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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Client - ATC

Lab Sample ID	BLANK-1546	Matrix	WIPE
Filename	F20406A_07	Dilution	NA
Total Amount Extracted	1 m2	Extracted	04/01/2002
ICAL Date	01/24/2002	Analyzed	04/07/2002 00:15
CCal Filename(s)	F20406A_03 & F20406A_19	Injected By	BAL

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.0025	A	2,3,7,8-TCDF-13C	2.00	65
Total TCDF	ND	-----	0.0020		2,3,7,8-TCDD-13C	2.00	57
					1,2,3,7,8-PeCDF-13C	2.00	67
2,3,7,8-TCDD	ND	-----	0.0024	A	2,3,4,7,8-PeCDF-13C	2.00	63
Total TCDD	ND	-----	0.0020		1,2,3,7,8-PeCDD-13C	2.00	64
					1,2,3,4,7,8-HxCDF-13C	2.00	89
1,2,3,7,8-PeCDF	ND	-----	0.0100		1,2,3,6,7,8-HxCDF-13C	2.00	84
2,3,4,7,8-PeCDF	ND	-----	0.0100		2,3,4,6,7,8-HxCDF-13C	2.00	83
Total PeCDF	ND	-----	0.0100		1,2,3,7,8,9-HxCDF-13C	2.00	81
					1,2,3,4,7,8-HxCDD-13C	2.00	91
1,2,3,7,8-PeCDD	ND	-----	0.0100		1,2,3,6,7,8-HxCDD-13C	2.00	76
Total PeCDD	ND	-----	0.0100		1,2,3,4,6,7,8-HpCDF-13C	2.00	70
					1,2,3,4,7,8,9-HpCDF-13C	2.00	61
1,2,3,4,7,8-HxCDF	ND	-----	0.0100		1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	ND	-----	0.0100		OCDD-13C	4.00	70
2,3,4,6,7,8-HxCDF	ND	-----	0.0100				
1,2,3,7,8,9-HxCDF	ND	-----	0.0100		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.0100		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.0100		2,3,7,8-TCDD-37Cl4	0.20	61
1,2,3,6,7,8-HxCDD	ND	-----	0.0100				
1,2,3,7,8,9-HxCDD	ND	-----	0.0100				
Total HxCDD	ND	-----	0.0100				
1,2,3,4,6,7,8-HpCDF	ND	-----	0.0100		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.0100		Equivalence: 0.000025 ng/m2		
Total HpCDF	ND	-----	0.0100		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.0100				
Total HpCDD	ND	-----	0.0100				
OCDF	ND	-----	0.0200				
OCDD	0.025	-----	0.0200	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LRL = Lower Reporting Limit
J = Concentration detected is below the calibration range
P = Recovery outside of target range
A = Detection Limit based on signal-to-noise measurement

I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....02-1055250

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Analysis Results

Client - ATC

Client's Sample ID	ATC-0315-150M-DX1		
Lab Sample ID	103398996		
Filename	F20406A_12		
Injected By	BAL		
Total Amount Extracted	1 m2	Matrix	WIPE
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	03/15/2002
ICAL Date	01/24/2002	Received	03/19/2002
CCal Filename(s)	F20406A_03 & F20406A_19	Extracted	04/01/2002
Method Blank ID	BLANK-1546	Analyzed	04/07/2002 05:19

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.0046	A	2,3,7,8-TCDF-13C	2.00	71
Total TCDF	ND	-----	0.0020		2,3,7,8-TCDD-13C	2.00	68
					1,2,3,7,8-PeCDF-13C	2.00	73
2,3,7,8-TCDD	ND	-----	0.0030	A	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	ND	-----	0.0020		1,2,3,7,8-PeCDD-13C	2.00	62
					1,2,3,4,7,8-HxCDF-13C	2.00	80
1,2,3,7,8-PeCDF	ND	-----	0.0100		1,2,3,6,7,8-HxCDF-13C	2.00	83
2,3,4,7,8-PeCDF	ND	-----	0.0100		2,3,4,6,7,8-HxCDF-13C	2.00	83
Total PeCDF	ND	-----	0.0100		1,2,3,7,8,9-HxCDF-13C	2.00	77
					1,2,3,4,7,8-HxCDD-13C	2.00	79
1,2,3,7,8-PeCDD	ND	-----	0.0100		1,2,3,6,7,8-HxCDD-13C	2.00	82
Total PeCDD	ND	-----	0.0100		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	58
1,2,3,4,7,8-HxCDF	ND	-----	0.0100		1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	ND	-----	0.0100		OCDD-13C	4.00	75
2,3,4,6,7,8-HxCDF	ND	-----	0.0100				
1,2,3,7,8,9-HxCDF	ND	-----	0.0100		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.0100		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.0100		2,3,7,8-TCDD-37Cl4	0.20	70
1,2,3,6,7,8-HxCDD	ND	-----	0.0100				
1,2,3,7,8,9-HxCDD	ND	-----	0.0100				
Total HxCDD	ND	-----	0.0100				
1,2,3,4,6,7,8-HpCDF	ND	-----	0.0100		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.0100		Equivalence: 0.000068 ng/m2		
Total HpCDF	ND	-----	0.0100		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.0100				
Total HpCDD	ND	-----	0.0100				
OCDF	ND	-----	0.0200				
OCDD	0.068	-----	0.0200	BJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....02-1055250

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Analysis Results

Client - ATC

Client's Sample ID	ATC-0315-150M-DX2		
Lab Sample ID	103399002		
Filename	F20406A_13		
Injected By	BAL		
Total Amount Extracted	1 m2	Matrix	WIPE
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	03/15/2002
ICAL Date	01/24/2002	Received	03/19/2002
CCal Filename(s)	F20406A_03 & F20406A_19	Extracted	04/01/2002
Method Blank ID	BLANK-1546	Analyzed	04/07/2002 06:08

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.0052	A	2,3,7,8-TCDF-13C	2.00	54
Total TCDF	ND	-----	0.0020		2,3,7,8-TCDD-13C	2.00	52
					1,2,3,7,8-PeCDF-13C	2.00	58
2,3,7,8-TCDD	ND	-----	0.0078	A	2,3,4,7,8-PeCDF-13C	2.00	55
Total TCDD	ND	-----	0.0020		1,2,3,7,8-PeCDD-13C	2.00	53
					1,2,3,4,7,8-HxCDF-13C	2.00	69
1,2,3,7,8-PeCDF	ND	-----	0.0100		1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	ND	-----	0.0100		2,3,4,6,7,8-HxCDF-13C	2.00	64
Total PeCDF	ND	-----	0.0100		1,2,3,7,8,9-HxCDF-13C	2.00	64
					1,2,3,4,7,8-HxCDD-13C	2.00	65
1,2,3,7,8-PeCDD	ND	-----	0.0100		1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD	ND	-----	0.0100		1,2,3,4,6,7,8-HpCDF-13C	2.00	56
					1,2,3,4,7,8,9-HpCDF-13C	2.00	52
1,2,3,4,7,8-HxCDF	ND	-----	0.0100		1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	ND	-----	0.0100		OCDD-13C	4.00	57
2,3,4,6,7,8-HxCDF	ND	-----	0.0100				
1,2,3,7,8,9-HxCDF	ND	-----	0.0100		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.0100		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.0100		2,3,7,8-TCDD-37Cl4	0.20	56
1,2,3,6,7,8-HxCDD	ND	-----	0.0100				
1,2,3,7,8,9-HxCDD	ND	-----	0.0100				
Total HxCDD	ND	-----	0.0100				
1,2,3,4,6,7,8-HpCDF	ND	-----	0.0100		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.0100		Equivalence: 0.00 ng/m2		
Total HpCDF	ND	-----	0.0100		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.0100				
Total HpCDD	ND	-----	0.0100				
OCDF	ND	-----	0.0200				
OCDD	ND	-----	0.0200				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Client - ATC

Lab Sample ID	SPIKE-1558		
Filename	F20406A_04	Matrix	WIPE
Total Amount Extracted	1 Sample	Dilution	NA
ICAL Date	01/24/2002	Extracted	04/01/2002
CCal Filename(s)	F20406A_03 & F20406A_19	Analyzed	04/06/2002 21:50
Method Blank ID	BLANK-1546	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.18	89	2,3,7,8-TCDF-13C	2.00	57
				2,3,7,8-TCDD-13C	2.00	47
				1,2,3,7,8-PeCDF-13C	2.00	59
2,3,7,8-TCDD	0.20	0.19	95	2,3,4,7,8-PeCDF-13C	2.00	54
				1,2,3,7,8-PeCDD-13C	2.00	53
				1,2,3,4,7,8-HxCDF-13C	2.00	99
1,2,3,7,8-PeCDF	1.00	0.97	97	1,2,3,6,7,8-HxCDF-13C	2.00	84
2,3,4,7,8-PeCDF	1.00	0.98	98	2,3,4,6,7,8-HxCDF-13C	2.00	81
				1,2,3,7,8,9-HxCDF-13C	2.00	74
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	1.00	1.00	100	1,2,3,6,7,8-HxCDD-13C	2.00	80
				1,2,3,4,6,7,8-HpCDF-13C	2.00	78
				1,2,3,4,7,8,9-HpCDF-13C	2.00	73
1,2,3,4,7,8-HxCDF	1.00	0.96	96	1,2,3,4,6,7,8-HpCDD-13C	2.00	82
1,2,3,6,7,8-HxCDF	1.00	0.97	97	OCDD-13C	4.00	84
2,3,4,6,7,8-HxCDF	1.00	0.98	98			
1,2,3,7,8,9-HxCDF	1.00	0.97	97	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.16	116	2,3,7,8-TCDD-37Cl4	0.20	48
1,2,3,6,7,8-HxCDD	1.00	0.92	92			
1,2,3,7,8,9-HxCDD	1.00	1.08	108			
1,2,3,4,6,7,8-HpCDF	1.00	0.97	97			
1,2,3,4,7,8,9-HpCDF	1.00	1.00	100			
1,2,3,4,6,7,8-HpCDD	1.00	0.98	98			
OCDF	2.00	2.02	101			
OCDD	2.00	2.05	102			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range
X = Background subtracted value
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

Report No.....02-1055250

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Client - ATC

Lab Sample ID	SPIKE-DUP-1359		
Filename	F20406A_05	Matrix	WIPE
Total Amount Extracted	1 Sample	Dilution	NA
ICAL Date	01/24/2002	Extracted	04/01/2002
CCal Filename(s)	F20406A_03 & F20406A_19	Analyzed	04/06/2002 22:37
Method Blank ID	BLANK-1546	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.17	84	2,3,7,8-TCDF-13C	2.00	51
				2,3,7,8-TCDD-13C	2.00	44
				1,2,3,7,8-PeCDF-13C	2.00	53
2,3,7,8-TCDD	0.20	0.19	97	2,3,4,7,8-PeCDF-13C	2.00	51
				1,2,3,7,8-PeCDD-13C	2.00	51
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	1.00	0.97	97	1,2,3,6,7,8-HxCDF-13C	2.00	58
2,3,4,7,8-PeCDF	1.00	0.98	98	2,3,4,6,7,8-HxCDF-13C	2.00	62
				1,2,3,7,8,9-HxCDF-13C	2.00	63
				1,2,3,4,7,8-HxCDD-13C	2.00	64
1,2,3,7,8-PeCDD	1.00	1.00	100	1,2,3,6,7,8-HxCDD-13C	2.00	53
				1,2,3,4,6,7,8-HpCDF-13C	2.00	49
				1,2,3,4,7,8,9-HpCDF-13C	2.00	47
1,2,3,4,7,8-HxCDF	1.00	1.05	105	1,2,3,4,6,7,8-HpCDD-13C	2.00	56
1,2,3,6,7,8-HxCDF	1.00	0.90	90	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	1.00	0.99	99			
1,2,3,7,8,9-HxCDF	1.00	0.97	97	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.03	103	2,3,7,8-TCDD-37Cl4	0.20	46
1,2,3,6,7,8-HxCDD	1.00	1.03	103			
1,2,3,7,8,9-HxCDD	1.00	1.07	107			
1,2,3,4,6,7,8-HpCDF	1.00	1.00	100			
1,2,3,4,7,8,9-HpCDF	1.00	0.97	97			
1,2,3,4,6,7,8-HpCDD	1.00	0.98	98			
OCDF	2.00	2.07	103			
OCDD	2.00	2.06	103			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range
X = Background subtracted value
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

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Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

SPIKE RECOVERY RELATIVE PERCENT DIFFERENCE (RPD) RESULTS

Client..... ATC

SPIKE 1 ID..... SPIKE-1558
SPIKE 1 Filename..... F20406A_04
SPIKE 2 ID..... SPIKE-DUP-1359
SPIKE 2 Filename..... F20406A_05

COMPOUND	SPIKE 1 REC,%	SPIKE 2 REC,%	RPD,%
2378-TCDF	89	84	5.8
2378-TCDD	95	97	2.1
12378-PeCDF	97	97	0.0
23478-PeCDF	98	98	0.0
12378-PeCDD	100	100	0.0
123478-HxCDF	96	105	9.0
123678-HxCDF	97	90	7.5
234678-HxCDF	98	99	1.0
123789-HxCDF	97	97	0.0
123478-HxCDD	116	103	11.9
123678-HxCDD	92	103	11.3
123789-HxCDD	108	107	0.9
1234678-HpCDF	97	100	3.0
1234789-HpCDF	100	97	3.0
1234678-HpCDD	98	98	0.0
OCDF	101	103	2.0
OCDD	102	103	1.0

REC = Percent Recovered
RPD = The difference between the two values divided by the average.
NA = Not Applicable

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