



Pace Analytical Services, Inc.
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Method 8290 Blank Analysis Results

Client - ATC

Lab Sample ID	BLANK-1505	Matrix	WIPE
Filename	F20315A_03	Dilution	NA
Total Amount Extracted	1 m2	Extracted	03/12/2002
ICAL Date	01/24/2002	Analyzed	03/15/2002 13:34
CCal Filename(s)	F20315A_01 & F20315A_16	Injected By	MASB

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.0025	----	0.00200 J	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	0.0025	----	0.00200 J	2,3,7,8-TCDD-13C	2.00	68
				1,2,3,7,8-PeCDF-13C	2.00	80
2,3,7,8-TCDD	ND	----	0.00200	2,3,4,7,8-PeCDF-13C	2.00	79
Total TCDD	ND	----	0.00200	1,2,3,7,8-PeCDD-13C	2.00	73
				1,2,3,4,7,8-HxCDF-13C	2.00	164 P
1,2,3,7,8-PeCDF	ND	----	0.01000	1,2,3,6,7,8-HxCDF-13C	2.00	146 P
2,3,4,7,8-PeCDF	ND	----	0.01000	2,3,4,6,7,8-HxCDF-13C	2.00	126
Total PeCDF	ND	----	0.01000	1,2,3,7,8,9-HxCDF-13C	2.00	77
				1,2,3,4,7,8-HxCDD-13C	2.00	155 P
1,2,3,7,8-PeCDD	ND	----	0.01000	1,2,3,6,7,8-HxCDD-13C	2.00	130
Total PeCDD	ND	----	0.01000	1,2,3,4,6,7,8-HpCDF-13C	2.00	125
				1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	ND	----	0.01000	1,2,3,4,6,7,8-HpCDD-13C	2.00	101
1,2,3,6,7,8-HxCDF	ND	----	0.01000	OCDD-13C	4.00	82 *
2,3,4,6,7,8-HxCDF	ND	----	0.01000			
1,2,3,7,8,9-HxCDF	ND	----	0.01000	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.01000	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.01000	2,3,7,8-TCDD-37Cl4	0.20	67
1,2,3,6,7,8-HxCDD	ND	----	0.01000			
1,2,3,7,8,9-HxCDD	ND	----	0.01000			
Total HxCDD	ND	----	0.01000			
1,2,3,4,6,7,8-HpCDF	ND	----	0.01000	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.01000	Equivalence: 0.00028 ng/m2		
Total HpCDF	ND	----	0.01000	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	0.01000			
Total HpCDD	ND	----	0.01000			
OCDF	ND	----	0.02000			
OCDD	0.0280	----	0.02000 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

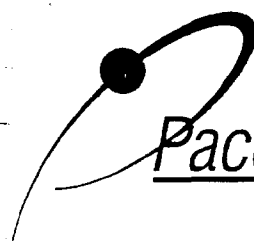
I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....02-1054698

REPORT OF LABORATORY ANALYSIS

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Pace Analytical™

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Method 8290 Analysis Results

Client - ATC

Client's Sample ID	ATC-1301-150M-DX-1		
Lab Sample ID	103363685		
Filename	F20318B_08		
Injected By	MASB		
Total Amount Extracted	1 m2	Matrix	WIPE
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	03/01/2002
ICAL Date	01/24/2002	Received	03/05/2002
CCal Filename(s)	F20318B_01 & F20318B_17	Extracted	03/12/2002
Method Blank ID	BLANK-1505	Analyzed	03/18/2002 21:22

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.00200	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	ND	----	0.00200	2,3,7,8-TCDD-13C	2.00	66
				1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	ND	----	0.00200	2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	0.0071	----	0.00200 J	1,2,3,7,8-PeCDD-13C	2.00	71
				1,2,3,4,7,8-HxCDF-13C	2.00	107
1,2,3,7,8-PeCDF	ND	----	0.01000	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	----	0.01000	2,3,4,6,7,8-HxCDF-13C	2.00	84
Total PeCDF	ND	----	0.01000	1,2,3,7,8,9-HxCDF-13C	2.00	90
				1,2,3,4,7,8-HxCDD-13C	2.00	108
1,2,3,7,8-PeCDD	ND	----	0.01000	1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	0.0110	----	0.01000 J	1,2,3,4,6,7,8-HpCDF-13C	2.00	81
				1,2,3,4,7,8,9-HpCDF-13C	2.00	80
1,2,3,4,7,8-HxCDF	ND	----	0.01000	1,2,3,4,6,7,8-HpCDD-13C	2.00	90
1,2,3,6,7,8-HxCDF	ND	----	0.01000	OCDD-13C	4.00	82
2,3,4,6,7,8-HxCDF	ND	----	0.01000			
1,2,3,7,8,9-HxCDF	ND	----	0.01000	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.01000	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.01000	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	ND	----	0.01000			
1,2,3,7,8,9-HxCDD	ND	----	0.01000			
Total HxCDD	0.0690	----	0.01000			
1,2,3,4,6,7,8-HpCDF	0.0140	----	0.01000 J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.01000	Equivalence: 0.0015 ng/m2		
Total HpCDF	0.0420	----	0.01000 J	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	0.0760	----	0.01000			
Total HpCDD	0.1700	----	0.01000			
OCDF	0.0340	----	0.02000 J			
OCDD	0.5700	----	0.02000			

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

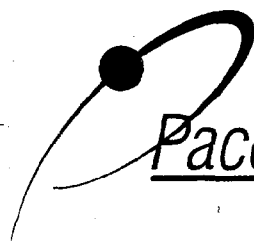
LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....02-1054698

REPORT OF LABORATORY ANALYSIS

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Method 8290 Laboratory Control Spike Results

Client - ATC

Lab Sample ID	SPIKE-1515	Matrix	WIPE
Filename	F20318B_02	Dilution	NA
Total Amount Extracted	1 Sample	Extracted	03/12/2002
ICAL Date	01/24/2002	Analyzed	03/18/2002 16:30
CCal Filename(s)	F20318B_01 & F20318B_17	Injected By	MASB
Method Blank ID	BLANK-1505		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.20	102	2,3,7,8-TCDF-13C	2.00	69
				2,3,7,8-TCDD-13C	2.00	62
				1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	0.20	0.20	102	2,3,4,7,8-PeCDF-13C	2.00	69
				1,2,3,7,8-PeCDD-13C	2.00	69
				1,2,3,4,7,8-HxCDF-13C	2.00	104
1,2,3,7,8-PeCDF	1.00	1.02	102	1,2,3,6,7,8-HxCDF-13C	2.00	83
2,3,4,7,8-PeCDF	1.00	1.03	103	2,3,4,6,7,8-HxCDF-13C	2.00	84
				1,2,3,7,8,9-HxCDF-13C	2.00	79
				1,2,3,4,7,8-HxCDD-13C	2.00	99
1,2,3,7,8-PeCDD	1.00	1.00	100	1,2,3,6,7,8-HxCDD-13C	2.00	79
				1,2,3,4,6,7,8-HpCDF-13C	2.00	82
				1,2,3,4,7,8,9-HpCDF-13C	2.00	76
1,2,3,4,7,8-HxCDF	1.00	1.02	102	1,2,3,4,6,7,8-HpCDD-13C	2.00	88
1,2,3,6,7,8-HxCDF	1.00	1.03	103	OCDD-13C	4.00	69
2,3,4,6,7,8-HxCDF	1.00	1.04	104			
1,2,3,7,8,9-HxCDF	1.00	0.99	99	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	1.04	104	2,3,7,8-TCDD-37Cl4	0.20	68
1,2,3,6,7,8-HxCDD	1.00	1.05	105			
1,2,3,7,8,9-HxCDD	1.00	0.93	93			
1,2,3,4,6,7,8-HpCDF	1.00	1.03	103			
1,2,3,4,7,8,9-HpCDF	1.00	1.03	103			
1,2,3,4,6,7,8-HpCDD	1.00	1.01	101			
OCDF	2.00	1.72	86			
OCDD	2.00	2.10	105			

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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Method 8290 Laboratory Control Spike Results

Client - ATC

Lab Sample ID	SPIKE-DUP-1336		
Filename	F20318B_03	Matrix	WIPE
Total Amount Extracted	1 Sample	Dilution	NA
ICAL Date	01/24/2002	Extracted	03/12/2002
CCal Filename(s)	F20318B_01 & F20318B_17	Analyzed	03/18/2002 17:18
Method Blank ID	BLANK-1505	Injected By	MASB

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.26	129	2,3,7,8-TCDF-13C	2.00	70
				2,3,7,8-TCDD-13C	2.00	65
				1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	0.20	0.25	125	2,3,4,7,8-PeCDF-13C	2.00	72
				1,2,3,7,8-PeCDD-13C	2.00	71
				1,2,3,4,7,8-HxCDF-13C	2.00	107
1,2,3,7,8-PeCDF	1.00	1.23	123	1,2,3,6,7,8-HxCDF-13C	2.00	81
2,3,4,7,8-PeCDF	1.00	1.25	125	2,3,4,6,7,8-HxCDF-13C	2.00	85
				1,2,3,7,8,9-HxCDF-13C	2.00	84
				1,2,3,4,7,8-HxCDD-13C	2.00	107
1,2,3,7,8-PeCDD	1.00	1.25	125	1,2,3,6,7,8-HxCDD-13C	2.00	73
				1,2,3,4,6,7,8-HpCDF-13C	2.00	81
1,2,3,4,7,8-HxCDF	1.00	1.25	125	1,2,3,4,7,8,9-HpCDF-13C	2.00	77
1,2,3,6,7,8-HxCDF	1.00	1.27	127	1,2,3,4,6,7,8-HpCDD-13C	2.00	86
2,3,4,6,7,8-HxCDF	1.00	1.27	127	OCDD-13C	4.00	75
1,2,3,7,8,9-HxCDF	1.00	1.26	126	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	1.29	129	2,3,7,8-TCDD-37Cl4	0.20	72
1,2,3,6,7,8-HxCDD	1.00	1.31	131 P			
1,2,3,7,8,9-HxCDD	1.00	1.24	124			
1,2,3,4,6,7,8-HpCDF	1.00	1.26	126			
1,2,3,4,7,8,9-HpCDF	1.00	1.25	125			
1,2,3,4,6,7,8-HpCDD	1.00	1.28	128			
OCDF	2.00	2.17	109			
OCDD	2.00	2.51	126			

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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SPIKE RECOVERY RELATIVE PERCENT DIFFERENCE (RPD) RESULTS

Client..... ATC

SPIKE 1 ID..... SPIKE-1515
 SPIKE 1 Filename..... F20318B_02
 SPIKE 2 ID..... SPIKE-DUP-1336
 SPIKE 2 Filename..... F20318B_03

COMPOUND	SPIKE 1 REC, %	SPIKE 2 REC, %	RPD, %
2378-TCDF	102	129	23.4
2378-TCDD	102	125	20.3
12378-PeCDF	102	123	18.7
23478-PeCDF	103	125	19.3
12378-PeCDD	100	125	22.2
123478-HxCDF	102	125	20.3
123678-HxCDF	103	127	20.9
234678-HxCDF	104	127	19.9
123789-HxCDF	99	126	24.0
123478-HxCDD	104	129	21.5
123678-HxCDD	105	131	22.0
123789-HxCDD	93	124	28.6
1234678-HpCDF	103	126	20.1
1234789-HpCDF	103	125	19.3
1234678-HpCDD	101	128	23.6
OCDF	86	109	23.6
OCDD	105	126	18.2

REC = Percent Recovered

RPD = The difference between the two values divided by the average.

NA = Not Applicable

Report No..... 02-1054698