Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Lab Code	Sample Name
K0607294-040	Comp 8,8a

16oz-Glass Jar WM (Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-040.02		NA		-				NA		
Test List: Homogen										
K0607294-040.03		NA		-				NA		
Test List: Homogen										

N/A (N/A)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-040.10		NA		-				NA		
Test List: Subsample										

Lab Code	Sample Name
K0607294-041	Comp 2,3

4oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-041.04		NA		-						
Test List: 8081A										
K0607294-041.05		NA		-						
Test List: 8270C SIM	Lipids	None								
K0607294-041.06		NA		-						
Test List: 8290										
K0607294-041.07		NA		-						
Test List: None										

8oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-041.08				-				NA		
Test List:										

3095

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Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Lab Code	Sample Name
K0607294-041	Comp 2,3

1each-Plastic Bag (Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-041.01		NA		-				NA		
Test List:	8270C SIM	200.8	8081A							
	6010B	7471A	7740							
	Lipids	Frz Dry	Homogen							
	8290	None	None							
	1630 Modified									
K0607294-041.09		NA		-				NA		
Test List:	Composite									

16oz-Glass Jar WM (Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-041.02		NA		-				NA		
Test List:	Homogen									
K0607294-041.03		NA		-				NA		
Test List:	Homogen									

N/A (N/A)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-041.10		NA		-				NA		
Test List:	Subsample									

K0607294-042	Comp 9afd and 10a

4oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-042.01				-				NA		
Test List:										
K0607294-042.02				-				NA		
Test List:										

3096

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Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Lab Code	Sample Name
K0607294-042	Comp 9afd and 10a

4oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-042.03				-				NA		
Test List:										
K0607294-042.04				-				NA		
Test List:										
K0607294-042.05				-				NA		
Test List:										

8oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-042.20		NA		-						
Test List: Subsample										
K0607294-042.21		NA		-						
Test List: Subsample										

2oz-Glass Jar WM CLEAR Teflon Liner(4-deg C)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-042.06				-				NA		
Test List:										

1each-Plastic Bag (Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-042.07		NA		-				NA		
Test List: Composite										

16oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action

3097

No	Project ID	Lab ID	Client ID	Sample Size g	Tare Vial g	Tare & Wet Sample	Tare & Dry Sample	Calculated Percent Solid	Calculated Percent Moisture	Dry Weight	Sample Description
MB		EB27020-MB	Method Blank	5.088							White tissue
LCS		EB27020-LCS	Lab Control Spike	5.544							White tissue
LCSD											
1	K0607294	K0607294-001	1	5.174							Gray tissue
2	K0607294	K0607294-004	3	5.087							Gray tissue
3	K0607294	K0607294-005	4	5.230							Gray tissue
4	K0607294	K0607294-005 MS	4MS	5.090							Gray tissue
5	K0607294	K0607294-005 MSD	4MSD	5.392							Gray tissue
6	K0607294	K0607294-006	1b	5.208							Gray tissue
7	K0607294	K0607294-007	5	5.143							Gray tissue
8	K0607294	K0607294-008	6	5.391							Gray tissue
9	K0607294	K0607294-012	7	5.336							Gray tissue
10	K0607294	K0607294-016	9	5.657							Gray tissue
11	K0607294	K0607294-018	10	5.458							Gray tissue
12	K0607294	K0607294-020	12	5.747							Gray tissue
13	K0607294	K0607294-021	13	5.357							Gray tissue
14	K0607294	K0607294-022	14	5.066							Gray tissue
15	K0607294	K0607294-025	NW2	5.555							Tan tissue
16	K0607294	K0607294-026	NW3	5.250							Tan tissue
17	K0607294	K0607294-027	NW4	5.455							Gray tissue
18	K0607294	K0607294-029	NW5	5.456							Pink tissue
19	K0607294	K0607294-030	NW6	5.496							Gray tissue
20	K0607294	K0607294-031	NW7	5.036							Gray tissue
21	K0607294	K0607294-032	NW8	5.778							Gray tissue
22											
23											
24											
25											
26											

3098

SODIUM SULFATE C1-71-2
ACETONE C1-68-3
TOLUENE C1-74-5
GLASS WOOL GW1-1-4
DICHLOROMETHANE C1-73-3
ETHYL ACETATE C1-69-4
NONANE C1-67-5
HEXANE C1-73-2

SAND C1-33-1
TRIDECANE C1-74-2
SULFURIC ACID C1-74-3
BASIC SILICA GEL S1-24-3
CARBON : C1-73-5
ACIDIC SILICA GEL S1-24-4
SILICA GEL S1-22-6

Standard:	Internal	Matrix
Solution ID:	D8-31-2A	D8-27-1A
Volume:	100 uL	100 uL
Spiker:	CID	CID
Witness:	DB	DB
Date:	09/22/06	09/22/06
Standard:	Cleanup	Recovery
Solution ID:	D8-31-3A/B	D8-26-3A
Volume:	100 uL	20 uL
Spiker:	DB	hm
Witness:	KH	9/27/06
Date:	09/25/06	

EXTRACTION START: 09/22/06
EXTRACTION END:09/23/06
EXTRACTION TECHNIQUE: Soxhlet

TIME STARTED: 1600
TIME FINISHED: 0800

EXTRACTS RECEIVED BY NP

DATE RECEIVED 09/27/06

Columbia Analytical Services, INC.

EB27020 **8290**

Sulfuric Acid Cleanup: 09/25/06
Silica Gel/Carbon Column: 09/26/06

No	Project ID	Lab ID	Client ID	Sample Size g	Tare Vial g	Tare & Wet Sample	Tare & Dry Sample	Calculated Percent Solid	Calculated Percent Moisture	Dry Weight	Sample Description
MB		EB27025-MB	Method Blank	7.793							
LCS		EB27025-LCS	Lab Control Spike	7.879							
LCSD											
1	K0607294	K0607294-034	NW9	6.755							Gray Tissue
2	K0607294	K0607294-035	NW10	5.431							Gray Tissue
3	K0607294	K0607294-036	NW1 SW3-1	5.564							Brown Tissue
4	K0607294	K0607294-037	NW1 SW1-1	5.373							Brown Tissue
5	K0607294	K0607294-037 MS	NW1 SW1-1MS	4.882							Brown Tissue
6	K0607294	K0607294-037 MSD	NW1 SW1-1MSD	5.347							Brown Tissue
7	K0607294	K0607294-039	NW1 SW2-1	7.343							Brown Tissue
8	K0607294	K0607294-040	Comp 8,8a	6.086							Dark Green Tissue
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											

3099

SODIUM SULFATE C1-108-6
ACETONE C1-87-2
TOLUENE C1-109-4
GLASS WOOL C1-110-2
DICHLOROMETHANE C1-108-4
ETHYL ACETATE C1-95-3
NONANE C1-108-2
HEXANE C1-110-1

SAND C1-87-4
TRIDECANE C1-105-2
SULFURIC ACID C1-109-3
BASIC SILICA GEL C1-109-1
CARBON : C1-108-3
ACIDIC SILICA GEL C1-109-1
SILICA GEL C1--109-1

Standard:	Internal	Matrix
Solution ID:	D8-31-2A	D8-27-1A
Volume:	100 uL	100 uL
Spiker:	KH	KH
Witness:	DB	DB
Date:	09/26/06	09/26/06
Standard:	Cleanup	Recovery
Solution ID:	D8-31-2A/B	D8-26-3,4
Volume:	100 uL	2ml
Spiker:	KH	
Witness:	CID	m
Date:	09/28/06	9/27/06

EXTRACTION START: 9/26/06
EXTRACTION END: 9/27/06
EXTRACTION TECHNIQUE: SOXHLET

TIME STARTED: 1600
TIME FINISHED: 800

EXTRACTS RECEIVED BY _____ h _____

DATE RECEIVED _____9/29/06_____

Columbia Analytical Services, INC.

EB27025 **8290**

Sulfuric Acid Cleanup: 9/28/2006
Silica Gel/Carbon Column: 9/28/2006

Columbia Analytical Services INC.

An Employee - Owned Company

Dioxin/Furan

Analytical Report

10655 Richmond Avenue, Suite 130-A, Houston, TX 77042
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.

METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27020-MB

Client Name: Sample Wt/Vol: 5.088 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17032#1

Analysis Date: 27-SEP-06 Time: 20:00:45 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.047	U	*	*	0.89
1,2,3,7,8-PeCDD	*	0.061	U	*	*	0.84
1,2,3,4,7,8-HxCDD	*	0.091	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.078	U	*	*	1.02
1,2,3,7,8,9-HxCDD	*	0.085	U	*	*	0.93
1,2,3,4,6,7,8-HpCDD	0.638	0.052	J	0.92	1.000	0.86
OCDD	7.118	0.103	J	0.81	1.000	0.97
2,3,7,8-TCDF	*	0.070	U	*	*	0.80
1,2,3,7,8-PeCDF	*	0.036	U	*	*	0.82
2,3,4,7,8-PeCDF	*	0.035	U	*	*	0.84
1,2,3,4,7,8-HxCDF	*	0.040	U	*	*	1.06
1,2,3,6,7,8-HxCDF	*	0.038	U	*	*	1.12
1,2,3,7,8,9-HxCDF	*	0.051	U	*	*	0.84
2,3,4,6,7,8-HxCDF	*	0.042	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.068	U	*	*	1.31
1,2,3,4,7,8,9-HpCDF	*	0.093	U	*	*	0.96
OCDF	0.543	0.115	JK	1.06	1.004	0.95
Total Tetra-Dioxins	*	0.047	U			
Total Penta-Dioxins	*	0.061	U			
Total Hexa-Dioxins	*	0.078	U			
Total Hepta-Dioxins	1.521	0.052				
Total Tetra-Furans	*	0.070	U			
Total Penta-Furans	*	0.035	U			
Total Hexa-Furans	*	0.038	U			
Total Hepta-Furans	*	0.068	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27020-MB

Client Name: Sample Wt/Vol: 5.088 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: db5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17032#1

Analysis Date: 27-SEP-06 Time: 20:00:45 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	856.42	85.64		0.79	1.008	0.97
13C-1,2,3,7,8-PeCDD	1000	865.12	86.51		1.51	1.171	0.84
13C-1,2,3,6,7,8-HxCDD	2500	1816.47	72.66		1.23	0.992	0.97
13C-1,2,3,4,6,7,8-HpCDD	2500	2122.97	84.92		1.03	1.066	0.82
13C-OCDD	5000	3798.89	75.98		0.89	1.143	0.80
13C-2,3,7,8-TCDF	1000	763.63	76.36		0.75	0.978	1.07
13C-1,2,3,7,8-PeCDF	1000	835.70	83.57		1.52	1.133	1.01
13C-1,2,3,4,7,8-HxCDF	2500	2133.21	85.33		0.52	0.971	1.00
13C-1,2,3,4,6,7,8-HpCDF	2500	2104.60	84.18		0.43	1.043	0.72
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	813.64	101.70			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27020-MB

Client Name: Sample Wt/Vol: 5.088 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17045#1

Analysis Date: 28-SEP-06 Time: 09:41:52 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.032	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.063	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.067	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.064	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.064	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.365	0.057	J	0.95	1.000	0.92
OCDD	2.705	0.102	J	0.85	1.000	0.99
2,3,7,8-TCDF	*	0.043	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.045	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.044	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.028	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.029	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.036	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.031	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.074	U	*	*	1.36
1,2,3,4,7,8,9-HpCDF	*	0.103	U	*	*	0.97
OCDF	*	0.124	U	*	*	0.95
Total Tetra-Dioxins	*	0.032	U			
Total Penta-Dioxins	*	0.063	U			
Total Hexa-Dioxins	*	0.064	U			
Total Hepta-Dioxins	0.365	0.057				
Total Tetra-Furans	*	0.043	U			
Total Penta-Furans	*	0.044	U			
Total Hexa-Furans	*	0.029	U			
Total Hepta-Furans	*	0.074	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27020-MB

Client Name: Sample Wt/Vol: 5.088 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17045#1

Analysis Date: 28-SEP-06 Time: 09:41:52 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	719.47	71.95		0.77	1.009	1.10
13C-1,2,3,7,8-PeCDD	1000	682.09	68.21		1.52	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1787.55	71.50		1.22	0.993	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1750.52	70.02		1.03	1.067	0.95
13C-OCDD	5000	2955.13	59.10		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	527.28	52.73		0.76	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	583.08	58.31		1.51	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1790.45	71.62		0.53	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1588.17	63.53		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	671.47	83.93			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Lab Code	Sample Name
K0607294-042	Comp 9afd and 10a

16oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-042.18		NA		-						
Test List: Subsample										
K0607294-042.19		NA		-						
Test List: Subsample										

N/A (N/A)

Bottle ID	Barcode	Expected Conditions HS	Expected Conditions pH	Expected Conditions Temp	Cooler #	Received Conditions Rec Temp	Received Conditions pH Check	Received Conditions Rec HS	Seal Intact?	Corrective Action
K0607294-042.08		NA		-				NA		
Test List: Homogen										
K0607294-042.09		NA		-				NA		
Test List: Homogen										
K0607294-042.10		NA		-				NA		
Test List: Homogen										
K0607294-042.11		NA		-				NA		
Test List: Homogen										
K0607294-042.12		NA		-				NA		
Test List: Homogen										
K0607294-042.13		NA		-				NA		
Test List: Homogen										
K0607294-042.14		NA		-				NA		
Test List: Homogen										
K0607294-042.15		NA		-				NA		
Test List: Homogen										
K0607294-042.16		NA		-				NA		
Test List: Homogen										
K0607294-042.17		NA		-				NA		
Test List: Subsample										

Cooler Receipt Comments:

page 50 of 50 missing - not relevant to 8290
NC 10/6/11

3105

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Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.

METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27020-MB

Client Name: Sample Wt/Vol: 5.088 g or mL: g

Matrix (aqueous/solid/leachate): tissue Initial Calibration Date: 11/04/04

Sample Receipt Date: Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26888#1

Analysis Date: 28-SEP-06 Time: 18:41:03 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.216	U	*	*	0.94
1,2,3,7,8-PeCDD	*	0.392	U	*	*	0.92
1,2,3,4,7,8-HxCDD	*	0.206	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.196	U	*	*	1.05
1,2,3,7,8,9-HxCDD	*	0.205	U	*	*	1.00
1,2,3,4,6,7,8-HpCDD	*	0.239	U	*	*	0.94
OCDD	1.624	0.256	J	0.91	1.000	1.03
2,3,7,8-TCDF	*	0.211	U	*	*	0.91
1,2,3,7,8-PeCDF	*	0.233	U	*	*	0.94
2,3,4,7,8-PeCDF	*	0.223	U	*	*	0.99
1,2,3,4,7,8-HxCDF	*	0.119	U	*	*	1.22
1,2,3,6,7,8-HxCDF	*	0.122	U	*	*	1.20
1,2,3,7,8,9-HxCDF	*	0.152	U	*	*	0.96
2,3,4,6,7,8-HxCDF	*	0.129	U	*	*	1.13
1,2,3,4,6,7,8-HpCDF	*	0.166	U	*	*	1.44
1,2,3,4,7,8,9-HpCDF	*	0.224	U	*	*	1.07
OCDF	*	0.422	U	*	*	1.20
Total Tetra-Dioxins	*	0.216	U			
Total Penta-Dioxins	*	0.392	U			
Total Hexa-Dioxins	*	0.196	U			
Total Hepta-Dioxins	*	0.239	U			
Total Tetra-Furans	*	0.211	U			
Total Penta-Furans	*	0.223	U			
Total Hexa-Furans	*	0.122	U			
Total Hepta-Furans	*	0.166	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27020-MB

Client Name: Sample Wt/Vol: 5.088 g or mL: g

Matrix (aqueous/solid/leachate): tissue Initial Calibration Date: 11/04/04

Sample Receipt Date: Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column: db5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U26888#1

Analysis Date: 28-SEP-06 Time: 18:41:03 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg): ng/Kg % Moisture/Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	805.59	80.56		0.74	1.008	1.00
13C-1,2,3,7,8-PeCDD	1000	853.62	85.36		1.54	1.173	1.02
13C-1,2,3,6,7,8-HxCDD	2500	1993.08	79.72		1.23	0.992	0.96
13C-1,2,3,4,6,7,8-HpCDD	2500	2307.72	92.31		1.07	1.067	0.89
13C-OCDD	5000	4502.79	90.06		0.89	1.143	0.83
13C-2,3,7,8-TCDF	1000	763.25	76.33		0.77	0.977	1.34
13C-1,2,3,7,8-PeCDF	1000	900.06	90.01		1.55	1.134	1.39
13C-1,2,3,4,7,8-HxCDF	2500	2292.45	91.70		0.53	0.971	1.20
13C-1,2,3,4,6,7,8-HpCDF	2500	2306.07	92.24		0.44	1.043	0.95
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	811.41	101.43			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27025-MB

Client Name: Sample Wt/Vol: 7.793 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: Instrument ID: Autospec-Ultima

Ext. Date: 09/26/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17058#1

Analysis Date: 29-SEP-06 Time: 10:48:28 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.022	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.039	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.051	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.049	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.049	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.309	0.025	J	1.00	1.000	0.92
OCDD	4.294	0.083	J	0.87	1.000	0.99
2,3,7,8-TCDF	*	0.031	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.048	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.046	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.023	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.024	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.030	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.026	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.207	0.054	J	1.05	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.076	U	*	*	0.97
OCDF	0.586	0.069	JK	1.06	1.004	0.95
Total Tetra-Dioxins	*	0.022	U			
Total Penta-Dioxins	*	0.039	U			
Total Hexa-Dioxins	*	0.049	U			
Total Hepta-Dioxins	0.824	0.025				
Total Tetra-Furans	0.012	0.031	U			
Total Penta-Furans	*	0.046	U			
Total Hexa-Furans	*	0.024	U			
Total Hepta-Furans	0.207	0.054				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: EB27025-MB

Client Name: Sample Wt/Vol: 7.793 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17058#1

Analysis Date: 29-SEP-06 Time: 10:48:28 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	692.18	69.22		0.77	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	663.45	66.34		1.53	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1719.27	68.77		1.23	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1628.74	65.15		1.06	1.067	0.95
13C-OCDD	5000	2601.32	52.03		0.90	1.142	0.97
13C-2,3,7,8-TCDF	1000	541.98	54.20		0.75	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	614.64	61.46		1.54	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1832.23	73.29		0.52	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1533.16	61.33		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	612.16	76.52			1.008	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-001

Client Name: TTEMI Sample Wt/Vol: 5.174 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17033#1

Analysis Date: 27-SEP-06 Time: 20:49:28 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.035	U	*	*	0.89
1,2,3,7,8-PeCDD	*	0.061	U	*	*	0.84
1,2,3,4,7,8-HxCDD	*	0.043	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.037	U	*	*	1.02
1,2,3,7,8,9-HxCDD	*	0.040	U	*	*	0.93
1,2,3,4,6,7,8-HpCDD	0.723	0.091	BJ	0.90	1.000	0.86
OCDD	5.266	0.088	BJ	0.95	1.000	0.97
2,3,7,8-TCDF	*	0.055	U	*	*	0.80
1,2,3,7,8-PeCDF	*	0.041	U	*	*	0.82
2,3,4,7,8-PeCDF	*	0.040	U	*	*	0.84
1,2,3,4,7,8-HxCDF	*	0.056	U	*	*	1.06
1,2,3,6,7,8-HxCDF	*	0.053	U	*	*	1.12
1,2,3,7,8,9-HxCDF	*	0.071	U	*	*	0.84
2,3,4,6,7,8-HxCDF	*	0.059	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.068	U	*	*	1.31
1,2,3,4,7,8,9-HpCDF	*	0.093	U	*	*	0.96
OCDF	*	0.151	U	*	*	0.95
Total Tetra-Dioxins	*	0.035	U			
Total Penta-Dioxins	*	0.061	U			
Total Hexa-Dioxins	*	0.037	U			
Total Hepta-Dioxins	1.402	0.091				
Total Tetra-Furans	*	0.055	U			
Total Penta-Furans	*	0.040	U			
Total Hexa-Furans	*	0.053	U			
Total Hepta-Furans	*	0.068	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-001

Client Name: TTEMI Sample Wt/Vol: 5.174 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17033#1

Analysis Date: 27-SEP-06 Time: 20:49:28 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	861.85	86.19		0.77	1.008	0.97
13C-1,2,3,7,8-PeCDD	1000	879.20	87.92		1.54	1.172	0.84
13C-1,2,3,6,7,8-HxCDD	2500	2110.27	84.41		1.22	0.992	0.97
13C-1,2,3,4,6,7,8-HpCDD	2500	2173.96	86.96		1.04	1.067	0.82
13C-OCDD	5000	3689.85	73.80		0.89	1.143	0.80
13C-2,3,7,8-TCDF	1000	771.43	77.14		0.76	0.978	1.07
13C-1,2,3,7,8-PeCDF	1000	862.76	86.28		1.51	1.133	1.01
13C-1,2,3,4,7,8-HxCDF	2500	2242.59	89.70		0.51	0.972	1.00
13C-1,2,3,4,6,7,8-HpCDF	2500	2225.01	89.00		0.43	1.043	0.72
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	803.51	100.44			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
1

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-001

Client Name: TTEMI Sample Wt/Vol: 5.174 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17033#1

Analysis Date: 27-SEP-06 Time: 20:49:28 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.723	X 0.01	7.23e-03
OCDD	5.266	X 0.0001	5.27e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	7.76e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
3

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-004

Client Name: TTEMI Sample Wt/Vol: 5.087 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17034#1

Analysis Date: 27-SEP-06 Time: 21:38:10 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.042	U	*	*	0.89
1,2,3,7,8-PeCDD	1.422	0.067	J	1.50	1.000	0.84
1,2,3,4,7,8-HxCDD	*	0.068	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.058	U	*	*	1.02
1,2,3,7,8,9-HxCDD	*	0.064	U	*	*	0.93
1,2,3,4,6,7,8-HpCDD	0.547	0.045	BJ	0.89	1.000	0.86
OCDD	4.114	0.092	BJ	0.87	1.000	0.97
2,3,7,8-TCDF	*	0.047	U	*	*	0.80
1,2,3,7,8-PeCDF	*	0.041	U	*	*	0.82
2,3,4,7,8-PeCDF	*	0.040	U	*	*	0.84
1,2,3,4,7,8-HxCDF	*	0.056	U	*	*	1.06
1,2,3,6,7,8-HxCDF	*	0.052	U	*	*	1.12
1,2,3,7,8,9-HxCDF	*	0.070	U	*	*	0.84
2,3,4,6,7,8-HxCDF	*	0.058	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.085	U	*	*	1.31
1,2,3,4,7,8,9-HpCDF	*	0.117	U	*	*	0.96
OCDF	1.093	0.160	BJK	0.70	1.004	0.95
Total Tetra-Dioxins	*	0.042	U			
Total Penta-Dioxins	1.422	0.067				
Total Hexa-Dioxins	*	0.058	U			
Total Hepta-Dioxins	1.495	0.045				
Total Tetra-Furans	*	0.047	U			
Total Penta-Furans	*	0.040	U			
Total Hexa-Furans	*	0.052	U			
Total Hepta-Furans	*	0.085	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

3

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-004

Client Name: TTEMI Sample Wt/Vol: 5.087 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17034#1

Analysis Date: 27-SEP-06 Time: 21:38:10 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	830.25	83.03		0.76	1.008	0.97
13C-1,2,3,7,8-PeCDD	1000	846.45	84.64		1.54	1.171	0.84
13C-1,2,3,6,7,8-HxCDD	2500	2068.22	82.73		1.23	0.992	0.97
13C-1,2,3,4,6,7,8-HpCDD	2500	2055.05	82.20		1.05	1.066	0.82
13C-OCDD	5000	3550.27	71.01		0.88	1.143	0.80
13C-2,3,7,8-TCDF	1000	736.68	73.67		0.75	0.978	1.07
13C-1,2,3,7,8-PeCDF	1000	843.87	84.39		1.54	1.133	1.01
13C-1,2,3,4,7,8-HxCDF	2500	2240.20	89.61		0.52	0.971	1.00
13C-1,2,3,4,6,7,8-HpCDF	2500	2157.99	86.32		0.44	1.043	0.72
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	808.12	101.01			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
3

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-004

Client Name: TTEMI Sample Wt/Vol: 5.087 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17034#1

Analysis Date: 27-SEP-06 Time: 21:38:10 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	1.422	X 1.0	1.42e+00
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.547	X 0.01	5.47e-03
OCDD	4.114	X 0.0001	4.11e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	1.093	X 0.0001	1.09e-04
		Total:	1.43e+00

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
4

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-005

Client Name: TTEMI Sample Wt/Vol: 5.230 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17037#1

Analysis Date: 28-SEP-06 Time: 00:04:14 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.033	U	*	*	0.89
1,2,3,7,8-PeCDD	0.449	0.048	JK	1.27	1.000	0.84
1,2,3,4,7,8-HxCDD	*	0.067	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.058	U	*	*	1.02
1,2,3,7,8,9-HxCDD	*	0.063	U	*	*	0.93
1,2,3,4,6,7,8-HpCDD	2.393	0.057	BJ	0.97	1.000	0.86
OCDD	24.168	0.157	B	0.89	1.000	0.97
2,3,7,8-TCDF	*	0.056	U	*	*	0.80
1,2,3,7,8-PeCDF	*	0.066	U	*	*	0.82
2,3,4,7,8-PeCDF	*	0.064	U	*	*	0.84
1,2,3,4,7,8-HxCDF	*	0.051	U	*	*	1.06
1,2,3,6,7,8-HxCDF	*	0.048	U	*	*	1.12
1,2,3,7,8,9-HxCDF	*	0.064	U	*	*	0.84
2,3,4,6,7,8-HxCDF	*	0.053	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.087	U	*	*	1.31
1,2,3,4,7,8,9-HpCDF	*	0.119	U	*	*	0.96
OCDF	4.161	0.205	BJ	0.87	1.004	0.95
Total Tetra-Dioxins	*	0.033	U			
Total Penta-Dioxins	*	0.048	U			
Total Hexa-Dioxins	*	0.058	U			
Total Hepta-Dioxins	10.151	0.057				
Total Tetra-Furans	*	0.056	U			
Total Penta-Furans	*	0.064	U			
Total Hexa-Furans	*	0.048	U			
Total Hepta-Furans	0.799	0.087				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

4

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-005

Client Name: TTEMI Sample Wt/Vol: 5.230 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17037#1

Analysis Date: 28-SEP-06 Time: 00:04:14 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	855.70	85.57		0.77	1.008	0.97
13C-1,2,3,7,8-PeCDD	1000	844.20	84.42		1.53	1.171	0.84
13C-1,2,3,6,7,8-HxCDD	2500	2199.67	87.99		1.22	0.992	0.97
13C-1,2,3,4,6,7,8-HpCDD	2500	1971.85	78.87		1.04	1.066	0.82
13C-OCDD	5000	2929.06	58.58		0.89	1.143	0.80
13C-2,3,7,8-TCDF	1000	818.09	81.81		0.75	0.978	1.07
13C-1,2,3,7,8-PeCDF	1000	871.97	87.20		1.52	1.133	1.01
13C-1,2,3,4,7,8-HxCDF	2500	2512.95	100.52		0.51	0.971	1.00
13C-1,2,3,4,6,7,8-HpCDF	2500	2119.34	84.77		0.44	1.043	0.72
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	820.59	102.57			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
4

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-005

Client Name: TTEMI Sample Wt/Vol: 5.230 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17037#1

Analysis Date: 28-SEP-06 Time: 00:04:14 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	0.449	X 1.0	4.49e-01
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	2.393	X 0.01	2.39e-02
OCDD	24.168	X 0.0001	2.42e-03
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	4.161	X 0.0001	4.16e-04
		Total:	4.75e-01

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

1b

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-006

Client Name: TTEMI Sample Wt/Vol: 5.208 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17035#1

Analysis Date: 27-SEP-06 Time: 22:26:51 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.036	U	*	*	0.89
1,2,3,7,8-PeCDD	*	0.073	U	*	*	0.84
1,2,3,4,7,8-HxCDD	*	0.058	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.050	U	*	*	1.02
1,2,3,7,8,9-HxCDD	*	0.055	U	*	*	0.93
1,2,3,4,6,7,8-HpCDD	0.774	0.081	BJ	0.98	1.001	0.86
OCDD	7.479	0.119	BJ	0.85	1.000	0.97
2,3,7,8-TCDF	*	0.049	U	*	*	0.80
1,2,3,7,8-PeCDF	*	0.046	U	*	*	0.82
2,3,4,7,8-PeCDF	*	0.044	U	*	*	0.84
1,2,3,4,7,8-HxCDF	*	0.042	U	*	*	1.06
1,2,3,6,7,8-HxCDF	*	0.040	U	*	*	1.12
1,2,3,7,8,9-HxCDF	*	0.053	U	*	*	0.84
2,3,4,6,7,8-HxCDF	*	0.044	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.094	U	*	*	1.31
1,2,3,4,7,8,9-HpCDF	*	0.128	U	*	*	0.96
OCDF	0.660	0.109	BJ	0.82	1.003	0.95
Total Tetra-Dioxins	*	0.036	U			
Total Penta-Dioxins	*	0.073	U			
Total Hexa-Dioxins	*	0.050	U			
Total Hepta-Dioxins	2.034	0.081				
Total Tetra-Furans	*	0.049	U			
Total Penta-Furans	*	0.044	U			
Total Hexa-Furans	*	0.040	U			
Total Hepta-Furans	*	0.094	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

1b

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-006

Client Name: TTEMI Sample Wt/Vol: 5.208 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17035#1

Analysis Date: 27-SEP-06 Time: 22:26:51 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	802.21	80.22		0.78	1.008	0.97
13C-1,2,3,7,8-PeCDD	1000	793.78	79.38		1.56	1.172	0.84
13C-1,2,3,6,7,8-HxCDD	2500	2049.92	82.00		1.23	0.992	0.97
13C-1,2,3,4,6,7,8-HpCDD	2500	2013.95	80.56		1.02	1.067	0.82
13C-OCDD	5000	3523.90	70.48		0.88	1.143	0.80
13C-2,3,7,8-TCDF	1000	697.84	69.78		0.75	0.978	1.07
13C-1,2,3,7,8-PeCDF	1000	800.35	80.04		1.52	1.133	1.01
13C-1,2,3,4,7,8-HxCDF	2500	2136.28	85.45		0.53	0.972	1.00
13C-1,2,3,4,6,7,8-HpCDF	2500	2085.64	83.43		0.45	1.043	0.72
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	726.90	90.86			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
1b

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-006

Client Name: TTEMI Sample Wt/Vol: 5.208 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17035#1

Analysis Date: 27-SEP-06 Time: 22:26:51 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.774	X 0.01	7.74e-03
OCDD	7.479	X 0.0001	7.48e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	0.660	X 0.0001	6.60e-05
		Total:	8.55e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-007

Client Name: TTEMI Sample Wt/Vol: 5.143 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17036#1

Analysis Date: 27-SEP-06 Time: 23:15:32 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.042	U	*	*	0.89
1,2,3,7,8-PeCDD	*	0.056	U	*	*	0.84
1,2,3,4,7,8-HxCDD	*	0.061	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.052	U	*	*	1.02
1,2,3,7,8,9-HxCDD	*	0.057	U	*	*	0.93
1,2,3,4,6,7,8-HpCDD	1.050	0.076	BJ	0.94	1.001	0.86
OCDD	8.795	0.097	BJ	0.83	1.000	0.97
2,3,7,8-TCDF	*	0.047	U	*	*	0.80
1,2,3,7,8-PeCDF	*	0.055	U	*	*	0.82
2,3,4,7,8-PeCDF	*	0.054	U	*	*	0.84
1,2,3,4,7,8-HxCDF	*	0.059	U	*	*	1.06
1,2,3,6,7,8-HxCDF	*	0.055	U	*	*	1.12
1,2,3,7,8,9-HxCDF	*	0.074	U	*	*	0.84
2,3,4,6,7,8-HxCDF	*	0.062	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.103	U	*	*	1.31
1,2,3,4,7,8,9-HpCDF	*	0.142	U	*	*	0.96
OCDF	0.693	0.155	BJK	1.07	1.004	0.95
Total Tetra-Dioxins	*	0.042	U			
Total Penta-Dioxins	*	0.056	U			
Total Hexa-Dioxins	*	0.052	U			
Total Hepta-Dioxins	2.617	0.076				
Total Tetra-Furans	*	0.047	U			
Total Penta-Furans	*	0.054	U			
Total Hexa-Furans	*	0.055	U			
Total Hepta-Furans	*	0.103	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-007

Client Name: TTEMI Sample Wt/Vol: 5.143 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17036#1

Analysis Date: 27-SEP-06 Time: 23:15:32 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	860.75	86.08		0.75	1.008	0.97
13C-1,2,3,7,8-PeCDD	1000	854.49	85.45		1.53	1.171	0.84
13C-1,2,3,6,7,8-HxCDD	2500	2307.62	92.30		1.22	0.992	0.97
13C-1,2,3,4,6,7,8-HpCDD	2500	2237.62	89.50		1.04	1.066	0.82
13C-OCDD	5000	3850.86	77.02		0.89	1.143	0.80
13C-2,3,7,8-TCDF	1000	765.76	76.58		0.75	0.978	1.07
13C-1,2,3,7,8-PeCDF	1000	856.54	85.65		1.55	1.133	1.01
13C-1,2,3,4,7,8-HxCDF	2500	2437.17	97.49		0.51	0.971	1.00
13C-1,2,3,4,6,7,8-HpCDF	2500	2285.01	91.40		0.44	1.043	0.72
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	801.11	100.14			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
5

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-007

Client Name: TTEMI Sample Wt/Vol: 5.143 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/14/06

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17036#1

Analysis Date: 27-SEP-06 Time: 23:15:32 Blank Data Filename: U17032#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17030#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	1.050	X 0.01	1.05e-02
OCDD	8.795	X 0.0001	8.79e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	0.693	X 0.0001	6.90e-05
		Total:	1.15e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

6

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-008

Client Name: TTEMI Sample Wt/Vol: 5.391 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26889#1

Analysis Date: 28-SEP-06 Time: 19:27:45 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.366	U	*	*	0.94
1,2,3,7,8-PeCDD	*	0.170	U	*	*	0.92
1,2,3,4,7,8-HxCDD	*	0.154	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.146	U	*	*	1.05
1,2,3,7,8,9-HxCDD	*	0.153	U	*	*	1.00
1,2,3,4,6,7,8-HpCDD	*	0.183	U	*	*	0.94
OCDD	1.999	0.227	BJ	0.87	1.000	1.03
2,3,7,8-TCDF	*	0.345	U	*	*	0.91
1,2,3,7,8-PeCDF	*	0.117	U	*	*	0.94
2,3,4,7,8-PeCDF	*	0.111	U	*	*	0.99
1,2,3,4,7,8-HxCDF	*	0.098	U	*	*	1.22
1,2,3,6,7,8-HxCDF	*	0.101	U	*	*	1.20
1,2,3,7,8,9-HxCDF	*	0.125	U	*	*	0.96
2,3,4,6,7,8-HxCDF	*	0.107	U	*	*	1.13
1,2,3,4,6,7,8-HpCDF	*	0.119	U	*	*	1.44
1,2,3,4,7,8,9-HpCDF	*	0.161	U	*	*	1.07
OCDF	*	0.375	U	*	*	1.20
Total Tetra-Dioxins	*	0.366	U			
Total Penta-Dioxins	*	0.170	U			
Total Hexa-Dioxins	*	0.146	U			
Total Hepta-Dioxins	*	0.183	U			
Total Tetra-Furans	*	0.345	U			
Total Penta-Furans	*	0.111	U			
Total Hexa-Furans	*	0.101	U			
Total Hepta-Furans	*	0.119	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

6

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-008

Client Name: TTEMI Sample Wt/Vol: 5.391 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column: db5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U26889#1

Analysis Date: 28-SEP-06 Time: 19:27:45 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg): ng/Kg % Moisture/Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	837.44	83.74		0.76	1.009	1.00
13C-1,2,3,7,8-PeCDD	1000	835.18	83.52		1.58	1.174	1.02
13C-1,2,3,6,7,8-HxCDD	2500	2053.80	82.15		1.27	0.992	0.96
13C-1,2,3,4,6,7,8-HpCDD	2500	2301.13	92.05		1.07	1.067	0.89
13C-OCDD	5000	4124.64	82.49		0.91	1.143	0.83
13C-2,3,7,8-TCDF	1000	786.24	78.62		0.78	0.978	1.34
13C-1,2,3,7,8-PeCDF	1000	919.10	91.91		1.56	1.135	1.39
13C-1,2,3,4,7,8-HxCDF	2500	2478.49	99.14		0.52	0.971	1.20
13C-1,2,3,4,6,7,8-HpCDF	2500	2353.83	94.15		0.44	1.043	0.95
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	816.08	102.01			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

CLIENT ID.

6

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-008

Client Name: TTEMI Sample Wt/Vol: 5.391 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26889#1

Analysis Date: 28-SEP-06 Time: 19:27:45 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	1.999	X 0.0001	2.00e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	2.00e-04

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
7

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-012

Client Name: TTEMI Sample Wt/Vol: 5.336 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26890#1

Analysis Date: 28-SEP-06 Time: 20:15:54 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.240	U	*	*	0.94
1,2,3,7,8-PeCDD	*	0.243	J	*	*	0.92
1,2,3,4,7,8-HxCDD	*	0.481	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.458	U	*	*	1.05
1,2,3,7,8,9-HxCDD	*	0.478	U	*	*	1.00
1,2,3,4,6,7,8-HpCDD	0.531	0.274	J	1.01	1.000	0.94
OCDD	4.848	0.863	BJ	0.90	1.000	1.03
2,3,7,8-TCDF	*	0.221	U	*	*	0.91
1,2,3,7,8-PeCDF	*	0.098	U	*	*	0.94
2,3,4,7,8-PeCDF	*	0.094	U	*	*	0.99
1,2,3,4,7,8-HxCDF	*	0.268	U	*	*	1.22
1,2,3,6,7,8-HxCDF	*	0.274	U	*	*	1.20
1,2,3,7,8,9-HxCDF	*	0.341	U	*	*	0.96
2,3,4,6,7,8-HxCDF	*	0.290	U	*	*	1.13
1,2,3,4,6,7,8-HpCDF	*	0.153	U	*	*	1.44
1,2,3,4,7,8,9-HpCDF	*	0.207	U	*	*	1.07
OCDF	1.311	0.875	J	0.94	1.004	1.20
Total Tetra-Dioxins	*	0.240	U			
Total Penta-Dioxins	*	0.243	U			
Total Hexa-Dioxins	*	0.458	U			
Total Hepta-Dioxins	1.692	0.274				
Total Tetra-Furans	*	0.221	U			
Total Penta-Furans	*	0.094	U			
Total Hexa-Furans	*	0.274	U			
Total Hepta-Furans	*	0.153	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

7

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-012

Client Name: TTEMI Sample Wt/Vol: 5.336 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column: db5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U26890#1

Analysis Date: 28-SEP-06 Time: 20:15:54 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg): ng/Kg % Moisture/Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	795.79	79.58		0.76	1.008	1.00
13C-1,2,3,7,8-PeCDD	1000	777.85	77.78		1.56	1.174	1.02
13C-1,2,3,6,7,8-HxCDD	2500	1923.49	76.94		1.24	0.992	0.96
13C-1,2,3,4,6,7,8-HpCDD	2500	2160.00	86.40		1.08	1.067	0.89
13C-OCDD	5000	3799.84	76.00		0.90	1.143	0.83
13C-2,3,7,8-TCDF	1000	757.41	75.74		0.77	0.978	1.34
13C-1,2,3,7,8-PeCDF	1000	850.24	85.02		1.58	1.135	1.39
13C-1,2,3,4,7,8-HxCDF	2500	2368.45	94.74		0.51	0.971	1.20
13C-1,2,3,4,6,7,8-HpCDF	2500	2268.36	90.73		0.44	1.043	0.95
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	793.58	99.20			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

CLIENT ID.

7

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-012

Client Name: TTEMI Sample Wt/Vol: 5.336 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26890#1

Analysis Date: 28-SEP-06 Time: 20:15:54 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.531	X 0.01	5.31e-03
OCDD	4.848	X 0.0001	4.85e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	1.311	X 0.0001	1.31e-04
		Total:	5.92e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
9

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-016

Client Name: TTEMI Sample Wt/Vol: 5.657 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17046#1

Analysis Date: 28-SEP-06 Time: 10:28:05 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.031	U	*	*	0.98
1,2,3,7,8-PeCDD	1.756	0.044	J	1.59	1.000	0.91
1,2,3,4,7,8-HxCDD	*	0.053	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.051	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.050	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.982	0.034	BJ	1.05	1.000	0.92
OCDD	6.609	0.102	BJ	0.85	1.000	0.99
2,3,7,8-TCDF	0.170	0.039	CJK	0.91	1.000	0.82
1,2,3,7,8-PeCDF	*	0.030	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.028	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.046	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.048	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.060	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.052	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.295	0.082	J	0.91	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.114	U	*	*	0.97
OCDF	1.264	0.116	J	0.91	1.003	0.95
Total Tetra-Dioxins	*	0.031	U			
Total Penta-Dioxins	1.756	0.044				
Total Hexa-Dioxins	0.145	0.051				
Total Hepta-Dioxins	2.036	0.034				
Total Tetra-Furans	*	0.039	U			
Total Penta-Furans	*	0.028	U			
Total Hexa-Furans	*	0.048	U			
Total Hepta-Furans	0.295	0.082				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

9

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-016

Client Name: TTEMI Sample Wt/Vol: 5.657 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17046#1

Analysis Date: 28-SEP-06 Time: 10:28:05 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	758.12	75.81		0.77	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	716.03	71.60		1.53	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1925.45	77.02		1.22	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1767.45	70.70		1.03	1.066	0.95
13C-OCDD	5000	2911.20	58.22		0.90	1.143	0.97
13C-2,3,7,8-TCDF	1000	573.31	57.33		0.76	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	624.06	62.41		1.51	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1896.67	75.87		0.52	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1591.12	63.65		0.43	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	672.96	84.12			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

USEPA - CLP
Form3
CDD/CDF TOXICITY EQUIVALENCE SUMMARY
HIGH RESOLUTION

CLIENT ID.
9

Lab Name: Columbia Analytical Services
Lab Code: CAS Case No.:
Client Name: TTEMI
Matrix(Solid/Aqueous/Waste/Ash): TISSUE
Sample Receipt Date: 9/21/2006
Ext. Date 9/22/2006
Ext. Vol(ul): 20.0 Inj. Vol(ul):1.0
Analysis Date: 28-Sep-06
Dilution Factor: 1
CONCENTRATION UNITS: (pg/L or ng/Kg)

Contract:
Lab ID: K0607294-016
Sample Wt/Vol: 5.657 g
Initial Calibration Date: 9/16/2004
Instrument ID: AutoSpec-Ultima
GC Column ID: DB-5
Sample Date Filename: U17046#1
Blank Data Filename: U17045#1
Cal. Ver. Date Filename: U17044#1
ng/Kg %Moisture

TARGET ANALYTE	CONCENTRATION		TEF	TEF-ADJUSTED CONCENTRATION
2378-TCDD	*		x 1.0	0.000E+00
12378-PeCDD	1.756		x 1	1.756E+00
123478-HxCDD	*		x 0.1	0.000E+00
123678-HxCDD	*		x 0.1	0.000E+00
123789-HxCDD	*		x 0.1	0.000E+00
1234678-HpCDD	0.982		x 0.01	9.820E-03
OCDD	6.609		x 0.0001	6.609E-04
2378-TCDF	*		x 0.1	0.000E+00
12378-PeCDF	*		x 0.05	0.000E+00
23478-PeCDF	*		x 0.5	0.000E+00
123478-HxCDF	*		x 0.1	0.000E+00
123678-HxCDF	*		x 0.1	0.000E+00
123789-HxCDF	*		x 0.1	0.000E+00
234678-HxCDF	*		x 0.1	0.000E+00
1234678-HpCDF	0.295		x 0.01	2.950E-03
1234789-HpCDF	*		x 0.01	0.000E+00
OCDF	1.264		x 0.0001	1.264E-04
			Total =	1.770E+00

(1) World Health Organization (WHO) adopted TEF's taken from: Van Den Berg, et al: Toxic Equivalency Factor(TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife (environ Health Perspect 106: 775-792 (1998)). and 1989 Update.

The TCDF value is reported from the confirmation analysis (DB-225 column).

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

10

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-018

Client Name: TTEMI Sample Wt/Vol: 5.458 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17047#1

Analysis Date: 28-SEP-06 Time: 11:16:44 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.027	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.060	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.065	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.063	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.062	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.699	0.055	BJ	1.00	1.001	0.92
OCDD	5.944	0.090	BJ	0.83	1.000	0.99
2,3,7,8-TCDF	0.182	0.043	CJK	1.06	1.001	0.82
1,2,3,7,8-PeCDF	*	0.045	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.044	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.032	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.034	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.042	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.036	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.082	U	*	*	1.36
1,2,3,4,7,8,9-HpCDF	*	0.115	U	*	*	0.97
OCDF	0.549	0.157	JK	1.19	1.004	0.95
Total Tetra-Dioxins	*	0.027	U			
Total Penta-Dioxins	*	0.060	U			
Total Hexa-Dioxins	*	0.063	U			
Total Hepta-Dioxins	0.699	0.055				
Total Tetra-Furans	*	0.043	U			
Total Penta-Furans	*	0.044	U			
Total Hexa-Furans	*	0.034	U			
Total Hepta-Furans	*	0.082	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

10

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-018

Client Name: TTEMI Sample Wt/Vol: 5.458 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17047#1

Analysis Date: 28-SEP-06 Time: 11:16:44 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	699.36	69.94		0.78	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	667.21	66.72		1.55	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1859.30	74.37		1.21	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1633.98	65.36		1.04	1.066	0.95
13C-OCDD	5000	2704.29	54.09		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	528.89	52.89		0.75	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	586.34	58.63		1.55	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1789.79	71.59		0.51	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1463.70	58.55		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	666.45	83.31			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

USEPA - CLP
Form3
CDD/CDF TOXICITY EQUIVALENCE SUMMARY
HIGH RESOLUTION

CLIENT ID.
10

Lab Name: Columbia Analytical Services
Lab Code: CAS Case No.:
Client Name: TTEMI
Matrix(Solid/Aqueous/Waste/Ash): TISSUE
Sample Receipt Date: 9/21/2006
Ext. Date 9/22/2006
Ext. Vol(ul): 20.0 Inj. Vol(ul):1.0
Analysis Date: 28-Sep-06
Dilution Factor: 1
CONCENTRATION UNITS: (pg/L or ng/Kg)

Contract:
Lab ID: K0607294-018
Sample Wt/Vol: 5.458 g
Initial Calibration Date: 9/16/2004
Instrument ID: AutoSpec-Ultima
GC Column ID: DB-5
Sample Date Filename: U17047#1
Blank Data Filename: U17045#1
Cal. Ver. Date Filename: U17044#1
ng/Kg %Moisture

TARGET ANALYTE	CONCENTRATION		TEF	TEF-ADJUSTED CONCENTRATION
2378-TCDD	*		x 1.0	0.000E+00
12378-PeCDD	*		x 1	0.000E+00
123478-HxCDD	*		x 0.1	0.000E+00
123678-HxCDD	*		x 0.1	0.000E+00
123789-HxCDD	*		x 0.1	0.000E+00
1234678-HpCDD	0.699		x 0.01	6.990E-03
OCDD	5.944		x 0.0001	5.944E-04
2378-TCDF	*		x 0.1	0.000E+00
12378-PeCDF	*		x 0.05	0.000E+00
23478-PeCDF	*		x 0.5	0.000E+00
123478-HxCDF	*		x 0.1	0.000E+00
123678-HxCDF	*		x 0.1	0.000E+00
123789-HxCDF	*		x 0.1	0.000E+00
234678-HxCDF	*		x 0.1	0.000E+00
1234678-HpCDF	*		x 0.01	0.000E+00
1234789-HpCDF	*		x 0.01	0.000E+00
OCDF	0.549		x 0.0001	5.490E-05
			Total =	7.639E-03

(1) World Health Organization (WHO) adopted TEF's taken from: Van Den Berg, et al: Toxic Equivalency Factor(TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife (environ Health Perspect 106: 775-792 (1998)). and 1989 Update.

The TCDF value is reported from the confirmation analysis (DB-225 column).

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
12

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-020

Client Name: TTEMI Sample Wt/Vol: 5.747 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17048#1

Analysis Date: 28-SEP-06 Time: 12:05:26 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.024	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.061	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.068	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.066	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.065	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.862	0.058	BJ	1.07	1.000	0.92
OCDD	6.191	0.099	BJ	0.81	1.000	0.99
2,3,7,8-TCDF	*	0.045	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.046	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.044	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.053	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.055	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.068	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.059	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.207	0.087	J	1.11	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.123	U	*	*	0.97
OCDF	0.649	0.136	J	0.95	1.004	0.95
Total Tetra-Dioxins	*	0.024	U			
Total Penta-Dioxins	*	0.061	U			
Total Hexa-Dioxins	*	0.066	U			
Total Hepta-Dioxins	1.725	0.058				
Total Tetra-Furans	*	0.045	U			
Total Penta-Furans	*	0.044	U			
Total Hexa-Furans	*	0.055	U			
Total Hepta-Furans	0.207	0.087				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.
12

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-020

Client Name: TTEMI Sample Wt/Vol: 5.747 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17048#1

Analysis Date: 28-SEP-06 Time: 12:05:26 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	719.30	71.93		0.76	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	681.93	68.19		1.55	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1854.83	74.19		1.23	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1647.50	65.90		1.02	1.066	0.95
13C-OCDD	5000	2552.22	51.04		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	528.62	52.86		0.76	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	589.96	59.00		1.55	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1860.93	74.44		0.51	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1496.52	59.86		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	636.18	79.52			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

CLIENT ID.

12

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-020

Client Name: TTEMI Sample Wt/Vol: 5.747 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17048#1

Analysis Date: 28-SEP-06 Time: 12:05:26 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.862	X 0.01	8.62e-03
OCDD	6.191	X 0.0001	6.19e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.207	X 0.01	2.07e-03
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	0.649	X 0.0001	6.50e-05
		Total:	1.14e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
13

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-021

Client Name: TTEMI Sample Wt/Vol: 5.357 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17049#1

Analysis Date: 28-SEP-06 Time: 12:54:08 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.033	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.053	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.056	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.054	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.053	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.896	0.067	BJ	1.05	1.000	0.92
OCDD	6.760	0.130	BJ	0.86	1.000	0.99
2,3,7,8-TCDF	*	0.058	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.026	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.025	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.050	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.053	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.065	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.056	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.178	0.098	J	1.07	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.138	U	*	*	0.97
OCDF	0.644	0.207	J	0.92	1.004	0.95
Total Tetra-Dioxins	*	0.033	U			
Total Penta-Dioxins	*	0.053	U			
Total Hexa-Dioxins	*	0.054	U			
Total Hepta-Dioxins	1.915	0.067				
Total Tetra-Furans	*	0.058	U			
Total Penta-Furans	*	0.025	U			
Total Hexa-Furans	*	0.053	U			
Total Hepta-Furans	0.178	0.098				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

13

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-021

Client Name: TTEMI Sample Wt/Vol: 5.357 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17049#1

Analysis Date: 28-SEP-06 Time: 12:54:08 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	752.45	75.24		0.76	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	714.02	71.40		1.55	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1957.86	78.31		1.25	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1605.27	64.21		1.02	1.067	0.95
13C-OCDD	5000	2328.27	46.57		0.91	1.143	0.97
13C-2,3,7,8-TCDF	1000	586.70	58.67		0.76	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	664.25	66.42		1.51	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1971.66	78.87		0.51	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1495.66	59.83		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	691.54	86.44			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
13

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-021

Client Name: TTEMI Sample Wt/Vol: 5.357 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17049#1

Analysis Date: 28-SEP-06 Time: 12:54:08 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.896	X 0.01	8.96e-03
OCDD	6.760	X 0.0001	6.76e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.178	X 0.01	1.78e-03
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	0.644	X 0.0001	6.40e-05
		Total:	1.15e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

14

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-022

Client Name: TTEMI Sample Wt/Vol: 5.066 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17050#1

Analysis Date: 28-SEP-06 Time: 13:42:50 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.034	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.061	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.052	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.050	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.049	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	1.193	0.082	BJ	1.12	1.000	0.92
OCDD	9.246	0.127	BJ	0.85	1.000	0.99
2,3,7,8-TCDF	*	0.038	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.040	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.039	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.038	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.040	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.049	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.042	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.371	0.090	J	0.89	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.126	U	*	*	0.97
OCDF	0.878	0.222	J	0.93	1.004	0.95
Total Tetra-Dioxins	*	0.034	U			
Total Penta-Dioxins	*	0.061	U			
Total Hexa-Dioxins	0.369	0.050				
Total Hepta-Dioxins	2.457	0.082				
Total Tetra-Furans	*	0.038	U			
Total Penta-Furans	*	0.039	U			
Total Hexa-Furans	0.167	0.040				
Total Hepta-Furans	0.371	0.090				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

14

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-022

Client Name: TTEMI Sample Wt/Vol: 5.066 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17050#1

Analysis Date: 28-SEP-06 Time: 13:42:50 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	707.81	70.78		0.77	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	678.15	67.81		1.52	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1967.67	78.71		1.23	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1696.43	67.86		1.04	1.066	0.95
13C-OCDD	5000	2709.86	54.20		0.88	1.143	0.97
13C-2,3,7,8-TCDF	1000	512.90	51.29		0.74	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	587.41	58.74		1.55	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1843.36	73.73		0.53	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1575.96	63.04		0.43	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	652.44	81.55			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
14

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-022

Client Name: TTEMI Sample Wt/Vol: 5.066 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17050#1

Analysis Date: 28-SEP-06 Time: 13:42:50 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	1.193	X 0.01	1.19e-02
OCDD	9.246	X 0.0001	9.25e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.371	X 0.01	3.71e-03
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	0.878	X 0.0001	8.80e-05
		Total:	1.67e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

NW2

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-025

Client Name: TTEMI Sample Wt/Vol: 5.555 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17053#1

Analysis Date: 28-SEP-06 Time: 16:16:40 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.030	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.057	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.079	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.076	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.075	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.158	0.099	BJK	0.73	1.000	0.92
OCDD	1.201	0.152	BJK	0.70	1.000	0.99
2,3,7,8-TCDF	*	0.057	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.045	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.043	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.043	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.045	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.055	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.048	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.092	U	*	*	1.36
1,2,3,4,7,8,9-HpCDF	*	0.129	U	*	*	0.97
OCDF	*	0.196	U	*	*	0.95
Total Tetra-Dioxins	*	0.030	U			
Total Penta-Dioxins	*	0.057	U			
Total Hexa-Dioxins	*	0.076	U			
Total Hepta-Dioxins	*	0.099	U			
Total Tetra-Furans	*	0.057	U			
Total Penta-Furans	*	0.043	U			
Total Hexa-Furans	*	0.045	U			
Total Hepta-Furans	*	0.092	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

NW2

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-025

Client Name: TTEMI Sample Wt/Vol: 5.555 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17053#1

Analysis Date: 28-SEP-06 Time: 16:16:40 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	762.79	76.28		0.79	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	708.19	70.82		1.54	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1937.20	77.49		1.24	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1727.63	69.11		1.04	1.067	0.95
13C-OCDD	5000	2355.17	47.10		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	587.29	58.73		0.76	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	626.34	62.63		1.52	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	2042.40	81.70		0.51	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1621.88	64.88		0.43	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	716.65	89.58			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW2

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-025

Client Name: TTEMI Sample Wt/Vol: 5.555 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17053#1

Analysis Date: 28-SEP-06 Time: 16:16:40 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.158	X 0.01	1.58e-03
OCDD	1.201	X 0.0001	1.20e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	1.70e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW3

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-026

Client Name: TTEMI Sample Wt/Vol: 5.250 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17051#1

Analysis Date: 28-SEP-06 Time: 14:31:33 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.026	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.069	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.078	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.075	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.074	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	*	0.041	U	*	*	0.92
OCDD	1.505	0.129	BJ	0.77	1.000	0.99
2,3,7,8-TCDF	*	0.042	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.036	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.035	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.038	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.040	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.049	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.043	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.067	U	*	*	1.36
1,2,3,4,7,8,9-HpCDF	*	0.094	U	*	*	0.97
OCDF	*	0.141	U	*	*	0.95
Total Tetra-Dioxins	*	0.026	U			
Total Penta-Dioxins	*	0.069	U			
Total Hexa-Dioxins	*	0.075	U			
Total Hepta-Dioxins	*	0.041	U			
Total Tetra-Furans	*	0.042	U			
Total Penta-Furans	*	0.035	U			
Total Hexa-Furans	*	0.040	U			
Total Hepta-Furans	*	0.067	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

NW3

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-026

Client Name: TTEMI Sample Wt/Vol: 5.250 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17051#1

Analysis Date: 28-SEP-06 Time: 14:31:33 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	762.94	76.29		0.76	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	724.64	72.46		1.54	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1910.06	76.40		1.24	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1747.35	69.89		1.02	1.066	0.95
13C-OCDD	5000	2592.47	51.85		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	590.47	59.05		0.75	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	632.97	63.30		1.52	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1929.29	77.17		0.52	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1599.12	63.96		0.43	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	719.47	89.93			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW3

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-026

Client Name: TTEMI Sample Wt/Vol: 5.250 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17051#1

Analysis Date: 28-SEP-06 Time: 14:31:33 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	1.505	X 0.0001	1.50e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	1.50e-04

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW4

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-027

Client Name: TTEMI Sample Wt/Vol: 5.455 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17052#1

Analysis Date: 28-SEP-06 Time: 15:20:16 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.022	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.040	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.060	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.057	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.057	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.143	0.048	BJK	0.74	1.000	0.92
OCDD	1.138	0.105	BJ	0.83	1.000	0.99
2,3,7,8-TCDF	*	0.034	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.033	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.032	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.036	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.038	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.046	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.040	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.066	U	*	*	1.36
1,2,3,4,7,8,9-HpCDF	*	0.092	U	*	*	0.97
OCDF	*	0.140	U	*	*	0.95
Total Tetra-Dioxins	*	0.022	U			
Total Penta-Dioxins	*	0.040	U			
Total Hexa-Dioxins	*	0.057	U			
Total Hepta-Dioxins	*	0.048	U			
Total Tetra-Furans	*	0.034	U			
Total Penta-Furans	*	0.032	U			
Total Hexa-Furans	*	0.038	U			
Total Hepta-Furans	*	0.066	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

NW4

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-027

Client Name: TTEMI Sample Wt/Vol: 5.455 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17052#1

Analysis Date: 28-SEP-06 Time: 15:20:16 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	781.93	78.19		0.76	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	739.15	73.92		1.53	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1955.97	78.24		1.22	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1816.21	72.65		1.05	1.066	0.95
13C-OCDD	5000	2710.72	54.21		0.90	1.143	0.97
13C-2,3,7,8-TCDF	1000	600.93	60.09		0.77	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	647.28	64.73		1.54	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1993.85	79.75		0.50	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1664.60	66.58		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	736.69	92.09			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW4

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-027

Client Name: TTEMI Sample Wt/Vol: 5.455 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17052#1

Analysis Date: 28-SEP-06 Time: 15:20:16 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.143	X 0.01	1.43e-03
OCDD	1.138	X 0.0001	1.14e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	1.54e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-029

Client Name: TTEMI Sample Wt/Vol: 5.456 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/22/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17054#1

Analysis Date: 28-SEP-06 Time: 17:02:41 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.031	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.065	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.095	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.091	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.090	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	*	0.060	U	*	*	0.92
OCDD	1.236	0.097	BJ	0.76	1.000	0.99
2,3,7,8-TCDF	*	0.055	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.050	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.048	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.032	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.033	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.041	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.035	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	*	0.071	U	*	*	1.36
1,2,3,4,7,8,9-HpCDF	*	0.100	U	*	*	0.97
OCDF	*	0.161	U	*	*	0.95
Total Tetra-Dioxins	*	0.031	U			
Total Penta-Dioxins	*	0.065	U			
Total Hexa-Dioxins	*	0.091	U			
Total Hepta-Dioxins	*	0.060	U			
Total Tetra-Furans	*	0.055	U			
Total Penta-Furans	*	0.048	U			
Total Hexa-Furans	*	0.033	U			
Total Hepta-Furans	*	0.071	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

NW5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-029

Client Name: TTEMI Sample Wt/Vol: 5.456 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17054#1

Analysis Date: 28-SEP-06 Time: 17:02:41 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	723.42	72.34		0.77	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	695.41	69.54		1.55	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1902.50	76.10		1.24	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1737.78	69.51		1.04	1.066	0.95
13C-OCDD	5000	2590.46	51.81		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	553.37	55.34		0.77	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	607.77	60.78		1.55	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1905.70	76.23		0.51	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1601.53	64.06		0.45	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	679.80	84.97			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW5

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-029

Client Name: TTEMI Sample Wt/Vol: 5.456 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17054#1

Analysis Date: 28-SEP-06 Time: 17:02:41 Blank Data Filename: U17045#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17044#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	1.236	X 0.0001	1.24e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	1.24e-04

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW6

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-030

Client Name: TTEMI Sample Wt/Vol: 5.496 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26891#1

Analysis Date: 28-SEP-06 Time: 21:04:03 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.324	U	*	*	0.94
1,2,3,7,8-PeCDD	*	0.364	U	*	*	0.92
1,2,3,4,7,8-HxCDD	*	0.130	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.124	U	*	*	1.05
1,2,3,7,8,9-HxCDD	*	0.129	U	*	*	1.00
1,2,3,4,6,7,8-HpCDD	*	0.155	U	*	*	0.94
OCDD	1.011	0.566	BJ	0.82	1.000	1.03
2,3,7,8-TCDF	*	0.290	U	*	*	0.91
1,2,3,7,8-PeCDF	*	0.242	U	*	*	0.94
2,3,4,7,8-PeCDF	*	0.231	U	*	*	0.99
1,2,3,4,7,8-HxCDF	*	0.084	U	*	*	1.22
1,2,3,6,7,8-HxCDF	*	0.086	U	*	*	1.20
1,2,3,7,8,9-HxCDF	*	0.107	U	*	*	0.96
2,3,4,6,7,8-HxCDF	*	0.091	U	*	*	1.13
1,2,3,4,6,7,8-HpCDF	*	0.122	U	*	*	1.44
1,2,3,4,7,8,9-HpCDF	*	0.165	U	*	*	1.07
OCDF	*	0.583	U	*	*	1.20
Total Tetra-Dioxins	*	0.324	U			
Total Penta-Dioxins	*	0.364	U			
Total Hexa-Dioxins	*	0.124	U			
Total Hepta-Dioxins	*	0.155	U			
Total Tetra-Furans	*	0.290	U			
Total Penta-Furans	*	0.231	U			
Total Hexa-Furans	*	0.086	U			
Total Hepta-Furans	*	0.122	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.
NW6

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-030

Client Name: TTEMI Sample Wt/Vol: 5.496 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column: db5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U26891#1

Analysis Date: 28-SEP-06 Time: 21:04:03 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg): ng/Kg % Moisture/Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	835.79	83.58		0.76	1.008	1.00
13C-1,2,3,7,8-PeCDD	1000	792.54	79.25		1.57	1.174	1.02
13C-1,2,3,6,7,8-HxCDD	2500	2097.84	83.91		1.25	0.993	0.96
13C-1,2,3,4,6,7,8-HpCDD	2500	2246.80	89.87		1.05	1.067	0.89
13C-OCDD	5000	3785.89	75.72		0.90	1.143	0.83
13C-2,3,7,8-TCDF	1000	802.33	80.23		0.77	0.978	1.34
13C-1,2,3,7,8-PeCDF	1000	883.79	88.38		1.55	1.135	1.39
13C-1,2,3,4,7,8-HxCDF	2500	2506.51	100.26		0.52	0.971	1.20
13C-1,2,3,4,6,7,8-HpCDF	2500	2300.68	92.03		0.45	1.044	0.95
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	810.86	101.36			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW6

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-030

Client Name: TTEMI Sample Wt/Vol: 5.496 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26891#1

Analysis Date: 28-SEP-06 Time: 21:04:03 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	1.011	X 0.0001	1.01e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	1.01e-04

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

NW7

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-031

Client Name: TTEMI Sample Wt/Vol: 5.036 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26892#1

Analysis Date: 28-SEP-06 Time: 21:52:13 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.150	U	*	*	0.94
1,2,3,7,8-PeCDD	*	0.209	U	*	*	0.92
1,2,3,4,7,8-HxCDD	*	0.170	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.162	U	*	*	1.05
1,2,3,7,8,9-HxCDD	*	0.169	U	*	*	1.00
1,2,3,4,6,7,8-HpCDD	0.771	0.436	J	0.96	1.000	0.94
OCDD	5.225	0.286	BJ	0.88	1.000	1.03
2,3,7,8-TCDF	*	0.144	U	*	*	0.91
1,2,3,7,8-PeCDF	*	0.112	U	*	*	0.94
2,3,4,7,8-PeCDF	*	0.107	U	*	*	0.99
1,2,3,4,7,8-HxCDF	*	0.089	U	*	*	1.22
1,2,3,6,7,8-HxCDF	*	0.091	U	*	*	1.20
1,2,3,7,8,9-HxCDF	*	0.113	U	*	*	0.96
2,3,4,6,7,8-HxCDF	*	0.096	U	*	*	1.13
1,2,3,4,6,7,8-HpCDF	*	0.264	U	*	*	1.44
1,2,3,4,7,8,9-HpCDF	*	0.356	U	*	*	1.07
OCDF	*	0.433	U	*	*	1.20
Total Tetra-Dioxins	*	0.150	U			
Total Penta-Dioxins	*	0.209	U			
Total Hexa-Dioxins	*	0.162	U			
Total Hepta-Dioxins	1.620	0.436				
Total Tetra-Furans	*	0.144	U			
Total Penta-Furans	*	0.107	U			
Total Hexa-Furans	*	0.091	U			
Total Hepta-Furans	*	0.264	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW7

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-031

Client Name: TTEMI Sample Wt/Vol: 5.036 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26892#1

Analysis Date: 28-SEP-06 Time: 21:52:13 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.771	X 0.01	7.72e-03
OCDD	5.225	X 0.0001	5.22e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	8.24e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW8

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-032

Client Name: TTEMI Sample Wt/Vol: 5.778 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column:db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26893#1

Analysis Date: 28-SEP-06 Time: 22:40:22 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg Wet Wt): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.096	U	*	*	0.94
1,2,3,7,8-PeCDD	*	0.076	U	*	*	0.92
1,2,3,4,7,8-HxCDD	*	0.073	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.070	U	*	*	1.05
1,2,3,7,8,9-HxCDD	*	0.073	U	*	*	1.00
1,2,3,4,6,7,8-HpCDD	0.205	0.091	J	1.18	1.000	0.94
OCDD	1.180	0.167	BJ	0.90	1.000	1.03
2,3,7,8-TCDF	*	0.077	U	*	*	0.91
1,2,3,7,8-PeCDF	*	0.049	U	*	*	0.94
2,3,4,7,8-PeCDF	*	0.047	U	*	*	0.99
1,2,3,4,7,8-HxCDF	*	0.052	U	*	*	1.22
1,2,3,6,7,8-HxCDF	*	0.053	U	*	*	1.20
1,2,3,7,8,9-HxCDF	*	0.066	U	*	*	0.96
2,3,4,6,7,8-HxCDF	*	0.056	U	*	*	1.13
1,2,3,4,6,7,8-HpCDF	*	0.057	U	*	*	1.44
1,2,3,4,7,8,9-HpCDF	*	0.077	U	*	*	1.07
OCDF	*	0.223	U	*	*	1.20
Total Tetra-Dioxins	*	0.096	U			
Total Penta-Dioxins	*	0.076	U			
Total Hexa-Dioxins	*	0.070	U			
Total Hepta-Dioxins	0.428	0.091				
Total Tetra-Furans	*	0.077	U			
Total Penta-Furans	*	0.047	U			
Total Hexa-Furans	*	0.053	U			
Total Hepta-Furans	*	0.057	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

NW8

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-032

Client Name: TTEMI Sample Wt/Vol: 5.778 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column: db5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U26893#1

Analysis Date: 28-SEP-06 Time: 22:40:22 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg): ng/Kg % Moisture/Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	834.37	83.44		0.80	1.009	1.00
13C-1,2,3,7,8-PeCDD	1000	779.28	77.93		1.54	1.174	1.02
13C-1,2,3,6,7,8-HxCDD	2500	2165.60	86.62		1.22	0.992	0.96
13C-1,2,3,4,6,7,8-HpCDD	2500	2069.70	82.79		1.04	1.067	0.89
13C-OCDD	5000	3223.05	64.46		0.90	1.143	0.83
13C-2,3,7,8-TCDF	1000	817.94	81.79		0.77	0.978	1.34
13C-1,2,3,7,8-PeCDF	1000	871.06	87.11		1.57	1.135	1.39
13C-1,2,3,4,7,8-HxCDF	2500	2504.44	100.18		0.53	0.971	1.20
13C-1,2,3,4,6,7,8-HpCDF	2500	2217.47	88.70		0.45	1.043	0.95
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	808.24	101.03			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

NW7

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-031

Client Name: TTEMI Sample Wt/Vol: 5.036 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AUTOSPEC ULTIMA

Ext. Date: 09/22/06 GC Column: db5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U26892#1

Analysis Date: 28-SEP-06 Time: 21:52:13 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg): ng/Kg % Moisture/Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	823.27	82.33		0.81	1.009	1.00
13C-1,2,3,7,8-PeCDD	1000	784.15	78.42		1.55	1.174	1.02
13C-1,2,3,6,7,8-HxCDD	2500	2119.45	84.78		1.29	0.993	0.96
13C-1,2,3,4,6,7,8-HpCDD	2500	2109.10	84.36		1.06	1.067	0.89
13C-OCDD	5000	3444.88	68.90		0.89	1.143	0.83
13C-2,3,7,8-TCDF	1000	810.95	81.09		0.76	0.978	1.34
13C-1,2,3,7,8-PeCDF	1000	862.52	86.25		1.55	1.135	1.39
13C-1,2,3,4,7,8-HxCDF	2500	2507.23	100.29		0.52	0.971	1.20
13C-1,2,3,4,6,7,8-HpCDF	2500	2188.86	87.55		0.44	1.044	0.95
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	841.15	105.14			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

CLIENT ID.

NW8

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-032

Client Name: TTEMI Sample Wt/Vol: 5.778 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 11/04/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/22/06 GC Column ID: db5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U26893#1

Analysis Date: 28-SEP-06 Time: 22:40:22 Blank Data Filename: U26888#1

Dilution Factor: 1 Cal. Ver. Data Filename: U26886#1

Concentration Units (pg/L or ng/Kg wet weight): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.205	X 0.01	2.05e-03
OCDD	1.180	X 0.0001	1.18e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	2.16e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW9

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-034

Client Name: TTEMI Sample Wt/Vol: 6.755 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/26/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17059#1

Analysis Date: 29-SEP-06 Time: 11:34:33 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.018	U	*	*	0.98
1,2,3,7,8-PeCDD	0.172	0.057	JK	1.22	1.000	0.91
1,2,3,4,7,8-HxCDD	*	0.049	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.047	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.047	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.576	0.037	BJK	1.38	1.000	0.92
OCDD	4.734	0.062	BJ	0.87	1.000	0.99
2,3,7,8-TCDF	0.247	0.034	CJ	0.87	1.001	0.82
1,2,3,7,8-PeCDF	*	0.054	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.052	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.039	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.041	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.050	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.044	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.498	0.052	BJK	0.84	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.074	U	*	*	0.97
OCDF	0.674	0.116	BJK	0.69	1.004	0.95
Total Tetra-Dioxins	*	0.018	U			
Total Penta-Dioxins	*	0.057	U			
Total Hexa-Dioxins	*	0.047	U			
Total Hepta-Dioxins	0.658	0.037				
Total Tetra-Furans	0.247	0.034				
Total Penta-Furans	*	0.052	U			
Total Hexa-Furans	*	0.041	U			
Total Hepta-Furans	*	0.052	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.
NW9

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-034

Client Name: TTEMI Sample Wt/Vol: 6.755 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17059#1

Analysis Date: 29-SEP-06 Time: 11:34:33 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	725.26	72.53		0.78	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	673.87	67.39		1.55	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1741.72	69.67		1.22	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1619.72	64.79		1.03	1.067	0.95
13C-OCDD	5000	2648.69	52.97		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	575.84	57.58		0.77	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	638.76	63.88		1.52	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1903.60	76.14		0.52	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1509.49	60.38		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	678.08	84.76			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

USEPA - CLP
Form3
CDD/CDF TOXICITY EQUIVALENCE SUMMARY
HIGH RESOLUTION

CLIENT ID.
NW9

Lab Name: Columbia Analytical Services
Lab Code: CAS Case No.:
Client Name: TTEMI
Matrix(Solid/Aqueous/Waste/Ash): TISSUE
Sample Receipt Date: 9/21/2006
Ext. Date 9/26/2006
Ext. Vol(ul): 20.0 Inj. Vol(ul):1.0
Analysis Date: 29-Sep-06
Dilution Factor: 1
CONCENTRATION UNITS: (pg/L or ng/Kg)

Contract:
Lab ID: K0607294-034
Sample Wt/Vol: 6.755 g
Initial Calibration Date: 9/16/2004
Instrument ID: AutoSpec-Ultima
GC Column ID: DB-5
Sample Date Filename: U17059#1
Blank Data Filename: U17058#1
Cal. Ver. Date Filename: U17057#1
ng/Kg %Moisture

TARGET ANALYTE	CONCENTRATION		TEF	TEF-ADJUSTED CONCENTRATION
2378-TCDD	*		x 1.0	0.000E+00
12378-PeCDD	0.172		x 1	1.720E-01
123478-HxCDD	*		x 0.1	0.000E+00
123678-HxCDD	*		x 0.1	0.000E+00
123789-HxCDD	*		x 0.1	0.000E+00
1234678-HpCDD	0.576		x 0.01	5.760E-03
OCDD	4.734		x 0.0001	4.734E-04
2378-TCDF	*		x 0.1	0.000E+00
12378-PeCDF	*		x 0.05	0.000E+00
23478-PeCDF	*		x 0.5	0.000E+00
123478-HxCDF	*		x 0.1	0.000E+00
123678-HxCDF	*		x 0.1	0.000E+00
123789-HxCDF	*		x 0.1	0.000E+00
234678-HxCDF	*		x 0.1	0.000E+00
1234678-HpCDF	0.498		x 0.01	4.980E-03
1234789-HpCDF	*		x 0.01	0.000E+00
OCDF	0.674		x 0.0001	6.740E-05
			Total =	1.833E-01

(1) World Health Organization (WHO) adopted TEF's taken from: Van Den Berg, et al: Toxic Equivalency Factor(TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife (environ Health Perspect 106: 775-792 (1998)). and 1989 Update.

The TCDF value is reported from the confirmation analysis (DB-225 column).

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW10

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-035

Client Name: TTEMI Sample Wt/Vol: 5.431 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/26/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17060#1

Analysis Date: 29-SEP-06 Time: 12:23:14 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.023	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.065	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.077	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.074	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.073	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.246	0.041	BJK	1.57	1.001	0.92
OCDD	2.195	0.130	BJ	0.89	1.000	0.99
2,3,7,8-TCDF	*	0.040	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.066	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.064	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.027	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.028	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.035	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.030	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.287	0.066	BJ	0.89	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.093	U	*	*	0.97
OCDF	*	0.108	U	*	*	0.95
Total Tetra-Dioxins	*	0.023	U			
Total Penta-Dioxins	*	0.065	U			
Total Hexa-Dioxins	*	0.074	U			
Total Hepta-Dioxins	0.306	0.041				
Total Tetra-Furans	*	0.040	U			
Total Penta-Furans	*	0.064	U			
Total Hexa-Furans	*	0.028	U			
Total Hepta-Furans	0.287	0.066				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.
NW10

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-035

Client Name: TTEMI Sample Wt/Vol: 5.431 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17060#1

Analysis Date: 29-SEP-06 Time: 12:23:14 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	735.83	73.58		0.78	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	685.04	68.50		1.51	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1744.47	69.78		1.24	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1668.10	66.72		1.04	1.066	0.95
13C-OCDD	5000	2585.03	51.70		0.90	1.143	0.97
13C-2,3,7,8-TCDF	1000	583.28	58.33		0.77	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	639.09	63.91		1.53	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1949.72	77.99		0.51	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1508.24	60.33		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	682.18	85.27			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW10

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-035

Client Name: TTEMI Sample Wt/Vol: 5.431 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17060#1

Analysis Date: 29-SEP-06 Time: 12:23:14 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.246	X 0.01	2.46e-03
OCDD	2.195	X 0.0001	2.19e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.287	X 0.01	2.87e-03
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	5.55e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW1 SW3-1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-036

Client Name: TTEMI Sample Wt/Vol: 5.564 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/26/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17061#1

Analysis Date: 29-SEP-06 Time: 13:11:55 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.028	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.069	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.069	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.066	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.065	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	0.323	0.038	BJ	0.90	1.000	0.92
OCDD	2.323	0.115	BJ	0.87	1.000	0.99
2,3,7,8-TCDF	*	0.044	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.049	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.047	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.046	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.049	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.060	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.052	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.329	0.072	BJK	1.38	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.101	U	*	*	0.97
OCDF	*	0.118	U	*	*	0.95
Total Tetra-Dioxins	*	0.028	U			
Total Penta-Dioxins	*	0.069	U			
Total Hexa-Dioxins	*	0.066	U			
Total Hepta-Dioxins	0.323	0.038				
Total Tetra-Furans	*	0.044	U			
Total Penta-Furans	*	0.047	U			
Total Hexa-Furans	*	0.049	U			
Total Hepta-Furans	*	0.072	U			

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.
NW1 SW3-1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-036

Client Name: TTEMI Sample Wt/Vol: 5.564 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17061#1

Analysis Date: 29-SEP-06 Time: 13:11:55 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	717.49	71.75		0.78	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	680.38	68.04		1.52	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1774.77	70.99		1.25	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1666.46	66.66		1.05	1.066	0.95
13C-OCDD	5000	2508.92	50.18		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	570.75	57.08		0.77	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	640.14	64.01		1.52	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1970.25	78.81		0.52	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1536.81	61.47		0.45	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	681.08	85.14			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37C14-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW1 SW3-1

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-036

Client Name: TTEMI Sample Wt/Vol: 5.564 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17061#1

Analysis Date: 29-SEP-06 Time: 13:11:55 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.323	X 0.01	3.23e-03
OCDD	2.323	X 0.0001	2.32e-04
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.329	X 0.01	3.29e-03
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.0001	*
		Total:	6.75e-03

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW1 SW1-1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-037

Client Name: TTEMI Sample Wt/Vol: 5.373 g or mL: g

Matrix (Aqueous/Solid/Leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17064#1

Analysis Date: 29-SEP-06 Time: 15:38:01 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture/Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.024	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.051	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.058	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.056	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.055	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	1.250	0.044	BJ	1.08	1.000	0.92
OCDD	11.072	0.098	B	0.90	1.000	0.99
2,3,7,8-TCDF	*	0.030	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.040	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.038	U	*	*	0.87
1,2,3,4,7,8-HxCDF	0.089	0.028	J	1.26	1.000	1.13
1,2,3,6,7,8-HxCDF	0.057	0.029	JK	0.88	1.003	1.08
1,2,3,7,8,9-HxCDF	*	0.036	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.031	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	1.127	0.091	BJ	0.92	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.127	U	*	*	0.97
OCDF	2.010	0.119	BJ	0.94	1.004	0.95
Total Tetra-Dioxins	*	0.024	U			
Total Penta-Dioxins	*	0.051	U			
Total Hexa-Dioxins	*	0.056	U			
Total Hepta-Dioxins	1.250	0.044				
Total Tetra-Furans	*	0.030	U			
Total Penta-Furans	*	0.038	U			
Total Hexa-Furans	0.089	0.028				
Total Hepta-Furans	1.762	0.091				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.
NW1 SW1-1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-037

Client Name: TTEMI Sample Wt/Vol: 5.373 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17064#1

Analysis Date: 29-SEP-06 Time: 15:38:01 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	782.36	78.24		0.77	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	720.67	72.07		1.53	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1774.21	70.97		1.23	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1589.57	63.58		1.04	1.067	0.95
13C-OCDD	5000	2332.38	46.65		0.88	1.143	0.97
13C-2,3,7,8-TCDF	1000	655.18	65.52		0.76	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	680.17	68.02		1.55	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1987.04	79.48		0.52	0.972	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1468.34	58.73		0.43	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	737.98	92.25			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW1 SW1-1

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-037

Client Name: TTEMI Sample Wt/Vol: 5.373 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17064#1

Analysis Date: 29-SEP-06 Time: 15:38:01 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	1.250	X 0.01	1.25e-02
OCDD	11.072	X 0.0001	1.11e-03
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	0.089	X 0.1	8.91e-03
1,2,3,6,7,8-HxCDF	0.057	X 0.1	5.74e-03
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	1.127	X 0.01	1.13e-02
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	2.010	X 0.0001	2.01e-04
		Total:	3.97e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
NW1 SW2-1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-039

Client Name: TTEMI Sample Wt/Vol: 7.343 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/26/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17062#1

Analysis Date: 29-SEP-06 Time: 14:00:37 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.011	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.042	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.044	U	*	*	1.00
1,2,3,6,7,8-HxCDD	0.242	0.043	J	1.12	1.000	1.04
1,2,3,7,8,9-HxCDD	0.316	0.042	J	1.07	1.008	1.06
1,2,3,4,6,7,8-HpCDD	8.041	0.033	B	1.04	1.000	0.92
OCDD	68.490	0.077	B	0.88	1.000	0.99
2,3,7,8-TCDF	*	0.024	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.035	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.034	U	*	*	0.87
1,2,3,4,7,8-HxCDF	0.114	0.043	J	1.22	1.000	1.13
1,2,3,6,7,8-HxCDF	*	0.045	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.055	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.048	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	1.673	0.077	BJ	0.98	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.108	U	*	*	0.97
OCDF	5.791	0.065	BJ	0.88	1.004	0.95
Total Tetra-Dioxins	*	0.011	U			
Total Penta-Dioxins	*	0.042	U			
Total Hexa-Dioxins	1.905	0.043				
Total Hepta-Dioxins	16.478	0.033				
Total Tetra-Furans	*	0.024	U			
Total Penta-Furans	*	0.034	U			
Total Hexa-Furans	0.430	0.045				
Total Hepta-Furans	4.578	0.077				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.
NW1 SW2-1

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-039

Client Name: TTEMI Sample Wt/Vol: 7.343 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17062#1

Analysis Date: 29-SEP-06 Time: 14:00:37 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	756.37	75.64		0.76	1.008	1.10
13C-1,2,3,7,8-PeCDD	1000	651.85	65.18		1.53	1.172	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1689.70	67.59		1.24	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1575.25	63.01		1.04	1.066	0.95
13C-OCDD	5000	2480.67	49.61		0.89	1.143	0.97
13C-2,3,7,8-TCDF	1000	614.56	61.46		0.75	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	614.49	61.45		1.53	1.133	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1806.55	72.26		0.52	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1485.18	59.41		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	675.29	84.41			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
NW1 SW2-1

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-039

Client Name: TTEMI Sample Wt/Vol: 7.343 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17062#1

Analysis Date: 29-SEP-06 Time: 14:00:37 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.242	X 0.1	2.42e-02
1,2,3,7,8,9-HxCDD	0.316	X 0.1	3.16e-02
1,2,3,4,6,7,8-HpCDD	8.041	X 0.01	8.04e-02
OCDD	68.490	X 0.0001	6.85e-03
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	0.114	X 0.1	1.14e-02
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	1.673	X 0.01	1.67e-02
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	5.791	X 0.0001	5.79e-04
		Total:	1.72e-01

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

FORM 2

PCDD/PCDF LABELED COMPOUND AND
CLEANUP STANDARD RECOVERIES

CLIENT ID.

COMP 8,8A

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-040

Client Name: TTEMI Sample Wt/Vol: 6.086 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column: DB-5

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U17063#1

Analysis Date: 29-SEP-06 Time: 14:49:18 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

	SPIKE CONC.(pg)	CONCENT. FOUND(pg)	RECOV. %	Q	ION ABUND. RATIO(2)	RRT (2)	MEAN RRF
LABELED COMPOUNDS							
13C-2,3,7,8-TCDD	1000	701.72	70.17		0.78	1.009	1.10
13C-1,2,3,7,8-PeCDD	1000	638.34	63.83		1.52	1.173	1.01
13C-1,2,3,6,7,8-HxCDD	2500	1748.60	69.94		1.25	0.992	0.98
13C-1,2,3,4,6,7,8-HpCDD	2500	1607.08	64.28		1.01	1.067	0.95
13C-OCDD	5000	2648.23	52.96		0.87	1.142	0.97
13C-2,3,7,8-TCDF	1000	569.18	56.92		0.77	0.978	1.52
13C-1,2,3,7,8-PeCDF	1000	606.76	60.68		1.51	1.134	1.41
13C-1,2,3,4,7,8-HxCDF	2500	1855.87	74.23		0.51	0.971	1.22
13C-1,2,3,4,6,7,8-HpCDF	2500	1535.42	61.42		0.44	1.043	0.96
CLEANUP STANDARD							
37Cl-2,3,7,8-TCDD	800	660.33	82.54			1.009	

(1) Contract-required limits for percent recovery are 40%-135% (section 8.4, Method 8290).

(2) Contract-required Reference Attributions for RRTs and ion abundance ratios are specified in Tables 11 and 8, respectively, Method 8290.

NOTE: There is no ion abundance ratio for 37Cl4-2378-TCDD (cleanup standard).

8290F2

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
COMP 8,8A

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 8290 Lab Sample ID: K0607294-040

Client Name: TTEMI Sample Wt/Vol: 6.086 g or mL: g

Matrix (aqueous/solid/leachate): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: Autospec-Ultima

Ext. Date: 09/26/06 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17063#1

Analysis Date: 29-SEP-06 Time: 14:49:18 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weight): ng/Kg % Lipid:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.016	U	*	*	0.98
1,2,3,7,8-PeCDD	*	0.050	U	*	*	0.91
1,2,3,4,7,8-HxCDD	*	0.052	U	*	*	1.00
1,2,3,6,7,8-HxCDD	*	0.050	U	*	*	1.04
1,2,3,7,8,9-HxCDD	*	0.050	U	*	*	1.06
1,2,3,4,6,7,8-HpCDD	1.636	0.025	BJ	1.03	1.000	0.92
OCDD	12.396	0.090	B	0.88	1.000	0.99
2,3,7,8-TCDF	*	0.032	U	*	*	0.82
1,2,3,7,8-PeCDF	*	0.035	U	*	*	0.84
2,3,4,7,8-PeCDF	*	0.034	U	*	*	0.87
1,2,3,4,7,8-HxCDF	*	0.031	U	*	*	1.13
1,2,3,6,7,8-HxCDF	*	0.032	U	*	*	1.08
1,2,3,7,8,9-HxCDF	*	0.039	U	*	*	0.88
2,3,4,6,7,8-HxCDF	*	0.034	U	*	*	1.01
1,2,3,4,6,7,8-HpCDF	0.766	0.077	BJ	0.98	1.000	1.36
1,2,3,4,7,8,9-HpCDF	*	0.108	U	*	*	0.97
OCDF	1.505	0.098	BJ	0.96	1.004	0.95
Total Tetra-Dioxins	*	0.016	U			
Total Penta-Dioxins	*	0.050	U			
Total Hexa-Dioxins	*	0.050	U			
Total Hepta-Dioxins	3.015	0.025				
Total Tetra-Furans	*	0.032	U			
Total Penta-Furans	*	0.034	U			
Total Hexa-Furans	0.129	0.032				
Total Hepta-Furans	1.351	0.077				

(1) Qualifiers: See flag definitions.

(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
COMP 8,8A

Lab Name: Columbia Analytical Services Contract:

Lab Code: CAS SDG No.: Method:8290 Lab Sample ID: K0607294-040

Client Name: TTEMI Sample Wt/Vol: 6.086 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): TISSUE Initial Calibration Date: 09/16/04

Sample Receipt Date: 09/21/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 09/26/06 GC Column ID: DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: U17063#1

Analysis Date: 29-SEP-06 Time: 14:49:18 Blank Data Filename: U17058#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17057#1

Concentration Units (pg/L or ng/Kg Wet Weigh): ng/Kg % Moisture/Lipids:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 1.0	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	1.636	X 0.01	1.64e-02
OCDD	12.396	X 0.0001	1.24e-03
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.766	X 0.01	7.66e-03
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	1.505	X 0.0001	1.50e-04
		Total:	2.54e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van den Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife(Environ Health Perspect 106:775-792 (1998).

8290F3WU

SEVERN TRENT LABORATORIES, INC.
SAMPLE CONFIRMATION REPORT

The following samples have been received by Severn Trent Laboratories, Inc. at West Sacramento, California. Please verify that the sample ID's and the requested tests are correct. Contact the STL project manager listed below to resolve any discrepancies.

Report to:
SUSAN CARSTENN
Tetra Tech Inc
180 Howard Street
Suite 250
San Francisco, CA94105

Bill to:
Accounts Payable
Tetra Tech Inc
180 Howard Street
Suite 250
San Francisco, CA 94105

Client
Project : Makua Military Reservation
Number :
Manager : SUSAN CARSTENN

STL
Date Rec: 9/21/06
Quote No: 072181
Manager : Robert Hrabak

Due Dates
Preliminary: 10/09/06
Hard Copy : 10/12/06

Analytical TAT: 17

Client ID: 2FD
Date Sampled: 8/03/06 Time Sampled: :00
LAB ID: G6I210382-001 Matrix: BIOLOGICAL

Parameter	Method		Rep
BIOLOGIC, 8330, Special List	SW846	8330	
BIOLOGIC, 8290, Dioxins/Furans	SW846	8290	

Client ID: NW1FD
Date Sampled: 8/05/06 Time Sampled: :00
LAB ID: G6I210382-002 Matrix: BIOLOGICAL

Parameter	Method		Rep
BIOLOGIC, 8330, Special List	SW846	8330	
BIOLOGIC, 8290, Dioxins/Furans	SW846	8290	

Client ID: NW2FD
Date Sampled: 8/19/06 Time Sampled: :00
LAB ID: G6I210382-003 Matrix: BIOLOGICAL

Parameter	Method		Rep
BIOLOGIC, 8330, Special List	SW846	8330	
BIOLOGIC, 8290, Dioxins/Furans	SW846	8290	

Client ID: NW1SW1-1FD
Date Sampled: 8/09/06 Time Sampled: :00
LAB ID: G6I210382-004 Matrix: BIOLOGICAL

Parameter	Method		Rep
BIOLOGIC, 8330, Special List	SW846	8330	
BIOLOGIC, 8290, Dioxins/Furans	SW846	8290	

Client
Project : Makua Military Reservation
Number :
Manager : SUSAN CARSTENN

STL
Date Rec: 9/21/06
Quote No: 072181
Manager : Robert Hrabak

Due Dates
Preliminary: 10/09/06
Hard Copy : 10/12/06

Analytical TAT: 17

- -

Client ID: 9AFD AND 10A COMP
Date Sampled: 8/03/06 Time Sampled: :00
LAB ID: G6I210382-005 Matrix: BIOLOGICAL

Parameter	Method		Rep
BIOLOGIC, 8330, Special List	SW846	8330	
BIOLOGIC, 8290, Dioxins/Furans	SW846	8290	

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Tetra Tech Inc

Lot #: G6I210382 Makua Military Reservation **Date Reported:** 10/11/06

Client Sample ID: 2fd

Sample #: 001 Date Sampled: 08/03/06 Date Received: 09/21/06 Matrix: BIOLOGIC

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Nitroaromatics and Nitramines by HPLC					Reviewed
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330	
Nitroglycerin	**0.69 AA**	**0.50**	**mg/kg**	**SW846 8330**	
RDX	ND	0.25	mg/kg	SW846 8330	

AA = see case narrative

Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.33	pg/g	SW846 8290	
Total TCDD	ND	0.33	pg/g	SW846 8290	
1,2,3,7,8-PeCDD	ND	0.79	pg/g	SW846 8290	
Total PeCDD	ND	0.79	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.54	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	0.52	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	0.51	pg/g	SW846 8290	
Total HxCDD	ND	0.54	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	ND	1.7	pg/g	SW846 8290	
Total HpCDD	ND	1.7	pg/g	SW846 8290	
OCDD	**8.7 J**		**pg/g**	**SW846 8290**	
2,3,7,8-TCDF	**0.59 J,CON**		**pg/g**	**SW846 8290**	
Total TCDF	**0.59**		**pg/g**	**SW846 8290**	
1,2,3,7,8-PeCDF	ND	0.49	pg/g	SW846 8290	
2,3,4,7,8-PeCDF	ND	0.49	pg/g	SW846 8290	
Total PeCDF	ND	1.2	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDF	ND	0.51	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDF	ND	0.37	pg/g	SW846 8290	
2,3,4,6,7,8-HxCDF	ND	0.41	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDF	ND	0.45	pg/g	SW846 8290	
Total HxCDF	ND	0.51	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDF	ND	1.3	pg/g	SW846 8290	
1,2,3,4,7,8,9-HpCDF	ND	0.43	pg/g	SW846 8290	
Total HpCDF	ND	1.3	pg/g	SW846 8290	
OCDF	ND	1.1	pg/g	SW846 8290	

J Estimated result. Result is less than the reporting limit.

CON Confirmation analysis.

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Tetra Tech Inc

Lot #: G6I210382 Makua Military Reservation **Date Reported:** 10/11/06

Client Sample ID: NW1fd

Sample #: 002 Date Sampled: 08/05/06 Date Received: 09/21/06 Matrix: BIOLOGIC

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Nitroaromatics and Nitramines by HPLC					Reviewed
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330	
Nitroglycerin	**0.33 J**	**0.50**	**mg/kg**	**SW846 8330**	
RDX	**0.057 J**	**0.25**	**mg/kg**	**SW846 8330**	

J Estimated result. Result is less than RL.

Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.41	pg/g	SW846 8290	
Total TCDD	ND	0.41	pg/g	SW846 8290	
1,2,3,7,8-PeCDD	ND	0.77	pg/g	SW846 8290	
Total PeCDD	ND	0.77	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.46	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	0.44	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	0.43	pg/g	SW846 8290	
Total HxCDD	ND	0.46	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	ND	0.82	pg/g	SW846 8290	
Total HpCDD	ND	0.82	pg/g	SW846 8290	
OCDD	ND	3.3	pg/g	SW846 8290	
2,3,7,8-TCDF	ND	0.41	pg/g	SW846 8290	
Total TCDF	ND	0.41	pg/g	SW846 8290	
1,2,3,7,8-PeCDF	ND	0.51	pg/g	SW846 8290	
2,3,4,7,8-PeCDF	ND	0.51	pg/g	SW846 8290	
Total PeCDF	ND	0.51	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDF	ND	0.36	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDF	ND	0.34	pg/g	SW846 8290	
2,3,4,6,7,8-HxCDF	ND	0.37	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDF	ND	0.41	pg/g	SW846 8290	
Total HxCDF	ND	0.41	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDF	ND	1.2	pg/g	SW846 8290	
1,2,3,4,7,8,9-HpCDF	ND	0.44	pg/g	SW846 8290	
Total HpCDF	ND	1.2	pg/g	SW846 8290	
OCDF	ND	0.87	pg/g	SW846 8290	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Tetra Tech Inc

Lot #: G6I210382 Makua Military Reservation **Date Reported:** 10/11/06

Client Sample ID: NW2fd
Sample #: 003 Date Sampled: 08/19/06 Date Received: 09/21/06 Matrix: BIOLOGIC

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Nitroaromatics and Nitramines by HPLC					Reviewed
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330	
Nitroglycerin	ND	0.50	mg/kg	SW846 8330	
RDX	ND	0.25	mg/kg	SW846 8330	
Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.34	pg/g	SW846 8290	
Total TCDD	ND	0.34	pg/g	SW846 8290	
1,2,3,7,8-PeCDD	ND	0.69	pg/g	SW846 8290	
Total PeCDD	ND	0.69	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.49	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	0.48	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	0.46	pg/g	SW846 8290	
Total HxCDD	ND	0.49	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	ND	0.48	pg/g	SW846 8290	
Total HpCDD	ND	0.48	pg/g	SW846 8290	
OCDD	ND	1.3	pg/g	SW846 8290	
2,3,7,8-TCDF	ND	0.22	pg/g	SW846 8290	
Total TCDF	ND	0.22	pg/g	SW846 8290	
1,2,3,7,8-PeCDF	ND	0.48	pg/g	SW846 8290	
2,3,4,7,8-PeCDF	ND	0.47	pg/g	SW846 8290	
Total PeCDF	ND	0.48	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDF	ND	0.32	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDF	ND	0.30	pg/g	SW846 8290	
2,3,4,6,7,8-HxCDF	ND	0.34	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDF	ND	0.37	pg/g	SW846 8290	
Total HxCDF	ND	0.34	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDF	ND	0.48	pg/g	SW846 8290	
1,2,3,4,7,8,9-HpCDF	ND	0.41	pg/g	SW846 8290	
Total HpCDF	ND	0.48	pg/g	SW846 8290	
OCDF	ND	0.68	pg/g	SW846 8290	

Client Sample ID: NW1SW1-1fd
Sample #: 004 Date Sampled: 08/09/06 Date Received: 09/21/06 Matrix: BIOLOGIC

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Tetra Tech Inc PAGE 4

Lot #: G6I210382 Makua Military Reservation **Date Reported:** 10/11/06

Client Sample ID: NW1SW1-1fd

Sample #: 004 Date Sampled: 08/09/06 Date Received: 09/21/06 Matrix: BIOLOGIC

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Nitroaromatics and Nitramines by HPLC					Reviewed
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330	
Nitroglycerin	ND	0.50	mg/kg	SW846 8330	
RDX	**0.38 PG**	**0.25**	**mg/kg**	**SW846 8330**	

PG The percent difference between the original and confirmation analyses is greater than 40%.

Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.37	pg/g	SW846 8290	
Total TCDD	ND	0.37	pg/g	SW846 8290	
1,2,3,7,8-PeCDD	ND	0.55	pg/g	SW846 8290	
Total PeCDD	ND	0.55	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.42	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	0.41	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	0.39	pg/g	SW846 8290	
Total HxCDD	ND	0.42	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	ND	0.42	pg/g	SW846 8290	
Total HpCDD	ND	0.42	pg/g	SW846 8290	
OCDD	ND	0.55	pg/g	SW846 8290	
2,3,7,8-TCDF	ND	0.21	pg/g	SW846 8290	
Total TCDF	ND	0.21	pg/g	SW846 8290	
1,2,3,7,8-PeCDF	ND	0.42	pg/g	SW846 8290	
2,3,4,7,8-PeCDF	ND	0.42	pg/g	SW846 8290	
Total PeCDF	ND	0.42	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDF	ND	0.26	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDF	ND	0.24	pg/g	SW846 8290	
2,3,4,6,7,8-HxCDF	ND	0.27	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDF	ND	0.29	pg/g	SW846 8290	
Total HxCDF	ND	0.29	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDF	ND	0.30	pg/g	SW846 8290	
1,2,3,4,7,8,9-HpCDF	ND	0.34	pg/g	SW846 8290	
Total HpCDF	ND	0.34	pg/g	SW846 8290	
OCDF	ND	0.59	pg/g	SW846 8290	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Tetra Tech Inc PAGE 5

Lot #: G6I210382 Makua Military Reservation **Date Reported:** 10/11/06

Client Sample ID: 9afd and 10a Comp

Sample #: 005 Date Sampled: 08/03/06 Date Received: 09/21/06 Matrix: BIOLOGIC

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Nitroaromatics and Nitramines by HPLC					Reviewed
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330	
Nitroglycerin	**0.95 PG**	**0.50**	**mg/kg**	**SW846 8330**	
RDX	ND	0.25	mg/kg	SW846 8330	

PG The percent difference between the original and confirmation analyses is greater than 40%.

Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.39	pg/g	SW846 8290	
Total TCDD	ND	0.39	pg/g	SW846 8290	
1,2,3,7,8-PeCDD	ND	0.79	pg/g	SW846 8290	
Total PeCDD	ND	1.2	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.63	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	0.61	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	0.58	pg/g	SW846 8290	
Total HxCDD	ND	0.63	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	ND	1.5	pg/g	SW846 8290	
Total HpCDD	ND	1.5	pg/g	SW846 8290	
OCDD	**6.9 J**		**pg/g**	**SW846 8290**	
2,3,7,8-TCDF	ND	0.26	pg/g	SW846 8290	
Total TCDF	ND	0.26	pg/g	SW846 8290	
1,2,3,7,8-PeCDF	ND	0.61	pg/g	SW846 8290	
2,3,4,7,8-PeCDF	ND	0.60	pg/g	SW846 8290	
Total PeCDF	ND	0.61	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDF	ND	0.34	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDF	ND	0.32	pg/g	SW846 8290	
2,3,4,6,7,8-HxCDF	ND	0.36	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDF	ND	0.40	pg/g	SW846 8290	
Total HxCDF	ND	0.40	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDF	ND	0.63	pg/g	SW846 8290	
1,2,3,4,7,8,9-HpCDF	ND	0.49	pg/g	SW846 8290	
Total HpCDF	ND	0.63	pg/g	SW846 8290	
OCDF	ND	0.82	pg/g	SW846 8290	

J Estimated result. Result is less than the reporting limit.

Laboratory Report

Tetra Tech, Inc.

Makua Shellfish Study

ARF 57114

Sampling Date: September 29, 2008

AMENDED PAGE

AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES, INC.

4203 West Swift ∇ Fresno, California 93722 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Case Narrative

ARF: 57114

Project: Makua Shellfish Study

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: 05233CA (HW)

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Receipt Information:

The sample was received October 1, 2008, at 2.5°C. The sample was assigned Analytical Request Form (ARF) number 57114. The sample number and requested analyses were compared to the chain of custody. No exception was noted.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
MNS-03	AX84606	MISC	09/29/08	10/01/08

Percent moisture was determined using CLP 4.0. The sample results are reported "as is" without moisture correction, as instructed.

EPA Method 8330B
Energetics

Sample Preparation:

The tissue sample was extracted according to EPA 8330. All hold times were met.

Analysis:

The sample was analyzed according to EPA Method 8330B using an Agilent 1100 HPLC with UV detector.

Quality Control/Assurance:

Spike Recovery

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis. A

Method blanks:

No target analyte was detected at or above the MDL in the method blank.

Surrogates:

The LCS recovered 1,2-Dinitrobenzene slightly below the 70% lower control limit at 69%. All other surrogates had acceptable recoveries.

Calibration:

The initial and continuing calibrations and second source were analyzed according to the method. All calibration criteria were met.

Summary:

No other analytical problem was encountered.

EPA Method 8270C
Semivolatile Organic Compounds

Sample Preparation:

The sample was extracted according to EPA method 3550B. All holding times were met.

Sample Analysis Information:

The sample was analyzed according to EPA Method 8270C using a Hewlett Packard GC/MS.

Quality Control/Assurance

Spike Recovery

A Laboratory Control Spike (LCS) was used for quality assurance. All spike recoveries were acceptable.

No sample was designated by the client for an MS/MSD analysis.

Method blanks

No target compound was detected at or above the method detection limit.

Surrogates

All surrogate recoveries were within control limits.

Calibration

The initial and continuing calibrations were performed according to the method. All method acceptance criteria were met.

Tuning:

The instrument was tuned using DFTPP. All method criteria were met.

Internal Standards

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8270. All method criteria were met.

Summary:

No problem was encountered. The data generated are acceptable.

EPA Methods 6020 and 7471A
Metals

Sample Preparation

The tissue sample as digested according to the EPA methods 3051, 3051A, and 7471A.

Analysis Information:

The sample was analyzed for total metals according to EPA method 6020 using a Perkin Elmer Elan 6100 ICP-MS and according to EPA method 7471A using a Perkin Elmer AAnalyst 300. The sample was analyzed twice undiluted; however the internal standards failed. The sample was then analyzed at a dilution factor of 1:5, and internal standard recoveries were acceptable. All holding times were met.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard.

Blanks:

The method blanks and continuing calibration blanks were screened down to the method detection limits. No target metal was detected at concentrations greater than one-half the reporting limits.

Spikes:

Laboratory Control Spikes (LCS/LCSD) were used for quality assurance. All LCS recoveries met acceptance criteria.

No sample was designated by the client for an MS/MSD analysis.

Summary:

No analytical exception is noted. All data are acceptable.

EPA Method 8081A
Pesticides

Sample Preparation:

The sample was extracted according to EPA method 3550B. All holding times were met.

Analysis Information:

Samples:

The sample was analyzed for Pesticides according to EPA method 8081A using a Hewlett Packard GC equipped with an ECD.

Calibrations:

Initial and continuing calibrations were performed according to the method. All acceptance criteria were met.

Blanks:

No target analyte was detected above the reporting limit for the method blanks.

Spikes and Duplicates:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for an MS/MSD analysis.

Surrogates:

All surrogates recovered within acceptance limits.

Summary:

No analytical problem was encountered. The data generated are acceptable.

EPA Method 8290A
Dioxins/Furans by GC-HRMS

Sample Preparation:

The sample was extracted according to EPA method 3540C. The percent lipid content was determined using the procedures listed in EPA 8290. All holding times were met.

Sample Analysis Information:

The sample was analyzed according to EPA method 8290A using a Hewlett Packard Gas Chromatograph with a Waters AutoSpec High Resolution Mass Spectrometer detector.

Quality Control/Assurance

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

Two analytes were detected in the method blank below the PQL, at J-value levels: 1.2.3.4.7.8.9-HpCDF (0.17 ng/kg) and 2.3.4.7.8-HxCDD (0.18 ng/kg). These analytes were not detected in the associated sample. No target analyte was detected above the reporting limits in the method blank.

Spikes:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for an MS/MSD analysis.

Surrogates

For the method blank, the 13C-2.3.7.8-TCDD surrogate recovered below the 40% control limit, at 24.1%. All of the sample surrogates were within acceptance criteria.

Summary:

No other problem was encountered. The data generated are acceptable.

EPA Method 8260B
Volatile Organic Compounds

Preparation Information:

The fish tissue sample was purged according to EPA method 5035.

Analysis Information:

The samples were analyzed according to EPA method 8260B using a Hewlett Packard GC/MS.

Quality Control/Assurance

Spike Recoveries

A Laboratory Control Spike (LCS) was used for quality assurance. A second source standard was used for the LCS. All recoveries met acceptance criteria.

No sample was designated by the client for an MS/MSD analysis.

Method blanks

The blank contained no target compound at or above reporting limits.

Surrogates

All other recoveries were within acceptance limits.

Initial and Continuing Calibrations

Initial and continuing calibrations were analyzed according to the method. All acceptance criteria were met.

Internal Standards

Internal standard recoveries were checked against the mid-point of the initial calibrations. Undiluted, the sample had low internal standard recoveries. The sample was re-analyzed diluted with acceptable IS recoveries. Both sets of data are included.

Tuning:

The instrument was tuned using BFB. All method criteria were met.

Summary:

No other exception was noted.

EPA Method 314.0
Perchlorate

Sample Preparation:

The sample was prepared according to the method. All holding times were met.

Analysis Information:

The sample was analyzed according to the method using a Dionex DX500 ion chromatograph.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the method. The ICV is prepared from a second source standard.

Blanks:

The blank contained no Perchlorate at or above half the reporting limit.

Spikes:

Laboratory control spikes (LCS/LCSD) were used for quality assurance. All acceptance criteria were met.

Summary:

All data were acceptable. No analytical exception is noted.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

11/7/08

Leonard Fong, Ph.D, Laboratory Director / Date

EPA 8330A Explosives-Soil

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 9/29/2008

ARF: 57114
APPL ID: AX84606
QCG: $83TTS-081013A-127499

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8330	2,4-DNT	Not detected	0.50	0.083	mg/kg	10/13/2008	11/6/1989
EPA 8330	Nitroglycerine	Not detected	0.50	0.085	mg/kg	10/13/2008	11/6/1989
EPA 8330	RDX	Not detected	0.50	0.080	mg/kg	10/13/2008	11/6/1989
EPA 8330	Surrogate: 1,2-Dinitrobenzene (S)	87.3	70-130		%	10/13/2008	11/6/1989

Quant Method: E2_1104.M
Run #: 1104_033.D
Instrument: UV1200
Sequence: 081104
Dilution Factor: 1
Initials: RJB

Printed: 11/7/2008 3:06:06 PM
APPL-F1-SC-NoMC-REG MDLs

Method Blank

EPA 8330A Explosives-Soil

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081013S-84606 - 127499**
Batch ID: $83TTS-081013A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	2,4-DNT	Not detected	0.50	0.083	mg/kg	10/13/2008	10/20/2008
BLANK	Nitroglycerine	Not detected	0.50	0.085	mg/kg	10/13/2008	10/20/2008
BLANK	RDX	Not detected	0.50	0.080	mg/kg	10/13/2008	10/20/2008
BLANK	Surrogate: 1,2-Dinitrobenzene (S)	77.8	70-130		%	10/13/2008	10/20/2008

Quant Method: C18_1008.M
Run #: 1104_033.D
Instrument: UV2
Sequence: 081008
Initials: RJB

GC SC-Blank-REG MDLs
Printed: 11/7/2008 3:06:12 PM

Laboratory Control Spike Recovery

EPA 8330A Explosives-Soil

APPL ID: **081013S-84606 LCS - 127499**
Batch ID: $83TTS-081013A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level mg/kg	SPK Result mg/kg	SPK % Recovery	Recovery Limits
2,4-DNT	1.0	1.02	102	80-125
Nitroglycerine	1.0	1.07	107	75-125
RDX	1.0	0.890	89.0	70-135
Surrogate: 1,2-Dinitrobenzene	1.0	0.690	69.0 #	70-130

= Recovery is outside QC limits.

Comments:

Primary	SPK
Quant Method :	C18_1008.M
Extraction Date :	10/13/2008
Analysis Date :	10/16/2008
Instrument :	UV2
Run :	1015_040.D
Initials :	RJB

Printed: 11/7/2008 3:20:25 PM

APPL Standard LCS

EPA 8270C Soils

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 09/29/08

ARF: 57114
APPL ID: AX84606
QCG: $8270S-081013A-126829

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8270C	Bis (2-ethylhexyl) phthalate	Not detected	330	61.6	ug/Kg	10/13/08	10/18/08
EPA 8270C	Di-n-butylphthalate	Not detected	330	65.9	ug/Kg	10/13/08	10/18/08
EPA 8270C	Di-n-octylphthalate	Not detected	330	58.4	ug/Kg	10/13/08	10/18/08
EPA 8270C	Diethyl phthalate	Not detected	330	62.1	ug/Kg	10/13/08	10/18/08
EPA 8270C	Pentachlorophenol	Not detected	330	58.7	ug/Kg	10/13/08	10/18/08
EPA 8270C	Pyrene	Not detected	330	54.1	ug/Kg	10/13/08	10/18/08
EPA 8270C	Surrogate: 2,4,6-Tribromophenol (S)	70.9	44-114		%	10/13/08	10/18/08
EPA 8270C	Surrogate: 2-Fluorbiphenyl (S)	70.6	39-116		%	10/13/08	10/18/08
EPA 8270C	Surrogate: 2-Fluorophenol (S)	68.0	48-118		%	10/13/08	10/18/08
EPA 8270C	Surrogate: Nitrobenzene-D5 (S)	66.7	49-142		%	10/13/08	10/18/08
EPA 8270C	Surrogate: Phenol (S)	69.7	47-122		%	10/13/08	10/18/08
EPA 8270C	Surrogate: Terphenyl-d14 (S)	105	40-135		%	10/13/08	10/18/08

Quant Method: Y8270D.M
Run #: 1018Y011
Instrument: YODA
Sequence: Y080912
Dilution Factor: 1
Initials: LF

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APPL-F1-SC-NoMC-REG MDLs

Method Blank
EPA 8270C Soils

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081013S-84606 - 126829**
Batch ID: $8270S-081013A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	Bis (2-ethylhexyl) phthalate	Not detected	330	61.6	ug/Kg	10/13/08	10/18/08
BLANK	Di-n-butylphthalate	Not detected	330	65.9	ug/Kg	10/13/08	10/18/08
BLANK	Di-n-octylphthalate	Not detected	330	58.4	ug/Kg	10/13/08	10/18/08
BLANK	Diethyl phthalate	Not detected	330	62.1	ug/Kg	10/13/08	10/18/08
BLANK	Pentachlorophenol	Not detected	330	58.7	ug/Kg	10/13/08	10/18/08
BLANK	Pyrene	Not detected	330	54.1	ug/Kg	10/13/08	10/18/08
BLANK	Surrogate: 2,4,6-Tribromophenol (S)	74.6	44-114		%	10/13/08	10/18/08
BLANK	Surrogate: 2-Fluorbiphenyl (S)	70.1	39-116		%	10/13/08	10/18/08
BLANK	Surrogate: 2-Fluorophenol (S)	72.2	48-118		%	10/13/08	10/18/08
BLANK	Surrogate: Nitrobenzene-D5 (S)	68.7	49-142		%	10/13/08	10/18/08
BLANK	Surrogate: Phenol (S)	73.9	47-122		%	10/13/08	10/18/08
BLANK	Surrogate: Terphenyl-d14 (S)	80.5	40-135		%	10/13/08	10/18/08

Quant Method: Y8270D.M
Run #: 1018Y003
Instrument: YODA
Sequence: Y080912
Initials: LF

GC SC-Blank-REG MDLs
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Laboratory Control Spike Recovery
EPA 8270C Soils

APPL ID: **081013S-84606 LCS - 126829**
Batch ID: $8270S-081013A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
Bis (2-ethylhexyl) phthalate	1670	1570	94.0	38-148
Di-n-butylphthalate	1670	1370	82.0	36-151
Di-n-octylphthalate	1670	1540	92.2	51-139
Diethyl phthalate	1670	1370	82.0	51-126
Pentachlorophenol	1670	1270	76.0	32-150
Pyrene	1670	1490	89.2	45-137
Surrogate: 2,4,6-Tribromophenol	6670	5200	78.0	44-114
Surrogate: 2-Fluorbiphenyl	3330	2610	78.4	39-116
Surrogate: 2-Fluorophenol	6670	5300	79.5	48-118
Surrogate: Nitrobenzene-D5	3330	2500	75.1	49-142
Surrogate: Phenol	6670	5310	79.6	47-122
Surrogate: Terphenyl-d14	3330	2820	84.7	40-135

Comments:

Primary	SPK
Quant Method :	Y8270D.M
Extraction Date :	10/13/08
Analysis Date :	10/18/08
Instrument :	YODA
Run :	1018Y004
Initials :	LF

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APPL Standard LCS

Metals Analysis

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 09/29/08

ARF: 57114
APPL ID: AX84606

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020	Aluminum (Al)	102	10.0	0.30	mg/Kg	5	10/16/08	10/23/08
6020	Antimony (Sb)	Not detected	0.5	0.15	mg/Kg	5	10/16/08	10/22/08
6020	Arsenic (As)	1.2 J	2.5	0.40	mg/Kg	5	10/16/08	10/22/08
6020	Barium (Ba)	2.3	0.5	0.20	mg/Kg	5	10/16/08	10/22/08
6020	Beryllium (Be)	Not detected	5.0	0.35	mg/Kg	5	10/16/08	10/23/08
6020	Cadmium (Cd)	Not detected	0.5	0.15	mg/Kg	5	10/16/08	10/22/08
6020	Chromium (Cr)	1.2 J	2.5	0.10	mg/Kg	5	10/16/08	10/23/08
6020	Cobalt (Co)	0.23 J	0.5	0.10	mg/Kg	5	10/16/08	10/23/08
6020	Copper (Cu)	2.6	0.5	0.20	mg/Kg	5	10/16/08	10/22/08
6020	Iron (Fe)	84.9	50.0	15.00	mg/Kg	5	10/16/08	10/23/08
6020	Lead (Pb)	0.33 J	0.5	0.10	mg/Kg	5	10/16/08	10/22/08
6020	Manganese (Mn)	3.5	0.5	0.25	mg/Kg	5	10/16/08	10/23/08
7471A/7471A	Mercury	Not detected	0.1	0.02	mg/Kg	1	10/03/08	10/06/08
6020	Selenium (Se)	0.73 J	1.0	0.20	mg/Kg	5	10/16/08	10/22/08
6020	Silver (Ag)	Not detected	0.5	0.10	mg/Kg	5	10/16/08	10/22/08
6020	Thallium (Tl)	Not detected	0.5	0.10	mg/Kg	5	10/16/08	10/22/08
6020	Vanadium (V)	0.31 J	0.5	0.10	mg/Kg	5	10/16/08	10/23/08
6020	Zinc (Zn)	11.6	10.0	0.65	mg/Kg	5	10/16/08	10/22/08

J = Estimated value.

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APPL-F1-SC-NoMC-REG MDLs

METALS BLANK

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
6020	Antimony (Sb)	Not detected	0.1	0.03	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Arsenic (As)	Not detected	0.5	0.08	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Barium (Ba)	Not detected	0.1	0.04	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Cadmium (Cd)	Not detected	0.1	0.03	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Copper (Cu)	Not detected	0.1	0.04	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Lead (Pb)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Selenium (Se)	Not detected	0.2	0.04	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Silver (Ag)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Thallium (Tl)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Zinc (Zn)	0.45 J	2.0	0.13	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Aluminum (Al)	0.39 J	2.0	0.06	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Beryllium (Be)	Not detected	1.0	0.07	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Chromium (Cr)	Not detected	0.5	0.02	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Cobalt (Co)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Iron (Fe)	Not detected	10.0	2.91	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Manganese (Mn)	Not detected	0.1	0.05	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Vanadium (V)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
7471A	Mercury	Not detected	0.1	0.02	mg/Kg	10/03/08	10/06/08	$HG-S-081003A-AX84606

Metals SC-Blank-REG MDLs
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Laboratory Control Spike Recoveries

METALS

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Compound Name	Spike Lvl mg/Kg	SPK Res mg/Kg	DUP Res mg/Kg	SPK % Recov	DUP % Recov	RPD	RPD Max	QC Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group
6020	Aluminum (Al)	400	394	423	98.5	106	7.1	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Antimony (Sb)	50.0	54.7	56.9	109	114	3.9	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Arsenic (As)	50.0	51.2	53.6	102	107	4.6	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Barium (Ba)	50.0	54.1	54.4	108	109	0.6	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Beryllium (Be)	10.00	10.4	10.5	104	105	1.0	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Cadmium (Cd)	10.00	10.5	10.7	105	107	1.9	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Chromium (Cr)	50.0	51.5	51.8	103	104	0.6	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Cobalt (Co)	50.0	48.1	48.8	96.2	97.6	1.4	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Copper (Cu)	50.0	52.6	55.3	105	111	5.0	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Iron (Fe)	200	193	194	96.5	97.0	0.5	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Lead (Pb)	50.0	53.2	54.1	106	108	1.7	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Manganese (Mn)	50.0	48.4	50.1	96.8	100	3.5	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Selenium (Se)	50.0	53.2	55.7	106	111	4.6	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Silver (Ag)	20.0	19.5	19.9	97.5	99.5	2.0	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Thallium (Tl)	50.0	56.7	56.7	113	113	0.0	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Vanadium (V)	50.0	51.7	53.3	103	107	3.0	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Zinc (Zn)	100.0	105	109	105	109	3.7	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
EPA 7471A	Mercury	0.667	0.71	0.72	106	108	1.4	20	80-120	10/03/08	10/06/08	10/03/08	10/06/08	$HG-S-081003A-AX84606

Comments: _____

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APPL Standard LCSD

EPA 8081A SOIL

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 09/29/08

ARF: 57114
APPL ID: AX84606
QCG: $88SS-081013A-126809

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8081A	4,4'-DDT	Not detected	5.0	0.40	ug/Kg	10/13/08	10/17/08
EPA 8081A	a-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
EPA 8081A	Aldrin	Not detected	5.0	1.40	ug/Kg	10/13/08	10/17/08
EPA 8081A	b-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
EPA 8081A	d-BHC	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
EPA 8081A	g-BHC (Lindane)	Not detected	5.0	0.90	ug/Kg	10/13/08	10/17/08
EPA 8081A	Heptachlor	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
EPA 8081A	Heptachlor epoxide	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
EPA 8081A	Surrogate: Decachlorobiphenyl (S)	69.2	29-125		%	10/13/08	10/17/08
EPA 8081A	Surrogate: TCmX (S)	76.4	40-123		%	10/13/08	10/17/08

Quant Method: OCLB.M
Run #: 0930259
Instrument: Ethel
Sequence: 080930
Dilution Factor: 1
Initials: MA

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APPL-F1-SC-NoMC-REG MDLs

Method Blank
EPA 8081A SOIL

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081013S-84606 - 126809**
Batch ID: $88SS-081013A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	4,4'-DDT	Not detected	5.0	0.40	ug/Kg	10/13/08	10/17/08
BLANK	a-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
BLANK	Aldrin	Not detected	5.0	1.40	ug/Kg	10/13/08	10/17/08
BLANK	b-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
BLANK	d-BHC	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
BLANK	g-BHC (Lindane)	Not detected	5.0	0.90	ug/Kg	10/13/08	10/17/08
BLANK	Heptachlor	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
BLANK	Heptachlor epoxide	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
BLANK	Surrogate: Decachlorobiphenyl (S)	75.1	29-125		%	10/13/08	10/17/08
BLANK	Surrogate: TCmX (S)	68.1	40-123		%	10/13/08	10/17/08

Quant Method: OCLB.M
Run #: 0930257
Instrument: Ethel
Sequence: 080930
Initials: MA

GC SC-Blank-REG MDLs
Printed: 10/20/08 3:11:04 PM

Laboratory Control Spike Recovery
EPA 8081A SOIL

APPL ID: **081013S-84606 LCS - 126809**
Batch ID: $88SS-081013A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
4,4'-DDT	333	260	78.1	47-120
a-BHC	333	256	76.9	41-114
Aldrin	333	262	78.7	40-108
b-BHC	333	283	85.0	63-129
d-BHC	333	280	84.1	52-105
g-BHC (Lindane)	333	268	80.5	46-114
Heptachlor	333	258	77.5	48-115
Heptachlor epoxide	333	268	80.5	61-110
Surrogate: Decachlorobiphenyl	333	261	78.4	29-125
Surrogate: TCmX	333	157	47.1	40-123

Comments:

Primary	SPK
Quant Method :	OCLB.M
Extraction Date :	10/13/08
Analysis Date :	10/17/08
Instrument :	Ethel
Run :	0930258
Initials :	MA

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APPL Standard LCS

EPA 8290 - Dioxins and Furans

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 09/29/08

ARF: 57114
APPL ID: AX84606
QCG: $829ET27S-081010-12720

Method	Analyte	Result	EDL / EMPC	Units	Extraction Date	Analysis Date
EPA 8290	1,2,3,4,6,7,8-heptachloro-dibenzofuran	Not detected	0.26	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxi	Not detected	0.38	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,7,8,9-heptachloro-dibenzofuran	Not detected	0.032	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,7,8-hexachloro-dibenzofuran	Not detected	0.19	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	Not detected	0.12	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,6,7,8-hexachloro-dibenzofuran	Not detected	0.13	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	Not detected	0.043	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8,9-hexachloro-dibenzofuran	Not detected	0.048	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	Not detected	0.053	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8-pentachloro-dibenzofuran	Not detected	0.23	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8-pentachlorodibenzo-p-dioxin	Not detected	0.21	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,4,6,7,8-hexachloro-dibenzofuran	Not detected	0.039	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,4,7,8-pentachloro-dibenzofuran	Not detected	0.012	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,7,8-tetrachloro-dibenzofuran	Not detected	0.48	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,7,8-tetrachlorodibenzo-p-dioxin	Not detected	0.079	ng/kg	10/10/08	10/23/08
EPA 8290	octachloro-dibenzofuran	Not detected	0.054	ng/kg	10/10/08	10/23/08
EPA 8290	octachlorodibenzo-p-dioxin	2.1 J	NA	ng/kg	10/10/08	10/23/08
EPA 8290	TCDD, total	Not detected	3.19	ng/kg	10/10/08	10/23/08
EPA 8290	TCDF, total	0.40 J	NA	ng/kg	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (S)	47.8	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (S)	62.7	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,4,7,8-HxCDF (S)	55.2	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,6,7,8-HxCDD (S)	56.6	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,7,8-PeCDD (S)	50.3	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,7,8-PeCDF (S)	52.4	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-2,3,7,8-TCDD (S)	53.9	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-2,3,7,8-TCDF (S)	58.6	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-OCDD (S)	51.4	40-135	%	10/10/08	10/23/08

J = Estimated value.

Quant Method: 8290_081014
Run #: 081022_HR_12
Instrument: Magneto
Sequence: 081022
Dilution Factor: 1
Initials: RP

Printed: 11/07/08 3:34:45 PM
Form 1 - APPL Standard GC - No MC

Lipid

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 9/29/2008

ARF: 57114
APPL ID: AX84606
QCG: $LIPID-081010A-127440

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
%Lipid	Lipids	1.3	NA	%	10/10/2008	10/13/2008

Quant Method: NA
Run #: NA
Instrument: NA
Sequence: NA
Dilution Factor: 1
Initials: RP

Printed: 11/5/2008 12:09:49 PM
Form 1 - APPL Standard GC - No MC

Method Blank

EPA 8290 - Dioxins and Furans

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081010S-84606 - 127202**
Batch ID: $829ET27S-081010

Sample Type	Analyte	Result	EDL / EMPC	Units	Extraction Date	Analysis Date
BLANK	1,2,3,4,6,7,8-heptachloro-dibenzofuran	Not detected	0.042	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxi	Not detected	0.26	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,7,8,9-heptachloro-dibenzofuran	0.17 J	NA	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,7,8-hexachloro-dibenzofuran	Not detected	0.12	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	0.18 J	NA	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,6,7,8-hexachloro-dibenzofuran	Not detected	0.074	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	Not detected	0.064	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8,9-hexachloro-dibenzofuran	Not detected	0.044	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	Not detected	0.085	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8-pentachloro-dibenzofuran	Not detected	0.061	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8-pentachlorodibenzo-p-dioxin	Not detected	0.11	ng/kg	10/10/08	10/23/08
BLANK	2,3,4,6,7,8-hexachloro-dibenzofuran	Not detected	0.15	ng/kg	10/10/08	10/23/08
BLANK	2,3,4,7,8-pentachloro-dibenzofuran	Not detected	0.027	ng/kg	10/10/08	10/23/08
BLANK	2,3,7,8-tetrachloro-dibenzofuran	Not detected	0.26	ng/kg	10/10/08	10/23/08
BLANK	2,3,7,8-tetrachlorodibenzo-p-dioxin	Not detected	0.26	ng/kg	10/10/08	10/23/08
BLANK	octachloro-dibenzofuran	Not detected	0.016	ng/kg	10/10/08	10/23/08
BLANK	octachlorodibenzo-p-dioxin	Not detected	1.3	ng/kg	10/10/08	10/23/08
BLANK	TCDD, total	Not detected	3.8	ng/kg	10/10/08	10/23/08
BLANK	TCDF, total	Not detected	1.9	ng/kg	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (S)	74.8	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (S)	71.8	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,4,7,8-HxCDF (S)	63.7	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,6,7,8-HxCDD (S)	61.1	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,7,8-PeCDD (S)	52.5	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,7,8-PeCDF (S)	59.5	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-2,3,7,8-TCDD (S)	24.1 #	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-2,3,7,8-TCDF (S)	61.8	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-OCDD (S)	65.8	40-135	%	10/10/08	10/23/08

J = Estimated value.
# = Recovery (or RPD) is outside QC limits.

Quant Method: 8290_081014
Run #: 081022_HR_09
Instrument: Magneto
Sequence: 081022
Initials: RP

Printed: 11/07/08 3:34:38 PM

Laboratory Control Spike Recoveries

EPA 8290 - Dioxins and Furans

APPL ID: **081010S-84606 LCS - 127202**
Batch ID: $829ET27S-081010

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ng/kg	SPK Result ng/kg	DUP Result ng/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
1,2,3,4,6,7,8-heptachloro-dibenzofuran	125	129	131	103	105	70-130	1.5	30
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxi	125	117	128	93.6	102	70-130	9.0	30
1,2,3,4,7,8,9-heptachloro-dibenzofuran	125	118	118	94.4	94.4	70-130	0.0	30
1,2,3,4,7,8-hexachloro-dibenzofuran	125	133	133	106	106	70-130	0.0	30
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	125	132	134	106	107	70-130	1.5	30
1,2,3,6,7,8-hexachloro-dibenzofuran	125	131	141	105	113	70-130	7.4	30
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	125	136	137	109	110	70-130	0.73	30
1,2,3,7,8,9-hexachloro-dibenzofuran	125	133	138	106	110	70-130	3.7	30
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	125	138	147	110	118	70-130	6.3	30
1,2,3,7,8-pentachloro-dibenzofuran	125	142	143	114	114	70-130	0.70	30
1,2,3,7,8-pentachlorodibenzo-p-dioxin	125	127	129	102	103	70-130	1.6	30
2,3,4,6,7,8-hexachloro-dibenzofuran	125	141	131	113	105	70-130	7.4	30
2,3,4,7,8-pentachloro-dibenzofuran	125	130	127	104	102	70-130	2.3	30
2,3,7,8-tetrachloro-dibenzofuran	50.0	54.1	53.0	108	106	70-130	2.1	30
2,3,7,8-tetrachlorodibenzo-p-dioxin	50.0	53.1	53.9	106	108	70-130	1.5	30
octachloro-dibenzofuran	250	253	265	101	106	70-130	4.6	30
octachlorodibenzo-p-dioxin	250	256	270	102	108	70-130	5.3	30
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	625	450	438	72.0	70.1	40-135		
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	625	435	438	69.6	70.1	40-135		
Surrogate: 13C-1,2,3,4,7,8-HxCDF	625	403	400	64.5	64.0	40-135		
Surrogate: 13C-1,2,3,6,7,8-HxCDD	625	392	370	62.7	59.2	40-135		
Surrogate: 13C-1,2,3,7,8-PeCDD	250	141	146	56.4	58.4	40-135		
Surrogate: 13C-1,2,3,7,8-PeCDF	250	148	152	59.2	60.8	40-135		
Surrogate: 13C-2,3,7,8-TCDD	250	154	145	61.6	58.0	40-135		

Comments:

Primary	SPK	DUP
Quant Method :	8290_081014	8290_081014
Extraction Date :	10/10/2008	10/10/2008
Analysis Date :	10/22/2008	10/23/2008
Instrument :	Magneto	Magneto
Run :	081022_HR_06	081022_HR_07
Initials :	RP	

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APPL Standard LCSD

Laboratory Control Spike Recoveries

EPA 8290 - Dioxins and Furans

APPL ID: **081010S-84606 LCS - 127202**
Batch ID: $829ET27S-081010

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ng/kg	SPK Result ng/kg	DUP Result ng/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
Surrogate: 13C-2,3,7,8-TCDF	250	166	164	66.4	65.6	40-135		
Surrogate: 13C-OCDD	1250	863	863	69.0	69.0	40-135		

Comments:

Primary	SPK	DUP
Quant Method :	8290_081014	8290_081014
Extraction Date :	10/10/2008	10/10/2008
Analysis Date :	10/22/2008	10/23/2008
Instrument :	Magneto	Magneto
Run :	081022_HR_06	081022_HR_07
Initials :	RP	

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APPL Standard LCSD

EPA 8260B MEOH

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 09/29/08

ARF: 57114
APPL ID: AX84606
QCG: $8260M-081003BN-126483

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8260B-	1,2,4-Trimethylbenzene	Not detected	25.0	9.50	ug/Kg	10/04/08	10/04/08
EPA 8260B-	Ethyl benzene	Not detected	25.0	11.50	ug/Kg	10/04/08	10/04/08
EPA 8260B-	m&p-Xylene	Not detected	25.0	20.00	ug/Kg	10/04/08	10/04/08
EPA 8260B-	o-Xylene	Not detected	25.0	9.50	ug/Kg	10/04/08	10/04/08
EPA 8260B-	Styrene	Not detected	25.0	12.50	ug/Kg	10/04/08	10/04/08
EPA 8260B-	Toluene	Not detected	25.0	8.50	ug/Kg	10/04/08	10/04/08
EPA 8260B-	Xylenes	Not detected	25.0	9.50	ug/Kg	10/04/08	10/04/08
EPA 8260B-	Surrogate: 1,2-Dichloroethane-d4 (S)	97.4	70-125		%	10/04/08	10/04/08
EPA 8260B-	Surrogate: 4-Bromofluorobenzene (S)	112	72-133		%	10/04/08	10/04/08
EPA 8260B-	Surrogate: Dibromofluoromethane (S)	102	78-125		%	10/04/08	10/04/08
EPA 8260B-	Surrogate: Toluene-D8 (S)	110	73-124		%	10/04/08	10/04/08

Quant Method: N826AW.M
Run #: 1003N24
Instrument: Neo
Sequence: N081002
Dilution Factor: 50
Initials: DG

Printed: 11/07/08 4:41:04 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 8260B Soil

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNS-03
Sample Collection Date: 09/29/08

ARF: 57114
APPL ID: AX84606
QCG: $8260S-081003BC-126438

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8260B	1,2,4-Trimethylbenzene	Not detected	5.0	1.18	ug/Kg	10/04/08	10/04/08
EPA 8260B	Ethylbenzene	Not detected	5.0	0.64	ug/Kg	10/04/08	10/04/08
EPA 8260B	m&p-Xylene	Not detected	5.0	0.43	ug/Kg	10/04/08	10/04/08
EPA 8260B	o-Xylene	Not detected	5.0	0.61	ug/Kg	10/04/08	10/04/08
EPA 8260B	Styrene	Not detected	5.0	0.69	ug/Kg	10/04/08	10/04/08
EPA 8260B	Toluene	Not detected	5.0	0.65	ug/Kg	10/04/08	10/04/08
EPA 8260B	Xylenes	Not detected	5.0	0.68	ug/Kg	10/04/08	10/04/08
EPA 8260B	Surrogate: 1,2-Dichloroethane-d4 (S)	106	59-120		%	10/04/08	10/04/08
EPA 8260B	Surrogate: 4-Bromofluorobenzene (S)	89.6	82-121		%	10/04/08	10/04/08
EPA 8260B	Surrogate: Dibromofluoromethane (S)	101	74-122		%	10/04/08	10/04/08
EPA 8260B	Surrogate: Toluene-D8 (S)	105	71-127		%	10/04/08	10/04/08

Quant Method: C86AFS.M
Run #: 1003C31
Instrument: Chico
Sequence: C081002
Dilution Factor: 1
Initials: DG

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APPL-F1-SC-NoMC-REG MDLs

Method Blank
EPA 8260B Soil

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081004S-84606 - 126438**
Batch ID: $8260S-081003BC

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	1,2,4-Trimethylbenzene	Not detected	5.0	ug/Kg	10/04/08	10/04/08
BLANK	Ethylbenzene	Not detected	5.0	ug/Kg	10/04/08	10/04/08
BLANK	m&p-Xylene	Not detected	5.0	ug/Kg	10/04/08	10/04/08
BLANK	o-Xylene	Not detected	5.0	ug/Kg	10/04/08	10/04/08
BLANK	Styrene	Not detected	5.0	ug/Kg	10/04/08	10/04/08
BLANK	Toluene	Not detected	5.0	ug/Kg	10/04/08	10/04/08
BLANK	Xylenes	Not detected	5.0	ug/Kg	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: 1,2-Dichloroethane-	102	59-120	%	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: 4-Bromofluorobenz	102	82-121	%	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: Dibromofluorometh	97.7	74-122	%	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: Toluene-D8	105	71-127	%	10/04/08	10/04/08

Quant Method: C86AFS.M
Run #: 1003C25
Instrument: Chico
Sequence: C081002
Initials: DG

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Method Blank
EPA 8260B MEOH

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081004S-84606 - 126483**
Batch ID: $8260M-081003BN

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	1,2,4-Trimethylbenzene	Not detected	25.0	ug/Kg	10/04/08	10/04/08
BLANK	Ethyl benzene	Not detected	25.0	ug/Kg	10/04/08	10/04/08
BLANK	m&p-Xylene	Not detected	25.0	ug/Kg	10/04/08	10/04/08
BLANK	o-Xylene	Not detected	25.0	ug/Kg	10/04/08	10/04/08
BLANK	Styrene	Not detected	25.0	ug/Kg	10/04/08	10/04/08
BLANK	Toluene	Not detected	25.0	ug/Kg	10/04/08	10/04/08
BLANK	Xylenes	Not detected	25.0	ug/Kg	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: 1,2-Dichloroethane-	104	70-125	%	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: 4-Bromofluorobenz	103	72-133	%	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: Dibromofluorometh	108	78-125	%	10/04/08	10/04/08
BLANK	Surrogate recovery: Surrogate: Toluene-D8	102	73-124	%	10/04/08	10/04/08

Quant Method: N826AW.M
Run #: 1003N22
Instrument: Neo
Sequence: N081002
Initials: DG

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Laboratory Control Spike Recovery
EPA 8260B Soil

APPL ID: **081003S-84606 LCS - 126438**
Batch ID: $8260S-081003BC

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
1,2,4-Trimethylbenzene	50.0	45.7	91.4	65-135
Ethylbenzene	50.0	48.2	96.4	78-127
m&p-Xylene	100	98.5	98.5	85-121
o-Xylene	50.0	48.4	96.8	85-121
Styrene	50.0	48.0	96.0	65-135
Toluene	50.0	45.6	91.2	60-135
Xylenes	150	147	98.0	70-135
Surrogate: 1,2-Dichloroethane-d4	29.0	29.3	101	59-120
Surrogate: 4-Bromofluorobenzene	31.0	31.5	102	82-121
Surrogate: Dibromofluoromethane	31.0	29.3	94.5	74-122
Surrogate: Toluene-D8	32.0	30.7	95.9	71-127

omments: _____

Primary	SPK
Quant Method :	C86AFS.M
Extraction Date :	10/03/08
Analysis Date :	10/03/08
Instrument :	Chico
Run :	1003C20
Initials :	DG

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APPL Standard LCS

Laboratory Control Spike Recovery

EPA 8260B MEOH

APPL ID: **081004S-84606 LCS - 126483**
Batch ID: $8260M-081003BN

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
,2,4-Trimethylbenzene	500	459	91.8	65-135
n&p-Xylene	1000	905	90.5	85-121
-Xylene	500	467	93.4	85-121
Styrene	500	471	94.2	65-135
Toluene	500	482	96.4	69-122
Xylenes	1500	1370	91.3	73-145
Surrogate: 1,2-Dichloroethane-d4	18.8	19.9	106	70-125
Surrogate: 4-Bromofluorobenzene	20.3	19.9	97.9	72-133
Surrogate: Dibromofluoromethane	20.3	21.4	105	78-125
Surrogate: Toluene-D8	21.5	21.6	100	73-124

omments: _____

Primary	SPK
Quant Method :	N826AW.M
Extraction Date :	10/04/08
Analysis Date :	10/04/08
Instrument :	Neo
Run :	1003N21
Initials :	DG

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APPL Standard LCS

Wet Lab Analysis

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd

Project: Makua Shellfish Study

Sample ID: MNS-03

Sample Collection Date: 09/29/08

APPL ID: AX84606

ARF: 57114

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date
EPA 314.0	Perchlorate in Solids	1050	150.0	10.30	ug/Kg	10/07/08	10/07/08

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APPL-F1-SC-NoMC-REG MDLs

Wetlab Results

ARF: 57114

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

Attn: Gary Floyd

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AX84606	-Client Sample ID: MNS-03		-Sample Collection Date: 09/29/08		Project: Makua Shellfish Study	
CLP MOIST	Moisture	48.1	2.0	%	10/02/08	10/03/08

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WETLAB BLANK

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Analyte	Result	PQL	Units	Prep Date	Anal Date	QC Group
EPA 314.0	Perchlorate in Solids	Not detected	30.0	ug/Kg	10/06/08	10/06/08	$314S-081006A-AX84606

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Laboratory Control Spike Recoveries

WETLAB

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Compound Name	Spike Lvl ug/Kg	SPK Res ug/Kg	DUP Res ug/Kg	SPK % Recov	DUP % Recov	RPD	RPD Max	QC Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group
EPA 314.0	Perchlorate in Solids	100.0	101	96.9	101	96.9	4.1	15	85-115	10/06/08	10/06/08	10/06/08	10/06/08	$314S-081006A-AX84606

Comments: _____

Printed: 10/10/08 2:37:10 PM
APPL Standard LCSD

CHAIN-OF-CUSTODY RECORD

TETRA TECH

Client Name/Account #: TetraTech, Inc.
Address: 737 Bishop St., Suite 3020
City/State/Zip: Honolulu, HI 96813
Project Manager: Gary Floyd
Telephone Number: (808)533-3366 **Fax No.:** (808)533-3306
Sampler Name: (Print) Maren Anderson
Sampler Signature: Maren Anderson

Report To: Gary Floyd, Susan Carstenn, Yvonne Parry
Invoice To: Yvonne Parry
Project ID: Makua Shellfish Study
Project #: 100-SFO-T95M78

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Multi-incremental Sample	Preservative: Ice	Preservative: HNO_3 (Red Label)	Preservative: HCl (Blue Label)	Preservative: NaOH (Orange Label)	Preservative: H_2SO_4 Plastic (Yellow Label)	Preservative: H_2SO_4 Glass(Yellow Label)	Preservative: None (Black Label)	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Wastewater	Matrix: Drinking Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: See attached Table	Analyze For: Homogenization	Analyze For: Split and have Test America analyze 2nd half for QC purposes								RUSH TAT (Pre-Schedule)	Standard TAT		
MNS – Ø 3	9/29/08	1145	11		X		X						X							X	X	X	X										X	

Special Instructions: Please remove shells from sample and homogenize sample "flesh" as previously discussed. Analyte table is attached to this COC. Temperature blank is enclosed in cooler. Above sample is to be split and one half is to be sent to Test America Sacramento for split QC analysis for same analytes.

Method of Shipment: FEDEX

Laboratory Comments:
Temperature Upon Receipt:
VOCs Free of Headspace? Y N

Relinquished by:	Date	Time	Received by:	Date	Time
Maren Anderson	9.29.08	17:50	Yvonne Parry Y. PARRY	9.29.08	17:50
Relinquished by: Yvonne Parry Y. PARRY	9.30.08	13:00	Received by Laboratory:	10/01/08	9:30

Laboratory Report

Tetra Tech, Inc.

Makua Shellfish Study

ARF 57121

Sampling Date: September 29, 2008

AMENDED PAGE

AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES, INC.

4203 West Swift ∇ Fresno, California 93722 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Case Narrative

ARF: 57121

Project: Makua Shellfish Study

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: 05233CA (HW)

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Receipt Information:

The sample was received October 2, 2008, at 2.0°C. The sample was assigned Analytical Request Form (ARF) number 57121. The sample number and requested analyses were compared to the chain of custody. No exception was noted.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
MNM-04	AX84636	MISC	09/29/08	10/02/08

Percent moisture was determined using CLP 4.0. The sample results are reported "as is" without moisture correction, as instructed.

EPA Method 8330B
Energetics

Sample Preparation:

The tissue sample was extracted according to EPA 8330. All hold times were met.

Analysis:

The sample was analyzed according to EPA Method 8330B using an Agilent 1100 HPLC with UV detector.

Quality Control/Assurance:

Spike Recovery

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

Method blanks:

No target analyte was detected at or above the MDL in the method blank.

Surrogates:

The LCS recovered 1,2-Dinitrobenzene slightly below the 70% lower control limit at 69%. All other surrogates had acceptable recoveries.

Calibration:

The initial and continuing calibrations and second source were analyzed according to the method. All calibration criteria were met.

Summary:

No other analytical problem was encountered.

EPA Method 8270C
Semivolatile Organic Compounds

Sample Preparation:

The sample was extracted according to EPA method 3550B. All holding times were met.

Sample Analysis Information:

The sample was analyzed according to EPA Method 8270C using a Hewlett Packard GC/MS.

Quality Control/Assurance

Spike Recovery

A Laboratory Control Spike (LCS) was used for quality assurance. All spike recoveries were acceptable.

No sample was designated by the client for an MS/MSD analysis.

Method blanks

No target compound was detected at or above the method detection limit.

Surrogates

The sample recovered Terphenyl-d14 above the 135% upper control limit at 141%. All other surrogate recoveries were within control limits.

Calibration

The initial and continuing calibrations were performed according to the method. All method acceptance criteria were met.

Tuning:

The instrument was tuned using DFTPP. All method criteria were met.

Internal Standards

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8270. All method criteria were met.

Summary:

No other problem was encountered. The data generated are acceptable.

EPA Methods 6020 and 7471A
Metals

Sample Preparation

The tissue sample as digested according to the EPA methods 3051, 3051A, and 7471A.

Analysis Information:

The sample was analyzed for total metals according to EPA method 6020 using a Perkin Elmer Elan 6100 ICP-MS and according to EPA method 7471A using a Perkin Elmer AAnalyst 300. The sample was analyzed twice undiluted; however the internal standards failed. The sample was then analyzed at a dilution factor of 1:5, and internal standard recoveries were acceptable. All holding times were met.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard.

Blanks:

The method blanks and continuing calibration blanks were screened down to the method detection limits. No target metal was detected at concentrations greater than one-half the reporting limits.

Spikes:

Laboratory Control Spikes (LCS/LCSD) were used for quality assurance. All LCS recoveries met acceptance criteria.

No sample was designated by the client for an MS/MSD analysis.

Summary:

No analytical exception is noted. All data are acceptable.

EPA Method 8081A
Pesticides

Sample Preparation:

The sample was extracted according to EPA method 3550B. All holding times were met.

Analysis Information:

Samples:

The sample was analyzed for Pesticides according to EPA method 8081A using a Hewlett Packard GC equipped with an ECD.

Calibrations:

Initial and continuing calibrations were performed according to the method. All acceptance criteria were met.

Blanks:

No target analyte was detected above the reporting limit for the method blanks.

Spikes and Duplicates:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for an MS/MSD analysis.

Surrogates:

All surrogates recovered within acceptance limits.

Summary:

No analytical problem was encountered. The data generated are acceptable.

EPA Method 8290A
Dioxins/Furans by GC-HRMS

Sample Preparation:

The sample was extracted according to EPA method 3540C. The percent lipid content was determined using the procedures listed in EPA 8290. All holding times were met.

Sample Analysis Information:

The sample was analyzed according to EPA method 8290A using a Hewlett Packard Gas Chromatograph with a Waters AutoSpec High Resolution Mass Spectrometer detector.

Quality Control/Assurance

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

Two analytes were detected in the method blank below the PQL, at J-value levels: 1.2.3.4.7.8.9-HpCDF (0.17 ng/kg) and 2.3.4.7.8-HxCDD (0.18 ng/kg). These analytes were not detected in the associated sample. No target analyte was detected above the reporting limits in the method blank.

Spikes:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for an MS/MSD analysis.

Surrogates

For the method blank, the 13C-2.3.7.8-TCDD surrogate recovered below the 40% control limit, at 24.1%. All of the sample surrogates were within acceptance criteria.

Summary:

No other problem was encountered. The data generated are acceptable.

EPA Method 8260B
Volatile Organic Compounds

Preparation Information:

The fish tissue sample was purged according to EPA method 5035.

Analysis Information:

The samples were analyzed according to EPA method 8260B using a Hewlett Packard GC/MS.

Quality Control/Assurance

Spike Recoveries

A Laboratory Control Spike (LCS) was used for quality assurance. A second source standard was used for the LCS. All recoveries met acceptance criteria.

No sample was designated by the client for an MS/MSD analysis.

Method blanks

The blank contained no target compound at or above reporting limits.

Surrogates

All other recoveries were within acceptance limits.

Initial and Continuing Calibrations

Initial and continuing calibrations were analyzed according to the method. All acceptance criteria were met.

Internal Standards

Internal standard recoveries were checked against the mid-point of the initial calibrations. All IS recoveries were acceptable.

Tuning:

The instrument was tuned using BFB. All method criteria were met.

Summary:

No exception was noted.

EPA Method 314.0
Perchlorate

Sample Preparation:

The sample was prepared according to the method. All holding times were met.

Analysis Information:

The sample was analyzed according to the method using a Dionex DX500 ion chromatograph.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the method. The ICV is prepared from a second source standard.

Blanks:

The blank contained no Perchlorate at or above half the reporting limit.

Spikes:

Laboratory control spikes (LCS/LCSD) were used for quality assurance. All acceptance criteria were met.

Summary:

All data were acceptable. No analytical exception is noted.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

11/7/08

Leonard Fong, Ph.D, Laboratory Director / Date

EPA 8330A Explosives-Soil

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNM-04
Sample Collection Date: 9/29/2008

ARF: 57121
APPL ID: AX84636
QCG: $83TTS-081013A-127499

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8330	2,4-DNT	Not detected	0.50	0.083	mg/kg	10/13/2008	11/6/1989
EPA 8330	Nitroglycerine	Not detected	0.50	0.085	mg/kg	10/13/2008	11/6/1989
EPA 8330	RDX	Not detected	0.50	0.080	mg/kg	10/13/2008	11/6/1989
EPA 8330	Surrogate: 1,2-Dinitrobenzene (S)	88.1	70-130		%	10/13/2008	11/6/1989

Quant Method: E2_1104.M
Run #: 1104_034.D
Instrument: UV1200
Sequence: 081104
Dilution Factor: 1
Initials: RJB

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APPL-F1-SC-NoMC-REG MDLs

Method Blank

EPA 8330A Explosives-Soil

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081013S-84606 - 127499**
Batch ID: $83TTS-081013A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	2,4-DNT	Not detected	0.50	0.083	mg/kg	10/13/2008	10/20/2008
BLANK	Nitroglycerine	Not detected	0.50	0.085	mg/kg	10/13/2008	10/20/2008
BLANK	RDX	Not detected	0.50	0.080	mg/kg	10/13/2008	10/20/2008
BLANK	Surrogate: 1,2-Dinitrobenzene (S)	77.8	70-130		%	10/13/2008	10/20/2008

Quant Method: C18_1008.M
Run #: 1104_033.D
Instrument: UV2
Sequence: 081008
Initials: RJB

GC SC-Blank-REG MDLs
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Laboratory Control Spike Recovery
EPA 8330A Explosives-Soil

APPL ID: **081013S-84606 LCS - 127499**
Batch ID: $83TTS-081013A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level mg/kg	SPK Result mg/kg	SPK % Recovery	Recovery Limits
2,4-DNT	1.0	1.02	102	80-125
Nitroglycerine	1.0	1.07	107	75-125
RDX	1.0	0.890	89.0	70-135
Surrogate: 1,2-Dinitrobenzene	1.0	0.690	69.0 #	70-130

= Recovery is outside QC limits.

Comments:

Primary	SPK
Quant Method :	C18_1008.M
Extraction Date :	10/13/2008
Analysis Date :	10/16/2008
Instrument :	UV2
Run :	1015_040.D
Initials :	RJB

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APPL Standard LCS

EPA 8270C Soils

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNM-04
Sample Collection Date: 09/29/08

ARF: 57121
APPL ID: AX84636
QCG: $8270S-081013A-126829

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8270C	Bis (2-ethylhexyl) phthalate	Not detected	330	61.6	ug/Kg	10/13/08	10/18/08
EPA 8270C	Di-n-butylphthalate	Not detected	330	65.9	ug/Kg	10/13/08	10/18/08
EPA 8270C	Di-n-octylphthalate	Not detected	330	58.4	ug/Kg	10/13/08	10/18/08
EPA 8270C	Diethyl phthalate	Not detected	330	62.1	ug/Kg	10/13/08	10/18/08
EPA 8270C	Pentachlorophenol	Not detected	330	58.7	ug/Kg	10/13/08	10/18/08
EPA 8270C	Pyrene	Not detected	330	54.1	ug/Kg	10/13/08	10/18/08
EPA 8270C	Surrogate: 2,4,6-Tribromophenol (S)	64.0	44-114		%	10/13/08	10/18/08
EPA 8270C	Surrogate: 2-Fluorbiphenyl (S)	59.8	39-116		%	10/13/08	10/18/08
EPA 8270C	Surrogate: 2-Fluorophenol (S)	71.2	48-118		%	10/13/08	10/18/08
EPA 8270C	Surrogate: Nitrobenzene-D5 (S)	67.8	49-142		%	10/13/08	10/18/08
EPA 8270C	Surrogate: Phenol (S)	70.5	47-122		%	10/13/08	10/18/08
EPA 8270C	Surrogate: Terphenyl-d14 (S)	141 #	40-135		%	10/13/08	10/18/08

= Recovery (or RPD) is outside QC limits.

Quant Method: Y8270D.M
Run #: 1018Y012
Instrument: YODA
Sequence: Y080912
Dilution Factor: 1
Initials: LF

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APPL-F1-SC-NoMC-REG MDLs

Method Blank
EPA 8270C Soils

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081013S-84606 - 126829**
Batch ID: $8270S-081013A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	Bis (2-ethylhexyl) phthalate	Not detected	330	61.6	ug/Kg	10/13/08	10/18/08
BLANK	Di-n-butylphthalate	Not detected	330	65.9	ug/Kg	10/13/08	10/18/08
BLANK	Di-n-octylphthalate	Not detected	330	58.4	ug/Kg	10/13/08	10/18/08
BLANK	Diethyl phthalate	Not detected	330	62.1	ug/Kg	10/13/08	10/18/08
BLANK	Pentachlorophenol	Not detected	330	58.7	ug/Kg	10/13/08	10/18/08
BLANK	Pyrene	Not detected	330	54.1	ug/Kg	10/13/08	10/18/08
BLANK	Surrogate: 2,4,6-Tribromophenol (S)	74.6	44-114		%	10/13/08	10/18/08
BLANK	Surrogate: 2-Fluorbiphenyl (S)	70.1	39-116		%	10/13/08	10/18/08
BLANK	Surrogate: 2-Fluorophenol (S)	72.2	48-118		%	10/13/08	10/18/08
BLANK	Surrogate: Nitrobenzene-D5 (S)	68.7	49-142		%	10/13/08	10/18/08
BLANK	Surrogate: Phenol (S)	73.9	47-122		%	10/13/08	10/18/08
BLANK	Surrogate: Terphenyl-d14 (S)	80.5	40-135		%	10/13/08	10/18/08

Quant Method: Y8270D.M
Run #: 1018Y003
Instrument: YODA
Sequence: Y080912
Initials: LF

GC SC-Blank-REG MDLs
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Laboratory Control Spike Recovery
EPA 8270C Soils

APPL ID: **081013S-84606 LCS - 126829**
Batch ID: $8270S-081013A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
Bis (2-ethylhexyl) phthalate	1670	1570	94.0	38-148
Di-n-butylphthalate	1670	1370	82.0	36-151
Di-n-octylphthalate	1670	1540	92.2	51-139
Diethyl phthalate	1670	1370	82.0	51-126
Pentachlorophenol	1670	1270	76.0	32-150
Pyrene	1670	1490	89.2	45-137
Surrogate: 2,4,6-Tribromophenol	6670	5200	78.0	44-114
Surrogate: 2-Fluorbiphenyl	3330	2610	78.4	39-116
Surrogate: 2-Fluorophenol	6670	5300	79.5	48-118
Surrogate: Nitrobenzene-D5	3330	2500	75.1	49-142
Surrogate: Phenol	6670	5310	79.6	47-122
Surrogate: Terphenyl-d14	3330	2820	84.7	40-135

Comments:

Primary	SPK
Quant Method :	Y8270D.M
Extraction Date :	10/13/08
Analysis Date :	10/18/08
Instrument :	YODA
Run :	1018Y004
Initials :	LF

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APPL Standard LCS

Metals Analysis

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNM-04
Sample Collection Date: 09/29/08

ARF: 57121
APPL ID: AX84636

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020	Aluminum (Al)	33.3	10.0	0.30	mg/Kg	5	10/16/08	10/23/08
6020	Antimony (Sb)	Not detected	0.5	0.15	mg/Kg	5	10/16/08	10/22/08
6020	Arsenic (As)	2.4 J	2.5	0.40	mg/Kg	5	10/16/08	10/22/08
6020	Barium (Ba)	26.3	0.5	0.20	mg/Kg	5	10/16/08	10/22/08
6020	Beryllium (Be)	Not detected	5.0	0.35	mg/Kg	5	10/16/08	10/23/08
6020	Cadmium (Cd)	Not detected	0.5	0.15	mg/Kg	5	10/16/08	10/22/08
6020	Chromium (Cr)	0.94 J	2.5	0.10	mg/Kg	5	10/16/08	10/23/08
6020	Cobalt (Co)	0.17 J	0.5	0.10	mg/Kg	5	10/16/08	10/23/08
6020	Copper (Cu)	21.3	0.5	0.20	mg/Kg	5	10/16/08	10/22/08
6020	Iron (Fe)	92.2	50.0	15.00	mg/Kg	5	10/16/08	10/23/08
6020	Lead (Pb)	Not detected	0.5	0.10	mg/Kg	5	10/16/08	10/22/08
6020	Manganese (Mn)	70.3	0.5	0.25	mg/Kg	5	10/16/08	10/23/08
7471A/7471A	Mercury	0.022 J	0.1	0.02	mg/Kg	1	10/03/08	10/06/08
6020	Selenium (Se)	0.68 J	1.0	0.20	mg/Kg	5	10/16/08	10/22/08
6020	Silver (Ag)	Not detected	0.5	0.10	mg/Kg	5	10/16/08	10/22/08
6020	Thallium (Tl)	Not detected	0.5	0.10	mg/Kg	5	10/16/08	10/22/08
6020	Vanadium (V)	0.35 J	0.5	0.10	mg/Kg	5	10/16/08	10/23/08
6020	Zinc (Zn)	31.2	10.0	0.65	mg/Kg	5	10/16/08	10/22/08

J = Estimated value.

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APPL-F1-SC-NoMC-REG MDLs

METALS BLANK

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
6020	Antimony (Sb)	Not detected	0.1	0.03	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Arsenic (As)	Not detected	0.5	0.08	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Barium (Ba)	Not detected	0.1	0.04	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Cadmium (Cd)	Not detected	0.1	0.03	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Copper (Cu)	Not detected	0.1	0.04	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Lead (Pb)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Selenium (Se)	Not detected	0.2	0.04	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Silver (Ag)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Thallium (Tl)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Zinc (Zn)	0.45 J	2.0	0.13	mg/Kg	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Aluminum (Al)	0.39 J	2.0	0.06	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Beryllium (Be)	Not detected	1.0	0.07	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Chromium (Cr)	Not detected	0.5	0.02	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Cobalt (Co)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Iron (Fe)	Not detected	10.0	2.91	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Manganese (Mn)	Not detected	0.1	0.05	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
6020	Vanadium (V)	Not detected	0.1	0.02	mg/Kg	10/16/08	10/23/08	$6020S-081016A1-AX84606
7471A	Mercury	Not detected	0.1	0.02	mg/Kg	10/03/08	10/06/08	$HG-S-081003A1-AX84636

Metals SC-Blank-REG MDLs
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Laboratory Control Spike Recoveries

METALS

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Compound Name	Spike Lvl mg/Kg	SPK Res mg/Kg	DUP Res mg/Kg	SPK % Recov	DUP % Recov	RPD	RPD Max	QC Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group
6020	Aluminum (Al)	400	394	423	98.5	106	7.1	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Antimony (Sb)	50.0	54.7	56.9	109	114	3.9	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Arsenic (As)	50.0	51.2	53.6	102	107	4.6	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Barium (Ba)	50.0	54.1	54.4	108	109	0.6	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Beryllium (Be)	10.00	10.4	10.5	104	105	1.0	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Cadmium (Cd)	10.00	10.5	10.7	105	107	1.9	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Chromium (Cr)	50.0	51.5	51.8	103	104	0.6	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Cobalt (Co)	50.0	48.1	48.8	96.2	97.6	1.4	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Copper (Cu)	50.0	52.6	55.3	105	111	5.0	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Iron (Fe)	200	193	194	96.5	97.0	0.5	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Lead (Pb)	50.0	53.2	54.1	106	108	1.7	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Manganese (Mn)	50.0	48.4	50.1	96.8	100	3.5	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Selenium (Se)	50.0	53.2	55.7	106	111	4.6	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Silver (Ag)	20.0	19.5	19.9	97.5	99.5	2.0	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Thallium (Tl)	50.0	56.7	56.7	113	113	0.0	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
6020	Vanadium (V)	50.0	51.7	53.3	103	107	3.0	20	80-120	10/16/08	10/23/08	10/16/08	10/23/08	$6020S-081016A1-AX8460
6020	Zinc (Zn)	100.0	105	109	105	109	3.7	20	80-120	10/16/08	10/22/08	10/16/08	10/22/08	$6020S-081016A-AX84606
EPA 7471A	Mercury	0.667	0.71	0.72	106	108	1.4	20	80-120	10/03/08	10/06/08	10/03/08	10/06/08	$HG-S-081003A1-AX84636

Comments: _____

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APPL Standard LCSD

EPA 8081A SOIL

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNM-04
Sample Collection Date: 09/29/08

ARF: 57121
APPL ID: AX84636
QCG: $88SS-081013A-126809

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 8081A	4,4'-DDT	Not detected	5.0	0.40	ug/Kg	10/13/08	10/17/08
EPA 8081A	a-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
EPA 8081A	Aldrin	Not detected	5.0	1.40	ug/Kg	10/13/08	10/17/08
EPA 8081A	b-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
EPA 8081A	d-BHC	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
EPA 8081A	g-BHC (Lindane)	Not detected	5.0	0.90	ug/Kg	10/13/08	10/17/08
EPA 8081A	Heptachlor	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
EPA 8081A	Heptachlor epoxide	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
EPA 8081A	Surrogate: Decachlorobiphenyl (S)	90.3	29-125		%	10/13/08	10/17/08
EPA 8081A	Surrogate: TCmX (S)	93.7	40-123		%	10/13/08	10/17/08

Quant Method: OCLB.M
Run #: 0930260
Instrument: Ethel
Sequence: 080930
Dilution Factor: 1
Initials: MA

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APPL-F1-SC-NoMC-REG MDLs

Method Blank
EPA 8081A SOIL

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081013S-84606 - 126809**
Batch ID: $88SS-081013A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	4,4'-DDT	Not detected	5.0	0.40	ug/Kg	10/13/08	10/17/08
BLANK	a-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
BLANK	Aldrin	Not detected	5.0	1.40	ug/Kg	10/13/08	10/17/08
BLANK	b-BHC	Not detected	5.0	1.00	ug/Kg	10/13/08	10/17/08
BLANK	d-BHC	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
BLANK	g-BHC (Lindane)	Not detected	5.0	0.90	ug/Kg	10/13/08	10/17/08
BLANK	Heptachlor	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
BLANK	Heptachlor epoxide	Not detected	5.0	1.10	ug/Kg	10/13/08	10/17/08
BLANK	Surrogate: Decachlorobiphenyl (S)	75.1	29-125		%	10/13/08	10/17/08
BLANK	Surrogate: TCmX (S)	68.1	40-123		%	10/13/08	10/17/08

Quant Method: OCLB.M
Run #: 0930257
Instrument: Ethel
Sequence: 080930
Initials: MA

GC SC-Blank-REG MDLs
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Laboratory Control Spike Recovery
EPA 8081A SOIL

APPL ID: **081013S-84606 LCS - 126809**
Batch ID: $88SS-081013A

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
4,4'-DDT	333	260	78.1	47-120
a-BHC	333	256	76.9	41-114
Aldrin	333	262	78.7	40-108
b-BHC	333	283	85.0	63-129
d-BHC	333	280	84.1	52-105
g-BHC (Lindane)	333	268	80.5	46-114
Heptachlor	333	258	77.5	48-115
Heptachlor epoxide	333	268	80.5	61-110
Surrogate: Decachlorobiphenyl	333	261	78.4	29-125
Surrogate: TCmX	333	157	47.1	40-123

Comments: _____

Primary	SPK
Quant Method :	OCLB.M
Extraction Date :	10/13/08
Analysis Date :	10/17/08
Instrument :	Ethel
Run :	0930258
Initials :	MA

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APPL Standard LCS

EPA 8290 - Dioxins and Furans

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNM-04
Sample Collection Date: 09/29/08

ARF: 57121
APPL ID: AX84636
QCG: $829ET27S-081010-12720

Method	Analyte	Result	EDL / EMPC	Units	Extraction Date	Analysis Date
EPA 8290	1,2,3,4,6,7,8-heptachloro-dibenzofuran	Not detected	0.37	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxi	Not detected	1.84	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,7,8,9-heptachloro-dibenzofuran	Not detected	0.18	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,7,8-hexachloro-dibenzofuran	Not detected	0.18	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	Not detected	0.21	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,6,7,8-hexachloro-dibenzofuran	Not detected	0.17	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	1.2 J	NA	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8,9-hexachloro-dibenzofuran	Not detected	0.06	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	0.83 J	NA	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8-pentachloro-dibenzofuran	Not detected	0.28	ng/kg	10/10/08	10/23/08
EPA 8290	1,2,3,7,8-pentachlorodibenzo-p-dioxin	Not detected	0.91	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,4,6,7,8-hexachloro-dibenzofuran	Not detected	0.29	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,4,7,8-pentachloro-dibenzofuran	Not detected	0.11	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,7,8-tetrachloro-dibenzofuran	1.7	NA	ng/kg	10/10/08	10/23/08
EPA 8290	2,3,7,8-tetrachlorodibenzo-p-dioxin	Not detected	0.7	ng/kg	10/10/08	10/23/08
EPA 8290	octachloro-dibenzofuran	Not detected	0.21	ng/kg	10/10/08	10/23/08
EPA 8290	octachlorodibenzo-p-dioxin	3.0 J	NA	ng/kg	10/10/08	10/23/08
EPA 8290	TCDD, total	3.3	NA	ng/kg	10/10/08	10/23/08
EPA 8290	TCDF, total	1.7 J	NA	ng/kg	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (S)	77.8	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (S)	80.9	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,4,7,8-HxCDF (S)	62.0	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,6,7,8-HxCDD (S)	66.2	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,7,8-PeCDD (S)	52.5	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-1,2,3,7,8-PeCDF (S)	59.1	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-2,3,7,8-TCDD (S)	50.6	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-2,3,7,8-TCDF (S)	65.6	40-135	%	10/10/08	10/23/08
EPA 8290	Surrogate: 13C-OCDD (S)	58.0	40-135	%	10/10/08	10/23/08

J = Estimated value.

Quant Method: 8290_081014
Run #: 081022_HR_16
Instrument: Magneto
Sequence: 081022
Dilution Factor: 1
Initials: RP

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Form 1 - APPL Standard GC - No MC

Lipid

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNM-04
Sample Collection Date: 9/29/2008

ARF: 57121
APPL ID: AX84636
QCG: $LIPID-081010A-127440

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
%Lipid	Lipids	0.70	NA	%	10/10/2008	10/13/2008

Quant Method: NA
Run #: NA
Instrument: NA
Sequence: NA
Dilution Factor: 1
Initials: RP

Printed: 11/5/2008 12:09:49 PM
Form 1 - APPL Standard GC - No MC

Method Blank

EPA 8290 - Dioxins and Furans

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081010S-84606 - 127202**
Batch ID: $829ET27S-081010

Sample Type	Analyte	Result	EDL / EMPC	Units	Extraction Date	Analysis Date
BLANK	1,2,3,4,6,7,8-heptachloro-dibenzofuran	Not detected	0.042	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxi	Not detected	0.26	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,7,8,9-heptachloro-dibenzofuran	0.17 J	NA	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,7,8-hexachloro-dibenzofuran	Not detected	0.12	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	0.18 J	NA	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,6,7,8-hexachloro-dibenzofuran	Not detected	0.074	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	Not detected	0.064	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8,9-hexachloro-dibenzofuran	Not detected	0.044	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	Not detected	0.085	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8-pentachloro-dibenzofuran	Not detected	0.061	ng/kg	10/10/08	10/23/08
BLANK	1,2,3,7,8-pentachlorodibenzo-p-dioxin	Not detected	0.11	ng/kg	10/10/08	10/23/08
BLANK	2,3,4,6,7,8-hexachloro-dibenzofuran	Not detected	0.15	ng/kg	10/10/08	10/23/08
BLANK	2,3,4,7,8-pentachloro-dibenzofuran	Not detected	0.027	ng/kg	10/10/08	10/23/08
BLANK	2,3,7,8-tetrachloro-dibenzofuran	Not detected	0.26	ng/kg	10/10/08	10/23/08
BLANK	2,3,7,8-tetrachlorodibenzo-p-dioxin	Not detected	0.26	ng/kg	10/10/08	10/23/08
BLANK	octachloro-dibenzofuran	Not detected	0.016	ng/kg	10/10/08	10/23/08
BLANK	octachlorodibenzo-p-dioxin	Not detected	1.3	ng/kg	10/10/08	10/23/08
BLANK	TCDD, total	Not detected	3.8	ng/kg	10/10/08	10/23/08
BLANK	TCDF, total	Not detected	1.9	ng/kg	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (S)	74.8	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (S)	71.8	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,4,7,8-HxCDF (S)	63.7	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,6,7,8-HxCDD (S)	61.1	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,7,8-PeCDD (S)	52.5	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-1,2,3,7,8-PeCDF (S)	59.5	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-2,3,7,8-TCDD (S)	24.1 #	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-2,3,7,8-TCDF (S)	61.8	40-135	%	10/10/08	10/23/08
BLANK	Surrogate: 13C-OCDD (S)	65.8	40-135	%	10/10/08	10/23/08

J = Estimated value.
# = Recovery (or RPD) is outside QC limits.

Quant Method: 8290_081014
Run #: 081022_HR_09
Instrument: Magneto
Sequence: 081022
Initials: RP

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Laboratory Control Spike Recoveries

EPA 8290 - Dioxins and Furans

APPL ID: **081010S-84606 LCS - 127202**
Batch ID: $829ET27S-081010

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ng/kg	SPK Result ng/kg	DUP Result ng/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
1,2,3,4,6,7,8-heptachloro-dibenzofuran	125	129	131	103	105	70-130	1.5	30
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxi	125	117	128	93.6	102	70-130	9.0	30
1,2,3,4,7,8,9-heptachloro-dibenzofuran	125	118	118	94.4	94.4	70-130	0.0	30
1,2,3,4,7,8-hexachloro-dibenzofuran	125	133	133	106	106	70-130	0.0	30
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	125	132	134	106	107	70-130	1.5	30
1,2,3,6,7,8-hexachloro-dibenzofuran	125	131	141	105	113	70-130	7.4	30
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	125	136	137	109	110	70-130	0.73	30
1,2,3,7,8,9-hexachloro-dibenzofuran	125	133	138	106	110	70-130	3.7	30
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	125	138	147	110	118	70-130	6.3	30
1,2,3,7,8-pentachloro-dibenzofuran	125	142	143	114	114	70-130	0.70	30
1,2,3,7,8-pentachlorodibenzo-p-dioxin	125	127	129	102	103	70-130	1.6	30
2,3,4,6,7,8-hexachloro-dibenzofuran	125	141	131	113	105	70-130	7.4	30
2,3,4,7,8-pentachloro-dibenzofuran	125	130	127	104	102	70-130	2.3	30
2,3,7,8-tetrachloro-dibenzofuran	50.0	54.1	53.0	108	106	70-130	2.1	30
2,3,7,8-tetrachlorodibenzo-p-dioxin	50.0	53.1	53.9	106	108	70-130	1.5	30
octachloro-dibenzofuran	250	253	265	101	106	70-130	4.6	30
octachlorodibenzo-p-dioxin	250	256	270	102	108	70-130	5.3	30
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	625	450	438	72.0	70.1	40-135		
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	625	435	438	69.6	70.1	40-135		
Surrogate: 13C-1,2,3,4,7,8-HxCDF	625	403	400	64.5	64.0	40-135		
Surrogate: 13C-1,2,3,6,7,8-HxCDD	625	392	370	62.7	59.2	40-135		
Surrogate: 13C-1,2,3,7,8-PeCDD	250	141	146	56.4	58.4	40-135		
Surrogate: 13C-1,2,3,7,8-PeCDF	250	148	152	59.2	60.8	40-135		
Surrogate: 13C-2,3,7,8-TCDD	250	154	145	61.6	58.0	40-135		

Comments:

Primary	SPK	DUP
Quant Method :	8290_081014	8290_081014
Extraction Date :	10/10/2008	10/10/2008
Analysis Date :	10/22/2008	10/23/2008
Instrument :	Magneto	Magneto
Run :	081022_HR_06	081022_HR_07
Initials :	RP	

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APPL Standard LCSD

Laboratory Control Spike Recoveries

EPA 8290 - Dioxins and Furans

APPL ID: **081010S-84606 LCS - 127202**
Batch ID: $829ET27S-081010

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Lvl ng/kg	SPK Result ng/kg	DUP Result ng/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
Surrogate: 13C-2,3,7,8-TCDF	250	166	164	66.4	65.6	40-135		
Surrogate: 13C-OCDD	1250	863	863	69.0	69.0	40-135		

Comments:

Primary	SPK	DUP
Quant Method :	8290_081014	8290_081014
Extraction Date :	10/10/2008	10/10/2008
Analysis Date :	10/22/2008	10/23/2008
Instrument :	Magneto	Magneto
Run :	081022_HR_06	081022_HR_07
Initials :	RP	

Printed: 11/4/2008 4:19:53 PM
APPL Standard LCSD

EPA 8260B Soil

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd
Project: Makua Shellfish Study
Sample ID: MNM-04
Sample Collection Date: 09/29/08

ARF: 57121
APPL ID: AX84636
QCG: $8260S-081003AC-126437

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8260B	1,2,4-Trimethylbenzene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
EPA 8260B	Ethylbenzene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
EPA 8260B	m&p-Xylene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
EPA 8260B	o-Xylene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
EPA 8260B	Styrene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
EPA 8260B	Toluene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
EPA 8260B	Xylenes	Not detected	5.0	ug/Kg	10/03/08	10/03/08
EPA 8260B	Surrogate: 1,2-Dichloroethane-d4 (S)	106	59-120	%	10/03/08	10/03/08
EPA 8260B	Surrogate: 4-Bromofluorobenzene (S)	89.6	82-121	%	10/03/08	10/03/08
EPA 8260B	Surrogate: Dibromofluoromethane (S)	97.7	74-122	%	10/03/08	10/03/08
EPA 8260B	Surrogate: Toluene-D8 (S)	99.0	71-127	%	10/03/08	10/03/08

Quant Method: C86AFS.M
Run #: 1003C11
Instrument: Chico
Sequence: C081002
Dilution Factor: 1
Initials: DG

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Form 1 - APPL Standard GC - No MC

Method Blank
EPA 8260B Soil

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Blank Name/QCG: **081003S-84636 - 126437**
Batch ID: $8260S-081003AC

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	1,2,4-Trimethylbenzene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
BLANK	Ethylbenzene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
BLANK	m&p-Xylene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
BLANK	o-Xylene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
BLANK	Styrene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
BLANK	Toluene	Not detected	5.0	ug/Kg	10/03/08	10/03/08
BLANK	Xylenes	Not detected	5.0	ug/Kg	10/03/08	10/03/08
BLANK	Surrogate recovery: Surrogate: 1,2-Dichloroethane-	106	59-120	%	10/03/08	10/03/08
BLANK	Surrogate recovery: Surrogate: 4-Bromofluorobenz	99.2	82-121	%	10/03/08	10/03/08
BLANK	Surrogate recovery: Surrogate: Dibromofluorometh	97.7	74-122	%	10/03/08	10/03/08
BLANK	Surrogate recovery: Surrogate: Toluene-D8	102	71-127	%	10/03/08	10/03/08

Quant Method: C86AFS.M
Run #: 1003C06
Instrument: Chico
Sequence: C081002
Initials: DG

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Laboratory Control Spike Recovery
EPA 8260B Soil

APPL ID: **081003S-84636 LCS - 126437**
Batch ID: $8260S-081003AC

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
1,2,4-Trimethylbenzene	50.0	57.2	114	65-135
Ethylbenzene	50.0	55.0	110	78-127
m&p-Xylene	100	111	111	85-121
o-Xylene	50.0	55.0	110	85-121
Styrene	50.0	52.4	105	65-135
Toluene	50.0	54.2	108	60-135
Xylenes	150	166	111	70-135
Surrogate: 1,2-Dichloroethane-d4	29.3	30.2	103	59-120
Surrogate: 4-Bromofluorobenzene	31.3	29.9	95.7	82-121
Surrogate: Dibromofluoromethane	30.7	28.8	93.8	74-122
Surrogate: Toluene-D8	32.3	29.8	92.2	71-127

Comments:

Primary	SPK
Quant Method :	C86AFS.M
Extraction Date :	10/03/08
Analysis Date :	10/03/08
Instrument :	Chico
Run :	1003C02
Initials :	DG

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APPL Standard LCS

Wet Lab Analysis

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Attn: Gary Floyd

Project: Makua Shellfish Study

Sample ID: MNM-04

Sample Collection Date: 09/29/08

APPL ID: AX84636

ARF: 57121

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date
EPA 314.0	Perchlorate in Solids	Not detected	500.0	103.00	ug/Kg	10/07/08	10/07/08

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APPL-F1-SC-NoMC-REG MDLs

Wetlab Results

ARF: 57121

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

Attn: Gary Floyd

Method	Analyte	Result	PQL	Units	Prep Date	Analysis Date
APPL ID: AX84636	-Client Sample ID: MNM-04		-Sample Collection Date: 09/29/08		Project: Makua Shellfish Study	
CLP MOIST	Moisture	71.3	2.0	%	10/02/08	10/03/08

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WETLAB BLANK

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Analyte	Result	PQL	Units	Prep Date	Anal Date	QC Group
EPA 314.0	Perchlorate in Solids	Not detected	30.0	ug/Kg	10/06/08	10/06/08	$314S-081006A-AX84606

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Laboratory Control Spike Recoveries

WETLAB

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

Method	Compound Name	Spike Lvl ug/Kg	SPK Res ug/Kg	DUP Res ug/Kg	SPK % Recov	DUP % Recov	RPD	RPD Max	QC Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group
EPA 314.0	Perchlorate in Solids	100.0	101	96.9	101	96.9	4.1	15	85-115	10/06/08	10/06/08	10/06/08	10/06/08	$314S-081006A-AX84606

Comments: _____

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APPL Standard LCSD

WETLAB

Sample/Sample Duplicate Results

Tetra Tech, Inc.
737 Bishop St, ste 3020
Honolulu, HI 96813

Attn: Gary Floyd
Project: Makua Shellfish Study

Sample ID: AX84636
Client ID: MNM-04

APPL Inc.
4203 West Swift Avenue
Fresno, CA 93722

ARF: 57121

Method	Analyte	Sample ID	Sample Result	Sample Dup Result	RPD	RPD Max	PQL	Units	Sample Extract Date	Sample Analysis Date	Sample Dup Extract Date	Sample Dup Analysis Date
CLP MOIS	Moisture	AX84636	71.3	70.3	1.4	20	2.0	%	10/02/08	10/03/08	10/02/08	10/03/08

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CHAIN-OF-CUSTODY RECORD

TETRA TECH

Client Name/Account #: TetraTech, Inc.
Address: 737 Bishop St., Suite 3020
City/State/Zip: Honolulu, HI 96813
Project Manager: Gary Floyd
Telephone Number: (808)533-3366 Fax No.: (808)533-3306
Sampler Name: (Print) Maren Anderson
Sampler Signature: Maren Anderson

Report To: Gary Floyd, Susan Carstenn, Yvonne Parry
Invoice To: Yvonne Parry
Project ID: Makua Shellfish Study
Project #: 100-SFO-T95M78

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Multi-incremental Sample	Preservative: Ice	Preservative: HNO_3 (Red Label)	Preservative: HCl (Blue Label)	Preservative: NaOH (Orange Label)	Preservative: H_2SO_4 Plastic (Yellow Label)	Preservative: H_2SO_4 Glass(Yellow Label)	Preservative: None (Black Label)	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Wastewater	Matrix: Drinking Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: See attached Table	RUSH TAT (Pre-Schedule)	Standard TAT
MNM-04	9/29/08	1257	2		X		X						X							X	X		X

Special Instructions: Please ~~leave~~ remove shell and homogenize. Analyse for compounds listed in attached table. Temp blank is enclosed. (jar & 1 ziplock with sample seal)

Method of Shipment: FEDEX

Laboratory Comments:
Temperature Upon Receipt:
VOCs Free of Headspace? Y N

Relinquished by:	Date	Time	Received by:	Date	Time
Maren Anderson	MDA 10.01.08	0709	Yvonne Parry Y.PARRY	10.1.08	0709
Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
Yvonne Parry Y.PARRY	10.1.08	1200	[illegible]	10-2-08	0950

Laboratory Report

Tetra Tech, Inc.

Makua Shellfish Study

ARF 57149

Sampling Date: October 01, 2008

AMENDED PAGE

AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES, INC.

4203 West Swift ∇ Fresno, California 93722 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Case Narrative

ARF: 57149

Project: Makua Shellfish Study

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: 05233CA (HW)

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Receipt Information:

The sample group was received October 4, 2008, at 3.0°C and 2.5°C. The samples were assigned Analytical Request Form (ARF) number 57149. The sample number and requested analyses were compared to the chain of custody. Sample SBNS-01-B was placed on hold upon arrival, then taken off hold on October 9, per Yvonne Parry. No other exception was noted.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
SBNS-01A	AX84955	MISC	10/01/08	10/04/08
SBNS-01-B	AX84957	MISC	10/01/08	10/04/08

Percent moisture was determined using CLP 4.0. The sample results are reported "as is" without moisture correction, as instructed.

EPA Method 8330B
Energetics

Sample Preparation:

The tissue samples were extracted according to EPA 8330. All hold times were met.

Analysis:

The sample was analyzed according to EPA Method 8330B using an Agilent 1100 HPLC with UV detector.

Quality Control/Assurance:

Spike Recovery

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

Method blanks:

No target analyte was detected at or above the MDL in the method blank.

Surrogates:

The LCS recovered 1,2-Dinitrobenzene slightly below the 70% lower control limit at 69%. All other surrogates had acceptable recoveries.

Calibration:

The initial and continuing calibrations and second source were analyzed according to the method. All calibration criteria were met.

Summary:

No other analytical problem was encountered.

EPA Method 8270C
Semivolatile Organic Compounds

Sample Preparation:

The samples were extracted according to EPA method 3550B. All holding times were met.

Sample Analysis Information:

The samples were analyzed according to EPA Method 8270C using a Hewlett Packard GC/MS.

Quality Control/Assurance

Spike Recovery

A Laboratory Control Spike (LCS) was used for quality assurance. All spike recoveries were acceptable.

No sample was designated by the client for an MS/MSD analysis.

Method blanks

No target compound was detected at or above the method detection limit.

Surrogates

All surrogate recoveries were within control limits.

Calibration

The initial and continuing calibrations were performed according to the method. All method acceptance criteria were met.

Tuning:

The instrument was tuned using DFTPP. All method criteria were met.

Internal Standards

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8270. All method criteria were met.

Summary:

No problem was encountered. The data generated are acceptable.

EPA Methods 6020 and 7471A
Metals

Sample Preparation

The tissue samples were digested according to the EPA methods 3051, 3051A, and 7471A.

Analysis Information:

The samples were analyzed for total metals according to EPA method 6020 using a Perkin Elmer Elan 6100 ICP-MS and according to EPA method 7471A using a Perkin Elmer AAnalyst 300. The samples were analyzed twice undiluted; however the internal standards failed. The samples were then analyzed at a dilution factor of 1:5, and internal standard recoveries were acceptable. All holding times were met.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard.

Blanks:

The method blanks and continuing calibration blanks were screened down to the method detection limits. No target metal was detected at concentrations greater than one-half the reporting limits.

Spikes:

Laboratory Control Spikes (LCS/LCSD) were used for quality assurance. All LCS recoveries met acceptance criteria.

No sample was designated by the client for an MS/MSD analysis.

Summary:

No analytical exception is noted. All data are acceptable.

EPA Method 8081A
Pesticides

Sample Preparation:

The samples were extracted according to EPA method 3550B. All holding times were met.

Analysis Information:

Samples:

The samples were analyzed for Pesticides according to EPA method 8081A using a Hewlett Packard GC equipped with an ECD.

Calibrations:

Initial and continuing calibrations were performed according to the method. All acceptance criteria were met.

Blanks:

No target analyte was detected above the reporting limit for the method blank.

Spikes and Duplicates:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for an MS/MSD analysis.

Surrogates:

All surrogates recovered within acceptance limits.

Summary:

No analytical problem was encountered. The data generated are acceptable.

EPA Method 8290A
Dioxins/Furans by GC-HRMS

Sample Preparation:

The samples were extracted according to EPA method 3540C. The percent lipid content was determined using the procedures listed in EPA 8290. All holding times were met.

Sample Analysis Information:

The sampleswere analyzed according to EPA method 8290A using a Hewlett Packard Gas Chromatograph with a Waters AutoSpec High Resolution Mass Spectrometer detector.

Quality Control/Assurance

Calibrations:

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

Blanks:

Two analytes were detected in the method blank below the PQL, at J-value levels: 1.2.3.4.7.8.9-HpCDF (0.17 ng/kg) and 2.3.4.7.8-HxCDD (0.18 ng/kg). These analytes were not detected in the associated sample. No target analyte was detected above the reporting limits in the method blank.

Spikes:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for an MS/MSD analysis.

Surrogates

For the method blank, the 13C-2.3.7.8-TCDD surrogate recovered below the 40% control limit, at 24.1%. All of the sample surrogates were within acceptance criteria.

Summary:

No other problem was encountered. The data generated are acceptable.

EPA Method 8260B
Volatile Organic Compounds

Preparation Information:

The fish tissue samples were purged according to EPA method 5035.

Analysis Information:

The samples were analyzed according to EPA method 8260B using a Hewlett Packard GC/MS.

Quality Control/Assurance

Spike Recoveries

A Laboratory Control Spike (LCS) was used for quality assurance. A second source standard was used for the LCS. All recoveries met acceptance criteria.

No sample was designated by the client for an MS/MSD analysis.

Method blanks

The blank contained no target compound at or above reporting limits.

Surrogates

All other recoveries were within acceptance limits.

Initial and Continuing Calibrations

Initial and continuing calibrations were analyzed according to the method. All acceptance criteria were met.

Internal Standards

Internal standard recoveries were checked against the mid-point of the initial calibrations. Undiluted, sample SBNS-01A had low internal standard recoveries. The sample was re-analyzed diluted with acceptable IS recoveries. Both sets of data are included.

Tuning:

The instrument was tuned using BFB. All method criteria were met.

Summary:

No other exception was noted.

EPA Method 314.0
Perchlorate

Sample Preparation:

The samples were prepared according to the method. All holding times were met.

Analysis Information:

The sampleswere analyzed according to the method using a Dionex DX500 ion chromatograph.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the method. The ICV is prepared from a second source standard.

Blanks:

The blank contained no Perchlorate at or above half the reporting limit.

Spikes:

Laboratory control spikes (LCS/LCSD) were used for quality assurance. All acceptance criteria were met.

Summary:

All data were acceptable. No analytical exception is noted.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

11/7/08

Leonard Fong, Ph.D. Laboratory Director / Date