

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Package ID T713DF6

Task Order 313150010

SDG No. IOJ0896


No. of Analyses 5

Laboratory Alta

Reviewer E. Wessling

Analysis/Method Dioxins by 1613

Date: December 20, 2005

Reviewer's Signature 

ACTION ITEMS^a

1. **Case Narrative
Deficiencies**

2. **Out of Scope
Analyses**

3. **Analyses Not Conducted**

4. **Missing Hardcopy
Deliverables**

5. **Incorrect Hardcopy
Deliverables**

6. **Deviations from Analysis**

Protocol, e.g.,

Holding Times

GC/MS Tune/Inst. Performance

Calibration

Method blanks

Surrogates

Matrix Spike/Dup LCS

Field QC

Internal Standard Performance

Compound Identification

Quantitation

System Performance

Qualifications were assigned for the following:

-- estimated maximum possible concentration interferences

-- lack of confirmation analysis of 2,3,7,8-TCDF

COMMENTS^b

^a Subcontracted analytical laboratory is not meeting contract and/or method requirements.

^b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.



DATA VALIDATION REPORT

Topanga Fire Surface Samples

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IOJ0896

Prepared by

AMEC—Denver Operations
355 South Teller Street Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: Topanga Fire Ash Samples
Contract Task Order #: 313150010
Sample Delivery Group #: IOJ0896
Project Manager: A. Lenox
Matrix: Solid
Analysis: Dioxins/Furans
QC Level: Level IV
No. of Samples: 5
No. of Reanalyses/Dilutions: 0
Reviewer: E. Wessling
Date of Review: December 20, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1)*, *EPA Method 1613*, and the *National Functional Guidelines For Chlorinated Dioxin/Furan Data Review (8/02)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample Identification

EPA ID	MWH ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
WL016	SGSS01S01 Soil	IOJ0896-01	26809-001	Soil	1613
WL017	SGSS01S01 Ash	IOJ0896-02	26809-002	Ash	1613
WL018	BKND-5 (Soil)	IOJ0896-03	26809-003	Soil	1613
WL019	BKND-5 (Ash)	IOJ0896-04	26809-004	Ash	1613
WL021	BKND-1 (Soil)	IOJ0896-06	26809-005	Soil	1613

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical within the temperature limits of 4°C ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received within temperature limits of 4°C ±2°C. No qualifications were required. According to the case narrative and laboratory login sheet, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the samples were couriered directly to Del Mar Analytical-Irvine, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards (see section 2.3.2). The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%. No qualifications were required.

2.2.2 Mass Spectrometer Performance

The mass spectrometer performance was acceptable with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

2.3.1 Initial Calibration

The initial calibration was analyzed 6/06/2005. The calibration consisted of six concentration level standards (CS1 through CS6) analyzed to verify instrument linearity. The initial calibrations were acceptable with %RSDs $\leq 20\%$ for the 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.3.2 Continuing Calibration

Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits. A representative number of %Ds were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

WDM and isomer specificity compounds were added to the VER standard instead of being analyzed separately, as noted in section 2.2.1 of this report. No adverse effect was observed with this practice.

2.4 BLANKS

One method blank (Blank 7348-0-MB001) was extracted and analyzed with the samples in this SDG. No target or total compounds were reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives or false positives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike (7348-0-OPR001) was extracted and analyzed with the samples in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. A review of the raw data and chromatograms indicated no transcription or calculation errors. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in this SDG. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

The samples in this SDG had no identified field QC samples. No qualifications were required.

2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No further qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J," by the laboratory. Any reported EMPC was qualified as an estimated nondetect, "UJ." Confirmation for 2,3,7,8-TCDF detected in samples WL016, WL017 and WL021 was not performed; therefore, 2,3,7,8-TCDF was qualified as estimated, "J." No further qualifications were required.



Sample ID: IOJ0896-01			EPA Method 1613		
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-001
Project:	IOJ0896	Sample Size:	10.43 g	QC Batch No.:	7348
Date Collected:	13-Oct-05	%Solids:	98.7	Date Analyzed DB-5:	26-Oct-05
Time Collected:	1152			Date Received:	17-Oct-05
				Date Extracted:	24-Oct-05
				Date Analyzed DB-225:	N/A
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	
2,3,7,8-TCDD	ND	0.138			
1,2,3,7,8-PeCDD	0.334				
1,2,3,4,7,8-HxCDD	0.607				
1,2,3,6,7,8-HxCDD	1.29				
1,2,3,7,8,9-HxCDD	1.20				
1,2,3,4,6,7,8-HpCDD	23.0				
OCDD	168				
2,3,7,8-TCDF	0.284				
1,2,3,7,8-PeCDF	0.275				
2,3,4,7,8-PeCDF	0.418				
1,2,3,4,7,8-HxCDF	0.375				
1,2,3,6,7,8-HxCDF	0.382				
2,3,4,6,7,8-HxCDF	0.420				
1,2,3,7,8,9-HxCDF	ND	0.0918			
1,2,3,4,6,7,8-HpCDF	3.73				
1,2,3,4,7,8,9-HpCDF	0.308				
OCDF	8.37				
Totals					
Total TCDD	1.19		4.12		
Total PeCDD	3.21				
Total HxCDD	12.7				
Total HpCDD	46.5				
Total TCDF	5.23		5.46		
Total PeCDF	5.08		5.51		
Total HxCDF	6.19				
Total HpCDF	9.09				
Toxic Equivalent Quotient (TEQ) Data ^c				TEQ (Min): 1.29	
Labeled Standard				%R	LCL-UCL ^d Qualifiers
13C-2,3,7,8-TCDD				75.1	25 - 164
13C-1,2,3,7,8-PeCDD				72.0	25 - 181
13C-1,2,3,4,7,8-HxCDD				89.7	32 - 141
13C-1,2,3,6,7,8-HxCDD				83.5	28 - 130
13C-1,2,3,4,6,7,8-HpCDD				84.3	23 - 140
13C-OCDD				64.8	17 - 157
13C-2,3,7,8-TCDF				71.9	24 - 169
13C-1,2,3,7,8-PeCDF				70.7	24 - 185
13C-2,3,4,7,8-PeCDF				69.2	21 - 178
13C-1,2,3,4,7,8-HxCDF				82.2	26 - 152
13C-1,2,3,6,7,8-HxCDF				78.7	26 - 123
13C-2,3,4,6,7,8-HxCDF				84.4	28 - 136
13C-1,2,3,7,8,9-HxCDF				86.5	29 - 147
13C-1,2,3,4,6,7,8-HpCDF				78.6	28 - 143
13C-1,2,3,4,7,8,9-HpCDF				83.8	26 - 138
13C-OCDF				70.3	17 - 157
CRS 37Cl-2,3,7,8-TCDD				73.5	35 - 197

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 14:36



Sample ID: IOJ0896-02 EPA Method 1613

Client Data			Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine		Matrix:	Soil	Lab Sample:	26809-002	Date Received:	
Project:	IOJ0896		Sample Size:	5.23 g	QC Batch No.:	7348	Date Extracted:	
Date Collected:	13-Oct-05		%Solids:	98.4	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	
Time Collected:	1200						NA	
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.175			IS 13C-2,3,7,8-TCDD	80.8	25 - 164	
1,2,3,7,8-PeCDD	0.288			J	13C-1,2,3,7,8-PeCDD	75.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.596			13C-1,2,3,4,7,8-HxCDD	91.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.613			13C-1,2,3,6,7,8-HxCDD	92.0	28 - 130	
1,2,3,7,8,9-HxCDD	0.562			J	13C-1,2,3,4,6,7,8-HpCDD	91.9	23 - 140	
1,2,3,4,6,7,8-HpCDD	5.87				13C-OCDD	67.5	17 - 157	
OCDD	23.8				13C-2,3,7,8-TCDF	81.0	24 - 169	
2,3,7,8-TCDF	0.212			J	13C-1,2,3,7,8-PeCDF	76.4	24 - 185	
1,2,3,7,8-PeCDF	ND	0.295			13C-2,3,4,7,8-PeCDF	74.7	21 - 178	
2,3,4,7,8-PeCDF	0.286			J	13C-1,2,3,4,7,8-HxCDF	83.0	26 - 152	
1,2,3,4,7,8-HxCDF	0.268			J	13C-1,2,3,6,7,8-HxCDF	82.3	26 - 123	
1,2,3,6,7,8-HxCDF	0.184			J	13C-2,3,4,6,7,8-HxCDF	87.5	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.109			13C-1,2,3,7,8,9-HpCDF	90.2	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.148			13C-1,2,3,4,6,7,8-HpCDF	81.5	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.485			J	13C-1,2,3,4,7,8,9-HpCDF	86.8	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.218			13C-OCDF	72.5	17 - 157	
OCDF	ND		0.661		CRS 37Cl-2,3,7,8-TCDD	77.7	35 - 197	
Totals					Toxic Equivalent Quotient (TEQ) Data ^e			
Total TCDD	ND		0.220		TEQ (Mln):	0.497		
Total PeCDD	3.55		4.41					
Total HxCDD	7.42							
Total HpCDD	16.0							
Total TCDF	2.16		2.40					
Total PeCDF	1.46		1.85					
Total HxCDF	1.36							
Total HpCDF	1.03							

Approved By:

Martha M. Maier

28-Oct-2005 14:36

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: JMH Approved By: Martha M. Maier 28-Oct-2005 14:36

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Sample ID: IOJ0896-03				EPA Method 1613				
Client Data		Sample Data		Laboratory Data				
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-003	Date Received:	17-Oct-05	
Project:	IOJ0896	Sample Size:	11.82 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05	
Date Collected:	13-Oct-05	%Solids:	86.5	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-225:	NA	
Time Collected:	1348							
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.0870		J	13C-2,3,7,8-TCDD	87.9	25 - 164	
1,2,3,7,8-PeCDD	0.279			J	13C-1,2,3,7,8-PeCDD	83.2	25 - 181	
1,2,3,4,7,8-HxCDD	0.449			J	13C-1,2,3,4,7,8-HxCDD	96.2	32 - 141	
1,2,3,6,7,8-HxCDD	0.950			J	13C-1,2,3,6,7,8-HxCDD	92.3	28 - 130	
1,2,3,7,8,9-HxCDD	0.888			J	13C-1,2,3,4,6,7,8-HpCDD	90.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	20.4				13C-OCDD	64.3	17 - 157	
OCDD	211				13C-2,3,7,8-TCDF	82.4	24 - 169	
2,3,7,8-TCDF	ND	0.301		J	13C-1,2,3,7,8-PeCDF	81.8	24 - 185	
1,2,3,7,8-PeCDF	0.178			J	13C-2,3,4,7,8-PeCDF	79.3	21 - 178	
2,3,4,7,8-PeCDF	0.293			J	13C-1,2,3,4,7,8-HxCDF	89.0	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.287		J	13C-1,2,3,6,7,8-HxCDF	86.3	26 - 123	
1,2,3,6,7,8-HxCDF	0.270			J	13C-2,3,4,6,7,8-HxCDF	91.3	28 - 136	
2,3,4,6,7,8-HxCDF	0.337			J	13C-1,2,3,7,8,9-HxCDF	95.0	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.130			13C-1,2,3,4,6,7,8-HpCDF	82.9	28 - 143	
1,2,3,4,6,7,8-HpCDF	3.16				13C-1,2,3,4,7,8,9-HpCDF	90.0	26 - 138	
1,2,3,4,7,8,9-HpCDF	0.331			J	13C-OCDF	70.0	17 - 157	
OCDF	9.83				CRS 37Cl-2,3,7,8-TCDD	88.3	35 - 197	
Totals					Toxic Equivalent Quotient (TEQ) Data ^e			
Total TCDD	0.774		0.890		TEQ (Min):	1.04		
Total PeCDD	2.48		2.83					
Total HxCDD	9.75							
Total HpCDD	42.8							
Total TCDF	3.13		3.96					
Total PeCDF	3.83		4.09					
Total HxCDF	4.17		4.58					
Total HpCDF	8.59							

Approved By: Martha M. Maier 28-Oct-2005 14:36

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (TEF).

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Approved By: Martha M. Maier 28-Oct-2005 14:36

Analyst: JMH



Sample ID: IOJ0896-04				EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-004	Date Received:	17-Oct-05
Project:	IOJ0896	Sample Size:	5.42 g	QC Batch No.:	7348	Date Extracted:	24-Oct-05
Date Collected:	13-Oct-05	%Solids:	94.4	Date Analyzed DB-5:	26-Oct-05	Date Analyzed DB-25:	N/A
Time Collected:	1356						
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCI-UCL ^d
2,3,7,8-TCDD	0.363			J	13C-2,3,7,8-TCDD	78.4	25 - 164
1,2,3,7,8-PeCDD	0.749			J	13C-1,2,3,7,8-PeCDD	79.7	25 - 181
1,2,3,4,7,8-HxCDD	0.916			J	13C-1,2,3,4,7,8-HxCDD	89.8	32 - 141
1,2,3,6,7,8-HxCDD	5.57			J	13C-1,2,3,6,7,8-HxCDD	85.3	28 - 130
1,2,3,7,8,9-HxCDD	3.35			J	13C-1,2,3,4,6,7,8-HpCDD	87.9	23 - 140
1,2,3,4,6,7,8-HpCDD	100				13C-OCDD	60.6	17 - 157
OCDD	470				13C-2,3,7,8-TCDF	74.8	24 - 169
2,3,7,8-TCDF	ND	0.114			13C-1,2,3,7,8-PeCDF	74.8	24 - 185
1,2,3,7,8-PeCDF	ND	0.159			13C-2,3,4,7,8-PeCDF	72.8	21 - 178
2,3,4,7,8-PeCDF	ND	0.139			13C-1,2,3,4,7,8-HxCDF	80.9	26 - 152
1,2,3,4,7,8-HxCDF	ND		0.241		13C-1,2,3,6,7,8-HxCDF	79.4	26 - 123
1,2,3,6,7,8-HxCDF	ND		0.195		13C-2,3,4,6,7,8-HxCDF	84.8	28 - 136
2,3,4,6,7,8-HxCDF	0.281			J	13C-1,2,3,7,8,9-HxCDF	89.2	29 - 147
1,2,3,7,8,9-HxCDF	ND	0.0764			13C-1,2,3,4,6,7,8-HpCDF	79.3	28 - 143
1,2,3,4,6,7,8-HpCDF	3.45			J	13C-1,2,3,4,7,8,9-HpCDF	89.8	26 - 138
1,2,3,4,7,8,9-HpCDF	0.491			J	13C-OCDF	68.0	17 - 157
OCDF	17.0				CRS 37Cl-2,3,7,8-TCDD	75.7	35 - 197
Totals				Toxic Equivalent Quotient (TEQ) Data ^c			
Total TCDD	7.10		8.46	TEQ (Min): 3.28			
Total PeCDD	12.5		13.8				
Total HxCDD	42.7						
Total HpCDD	171						
Total TCDF	0.481		0.683				
Total PeCDF	0.986						
Total HxCDF	2.76		3.55				
Total HpCDF	12.1						

Analyst: JMH

Approved By: Martha M. Maier 28-Oct-2005 14:36

a. Sample specific estimated detection limit.
 b. Estimated maximum possible concentration.
 c. Method detection limit.
 d. Lower control limit - upper control limit.
 e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).



Sample ID: IOJ0896-06				EPA Method 1613				
Client Data		Sample Data		Laboratory Data				
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	26809-005			
Project:	IOJ0896	Sample Size:	9.99 g	QC Batch No.:	7348			
Date Collected:	13-Oct-05	%Solids:	97.8	Date Analyzed DB-5:	27-Oct-05			
Time Collected:	1420			Date Received:	17-Oct-05			
				Date Extracted:	24-Oct-05			
				Date Analyzed DB-25:	NA			
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.0622			IS 13C-2,3,7,8-TCDD	75.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0646			13C-1,2,3,7,8-PeCDD	73.0	25 - 181	
1,2,3,4,7,8-HxCDD	0.192			J	13C-1,2,3,4,7,8-HxCDD	83.0	32 - 141	
1,2,3,6,7,8-HxCDD	0.174			J	13C-1,2,3,6,7,8-HxCDD	84.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0894			13C-1,2,3,4,6,7,8-HpCDD	85.4	23 - 140	
1,2,3,4,6,7,8-HpCDD	3.40				13C-OCDD	54.2	17 - 157	
OCDD	48.0				13C-2,3,7,8-TCDF	73.2	24 - 169	
2,3,7,8-TCDF	0.163			J	13C-1,2,3,7,8-PeCDF	73.1	24 - 185	
1,2,3,7,8-PeCDF	ND	0.0811			13C-2,3,4,7,8-PeCDF	70.5	21 - 178	
2,3,4,7,8-PeCDF	ND	0.137		J	13C-1,2,3,4,7,8-HxCDF	78.4	26 - 152	
1,2,3,4,7,8-HxCDF	0.135			J	13C-1,2,3,6,7,8-HxCDF	76.1	26 - 123	
1,2,3,6,7,8-HxCDF	0.0912			J	13C-1,2,3,7,8,9-HxCDF	81.1	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.0852			13C-1,2,3,7,8,9-HxCDF	85.1	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.0588			13C-1,2,3,4,6,7,8-HpCDF	73.3	28 - 143	
1,2,3,4,6,7,8-HpCDF	0.561			J	13C-1,2,3,4,7,8,9-HpCDF	83.5	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.0839			13C-OCDF	63.6	17 - 157	
OCDF	0.970			J	CRS 37Cl-2,3,7,8-TCDD	75.9	35 - 197	
Totals				Toxic Equivalent Quotient (TEQ) Data ^e				
Total TCDD	ND	0.0622			TEQ (Min):	0.164		
Total PeCDD	0.149		0.287					
Total HxCDD	1.30							
Total HpCDD	9.59							
Total TCDF	0.163		0.981					
Total PeCDF	1.02		1.24					
Total HxCDF	1.03		1.30					
Total HpCDF	1.27							

Approved By: Martha M. Maier 28-Oct-2005 14:36

Analyst: JMH

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).