
Seqnum : 243052352102 File : 036_102 Time : 07-FEB-2013 08:56
Cal : 243052352001 Caldate : 05-FEB-2013
Standards: S20648

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
alpha-BHC	A	1831.8	1894.0	5.000	5.170	pg/uL	3	15	
gamma-BHC	A	1669.6	1731.6	5.000	5.186	pg/uL	4	15	
beta-BHC	A	611.04	666.00	5.000	5.450	pg/uL	9	15	
delta-BHC	A	1125.6	1377.6	5.000	6.119	pg/uL	**22**	15	c+ ***
Heptachlor	A	1014.8	1174.8	5.000	5.789	pg/uL	**16**	15	c+ ***
Aldrin	A	1658.4	1711.2	5.000	5.159	pg/uL	3	15	
Heptachlor epoxide	A	1443.0	1478.6	5.000	5.123	pg/uL	2	15	
gamma-Chlordane	A	1448.5	1430.8	5.000	4.939	pg/uL	-1	15	
alpha-Chlordane	A	1347.2	1376.0	5.000	5.107	pg/uL	2	15	
4,4'-DDE	A	1256.2	1157.8	10.00	9.217	pg/uL	-8	15	
Endosulfan I	A	1326.8	1312.4	5.000	4.946	pg/uL	-1	15	
Dieldrin	A	1464.1	1473.3	10.00	10.06	pg/uL	1	15	
Endrin	A	999.56	963.70	10.00	9.641	pg/uL	-4	15	v-
4,4'-DDD	A	800.07	715.60	10.00	8.944	pg/uL	-11	15	
Endosulfan II	A	1185.2	1196.6	10.00	10.10	pg/uL	1	15	
4,4'-DDT	A	754.34	735.10	10.00	9.745	pg/uL	-3	15	
Endrin aldehyde	A	719.50	778.70	10.00	10.82	pg/uL	8	15	
Methoxychlor	A	274.87	282.30	50.00	51.35	pg/uL	3	15	
Endosulfan sulfate	A	796.07	729.20	10.00	8.931	pg/uL	-11	15	
TCMX	A	1308.0	1317.4	10.00	10.07	pg/uL	1	15	
Decachlorobiphenyl	A	723.43	704.30	10.00	9.736	pg/uL	-3	15	
alpha-BHC	B	32592	34351	5.000	5.270	pg/uL	5	15	
gamma-BHC	B	29151	29715	5.000	5.097	pg/uL	2	15	
beta-BHC	B	11362	12527	5.000	5.513	pg/uL	10	15	
delta-BHC	B	25962	23854	5.000	4.594	pg/uL	-8	15	
Heptachlor	B	27219	29683	5.000	5.453	pg/uL	9	15	
Aldrin	B	30387	30789	5.000	5.066	pg/uL	1	15	
Heptachlor epoxide	B	25195	26048	5.000	5.169	pg/uL	3	15	
gamma-Chlordane	B	26257	25595	5.000	4.874	pg/uL	-3	15	
alpha-Chlordane	B	24318	24183	5.000	4.972	pg/uL	-1	15	
4,4'-DDE	B	23573	23662	10.00	10.04	pg/uL	0	15	
Endosulfan I	B	23143	23094	5.000	4.989	pg/uL	0	15	
Dieldrin	B	25334	26749	10.00	10.56	pg/uL	6	15	
Endrin	B	14695	14942	10.00	10.17	pg/uL	2	15	
4,4'-DDD	B	15504	19472	10.00	12.56	pg/uL	**26**	15	c+ ***
Endosulfan II	B	20804	22745	10.00	10.93	pg/uL	9	15	
4,4'-DDT	B	14787	11279	10.00	7.628	pg/uL	**-24**	15	c- ***
Endrin aldehyde	B	14728	16562	10.00	11.25	pg/uL	12	15	
Methoxychlor	B	5014.9	4335.4	50.00	43.22	pg/uL	-14	15	
Endosulfan sulfate	B	16198	16297	10.00	10.06	pg/uL	1	15	
TCMX	B	20706	21736	10.00	10.50	pg/uL	5	15	
Decachlorobiphenyl	B	12168	11517	10.00	9.465	pg/uL	-5	15	
Average EPA 8081A	A	(n=23)					7	15	
Average EPA 8081A	B	(n=23)					7	15	

TKB 02/07/13 : Corrected automatically drawn baseline.

Analyst: TKB Date: 02/07/13 Reviewer: EAH Date: 02/07/13

+=high bias -=low bias c=CCV v=ICV

243052352102

Logbooks & Sequences

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 243052352

Instrument : GC21 Begun : 02/05/13 08:32
Method : EPA 8081A SOP Version : pesticides_rv12

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	036_001	X	HEX			02/05/13 08:32	1.0		
002	036_002	PEM	PEM			02/05/13 08:54	1.0	1	
003	036_003	CCV	PEST_2			02/05/13 09:15	1.0	2	ac
004	036_004	X	HEX			02/05/13 10:28	1.0		
005	036_005	PEM	PEM			02/05/13 10:49	1.0	1	
006	036_006	CCV	PEST_2			02/05/13 11:11	1.0	2	ac
007	036_007	PEM	PEM			02/05/13 12:34	1.0	1	
008	036_008	CCV	PEST_2			02/05/13 12:56	1.0	2	ac
009	036_009	X	HEX			02/05/13 13:23	1.0		
010	036_010	X	HEX			02/05/13 13:45	1.0		
011	036_011	PEM	PEM			02/05/13 14:06	1.0	1	
012	036_012	PEM	PEM			02/05/13 14:48	1.0	1	
013	036_013	IB	CAL			02/05/13 15:09	1.0		
014	036_014	ICAL	PEST_1/2			02/05/13 15:31	1.0	3	
015	036_015	ICAL	PEST_1			02/05/13 15:52	1.0	3	
016	036_016	ICAL	PEST_2			02/05/13 16:14	1.0	2	
017	036_017	ICAL	PEST_3			02/05/13 16:35	1.0	4	
018	036_018	ICAL	PEST_4			02/05/13 16:57	1.0	5	
019	036_019	ICAL	PEST_5			02/05/13 17:19	1.0	6	
020	036_020	ICAL	PEST_6			02/05/13 17:40	1.0	7	
021	036_021	ICAL	PEST_7			02/05/13 18:02	1.0	8	
022	036_022	X	HEX			02/05/13 18:23	1.0		
023	036_023	ICV	PEST_ICV			02/05/13 18:45	1.0	9	
024	036_024	ICAL	CHLOR_500			02/05/13 19:06	1.0	10	
025	036_025	ICAL	TOX_500			02/05/13 19:28	1.0	11	
026	036_026	X	ICV			02/05/13 19:49	1.0	9	
027	036_027	X	HEX			02/05/13 20:11	1.0		
028	036_028	X	PEM			02/05/13 21:36	1.0	1	
029	036_029	X	PEST_2			02/05/13 21:58	1.0	2	
030	036_030	PEM	PEM			02/05/13 22:19	1.0	1	
031	036_031	CCV	PEST_2			02/05/13 22:41	1.0	2	
032	036_032	BLANK	QC675612	Soil	195270	02/05/13 23:02	1.0		
033	036_033	LCS	QC675618	Soil	195270	02/05/13 23:24	1.0		
034	036_034	SAMPLE	242872-011	Soil	195270	02/05/13 23:45	1.0		2:DIELDRIN=240
035	036_035	SAMPLE	242910-001	Soil	195270	02/06/13 00:07	1.0		
036	036_036	SAMPLE	242910-002	Soil	195270	02/06/13 00:28	1.0		
037	036_037	SAMPLE	242910-004	Soil	195270	02/06/13 00:50	1.0		
038	036_038	SAMPLE	242910-005	Soil	195270	02/06/13 01:11	1.0		
039	036_039	SAMPLE	242913-001	Soil	195270	02/06/13 01:33	1.0		
040	036_040	SAMPLE	242913-002	Soil	195270	02/06/13 01:54	1.0		
041	036_041	SAMPLE	242913-003	Soil	195270	02/06/13 02:16	1.0		
042	036_042	SAMPLE	242913-006	Soil	195270	02/06/13 02:37	1.0		
043	036_043	SAMPLE	242913-007	Soil	195270	02/06/13 02:59	1.0		
044	036_044	PEM	PEM			02/06/13 03:20	1.0	12	
045	036_045	CCV	PEST_3			02/06/13 03:42	1.0	4	
046	036_046	X	PEM			02/06/13 04:03	1.0	1	
047	036_047	X	PEST_3			02/06/13 04:25	1.0	4	
048	036_048	CCV	CHLOR_500			02/06/13 04:46	1.0	10	
049	036_049	CCV	TOX_500			02/06/13 05:08	1.0	11	
050	036_050	MSS	242872-001	Soil	195270	02/06/13 05:29	2.0		
051	036_051	MSS	242872-002	Soil	195270	02/06/13 05:51	1.0		
052	036_052	SAMPLE	242872-003	Soil	195270	02/06/13 06:13	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 243052352

Instrument : GC21 Begun : 02/05/13 08:32
Method : EPA 8081A SOP Version : pesticides_rv12

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	036_053	SAMPLE	242872-004	Soil	195270	02/06/13 06:34	1.0		
054	036_054	SAMPLE	242872-005	Soil	195270	02/06/13 06:56	5.0		
055	036_055	SAMPLE	242872-006	Soil	195270	02/06/13 07:17	1.0		
056	036_056	SAMPLE	242872-007	Soil	195270	02/06/13 07:39	1.0		
057	036_057	SAMPLE	242872-008	Soil	195270	02/06/13 08:00	1.0		
058	036_058	SAMPLE	242872-009	Soil	195270	02/06/13 08:22	2.0		
059	036_059	SAMPLE	242872-010	Soil	195270	02/06/13 08:44	1.0		
060	036_060	PEM	PEM			02/06/13 09:05	1.0	12	
061	036_061	CCV	PEST_2			02/06/13 09:27	1.0	2	
062	036_062	BLANK	QC675644	Soil	195278	02/06/13 10:19	1.0		
063	036_063	LCS	QC675648	Soil	195278	02/06/13 10:41	1.0		
064	036_064	MSS	242872-012	Soil	195278	02/06/13 11:02	1.0		1:ALDRIN=140
065	036_065	SAMPLE	242872-011	Soil	195270	02/06/13 11:24	5.0		
066	036_066	MSS	242872-012	Soil	195278	02/06/13 11:48	5.0		
067	036_067	PEM	PEM			02/06/13 12:12	1.0	12	
068	036_068	CCV	PEST_3			02/06/13 12:33	1.0	4	
069	036_069	SAMPLE	242596-002	Soil	194881	02/06/13 15:06	5.0		2:BHCDELTA=120
070	036_070	SAMPLE	242596-002	Soil	194881	02/06/13 15:27	10.0		
071	036_071	SAMPLE	242510-022	Water	194840	02/06/13 15:49	10.0		1:BHCDELTA=120
072	036_072	SAMPLE	242510-022	Water	194840	02/06/13 16:10	25.0		
073	036_073	MS	QC675616	Soil	195270	02/06/13 16:32	1.0		
074	036_074	MSD	QC675617	Soil	195270	02/06/13 16:53	1.0		
075	036_075	MS	QC675649	Soil	195278	02/06/13 17:15	1.0		1:MTXYCL=290
076	036_076	MSD	QC675650	Soil	195278	02/06/13 17:36	1.0		1:DIELDRIN=120
077	036_077	PEM	PEM			02/06/13 19:13	1.0	12	
078	036_078	X	CCV			02/06/13 19:34	1.0	2	ac
079	036_079	X	PEM			02/06/13 19:56	1.0	12	
080	036_080	CCV	PEST_2			02/06/13 20:17	1.0	2	
081	036_081	SAMPLE	242908-001	Soil	195278	02/06/13 20:39	1.0		
082	036_082	SAMPLE	242908-002	Soil	195278	02/06/13 21:00	1.0		
083	036_083	SAMPLE	242908-003	Soil	195278	02/06/13 21:22	1.0		
084	036_084	SAMPLE	242908-006	Soil	195278	02/06/13 21:43	1.0		2:ACHLORDANE=240
085	036_085	SAMPLE	242908-007	Soil	195278	02/06/13 22:05	1.0		
086	036_086	SAMPLE	242908-008	Soil	195278	02/06/13 22:26	1.0		
087	036_087	PEM	PEM			02/06/13 22:48	1.0	12	
088	036_088	CCV	PEST_3			02/06/13 23:10	1.0	4	
089	036_089	X	PEM			02/06/13 23:31	1.0	12	
090	036_090	X	CCV			02/06/13 23:53	1.0	4	ac
091	036_091	SAMPLE	242876-001	Soil	195278	02/07/13 00:14	10.0		
092	036_092	SAMPLE	242908-004	Soil	195278	02/07/13 00:36	1.0		
093	036_093	SAMPLE	242908-005	Soil	195278	02/07/13 00:57	1.0		6:ACHLORDANE=360
094	036_094	SAMPLE	242910-003	Soil	195278	02/07/13 01:19	1.0		
095	036_095	SAMPLE	242913-004	Soil	195278	02/07/13 01:40	1.0		
096	036_096	SAMPLE	242913-005	Soil	195278	02/07/13 02:02	1.0		
097	036_097	SAMPLE	242755-001	Soil	195123	02/07/13 02:23	5.0		
098	036_098	MS	QC675649	Soil	195278	02/07/13 07:31	5.0		
099	036_099	MSD	QC675650	Soil	195278	02/07/13 07:52	5.0		
100	036_100	SAMPLE	242908-006	Soil	195278	02/07/13 08:14	5.0		
101	036_101	PEM	PEM			02/07/13 08:35	1.0	12	
102	036_102	CCV	PEST_2			02/07/13 08:56	1.0	2	
103	036_103	SAMPLE	242596-002	Soil	194881	02/07/13 11:08	1.0		8:MTXYCL=320
104	036_104	SAMPLE	242908-005	Soil	195278	02/07/13 11:29	20.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 243052352

Instrument : GC21 Begun : 02/05/13 08:32
Method : EPA 8081A SOP Version : pesticides_rv12

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	036_105	PEM	PEM			02/07/13 11:56	1.0	12	
106	036_106	CCV	PEST_3			02/07/13 12:17	1.0	4	
107	036_107	SAMPLE	242863-001	Water	195264	02/07/13 14:37	10.0		
108	036_108	SAMPLE	242863-002	Water	195264	02/07/13 14:58	10.0		
109	036_109	SAMPLE	242863-003	Water	195264	02/07/13 15:20	10.0		
110	036_110	SAMPLE	242863-004	Water	195264	02/07/13 15:41	10.0		
111	036_111	SAMPLE	242893-001	Water	195264	02/07/13 16:03	1.0		>ac
112	036_112	BLANK	QC675584	Water	195264	02/07/13 16:24	1.0		>ac
113	036_113	BS	QC675585	Water	195264	02/07/13 16:46	1.0		>ac
114	036_114	BSD	QC675586	Water	195264	02/07/13 17:07	1.0		>ac
115	036_115	PEM	PEM			02/07/13 17:29	1.0	12	
116	036_116	CCV	PEST_2			02/07/13 17:50	1.0	2	ac
117	036_117	X	CCV			02/07/13 18:12	1.0	2	
118	036_118	X	PEM			02/07/13 18:33	1.0	12	

TKB 02/07/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 106.

Standards used: 1=S20501 2=S20648 3=S20647 4=S21065 5=S20650 6=S20651 7=S20652 8=S20653 9=S20524 10=S20181 11=S19613 12=S21116

Flags used: >=closing ac=average CCV drift out

SAMPLE PREPARATION SUMMARY

Batch # : 195278
Started By : MAW
Method : 3550B
Spike #1 ID : S20981
Prep Date : 05-FEB-2013 22:00
SOP Version : PCB_3550_rv8
Spike #2 ID : S21401
Analysis : PCB
Finished By : MAW
Units : g
Spike #3 ID : S20980

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
242830-010		Miscell.	30.06	20	1	0.6653		.8				PCB	Prepped 06-FEB-2013 12:20
242830-011		Miscell.	30.05	20	1	0.6656		.8				PCB	Prepped 06-FEB-2013 12:20
242830-012		Miscell.	30.39	20	1	0.6581		.8				PCB	Prepped 06-FEB-2013 12:20
242830-013		Miscell.	30.46	20	1	0.6566		.8				PCB	Prepped 06-FEB-2013 12:20
242834-001		Miscell.	30.1	20	1	0.6645		.8				PCB	Prepped 06-FEB-2013 12:20
242834-002		Miscell.	30.08	20	1	0.6649		.8				PCB	Prepped 06-FEB-2013 12:20
242834-003		Soil	30.11	20	1	0.6642		.8				PCB	Prepped 06-FEB-2013 12:20
242872-012		Soil	30.08	20	1	0.6649		.8				8081, PCB	MSS 8082 + 8081
242876-001		Soil	30.47	20	1	0.6564		.8				8081, PCB	Prepped 06-FEB-2013 12:20
242908-001		Soil	30.18	20	1	0.6627		.8				8081	Prepped 06-FEB-2013 12:20
242908-002		Soil	30.43	20	1	0.6572		.8				8081	Prepped 06-FEB-2013 12:20
242908-003		Soil	30.41	20	1	0.6577		.8				8081	Prepped 06-FEB-2013 12:20
242908-004		Soil	30.43	20	1	0.6572		.8				8081	Prepped 06-FEB-2013 12:20
242908-005		Soil	30.25	20	1	0.6612		.8				8081	Prepped 06-FEB-2013 12:20
242908-006		Soil	30.04	20	1	0.6658		.8				8081	Prepped 06-FEB-2013 12:20
242908-007		Soil	30.22	20	1	0.6618		.8				8081	Prepped 06-FEB-2013 12:20
242908-008		Soil	30.03	20	1	0.666		.8				8081	Prepped 06-FEB-2013 12:20
242910-003		Soil	30.22	20	1	0.6618		.8				8081	Prepped 06-FEB-2013 12:20
242913-004		Soil	30.13	20	1	0.6638		.8				8081	Prepped 06-FEB-2013 12:20
242913-005		Soil	30.34	20	1	0.6592		.8				8081	Prepped 06-FEB-2013 12:20
QC675644	BLANK	Soil	30.24	20	1	0.6614		.8				PCB	
QC675645	LCS	Soil	30.14	20	1	0.6636		.8	1			PCB	
QC675646	MS	Soil	30.09	20	1	0.6647		.8	1			PCB	
QC675647	MSD	Soil	30.09	20	1	0.6647		.8	1			PCB	
QC675648	LCS	Soil	30.36	20	1	0.6588		.8		.4		8081	
QC675649	MS	Soil	30	20	1	0.6667		.8		.4		8081	
QC675650	MSD	Soil	30.22	20	1	0.6618		.8		.4		8081	

EAH 02/06/13 : Reviewed for PCB and verified paperwork for Pest.

Analyst: WSR Date: 02/06/13 Reviewer: EAH Date: 02/07/13

Project SOIL ALIQUOT BK3414

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242872-011A	30.47	P/F	195270	
242910-001	30.15	8081		
2	30.41			
4	30.25			
5	30.12			
242913-001	30.11			
2	30.10			
3	30.36			
6	30.25			
7	30.40			
			ICK 2/5/13	
242872-012A	30.08	P/F		MSS
MB	30.24	↓		EM2092C525
LCS	30.14	PCB		↓
MS	30.09	↓		242872-012A
MSD	30.09	↓		↓
LCS	30.36	8081		EM2092K525
MS	30.00	↓		242872-012A
MSD	30.22	↓		↓
			ICK 2/5/13	

Continued on Page

Read and Understood By

Signed Date Signed Date

Project SOIL ALIQUOT BK3414

Continued from Page

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242830-001	30.02	PCB		
2	30.22			MSS
3	30.02			
4	30.03			
5	30.34			
6	30.14			
7	30.08			
8	30.23			
9	30.24			
MS	30.45			242830-002A
MSD	30.27			
			ICK 2/6/13	
242830-010A	30.06	PCB	195278	
11	30.05			
12	30.39			
13	30.46			
242834-001A	30.10			
2	30.08			
3	30.11			
242876-001A	30.47	P/P		WET
242908-001B	30.18	8081		
2	30.43			
3A	30.41			
4B	30.43			
5A	30.25			
6	30.04			
7	30.22			
8B	30.03			
242910-003A	30.22			
242913-004A	30.13			
5B	30.34			
			ICK 2/6/13	

Continued on Page

Read and Understood By

Signed Date Signed Date

PCB (8082) Soil Prep Log

Curtis & Tompkins, Ltd.

LIMS Batch No: 195278 ☒ EPA 3550b Sonication

LIMS Analysis PCB(P/P) ☐ Other _____

Date Extracted: 2/5/13

BK 3407

	Sample #	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
	242872-012	A	30.08	☐ 25.0 ☒ 20.0	MSS
	MB QC675644	NA	30.24	☐ 25.0 ☒ 20.0	
	LCS 5	↓	30.14	☐ 25.0 ☒ 20.0	
	MS 6	A	30.09	☐ 25.0 ☒ 20.0	
5	MSD 7	↓	30.09	☐ 25.0 ☒ 20.0	
	242876-001	A	30.47	☐ 25.0 ☒ 20.0	
	242830-010	A	30.06	☐ 25.0 ☒ 20.0	DCM ONLY
	11	↓	30.05	☐ 25.0 ☒ 20.0	↓
	12	↓	30.39	☐ 25.0 ☒ 20.0	↓
10	13	↓	30.46	☐ 25.0 ☒ 20.0	↓
	242834-001	↓	30.10	☐ 25.0 ☒ 20.0	↓
	2	↓	30.08	☐ 25.0 ☒ 20.0	↓
	3	↓	30.11	☐ 25.0 ☒ 20.0	
				☐ 25.0 ☐	
15				☐ 25.0 ☐	
				☐ 25.0 ☐	
				☐ 25.0 ☐	
				☐ 25.0 ☐	
				☐ 25.0 ☐	
20				☐ 25.0 ☐	
				☐ 25.0 ☐	
				☐ 25.0 ☐	
				☐ 25.0 ☐	
				☐ 25.0 ☐	
				☐ 25.0 ☐	

MAW 2/1/13

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	EM2092C525	MAW 2/5/13
dried with CH_2Cl_2-rinsed ☒ granular Na_2SO_4 ☐ powder	↓	
0.8 mL of surrogate solution was added to all samples	S209818	
1.0 mL of matrix spiking solution was added to all spikes	S21401D	
1:1 CH_2Cl_2 (lot# EM52089):Acetone(lot# EM52257) was added to all	✓	
Solvent added at (time)	2200/1220	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
Soxhlets off at:	NA	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	EM26B1C508	
Solvent exchanged with Hexane, Lot#	EM52258	
Concentrated to final volume at temperature (degrees C)	100	
EPA 3665A Clean-up: vortexed w/ H_2SO_4 Lot#	FS116662	
Centrifuged for 1 min; 5mL transferred to labelled vial	✓	
Relinquished to PCB group	✓	↓

Mi Wallace 2/5/13

Extraction Chemist / Date

Continued from page _____

Continued on page 1

2/6/13 2/7/13

Reviewed by / Date

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242872-011A	30.42	P/F	195274	
242910-001	30.15	8081		
2	30.41			
4	30.28			
5	30.12			
242913-001	30.11			
2	30.10			
3	30.36			
6	30.25			
7	30.40			
			ICK 2/5/13	
242872-012A	30.08	P/F		MS's
MB	30.24	↓		EM2092525
LCS	30.14	PCB's		↓
MS	30.09	↓		242872-012A
MSD	30.09	↓		↓
LCS	30.36	8081		EM2092525
MS	30.00	↓		242872-012A
MSD	30.122	↓		↓
			ICK 2/5/13	

Continued on Page

Read and Understood By

Signed Date Signed Date

6 | Project SOIL ALIQUOT BF3414

Continued from Page

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242830-001	30.02	PCB		
2	30.22			MSS
3	30.02			
4	30.03			
5	30.34			
6	30.14			
7	30.08			
8	30.23			
9	30.24			
MS	30.45			242830-002A
MSD	30.27			
			ICK 2/6/13	
242830-010A	30.06	PCB	195278	
11	30.05			
12	30.39			
13	30.46			
242834-001A	30.10			
2	30.08			
3	30.11			
242876-001A	30.47	P/P		WET
242908-001B	30.18	8081		
2	30.43			
3A	30.41			
4B	30.43			
5A	30.25			
6	30.04			
7	30.22			
8B	30.03			
242910-003A	30.22			
242913-004A	30.13			
5B	30.34			
			ICK 2/6/13	

Continued on Page

Read and Understood By

Curtis & Tompkins, Ltd. **Florisil Cleanup** **EPA 3620B**

Prep Chemist: MAW
Cleanup Date: 2/5/13

Benchbook # **BK 3406**
Page 8

	Sample #	Extraction Batch#	Initial Volume (mL)	Final Volume (mL)	Comments
	242872-012	195278	☑ 1.0 ☐____	☑ 1.0 ☐____	MSS
	MB QC675644	↓	☑ 1.0 ☐____	☑ 1.0 ☐____	
	LCS 48		☑ 1.0 ☐____	☑ 1.0 ☐____	
	MS 49		☑ 1.0 ☐____	☑ 1.0 ☐____	
5	MSD ↓ 50	↓	☑ 1.0 ☐____	☑ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
10			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
15			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
20			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
25			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
30			☐ 1.0 ☐____	☐ 1.0 ☐____	

	Mfg & Lot # / Time / Program	Initials / D
☑ Extracts were cleaned up using Florisil cartridges	SP 3791501	MAW 2/5/1
Florisil cartridges/ columns rinsed 3x with Hexane	EM52258	↓
Extracts were eluted with 9-0 mL ~~9:1~~ 8:2 Hexane/Acetone — Hexane	EM52228	
Acetone	EM52179	
• Concentrated to volumes as noted above	✓	

MAW 2/5/13
Extraction Chemist / Date

Continued from page /
Continued on page /

2/6/13
Reviewed by / Date

Curtis & Tompkins, Ltd. **Florisil Cleanup** **EPA 3620B**

Prep Chemist: ICK
Cleanup Date: 2/6/13

Benchbook # **BK 3406**
Page 9

	Sample #	Extraction Batch#	Initial Volume (mL)	Final Volume (mL)	Comments
	242876-001	195278	☒ 1.0 ☐	☒ 1.0 ☐	
	242908-001		☒ 1.0 ☐	☒ 1.0 ☐	
	2		☒ 1.0 ☐	☒ 1.0 ☐	
	3		☒ 1.0 ☐	☒ 1.0 ☐	
5	4		☒ 1.0 ☐	☒ 1.0 ☐	
	5		☒ 1.0 ☐	☒ 1.0 ☐	
	6		☒ 1.0 ☐	☒ 1.0 ☐	
	7		☒ 1.0 ☐	☒ 1.0 ☐	
	8		☒ 1.0 ☐	☒ 1.0 ☐	
10	242910-003		☒ 1.0 ☐	☒ 1.0 ☐	
	242913-004		☒ 1.0 ☐	☒ 1.0 ☐	
	5		☒ 1.0 ☐	☒ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
15			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
20			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
25			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
			☐ 1.0 ☐	☐ 1.0 ☐	
30			☐ 1.0 ☐	☐ 1.0 ☐	

	Mfg & Lot # / Time / Program	Initials / Date
☒ Extracts were cleaned up using Florisil cartridges	SP3791501	ICK 2/6/13
Florisil cartridges/ columns rinsed 3x with Hexane	EM52258	
Extracts were eluted with 9.0 mL ~~9.1~~ 8.2 Hexane/Acetone — Hexane	EM52228	
Acetone	EM52179	
Concentrated to volumes as noted above	✓	

Extraction Chemist / Date

Continued from page 1
Continued on page

Reviewed by / Date

8081 Soil Prep Log Curtis & Tompkins, Ltd.

Page 61 BK 3346

Extraction Method: ☒ EPA 3550b Sonication; o _____

Cleanup Method: x EPA 3620b Florisil

LIMS Batch No: 195278

Date Extracted: 2/5/13

	Sample #	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
	242872-012	A	30.08	☒ 20.0 ☐	MSS
	MB QC675644	NA	30.24	☒ 20.0 ☐	
	LCS 48	↓	30.36	☒ 20.0 ☐	
	MS 49	A	30.00	☒ 20.0 ☐	
5	MSD ↓ 50	↓	30.22	☒ 20.0 ☐	
	242876-001	A	30.47	☒ 20.0 ☐	
	242908-001	B	30.18	☒ 20.0 ☐	
	2	↓	30.43	☒ 20.0 ☐	
	3	A	30.41	☒ 20.0 ☐	
10	4	B	30.43	☒ 20.0 ☐	
	5	A	30.25	☒ 20.0 ☐	
	6	↓	30.04	☒ 20.0 ☐	
	7	↓	30.22	☒ 20.0 ☐	
	↓ 8	B	30.03	☒ 20.0 ☐	
15	242910-003	A	30.22	☒ 20.0 ☐	
	242913-004	A	30.13	☒ 20.0 ☐	
	↓ 5	B	30.34	☒ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
20				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	

WR 2/7/13

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	EM2092C525	MAW 2/5/13
dried with CH_2Cl_2-rinsed ☒ granular Na_2SO_4 ☐ powder	↓	↓
0.8 mL of surrogate solution was added to all samples	S20981B	
0.4 mL of spike solution was added to all spikes	S20980B	
1:1 CH_2Cl_2 (lot# EM52089): Acetone(lot# EM52257) was added to all	✓	
Solvent added at (time)	2200/1220	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
soxhlets off at:	NA	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	EM2681C508	
Exchanged 2x with Hexane	EM52258	
Concentrated to final volume at temperature (degrees C)	100	
xFlorisil Cleanup Performed	✓	
Extracts relinquished to Pesticide Group	✓	

Mike McMace

Extraction Chemist / Date

Continued from page ____

Continued on page 1

Will Rice 2/7/13

Reviewed by / Date

REPORTING SUMMARY FOR 242876 PEST Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
242876-001	alpha-BHC	GC21	A	02/07/13 00:14
242876-001	beta-BHC	GC21	A	02/07/13 00:14
242876-001	gamma-BHC	GC21	A	02/07/13 00:14
242876-001	delta-BHC	GC21	A	02/07/13 00:14
242876-001	Heptachlor	GC21	B	02/07/13 00:14
242876-001	Aldrin	GC21	A	02/07/13 00:14
242876-001	Heptachlor epoxide	GC21	A	02/07/13 00:14
242876-001	Endosulfan I	GC21	A	02/07/13 00:14
242876-001	Dieldrin	GC21	A	02/07/13 00:14
242876-001	4,4'-DDE	GC21	A	02/07/13 00:14
242876-001	Endrin	GC21	A	02/07/13 00:14
242876-001	Endosulfan II	GC21	A	02/07/13 00:14
242876-001	Endosulfan sulfate	GC21	B	02/07/13 00:14
242876-001	4,4'-DDD	GC21	A	02/07/13 00:14
242876-001	Endrin aldehyde	GC21	A	02/07/13 00:14
242876-001	4,4'-DDT	GC21	A	02/07/13 00:14
242876-001	alpha-Chlordane	GC21	A	02/07/13 00:14
242876-001	gamma-Chlordane	GC21	A	02/07/13 00:14
242876-001	Methoxychlor	GC21	A	02/07/13 00:14
242876-001	Toxaphene	GC21	A	02/07/13 00:14
242876-001	TCMX	GC21	A	02/07/13 00:14
242876-001	Decachlorobiphenyl	GC21	A	02/07/13 00:14
QC675644	alpha-BHC	GC21	A	02/06/13 10:19
QC675644	beta-BHC	GC21	A	02/06/13 10:19
QC675644	gamma-BHC	GC21	A	02/06/13 10:19
QC675644	delta-BHC	GC21	A	02/06/13 10:19
QC675644	Heptachlor	GC21	A	02/06/13 10:19
QC675644	Aldrin	GC21	A	02/06/13 10:19
QC675644	Heptachlor epoxide	GC21	A	02/06/13 10:19
QC675644	Endosulfan I	GC21	A	02/06/13 10:19
QC675644	Dieldrin	GC21	A	02/06/13 10:19
QC675644	4,4'-DDE	GC21	A	02/06/13 10:19
QC675644	Endrin	GC21	A	02/06/13 10:19
QC675644	Endosulfan II	GC21	A	02/06/13 10:19
QC675644	Endosulfan sulfate	GC21	A	02/06/13 10:19
QC675644	4,4'-DDD	GC21	A	02/06/13 10:19
QC675644	Endrin aldehyde	GC21	A	02/06/13 10:19
QC675644	4,4'-DDT	GC21	A	02/06/13 10:19
QC675644	alpha-Chlordane	GC21	A	02/06/13 10:19
QC675644	gamma-Chlordane	GC21	A	02/06/13 10:19
QC675644	Methoxychlor	GC21	A	02/06/13 10:19
QC675644	Toxaphene	GC21	A	02/06/13 10:19
QC675644	TCMX	GC21	A	02/06/13 10:19
QC675644	Decachlorobiphenyl	GC21	A	02/06/13 10:19
QC675648	gamma-BHC	GC21	B	02/06/13 10:41
QC675648	Heptachlor	GC21	A	02/06/13 10:41
QC675648	Aldrin	GC21	A	02/06/13 10:41
QC675648	Dieldrin	GC21	A	02/06/13 10:41
QC675648	Endrin	GC21	B	02/06/13 10:41
QC675648	4,4'-DDT	GC21	A	02/06/13 10:41
QC675648	TCMX	GC21	A	02/06/13 10:41
QC675648	Decachlorobiphenyl	GC21	A	02/06/13 10:41

REPORTING SUMMARY FOR 242876 PEST Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
QC675649	gamma-BHC	GC21	B	02/06/13 17:15
QC675649	Heptachlor	GC21	B	02/06/13 17:15
QC675649	Aldrin	GC21	A	02/07/13 07:31
QC675649	Dieldrin	GC21	A	02/06/13 17:15
QC675649	Endrin	GC21	A	02/06/13 17:15
QC675649	4,4'-DDT	GC21	A	02/06/13 17:15
QC675649	TCMX	GC21	A	02/06/13 17:15
QC675649	Decachlorobiphenyl	GC21	A	02/06/13 17:15
QC675650	gamma-BHC	GC21	B	02/06/13 17:36
QC675650	Heptachlor	GC21	B	02/06/13 17:36
QC675650	Aldrin	GC21	A	02/07/13 07:52
QC675650	Dieldrin	GC21	A	02/06/13 17:36
QC675650	Endrin	GC21	A	02/06/13 17:36
QC675650	4,4'-DDT	GC21	A	02/06/13 17:36
QC675650	TCMX	GC21	A	02/06/13 17:36
QC675650	Decachlorobiphenyl	GC21	A	02/06/13 17:36

Laboratory Job Number 242876

ANALYTICAL REPORT

PCBs

Matrix: Soil

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8082
Field ID:	RFS-WSM-DU1-006	Batch#:	195278
Lab ID:	242876-001	Sampled:	02/04/13
Matrix:	Soil	Received:	02/04/13
Units:	ug/Kg	Prepared:	02/06/13
Basis:	as received	Analyzed:	02/06/13
Diln Fac:	1.000		

Moisture: ** MISSING MOISTURE DATA **

Analyte	Result	RL	MDL
Aroclor-1016	ND	9.5	0.30
Aroclor-1221	ND	19	5.0
Aroclor-1232	ND	9.5	0.88
Aroclor-1242	ND	9.5	0.41
Aroclor-1248	ND	9.5	0.79
Aroclor-1254	ND	9.5	1.9
Aroclor-1260	ND	9.5	0.69

Surrogate	%REC	Limits
TCMX	124	56-143
Decachlorobiphenyl	79	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8082
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC675644	Batch#:	195278
Matrix:	Soil	Prepared:	02/05/13
Units:	ug/Kg	Analyzed:	02/06/13

Analyte	Result	RL	MDL
Aroclor-1016	ND	9.5	1.4
Aroclor-1221	ND	19	6.3
Aroclor-1232	ND	9.5	2.9
Aroclor-1242	ND	9.5	1.8
Aroclor-1248	ND	9.5	1.7
Aroclor-1254	ND	9.5	1.9
Aroclor-1260	ND	9.5	0.39

Surrogate	%REC	Limits
TCMX	101	56-143
Decachlorobiphenyl	73	33-135

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC675645	Batch#:	195278
Matrix:	Soil	Prepared:	02/05/13
Units:	ug/Kg	Analyzed:	02/06/13

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	165.9	184.1	111	59-139
Aroclor-1260	165.9	202.2	122	56-141

Surrogate	%REC	Limits
TCMX	107	56-143
Decachlorobiphenyl	81	33-135

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103S225322	Analysis:	EPA 8082
Field ID:	ZZZZZZZZZZ	Batch#:	195278
MSS Lab ID:	242872-012	Sampled:	01/24/13
Matrix:	Soil	Received:	02/04/13
Units:	ug/Kg	Prepared:	02/05/13
Basis:	as received	Analyzed:	02/06/13
Diln Fac:	1.000		

Type: MS Lab ID: QC675646

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<1.393	166.2	183.3	110	47-158
Aroclor-1260	<0.3894	166.2	215.8	130	35-160

Surrogate	%REC	Limits
TCMX	107	56-143
Decachlorobiphenyl	80	33-135

Type: MSD Lab ID: QC675647

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	166.2	198.4	119	47-158	8	43
Aroclor-1260	166.2	211.5	127	35-160	2	42

Surrogate	%REC	Limits
TCMX	116	56-143
Decachlorobiphenyl	84	33-135

RPD= Relative Percent Difference

Initial & Continuing Calibration Data

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 PCBS Soil: EPA 8082

Inst : GC16
Calnum : 233042416001
Units : pg/ul

Name : AR1660_029
Date : 29-JAN-2013 20:58
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	029_006	233042416006	PCB10_2	29-JAN-2013 20:58	S21206
L2	029_007	233042416007	PCB25_5	29-JAN-2013 21:27	S21208
L3	029_008	233042416008	PCB100_20	29-JAN-2013 21:54	S21207
L4	029_009	233042416009	PCB250_50	29-JAN-2013 22:22	S21690
L5	029_010	233042416010	PCB500_100	29-JAN-2013 22:51	S21210
L6	029_011	233042416011	PCB750_150	29-JAN-2013 23:18	S21211
L7	029_012	233042416012	PCB1000_200	29-JAN-2013 23:46	S21212

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	5157.3	5943.2	5008.1	4477.5	4109.9	3868.5		AVRG		2.10E-4		4760.7	16	.99	20	
Aroclor-1016 Peak # 2	A	7077.2	8587.4	7076.3	6469.3	6056.1	5962.6	4785.5	AVRG		1.52E-4		6573.5	18	.99	20	
Aroclor-1016 Peak # 3	A	4664.4	4859.7	4248.9	3934.8	3830.7	3606.4	2920.0	AVRG		2.49E-4		4009.3	16	.99	20	
Aroclor-1016 Peak # 4	A	3175.3	3469.7	3295.4	3075.0	3306.2	3028.2	2482.0	AVRG		3.21E-4		3118.8	10	.99	20	
Aroclor-1016 Peak # 5	A	1737.2	1593.3	2122.3	2392.4	2104.7	1776.3	1408.1	AVRG		5.33E-4		1876.3	18	.99	20	
Aroclor-1260 Peak # 1	A	13105	14138	10173	9056.4	9127.6	8583.8		LINR	-15.332	1.17E-4		10697	0.999	.99	20	
Aroclor-1260 Peak # 2	A	8039.0	8764.3	6326.7	5642.1	5596.0	5375.7		LINR	-14.403	1.88E-4		6624.0	0.999	.99	20	
Aroclor-1260 Peak # 3	A	9302.9	7848.5	4562.6	5854.2	4651.8	5034.5		LINR	-11.421	2.05E-4		6209.1	0.993	.99	20	
Aroclor-1260 Peak # 4	A	18493	19866	13184	12011	11135	10863		LINR	-20.259	9.38E-5		14259	0.999	.99	20	
Aroclor-1260 Peak # 5	A	7857.4	9896.2	6212.0	6270.8	5964.6	5889.1		LINR	-11.259	1.72E-4		7015.0	1.000	.99	20	
TCMX	A	154986	163478	121288	104603	95594	92355		LINR	-4.7742	1.10E-5		122051	0.998	.99	20	
Decachlorobiphenyl	A	131853	131385	98373	83458	73807	73419		LINR	-5.0428	1.40E-5		98716	0.998	.99	20	
Aroclor-1016 Peak # 1	B	720.80	813.92	652.38	614.18	612.13	659.33	514.75	AVRG		0.00153		655.36	14	.99	20	
Aroclor-1016 Peak # 2	B	295.10	370.32	291.78	282.48	282.01	306.30	236.03	AVRG		0.00339		294.86	14	.99	20	
Aroclor-1016 Peak # 3	B	160.00	229.16	192.17	169.55	174.05	195.30	148.22	AVRG		0.00552		181.21	15	.99	20	
Aroclor-1016 Peak # 4	B	201.70	236.76	187.42	175.13	178.31	186.00	144.43	AVRG		0.00534		187.11	15	.99	20	
Aroclor-1016 Peak # 5	B	239.60	255.60	211.37	201.61	201.64	215.01	170.64	AVRG		0.00468		213.64	13	.99	20	
Aroclor-1260 Peak # 1	B	1254.1	1270.4	983.82	873.61	879.50	867.10		AVRG		9.79E-4		1021.4	19	.99	20	
Aroclor-1260 Peak # 2	B	1071.2	980.96	776.48	712.86	745.97	743.30	609.59	AVRG		0.00124		805.77	20	.99	20	
Aroclor-1260 Peak # 3	B	786.40	813.36	628.25	570.42	576.25	583.16	473.63	AVRG		0.00158		633.07	19	.99	20	
Aroclor-1260 Peak # 4	B	1681.4	1681.4	1235.2	1119.4	1165.3	1187.3		AVRG		7.43E-4		1345.0	20	.99	20	
Aroclor-1260 Peak # 5	B	722.10	721.96	540.69	493.82	527.81	537.00	441.67	AVRG		0.00176		569.29	19	.99	20	
TCMX	B	8561.0	9285.6	8480.1	8348.9	8556.9	9335.8	7634.5	AVRG		1.16E-4		8600.4	7	.99	20	
Decachlorobiphenyl	B	15480	14113	11716	10103	9954.8	10207		AVRG		8.38E-5		11929	20	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	8	25.000	**25**	100.00	5	250.00	-6	500.00	-14	750.00	-19		
Aroclor-1016 Peak # 2	A	10.000	8	25.000	**31**	100.00	8	250.00	-2	500.00	-8	750.00	-9	1000.0	**-27**
Aroclor-1016 Peak # 3	A	10.000	16	25.000	**21**	100.00	6	250.00	-2	500.00	-4	750.00	-10	1000.0	**-27**
Aroclor-1016 Peak # 4	A	10.000	2	25.000	11	100.00	6	250.00	-1	500.00	6	750.00	-3	1000.0	-20
Aroclor-1016 Peak # 5	A	10.000	-7	25.000	-15	100.00	13	250.00	**28**	500.00	12	750.00	-5	1000.0	**-25**
Aroclor-1260 Peak # 1	A	10.000	**-100**	25.000	4	100.00	4	250.00	0	500.00	4	750.00	-2		
Aroclor-1260 Peak # 2	A	10.000	**-93**	25.000	7	100.00	4	250.00	0	500.00	2	750.00	-1		
Aroclor-1260 Peak # 3	A	10.000	**-24**	25.000	15	100.00	-18	250.00	15	500.00	-7	750.00	2		
Aroclor-1260 Peak # 4	A	10.000	**-129**	25.000	5	100.00	3	250.00	5	500.00	0	750.00	-1		
Aroclor-1260 Peak # 5	A	10.000	**-78**	25.000	**25**	100.00	-5	250.00	3	500.00	0	750.00	0		
TCMX	A	2.0000	**-168**	5.0000	-15	20.000	10	50.000	6	100.00	1	150.00	-1		
Decachlorobiphenyl	A	2.0000	**-167**	5.0000	-16	20.000	13	50.000	7	100.00	-1	150.00	0		
Aroclor-1016 Peak # 1	B	10.000	10	25.000	**24**	100.00	0	250.00	-6	500.00	-7	750.00	1	1000.0	**-21**
Aroclor-1016 Peak # 2	B	10.000	0	25.000	**26**	100.00	-1	250.00	-4	500.00	-4	750.00	4	1000.0	-20
Aroclor-1016 Peak # 3	B	10.000	-12	25.000	**26**	100.00	6	250.00	-6	500.00	-4	750.00	8	1000.0	-18
Aroclor-1016 Peak # 4	B	10.000	8	25.000	**27**	100.00	0	250.00	-6	500.00	-5	750.00	-1	1000.0	**-23**
Aroclor-1016 Peak # 5	B	10.000	12	25.000	20	100.00	-1	250.00	-6	500.00	-6	750.00	1	1000.0	-20
Aroclor-1260 Peak # 1	B	10.000	**23**	25.000	**24**	100.00	-4	250.00	-14	500.00	-14	750.00	-15		
Aroclor-1260 Peak # 2	B	10.000	**33**	25.000	**22**	100.00	-4	250.00	-12	500.00	-7	750.00	-8	1000.0	**-24**
Aroclor-1260 Peak # 3	B	10.000	**24**	25.000	**28**	100.00	-1	250.00	-10	500.00	-9	750.00	-8	1000.0	**-25**
Aroclor-1260 Peak # 4	B	10.000	**25**	25.000	**25**	100.00	-8	250.00	-17	500.00	-13	750.00	-12		
Aroclor-1260 Peak # 5	B	10.000	**27**	25.000	**27**	100.00	-5	250.00	-13	500.00	-7	750.00	-6	1000.0	**-22**
TCMX	B	2.0000	0	5.0000	8	20.000	-1	50.000	-3	100.00	-1	150.00	9	200.00	-11
Decachlorobiphenyl	B	2.0000	**30**	5.0000	18	20.000	-2	50.000	-15	100.00	-17	150.00	-14		

WSR 01/30/13 : CHANNEL A ICV FAILS HIGH. WILL ONLY REPORT FROM CHANNEL B

WSR 01/30/13 : Corrected automatically drawn baseline in all levels.

Analyst: WSR Date: 01/31/13 Reviewer: EAH Date: 01/31/13

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 PCBS Soil
EPA 8082

Inst : GC16 Name : AR1660_029
Calnum : 233042416001 Cal Date : 29-JAN-2013

ICV 233042416015 (029_015 30-JAN-2013) stds: S21678

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	319.4	pg/ul	**28**	15	
Aroclor-1260	A	250.0	345.6	pg/ul	**38**	15	
Aroclor-1016	B	250.0	287.8	pg/ul	15	15	
Aroclor-1260	B	250.0	271.1	pg/ul	8	15	

Analyst: WSR Date: 01/31/13 Reviewer: EAH Date: 02/01/13

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 PCBS Soil: EPA 8082

Inst : GC22
Calnum : 253006288001
Units : pg/uL

Name : AR1660_004
Date : 04-JAN-2013 17:42

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	004_017	253006288017	PCB10_2	04-JAN-2013 17:42	S21206
L2	004_018	253006288018	PCB25_5	04-JAN-2013 18:08	S21208
L3	004_019	253006288019	PCB100_20	04-JAN-2013 18:35	S21207
L4	004_020	253006288020	PCB250_50	04-JAN-2013 19:01	S21209
L5	004_021	253006288021	PCB500_100	04-JAN-2013 19:28	S21210
L6	004_022	253006288022	PCB750_150	04-JAN-2013 19:54	S21211
L7	004_023	253006288023	PCB1000_200	04-JAN-2013 20:21	S21212

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	X	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	25.300	23.880	21.430	21.672	18.410	17.620	17.872	AVRG	R		0.04788		20.883	15	.99	20	
Aroclor-1016 Peak # 2	A	61.800	65.040	61.440	64.488	51.612	48.941	53.588	AVRG	R		0.01720		58.130	11	.99	20	
Aroclor-1016 Peak # 3	A	25.600	29.640	29.830	33.776	26.924	26.305	28.047	AVRG	R		0.03498		28.589	10	.99	20	
Aroclor-1016 Peak # 4	A	18.500	21.600	17.750	19.544	15.308	14.277	14.838	AVRG	R		0.05746		17.402	16	.99	20	
Aroclor-1016 Peak # 5	A	32.700	32.320	27.490	29.968	24.048	22.427	24.381	AVRG	R		0.03621		27.619	15	.99	20	
Aroclor-1260 Peak # 1	A	119.00	111.16	106.60	117.30	97.906	96.791	120.83	AVRG	R		0.00910		109.94	9	.99	20	
Aroclor-1260 Peak # 2	A	80.300	80.800	78.050	84.384	70.152	68.336	83.385	AVRG	R		0.01283		77.915	8	.99	20	
Aroclor-1260 Peak # 3	A	78.300	72.280	66.870	70.248	58.422	55.823	67.743	AVRG	R		0.01490		67.098	12	.99	20	
Aroclor-1260 Peak # 4	A	173.50	173.12	164.35	181.34	166.87	164.43	228.43	AVRG	R		0.00559		178.86	13	.99	20	
Aroclor-1260 Peak # 5	A	78.700	76.560	73.560	76.648	66.478	60.709	79.278	AVRG	R		0.01367		73.133	10	.99	20	
TCMX	A	1634.5	1507.2	1401.1	1633.1	1540.3	1513.8	1581.3	AVRG	R		6.47E-4		1544.5	5	.99	20	
Decachlorobiphenyl	A	1234.5	1175.2	1194.0	1192.6	1219.7	1159.7	1710.3	AVRG	R		7.88E-4		1269.4	15	.99	20	
Aroclor-1016 Peak # 1	B	93.000	117.52	115.61	110.32	105.14	127.77	126.92	AVRG	R		0.00879		113.75	11	.99	20	
Aroclor-1016 Peak # 2	B	239.10	257.48	263.25	265.94	267.64			AVRG	R		0.00387		258.68	4	.99	20	
Aroclor-1016 Peak # 3	B	109.90	172.84	168.32	161.54	147.15	202.87	196.75	AVRG	R		0.00604		165.62	19	.99	20	
Aroclor-1016 Peak # 4	B	74.800	79.360	68.590	69.528	56.272	75.536	66.873	AVRG	R		0.01426		70.137	11	.99	20	
Aroclor-1016 Peak # 5	B	84.400	88.440	76.140	79.128	71.466	99.289	93.045	AVRG	R		0.01183		84.558	12	.99	20	
Aroclor-1260 Peak # 1	B	279.90	269.08	305.96	344.84	449.18	588.38		QUAD	A	2959.41	190.900	0.521979	372.89	1.000	.99	20	
Aroclor-1260 Peak # 2	B	672.50	485.60	382.40	377.23	454.41			LINR	R	7.36269	0.00224		474.43	0.991	.99	20	
Aroclor-1260 Peak # 3	B	327.20	291.72	286.98	288.63	326.39	432.34	428.95	AVRG	R		0.00294		340.32	19	.99	20	
Aroclor-1260 Peak # 4	B	899.70	810.36	993.30	1327.8	1429.1	1487.3	1308.8	LINR	R	6.16520	7.20E-4		1179.5	0.992	.99	20	
Aroclor-1260 Peak # 5	B	385.50	342.44	367.24	376.17	475.85			AVRG	R		0.00257		389.44	13	.99	20	
TCMX	B	6569.0	6949.0	7580.3	9234.0	8420.5	8734.5	7538.2	AVRG	R		1.27E-4		7860.8	12	.99	20	
Decachlorobiphenyl	B	7714.0	7081.2	12954	13136	10616	10057	8800.0	QUAD	A	-10019	13546.7	-23.4935	10051	0.998	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	**21**	25.000	14	100.00	3	250.00	4	500.00	-12	750.00	-16	1000.0	-14
Aroclor-1016 Peak # 2	A	10.000	6	25.000	12	100.00	6	250.00	11	500.00	-11	750.00	-16	1000.0	-8
Aroclor-1016 Peak # 3	A	10.000	-10	25.000	4	100.00	4	250.00	18	500.00	-6	750.00	-8	1000.0	-2
Aroclor-1016 Peak # 4	A	10.000	6	25.000	**24**	100.00	2	250.00	12	500.00	-12	750.00	-18	1000.0	-15
Aroclor-1016 Peak # 5	A	10.000	18	25.000	17	100.00	0	250.00	9	500.00	-13	750.00	-19	1000.0	-12
Aroclor-1260 Peak # 1	A	10.000	8	25.000	1	100.00	-3	250.00	7	500.00	-11	750.00	-12	1000.0	10
Aroclor-1260 Peak # 2	A	10.000	3	25.000	4	100.00	0	250.00	8	500.00	-10	750.00	-12	1000.0	7
Aroclor-1260 Peak # 3	A	10.000	17	25.000	8	100.00	0	250.00	5	500.00	-13	750.00	-17	1000.0	1
Aroclor-1260 Peak # 4	A	10.000	-3	25.000	-3	100.00	-8	250.00	1	500.00	-7	750.00	-8	1000.0	**28**
Aroclor-1260 Peak # 5	A	10.000	8	25.000	5	100.00	1	250.00	5	500.00	-9	750.00	-17	1000.0	8
TCMX	A	2.0000	6	5.0000	-2	20.000	-9	50.000	6	100.00	0	150.00	-2	200.00	2
Decachlorobiphenyl	A	2.0000	-3	5.0000	-7	20.000	-6	50.000	-6	100.00	-4	150.00	-9	200.00	**35**
Aroclor-1016 Peak # 1	B	10.000	-18	25.000	3	100.00	2	250.00	-3	500.00	-8	750.00	12	1000.0	12
Aroclor-1016 Peak # 2	B	10.000	-8	25.000	0	100.00	2	250.00	3	500.00	3				
Aroclor-1016 Peak # 3	B	10.000	**-34**	25.000	4	100.00	2	250.00	-2	500.00	-11	750.00	**22**	1000.0	19
Aroclor-1016 Peak # 4	B	10.000	7	25.000	13	100.00	-2	250.00	-1	500.00	-20	750.00	8	1000.0	-5
Aroclor-1016 Peak # 5	B	10.000	0	25.000	5	100.00	-10	250.00	-6	500.00	-15	750.00	17	1000.0	10
Aroclor-1260 Peak # 1	B	10.000	**-108**	25.000	**-25**	100.00	11	250.00	3	500.00	-1	750.00	0		
Aroclor-1260 Peak # 2	B	10.000	**124**	25.000	**38**	100.00	-7	250.00	-13	500.00	3				
Aroclor-1260 Peak # 3	B	10.000	-4	25.000	-14	100.00	-16	250.00	-15	500.00	-4	750.00	**27**	1000.0	**26**
Aroclor-1260 Peak # 4	B	10.000	**26**	25.000	-17	100.00	**-22**	250.00	-2	500.00	4	750.00	8	1000.0	-5
Aroclor-1260 Peak # 5	B	10.000	-1	25.000	-12	100.00	-6	250.00	-3	500.00	**22**				
TCMX	B	2.0000	-16	5.0000	-12	20.000	-4	50.000	17	100.00	7	150.00	11	200.00	-4
Decachlorobiphenyl	B	2.0000	-6	5.0000	**-33**	20.000	3	50.000	9	100.00	-5	150.00	2	200.00	0

PML 01/07/13 : Corrected automatically drawn baseline in all levels.

PML 01/07/13 : dropped various points and changed fit types on Ch. B for better r^2 %RSD recovery

Analyst: PML Date: 01/07/13 Reviewer: EAH Date: 01/07/13

X=A: Instrument response = a0 + amount * a1 + amount^2 * a2 (invert equation before quantitating); X=R: Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression; QUAD=Quadratic regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 PCBS Soil
EPA 8082

Inst : GC22 Name : AR1660_004
Calnum : 253006288001 Cal Date : 04-JAN-2013

ICV 253006288025 (004_025 04-JAN-2013) stds: S20431

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	256.9	pg/uL	3	15	
Aroclor-1260	A	250.0	251.5	pg/uL	1	15	
Aroclor-1016	B	250.0	241.0	pg/uL	-4	15	
Aroclor-1260	B	250.0	232.7	pg/uL	-7	15	

Analyst: PML Date: 01/07/13 Reviewer: EAH Date: 01/07/13

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PCBS Soil
EPA 8082

Inst : GC16 Run Name : PCB250_50 IDF : 1.0
Seqnum : 233053801002 File : 037_002 Time : 06-FEB-2013 09:09
Cal : 233042416001 Caldate : 29-JAN-2013
Standards: S21690

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	447.2	pg/ul	**79**	15	c+ v+ ***
Aroclor-1260	A			250.0	634.9	pg/ul	**154**	15	c+ v+ ***
TCMX	A	122051	239226	50.00	127.4	pg/ul	**155**	15	c+
Decachlorobiphenyl	A	98716	164849	50.00	110.6	pg/ul	**121**	15	c+
Aroclor-1016	B			250.0	264.1	pg/ul	6	15	
Aroclor-1260	B			250.0	246.4	pg/ul	-1	15	
TCMX	B	8600.4	9113.1	50.00	52.98	pg/ul	6	15	
Decachlorobiphenyl	B	11929	10033	50.00	42.06	pg/ul	**-16**	15	c-

WSR 02/07/13 : CHANNEL A DETECTOR ERROR IN AR1016 RANGE. SAMPLES ND

WSR 02/07/13 : Corrected automatically drawn baseline.

Analyst: WSR Date: 02/07/13 Reviewer: EAH Date: 02/08/13

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PCBS Soil
EPA 8082

Inst : GC16 Run Name : PCB100_20 IDF : 1.0
Seqnum : 233053801006 File : 037_006 Time : 06-FEB-2013 18:34
Cal : 233042416001 Caldate : 29-JAN-2013
Standards: S21207

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			100.0	354.8	pg/ul	**255**	15	c+ v+ ***
Aroclor-1260	A			100.0	325.4	pg/ul	**225**	15	c+ v+ ***
TCMX	A	122051	382082	20.00	79.64	pg/ul	**298**	15	c+
Decachlorobiphenyl	A	98716	202812	20.00	51.89	pg/ul	**159**	15	c+
Aroclor-1016	B			100.0	132.1	pg/ul	**32**	15	c+ ***
Aroclor-1260	B			100.0	112.4	pg/ul	12	15	
TCMX	B	8600.4	9449.2	20.00	21.97	pg/ul	10	15	
Decachlorobiphenyl	B	11929	11980	20.00	20.09	pg/ul	0	15	

PML 02/07/13 : Corrected Std. ID in LIMS; should read: s21207

WSR 02/07/13 : Corrected automatically drawn baseline.

Analyst: WSR Date: 02/07/13 Reviewer: EAH Date: 02/08/13

+=high bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PCBS Soil
EPA 8082

Inst : GC22 Run Name : PCB250_50 IDF : 1.0
Seqnum : 253053799002 File : 037_002 Time : 06-FEB-2013 09:06
Cal : 253006288001 Caldate : 04-JAN-2013
Standards: S21209

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	268.2	pg/uL	7	15	
Aroclor-1260	A			250.0	269.8	pg/uL	8	15	
TCMX	A	1544.5	1444.9	50.00	46.78	pg/uL	-6	15	
Decachlorobiphenyl	A	1269.4	989.32	50.00	38.97	pg/uL	**-22**	15	c-
Aroclor-1016	B			250.0	230.2	pg/uL	-8	15	
Aroclor-1260	B			250.0	233.4	pg/uL	-7	15	
TCMX	B	7860.8	7984.4	50.00	50.79	pg/uL	2	15	
Decachlorobiphenyl	B	10051	13517	50.00	56.08	pg/uL	12	15	

WSR 02/06/13 : Corrected automatically drawn baseline.

Analyst: WSR Date: 02/06/13 Reviewer: EAH Date: 02/06/13

-=low bias c=CCV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 PCBS Soil
EPA 8082

Inst : GC22 Run Name : PCB100_20 IDF : 1.0
Seqnum : 253053799009 File : 037_009 Time : 06-FEB-2013 14:02
Cal : 253006288001 Caldate : 04-JAN-2013
Standards: S21207

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			100.0	104.2	pg/uL	4	15	
Aroclor-1260	A			100.0	101.0	pg/uL	1	15	
TCMX	A	1544.5	1320.6	20.00	17.10	pg/uL	-14	15	
Decachlorobiphenyl	A	1269.4	868.00	20.00	13.68	pg/uL	**-32**	15	c-
Aroclor-1016	B			100.0	97.18	pg/uL	-3	15	
Aroclor-1260	B			100.0	85.29	pg/uL	-15	15	
TCMX	B	7860.8	5744.6	20.00	14.62	pg/uL	**-27**	15	c-
Decachlorobiphenyl	B	10051	11085	20.00	17.65	pg/uL	-12	15	

WSR 02/06/13 : Corrected automatically drawn baseline.

Analyst: WSR Date: 02/06/13 Reviewer: EAH Date: 02/06/13

-=low bias c=CCV

Logbooks & Sequences

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 233042416

Instrument : GC16 Begun : 01/29/13 10:56
Method : EPA 8082 SOP Version : pcb_rv.7

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	029_001	X	HEX			01/29/13 10:56	1.0		
002	029_002	CCV	PCB250_50			01/29/13 11:25	1.0	1	
003	029_003	CCV	PCB250_50			01/29/13 15:18	1.0	2	3:PCB1016#1=1200
004	029_004	IB	CAL			01/29/13 20:02	1.0		
005	029_005	IB	CAL			01/29/13 20:30	1.0		
006	029_006	ICAL	PCB10_2			01/29/13 20:58	1.0	3	
007	029_007	ICAL	PCB25_5			01/29/13 21:27	1.0	4	
008	029_008	ICAL	PCB100_20			01/29/13 21:54	1.0	5	
009	029_009	ICAL	PCB250_50			01/29/13 22:22	1.0	2	
010	029_010	ICAL	PCB500_100			01/29/13 22:51	1.0	6	
011	029_011	ICAL	PCB750_150			01/29/13 23:18	1.0	7	
012	029_012	ICAL	PCB1000_200			01/29/13 23:46	1.0	8	
013	029_013	X	HEX			01/30/13 00:14	1.0		
014	029_014	X	ULTRA_1660			01/30/13 00:42	1.0	9	
015	029_015	ICV	ULTRA_1660			01/30/13 01:09	1.0	9	
016	029_016	X	HEX			01/30/13 01:37	1.0		

WSR 01/30/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 16.

Standards used: 1=S21209 2=S21690 3=S21206 4=S21208 5=S21207 6=S21210 7=S21211 8=S21212 9=S21678

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 233053801

Instrument : GC16 Begun : 02/06/13 08:41
Method : EPA 8082 SOP Version : pcb_rv.7

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	037_001	X	HEX			02/06/13 08:41	1.0		
002	037_002	CCV	PCB250_50			02/06/13 09:09	1.0	1	
003	037_003	CCV	AR1254			02/06/13 16:57	1.0	2	4:PCB1016#5=1500
004	037_004	SAMPLE	242834-003	Soil	195278	02/06/13 17:26	10.0		
005	037_005	SAMPLE	242876-001	Soil	195278	02/06/13 17:54	1.0		4:PCB1016#5=26000
006	037_006	CCV	PCB100_20			02/06/13 18:34	1.0	3	
007	037_007	CCV	AR1254			02/06/13 19:17	1.0	2	3:PCB1016#5=2900

MA 02/07/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 7.

Standards used: 1=S21690 2=S21567 3=S21207

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 253006288

Instrument : GC22 Begun : 01/04/13 08:48
Method : EPA 8082 SOP Version : pcb_rv.7

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	004_001	X	HEX			01/04/13 08:48	1.0		
002	004_002	X	HEX			01/04/13 09:15	1.0		
003	004_003	X	HEX			01/04/13 09:41	1.0		
004	004_004	X	PCB250_50			01/04/13 10:07	1.0	1	
005	004_005	X	AR2154			01/04/13 10:34	1.0	2	
006	004_006	X	PCB250_50			01/04/13 11:00	1.0	1	
007	004_007	X	CCV			01/04/13 11:39	1.0	1	
008	004_008	X	CCV			01/04/13 12:06	1.0	1	
009	004_009	X	CCV			01/04/13 12:37	1.0	1	
010	004_010	X	PCB250_50			01/04/13 13:03	1.0	1	
011	004_011	X	PCB100_20			01/04/13 13:30	1.0	3	
012	004_012	X	PCB100_20			01/04/13 13:56	1.0	3	
013	004_013	X	HEX			01/04/13 14:40	1.0		
014	004_014	X	PCB100_20			01/04/13 15:07	1.0	3	
015	004_015	X	HEX			01/04/13 16:49	1.0		
016	004_016	IB	CAL			01/04/13 17:16	1.0		
017	004_017	ICAL	PCB10_2			01/04/13 17:42	1.0	4	
018	004_018	ICAL	PCB25_5			01/04/13 18:08	1.0	5	
019	004_019	ICAL	PCB100_20			01/04/13 18:35	1.0	3	
020	004_020	ICAL	PCB250_50			01/04/13 19:01	1.0	1	
021	004_021	ICAL	PCB500_100			01/04/13 19:28	1.0	6	
022	004_022	ICAL	PCB750_150			01/04/13 19:54	1.0	7	
023	004_023	ICAL	PCB1000_200			01/04/13 20:21	1.0	8	
024	004_024	X	HEX			01/04/13 20:47	1.0		
025	004_025	ICV	ULTRA_1660			01/04/13 21:14	1.0	9	
026	004_026	X	ICV			01/04/13 21:40	1.0	9	
027	004_027	X	HEX			01/04/13 22:06	1.0		

PML 01/07/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 027.

Standards used: 1=S21209 2=S20600 3=S21207 4=S21206 5=S21208 6=S21210 7=S21211 8=S21212 9=S20431

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 253053799

Instrument : GC22 Begun : 02/06/13 08:39
Method : EPA 8082 SOP Version : pcb_rv.7

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	037_001	X	HEX			02/06/13 08:39	1.0		
002	037_002	CCV	PCB250_50			02/06/13 09:06	1.0	1	
003	037_003	CCV	AR1254			02/06/13 10:40	1.0	2	
004	037_004	BLANK	QC675644	Soil	195278	02/06/13 11:07	1.0		
005	037_005	LCS	QC675645	Soil	195278	02/06/13 11:33	1.0		
006	037_006	MSS	242872-012	Soil	195278	02/06/13 12:00	1.0		1:PCB1260#5=2700
007	037_007	MS	QC675646	Soil	195278	02/06/13 12:26	1.0		
008	037_008	MSD	QC675647	Soil	195278	02/06/13 12:53	1.0		1:PCB1260#5=1100
009	037_009	CCV	PCB100_20			02/06/13 14:02	1.0	3	
010	037_010	CCV	AR1254			02/06/13 16:56	1.0	2	
011	037_011	SAMPLE	242834-001	Miscell.	195278	02/06/13 17:23	1.0		
012	037_012	SAMPLE	242834-002	Miscell.	195278	02/06/13 17:49	1.0		
013	037_013	SAMPLE	242830-013	Miscell.	195278	02/06/13 18:16	1.0		
014	037_014	CCV	PCB250_50			02/06/13 18:42	1.0	1	
015	037_015	CCV	AR1254			02/06/13 19:18	1.0	2	
016	037_016	BLANK	QC675808	Soil	195316	02/06/13 20:44	1.0		
017	037_017	LCS	QC675809	Soil	195316	02/06/13 21:10	1.0		
018	037_018	SAMPLE	242830-001	Soil	195316	02/06/13 21:37	1.0		
019	037_019	MSS	242830-002	Soil	195316	02/06/13 22:03	1.0		
020	037_020	SAMPLE	242830-003	Soil	195316	02/06/13 22:29	5.0		
021	037_021	SAMPLE	242830-004	Soil	195316	02/06/13 22:56	1.0		
022	037_022	SAMPLE	242830-005	Soil	195316	02/06/13 23:22	1.0		
023	037_023	SAMPLE	242830-006	Soil	195316	02/06/13 23:49	1.0		
024	037_024	SAMPLE	242830-007	Soil	195316	02/07/13 00:15	1.0		
025	037_025	SAMPLE	242830-008	Soil	195316	02/07/13 00:42	1.0		
026	037_026	SAMPLE	242830-009	Miscell.	195316	02/07/13 01:08	1.0		
027	037_027	CCV	PCB100_20			02/07/13 01:35	1.0	3	
028	037_028	CCV	AR1254			02/07/13 02:01	1.0	2	

WSR 02/06/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 9.

MA 02/07/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 9 through 28.

Standards used: 1=S21209 2=S21567 3=S21207

SAMPLE PREPARATION SUMMARY

Batch # : 195278
Started By : MAW
Method : 3550B
Spike #1 ID : S20981
Prep Date : 05-FEB-2013 22:00
SOP Version : PCB_3550_rv8
Spike #2 ID : S21401
Analysis : PCB
Finished By : MAW
Units : g
Spike #3 ID : S20980

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
242830-010		Miscell.	30.06	20	1	0.6653		.8				PCB	Prepped 06-FEB-2013 12:20
242830-011		Miscell.	30.05	20	1	0.6656		.8				PCB	Prepped 06-FEB-2013 12:20
242830-012		Miscell.	30.39	20	1	0.6581		.8				PCB	Prepped 06-FEB-2013 12:20
242830-013		Miscell.	30.46	20	1	0.6566		.8				PCB	Prepped 06-FEB-2013 12:20
242834-001		Miscell.	30.1	20	1	0.6645		.8				PCB	Prepped 06-FEB-2013 12:20
242834-002		Miscell.	30.08	20	1	0.6649		.8				PCB	Prepped 06-FEB-2013 12:20
242834-003		Soil	30.11	20	1	0.6642		.8				PCB	Prepped 06-FEB-2013 12:20
242872-012		Soil	30.08	20	1	0.6649		.8				8081, PCB	MSS 8082 + 8081
242876-001		Soil	30.47	20	1	0.6564		.8				8081, PCB	Prepped 06-FEB-2013 12:20
242908-001		Soil	30.18	20	1	0.6627		.8				8081	Prepped 06-FEB-2013 12:20
242908-002		Soil	30.43	20	1	0.6572		.8				8081	Prepped 06-FEB-2013 12:20
242908-003		Soil	30.41	20	1	0.6577		.8				8081	Prepped 06-FEB-2013 12:20
242908-004		Soil	30.43	20	1	0.6572		.8				8081	Prepped 06-FEB-2013 12:20
242908-005		Soil	30.25	20	1	0.6612		.8				8081	Prepped 06-FEB-2013 12:20
242908-006		Soil	30.04	20	1	0.6658		.8				8081	Prepped 06-FEB-2013 12:20
242908-007		Soil	30.22	20	1	0.6618		.8				8081	Prepped 06-FEB-2013 12:20
242908-008		Soil	30.03	20	1	0.666		.8				8081	Prepped 06-FEB-2013 12:20
242910-003		Soil	30.22	20	1	0.6618		.8				8081	Prepped 06-FEB-2013 12:20
242913-004		Soil	30.13	20	1	0.6638		.8				8081	Prepped 06-FEB-2013 12:20
242913-005		Soil	30.34	20	1	0.6592		.8				8081	Prepped 06-FEB-2013 12:20
QC675644	BLANK	Soil	30.24	20	1	0.6614		.8				PCB	
QC675645	LCS	Soil	30.14	20	1	0.6636		.8	1			PCB	
QC675646	MS	Soil	30.09	20	1	0.6647		.8	1			PCB	
QC675647	MSD	Soil	30.09	20	1	0.6647		.8	1			PCB	
QC675648	LCS	Soil	30.36	20	1	0.6588		.8		.4		8081	
QC675649	MS	Soil	30	20	1	0.6667		.8		.4		8081	
QC675650	MSD	Soil	30.22	20	1	0.6618		.8		.4		8081	

EAH 02/06/13 : Reviewed for PCB and verified paperwork for Pest.

Analyst: WSR Date: 02/06/13 Reviewer: EAH Date: 02/07/13

Project SOIL ALIQUOT BK3414

Continuation

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242872-011A	30.47	P/F	195270	
242910-001	30.15	8081		
2	30.41			
4	30.25			
5	30.12			
242913-001	30.11			
2	30.10			
3	30.36			
6	30.25			
7	30.40			
			ICK 2/5/13	
242872-012A	30.08	P/F		MSS
MB	30.24	↓		EM2092C525
LCS	30.14	PCB		↓
MS	30.09	↓		242872-012A
MSD	30.09	↓		↓
LCS	30.36	8081		EM2092K525
MS	30.00	↓		242872-012A
MSD	30.22	↓		↓
			ICK 2/5/13	

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Read and Understood By

Signed Date Signed Date

Project SOIL ALIQUOT BK3414

Continued from Page

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242830-001	30.02	PCB		
2	30.22			MSS
3	30.02			
4	30.03			
5	30.34			
6	30.14			
7	30.08			
8	30.23			
9	30.24			
MS	30.45			242830-002A
MSD	30.27			
			ICK 2/6/13	
242830-010A	30.06	PCB	195278	
11	30.05			
12	30.39			
13	30.46			
242834-001A	30.10			
2	30.08			
3	30.11			
242876-001A	30.47	P/P		WET
242908-001B	30.18	8081		
2	30.43			
3A	30.41			
4B	30.43			
5A	30.25			
6	30.04			
7	30.22			
8B	30.03			
242910-003A	30.22			
242913-004A	30.13			
5B	30.34			
			ICK 2/6/13	

Continued on Page

Read and Understood By

Signed Date Signed Date

PCB (8082) Soil Prep Log

Curtis & Tompkins, Ltd.

LIMS Batch No: 195278

☒ EPA 3550b Sonication

Page 5

LIMS Analysis PCB(P/P)

☐ Other _____

BK 3407

Date Extracted: 2/5/13

	Sample #	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
	242872-012	A	30.08	☐ 25.0 ☒ 20.0	MSS
	MB QC675644	NA	30.24	☐ 25.0 ☒ 20.0	
	LCS 5	↓	30.14	☐ 25.0 ☒ 20.0	
	MS 6	A	30.09	☐ 25.0 ☒ 20.0	
5	MSD ↓ 7	↓	30.09	☐ 25.0 ☒ 20.0	
	242876-001	A	30.47	☐ 25.0 ☒ 20.0	
	242830-010	A	30.06	☐ 25.0 ☒ 20.0	DCM ONLY
	↓ 11	↓	30.05	☐ 25.0 ☒ 20.0	↓
	12		30.39	☐ 25.0 ☒ 20.0	
10	↓ 13	↓	30.46	☐ 25.0 ☒ 20.0	
	242834-001		30.10	☐ 25.0 ☒ 20.0	
	↓ 2	↓	30.08	☐ 25.0 ☒ 20.0	↓
	↓ 3	↓	30.11	☐ 25.0 ☒ 20.0	
				☐ 25.0 ☐ ____	
15				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
20				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	
				☐ 25.0 ☐ ____	

MW2

2/1/13

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	EM2092C525	MAW 2/5/13
dried with CH_2Cl_2-rinsed ☒ granular Na_2SO_4 ☐ powder	↓	
0.8 mL of surrogate solution was added to all samples	S209818	
1.0 mL of matrix spiking solution was added to all spikes	S21401D	
1:1 CH_2Cl_2 (lot# EM52089):Acetone(lot# EM52257) was added to all	✓	
Solvent added at (time)	2200/1220	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
Soxhlets off at:	NA	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	EM26B1C508	
Solvent exchanged with Hexane, Lot#	EM52258	
Concentrated to final volume at temperature (degrees C)	100	
EPA 3665A Clean-up: vortexed w/ H_2SO_4 Lot#	FS116662	
Centrifuged for 1 min; 5mL transferred to labelled vial	✓	
Relinquished to PCB group	✓	↓

Mi Wallace 2/5/13

Extraction Chemist / Date

Continued from page ____

Continued on page 1

2/6/13 2/7/13

Reviewed by / Date

Project SOIL ALIQUOT BK 3414

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242872-011A	30.42	P/F	195274	
242910-001	30.15	8081		
2	30.41			
4	30.28			
5	30.12			
242913-001	30.11			
2	30.10			
3	30.36			
6	30.25			
7	30.40			
			ICK 2/5/13	
242872-012A	30.08	P/F		MS's
MB	30.24	↓		EM2092525
LCS	30.14	PCB's		↓
MS	30.09	↓		242872-012A
MSD	30.09	↓		↓
LCS	30.36	8081		EM2092525
MS	30.00	↓		242872-012A
MSD	30.22	↓		↓
			ICK 2/5/13	

Continued on Page

Read and Understood By

Signed Date Signed Date

6 | Project SOIL ALIQUOT BF3414

Continued from Page

SAMPLE ID	WEIGHT	ANALYSIS	BATCH #	COMMENTS
242830-001	30.02	PCB		
2	30.22			MSS
3	30.02			
4	30.03			
5	30.34			
6	30.14			
7	30.08			
8	30.23			
9	30.24			
MS	30.45			242830-002A
MSD	30.27			
			ICK 2/6/13	
242830-010A	30.06	PCB	195278	
11	30.05			
12	30.39			
13	30.46			
242834-001A	30.10			
2	30.08			
3	30.11			
242876-001A	30.47	P/P		WET
242908-001B	30.18	8081		
2	30.43			
3A	30.41			
4B	30.43			
5A	30.25			
6	30.04			
7	30.22			
8B	30.03			
242910-003A	30.22			
242913-004A	30.13			
5B	30.34			
			ICK 2/6/13	

Continued on Page

Read and Understood By

Curtis & Tompkins, Ltd. **Florisil Cleanup** **EPA 3620B**

Prep Chemist: MAW
Cleanup Date: 2/5/13

Benchbook # **BK 3406**
Page 8

	Sample #	Extraction Batch#	Initial Volume (mL)	Final Volume (mL)	Comments
	242872-012	195278	☒ 1.0 ☐____	☒ 1.0 ☐____	MSS
	MB QC675644	↓	☒ 1.0 ☐____	☒ 1.0 ☐____	
	LCS 48		☒ 1.0 ☐____	☒ 1.0 ☐____	
	MS 49		☒ 1.0 ☐____	☒ 1.0 ☐____	
5	MSD ↓ 50	↓	☒ 1.0 ☐____	☒ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
10			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
15			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
20			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
25			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
30			☐ 1.0 ☐____	☐ 1.0 ☐____	

	Mfg & Lot # / Time / Program	Initials / D
☒ Extracts were cleaned up using Florisil cartridges	SP 3791501	MAW 2/5/1
Florisil cartridges/ columns rinsed 3x with Hexane	EM52258	↓
Extracts were eluted with 9-0 mL ~~9:1~~ 8:2 Hexane/Acetone — Hexane	EM52228	
Acetone	EM52179	
• Concentrated to volumes as noted above	✓	

MAW 2/5/13
Extraction Chemist / Date

Continued from page /
Continued on page /

2/6/13
Reviewed by / Date

Curtis & Tompkins, Ltd. **Florisil Cleanup** **EPA 3620B**

Prep Chemist: ICK
Cleanup Date: 2/6/13

Benchbook # **BK 3406**
Page 9

	Sample #	Extraction Batch#	Initial Volume (mL)	Final Volume (mL)	Comments
	242876-001	195278	☒ 1.0 ☐____	☒ 1.0 ☐____	
	242908-001	↓	☒ 1.0 ☐____	☒ 1.0 ☐____	
	2		☒ 1.0 ☐____	☒ 1.0 ☐____	
	3		☒ 1.0 ☐____	☒ 1.0 ☐____	
5	4		☒ 1.0 ☐____	☒ 1.0 ☐____	
	5		☒ 1.0 ☐____	☒ 1.0 ☐____	
	6		☒ 1.0 ☐____	☒ 1.0 ☐____	
	7		☒ 1.0 ☐____	☒ 1.0 ☐____	
	8		☒ 1.0 ☐____	☒ 1.0 ☐____	
10	242910-003		☒ 1.0 ☐____	☒ 1.0 ☐____	
	242913-004		☒ 1.0 ☐____	☒ 1.0 ☐____	
	↓ 5	↓	☒ 1.0 ☐____	☒ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
15			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
20			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
25			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
			☐ 1.0 ☐____	☐ 1.0 ☐____	
30			☐ 1.0 ☐____	☐ 1.0 ☐____	

	Mfg & Lot # / Time / Program	Initials / Date
☒ Extracts were cleaned up using Florisil cartridges	SP3791501	ICK 2/6/13
Florisil cartridges/ columns rinsed 3x with Hexane	EM52258	
Extracts were eluted with 9.0 mL ~~9.1~~ 8.2 Hexane/Acetone — Hexane	ICK 2/6/13 EM52228	
Acetone	EM52179	
Concentrated to volumes as noted above	✓	

Extraction Chemist / Date

Continued from page ____
Continued on page 1

Reviewed by / Date

8081 Soil Prep Log Curtis & Tompkins, Ltd.

Page 61 BK 3346

Extraction Method: ☒ EPA 3550b Sonication; o _____

Cleanup Method: x EPA 3620b Florisil

LIMS Batch No: 195278

Date Extracted: 2/5/13

	Sample #	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
	242872-012	A	30.08	☒ 20.0 ☐	MSS
	MB QC675644	NA	30.24	☒ 20.0 ☐	
	LCS 48	↓	30.36	☒ 20.0 ☐	
	MS 49	A	30.00	☒ 20.0 ☐	
5	MSD ↓ 50	↓	30.22	☒ 20.0 ☐	
	242876-001	A	30.47	☒ 20.0 ☐	
	242908-001	B	30.18	☒ 20.0 ☐	
	2	↓	30.43	☒ 20.0 ☐	
	3	A	30.41	☒ 20.0 ☐	
10	4	B	30.43	☒ 20.0 ☐	
	5	A	30.25	☒ 20.0 ☐	
	6	↓	30.04	☒ 20.0 ☐	
	7	↓	30.22	☒ 20.0 ☐	
	↓ 8	B	30.03	☒ 20.0 ☐	
15	242910-003	A	30.22	☒ 20.0 ☐	
	242913-004	A	30.13	☒ 20.0 ☐	
	↓ 5	B	30.34	☒ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
20				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	
				☐ 20.0 ☐	

MAW 2/7/13

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	EM2092C525	MAW 2/5/13
dried with CH_2Cl_2-rinsed ☒ granular Na_2SO_4 ☐ powder	↓	↓
0.8 mL of surrogate solution was added to all samples	S20981B	
0.4 mL of spike solution was added to all spikes	S20980B	
1:1 CH_2Cl_2 (lot# EM52089): Acetone(lot# EM52257) was added to all	✓	
Solvent added at (time)	2200/1220	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
soxhlets off at:	NA	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	EM2681C508	
Exchanged 2x with Hexane	EM52258	
Concentrated to final volume at temperature (degrees C)	100	
xFlorisil Cleanup Performed	✓	
Extracts relinquished to Pesticide Group	✓	

Mike MacRae

Extraction Chemist / Date

Continued from page ____

Continued on page ____

Will Bin 2/7/13

Reviewed by / Date

REPORTING SUMMARY FOR 242876 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
242876-001	Aroclor-1016	GC16	B	02/06/13 17:54
242876-001	Aroclor-1221	GC16	B	02/06/13 17:54
242876-001	Aroclor-1232	GC16	B	02/06/13 17:54
242876-001	Aroclor-1242	GC16	B	02/06/13 17:54
242876-001	Aroclor-1248	GC16	B	02/06/13 17:54
242876-001	Aroclor-1254	GC16	B	02/06/13 17:54
242876-001	Aroclor-1260	GC16	B	02/06/13 17:54
242876-001	TCMX	GC16	B	02/06/13 17:54
242876-001	Decachlorobiphenyl	GC16	B	02/06/13 17:54
QC675644	Aroclor-1016	GC22	A	02/06/13 11:07
QC675644	Aroclor-1221	GC22	A	02/06/13 11:07
QC675644	Aroclor-1232	GC22	A	02/06/13 11:07
QC675644	Aroclor-1242	GC22	A	02/06/13 11:07
QC675644	Aroclor-1248	GC22	A	02/06/13 11:07
QC675644	Aroclor-1254	GC22	A	02/06/13 11:07
QC675644	Aroclor-1260	GC22	A	02/06/13 11:07
QC675644	TCMX	GC22	A	02/06/13 11:07
QC675644	Decachlorobiphenyl	GC22	A	02/06/13 11:07
QC675645	Aroclor-1016	GC22	A	02/06/13 11:33
QC675645	Aroclor-1260	GC22	A	02/06/13 11:33
QC675645	TCMX	GC22	A	02/06/13 11:33
QC675645	Decachlorobiphenyl	GC22	A	02/06/13 11:33
QC675646	Aroclor-1016	GC22	A	02/06/13 12:26
QC675646	Aroclor-1260	GC22	A	02/06/13 12:26
QC675646	TCMX	GC22	A	02/06/13 12:26
QC675646	Decachlorobiphenyl	GC22	A	02/06/13 12:26
QC675647	Aroclor-1016	GC22	A	02/06/13 12:53
QC675647	Aroclor-1260	GC22	A	02/06/13 12:53
QC675647	TCMX	GC22	A	02/06/13 12:53
QC675647	Decachlorobiphenyl	GC22	A	02/06/13 12:53

Laboratory Job Number 242876

ANALYTICAL REPORT

Metals

Matrix: Soil

Curtis & Tompkins, Ltd.

Target Analyte List Metals

Lab #:	242876	Project#:	103S225322
Client:	Tetra Tech EMI	Location:	PHA 2013
Field ID:	RFS-WSM-DU1-006	Basis:	dry
Lab ID:	242876-001	Sampled:	02/04/13
Matrix:	Soil	Received:	02/04/13
Units:	mg/Kg		

Moisture: 60%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Aluminum	28,000	1,200	320	100.0	195450	02/11/13	02/14/13	EPA 3050B	EPA 6010B
Antimony	ND	1.2	0.38	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Arsenic	28	0.60	0.20	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Barium	60	0.60	0.12	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Beryllium	0.61	0.24	0.046	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Cadmium	0.31 J	0.60	0.038	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Calcium	3,600	60	9.2	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Chromium	84	0.60	0.050	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Cobalt	16	0.60	0.047	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Copper	96	0.62	0.21	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Iron	45,000	1,200	390	100.0	195450	02/11/13	02/15/13	EPA 3050B	EPA 6010B
Lead	56	0.60	0.18	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Magnesium	13,000	4,800	1,200	100.0	195450	02/11/13	02/15/13	EPA 3050B	EPA 6010B
Manganese	510	0.60	0.069	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Mercury	2.0	0.040	0.0039	1.000	195391	02/08/13	02/08/13	METHOD	EPA 7471A
Molybdenum	1.8	0.60	0.13	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Nickel	83	0.60	0.16	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Potassium	4,600	60	15	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Selenium	ND	1.2	0.35	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Silver	0.43 J	0.60	0.18	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Sodium	14,000	6,000	810	100.0	195450	02/11/13	02/14/13	EPA 3050B	EPA 6010B
Thallium	ND	1.2	0.39	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Vanadium	77	0.60	0.059	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B
Zinc	240	2.4	0.23	1.000	195450	02/11/13	02/12/13	EPA 3050B	EPA 6010B

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S225322	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	195391
Lab ID:	QC676084	Prepared:	02/08/13
Matrix:	Soil	Analyzed:	02/08/13
Units:	mg/Kg		

Result	RL	MDL
ND	0.017	0.0016

ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S225322	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	195391
Matrix:	Soil	Prepared:	02/08/13
Units:	mg/Kg	Analyzed:	02/08/13
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC676085	0.2083	0.2202	106	80-120		
BSD	QC676086	0.2083	0.2128	102	80-120	3	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S225322	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	195391
MSS Lab ID:	242846-003	Sampled:	01/31/13
Matrix:	Soil	Received:	02/01/13
Units:	mg/Kg	Prepared:	02/08/13
Basis:	dry	Analyzed:	02/08/13

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
MS	QC676087	0.009949	0.2825	0.3206	110	76-138	21%		
MSD	QC676088		0.2728	0.3081	109	76-138	21%	1	42

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103S225322	Analysis:	EPA 7471A
Analyte:	Mercury	Basis:	dry
Field ID:	ZZZZZZZZZZ	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	195391
MSS Lab ID:	242846-003	Sampled:	01/31/13
Lab ID:	QC676089	Received:	02/01/13
Matrix:	Soil	Analyzed:	02/08/13
Units:	mg/Kg		

MSS Result	MSS RL	Result	RL	Moisture	% Diff	Lim
0.009949	0.02221	ND	0.1110	21%	NC	10

NC= Not Calculated
ND= Not Detected at or above MDL
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S225322	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC676333	Batch#:	195450
Matrix:	Soil	Prepared:	02/11/13
Units:	mg/Kg	Analyzed:	02/12/13

Analyte	Result	RL	MDL
Aluminum	1.5 J	5.0	1.3
Antimony	ND	0.50	0.16
Arsenic	ND	0.25	0.083
Barium	ND	0.25	0.049
Beryllium	ND	0.10	0.019
Cadmium	ND	0.25	0.016
Calcium	4.1 J	25	3.8
Chromium	0.084 J	0.25	0.021
Cobalt	ND	0.25	0.019
Copper	ND	0.26	0.086
Iron	ND	5.0	1.6
Lead	ND	0.25	0.073
Magnesium	ND	25	3.3
Manganese	0.031 J	0.25	0.029
Molybdenum	ND	0.25	0.056
Nickel	0.073 J	0.25	0.068
Potassium	ND	25	6.3
Selenium	ND	0.50	0.15
Silver	ND	0.25	0.075
Sodium	3.4 J	25	3.4
Thallium	ND	0.50	0.16
Vanadium	0.026 J	0.25	0.025
Zinc	0.79 J	1.0	0.098

J= Estimated value
ND= Not Detected at or above MDL
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S225322	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	195450
Units:	mg/Kg	Prepared:	02/11/13
Diln Fac:	1.000	Analyzed:	02/12/13

Type: BS Lab ID: QC676334

Analyte	Spiked	Result	%REC	Limits
Aluminum	1,000	1,016	102	78-120
Antimony	100.0	97.35	97	80-120
Arsenic	50.00	49.95	100	80-121
Barium	100.0	100.6	101	80-120
Beryllium	2.500	2.637	105	80-120
Cadmium	10.00	10.34	103	80-120
Calcium	1,000	1,038	104	80-120
Chromium	100.0	98.60	99	80-120
Cobalt	25.00	24.91	100	80-120
Copper	12.50	12.17	97	80-120
Iron	1,000	1,031	103	80-120
Lead	100.0	96.02	96	80-120
Magnesium	1,000	1,020	102	80-120
Manganese	25.00	25.45	102	80-120
Molybdenum	20.00	20.20	101	80-120
Nickel	25.00	24.82	99	80-120
Potassium	500.0	490.8	98	77-120
Selenium	50.00	48.70	97	80-120
Silver	10.00	9.542	95	80-120
Sodium	1,000	1,036	104	80-120
Thallium	50.00	48.70	97	80-120
Vanadium	25.00	24.76	99	80-120
Zinc	25.00	25.56	102	80-120

Type: BSD Lab ID: QC676335

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aluminum	1,000	1,020	102	78-120	0	20
Antimony	100.0	97.19	97	80-120	0	20
Arsenic	50.00	49.96	100	80-121	0	20
Barium	100.0	100.6	101	80-120	0	20
Beryllium	2.500	2.650	106	80-120	0	20
Cadmium	10.00	10.47	105	80-120	1	20
Calcium	1,000	1,049	105	80-120	1	20
Chromium	100.0	99.78	100	80-120	1	20
Cobalt	25.00	25.07	100	80-120	1	20
Copper	12.50	12.41	99	80-120	2	20
Iron	1,000	1,041	104	80-120	1	20
Lead	100.0	96.33	96	80-120	0	23
Magnesium	1,000	1,032	103	80-120	1	20
Manganese	25.00	25.73	103	80-120	1	20
Molybdenum	20.00	20.11	101	80-120	0	20
Nickel	25.00	25.02	100	80-120	1	20
Potassium	500.0	497.4	99	77-120	1	20
Selenium	50.00	48.61	97	80-120	0	20
Silver	10.00	9.643	96	80-120	1	20
Sodium	1,000	1,052	105	80-120	2	20
Thallium	50.00	48.29	97	80-120	1	20
Vanadium	25.00	24.97	100	80-120	1	20
Zinc	25.00	25.74	103	80-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S225322	Analysis:	EPA 6010B
Field ID:	RFS-WSM-DU1-006	Batch#:	195450
MSS Lab ID:	242876-001	Sampled:	02/04/13
Matrix:	Soil	Received:	02/04/13
Units:	mg/Kg	Prepared:	02/11/13
Basis:	dry		

Type: MS Moisture: 60%
Lab ID: QC676336

Analyte	MSS Result	Spiked	Result	%REC	Limits	Diln Fac	Analyzed
Aluminum	27,640	2,212	34,370	304 NM	25-178	100.0	02/14/13
Antimony	<0.3819	221.2	70.16	32	12-120	1.000	02/12/13
Arsenic	27.81	110.6	131.5	94	73-121	1.000	02/12/13
Barium	60.43	221.2	266.5	93	51-135	1.000	02/12/13
Beryllium	0.6150	5.531	6.142	100	79-120	1.000	02/12/13
Cadmium	0.3110	22.12	21.01	94	74-120	1.000	02/12/13
Calcium	3,645	2,212	24,160	927 *	37-163	100.0	02/15/13
Chromium	84.41	221.2	284.7	91	62-124	1.000	02/12/13
Cobalt	16.03	55.31	65.22	89	62-120	1.000	02/12/13
Copper	95.92	27.65	121.8	93	48-150	1.000	02/12/13
Iron	44,620	2,212	47,810	145 NM	36-154	100.0	02/15/13
Lead	56.16	221.2	239.9	83	58-124	1.000	02/12/13
Magnesium	13,400	2,212	16,740	151 NM	37-160	100.0	02/15/13
Manganese	514.6	55.31	669.2	280 NM	48-148	1.000	02/12/13
Molybdenum	1.821	44.25	41.17	89	69-120	1.000	02/12/13
Nickel	82.99	55.31	130.9	87	49-135	1.000	02/12/13
Potassium	4,560	1,106	5,482	83 NM	44-147	1.000	02/12/13
Selenium	<0.3516	110.6	103.6	94	68-120	1.000	02/12/13
Silver	0.4256	22.12	21.24	94	76-120	1.000	02/12/13
Sodium	14,140	2,212	16,410	NM	69-126	100.0	02/14/13
Thallium	<0.3919	110.6	92.11	83	68-120	1.000	02/12/13
Vanadium	77.39	55.31	128.2	92	54-137	1.000	02/12/13
Zinc	244.7	55.31	300.2	100 NM	43-147	1.000	02/12/13

*= Value outside of QC limits; see narrative
NM= Not Meaningful: Sample concentration > 4X spike concentration
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S225322	Analysis:	EPA 6010B
Field ID:	RFS-WSM-DU1-006	Batch#:	195450
MSS Lab ID:	242876-001	Sampled:	02/04/13
Matrix:	Soil	Received:	02/04/13
Units:	mg/Kg	Prepared:	02/11/13
Basis:	dry		

Type: MSD Moisture: 60%
Lab ID: QC676337

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Diln Fac	Analyzed
Aluminum	2,500	35,680	322 NM	25-178	3	51	100.0	02/14/13
Antimony	250.0	84.58	34	12-120	6	36	1.000	02/12/13
Arsenic	125.0	146.0	95	73-121	1	40	1.000	02/12/13
Barium	250.0	302.4	97	51-135	3	40	1.000	02/12/13
Beryllium	6.250	6.983	102	79-120	2	21	1.000	02/12/13
Cadmium	25.00	24.54	97	74-120	3	20	1.000	02/12/13
Calcium	2,500	7,343	148	37-163	110 *	44	100.0	02/15/13
Chromium	250.0	322.4	95	62-124	3	34	1.000	02/12/13
Cobalt	62.50	74.06	93	62-120	3	35	1.000	02/12/13
Copper	31.25	131.5	114	48-150	5	39	1.000	02/12/13
Iron	2,500	51,940	293 NM	36-154	8	52	100.0	02/15/13
Lead	250.0	275.2	88	58-124	4	44	1.000	02/12/13
Magnesium	2,500	17,860	179 NM	37-160	5	35	100.0	02/15/13
Manganese	62.50	692.7	285 NM	48-148	2	39	1.000	02/12/13
Molybdenum	50.00	47.34	91	69-120	2	25	1.000	02/12/13
Nickel	62.50	144.6	99	49-135	5	37	1.000	02/12/13
Potassium	1,250	5,836	102	44-147	4	31	1.000	02/12/13
Selenium	125.0	115.8	93	68-120	1	29	1.000	02/12/13
Silver	25.00	24.02	94	76-120	0	29	1.000	02/12/13
Sodium	2,500	16,210	NM	69-126	3	26	100.0	02/14/13
Thallium	125.0	110.1	88	68-120	6	21	1.000	02/12/13
Vanadium	62.50	142.6	104	54-137	5	31	1.000	02/12/13
Zinc	62.50	301.3	91	43-147	2	41	1.000	02/12/13

*= Value outside of QC limits; see narrative
NM= Not Meaningful: Sample concentration > 4X spike concentration
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S225322	Analysis:	EPA 6010B
Field ID:	RFS-WSM-DU1-006	Units:	mg/Kg
Type:	Serial Dilution	Basis:	dry
MSS Lab ID:	242876-001	Batch#:	195450
Lab ID:	QC676338	Sampled:	02/04/13
Matrix:	Soil	Received:	02/04/13

Moisture: 60%

Analyte	MSS Result	MSS RL	Result	RL	% Diff	Lim	Diln Fac	Analyzed
Aluminum	27,640	1,202	28,080	6,010	2	10	500.0	02/14/13
Antimony	ND	1.202	ND	6.010	NC	10	5.000	02/12/13
Arsenic	27.81	0.6010	31.00	3.005	11 *	10	5.000	02/12/13
Barium	60.43	0.6010	64.58	3.005	7	10	5.000	02/12/13
Beryllium	0.6150	0.2404	0.6433 J	1.202	NC	10	5.000	02/12/13
Cadmium	0.3110	0.6010	0.4337 J	3.005	NC	10	5.000	02/12/13
Calcium	3,645	60.10	3,946	240.4	8	10	5.000	02/12/13
Chromium	84.41	0.6010	91.91	3.005	9	10	5.000	02/12/13
Cobalt	16.03	0.6010	17.35	3.005	8	10	5.000	02/12/13
Copper	95.92	0.6233	97.02	3.116	1	10	5.000	02/12/13
Iron	44,620	1,202	46,040	6,010	3	10	500.0	02/15/13
Lead	56.16	0.6010	60.82	3.005	8	10	5.000	02/12/13
Magnesium	13,400	4,808	13,640 J	24,040	NC	10	500.0	02/15/13
Manganese	514.6	0.6010	557.2	3.005	8	10	5.000	02/12/13
Molybdenum	1.821	0.6010	2.002 J	3.005	NC	10	5.000	02/12/13
Nickel	82.99	0.6010	90.37	3.005	9	10	5.000	02/12/13
Potassium	4,560	60.10	4,658	300.5	2	10	5.000	02/12/13
Selenium	ND	1.202	ND	6.010	NC	10	5.000	02/12/13
Silver	0.4256	0.6010	ND	3.005	NC	10	5.000	02/12/13
Sodium	14,140	6,010	15,430 J	30,050	NC	10	500.0	02/14/13
Thallium	ND	1.202	ND	6.010	NC	10	5.000	02/12/13
Vanadium	77.39	0.6010	82.56	3.005	7	10	5.000	02/12/13
Zinc	244.7	2.404	267.6	12.02	9	10	5.000	02/12/13

*= Value outside of QC limits; see narrative
J= Estimated value
NC= Not Calculated
ND= Not Detected at or above MDL
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Target Analyte List Metals

Lab #:	242876	Location:	PHA 2013
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103S225322	Analysis:	EPA 6010B
Field ID:	RFS-WSM-DU1-006	Units:	mg/Kg
Type:	Post Digest Spike	Basis:	dry
MSS Lab ID:	242876-001	Batch#:	195450
Lab ID:	QC676339	Sampled:	02/04/13
Matrix:	Soil	Received:	02/04/13

Moisture: 60%

Analyte	MSS Result	Spiked	Result	%REC	Limits	Diln Fac	Analyzed
Aluminum	27,640	240,400	277,100	104	75-125	100.0	02/14/13
Antimony	<0.3819	240.4	231.4	96	75-125	1.000	02/12/13
Arsenic	27.81	120.2	144.2	97	75-125	1.000	02/12/13
Barium	60.43	240.4	288.7	95	75-125	1.000	02/12/13
Beryllium	0.6150	6.010	6.705	101	75-125	1.000	02/12/13
Cadmium	0.3110	24.04	23.80	98	75-125	1.000	02/12/13
Calcium	3,645	2,404	5,851	92	75-125	1.000	02/12/13
Chromium	84.41	240.4	307.6	93	75-125	1.000	02/12/13
Cobalt	16.03	60.10	71.22	92	75-125	1.000	02/12/13
Copper	95.92	30.05	124.3	94	75-125	1.000	02/12/13
Iron	44,620	240,400	311,500	111	75-125	100.0	02/15/13
Lead	56.16	240.4	270.6	89	75-125	1.000	02/12/13
Magnesium	13,400	240,400	264,900	105	75-125	100.0	02/15/13
Manganese	514.6	60.10	562.9	80 NM	75-125	1.000	02/12/13
Molybdenum	1.821	48.08	48.13	96	75-125	1.000	02/12/13
Nickel	82.99	60.10	136.4	89	75-125	1.000	02/12/13
Potassium	4,560	1,202	5,626	89	75-125	1.000	02/12/13
Selenium	<0.3516	120.2	115.5	96	75-125	1.000	02/12/13
Silver	0.4256	24.04	22.18	90	75-125	1.000	02/12/13
Sodium	14,140	240,400	267,100	105	75-125	100.0	02/14/13
Thallium	<0.3919	120.2	105.7	88	75-125	1.000	02/12/13
Vanadium	77.39	60.10	133.4	93	75-125	1.000	02/12/13
Zinc	244.7	60.10	296.9	87 NM	75-125	1.000	02/12/13

NM= Not Meaningful: Sample concentration > 4X spike concentration

REPORTING SUMMARY FOR 242876 METALS Soil

Curtis & Tompkins Laboratories

Lab ID	Inst ID	Analyzed	IDF	AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	MO	NI	K	SE	AG	NA	TL	V	ZN
242876-001	MET34	02/08/13 13:27	1.0															+									
242876-001	MET08	02/12/13 08:48	1.0		+	+	+	+	+	+	+	+	+		+		+		+	+	+	+	+		+	+	+
242876-001	MET08	02/14/13 14:12	100.0	+																				+			
242876-001	MET08	02/15/13 13:38	100.0											+													
242876-001	MET09	02/15/13 15:25	100.0													+											
QC676084	MET34	02/08/13 12:57	1.0															+									
QC676085	MET34	02/08/13 12:58	1.0															+									
QC676086	MET34	02/08/13 13:03	1.0															+									
QC676087	MET34	02/08/13 13:07	1.0															+									
QC676088	MET34	02/08/13 13:09	1.0															+									
QC676089	MET34	02/08/13 13:10	5.0															+									
QC676333	MET08	02/12/13 08:35	1.0	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+
QC676334	MET08	02/12/13 08:40	1.0	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+
QC676335	MET08	02/12/13 08:44	1.0	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+
QC676336	MET08	02/12/13 08:51	1.0		+	+	+	+	+		+	+	+		+		+		+	+	+	+	+		+	+	+
QC676336	MET08	02/14/13 14:17	100.0	+																				+			
QC676336	MET08	02/15/13 13:43	100.0							+				+													
QC676336	MET09	02/15/13 15:29	100.0													+											
QC676337	MET08	02/12/13 08:54	1.0		+	+	+	+	+		+	+	+		+		+		+	+	+	+	+		+	+	+
QC676337	MET08	02/14/13 14:22	100.0	+																				+			
QC676337	MET08	02/15/13 13:48	100.0							+				+													
QC676337	MET09	02/15/13 15:33	100.0													+											
QC676338	MET08	02/12/13 08:58	5.0		+	+	+	+	+	+	+	+	+		+		+		+	+	+	+	+		+	+	+
QC676338	MET08	02/14/13 14:28	500.0	+																				+			
QC676338	MET08	02/15/13 13:54	500.0											+													
QC676338	MET09	02/15/13 15:37	500.0													+											
QC676339	MET08	02/12/13 09:02	1.0		+	+	+	+	+	+	+	+	+		+		+		+	+	+	+	+		+	+	+
QC676339	MET08	02/14/13 14:33	100.0	+																				+			
QC676339	MET08	02/15/13 13:59	100.0											+													
QC676339	MET09	02/15/13 15:42	100.0													+											

ICP Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 83062368

Instrument : MET08 Begun : 02/12/13 07:28
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sr_6010	ICALBLK				02/12/13 07:28	1.0		
002	met08_sr_6010	ICAL	CRI5.1			02/12/13 07:33	1.0	1	
003	met08_sr_6010	ICAL	CS100			02/12/13 07:39	1.0	2	
004	met08_sr_6010	ICAL	CS1K			02/12/13 07:43	1.0	3	
005	met08_sr_6010	ICAL	CS10K			02/12/13 07:48	1.0	4	
006	met08_sr_6010	ICAL	CS100K			02/12/13 07:53	1.0	5	
007	met08_sr_6010	ICV				02/12/13 07:59	1.0	6	
008	met08_sr_6010	ICB				02/12/13 08:04	1.0		
009	met08_sr_6010	ICSA				02/12/13 08:09	1.0	7	10:AL=500000
010	met08_sr_6010	ICSAB				02/12/13 08:23	1.0	8	5:AL=500000
011	met08_sr_6010	CRI				02/12/13 08:29	1.0	9	
012	met08_sr_6010	BLANK	QC676333	Soil	195450	02/12/13 08:35	1.0		
013	met08_sr_6010	BS	QC676334	Soil	195450	02/12/13 08:40	1.0		
014	met08_sr_6010	BSD	QC676335	Soil	195450	02/12/13 08:44	1.0		
015	met08_sr_6010	MSS	242876-001	Soil	195450	02/12/13 08:48	1.0		4:FE=310000
016	met08_sr_6010	MS	QC676336	Soil	195450	02/12/13 08:51	1.0		1:FE=350000
017	met08_sr_6010	MSD	QC676337	Soil	195450	02/12/13 08:54	1.0		
018	met08_sr_6010	SER	QC676338	Soil	195450	02/12/13 08:58	5.0		
019	met08_sr_6010	PDS	QC676339	Soil	195450	02/12/13 09:02	1.0	10 11	
020	met08_sr_6010	CCV				02/12/13 09:05	1.0	12	
021	met08_sr_6010	CCB				02/12/13 09:10	1.0		
022	met08_sr_6010	SAMPLE	243035-006	Soil	195450	02/12/13 09:16	1.0		5:CA=940000
023	met08_sr_6010	SAMPLE	243036-005	Soil	195450	02/12/13 09:19	1.0		5:FE=520000
024	met08_sr_6010	SAMPLE	243036-005	Soil	195450	02/12/13 09:24	1.0		5:FE=520000
025	met08_sr_6010	SAMPLE	243036-005	Soil	195450	02/12/13 09:28	100.0		
026	met08_sr_6010	CCV				02/12/13 09:32	1.0	12	
027	met08_sr_6010	CCB				02/12/13 09:37	1.0		
028	met08_sr_6010	ICSAB				02/12/13 09:42	1.0	8	5:AL=500000
029	met08_sr_6010	BLANK	QC676148	Filtrate	195406	02/12/13 09:59	1.0		
030	met08_sr_6010	BS	QC676149	Filtrate	195406	02/12/13 10:05	1.0		
031	met08_sr_6010	BSD	QC676150	Filtrate	195406	02/12/13 10:10	1.0		
032	met08_sr_6010	MSS	242894-001	Filtrate	195406	02/12/13 10:15	1.0		
033	met08_sr_6010	MS	QC676151	Filtrate	195406	02/12/13 10:20	1.0		
034	met08_sr_6010	MSD	QC676152	Filtrate	195406	02/12/13 10:24	1.0		
035	met08_sr_6010	MSS	242894-001	Filtrate	195406	02/12/13 10:28	10.0		
036	met08_sr_6010	MS	QC676151	Filtrate	195406	02/12/13 10:33	10.0		
037	met08_sr_6010	MSD	QC676152	Filtrate	195406	02/12/13 10:38	10.0		
038	met08_sr_6010	CCV				02/12/13 10:44	1.0	12	
039	met08_sr_6010	CCB				02/12/13 10:49	1.0		
040	met08_sr_6010	ICSAB				02/12/13 10:54	1.0	8	5:AL=500000
041	met08_sr_6010	MSS	242846-003	Soil	195367	02/12/13 11:15	1.0		4:FE=400000
042	met08_sr_6010	MSS	242846-003	Soil	195367	02/12/13 11:18	100.0		
043	met08_sr_6010	SER	QC676008	Soil	195367	02/12/13 11:23	500.0		
044	met08_sr_6010	PDS	QC676009	Soil	195367	02/12/13 11:28	100.0	10 11	
045	met08_sr_6010	CCV				02/12/13 11:32	1.0	12	
046	met08_sr_6010	CCB				02/12/13 11:38	1.0		
047	met08_sr_6010	SAMPLE	242823-001	Soil	195367	02/12/13 11:43	100.0		
048	met08_sr_6010	SAMPLE	242823-002	Soil	195367	02/12/13 11:48	100.0		
049	met08_sr_6010	SAMPLE	242823-003	Soil	195367	02/12/13 11:53	100.0		
050	met08_sr_6010	SAMPLE	242823-004	Soil	195367	02/12/13 11:58	100.0		
051	met08_sr_6010	SAMPLE	242846-001	Soil	195367	02/12/13 12:03	100.0		
052	met08_sr_6010	SAMPLE	242846-002	Soil	195367	02/12/13 12:07	100.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 83062368

Instrument : MET08 Begun : 02/12/13 07:28
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sr_6010	SAMPLE	242846-004	Soil	195367	02/12/13 12:13	100.0		
054	met08_sr_6010	SAMPLE	242846-005	Soil	195367	02/12/13 12:18	100.0		
055	met08_sr_6010	SAMPLE	242846-006	Soil	195367	02/12/13 12:23	100.0		
056	met08_sr_6010	SAMPLE	242846-007	Soil	195367	02/12/13 12:28	100.0		
057	met08_sr_6010	ICSAB				02/12/13 12:33	1.0	8	5:AL=510000
058	met08_sr_6010	CCV				02/12/13 12:38	1.0	12	
059	met08_sr_6010	CCB				02/12/13 12:44	1.0		
060	met08_sr_6010	SAMPLE	242846-008	Soil	195367	02/12/13 12:49	100.0		
061	met08_sr_6010	SAMPLE	242823-002	Soil	195367	02/12/13 12:54	1.0		2:FE=390000
062	met08_sr_6010	SAMPLE	242823-003	Soil	195367	02/12/13 12:57	1.0		2:FE=330000
063	met08_sr_6010	SAMPLE	242846-002	Soil	195367	02/12/13 13:00	1.0		4:FE=520000
064	met08_sr_6010	SAMPLE	242846-005	Soil	195367	02/12/13 13:06	1.0		3:FE=350000
065	met08_sr_6010	SAMPLE	242846-006	Soil	195367	02/12/13 13:09	1.0		4:AL=390000
066	met08_sr_6010	SAMPLE	242846-008	Soil	195367	02/12/13 13:12	1.0		5:FE=440000
067	met08_sr_6010	CCV				02/12/13 13:16	1.0	12	
068	met08_sr_6010	CCB				02/12/13 13:21	1.0		
069	met08_sr_6010	ICSAB				02/12/13 13:26	1.0	8	5:AL=500000
070	met08_sr_6010	BLANK	QC675998	Water	195366	02/12/13 13:41	1.0		
071	met08_sr_6010	BS	QC675999	Water	195366	02/12/13 13:46	1.0		
072	met08_sr_6010	BSD	QC676000	Water	195366	02/12/13 13:52	1.0		
073	met08_sr_6010	MSS	242981-001	Water	195366	02/12/13 13:57	1.0		
074	met08_sr_6010	MS	QC676001	Water	195366	02/12/13 14:01	1.0		
075	met08_sr_6010	MSD	QC676002	Water	195366	02/12/13 14:05	1.0		
076	met08_sr_6010	MSS	242981-001	Water	195366	02/12/13 14:09	10.0		
077	met08_sr_6010	BLANK	QC676317	Water	195447	02/12/13 14:14	1.0		
078	met08_sr_6010	BS	QC676318	Water	195447	02/12/13 14:19	1.0		
079	met08_sr_6010	BSD	QC676319	Water	195447	02/12/13 14:24	1.0		
080	met08_sr_6010	CCV				02/12/13 14:30	1.0	12	
081	met08_sr_6010	CCB				02/12/13 14:35	1.0		
082	met08_sr_6010	MSS	242961-024	Water	195447	02/12/13 14:40	1.0		1:CA=200000
083	met08_sr_6010	MS	QC676320	Water	195447	02/12/13 14:45	1.0		2:CA=210000
084	met08_sr_6010	MSD	QC676321	Water	195447	02/12/13 14:50	1.0		1:CA=210000
085	met08_sr_6010	SER	QC676322	Water	195447	02/12/13 14:55	5.0		
086	met08_sr_6010	PDS	QC676323	Water	195447	02/12/13 15:00	1.0	13 14	2:CA=210000
087	met08_sr_6010	SAMPLE	242987-001	Water	195447	02/12/13 15:06	1.0		
088	met08_sr_6010	SAMPLE	242994-001	Water	195447	02/12/13 15:11	1.0		
089	met08_sr_6010	SAMPLE	242994-002	Water	195447	02/12/13 15:16	1.0		
090	met08_sr_6010	SAMPLE	242994-003	Water	195447	02/12/13 15:21	1.0		
091	met08_sr_6010	SAMPLE	242995-001	Water	195447	02/12/13 15:26	1.0		
092	met08_sr_6010	ICSAB				02/12/13 15:31	1.0	8	5:AL=510000
093	met08_sr_6010	CCV				02/12/13 15:36	1.0	12	
094	met08_sr_6010	CCB				02/12/13 15:42	1.0		
095	met08_sr_6010	SAMPLE	242995-002	Water	195447	02/12/13 15:47	1.0		
096	met08_sr_6010	SAMPLE	242995-003	Water	195447	02/12/13 15:52	1.0		
097	met08_sr_6010	CCV				02/12/13 15:57	1.0	12	
098	met08_sr_6010	CCB				02/12/13 16:03	1.0		
099	met08_sr_6010	ICSAB				02/12/13 16:08	1.0	8	5:AL=510000

NT 02/13/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 99.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 83062368

Instrument : MET08 Begun : 02/12/13 07:28
Method : EPA 6010B SOP Version : icp metals_rv9

Standards used: 1=S21545 2=S21547 3=S21546 4=S21548 5=S21549 6=S21592 7=S21411 8=S21412 9=S21413 10=S20436 11=S20437 12=S21593 13=S19831 14=S19832

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 83062368

Date : 02/12/13 Reference : met08_sr_6010
Sequence : MET08 02/12/13 Analyzed : 02/12/13 07:33

#	Type	Sample ID	Y A
		ICAL STD	2582486
		LOWER LIMIT	774746
		UPPER LIMIT	5164973
008	ICB		2643564
009	ICSA		2234689
010	ICSAB		2192664
012	BLANK	QC676333	2679918
013	BS	QC676334	2541942
014	BSD	QC676335	2564048
015	MSS	242876-001	2460826
016	MS	QC676336	2467094
017	MSD	QC676337	2478221
018	SER	QC676338	2545397
019	PDS	QC676339	2483674
020	CCV		2559543
021	CCB		2750461
022	SAMPLE	243035-006	2479720
023	SAMPLE	243036-005	2464089
024	SAMPLE	243036-005	2449757
025	SAMPLE	243036-005	2694951
026	CCV		2580529
027	CCB		2652843
028	ICSAB		2220576
029	BLANK	QC676148	2800039
030	BS	QC676149	2638107
031	BSD	QC676150	2665658
032	MSS	242894-001	2599957
033	MS	QC676151	2519367
034	MSD	QC676152	2518890
035	MSS	242894-001	2684287
036	MS	QC676151	2679055
037	MSD	QC676152	2643484
038	CCV		2591468
039	CCB		2732841
040	ICSAB		2234679
043	SER	QC676008	2683821
044	PDS	QC676009	2553210
045	CCV		2575946
046	CCB		2717554
057	ICSAB		2167844
058	CCV		2571404
059	CCB		2634816
067	CCV		2536891
068	CCB		2630140
069	ICSAB		2169840
070	BLANK	QC675998	2660076
071	BS	QC675999	2514758
072	BSD	QC676000	2538185
073	MSS	242981-001	2605666
074	MS	QC676001	2523945
075	MSD	QC676002	2512584

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 83062368

Date : 02/12/13 Reference : met08_sr_6010
Sequence : MET08 02/12/13 Analyzed : 02/12/13 07:33

#	Type	Sample ID	Y A
076	MSS	242981-001	2603948
077	BLANK	QC676317	2587696
078	BS	QC676318	2488774
079	BSD	QC676319	2488795
080	CCV		2501705
081	CCB		2675588
082	MSS	242961-024	2367346
083	MS	QC676320	2324508
084	MSD	QC676321	2330793
085	SER	QC676322	2491654
086	PDS	QC676323	2326775
087	SAMPLE	242987-001	2546497
088	SAMPLE	242994-001	2580275
089	SAMPLE	242994-002	2588796
090	SAMPLE	242994-003	2535177
091	SAMPLE	242995-001	2548174
092	ICSAB		2159240
093	CCV		2468273
094	CCB		2628485
095	SAMPLE	242995-002	2588282
096	SAMPLE	242995-003	2595646
097	CCV		2492852
098	CCB		2591303
099	ICSAB		2121279

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 METALS Soil: EPA 6010B

Inst : MET08
Calnum : 83062368001
Units : ug/L

Reviewer : ---
Date : 12-FEB-2013 07:28
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sr_6010	83062368002	CRI5.1	12-FEB-2013 07:33	S21545
L2	met08_sr_6010	83062368003	CS100	12-FEB-2013 07:39	S21547
L3	met08_sr_6010	83062368004	CS1K	12-FEB-2013 07:43	S21546
L4	met08_sr_6010	83062368005	CS10K	12-FEB-2013 07:48	S21548
L5	met08_sr_6010	83062368006	CS100K	12-FEB-2013 07:53	S21549

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Antimony	A	28.440	26.281	26.598	27.166		LOR0	0.00000	0.03682		27.121	1.000	0.995	
Arsenic	A	13.640	14.848	15.108	15.434		LOR0	0.00000	0.06480		14.758	1.000	0.995	
Barium	A	343.90	344.78	337.64	332.30		LOR0	0.00000	0.00301		339.65	1.000	0.995	
Beryllium	A	4554.8	4503.3	4521.5			LOR0	0.00000	2.21E-4		4526.5	1.000	0.995	
Cadmium	A	195.22	197.45	196.34	192.50		LOR0	0.00000	0.00519		195.38	1.000	0.995	
Chromium	A	101.88	86.029	83.482	83.281		LOR0	0.00000	0.01201		88.668	1.000	0.995	
Cobalt	A	102.00	102.84	105.91	106.05		LOR0	0.00000	0.00943		104.20	1.000	0.995	
Copper	A	115.64	111.84	115.25	117.84		LOR0	0.00000	0.00849		115.14	1.000	0.995	
Lead	A	39.480	48.396	49.161	49.060		LOR0	0.00000	0.02038		46.524	1.000	0.995	
Manganese	A	1606.2	1582.6	1541.7	1497.7		LOR0	0.00000	6.68E-4		1557.0	1.000	0.995	
Molybdenum	A	29.420	29.631	29.568	29.750		LOR0	0.00000	0.03362		29.592	1.000	0.995	
Nickel	A	46.580	41.251	42.315	42.294		LOR0	0.00000	0.02364		43.110	1.000	0.995	
Selenium	A	18.810	21.397	21.628	22.532		LOR0	0.00000	0.04440		21.092	1.000	0.995	
Silver	A	731.40	705.82	695.87	708.31		LOR0	0.00000	0.00142		710.35	1.000	0.995	
Thallium	A	13.700	14.250	14.159	14.092		LOR0	0.00000	0.07096		14.050	1.000	0.995	
Vanadium	A	158.56	151.79	148.87	150.06		LOR0	0.00000	0.00666		152.32	1.000	0.995	
Zinc	A	61.850	60.698	60.207	60.855		LOR0	0.00000	0.01643		60.902	1.000	0.995	
Aluminum	R	1.0800		0.9480	0.9370	0.8894	LOR0	0.00000	1.12372		0.9636	1.000	0.995	
Calcium	R	6.8910		6.6034	6.5354	6.2811	LOR0	0.00000	0.15914		6.5777	1.000	0.995	
Iron	R	3.2000		2.9485	2.9132	2.8400	LOR0	0.00000	0.35202		2.9754	1.000	0.995	
Magnesium	R	0.6760		0.5933	0.5801	0.5651	LOR0	0.00000	1.76915		0.6036	1.000	0.995	
Potassium	R	3.9160		3.9561	4.4448	4.5348	LOR0	0.00000	0.22056		4.2129	1.000	0.995	
Sodium	R	9.5212		9.2096	9.2763	8.9201	LOR0	0.00000	0.11206		9.2318	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Antimony	A	10.000	5	100.00	-3	1000.0	-2	10000	0		
Arsenic	A	5.0000	-12	100.00	-4	1000.0	-2	10000	0		
Barium	A	5.0000	3	100.00	4	1000.0	2	10000	0		
Beryllium	A	2.0000	1	100.00	0	1000.0	0				
Cadmium	A	5.0000	1	100.00	3	1000.0	2	10000	0		
Chromium	A	5.0000	**22**	100.00	3	1000.0	0	10000	0		
Cobalt	A	5.0000	-4	100.00	-3	1000.0	0	10000	0		
Copper	A	5.0000	-2	100.00	-5	1000.0	-2	10000	0		
Lead	A	5.0000	-20	100.00	-1	1000.0	0	10000	0		
Manganese	A	5.0000	7	100.00	6	1000.0	3	10000	0		
Molybdenum	A	5.0000	-1	100.00	0	1000.0	-1	10000	0		
Nickel	A	5.0000	10	100.00	-2	1000.0	0	10000	0		
Selenium	A	10.000	-16	100.00	-5	1000.0	-4	10000	0		
Silver	A	5.0000	4	100.00	0	1000.0	-1	2000.0	0		
Thallium	A	10.000	-3	100.00	1	1000.0	0	10000	0		
Vanadium	A	5.0000	6	100.00	1	1000.0	-1	10000	0		
Zinc	A	20.000	2	100.00	0	1000.0	-1	10000	0		
Aluminum	R	100.00	**21**			1000.0	7	10000	5	100000	0
Calcium	R	200.00	10			1000.0	5	10000	4	100000	0
Iron	R	100.00	13			1000.0	4	10000	3	100000	0
Magnesium	R	200.00	20			1000.0	5	10000	3	100000	0
Potassium	R	500.00	-14			1000.0	-13	10000	-2	100000	0
Sodium	R	500.00	7			1000.0	3	10000	4	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 METALS Soil
EPA 6010B

Inst : MET08
Calnum : 83062368001 Cal Date : 12-FEB-2013

ICV 83062368007 (12-FEB-2013) stds: S21592

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Antimony	A	5000	5021	ug/L	0	10	
Arsenic	A	5000	5043	ug/L	1	10	
Barium	A	5000	4990	ug/L	0	10	
Beryllium	A	500.0	514.6	ug/L	3	10	
Cadmium	A	5000	5085	ug/L	2	10	
Chromium	A	5000	4936	ug/L	-1	10	
Cobalt	A	5000	4949	ug/L	-1	10	
Copper	A	5000	4832	ug/L	-3	10	
Lead	A	5000	4867	ug/L	-3	10	
Manganese	A	5000	5011	ug/L	0	10	
Molybdenum	A	5000	5083	ug/L	2	10	
Nickel	A	5000	4973	ug/L	-1	10	
Selenium	A	5000	4926	ug/L	-1	10	
Silver	A	1000	969.8	ug/L	-3	10	
Thallium	A	5000	4922	ug/L	-2	10	
Vanadium	A	5000	4941	ug/L	-1	10	
Zinc	A	5000	4933	ug/L	-1	10	
Aluminum	R	20000	20160	ug/L	1	10	
Calcium	R	20000	20440	ug/L	2	10	
Iron	R	20000	20580	ug/L	3	10	
Magnesium	R	20000	20600	ug/L	3	10	
Potassium	R	20000	19680	ug/L	-2	10	
Sodium	R	20000	20860	ug/L	4	10	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83062368008 File : met08_sr_6010 Time : 12-FEB-2013 08:04
Cal : 83062368001 Caldate : 12-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	ND	5.000	0.3522	ug/L	
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Manganese	A	[0.3569]	5.000	0.3422	ug/L	!ib
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	
Aluminum	R	ND	100.0	42.13	ug/L	
Calcium	R	ND	200.0	16.33	ug/L	
Iron	R	ND	100.0	33.25	ug/L	
Magnesium	R	ND	200.0	32.69	ug/L	
Potassium	R	ND	500.0	221.6	ug/L	
Sodium	R	ND	500.0	43.92	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	2582486	2643564	2.37

!=warning ib=instrument blank

83062368008

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83062368009 File : met08_sr_6010 Time : 12-FEB-2013 08:09
Cal : 83062368001 Caldate : 12-FEB-2013
Standards: S21411

Analyte	Ch	Quant	IQL	Units	Flags
Antimony	A	[7.326]	10.00	ug/L	!a+
Arsenic	A	[0.09215]	5.000	ug/L	
Barium	A	[-2.326]	5.000	ug/L	!a-
Beryllium	A	[-1.167]	2.000	ug/L	!a-
Cadmium	A	[-1.926]	5.000	ug/L	!a-
Cobalt	A	[-1.806]	5.000	ug/L	!a-
Lead	A	[0.02579]	5.000	ug/L	
Molybdenum	A	[0.9352]	5.000	ug/L	
Selenium	A	[1.893]	10.00	ug/L	
Silver	A	[-3.931]	5.000	ug/L	!a-
Thallium	A	[0.1773]	10.00	ug/L	
Zinc	A	[1.581]	20.00	ug/L	
Potassium	R	[-120.2]	500.0	ug/L	
Sodium	R	[76.27]	500.0	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	18970	ug/L	95
Copper	A	20000	20270	ug/L	101
Manganese	A	20000	18140	ug/L	91
Nickel	A	20000	17850	ug/L	89
Vanadium	A	20000	19290	ug/L	96
Aluminum	R	500000	495600	ug/L	99
Calcium	R	500000	466600	ug/L	93
Iron	R	200000	185400	ug/L	93
Magnesium	R	500000	474800	ug/L	95
Titanium	R	20000	20700	ug/L	103

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	2582486	2234689	-13.47

!=warning +=high bias -=low bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83062368010 File : met08_sr_6010 Time : 12-FEB-2013 08:23
Cal : 83062368001 Caldate : 12-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	497.9	ug/L	0	20	
Arsenic	A	500.0	513.2	ug/L	3	20	
Barium	A	500.0	518.6	ug/L	4	20	
Beryllium	A	500.0	526.5	ug/L	5	20	
Cadmium	A	1000	995.7	ug/L	0	20	
Chromium	A	500.0	496.0	ug/L	-1	20	
Cobalt	A	500.0	472.3	ug/L	-6	20	
Copper	A	500.0	536.8	ug/L	7	20	
Lead	A	1000	947.1	ug/L	-5	20	
Manganese	A	500.0	472.0	ug/L	-6	20	
Molybdenum	A	500.0	516.2	ug/L	3	20	
Nickel	A	1000	926.3	ug/L	-7	20	
Selenium	A	500.0	488.7	ug/L	-2	20	
Silver	A	1000	1089	ug/L	9	20	
Thallium	A	500.0	445.0	ug/L	-11	20	
Vanadium	A	500.0	522.1	ug/L	4	20	
Zinc	A	1000	976.4	ug/L	-2	20	
Aluminum	R	500000	502200	ug/L	0		
Calcium	R	500000	480100	ug/L	-4		
Iron	R	200000	188800	ug/L	-6		
Magnesium	R	500000	485900	ug/L	-3		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	2582486	2192664	-15.09

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83062368020 File : met08_sr_6010 Time : 12-FEB-2013 09:05
Cal : 83062368001 Caldate : 12-FEB-2013
Standards: S21593

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	27.121	26.125	5000	4810	ug/L	-4	10	
Arsenic	A	14.758	14.864	5000	4816	ug/L	-4	10	
Barium	A	339.65	325.84	5000	4902	ug/L	-2	10	
Beryllium	A	4526.5	4580.5	500.0	506.5	ug/L	1	10	
Cadmium	A	195.38	193.39	5000	5022	ug/L	0	10	
Chromium	A	88.668	80.977	5000	4862	ug/L	-3	10	
Cobalt	A	104.20	103.36	5000	4863	ug/L	-3	10	
Copper	A	115.14	115.74	5000	4912	ug/L	-2	10	
Lead	A	46.524	47.034	5000	4793	ug/L	-4	10	
Manganese	A	1557.0	1480.5	5000	4941	ug/L	-1	10	
Molybdenum	A	29.592	29.871	5000	5021	ug/L	0	10	
Nickel	A	43.110	41.380	5000	4892	ug/L	-2	10	
Selenium	A	21.092	21.145	5000	4694	ug/L	-6	10	
Silver	A	710.35	677.05	1000	959.2	ug/L	-4	10	
Thallium	A	14.050	13.250	5000	4701	ug/L	-6	10	
Vanadium	A	152.32	146.89	5000	4895	ug/L	-2	10	
Zinc	A	60.902	58.911	5000	4841	ug/L	-3	10	
Aluminum	R	0.9636	0.9063	20000	20370	ug/L	2	10	
Calcium	R	6.5777	6.2495	20000	19890	ug/L	-1	10	
Iron	R	2.9754	2.8767	20000	20250	ug/L	1	10	
Magnesium	R	0.6036	0.5625	20000	19900	ug/L	0	10	
Potassium	R	4.2129	4.4387	20000	19580	ug/L	-2	10	
Sodium	R	9.2318	9.2524	20000	20740	ug/L	4	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	2582486	2559543	-0.89

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83062368021 File : met08_sr_6010 Time : 12-FEB-2013 09:10
Cal : 83062368001 Caldate : 12-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	ND	5.000	0.3522	ug/L	
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Manganese	A	ND	5.000	0.3422	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	
Aluminum	R	ND	100.0	42.13	ug/L	
Calcium	R	ND	200.0	16.33	ug/L	
Iron	R	ND	100.0	33.25	ug/L	
Magnesium	R	ND	200.0	32.69	ug/L	
Potassium	R	ND	500.0	221.6	ug/L	
Sodium	R	ND	500.0	43.92	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	2582486	2750461	6.50

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83062368028 File : met08_sr_6010 Time : 12-FEB-2013 09:42
Cal : 83062368001 Caldate : 12-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	484.1	ug/L	-3	20	
Arsenic	A	500.0	476.7	ug/L	-5	20	
Barium	A	500.0	508.8	ug/L	2	20	
Beryllium	A	500.0	518.1	ug/L	4	20	
Cadmium	A	1000	982.8	ug/L	-2	20	
Chromium	A	500.0	486.2	ug/L	-3	20	
Cobalt	A	500.0	460.7	ug/L	-8	20	
Copper	A	500.0	540.4	ug/L	8	20	
Lead	A	1000	930.3	ug/L	-7	20	
Manganese	A	500.0	463.8	ug/L	-7	20	
Molybdenum	A	500.0	508.4	ug/L	2	20	
Nickel	A	1000	910.9	ug/L	-9	20	
Selenium	A	500.0	480.1	ug/L	-4	20	
Silver	A	1000	1077	ug/L	8	20	
Thallium	A	500.0	436.3	ug/L	-13	20	
Vanadium	A	500.0	516.6	ug/L	3	20	
Zinc	A	1000	952.2	ug/L	-5	20	
Aluminum	R	500000	501300	ug/L	0		
Calcium	R	500000	468800	ug/L	-6		
Iron	R	200000	184600	ug/L	-8		
Magnesium	R	500000	470300	ug/L	-6		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	2582486	2220576	-14.01

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 83065573

Instrument : MET08 Begun : 02/14/13 12:53
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sr_6010	ICALBLK				02/14/13 12:53	1.0		
002	met08_sr_6010	ICAL	CRI5.1			02/14/13 12:58	1.0	1	
003	met08_sr_6010	ICAL	CS100			02/14/13 13:03	1.0	2	
004	met08_sr_6010	ICAL	CS1K			02/14/13 13:07	1.0	3	
005	met08_sr_6010	ICAL	CS10K			02/14/13 13:12	1.0	4	
006	met08_sr_6010	ICAL	CS100K			02/14/13 13:18	1.0	5	
007	met08_sr_6010	ICV				02/14/13 13:23	1.0	6	
008	met08_sr_6010	ICB				02/14/13 13:29	1.0		
009	met08_sr_6010	ICSA				02/14/13 13:34	1.0	7	10:AL=500000
010	met08_sr_6010	ICSAB				02/14/13 13:51	1.0	8	5:AL=510000
011	met08_sr_6010	XCRI				02/14/13 13:56	1.0	9	
012	met08_sr_6010	XCRI				02/14/13 14:01	1.0	9	
013	met08_sr_6010	CRI				02/14/13 14:07	1.0	9	
014	met08_sr_6010	MSS	242876-001	Soil	195450	02/14/13 14:12	100.0		
015	met08_sr_6010	MS	QC676336	Soil	195450	02/14/13 14:17	100.0		
016	met08_sr_6010	MSD	QC676337	Soil	195450	02/14/13 14:22	100.0		
017	met08_sr_6010	SER	QC676338	Soil	195450	02/14/13 14:28	500.0		
018	met08_sr_6010	PDS	QC676339	Soil	195450	02/14/13 14:33	100.0	10 11	
019	met08_sr_6010	BLANK	QC676676	Water	195534	02/14/13 14:37	1.0		
020	met08_sr_6010	BS	QC676677	Water	195534	02/14/13 14:42	1.0		
021	met08_sr_6010	BSD	QC676678	Water	195534	02/14/13 14:47	1.0		
022	met08_sr_6010	CCV				02/14/13 14:52	1.0	12	
023	met08_sr_6010	CCB				02/14/13 14:58	1.0		
024	met08_sr_6010	MSS	243018-002	Water	195534	02/14/13 15:03	1.0		
025	met08_sr_6010	MS	QC676679	Water	195534	02/14/13 15:09	1.0		
026	met08_sr_6010	MSD	QC676680	Water	195534	02/14/13 15:14	1.0		
027	met08_sr_6010	MS	QC676530	Soil	195494	02/14/13 15:19	1.0		3:FE=540000
028	met08_sr_6010	MSD	QC676531	Soil	195494	02/14/13 15:24	1.0		2:FE=750000
029	met08_sr_6010	CCV				02/14/13 15:29	1.0	12	
030	met08_sr_6010	CCB				02/14/13 15:35	1.0		
031	met08_sr_6010	ICSAB				02/14/13 15:40	1.0	8	5:MG=560000
032	met08_sr_6010	SAMPLE	243097-002	Water	195534	02/14/13 16:18	1.0		
033	met08_sr_6010	SAMPLE	243097-001	Water	195534	02/14/13 16:25	1.0		1:CU=94000
034	met08_sr_6010	CCV				02/14/13 16:32	1.0	12	
035	met08_sr_6010	CCB				02/14/13 16:38	1.0		
036	met08_sr_6010	ICSAB				02/14/13 16:43	1.0	8	5:MG=590000

NT 02/14/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 12.

JDB 02/14/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 13 through 36.

Standards used: 1=S21545 2=S21547 3=S21546 4=S21548 5=S21549 6=S21592 7=S21411 8=S21412 9=S21413 10=S20436 11=S20437 12=S21593

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 83065573

Date : 02/14/13 Reference : met08_sr_6010
Sequence : MET08 02/14/13 Analyzed : 02/14/13 12:58

#	Type	Sample ID	Y A
		ICAL STD	1974315
		LOWER LIMIT	592294
		UPPER LIMIT	3948630
008	ICB		1953813
009	ICSA		1627123
010	ICSAB		1617468
014	MSS	242876-001	1891848
015	MS	QC676336	1866080
016	MSD	QC676337	1883336
017	SER	QC676338	1913166
018	PDS	QC676339	1798478
019	BLANK	QC676676	1953814
020	BS	QC676677	1863404
021	BSD	QC676678	1881132
022	CCV		1792559
023	CCB		1871092
024	MSS	243018-002	2378237
025	MS	QC676679	2294879
026	MSD	QC676680	2279678
027	MS	QC676530	1731741
028	MSD	QC676531	1710802
029	CCV		1750190
030	CCB		1821108
031	ICSAB		1498102
032	SAMPLE	243097-002	1545704
033	SAMPLE	243097-001	1776383
034	CCV		1688267
035	CCB		1761675
036	ICSAB		1450556

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 METALS Soil: EPA 6010B

Inst : MET08
Calnum : 83065573001
Units : ug/L

Reviewer : ---
Date : 14-FEB-2013 12:53
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sr_6010	83065573002	CRI5.1	14-FEB-2013 12:58	S21545
L2	met08_sr_6010	83065573003	CS100	14-FEB-2013 13:03	S21547
L3	met08_sr_6010	83065573004	CS1K	14-FEB-2013 13:07	S21546
L4	met08_sr_6010	83065573005	CS10K	14-FEB-2013 13:12	S21548
L5	met08_sr_6010	83065573006	CS100K	14-FEB-2013 13:18	S21549

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Antimony	A	29.080	25.279	25.363	26.171		LOR0	0.00000	0.03822		26.473	1.000	0.995	
Arsenic	A	11.140	13.785	14.186	14.648		LOR0	0.00000	0.06829		13.440	1.000	0.995	
Barium	A	336.30	326.94	332.41	328.73		LOR0	0.00000	0.00304		331.10	1.000	0.995	
Beryllium	A	4234.2	4160.4	4228.2			LOR0	0.00000	2.37E-4		4207.6	1.000	0.995	
Cadmium	A	178.60	175.25	180.00	176.53		LOR0	0.00000	0.00566		177.60	1.000	0.995	
Chromium	A	80.560	76.070	77.321	77.742		LOR0	0.00000	0.01286		77.923	1.000	0.995	
Cobalt	A	100.66	98.171	102.38	102.30		LOR0	0.00000	0.00977		100.88	1.000	0.995	
Copper	A	93.520	100.39	103.87	107.76		LOR0	0.00000	0.00928		101.38	1.000	0.995	
Lead	A	51.880	44.551	45.710	45.531		LOR0	0.00000	0.02196		46.918	1.000	0.995	
Manganese	A	1479.1	1480.8	1492.2	1472.1		LOR0	0.00000	6.79E-4		1481.0	1.000	0.995	
Molybdenum	A	27.580	27.434	27.768	28.035		LOR0	0.00000	0.03567		27.704	1.000	0.995	
Nickel	A	39.160	37.952	39.742	39.619		LOR0	0.00000	0.02524		39.118	1.000	0.995	
Selenium	A	20.830	20.067	20.507	21.506		LOR0	0.00000	0.04652		20.728	1.000	0.995	
Silver	A	668.74	644.01	661.71	673.93		LOR0	0.00000	0.00149		662.10	1.000	0.995	
Thallium	A	13.960	14.222	14.226	14.112		LOR0	0.00000	0.07085		14.130	1.000	0.995	
Vanadium	A	141.30	132.73	135.66	137.95		LOR0	0.00000	0.00725		136.91	1.000	0.995	
Zinc	A	62.060	54.497	55.968	56.497		LOR0	0.00000	0.01770		57.255	1.000	0.995	
Aluminum	R	0.9000		0.8756	0.8916	0.8519	LOR0	0.00000	1.17331		0.8798	1.000	0.995	
Calcium	R	6.4055		6.3945	6.5146	6.1705	LOR0	0.00000	0.16197		6.3713	1.000	0.995	
Iron	R	2.8100		2.7540	2.8312	2.7155	LOR0	0.00000	0.36810		2.7777	1.000	0.995	
Magnesium	R	0.5465		0.5609	0.5644	0.5422	LOR0	0.00000	1.84367		0.5535	1.000	0.995	
Potassium	R	3.2976		3.6607	4.4033	4.5133	LOR0	0.00000	0.22163		3.9687	1.000	0.995	
Sodium	R	9.2598		9.0992	9.2053	9.0655	LOR0	0.00000	0.11029		9.1574	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Antimony	A	10.000	11	100.00	-3	1000.0	-3	10000	0		
Arsenic	A	5.0000	**-24**	100.00	-6	1000.0	-3	10000	0		
Barium	A	5.0000	2	100.00	-1	1000.0	1	10000	0		
Beryllium	A	2.0000	0	100.00	-2	1000.0	0				
Cadmium	A	5.0000	1	100.00	-1	1000.0	2	10000	0		
Chromium	A	5.0000	4	100.00	-2	1000.0	-1	10000	0		
Cobalt	A	5.0000	-2	100.00	-4	1000.0	0	10000	0		
Copper	A	5.0000	-13	100.00	-7	1000.0	-4	10000	0		
Lead	A	5.0000	14	100.00	-2	1000.0	0	10000	0		
Manganese	A	5.0000	0	100.00	1	1000.0	1	10000	0		
Molybdenum	A	5.0000	-2	100.00	-2	1000.0	-1	10000	0		
Nickel	A	5.0000	-1	100.00	-4	1000.0	0	10000	0		
Selenium	A	10.000	-3	100.00	-7	1000.0	-5	10000	0		
Silver	A	5.0000	0	100.00	-4	1000.0	-1	2000.0	0		
Thallium	A	10.000	-1	100.00	1	1000.0	1	10000	0		
Vanadium	A	5.0000	2	100.00	-4	1000.0	-2	10000	0		
Zinc	A	20.000	10	100.00	-4	1000.0	-1	10000	0		
Aluminum	R	100.00	6			1000.0	3	10000	5	100000	0
Calcium	R	200.00	4			1000.0	4	10000	6	100000	0
Iron	R	100.00	3			1000.0	1	10000	4	100000	0
Magnesium	R	200.00	1			1000.0	3	10000	4	100000	0
Potassium	R	500.00	**-27**			1000.0	-19	10000	-2	100000	0
Sodium	R	500.00	2			1000.0	0	10000	2	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 METALS Soil
EPA 6010B

Inst : MET08
Calnum : 83065573001 Cal Date : 14-FEB-2013

ICV 83065573007 (14-FEB-2013) stds: S21592

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Antimony	A	5000	4901	ug/L	-2	10	
Arsenic	A	5000	4918	ug/L	-2	10	
Barium	A	5000	4993	ug/L	0	10	
Beryllium	A	500.0	516.2	ug/L	3	10	
Cadmium	A	5000	5037	ug/L	1	10	
Chromium	A	5000	4881	ug/L	-2	10	
Cobalt	A	5000	4884	ug/L	-2	10	
Copper	A	5000	4691	ug/L	-6	10	
Lead	A	5000	4781	ug/L	-4	10	
Manganese	A	5000	4927	ug/L	-1	10	
Molybdenum	A	5000	5069	ug/L	1	10	
Nickel	A	5000	4897	ug/L	-2	10	
Selenium	A	5000	4859	ug/L	-3	10	
Silver	A	1000	961.2	ug/L	-4	10	
Thallium	A	5000	4889	ug/L	-2	10	
Vanadium	A	5000	4954	ug/L	-1	10	
Zinc	A	5000	4867	ug/L	-3	10	
Aluminum	R	20000	20320	ug/L	2	10	
Calcium	R	20000	20890	ug/L	4	10	
Iron	R	20000	20980	ug/L	5	10	
Magnesium	R	20000	20880	ug/L	4	10	
Potassium	R	20000	19990	ug/L	0	10	
Sodium	R	20000	19770	ug/L	-1	10	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83065573008.1 File : met08_sr_6010 Time : 14-FEB-2013 13:29
Cal : 83065573001 Caldate : 14-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	ND	5.000	0.3522	ug/L	
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Manganese	A	[0.3862]	5.000	0.3422	ug/L	!ib
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	
Aluminum	R	ND	100.0	42.13	ug/L	
Calcium	R	ND	200.0	16.33	ug/L	
Iron	R	ND	100.0	33.25	ug/L	
Magnesium	R	ND	200.0	32.69	ug/L	
Potassium	R	ND	500.0	221.6	ug/L	
Sodium	R	ND	500.0	43.92	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1974315	1953813	-1.04

!=warning ib=instrument blank

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83065573009.1 File : met08_sr_6010 Time : 14-FEB-2013 13:34
Cal : 83065573001 Caldate : 14-FEB-2013
Standards: S21411

Analyte	Ch	Quant	IQL	Units	Flags
Antimony	A	[-9.777]	10.00	ug/L	!a-
Arsenic	A	[-2.427]	5.000	ug/L	
Barium	A	[-2.811]	5.000	ug/L	!a-
Beryllium	A	[-0.5023]	2.000	ug/L	!a-
Cadmium	A	[-1.534]	5.000	ug/L	!a-
Cobalt	A	[-1.694]	5.000	ug/L	!a-
Lead	A	[3.047]	5.000	ug/L	
Molybdenum	A	[2.555]	5.000	ug/L	
Selenium	A	[5.310]	10.00	ug/L	!a+
Silver	A	[-0.2857]	5.000	ug/L	
Thallium	A	[-4.716]	10.00	ug/L	!a-
Zinc	A	[1.089]	20.00	ug/L	
Potassium	R	[-141.1]	500.0	ug/L	
Sodium	R	[90.21]	500.0	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	19650	ug/L	98
Copper	A	20000	19640	ug/L	98
Manganese	A	20000	18470	ug/L	92
Nickel	A	20000	18290	ug/L	91
Vanadium	A	20000	19900	ug/L	100
Aluminum	R	500000	504900	ug/L	101
Calcium	R	500000	496000	ug/L	99
Iron	R	200000	193700	ug/L	97
Magnesium	R	500000	500100	ug/L	100
Titanium	R	20000	21370	ug/L	107

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1974315	1627123	-17.59

!=warning +=high bias -=low bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83065573010.1 File : met08_sr_6010 Time : 14-FEB-2013 13:51
Cal : 83065573001 Caldate : 14-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	497.2	ug/L	-1	20	
Arsenic	A	500.0	508.2	ug/L	2	20	
Barium	A	500.0	527.0	ug/L	5	20	
Beryllium	A	500.0	540.8	ug/L	8	20	
Cadmium	A	1000	996.4	ug/L	0	20	
Chromium	A	500.0	506.9	ug/L	1	20	
Cobalt	A	500.0	470.3	ug/L	-6	20	
Copper	A	500.0	519.8	ug/L	4	20	
Lead	A	1000	957.5	ug/L	-4	20	
Manganese	A	500.0	469.3	ug/L	-6	20	
Molybdenum	A	500.0	518.8	ug/L	4	20	
Nickel	A	1000	934.9	ug/L	-7	20	
Selenium	A	500.0	499.2	ug/L	0	20	
Silver	A	1000	1118	ug/L	12	20	
Thallium	A	500.0	453.2	ug/L	-9	20	
Vanadium	A	500.0	539.5	ug/L	8	20	
Zinc	A	1000	973.7	ug/L	-3	20	
Aluminum	R	500000	512300	ug/L	2		
Calcium	R	500000	501900	ug/L	0		
Iron	R	200000	197000	ug/L	-1		
Magnesium	R	500000	510600	ug/L	2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1974315	1617468	-18.07

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83065573022.1 File : met08_sr_6010 Time : 14-FEB-2013 14:52
Cal : 83065573001 Caldate : 14-FEB-2013
Standards: S21593

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	26.473	27.352	5000	5227	ug/L	5	10	
Arsenic	A	13.440	15.398	5000	5258	ug/L	5	10	
Barium	A	331.10	349.07	5000	5309	ug/L	6	10	
Beryllium	A	4207.6	4641.4	500.0	548.9	ug/L	10	10	
Cadmium	A	177.60	189.25	5000	5359	ug/L	7	10	
Chromium	A	77.923	82.203	5000	5287	ug/L	6	10	
Cobalt	A	100.88	108.28	5000	5282	ug/L	6	10	
Copper	A	101.38	103.50	5000	4804	ug/L	-4	10	v- ***
Lead	A	46.918	46.557	5000	5112	ug/L	2	10	
Manganese	A	1481.0	1540.3	5000	5231	ug/L	5	10	
Molybdenum	A	27.704	30.339	5000	5411	ug/L	8	10	
Nickel	A	39.118	42.074	5000	5310	ug/L	6	10	
Selenium	A	20.728	22.486	5000	5230	ug/L	5	10	
Silver	A	662.10	693.44	1000	1033	ug/L	3	10	
Thallium	A	14.130	14.841	5000	5258	ug/L	5	10	
Vanadium	A	136.91	144.63	5000	5243	ug/L	5	10	
Zinc	A	57.255	59.615	5000	5276	ug/L	6	10	
Aluminum	R	0.8798	0.8876	20000	20830	ug/L	4	10	
Calcium	R	6.3713	6.8507	20000	22190	ug/L	**11**	10	c+ ***
Iron	R	2.7777	3.0155	20000	22200	ug/L	**11**	10	c+ ***
Magnesium	R	0.5535	0.6041	20000	22270	ug/L	**11**	10	c+ ***
Potassium	R	3.9687	4.7101	20000	20880	ug/L	4	10	
Sodium	R	9.1574	9.6804	20000	21350	ug/L	7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1974315	1792559	-9.21

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83065573023.1 File : met08_sr_6010 Time : 14-FEB-2013 14:58
Cal : 83065573001 Caldate : 14-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	ND	5.000	0.3522	ug/L	
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Manganese	A	ND	5.000	0.3422	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	
Aluminum	R	ND	100.0	42.13	ug/L	
Calcium	R	ND	200.0	16.33	ug/L	
Iron	R	ND	100.0	33.25	ug/L	
Magnesium	R	ND	200.0	32.69	ug/L	
Potassium	R	ND	500.0	221.6	ug/L	
Sodium	R	ND	500.0	43.92	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1974315	1871092	-5.23

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83065573031.2 File : met08_sr_6010 Time : 14-FEB-2013 15:40
Cal : 83065573001 Caldate : 14-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	517.0	ug/L	3	20	
Arsenic	A	500.0	561.8	ug/L	12	20	
Barium	A	500.0	568.9	ug/L	14	20	
Beryllium	A	500.0	583.1	ug/L	17	20	
Cadmium	A	1000	1076	ug/L	8	20	
Chromium	A	500.0	539.1	ug/L	8	20	
Cobalt	A	500.0	502.6	ug/L	1	20	
Copper	A	500.0	549.2	ug/L	10	20	
Lead	A	1000	1026	ug/L	3	20	
Manganese	A	500.0	505.0	ug/L	1	20	
Molybdenum	A	500.0	554.1	ug/L	11	20	
Nickel	A	1000	994.1	ug/L	-1	20	
Selenium	A	500.0	587.2	ug/L	17	20	
Silver	A	1000	1199	ug/L	20	20	
Thallium	A	500.0	482.4	ug/L	-4	20	
Vanadium	A	500.0	577.1	ug/L	15	20	
Zinc	A	1000	1045	ug/L	4	20	
Aluminum	R	500000	552200	ug/L	10		
Calcium	R	500000	548400	ug/L	10		
Iron	R	200000	215300	ug/L	8		
Magnesium	R	500000	558800	ug/L	12		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1974315	1498102	-24.12

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 93066768

Instrument : MET09 Begun : 02/15/13 08:48
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met09_sn	ICALBLK				02/15/13 08:48	1.0		
002	met09_sn	ICAL	CRI5.1			02/15/13 08:53	1.0	1	
003	met09_sn	ICAL	CS100			02/15/13 08:58	1.0	2	
004	met09_sn	ICAL	CS1K			02/15/13 09:02	1.0	3	
005	met09_sn	ICAL	CS10K			02/15/13 09:06	1.0	4	
006	met09_sn	ICAL	CS100K			02/15/13 09:11	1.0	5	
007	met09_sn	XICV				02/15/13 09:16	1.0	6	
008	met09_sn	ICV				02/15/13 09:20	1.0	6	
009	met09_sn	ICB				02/15/13 09:26	1.0		
010	met09_sn	ICSA				02/15/13 09:31	1.0	7	10:AL=450000
011	met09_sn	ICSAB				02/15/13 10:06	1.0	8	5:AL=480000
012	met09_sn	CRI				02/15/13 10:11	1.0	9	
013	met09_sn	BLANK	QC676904	Soil	195586	02/15/13 10:16	1.0		
014	met09_sn	BS	QC676905	Soil	195586	02/15/13 10:21	1.0		
015	met09_sn	BSD	QC676906	Soil	195586	02/15/13 10:24	1.0		
016	met09_sn	MSS	243118-001	Soil	195586	02/15/13 10:27	10.0		2:FE=430000
017	met09_sn	MS	QC676907	Soil	195586	02/15/13 10:33	10.0		
018	met09_sn	MSD	QC676908	Soil	195586	02/15/13 10:40	10.0		
019	met09_sn	CCV				02/15/13 10:46	1.0	10	
020	met09_sn	CCB				02/15/13 10:51	1.0		
021	met09_sn	SAMPLE	243019-001	Soil	195535	02/15/13 10:57	1.0		6:FE=580000
022	met09_sn	SAMPLE	243019-002	Soil	195535	02/15/13 11:00	1.0		3:FE=250000
023	met09_sn	SAMPLE	243019-003	Soil	195535	02/15/13 11:03	1.0		3:FE=240000
024	met09_sn	SAMPLE	243023-001	Soil	195535	02/15/13 11:06	1.0		6:FE=550000
025	met09_sn	SAMPLE	243023-003	Soil	195535	02/15/13 11:09	1.0		6:CA=520000
026	met09_sn	SAMPLE	243023-005	Soil	195535	02/15/13 11:12	1.0		6:FE=520000
027	met09_sn	SAMPLE	243023-007	Soil	195535	02/15/13 11:16	1.0		6:CA=660000
028	met09_sn	SAMPLE	243042-001	Soil	195535	02/15/13 11:19	1.0		4:FE=230000
029	met09_sn	SAMPLE	243042-002	Soil	195535	02/15/13 11:22	1.0		4:FE=350000
030	met09_sn	SAMPLE	243042-003	Soil	195535	02/15/13 11:25	1.0		4:FE=330000
031	met09_sn	CCV				02/15/13 11:28	1.0	10	
032	met09_sn	CCB				02/15/13 11:33	1.0		
033	met09_sn	ICSAB				02/15/13 11:38	1.0	8	5:AL=510000
034	met09_sn	BLANK	QC676885	WET Leachate	195583	02/15/13 11:48	10.0		1:NA=170000
035	met09_sn	BS	QC676886	WET Leachate	195583	02/15/13 11:55	1.0		
036	met09_sn	BSD	QC676887	WET Leachate	195583	02/15/13 11:58	1.0		
037	met09_sn	MSS	243035-006	WET Leachate	195583	02/15/13 12:01	10.0		1:NA=180000
038	met09_sn	MS	QC676888	WET Leachate	195583	02/15/13 12:08	10.0		
039	met09_sn	MSD	QC676889	WET Leachate	195583	02/15/13 12:14	10.0		
040	met09_sn	SER	QC676890	WET Leachate	195583	02/15/13 12:20	50.0		
041	met09_sn	PDS	QC676891	WET Leachate	195583	02/15/13 12:25	10.0	11 12	
042	met09_sn	SAMPLE	243016-001	WET Leachate	195583	02/15/13 12:30	10.0		1:NA=180000
043	met09_sn	SAMPLE	243046-024	WET Leachate	195583	02/15/13 12:38	10.0		1:NA=190000
044	met09_sn	CCV				02/15/13 12:45	1.0	10	
045	met09_sn	CCB				02/15/13 12:50	1.0		
046	met09_sn	ICSAB				02/15/13 12:55	1.0	8	5:AL=480000
047	met09_sn	SAMPLE	243019-001	Soil	195535	02/15/13 13:00	1.0		6:FE=570000
048	met09_sn	SAMPLE	243023-001	Soil	195535	02/15/13 13:03	1.0		6:FE=520000
049	met09_sn	SAMPLE	243023-005	Soil	195535	02/15/13 13:07	1.0		6:FE=500000
050	met09_sn	SAMPLE	243023-007	Soil	195535	02/15/13 13:10	1.0		6:CA=670000
051	met09_sn	SAMPLE	243042-002	Soil	195535	02/15/13 13:13	1.0		4:FE=340000
052	met09_sn	SAMPLE	243042-003	Soil	195535	02/15/13 13:16	1.0		4:FE=300000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 93066768

Instrument : MET09 Begun : 02/15/13 08:48
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met09_sn	CCV				02/15/13 13:19	1.0	10	
054	met09_sn	CCB				02/15/13 13:24	1.0		
055	met09_sn	ICSAB				02/15/13 13:29	1.0	8	5:AL=500000
056	met09_sn	BLANK	QC676882	Water	195582	02/15/13 13:38	1.0		
057	met09_sn	BS	QC676883	Water	195582	02/15/13 13:43	1.0		
058	met09_sn	BSD	QC676884	Water	195582	02/15/13 13:48	1.0		
059	met09_sn	SAMPLE	243010-001	Water	195582	02/15/13 13:53	1.0		
060	met09_sn	SAMPLE	243010-002	Water	195582	02/15/13 13:58	1.0		
061	met09_sn	SAMPLE	243025-001	WET Leachate	195583	02/15/13 14:03	1.0		1:NA=160000
062	met09_sn	SAMPLE	243025-003	WET Leachate	195583	02/15/13 14:10	1.0		1:NA=170000
063	met09_sn	SAMPLE	243025-004	WET Leachate	195583	02/15/13 14:17	1.0		1:NA=140000
064	met09_sn	SAMPLE	243025-005	WET Leachate	195583	02/15/13 14:24	1.0		1:NA=150000
065	met09_sn	SAMPLE	243025-006	WET Leachate	195583	02/15/13 14:32	1.0		1:NA=150000
066	met09_sn	CCV				02/15/13 14:39	1.0	10	
067	met09_sn	CCB				02/15/13 14:44	1.0		
068	met09_sn	SAMPLE	243025-007	WET Leachate	195583	02/15/13 14:49	1.0		1:NA=160000
069	met09_sn	SAMPLE	243025-008	WET Leachate	195583	02/15/13 14:56	1.0		1:NA=210000
070	met09_sn	SAMPLE	243025-009	WET Leachate	195583	02/15/13 15:03	1.0		1:NA=160000
071	met09_sn	SAMPLE	243025-010	WET Leachate	195583	02/15/13 15:10	1.0		1:NA=170000
072	met09_sn	SAMPLE	243025-011	WET Leachate	195583	02/15/13 15:17	1.0		1:NA=170000
073	met09_sn	MSS	242876-001	Soil	195450	02/15/13 15:25	100.0		
074	met09_sn	MS	QC676336	Soil	195450	02/15/13 15:29	100.0		
075	met09_sn	MSD	QC676337	Soil	195450	02/15/13 15:33	100.0		
076	met09_sn	SER	QC676338	Soil	195450	02/15/13 15:37	500.0		
077	met09_sn	PDS	QC676339	Soil	195450	02/15/13 15:42	100.0	11 12	
078	met09_sn	ICSAB				02/15/13 15:45	1.0	8	5:MG=470000
079	met09_sn	CCV				02/15/13 15:50	1.0	10	
080	met09_sn	CCB				02/15/13 15:55	1.0		
081	met09_sn	SAMPLE	243025-012	WET Leachate	195583	02/15/13 16:00	1.0		1:NA=190000
082	met09_sn	BLANK	QC676669	Water	195533	02/15/13 16:07	1.0		
083	met09_sn	BS	QC676670	Water	195533	02/15/13 16:12	1.0		
084	met09_sn	BSD	QC676671	Water	195533	02/15/13 16:17	1.0		
085	met09_sn	MSS	242960-005	Water	195533	02/15/13 16:22	1.0		
086	met09_sn	MS	QC676672	Water	195533	02/15/13 16:27	1.0		
087	met09_sn	MSD	QC676673	Water	195533	02/15/13 16:32	1.0		
088	met09_sn	SER	QC676674	Water	195533	02/15/13 16:37	5.0		
089	met09_sn	PDS	QC676675	Water	195533	02/15/13 16:42	1.0	13 14	
090	met09_sn	SAMPLE	242960-007	Water	195533	02/15/13 16:46	1.0		
091	met09_sn	CCV				02/15/13 16:51	1.0	10	
092	met09_sn	CCB				02/15/13 16:56	1.0		
093	met09_sn	SAMPLE	242960-011	Water	195533	02/15/13 17:01	1.0		
094	met09_sn	SAMPLE	242960-015	Water	195533	02/15/13 17:06	1.0		
095	met09_sn	SAMPLE	242960-019	Water	195533	02/15/13 17:11	1.0		
096	met09_sn	SAMPLE	243032-001	Water	195533	02/15/13 17:16	1.0		
097	met09_sn	CCV				02/15/13 17:21	1.0	10	
098	met09_sn	CCB				02/15/13 17:26	1.0		
099	met09_sn	ICSAB				02/15/13 17:31	1.0	8	5:MG=470000
100	met09_sn	BLANK	QC677037	Soil	195616	02/15/13 20:27	1.0		
101	met09_sn	BS	QC677038	Soil	195616	02/15/13 20:32	1.0		
102	met09_sn	BSD	QC677039	Soil	195616	02/15/13 20:35	1.0		
103	met09_sn	MSS	243084-001	Soil	195616	02/15/13 20:38	1.0		6:FE=440000
104	met09_sn	MS	QC677040	Soil	195616	02/15/13 20:41	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 93066768

Instrument : MET09 Begun : 02/15/13 08:48
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	met09_sn	MSD	QC677041	Soil	195616	02/15/13 20:46	1.0		
106	met09_sn	SAMPLE	243084-002	Soil	195616	02/15/13 20:52	1.0		6:FE=360000
107	met09_sn	SAMPLE	243084-003	Soil	195616	02/15/13 20:57	1.0		3:FE=280000
108	met09_sn	CCV				02/15/13 21:00	1.0	10	
109	met09_sn	X				02/15/13 21:05	1.0		
110	met09_sn	CCB				02/15/13 21:09	1.0		
111	met09_sn	SAMPLE	243084-004	Soil	195616	02/15/13 21:14	1.0		5:CA=370000
112	met09_sn	SAMPLE	243084-005	Soil	195616	02/15/13 21:19	1.0		4:FE=350000
113	met09_sn	SAMPLE	243084-006	Soil	195616	02/15/13 21:22	1.0		1:FE=210000
114	met09_sn	SAMPLE	243084-007	Soil	195616	02/15/13 21:25	1.0		2:FE=200000
115	met09_sn	SAMPLE	243084-008	Soil	195616	02/15/13 21:29	1.0		2:FE=300000
116	met09_sn	SAMPLE	243084-009	Soil	195616	02/15/13 21:34	1.0		4:FE=320000
117	met09_sn	SAMPLE	243084-010	Soil	195616	02/15/13 21:37	1.0		5:CA=840000
118	met09_sn	SAMPLE	243084-011	Soil	195616	02/15/13 21:42	1.0		3:FE=350000
119	met09_sn	SAMPLE	243084-012	Soil	195616	02/15/13 21:45	1.0		6:FE=620000
120	met09_sn	SAMPLE	243084-013	Soil	195616	02/15/13 21:50	1.0		3:FE=220000
121	met09_sn	ICSAB				02/15/13 21:54	1.0	8	5:AL=490000
122	met09_sn	CCV				02/15/13 21:59	1.0	10	
123	met09_sn	CCB				02/15/13 22:04	1.0		
124	met09_sn	SAMPLE	243084-014	Soil	195616	02/15/13 22:09	1.0		4:FE=440000
125	met09_sn	SAMPLE	243084-015	Soil	195616	02/15/13 22:12	1.0		6:FE=660000
126	met09_sn	SAMPLE	243084-016	Soil	195616	02/15/13 22:18	1.0		6:FE=760000
127	met09_sn	SAMPLE	243084-017	Soil	195616	02/15/13 22:23	1.0		5:FE=390000
128	met09_sn	SAMPLE	243084-018	Soil	195616	02/15/13 22:26	1.0		3:FE=350000
129	met09_sn	SAMPLE	243084-019	Soil	195616	02/15/13 22:29	1.0		6:FE=630000
130	met09_sn	SAMPLE	243084-020	Soil	195616	02/15/13 22:34	1.0		4:FE=430000
131	met09_sn	CCV				02/15/13 22:38	1.0	10	
132	met09_sn	CCB				02/15/13 22:43	1.0		
133	met09_sn	ICSAB				02/15/13 22:48	1.0	8	5:AL=530000
134	met09_sn	X	QC677044	Soil	195618	02/15/13 23:19	1.0		
135	met09_sn	BS	QC677045	Soil	195618	02/15/13 23:24	1.0		
136	met09_sn	BSD	QC677046	Soil	195618	02/15/13 23:27	1.0		
137	met09_sn	BLANK	QC677044	Soil	195618	02/15/13 23:30	1.0		
138	met09_sn	MSS	243084-021	Soil	195618	02/15/13 23:35	1.0		5:FE=370000
139	met09_sn	MS	QC677047	Soil	195618	02/15/13 23:41	1.0		1:FE=350000
140	met09_sn	MSD	QC677048	Soil	195618	02/15/13 23:46	1.0		
141	met09_sn	SAMPLE	243084-022	Soil	195618	02/15/13 23:51	1.0		4:FE=280000
142	met09_sn	SAMPLE	243084-023	Soil	195618	02/15/13 23:54	1.0		5:FE=290000
143	met09_sn	SAMPLE	243084-025	Soil	195618	02/15/13 23:57	1.0		4:FE=300000
144	met09_sn	CCV				02/16/13 00:00	1.0	10	
145	met09_sn	CCB				02/16/13 00:06	1.0		
146	met09_sn	SAMPLE	243084-026	Soil	195618	02/16/13 00:11	1.0		3:FE=350000
147	met09_sn	SAMPLE	243084-027	Soil	195618	02/16/13 00:14	1.0		5:MG=340000
148	met09_sn	SAMPLE	243084-028	Soil	195618	02/16/13 00:19	1.0		2:FE=280000
149	met09_sn	SAMPLE	243084-029	Soil	195618	02/16/13 00:22	1.0		5:FE=450000
150	met09_sn	SAMPLE	243084-030	Soil	195618	02/16/13 00:28	1.0		3:FE=250000
151	met09_sn	SAMPLE	243111-001	Soil	195618	02/16/13 00:31	1.0		2:FE=190000
152	met09_sn	SAMPLE	243112-001	Soil	195618	02/16/13 00:37	1.0		2:FE=240000
153	met09_sn	SAMPLE	243112-002	Soil	195618	02/16/13 00:41	1.0		5:FE=420000
154	met09_sn	SAMPLE	243112-003	Soil	195618	02/16/13 00:44	1.0		3:FE=220000
155	met09_sn	SAMPLE	243112-004	Soil	195618	02/16/13 00:48	1.0		2:FE=260000
156	met09_sn	ICSAB				02/16/13 00:51	1.0	8	5:MG=480000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 93066768

Instrument : MET09 Begun : 02/15/13 08:48
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	met09_sn	CCV				02/16/13 00:57	1.0	10	
158	met09_sn	CCB				02/16/13 01:02	1.0		
159	met09_sn	SAMPLE	243112-005	Soil	195618	02/16/13 01:07	1.0		2:FE=210000
160	met09_sn	SAMPLE	243112-006	Soil	195618	02/16/13 01:11	1.0		1:FE=110000
161	met09_sn	SAMPLE	243112-007	Soil	195618	02/16/13 01:15	1.0		2:FE=310000
162	met09_sn	SAMPLE	243112-008	Soil	195618	02/16/13 01:19	1.0		2:FE=230000
163	met09_sn	SAMPLE	243112-009	Soil	195618	02/16/13 01:22	1.0		1:FE=140000
164	met09_sn	SAMPLE	243112-010	Soil	195618	02/16/13 01:26	1.0		1:FE=190000
165	met09_sn	BLANK	QC677049	Soil	195619	02/16/13 01:30	1.0		
166	met09_sn	BS	QC677050	Soil	195619	02/16/13 01:35	1.0		
167	met09_sn	BSD	QC677051	Soil	195619	02/16/13 01:38	1.0		
168	met09_sn	MSS	243105-007	Soil	195619	02/16/13 01:41	1.0		4:FE=360000
169	met09_sn	CCV				02/16/13 01:44	1.0	10	
170	met09_sn	CCB				02/16/13 01:49	1.0		
171	met09_sn	MS	QC677052	Soil	195619	02/16/13 01:55	1.0		
172	met09_sn	MSD	QC677053	Soil	195619	02/16/13 01:58	1.0		
173	met09_sn	SER	QC677054	Soil	195619	02/16/13 02:01	5.0		
174	met09_sn	PDS	QC677055	Soil	195619	02/16/13 02:05	1.0	11 12	
175	met09_sn	SAMPLE	243074-001	Soil	195619	02/16/13 02:08	1.0		3:FE=330000
176	met09_sn	SAMPLE	243074-002	Soil	195619	02/16/13 02:12	1.0		3:AL=390000
177	met09_sn	SAMPLE	243074-003	Soil	195619	02/16/13 02:15	1.0		2:FE=320000
178	met09_sn	SAMPLE	243074-004	Soil	195619	02/16/13 02:18	1.0		3:FE=350000
179	met09_sn	SAMPLE	243074-005	Soil	195619	02/16/13 02:22	1.0		3:FE=410000
180	met09_sn	SAMPLE	243074-006	Soil	195619	02/16/13 02:26	1.0		2:FE=280000
181	met09_sn	ICSAB				02/16/13 02:30	1.0	8	5:AL=510000
182	met09_sn	CCV				02/16/13 02:35	1.0	10	
183	met09_sn	CCB				02/16/13 02:40	1.0		
184	met09_sn	SAMPLE	243074-007	Soil	195619	02/16/13 02:45	1.0		2:FE=320000
185	met09_sn	SAMPLE	243074-008	Soil	195619	02/16/13 02:49	1.0		3:FE=390000
186	met09_sn	SAMPLE	243074-009	Soil	195619	02/16/13 02:52	1.0		2:FE=580000
187	met09_sn	SAMPLE	243074-010	Soil	195619	02/16/13 02:57	1.0		2:FE=340000
188	met09_sn	SAMPLE	243074-011	Soil	195619	02/16/13 03:01	1.0		3:FE=400000
189	met09_sn	SAMPLE	243074-012	Soil	195619	02/16/13 03:04	1.0		2:FE=350000
190	met09_sn	CCV				02/16/13 03:08	1.0	10	
191	met09_sn	CCB				02/16/13 03:13	1.0		
192	met09_sn	ICSAB				02/16/13 03:18	1.0	8	5:MG=480000

NT 02/19/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 192.

BRJ 02/15/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 56 through 80.

JDB 02/15/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 81 through 99.

NT 02/19/13 : CCB reran, initial run removed.

Standards used: 1=S21545 2=S21547 3=S21546 4=S21548 5=S21549 6=S21592 7=S21411 8=S21412 9=S21413 10=S21593 11=S20436 12=S20437 13=S19831 14=S19832

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 93066768

Date : 02/15/13 Reference : met09_sn
Sequence : MET09 02/15/13 Analyzed : 02/15/13 08:53

#	Type	Sample ID	Y A
		ICAL STD	4330637
		LOWER LIMIT	1299191
		UPPER LIMIT	8661274
009	ICB		4151535
010	ICSA		3862652
011	ICSAB		3679335
013	BLANK	QC676904	4673187
014	BS	QC676905	4416538
015	BSD	QC676906	4171337
016	MSS	243118-001	4382132
017	MS	QC676907	4281597
018	MSD	QC676908	3965911
019	CCV		4136741
020	CCB		4360477
021	SAMPLE	243019-001	3971708
022	SAMPLE	243019-002	4050264
023	SAMPLE	243019-003	4322475
024	SAMPLE	243023-001	3871455
025	SAMPLE	243023-003	3916237
026	SAMPLE	243023-005	4019819
027	SAMPLE	243023-007	3704252
028	SAMPLE	243042-001	4155491
029	SAMPLE	243042-002	4293860
030	SAMPLE	243042-003	4080288
031	CCV		4244114
032	CCB		4606766
033	ICSAB		3420124
034	BLANK	QC676885	3940501
035	BS	QC676886	4283963
036	BSD	QC676887	4491665
037	MSS	243035-006	4139221
038	MS	QC676888	4100504
039	MSD	QC676889	3738996
040	SER	QC676890	4385640
041	PDS	QC676891	3839197
042	SAMPLE	243016-001	3991767
043	SAMPLE	243046-024	3991061
044	CCV		4312078
045	CCB		4067975
046	ICSAB		3677443
047	SAMPLE	243019-001	4162328
048	SAMPLE	243023-001	4034031
049	SAMPLE	243023-005	4091857
050	SAMPLE	243023-007	3702219
051	SAMPLE	243042-002	4196682
052	SAMPLE	243042-003	4278800
053	CCV		4113633
054	CCB		4111565
055	ICSAB		3510246
056	BLANK	QC676882	5001223
057	BS	QC676883	4510266

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 93066768

Date : 02/15/13 Reference : met09_sn
Sequence : MET09 02/15/13 Analyzed : 02/15/13 08:53

#	Type	Sample ID	Y A
058	BSD	QC676884	4365839
059	SAMPLE	243010-001	4819412
060	SAMPLE	243010-002	5040591
061	SAMPLE	243025-001	3873193
062	SAMPLE	243025-003	3883359
063	SAMPLE	243025-004	3998491
064	SAMPLE	243025-005	3821382
065	SAMPLE	243025-006	4081046
066	CCV		4114900
067	CCB		4633106
068	SAMPLE	243025-007	3820397
069	SAMPLE	243025-008	3775932
070	SAMPLE	243025-009	3929723
071	SAMPLE	243025-010	3848313
072	SAMPLE	243025-011	3958385
073	MSS	242876-001	4466014
074	MS	QC676336	4185111
075	MSD	QC676337	4056946
076	SER	QC676338	5705267
077	PDS	QC676339	3969642
078	ICSAB		3508069
079	CCV		3880877
080	CCB		4301905
081	SAMPLE	243025-012	3954686
082	BLANK	QC676669	4214444
083	BS	QC676670	4471947
084	BSD	QC676671	4030698
085	MSS	242960-005	3720256
086	MS	QC676672	4228738
087	MSD	QC676673	3926644
088	SER	QC676674	4211877
089	PDS	QC676675	3998731
090	SAMPLE	242960-007	4265469
091	CCV		4196261
092	CCB		4344933
093	SAMPLE	242960-011	4188862
094	SAMPLE	242960-015	4337446
095	SAMPLE	242960-019	4262648
096	SAMPLE	243032-001	4322409
097	CCV		4099843
098	CCB		4533514
099	ICSAB		3710542
100	BLANK	QC677037	4578439
101	BS	QC677038	4104195
102	BSD	QC677039	3889797
103	MSS	243084-001	3858037
104	MS	QC677040	3959305
105	MSD	QC677041	3869258
106	SAMPLE	243084-002	3783091
107	SAMPLE	243084-003	4127529
108	CCV		3875377
110	CCB		4334108

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 93066768

Date : 02/15/13 Reference : met09_sn
Sequence : MET09 02/15/13 Analyzed : 02/15/13 08:53

#	Type	Sample ID	Y A
111	SAMPLE	243084-004	3934107
112	SAMPLE	243084-005	3775791
113	SAMPLE	243084-006	4109178
114	SAMPLE	243084-007	4313712
115	SAMPLE	243084-008	3920973
116	SAMPLE	243084-009	3754274
117	SAMPLE	243084-010	3571263
118	SAMPLE	243084-011	4036575
119	SAMPLE	243084-012	3943374
120	SAMPLE	243084-013	4118689
121	ICSAB		3544583
122	CCV		4126707
123	CCB		4318144
124	SAMPLE	243084-014	4210610
125	SAMPLE	243084-015	3900414
126	SAMPLE	243084-016	3851942
127	SAMPLE	243084-017	3960311
128	SAMPLE	243084-018	4146852
129	SAMPLE	243084-019	3944772
130	SAMPLE	243084-020	3919151
131	CCV		4166053
132	CCB		4406244
133	ICSAB		3279616
135	BS	QC677045	3951198
136	BSD	QC677046	4275677
137	BLANK	QC677044	4550991
138	MSS	243084-021	3794299
139	MS	QC677047	3738222
140	MSD	QC677048	4096042
141	SAMPLE	243084-022	4103118
142	SAMPLE	243084-023	4194457
143	SAMPLE	243084-025	4193036
144	CCV		3978587
145	CCB		4219681
146	SAMPLE	243084-026	4118732
147	SAMPLE	243084-027	3693316
148	SAMPLE	243084-028	4144404
149	SAMPLE	243084-029	4138917
150	SAMPLE	243084-030	4182510
151	SAMPLE	243111-001	4053661
152	SAMPLE	243112-001	4172232
153	SAMPLE	243112-002	4143674
154	SAMPLE	243112-003	4093923
155	SAMPLE	243112-004	4124539
156	ICSAB		3532810
157	CCV		3941813
158	CCB		4305222
159	SAMPLE	243112-005	4038231
160	SAMPLE	243112-006	4235580
161	SAMPLE	243112-007	4008063
162	SAMPLE	243112-008	3981227
163	SAMPLE	243112-009	4101858

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 93066768

Date : 02/15/13 Reference : met09_sn
Sequence : MET09 02/15/13 Analyzed : 02/15/13 08:53

#	Type	Sample ID	Y A
164	SAMPLE	243112-010	4265205
165	BLANK	QC677049	4287032
166	BS	QC677050	3884103
167	BSD	QC677051	4038539
168	MSS	243105-007	4028623
169	CCV		4124871
170	CCB		4520986
171	MS	QC677052	4105861
172	MSD	QC677053	3896892
173	SER	QC677054	4108775
174	PDS	QC677055	3928388
175	SAMPLE	243074-001	4276218
176	SAMPLE	243074-002	4413685
177	SAMPLE	243074-003	4398639
178	SAMPLE	243074-004	4242002
179	SAMPLE	243074-005	3929739
180	SAMPLE	243074-006	4219730
181	ICSAB		3439259
182	CCV		4326068
183	CCB		4384448
184	SAMPLE	243074-007	4134282
185	SAMPLE	243074-008	4060331
186	SAMPLE	243074-009	4520765
187	SAMPLE	243074-010	4677132
188	SAMPLE	243074-011	4506118
189	SAMPLE	243074-012	4233575
190	CCV		4302796
191	CCB		4708929
192	ICSAB		3706972

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 METALS Soil: EPA 6010B

Inst : MET09
Calnum : 93066768001
Units : ug/L

Reviewer : ---
Date : 15-FEB-2013 08:48
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met09_sn	93066768002	CRI5.1	15-FEB-2013 08:53	S21545
L2	met09_sn	93066768003	CS100	15-FEB-2013 08:58	S21547
L3	met09_sn	93066768004	CS1K	15-FEB-2013 09:02	S21546
L4	met09_sn	93066768005	CS10K	15-FEB-2013 09:06	S21548
L5	met09_sn	93066768006	CS100K	15-FEB-2013 09:11	S21549

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Antimony	A	14.190	14.767	15.661	15.531		LOR0	0.00000	0.06438		15.037	1.000	0.995	
Arsenic	A	9.9200	8.4220	8.8080	8.6075		LOR0	0.00000	0.11615		8.9394	1.000	0.995	
Barium	A	113.18	105.29	107.75	102.02		LOR0	0.00000	0.00980		107.06	1.000	0.995	
Beryllium	A	6814.7	5970.5	6079.6			LOR0	0.00000	1.65E-4		6288.3	1.000	0.995	
Cadmium	A	192.40	179.01	182.86	170.39		LOR0	0.00000	0.00586		181.17	1.000	0.995	
Chromium	A	244.76	232.36	237.10	227.62		LOR0	0.00000	0.00439		235.46	1.000	0.995	
Cobalt	A	74.440	68.415	70.880	67.887		LOR0	0.00000	0.01472		70.406	1.000	0.995	
Copper	A	267.56	257.60	264.56	260.19		LOR0	0.00000	0.00384		262.48	1.000	0.995	
Lead	A	62.080	53.386	54.824	52.107		LOR0	0.00000	0.01918		55.599	1.000	0.995	
Manganese	A	751.60	709.01	715.14	668.06		LOR0	0.00000	0.00150		710.95	1.000	0.995	
Molybdenum	A	43.100	40.217	41.543	40.508		LOR0	0.00000	0.02468		41.342	1.000	0.995	
Nickel	A	119.94	116.18	118.03	112.21		LOR0	0.00000	0.00891		116.59	1.000	0.995	
Selenium	A	11.130	11.372	11.968	12.089		LOR0	0.00000	0.08273		11.640	1.000	0.995	
Silver	A	512.38	472.42	487.59	480.77		LOR0	0.00000	0.00207		488.29	1.000	0.995	
Thallium	A	9.3700	8.7130	8.9417	8.5325		LOR0	0.00000	0.11714		8.8893	1.000	0.995	
Vanadium	A	308.60	288.10	293.88	286.44		LOR0	0.00000	0.00349		294.26	1.000	0.995	
Zinc	A	83.030	73.756	74.912	72.226		LOR0	0.00000	0.01384		75.981	1.000	0.995	
Aluminum	R	0.6630		0.6139	0.5943	0.6337	LOR0	0.00000	1.57895		0.6262	1.000	0.995	
Calcium	R	9.9155		9.4174	8.9307	9.1754	LOR0	0.00000	0.10902		9.3598	1.000	0.995	
Iron	R	4.0860		3.9552	3.7869	3.8186	LOR0	0.00000	0.26190		3.9117	1.000	0.995	
Magnesium	R	1.5205		1.5064	1.4194	1.4872	LOR0	0.00000	0.67270		1.4834	1.000	0.995	
Potassium	R	3.1150		2.6313	2.6706	2.9654	LOR0	0.00000	0.33756		2.8456	1.000	0.995	
Sodium	R	105.45		101.49	105.20	107.18	LOR0	0.00000	0.00933		104.83	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Antimony	A	10.000	-9	100.00	-5	1000.0	1	10000	0		
Arsenic	A	5.0000	15	100.00	-2	1000.0	2	10000	0		
Barium	A	5.0000	11	100.00	3	1000.0	6	10000	0		
Beryllium	A	2.0000	12	100.00	-2	1000.0	0				
Cadmium	A	5.0000	13	100.00	5	1000.0	7	10000	0		
Chromium	A	5.0000	7	100.00	2	1000.0	4	10000	0		
Cobalt	A	5.0000	10	100.00	1	1000.0	4	10000	0		
Copper	A	5.0000	3	100.00	-1	1000.0	2	10000	0		
Lead	A	5.0000	19	100.00	2	1000.0	5	10000	0		
Manganese	A	5.0000	12	100.00	6	1000.0	7	10000	0		
Molybdenum	A	5.0000	6	100.00	-1	1000.0	3	10000	0		
Nickel	A	5.0000	7	100.00	3	1000.0	5	10000	0		
Selenium	A	10.000	-8	100.00	-6	1000.0	-1	10000	0		
Silver	A	5.0000	6	100.00	-2	1000.0	1	2000.0	0		
Thallium	A	10.000	10	100.00	2	1000.0	5	10000	0		
Vanadium	A	5.0000	8	100.00	1	1000.0	3	10000	0		
Zinc	A	20.000	15	100.00	2	1000.0	4	10000	0		
Aluminum	R	100.00	5			1000.0	-3	10000	-6	100000	0
Calcium	R	200.00	8			1000.0	3	10000	-3	100000	0
Iron	R	100.00	7			1000.0	4	10000	-1	100000	0
Magnesium	R	200.00	2			1000.0	1	10000	-5	100000	0
Potassium	R	500.00	5			1000.0	-11	10000	-10	100000	0
Sodium	R	500.00	-2			1000.0	-5	10000	-2	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

93066768001

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 METALS Soil
EPA 6010B

Inst : MET09
Calnum : 93066768001 Cal Date : 15-FEB-2013

ICV 93066768008 (15-FEB-2013) stds: S21592

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Antimony	A	5000	5033	ug/L	1	10	
Arsenic	A	5000	5117	ug/L	2	10	
Barium	A	5000	5061	ug/L	1	10	
Beryllium	A	500.0	511.0	ug/L	2	10	
Cadmium	A	5000	5189	ug/L	4	10	
Chromium	A	5000	5078	ug/L	2	10	
Cobalt	A	5000	5052	ug/L	1	10	
Copper	A	5000	4837	ug/L	-3	10	
Lead	A	5000	4903	ug/L	-2	10	
Manganese	A	5000	5042	ug/L	1	10	
Molybdenum	A	5000	5170	ug/L	3	10	
Nickel	A	5000	5087	ug/L	2	10	
Selenium	A	5000	5007	ug/L	0	10	
Silver	A	1000	981.3	ug/L	-2	10	
Thallium	A	5000	4958	ug/L	-1	10	
Vanadium	A	5000	5022	ug/L	0	10	
Zinc	A	5000	5038	ug/L	1	10	
Aluminum	R	20000	19140	ug/L	-4	10	
Calcium	R	20000	19760	ug/L	-1	10	
Iron	R	20000	20060	ug/L	0	10	
Magnesium	R	20000	19880	ug/L	-1	10	
Potassium	R	20000	18920	ug/L	-5	10	
Sodium	R	20000	19580	ug/L	-2	10	

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 242876 METALS Soil
EPA 6010B

Inst : MET09 IDF : 1.0
Seqnum : 93066768010 File : met09_sn Time : 15-FEB-2013 09:31
Cal : 93066768001 Caldate : 15-FEB-2013
Standards: S21411

Analyte	Ch	Quant	IQL	Units	Flags
Antimony	A	[9.812]	10.00	ug/L	!a+
Arsenic	A	[-3.642]	5.000	ug/L	!a-
Barium	A	[0.2677]	5.000	ug/L	
Beryllium	A	[0.7049]	2.000	ug/L	!a+
Cadmium	A	[0.3843]	5.000	ug/L	
Cobalt	A	[0.3507]	5.000	ug/L	
Lead	A	[-3.733]	5.000	ug/L	!a-
Molybdenum	A	[-3.217]	5.000	ug/L	!a-
Selenium	A	[4.726]	10.00	ug/L	
Silver	A	[0.6604]	5.000	ug/L	
Thallium	A	[1.922]	10.00	ug/L	
Zinc	A	[-15.60]	20.00	ug/L	!a-
Potassium	R	[97.56]	500.0	ug/L	
Sodium	R	[14.64]	500.0	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	18230	ug/L	91
Copper	A	20000	18740	ug/L	94
Manganese	A	20000	17100	ug/L	86
Nickel	A	20000	16650	ug/L	83
Vanadium	A	20000	18730	ug/L	94
Aluminum	R	500000	445100	ug/L	89
Calcium	R	500000	430000	ug/L	86
Iron	R	200000	167700	ug/L	84
Magnesium	R	500000	443700	ug/L	89
Titanium	R	20000	19640	ug/L	98

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	4330637	3862652	-10.81

!=warning +=high bias -=low bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET09 IDF : 1.0
Seqnum : 93066768055.2 File : met09_sn Time : 15-FEB-2013 13:29
Cal : 93066768001 Caldate : 15-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	541.2	ug/L	8	20	
Arsenic	A	500.0	536.9	ug/L	7	20	
Barium	A	500.0	539.0	ug/L	8	20	
Beryllium	A	500.0	538.5	ug/L	8	20	
Cadmium	A	1000	1022	ug/L	2	20	
Chromium	A	500.0	520.6	ug/L	4	20	
Cobalt	A	500.0	476.9	ug/L	-5	20	
Copper	A	500.0	550.8	ug/L	10	20	
Lead	A	1000	933.1	ug/L	-7	20	
Manganese	A	500.0	522.9	ug/L	5	20	
Molybdenum	A	500.0	530.3	ug/L	6	20	
Nickel	A	1000	948.4	ug/L	-5	20	
Selenium	A	500.0	534.7	ug/L	7	20	
Silver	A	1000	1135	ug/L	14	20	
Thallium	A	500.0	488.2	ug/L	-2	20	
Vanadium	A	500.0	541.6	ug/L	8	20	
Zinc	A	1000	1012	ug/L	1	20	
Aluminum	R	500000	497900	ug/L	0		
Calcium	R	500000	477500	ug/L	-5		
Iron	R	200000	186800	ug/L	-7		
Magnesium	R	500000	495900	ug/L	-1		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	4330637	3510246	-18.94

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 6010B

Inst : MET09 IDF : 1.0
Seqnum : 93066768066.1 File : met09_sn Time : 15-FEB-2013 14:39
Cal : 93066768001 Caldate : 15-FEB-2013
Standards: S21593

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	15.037	16.330	5000	5257	ug/L	5	10	
Arsenic	A	8.9394	9.1422	5000	5309	ug/L	6	10	
Barium	A	107.06	106.11	5000	5197	ug/L	4	10	
Beryllium	A	6288.3	6366.5	500.0	523.7	ug/L	5	10	
Cadmium	A	181.17	175.88	5000	5157	ug/L	3	10	
Chromium	A	235.46	237.18	5000	5208	ug/L	4	10	
Cobalt	A	70.406	71.052	5000	5220	ug/L	4	10	
Copper	A	262.48	263.16	5000	5056	ug/L	1	10	
Lead	A	55.599	51.268	5000	4917	ug/L	-2	10	
Manganese	A	710.95	680.15	5000	5087	ug/L	2	10	
Molybdenum	A	41.342	43.928	5000	5421	ug/L	8	10	
Nickel	A	116.59	116.72	5000	5198	ug/L	4	10	
Selenium	A	11.640	12.658	5000	5236	ug/L	5	10	
Silver	A	488.29	480.38	1000	996.4	ug/L	0	10	
Thallium	A	8.8893	8.8623	5000	5191	ug/L	4	10	
Vanadium	A	294.26	294.55	5000	5140	ug/L	3	10	
Zinc	A	75.981	74.257	5000	5139	ug/L	3	10	
Aluminum	R	0.6262	0.5980	20000	18890	ug/L	-6	10	
Calcium	R	9.3598	8.9719	20000	19560	ug/L	-2	10	
Iron	R	3.9117	3.6782	20000	19270	ug/L	-4	10	
Magnesium	R	1.4834	1.4895	20000	20040	ug/L	0	10	
Potassium	R	2.8456	2.8296	20000	19100	ug/L	-4	10	
Sodium	R	104.83	100.62	20000	18780	ug/L	-6	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	4330637	4114900	-4.98

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET09 IDF : 1.0
Seqnum : 93066768067.1 File : met09_sn Time : 15-FEB-2013 14:44
Cal : 93066768001 Caldate : 15-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	5.737	ug/L	
Arsenic	A	ND	5.000	2.971	ug/L	
Barium	A	ND	5.000	0.7642	ug/L	
Beryllium	A	ND	2.000	0.4365	ug/L	
Cadmium	A	ND	5.000	0.7671	ug/L	
Chromium	A	ND	5.000	1.021	ug/L	
Cobalt	A	ND	5.000	0.7267	ug/L	
Copper	A	ND	5.000	2.558	ug/L	
Lead	A	[2.899]	5.000	2.159	ug/L	!ib
Manganese	A	ND	5.000	0.8105	ug/L	
Molybdenum	A	ND	5.000	1.491	ug/L	
Nickel	A	ND	5.000	1.516	ug/L	
Selenium	A	ND	10.00	6.619	ug/L	
Silver	A	ND	5.000	2.247	ug/L	
Thallium	A	ND	10.00	3.135	ug/L	
Vanadium	A	ND	5.000	0.9140	ug/L	
Zinc	A	ND	20.00	4.517	ug/L	
Aluminum	R	ND	100.0	48.23	ug/L	
Calcium	R	ND	200.0	68.31	ug/L	
Iron	R	ND	100.0	20.42	ug/L	
Magnesium	R	ND	200.0	53.28	ug/L	
Potassium	R	ND	500.0	168.0	ug/L	
Sodium	R	ND	500.0	55.12	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	4330637	4633106	6.98

!=warning ib=instrument blank

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET09 IDF : 1.0
Seqnum : 93066768078.1 File : met09_sn Time : 15-FEB-2013 15:45
Cal : 93066768001 Caldate : 15-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	517.9	ug/L	4	20	
Arsenic	A	500.0	539.6	ug/L	8	20	
Barium	A	500.0	529.5	ug/L	6	20	
Beryllium	A	500.0	527.0	ug/L	5	20	
Cadmium	A	1000	1012	ug/L	1	20	
Chromium	A	500.0	510.2	ug/L	2	20	
Cobalt	A	500.0	467.0	ug/L	-7	20	
Copper	A	500.0	539.5	ug/L	8	20	
Lead	A	1000	912.3	ug/L	-9	20	
Manganese	A	500.0	519.4	ug/L	4	20	
Molybdenum	A	500.0	520.7	ug/L	4	20	
Nickel	A	1000	927.5	ug/L	-7	20	
Selenium	A	500.0	535.2	ug/L	7	20	
Silver	A	1000	1124	ug/L	12	20	
Thallium	A	500.0	480.3	ug/L	-4	20	
Vanadium	A	500.0	531.5	ug/L	6	20	
Zinc	A	1000	988.1	ug/L	-1	20	
Aluminum	R	500000	467000	ug/L	-7		
Calcium	R	500000	454400	ug/L	-9		
Iron	R	200000	175300	ug/L	-12		
Magnesium	R	500000	473300	ug/L	-5		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	4330637	3508069	-18.99

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 6010B

Inst : MET09 IDF : 1.0
Seqnum : 93066768079 File : met09_sn Time : 15-FEB-2013 15:50
Cal : 93066768001 Caldate : 15-FEB-2013
Standards: S21593

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	15.037	17.048	5000	5488	ug/L	10	10	
Arsenic	A	8.9394	9.5137	5000	5525	ug/L	**11**	10	c+ ***
Barium	A	107.06	111.12	5000	5443	ug/L	9	10	
Beryllium	A	6288.3	6659.9	500.0	547.8	ug/L	10	10	
Cadmium	A	181.17	185.90	5000	5451	ug/L	9	10	
Chromium	A	235.46	248.86	5000	5464	ug/L	9	10	
Cobalt	A	70.406	74.056	5000	5440	ug/L	9	10	
Copper	A	262.48	273.24	5000	5250	ug/L	5	10	
Lead	A	55.599	54.472	5000	5224	ug/L	4	10	
Manganese	A	710.95	717.52	5000	5366	ug/L	7	10	
Molybdenum	A	41.342	45.802	5000	5652	ug/L	**13**	10	c+ ***
Nickel	A	116.59	122.37	5000	5450	ug/L	9	10	
Selenium	A	11.640	13.083	5000	5412	ug/L	8	10	
Silver	A	488.29	504.66	1000	1047	ug/L	5	10	
Thallium	A	8.8893	9.2190	5000	5400	ug/L	8	10	
Vanadium	A	294.26	309.61	5000	5403	ug/L	8	10	
Zinc	A	75.981	77.540	5000	5366	ug/L	7	10	
Aluminum	R	0.6262	0.6527	20000	20610	ug/L	3	10	
Calcium	R	9.3598	9.6282	20000	20990	ug/L	5	10	
Iron	R	3.9117	4.0549	20000	21240	ug/L	6	10	
Magnesium	R	1.4834	1.5634	20000	21030	ug/L	5	10	
Potassium	R	2.8456	2.9951	20000	20220	ug/L	1	10	
Sodium	R	104.83	113.80	20000	21240	ug/L	6	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	4330637	3880877	-10.39

+=high bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET09 IDF : 1.0
Seqnum : 93066768080 File : met09_sn Time : 15-FEB-2013 15:55
Cal : 93066768001 Caldate : 15-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	5.737	ug/L	
Arsenic	A	ND	5.000	2.971	ug/L	
Barium	A	ND	5.000	0.7642	ug/L	
Beryllium	A	ND	2.000	0.4365	ug/L	
Cadmium	A	ND	5.000	0.7671	ug/L	
Chromium	A	ND	5.000	1.021	ug/L	
Cobalt	A	ND	5.000	0.7267	ug/L	
Copper	A	ND	5.000	2.558	ug/L	
Lead	A	ND	5.000	2.159	ug/L	
Manganese	A	ND	5.000	0.8105	ug/L	
Molybdenum	A	ND	5.000	1.491	ug/L	
Nickel	A	ND	5.000	1.516	ug/L	
Selenium	A	ND	10.00	6.619	ug/L	
Silver	A	ND	5.000	2.247	ug/L	
Thallium	A	ND	10.00	3.135	ug/L	
Vanadium	A	ND	5.000	0.9140	ug/L	
Zinc	A	ND	20.00	4.517	ug/L	
Aluminum	R	ND	100.0	48.23	ug/L	
Calcium	R	ND	200.0	68.31	ug/L	
Iron	R	ND	100.0	20.42	ug/L	
Magnesium	R	ND	200.0	53.28	ug/L	
Potassium	R	ND	500.0	168.0	ug/L	
Sodium	R	ND	500.0	55.12	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	4330637	4301905	-0.66

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 83066978

Instrument : MET08 Begun : 02/15/13 12:18
Method : EPA 6010B SOP Version : icp metals_rv9

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sr_6010	ICALBLK				02/15/13 12:18	1.0		
002	met08_sr_6010	ICAL	CRI5.1			02/15/13 12:23	1.0	1	
003	met08_sr_6010	ICAL	CS100			02/15/13 12:28	1.0	2	
004	met08_sr_6010	ICAL	CS1K			02/15/13 12:32	1.0	3	
005	met08_sr_6010	ICAL	CS10K			02/15/13 12:37	1.0	4	
006	met08_sr_6010	ICAL	CS100K			02/15/13 12:43	1.0	5	
007	met08_sr_6010	ICV				02/15/13 12:48	1.0	6	
008	met08_sr_6010	ICB				02/15/13 12:53	1.0		
009	met08_sr_6010	ICSA				02/15/13 12:58	1.0	7	10:AL=510000
010	met08_sr_6010	ICSAB				02/15/13 13:16	1.0	8	5:MG=520000
011	met08_sr_6010	XCRI				02/15/13 13:22	1.0	9	
012	met08_sr_6010	CRI				02/15/13 13:26	1.0	9	
013	met08_sr_6010	MSS	242876-001	Soil	195450	02/15/13 13:38	100.0		
014	met08_sr_6010	MS	QC676336	Soil	195450	02/15/13 13:43	100.0		
015	met08_sr_6010	MSD	QC676337	Soil	195450	02/15/13 13:48	100.0		
016	met08_sr_6010	SER	QC676338	Soil	195450	02/15/13 13:54	500.0		
017	met08_sr_6010	PDS	QC676339	Soil	195450	02/15/13 13:59	100.0	10 11	
018	met08_sr_6010	CCV				02/15/13 14:03	1.0	12	
019	met08_sr_6010	CCB				02/15/13 14:08	1.0		
020	met08_sr_6010	SAMPLE	242925-001	Soil	195450	02/15/13 14:13	1.0		5:FE=400000
021	met08_sr_6010	SAMPLE	242925-002	Soil	195450	02/15/13 14:17	1.0		4:FE=440000
022	met08_sr_6010	SAMPLE	242925-003	Soil	195450	02/15/13 14:20	1.0		4:FE=420000
023	met08_sr_6010	SAMPLE	242957-001	Soil	195450	02/15/13 14:23	1.0		5:FE=460000
024	met08_sr_6010	SAMPLE	242957-002	Soil	195450	02/15/13 14:26	1.0		4:CA=430000
025	met08_sr_6010	SAMPLE	242925-001	Soil	195450	02/15/13 14:29	1.0		5:FE=410000
026	met08_sr_6010	SAMPLE	242925-002	Soil	195450	02/15/13 14:33	1.0		4:FE=440000
027	met08_sr_6010	SAMPLE	242925-003	Soil	195450	02/15/13 14:36	1.0		4:FE=420000
028	met08_sr_6010	SAMPLE	242957-001	Soil	195450	02/15/13 14:39	1.0		5:FE=480000
029	met08_sr_6010	SAMPLE	242957-002	Soil	195450	02/15/13 14:42	1.0		4:CA=440000
030	met08_sr_6010	CCV				02/15/13 14:46	1.0	12	
031	met08_sr_6010	CCB				02/15/13 14:52	1.0		
032	met08_sr_6010	ICSAB				02/15/13 14:57	1.0	8	5:MG=550000

NT 02/15/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 12.

BRJ 02/15/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 13 through 32.

Standards used: 1=S21545 2=S21547 3=S21546 4=S21548 5=S21549 6=S21592 7=S21411 8=S21412 9=S21413 10=S20436 11=S20437 12=S21593

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 83066978

Date : 02/15/13 Reference : met08_sr_6010
Sequence : MET08 02/15/13 Analyzed : 02/15/13 12:23

#	Type	Sample ID	Y A
		ICAL STD	1288929
		LOWER LIMIT	386679
		UPPER LIMIT	2577858
008	ICB		1251005
009	ICSA		1026169
010	ICSAB		1035328
013	MSS	242876-001	1259453
014	MS	QC676336	1214236
015	MSD	QC676337	1240116
016	SER	QC676338	1226202
017	PDS	QC676339	1175013
018	CCV		1156434
019	CCB		1223473
030	CCV		1175780
031	CCB		1186848
032	ICSAB		986941

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 METALS Soil: EPA 6010B

Inst : MET08
Calnum : 83066978001
Units : ug/L

Reviewer : ---
Date : 15-FEB-2013 12:18
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sr_6010	83066978002	CRI5.1	15-FEB-2013 12:23	S21545
L2	met08_sr_6010	83066978003	CS100	15-FEB-2013 12:28	S21547
L3	met08_sr_6010	83066978004	CS1K	15-FEB-2013 12:32	S21546
L4	met08_sr_6010	83066978005	CS10K	15-FEB-2013 12:37	S21548
L5	met08_sr_6010	83066978006	CS100K	15-FEB-2013 12:43	S21549

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Antimony	A	24.630	25.147	25.810	26.674		LOR0	0.00000	0.03750		25.565	1.000	0.995	
Arsenic	A	10.880	14.098	14.333	14.839		LOR0	0.00000	0.06741		13.537	1.000	0.995	
Barium	A	331.88	335.13	335.81	334.63		LOR0	0.00000	0.00299		334.36	1.000	0.995	
Beryllium	A	4254.9	4299.9	4340.8			LOR0	0.00000	2.30E-4		4298.6	1.000	0.995	
Cadmium	A	179.66	180.37	183.04	180.44		LOR0	0.00000	0.00554		180.88	1.000	0.995	
Chromium	A	66.320	77.673	78.383	79.076		LOR0	0.00000	0.01265		75.363	1.000	0.995	
Cobalt	A	100.32	101.18	103.51	104.39		LOR0	0.00000	0.00958		102.35	1.000	0.995	
Copper	A	100.92	107.56	109.60	111.62		LOR0	0.00000	0.00896		107.43	1.000	0.995	
Lead	A	49.660	45.366	46.281	46.202		LOR0	0.00000	0.02164		46.877	1.000	0.995	
Manganese	A	1464.7	1528.7	1533.9	1487.7		LOR0	0.00000	6.72E-4		1503.8	1.000	0.995	
Molybdenum	A	29.580	28.192	28.346	28.748		LOR0	0.00000	0.03479		28.717	1.000	0.995	
Nickel	A	34.660	38.939	40.118	40.372		LOR0	0.00000	0.02477		38.522	1.000	0.995	
Selenium	A	17.700	20.355	20.585	21.708		LOR0	0.00000	0.04609		20.087	1.000	0.995	
Silver	A	658.46	669.05	674.73	693.84		LOR0	0.00000	0.00145		674.02	1.000	0.995	
Thallium	A	14.250	14.350	14.471	14.462		LOR0	0.00000	0.06915		14.383	1.000	0.995	
Vanadium	A	133.10	136.52	138.11	140.88		LOR0	0.00000	0.00710		137.15	1.000	0.995	
Zinc	A	58.040	56.963	56.589	57.463		LOR0	0.00000	0.01741		57.264	1.000	0.995	
Aluminum	R	0.6210		0.8495	0.8724	0.8331	LOR0	0.00000	1.19974		0.7940	1.000	0.995	
Calcium	R	5.7645		6.0531	6.1008	5.9310	LOR0	0.00000	0.16856		5.9624	1.000	0.995	
Iron	R	2.4720		2.6745	2.7211	2.6612	LOR0	0.00000	0.37568		2.6322	1.000	0.995	
Magnesium	R	0.5065		0.5257	0.5295	0.5240	LOR0	0.00000	1.90814		0.5214	1.000	0.995	
Potassium	R	4.3844		3.8117	4.2427	4.4051	LOR0	0.00000	0.22709		4.2110	1.000	0.995	
Sodium	R	9.2436		9.0036	8.9108	8.6541	LOR0	0.00000	0.11552		8.9530	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Antimony	A	10.000	-8	100.00	-6	1000.0	-3	10000	0		
Arsenic	A	5.0000	**-27**	100.00	-5	1000.0	-3	10000	0		
Barium	A	5.0000	-1	100.00	0	1000.0	0	10000	0		
Beryllium	A	2.0000	-2	100.00	-1	1000.0	0				
Cadmium	A	5.0000	0	100.00	0	1000.0	1	10000	0		
Chromium	A	5.0000	-16	100.00	-2	1000.0	-1	10000	0		
Cobalt	A	5.0000	-4	100.00	-3	1000.0	-1	10000	0		
Copper	A	5.0000	-10	100.00	-4	1000.0	-2	10000	0		
Lead	A	5.0000	7	100.00	-2	1000.0	0	10000	0		
Manganese	A	5.0000	-2	100.00	3	1000.0	3	10000	0		
Molybdenum	A	5.0000	3	100.00	-2	1000.0	-1	10000	0		
Nickel	A	5.0000	-14	100.00	-4	1000.0	-1	10000	0		
Selenium	A	10.000	-18	100.00	-6	1000.0	-5	10000	0		
Silver	A	5.0000	-5	100.00	-3	1000.0	-2	2000.0	1		
Thallium	A	10.000	-1	100.00	-1	1000.0	0	10000	0		
Vanadium	A	5.0000	-6	100.00	-3	1000.0	-2	10000	0		
Zinc	A	20.000	1	100.00	-1	1000.0	-2	10000	0		
Aluminum	R	100.00	**-25**			1000.0	2	10000	5	100000	0
Calcium	R	200.00	-3			1000.0	2	10000	3	100000	0
Iron	R	100.00	-7			1000.0	0	10000	2	100000	0
Magnesium	R	200.00	-3			1000.0	0	10000	1	100000	0
Potassium	R	500.00	0			1000.0	-13	10000	-4	100000	0
Sodium	R	500.00	7			1000.0	4	10000	3	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 METALS Soil
EPA 6010B

Inst : MET08
Calnum : 83066978001 Cal Date : 15-FEB-2013

ICV 83066978007 (15-FEB-2013) stds: S21592

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Antimony	A	5000	4902	ug/L	-2	10	
Arsenic	A	5000	4951	ug/L	-1	10	
Barium	A	5000	4950	ug/L	-1	10	
Beryllium	A	500.0	511.4	ug/L	2	10	
Cadmium	A	5000	5022	ug/L	0	10	
Chromium	A	5000	4922	ug/L	-2	10	
Cobalt	A	5000	4905	ug/L	-2	10	
Copper	A	5000	4792	ug/L	-4	10	
Lead	A	5000	4793	ug/L	-4	10	
Manganese	A	5000	4958	ug/L	-1	10	
Molybdenum	A	5000	5063	ug/L	1	10	
Nickel	A	5000	4941	ug/L	-1	10	
Selenium	A	5000	4837	ug/L	-3	10	
Silver	A	1000	970.6	ug/L	-3	10	
Thallium	A	5000	4870	ug/L	-3	10	
Vanadium	A	5000	4934	ug/L	-1	10	
Zinc	A	5000	4886	ug/L	-2	10	
Aluminum	R	20000	20310	ug/L	2	10	
Calcium	R	20000	20570	ug/L	3	10	
Iron	R	20000	20710	ug/L	4	10	
Magnesium	R	20000	20680	ug/L	3	10	
Potassium	R	20000	19810	ug/L	-1	10	
Sodium	R	20000	20990	ug/L	5	10	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83066978008 File : met08_sr_6010 Time : 15-FEB-2013 12:53
Cal : 83066978001 Caldate : 15-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	ND	5.000	0.3522	ug/L	
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Manganese	A	ND	5.000	0.3422	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	
Aluminum	R	ND	100.0	42.13	ug/L	
Calcium	R	ND	200.0	16.33	ug/L	
Iron	R	ND	100.0	33.25	ug/L	
Magnesium	R	ND	200.0	32.69	ug/L	
Potassium	R	ND	500.0	221.6	ug/L	
Sodium	R	ND	500.0	43.92	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1288929	1251005	-2.94

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83066978009 File : met08_sr_6010 Time : 15-FEB-2013 12:58
Cal : 83066978001 Caldate : 15-FEB-2013
Standards: S21411

Analyte	Ch	Quant	IQL	Units	Flags
Antimony	A	[3.433]	10.00	ug/L	!a+
Arsenic	A	[-0.1432]	5.000	ug/L	
Barium	A	[-2.610]	5.000	ug/L	!a-
Beryllium	A	[-0.7387]	2.000	ug/L	!a-
Cadmium	A	[-1.955]	5.000	ug/L	!a-
Cobalt	A	[-2.528]	5.000	ug/L	!a-
Lead	A	[0.6332]	5.000	ug/L	
Molybdenum	A	[1.487]	5.000	ug/L	
Selenium	A	[7.159]	10.00	ug/L	!a+
Silver	A	[-0.9260]	5.000	ug/L	
Thallium	A	[-1.962]	10.00	ug/L	
Zinc	A	[2.523]	20.00	ug/L	
Potassium	R	[-109.5]	500.0	ug/L	
Sodium	R	[64.94]	500.0	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20090	ug/L	100
Copper	A	20000	21370	ug/L	107
Manganese	A	20000	19340	ug/L	97
Nickel	A	20000	18750	ug/L	94
Vanadium	A	20000	20400	ug/L	102
Aluminum	R	500000	513100	ug/L	103
Calcium	R	500000	481000	ug/L	96
Iron	R	200000	193900	ug/L	97
Magnesium	R	500000	500800	ug/L	100
Titanium	R	20000	21990	ug/L	110

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1288929	1026169	-20.39

!=warning +=high bias -=low bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83066978010 File : met08_sr_6010 Time : 15-FEB-2013 13:16
Cal : 83066978001 Caldate : 15-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	513.7	ug/L	3	20	
Arsenic	A	500.0	529.3	ug/L	6	20	
Barium	A	500.0	533.6	ug/L	7	20	
Beryllium	A	500.0	546.4	ug/L	9	20	
Cadmium	A	1000	1012	ug/L	1	20	
Chromium	A	500.0	512.5	ug/L	3	20	
Cobalt	A	500.0	480.0	ug/L	-4	20	
Copper	A	500.0	530.0	ug/L	6	20	
Lead	A	1000	986.3	ug/L	-1	20	
Manganese	A	500.0	480.5	ug/L	-4	20	
Molybdenum	A	500.0	528.1	ug/L	6	20	
Nickel	A	1000	957.0	ug/L	-4	20	
Selenium	A	500.0	525.9	ug/L	5	20	
Silver	A	1000	1131	ug/L	13	20	
Thallium	A	500.0	469.1	ug/L	-6	20	
Vanadium	A	500.0	544.9	ug/L	9	20	
Zinc	A	1000	1000	ug/L	0	20	
Aluminum	R	500000	519300	ug/L	4		
Calcium	R	500000	495900	ug/L	-1		
Iron	R	200000	198700	ug/L	-1		
Magnesium	R	500000	519800	ug/L	4		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1288929	1035328	-19.68

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83066978018 File : met08_sr_6010 Time : 15-FEB-2013 14:03
Cal : 83066978001 Caldate : 15-FEB-2013
Standards: S21593

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	25.565	28.440	5000	5333	ug/L	7	10	
Arsenic	A	13.537	16.061	5000	5414	ug/L	8	10	
Barium	A	334.36	361.40	5000	5400	ug/L	8	10	
Beryllium	A	4298.6	4827.4	500.0	556.1	ug/L	**11**	10	c+ ***
Cadmium	A	180.88	196.86	5000	5454	ug/L	9	10	
Chromium	A	75.363	84.913	5000	5370	ug/L	7	10	
Cobalt	A	102.35	112.39	5000	5373	ug/L	7	10	
Copper	A	107.43	109.14	5000	4890	ug/L	-2	10	
Lead	A	46.877	48.057	5000	5201	ug/L	4	10	
Manganese	A	1503.8	1602.6	5000	5384	ug/L	8	10	
Molybdenum	A	28.717	31.456	5000	5472	ug/L	9	10	
Nickel	A	38.522	43.554	5000	5394	ug/L	8	10	
Selenium	A	20.087	23.177	5000	5341	ug/L	7	10	
Silver	A	674.02	721.86	1000	1046	ug/L	5	10	
Thallium	A	14.383	15.431	5000	5335	ug/L	7	10	
Vanadium	A	137.15	149.20	5000	5297	ug/L	6	10	
Zinc	A	57.264	61.997	5000	5395	ug/L	8	10	
Aluminum	R	0.7940	0.8618	20000	20680	ug/L	3	10	
Calcium	R	5.9624	6.5355	20000	22030	ug/L	10	10	
Iron	R	2.6322	2.9125	20000	21880	ug/L	9	10	
Magnesium	R	0.5214	0.5845	20000	22310	ug/L	**12**	10	c+ ***
Potassium	R	4.2110	4.5201	20000	20530	ug/L	3	10	
Sodium	R	8.9530	9.2913	20000	21470	ug/L	7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1288929	1156434	-10.28

+=high bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83066978019 File : met08_sr_6010 Time : 15-FEB-2013 14:08
Cal : 83066978001 Caldate : 15-FEB-2013

Analyte	Ch	Quant	IQL	2X MDL	Units	Flags
Antimony	A	ND	10.00	2.158	ug/L	
Arsenic	A	ND	5.000	2.582	ug/L	
Barium	A	ND	5.000	0.3522	ug/L	
Beryllium	A	ND	2.000	0.3881	ug/L	
Cadmium	A	ND	5.000	0.9506	ug/L	
Chromium	A	ND	5.000	1.262	ug/L	
Cobalt	A	ND	5.000	1.550	ug/L	
Copper	A	ND	5.000	3.219	ug/L	
Lead	A	ND	5.000	3.105	ug/L	
Manganese	A	ND	5.000	0.3422	ug/L	
Molybdenum	A	ND	5.000	2.826	ug/L	
Nickel	A	ND	5.000	2.429	ug/L	
Selenium	A	ND	10.00	4.980	ug/L	
Silver	A	ND	5.000	2.661	ug/L	
Thallium	A	ND	10.00	3.279	ug/L	
Vanadium	A	ND	5.000	1.427	ug/L	
Zinc	A	ND	20.00	4.561	ug/L	
Aluminum	R	ND	100.0	42.13	ug/L	
Calcium	R	ND	200.0	16.33	ug/L	
Iron	R	ND	100.0	33.25	ug/L	
Magnesium	R	ND	200.0	32.69	ug/L	
Potassium	R	ND	500.0	221.6	ug/L	
Sodium	R	ND	500.0	43.92	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1288929	1223473	-5.08

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 242876 METALS Soil
EPA 6010B

Inst : MET08 IDF : 1.0
Seqnum : 83066978032 File : met08_sr_6010 Time : 15-FEB-2013 14:57
Cal : 83066978001 Caldate : 15-FEB-2013
Standards: S21412

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Antimony	A	500.0	563.5	ug/L	13	20	
Arsenic	A	500.0	574.2	ug/L	15	20	
Barium	A	500.0	564.8	ug/L	13	20	
Beryllium	A	500.0	578.1	ug/L	16	20	
Cadmium	A	1000	1084	ug/L	8	20	
Chromium	A	500.0	552.1	ug/L	10	20	
Cobalt	A	500.0	520.8	ug/L	4	20	
Copper	A	500.0	558.0	ug/L	12	20	
Lead	A	1000	1059	ug/L	6	20	
Manganese	A	500.0	509.1	ug/L	2	20	
Molybdenum	A	500.0	567.1	ug/L	13	20	
Nickel	A	1000	1035	ug/L	4	20	
Selenium	A	500.0	582.7	ug/L	17	20	
Silver	A	1000	1193	ug/L	19	20	
Thallium	A	500.0	507.4	ug/L	1	20	
Vanadium	A	500.0	574.2	ug/L	15	20	
Zinc	A	1000	1093	ug/L	9	20	
Aluminum	R	500000	541200	ug/L	8		
Calcium	R	500000	531700	ug/L	6		
Iron	R	200000	209600	ug/L	5		
Magnesium	R	500000	551900	ug/L	10		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	1288929	986941	-23.43

SAMPLE PREPARATION SUMMARY

Batch # : 195450
Started By : MCB
Method : 3050B
Spike #1 ID : S20436
Prep Date : 11-FEB-2013 21:15
SOP Version : 3050B_ICP_rv9
Spike #2 ID : S20437
Analysis : ICAP
Finished By : MCB
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
242876-001		Soil	1.04	50	1	48.08						TAL/ICP	
242925-001		Soil	1.04	50	1	48.08						TAL/ICP	
242925-002		Soil	1.06	50	1	47.17						TAL/ICP	
242925-003		Soil	1.01	50	1	49.50						TAL/ICP	
242957-001		Soil	1.07	50	1	46.73						TAL/ICP	
242957-002		Soil	1.11	50	1	45.05						TAL/ICP	
243035-006		Soil	1.06	50	1	47.17						T22/ICP	
243036-005		Soil	1.04	50	1	48.08						T22/ICP	
QC676333	BLANK	Soil	1	50	1	50.0							
QC676334	BS	Soil	1	50	1	50.0		.5	.5				
QC676335	BSD	Soil	1	50	1	50.0		.5	.5				
QC676336	MS	Soil	1.13	50	1	44.25		.5	.5				
QC676337	MSD	Soil	1	50	1	50.0		.5	.5				
QC676338	SER	Soil	1.04	50	1	48.08							
QC676339	PDS	Soil	1.04	50	1	48.08							

Analyst: NT Date: 02/12/13 Reviewer: PRW Date: 02/12/13

Soil Digestion for ICP & ICP-MS Curtis & Tompkins, Ltd.

LIMS Batch #: 195450 Scale Used: ☒ Metals Prep ☐ _____ Digestion Method: ☒ EPA 3050b ☐ _____ **BK3378**

Date Digested: 2/11/13 Page 66

Digested by: MCB III

Lvl.	Sample #	Container ID	Weight of Sample (g)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
	BLANK		∅	☒ 50 ☐	Y		
	BS		↓	☒ 50 ☐	↓		
	BSD		↓	☒ 50 ☐			
IV	MS-876-001	A	1.13	☒ 50 ☐		✓	
5	MSD-876-001	↓	1.00	☒ 50 ☐		✓	
↓	242876-001	↓	1.04	☒ 50 ☐		✓	
III	242925-001	C	1.04	☒ 50 ☐		✓	
	↓ -002	↓	1.06	☒ 50 ☐		✓	
	↓ -003	↓	1.01	☒ 50 ☐		✓	
10	242957-001	A	1.07	☒ 50 ☐		✓	
↓	↓ -002	↓	1.11	☒ 50 ☐		✓	
	243035-006	B	1.06	☐ 50 ☐		✓	
↓	243036-005	A	1.04	☐ 50 ☐	↓	✓	
				☐ 50 ☐			
15				☐ 50 ☐			
				☐ 50 ☐			
				☐ 50 ☐			
				☐ 50 ☐			
				☐ 50 ☐			
20				☐ 50 ☐			
				☐ 50 ☐			
				☐ 50 ☐			
				☐ 50 ☐			
				☐ 50 ☐			
				☐ 50 ☐			

MCB III 2/11/13

	Reagent ID or LIMS #		Initials / Date
Digestion tubes, lot#	152115-262		
.5 mL of spike solution (Std1) was added to all spikes	520436		MCB III 2/11/13
.5 mL of spike solution (Std2) was added to all spikes	520437		
Digestion Temperature (°C), Block and Probe Location	95°	C-21	
Digestion begun at (time)	9:15 PM		
1:1 HNO3	52223	EMD	
concentrated HNO3	25627	J.T.BAKER	
3mL 30% hydrogen peroxide	24344	↓	
concentrated HCl	20145	↓	
Digestion ended at (time)	12:30 AM		
☒ filtered	6819607	WHATMAN	
Relinquished to ICP group	ICP		↓

Michael C Brock III 2/11/13
Digestion Chemist / Date

Continued from page ____
Continued on page 1

Reviewed by / Date

Mercury Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1053056860

Instrument : MET34
Method : EPA 7470A

Begun : 02/08/13 11:40
SOP Version : HG_water_rv12

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	195391	ICALBLK	CAL BLANK			02/08/13 11:40	1.0		
002	195391	ICAL	CAL 1			02/08/13 11:42	1.0	1	
003	195391	ICAL	CAL 2			02/08/13 11:43	1.0	1	
004	195391	ICAL	CAL 3			02/08/13 11:45	1.0	1	
005	195391	ICAL	CAL 4			02/08/13 11:47	1.0	1	
006	195391	ICAL	CAL 5			02/08/13 11:48	1.0	1	
007	195391	ICV				02/08/13 11:53	1.0	2	
008	195391	ICB				02/08/13 11:55	1.0		
009	195391	BLANK	QC676050	Soil	195381	02/08/13 11:57	1.0		
010	195391	BS	QC676051	Soil	195381	02/08/13 11:59	1.0		
011	195391	BSD	QC676052	Soil	195381	02/08/13 12:00	1.0		
012	195391	MSS	242949-005	Soil	195381	02/08/13 12:02	1.0		
013	195391	MS	QC676053	Soil	195381	02/08/13 12:04	1.0		
014	195391	MSD	QC676054	Soil	195381	02/08/13 12:05	1.0		
015	195391	SER	QC676055	Soil	195381	02/08/13 12:07	5.0		
016	195391	SAMPLE	242823-001	Soil	195381	02/08/13 12:09	1.0		
017	195391	SAMPLE	242823-002	Soil	195381	02/08/13 12:10	1.0		
018	195391	SAMPLE	242823-003	Soil	195381	02/08/13 12:12	1.0		
019	195391	CCV				02/08/13 12:14	1.0	3	
020	195391	CCB				02/08/13 12:16	1.0		
021	195391	SAMPLE	242823-004	Soil	195381	02/08/13 12:17	1.0		
022	195391	SAMPLE	242946-001	Miscell.	195381	02/08/13 12:19	1.0		
023	195391	SAMPLE	242946-002	Miscell.	195381	02/08/13 12:21	10.0		
024	195391	SAMPLE	242946-003	Miscell.	195381	02/08/13 12:22	1.0		1:HG=11
025	195391	SAMPLE	242946-004	Miscell.	195381	02/08/13 12:24	10.0		
026	195391	SAMPLE	242949-001	Soil	195381	02/08/13 12:26	1.0		
027	195391	SAMPLE	242949-002	Soil	195381	02/08/13 12:28	1.0		
028	195391	SAMPLE	242949-003	Soil	195381	02/08/13 12:29	1.0		
029	195391	SAMPLE	242949-004	Soil	195381	02/08/13 12:31	1.0		
030	195391	SAMPLE	242949-006	Soil	195381	02/08/13 12:33	1.0		
031	195391	CCV				02/08/13 12:34	1.0	3	
032	195391	CCB				02/08/13 12:36	1.0		
033	195391	SAMPLE	242949-007	Soil	195381	02/08/13 12:38	1.0		
034	195391	SAMPLE	242949-008	Soil	195381	02/08/13 12:39	1.0		
035	195391	SAMPLE	242949-009	Soil	195381	02/08/13 12:41	1.0		
036	195391	SAMPLE	242949-010	Soil	195381	02/08/13 12:43	1.0		
037	195391	SAMPLE	242949-011	Soil	195381	02/08/13 12:45	1.0		
038	195391	SAMPLE	242983-001	Soil	195381	02/08/13 12:46	1.0		
039	195391	SAMPLE	242946-004	Miscell.	195381	02/08/13 12:48	1.0		
040	195391	SAMPLE	242946-003	Miscell.	195381	02/08/13 12:50	10.0		
041	195391	BLANK	QC676084	Soil	195391	02/08/13 12:57	1.0		
042	195391	BS	QC676085	Soil	195391	02/08/13 12:58	1.0		
043	195391	CCV				02/08/13 13:00	1.0	3	
044	195391	CCB				02/08/13 13:02	1.0		
045	195391	BSD	QC676086	Soil	195391	02/08/13 13:03	1.0		
046	195391	MSS	242846-003	Soil	195391	02/08/13 13:05	1.0		
047	195391	MS	QC676087	Soil	195391	02/08/13 13:07	1.0		
048	195391	MSD	QC676088	Soil	195391	02/08/13 13:09	1.0		
049	195391	SER	QC676089	Soil	195391	02/08/13 13:10	5.0		
050	195391	SAMPLE	242846-001	Soil	195391	02/08/13 13:12	1.0		
051	195391	SAMPLE	242846-002	Soil	195391	02/08/13 13:14	1.0		
052	195391	SAMPLE	242846-004	Soil	195391	02/08/13 13:15	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1053056860

Instrument : MET34 Begun : 02/08/13 11:40
Method : EPA 7470A SOP Version : HG_water_rv12

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	195391	SAMPLE	242846-005	Soil	195391	02/08/13 13:17	1.0		
054	195391	SAMPLE	242846-006	Soil	195391	02/08/13 13:19	1.0		
055	195391	CCV				02/08/13 13:21	1.0	3	
056	195391	CCB				02/08/13 13:22	1.0		
057	195391	SAMPLE	242846-007	Soil	195391	02/08/13 13:24	1.0		
058	195391	SAMPLE	242846-008	Soil	195391	02/08/13 13:26	1.0		
059	195391	SAMPLE	242876-001	Soil	195391	02/08/13 13:27	1.0		
060	195391	SAMPLE	242925-001	Soil	195391	02/08/13 13:29	1.0		
061	195391	SAMPLE	242925-002	Soil	195391	02/08/13 13:31	1.0		
062	195391	SAMPLE	242925-003	Soil	195391	02/08/13 13:33	1.0		
063	195391	SAMPLE	242957-001	Soil	195391	02/08/13 13:34	1.0		
064	195391	SAMPLE	242957-002	Soil	195391	02/08/13 13:36	1.0		
065	195391	SAMPLE	242979-001	Soil	195391	02/08/13 13:38	1.0		
066	195391	SAMPLE	242980-001	Soil	195391	02/08/13 13:39	1.0		
067	195391	CCV				02/08/13 13:41	1.0	3	
068	195391	CCB				02/08/13 13:43	1.0		
069	195391	SAMPLE	242980-002	Soil	195391	02/08/13 13:45	1.0		
070	195391	SAMPLE	242980-003	Soil	195391	02/08/13 13:46	1.0		
071	195391	CCV				02/08/13 13:48	1.0	3	
072	195391	CCB				02/08/13 13:50	1.0		

JDB 02/08/13 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 72.

Standards used: 1=S21757 2=S21759 3=S21760

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 242876 METALS Soil: EPA 7470A

Inst : MET34
Calnum : 1053056860001
Units : ug/L

Date : 08-FEB-2013 11:40
X Axis : R

Reviewer : ---
Type : SOIL

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	195391	1053056860002	CAL 1	08-FEB-2013 11:42	S21757 (500X)
L2	195391	1053056860003	CAL 2	08-FEB-2013 11:43	S21757 (200X)
L3	195391	1053056860004	CAL 3	08-FEB-2013 11:45	S21757 (50X)
L4	195391	1053056860005	CAL 4	08-FEB-2013 11:47	S21757 (20X)
L5	195391	1053056860006	CAL 5	08-FEB-2013 11:48	S21757 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	4670.0	4752.0	4518.0	4390.0	4090.5	LINR	-0.0999	2.43E-4		4484.1	0.999	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	**-36**	0.5000	-4	2.0000	5	5.0000	5	10.000	-1

Instrument amount = a0 + response * a1 + response^2 * a2; LINR=Linear regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 242876 METALS Soil
EPA 7470A

Inst : MET34
Calnum : 1053056860001 Cal Date : 08-FEB-2013 Type : SOIL

ICV 1053056860007 (08-FEB-2013) stds: S21759

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	5.101	ug/L	2	10	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860031 File : 195391 Time : 08-FEB-2013 12:34
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL
Standards: S21760

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	4484.1	4214.6	5.000	5.027	ug/L	1	20	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860032 File : 195391 Time : 08-FEB-2013 12:36
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.02014	ug/L	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860043 File : 195391 Time : 08-FEB-2013 13:00
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL
Standards: S21760

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	4484.1	4030.4	5.000	4.803	ug/L	-4	20	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860044 File : 195391 Time : 08-FEB-2013 13:02
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.02014	ug/L	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860055 File : 195391 Time : 08-FEB-2013 13:21
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL
Standards: S21760

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	4484.1	4149.6	5.000	4.948	ug/L	-1	20	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860056 File : 195391 Time : 08-FEB-2013 13:22
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.02014	ug/L	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860067 File : 195391 Time : 08-FEB-2013 13:41
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL
Standards: S21760

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	4484.1	4154.6	5.000	4.954	ug/L	-1	20	

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 242876 METALS Soil
EPA 7470A

Inst : MET34 IDF : 1.0
Seqnum : 1053056860068 File : 195391 Time : 08-FEB-2013 13:43
Cal : 1053056860001 Caldate : 08-FEB-2013 Caltype : SOIL

Analyte	Quant	IQL	MDL	Units	Flags
Mercury	ND	0.2000	0.02014	ug/L	

SAMPLE PREPARATION SUMMARY

Batch # : 195391
Started By : JDB
Method : METHOD
Spike #1 ID : S21757

Prep Date : 08-FEB-2013 11:15

Analysis : HG
Finished By : JDB
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
242846-001		Soil	.64	50	1	78.13						TAL/HG	
242846-002		Soil	.61	50	1	81.97						TAL/HG	
242846-003		Soil	.57	50	1	87.72						TAL/HG	
242846-004		Soil	.6	50	1	83.33						TAL/HG	
242846-005		Soil	.62	50	1	80.65						TAL/HG	
242846-006		Soil	.59	50	1	84.75						TAL/HG	
242846-007		Soil	.63	50	1	79.37						TAL/HG	
242846-008		Soil	.66	50	1	75.76						TAL/HG	
242876-001		Soil	.63	50	1	79.37						TAL/HG	
242925-001		Soil	.6	50	1	83.33						TAL/HG	
242925-002		Soil	.66	50	1	75.76						TAL/HG	
242925-003		Soil	.65	50	1	76.92						TAL/HG	
242957-001		Soil	.59	50	1	84.75						TAL/HG	
242957-002		Soil	.61	50	1	81.97						TAL/HG	
242979-001		Soil	.57	50	1	87.72						T22/HG	
242980-001		Soil	.64	50	1	78.13						T22/HG	
242980-002		Soil	.58	50	1	86.21						T22/HG	
242980-003		Soil	.56	50	1	89.29						T22/HG	
QC676084	BLANK	Soil	.6	50	1	83.33							
QC676085	BS	Soil	.6	50	1	83.33		1.25					
QC676086	BSD	Soil	.6	50	1	83.33		1.25					
QC676087	MS	Soil	.56	50	1	89.29		1.25					
QC676088	MSD	Soil	.58	50	1	86.21		1.25					
QC676089	SER	Soil	.57	50	1	87.72							

Analyst: JDB Date: 02/08/13 Reviewer: PRW Date: 02/13/13

Soil Digestion for Mercury

Curtis & Tompkins, Ltd.

LIMS Batch #: 195391
Date Digested: 2.08.13

Scale Used: ☒ Metals Prep ☐ _____
Digestion Method: ☒ EPA 7471A ☐ _____

BK 3366
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	Sample #	container ID	Sample Weight (g)	Final Volume (mL)	Filtered? (y/n)	Comments
	MB		0	☒50 ☐___	Y	
	BS		0	☒50 ☐___		
	BSD		0	☒50 ☐___		
	242846-003	A	0.57	☒50 ☐___		(MSS) Clay-like
5	MS		0.56	☒50 ☐___		
	MSD		0.58	☒50 ☐___		
	242846-001	A	0.64	☒50 ☐___		
	002		0.61	☒50 ☐___		
	004		0.60	☒50 ☐___		
10	005		0.62	☒50 ☐___		
	006		0.59	☒50 ☐___		
	007		0.63	☒50 ☐___		
	008	↓	0.66	☒50 ☐___		
	242876-001	A	0.63	☒50 ☐___		Mud
15	242925-001	C	0.60	☒50 ☐___		
	002	↓	0.66	☒50 ☐___		
	003	B	0.65	☒50 ☐___		
	242957-001	A	0.59	☒50 ☐___		
	002	↓	0.61	☒50 ☐___		
20	242979-001	B	0.57	☒50 ☐___		
	242980-001	H	0.64	☒50 ☐___		
	002		0.58	☒50 ☐___		
	003	↓	0.56	☒50 ☐___	↓	
				☐50 ☐___		
				☐50 ☐___		

	Reagent ID/ LIMS# / Time	Initials / Date
Digestion Tubes, Lot #	EK12299	KB 2.8.13
1.25 mL of spike standard was added to all spikes	S21758/S21757	↓
☐ CAL digested with this batch — ICAL Source LIMS S#	S21759	
ICV / CCV LIMS S#	S21760	
Digestion Temperature (°C), Block and Probe Location	95° B-29	
Digestion Started at (time)	11:15	
Aqua Regia Acids (HNO3+ HCl)	2.08.13	
5% $KMnO_4$	2.6.13	
NaCl.hydroxylamine hydrochloride	2.1.13	
Stannous Chloride	2.6.13	
Digestion Completd at (time)	11:45	
☒ filtered thru' 0.45 um syringe filter (lot #)	SS 21012103	↓

KB 2.8.13
Prep Chemist / Date

Continued from page ___
Continued on page ___

Reviewed by / Date

Laboratory Job Number 242876

ANALYTICAL REPORT

Wet Chemistry

Matrix: Soil

Percent Moisture Summary Report

Batch: 195372
Date: 02/08/13
Method: CLP SOW 390
Analyst: JDB

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
242876-001	11.3697	18.9567	14.4138	40	60
QC676021	10.8922	17.2779	13.4758	40	60
of 242876-001			RPD:	0.8%	0.6%

Moisture LOG **Curtis & Tompkins, Ltd.**

LIMS Batch #: 195372
Date: 2-8-13

Page: **92**
Benchbook#: **BK 3368**

Scale Used

☒ Leachates Analytical
☐ _____

Sample # / Letter	Dish #	Dish Weight (g)	Sample + Dish Wt (g)	Final Weight (g)	*Comments
BIK	IV	11.0947	Ø	11.0950	dish# IV
243876001 A	K03	11.3697	18.9567	14.4138	
SDUP - 001 ↓	DEV	10.8922	17.2779	13.4758	

Date/ Time IN: 2-8-13 12 AM
Temp (F) IN: 105°C
Date/ Time OUT: 2.08.13 13:00
Temp (F) OUT: 105°C

2.8.13

Extraction Chemist **Date**

Reviewed by **Date**

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PROJECT AE 163 METTLER

Notebook No. BK2394

Continued From Page

Date	Analyst	0.2000	0.5000	1.000	2.000	5.000	10.0000	20.0000	50.0000	100.0000	Set
1.25.13	JSB	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0000	50.0001	100.0002	10827
1.26.13	VV	0.2001	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	49.9998	99.9998	10827
1-27-13	VV	0.2000	0.5000	1.0000	1.9999	5.0000	10.0000	20.0001	49.9999	100.0000	10827
1-28-13	JSB	0.2000	0.5000	1.0000	1.9999	4.9999	9.9999	20.0000	49.9998	99.9996	10827
1.29.13	JSB	0.2000	0.4999	1.0000	2.0000	5.0000	9.9999	20.0000	50.0000	99.9999	10827
1.30.13	JSB	0.2000	0.5000	1.0000	1.9999	5.0001	10.0000	20.0002	50.0002	100.0003	10827
1.31.13	JSB	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000	100.0000	10827
2-1-13	BRS	0.1999	0.5000	1.0000	1.9999	4.9999	9.9999	19.9999	49.9999	99.9998	10827
2-2-13	VV	0.1999	0.4998	0.9997	1.9999	5.000	10.0000	20.0000	50.0000	99.9997	10827
2-3-13	VV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	19.9999	49.9998	99.9998	10827
2.04.13	JSB	0.2000	0.5000	1.0000	2.0000	5.0000	10.0000	19.9999	49.9999	99.9997	10827
2.05.13	JSB	0.2000	0.5001	1.0001	2.0001	5.0001	10.0001	20.0001	50.0000	99.9999	10827
2.06.13	JSB	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0000	50.0001	100.0001	10827
2-7-13	VV	0.2001	0.5000	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000	100.0000	10827
2.08.13	JSB	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0000	50.0000	99.9999	10827

Continued on Page

Read and Understood By

Signed Date Signed Date