CleanAir.

CleanAir Engineering
500 W. Wood Street
Palatine, IL 60067-4975
800-627-0033
www.cleanair.com

Wheelabrator North Broward, Inc.
2600 NW 48th Street
Pompano Beach, FL 33073

RECEIVED
APR 27 2010
BUREAU OF
AIR REGULATION

REPORT ON COMPLIANCE TESTING

Performed for:

WHEELABRATOR NORTH BROWARD, INC.
ASH HANDLING SYSTEM, LIME SILO VENTS,
UNITS 1, 2 AND 3 SDA INLETS, FF OUTLETS AND STACKS
POMPANO BEACH, FL
VOLUME II OF II

CleanAir Project No: 10955-2
Revision 0: April 23, 2010

Wheelabrator North Broward Inc.
A Waste Management Company
2600 Wiles Road
Pompano Beach, FL 33073
(954) 971-8701 Tel
(954) 971-8703 Fax

April 27, 2010

UPS# 1Z26X1500394865542

RECEIVED
APR 27 2010
BUREAU OF
AIR REGULATION

Mr. Lennon Anderson
Air Program Administrator
Florida Department of Environmental Protection
Southeast District
400 North Congress Ave., Suite 200
West Palm Beach, FL 33401

Re: Wheelabrator North Broward
2010 Annual Compliance Stack Test and RATA Reports

Dear Mr. Anderson:

Please find enclosed a copy of the final compliance stack test report and the continuous emissions monitoring system certification RATA report for testing conducted on March 16-18 of this year by Clean Air Engineering, Inc.

I, the undersigned, am a responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this submittal. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements and information in this document are true, accurate and complete.

If there are any questions, please contact this office at (954) 971-8701.

Sincerely,

Scott McIlvaine
Plant Manager

cc: USEPA, Region IV, Pesticides and Toxics Management Division, Air & EPCRA Enforcement Branch, Air Enforcement Section (with) UPS# 1Z26X1500390744304
FDEP, Tallahassee, Bureau of Air Regulation, New Source Review Section, (with) UPS# 1Z26X1500394730124
Broward County Department of Planning and Environmental Protection, Air Quality Division (with) UPS# 1Z26X1500393811511

Chuck Faller (with)
Ram Tewari – BCWRS (without)
Tim Porter (without)
Rob French – MPI (with) UPS# 1Z26X1500392976131

WASTE MANAGEMENT

FIELD DATA

G

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TEST LOCATION: FF Outlet Particulate / Metals **TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3/16/10
Meter Operator	P. Bikun
Probe Operator	P. Bikun

Meter Box 61-6	Sample Box No. M15
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6020
K Factor 2.23 2.28	Pitot C_p 0.805
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.002 [cfm] [Lpm] @ 8 (in. Hg)	
Pitot Leak Check Before: ☑	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

40000 5

Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.0	10.0		

Amb. Temp. (°F) 60	Bar. Press. 30.05 [in. Hg] [mbar]
Probe I.D. No.	6-7-5-4
Liner Material	Glass

Filter No.	F-15-35	
Thimble No.	N/A	
Nozzle Diameter 0.220	Nozzle I.D.	2704

Start Time: 7:21	Stop Time: 9:32

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 76.485	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) PD Flow	Notes O2	
1-1	5	0.43	~~0.98~~ 0.90	79.29	292	245	252	49	59	57	2.5	0.25	9.8	
2	10	0.51	1.1	82.20	293	249	251	46	~~58~~ 61	57	2.5	0.25	9.3	
3	15	0.57	1.3	85.41	293	255	250	46	64	58	3.0	0.25	10.4	
4	20	0.64	1.4	88.79	294	252	252	47	65	58	3.0	0.25	10.3	
5	25	0.64	1.4	92.180	294	250	250	48	66	58	3.0	0.25	10.4	92.240
2-1	30	0.57	1.3	95.51	293	245	250	49	66	59	3.0	0.25	10.0	-0.06
2	35	0.52	1.2	98.59	294	246	249	48	67	60	3.0	0.25	10.0	
3	40	0.52	1.2	101.69	294	254	250	48	68	60	3.0	0.25	9.7	
4	45	0.68	1.5	105.20	294	253	252	48	69	61	3.5	0.25	10.3	
5	50	0.60	1.3	108.455	294	250	250	49	70	61	3.0	0.25	10.0	108.515
3-1	55	0.63	1.4	111.87	294	246	251	50	68	61	3.0	0.25	9.5	-0.06
2	60	0.53	1.2	115.04	293	246	250	51	69	61	3.0	0.25	10.5	
	Total	*		80.240										
	Average	0.7507	1.2686		293.280				64.3806					

* Sum of square roots. PM 0.7507 15.26

Circle correct bracketed units on data sheet. 3522 1503

QA/QC PB

Date 3/16/10

FDS005-General.xls, Feb 2002

CleanAir ENGINEERING

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G-4

TEST LOCATION: FF-Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3/16/10
Meter Operator P. Bihun	
Probe Operator P. Bihun	

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp T_t (°F) Bag Flow	Notes O_2
3	65	0.58	1.3	118.30	294	254	249	52	68	61	3.0	0.25	10.3
4	70	0.65	1.5	121.80	294	252	251	52	69	61	3.5	0.25	10.2
5	75	0.68	1.5	125.290	293	250	251	54	69	62	3.5	0.25	10.5 125.350
4-1	80	0.61	1.4	128.67	294	248	250	55	69	62	3.5	0.25	10.5 70.06
2	85	0.46	1.0	131.71	294	245	251	55	70	62	3.0	0.25	10.4
3	90	0.42	0.94	134.51	293	254	250	55	70	62	3.0	0.25	10.5
4	95	0.61	1.4	137.89	295	251	250	56	69	62	3.5	0.25	10.4 141.455
5	100	0.68	1.5	141.415	294	250	249	57	70	63	3.5	0.25	10.7 70.04
5-1	105	0.45	1.0	144.35	291	248	250	58	69	63	3.0	0.25	10.4
2	110	0.45	1.0	147.23	292	250	251	60	70	63	3.0	0.25	10.6
3	115	0.47	1.1	150.20	290	252	249	59	71	63	3.0	0.25	10.6
4	120	0.58	1.3	153.50	292	251	252	60	71	63	3.5	0.25	10.1
5	125	0.69	1.5	156.945	294	250	251	61	71	63	3.5	0.25	10.7
	Total	*											
	Average												

* Sum of square roots. 14.44

Circle correct bracketed units on data sheet. 1716

QA/QC PB

Date 3/16/10

CleanAir ENGINEERING

G-5

TEST LOCATION: FF outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955		
Plant N. Broward	Date 3/16/10		
Meter Operator P. Bifun			
Probe Operator P. Bifun			
Meter Box 61-6	Sample Box No. M10		
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6820		
K Factor 2.23	Pitot C_p 0.805		
Leak Rate Before 0.003 [cfm] [Lpm] @ 15 (in. Hg)			
Leak Rate After 0.002 [cfm] [Lpm] @ 8 (in. Hg)			
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐		

Cross-Section of Test Location

[N] [UP]

1 5

Duct Dimensions (in.) 96x96			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.0	10.0	In	In

Amb. Temp. (°F)	Bar. Press. 30.01 [in. Hg] [mbar]		
Probe I.D. No. 67-5-4			
Liner Material Glass			
Filter No. E-115-36			
Thimble No. N/A			
Nozzle Diameter 0.220	Nozzle I.D. 220-1		
Start Time: 10:00	Stop Time: 12:14		

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 157.281	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 252	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t Bag Flow	Notes O_2	
1-1	5	0.58	1.3	160.68	293	247	250	57	63	62	4.0	0.20	10.7	
2	10	0.57	1.4 ~~1.3~~	163.96	295	254	252	54	65	62	3.5	0.20	10.5	K=2.36
3	15	0.61	1.4	167.33	295	252	253	52	68	63	4.0	0.20	10.6	
4	20	0.72	1.7	171.06	295	253	251	51	68	62	4.5	0.20	10.6	
5	25	0.68	1.6	174.690	295	250	250	53	70	63	4.0	0.20	10.3	174.742
2-1	30	0.49	1.1	177.66	292	247	250	56	70	64	3.0	0.20	10.7	-0.05
2	35	0.54	1.2	180.80	293	247	250	57	72	64	3.5	0.20	10.9	
3	40	0.61	1.4	184.17	294	253	246	56	72	65	3.5	0.20	9.8	
4	45	0.67	1.5	187.68	295	252	250	56	74	65	4.0	0.20	10.7	
5	50	0.65	1.5	191.210	294	250	249	57	74	66	4.0	0.20	11.0	191.265
3-1	55	0.56	1.3	194.50	293	246	250	57	73	66	3.5	0.20	10.8	-0.055
2	60	0.45	1.0	197.39	295	250	251	58	74	66	3.0	0.20	9.1	
	Total	*		81.500										
	Average	0.7494	1.3032		295.0400				68.7000					

* Sum of square roots. 16.4

Circle correct bracketed units on data sheet.

3591 16.1

QA/QC PB

Date 3/16/10

CleanAir ENGINEERING

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TEST LOCATION: PF Outlet   Particulate/Metals **TESTING**   **METHOD:** 5/29   **PAGE** 2 **OF** 2

UNIT: 1   **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10915
Plant	N. Broward	Date	3/16/10
Meter Operator	P. Bihyn		
Probe Operator	P. Bihyn		

Meter Box		Sample Box No.	
Meter Y_d		Meter $\Delta H_@$	
K Factor		Pitot C_p	
Leak Rate Before [cfm] [Lpm] @ (in. Hg)			
Leak Rate After [cfm] [Lpm] @ (in. Hg)			
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)		Bar. Press.	[in. Hg] [mbar]
Probe I.D. No.			
Liner Material			

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	
Start Time:	Stop Time:	

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ Bag Flow	Notes O2
3	65	0.70	1.3	200.64	295	254	250	60	74	66	3.5	0.20	10.0
4	70	0.60	1.4	203.99	295	251	250	58	74	66	4.0	0.20	10.3
5	75	0.63	1.5	207.535	294	251	248	59	75	67	4.0	0.20	10.6 207.880
4-1	80	0.53	1.2	210.74	292	248	251	59	73	66	3.5	0.20	11.1 ~0.045
2	85	0.50	1.2	213.87	295	247	250	60	73	66	3.5	0.20	10.5
3	90	0.55	1.3	217.16	296	254	249	61	73	66	4.0	0.20	10.5
4	95	0.57	1.3	220.43	296	253	250	61	74	66	4.0	0.20	10.5
5	100	0.62	1.4	223.870	297	250	250	62	75	67	4.0	0.20	10.6 223.915
5-1	105	0.45	1.0	226.76	297	250	249	63	73	67	3.5	0.20	10.7 ~0.045
2	110	0.43	0.99	229.64	297	245	250	64	73	67	3.5	0.20	9.9
3	115	0.40	0.92	232.41	296	250	250	64	74	67	3.5	0.20	10.8
4	120	0.42	0.97	235.26	297	251	249	63	74	67	3.5	0.20	10.9
5	125	0.72	1.7	238.980	300	251	250	63	74	67	4.5	0.20	10.6
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB

Date 3/16/10

1324

CleanAir ENGINEERING

TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3/16/10
Meter Operator P. Bihun	
Probe Operator P. Bihun	

Meter Box 6-6	Sample Box No. N15
Meter Y_d 0.99900	Meter $\Delta H_@$ 1.6820
K Factor 2.30	Pitot C_p 0.805
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 8 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 96x96			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.1	10.0		

Amb. Temp. (°F) 68	Bar. Press. 30.01	[in. Hg] [mbar]
Probe I.D. No.	67-5-4	
Liner Material	Glass	

Filter No.	E-115-77	
Thimble No.	N/A	
Nozzle Diameter 0.220	Nozzle I.D.	220-1
Start Time: 12:36	Stop Time: 14:47	

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 239.315	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ Bag Flow	Notes O_2	
1-1	5	0.45	1.0	242.26	300	247	250	54	70	68	2.5	0.20	10.8	
2	10	0.54	1.2	245.42	301	255	253	48	71	68	3.0	0.20	10.7	
3	15	0.57	1.3	248.75	302	257	252	45	73	68	3.0	0.20	10.5	
4	20	0.63	1.5	252.34	302	251	249	45	75	69	3.5	0.20	10.5	
5	25	0.60	1.4	255.770	301	249	249	46	77	69	3.5	0.20	11.0	255.880
2-1	30	0.54	1.2	258.98	299	248	250	48	76	69	3.0	0.20	10.8	-0.04
2	35	0.47	1.1	261.95	301	248	251	48	77	70	3.0	0.20	10.8	
3	40	0.60	1.4	265.37	302	254	250	49	78	70	3.0	0.20	11.1	
4	45	0.80	1.8	269.23	303	251	250	49	79	71	3.5	0.20	11.2	
5	50	0.65	1.5	272.785	302	249	249	49	80	71	3.5	0.20	10.7	272.825
3-1	55	0.66	1.5	276.37	299	247	249	51	78	71	3.5	0.20	10.6	-0.04
2	60	0.56	1.3	279.67	301	245	251	52	79	71	3.5	0.20	11.0	
	Total	*		82.900										
	Average	0.7563	1.3268		300.800				75.1800					

* Sum of square roots. 14.12

Circle correct bracketed units on data sheet.

3613 1798

QA/QC PB

Date 3/16/10

CleanAir.
ENGINEERING

TEST LOCATION: RR Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10951		
Plant: N. Broward	Date: 3/16/10		
Meter Operator: P. Bihun			
Probe Operator: P. Bihun			
Meter Box	Sample Box No.		
Meter Y_d	Meter $\Delta H_@$		
K Factor	Pitot C_p		
Leak Rate Before [cfm] [Lpm] @ (in. Hg)			
Leak Rate After [cfm] [Lpm] @ (in. Hg)			
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐		

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [l]	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ Bag Flow	Notes O_2
3	65	0.68	1.6	283.29	302	256	253	53	79	71	3.5	0.20	10.8
4	70	0.66	1.5	286.80	303	254	250	53	80	72	3.5	0.20	9.8
5	75	0.70	1.6	290.430	~~302~~	249	249	55	80	72	3.5	0.20	10.6 290.475
4-1	80	0.60	1.4	293.85	300	241	247	57	80	73	3.5	0.20	11.1 .0045
2	85	0.47	1.1	296.82	300	244	252	57	81	73	3.0	0.20	10.9
3	90	0.50	1.2	300.04	302	255	250	57	81	73	3.0	0.20	11.1
4	95	0.67	1.5	303.58	302	254	250	57	82	73	3.5	0.20	11.3
5	100	0.69	1.6	307.280	301	250	249	58	83	74	4.0	0.20	11.0 307.320
5-1	105	0.41	1.0	310.26	301	250	247	60	82	74	3.0	0.20	9.8 .004
2	110	0.42	0.97	313.09	299	249	251	61	82	75	3.0	0.20	11.0
3	115	0.35	0.81	315.69	297	251	251	62	82	75	3.0	0.20	10.5
4	120	0.43	0.99	318.58	299	252	249	63	82	75	3.0	0.20	11.3
5	125	0.75	1.7	322.380	299	251	250	64	82	75	4.0	0.20	11.0
	Total	*											
	Average												

* Sum of square roots. 14.97

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/16/10

CleanAir ENGINEERING

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Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 1 FF Outlet	
Plant North Broward	Job No. 10955	Method	5/29

Run No. 1	Filter Type Quartz		Sample Box No. M15
Date 3/16/10	Lot No. 56079		pH
Analyst B. Wiltse	Filter No. E115-35		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	734.9	459.3	275.6	
Impinger 2	100 ml 5%HNO3/10%H2O2	655.2	544.3	110.9	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	569.3	547.7	21.6	Date 3/16
Impinger 4	Empty	442.7	437.8	4.9	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	543.8	542.6	1.2	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	559.3	560.2	-0.9	413.3
Impinger 7	Silica Gel	725.3	707.1	18.2	431.5

Run No. 2	Filter Type Quartz		Sample Box No. M10
Date 3/16/10	Lot No. 56079		pH
Analyst B. Wilke	Filter No. E115-36		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	687.1	437.6	249.5	
Impinger 2	100 ml 5%HNO3/10%H2O2	673.8	555.1	118.7	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	571.0	534.3	36.7	Date 3/16
Impinger 4	Empty	451.7	445.5	6.2	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	545.3	543.2	2.1	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	538.7	538.6	0.1	413.3
Impinger 7	Silica Gel	739.3	720.4	18.9	432.2

Run No. 3	Filter Type Quartz		Sample Box No. M15
Date 3/16/10	Lot No. 56079		pH
Analyst B. Wiltse	Filter No. E-115-37		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	746.2	461.6	SB ~~285.1~~ 284.6	
Impinger 2	100 ml 5%HNO3/10%H2O2	645.1	541.8	103.3	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	569.4	550.8	18.6	Date 3/16
Impinger 4	Empty	442.4	439.5	2.9	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	542.9	541.5	1.4	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	559.9	559.9	0.0	SB ~~411.3~~ 410.8
Impinger 7	Silica Gel	735.7	721.5	14.2	SB ~~425.5~~ 425.0

CleanAir ENGINEERING

QA/QC SB
Date 3/16

TEST LOCATION: FF outlet   Fluoride **TESTING** **METHOD:** 13B **PAGE** 1 **OF** 2

UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client: wheelabrator	Project No. 10955
Plant: N. Broward	Date: 3-17-10
Meter Operator: A. Obuchowski	
Probe Operator: B. ARNOLD	

Meter Box: 61-6	Sample Box No.
Meter Y_d: 0.9900	Meter $\Delta H_@$: 1.6820
K Factor: 2.3	Pitot C_p: 0.812
Leak Rate Before: 0.002 [cfm] [Lpm]	@ 15 (in. Hg)
Leak Rate After: 0.001 [cfm] [Lpm]	@ 22 (in. Hg)
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐

Cross-Section of Test Location

Duct Dimensions (in.): 96 x 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.3	10		

Amb. Temp. (°F): 70	Bar. Press.: 30.0 [in. Hg] [mbar]
Probe I.D. No.	67-8-14
Liner Material	glass

Filter No.	—	
Thimble No.	—	
Nozzle Diameter: .268	Nozzle I.D.	268-1
Start Time: 11:46	Stop Time: 12:56	

Traverse Point Number	Min/pt 2.5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 323.725	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. O_2 T_t l/min (°F)	Notes O_2	
5-1	2.5	0.54	1.2	325.33	304	250	249	62	62	61	2	0.30	11.0	
-2	5	0.56	1.3	326.99	301	255	251	58	63	61	3	0.30	10.9	
-3	7.5	0.63	1.4	328.64	302	255	252	56	65	62	3	0.30	10.9	
-4	10	0.75	1.7	330.51	304	256	256	54	66	61	3	0.30	10.4	
-5	12.5	0.79	1.8	332.41	304	255	253	54	68	62	3	0.30	10.2	332.4
4-1	15	0.69	1.6	334.28	301	250	256	56	68	62	3	0.30	10.9	-.07
-2	17.5	0.56	1.3	335.96	304	248	250	57	70	63	3	0.30	8.9	
-3	20	0.66	1.5	337.64	303	249	248	59	71	63	3	0.30	10.6	
-4	22.5	0.78	1.8	339.55	303	250	248	60	73	64	3	0.30	10.3	
-5	25	0.76	1.7	341.45	304	250	249	61	74	64	3	0.30	10.4	341.5
3-1	27.5	0.59	1.4	343.18	300	250	253	62	74	64	3	0.30	10.8	-.05
-2	30	0.57	1.3	344.82	304	249	249	62	76	65	3	0.30	10.0	
-3	32.5	0.65	1.5	346.46	304	250	248	63	76	65	3	0.30	10.1	
	Total	*19.8383	36.40	22.9356	7565				1601	1546				
	Average	.7935	1.4560		302.60				~~66.990~~ 68.28	58				

* Sum of ~~square roots~~.

~~Circle~~ correct bracketed units on data sheet.

QA/QC: [illegible]
Date: 3-17

CleanAir ENGINEERING

TEST LOCATION: FF outlet Fluoride **TESTING** **METHOD:** 13B **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator		Project No. 10955	
Plant N. Broward		Date 3-17-16	
Meter Operator	A. Obuchowski		
Probe Operator	B. ARNOLD		

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft^3] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	
-4	35	0.72	1.7	348.31	303	251	250	62	76	65	3	0.30	10.3	
-5	37.5	0.69	1.6	350.15	303	250	250	61	76	66	3	0.30	9.9	350.26
2-1	40	0.64	1.5	351.99	303	248	249	57	73	66	3	0.30	10.5	-0.11
-2	42.5	0.50	1.2	353.57	302	248	250	54	74	66	3	0.30	10.0	
-3	45	0.46	1.1	355.07	301	250	249	53	74	66	3	0.30	10.6	
-4	47.5	0.60	1.4	356.86	302	250	252	52	74	66	3	0.30	10.2	
-5	50	0.70	1.6	358.55	303	250	250	52	75	66	3	0.30	10.7	358.63
1-1	52.5	0.51	1.2	360.19	300	247	249	51	73	67	3	0.30	10.7	
-2	55	0.54	1.2	361.77	303	250	252	49	74	67	3	0.30	10.9	-.08
-3	57.5	0.54	1.2	363.37	302	252	251	48	75	67	3	0.30	10.2	
-4	60	0.63	1.4	365.04	302	251	250	48	75	67	3	0.30	10.9	
-5	62.5	0.77	1.8	366.97	303	251	251	48	76	67	3	0.30	10.5	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/17

CleanAir ENGINEERING

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TEST LOCATION: FF outlet Fluoride **TESTING** **METHOD:** 13B **PAGE** 1 **OF** 2

UNIT: 21 **RUN:** 2

FIELD DATA SHEET

Client wheelabrator	Project No. 10955
Plant N. Broward	Date 3-17-10
Meter Operator A. Obuchowski	
Probe Operator B. ARNOLD	

Meter Box 61-6	Sample Box No. B7
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6620
K Factor 2.7	Pitot C_p 0.84
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐

Cross-Section of Test Location

[N] [UP]

5

Duct Dimensions (in.) 96x96			
Static Pres (in. H_2O) -10.4	Port Len. (in.) 10	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F) 70	Bar. Press. 30.0 [in. Hg] [mbar]
Probe I.D. No. 67-E-14	
Liner Material glass	

Filter No. —		
Thimble No. —		
Nozzle Diameter 0.266	Nozzle I.D. 26E-1	

Start Time: 13:15	Stop Time: 14:27

Traverse Point Number	Min/pt 2.5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 367.345	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) O_2 l/min	Notes O_2
1-1	2.5	0.54	1.24	BA ~~370.49~~ MISSED BA	299	261	249	54	68	66	3.0	0.3	11.3
2	5	0.53	1.2	370.49	300	259	251	53	70	66	2.5		11.4
3	7.5	0.51	1.2	372.04	300	256	251	51	71	66	3.0		12.4
4	10	0.58	1.3	373.36	301	253	252	51	73	66	3.0		10.8
5	12.5	0.76	1.7	375.53	301	252	251	57	74	66	3.0		10.1
2-1	15	0.67	1.5	377.41	302	247	249	52	74	67	3.5		11.3
2	17.5	0.58	1.3	379.05	304	248	250	52	74	67	3.5		9.3
3	20	0.65	1.5	380.77	301	250	251	54	76	47	3.5		10.8
4	22.5	0.74	1.7	382.61	303	251	250	57	77	68	4.0		10.4
5	25	0.74	1.7	384.47	302	251	251	60	78	68	4.0		10.9
3-1	27.5	0.65	1.5	386.32	301	250	250	64	76	68	3.5		11.1
2	30	0.53	1.2	387.92	303	249	249	64	77	68	3.5		9.6
3	32.5	0.57	1.3	389.55	302	250	251	64	78	68	3.0		11.4
	Total	*19.9818	38.0000	42.9200	7551				1866	1194			
	Average	0.7993	1.5200		302.0400				~~71.2000~~ SB				

-.29
-.09
.580

* Sum of square roots: 1.4736

71.600

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-17-10

CleanAir ENGINEERING

TEST LOCATION: FF outlet Fluoride **TESTING** **METHOD:** 13D **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client	Project No.
Plant	Date
Meter Operator	
Probe Operator	

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt / Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	
3-4	35	0.79	1.8	391.42	303	250	250	63	78	68	4.0	0.3	10.9	-.14
-5	37.5	0.81	1.9	393.39	304	250	250	63	78	68	4.0		10.5	-.11
4-1	40	0.60	1.4	395.24	301	249	250	63	76	69	3.0		11.8	
2	42.5	0.53	1.2	396.81	302	248	249	63	77	68	3.0		10.3	
3	45	0.62	1.4	398.49	303	250	251	62	77	69	3.0		10.2	
4	47.5	0.74	1.7	400.33	302	252	250	61	77	69	3.0		10.8	
5	50	0.74	1.7	402.20	303	251	251	61	78	69	4.0		11.2	
5-1	52.5	0.53	1.2	403.88	300	250	250	58	75	69	3.0		11.9	
2	55	0.56	1.2	405.42	303	249	249	56	75	68	3.0		10.3	
3	57.5	0.61	1.4	407.10	303	249	249	54	74	69	3.0		10.4	
4	60	0.73	1.7	408.92	303	250	250	53	76	68	3.0		9.9	
5	62.5	0.82	1.9	410.845	305	250	251	52	77	69	4.0		10.7	
	Total	*		42.9200										
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/17

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CleanAir ENGINEERING

TEST LOCATION: FF outlet Fluoride **TESTING** **METHOD:** 13B **PAGE** 1 **OF** 2

UNIT: 1 **RUN:** 3

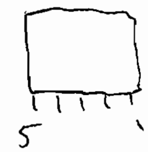
FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-17-10
Meter Operator	A. Chudkowski		
Probe Operator	B. Arnold		

Meter Box	61-6	Sample Box No.	
Meter Y_d	0.9900	Meter $\Delta H_@$	1.6820
K Factor	2.3	Pitot C_p	0.84
Leak Rate Before 0.002 [cfm] [Lpm]	@ 15 (in. Hg)		
Leak Rate After 0.002 [cfm] [Lpm]	@ 15 (in. Hg)		
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐		

Cross-Section of Test Location

[N] [UP]



Duct Dimensions (in.)	96x96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10		

Amb. Temp. (°F) 70	Bar. Press. 30.0	[in Hg] [mbar]	
Probe I.D. No.	67-8-14		
Liner Material	glass		

Filter No.	—	
Thimble No.	—	
Nozzle Diameter 0.268	Nozzle I.D.	268-1

Start Time:	14:45	Stop Time:	15:53

Traverse Point Number	Min/pt 2.5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 411.34	Stack Temp. Ts (°F)	Probe T_p (°F) Set Point 250	Filter T_f (°F) Set Point 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. O_2 T_t % (°F)	Notes O_2	
5-1	2.5	0.51	1.2	412.95	302	259	244	60	68	66	2	0.30	11.2	
-2	5	0.52	1.2	414.54	301	255	250	57	69	66	2		10.4	
-3	7.5	0.55	1.3	416.14	303	258	251	56	70	66	2		11.8	
-4	10	0.63	1.4	417.82	302	256	251	55	71	66	2		9.0	419.5
-5	12.5	0.58	1.3	419.46	302	253	250	55	72	66	2		10.8	0.02
4-1	15	0.58	1.3	421.15	302	250	252	57	71	66	2		10.9	
-2	17.5	0.54	1.2	422.70	303	249	249	58	72	66	2		10.8	
-3	20	0.65	1.5	424.39	303	250	249	59	72	66	2		11.1	
-4	22.5	0.69	1.6	426.06	304	251	251	60	73	66	2		10.5	428.0
-5	25	0.77	1.7	427.95	302	250	252	61	74	66	2		10.9	
3-1	28.7	0.71	1.6	429.81	302	250	250	62	73	66	3		10.3	0.08
-2	30	0.54	1.2	431.40	304	248	252	62	73	66	3		11.0	
-3	32.5	0.64	1.5	433.18	303	250	249	63	73	66	3		10.5	
	Total	*19.1426	33.820	21.470	3565				1022	1662				
	Average	0.7657	1.3528		302.60				~~69.680~~ 69.700					

~~* Sum of square roots.~~

~~Circle correct~~ bracketed units on data sheet.

QA/QC Ca

Date 3-17

FDS005-General.xls, Feb 2002

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CleanAir ENGINEERING

TEST LOCATION: FF outlet fluoride **TESTING** **METHOD:** 13 B **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10655
Plant: N. Broward	Date 3-17-10
Meter Operator: A. Obuchowski	
Probe Operator: BARNOLD	

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	
-4	35	0.65	~~2~~ 1.5	434.95	304	250	250	~~304~~ 62 @	74	67	3	0.30	9.7	
-5	37.5	0.66	1.5	436.74	303	251	249	60	75	67	3		10.0	436.~~89~~ 79 @
2-1	40	0.66	1.5	438.55	302	249	249	60	73	67	3		10.9	
-2	42.5	0.53	1.2	440.14	304	248	252	61	74	67	3		10.5	-0.05
-3	45	0.53	1.2	441.69	304	250	250	61	74	67	3		11.3	
-4	47.5	0.60	1.4	443.41	305	251	249	62	75	67	3		8.4	
-5	50	0.69	1.6	445.21	303	251	250	60	75	67	3		11.3	445.30
1-1	52.5	0.49	1.1	446.79	302	250	249	58	75	67	3		10.9	
-2	55	0.50	1.2	448.35	302	249	249	56	74	68	3		10.9	-0.09
-3	57.5	0.40	0.92	449.77	301	250	250	55	74	67	3		9.0	
-4	60	0.56	1.2	451.33	306	250	250	55	74	67	3		11.5	
-5	62.5	0.65	1.5	453.11	302	250	251	56	74	67	3		9.1	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/17

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 1 FF Outlet	
Plant North Broward	Job No. 10955	Method 13B	

Run No. 1	Filter Type Teflon glass mat	Sample Box No. B6
Date 3/17/10	Lot No.	pH
Analyst B. Wilke	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	100 mL DI H2O	665.4	546.3	119.1	
Impinger 2	100 mL DI H2O	630.2	562.5	67.7	QA/QC BW
Impinger 3	Empty	480.7	459.0	21.7	Date 3/17
Impinger 4	Silica Gel	826.4	~~721.6~~ 809.4	17.0	
					Total Weight (gm)
					208.5
					225.5

Run No. 2	Filter Type Teflon glass mat	Sample Box No. B7
Date 3/17/10	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	100 mL DI H2O	658.1	542.1	116.0	
Impinger 2	100 mL DI H2O	621.1	544.3	76.8	QA/QC SB
Impinger 3	Empty	458.4	437.7	20.7	Date 3/17
Impinger 4	Silica Gel	799.4	780.6	18.8	
					Total Weight (gm)
					213.5
					232.3

Run No. 3	Filter Type Teflon glass mat	Sample Box No. B5
Date 3/17/10	Lot No.	pH
Analyst B. Wilke	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	100 mL DI H2O	661.5	540.4	121.1	
Impinger 2	100 mL DI H2O	619.3	550.6	68.7	QA/QC BW
Impinger 3	Empty	469.1	450.5	18.6	Date 3/17
Impinger 4	Silica Gel	765.0	~~653.0~~ RV 741.1	23.9	
					Total Weight (gm)
					208.4
					232.3

CleanAir. ENGINEERING

QA/QC SB
Date 3/17

G-17

TEST LOCATION: FF outlet   HCL **TESTING**   **METHOD:** 26A   **PAGE** 1 **OF** 1

UNIT: 1   **RUN:** 1

FIELD DATA SHEET

Client	wheelabrator	Project No.	6955
Plant	N. Broward	Date	3-18-10
Meter Operator	A. Obuchowski		
Probe Operator	—		

Meter Box	ES-2	Sample Box No.	321
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7759
K Factor	—	Pitot C_p	
Leak Rate Before 0.003 [cfm] [Lpm]	@ 15 (in. Hg)		
Leak Rate After [cfm] [Lpm]	@ (in. Hg)		
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐		

Cross-Section of Test Location

[N] [UP]

5 3

Duct Dimensions (in.) 96x96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-11.1	16		

Amb. Temp. (°F) 65	Bar. Press. 30.05 [in. Hg] [mbar]		
Probe I.D. No.	67-4-3		
Liner Material	glass		

Filter No.	—	
Thimble No.	—	
Nozzle Diameter	—	Nozzle I.D. —

Start Time:	7:02	Stop Time:	8:02

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 269.166	Stack Temp. Ts (°F)	Probe T_p (°F) Set Point 300	Filter T_f (°F) Set Point 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes 62
3-1	5	N/A	1.5	272.58	308	296	299	47	59	57	5	N/A	10.2
	10		1.5	275.83	309	297	300	43	59	57	5		9.9
	15		1.5	279.19	310	297	300	43	63	57	5		11.1
	20		1.5	282.44	309	299	300	44	65	57	5		10.9
	25		1.5	285.83	307	300	300	46	68	58	5		9.9
	30		1.5	289.17	307	300	300	49	69	58	5		10.2
	35		1.5	292.53	307	299	300	53	~~73~~ 70	58	5		9.4
	40		1.5	295.89	307	300	299	56	70	59	5		9.5
	45		1.5	299.18	307	299	300	60	70	59	5		9.8
	50		1.5	302.64	307	299	300	61	70	60	5		9.5
	55		1.5	305.92	307	298	300	61	70	60	5		9.3
	60		1.5	309.265	307	298	299	62	70	60	5		9.9
	Total	*	18	40.1050	3692				807	700			
	Average		1.50		307.6667				62.6250				

* Sum of square roots.   Circle correct bracketed units on data sheet.

QA/QC [initials]
Date 3-18

CleanAir ENGINEERING

TEST LOCATION: FF outlet HCL **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 1 **RUN:** 2 **FIELD DATA SHEET**

Client	wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-16-10
Meter Operator	A. Obuchovski		
Probe Operator	–		

Meter Box	85-2	Sample Box No.	
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7759
K Factor	–	Pitot C_p	
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)			
Leak Rate After 0.001 [cfm] [Lpm] @ 15 (in. Hg)			
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location

Duct Dimensions (in.)	96x96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out]	First point all the way [In] [Out] of page
~~-0.5~~ -0.9 C	10		

Amb. Temp. (°F) 65	Bar. Press. 30.05 [in Hg] [mbar]		
Probe I.D. No.	67-4-3		
Liner Material	glass		

Filter No.	–	
Thimble No.	–	
Nozzle Diameter	–	Nozzle I.D. –
Start Time: 9:26	Stop Time: 10:37	

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³][L] 309.830	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 300	Filter T$_f$ (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes paused at 9:51
3-1	5	N/A	1.5	313.18	309	300	300	50	61	60	5	N/A	9.4
	10		1.5	316.51	310	300	300	49	61	60	5		9.1
	15		1.5	319.79	309	296	301	49	64	60	5		10.1
	20		1.5	323.05	309	298	300	51	65	61	5		9.9
	25		1.5	326.39	310	299	301	53	67	61	5		10.0
	30		1.5	329.72	308	299	299	55	66	62	5		10.0
	35		1.5	333.10	305	297	301	58	66	62	5		9.2
	40		1.5	336.41	310	297	301	59	68	63	5		10.3
	45		1.5	339.84	310	298	301	60	69	63	5		10.1
	50		1.5	343.37	310	297	299	61	68	63	5		10.1
	55		1.5	346.40	309	299	299	62	68	63	5		9.6
	60		1.5	349.730	310	299	300	63	67	63	5		9.2
	Total	*	18	39.90	3709				790	741			
	Average		1.50		309.0833				63.7917				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC Q

Date 3-18

CleanAir ENGINEERING

TEST LOCATION: FF outlet HCL **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-18-10
Meter Operator	A. Obuchowski		
Probe Operator	–		

Meter Box	85-2	Sample Box No.	
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7759
K Factor	–	Pitot C_p	
Leak Rate Before	0.006 [cfm] [Lpm] @ 15 (in. Hg)		
Leak Rate After	0.002 [cfm] [Lpm] @ 15 (in. Hg)		
Pitot Leak Check Before:		After: Good ☐ Bad ☐	

Cross-Section of Test Location

[N] [UP]

5 1

Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-11.0	10		

Amb. Temp. (°F)	65	Bar. Press.	30.05 [in Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	Glass		

Filter No.	–	
Thimble No.	–	
Nozzle Diameter	–	Nozzle I.D. –

Start Time:	11:49	Stop Time:	12:49

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 351.710	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes
3-1	5	N/A	1.5	355.11	310	300	300	54	67	65	5	n/a	10.4
	10		1.5	358.45	310	299	300	52	67	65	5		10.5
	15		1.5	361.79	308	296	302	53	69	65	5		10.9
	20		1.5	365.12	307	299	300	56	72	66	5		11.0
	25		1.5	368.[illegible]	309	297	299	59	71	66	5		10.8
	30		1.5	371.80	311	298	298	61	72	67	5		10.8
	35		1.5	375.17	311	297	300	61	72	67	5		10.6
	40		1.5	378.59	311	300	300	62	74	68	5		10.0
	45		1.5	381.87	312	299	301	61	74	68	5		9.4
	50		1.5	385.21	310	297	300	60	73	68	5		10.4
	55		1.5	388.55	310	297	300	60	72	68	5		10.2
	60		1.5	391.865	310	296	301	62	73	69	5		9.5
	Total	*	18	40.1550	3719				856	802			
	Average		1.50		309.9167				69.0833				

* Sum of square roots.

~~Circle correct~~ bracketed units on data sheet.

QA/QC ________

Date 7-14

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator	Unit Name/Location Unit 1 FF Outlet
Plant North Broward / Job No. 10955	Method Mod. 26A

Run No. 1	Filter Type Quartz		Sample Box No. B21
Date 3/18/10	Lot No.		pH
Analyst B. Wilbe	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	501.4	472.8	28.6	
Impinger 2	100 mL 01.N H2SO4	741.6	642.1	99.5	QA/QC [illegible]
Impinger 3	100 mL 01.N H2SO4	582.6	535.0	47.6	Date 3/18
Impinger 4	Empty	472.6	448.5	24.1	
Impinger 5	Silica Gel	735.2	717.6	17.6	Total Weight (gm)
					199.8
					217.4

Run No. 2	Filter Type Quartz		Sample Box No. B11
Date 3/18/10	Lot No.		pH
Analyst B Wilbe	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4 524.0	~~504.6~~ BW	~~469.1~~ BW	460.1 63.9	
Impinger 2	100 mL 01.N H2SO4 680.6	~~629.1~~	561.4	119.2	QA/QC SB
Impinger 3	100 mL 01.N H2SO4 589.0	~~582.0~~	555.6	33.4	Date 3/18
Impinger 4	Empty 465.1	~~439.9~~	456.4	8.7	
Impinger 5	Silica Gel	791.5	780.5	11.0	Total Weight (gm)
					225.2
					236.2

Run No. 3	Filter Type Quartz		Sample Box No. ~~B1~~ B21 BW
Date 3/18/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	503.1	472.6	30.5	
Impinger 2	100 mL 01.N H2SO4	571.2	642.0	115.7	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	757.7	535.8	35.4	Date 3/18
Impinger 4	Empty	458.9	448.6	10.3	
Impinger 5	Silica Gel	735.2	716.0	19.2	Total Weight (gm)
					191.9
					211.1

CleanAir ENGINEERING

QA/QC SB
Date 3/18

TEST LOCATION: SDA INLET HCL **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

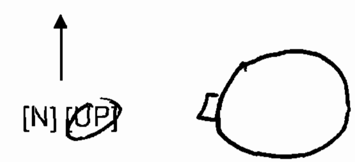
UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3-19-10
Meter Operator B. Arnold	
Probe Operator B. Arnold	

Meter Box 85-4	Sample Box No. 822
Meter Y_d 1.0085	Meter $\Delta H_@$ 1.7723
K Factor N/A	Pitot C_p
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 22 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.) 105			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.9	14		

Amb. Temp. (°F) 58	Bar. Press. 30.05 [in. Hg] [mbar]		
Probe I.D. No. 67-4-4			
Liner Material GLASS			
Filter No. N/A			
Thimble No. N/A			
Nozzle Diameter N/A	Nozzle I.D. N/A		
Start Time: 7:02	Stop Time: 8:02		

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 614.080	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 355	Filter T_f (°F) Set Points 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp.~~ BA T_t (°F)	Notes
1-1	5		1.2	617.19	486	355	356	60	58	56	3.0	9.7	
	10			620.24	487	356	356	58	59	56	3.5	9.6	
	15			623.31	493	352	354	61	64	57	5.5	10.6	
	20			626.40	493	350	354	65	63	58	7.0	10.1	
	25			629.49	488	355	353	60	63	58	9.0	9.8	
	30			632.57	488	357	354	60	63	58	~~9.8~~ 10.0	9.6	
	35			635.64	492	358	355	59	63	58	12.0	8.8	
	40			638.74	490	355	355	59	63	58	14.0	8.8	
	45			641.87	489	354	354	62	63	58	16.5	8.6	
	50			644.98	486	353	355	62	63	60	17.5	9.4	
	55			648.09	486	356	354	61	63	59	19.5	9.5	
	60		1.1	651.130	488	352	353	62	63	59	22.0	9.7	
	Total	*	14.3000	37.0500	5866				748	690			
	Average		1.1917		488.833				60.1250				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA
Date 3-19-10

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CleanAir ENGINEERING

TEST LOCATION: SDA INLET | HCL **TESTING** | **METHOD:** 26A | **PAGE** 1 **OF** 1

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10955
Plant: N. Broward	Date: 3-19-10
Meter Operator: B. ARNOLD	
Probe Operator: B. ARNOLD	

Meter Box: 85-4	Sample Box No. B16
Meter Y_d: 1.0085	Meter $\Delta H_@$: 1.7723
K Factor: N/A	Pitot C_p
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 22 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 105

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.7	14		

Amb. Temp. (°F) 62	Bar. Press. 30.05 [in. Hg] [mbar]
Probe I.D. No. 67-4-4	
Liner Material GLASS	

Filter No. N/A		
Thimble No. N/A		
Nozzle Diameter N/A	Nozzle I.D. N/A	

Start Time: 9:26	Stop Time: 10:37

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 655.840	Stack Temp. Ts (°F)	Probe T_p (°F) Set Point 355	Filter T_f (°F) Set Point 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ O2	Notes
1-1	5		1.2	658.81	485	351	365	66	62	61	3.0	9.4	-.1100 For
	10			661.92	485	355	360	64	66	63	6.5	9.5	STOP + Leak ✓
	15			664.82	489	357	357	61	~~68~~ 68	63	10.0	8.5	Change filter
	20			667.79	489	356	356	60	69	63	13.0	9.2	
	25			670.71	494	360	358	58	70	64	~~16.5~~ 22.0	9.9	670.820 lkck.
	30			673.91	489	344	348	57	65	64	3.0	9.6	
	35			676.82	485	361	350	58	67	65	3.0	9.4	
	40			679.75	487	349	357	59	67	65	4.5	10.1	
	45			682.69	491	347	346	59	71	65	5.5	10.1	
	50			685.78	494	358	349	60	72	66	7.0	9.3	
	55			688.68	490	351	350	60	69	66	9.0	8.6	
	60			691.690	491	352	353	60	69	66	10.5	8.2	
	Total	*		35.7400					815	771			
	Average				489.0833				66.0833				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA
Date 3-19-10

CleanAir ENGINEERING

TEST LOCATION: SDA INLET HCL **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3-17-10
Meter Operator B. ARNOLD	
Probe Operator B. ARNOLD	

Meter Box 85-4	Sample Box No. 22
Meter Y_d 1.0085	Meter $\Delta H_@$ 1.7723
K Factor N/A	Pitot C_p
Leak Rate Before .003 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 18 (in. Hg)	
Pitot Leak Check Before: ☑	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 105			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.7	14		

Amb. Temp. (°F) 70	Bar. Press. 30.05 [in. Hg] [mbar]	
Probe I.D. No. 67-4-4		
Liner Material GLASS		

Filter No. N/A		
Thimble No. N/A		
Nozzle Diameter N/A	Nozzle I.D. N/A	

Start Time: 11:49	Stop Time: 12:49

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 691.850	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 355	Filter T$_f$ (°F) Set Points 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp.~~ T_t (°F) 02	Notes
1-1	5		1.2	694.83	494	351	355	65	72	72	2.5	9.7	
	10			697.73	496	355	354	61	74	72	3.0	10.1	
	15			700.68	491	353	354	58	78	73	4.0	10.7	
	20			703.65	494	358	359	58	78	74	5.5	11.0	
	25			706.63	501	357	355	59	78	74	7.5	10.7	
	30			709.63	500	357	354	57	78	75	8.5	10.6	
	35			712.61	502	359	357	56	77	75	10.0	10.4	
	40			715.60	501	350	355	58	78	75	11.5	10.6	
	45			718.58	497	357	353	60	79	76	13.5	10.3	
	50			721.53	497	355	355	61	76	75	15.0	9.7	
	55			724.50	494	352	355	63	75	75	16.0	9.5	
	60			727.450	496	355	355	64	75	74	18.0	9.0	
	Total	*		35.6000	5963				919	890			
	Average				496.9167				75.3750				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-19-10

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FDS005 General.xls, Feb 2002

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 1.SDA Inlet	
Plant North Broward	Job No. 10955	Method	Mod. 26A

Run No. 1	Filter Type Quartz		Sample Box No. B22
Date 3/18/10	Lot No.		pH
Analyst B. Wiltse	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	50 mL 0.1N H2SO4	504.6	479.6	
Impinger 2	100 mL 01.N H2SO4	629.1	537.6	
Impinger 3	100 mL 01.N H2SO4	582.0	557.1	
Impinger 4	Empty	439.9	430.7	
Impinger 5	Silica Gel	775.4	753.7	

QA/QC SB
Date 3/18

Total Weight (gm)

Run No. 2	Filter Type Quartz		Sample Box No. B16
Date 3/18/10	Lot No.		pH
Analyst R. Vicere/B.Wiltse	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	50 mL 0.1N H2SO4	523.3	454.7	68.6
Impinger 2	100 mL 01.N H2SO4	606.5	542.4 ~~557.7~~ BW	64.1
Impinger 3	100 mL 01.N H2SO4	550.5	540.8	9.7
Impinger 4	Empty	466.8	463.4	3.4
Impinger 5	Silica Gel	764.5	753.2	11.3

QA/QC SB
Date 3/18

Total Weight (gm)
145.8
157.1

Run No. 3	Filter Type Quartz		Sample Box No.
Date 3/18/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	50 mL 0.1N H2SO4	538.6	469.9	68.7
Impinger 2	100 mL 01.N H2SO4	597.4	537.1	60.3
Impinger 3	100 mL 01.N H2SO4	561.1	553.2	7.9
Impinger 4	Empty	432.6	430.6	2.0
Impinger 5	Silica Gel	722.8	711.4	11.4

QA/QC SB
Date 3/18

Total Weight (gm)
138.9
150.3

CleanAir
ENGINEERING

ImpFieldWSht_200408a
NS ImpFieldWSht

QA/QC SB
Date 3/18

G - 25

TEST LOCATION: FF Outlet   Particulate/Metals **TESTING**   **METHOD:** 5/29   **PAGE** 1 **OF** 2

UNIT: 2   **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3/8/10
Meter Operator J. Bihun	
Probe Operator J. Bihun	

Meter Box 66-24	Sample Box No. M15
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7576
K Factor 2.35	Pitot C_p 0.805
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.004 [cfm] [Lpm] @ 5 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

5 … 1

Duct Dimensions (in.) 96 x 96			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10.0		

Amb. Temp. (°F) 60	Bar. Press 30.05 [in. Hg] [mbar]	
Probe I.D. No.	67-5-4	
Liner Material	Glass	

Filter No. E-115-30		
Thimble No. N/A		
Nozzle Diameter 0.270	Nozzle I.D. 270-1	
Start Time: 7:09	Stop Time: 9:22	

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 446.115	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 210	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m in}$ (°F)	DGM Outlet $T_{m out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) Gas Flow	Notes O_2	
5-1	5	0.59	1.4	449.45	308	245	250	54	59	57	4.5	0.20	9.9	
2	10	0.48	1.1	452.36	307	253	260	47	61	58	3.5	0.20	9.7	
3	15	0.46	1.1	455.23	308	257	253	44	63	58	3.5	0.20	9.9	
4	20	0.50	1.2	458.32	308	252	248	44	66	58	4.0	0.20	10.0	461.080
5	25	0.42	0.99	461.025	308	249	250	44	68	59	3.5	0.20	8.8	-0.055
4-1	30	0.55	1.3	464.29	307	246	247	45	68	60	4.0	0.20	10.3	
2	35	0.54	1.3	467.47	309	243	254	44	71	61	4.0	0.20	10.2	
3	40	0.67	1.6	471.05	309	257	252	44	72	61	4.5	0.20	9.5	
4	45	0.70	1.7	474.72	309	254	249	44	74	62	5.0	0.20	10.4	478.310
5	50	0.68	1.6	478.275	309	250	250	45	76	63	4.5	0.20	10.0	-0.035
3-1	55	0.59	1.4	481.6	308	246	248	46	74	64	4.5	0.20	10.4	
2	60	0.53	1.3	484.86	309	243	254	46	76	65	4.0	0.20	10.3	
	Total	*		84.670										
	Average	0.7819	1.4596		307.480				69.9000					

* Sum of square roots 15.94

3699   1554

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/18/10

CleanAir ENGINEERING

TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No: 10557
Plant N. Broward	Date 3/18/10
Meter Operator P. Bihun	
Probe Operator P. Bihun	

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	ProbeT_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp T_t (°F)~~ Bag Flow	Notes O2
3	65	0.58	1.4	488.21	309	257	257	47	77	66	4.5	0.20	10.8
4	70	0.66	1.6	491.81	310	253	249	47	78	67	4.5	0.20	9.9
5	75	0.72	1.7	495.505	309	250	249	47	79	67	5.0	0.20	10.4 495.5[illegible]
2 1	80	0.61	1.4	498.87	308	245	249	49	77	68	4.5	0.20	10.7 -9.08
2	85	0.87	2.0	502.81	309	249	255	50	79	68	5.5	0.20	10.6
3	90	0.72	1.7	506.51	309	256	249	49	80	69	5.0	0.20	9.6
4	95	0.82	1.9	510.39	305	252	247	50	81	70	5.5	0.20	10.0
5	100	0.75	1.8	514.185	307	250	250	51	82	70	5.0	0.20	10.3 514.[illegible]
1 1	105	0.55	1.3	517.50	305	248	246	53	78	71	4.5	0.20	10.3 -0.07
2	110	0.60	1.4	520.86	303	250	252	53	81	71	4.8	0.20	8.8
3	115	0.55	1.3	524.05	303	250	250	53	82	72	4.5	0.20	9.3
4	120	0.58	1.4	527.40	305	252	250	55	82	72	4.5	0.20	9.3
5	125	0.68	1.6	531.025	306	251	252	55	82	72	5.0	0.20	9.4
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/18/10

FDS005-General.xls, Feb 2002

CleanAir ENGINEERING

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TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	1095F
Plant	N. Broward	Date	3/18/10
Meter Operator	P. Bihun		
Probe Operator	P. Bihun		

Meter Box	C6-24	Sample Box No.	M10
Meter Y_d	0.9904	Meter $\Delta H_@$	1.7516
K Factor	2.35	Pitot C_p	0.805
Leak Rate Before	0.003 [cfm] [Lpm] @ 15 (in. Hg)		
Leak Rate After	0.002 [cfm] [Lpm] @ 9 (in. Hg)		
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐		

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 96 x 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10.0	[In]	[In]

Amb. Temp. (°F)	65	Bar. Press.	30.05 [in. Hg] [mbar]
Probe I.D. No.	67-5-4		
Liner Material	Glass		

Filter No.	E-115-31		
Thimble No.	N/A		
Nozzle Diameter	0.270	Nozzle I.D.	270-1

Start Time: 9:49 Stop Time: 12:02

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F)	Filter T_f (°F)	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp T_t (°F)~~ Gas Flow	Notes O_2	
				531.310		Set Points 250	250							
5-1	5	0.58	1.4	534.68	307	246	253	59	73	72	4.5	0.25	10.0	
2	10	0.59	1.4	537.96	307	253	255	50	75	72	4.5	0.25	9.5	
3	15	0.60	1.4	541.26	308	255	257	47	78	72	4.5	0.25	10.5	
4	20	0.67	1.6	544.83	310	252	250	47	80	73	5.0	0.25	9.4	548.430
5	25	0.66	1.6	548.400	310	250	252	48	82	74	5.0	0.25	9.3	-0.04
4-1	30	0.53	1.3	551.68	308	246	249	51	81	74	4.5	0.25	9.6	
2	35	0.51	1.2	554.82	308	245	250	50	83	74	4.5	0.25	9.8	
3	40	0.58	1.4	558.18	308	254	250	49	84	75	5.0	0.25	9.9	
4	45	0.62	1.5	561.66	308	251	249	49	85	76	5.0	0.25	10.2	565.185
5	50	0.62	1.5	565.150	308	257	250	50	86	76	5.0	0.25	10.3	-0.035
3-1	55	0.51	1.3	568.41	308	247	250	53	84	77	4.5	0.25	9.9	
2	60	0.50	1.2	571.54	308	245	251	53	86	77	4.5	0.25	8.9	
	Total	*		81,630										
	Average	0.7481	1.3336		307.6000				81.9000					

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/26/10

FDS005-General.xls, Feb 2002

CleanAir ENGINEERING

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TEST LOCATION: PF outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10257
Plant N. Broward	Date 3/18/10
Meter Operator P. Bihun	
Probe Operator P. Bihun	

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ Bag Flow	Notes O_2	
3	65	0.53	1.3	574.77	307	255	250	52	87	78	5.0	0.25	10.1	
4	70	0.56	1.3	578.00	307	253	250	52	88	79	5.0	0.25	9.7	581.270
5	75	0.56	1.3	581.215	307	252	250	53	89	79	5.0	0.25	9.6	-0.055
2-1	80	0.53	1.3	584.50	306	248	250	56	88	80	5.0	0.25	10.4	
2	85	0.47	1.1	587.56	306	246	250	58	89	81	4.5	0.25	9.8	
3	90	0.56	1.3	590.65	308	253	250	57	90	82	5.0	0.25	10.0	
4	95	0.64	1.5	594.07	307	251	250	56	90	82	5.5	0.25	10.5	597.830
5	100	0.74	1.7	597.775	308	250	250	56	91	82	5.5	0.25	10.3	-0.055
1-1	105	0.55	1.3	601.09	306	250	250	59	89	83	5.0	0.25	10.0	
2	110	0.54	1.3	604.32	308	249	250	59	90	83	5.0	0.25	10.0	
3	115	0.43	1.0	607.20	308	250	251	59	92	84	4.5	0.25	10.3	
4	120	0.40	0.94	609.97	307	251	250	60	91	84	4.5	0.25	10.1	
5	125	0.51	1.2	613.125	307	251	250	61	91	84	5.0	0.25	10.3	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/18/10

CleanAir ENGINEERING

TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3/18/10
Meter Operator	P. Bibeau		
Probe Operator	P. Bibeau		

Meter Box	16-24	Sample Box No.	M15
Meter Y_d	0.9904	Meter $\Delta H_@$	1.7716
K Factor	2.35	Pitot C_p	0.805
Leak Rate Before 0.003 [cfm] [Lpm] @ 15 (in. Hg)			
Leak Rate After 0.003 [cfm] [Lpm] @ 9 (in. Hg)			
Pitot Leak Check Before: ☑		After: Good ☑ Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.7	0.0		

Amb. Temp. (°F)	70	Bar. Press.	30.05 [in. Hg] [mbar]
Probe I.D. No.	6.7-5-4		
Liner Material	Glass		

Filter No.	B-115-32		
Thimble No.	N/A		
Nozzle Diameter	0.270	Nozzle I.D.	270-1

Start Time:	12:27	Stop Time:	14:39

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 613.455	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ Bag Flow	Notes O_2	
1-1	5	0.45	1.1	616.54	306	246	257	63	83	84	4.5	0.25	10.4	
2	10	0.45	1.1	619.54	307	256	253	53	84	84	4.0	0.25	10.3	
3	15	0.43	1.0	622.40	306	252	251	48	86	83	3.5	0.25	10.4	
4	20	0.71	1.7	626.06	307	252	250	47	88	83	4.5	0.25	9.6	K=2.40
5	25	0.73	1.8	629.855	308	249	249	49	90	83	5.0	0.25	10.3	629.920
2-1	30	0.69	1.7	633.63	306	250	250	50	89	83	4.5	0.25	10.0	-0.065
2	35	0.73	1.8	637.48	307	245	250	51	91	84	5.0	0.25	10.2	
3	40	0.70	1.7	641.22	308	255	250	51	92	84	5.0	0.25	9.7	
4	45	0.60	1.4	644.64	308	251	250	52	93	85	4.5	0.25	9.8	
5	50	0.67	1.6	648.225	308	249	249	53	92	85	5.0	0.25	10.0	648.270
3-1	55	0.50	1.2	651.40	306	248	249	54	90	84	4.0	0.25	9.9	-0.045
2	60	0.51	1.2	654.52	308	248	250	54	90	84	4.0	0.25	10.3	
	Total			85.170										
	Average	0.7107	1.4432		307.760				~~84.8000~~ 86.480					

Sum of square roots. 17.3

Circle correct bracketed units on data sheet.

3685

2074

QA/QC PB

Date 3/18/10

CleanAir ENGINEERING

TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10905
Plant	N. Broward	Date	3/18/10
Meter Operator	P. Bihun		
Probe Operator	P. Bihun		

Meter Box		Sample Box No.	
Meter Y_d		Meter $\Delta H_@$	
K Factor		Pitot C_p	
Leak Rate Before	[cfm] [Lpm] @ (in. Hg)		
Leak Rate After	[cfm] [Lpm] @ (in. Hg)		
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐		

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ Bag Flow	Notes O_2	
3	65	0.56	1.3	657.79	308	253	250	54	90	84	4.5	0.25	10.0	
4	70	0.65	1.6	661.41	308	251	249	54	91	84	5.0	0.25	10.0	
5	75	0.66	1.6	665.025	308	251	250	56	92	84	5.0	0.25	10.0	665.060
4-1	80	0.55	1.3	668.31	309	247	250	60	89	84	4.5	0.25	9.7	0.035
2	85	0.56	1.3	671.58	309	247	257	60	90	83	4.5	0.25	9.9	
3	90	0.66	1.6	675.21	310	251	250	60	90	83	5.0	0.25	10.3	
4	95	0.70	1.7	678.95	309	252	250	61	91	83	5.0	0.25	10.6	
5	100	0.72	1.7	682.670	308	250	250	63	92	84	5.0	0.25	10.2	682.740
5-1	105	0.24	0.55	684.890	307	248	250	63	89	84	3.5	0.25	10.7	0.07
2	110	0.61	1.5	688.24	310	247	250	56	88	83	5.0	0.25	11.0	
3	115	0.64	1.5	691.73	308	251	250	52	89	83	5.0	0.25	10.9	
4	120	0.67	1.6	695.33	308	240	244	49	88	82	5.0	0.20	11.0	
5	120	0.63	1.5	698.840	307	242	245	49	88	82	5.0	0.25	10.6	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB

Date 3/18/10

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 FF Outlet	
Plant North Broward	Job No. 10955	Method 5/29	

Run No. 1	Filter Type Quartz		Sample Box No. M15
Date 3/18/10	Lot No.		pH
Analyst B. Wiltse	Filter No. E-115-30		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	723.5	463.1	260.4	
Impinger 2	100 ml 5%HNO3/10%H2O2	689.7	543.1	146.6	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	580.8	550.0	30.8	Date 3/18
Impinger 4	Empty	445.8	440.0	5.8	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	541.9	540.1	1.8	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	562.0	562.2	-0.2	445.2
Impinger 7	Silica Gel	742.7	728.5	14.2	459.4

Run No. 2	Filter Type Quartz		Sample Box No. M10
Date 3/18/10	Lot No.		pH
Analyst B. Wilke	Filter No. E-115-31		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	720.2	440.9	279.3	
Impinger 2	100 ml 5%HNO3/10%H2O2	666.6	559.6	107.0	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	562.4	539.1	23.3	Date 3/18
Impinger 4	Empty	454.2	447.6	6.6	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	546.3	542.7	3.6	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	547.1	546.8	0.3	420.1
Impinger 7	Silica Gel	714.1	700.0	14.1	434.2

Run No. 3	Filter Type Quartz		Sample Box No.
Date 3/18/10	Lot No.		pH
Analyst B. Wiltse	Filter No.		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	732.3	463.4	268.9	
Impinger 2	100 ml 5%HNO3/10%H2O2	677.1	540.4	136.7	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	584.4	551.4	33.0	Date 3/18
Impinger 4	Empty	444.3 BW	440.5	3.8	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	~~563.6~~ 539.6	537.8	1.8	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	563.6	563.4	0.2	444.4
Impinger 7	Silica Gel	711.7	692.5	19.2	463.6

CleanAir ENGINEERING

QA/QC SB
Date 3/18

9

TEST LOCATION: OUTLET FLUORINE **TESTING** **METHOD:** 13B **PAGE** 1 **OF** 2

UNIT: 2 **RUN:** 1

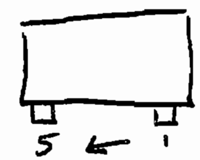
FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.18.10
Meter Operator N. Hutchins	
Probe Operator N. Hutchins	

Meter Box 66-14	Sample Box No. ~~66~~ B6
Meter Y_d 0.9898	Meter $\Delta H_@$ 1.7643
K Factor 2.33	Pitot C_p 0.812
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10	In	In

Amb. Temp. (°F) 60	Bar. Press. 30.05 [in. Hg] [mbar]
Probe I.D. No. 67-8-14	
Liner Material GLASS	

Filter No. NA		
Thimble No.		
Nozzle Diameter 0.268	Nozzle I.D.	0.268-1

Start Time: 7:09	Stop Time: 8:24

Traverse Point Number	Min/pt 2:30 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 499.215	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ IGS	Notes O_2	
4-1	2:30	0.50	1.2	500.77	305	250	250	45	58	56	3	0.3	10.5	
2	5	0.47	1.1	502.26	307	250	250	44	58	56	3	0.3	10.0	
3	7:30	0.45	1.0	503.35	307	250	250	42	60	56	3	0.3	10.0	
4	10	0.43	1.0	505.00	306	250	250	41	62	56	3	0.3	10.0	
5	12:30	0.42	1.0	506.380	306	251	249	40	63	57	3	0.3	10.3	506.465
3-1	15	0.45	1.0	507.85	305	249	248	42	63	57	3	0.3	10.4	-0.085
2	17:30	0.47	1.1	509.32	307	251	249	41	65	58	3	0.3	9.2	
3	20	0.50	1.2	510.82	306	250	250	42	67	58	3	0.3	10.2	
4	22:30	0.58	1.4	512.44	307	250	249	44	68	59	3	0.3	10.2	
5	25	0.56	1.3	513.995	307	250	249	46	69	59	3	0.3	10.3	514.065
2-1	27:30	0.63	1.5	515.73	306	249	249	50	68	60	3	0.3	11.0	-0.07
2	30	0.60	1.4	517.35	308	250	250	51	70	60	3	0.3	10.4	
3	32:30	0.60	1.4	518.95	307	250	249	54	71	60	3	0.3	10.3	
	Total	*18.2547	31.4000	38.985 SB	7656				842 1717	752 1510				
	Average	0.7304	1.2560	38.080	306.2400				64.5400					

*Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NH

Date 3.18.10

CleanAir ENGINEERING

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TEST LOCATION: FF OUTLET Fluoride **TESTING** **METHOD:** 13 B **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client wheelabrator	Project No. 10955
Plant N. Broward	Date 3.18-10
Meter Operator N. Hutchins	
Probe Operator N. Hutchins	

Meter Box 66-14	Sample Box No. B6
Meter Y_d 0.9898	Meter $\Delta H_@$ 1.7643
K Factor 2.33	Pitot C_p 0.812
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

5 ← 1

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10		

Amb. Temp. (°F)	Bar. Press.	[in. Hg] [mbar]
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time: 8:24

Traverse Point Number	Min/pt 2:30 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) IGS	Notes
2-4	35	0.68	1.6	520.70	305	250	249	63	73	61	3	0.3	10.7
5	37:30	0.66	1.5	522.380	305	250	250	63	73	61	3	0.3	11.2 522.455
1-1	40	0.46	1.1	523.89	306	250	250	63	70	62	3	0.3	10.9 -0.075
2	42:30	0.50	1.2	525.39	308	250	245	65	72	62	3	0.3	10.6
3	45	0.46	1.1	526.86	303	250	250	66	72	63	3	0.3	10.6
4	47:30	0.48	1.1	528.33	307	250	249	66	73	63	3	0.3	10.2
5	50	0.68	1.6	529.700	306	250	249	66	74	63	4	0.3	11.0 530.195
5-1	52:30	0.30	0.70	531.35	306	249	249	62	71	64	2	0.3	11.0 -0.495
2	55	0.57	1.3	532.92	306	250	249	60	72	64	3	0.3	11.2
3	57:30	0.66	1.5	534.60	307	251	250	59	74	65	3	0.3	10.9
4	60	0.70	1.6	536.33	306	250	249	58	75	65	3	0.3	11.4
5	62:30	0.65	1.5	538.026	307	251	250	57	76	65	3	0.3	10.6
	Total	*	15.8		3672				875	750			
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/18

CleanAir ENGINEERING

TEST LOCATION: FF OUTLET   Fluoride   **TESTING**   **METHOD:** 13B   **PAGE** 1 **OF** 2

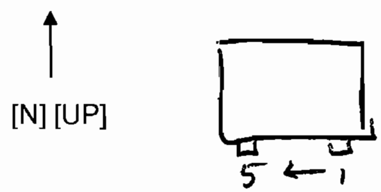
UNIT: 2   **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.18.10
Meter Operator N. Atkins	
Probe Operator "	

Meter Box 66-14	Sample Box No. B7
Meter Y_d 0.9898	Meter $\Delta H_@$ 1.7643
K Factor 2.33	Pitot C_p 0.812
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10	In	In

Amb. Temp. (°F) 60	Bar. Press. 30.05 [in Hg] [mbar]
Probe I.D. No. 67-8-14	
Liner Material GLASS	

Filter No.		
Thimble No.		
Nozzle Diameter 0.268	Nozzle I.D.	.268-1

Start Time: 8:56	Stop Time: 10:10

Traverse Point Number	Min/pt 2:30 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 538.420	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) IGS	Notes O_2
5-1	2:30	0.63	1.5	540.17	304	248	248	62	69	67	3	0.3	11.3
2	5	0.63	1.5	541.85	304	249	248	56	71	67	3	0.3	11.4
3	7:30	~~0.64~~ 0.54	1.3	543.43	302	250	248	53	72	67	3	0.3	10.3
4	10	0.51	1.2	544.94	303	250	250	50	74	67	3	0.3	11.2
5	12:30	0.46	1.1	546.405	304	250	249	48	75	68	3	0.3	9.8 546.475
4-1	15	0.45	1.0	547.86	306	249	248	49	74	68	3	0.3	10.1
2	17:30	0.45	1.0	549.25	305	249	249	49	75	68	3	0.3	11.0
3	20	0.45	1.0	550.65	305	250	249	47	76	68	3	0.3	10.1
4	22:30	0.46	1.1	552.12	305	251	249	48	77	68	3	0.3	10.2
5	25	0.46	1.1	553.595	305	250	249	48	78	69	3	0.3	10.8 553.650
3-1	27:30	0.47	1.1	555.12	305	248	249	51	76	69	3	0.3	11.2
2	30	0.42	0.99	556.49	307	250	248	49	77	69	3	0.3	9.9
3	32:30	0.42	0.99	557.87	307	251	249	49	77	70	3	0.3	9.8
	Total	*17.5498	28.9800	37.3850	7636				971	885			
	Average	0.7020	1.1592		305.4400				73.1600				

*Sum of square roots. 14.88

0.105
0.07
0.055
2.05

Circle correct bracketed units on data sheet. 3962

QA/QC NH
Date 3.18.10

CleanAir ENGINEERING

G - 34

G - 35

TEST LOCATION: FF outlet   Fluoride **TESTING**   **METHOD:** 13B **PAGE** 2 **OF** 2

UNIT: 2   **RUN:** 2   **FIELD DATA SHEET**

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.18.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-14	Sample Box No. B7
Meter Y_d 0.9898	Meter $\Delta H_@$ 1.7643
K Factor 2.33	Pitot C_p 0.812
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press.	[in. Hg] [mbar]
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time: 10:10

Traverse Point Number	Min/pt 2:30 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) IGS	Notes O_2
3-4	35	0.45	1.0	559.26	306	250	249	49	78	70	3	0.3	10.0
5	37:30	0.47	1.1	560.730	306	250	249	50	79	71	3	0.3	9.8 560.780
2-1	40	0.43	1.0	562.18	305	249	250	53	76	71	3	0.3	11.1
2	42:30	0.43	1.0	563.68	306	250	249	52	78	71	3	0.3	10.0
3	45	0.50	1.2	565.10	306	257	249	51	78	71	3	0.3	10.6
4	47:30	0.59	1.4	566.73	306	257	249	57	80	71	3	0.3	11.1
5	50	0.65 ~~[illegible]~~ NH	1.5	568.415	307	250	248	50	81	71	3	0.3	10.1 568.520
1-1	52:30	0.45	1.0	569.95	306	250	250	54	77	72	3	6.3	11.2
2	55	0.46	1.1	571.39	306	250	249	57	78	72	3	0.3	11.0
3	57:30	0.46	1.1	572.86	306	250	249	50	80	72	3	0.3	10.8
4	60	0.51	1.2	574.38	307	250	249	50	80	72	3	0.3	11.1
5	62:30	0.63	1.5	576.085	307	250	250	50	81	72	3	0.3	10.9
	Total	*17.5468	14.10		3674				~~874~~ 946 NH	856			
	Average	0.7020							73.1600				

*Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC JB
Date 3/18

CleanAir ENGINEERING

TEST LOCATION:	FF OUTLET	FLUORIDE	TESTING	METHOD: 13B	PAGE 1 OF 2

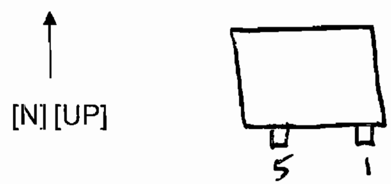
UNIT: 2 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.18.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-14	Sample Box No. B5
Meter Y_d 0.9898	Meter $\Delta H_@$ 1.7643
K Factor 2.24	Pitot C_p 0.812
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 12 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.)	96 x 96		
Static Pres ($in. H_2O$)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10		

Amb. Temp. (°F) 60	Bar. Press. 30.05 [in. Hg] [mbar]		
Probe I.D. No.	87-8-14		
Liner Material	glass		
Filter No.			
Thimble No.			
Nozzle Diameter 0.268		Nozzle I.D.	.268-1
Start Time:	10:45	Stop Time:	12:05

Traverse Point Number	Min/pt 2:30 Elapsed Time	Velocity Head ΔP ($in. H_2O$)	Orifice Setting ΔH ($in. H_2O$)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 576.360	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. (°F)~~ IGS	Notes O_2
2-1	2:30	0.52	1.2	577.94	307	248	249	65	75	74	3	0.3	10.3
2	5	0.48	1.1	579.39	306	250	246	62	77	74	3	0.3	10.4
3	7:30	0.49	1.2	580.88	306	250	249	58	79	74	3	0.3	9.2
4	10	0.59	1.4	582.51	305	250	249	56	81	75	3	0.3	11.1
5	12:30	0.62	1.5	584.215	305	250	249	55	82	75	3	0.3	10.1 584.320
1-1	15	0.44	1.0	585.73	305	250	248	61	81	76	3	0.3	11.3
2	17:30	0.46	1.1	587.21	305	250	249	57	83	77	3	0.3	10.6
3	20	0.43	1.0	588.61	302	250	249	56	85	77	3	0.3	10.8
4	22:30	0.47	1.0	590.02	304	250	249	58	85	77	3	0.3	10.3
5	25	0.62	1.5	591.725	305	250	250	61	86	78	3	0.3	10.2 591.785
3-1	27:30	0.36	0.87	593.11	306	249	247	65	83	79	3	0.3	10.1
2	30	0.46	1.1	594.60	307	250	249	61	84	79	3	0.3	10.0
3	32:30	0.47	1.1	596.07	307	250	248	53	85	79	3	0.3	10.5
	Total	*17.7857	20.1700	38.3650	7643				1066	994			
	Average	0.7114	1.2068		305.7200				81.1000				

* Sum of square roots.

15.070

.105
.060
.065
0.99

.3200

3970

Circle correct bracketed units on data sheet.

QA/QC NH
Date 3.18.10

CleanAir ENGINEERING

TEST LOCATION: FF Outlet Fluoride **TESTING** **METHOD:** 13B **PAGE** 2 **OF** 2

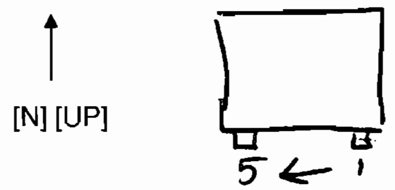
UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator		Project No. 10955	
Plant N. Broward		Date 3.18.10	
Meter Operator N. Hitchins			
Probe Operator N. Hitchins			

Meter Box	66-14	Sample Box No.	B5
Meter Y_d	0.9898	Meter $\Delta H_@$	1.7643
K Factor	2.38	Pitot C_p	0.812
Leak Rate Before	[cfm] [Lpm]	@	(in. Hg)
Leak Rate After	[cfm] [Lpm]	@	(in. Hg)
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location



Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10		

Amb. Temp. (°F)		Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.			
Liner Material			

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time: 12:05

Traverse Point Number	Min/pt 2:30 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T (°F)~~ IGS	Notes O_2
3-4	35	0.51	1.2	597.60	306	250	249	49	85	79	3	0.3	10.8
5	37:30	0.53	1.3	599.185	306	250	248	47	86	80	3	0.3	11.0 599.250
4-1	40	0.56	1.3	600.85	307	249	249	50	84	80	3	0.3	10.3
2	42:30	0.51	1.2	602.44	307	250	249	48	85	80	3	0.3	11.0
3	45	0.52	1.2	NH ~~604~~. 604.08	306	250	249	46	86	80	3	0.3	10.6
4	47:30	0.56	1.3	605.58	307	250	249	46	87	80	3	0.3	10.7
5	50	0.51	1.2	607.150	306	251	249	46	88	80	3	0.3	10.5 607.240
5-1	52:30	0.25	0.60	608.35	305	249	249	60	83	81	3	0.3	11.4
2	55	0.58	1.4	609.99	306	250	249	52	85	81	3	0.3	10.7
3	57:30	0.64	1.5	611.71	306	250	250	49	86	81	3	0.3	11.2
4	60	0.64	1.5	613.37	306	250	249	46	87	81	3	0.3	10.5
5	62:30	0.58	1.4	615.045	305	250	249	46	88	82	3	6.3	11.2
	Total	*							1030	965			
	Average												

* Sum of square roots. 15.1

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/18

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 FF Outlet	
Plant North Broward	Job No: 10955	Method 13B	

Run No. 1	Filter Type Teflon glass mat		Sample Box No. B6
Date 3/18/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	100 mL DI H2O	645.7	547.6	98.1	
Impinger 2	100 mL DI H2O	642.5	566.6	75.9	QA/QC SB
Impinger 3	Empty	482.7	460.8	21.9	Date 3/18
Impinger 4	Silica Gel	772.2	755.7	16.5	
					Total Weight (gm)
					195.9
					212.4

Run No. 2	Filter Type Teflon glass mat		Sample Box No. B7
Date 3/18/10	Lot No.		pH
Analyst R. Vicere / B. Wilke	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	100 mL DI H2O	676.7	542.4	134.3	
Impinger 2	100 mL DI H2O	594.8	541.5	53.3	QA/QC SB
Impinger 3	Empty	446.0	437.0	9.0	Date 3/18
Impinger 4	Silica Gel	769.2	755.9	13.3	
					Total Weight (gm)
					196.6
					209.9

Run No. 3	Filter Type Teflon glass mat		Sample Box No. B5
Date 3/19/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	100 mL DI H2O	678.4	538.3	140.1	
Impinger 2	100 mL DI H2O	600.9	556.3	44.6	QA/QC SB
Impinger 3	Empty	460.3	452.3	8.0	Date 3/18
Impinger 4	Silica Gel	764.5	755.6	8.9	
					Total Weight (gm)
					192.7
					201.6

CleanAir ENGINEERING

QA/QC SB
Date 3/18

TEST LOCATION: OUTLET DIOXIN **TESTING** METHOD: 23 PAGE 1 OF 5

UNIT: 2 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.16.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 46-6	Sample Box No. D8
Meter Y_d 0.9901	Meter $\Delta H_@$ 1.7870
K Factor 2.29	Pitot C_p 0.834
Leak Rate Before 0.005 [cfm] [Lpm]	@ 15 (in. Hg)
Leak Rate After 0.005 [cfm] [Lpm]	@ 15 (in. Hg)
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

5

Duct Dimensions (in.) 96 x 96			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.0	10		

Amb. Temp. (°F) 72	Bar. Press.	[in. Hg] [mbar]
Probe I.D. No.	67-8-17	
Liner Material	GLASS	

Filter No.		
Thimble No.		
Nozzle Diameter 0.264	Nozzle I.D.	.264-1

Start Time: 8:44	Stop Time: 13:36

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 690.310	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) Aux	Notes 165 (lpm)
1-1	5	0.69	1.6	693.89	298	245	249	52	65	62	8	39	10.0 0.10
1	10	0.62	1.4	697.30	297	250	252	48	65	62	8	41	9.8 0.10 ~~.05~~
1-2	15	0.50	1.1	700.03	296	251	249	46	67	63	7	42	10.0 0.10 lpm
2	20	0.49	1.1	703.04	297	252	252	46	69	64	7	42	9.7 0.1
1-3	25	~~0.65~~ 0.50 NH	1.1	705.98	297	251	251	48	70	65	7	42	9.6 0.1
3	30	0.51	1.2	708.99	298	250	250	49	71	65	7	42	9.8 0.1
1-4	35	0.51	1.2	712.03	297	250	250	57	72	67	7	43	8.8 0.1
4	40	0.56	1.3	715.15	296	250	250	51	72	67	7	46	9.6 0.1
1-5	45	0.48	1.1	718.17	295	250	250	45	74	68	7	42	9.3 0.1 .62
5	50	0.76	1.7	721.785	298	250	250	43	74	68	9	41	10.2 0.1 722.405
2-1	55	0.59	1.4	725.74	297	250	253	48	74	70	8	38	10.0 0.1
1	60	0.61	1.4	729.02	297	249	250	41	75	71	8	39	9.6 0.1
	Total	* ~~58~~	58	160.3450	58								
	Average	~~0.74654~~	~~1.2960~~		~~300.6600~~				80.0500				

~~Sum of square roots~~

0.7462 1.294

300.640

Circle correct bracketed units on data sheet.

QA/QC NH

Date 3.16.10

1.770

CleanAir ENGINEERING

TEST LOCATION: OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 2 **OF** 5

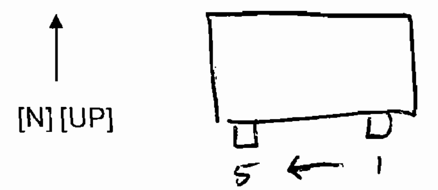
UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator		Project No.	10555
Plant N. Broward		Date	3-16-10
Meter Operator	N. Hitchins		
Probe Operator	N. Hitchins		

Meter Box	66-6	Sample Box No.	D8
Meter Y_d	0.9901	Meter $\Delta H_@$	~~0.834~~ 1.7879 NH
K Factor	2.25	Pitot C_p	0.834
Leak Rate Before	[cfm] [Lpm] @ (in. Hg)		
Leak Rate After	[cfm] [Lpm] @ (in. Hg)		
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12	10	[In]	[In]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes 165 (lpm)	
2-2	65	0.61	1.4	732.30	297	249	249	45	76	72	8	40	9.6 0.1	2.32
2	70	0.64	1.5	735.97	296	253	252	43	77	72	8	42	9.2 0.1	2.33
2-3	75	0.60	1.4	739.11	297	250	251	48	79	73	8	49	9.5 0.1	2.33
3	80	0.58	1.4	742.41	297	249	250	52	80	74	9	53	9.4 0.1	2.33
2-4	85	0.60	1.4	745.77	297	250	250	54	80	75	9	55	9.9 0.1	
4	90	0.53	1.2	748.93	298	249	250	59	80	75	8	NH ~~60~~ 57	9.6 0.1	
2-5	95	0.54	1.3	752.15	296	249	248	57	80	76	8	NH ~~55~~ 53	9.6 0.1	.375
5	100	0.52	1.2	755.290	296	250	250	54	81	76	8	43	9.4 0.1 755.665	
3-1	105	0.63	1.5	759.06	297	249	250	53	80	77	9	43	10.2 0.1	
1	110	0.63	1.5	762.50	298	249	251	49	82	78	9	46	9.7 0.1	
3-2	115	0.55	1.3	765.78	298	251	249	51	83	79	9	53	9.0 0.1	
2	120	0.56	1.3	769.03	297	251	250	54	84	80	9	55	10.1 0.1	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SS

Date 2/18

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CleanAir ENGINEERING

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TEST LOCATION: OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 3 **OF** 5

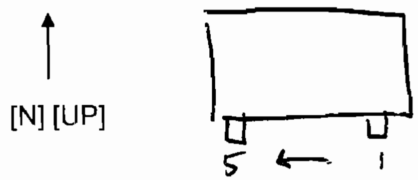
UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client WHEELABRATOR	Project No. 10955
Plant N. BROWARD	Date
Meter Operator N.Hitchins	
Probe Operator N.Hitchins	

Meter Box 66-6	Sample Box No. D8
Meter Y_d 0.9901	Meter $\Delta H_@$ 1.7870
K Factor 2.29	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft^3] [L]	Stack Temp. Ts (°F)	ProbeT_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes 165 (lpm)
3-3	125	0.51	1.2	772.17	297	250	249	60	85	81	8	61	9.8 0.1
3	130	0.52	1.2	775.30	299	250	250	59	86	81	8	53	9.0 0.1
3-4	135	0.56	1.3	778.52	299	250	250	53	86	82	8	44	9.3 0.1
4	140	0.57	1.3	781.71	301	250	250	57	87	82	8	43	9.4 0.1 .365
3-5	145	~~0.62~~ 0.62 NH	1.4	785.06	301	250	252	47	87	83	8	44	9.3 0.1 788.850
5	150	0.63	1.5	788.485	301	250	248	47	88	84	9	42	9.3 ~~788.7~~05 -0.1 NH
4-1	155	0.48	~~1.1~~ NH 1.1	791.93	304	250	252	51	86	84	8	39	10.5 0.1
1	160	0.46	1.1	794.95	304	250	253	46	87	84	8	40	9.7 0.1
4-2	165	0.45	1.0	797.79	305	250	250	46	88	85	7	42	9.0 0.1
2	170	0.48	1.1	800.69	304	252	258	48	89	85	7	44	9.3 0.1
4-3	175	0.52	1.2	803.79	304	250	252	51	89	86	8	49	9.3 0.1
3	180	0.54	1.3	806.93	305	250	251	55	90	86	8	53	8.8 0.1
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/18

CleanAir ENGINEERING

TEST LOCATION: OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 4 **OF** 5

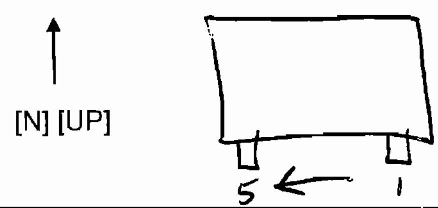
UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client WHEELABRATOR	Project No. 10535
Plant N. BROWARD	Date 3-16-10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-6	Sample Box No. D8
Meter Y_d 0.9901	Meter $\Delta H_@$ 1.7870
K Factor 2.29	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12			

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes TGS (lpm)
4-4	185	0.52	1.2	810.10	304	249	253	60	90	86	8	~~NHS~~ 58	9.3 0.1
4	190	0.53	1.2	813.05	305	250	250	63	90	87	8	60	9.8 0.1
4-5	195	0.52	1.2	816.19	305	250	253	59	89	87	8	50	9.5 0.1 .41
5	200	0.55	1.4	819.560	305	250	250	58	89	86	9	45	9.6 0.1 / 819.970
5-1	205	0.52	1.2	823.03	305	250	250	60	88	86	8	51	9.5 0.1
1	210	0.53	1.2	826.22	305	250	257	51	87	86	8	46	9.4 0.1
5-2	215	0.55	1.3	829.43	306	252	248	48	88	86	8	40	9.6 0.1
2	220	0.56	1.3	832.66	306	252	248	47	88	86	8	40	10.0 0.1
5-3	225	0.62	1.4	836.03	308	250	250	47	88	86	9	41	9.0 0.1
3	230	0.61	1.4	839.41	307	250	250	48	89	86	9	42	9.3 0.1
5-4	235	0.64	1.5	842.89	306	249	249	50	89	86	9	45	10.0 0.1
4	240	0.64	1.5	846.33	306	249	249	53	89	86	9	48	9.1 0.1
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SW
Date 3/18

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CleanAir ENGINEERING

FDS005-General.xls, Feb 2002

TEST LOCATION: OUTLET Dioxin **TESTING** **METHOD:** 23 **PAGE** 5 **OF** 5

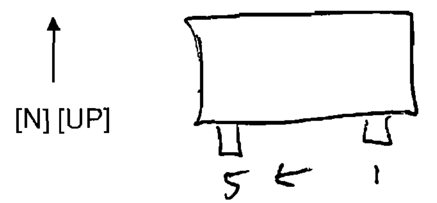
UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10555
Plant N. Broward	Date 3.16.10
Meter Operator N. Aitchins	
Probe Operator N. Aitchins	

Meter Box 66-6	Sample Box No. D8
Meter Y_d 0.9901	Meter $\Delta H_@$ 1.7870
K Factor 2.29	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time: 13:36

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes IGS (lpm)
5-5	245	0.47	1.1	849.39	307	250	250	58	88	86	8	52	10.1 0.1
5	250	0.46	1.1	852.425	306	250	252	61	87	86	8	55	10.2 0.1
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/16

CleanAir ENGINEERING

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TEST LOCATION: OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 1 **OF** 5

UNIT: 2 **RUN:** 2

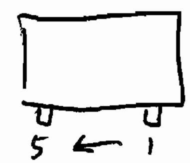
FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.17.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-6	Sample Box No. D7
Meter Y_d 0.9901	Meter $\Delta H_@$ 1.7870
K Factor 2.41	Pitot C_p 0.834
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.005 [cfm] [Lpm] @ 18 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]



Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.5	10		

Amb. Temp. (°F) 64	Bar. Press. 30.00 [in. Hg] [mbar]
Probe I.D. No. 67-8-17	
Liner Material Glass	

Filter No.		
Thimble No.		
Nozzle Diameter 0.264	Nozzle I.D.	0264-1

Start Time: 6:54	Stop Time: 12:19

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 853.415	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	IGS (lpm)
5-1	5	0.61	1.5	856.85	305	250	250	51	69	66	10	47	8.6	0.1
1	10	0.61	1.5	860.11	306	250	250	52	70	68	12	50	10.1	0.1
5-2	15	0.61	1.5	863.43	307	250	250	44	71	68	12	55	9.6	0.1
2	20	0.61	1.5	866.83	307	250	255	47	72	68	12	61	10.0	0.1
5-3	25	0.59	1.4	870.19	310	257	254	50	73	69	12	53	10.1	0.1
3	30	0.59	1.4	873.54	310	250	252	55	73	69	12	43	9.3	0.1
5-4	35	0.62	1.5	876.93	309	250	253	60	74	70	12	46	10.1	0.1
4	40	0.62	1.5	880.36	309	250	252	58	75	71	12	42	9.8	0.1
5-5	45	0.58	1.4	883.69	309	250	253	55	75	71	12	40	9.9	0.1
5	50	0.55	1.3	886.945	308	250	250	53	75	71	12	40	9.5	0.1 887. /180
4-1	55	0.56	1.3	890.36	310	250	252	53	74	72	12	41	10.5	0.1
1	60	0.54	1.3	893.53	309	249	253	51	76	72	12	~~34~~ NH 39	8.5	0.1
	Total	*		171.615										
	Average	0.79826	1.5220		307.48				74.6100					

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NH

Date 3.17.10

CleanAir
ENGINEERING

TEST LOCATION: OUTLET Dioxin **TESTING** **METHOD:** 23 **PAGE** 2 **OF** 5

UNIT: 2 **RUN:** 2

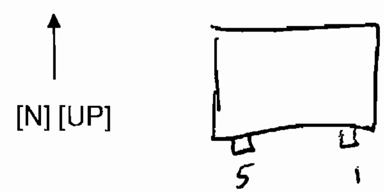
FIELD DATA SHEET

Client Wheelabrator		Project No.	10955
Plant N. Broward		Date	3.17.10
Meter Operator	NHitchins		
Probe Operator	NHitchins		

Meter Box	66-6	Sample Box No.	D7
Meter Y_d	0.9901	Meter $\Delta H_@$	1.7870
K Factor	2.41 2.38	Pitot C_p	0.834
Leak Rate Before	[cfm] [Lpm] @ (in. Hg)		
Leak Rate After	[cfm] [Lpm] @ (in. Hg)		
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐		

Cross-Section of Test Location

[N] [UP]



Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.5	10		

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol: [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) 252	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes IGS (lpm)	
4-2	65	0.62	1.5	896.91	311	252	253	49	77	73	NH 12	43	9.0 0.1	
2	70	0.65	1.6	900.40	312	252	252	50	77	73	13	47	9.7 0.1	
4-3	75	0.63	1.5	903.87	311	257	252	53	77	73	13	52	9.8 0.1	
3	80	0.63	1.5	907.315	311	250	257	57	77	74	13	52	10.1 0.1	2.38
4-4	85	0.65	1.5	910.78	308	250	252	54	74	73	13	41	9.9 RESTART 0.1	9:02
4	90	0.62	1.5	914.16	308	257	250	44	74	73	13	44	9.3 0.1	
4-5	95	0.77	1.8	917.84	310	250	254	46	77	73	15	47	9.4 0.1	
~~3~~-5	100	NH ~~0.73~~ 0.67	NH ~~1.7~~ 1.6	921.400	308	250	252	49	77	74	14	44	10.4 0.1 921	590
3-1	105	0.65	1.5	924.97	308	249	252	55	76	74	13	44	10.6 0.1	
1	110	0.68	1.6	928.47	307	250	251	57	77	74	14	45	10.4 0.1	
3-2	115	0.61	1.5	931.93	305	252	254	46	78	75	13	41	10.0 0.1	
2	120	0.60	1.4	935.28	306	251	251	46	77	75	13	41	10.0 0.1	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC 3g

Date 3/12

CleanAir ENGINEERING

G - 45

TEST LOCATION: OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 3 **OF** 5

UNIT: 2 **RUN:** 2

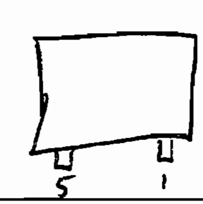
FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.17.10
Meter Operator N. Hitchins	
Probe Operator N Hitchins	

Meter Box 66-6	Sample Box No. D7
Meter Y_d 0.9901	Meter $\Delta H_@$ 1.7870
K Factor 2.41 2.38	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.5	10		

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes IGS (lpm)	
3-3	125	0.66	1.6	938.77	308	250	251	47	78	76	14	47	9.8	0.1
3	130	0.65	1.5	942.28	307	250	252	48	79	76	13	47	9.7	0.1
3-4	135	~~0.66~~ 0.65 NH	NH ~~1.6~~ 1.5	945.67	307	250	252	57	78	76	14	51	9.7	0.1
4	140	0.65	1.5	949.10	308	249	253	54	78	76	14	55	9.1	0.1
3-5	145	0.62	1.5	952.54	307	249	253	59	78	76	14	57	9.5	0.1
5	150	0.65	1.5	955.950	307	250	252	64	78	76	14	61	10.8	0.1 956.210
2-1	155	0.67	1.6	959.69	308	249	252	57	77	76	14	51	9.5	0.1
1	160	0.67	1.6	963.16	307	249	254	52	77	76	14	42	9.8	0.1
2-2	165	0.65	1.6	966.75	306	252	252	52	77	76	14	42	9.3	0.1
2	170	0.65	1.5	970.17	307	251	251	53	78	76	14	46	9.0	0.1
2-3	175	0.70	1.7	973.79	307	250	252	55	78	76	15	49	9.2	0.1
3	180	0.70	1.7	977.42	306	249	253	59	77	76	15	55	10.2	0.1
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 8/10

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CleanAir ENGINEERING

G-47

TEST LOCATION: OUTLET DIOXIN **TESTING METHOD:** 23 **PAGE** 4 **OF** 5

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator		Project No: 10555	
Plant N. BROWARD		Date 3.17.10	
Meter Operator	N. Hitchins		
Probe Operator	N. Hitchins		

Meter Box	66-6	Sample Box No.	D7
Meter Y_d	0.9901	Meter $\Delta H_@$	1.7870
K Factor	2.41 2.38	Pitot C_p	0.834
Leak Rate Before	[cfm] [Lpm] @ (in. Hg)		
Leak Rate After	[cfm] [Lpm] @ (in. Hg)		
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location

[N] [UP]

U U

5 ← 1

Duct Dimensions (in.)	96 + 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.5	10		

Amb. Temp. (°F)		Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.			
Liner Material			

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. (ft³) [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\ in}$ (°F)	DGM Outlet $T_{m\ out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes IGS (lpm)
2-4	185	0.68	1.6	980.99	306	250	253	65	78	76	15	59	8.9 0.1
4	190	0.66	1.6	984.49	305	249	254	58	78	76	15	46	9.2 0.1
V5	195	0.66	1.6	988.00	305	250	250	53	78	76	14	46	9.3 0.1
5	200	0.70	1.7	991.595	305	250	250	53	78	76	15	48	9.0 991.910 0.1
1-1	205	0.56	1.3	995.65	307	249	248	53	76	76	12	50	10.5 0.1
1	210	0.59	1.4	998.34	307	250	253	53	77	75	13	50	9.8 0.1
1-2	215	0.59	1.4	001.63	306	251	253	58	77	75	13	54	9.9 0.1
2	220	0.59	1.4	004.90	306	251	251	61	76	75	13	56	9.0 0.1
1-3	225	0.59	1.4	008.18	306	250	253	61	76	74	13	~~52~~ NH 50	9.4 0.1
3	230	0.56	1.3	011.43	305	250	250	59	76	74	13	48	9.2 0.1
1-4	235	0.63	1.5	014.81	306	250	253	58	74	73	13	49	9.4 0.1
4	240	0.71	1.7	1018.41	306	250	251	58	74	73	15	53	10.0 0.1
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/17

CleanAir ENGINEERING

TEST LOCATION: OUTLET DIOXIN **TESTING** METHOD: 23 PAGE 5 OF 5

UNIT: 2 RUN: 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.17.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-6	Sample Box No. D7
Meter Y_d 0.9901	Meter $\Delta H_@$ 1.7870
K Factor 2.38	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

5 1

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.5	10		

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\ in}$ (°F)	DGM Outlet $T_{m\ out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes IGS (lpm)
1-5	245	0.80	1.9	022.74	307	250	250	61	72	71	16	53	8.9 0.1
5	250	0.80	1.9	026.030	308	250	256	64	71	71	17	55	9.2 0.1
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/17

CleanAir ENGINEERING

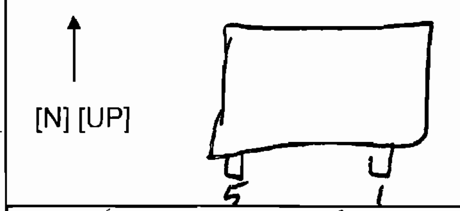
TEST LOCATION: OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 1 **OF** 5

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10955		
Plant: N. Broward	Date: 3.17.10		
Meter Operator: N. Hitchins			
Probe Operator: N. Hitchins			
Meter Box: 66-24	Sample Box No.: D8		
Meter Y_d: 0.9904	Meter $\Delta H_@$: 1.7516		
K Factor: 2.35	Pitot C_p: 0.834		
Leak Rate Before: 0.005 [cfm] [Lpm] @ 16 (in. Hg)			
Leak Rate After: [cfm] [Lpm] @ (in. Hg)			
Pitot Leak Check Before: ☑	After: Good ☒ Bad ☐		

Cross-Section of Test Location



Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10		

Amb. Temp. (°F) 70	Bar. Press. 30.00 [in. Hg] [mbar]		
Probe I.D. No.	67-8-17		
Liner Material	Glass		
Filter No.			
Thimble No.			
Nozzle Diameter 0.264	Nozzle I.D. .264-1		
Start Time: 12:53	Stop Time:		

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 277.760	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 252	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2	Notes IGS (lpm)
1-1	5	0.48	1.1	280.78	308	250	250	58	67	69	8	60	10.1	0.1
1	10	0.46	1.1	285.84	307	251	251	37	77	68	9	58	10.2	0.1
1-2	15	0.62	1.5	287.29	308	251	255	37	72	68	10	52	10.5	0.1
2	20	0.56	1.3	290.60	308	251	252	40	74	68	10	49	10.5	0.1
1-3	25	0.63	1.5	294.04	307	250	254	40	75	68	11	49	10.8	0.1
3	30	0.60	1.4	297.46	306	250	250	39	76	68	11	50	10.9	0.1
1-4	35	0.70	1.6	~~300.~~ 301.03	308	250	250	41	76	68	12	50	10.1	0.1
4	40	0.70	NH ~~1.7~~ 1.6	304.60	309	250	250	43	77	68	12	57	10.1	0.1
1-5	45	0.76	1.8	308.36	308	250	250	48	77	68	13	53	10.2	0.1
5	50	0.75	1.8	312.145	308	250	250	51	77	69	14	54	9.7	312.345 0.1
2-1	55	0.58	1.4	315.54	308	250	250	58	74	69	10	58	10.7	0.1
1	60	0.55	1.3	318.77	307	250	250	62	74	68	10	59	10.2	0.1
	Total			166.155										
	Average	0.76114	1.3680		307.8400				72.3700					

~~Sum of square roots.~~

Circle correct bracketed units on data sheet.

QA/QC NH

Date 3.17.10

CleanAir ENGINEERING

004 @ 16

TEST LOCATION: OUTLET DIOXIN **TESTING** METHOD: 23 PAGE 2 OF 5

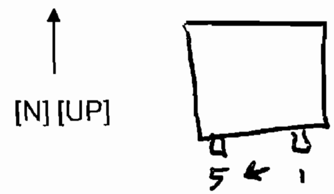
UNIT: 2 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955		
Plant N. Broward	Date 3.17.10		
Meter Operator N. Hitchins			
Probe Operator N. Hitchins			

Meter Box 66-24	Sample Box No. D8
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.35	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10		

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

G - 50

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	IGS (lpm)
2-2	65	0.51	1.2	321.90	307	247	247	45	75	68	10	57	9.0	0.1
2	70	0.51	1.2	324.99	307	248	249	46	75	68	10	56	9.6	0.1
2-3	75	0.56	1.3	328.19	309	250	250	48	76	68	10	56	9.4	0.1
3	80	0.58	1.4	331.52	309	250	250	48	77	68	11	56	10.1	0.1
2-4	85	0.55	1.3	334.81	308	250	250	51	77	68	11	56	10.1	0.1
4	90	0.55	1.3	33[illegible].02	310	250	250	54	77	68	11	59	9.5	0.1
2-5	95	0.51	1.2	341.21	308	250	250	59	76	69	11	62	9.8	0.1
5	100	0.54	1.3	344.440	309	250	250	61	76	68	11	64	10.1	344.700 0.1
3-1	105	0.66	1.6	348.27	308	250	250	44	74	68	12	53	10.5	0.1
3-1 ~~2~~ NH	110	0.62	1.5	351.79	306	250	247	42	74	68	12	51	10.1	0.1
3-2	115	0.57	1.3	355.10	308	252	252	42	74	68	11	50	10.5	0.1
2	120	0.57	1.3	358.39	308	251	254	44	75	67	11	57	10.2	0.1
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC 53
Date 3/17

CleanAir ENGINEERING

003 @ 17

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TEST LOCATION: Outlet Dioxin **TESTING** **METHOD:** 23 **PAGE** 3 **OF** 5

UNIT: 2 **RUN:** 3

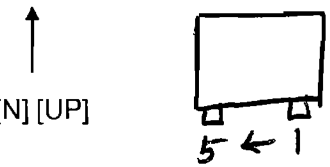
FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.17.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-24	Sample Box No. 58
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.35	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10		

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	IGS (lpm)
3-3	125	0.58	1.4	361.72	308	251	252	47	76	67	11	53	10.6	0.1
3	130	0.55	1.3	364.97	309	250	252	57	76	68	11	56	10.1	0.1
3-4	135	0.56	1.3	368.20	308	250	250	54	76	68	11	58	10.6	0.1
4	140	0.57	1.3	371.45	304	250	253	58	76	68	11	62	10.0	0.1
3-5	145	0.57	1.3	374.72	309	250	253	51	77	68	11	55	10.9	0.1
5	150	0.51	1.2	377.895	308	250	249	45	77	68	11	52	10.1	378.175 0.1
4-1	155	0.60	1.4	381.52	309	249	252	43	74	68	11	48	11.1	0.1
1	160	0.62	1.5	384.98	304	250	254	42	75	68	12	47	11.1	0.1
4-2	165	0.64	1.5	388.44	307	252	254	45	77	69	12	50	10.1	0.1
2	170	0.62	1.5	391.97	307	251	247	47	77	69	12	53	10.1	0.1
4-3	175	0.53	1.2	395.13	307	250	253	52	77	69	11	57	10.3	0.1
3	180	0.53	1.2	398.29	307	250	252	55	77	69	11	60	9.9	0.1
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/17

CleanAir ENGINEERING

TEST LOCATION: Outlet Dioxin **TESTING METHOD:** 23 **PAGE** 4 **OF** 5

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3.17.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-24	Sample Box No. 58
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.35	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

5 ← 1

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10		

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

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Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	IGS (lpm)
4-4 ~~3-2~~	185	0.67	1.6	401.85	308	249	245	59	77	69	12	65	9.2	0.1
4 ~~3~~	190	0.63	1.5	405.38	309	250	257	53	77	69	12	62	10.2	0.1
4-5 ~~3-4~~	195	0.65	1.5	408.90	308	249	248	44	77	69	12	59	9.8	0.1
5 ~~4~~	200	0.65	1.5	412.410	308	252	249	45	77	69	12	59	10.9 412.7600	0.1
5-1 ~~4-5~~	205	0.59	1.4	416.12	310	249	251	51	77	69	11	59	10.5	0.1
1 ~~5~~	210	0.52	1.2	419.27	308	250	250	54	77	69	10	60	10.5	0.1
5-2 ~~4-1~~	215	0.50	1.2	422.41	307	257	252	58	77	69	10	64	10.2	0.1
2 ~~1~~	220	0.52	1.2	425.59	308	252	255	54	78	70	10	60	10.3	0.1
5-3 ~~4-2~~	225	0.51	1.2	428.76	306	250	250	43	79	70	10	54	10.2	0.1
3	230	0.57	1.2	431.89	307	249	248	44	79	70	10	57	10.1	0.1
5-4	235	0.54	1.3	435.08	307	250	250	47	79	71	10	50	9.9	0.1
4	240	0.55	1.3	438.28	307	249	251	57	79	71	10	57	10.1	0.1
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BB
Date 3/17

CleanAir ENGINEERING

TEST LOCATION: Outlet Dioxin **TESTING** **METHOD:** 23 **PAGE** 5 **OF** 5

UNIT: 2 **RUN:** 3

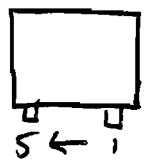
FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N Broward	Date 3.17.10
Meter Operator N. Hitchins	
Probe Operator N. Hitchins	

Meter Box 66-24	Sample Box No. D8
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.35	Pitot C_p 0.834
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]



Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10	In	In

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]	
Probe I.D. No.		
Liner Material		

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time: 17:26

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\ in}$ (°F)	DGM Outlet $T_{m\ out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes IGS (lpm)
5.5	245	0.54	1.3	441.49	306	250	248	54	79	71	10	53	10.8 0.1
5.5	250	0.69	1.6	445.005	308	250	257	56	78	71	12	56	10.5 0.1
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/17

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 FF Outlet	
Plant North Broward	Job No. 10955	Method 23	

Run No.	~~1~~ 1 RV	Filter Type		Sample Box No.	D8
Date	3/16/10	Lot No.		pH	
Analyst	R. Vicere	Filter No.		Rinse	

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	1532.1	633.7	898.4	
Impinger 2	100 ml HPLC H2O	483.7	551.1	-67.4	QA/QC SB
Impinger 3	100 ml HPLC H2O	475.6	529.6	-54.0	Date 3/16
Impinger 4	Empty	440.1	437.1	3.0	
Impinger 5	Trap # T0525_001	398.7	386.3	12.4	Total Weight (gm)
Impinger 6	Silica Gel	842.6	798.5	44.1	792.4
					836.5

Run No.	~~0~~ 2 RV	Filter Type		Sample Box No.	D7
Date	3/17/10	Lot No.		pH	
Analyst	R. Vicere	Filter No.		Rinse	

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	1520.8	624.9	895.9	
Impinger 2	100 ml HPLC H2O	542.4	524.1	18.3	QA/QC SB
Impinger 3	100 ml HPLC H2O	498.5	541.2	-42.7	Date 3/17
~~Impinger 4~~	~~Empty~~				
Impinger 5	Trap # T0525_002	357.6	346.2	11.4	Total Weight (gm)
Impinger 6	Silica Gel	797.0	736.0	61.0	882.9
					943.9

Run No.	~~0~~ 3 RV	Filter Type		Sample Box No.	D8
Date	3/17/10	Lot No.		pH	
Analyst	R. Vicere	Filter No.		Rinse	

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	1460.5	635.1	825.4	
Impinger 2	100 ml HPLC H2O	531.2	531.6	-0.4	QA/QC SB
Impinger 3	100 ml HPLC H2O	541.3	540.5	0.8	Date 3/17
~~Impinger 4~~	~~Empty~~				
Impinger 5	Trap # T0525_003	352.7	340.9	11.8	Total Weight (gm)
Impinger 6	Silica Gel	875.1	816.0	59.1	837.6
					896.7

CleanAir Engineering

QA/QC SB
Date 3/17

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TEST LOCATION: FF outlet HCL **TESTING METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-17-10
Meter Operator	A. Obuchowski		
Probe Operator	—		

Meter Box	66-24	Sample Box No.	B11
Meter Y_d	0.9904	Meter $\Delta H_@$	1.7516
K Factor	—	Pitot C_p	
Leak Rate Before 0.002 [cfm] [Lpm]	@ 15 (in. Hg)		
Leak Rate After [cfm] [Lpm]	@ (in. Hg)		
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐		

Cross-Section of Test Location

[N] [UP]

5 ② 1

Duct Dimensions (in.)	96x96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.5	10		

Amb. Temp. (°F)	70	Bar. Press.	30.0 [in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

Filter No.	—	
Thimble No.	—	
Nozzle Diameter	-	Nozzle I.D. —

Start Time:	6:54	Stop Time:	7:54

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 150.43	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 300	Filter T$_f$ (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2
2	5	N/A	1.5	153.59	307	302	301	63	72	66	5	N/A	9.0
	10		1.5	157.25	307	300	300	61	72	66	5		8.8
	15		1.5	160.65	307	301	301	60	74	66	5		8.4
	20		1.5	164.15	308	300	301	59	77	67	5		9.1
	25		1.5	167.64	308	299	300	58	80	68	6		9.6
	30		1.5	171.14	313	301	301	60	81	68	6		9.5
	35		1.5	174.65	311	300	300	60	~~7~~ 84	70	6		9.1
	40		1.5	178.18	310	300	299	61	85	71	6		9.9
	~~50~~ 45		1.5	181.74	310	300	301	60	85	72	6		10.5
	~~55~~ 50		1.5	185.28	311	300	300	60	86	73	6		9.6
	~~60~~ 55		1.5	188.82	316	301	300	61	86	74	6		8.9
	60		1.5	192.380	311	300	300	62	86	74	6		8.6
	Total	*	18	41.950	3713				968	835			
	Average		1.50		309.4167				75.1250				

* Sum of square roots.

~~Circle correct~~ bracketed units on data sheet.

QA/QC [initials]
Date 3-17

CleanAir ENGINEERING

TEST LOCATION: FF outlet HCL **TESTING METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10955
Plant: N. Broward	Date: 3-17-10
Meter Operator: A. Obuchowski	
Probe Operator: —	

Meter Box: 66-24	Sample Box No. 821
Meter Y_d: 0.9904	Meter $\Delta H_@$: 1.7516
K Factor: —	Pitot C_p
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Pitot Leak Check Before:	After: Good Bad

Cross-Section of Test Location

[N] [UP]

5 2

Duct Dimensions (in.)	96x96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.5	10		

Amb. Temp. (°F) 70	Bar. Press. 30.0	[in. Hg] [mbar]
Probe I.D. No.	67-4-3	
Liner Material	glass	

Filter No.	—		
Thimble No.	—		
Nozzle Diameter	—	Nozzle I.D.	—

Start Time:	9:02	Stop Time:	10:02

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 192.710	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 300	Filter T$_f$ (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2
	5	N/A	1.5	196.22	308	302	300	60	75	75	5	N/A	9.7
	10		1.5	199.70	308	300	300	60	75	75	5		9.8
	15		1.5	203.20	309	300	300	54	77	75	5		9.6
	20		1.5	206.69	308	301	300	56	80	75	5		9.7
	25		1.5	210.18	309	300	299	57	82	75	5		9.5
	30		1.5	213.67	309	301	300	58	84	76	5		10.2
	35		1.5	217.20	307	300	299	60	85	76	5		10.3
	40		1.5	220.74	308	300	300	60	86	76	5		10.0
	45		1.5	224.26	307	301	300	61	87	77	5		9.8
	50		1.5	227.70	308	300	300	60	88	77	5		9.8
	55		1.5	231.27	308	300	300	61	89	78	5		10.2
	60		1.5	234.775	308	300	300	59	89	79	5		10.4
	Total	*	18	42.0650	3697				997	914			
	Average		1.50		308.0833				79.6250				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC
Date

CleanAir ENGINEERING

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TEST LOCATION: FF outlet HCL **TESTING** METHOD: 26A PAGE 1 OF 1

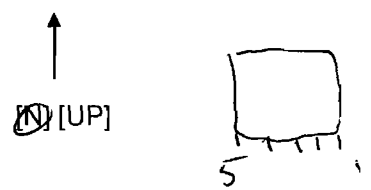
UNIT: 2 RUN: 3

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10955
Plant: N. Broward	Date: 3-17-10
Meter Operator: A. Obuchowski	
Probe Operator: —	

Meter Box: 6-24	Sample Box No.
Meter Y_d: 0.9904	Meter $\Delta H_@$: 1.7516
K Factor: —	Pitot C_p
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 15 (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10		

Amb. Temp. (°F) 70	Bar. Press. 30.0 [in. Hg] [mbar]
Probe I.D. No. 67-4-3	
Liner Material: glass	

Filter No. —		
Thimble No. —		
Nozzle Diameter —	Nozzle I.D. —	

Start Time: 10:25	Stop Time: 11:25

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 235.110	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2
	5	n/a	1.5	238.66	308	299	305	60	81	79	5	n/a	10.3
	10		1.5	242.15	307	300	304	53	84	79	5		10.2
	15		1.5	245.67	307	302	303	48	88	80	6		9.8
	20		1.5	249.17	306	300	301	49	90	80	6		9.1
	25		1.5	252.66	307	300	301	53	91	80	6		8.7
	30		1.5	256.13	307	300	300	55	91	81	6		9.0
	35		1.5	259.67	306	300	300	57	92	81	6		9.2
	40		1.5	263.20	310	301	301	59	92	82	6		8.5
	45		1.5	266.71	307	300	301	61	92	82	6		9.0
	50		1.5	270.27	308	300	300	62	93	83	6		9.2
	55		1.5	273.80	308	299	300	62	93	83	6		8.2
	60		1.5	277.350	307	300	300	63	93	83	6		9.1
	Total	*	18	42.240	3688				1080	973			
	Average		1.50		307.3333				85.5417				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC AO

Date 3-16

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CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 FF Outlet	
Plant North Broward	Job No. 10955	Method	Mod. 26A

Run No. 1	Filter Type Quartz		Sample Box No. B11
Date 3/17/10	Lot No.		pH
Analyst B. Wilke	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	504.9	469.4	35.5	
Impinger 2	100 mL 01.N H2SO4	652.1	560.4	91.7	QA/QC BW
Impinger 3	100 mL 01.N H2SO4	615.6	554.3	61.3	Date 3/17
Impinger 4	Empty	479.1	456.0	23.1	
Impinger 5	Silica Gel	808.5	785.4	23.1	Total Weight (gm)
					211.6
					234.7

Run No. 2	Filter Type Quartz		Sample Box No.
Date 3/17/10	Lot No.		pH
Analyst B. Wilke	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	513.0	480.5	32.5	
Impinger 2	100 mL 01.N H2SO4	751.1	642.5	108.6	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	577.5	534.9	42.6	Date 3/17
Impinger 4	Empty	463.9	448.0	15.9	
Impinger 5	Silica Gel	718.5	695.7	22.8	Total Weight (gm)
					199.6
					222.4

Run No. 3	Filter Type Quartz		Sample Box No. B11
Date 3/17/10	Lot No.		pH
Analyst B. Wilke P. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	506.8	467.8	39.0	
Impinger 2	100 mL 01.N H2SO4	683.0	561.1	121.9	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	597.3	554.6	42.7	Date 3/17
Impinger 4	Empty	469.8	455.7	14.1	
Impinger 5	Silica Gel	780.8	761.6	19.2	Total Weight (gm)
					217.7
					236.9

CleanAir ENGINEERING

QA/QC SB
Date 3/17

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TEST LOCATION: SDA INLET HCL **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 2 **RUN:** 1 **FIELD DATA SHEET**

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3-17-10
Meter Operator B. Arnold	
Probe Operator B. Arnold	

Meter Box 61-8	Sample Box No. B16
Meter Y_d 0.9916	Meter $\Delta H_@$ 1.7580
K Factor N/A	Pitot C_p
Leak Rate Before 0.003 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.004 [cfm] [Lpm] @ 20 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 105			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.7	14		

Amb. Temp. (°F) 70	Bar. Press. 30.03 [in. Hg] [mbar]
Probe I.D. No. 67-4-5	
Liner Material GLASS	

Filter No. N/A		
Thimble No. N/A		
Nozzle Diameter N/A	Nozzle I.D. N/A	

Start Time: 6:54	Stop Time: 7:54

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 101.165	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 355	Filter T_f (°F) Set Points 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp.~~ T_t (°F) O2	Notes
1-1	5		1.2	104.21	501	356	354	67	67	64	3.0	7.1	
	10			107.12	504	357	353	65	69	65	3.5	6.8	
	15			110.12	507	356	359	61	71	65	5.5	6.8	
	20			113.19	512	355	353	57	74	66	6.0	7.5	
	25			116.21	514	355	355	55	76	67	8.0	8.2	
	30			119.15	514	355	352	55	79	70	9.0	7.6	
	35			122.23	514	355	358	56	80	72	11.5	7.4	
	40			125.34	514	355	354	57	78	71	12.5	8.0	
	45			128.41	512	355	356	59	80	72	13.5	8.7	
	50			131.49	510	355	356	60	80	73	15.0	7.5	
	55			134.55	505	355	358	62	81	74	17.0	6.7	
	60		1.1	137.490	507	355	353	64	79	74	17.5	7.4	
	Total	*	14.3000	36.3250	6114				914	833			
	Average		1.1917		509.5000				72.7917				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-17-10

CleanAir ENGINEERING

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TEST LOCATION: SDA INLET HCL TESTING METHOD: 26A PAGE 1 OF 1

UNIT: 2 RUN: 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955		
Plant N. BROWARD	Date 3-17-10		
Meter Operator B. ARNOLD			
Probe Operator B. ARNOLD			
Meter Box 61-8	Sample Box No. 822		
Meter Y_d 0.9916	Meter $\Delta H_@$ 1.7580		
K Factor N/A	Pitot C_p		
Leak Rate Before 0.003 [cfm] [Lpm]	@ 15 (in. Hg)		
Leak Rate After 003 [cfm] [Lpm]	@ 20 (in. Hg)		
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐		

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 105			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.9	14		

Amb. Temp. (°F) 61	Bar. Press. 30.00 [in Hg] [mbar]		
Probe I.D. No. 67-4-5			
Liner Material			
Filter No. N/A			
Thimble No. N/A			
Nozzle Diameter N/A	Nozzle I.D.	N/A	
Start Time: 9:02	Stop Time: 10:02		

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 138.230	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Point 355	Filter T$_f$ (°F) Set Point 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ 82	Notes
1-1	5		1.2	141.38	502	355	355	51	63	63	3.0	9.1	
	10			144.35	502	357	354	50	65	64	3.5	9.4	
	15			147.35	501	357	354	50	66	64	4.5	9.7	
	20			150.35	502	355	355	50	69	68	5.5	9.8	
	25			153.37	507	355	355	52	70	65	6.5	8.8	
	30			156.40	506	355	355	53	70	65	7.5	10.2	
	35			159.42	503	355	355	53	70	66	9.5	10.3	
	40			162.47	505	355	355	54	71	66	10.5	9.5	
	45			165.57	502	355	356	55	70	66	12.5	8.7	
	50			168.62	502	355	354	57	70	66	15.0	8.5	
	55			171.69	506	355	354	58	69	66	15.5	9.6	
	60			174.700	504	355	355	60	69	66	17.5	9.8	
	Total	*		36.4700	6042				822	782			
	Average				503.500				66.8333				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/17

CleanAir ENGINEERING

TEST LOCATION: SDA INLET HCL **TESTING** METHOD: 26A PAGE 1 OF 1

UNIT: 2 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. BROWARD	Date 3-17-10
Meter Operator B. ARNOLD	
Probe Operator B. ARNOLD	

Meter Box 61-8	Sample Box No. B16
Meter Y_d 0.9916	Meter $\Delta H_@$ 1.7580
K Factor N/A	Pitot C_p
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.004 [cfm] [Lpm] @ 18 (in. Hg)	
Pitot Leak Check Before: ☑	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 105

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.9	14		

Amb. Temp. (°F) 62	Bar. Press. 30.00 [in. Hg] [mbar]
Probe I.D. No. 67-4-5	
Liner Material GLASS	

Filter No.	N/A	
Thimble No.	N/A	
Nozzle Diameter	N/A	Nozzle I.D. N/A

Start Time: 10:25 Stop Time: 11:25

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 174.890	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 355	Filter T$_f$ (°F) Set Points 355	Cond Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t ~~BA~~ O2 (°F)	Notes
1-1	5		1.2	178.02	507	354	360	59	65	64	3.0	9.9	
	10			180.97	505	358	364	52	66	64	3.0	10.1	
	15			183.98	504	357	360	51	68	64	3.5	11.0	
	20			187.00	499	355	356	52	69	64	5.0	8.6	
	25			190.00	502	355	355	54	70	65	7.0	7.1	
	30			193.07	503	355	356	54	70	65	8.0	7.5	
	35			196.07	501	354	356	56	70	65	9.5	8.4	
	40			199.08	505	355	356	57	70	65	11.0	7.8	
	45			202.10	498	354	354	59	70	66	12.5	8.5	
	50			205.15	498	355	353	60	70	66	14.5	9.8	
	55		~~1.1~~ BA	208.19	499	355	357	60	70	66	16.0	8.2	
	60		1.1	211.135	498	355	356	61	70	66	17.0	9.0	
	Total	*	14.3000	36.2450	6019				828	780			
	Average		1.1917		501.5833				67.0000				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-17-10

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CleanAir ENGINEERING

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Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location	Unit 2 SDA Inlet
Plant North Broward	Job No. 10955	Method	Mod. 26A

Run No. 1	Filter Type Quartz		Sample Box No. B16
Date 3/17/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	477.3	455.7	21.6	
Impinger 2	100 mL 01.N H2SO4	637.5	556.7	80.8	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	576.6	541.1	35.5	Date 3/17
Impinger 4	Empty	473.6	463.0	10.6	
Impinger 5	Silica Gel	754.2	740.9	13.3	Total Weight (gm)
					148.5
					161.8

Run No. 2	Filter Type Quartz		Sample Box No. B22
Date 3/17/10	Lot No.		pH
Analyst B. Wilbe	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	501.8	471.6	30.2	
Impinger 2	100 mL 01.N H2SO4	620.4	535.9	84.5	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	571.4	550.6	20.8	Date 3/17
Impinger 4	Empty	431.8	428.3	3.5	
Impinger 5	Silica Gel	766.4	754.2	12.2	Total Weight (gm)
					139.0
					151.2

Run No. 3	Filter Type Quartz		Sample Box No. B16
Date 3/17/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	487.7	455.6	32.1	
Impinger 2	100 mL 01.N H2SO4	643.0	560.9	82.1	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	567.7	540.3	27.4	Date 3/17
Impinger 4	Empty	472.5	465.4	7.1	
Impinger 5	Silica Gel	753.5	738.2	15.3	Total Weight (gm)
					148.7
					164.0

CleanAir ENGINEERING

ImpFieldWtSht_200408a
NS ImpFieldWtSht

QA/QC SB
Date 3/17

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TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator		Project No. 1095F	
Plant N. Broward		Date 3/17/10	
Meter Operator	P. Bikun		
Probe Operator	P. Bikun		

Meter Box 16-14		Sample Box No. M10	
Meter Y ~~0.990~~ 0.9893		Meter ΔH@ ~~1.60~~ 1.7443	
K Factor 2.35		Pitot C_p 0.805	
Leak Rate Before 0.003 [cfm] [Lpm]		@ 15 (in. Hg)	
Leak Rate After 0.00 [cfm] [Lpm]		@ 8 (in. Hg)	
Pitot Leak Check Before: ☒		After: Good ☒ Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)		96x96	
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-11.0	10.0		

Amb. Temp. (°F) 63		Bar. Press. 30.00 [in. Hg] [mbar]	
Probe I.D. No.		67-5-4	
Liner Material		Glass	

Filter No.	E-15-26		
Thimble No.	N/A		
Nozzle Diameter	0.270	Nozzle I.D.	270-1

Start Time:	6:50	Stop Time:	9:03

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 269.855	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_x (°F) Bag Flow	Notes O_2
1-1	5	0.46	1.1	272.72	305	245	252	60	65	65	3.0	0.20	6.9
2	10	0.54	1.3	275.84	305	251	257	53	68	65	3.5	0.20	6.8
3	15	0.55	1.3	278.97	307	249	248	50	71	65	3.5	0.20	7.2
4	20	0.50	1.2	281.98	306	250	248	49	73	65	3.5	0.20	7.1
5	25	0.46	1.1	284.900	306	250	248	51	75	66	3.5	0.20	7.3 284.955
2-1	30	0.57	1.3	288.09	306	248	254	53	76	68	4.0	0.20	7.0 -0.055
2	35	0.60	1.4	291.41	306	249	251	54	77	68	4.0	0.20	6.7
3	40	0.48	1.1	294.32	306	250	250	54	80	69	3.5	0.20	7.2
4	45	0.48	1.1	297.23	305	250	248	55	81	70	3.5	0.20	7.2
5	50	0.38	0.89	299.891	305	251	249	55	81	71	3.0	0.20	7.3 299.955
3-1	55	0.51	1.2	302.98	304	246	248	55	79	71	3.5	0.20	7.0 -0.06
2	60	0.54	1.3	306.19	305	249	251	56	81	72	4.0	0.20	7.3
	Total	*		72.290									
	Average	0.6736	1.0824		303.440				75.8000				

* Sum of square roots. 14.29

Circle correct bracketed units on data sheet. 3446 1122

QA/QC PB

Date 3/17/10

CleanAir ENGINEERING

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TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955		
Plant N. Broward	Date 3/17/10		
Meter Operator P. Bihun			
Probe Operator P. Bihun			
Meter Box	Sample Box No.		
Meter Y_d	Meter $\Delta H_@$		
K Factor	Pitot C_p		
Leak Rate Before [cfm] [Lpm] @ (in. Hg)			
Leak Rate After [cfm] [Lpm] @ (in. Hg)			
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐		

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]		
Probe I.D. No.			
Liner Material			
Filter No.			
Thimble No.			
Nozzle Diameter	Nozzle I.D.		
Start Time:	Stop Time:		

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_x (°F)~~ Bag Flow	Notes O2	
3	65	0.52	1.2	309.30	305	251	249	56	83	73	4.0	0.20	7.0	
4	70	0.46	1.1	312.24	305	251	249	56	83	73	3.5	0.20	6.9	
5	75	0.41	0.96	315.005	305	251	248	57	84	75	3.5	0.20	7.2	315.065
4-1	80	0.61	1.4	318.37	304	248	246	57	82	74	4.0	0.20	7.4	-0.06
2	85	0.50	1.2	321.51	305	249	251	57	84	75	4.0	0.20	6.8	
3	90	0.54	1.3	324.75	304	250	249	57	84	75	4.0	0.20	7.1	
4	95	0.47	1.1	327.72	305	250	248	57	85	76	3.5	0.20	7.1	
5	100	0.38	0.89	330.41	305	251	249	58	85	76	3.5	0.20	7.0	330.475
5-1	105	0.23	0.54	332.54	286	249	249	60	82	77	2.5	0.20	7.7	-0.06
2	110	0.23	0.54	334.60	286	250	248	61	83	77	2.5	0.20	7.8	
3	115	0.30	0.71	336.98	301	244	250	62	83	77	3.0	0.20	7.6	
4	120	0.38	0.89	339.63	305	249	249	62	84	77	3.5	0.20	7.2	
5	125	0.40	0.94	342.380	304	250	250	62	84	77	3.5	0.20	7.5	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/17/10

CleanAir ENGINEERING

TEST LOCATION: FF Outlet   Particulate/Metals **TESTING**   **METHOD:** 5/29   **PAGE** 1 **OF** 2

UNIT: 3   **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Brainerd	Date	3/7/00
Meter Operator	P. Bibus		
Probe Operator	P. Bibus		

Meter Box	66-14	Sample Box No.	M15
Meter Y_d	0.9898	Meter $\Delta H_@$	1.7643
K Factor	~~2.35~~ 2.40	Pitot C_p	0.808
Leak Rate Before	0.003 [cfm] [Lpm] @ 15 (in. Hg)		
Leak Rate After	0.003 [cfm] [Lpm] @ 9 (in. Hg)		
Pitot Leak Check Before: ☑		After: Good ☐ Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)	96 x 96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-11.0	10.0		

Amb. Temp. (°F)	63	Bar. Press.	30.00 [in. Hg] [mbar]
Probe I.D. No.	67-8-4		
Liner Material	Glass		

Filter No.	E-115-27		
Thimble No.	N/A		
Nozzle Diameter	0.220	Nozzle I.D.	220-1
Start Time:	9:26	Stop Time:	11:38

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 342.680	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 250	Filter T$_f$ (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_x (°F)~~ Gas Flow	Notes O_2
1-1	5	0.51	1.2	345.85	302	244	247	60	77	77	3.0	0.25	7.5
2	10	0.59	1.4	349.13	306	246	251	55	79	77	3.0	0.25	7.6
3	15	0.53	1.3	352.27	305	248	247	57	81	77	3.0	0.25	7.7 K=2.35
4	20	0.53	1.3	355.47	305	249	248	57	82	77	3.0	0.25	7.8
5	25	0.48	1.1	358.370	302	250	249	52	83	77	3.0	0.25	7.5 358.440
2-1	30	0.51	1.2	361.51	302	246	249	53	82	77	3.0	0.25	7.8 -0.07
2	35	0.56	1.3	364.74	305	249	250	53	83	77	3.0	0.25	7.3
3	40	0.50	1.2	367.84	306	250	247	52	84	77	3.0	0.25	7.2
4	45	0.50	1.2	370.89	305	250	249	52	83	77	3.0	0.25	7.3
5	50	0.43	1.0	373.720	304	250	248	53	84	77	3.0	0.25	7.4 373.750
3-1	55	0.66	1.6	377.30	305	247	247	53	82	77	3.5	0.25	7.6 -0.03
2	60	0.63	1.5	380.73	305	249	250	55	83	77	3.5	0.25	7.8
	Total	*		77.935									
	Average	0.7224	1.2396		304.0800				80.2200				

* Sum of square roots 15.3

Circle correct bracketed units on data sheet.

3652   987   1907

QA/QC PB
Date 3/7/00

CleanAir ENGINEERING

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TEST LOCATION: FF outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator		Project No. 10911	
Plant N. Broward		Date 3/12/10	
Meter Operator PB N. Broward/R. Bihun			
Probe Operator R. Bihun			
Meter Box		Sample Box No.	
Meter Y_d		Meter $\Delta H_@$	
K Factor		Pitot C_p	
Leak Rate Before	[cfm] [Lpm] @ (in. Hg)		
Leak Rate After	[cfm] [Lpm] @ (in. Hg)		
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp T_t (°F)~~ Bag Flow	Notes O2	
3	65	0.52	1.2	383.85	305	250	251	55	84	77	3.5	0.25	7.1	
4	70	0.57	1.2	386.92	305	251	250	56	84	77	3.5	0.25	7.5	
5	75	0.42	0.99	389.725	305	251	249	56	83	77	3.0	0.25	7.2	389.760
4-1	80	0.67	1.6	393.26	301	246	249	58	82	76	4.0	0.25	7.3	-0.035
2	85	0.63	1.5	396.73	304	~~248~~	250	58	84	77	4.0	0.25	6.9	
3	90	0.54	1.3	399.96	304	250	249	57	85	77	3.5	0.25	6.6	
4	95	0.54	1.3	403.17	305	250	249	58	85	77	3.5	0.25	6.5	
5	100	0.52	1.2	406.215	304	250	249	59	86	77	3.5	0.25	7.0	406.256
5-1	105	0.50	1.2	409.35	303	249	248	60	83	77	3.5	0.25	7.3	-0.035
2	110	0.47	1.1	412.24	303	250	249	62	85	77	3.5	0.25	6.4	
3	115	0.44	1.0	415.07	301	250	250	62	86	78	3.5	0.25	6.9	
4	120	0.43	1.0	417.86	303	250	250	63	86	78	3.5	0.25	6.9	
5	125	0.48	1.1	420.785	303	250	250	64	87	79	3.5	0.25	7.1	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/12/10

CleanAir ENGINEERING

TEST LOCATION: FF Outlet Particulate / Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 1095F
Plant N. Broward	Date 3/17/10
Meter Operator P. Bihun	
Probe Operator P. Bihun	

Meter Box U-14	Sample Box No. M10
Meter Y_d 0.9898	Meter $\Delta H_@$ 1.7643
K Factor 2.35	Pitot C_p 0.805
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 9 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 96x96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point at the way [In] [Out]
-10.3 / -10.8	10.0		

Amb. Temp. (°F) 67	Bar. Press. 30.00 [in. Hg] [mbar]
Probe I.D. No. 67-P-4	
Liner Material Glass	

Filter No. E-115-28		
Thimble No. N/A		
Nozzle Diameter 0.270	Nozzle I.D. 2707	

Start Time: 11:59	Stop Time: 14:11

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 421.105	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,In}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ Bag Flow	Notes O2	
1-1	5	0.54	1.3	424.33	304	247	245	58	78	77	4.0	0.25	6.8	
2	10	0.50	1.2	427.41	304	242	255	53	80	77	3.5	0.25	6.9	
3	15	0.46	1.1	430.34	304	246	249	49	81	77	3.5	0.25	7.2	
4	20	0.45	1.1	433.23	304	248	248	49	82	77	3.5	0.25	6.8	436.095
5	25	0.43	1.0	436.055	305	249	248	50	82	77	3.0	0.25	6.6	-0.04
2-1	30	0.57	1.3	439.26	305	250	249	50	81	76	3.5	0.25	7.6	
2	35	0.60	1.4	442.61	304	249	250	48	82	76	4.0	0.25	7.8	
3	40	0.50	1.2	445.70	305	250	251	47	84	77	3.5	0.25	7.7	
4	45	0.54	1.3	448.92	305	251	248	47	83	76	3.5	0.25	8.3	451.910
5	50	0.45	1.1	451.855	305	250	247	47	83	76	3.5	0.25	8.3	-0.055
3-1	55	0.61	1.4	455.15	306	247	247	49	81	76	4.0	0.25	8.2	
2	60	0.60	1.4	458.45	305	249	250	48	82	76	4.0	0.25	7.5	
	Total	*		76.665	304.50	58								
	Average	.736	1.2104		304.040				78.5800					

* Sum of square roots. 14.8

Circle correct bracketed units on data sheet. 3657 1897

QA/QC PB
Date 3/22/2010

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CleanAir ENGINEERING

TEST LOCATION: FF Outlet Particulate/Metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3/17/10
Meter Operator P. Bilmer	
Probe Operator P. Bilmer	

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	
Start Time:	Stop Time:	

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp T_t (°F)~~ Bag Hou	Notes O_2	
3	65	0.58	1.4	461.73	305	250	248	48	83	76	4.0	0.25	7.1	
4	70	0.50	1.2	464.77	305	251	249	49	83	76	3.5	0.25	6.4	
5	75	0.48	1.1	467.625	305	251	249	50	82	76	3.5	0.25	6.9	467.730
4-1	80	0.71	1.7	471.35	305	250	246	52	81	75	4.5	0.25	7.3	-0.055
2	85	0.65	1.5	474.79	306	249	252	52	82	75	4.0	0.25	7.7	
3	90	0.57	1.3	477.97	306	250	249	52	83	75	4.0	0.25	7.3	
4	95	0.55	1.3	481.16	306	257	249	53	82	75	4.0	0.25	7.2	484.120
5	100	0.47	1.1	484.075	306	251	249	54	82	75	3.5	0.25	7.4	-0.045
5-1	105	0.37	0.87	486.73	294	249	249	55	79	75	3.0	0.25	7.5	
2	110	0.37	0.87	489.36	295	250	250	55	80	74	3.0	0.25	7.5	
3	115	0.39	0.92	492.08	304	250	250	55	80	74	3.5	0.25	7.0	
4	120	0.43	1.0	494.89	303	250	249	55	80	74	3.5	0.25	6.4	
5	125	0.50	1.2	497.965	304	250	249	56	81	74	4.0	0.25	6.5	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB

Date 3/12/10

CleanAir ENGINEERING

Impinger Weight Sheet

Client: Wheelabrator		Unit Name/Location Unit 3 FF Outlet
Plant North Broward	Job No. 10955	Method 5/29

Run No. 1	Filter Type Quartz		Sample Box No.
Date 3/17/10	Lot No.		pH
Analyst B. Wilke	Filter No. E-115-26		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	693.8	439.8	254.0	
Impinger 2	100 ml 5%HNO3/10%H2O2	689.5	559.5	130.0	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	571.6	537.6	34.0	Date 3/17
Impinger 4	Empty	454.0	446.4	7.6	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	547.6	544.7	2.9	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	551.5	551.1	0.4	428.9
Impinger 7	Silica Gel	748.4	735.2	13.2	442.1

Run No. 2	Filter Type Quartz		Sample Box No.
Date 3/17/10	Lot No.		pH
Analyst B. Wilke	Filter No. E-115-27		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	740.5	463.2	277.3	
Impinger 2	100 ml 5%HNO3/10%H2O2	683.5	542.1	141.4	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	586.5	553.5	33.0	Date 3/17
Impinger 4	Empty	446.1	440.0	6.1	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	564.8	562.4	2.4	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	540.6	540.6	0.0	460.2
Impinger 7	Silica Gel	736.0	717.8	18.2	478.4

Run No. 3	Filter Type Quartz		Sample Box No.
Date 3/17/10	Lot No.		pH
Analyst B. Wilke	Filter No. E-115-28		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	722.8	439.7	283.1	
Impinger 2	100 ml 5%HNO3/10%H2O2	685.9	556.9	129.0	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	562.6	536.0	26.6	Date 3/17
Impinger 4	Empty	453.5	447.5	6.0	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	545.2	541.1	4.1	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	545.1	545.2	-0.1	448.7
Impinger 7	Silica Gel	700.3	684.6	15.7	464.4

CleanAir ENGINEERING

QA/QC SB
Date 3/17

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TEST LOCATION: FF outlet Fluoride **TESTING** **METHOD:** 13B **PAGE** 1 **OF** 2

UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client	wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-16-10
Meter Operator	A. Obuchowski		
Probe Operator	B. ARNOLD		

Meter Box	66-14	Sample Box No.	B6
Meter Y_d	0.9898	Meter $\Delta H_@$	1.7643
K Factor	2.44	Pitot C_p	0.812
Leak Rate Before	0.005 [cfm] [Lpm]	@ 15	(in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@ 15	(in. Hg)
Pitot Leak Check Before:		After: Good ☑ Bad ☐	

Cross-Section of Test Location

[N] [UP]

5 4 3 2 1

Duct Dimensions (in.)	96x96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10		

Amb. Temp. (°F) 70	Bar. Press. 30.05	[in. Hg] [mbar]	
Probe I.D. No.	67-8-14		
Liner Material	glass		

Filter No.		
Thimble No.	—	
Nozzle Diameter 0.268	Nozzle I.D.	0.268-1

Start Time: 11:49	Stop Time: 13:07

Traverse Point Number	Min/pt 2.5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 156.30	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. O_2 T_t (°F)	Notes O_2
1-1	2.5	0.34	0.83	157.35	287	249	247	63	67	66	2	~0.3	10.1
-2	5	0.34	0.83	158.74	286	249	246	61	67	66	2	0.3	9.4
-3	7.5	0.34	0.83	160.14	293	250	248	60	67	66	2	0.3	9.6
-4	10	0.43	1.0	161.40	294	250	250	60	68	66	2	0.3	9.5
2-5	12.5	0.47	1.1	162.73	299	250	248	59	69	67	2	0.3	9.3
2-1	15	0.53	1.3	164.39	298	250	247	59	69	67	2	0.3	8.8
-2	17.5	0.53	1.3	166.00	300	250	250	60	71	67	2	0.3	9.7
-3	20	0.50	1.2	167.49	299	250	248	59	72	68	2	0.3	9.1
-4	22.5	0.45	1.1	168.92	299	250	249	60	73	68	2	0.3	9.0
-5	25	0.41	1.0	170.34	300	250	249	61	74	68	2	0.3	10.0
3-1	27.5	0.52	1.3	171.90	300	250	250	61	71	70	2	0.3	9.8
-2	30	0.50	1.2	173.48	301	250	247	62	75	70	2	0.3	8.9
-3	32.5	0.52	1.3	175.07	300	250	248	62	76	70	2	0.3	9.8
	Total	*16.7833	27.370	36.80	7449				1846	1744			
	Average	0.6713	1.0948		297.960				71.80				

163.00
-162.73
0.27

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC Q
Date 3-16

CleanAir ENGINEERING

G-71

TEST LOCATION: ff Outlet Fluoride **TESTING** **METHOD:** 13B **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-16-06
Meter Operator	A. Obuchowski		
Probe Operator	B. Arnold		

Meter Box		Sample Box No.	
Meter Y_d		Meter $\Delta H_@$	
K Factor		Pitot C_p	
Leak Rate Before	[cfm] [Lpm] @ (in. Hg)		
Leak Rate After	[cfm] [Lpm] @ (in. Hg)		
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)		Bar. Press. 30.05	[in. Hg] [mbar]
Probe I.D. No.	67		
Liner Material			

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes
-4	35	0.50	1.2	~~173~~ 176.60	300	250	247	63	77	71	2	0.30	10.0
-5	37.5	0.45	1.1	178.825	300	250	246	63	76	71	2	0.30	10.1
4-1	40	0.45	1.1	180.08	300	250	247	62	76	74	2	0.30	10.1
-2	42.5	0.43	1.0	181.70	300	250	248	61	78	72	2	0.30	9.4
-3	45	0.43	1.0	183.10	299	250	247	61	78	72	2	0.30	9.2
-4	47.5	0.45	1.1	184.57	299	250	249	61	78	72	2	0.30	9.9
-5	50	0.45	1.1	186.03	300	250	250	61	78	72	2	0.30	9.9
5-1	52.5	0.47	1.1	187.55	300	250	248	61	75	72	2	0.30	10.0
-2	55	0.48	1.2	189.16	300	250	248	59	77	72	2	0.30	10.1
-3	57.5	0.47	1.1	190.58	299	251	248	57	78	72	2	0.30	10.1
-4	60	0.45	1.1	192.02	299	251	250	57	78	73	2	0.30	9.9
-5	62.5	0.40	0.98	193.450	297	251	248	56	78	72	2	0.30	10.3
	Total	*	13.08		3593				927	865			
	Average												

186.11

0.08

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/16

CleanAir ENGINEERING

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TEST LOCATION: FF outlet Fluoride **TESTING METHOD:** 13B **PAGE** 1 **OF** 2

UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-16-10
Meter Operator	A. Obuchowski		
Probe Operator	B. ARNOLD		

Meter Box	66-14	Sample Box No.	B7
Meter Y_d	0.9888	Meter $\Delta H_@$	1.7643
K Factor	2.44 2.37	Pitot C_p	0.842
Leak Rate Before 0.003 [cfm] [Lpm]	@ 15 (in. Hg)		
Leak Rate After 0.002 [cfm] [Lpm]	@ 15 (in. Hg)		
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐		

Cross-Section of Test Location

[In] [UP]

6 1

Duct Dimensions (in.)	96x96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10		

Amb. Temp. (°F) 70	Bar. Press. 30.05 [in Hg] [mbar]		
Probe I.D. No.	67-8-14		
Liner Material	glass		

Filter No.		
Thimble No.	—	
Nozzle Diameter 0.268	Nozzle I.D.	268-1

Start Time:	13:33	Stop Time:	14:44

Traverse Point Number	Min/pt 2.5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 193.980	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) ${V}_{min}$	Notes O_2
5-1	2.5	0.55	1.3	195.60	301	250	249	63	74	73	3	0.30	10.0
-2	5	0.57	1.4	197.25	300	249	247	57	74	72	3	0.30	10.3
-3	7.5	0.53	1.3	198.85	300	249	246	54	74	72	3	0.30	9.5
-4	10	0.49	1.2	200.40	298	249	248	49	76	72	3	0.30	10.4
-5	12.5	0.47	1.1	201.87	300	250	248	47	76	72	3	0.30	10.0
4-1	15	0.53	1.3	203.61	300	248	248	49	76	72	3	0.30	10.9
-2	17.5	0.57	1.4	205.26	301	250	248	46	78	73	3	0.30	10.3
-3	20	0.53	1.3	206.86	300	250	249	47	78	73	3	0.30	10.4
-4	22.5	0.50	1.2	208.41	300	250	248	47	79	73	3	0.30	10.4
-5	25	0.41	0.97	209.81	300	251	250	49	80	73	3	0.30	9.3
3-1	27.5	0.52	1.2	211.45	299	250	247	52	79	74	3	0.30	10.5
-2	30	0.52	1.2	212.99	300	250	250	51	80	74	3	0.30	10.0
-3	32.5	0.49	1.2	214.55	300	250	248	51	81	74	3	0.30	9.8
	Total	*17.352	28.80	37.760	7486				1999	1857			
	Average	0.6926	1.1520		299.440				77.120				

K factor 2.37

202.06
-201.87
-0.19

209.92
-209.81
-0.11

* Sum of square roots. ~~Circle correct~~ bracketed units on data sheet.

QA/QC 89
Date 3/16

16.07 3899 1005 947

CleanAir ENGINEERING

G-73

TEST LOCATION: FF Outlet Fluoride **TESTING** **METHOD:** 13B **PAGE** 2 **OF** 3

UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10455
Plant: N. Broward	Date 3-16-10
Meter Operator: A. Obuchowski	
Probe Operator: B. ARNOLD	

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor 2.37	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\ in}$ (°F)	DGM Outlet $T_{m\ out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	
-4	35	0.46	1.1	216.03	300	250	249	52	82	74	3	0.70	9.7	217.61
-5	37.5	0.46	1.1	217.50	300	250	248	53	82	74	3	0.30	9.1	217.50
~~2~~3-1	40	0.65	1.5	219.29	298	249	248	56	81	75	3	0.30	10.5	-.11
-2	42.5	0.54	1.3	220.90	300	250	248	56	83	75	3	0.30	9.8	
-3	45	0.46	1.1	22~~4~~3.40	300	251	250	55	84	75	3	0.30	9.6	
-4	47.5	0.41	0.97	223.85	299	250	250	55	84	76	3	0.30	9.3	
-5	50	0.41	0.97	225.26	299	250	249	55	84	76	3	0.30	10.1	225.38
2-1	52.5	0.52	1.2	226.90	298	249	248	58	82	77	3	0.30	10.0	225.26
-2	55	0.30	0.71	228.19	296	250	249	56	83	77	3	0.30	8.9	-.12
-3	57.5	0.34	0.81	229.25	298	250	250	56	83	77	3	0.30	10.0	
-4	60	0.41	0.97	230.62	299	250	250	55	83	77	3	0.30	8.9	
-5	62.5	0.43	1.0	232.27	300	250	250	54	83	77	3	0.30	9.7	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/16

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CleanAir ENGINEERING

TEST LOCATION: FF outlet Fluoride **TESTING** METHOD: 13B PAGE 1 OF 2

UNIT: 3 RUN: 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-16-10
Meter Operator	A. Obuchowski		
Probe Operator	B. ARNOLD		

Meter Box	66-14	Sample Box No.	B5
Meter Y_d	0.9898	Meter $\Delta H_@$	1.7643
K Factor	2.37	Pitot C_p	0.842
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)			
Leak Rate After 0.002 [cfm] [Lpm] @ 15 (in. Hg)			
Pitot Leak Check Before: ☑		After: Good ☑ Bad ☐	

Cross-Section of Test Location

[N] [UP]

5

Duct Dimensions (in.)	96x96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.6	10		

Amb. Temp. (°F) 70	Bar. Press. 30.05	[in. Hg] [mbar]	
Probe I.D. No.	67-8-14		
Liner Material	glass		

Filter No.		
Thimble No.	—	
Nozzle Diameter 0.268	Nozzle I.D.	268-1

Start Time:	15:03	Stop Time:	16:16

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] @ 232.60	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 25	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) O2 V_{min}	Notes O2	
1-1	2.5	0.48	1.1	234.07	299	249	245	62	76	76	3	0.30	10.5	
-2	5	0.29	0.69	235.34	298	246	245	55	77	76	3	0.30	9.4	
-3	7.5	0.29	0.69	236.49	295	248	248	53	77	76	3	0.30	9.2	
-4	10	0.36	0.85	237.81	298	248	248	52	78	76	3	0.30	9.2	239.3
-5	12.5	0.43	1.0	239.23	300	249	247	51	79	76	3	0.30	9.0	239.2
2-1	15	0.60	1.4	240.98	295	249	247	52	79	76	3	0.30	10.2	-0.00
-2	17.5	0.50	1.2	242.53	301	249	247	53	81	76	3	0.30	9.0	
-3	20	0.47	1.1	244.00	299	250	247	54	82	76	3	0.30	9.1	
-4	22.5	0.43	1.0	245.43	300	250	246	56	82	76	3	0.30	9.1	247.0
-5	25	0.50	1.2	246.98	300	250	248	58	82	76	3	0.30	8.9	246.9
3-1	27.5	0.54	1.3	248.68	295	249	249	60	81	76	3	0.30	10.7	-0.0
-2	30	0.48	1.1	250.25	300	249	247	61	82	76	3	0.30	8.5	
-3	32.5	0.48	1.1	251.61 SB	300	250	247	61	82	76	3	0.30	8.9	
	Total	*16.7532	26.680	~~34.580~~	7472				2018	1899				
	Average	0.6701	1.0672	36.580	298.880				~~78.340~~ SB 78.50					

*Sum of square roots. 13.73

3880

Circle correct bracketed units on data sheet.

QA/QC ______

Date ______

1078 988

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CleanAir ENGINEERING

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TEST LOCATION: FF outlet Fluoride **TESTING METHOD:** 13B **PAGE** @ 2 **OF** 2

UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client	wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-16-10
Meter Operator	A. Obuchowski		
Probe Operator	B. ARNOLD		

Meter Box		Sample Box No.	
Meter Y_d		Meter $\Delta H_@$	
K Factor		Pitot C_p	
Leak Rate Before [cfm] [Lpm] @ (in. Hg)			
Leak Rate After [cfm] [Lpm] @ (in. Hg)			
Pitot Leak Check Before: ☐		After: Good ☐ Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	—
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

Start Time:	Stop Time:

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 250	Filter T_f (°F) Set Points 250	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes	
-4	35	0.45	1.1	253.07	299	250	250	62	82	76	3	0.36	8.9	
-5	37.5	0.38	0.90	254.44	299	250	250	62	82	75	3	0.30	9.2	254.49 -254.44
4-1	40	0.51	1.2	256.05	297	249	249	64	81	76	3	0.30	10.0	-0.05
-2	42.5	0.55	1.3	257.60	301	249	248	57	82	76	3	0.30	9.0	
-3	45	0.45	1.1	259.16	300	250	249	55	83	76	3	0.30	9.6	
-4	47.5	0.43	1.0	260.37	300	251	248	55	83	76	3	0.30	9.9	
-5	50	0.40	0.95	262.01	300	250	249	51	82	76	3	0.30	9.2	262.07
5-1	52.5	0.43	1.0	263.49	298	249	249	51	81	76	3	0.30	9.9	-0.06
-2	55	0.50	1.2	265.14	300	249	249	49	82	76	3	0.30	9.7	
-3	57.5	0.45	1.1	266.56	300	250	248	49	83	76	3	0.30	8.4	
-4	60	0.47	1.1	268.09	299	250	248	49	83	76	3	0.30	8.5	
-5	62.5	0.43	1.0	269.47	299	250	249	49	83	76	3	0.30	8.7	
	Total	*												
	Average													

* Sum of square roots. 12.95

Circle correct bracketed units on data sheet.

.3592 QA/QC SB Date 3/13

9.80 9.11

CleanAir ENGINEERING

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Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 3 FF Outlet	
Plant North Broward	Job No. 10955	Method 13B	

Run No. 1	Filter Type Teflon glass mat		Sample Box No. B6
Date 3/16/10	Lot No.		pH
Analyst B. Wiltse	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	657.1	545.3	111.8
Impinger 2	100 mL DI H2O	618.0	558.1	59.9
Impinger 3	Empty	469.7	455.2	14.5
Impinger 4	Silica Gel	818.4	800.4	18.0

QA/QC BW
Date 3/16

Total Weight (gm): 186.2 / 204.2

Run No. 2	Filter Type Teflon glass mat		Sample Box No. B7
Date 3/16/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	652.2	536.6	115.6
Impinger 2	100 mL DI H2O	609.3	540.2	69.1
Impinger 3	Empty	446.6	433.5	13.1
Impinger 4	Silica Gel	780.9	765.0	15.9

QA/QC SB
Date 3/16

Total Weight (gm): 197.8 / 213.7

Run No. 3	Filter Type Teflon glass mat		Sample Box No. B5
Date 3/16/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	662.3	539.4	122.9
Impinger 2	100 mL DI H2O	598.1	543.1	55.0
Impinger 3	Empty	462.8	448.3	14.5
Impinger 4	Silica Gel	702.5	685.7	16.8

QA/QC SB
Date 3/16

Total Weight (gm): 192.4 / 209.2

CleanAir ENGINEERING

QA/QC SB
Date 3/16

G-77

TEST LOCATION: FF outlet HCL **TESTING METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	N. Broward	Date	3-16-10
Meter Operator	A. Obuchowski		
Probe Operator	—		

Meter Box	61-11	Sample Box No.	B21
Meter Y_d	0.9892	Meter $\Delta H_@$	1.7379
K Factor	—	Pitot C_p	
Leak Rate Before	0.003 [cfm] [Lpm] @ 15 (in. Hg)		
Leak Rate After	0.002 [cfm] [Lpm] @ 15 (in. Hg)		
Pitot Leak Check Before: ☑		After: Good ☑ Bad ☐	

Cross-Section of Test Location

Duct Dimensions (in.)	96×96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.4	10		

Amb. Temp. (°F)	70	Bar. Press.	30.05 [in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

Filter No.			
Thimble No.	—		
Nozzle Diameter	—	Nozzle I.D.	—

Start Time:	7:17	Stop Time:	8:17

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 230.13	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	* DGM inlet Notes O_2
3-1	5		1.5	233.54	300	300	301	61	56	59	5	n/a	8.1
	10		1.5	236.99	300	300	300	60	56	59	5		8.2
	15		1.5	240.40	299	301	300	60	53	58	5		8.6
	20		1.5	243.84	299	301	300	59	51	59	5		8.9
	25		1.5	247.30	299	301	301	60	49	60	5		9.1
	30		1.5	250.67	299	300	301	60	49	61	5		8.6
	35		1.5	254.17	300	300	300	61	48	62	5		8.2
	40		1.5	257.50	299	300	300	61	49	63	5		8.3
	45		1.5	261.10	299	299	300	61	51	63	5		8.1
	50		1.5	264.55	299	299	300	60	51	64	5		8.5
	55		1.5	268.02	299	300	301	60	51	65	5		7.4
	60		1.5	271.470	299	300	299	61	51	65	5		8.5
	Total	*	18.0	41.340	3591.0				615	738			
	Average		1.5		299.250				30.756				

* Sum of square roots.

~~Circle~~ correct bracketed units on data sheet.

QA/QC ©

Date 3-16

CleanAir ENGINEERING

TESTING FIELD DATA SHEET

TEST LOCATION: FF outlet HCL **METHOD:** 26A **PAGE** 1 **OF** 1

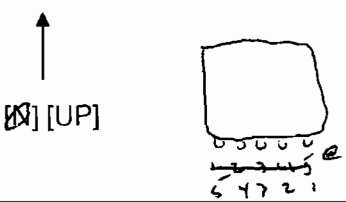
UNIT: 3 **RUN:** 2

Client Wheelabrator	Project No. 10955
Plant N. Broward	Date 3-16-10
Meter Operator A. Obuchowski	
Probe Operator –	

Meter Box 61-11	Sample Box No. B11
Meter Y_d 0.9892	Meter $\Delta H_@$ 1.7379
K Factor –	Pitot C_p
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.001 [cfm] [Lpm] @ 15 (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☑ Bad ☐

Cross-Section of Test Location

[X] [UP]



Duct Dimensions (in.) 96x96			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out]	First point all the way of page [In] [Out]
-11.2	16		

Amb. Temp. (°F) 76	Bar. Press. 30.05 [inHg] [mbar]
Probe I.D. No. 67-4-3	
Liner Material glass	

Filter No.			
Thimble No. –			
Nozzle Diameter		Nozzle I.D.	–

Start Time: 9:04	Stop Time: 10:04

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 272.~~505~~ 493	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2
3-1	5	n/a	1.5	276.42	304	299	299	60	62	65	5	n/a	9.4
	10		1.5	279.80	303	300	300	62	62	65	5		8.9
	15		1.5	283.18	299	301	300	59	56	64	5		9.7
	20		1.5	286.53	300	301	300	58	55	64	5		8.9
	25		1.5	289.95	300	301	301	60	53	64	5		9.4
	30		1.5	293.41	300	300	300	61	53	65	5		9.2
	35		1.5	296.90	299	300	300	62	54	66	5		9.5
	40		1.5	300.33	300	300	300	62	54	66	5		8.8
	45		1.5	303.82	300	300	301	62	54	67	5		8.6
	50		1.5	307.30	300	300	300	62	54	67	5		9.7
	55		1.5	310.78	300	301	300	63	55	68	5		9.2
	60		1.5	314.270	299	300	301	62	56	68	5		9.0
	Total	*	18.0	41.340	3605.0				668	789			
	Average		1.56		300.4167 58				60.7083				

* Sum of square roots.

300.33

Circle correct bracketed units on data sheet.

QA/QC [illegible]

Date 3-16

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CleanAir ENGINEERING

TEST LOCATION: FF outlet HCL **TESTING** METHOD: 26A PAGE 1 OF 1

UNIT: 3 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10055
Plant N. Broward	Date 3-16-10
Meter Operator A. Obuchowski	
Probe Operator -	

Meter Box 61-11	Sample Box No.
Meter Y_d 0.9892	Meter $\Delta H_@$ 1.7379
K Factor -	Pitot C_p
Leak Rate Before 0.002 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐

Cross-Section of Test Location

Duct Dimensions (in.) 96x96			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.7	10		

Amb. Temp. (°F) 70	Bar. Press. 30.05 [in. Hg] [mbar]
Probe I.D. No.	67-4-3
Liner Material	glass

Filter No.		
Thimble No. —		
Nozzle Diameter -	Nozzle I.D.	-

Start Time: 10:32	Stop Time: 11:32

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 315.150	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 300	Filter T$_f$ (°F) Set Points 300	Cond. Temp. T$_c$ (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T$_t$ (°F)	Notes O_2
3-1	5	N/A	1.5	318.53	300	303	302	60	63	68	5	N/A	9.0
	10		1.5	321.96	300	301	302	60	63	68	5		7.8
	15		1.5	325.38	299	300	301	53	59	68	5		8.9
	20		1.5	328.97	299	301	300	55	58	69	5		9.1
	25		1.5	332.29	299	300	300	59	58	69	5		9.0
	30		1.5	335.69	299	299	300	60	59	70	5		8.4
	35		1.5	339.23	299	300	301	60	59	71	5		8.1
	40		1.5	342.68	299	300	300	61	59	72	5		9.3
	45		1.5	346.20	299	300	300	61	60	72	5		9.2
	50		1.5	349.73	299	300	299	62	61	73	5		9.0
	55		1.5	353.27	300	301	300	63	61	74	5		9.5
	60		1.5	356.755	299	300	300	63	63	74	5		8.7
	Total	*	18	41.6050	3592				727	848			
	Average		1.50		~~299.3333~~ SB				65.4583				

* Sum of square roots.

Circle correct bracketed units on data sheet.

299.250

QA/QC O

Date 3-16

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CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 3 FF Outlet	
Plant North Broward	Job No. 10955	Method	Mod. 26A

Run No. 1	Filter Type Quartz		Sample Box No. B21
Date 3/16/10	Lot No.		pH
Analyst R. Wilke	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	505.4	472.7	32.7	
Impinger 2	100 mL 01.N H2SO4	730.5	637.4	93.1	QA/QC RW
Impinger 3	100 mL 01.N H2SO4	594.7	533.5	61.2	Date 3/16
Impinger 4	Empty	464.1	445.2	18.9	
Impinger 5	Silica Gel	760.9	731.3	29.6	Total Weight (gm)
					205.9
					235.5

Run No. 2	Filter Type Quartz		Sample Box No. B11
Date 3/16/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	510.0	465.0	45.0	
Impinger 2	100 mL 01.N H2SO4	669.7	558.4	111.3	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	603.7	550.9	52.8	Date 3/16
Impinger 4	Empty	466.6	454.4	12.2	
Impinger 5	Silica Gel	785.7	766.3	19.4	Total Weight (gm)
					221.3
					240.7

Run No. 3	Filter Type Quartz		Sample Box No. B21
Date 3/16/10	Lot No.		pH
Analyst B. Wilke	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	520.3	473.4	46.9	
Impinger 2	100 mL 01.N H2SO4	751.2	643.1	108.1	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	583.8	535.6	48.2	Date 3/16
Impinger 4	Empty	471.5	448.1	23.4	
Impinger 5	Silica Gel	780.7	760.2	20.5	Total Weight (gm)
					226.6
					247.1

CleanAir ENGINEERING

QA/QC SB
Date 3/16

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TEST LOCATION: SDA INLET HCL **TESTING METHOD:** 26A **PAGE** 1 **OF** 1

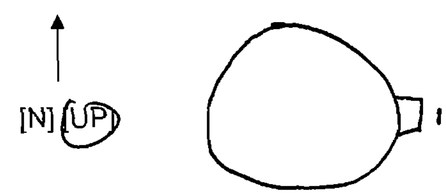
UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client wheelabrator	Project No. 10955
Plant N. BROWARD	Date 3-16-10
Meter Operator BARNARD	
Probe Operator B. ARNOLD	

Meter Box 61-8	Sample Box No. BZZ
Meter Y_d 0.9916	Meter $\Delta H_@$ 1.7580
K Factor N/A	Pitot C_p
Leak Rate Before 0.007 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.004 [cfm] [Lpm] @ 17 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.) 105			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-2.1	14"		

Amb. Temp. (°F) 69	Bar. Press. 30.05 [in. Hg] [mbar]
Probe I.D. No. 67-4-5	
Liner Material GLASS	

Filter No. N/A		
Thimble No. N/A		
Nozzle Diameter N/A	Nozzle I.D. N/A	

Start Time: 7:17	Stop Time: 8:17

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft^3] [L] 992.610	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 355	Filter T_f (°F) Set Points 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t~~ (°F) O_2	Notes
1-1	5	~~0.0~~ 0.58	1.2	995.70	501	356	350	63	67	66	3.0	7.2	
	10	~~0.0~~ 0.56		998.55	501	358	351	61	68	66	3.5	7.7	
	15	0.50		001.49	500	357	356	60	69	67	4.0	8.3	
	20	0.51		004.48	502	355	354	60	71	67	6.5	8.4	
	25	0.52		007.47	506	356	353	59	73	68	8.5	7.4	
	30	0.52		010.48	505	355	355	60	74	69	10.0	7.1	
	35	0.52		013.45	505	356	360	61	75	69	10.5	8.0	
	40	0.51		016.48	505	355	351	62	75	69	12.5	7.4	
	45	0.53		019.50	504	355	354	63	75	70	14.5	7.7	
	50	0.54	1.1	022.49	506	355	356	63	75	70	15.5	7.6	
	55	0.49	1.0	025.39	502	355	355	64	74	70	16.5	7.0	
	60	0.47	1.0	028.220	501	355	356	65	73	70	16.5	8.0	
	Total	6.2506	13.958 ~~14.4000~~	35.6100	6038				949	821			
	Average	0.5208	~~1.2000~~		503.1667				~~74.5833~~	58			

Sum of square roots: 1.138

Circle correct bracketed units on data sheet.

70.4166

QA/QC BA

Date 3-16-10

CleanAir ENGINEERING

TEST LOCATION: SDA INLET HCL **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant N. BROWARD	Date 3-16-10
Meter Operator B. ARNOLD	
Probe Operator B. ARNOLD	

Meter Box 61-8	Sample Box No. B16
Meter Y_d 0.9916	Meter $\Delta H_@$ 1.7580
K Factor N/A	Pitot C_p
Leak Rate Before 0.003 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm] @ 14 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 105

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-2.0	14		

Amb. Temp. (°F) 72	Bar. Press. 30.05 [in. Hg] [mbar]
Probe I.D. No. ~~GLASS~~ 8ft 67-4-5	
Liner Material GLASS	

Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	N/A	Nozzle I.D.	N/A

Start Time: 9:04	Stop Time: 10:04

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 028.865	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 355	Filter T_f (°F) Set Points 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	~~XAD Trap Temp. T_t (°F)~~ BA O2	Notes
1-1	5	0.55	1.2	031.92	508	354	356	58	70	69	2.5	8.1	
	10	0.51		034.92	510	358	356	57	71	69	3.0	7.5	
	15	0.66		037.95	508	358	357	56	72	70	4.0	7.9	
	20	0.56		040.96	509	356	357	56	75	70	5.0	7.6	
	25	0.56		043.95	510	355	355	57	76	71	6.0	7.6	
	30	0.61		046.96	510	355	354	57	77	71	6.5	8.2	
	35	0.54		049.97	508	355	354	58	77	71	8.0	7.8	
	40	0.46		052.98	508	355	358	59	78	72	9.0	7.2	
	45	0.44		056.02	509	355	353	60	78	72	10.0	7.1	
	50	0.60		059.04	511	355	355	62	78	72	11.0	8.2	
	55	0.57		062.07	514	355	355	63	78	72	12.0	8.2	
	60	0.47		065.115	510	355	353	64	78	73	13.0	7.5	
	Total	6.5300*	14.4000	36.2500	6115				909	852			
	Average	0.5442	1.2000		509.5833				~~73.3788~~	58			

*Sum of square roots.

Circle correct bracketed units on data sheet.

73.333

QA/QC BA

Date 3-16-10

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CleanAir ENGINEERING

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TEST LOCATION: SDA INLET HCL **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10955
Plant: N. Broward	Date: 3-16-10
Meter Operator: B. Arnold	
Probe Operator: B. Arnold	

Meter Box: 61-8	Sample Box No. ~~BH~~ BA B22
Meter Y_d: 0.9916	Meter $\Delta H_@$: 1.7580
K Factor: N/A	Pitot C_p:
Leak Rate Before: 0.003 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After: 0.003 [cfm] [Lpm] @ 27 (in. Hg)	
Pitot Leak Check Before: NA	After: Good ☐ Bad ☐

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.) 105			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-2.2	14		

Amb. Temp. (°F)	Bar. Press. 30.05 [in. Hg] [mbar]
Probe I.D. No. ~~GLASS BA~~ 67-4-5	
Liner Material: GLASS	

Filter No. N/A		
Thimble No. N/A		
Nozzle Diameter N/A	Nozzle I.D. N/A	

Start Time: 10:32	Stop Time: 11:32

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 065.410	Stack Temp. Ts (°F)	Probe T_p (°F) Set Point 355	Filter T_f (°F) Set Point 355	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in Hg)	~~XAD Trap Temp.~~ O2 T_t (°F)	Notes
1-1	5	0.80	1.2	068.32	508	354	356	61	74	73	2.5	8.1	
	10	0.65		071.20	507	358	362	60	75	73	3.0	7.0	
	15	0.47		074.14	505	358	359	58	77	73	4.0	7.9	
	20	0.62		077.12	508	357	354	57	78	73	6.0	7.5	
	25	0.53		080.00	510	356	357	56	80	74	7.5	6.8	
	30	0.51		082.97	508	356	355	56	81	75	8.0	7.5	
	35	0.52		SB ~~089.02~~ 86.02	507	356	357	57	81	75	10.5	7.6	
	40	0.43		SB ~~092.06~~ 89.02	509	355	356	57	81	75	12.0	7.3	
	45	0.44		SB ~~095.09~~ 92.08	509	355	356	59	82	77	15.5	7.8	
	50	0.53		SB ~~098.02~~ 95.02	509	355	356	61	82	78	16.5	7.8	
	55	0.56	1.1	98.02 (Assumed SB)	509	355	360	63	82	78	16.5	8.1	← MISSED Reading
	60	0.55	1.0	100.865	509	355	358	64	83	78	16.5	8.6	
	Total	*	14.1000	35.4550	6098				956	902			
	Average		1.1750		508.1667				77.4167				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-16-10

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CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location	Unit 3 SDA Inlet
Plant North Broward	Job No. 10955	Method	Mod. 26A

Run No. 1	Filter Type Quartz	Sample Box No. B22
Date 3/16/10	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	506.6	468.1	[illegible]	
Impinger 2	100 mL 01.N H2SO4	615.6	531.2	84.4	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	566.9	548.5	184	Date 3/16
Impinger 4	Empty	431.7	426.3	5.4	
Impinger 5	Silica Gel	747.1	734.0	13.1	Total Weight (gm)
					146.7
					159.8

Run No. 2	Filter Type Quartz	Sample Box No. B16
Date 3/16/10	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	504.1	451.1	53.0	
Impinger 2	100 mL 01.N H2SO4	629.9	554.4	75.5	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	556.7	538.6	18.1	Date 3/16
Impinger 4	Empty	463.6	460.7	2.9	
Impinger 5	Silica Gel	741.3	729.2	12.1	Total Weight (gm)
					149.5
					161.6

Run No. 3	Filter Type Quartz	Sample Box No. B22
Date 3/16/10	Lot No.	pH
Analyst R. Vicere	Filter No. NA	Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	507.8	468.5	39.3	
Impinger 2	100 mL 01.N H2SO4	610.7	534.3	76.4	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	572.1	553.2	18.9	Date 3/16
Impinger 4	Empty	432.4	428.3	4.1	
Impinger 5	Silica Gel	756.5	746.8	9.7	Total Weight (gm)
					138.7
					148.4

CleanAir ENGINEERING

QA/QC SB
Date 3/16

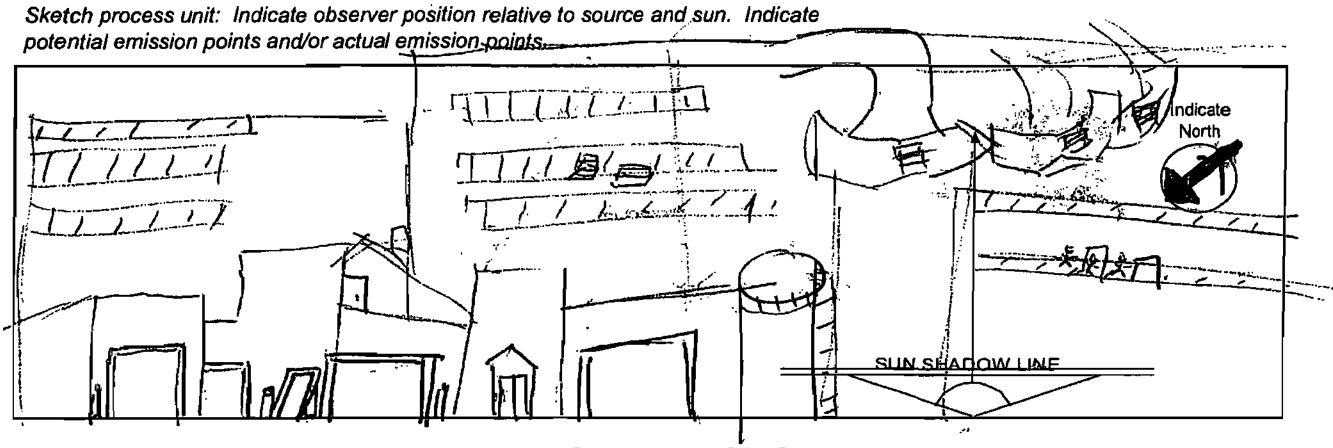
EPA METHOD 22
Fugitive or Smoke Emission Inspection
Outdoor Location

Job No.	10955	Date	3/18/10
Client	Wheelabrator	Observer	Raina Vicere
Plant	North Broward	Affiliation	Clean Air

Industry	MWS	Process Unit	Ash Handling System

Precipitation	none	Wind Direction	W
Sky Conditions	Sunny	Wind Speed	6

Sketch process unit: Indicate observer position relative to source and sun. Indicate potential emission points and/or actual emission points.



OBSERVATIONS

Comments	Clock Time	Observation Period Duration (min : sec)	Accumulated Emission Duration (min : sec)
Ash Conveyors ~~and~~ to Baghouse doors	Start 7:22 Stop 7:42	20:00	00:00
Ash Unloading / Conveyor	Start 7:47 Stop 8:07	20:00	00:00
	Start 8:12 Stop 8:32	20:00	00:00
	Start 8:37 Stop 8:57		
	Start 9:02 Stop 9:22		
	Start 9:27 Stop 9:47		

Note: Rest breaks must be taken every 15 to 20 minutes for 5 to 10 minutes.

CleanAir ENGINEERING

QA/QC RV
Date 3/19/10

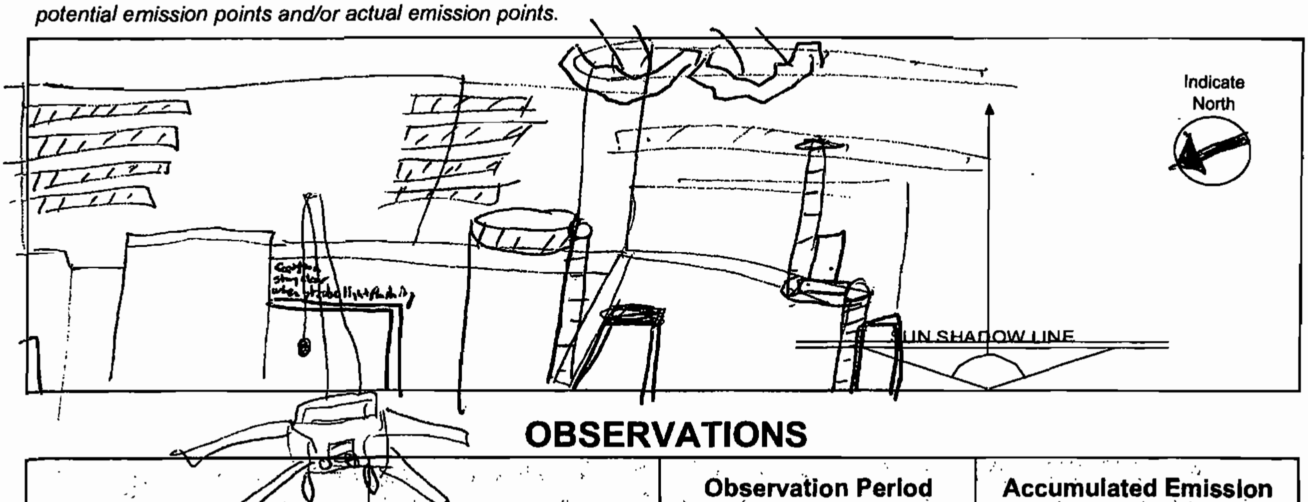
EPA METHOD 22
Fugitive or Smoke Emission Inspection
Outdoor Location

Job No.	10955	**Date**	3/18/10
Client	Wheelabrator	**Observer**	Raina Vicere
Plant	North Broward	**Affiliation**	Clean Air

Industry	MWS	**Process Unit**	Ash Handling System

Precipitation	none	**Wind Direction**	W
Sky Conditions	Sunny	**Wind Speed**	9

Sketch process unit: Indicate observer position relative to source and sun. Indicate potential emission points and/or actual emission points.



OBSERVATIONS

Comments	Clock Time	Observation Period Duration (min : sec)	Accumulated Emission Duration (min : sec)
Metals Unloading and baghouse doors	Start 8:43 / Stop 9:03	20:00	00:00
Ash Conveyor / Doors to Baghouse	Start 9:08 / Stop 9:28	20:00	00:00
	Start 9:33 / Stop 9:54	20:00	00:00
	Start / Stop		
	Start / Stop		
	Start / Stop		

Note: Rest breaks must be taken every 15 to 20 minutes for 5 to 10 minutes.

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FDS022-EPA22.xls, August 2004

QA/QC RV
Date 3/19/10

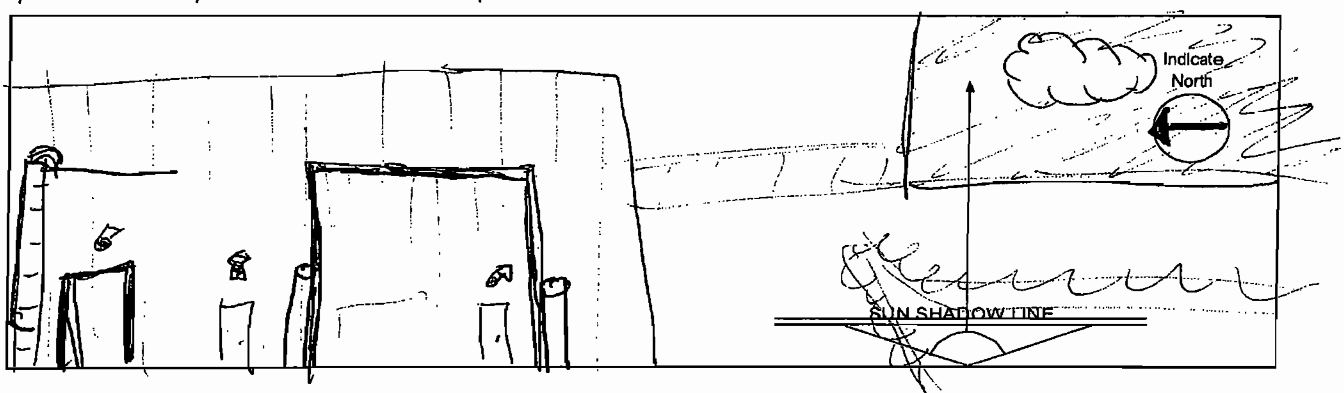
EPA METHOD 22
Fugitive or Smoke Emission Inspection
Outdoor Location

Job No.	10955	**Date**	3/18/10
Client	Wheelabrator	**Observer**	Raina Vicere
Plant	North Broward	**Affiliation**	Clean Air

Industry	MWS	**Process Unit**	Ash Handling System

Precipitation	none	**Wind Direction**	WNW
Sky Conditions	partly cloudy	**Wind Speed**	14

Sketch process unit: Indicate observer position relative to source and sun. Indicate potential emission points and/or actual emission points.



OBSERVATIONS

Comments	Clock Time	Observation Period Duration (min : sec)	Accumulated Emission Duration (min : sec)
Ash Building Baghouse Area	Start 11:10 Stop 11:30	20:00	00:00
~~Ash Unloading~~ / EB ~~Conveyor~~	Start 11:35 Stop 11:55	20:00	00:00
Rolling Door / Door to Baghouse	Start 12:00 Stop 12:20	20:00	00:00
	Start Stop		
	Start Stop		
	Start Stop		

Note: Rest breaks must be taken every 15 to 20 minutes for 5 to 10 minutes.

CleanAir. ENGINEERING

QA/QC RV
Date 3/18/10

Visible Emissions Observation Form

CLIENT/OWNER	PROJECT NUMBER		OBSERVATION DATE	START TIME	END TIME
Wheelabrator	10955		3/17/10	10:26	11:26
PLANT	**UNIT**	**RUN**			
North Broward		1			
PROCESS EQUIPMENT	**OPERATING MODE**				
Lime Silo					
CONTROL EQUIPMENT	**OPERATING MODE**				
Fabric filter baghouse					

DESCRIBE EMISSION POINT
vent fabric filter baghouse

HEIGHT ABOVE GROUND LEVEL	DISTANCE FROM OBSERVER
90	270
HEIGHT RELATIVE TO OBSERVER	**DIRECTION FROM OBSERVER**
90	

DESCRIBE EMISSIONS
clear

EMISSION COLOR	PLUME TYPE
clear	CONTINUOUS ☒ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT	**IF WATER DROPLET PLUME**
YES ☐ NO ☒	ATTACHED ☐ DETACHED ☐

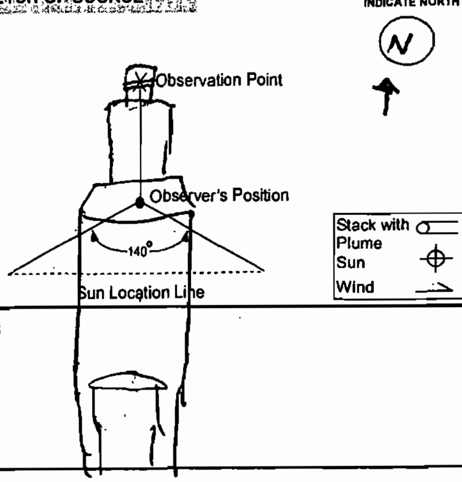
POINT IN PLUME AT WHICH EMISSIONS WERE DETERMINED
2ft off the vent opening

DESCRIBE BACKGROUND Tan color unit
cloudy, raining outside

WIND SPEED	WIND DIRECTION
- calm -	—
AMBIENT TEMPERATURE	**RELATIVE HUMIDITY**
64	69

MIN \ SEC	15	30	45	60	MIN \ SEC	15	30	45	60
0	0	0	0	0	30	0	0	0	0
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0

LAYOUT SKETCH OF SOURCE



RANGE OF OPACITY READINGS

MINIMUM	MAXIMUM
0	0

OBSERVER'S NAME (PRINT)
Raina Vicere

OBSERVER'S SIGNATURE	DATE
(signature)	3/17/10
CERTIFIED BY	**DATE**

COMMENTS

QA/QC [initials]
Date 3/17/10

CleanAir ENGINEERING

Visible Emissions Observation Form

CLIENT/OWNER	PROJECT NUMBER	OBSERVATION DATE	START TIME	END TIME
North Broward	10955	3/17/10	11:26	11:45

PLANT	UNIT	RUN
Wheelabrator 2		

PROCESS EQUIPMENT	OPERATING MODE
Lime Silo	

CONTROL EQUIPMENT	OPERATING MODE
fabric filter baghouse	

DESCRIBE EMISSION POINT
vent fabric filter baghouse

HEIGHT ABOVE GROUND LEVEL	DISTANCE FROM OBSERVER
90	270

HEIGHT RELATIVE TO OBSERVER	DIRECTION FROM OBSERVER
90	

DESCRIBE EMISSIONS
clear

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☒ FUGITIVE ☐ INTERMITTENT ☐
clear	

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME
YES ☐ NO ☐	ATTACHED ☐ DETACHED ☐

POINT IN PLUME AT WHICH EMISSIONS WERE DETERMINED
2 ft after vent opening

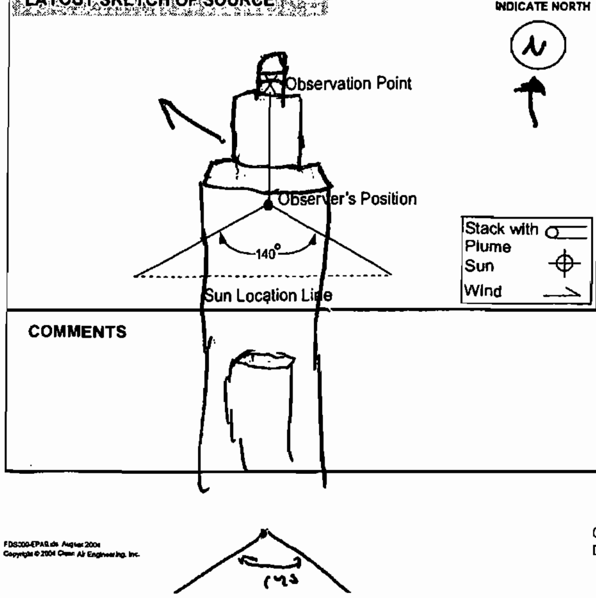
DESCRIBE BACKGROUND tan color unit
cloudy + raining outside

WIND SPEED	WIND DIRECTION
6	WNW

AMBIENT TEMPERATURE	RELATIVE HUMIDITY
	63

MIN \ SEC	15	30	45	60	MIN \ SEC	15	30	45	60
0	0	0	0	0	30				
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				

LAYOUT SKETCH OF SOURCE



RANGE OF OPACITY READINGS	
MINIMUM	MAXIMUM
0	0

OBSERVER'S NAME (PRINT)
Regina Vicars

OBSERVER'S SIGNATURE	DATE
[signature]	3/17/10

CERTIFIED BY	DATE

COMMENTS

FDS000-EPA9.xls August 2004
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QA/QC RV
Date 3/17/10

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FIELD DATA PRINTOUTS

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Field Data Printout

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals

Location: Unit 1 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: P. Bihun 505
Probe Operator: P. Bihun 505
Test Date: 3/16/10
Start Time: 07:21
Stop Time: 09:32
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 8 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.0
O_2 (dry volume %): 9.53
CO_2 (dry volume %): 9.88
N_2+CO (dry volume %): 80.59

H_2O (condensate, ml or gm): 413.3
H_2O (silica, g): 18.2
Actual Moisture (%): 20.13

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-6
Meter ΔH@: 1.68200
Meter Y_d: 0.99000

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in. H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			76.485						
1-01	5.0	0.43	0.96	79.290	292	59	57	0.66	2.81	99.9
1-02	10.0	0.51	1.10	82.200	293	61	57	0.71	2.91	95.1
1-03	15.0	0.57	1.30	85.410	293	64	58	0.75	3.21	98.8
1-04	20.0	0.64	1.40	88.790	294	65	58	0.80	3.38	98.2
1-05	25.0	0.64	1.40	92.180	294	66	58	0.80	3.39	98.4
LEAK CHECK	25.0			92.240						
2-01	30.0	0.57	1.30	95.510	293	66	59	0.75	3.27	100.4
2-02	35.0	0.52	1.20	98.590	294	67	60	0.72	3.08	98.9
2-03	40.0	0.52	1.20	101.690	294	68	60	0.72	3.10	99.4
2-04	45.0	0.68	1.50	105.200	294	69	61	0.82	3.51	98.3
2-05	50.0	0.60	1.30	108.455	294	70	61	0.77	3.26	96.9
LEAK CHECK	50.0			108.515						
3-01	55.0	0.63	1.40	111.870	294	68	61	0.79	3.36	97.7
3-02	60.0	0.53	1.20	115.040	293	69	61	0.73	3.17	100.4
3-03	65.0	0.58	1.30	118.300	294	68	61	0.76	3.26	98.9
3-04	70.0	0.65	1.50	121.800	294	69	61	0.81	3.50	100.3
3-05	75.0	0.68	1.50	125.290	293	69	62	0.82	3.49	97.6
LEAK CHECK	75.0			125.350						
4-01	80.0	0.61	1.40	128.670	294	69	62	0.78	3.32	98.1
4-02	85.0	0.46	1.00	131.710	294	70	62	0.68	3.04	103.2
4-03	90.0	0.42	0.94	134.510	293	70	62	0.65	2.80	99.4
4-04	95.0	0.61	1.40	137.890	295	69	62	0.78	3.38	99.9
4-05	100.0	0.68	1.50	141.415	294	70	63	0.82	3.53	98.5
LEAK CHECK	100.0			141.453						
5-01	105.0	0.45	1.00	144.350	291	69	63	0.67	2.90	99.2
5-02	110.0	0.45	1.00	147.230	292	70	63	0.67	2.88	98.6
5-03	115.0	0.47	1.10	150.200	290	71	63	0.69	2.97	99.3
5-04	120.0	0.58	1.30	153.500	292	71	63	0.76	3.30	99.5
5-05	125.0	0.69	1.50	156.945	294	71	63	0.83	3.44	95.4
Final	125.0		1.26800	80.24200	293.28000	64.38000		0.75072	80.24200	

25 points sampled

	Sq.Rt.ΔP						
QC-Check: Field Averages	0.7507	1.2680	80.2400	293.2800	64.3800	2RSD =	11.6%
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK		

041310 100206

QA/QC ________
Date ________

Field Data Printout

Test Method: **USEPA Method 5/29**
Analyte: **Particulate/Metals**

Location: Unit 1 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: P. Bihun 505
Probe Operator: P. Bihun 505
Test Date: 3/16/10
Start Time: 10:00
Stop Time: 12:14
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 8 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.0
O_2 (dry volume %): 9.46
CO_2 (dry volume %): 9.93
N_2+CO (dry volume %): 80.61

H_2O (condensate, ml or gm): 413.3
H_2O (silica, g): 18.9
Actual Moisture (%): 20.04

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-6
Meter ΔH@: 1.68200
Meter Y_d: 0.99000

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. }H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			157.285						
1-01	5.0	0.58	1.30	160.680	293	63	62	0.76	3.40	103.2
1-02	10.0	0.59	1.40	163.960	295	65	62	0.77	3.28	98.9
1-03	15.0	0.61	1.40	167.330	295	68	63	0.78	3.37	99.5
1-04	20.0	0.72	1.70	171.060	295	68	62	0.85	3.73	101.6
1-05	25.0	0.68	1.60	174.690	295	70	63	0.82	3.63	101.4
LEAK CHECK	25.0			174.740						
2-01	30.0	0.49	1.10	177.660	292	70	64	0.70	2.92	95.7
2-02	35.0	0.54	1.20	180.800	293	72	64	0.73	3.14	97.9
2-03	40.0	0.61	1.40	184.170	294	72	65	0.78	3.37	98.9
2-04	45.0	0.67	1.50	187.680	295	74	65	0.82	3.51	98.2
2-05	50.0	0.65	1.50	191.210	294	74	66	0.81	3.53	100.1
LEAK CHECK	50.0			191.265						
3-01	55.0	0.56	1.30	194.500	293	73	66	0.75	3.24	98.8
3-02	60.0	0.45	1.00	197.390	295	74	66	0.67	2.89	98.4
3-03	65.0	0.56	1.30	200.640	295	74	66	0.75	3.25	99.3
3-04	70.0	0.60	1.40	203.990	295	74	66	0.77	3.35	98.9
3-05	75.0	0.63	1.50	207.535	294	75	67	0.79	3.54	101.9
LEAK CHECK	75.0			207.580						
4-01	80.0	0.53	1.20	210.740	292	73	66	0.73	3.16	99.1
4-02	85.0	0.50	1.20	213.870	295	73	66	0.71	3.13	101.3
4-03	90.0	0.55	1.30	217.160	296	73	66	0.74	3.29	101.6
4-04	95.0	0.57	1.30	220.430	296	74	66	0.75	3.27	99.1
4-05	100.0	0.62	1.40	223.870	297	75	67	0.79	3.44	99.9
LEAK CHECK	100.0			223.915						
5-01	105.0	0.45	1.00	226.760	297	73	67	0.67	2.85	97.0
5-02	110.0	0.43	0.99	229.640	297	73	67	0.66	2.88	100.5
5-03	115.0	0.40	0.92	232.410	296	74	67	0.63	2.77	100.0
5-04	120.0	0.42	0.97	235.260	297	74	67	0.65	2.85	100.5
5-05	125.0	0.72	1.70	238.980	300	74	67	0.85	3.72	100.6
Final	125.0		1.30320	81.50000	295.04000	68.70000		0.74940	81.50000	

25 points sampled

	Sq.Rt.ΔP					
QC-Check: Field Averages	0.7494	1.3032	81.5000	295.0400	68.7000	2RSD = 12.2%
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	

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Field Data Printout

Test Method: **USEPA Method 5/29**
Analyte: **Particulate/Metals**

Location: Unit 1 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000

Meter Operator:	P. Bihun	505
Probe Operator:	P. Bihun	505

Test Date: 3/16/10
Start Time: 12:36
Stop Time: 14:47
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 8 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.1
O_2 (dry volume %): 9.74
CO_2 (dry volume %): 9.83
N_2+CO (dry volume %): 80.43

H_2O (condensate, ml or gm): 410.8
H_2O (silica, g): 14.2
Actual Moisture (%): 19.69

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-6
Meter ΔH@: 1.68200
Meter Y_d: 0.99000

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			239.315						
1-01	5.0	0.45	1.00	242.260	300	70	68	0.67	2.94	100.5
1-02	10.0	0.54	1.20	245.420	301	71	68	0.73	3.16	98.4
1-03	15.0	0.57	1.30	248.750	302	73	68	0.75	3.33	100.9
1-04	20.0	0.63	1.50	252.340	302	75	69	0.79	3.59	103.2
1-05	25.0	0.60	1.40	255.770	301	77	69	0.77	3.43	100.7
LEAK CHECK	25.0			255.810						
2-01	30.0	0.54	1.20	258.980	299	76	69	0.73	3.17	98.1
2-02	35.0	0.47	1.10	261.950	301	77	70	0.69	2.97	98.4
2-03	40.0	0.60	1.40	265.370	302	78	70	0.77	3.42	100.3
2-04	45.0	0.80	1.80	269.230	303	79	71	0.89	3.86	98.0
2-05	50.0	0.65	1.50	272.785	302	80	71	0.81	3.56	99.9
LEAK CHECK	50.0			272.825						
3-01	55.0	0.66	1.50	276.370	299	78	71	0.81	3.55	98.9
3-02	60.0	0.56	1.30	279.670	301	79	71	0.75	3.30	99.9
3-03	65.0	0.68	1.60	283.290	302	79	71	0.82	3.62	99.6
3-04	70.0	0.66	1.50	286.800	303	80	72	0.81	3.51	97.9
3-05	75.0	0.70	1.60	290.430	302	80	72	0.84	3.63	98.3
LEAK CHECK	75.0			290.475						
4-01	80.0	0.60	1.40	293.850	300	80	73	0.77	3.38	98.4
4-02	85.0	0.47	1.10	296.820	300	81	73	0.69	2.97	97.7
4-03	90.0	0.50	1.20	300.040	302	81	73	0.71	3.22	102.8
4-04	95.0	0.67	1.50	303.580	302	82	73	0.82	3.54	97.7
4-05	100.0	0.69	1.60	307.280	301	83	74	0.83	3.70	100.4
LEAK CHECK	100.0			307.320						
5-01	105.0	0.45	1.00	310.260	301	82	74	0.67	2.94	98.7
5-02	110.0	0.42	0.97	313.090	299	82	75	0.65	2.83	98.1
5-03	115.0	0.35	0.81	315.690	297	82	75	0.59	2.60	98.6
5-04	120.0	0.43	0.99	318.580	299	82	75	0.66	2.89	99.0
5-05	125.0	0.75	1.70	322.380	299	82	75	0.87	3.80	98.7
Final	125.0		1.32680	82.90000	300.80000	75.18000		0.75631	82.90000	

25 points sampled

	Sq.RtΔP						
QC-Check: Field Averages	0.7563	1.3268	82.9000	300.8000	75.1800	2RSD =	15.3%
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK		

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USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 5/29**
Analyte: **Particulate/Metals**

Location: Unit 1 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.88000		9.53000	80.59000	29.96200	1.15081	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.93000		9.46000	80.61000	29.96720	1.15206	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.83000		9.74000	80.43000	29.96240	1.13530	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location: Unit 1 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	734.9	459.3	275.6
Impinger 2	5%HNO3/10%H2O2	655.2	544.3	110.9
Impinger 3	5%HNO3/10%H2O2	569.3	547.7	21.6
Impinger 4	Empty	442.7	437.8	4.9
Impinger 5	4%KMnO4/10%H2SO4	543.8	542.6	1.2
Impinger 6	4%KMnO4/10%H2SO4	559.3	560.2	-0.9
Impinger 7	Silica Gel	725.3	707.1	18.2
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
413.3	Liquid (gm)		
0.0	less rinse (gm)		
413.3	Net Liquid (gm)	413.3	☑QA/QC OK
+ 18.2	Silica Gel (gm)	18.2	☑QA/QC OK
431.5	Total Vlc (gm)	431.5	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	687.1	437.6	249.5
Impinger 2	5%HNO3/10%H2O2	673.8	555.1	118.7
Impinger 3	5%HNO3/10%H2O2	571.0	534.3	36.7
Impinger 4	Empty	451.7	445.5	6.2
Impinger 5	4%KMnO4/10%H2SO4	545.3	543.2	2.1
Impinger 6	4%KMnO4/10%H2SO4	538.7	538.6	0.1
Impinger 7	Silica Gel	739.3	720.4	18.9
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
413.3	Liquid (gm)		
0.0	less rinse (gm)		
413.3	Net Liquid (gm)	413.3	☑QA/QC OK
+ 18.9	Silica Gel (gm)	18.9	☑QA/QC OK
432.2	Total Vlc (gm)	432.2	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	746.2	461.6	284.6
Impinger 2	5%HNO3/10%H2O2	645.1	541.8	103.3
Impinger 3	5%HNO3/10%H2O2	569.4	550.8	18.6
Impinger 4	Empty	442.4	439.5	2.9
Impinger 5	4%KMnO4/10%H2SO4	542.9	541.5	1.4
Impinger 6	4%KMnO4/10%H2SO4	559.9	559.9	0.0
Impinger 7	Silica Gel	735.7	721.5	14.2
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
410.8	Liquid (gm)		
0.0	less rinse (gm)		
410.8	Net Liquid (gm)	410.8	☑QA/QC OK
+ 14.2	Silica Gel (gm)	14.2	☑QA/QC OK
425.0	Total Vlc (gm)	425.0	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty			
Impinger 2	5%HNO3/10%H2O2			
Impinger 3	5%HNO3/10%H2O2			
Impinger 4	Empty			
Impinger 5	4%KMnO4/10%H2SO4			
Impinger 6	4%KMnO4/10%H2SO4			
Impinger 7	Silica Gel			
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐QA/QC OK
	Silica Gel (gm)		☐QA/QC OK
	Total Vlc (gm)		☐QA/QC OK

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Field Data Printout

Test Method: **USEPA Method 13B**
Analyte: **Total Fluorides**

Location: Unit 1 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: B. Arnold 770
Test Date: 3/17/10
Start Time: 11:46
Stop Time: 12:56
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 22 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -10.3
O_2 (dry volume %): 10.55
CO_2 (dry volume %): 9.11
N_2+CO (dry volume %): 80.34

H_2O (condensate, ml or gm): 208.5
H_2O (silica, g): 17.0
Actual Moisture (%): 19.89

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-6
Meter ΔH@: 1.68200
Meter Y_d: 0.99000

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			323.725						
5-01	2.5	0.54	1.20	325.330	304	62	61	0.73	1.60	102.4
5-02	5.0	0.56	1.30	326.990	301	63	61	0.75	1.66	103.7
5-03	7.5	0.63	1.40	328.640	302	65	62	0.79	1.65	97.0
5-04	10.0	0.75	1.70	330.510	304	66	61	0.87	1.87	101.0
5-05	12.5	0.79	1.80	332.410	304	68	62	0.89	1.90	99.7
LEAK CHECK	12.5			332.480						
4-01	15.0	0.69	1.60	334.280	301	68	62	0.83	1.80	100.8
4-02	17.5	0.56	1.30	335.960	304	70	63	0.75	1.68	104.3
4-03	20.0	0.66	1.50	337.640	303	71	63	0.81	1.68	95.9
4-04	22.5	0.78	1.80	339.550	303	73	64	0.88	1.91	100.1
4-05	25.0	0.76	1.70	341.450	304	74	64	0.87	1.90	100.8
LEAK CHECK	25.0			341.500						
3-01	27.5	0.59	1.40	343.180	300	74	64	0.77	1.68	100.9
3-02	30.0	0.57	1.30	344.820	304	76	65	0.75	1.64	100.1
3-03	32.5	0.65	1.50	346.450	304	76	65	0.81	1.63	93.2
3-04	35.0	0.72	1.70	348.310	303	76	65	0.85	1.86	101.1
3-05	37.5	0.69	1.60	350.150	303	76	66	0.83	1.84	102.0
LEAK CHECK	37.5			350.260						
2-01	40.0	0.64	1.50	351.990	303	73	66	0.80	1.73	99.8
2-02	42.5	0.50	1.20	353.570	302	74	66	0.71	1.58	102.9
2-03	45.0	0.46	1.10	355.070	301	74	66	0.68	1.50	101.8
2-04	47.5	0.60	1.40	356.800	302	74	66	0.77	1.73	102.9
2-05	50.0	0.70	1.60	358.550	303	75	66	0.84	1.75	96.4
LEAK CHECK	50.0			358.630						
1-01	52.5	0.51	1.20	360.190	300	73	67	0.71	1.56	100.5
1-02	55.0	0.54	1.20	361.770	303	74	67	0.73	1.58	99.0
1-03	57.5	0.54	1.20	363.320	302	75	67	0.73	1.55	97.0
1-04	60.0	0.63	1.40	365.040	302	75	67	0.79	1.72	99.7
1-05	62.5	0.77	1.80	366.970	303	76	67	0.88	1.93	101.2
Final	62.5		1.45600	42.93500	302.60000	68.28000		0.79353	42.93500	

25 points sampled

	Sq.Rt.ΔP					
QC-Check: Field Averages	0.7935	1.4560	42.9350	302.6000	68.2800	2RSD = 12.1%
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	

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Field Data Printout

Test Method: **USEPA Method 13B**
Analyte: **Total Fluorides**

Location: Unit 1 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: B. Arnold 770
Test Date: 3/17/10
Start Time: 13:15
Stop Time: 14:27
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -10.4
O_2 (dry volume %): 10.13
CO_2 (dry volume %): 9.62
N_2+CO (dry volume %): 80.25

H_2O (condensate, ml or gm): 213.5
H_2O (silica, g): 18.8
Actual Moisture (%): 20.48

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-6
Meter ΔH@: 1.68200
Meter Y_d: 0.99000

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			367.345						
1-01	2.5	0.54	1.24	**368.900**	299	68	66	0.73	1.55	98.5
1-02	5.0	0.53	1.20	370.490	300	70	66	0.73	1.59	101.6
1-03	7.5	0.51	1.20	372.040	300	71	66	0.71	1.55	100.9
1-04	10.0	0.58	1.30	373.360	301	73	66	0.76	1.32	80.5*
1-05	12.5	0.76	1.70	375.530	301	74	66	0.87	2.17	115.5*
LEAK CHECK	12.5			375.770						
2-01	15.0	0.67	1.50	377.410	302	74	67	0.82	1.64	92.9
2-02	17.5	0.58	1.30	379.050	304	74	67	0.76	1.64	100.0
2-03	20.0	0.65	1.50	380.770	301	76	67	0.81	1.72	98.7
2-04	22.5	0.74	1.70	382.610	303	77	68	0.86	1.84	99.0
2-05	25.0	0.74	1.70	384.470	302	78	68	0.86	1.86	99.9
LEAK CHECK	25.0			384.560						
3-01	27.5	0.65	1.50	386.320	301	76	68	0.81	1.76	100.9
3-02	30.0	0.53	1.20	387.920	303	77	68	0.73	1.60	101.6
3-03	32.5	0.57	1.30	389.550	302	78	68	0.75	1.63	99.6
3-04	35.0	0.79	1.80	391.420	303	78	68	0.89	1.87	97.3
3-05	37.5	0.81	1.90	393.390	304	78	68	0.90	1.97	101.3
LEAK CHECK	37.5			393.530						
4-01	40.0	0.60	1.40	395.240	301	76	69	0.77	1.71	101.9
4-02	42.5	0.53	1.20	396.810	302	77	68	0.73	1.57	99.6
4-03	45.0	0.62	1.40	398.490	303	77	69	0.79	1.68	98.5
4-04	47.5	0.74	1.70	400.330	302	77	69	0.86	1.84	98.8
4-05	50.0	0.74	1.70	402.200	303	78	69	0.86	1.87	100.4
LEAK CHECK	50.0			402.310						
5-01	52.5	0.53	1.20	403.880	300	75	69	0.73	1.57	99.5
5-02	55.0	0.50	1.20	405.420	303	75	68	0.71	1.54	100.8
5-03	57.5	0.61	1.40	407.100	303	76	69	0.78	1.68	99.4
5-04	60.0	0.73	1.70	408.920	303	76	68	0.85	1.82	98.6
5-05	62.5	0.82	1.90	410.845	305	77	69	0.91	1.93	98.4
Final	62.5		1.47360	42.92000	302.04000	71.60000		0.79927	42.92000	
25 points sampled.		Sq.RtΔP								
QC-Check: Field Averages		0.7993	1.4736	42.9200	302.0400	71.6000			2RSD =	12.9%
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

Bold number is estimated. Reading was missed

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Field Data Printout

Test Method: **USEPA Method 13B**
Analyte: **Total Fluorides**

Location: Unit 1 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: B. Arnold 770
Test Date: 3/17/10
Start Time: 14:45
Stop Time: 15:53
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -10.4
O_2 (dry volume %): 9.96
CO_2 (dry volume %): 9.80
N_2+CO (dry volume %): 80.24

H_2O (condensate, ml or gm): 208.4
H_2O (silica, g): 23.9
Actual Moisture (%): 20.99

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 61-6
Meter ΔH@: 1.68200
Meter Y_d: 0.99000

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			411.340						
5-01	2.5	0.51	1.20	412.950	302	68	66	0.71	1.61	105.8
5-02	5.0	0.52	1.20	414.540	301	69	66	0.72	1.59	103.3
5-03	7.5	0.55	1.30	416.140	303	70	66	0.74	1.60	101.1
5-04	10.0	0.63	1.40	417.820	302	71	66	0.79	1.68	99.1
5-05	12.5	0.58	1.30	419.460	302	72	66	0.76	1.64	100.7
LEAK CHECK	12.5			419.540						
4-01	15.0	0.58	1.30	421.150	302	71	66	0.76	1.61	98.9
4-02	17.5	0.54	1.20	422.700	303	72	66	0.73	1.55	98.7
4-03	20.0	0.65	1.50	424.390	303	72	66	0.81	1.69	98.1
4-04	22.5	0.69	1.60	426.060	304	73	66	0.83	1.67	94.1
4-05	25.0	0.73	1.70	427.950	302	74	66	0.85	1.89	103.3
LEAK CHECK	25.0			428.030						
3-01	27.5	0.71	1.60	429.810	302	73	66	0.84	1.78	98.8
3-02	30.0	0.54	1.20	431.400	304	73	66	0.73	1.59	101.2
3-03	32.5	0.64	1.50	433.180	303	73	66	0.80	1.78	104.1
3-04	35.0	0.65	1.50	434.950	304	74	67	0.81	1.77	102.5
3-05	37.5	0.66	1.50	436.740	303	75	67	0.81	1.79	102.8
LEAK CHECK	37.5			436.790						
2-01	40.0	0.66	1.50	438.550	302	73	67	0.81	1.76	101.2
2-02	42.5	0.53	1.20	440.140	304	74	67	0.73	1.59	101.9
2-03	45.0	0.53	1.20	441.690	304	74	67	0.73	1.55	99.4
2-04	47.5	0.60	1.40	443.410	305	75	67	0.77	1.72	103.7
2-05	50.0	0.69	1.60	445.210	303	75	67	0.83	1.80	101.1
LEAK CHECK	50.0			445.300						
1-01	52.5	0.49	1.10	446.790	302	75	67	0.70	1.49	99.1
1-02	55.0	0.50	1.20	448.350	302	74	68	0.71	1.56	102.7
1-03	57.5	0.40	0.92	449.770	301	74	67	0.63	1.42	104.5
1-04	60.0	0.50	1.20	451.330	300	74	67	0.71	1.56	102.7
1-05	62.5	0.65	1.50	453.110	302	74	67	0.81	1.78	103.0
Final	62.5		1.35280	41.47000	302.60000	69.70000		0.76570	41.47000	

25 points sampled

	Sq.Rt.ΔP					
QC-Check: Field Averages	0.7657	1.3528	41.4700	302.6000	69.7000	2RSD = 11.0%
	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	

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Date ________

USEPA Method 3 Laboratory Data

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 1 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst:
Analyst Emp No:

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.11000		10.55000	80.34000	29.87960	1.13611	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.62000		10.13000	80.25000	29.94440	1.11954	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.80000		9.96000	80.24000	29.96640	1.11633	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location:	Unit 1 FF Outlet	Test Method:	USEPA Method 13B
Client:	Wheelabrator North Broward, Inc.	Analyte:	Total Fluorides
Project No:	10955	Analyst:	B. Wiltse
		Analyst Emp No:	561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	665.4	546.3	119.1
Impinger 2	DI Water	630.2	562.5	67.7
Impinger 3	Empty	480.7	459.0	21.7
Impinger 4	Silica Gel	826.4	809.4	17.0
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
208.5	Liquid (gm)		
0.0	less rinse (gm)		
208.5	Net Liquid (gm)	208.5	☑QA/QC OK
+ 17.0	Silica Gel (gm)	17.0	☑QA/QC OK
225.5	Total Vlc (gm)	225.5	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	658.1	542.1	116.0
Impinger 2	DI Water	621.1	544.3	76.8
Impinger 3	Empty	458.4	437.7	20.7
Impinger 4	Silica Gel	799.4	780.6	18.8
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
213.5	Liquid (gm)		
0.0	less rinse (gm)		
213.5	Net Liquid (gm)	213.5	☑QA/QC OK
+ 18.8	Silica Gel (gm)	18.8	☑QA/QC OK
232.3	Total Vlc (gm)	232.3	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	661.5	540.4	121.1
Impinger 2	DI Water	619.3	550.6	68.7
Impinger 3	Empty	469.1	450.5	18.6
Impinger 4	Silica Gel	765.0	741.1	23.9
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
208.4	Liquid (gm)		
0.0	less rinse (gm)		
208.4	Net Liquid (gm)	208.4	☑QA/QC OK
+ 23.9	Silica Gel (gm)	23.9	☑QA/QC OK
232.3	Total Vlc (gm)	232.3	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐QA/QC OK
	Silica Gel (gm)		☐QA/QC OK
	Total Vlc (gm)		☐QA/QC OK

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QA/QC ________
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Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 1 SDA Inlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/18/10
Start Time: 07:02
Stop Time: 08:02
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 22 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -1.9
O_2 (dry volume %): 9.11
CO_2 (dry volume %): 10.23
N_2+CO (dry volume %): 80.66

H_2O (condensate, ml or gm): 150.6
H_2O (silica, g): 21.7
Actual Moisture (%): 17.51

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-4
Pitot C_p: 0.8400
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 85-4
Meter ΔH@: 1.77230
Meter Y_d: 1.00850

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			614.080						
1-01	5.0		1.20	617.190	486	58	56		3.11	
1-01	10.0		1.20	620.240	487	59	56		3.05	
1-01	15.0		1.20	623.310	493	64	57		3.07	
1-01	20.0		1.20	626.400	493	63	58		3.09	
1-01	25.0		1.20	629.490	488	63	58		3.09	
1-01	30.0		1.20	632.570	488	63	58		3.08	
1-01	35.0		1.20	635.640	492	63	58		3.07	
1-01	40.0		1.20	638.740	490	63	58		3.10	
1-01	45.0		1.20	641.870	489	63	58		3.13	
1-01	50.0		1.20	644.980	486	63	60		3.11	
1-01	55.0		1.20	648.090	486	63	59		3.11	
1-01	60.0		1.10	651.130	488	63	59		3.04	
Final	60.0		1.19167	37.05000	488.83333	60.12500		0.00000	37.05000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.1917	37.0500	488.8333	60.1250				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Field Data Printout

Test Method: **USEPA *Method* 26A**
Analyte: **HCl**

Location: Unit 1 SDA Inlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/18/10
Start Time: 09:26
Stop Time: 10:37
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 22 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -1.7
O_2 (dry volume %): 9.01
CO_2 (dry volume %): 10.35
N_2+CO (dry volume %): 80.64

H_2O (condensate, ml or gm): 145.8
H_2O (silica, g): 11.3
Actual Moisture (%): 16.87

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-4
Pitot C_p: 0.8400
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 85-4
Meter ΔH@: 1.77230
Meter Y_d: 1.00850

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in. H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			655.840						
1-01	5.0		1.20	658.810	485	62	61		2.97	
1-01	10.0		1.20	661.920	485	66	63		3.11	
1-01	15.0		1.20	664.820	489	68	63		2.90	
1-01	20.0		1.20	667.790	489	69	63		2.97	
1-01	25.0		1.20	670.710	494	70	64		2.92	
LEAK CHECK	25.0			670.820						
1-01	30.0		1.20	673.910	489	65	64		3.09	
1-01	35.0		1.20	676.820	485	67	65		2.91	
1-01	40.0		1.20	679.750	487	67	65		2.93	
1-01	45.0		1.20	682.690	491	71	65		2.94	
1-01	50.0		1.20	685.780	494	72	66		3.09	
1-01	55.0		1.20	688.680	490	69	66		2.90	
1-01	60.0		1.20	691.690	491	69	66		3.01	
Final	60.0		1.20000	35.74000	489.08333	66.08333		0.00000	35.74000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.2000	35.7400	489.0833	66.0833				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC ________
Date ________

Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 1 SDA Inlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/18/10
Start Time: 11:49
Stop Time: 12:49
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 18 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -1.7
O_2 (dry volume %): 9.70
CO_2 (dry volume %): 9.82
N_2+CO (dry volume %): 80.48

H_2O (condensate, ml or gm): 138.9
H_2O (silica, g): 11.4
Actual Moisture (%): 16.55

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-4
Pitot C_p: 0.8400
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 85-4
Meter ΔH@: 1.77230
Meter Y_d: 1.00850

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			691.850						
1-01	5.0		1.20	694.830	494	72	72		2.98	
1-01	10.0		1.20	697.730	496	74	72		2.90	
1-01	15.0		1.20	700.680	491	78	73		2.95	
1-01	20.0		1.20	703.650	494	78	74		2.97	
1-01	25.0		1.20	706.630	501	78	74		2.98	
1-01	30.0		1.20	709.630	500	78	75		3.00	
1-01	35.0		1.20	712.610	502	77	75		2.98	
1-01	40.0		1.20	715.600	501	78	75		2.99	
1-01	45.0		1.20	718.580	497	79	76		2.98	
1-01	50.0		1.20	721.530	497	76	75		2.95	
1-01	55.0		1.20	724.500	494	75	75		2.97	
1-01	60.0		1.20	727.450	496	76	74		2.95	
Final	60.0		1.20000	35.60000	496.91667	75.37500		0.00000	35.60000	
1 points sampled		Sq.RtΔP								
QC-Check: Field Averages			1.2000	35.6000	496.9167	75.3750				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC ________
Date ________

USEPA Method 3 Laboratory Data

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 1 SDA Inlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.23000		9.11000	80.66000	30.00120	1.15249	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.35000		9.01000	80.64000	30.01640	1.14879	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.82000		9.70000	80.48000	29.95920	1.14053	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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QA/QC ________
Date ________

USEPA Method 4 Laboratory Data

Location: Unit 1 SDA Inlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955

Test Method: **USEPA Method 26A**
Analyte: **HCl**
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	504.6	479.6	25.0
Impinger 2	100 ml 0.1N H2SO4	629.1	537.6	91.5
Impinger 3	100 ml 0.1N H2SO4	582.0	557.1	24.9
Impinger 4	Empty	439.9	430.7	9.2
Impinger 5	Silica Gel	775.4	753.7	21.7
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
150.6	Liquid (gm)		
0.0	less rinse (gm)		
150.6	Net Liquid (gm)	150.6	☑QA/QC OK
+ 21.7	Silica Gel (gm)	21.7	☑QA/QC OK
172.3	Total Vlc (gm)	172.3	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	523.3	454.7	68.6
Impinger 2	100 ml 0.1N H2SO4	606.5	542.4	64.1
Impinger 3	100 ml 0.1N H2SO4	550.5	540.8	9.7
Impinger 4	Empty	466.8	463.4	3.4
Impinger 5	Silica Gel	764.5	753.2	11.3
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
145.8	Liquid (gm)		
0.0	less rinse (gm)		
145.8	Net Liquid (gm)	145.8	☑QA/QC OK
+ 11.3	Silica Gel (gm)	11.3	☑QA/QC OK
157.1	Total Vlc (gm)	157.1	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	538.6	469.9	68.7
Impinger 2	100 ml 0.1N H2SO4	597.4	537.1	60.3
Impinger 3	100 ml 0.1N H2SO4	561.1	553.2	7.9
Impinger 4	Empty	432.6	430.6	2.0
Impinger 5	Silica Gel	722.8	711.4	11.4
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
138.9	Liquid (gm)		
0.0	less rinse (gm)		
138.9	Net Liquid (gm)	138.9	☑QA/QC OK
+ 11.4	Silica Gel (gm)	11.4	☑QA/QC OK
150.3	Total Vlc (gm)	150.3	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐QA/QC OK
	Silica Gel (gm)		☐QA/QC OK
	Total Vlc (gm)		☐QA/QC OK

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Date ________

Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 1 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/18/10
Start Time: 07:02
Stop Time: 08:02
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -11.1
O_2 (dry volume %): 9.88
CO_2 (dry volume %): 9.50
N_2+CO (dry volume %): 80.62

H_2O (condensate, ml or gm): 199.8
H_2O (silica, g): 17.6
Actual Moisture (%): 19.93

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 85-2
Meter ΔH@: 1.77590
Meter Y_d: 1.00660

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			269.160						
3-01	5.0		1.50	272.580	308	59	57		3.42	
3-01	10.0		1.50	275.830	309	59	57		3.25	
3-01	15.0		1.50	279.190	310	63	57		3.36	
3-01	20.0		1.50	282.440	309	65	57		3.25	
3-01	25.0		1.50	285.830	307	68	58		3.39	
3-01	30.0		1.50	289.170	307	69	58		3.34	
3-01	35.0		1.50	292.530	307	70	58		3.36	
3-01	40.0		1.50	295.890	307	70	59		3.36	
3-01	45.0		1.50	299.180	307	70	59		3.29	
3-01	50.0		1.50	302.640	307	70	60		3.46	
3-01	55.0		1.50	305.920	307	70	60		3.28	
3-01	60.0		1.50	309.265	307	70	60		3.34	
Final	60.0		1.50000	40.10500	307.66667	62.62500		0.00000	40.10500	
3 points sampled		Sq.RtΔP								
QC-Check: Field Averages			1.5000	40.1050	307.6667	62.6250				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 1 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/18/10
Start Time: 09:26
Stop Time: 10:37
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.9
O_2 (dry volume %): 9.69
CO_2 (dry volume %): 9.67
N_2+CO (dry volume %): 80.64

H_2O (condensate, ml or gm): 225.2
H_2O (silica, g): 11.0
Actual Moisture (%): 21.41

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 85-2
Meter ΔH@: 1.77590
Meter Y_d: 1.00660

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			309.830						
3-01	5.0		1.50	313.180	309	61	60		3.35	
3-01	10.0		1.50	316.510	310	61	60		3.33	
3-01	15.0		1.50	319.790	309	64	60		3.28	
3-01	20.0		1.50	323.050	309	65	61		3.26	
3-01	25.0		1.50	326.390	310	67	61		3.34	
3-01	30.0		1.50	329.720	308	66	62		3.33	
3-01	35.0		1.50	333.100	305	66	62		3.38	
3-01	40.0		1.50	336.410	310	68	63		3.31	
3-01	45.0		1.50	339.290	310	69	63		2.88	
3-01	50.0		1.50	343.370	310	68	63		4.08	
3-01	55.0		1.50	346.400	309	68	63		3.03	
3-01	60.0		1.50	349.730	310	67	63		3.33	
Final	60.0		1.50000	39.90000	309.08333	63.79167		0.00000	39.90000	
3 points sampled		Sq.RtΔP								
QC-Check: Field Averages			1.5000	39.9000	309.0833	63.7917				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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QA/QC ________
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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location:	Unit 1 FF Outlet				
Test Run:	3				
Client:	Wheelabrator North Broward, Inc.	Bar. Press. (in. Hg):	30.05	Nozzle ID No:	NA
Project No:	10955	Static P:	-11.0	Nozzle Diameter (D_n):	NA
Source Area (ft^2):	64.00000	O_2 (dry volume %):	10.05	Probe ID No:	67-4-3
Meter Operator:	A. Obuchowski 567	CO_2 (dry volume %):	9.42	Pitot C_p:	0.8400
Probe Operator:		N_2+CO (dry volume %):	80.53	Pitot Leak Check:	☑Pass ☐Fail
Test Date:	3/18/10				
Start Time:	11:49				
Stop Time:	12:49	H_2O (condensate, ml or gm):	191.9	Meter Box ID. No:	85-2
Leak Rate Before:	0.006 cfm @ 15 "Hg	H_2O (silica, g):	19.2	Meter ΔH@:	1.77590
Leak Rate After:	0.002 cfm @ 15 "Hg	Actual Moisture (%):	19.64	Meter Y_d:	1.00660

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			351.740						
3-01	5.0		1.50	355.110	310	67	65		3.37	
3-01	10.0		1.50	358.450	310	67	65		3.34	
3-01	15.0		1.50	361.790	308	69	65		3.34	
3-01	20.0		1.50	365.120	307	72	66		3.33	
3-01	25.0		1.50	368.450	309	71	66		3.33	
3-01	30.0		1.50	371.800	311	72	67		3.35	
3-01	35.0		1.50	375.170	311	72	67		3.37	
3-01	40.0		1.50	378.590	311	74	68		3.42	
3-01	45.0		1.50	381.870	312	74	68		3.28	
3-01	50.0		1.50	385.210	310	73	68		3.34	
3-01	55.0		1.50	388.550	310	72	68		3.34	
3-01	60.0		1.50	391.895	310	73	69		3.34	
Final	60.0		1.50000	40.15500	309.91667	69.08333		0.00000	40.15500	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	40.1550	309.9167	69.0833				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 1 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	
1	1							**Method of Analysis:** CEM
	2							
	3							
	Avg.							
CEM or Other Avg:		9.50000		9.88000	80.62000	29.91520	1.16000	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	
2	1							**Method of Analysis:** CEM
	2							
	3							
	Avg.							
CEM or Other Avg:		9.67000		9.69000	80.64000	29.93480	1.15926	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	
3	1							**Method of Analysis:** CEM
	2							
	3							
	Avg.							
CEM or Other Avg:		9.42000		10.05000	80.53000	29.90920	1.15180	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	
	1							**Method of Analysis:**
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location: Unit 1 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955

Test Method: USEPA Method 26A
Analyte: HCl
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	501.4	472.8	28.6
Impinger 2	100 ml 0.1N H2SO4	741.6	642.1	99.5
Impinger 3	100 ml 0.1N H2SO4	582.6	535.0	47.6
Impinger 4	Empty	472.6	448.5	24.1
Impinger 5	Silica Gel	735.2	717.6	17.6
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
199.8	Liquid (gm)		
0.0	less rinse (gm)		
199.8	Net Liquid (gm)	199.8	☑QA/QC OK
+ 17.6	Silica Gel (gm)	17.6	☑QA/QC OK
217.4	Total Vlc (gm)	217.4	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	524.0	460.1	63.9
Impinger 2	100 ml 0.1N H2SO4	680.6	561.4	119.2
Impinger 3	100 ml 0.1N H2SO4	589.0	555.6	33.4
Impinger 4	Empty	465.1	456.4	8.7
Impinger 5	Silica Gel	791.5	780.5	11.0
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
225.2	Liquid (gm)		
0.0	less rinse (gm)		
225.2	Net Liquid (gm)	225.2	☑QA/QC OK
+ 11.0	Silica Gel (gm)	11.0	☑QA/QC OK
236.2	Total Vlc (gm)	236.2	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	503.1	472.6	30.5
Impinger 2	100 ml 0.1N H2SO4	757.7	642.0	115.7
Impinger 3	100 ml 0.1N H2SO4	571.2	535.8	35.4
Impinger 4	Empty	458.9	448.6	10.3
Impinger 5	Silica Gel	735.2	716.0	19.2
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
191.9	Liquid (gm)		
0.0	less rinse (gm)		
191.9	Net Liquid (gm)	191.9	☑QA/QC OK
+ 19.2	Silica Gel (gm)	19.2	☑QA/QC OK
211.1	Total Vlc (gm)	211.1	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐QA/QC OK
	Silica Gel (gm)		☐QA/QC OK
	Total Vlc (gm)		☐QA/QC OK

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Field Data Printout

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals

Location: Unit 2 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000

Meter Operator:	P. Bihun	505
Probe Operator:	P. Bihun	505

Test Date: 3/18/10
Start Time: 07:09
Stop Time: 09:22
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 8 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 10.07
CO_2 (dry volume %): 9.25
N_2+CO (dry volume %): 80.68

H_2O (condensate, ml or gm): 445.2
H_2O (silica, g): 14.2
Actual Moisture (%): 20.43

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			446.115						
5-01	5.0	0.59	1.40	449.450	308	59	57	0.77	3.33	102.9
5-02	10.0	0.48	1.10	452.360	307	61	58	0.69	2.91	99.1
5-03	15.0	0.46	1.10	455.230	308	63	58	0.68	2.87	99.7
5-04	20.0	0.50	1.20	458.320	308	66	58	0.71	3.09	102.7
5-05	25.0	0.42	0.99	461.025	308	68	59	0.65	2.70	97.8
LEAK CHECK	25.0			461.080						
4-01	30.0	0.55	1.30	464.290	307	68	60	0.74	3.21	101.3
4-02	35.0	0.54	1.30	467.470	309	71	61	0.73	3.18	101.0
4-03	40.0	0.67	1.60	471.050	309	72	61	0.82	3.58	102.1
4-04	45.0	0.70	1.70	474.720	309	74	62	0.84	3.67	102.1
4-05	50.0	0.68	1.60	478.275	309	76	63	0.82	3.55	100.0
LEAK CHECK	50.0			478.310						
3-01	55.0	0.59	1.40	481.650	308	74	64	0.77	3.34	100.9
3-02	60.0	0.53	1.30	484.860	309	76	65	0.73	3.21	102.1
3-03	65.0	0.58	1.40	488.210	309	77	66	0.76	3.35	101.6
3-04	70.0	0.66	1.60	491.810	310	78	67	0.81	3.60	102.3
3-05	75.0	0.72	1.70	495.505	309	79	67	0.85	3.69	100.4
LEAK CHECK	75.0			495.585						
2-01	80.0	0.61	1.40	498.870	308	77	68	0.78	3.29	96.9
2-02	85.0	0.87	2.00	502.810	309	79	68	0.93	3.94	97.4
2-03	90.0	0.72	1.70	506.510	309	80	69	0.85	3.70	100.3
2-04	95.0	0.82	1.90	510.390	305	81	70	0.91	3.88	98.1
2-05	100.0	0.75	1.80	514.185	307	82	70	0.87	3.79	100.4
LEAK CHECK	100.0			514.258						
1-01	105.0	0.55	1.30	517.500	305	78	71	0.74	3.24	100.2
1-02	110.0	0.60	1.40	520.860	303	81	71	0.77	3.36	99.0
1-03	115.0	0.55	1.30	524.050	303	82	72	0.74	3.19	98.0
1-04	120.0	0.58	1.40	527.400	305	82	72	0.76	3.35	100.3
1-05	125.0	0.68	1.60	531.025	306	82	72	0.82	3.63	100.4
Final	125.0		1.45960	84.66700	307.48000	69.90000		0.78189	84.66700	
25 points sampled		Sq.Rt ΔP								
QC-Check: Field Averages		0.7819	1.4596	84.6700	307.4800	69.9000			2RSD =	13.9%
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals

Location: Unit 2 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: P. Bihun 505
Probe Operator: P. Bihun 505
Test Date: 3/18/10
Start Time: 09:49
Stop Time: 12:02
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 9.75
CO_2 (dry volume %): 9.60
N_2+CO (dry volume %): 80.65
H_2O (condensate, ml or gm): 420.1
H_2O (silica, g): 14.1
Actual Moisture (%): 20.48

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑Pass ☐Fail
Meter Box ID. No: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			531.310						
5-01	5.0	0.58	1.40	534.680	307	73	72	0.76	3.37	102.0
5-02	10.0	0.59	1.40	537.960	307	75	72	0.77	3.28	98.3
5-03	15.0	0.60	1.40	541.260	308	78	72	0.77	3.30	97.8
5-04	20.0	0.67	1.60	544.830	310	80	73	0.82	3.57	100.1
5-05	25.0	0.66	1.60	548.400	310	82	74	0.81	3.57	100.5
LEAK CHECK	25.0			548.440						
4-01	30.0	0.53	1.30	551.680	308	81	74	0.73	3.24	101.7
4-02	35.0	0.51	1.20	554.820	308	83	74	0.71	3.14	100.3
4-03	40.0	0.58	1.40	558.180	308	84	75	0.76	3.36	100.5
4-04	45.0	0.62	1.50	561.660	308	85	76	0.79	3.48	100.5
4-05	50.0	0.62	1.50	565.150	308	86	76	0.79	3.49	100.7
LEAK CHECK	50.0			565.185						
3-01	55.0	0.57	1.30	568.410	308	84	77	0.75	3.23	97.1
3-02	60.0	0.50	1.20	571.540	308	86	77	0.71	3.13	100.4
3-03	65.0	0.53	1.30	574.770	307	87	78	0.73	3.23	100.4
3-04	70.0	0.56	1.30	578.000	307	88	79	0.75	3.23	97.5
3-05	75.0	0.56	1.30	581.215	307	89	79	0.75	3.22	97.0
LEAK CHECK	75.0			581.270						
2-01	80.0	0.53	1.30	584.500	306	88	80	0.73	3.23	100.1
2-02	85.0	0.47	1.10	587.560	306	89	81	0.69	3.06	100.4
2-03	90.0	0.56	1.30	590.650	308	90	82	0.75	3.09	92.9
2-04	95.0	0.64	1.50	594.070	307	90	82	0.80	3.42	96.2
2-05	100.0	0.74	1.70	597.775	308	91	82	0.86	3.70	96.9
LEAK CHECK	100.0			597.830						
1-01	105.0	0.55	1.30	601.090	306	89	83	0.74	3.26	98.8
1-02	110.0	0.54	1.30	604.320	308	90	83	0.73	3.23	98.8
1-03	115.0	0.43	1.00	607.200	308	92	84	0.66	2.88	98.4
1-04	120.0	0.40	0.94	609.970	307	91	84	0.63	2.77	98.1
1-05	125.0	0.51	1.20	613.125	307	91	84	0.71	3.15	99.0
Final	125.0		1.33360	81.63000	307.60000	81.90000		0.74806	81.63000	

25 points sampled

QC-Check: Field Averages	Sq.Rt.ΔP 0.7481	1.3336	81.6300	307.6000	81.9000
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK

2RSD = 10.0%

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Field Data Printout

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals

Location:	Unit 2 FF Outlet		
Test Run:	3		
Client:	Wheelabrator North Broward, Inc.		
Project No:	10955		
Source Area (ft^2):	64.00000		
Meter Operator:	P. Bihun	505	
Probe Operator:	P. Bihun	505	
Test Date:	3/18/10		
Start Time:	12:27		
Stop Time:	14:39		
Leak Rate Before:	0.003	cfm	@ 15 "Hg
Leak Rate After:	0.003	cfm	@ 9 "Hg

Bar. Press. (in. Hg):	30.05
Static P:	-10.7
O_2 (dry volume %):	9.89
CO_2 (dry volume %):	9.58
N_2+CO (dry volume %):	80.53
H_2O (condensate, ml or gm):	444.4
H_2O (silica, g):	19.2
Actual Moisture (%):	20.99

Nozzle ID No:	270-1
Nozzle Diameter (D_n):	0.270
Probe ID No:	67-8-4
Pitot C_p:	0.8050
Pitot Leak Check:	☑ Pass ☐ Fail
Meter Box ID. No:	66-24
Meter ΔH@:	1.75160
Meter Y_d:	0.99040

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			613.455						
1-01	5.0	0.45	1.10	616.540	306	83	84	0.67	3.08	104.3
1-02	10.0	0.45	1.10	619.540	307	84	84	0.67	3.00	101.4
1-03	15.0	0.43	1.00	622.400	306	86	83	0.66	2.86	98.7
1-04	20.0	0.71	1.70	626.060	307	88	83	0.84	3.66	98.4
1-05	25.0	0.73	1.80	629.855	308	90	83	0.85	3.80	100.5
LEAK CHECK	25.0			629.920						
2-01	30.0	0.69	1.70	633.630	306	89	83	0.83	3.71	101.0
2-02	35.0	0.73	1.80	637.480	307	91	84	0.85	3.85	101.7
2-03	40.0	0.70	1.70	641.220	308	92	84	0.84	3.74	100.9
2-04	45.0	0.60	1.40	644.640	308	93	85	0.77	3.42	99.4
2-05	50.0	0.67	1.60	648.225	308	92	85	0.82	3.59	98.7
LEAK CHECK	50.0			648.270						
3-01	55.0	0.50	1.20	651.400	306	90	84	0.71	3.13	99.8
3-02	60.0	0.51	1.20	654.582	308	90	84	0.71	3.18	100.6
3-03	65.0	0.56	1.30	657.790	308	90	84	0.75	3.21	96.8
3-04	70.0	0.65	1.60	661.410	308	91	84	0.81	3.62	101.4
3-05	75.0	0.66	1.60	665.025	308	92	84	0.81	3.62	100.4
LEAK CHECK	75.0			665.060						
4-01	80.0	0.55	1.30	668.310	309	89	84	0.74	3.25	99.1
4-02	85.0	0.56	1.30	671.580	309	90	83	0.75	3.27	98.8
4-03	90.0	0.66	1.60	675.210	310	90	83	0.81	3.63	101.2
4-04	95.0	0.70	1.70	678.950	309	91	83	0.84	3.74	101.1
4-05	100.0	0.72	1.70	682.670	308	92	84	0.85	3.72	98.9
LEAK CHECK	100.0			682.740						
5-01	105.0	0.24	0.58	684.890	307	89	84	0.49	2.15	99.0
5-02	110.0	0.61	1.50	688.240	310	88	83	0.78	3.35	97.3
5-03	115.0	0.64	1.50	691.730	308	89	83	0.80	3.49	98.7
5-04	120.0	0.67	1.60	695.330	308	88	82	0.82	3.60	99.8
5-05	125.0	0.63	1.50	698.840	307	88	82	0.79	3.51	100.2
Final	125.0		1.44320	85.17000	307.76000	86.48000		0.77073	85.17000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7707	1.4432	85.1700	307.7600	86.4800			2RSD =	16.8%
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 5/29**
Analyte: **Particulate/Metals**

Location: Unit 2 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.25000		10.07000	80.68000	29.88280	1.17081	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.60000		9.75000	80.65000	29.92600	1.16146	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.58000		9.89000	80.53000	29.92840	1.14927	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location: Unit 2 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	723.5	463.1	260.4
Impinger 2	5%HNO3/10%H2O2	689.7	543.1	146.6
Impinger 3	5%HNO3/10%H2O2	580.8	550.0	30.8
Impinger 4	Empty	445.8	440.0	5.8
Impinger 5	4%KMnO4/10%H2SO4	541.9	540.1	1.8
Impinger 6	4%KMnO4/10%H2SO4	562.0	562.2	-0.2
Impinger 7	Silica Gel	742.7	728.5	14.2
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
445.2	Liquid (gm)		
0.0	less rinse (gm)		
445.2	Net Liquid (gm)	445.2	☑ QA/QC OK
+ 14.2	Silica Gel (gm)	14.2	☑ QA/QC OK
459.4	Total Vlc (gm)	459.4	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	720.2	440.9	279.3
Impinger 2	5%HNO3/10%H2O2	666.6	559.6	107.0
Impinger 3	5%HNO3/10%H2O2	562.4	539.1	23.3
Impinger 4	Empty	454.2	447.6	6.6
Impinger 5	4%KMnO4/10%H2SO4	546.3	542.7	3.6
Impinger 6	4%KMnO4/10%H2SO4	547.1	546.8	0.3
Impinger 7	Silica Gel	714.1	700.0	14.1
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
420.1	Liquid (gm)		
0.0	less rinse (gm)		
420.1	Net Liquid (gm)	420.1	☑ QA/QC OK
+ 14.1	Silica Gel (gm)	14.1	☑ QA/QC OK
434.2	Total Vlc (gm)	434.2	☑ QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	732.3	463.4	268.9
Impinger 2	5%HNO3/10%H2O2	677.1	540.4	136.7
Impinger 3	5%HNO3/10%H2O2	584.4	551.4	33.0
Impinger 4	Empty	444.3	440.5	3.8
Impinger 5	4%KMnO4/10%H2SO4	539.6	537.8	1.8
Impinger 6	4%KMnO4/10%H2SO4	563.6	563.4	0.2
Impinger 7	Silica Gel	711.7	692.5	19.2
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
444.4	Liquid (gm)		
0.0	less rinse (gm)		
444.4	Net Liquid (gm)	444.4	☑ QA/QC OK
+ 19.2	Silica Gel (gm)	19.2	☑ QA/QC OK
463.6	Total Vlc (gm)	463.6	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty			
Impinger 2	5%HNO3/10%H2O2			
Impinger 3	5%HNO3/10%H2O2			
Impinger 4	Empty			
Impinger 5	4%KMnO4/10%H2SO4			
Impinger 6	4%KMnO4/10%H2SO4			
Impinger 7	Silica Gel			
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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Field Data Printout

Test Method: **USEPA Method 13B**
Analyte: **Total Fluorides**

Location: Unit 2 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator: N. Hitchins 569
Test Date: 3/18/10
Start Time: 07:09
Stop Time: 08:24
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 10.02
CO_2 (dry volume %): 9.29
N_2+CO (dry volume %): 80.69

H_2O (condensate, ml or gm): 195.9
H_2O (silica, g): 16.5
Actual Moisture (%): 20.74

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			499.215						
4-01	2.5	0.50	1.20	500.770	305	58	56	0.71	1.56	105.1
4-02	5.0	0.47	1.10	502.260	307	58	56	0.69	1.49	104.0
4-03	7.5	0.45	1.00	503.350	307	60	56	0.67	1.09	77.6*
4-04	10.0	0.43	1.00	505.000	306	62	56	0.66	1.65	119.8*
4-05	12.5	0.42	1.00	506.380	306	63	57	0.65	1.38	101.2
LEAK CHECK	12.5			506.465						
3-01	15.0	0.45	1.00	507.850	305	63	57	0.67	1.39	98.0
3-02	17.5	0.47	1.10	509.320	307	65	58	0.69	1.47	101.7
3-03	20.0	0.50	1.20	510.820	306	67	58	0.71	1.50	100.4
3-04	22.5	0.58	1.40	512.440	307	68	59	0.76	1.62	100.6
3-05	25.0	0.56	1.30	513.995	307	69	59	0.75	1.55	98.1
LEAK CHECK	25.0			514.065						
2-01	27.5	0.63	1.50	515.730	306	68	60	0.79	1.66	99.0
2-02	30.0	0.60	1.40	517.350	308	70	60	0.77	1.62	98.7
2-03	32.5	0.60	1.40	518.950	307	71	60	0.77	1.60	97.3
2-04	35.0	0.68	1.60	520.700	305	73	61	0.82	1.75	99.6
2-05	37.5	0.66	1.50	522.380	305	73	61	0.81	1.68	97.0
LEAK CHECK	37.5			522.455						
1-01	40.0	0.46	1.10	523.890	306	70	62	0.68	1.43	99.4
1-02	42.5	0.50	1.20	525.390	308	72	62	0.71	1.50	99.6
1-03	45.0	0.46	1.10	526.860	303	72	63	0.68	1.47	101.3
1-04	47.5	0.48	1.10	528.330	307	73	63	0.69	1.47	99.4
1-05	50.0	0.68	1.60	529.700	306	74	63	0.82	1.37	77.8*
LEAK CHECK	50.0			530.195						
5-01	52.5	0.30	0.70	531.350	306	71	64	0.55	1.15	98.7
5-02	55.0	0.57	1.30	532.920	306	72	64	0.75	1.57	97.4
5-03	57.5	0.66	1.50	534.600	307	74	65	0.81	1.68	96.7
5-04	60.0	0.70	1.60	536.330	306	75	65	0.84	1.73	96.5
5-05	62.5	0.65	1.50	538.020	307	76	65	0.81	1.69	97.8
Final	62.5		1.25600	38.08000	306.24000	64.54000		0.73039	38.08000	

25 points sampled

	Sq.Rt.ΔP					
QC-Check: Field Averages	0.7304	1.2560	38.0800	306.2400	64.5400	2RSD = 14.3%
	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	

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QA/QC ________
Date ________

Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 2 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator: N. Hitchins 569
Test Date: 3/18/10
Start Time: 08:56
Stop Time: 10:10
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 9.64
CO_2 (dry volume %): 9.58
N_2+CO (dry volume %): 80.78

H_2O (condensate, ml or gm): 196.6
H_2O (silica, g): 13.3
Actual Moisture (%): 21.12

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) (√in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			538.420						
5-01	2.5	0.63	1.50	540.170	304	69	67	0.79	1.75	103.6
5-02	5.0	0.63	1.50	541.850	304	71	67	0.79	1.68	99.3
5-03	7.5	0.54	1.30	543.430	302	72	67	0.73	1.58	100.6
5-04	10.0	0.51	1.20	544.940	303	74	67	0.71	1.51	98.8
5-05	12.5	0.46	1.10	546.405	304	75	68	0.68	1.46	100.8
LEAK CHECK	12.5			546.475						
4-01	15.0	0.45	1.00	547.860	306	74	68	0.67	1.38	96.5
4-02	17.5	0.45	1.00	549.250	305	75	68	0.67	1.39	96.7
4-03	20.0	0.45	1.00	550.650	305	76	68	0.67	1.40	97.3
4-04	22.5	0.46	1.10	552.120	305	77	68	0.68	1.47	101.0
4-05	25.0	0.46	1.10	553.595	305	78	69	0.68	1.48	101.1
LEAK CHECK	25.0			553.650						
3-01	27.5	0.47	1.10	555.120	305	76	69	0.69	1.47	99.9
3-02	30.0	0.42	0.99	556.490	307	77	69	0.65	1.37	98.5
3-03	32.5	0.42	0.99	557.870	307	77	70	0.65	1.38	99.1
3-04	35.0	0.45	1.00	559.260	306	78	70	0.67	1.39	96.3
3-05	37.5	0.47	1.10	560.730	306	79	71	0.69	1.47	99.5
LEAK CHECK	37.5			560.780						
2-01	40.0	0.43	1.00	562.180	305	76	71	0.66	1.40	99.3
2-02	42.5	0.43	1.00	563.680	306	78	71	0.66	1.50	106.2
2-03	45.0	0.50	1.20	565.100	306	78	71	0.71	1.42	93.3
2-04	47.5	0.59	1.40	566.730	306	80	71	0.77	1.63	98.4
2-05	50.0	0.65	1.50	568.415	307	81	71	0.81	1.68	97.0
LEAK CHECK	50.0			568.520						
1-01	52.5	0.45	1.00	569.950	306	77	72	0.67	1.43	99.0
1-02	55.0	0.46	1.10	571.390	306	78	72	0.68	1.44	98.5
1-03	57.5	0.46	1.10	572.860	306	80	72	0.68	1.47	100.4
1-04	60.0	0.51	1.20	574.380	307	80	72	0.71	1.52	98.7
1-05	62.5	0.63	1.50	576.085	307	81	72	0.79	1.71	99.6
Final	62.5		1.15920	37.38500	305.44000	73.16000		0.70199	37.38500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7020	1.1592	37.3850	305.4400	73.1600			2RSD =	10.0%
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 13B**
Analyte: **Total Fluorides**

Location: Unit 2 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator: N. Hitchins 569
Test Date: 3/18/10
Start Time: 10:45
Stop Time: 12:05
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 12 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 10.15
CO_2 (dry volume %): 9.13
N_2+CO (dry volume %): 80.72

H_2O (condensate, ml or gm): 192.7
H_2O (silica, g): 8.9
Actual Moisture (%): 20.27

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			576.360						
2-01	2.5	0.52	1.20	577.940	307	75	74	0.72	1.58	100.9
2-02	5.0	0.48	1.10	579.390	306	77	74	0.69	1.45	96.1
2-03	7.5	0.49	1.20	580.880	306	79	74	0.70	1.49	97.6
2-04	10.0	0.59	1.40	582.510	305	81	75	0.77	1.63	97.0
2-05	12.5	0.62	1.50	584.215	305	82	75	0.79	1.71	98.9
LEAK CHECK	12.5			584.320						
1-01	15.0	0.44	1.00	585.730	305	81	76	0.66	1.41	97.0
1-02	17.5	0.46	1.10	587.210	305	83	77	0.68	1.48	99.3
1-03	20.0	0.43	1.00	588.610	302	85	77	0.66	1.40	96.8
1-04	22.5	0.43	1.00	590.020	304	85	77	0.66	1.41	97.6
1-05	25.0	0.62	1.50	591.725	305	86	78	0.79	1.71	98.3
LEAK CHECK	25.0			591.785						
3-01	27.5	0.36	0.87	593.110	306	83	79	0.60	1.33	100.3
3-02	30.0	0.46	1.10	594.600	307	84	79	0.68	1.49	99.8
3-03	32.5	0.47	1.10	596.070	307	85	79	0.69	1.47	97.3
3-04	35.0	0.51	1.20	597.600	306	85	79	0.71	1.53	97.2
3-05	37.5	0.53	1.30	599.185	306	86	80	0.73	1.58	98.6
LEAK CHECK	37.5			599.250						
4-01	40.0	0.56	1.30	600.850	307	84	80	0.75	1.60	97.1
4-02	42.5	0.51	1.20	602.440	307	85	80	0.71	1.59	101.0
4-03	45.0	0.52	1.20	604.080	306	86	80	0.72	1.64	103.0
4-04	47.5	0.56	1.30	605.580	307	87	80	0.75	1.50	90.8
4-05	50.0	0.51	1.20	607.150	306	88	80	0.71	1.57	99.4
LEAK CHECK	50.0			607.240						
5-01	52.5	0.25	0.60	608.350	305	83	81	0.50	1.11	100.5
5-02	55.0	0.58	1.40	609.990	306	85	81	0.76	1.64	97.6
5-03	57.5	0.64	1.50	611.710	306	86	81	0.80	1.72	97.4
5-04	60.0	0.64	1.50	613.370	306	87	81	0.80	1.66	93.9
5-05	62.5	0.58	1.40	615.045	305	88	82	0.76	1.67	99.2
Final	62.5		1.20680	38.36500	305.72000	81.10000		0.71140	38.36500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7114	1.2068	38.3650	305.7200	81.1000		2RSD =		13.4%
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method:	USEPA Method 13B
Analyte:	Total Fluorides

Location: Unit 2 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.29000		10.02000	80.69000	29.88720	1.17115	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.58000		9.64000	80.78000	29.91840	1.17537	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.13000		10.15000	80.72000	29.86680	1.17744	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location: Unit 2 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955

Test Method: USEPA Method 13B
Analyte: Total Fluorides
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	645.7	547.6	98.1
Impinger 2	DI Water	642.5	566.6	75.9
Impinger 3	Empty	482.7	460.8	21.9
Impinger 4	Silica Gel	772.2	755.7	16.5
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
195.9	Liquid (gm)		
0.0	less rinse (gm)		
195.9	Net Liquid (gm)	195.9	☑ QA/QC OK
+ 16.5	Silica Gel (gm)	16.5	☑ QA/QC OK
212.4	Total Vlc (gm)	212.4	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	676.7	542.4	134.3
Impinger 2	DI Water	594.8	541.5	53.3
Impinger 3	Empty	446.0	437.0	9.0
Impinger 4	Silica Gel	769.2	755.9	13.3
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
196.6	Liquid (gm)		
0.0	less rinse (gm)		
196.6	Net Liquid (gm)	196.6	☑ QA/QC OK
+ 13.3	Silica Gel (gm)	13.3	☑ QA/QC OK
209.9	Total Vlc (gm)	209.9	☑ QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	678.4	538.3	140.1
Impinger 2	DI Water	600.9	556.3	44.6
Impinger 3	Empty	460.3	452.3	8.0
Impinger 4	Silica Gel	764.5	755.6	8.9
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
192.7	Liquid (gm)		
0.0	less rinse (gm)		
192.7	Net Liquid (gm)	192.7	☑ QA/QC OK
+ 8.9	Silica Gel (gm)	8.9	☑ QA/QC OK
201.6	Total Vlc (gm)	201.6	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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Field Data Printout

Test Method: USEPA Method 23
Analyte: PCDD/F

Location:	Unit 2 FF Outlet
Test Run:	1
Client:	Wheelabrator North Broward, Inc.
Project No:	10955
Source Area (ft^2):	64.00000
Meter Operator:	N. Hitchins 569
Probe Operator:	N. Hitchins 569
Test Date:	3/16/10
Start Time:	08:44
Stop Time:	13:36
Leak Rate Before:	0.005 cfm @ 15 "Hg
Leak Rate After:	0.005 cfm @ 15 "Hg

Bar. Press. (in. Hg):	30.00
Static P:	-12.0
O_2 (dry volume %):	9.68
CO_2 (dry volume %):	9.74
N_2+CO (dry volume %):	80.58
H_2O (condensate, ml or gm):	792.4
H_2O (silica, g):	44.1
Actual Moisture (%):	20.14

Nozzle ID No:	264-1
Nozzle Diameter (D_n):	0.264
Probe ID No:	67-8-17
Pitot C_p:	0.8340
Pitot Leak Check:	☑ Pass ☐ Fail
Meter Box ID. No:	66-6
Meter ΔH@:	1.78700
Meter Y_d:	0.99010

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			690.310						
1-01	5.0	0.69	1.60	693.890	298	65	62	0.83	3.58	101.3
1-01	10.0	0.62	1.40	697.300	297	65	62	0.79	3.41	101.6
1-02	15.0	0.50	1.10	700.030	296	67	63	0.71	2.73	90.2
1-02	20.0	0.49	1.10	703.040	297	69	64	0.70	3.01	100.3
1-03	25.0	0.50	1.10	705.980	297	70	65	0.71	2.94	96.8
1-03	30.0	0.51	1.20	708.990	298	71	65	0.71	3.01	98.1
1-04	35.0	0.51	1.20	712.030	297	72	67	0.71	3.04	98.7
1-04	40.0	0.56	1.30	715.150	296	72	67	0.75	3.12	96.6
1-05	45.0	0.48	1.10	718.170	295	74	68	0.69	3.02	100.6
1-05	50.0	0.76	1.70	721.785	298	74	68	0.87	3.62	96.1
LEAK CHECK	50.0			722.405						
2-01	55.0	0.59	1.40	725.740	297	74	70	0.77	3.34	100.3
2-01	60.0	0.61	1.40	729.020	297	75	71	0.78	3.28	96.8
2-02	65.0	0.61	1.40	732.300	297	76	72	0.78	3.28	96.6
2-02	70.0	0.64	1.50	735.970	296	77	72	0.80	3.67	105.4
2-03	75.0	0.60	1.40	739.110	297	79	73	0.77	3.14	92.9
2-03	80.0	0.58	1.40	742.410	297	80	74	0.76	3.30	99.1
2-04	85.0	0.60	1.40	745.770	297	80	75	0.77	3.36	99.1
2-04	90.0	0.53	1.20	748.930	298	80	75	0.73	3.16	99.2
2-05	95.0	0.54	1.30	752.150	296	80	76	0.73	3.22	100.0
2-05	100.0	0.52	1.20	755.290	296	81	76	0.72	3.14	99.2
LEAK CHECK	100.0			755.665						
3-01	105.0	0.63	1.50	759.060	297	80	77	0.79	3.39	97.6
3-01	110.0	0.63	1.50	762.500	298	82	78	0.79	3.44	98.7
3-02	115.0	0.55	1.30	765.780	298	83	79	0.74	3.28	100.5
3-02	120.0	0.56	1.30	769.030	297	84	80	0.75	3.25	98.4
3-03	125.0	0.51	1.20	772.170	297	85	81	0.71	3.14	99.4
3-03	130.0	0.52	1.20	775.300	299	86	81	0.72	3.13	98.2
3-04	135.0	0.56	1.30	778.520	299	86	82	0.75	3.22	97.3
3-04	140.0	0.57	1.30	781.710	301	87	82	0.75	3.19	95.6
3-05	145.0	0.62	1.40	785.060	301	87	83	0.79	3.35	96.2
3-05	150.0	0.63	1.50	788.485	301	88	84	0.79	3.43	97.4
LEAK CHECK	150.0			788.850						
4-01	155.0	0.48	1.10	791.930	304	86	84	0.69	3.08	100.6
4-01	160.0	0.46	1.10	794.950	304	87	84	0.68	3.02	100.7
4-02	165.0	0.45	1.00	797.790	305	88	85	0.67	2.84	95.6
4-02	170.0	0.48	1.10	800.690	304	89	85	0.69	2.90	94.4
4-03	175.0	0.52	1.20	803.790	304	89	86	0.72	3.10	96.9
4-03	180.0	0.54	1.30	806.930	305	90	86	0.73	3.14	96.3
4-04	185.0	0.52	1.20	810.100	304	90	86	0.72	3.17	99.0
4-04	190.0	0.53	1.20	813.050	305	90	87	0.73	2.95	91.2
4-05	195.0	0.52	1.20	816.190	305	89	87	0.72	3.14	98.1
4-05	200.0	0.59	1.40	819.560	305	89	86	0.77	3.37	99.0
LEAK CHECK	200.0			819.970						
5-01	205.0	0.52	1.20	823.030	305	88	86	0.72	3.06	95.8
5-01	210.0	0.53	1.20	826.220	305	87	86	0.73	3.19	99.0
5-02	215.0	0.55	1.30	829.430	306	88	86	0.74	3.21	97.8
5-02	220.0	0.56	1.30	832.660	306	88	86	0.75	3.23	97.5
5-03	225.0	0.62	1.40	836.030	308	88	86	0.79	3.37	96.8
5-03	230.0	0.61	1.40	839.410	307	89	86	0.78	3.38	97.7
5-04	235.0	0.66	1.50	842.890	306	89	86	0.81	3.48	96.7
5-04	240.0	0.64	1.50	846.330	306	89	86	0.80	3.44	97.1
5-05	245.0	0.47	1.10	849.390	307	88	86	0.69	3.06	100.8
5-05	250.0	0.46	1.10	852.425	306	87	86	0.68	3.03	101.1
Final	250.0		1.29400	160.34500	300.64000	80.05000		0.74616	160.34500	
25 points sampled		Sq.RtΔP								
QC-Check: Field Averages		0.7462	1.2940	160.3450	300.6400	80.0500		2RSD =		8.7%
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: USEPA Method 23
Analyte: PCDD/F

Location: Unit 2 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000

Meter Operator:	N. Hitchins	569
Probe Operator:	N. Hitchins	569

Test Date: 3/17/10
Start Time: 06:54
Stop Time: 12:19
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.005 cfm @ 18 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -12.5
O_2 (dry volume %): 9.74
CO_2 (dry volume %): 9.84
N_2+CO (dry volume %): 80.42

H_2O (condensate, ml or gm): 882.9
H_2O (silica, g): 61.0
Actual Moisture (%): 20.83

Nozzle ID No: 264-1
Nozzle Diameter (D_n): 0.264
Probe ID No: 67-8-17
Pitot C_p: 0.8340
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-6
Meter ΔH@: 1.78700
Meter Y_d: 0.99010

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in. H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			853.415						
5-01	5.0	0.61	1.50	856.850	305	69	66	0.78	3.44	103.8
5-01	10.0	0.61	1.50	860.110	306	70	68	0.78	3.26	98.3
5-02	15.0	0.61	1.50	863.430	307	71	68	0.78	3.32	100.1
5-02	20.0	0.61	1.50	866.830	307	72	68	0.78	3.40	102.4
5-03	25.0	0.59	1.40	870.190	310	73	69	0.77	3.36	102.9
5-03	30.0	0.59	1.40	873.540	310	73	69	0.77	3.35	102.6
5-04	35.0	0.62	1.50	876.930	309	74	70	0.79	3.39	101.0
5-04	40.0	0.62	1.50	880.360	309	75	71	0.79	3.43	102.0
5-05	45.0	0.58	1.40	883.690	309	75	71	0.76	3.33	102.4
5-05	50.0	0.55	1.30	886.945	308	75	71	0.74	3.26	102.7
LEAK CHECK	50.0			887.180						
4-01	55.0	0.56	1.30	890.360	310	74	72	0.75	3.18	99.6
4-01	60.0	0.54	1.30	893.530	309	76	72	0.73	3.17	100.8
4-02	65.0	0.62	1.50	896.910	311	77	73	0.79	3.38	100.3
4-02	70.0	0.65	1.60	900.400	312	77	73	0.81	3.49	101.2
4-03	75.0	0.63	1.50	903.870	311	77	73	0.79	3.47	102.2
4-03	80.0	0.63	1.50	907.315	311	77	74	0.79	3.45	101.3
4-04	85.0	0.65	1.50	910.780	308	74	73	0.81	3.46	100.5
4-04	90.0	0.62	1.50	914.160	308	74	73	0.79	3.38	100.4
4-05	95.0	0.77	1.80	917.840	310	77	73	0.88	3.68	98.0
4-05	100.0	0.67	1.60	921.400	308	77	74	0.82	3.56	101.4
LEAK CHECK	100.0			921.590						
3-01	105.0	0.65	1.50	924.970	308	76	74	0.81	3.38	97.8
3-01	110.0	0.68	1.60	928.470	307	77	74	0.82	3.50	98.9
3-02	115.0	0.61	1.50	931.930	305	78	75	0.78	3.46	102.8
3-02	120.0	0.60	1.40	935.280	306	77	75	0.77	3.35	100.5
3-03	125.0	0.66	1.60	938.770	308	78	76	0.81	3.49	99.8
3-03	130.0	0.65	1.50	942.280	307	79	76	0.81	3.51	101.0
3-04	135.0	0.65	1.50	945.670	307	78	76	0.81	3.39	97.6
3-04	140.0	0.65	1.50	949.100	308	78	76	0.81	3.43	98.8
3-05	145.0	0.62	1.50	952.540	307	78	76	0.79	3.44	101.4
3-05	150.0	0.65	1.50	955.950	307	78	76	0.81	3.41	98.2
LEAK CHECK	150.0			956.210						
2-01	155.0	0.67	1.60	959.690	308	77	76	0.82	3.48	98.9
2-01	160.0	0.67	1.60	963.160	307	77	76	0.82	3.47	98.5
2-02	165.0	0.66	1.60	966.750	306	77	76	0.81	3.59	102.7
2-02	170.0	0.65	1.50	970.170	307	78	76	0.81	3.42	98.5
2-03	175.0	0.70	1.70	973.790	307	78	76	0.84	3.62	100.5
2-03	180.0	0.70	1.70	977.420	306	77	76	0.84	3.63	100.8
2-04	185.0	0.68	1.60	980.990	306	78	76	0.82	3.57	100.5
2-04	190.0	0.66	1.60	984.490	305	78	76	0.81	3.50	99.9
2-05	195.0	0.66	1.60	988.000	305	78	76	0.81	3.51	100.2
2-05	200.0	0.70	1.70	991.595	305	78	76	0.84	3.60	99.7
LEAK CHECK	200.0			991.910						
1-01	205.0	0.56	1.30	995.050	307	76	76	0.75	3.14	97.6
1-01	210.0	0.59	1.40	998.340	307	77	75	0.77	3.29	99.6
1-02	215.0	0.59	1.40	1001.630	306	77	75	0.77	3.29	99.5
1-02	220.0	0.59	1.40	1004.900	306	76	75	0.77	3.27	99.0
1-03	225.0	0.59	1.40	1008.180	306	76	74	0.77	3.28	99.4
1-03	230.0	0.56	1.30	1011.430	305	76	74	0.75	3.25	101.0
1-04	235.0	0.63	1.50	1014.810	306	74	73	0.79	3.38	99.5
1-04	240.0	0.71	1.70	1018.410	306	74	73	0.84	3.60	99.8
1-05	245.0	0.80	1.90	1022.240	307	72	71	0.89	3.83	100.6
1-05	250.0	0.80	1.90	1026.030	308	71	71	0.89	3.79	99.7
Final	250.0		1.52200	171.61500	307.48000	74.61000		0.79826	171.61500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7983	1.5220	171.6150	307.4800	74.6100			2RSD =	7.0%
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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Date ________

Field Data Printout

Test Method: USEPA Method 23
Analyte: PCDD/F

Location: Unit 2 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator: N. Hitchins 569
Test Date: 3/17/10
Start Time: 12:53
Stop Time: 17:26
Leak Rate Before: 0.005 cfm @ 16 "Hg
Leak Rate After: 0.005 cfm @ 16 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -10.4
O_2 (dry volume %): 10.31
CO_2 (dry volume %): 9.47
N_2+CO (dry volume %): 80.22

H_2O (condensate, ml or gm): 837.6
H_2O (silica, g): 59.1
Actual Moisture (%): 20.45

Nozzle ID No: 264-1
Nozzle Diameter (D_n): 0.264
Probe ID No: 67-8-17
Pitot C_p: 0.8340
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in. H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			277.760						
1-01	5.0	0.48	1.10	280.780	308	67	69	0.69	3.02	102.2
1-01	10.0	0.46	1.10	283.840	307	77	68	0.68	3.06	104.8
1-02	15.0	0.62	1.50	287.290	308	72	68	0.79	3.45	102.4
1-02	20.0	0.56	1.30	290.600	308	74	68	0.75	3.31	103.2
1-03	25.0	0.63	1.50	294.040	307	75	68	0.79	3.44	101.0
1-03	30.0	0.60	1.40	297.460	306	76	68	0.77	3.42	102.7
1-04	35.0	0.70	1.60	301.030	308	76	68	0.84	3.57	99.4
1-04	40.0	0.70	1.60	304.600	309	77	68	0.84	3.57	99.4
1-05	45.0	0.76	1.80	308.360	308	77	68	0.87	3.76	100.4
1-05	50.0	0.75	1.80	312.145	308	77	69	0.87	3.78	101.7
LEAK CHECK	50.0			312.345						
2-01	55.0	0.58	1.40	315.540	308	74	68	0.76	3.19	97.9
2-01	60.0	0.55	1.30	318.770	307	74	68	0.74	3.23	101.5
2-02	65.0	0.51	1.20	321.900	307	75	68	0.71	3.13	102.0
2-02	70.0	0.51	1.20	324.990	307	75	68	0.71	3.09	100.7
2-03	75.0	0.56	1.30	328.190	309	76	68	0.75	3.20	99.6
2-03	80.0	0.58	1.40	331.520	309	77	68	0.76	3.33	101.8
2-04	85.0	0.55	1.30	334.810	308	77	68	0.74	3.29	103.2
2-04	90.0	0.55	1.30	338.020	310	77	68	0.74	3.21	100.8
2-05	95.0	0.51	1.20	341.210	308	76	69	0.71	3.19	103.9
2-05	100.0	0.54	1.30	344.440	309	76	68	0.73	3.23	102.4
LEAK CHECK	100.0			344.700						
3-01	105.0	0.66	1.60	348.270	308	74	68	0.81	3.57	102.6
3-01	110.0	0.62	1.50	351.790	306	74	68	0.79	3.52	104.2
3-02	115.0	0.57	1.30	355.100	308	74	68	0.75	3.31	102.3
3-02	120.0	0.57	1.30	358.390	308	75	67	0.75	3.29	101.6
3-03	125.0	0.58	1.40	361.720	308	76	67	0.76	3.33	101.9
3-03	130.0	0.55	1.30	364.970	309	76	68	0.74	3.25	102.1
3-04	135.0	0.56	1.30	368.200	308	76	68	0.75	3.23	100.5
3-04	140.0	0.57	1.30	371.450	309	76	68	0.75	3.25	100.3
3-05	145.0	0.57	1.30	374.720	309	77	68	0.75	3.27	100.8
3-05	150.0	0.51	1.20	377.895	308	77	68	0.71	3.17	103.4
LEAK CHECK	150.0			378.175						
4-01	155.0	0.60	1.40	381.520	309	74	68	0.77	3.34	100.8
4-01	160.0	0.62	1.50	384.980	308	75	68	0.79	3.46	102.5
4-02	165.0	0.64	1.50	388.440	307	77	69	0.80	3.46	100.5
4-02	170.0	0.62	1.50	391.970	307	77	69	0.79	3.53	104.2
4-03	175.0	0.53	1.20	395.130	307	77	69	0.73	3.16	100.8
4-03	180.0	0.53	1.20	398.290	307	77	69	0.73	3.16	100.8
4-04	185.0	0.67	1.60	401.850	308	77	69	0.82	3.56	101.1
4-04	190.0	0.63	1.50	405.380	309	77	69	0.79	3.53	103.5
4-05	195.0	0.65	1.50	408.900	308	77	69	0.81	3.52	101.5
4-05	200.0	0.65	1.50	412.410	308	77	69	0.81	3.51	101.2
LEAK CHECK	200.0			412.760						
5-01	205.0	0.59	1.40	416.120	310	77	69	0.77	3.36	101.8
5-01	210.0	0.52	1.20	419.270	308	77	69	0.72	3.15	101.5
5-02	215.0	0.50	1.20	422.410	307	77	69	0.71	3.14	103.1
5-02	220.0	0.52	1.20	425.590	308	78	70	0.72	3.18	102.3
5-03	225.0	0.51	1.20	428.760	306	79	70	0.71	3.17	102.7
5-03	230.0	0.51	1.20	431.890	307	79	70	0.71	3.13	101.5
5-04	235.0	0.54	1.30	435.080	307	79	71	0.73	3.19	100.4
5-04	240.0	0.55	1.30	438.280	307	79	71	0.74	3.20	99.8
5-05	245.0	0.54	1.30	441.490	306	79	71	0.73	3.21	101.0
5-05	250.0	0.69	1.60	445.005	308	78	71	0.83	3.51	98.1
Final	250.0		1.36800	166.15500	307.84000	72.37000		0.76126	166.15500	

25 points sampled — Sq.RtΔP

QC-Check: Field Averages: 0.7611 | 1.3680 | 166.1550 | 307.8400 | 72.3700

☑ Avg. OK ☑ Avg. OK ☑ Avg. OK ☑ Avg. OK ☑ Avg. OK

.2RSD = 8.8%

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USEPA Method 3 Laboratory Data

Test Method:	USEPA Method 23
Analyte:	PCDD/F

Location: Unit 2 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.74000		9.68000	80.58000	29.94560	1.15195	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.84000		9.74000	80.42000	29.96400	1.13415	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.47000		10.31000	80.22000	29.92760	1.11827	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location:	Unit 2 FF Outlet	Test Method:	USEPA Method 23
Client:	Wheelabrator North Broward, Inc.	Analyte:	PCDD/F
Project No:	10955	Analyst:	R. Vicere
		Analyst Emp No:	563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	1532.1	633.7	898.4
Impinger 2	HPLC Water	483.7	551.1	-67.4
Impinger 3	HPLC Water	475.6	529.6	-54.0
Impinger 4	Empty	440.1	437.1	3.0
Impinger 5	XAD Trap	398.7	386.3	12.4
Impinger 6	Silica Gel	842.6	798.5	44.1
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
792.4	Liquid (gm)		
0.0	less rinse (gm)		
792.4	Net Liquid (gm)	792.4	☑QA/QC OK
+ 44.1	Silica Gel (gm)	44.1	☑QA/QC OK
836.5	Total Vlc (gm)	836.5	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	1520.8	624.9	895.9
Impinger 2	100 ml HPLC H2O	542.4	524.1	18.3
Impinger 3	100 ml HPLC H2O	498.5	541.2	-42.7
Impinger 4	XAD Trap	357.6	346.2	11.4
Impinger 5	Silica Gel	797.0	736.0	61.0
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
882.9	Liquid (gm)		
0.0	less rinse (gm)		
882.9	Net Liquid (gm)	882.9	☑QA/QC OK
+ 61.0	Silica Gel (gm)	61.0	☑QA/QC OK
943.9	Total Vlc (gm)	943.9	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	1460.5	635.1	825.4
Impinger 2	100 ml HPLC H2O	531.2	531.6	-0.4
Impinger 3	100 ml HPLC H2O	541.3	540.5	0.8
Impinger 4	XAD Trap	352.7	340.9	11.8
Impinger 5	Silica Gel	875.1	816.0	59.1
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
837.6	Liquid (gm)		
0.0	less rinse (gm)		
837.6	Net Liquid (gm)	837.6	☑QA/QC OK
+ 59.1	Silica Gel (gm)	59.1	☑QA/QC OK
896.7	Total Vlc (gm)	896.7	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty			
Impinger 2	HPLC Water			
Impinger 3	HPLC Water			
Impinger 4	Empty			
Impinger 5	XAD Trap			
Impinger 6	Silica Gel			
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐QA/QC OK
	Silica Gel (gm)		☐QA/QC OK
	Total Vlc (gm)		☐QA/QC OK

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Date ________

Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 2 SDA Inlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/17/10
Start Time: 06:54
Stop Time: 07:54
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 20 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -1.7
O_2 (dry volume %): 8.41
CO_2 (dry volume %): 10.86
N_2+CO (dry volume %): 80.73

H_2O (condensate, ml or gm): 148.5
H_2O (silica, g): 13.3
Actual Moisture (%): 17.51

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-5
Pitot C_p: 0.8400
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-8
Meter ΔH@: 1.75800
Meter Y_d: 0.99160

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in. H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			101.165						
1-01	5.0		1.20	104.210	501	67	64		3.04	
1-01	10.0		1.20	107.120	504	69	65		2.91	
1-01	15.0		1.20	110.120	507	71	65		3.00	
1-01	20.0		1.20	113.190	512	74	66		3.07	
1-01	25.0		1.20	116.210	514	76	67		3.02	
1-01	30.0		1.20	119.150	514	79	70		2.94	
1-01	35.0		1.20	122.230	514	80	72		3.08	
1-01	40.0		1.20	125.340	514	78	71		3.11	
1-01	45.0		1.20	128.410	512	80	72		3.07	
1-01	50.0		1.20	131.490	510	80	73		3.08	
1-01	55.0		1.20	134.550	505	81	74		3.06	
1-01	60.0		1.10	137.490	507	79	74		2.94	
Final	60.0		1.19167	36.32500	509.50000	72.79167		0.00000	36.32500	
1 points sampled		Sq.RtΔP								
QC-Check: Field Averages			1.1917	36.3250	509.5000	72.7917				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC ________
Date ________

Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 2 SDA Inlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/17/10
Start Time: 09:02
Stop Time: 10:02
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 20 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -1.9
O_2 (dry volume %): 9.29
CO_2 (dry volume %): 10.19
N_2+CO (dry volume %): 80.52

H_2O (condensate, ml or gm): 139.0
H_2O (silica, g): 12.2
Actual Moisture (%): 16.34

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-5
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 61-8
Meter ΔH@: 1.75800
Meter Y_d: 0.99160

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			138.230						
1-01	5.0		1.20	141.380	502	63	63		3.15	
1-01	10.0		1.20	144.350	502	65	64		2.97	
1-01	15.0		1.20	147.350	501	66	64		3.00	
1-01	20.0		1.20	150.350	502	69	65		3.00	
1-01	25.0		1.20	153.370	507	70	65		3.02	
1-01	30.0		1.20	156.400	506	70	65		3.03	
1-01	35.0		1.20	159.420	503	70	66		3.02	
1-01	40.0		1.20	162.470	505	71	66		3.05	
1-01	45.0		1.20	165.570	502	70	66		3.10	
1-01	50.0		1.20	168.620	502	70	66		3.05	
1-01	55.0		1.20	171.690	506	69	66		3.07	
1-01	60.0		1.20	174.700	504	69	66		3.01	
Final	60.0		1.20000	36.47000	503.50000	66.83333		0.00000	36.47000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.2000	36.4700	503.5000	66.8333				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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QA/QC ________
Date ________

Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 2 SDA Inlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/17/10
Start Time: 10:25
Stop Time: 11:25
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 18 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -1.9
O_2 (dry volume %): 8.68
CO_2 (dry volume %): 10.74
N_2+CO (dry volume %): 80.58

H_2O (condensate, ml or gm): 148.7
H_2O (silica, g): 15.3
Actual Moisture (%): 17.57

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-5
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 61-8
Meter ΔH@: 1.75800
Meter Y_d: 0.99160

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			174.890						
1-01	5.0		1.20	178.020	507	65	64		3.13	
1-01	10.0		1.20	180.970	505	66	64		2.95	
1-01	15.0		1.20	183.980	504	68	64		3.01	
1-01	20.0		1.20	187.000	499	69	64		3.02	
1-01	25.0		1.20	190.000	502	70	65		3.00	
1-01	30.0		1.20	193.070	503	70	65		3.07	
1-01	35.0		1.20	196.070	501	70	65		3.00	
1-01	40.0		1.20	199.080	505	70	65		3.01	
1-01	45.0		1.20	202.100	498	70	66		3.02	
1-01	50.0		1.20	205.150	498	70	66		3.05	
1-01	55.0		1.20	208.190	499	70	66		3.04	
1-01	60.0		1.10	211.135	498	70	66		2.94	
Final	60.0		1.19167	36.24500	501.58333	67.00000		0.00000	36.24500	
1 points sampled		Sq.RtΔP								
QC-Check: Field Averages			1.1917	36.2450	501.5833	67.0000				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC ________
Date ________

USEPA Method 3 Laboratory Data

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 2 SDA Inlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.86000		8.41000	80.73000	30.07400	1.15009	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.19000		9.29000	80.52000	30.00200	1.13935	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.74000		8.68000	80.58000	30.06560	1.13780	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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QA/QC ________
Date ________

USEPA Method 4 Laboratory Data

Location: Unit 2 SDA Inlet	Test Method: USEPA Method 26A
Client: Wheelabrator North Broward, Inc.	Analyte: HCl
Project No: 10955	Analyst: R. Vicere
	Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	477.3	455.7	21.6
Impinger 2	100 ml 0.1N H2SO4	637.5	556.7	80.8
Impinger 3	100 ml 0.1N H2SO4	576.6	541.1	35.5
Impinger 4	Empty	473.6	463.0	10.6
Impinger 5	Silica Gel	754.2	740.9	13.3
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
148.5	Liquid (gm)		
0.0	less rinse (gm)		
148.5	Net Liquid (gm)	148.5	☑ QA/QC OK
+ 13.3	Silica Gel (gm)	13.3	☑ QA/QC OK
161.8	Total Vlc (gm)	161.8	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	501.8	471.6	30.2
Impinger 2	100 ml 0.1N H2SO4	620.4	535.9	84.5
Impinger 3	100 ml 0.1N H2SO4	571.4	550.6	20.8
Impinger 4	Empty	431.8	428.3	3.5
Impinger 5	Silica Gel	766.4	754.2	12.2
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
139.0	Liquid (gm)		
0.0	less rinse (gm)		
139.0	Net Liquid (gm)	139.0	☑ QA/QC OK
+ 12.2	Silica Gel (gm)	12.2	☑ QA/QC OK
151.2	Total Vlc (gm)	151.2	☑ QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	487.7	455.6	32.1
Impinger 2	100 ml 0.1N H2SO4	643.0	560.9	82.1
Impinger 3	100 ml 0.1N H2SO4	567.7	540.3	27.4
Impinger 4	Empty	472.5	465.4	7.1
Impinger 5	Silica Gel	753.5	738.2	15.3
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
148.7	Liquid (gm)		
0.0	less rinse (gm)		
148.7	Net Liquid (gm)	148.7	☑ QA/QC OK
+ 15.3	Silica Gel (gm)	15.3	☑ QA/QC OK
164.0	Total Vlc (gm)	164.0	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 2 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/17/10
Start Time: 06:54
Stop Time: 07:54
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -12.5
O_2 (dry volume %): 9.65
CO_2 (dry volume %): 9.65
N_2+CO (dry volume %): 80.70

H_2O (condensate, ml or gm): 211.6
H_2O (silica, g): 23.1
Actual Moisture (%): 21.13

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			150.430						
2-01	5.0		1.50	153.590	307	72	66		3.16	
2-01	10.0		1.50	157.250	307	72	66		3.66	
2-01	15.0		1.50	160.650	307	74	66		3.40	
2-01	20.0		1.50	164.150	308	77	67		3.50	
2-01	25.0		1.50	167.640	308	80	68		3.49	
2-01	30.0		1.50	171.140	313	81	68		3.50	
2-01	35.0		1.50	174.650	311	84	70		3.51	
2-01	40.0		1.50	178.180	310	85	71		3.53	
2-01	45.0		1.50	181.740	310	85	72		3.56	
2-01	50.0		1.50	185.280	311	86	73		3.54	
2-01	55.0		1.50	188.820	310	86	74		3.54	
2-01	60.0		1.50	192.380	311	86	74		3.56	
Final	60.0		1.50000	41.95000	309.41667	75.12500		0.00000	41.95000	
2 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.9500	309.4167	75.1250				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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QA/QC ________
Date ________

Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 2 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/17/10
Start Time: 09:02
Stop Time: 10:02
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -12.5
O_2 (dry volume %): 10.39
CO_2 (dry volume %): 9.14
N_2+CO (dry volume %): 80.47

H_2O (condensate, ml or gm): 199.6
H_2O (silica, g): 22.8
Actual Moisture (%): 20.33

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			192.710						
2-01	5.0		1.50	196.220	308	75	75		3.51	
2-01	10.0		1.50	199.700	308	75	75		3.48	
2-01	15.0		1.50	203.200	309	77	75		3.50	
2-01	20.0		1.50	206.690	308	80	75		3.49	
2-01	25.0		1.50	210.180	309	82	75		3.49	
2-01	30.0		1.50	213.670	309	84	76		3.49	
2-01	35.0		1.50	217.200	307	85	76		3.53	
2-01	40.0		1.50	220.740	308	86	76		3.54	
2-01	45.0		1.50	224.260	307	87	77		3.52	
2-01	50.0		1.50	227.700	308	88	77		3.44	
2-01	55.0		1.50	231.270	308	89	78		3.57	
2-01	60.0		1.50	234.775	308	89	79		3.51	
Final	60.0		1.50000	42.06500	308.08333	79.62500		0.00000	42.06500	

2 points sampled

QC-Check: Field Averages	Sq.Rt.ΔP	Sample ΔH	Metered	Stack	Dry Gas Meter
		1.5000	42.0650	308.0833	79.6250
	☐ Avg: OK	☑ Avg: OK	☑ Avg: OK	☑ Avg: OK	☑ Avg: OK

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Date ________

Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 2 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/17/10
Start Time: 10:25
Stop Time: 11:25
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -10.4
O_2 (dry volume %): 9.53
CO_2 (dry volume %): 9.95
N_2+CO (dry volume %): 80.52

H_2O (condensate, ml or gm): 217.7
H_2O (silica, g): 19.2
Actual Moisture (%): 21.49

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			235.110						
2-01	5.0		1.50	238.660	308	81	79		3.55	
2-01	10.0		1.50	242.150	307	84	79		3.49	
2-01	15.0		1.50	245.670	307	88	80		3.52	
2-01	20.0		1.50	249.170	306	90	80		3.50	
2-01	25.0		1.50	252.660	307	91	80		3.49	
2-01	30.0		1.50	256.130	307	91	81		3.47	
2-01	35.0		1.50	259.670	306	92	81		3.54	
2-01	40.0		1.50	263.200	310	92	82		3.53	
2-01	45.0		1.50	266.710	307	92	82		3.51	
2-01	50.0		1.50	270.270	308	93	83		3.56	
2-01	55.0		1.50	273.800	308	93	83		3.53	
2-01	60.0		1.50	277.350	307	93	83		3.55	
Final	60.0		1.50000	42.24000	307.33333	85.54167		0.00000	42.24000	

2 points sampled

	Sq.Rt.ΔP				
QC-Check: Field Averages		1.5000	42.2400	307.3333	85.5417
	☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 2 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.65000		9.65000	80.70000	29.93000	1.16580	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.14000		10.39000	80.47000	29.87800	1.14989	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.95000		9.53000	80.52000	29.97320	1.14271	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Date ________

USEPA Method 4 Laboratory Data

Location: Unit 2 FF Outlet	Test Method: USEPA Method 26A
Client: Wheelabrator North Broward, Inc.	Analyte: HCl
Project No: 10955	Analyst: B. Wiltse
	Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)			
Impinger 1	50 ml 0.1N H2SO4	504.9	469.4	35.5			
Impinger 2	100 ml 0.1N H2SO4	652.1	560.4	91.7			
Impinger 3	100 ml 0.1N H2SO4	615.6	554.3	61.3			
Impinger 4	Empty	479.1	456.0	23.1			
Impinger 5	Silica Gel	808.5	785.4	23.1			
Impinger 6					211.6 Liquid (gm)	*Field Data Check*	
Impinger 7					0.0 less rinse (gm)		
Impinger 8					211.6 Net Liquid (gm)	211.6	☑QA/QC OK
					+ 23.1 Silica Gel (gm)	23.1	☑QA/QC OK
		Rinse:		(ml or gm)	234.7 Total Vlc (gm)	234.7	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)			
Impinger 1	50 ml 0.1N H2SO4	513.0	480.5	32.5			
Impinger 2	100 ml 0.1N H2SO4	751.1	642.5	108.6			
Impinger 3	100 ml 0.1N H2SO4	577.5	534.9	42.6			
Impinger 4	Empty	463.9	448.0	15.9			
Impinger 5	Silica Gel	718.5	695.7	22.8			
Impinger 6					199.6 Liquid (gm)	*Field Data Check*	
Impinger 7					0.0 less rinse (gm)		
Impinger 8					199.6 Net Liquid (gm)	199.6	☑QA/QC OK
					+ 22.8 Silica Gel (gm)	22.8	☑QA/QC OK
		Rinse:		(ml or gm)	222.4 Total Vlc (gm)	222.4	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)			
Impinger 1	50 ml 0.1N H2SO4	506.8	467.8	39.0			
Impinger 2	100 ml 0.1N H2SO4	683.0	561.1	121.9			
Impinger 3	100 ml 0.1N H2SO4	597.3	554.6	42.7			
Impinger 4	Empty	469.8	455.7	14.1			
Impinger 5	Silica Gel	780.8	761.6	19.2			
Impinger 6					217.7 Liquid (gm)	*Field Data Check*	
Impinger 7					0.0 less rinse (gm)		
Impinger 8					217.7 Net Liquid (gm)	217.7	☑QA/QC OK
					+ 19.2 Silica Gel (gm)	19.2	☑QA/QC OK
		Rinse:		(ml or gm)	236.9 Total Vlc (gm)	236.9	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)			
Impinger 1							
Impinger 2							
Impinger 3							
Impinger 4							
Impinger 5							
Impinger 6					Liquid (gm)	*Field Data Check*	
Impinger 7					less rinse (gm)		
Impinger 8					Net Liquid (gm)		☐QA/QC OK
					Silica Gel (gm)		☐QA/QC OK
		Rinse:		(ml or gm)	Total Vlc (gm)		☐QA/QC OK

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QA/QC ________
Date ________

Field Data Printout

Test Method: **USEPA Method 5/29**
Analyte: **Particulate/Metals**

Location: Unit 3 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: P. Bihun 505
Probe Operator: P. Bihun 505
Test Date: 3/17/10
Start Time: 06:50
Stop Time: 09:03
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.000 cfm @ 8 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -11.0
O_2 (dry volume %): 8.71
CO_2 (dry volume %): 10.46
N_2+CO (dry volume %): 80.83

H_2O (condensate, ml or gm): 428.9
H_2O (silica, g): 13.2
Actual Moisture (%): 22.70

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			269.855						
1-01	5.0	0.46	1.10	272.720	305	65	65	0.68	2.87	101.0
1-02	10.0	0.54	1.30	275.840	305	68	65	0.73	3.12	101.3
1-03	15.0	0.55	1.30	278.970	307	71	65	0.74	3.13	100.5
1-04	20.0	0.50	1.20	281.980	306	73	65	0.71	3.01	101.1
1-05	25.0	0.46	1.10	284.900	306	75	66	0.68	2.92	101.9
LEAK CHECK	25.0			284.955						
2-01	30.0	0.57	1.30	288.090	306	76	68	0.75	3.13	98.1
2-02	35.0	0.60	1.40	291.410	306	77	68	0.77	3.32	101.2
2-03	40.0	0.48	1.10	294.320	306	80	69	0.69	2.91	98.7
2-04	45.0	0.48	1.10	297.230	305	81	70	0.69	2.91	98.4
2-05	50.0	0.38	0.89	299.895	305	81	71	0.62	2.66	101.2
LEAK CHECK	50.0			299.955						
3-01	55.0	0.51	1.20	302.980	304	79	71	0.71	3.03	99.3
3-02	60.0	0.54	1.30	306.190	305	81	72	0.73	3.21	102.2
3-03	65.0	0.52	1.20	309.300	305	83	73	0.72	3.11	100.6
3-04	70.0	0.46	1.10	312.240	305	83	73	0.68	2.94	101.1
3-05	75.0	0.41	0.96	315.005	305	84	75	0.64	2.76	100.4
LEAK CHECK	75.0			315.065						
4-01	80.0	0.61	1.40	318.370	304	82	74	0.78	3.31	98.7
4-02	85.0	0.50	1.20	321.510	305	84	75	0.71	3.14	103.3
4-03	90.0	0.54	1.30	324.750	304	84	75	0.73	3.24	102.6
4-04	95.0	0.47	1.10	327.720	305	85	76	0.69	2.97	100.6
4-05	100.0	0.38	0.89	330.415	305	85	76	0.62	2.69	101.5
LEAK CHECK	100.0			330.475						
5-01	105.0	0.23	0.54	332.540	286	82	77	0.48	2.07	98.8
5-02	110.0	0.23	0.54	334.600	286	83	77	0.48	2.06	98.5
5-03	115.0	0.30	0.71	336.980	301	83	77	0.55	2.38	100.6
5-04	120.0	0.38	0.89	339.630	305	84	77	0.62	2.65	99.8
5-05	125.0	0.40	0.94	342.380	304	84	77	0.63	2.75	100.9
Final	125.0		1.08240	72.29000	303.44000	75.80000		0.67364	72.29000	

25 points sampled

	Sq.Rt.ΔP	ΔH	Metered	Stack	Dry Gas Meter
QC-Check: Field Averages	0.6736	1.0824	72.2900	303.4400	75.8000
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK

2RSD = 16.1%

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Date ________

Field Data Printout

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals

Location: Unit 3 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: P. Bihun 505
Probe Operator: P. Bihun 505
Test Date: 3/17/10
Start Time: 09:26
Stop Time: 11:38
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -11.0
O_2 (dry volume %): 8.30
CO_2 (dry volume %): 10.94
N_2+CO (dry volume %): 80.76

H_2O (condensate, ml or gm): 460.2
H_2O (silica, g): 18.2
Actual Moisture (%): 22.90

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			342.680						
1-01	5.0	0.51	1.20	345.850	302	77	77	0.71	3.17	103.9
1-02	10.0	0.59	1.40	349.130	306	79	77	0.77	3.28	100.1
1-03	15.0	0.53	1.30	352.270	305	81	77	0.73	3.14	100.8
1-04	20.0	0.53	1.30	355.470	305	82	77	0.73	3.20	102.6
1-05	25.0	0.48	1.10	358.370	302	83	77	0.69	2.90	97.4
LEAK CHECK	25.0			358.440						
2-01	30.0	0.51	1.20	361.510	302	82	77	0.71	3.07	100.1
2-02	35.0	0.56	1.30	364.740	305	83	77	0.75	3.23	100.7
2-03	40.0	0.50	1.20	367.840	306	84	77	0.71	3.10	102.2
2-04	45.0	0.50	1.20	370.890	305	83	77	0.71	3.05	100.6
2-05	50.0	0.43	1.00	373.720	304	84	77	0.66	2.83	100.4
LEAK CHECK	50.0			373.750						
3-01	55.0	0.66	1.60	377.300	305	82	77	0.81	3.55	102.1
3-02	60.0	0.63	1.50	380.730	305	83	77	0.79	3.43	100.8
3-03	65.0	0.52	1.20	383.850	305	84	77	0.72	3.12	100.8
3-04	70.0	0.51	1.20	386.920	305	84	77	0.71	3.07	100.2
3-05	75.0	0.42	0.99	389.725	305	83	77	0.65	2.81	100.9
LEAK CHECK	75.0			389.760						
4-01	80.0	0.67	1.60	393.260	305	82	76	0.82	3.50	100.0
4-02	85.0	0.63	1.50	396.730	304	84	77	0.79	3.47	101.9
4-03	90.0	0.54	1.30	399.960	304	85	77	0.73	3.23	102.3
4-04	95.0	0.54	1.30	403.170	305	85	77	0.73	3.21	101.7
4-05	100.0	0.52	1.20	406.215	304	86	77	0.72	3.04	98.1
LEAK CHECK	100.0			406.250						
5-01	105.0	0.50	1.20	409.350	303	83	77	0.71	3.10	102.1
5-02	110.0	0.47	1.10	412.240	303	85	77	0.69	2.89	98.0
5-03	115.0	0.44	1.00	415.070	301	86	78	0.66	2.83	98.8
5-04	120.0	0.43	1.00	417.860	303	86	78	0.66	2.79	98.7
5-05	125.0	0.48	1.10	420.785	303	87	79	0.69	2.93	97.8
Final	125.0		1.23960	77.93500	304.08000	80.22000		0.72242	77.93500	

25 points sampled

	Sq.Rt.ΔP	ΔH	Metered	Stack	Dry Gas Meter
QC-Check: Field Averages	0.7224	1.2396	77.9350	304.0800	80.2200
	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK

2RSD = 9.4%

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Field Data Printout

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals

Location: Unit 3 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: P. Bihun 505
Probe Operator: P. Bihun 505
Test Date: 3/17/10
Start Time: 11:59
Stop Time: 14:11
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.00
Static P: -10.3
O_2 (dry volume %): 8.72
CO_2 (dry volume %): 10.84
N_2+CO (dry volume %): 80.44

H_2O (condensate, ml or gm): 448.7
H_2O (silica, g): 15.7
Actual Moisture (%): 22.62

Nozzle ID No: 270-1
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-8-4
Pitot C_p: 0.8050
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			421.105						
1-01	5.0	0.54	1.30	424.330	304	78	77	0.73	3.22	102.4
1-02	10.0	0.50	1.20	427.410	304	80	77	0.71	3.08	101.4
1-03	15.0	0.46	1.10	430.310	304	81	77	0.68	2.90	99.4
1-04	20.0	0.45	1.10	433.230	304	82	77	0.67	2.92	101.1
1-05	25.0	0.43	1.00	436.055	305	82	77	0.66	2.82	100.1
LEAK CHECK	25.0			436.095						
2-01	30.0	0.57	1.30	439.260	305	81	76	0.75	3.16	97.7
2-02	35.0	0.60	1.40	442.610	304	82	76	0.77	3.35	100.6
2-03	40.0	0.50	1.20	445.700	305	84	77	0.71	3.09	101.4
2-04	45.0	0.54	1.30	448.920	305	83	76	0.73	3.22	101.9
2-05	50.0	0.45	1.10	451.855	305	83	76	0.67	2.94	101.7
LEAK CHECK	50.0			451.910						
3-01	55.0	0.61	1.40	455.150	306	81	76	0.78	3.24	96.7
3-02	60.0	0.60	1.40	458.450	305	82	76	0.77	3.30	99.2
3-03	65.0	0.58	1.40	461.730	305	83	76	0.76	3.28	100.2
3-04	70.0	0.50	1.20	464.770	305	83	76	0.71	3.04	100.0
3-05	75.0	0.48	1.10	467.675	305	82	76	0.69	2.91	97.5
LEAK CHECK	75.0			467.730						
4-01	80.0	0.71	1.70	471.350	305	81	75	0.84	3.62	100.3
4-02	85.0	0.65	1.50	474.790	306	82	75	0.81	3.44	99.5
4-03	90.0	0.57	1.30	477.970	306	83	75	0.75	3.18	98.1
4-04	95.0	0.55	1.30	481.160	306	82	75	0.74	3.19	100.3
4-05	100.0	0.47	1.10	484.075	306	82	75	0.69	2.91	99.1
LEAK CHECK	100.0			484.120						
5-01	105.0	0.37	0.87	486.730	294	79	75	0.61	2.61	99.4
5-02	110.0	0.37	0.87	489.360	295	80	74	0.61	2.63	100.2
5-03	115.0	0.39	0.92	492.080	304	80	74	0.62	2.72	101.6
5-04	120.0	0.43	1.00	494.890	303	80	74	0.66	2.81	99.9
5-05	125.0	0.50	1.20	497.965	304	81	74	0.71	3.07	101.4
Final	125.0		1.21040	76.66500	304.00000	78.58000		0.71365	76.66500	

25 points sampled

	Sq.Rt.ΔP	ΔH	Metered	Stack	Dry Gas Meter
QC-Check: Field Averages	0.7136	1.2104	76.6650	304.0000	78.5800
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK

2RSD = 12.1%

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals

Location: Unit 3 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.46000		8.71000	80.83000	30.02200	1.16539	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.94000		8.30000	80.76000	30.08240	1.15174	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.84000		8.72000	80.44000	30.08320	1.12362	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location: Unit 3 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955

Test Method: USEPA Method 5/29
Analyte: Particulate/Metals
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	693.8	439.8	254.0
Impinger 2	5%HNO3/10%H2O2	689.5	559.5	130.0
Impinger 3	5%HNO3/10%H2O2	571.6	537.6	34.0
Impinger 4	Empty	454.0	446.4	7.6
Impinger 5	4%KMnO4/10%H2SO4	547.6	544.7	2.9
Impinger 6	4%KMnO4/10%H2SO4	551.5	551.1	0.4
Impinger 7	Silica Gel	748.4	735.2	13.2
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
428.9	Liquid (gm)		
0.0	less rinse (gm)		
428.9	Net Liquid (gm)	428.9	☑ QA/QC OK
+ 13.2	Silica Gel (gm)	13.2	☑ QA/QC OK
442.1	Total Vlc (gm)	442.1	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	740.5	463.2	277.3
Impinger 2	5%HNO3/10%H2O2	683.5	542.1	141.4
Impinger 3	5%HNO3/10%H2O2	586.5	553.5	33.0
Impinger 4	Empty	446.1	440.0	6.1
Impinger 5	4%KMnO4/10%H2SO4	564.8	562.4	2.4
Impinger 6	4%KMnO4/10%H2SO4	540.6	540.6	0.0
Impinger 7	Silica Gel	736.0	717.8	18.2
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
460.2	Liquid (gm)		
0.0	less rinse (gm)		
460.2	Net Liquid (gm)	460.2	☑ QA/QC OK
+ 18.2	Silica Gel (gm)	18.2	☑ QA/QC OK
478.4	Total Vlc (gm)	478.4	☑ QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	722.8	439.7	283.1
Impinger 2	5%HNO3/10%H2O2	685.9	556.9	129.0
Impinger 3	5%HNO3/10%H2O2	562.6	536.0	26.6
Impinger 4	Empty	453.5	447.5	6.0
Impinger 5	4%KMnO4/10%H2SO4	545.2	541.1	4.1
Impinger 6	4%KMnO4/10%H2SO4	545.1	545.2	-0.1
Impinger 7	Silica Gel	700.3	684.6	15.7
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
448.7	Liquid (gm)		
0.0	less rinse (gm)		
448.7	Net Liquid (gm)	448.7	☑ QA/QC OK
+ 15.7	Silica Gel (gm)	15.7	☑ QA/QC OK
464.4	Total Vlc (gm)	464.4	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty			
Impinger 2	5%HNO3/10%H2O2			
Impinger 3	5%HNO3/10%H2O2			
Impinger 4	Empty			
Impinger 5	4%KMnO4/10%H2SO4			
Impinger 6	4%KMnO4/10%H2SO4			
Impinger 7	Silica Gel			
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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QA/QC ________
Date ________

Field Data Printout

Test Method: **USEPA Method 13B**
Analyte: **Total Fluorides**

Location: Unit 3 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: B. Arnold 770
Test Date: 3/16/10
Start Time: 11:49
Stop Time: 13:07
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 9.90
CO_2 (dry volume %): 9.71
N_2+CO (dry volume %): 80.39

H_2O (condensate, ml or gm): 186.2
H_2O (silica, g): 18.0
Actual Moisture (%): 20.88

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			156.300						
1-01	2.5	0.34	0.83	157.350	287	67	66	0.58	1.05	83.6*
1-02	5.0	0.34	0.83	158.740	286	67	66	0.58	1.39	110.6*
1-03	7.5	0.34	0.83	160.140	293	67	66	0.58	1.40	111.9*
1-04	10.0	0.43	1.00	161.400	294	68	66	0.66	1.26	89.6*
1-05	12.5	0.47	1.10	162.730	299	69	67	0.69	1.33	90.6
LEAK CHECK	12.5			163.000						
2-01	15.0	0.53	1.30	164.390	298	69	67	0.73	1.39	89.2*
2-02	17.5	0.53	1.30	166.000	300	71	67	0.73	1.61	103.2
2-03	20.0	0.50	1.20	167.490	299	72	68	0.71	1.49	98.1
2-04	22.5	0.45	1.10	168.920	299	73	68	0.67	1.43	99.1
2-05	25.0	0.41	1.00	170.340	300	74	68	0.64	1.42	103.0
LEAK CHECK	25.0			170.340						
3-01	27.5	0.52	1.30	171.900	300	71	70	0.72	1.56	100.7
3-02	30.0	0.50	1.20	173.480	301	75	70	0.71	1.58	103.6
3-03	32.5	0.52	1.30	175.070	300	76	70	0.72	1.59	102.1
3-04	35.0	0.50	1.20	176.600	300	77	71	0.71	1.53	100.0
3-05	37.5	0.45	1.10	178.250	300	76	71	0.67	1.65	113.8*
LEAK CHECK	37.5			178.250						
4-01	40.0	0.45	1.10	180.080	300	76	74	0.67	1.83	125.8*
4-02	42.5	0.43	1.00	181.700	300	78	72	0.66	1.62	113.9*
4-03	45.0	0.43	1.00	183.100	299	78	72	0.66	1.40	98.4
4-04	47.5	0.45	1.10	184.570	299	78	72	0.67	1.47	101.0
4-05	50.0	0.45	1.10	186.030	300	78	72	0.67	1.46	100.4
LEAK CHECK	50.0			186.110						
5-01	52.5	0.47	1.10	187.550	300	75	72	0.69	1.44	97.2
5-02	55.0	0.48	1.20	189.100	300	77	72	0.69	1.55	103.3
5-03	57.5	0.47	1.10	190.580	299	78	72	0.69	1.48	99.5
5-04	60.0	0.45	1.10	192.020	299	78	73	0.67	1.44	98.9
5-05	62.5	0.40	0.98	193.450	297	78	72	0.63	1.43	104.1
Final	62.5		1.09480	36.80000	297.96000	71.80000		0.67133	36.80000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6713	1.0948	36.8000	297.9600	71.8000			2RSD =	8.5%
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC ________
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Field Data Printout

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 3 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: B. Arnold 770
Test Date: 3/16/10
Start Time: 13:33
Stop Time: 14:44
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 9.53
CO_2 (dry volume %): 10.04
N_2+CO (dry volume %): 80.43

H_2O (condensate, ml or gm): 197.8
H_2O (silica, g): 15.9
Actual Moisture (%): 21.38

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in. H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			193.980						
5-01	2.5	0.55	1.30	195.600	301	74	73	0.74	1.62	101.7
5-02	5.0	0.57	1.40	197.250	300	74	72	0.75	1.65	101.8
5-03	7.5	0.53	1.30	198.850	300	74	72	0.73	1.60	102.4
5-04	10.0	0.49	1.20	200.400	298	76	72	0.70	1.55	102.8
5-05	12.5	0.47	1.10	201.870	300	76	72	0.69	1.47	99.7
LEAK CHECK	12.5			202.060						
4-01	15.0	0.53	1.30	203.610	300	76	72	0.73	1.55	99.0
4-02	17.5	0.57	1.40	205.260	301	78	73	0.75	1.65	101.4
4-03	20.0	0.53	1.30	206.860	300	78	73	0.73	1.60	101.9
4-04	22.5	0.50	1.20	208.410	300	79	73	0.71	1.55	101.5
4-05	25.0	0.41	0.97	209.810	300	80	73	0.64	1.40	101.1
LEAK CHECK	25.0			209.920						
3-01	27.5	0.52	1.20	211.450	299	79	74	0.72	1.53	98.1
3-02	30.0	0.52	1.20	212.990	300	80	74	0.72	1.54	98.7
3-03	32.5	0.49	1.20	214.550	300	81	74	0.70	1.56	102.9
3-04	35.0	0.46	1.10	216.030	300	82	74	0.68	1.48	100.7
3-05	37.5	0.46	1.10	217.500	300	82	74	0.68	1.47	100.0
LEAK CHECK	37.5			217.610						
2-01	40.0	0.65	1.50	219.290	298	81	75	0.81	1.68	96.1
2-02	42.5	0.54	1.30	220.900	300	83	75	0.73	1.61	100.9
2-03	45.0	0.46	1.10	223.400	300	84	75	0.68	2.50	169.6*
2-04	47.5	0.41	0.97	223.850	299	84	76	0.64	0.45	32.3*
2-05	50.0	0.41	0.97	225.260	299	84	76	0.64	1.41	101.1
LEAK CHECK	50.0			225.380						
1-01	52.5	0.52	1.20	226.900	298	82	77	0.72	1.52	96.9
1-02	55.0	0.30	0.71	228.190	296	83	77	0.55	1.29	107.9
1-03	57.5	0.34	0.81	229.250	298	83	77	0.58	1.06	83.4*
1-04	60.0	0.41	0.97	230.620	299	83	77	0.64	1.37	98.2
1-05	62.5	0.43	1.00	232.270	300	83	77	0.66	1.65	115.6*
Final	62.5		1.15200	37.76000	299.44000	77.12000		0.69261	37.76000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6926	1.1520	37.7600	299.4400	77.1200			2RSD =	11.4%
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Date ________

Field Data Printout

Test Method: **USEPA Method 13B**
Analyte: **Total Fluorides**

Location: Unit 3 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: B. Arnold 770
Test Date: 3/16/10
Start Time: 15:07
Stop Time: 16:16
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.6
O_2 (dry volume %): 9.72
CO_2 (dry volume %): 9.96
N_2+CO (dry volume %): 80.32

H_2O (condensate, ml or gm): 192.4
H_2O (silica, g): 16.8
Actual Moisture (%): 21.60

Nozzle ID No: 268-1
Nozzle Diameter (D_n): 0.268
Probe ID No: 67-8-14
Pitot C_p: 0.8120
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-14
Meter ΔH@: 1.76430
Meter Y_d: 0.98980

Traverse Point	Run Time 2.5 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			232.600						
1-01	2.5	0.48	1.10	234.070	299	76	76	0.69	1.47	98.4
1-02	5.0	0.29	0.69	235.340	298	77	76	0.54	1.27	109.1
1-03	7.5	0.29	0.69	236.490	295	77	76	0.54	1.15	98.6
1-04	10.0	0.36	0.85	237.810	298	78	76	0.60	1.32	101.7
1-05	12.5	0.43	1.00	239.230	300	79	76	0.66	1.42	100.2
LEAK CHECK	12.5			239.320						
2-01	15.0	0.60	1.40	240.980	295	79	76	0.77	1.66	98.9
2-02	17.5	0.50	1.20	242.530	301	81	76	0.71	1.55	101.4
2-03	20.0	0.47	1.10	244.000	299	82	76	0.69	1.47	98.9
2-04	22.5	0.43	1.00	245.430	300	82	76	0.66	1.43	100.6
2-05	25.0	0.50	1.20	246.980	300	82	76	0.71	1.55	101.2
LEAK CHECK	25.0			247.070						
3-01	27.5	0.54	1.30	248.680	295	81	76	0.73	1.61	100.9
3-02	30.0	0.48	1.10	250.250	300	82	76	0.69	1.57	104.6
3-03	32.5	0.48	1.10	251.610	300	82	76	0.69	1.36	90.6
3-04	35.0	0.45	1.10	253.070	299	82	76	0.67	1.46	100.4
3-05	37.5	0.38	0.90	254.440	299	82	75	0.62	1.37	102.5
LEAK CHECK	37.5			254.490						
4-01	40.0	0.51	1.20	256.050	297	81	76	0.71	1.56	100.7
4-02	42.5	0.55	1.30	257.600	301	82	76	0.74	1.55	96.6
4-03	45.0	0.45	1.10	259.160	300	83	76	0.67	1.56	107.2
4-04	47.5	0.43	1.00	260.370	300	83	76	0.66	1.21	85.1*
4-05	50.0	0.40	0.95	262.010	300	83	76	0.63	1.64	119.5*
LEAK CHECK	50.0			262.070						
5-01	52.5	0.43	1.00	263.490	298	81	76	0.66	1.42	99.9
5-02	55.0	0.50	1.20	265.140	300	82	76	0.71	1.65	107.7
5-03	57.5	0.45	1.10	266.560	300	83	76	0.67	1.42	97.6
5-04	60.0	0.47	1.10	268.090	299	83	76	0.69	1.53	102.8
5-05	62.5	0.43	1.00	269.470	299	83	76	0.66	1.38	96.9
Final	62.5		1.06720	36.58000	298.88000	78.50000		0.67013	36.58000	

25 points sampled

QC-Check: Field Averages	Sq.Rt.ΔP						
	0.6701	1.0672	36.5800	298.8800	78.5000	2RSD =	11.0%
	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK		

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 3 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.71000		9.90000	80.39000	29.94960	1.13285	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.04000		9.53000	80.43000	29.98760	1.13247	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.96000		9.72000	80.32000	29.98240	1.12249	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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USEPA Method 4 Laboratory Data

Location:	Unit 3 FF Outlet
Client:	Wheelabrator North Broward, Inc.
Project No:	10955
Test Method:	USEPA Method 13B
Analyte:	Total Fluorides
Analyst:	R. Vicere
Analyst Emp No:	563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	657.1	545.3	111.8
Impinger 2	DI Water	618.0	558.1	59.9
Impinger 3	Empty	469.7	455.2	14.5
Impinger 4	Silica Gel	818.4	800.4	18.0
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
186.2	Liquid (gm)		
0.0	less rinse (gm)		
186.2	Net Liquid (gm)	186.2	☑ QA/QC OK
+ 18.0	Silica Gel (gm)	18.0	☑ QA/QC OK
204.2	Total Vlc (gm)	204.2	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	652.2	536.6	115.6
Impinger 2	DI Water	609.3	540.2	69.1
Impinger 3	Empty	446.6	433.5	13.1
Impinger 4	Silica Gel	780.9	765.0	15.9
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
197.8	Liquid (gm)		
0.0	less rinse (gm)		
197.8	Net Liquid (gm)	197.8	☑ QA/QC OK
+ 15.9	Silica Gel (gm)	15.9	☑ QA/QC OK
213.7	Total Vlc (gm)	213.7	☑ QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	662.3	539.4	122.9
Impinger 2	DI Water	598.1	543.1	55.0
Impinger 3	Empty	462.8	448.3	14.5
Impinger 4	Silica Gel	702.5	685.7	16.8
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
192.4	Liquid (gm)		
0.0	less rinse (gm)		
192.4	Net Liquid (gm)	192.4	☑ QA/QC OK
+ 16.8	Silica Gel (gm)	16.8	☑ QA/QC OK
209.2	Total Vlc (gm)	209.2	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 3 SDA Inlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/16/10
Start Time: 07:17
Stop Time: 08:17
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 17 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -2.1
O_2 (dry volume %): 8.59
CO_2 (dry volume %): 10.72
N_2+CO (dry volume %): 80.69

H_2O (condensate, ml or gm): 146.7
H_2O (silica, g): 13.1
Actual Moisture (%): 17.53

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-5
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 61-8
Meter ΔH@: 1.75800
Meter Y_d: 0.99160

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			992.610						
1-01	5.0		1.20	995.700	501	67	66		3.09	
1-01	10.0		1.20	998.550	501	68	66		2.85	
1-01	15.0		1.20	1001.490	500	69	67		2.94	
1-01	20.0		1.20	1004.480	502	71	67		2.99	
1-01	25.0		1.20	1007.470	506	73	68		2.99	
1-01	30.0		1.20	1010.480	505	74	69		3.01	
1-01	35.0		1.20	1013.450	505	75	69		2.97	
1-01	40.0		1.20	1016.480	505	75	69		3.03	
1-01	45.0		1.20	1019.500	504	75	70		3.02	
1-01	50.0		1.10	1022.490	506	75	70		2.99	
1-01	55.0		1.00	1025.390	502	74	70		2.90	
1-01	60.0		1.00	1028.220	501	73	70		2.83	
Final	60.0		1.15833	35.61000	503.16667	70.41667		0.00000	35.61000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.1580	35.6100	503.1667	70.4166				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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QA/QC ________
Date ________

Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 3 SDA Inlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/16/10
Start Time: 09:04
Stop Time: 10:04
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 14 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -2.0
O_2 (dry volume %): 8.21
CO_2 (dry volume %): 11.07
N_2+CO (dry volume %): 80.72

H_2O (condensate, ml or gm): 149.5
H_2O (silica, g): 12.1
Actual Moisture (%): 17.51

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-5
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 61-8
Meter ΔH@: 1.75800
Meter Y_d: 0.99160

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			28.865						
1-01	5.0		1.20	31.920	508	70	69		3.06	
1-01	10.0		1.20	34.920	510	71	69		3.00	
1-01	15.0		1.20	37.950	508	72	70		3.03	
1-01	20.0		1.20	40.960	509	75	70		3.01	
1-01	25.0		1.20	43.950	510	76	71		2.99	
1-01	30.0		1.20	46.960	510	77	71		3.01	
1-01	35.0		1.20	49.970	508	77	71		3.01	
1-01	40.0		1.20	52.980	508	78	72		3.01	
1-01	45.0		1.20	56.020	509	78	72		3.04	
1-01	50.0		1.20	59.040	511	78	72		3.02	
1-01	55.0		1.20	62.070	514	78	72		3.03	
1-01	60.0		1.20	65.115	510	78	73		3.04	
Final	60.0		1.20000	36.25000	509.58333	73.33333		0.00000	36.25000	

1 points sampled

QC-Check: Field Averages	Sq.RtΔP	ΔH	Metered	Stack	Dry Gas Meter
		1.2000	36.2500	509.5833	73.3333
	☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 3 SDA Inlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/16/10
Start Time: 10:32
Stop Time: 11:32
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 17 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -2.2
O_2 (dry volume %): 8.07
CO_2 (dry volume %): 11.16
N_2+CO (dry volume %): 80.77

H_2O (condensate, ml or gm): 138.7
H_2O (silica, g): 9.7
Actual Moisture (%): 16.72

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-5
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 61-8
Meter ΔH@: 1.75800
Meter Y_d: 0.99160

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	$T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			65.410						
1-01	5.0		1.20	68.320	508	74	73		2.91	
1-01	10.0		1.20	71.200	507	75	73		2.88	
1-01	15.0		1.20	74.140	505	77	73		2.94	
1-01	20.0		1.20	77.120	508	78	73		2.98	
1-01	25.0		1.20	80.000	510	80	74		2.88	
1-01	30.0		1.20	82.970	508	81	75		2.97	
1-01	35.0		1.20	86.020	507	81	75		3.05	
1-01	40.0		1.20	89.020	509	81	75		3.00	
1-01	45.0		1.20	92.060	509	82	77		3.04	
1-01	50.0		1.20	95.020	509	82	78		2.96	
1-01	55.0		1.10	**98.020**	509	82	78		3.00	
1-01	60.0		1.00	100.865	509	83	78		2.85	
Final	60.0		1.17500	35.45500	508.16667	77.41667		0.00000	35.45500	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.1750	35.4550	508.1667	77.4167				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method:	USEPA Method 26A
Analyte:	HCl

Location: Unit 3 SDA Inlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.72000		8.59000	80.69000	30.05880	1.14832	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		11.07000		8.21000	80.72000	30.09960	1.14634	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		11.16000		8.07000	80.77000	30.10840	1.14964	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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QA/QC ________
Date ________

USEPA Method 4 Laboratory Data

Location:	Unit 3 SDA Inlet	Test Method:	USEPA Method 26A
Client:	Wheelabrator North Broward, Inc.	Analyte:	HCl
Project No:	10955	Analyst:	B. Wiltse
		Analyst Emp No:	561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	506.6	468.1	38.5
Impinger 2	100 ml 0.1N H2SO4	615.6	531.2	84.4
Impinger 3	100 ml 0.1N H2SO4	566.9	548.5	18.4
Impinger 4	Empty	431.7	426.3	5.4
Impinger 5	Silica Gel	747.1	734.0	13.1
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
146.7	Liquid (gm)		
0.0	less rinse (gm)		
146.7	Net Liquid (gm)	146.7	☑ QA/QC OK
+ 13.1	Silica Gel (gm)	13.1	☑ QA/QC OK
159.8	Total Vlc (gm)	159.8	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	504.1	451.1	53.0
Impinger 2	100 ml 0.1N H2SO4	629.9	554.4	75.5
Impinger 3	100 ml 0.1N H2SO4	556.7	538.6	18.1
Impinger 4	Empty	463.6	460.7	2.9
Impinger 5	Silica Gel	741.3	729.2	12.1
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
149.5	Liquid (gm)		
0.0	less rinse (gm)		
149.5	Net Liquid (gm)	149.5	☑ QA/QC OK
+ 12.1	Silica Gel (gm)	12.1	☑ QA/QC OK
161.6	Total Vlc (gm)	161.6	☑ QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	507.8	468.5	39.3
Impinger 2	100 ml 0.1N H2SO4	610.7	534.3	76.4
Impinger 3	100 ml 0.1N H2SO4	572.1	553.2	18.9
Impinger 4	Empty	432.4	428.3	4.1
Impinger 5	Silica Gel	756.5	746.8	9.7
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
138.7	Liquid (gm)		
0.0	less rinse (gm)		
138.7	Net Liquid (gm)	138.7	☑ QA/QC OK
+ 9.7	Silica Gel (gm)	9.7	☑ QA/QC OK
148.4	Total Vlc (gm)	148.4	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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QA/QC ________
Date ________

Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 3 FF Outlet
Test Run: 1
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/16/10
Start Time: 07:17
Stop Time: 08:17
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.4
O_2 (dry volume %): 9.03
CO_2 (dry volume %): 10.27
N_2+CO (dry volume %): 80.70

H_2O (condensate, ml or gm): 205.9
H_2O (silica, g): 29.6
Actual Moisture (%): 20.83

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-11
Meter ΔH@: 1.73790
Meter Y_d: 0.98920

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in. H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			230.130						
3-01	5.0		1.50	233.540	300	56	59		3.41	
3-01	10.0		1.50	236.990	300	56	59		3.45	
3-01	15.0		1.50	240.400	299	53	58		3.41	
3-01	20.0		1.50	243.840	299	51	59		3.44	
3-01	25.0		1.50	247.300	299	49	60		3.46	
3-01	30.0		1.50	250.670	299	49	61		3.37	
3-01	35.0		1.50	254.170	300	48	62		3.50	
3-01	40.0		1.50	257.500	299	49	63		3.33	
3-01	45.0		1.50	261.100	299	51	63		3.60	
3-01	50.0		1.50	264.550	299	51	64		3.45	
3-01	55.0		1.50	268.020	299	51	65		3.47	
3-01	60.0		1.50	271.470	299	51	65		3.45	
Final	60.0		1.50000	41.34000	299.25000	56.37500		0.00000	41.34000	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.3400	299.2500	56.3750				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC ________
Date ________

Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 3 FF Outlet
Test Run: 2
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski | 567
Probe Operator:
Test Date: 3/16/10
Start Time: 09:04
Stop Time: 10:04
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -11.2
O_2 (dry volume %): 9.10
CO_2 (dry volume %): 10.22
N_2+CO (dry volume %): 80.68

H_2O (condensate, ml or gm): 221.3
H_2O (silica, g): 19.4
Actual Moisture (%): 21.33

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 61-11
Meter ΔH@: 1.73790
Meter Y_d: 0.98920

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{\text{in. } H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			272.930						
3-01	5.0		1.50	276.420	304	62	65		3.49	
3-01	10.0		1.50	279.800	303	62	65		3.38	
3-01	15.0		1.50	283.180	299	56	64		3.38	
3-01	20.0		1.50	286.530	300	55	64		3.35	
3-01	25.0		1.50	289.950	300	53	64		3.42	
3-01	30.0		1.50	293.410	300	53	65		3.46	
3-01	35.0		1.50	296.900	299	54	66		3.49	
3-01	40.0		1.50	300.330	300	54	66		3.43	
3-01	45.0		1.50	303.820	300	54	67		3.49	
3-01	50.0		1.50	307.300	300	54	67		3.48	
3-01	55.0		1.50	310.780	300	55	68		3.48	
3-01	60.0		1.50	314.270	299	56	68		3.49	
Final	60.0		1.50000	41.34000	300.33333	60.70833		0.00000	41.34000	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.3400	300.3333	60.7083				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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QA/QC ________
Date ________

Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 3 FF Outlet
Test Run: 3
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/16/10
Start Time: 10:32
Stop Time: 11:32
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.7
O_2 (dry volume %): 8.92
CO_2 (dry volume %): 10.38
N_2+CO (dry volume %): 80.70

H_2O (condensate, ml or gm): 226.6
H_2O (silica, g): 20.5
Actual Moisture (%): 21.82

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-3
Pitot C_p: 0.8400
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 61-11
Meter ΔH@: 1.73790
Meter Y_d: 0.98920

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter T_{m-in} (°F)	Dry Gas Meter T_{m-out} (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft³)	Isokinetics (calculated) (%)
	0.0			315.150						
3-01	5.0		1.50	318.530	300	63	68		3.38	
3-01	10.0		1.50	321.960	300	63	68		3.43	
3-01	15.0		1.50	325.380	299	59	68		3.42	
3-01	20.0		1.50	328.970	299	58	69		3.59	
3-01	25.0		1.50	332.290	299	58	69		3.32	
3-01	30.0		1.50	335.690	299	59	70		3.40	
3-01	35.0		1.50	339.230	299	59	71		3.54	
3-01	40.0		1.50	342.680	299	59	72		3.45	
3-01	45.0		1.50	346.200	299	60	72		3.52	
3-01	50.0		1.50	349.730	299	61	73		3.53	
3-01	55.0		1.50	353.240	300	61	74		3.51	
3-01	60.0		1.50	356.755	299	63	74		3.51	
Final	60.0		1.50000	41.60500	299.25000	65.45833		0.00000	41.60500	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.6050	299.2500	65.4583				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Date ________

USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 3 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955
Method: EPA Method 3
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.27000		9.03000	80.70000	30.00440	1.15579	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.22000		9.10000	80.68000	29.99920	1.15460	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.38000		8.92000	80.70000	30.01760	1.15414	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Date ________

USEPA Method 4 Laboratory Data

Location: Unit 3 FF Outlet
Client: Wheelabrator North Broward, Inc.
Project No: 10955

Test Method: **USEPA Method 26A**
Analyte: **HCl**
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	505.4	472.7	32.7
Impinger 2	100 ml 0.1N H2SO4	730.5	637.4	93.1
Impinger 3	100 ml 0.1N H2SO4	594.7	533.5	61.2
Impinger 4	Empty	464.1	445.2	18.9
Impinger 5	Silica Gel	760.9	731.3	29.6
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
205.9	Liquid (gm)		
0.0	less rinse (gm)		
205.9	Net Liquid (gm)	205.9	☑QA/QC OK
+ 29.6	Silica Gel (gm)	29.6	☑QA/QC OK
235.5	Total Vlc (gm)	235.5	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	510.0	465.0	45.0
Impinger 2	100 ml 0.1N H2SO4	669.7	558.4	111.3
Impinger 3	100 ml 0.1N H2SO4	603.7	550.9	52.8
Impinger 4	Empty	466.6	454.4	12.2
Impinger 5	Silica Gel	785.7	766.3	19.4
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
221.3	Liquid (gm)		
0.0	less rinse (gm)		
221.3	Net Liquid (gm)	221.3	☑QA/QC OK
+ 19.4	Silica Gel (gm)	19.4	☑QA/QC OK
240.7	Total Vlc (gm)	240.7	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	520.3	473.4	46.9
Impinger 2	100 ml 0.1N H2SO4	751.2	643.1	108.1
Impinger 3	100 ml 0.1N H2SO4	583.8	535.6	48.2
Impinger 4	Empty	471.5	448.1	23.4
Impinger 5	Silica Gel	780.7	760.2	20.5
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
226.6	Liquid (gm)		
0.0	less rinse (gm)		
226.6	Net Liquid (gm)	226.6	☑QA/QC OK
+ 20.5	Silica Gel (gm)	20.5	☑QA/QC OK
247.1	Total Vlc (gm)	247.1	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐QA/QC OK
	Silica Gel (gm)		☐QA/QC OK
	Total Vlc (gm)		☐QA/QC OK

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QA/QC ________
Date ________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 16, 2010
Start Time 11:46
Stop time 12:20
IGS Bag Analysis

		Channel 1	Channel 2
		CO2	**O2**
		%dv	**%dv**
Calibration Checks			
C_{oi}	Initial zero	0.055	0.031
C_{ui}	Initial upscale	5.930	14.164
C_{of}	Final zero	0.052	0.020
C_{uf}	Final upscale	5.911	14.111
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U3 R1 M26A Out**	
C_{Avg}	Average conc.	10.25	9.06
C_{Gas}	**Bias adjusted**	**10.27**	**9.03**
Analyzer Averages (concentrations)		**U3 R2 M26A Out**	
C_{Avg}	Average conc.	10.20	9.13
C_{Gas}	**Bias adjusted**	**10.22**	**9.10**
Analyzer Averages (concentrations)		**U3 R3 M26A Out**	
C_{Avg}	Average conc.	10.36	8.96
C_{Gas}	**Bias adjusted**	**10.38**	**8.92**
Analyzer Averages (concentrations)		**U3 R1 M26A Inlet**	
C_{Avg}	Average conc.	10.70	8.62
C_{Gas}	**Bias adjusted**	**10.72**	**8.59**
Analyzer Averages (concentrations)		**U3 R2 M26A Inlet**	
C_{Avg}	Average conc.	11.04	8.24
C_{Gas}	**Bias adjusted**	**11.07**	**8.21**
Analyzer Averages (concentrations)		**U3 R3 M26A Inlet**	
C_{Avg}	Average conc.	11.13	8.10
C_{Gas}	**Bias adjusted**	**11.16**	**8.07**
Analyzer Averages (concentrations)		**U1 R1 M5/29**	
C_{Avg}	Average conc.	9.86	9.57
C_{Gas}	**Bias adjusted**	**9.88**	**9.53**
Analyzer Averages (concentrations)		**U1 R2 M5/29**	
C_{Avg}	Average conc.	9.91	9.49
C_{Gas}	**Bias adjusted**	**9.93**	**9.46**

Clock Time (at end of sample period)

032910 145749

11:47:57	0.055	0.031
11:48:12	0.054	2.352

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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 16, 2010
Start Time 11:46
Stop time 12:20
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
11:48:27	0.997	17.891	
11:48:42	2.099	14.181	
11:47:57	**0.055**	**0.031**	**zero**
11:48:12	0.054	2.352	
11:48:27	0.997	17.891	
11:48:42	2.099	14.181	
11:48:57	5.861	14.171	
11:49:12	5.634	14.152	
11:49:27	5.912	14.173	
11:49:42	5.922	14.164	
11:49:57	**5.930**	**14.164**	**span**
11:50:12	5.586	15.142	
11:50:27	1.058	19.321	
11:50:42	12.047	7.041	
11:50:57	13.813	6.070	
11:51:12	13.852	6.050	
11:51:27	**13.869**	**6.038**	**linearity**
11:51:42	13.879	6.058	
11:51:57	8.965	13.254	
11:52:12	0.387	20.776	
11:52:27	0.198	20.890	
11:52:42	0.079	20.460	
11:52:57	8.179	10.359	
11:53:12	10.193	9.083	
11:53:27	8.580	9.043	
11:53:42	8.828	8.418	
11:53:57	9.093	8.302	
11:54:12	9.633	7.944	
11:54:27	10.247	9.060	
11:54:42	**10.250**	**9.060**	**U3 R1 M26A Out**
11:54:57	9.630	10.816	
11:55:12	1.050	20.336	
11:55:27	0.430	19.948	
11:55:42	8.808	9.972	
11:55:57	10.175	9.152	
11:56:12	**10.195**	**9.129**	**U3 R2 M26A Out**
11:56:27	10.203	9.124	
11:56:42	8.220	12.792	
11:56:57	0.531	20.626	
11:57:12	5.931	12.747	
11:57:27	10.302	9.008	
11:57:42	10.351	8.968	
11:57:57	**10.358**	**8.958**	**U3 R3 M26A Out**
11:58:12	10.364	8.956	
11:58:27	7.881	13.269	
11:58:42	0.437	20.691	
11:58:57	3.369	15.792	
11:59:12	10.510	8.769	

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SS CEM Version 06-2004a

QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 16, 2010
Start Time 11:46
Stop time 12:20
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
11:59:27	10.677	8.669	
11:59:42	10.690	8.652	
11:59:57	**10.698**	**8.622**	**U3 R1 M26A Inlet**
12:00:12	10.700	8.630	
12:00:27	10.704	8.639	
12:00:42	4.095	17.884	
12:00:57	0.296	20.704	
12:01:12	5.342	13.457	
12:01:27	10.926	8.339	
12:01:42	11.012	8.288	
12:01:57	11.031	8.269	
12:02:12	11.036	8.241	
12:02:27	**11.042**	**8.238**	**U3 R2 M26A Inlet**
12:02:42	11.045	8.248	
12:02:57	11.046	8.235	
12:03:12	4.728	17.206	
12:03:27	0.259	20.802	
12:03:42	0.209	20.856	
12:03:57	2.003	17.322	
12:04:12	10.716	8.334	
12:04:27	11.111	8.118	
12:04:42	**11.133**	**8.099**	**U3 R3 M26A Inlet**
12:04:57	11.142	8.091	
12:05:12	11.146	8.089	
12:05:27	4.240	17.787	
12:05:42	0.304	20.420	
12:05:57	7.913	10.810	
12:06:12	9.835	9.570	
12:06:27	**9.862**	**9.568**	**U1 R1 M5/29**
12:06:42	9.872	9.562	
12:06:57	8.241	12.715	
12:07:12	0.558	20.631	<-- Paused at 12:07:33 -
12:15:13	0.140	20.923	
12:15:28	1.715	17.916	
12:15:43	9.504	9.714	
12:15:58	9.889	9.500	
12:16:13	**9.909**	**9.492**	**U1 R2 M5/29**
12:16:28	9.870	9.956	
12:16:43	2.067	19.709	
12:16:58	0.816	19.503	
12:17:13	5.548	14.313	
12:17:28	5.891	14.117	
12:17:43	5.887	14.109	
12:17:58	**5.911**	**14.111**	**span**
12:18:13	5.240	15.561	
12:18:28	0.473	13.097	
12:18:43	0.095	0.281	
12:18:58	0.043	0.052	

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SS CEM Version 06-2004a

QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 16, 2010
Start Time 11:46
Stop time 12:20
IGS Bag Analysis

	Channel 1	Channel 2	
	CO_2	O_2	
	%dv	%dv	
12:19:13	0.060	0.021	
12:19:28	**0.052**	**0.020**	**Zero**
12:19:43	0.064	6.117	
12:19:58	0.138	20.451	
12:20:13	0.140	20.859	

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SS CEM Version 06-2004a

QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 16, 2010
Start Time 16:04
Stop time 16:25
IGS Bag Analysis

		Channel 1 CO_2 %dv	Channel 2 O_2 %dv
Calibration Checks			
C_{oi}	Initial zero	0.057	0.108
C_{ui}	Initial upscale	5.926	14.080
C_{of}	Final zero	0.067	0.106
C_{uf}	Final upscale	5.943	14.128
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U1 R3 5/29**	
C_{Avg}	Average conc.	9.83	9.78
C_{Gas}	**Bias adjusted**	**9.83**	**9.74**
Analyzer Averages (concentrations)		**U2 R1 M23**	
C_{Avg}	Average conc.	9.74	9.72
C_{Gas}	**Bias adjusted**	**9.74**	**9.68**
Analyzer Averages (concentrations)		**U3 R1 M13B**	
C_{Avg}	Average conc.	9.71	9.94
C_{Gas}	**Bias adjusted**	**9.71**	**9.90**
Analyzer Averages (concentrations)		**U3 R2 M13B**	
C_{Avg}	Average conc.	10.04	9.56
C_{Gas}	**Bias adjusted**	**10.04**	**9.53**
Analyzer Averages (concentrations)		**U3 R3 M13B**	
C_{Avg}	Average conc.	9.96	9.76
C_{Gas}	**Bias adjusted**	**9.96**	**9.72**

Clock Time (at end of sample period)

032910 145749

16:05:32	0.038	0.154	
16:05:47	0.040	0.119	
16:06:02	0.057	0.108	
16:05:32	0.038	0.154	
16:05:47	0.040	0.119	
16:06:02	**0.057**	**0.108**	**zero**
16:06:17	0.057	2.464	
16:06:32	0.111	19.561	
16:06:47	1.148	18.780	
16:07:02	5.525	14.167	
16:07:17	5.839	14.057	
16:07:32	5.906	14.073	
16:07:47	**5.926**	**14.080**	**span**
16:08:02	5.689	14.863	
16:08:17	0.749	20.467	

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Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 16, 2010
Start Time 16:04
Stop time 16:25
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
16:08:32	2.664	16.635	
16:08:47	13.495	6.328	
16:09:02	13.932	6.071	
16:09:17	**13.962**	**6.060**	**linearity**
16:09:32	13.969	6.050	
16:09:47	11.148	10.822	
16:10:02	0.606	20.559	
16:10:17	2.063	17.524	
16:10:32	9.494	9.961	
16:10:47	9.808	9.787	
16:11:02	**9.830**	**9.776**	**U1 R3 5/29**
16:11:17	9.846	9.779	
16:11:32	9.845	9.950	
16:11:47	2.633	19.252	
16:12:02	0.192	20.821	
16:12:17	2.751	16.600	
16:12:32	9.524	9.838	
16:12:47	9.723	9.726	
16:13:02	**9.740**	**9.719**	**U2 R1 M23**
16:13:17	9.749	9.711	
16:13:32	6.749	14.549	
16:13:47	0.323	20.761	
16:14:02	3.790	15.442	
16:14:17	9.501	10.006	
16:14:32	9.697	9.949	
16:14:47	9.706	9.945	
16:15:02	**9.715**	**9.938**	**U3 R1 M13B**
16:15:17	9.722	9.935	
16:15:32	9.717	10.081	
16:15:47	2.674	19.243	
16:16:02	0.228	20.729	
16:16:17	6.796	12.014	
16:16:32	9.981	9.616	
16:16:47	10.021	9.577	
16:17:02	10.036	9.577	
16:17:17	10.039	9.574	
16:17:32	**10.043**	**9.565**	**U3 R2 M13B**
16:17:47	10.045	9.566	
16:18:02	10.044	9.569	
16:18:17	10.045	9.575	
16:18:32	5.333	16.371	
16:18:47	0.255	20.818	
16:19:02	0.174	20.879	
16:19:17	0.156	20.895	
16:19:32	0.148	20.900	
16:19:47	0.140	20.907	
16:20:02	3.628	15.645	
16:20:17	9.805	9.848	

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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 16, 2010
Start Time 16:04
Stop time 16:25
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
16:20:32	9.942	9.774	
16:20:47	**9.959**	**9.755**	**U3 R3 M13B**
16:21:02	9.950	9.752	
16:21:17	8.599	12.490	
16:21:32	1.748	18.574	
16:21:47	5.757	14.236	
16:22:02	5.933	14.146	
16:22:17	5.941	14.147	
16:22:32	**5.943**	**14.128**	**span**
16:22:47	5.942	14.141	
16:23:02	4.717	16.300	
16:23:17	0.346	11.283	
16:23:32	0.097	0.278	
16:23:47	0.079	0.131	
16:24:02	**0.067**	**0.106**	**zero**
16:24:17	0.063	0.091	
16:24:32	0.055	0.070	
16:24:47	0.057	1.116	
16:25:02	0.114	18.846	
16:25:17	0.123	20.801	

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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 17, 2010
Start Time 11:51
Stop time 12:18
IGS Bag Analysis

		Channel 1	Channel 2
		CO2	O2
		%dv	%dv
Calibration Checks			
C_{oi}	Initial zero	0.046	0.077
C_{ui}	Initial upscale	5.929	14.157
C_{of}	Final zero	0.077	0.087
C_{uf}	Final upscale	5.935	14.160
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U3 R1 M5/29**	
C_{Avg}	Average conc.	10.45	8.77
C_{Gas}	**Bias adjusted**	**10.46**	**8.71**
Analyzer Averages (concentrations)		**U3 R2 M5/29**	
C_{Avg}	Average conc.	10.93	8.37
C_{Gas}	**Bias adjusted**	**10.94**	**8.30**
Analyzer Averages (concentrations)		**U2 R1 M26A Out**	
C_{Avg}	Average conc.	9.65	9.72
C_{Gas}	**Bias adjusted**	**9.65**	**9.65**
Analyzer Averages (concentrations)		**U2 R2 M26A Out**	
C_{Avg}	Average conc.	9.14	10.45
C_{Gas}	**Bias adjusted**	**9.14**	**10.39**
Analyzer Averages (concentrations)		**U2 R3 M26A Out**	
C_{Avg}	Average conc.	9.94	9.60
C_{Gas}	**Bias adjusted**	**9.95**	**9.53**
Analyzer Averages (concentrations)		**U2 R1 M26A In**	
C_{Avg}	Average conc.	10.85	8.48
C_{Gas}	**Bias adjusted**	**10.86**	**8.41**
Analyzer Averages (concentrations)		**U2 R2 M26A In**	
C_{Avg}	Average conc.	10.19	9.36
C_{Gas}	**Bias adjusted**	**10.19**	**9.29**
Analyzer Averages (concentrations)		**U2 R3 M26A In**	
C_{Avg}	Average conc.	10.73	8.75
C_{Gas}	**Bias adjusted**	**10.74**	**8.68**

Clock Time (at end of sample period)

032910 145749

Clock Time	CO2	O2
11:52:28	0.044	0.216
11:52:43	0.049	0.125

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Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 17, 2010
Start Time 11:51
Stop time 12:18
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
11:52:28	0.044	0.216	
11:52:43	0.049	0.125	
11:52:58	0.048	0.098	
11:53:13	0.025	0.062	
11:53:28	**0.046**	**0.077**	**Zero**
11:53:43	0.041	0.099	
11:53:58	0.120	16.619	
11:54:13	1.998	17.844	
11:54:28	5.909	14.118	
11:54:43	6.003	14.095	
11:54:58	5.917	14.127	
11:55:13	5.923	14.146	
11:55:28	**5.929**	**14.157**	**span**
11:55:43	5.939	14.162	
11:55:58	4.753	16.248	
11:56:13	0.292	20.738	
11:56:28	0.860	19.105	
11:56:43	12.462	6.834	
11:56:58	13.814	6.079	
11:57:13	13.853	6.055	
11:57:28	**13.876**	**6.069**	**linearity**
11:57:43	13.893	6.098	
11:57:58	4.650	17.976	
11:58:13	-4.940	20.681	
11:58:28	0.198	20.866	
11:58:43	-1.575	20.888	
11:58:58	-0.333	20.899	
11:59:13	0.182	20.710	
11:59:28	7.805	10.622	
11:59:43	10.403	8.789	
11:59:58	10.442	8.782	
12:00:13	**10.454**	**8.773**	**U3 R1 M5/29**
12:00:28	10.195	9.909	
12:00:43	1.535	20.037	
12:00:58	1.621	18.032	
12:01:13	10.380	8.709	
12:01:28	10.905	8.391	
12:01:43	10.923	8.374	
12:01:58	**10.933**	**8.368**	**U3 R2 M5/29**
12:02:13	10.927	8.608	
12:02:28	2.861	19.158	
12:02:43	0.252	20.840	
12:02:58	0.196	20.881	
12:03:13	0.581	19.673	
12:03:28	8.566	10.388	
12:03:43	9.615	9.751	
12:03:58	9.649	9.728	
12:04:13	**9.648**	**9.717**	**U2 R1 M26A Out**

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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 17, 2010
Start Time 11:51
Stop time 12:18
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
12:04:28	9.636	9.711	
12:04:43	9.640	9.709	
12:04:58	9.668	9.714	
12:05:13	6.081	15.295	
12:05:28	0.355	20.751	
12:05:43	5.006	14.038	
12:05:58	9.074	10.499	
12:06:13	9.133	10.462	
12:06:28	**9.141**	**10.453**	**U2 R2 M26A Out**
12:06:43	9.145	10.452	
12:06:58	9.150	10.452	
12:07:13	4.732	16.889	
12:07:28	0.290	20.817	
12:07:43	0.364	20.183	
12:07:58	8.272	10.669	
12:08:13	9.902	9.626	
12:08:28	9.935	9.612	
12:08:43	**9.943**	**9.596**	**U2 R3 M26A Out**
12:08:58	9.949	9.592	
12:09:13	4.850	16.902	
12:09:28	0.364	20.427	
12:09:43	8.520	10.034	
12:09:58	10.794	8.509	
12:10:13	10.832	8.488	
12:10:28	10.842	8.480	
12:10:43	**10.849**	**8.476**	**U2 R1 M26A In**
12:10:58	10.852	8.471	
12:11:13	9.313	11.600	
12:11:28	0.889	20.279	
12:11:43	5.267	13.726	
12:11:58	10.117	9.409	
12:12:13	10.168	9.367	
12:12:28	10.173	9.361	
12:12:43	**10.186**	**9.359**	**U2 R2 M26A In**
12:12:58	10.201	9.355	
12:13:13	8.830	12.138	
12:13:28	0.753	20.509	
12:13:43	2.975	16.273	
12:13:58	10.359	8.887	
12:14:13	10.709	8.763	
12:14:28	10.725	8.749	
12:14:43	**10.733**	**8.746**	**U2 R3 M26A In**
12:14:58	10.680	8.732	
12:15:13	4.452	17.479	
12:15:28	0.288	20.814	
12:15:43	0.556	19.946	
12:15:58	5.399	14.447	
12:16:13	5.920	14.160	

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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 17, 2010
Start Time 11:51
Stop time 12:18
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
12:16:28	**5.935**	**14.160**	**span**
12:16:43	5.850	14.613	
12:16:58	1.072	12.268	
12:17:13	0.122	0.327	
12:17:28	0.098	0.124	
12:17:43	0.081	0.102	
12:17:58	**0.077**	**0.087**	**zero**
12:18:13	0.084	2.631	
12:18:28	0.180	19.672	

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Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 17, 2010
Start Time 17:12
Stop time 17:33
IGS Bag Analysis

		Channel 1	Channel 2
		CO2	**O2**
		%dv	**%dv**
Calibration Checks			
C_{oi}	Initial zero	0.045	0.046
C_{ui}	Initial upscale	5.927	14.068
C_{of}	Final zero	0.074	0.094
C_{uf}	Final upscale	5.942	14.161
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U3 R3 M5/29**	
C_{Avg}	Average conc.	10.84	8.76
C_{Gas}	**Bias adjusted**	**10.84**	**8.72**
Analyzer Averages (concentrations)		**U1 R1 M13B**	
C_{Avg}	Average conc.	9.12	10.57
C_{Gas}	**Bias adjusted**	**9.11**	**10.55**
Analyzer Averages (concentrations)		**U1 R2 M13B**	
C_{Avg}	Average conc.	9.63	10.16
C_{Gas}	**Bias adjusted**	**9.62**	**10.13**
Analyzer Averages (concentrations)		**U1 R3 M13B**	
C_{Avg}	Average conc.	9.80	9.99
C_{Gas}	**Bias adjusted**	**9.80**	**9.96**
Analyzer Averages (concentrations)		**U2 R2 M23**	
C_{Avg}	Average conc.	9.84	9.77
C_{Gas}	**Bias adjusted**	**9.84**	**9.74**
Analyzer Averages (concentrations)		**U2 R3 M23**	
C_{Avg}	Average conc.	9.47	10.34
C_{Gas}	**Bias adjusted**	**9.47**	**10.31**

Clock Time (at end of sample period)

032910 145749

Clock Time	CO2	O2	
17:13:05	0.066	2.094	
17:13:20	0.052	0.289	
17:13:05	0.066	2.094	
17:13:20	0.052	0.289	
17:13:35	0.047	0.126	
17:13:50	0.051	0.068	
17:14:05	0.044	0.043	
17:14:20	**0.045**	**0.046**	**zero**
17:14:35	0.055	4.700	
17:14:50	0.126	19.829	

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Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 17, 2010
Start Time 17:12
Stop time 17:33
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
17:15:05	4.352	14.706	
17:15:20	5.645	13.916	
17:15:35	5.735	14.077	
17:15:50	5.900	14.075	
17:16:05	5.916	14.069	
17:16:20	5.911	14.068	
17:16:35	**5.927**	**14.068**	**span**
17:16:50	5.906	14.075	
17:17:05	2.461	18.425	
17:17:20	11.722	7.289	
17:17:35	13.952	6.054	
17:17:50	13.983	6.042	
17:18:05	**14.000**	**6.033**	**linearity**
17:18:20	14.009	6.030	
17:18:35	13.820	7.094	
17:18:50	2.179	19.806	
17:19:05	0.203	20.809	
17:19:20	7.597	11.026	
17:19:35	10.790	8.779	
17:19:50	10.830	8.764	
17:20:05	**10.840**	**8.758**	**U3 R3 M5/29**
17:20:20	10.844	8.755	
17:20:35	6.142	15.638	
17:20:50	0.252	20.854	
17:21:05	6.017	12.921	
17:21:20	9.063	10.599	
17:21:35	9.103	10.583	
17:21:50	**9.115**	**10.574**	**U1 R1 M13B**
17:22:05	9.121	10.589	
17:22:20	4.651	17.060	
17:22:35	0.197	20.882	
17:22:50	0.204	20.504	
17:23:05	7.846	11.207	
17:23:20	9.576	10.154	
17:23:35	9.613	10.159	
17:23:50	**9.625**	**10.159**	**U1 R2 M13B**
17:24:05	9.629	10.152	
17:24:20	6.198	15.376	
17:24:35	0.258	20.844	
17:24:50	1.069	18.890	
17:25:05	9.210	10.299	
17:25:20	9.788	9.994	
17:25:35	**9.799**	**9.987**	**U1 R3 M13B**
17:25:50	9.823	9.994	
17:26:05	7.648	13.186	
17:26:20	0.355	20.738	
17:26:35	0.086	20.920	
17:26:50	0.152	20.943	

Prepared by Clean Air Engineering Proprietary Software
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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 17, 2010
Start Time 17:12
Stop time 17:33
IGS Bag Analysis

	Channel 1 CO_2 %dv	Channel 2 O_2 %dv	
17:27:05	0.685	19.425	
17:27:20	9.018	10.228	
17:27:35	9.791	9.791	
17:27:50	9.821	9.782	
17:28:05	9.816	9.769	
17:28:20	**9.842**	**9.773**	**U2 R2 M23**
17:28:35	9.847	9.768	
17:28:50	8.581	12.439	
17:29:05	0.570	20.694	
17:29:20	0.819	19.334	
17:29:35	8.803	10.724	
17:29:50	9.447	10.362	
17:30:05	9.462	10.341	
17:30:20	**9.471**	**10.338**	**U2 R3 M23**
17:30:35	9.473	10.349	
17:30:50	3.160	18.617	
17:31:05	4.901	14.765	
17:31:20	5.934	14.160	
17:31:35	**5.942**	**14.161**	**span**
17:31:50	5.249	15.662	
17:32:05	0.420	20.784	
17:32:20	0.138	9.619	
17:32:35	0.100	0.208	
17:32:50	0.091	0.119	
17:33:05	**0.074**	**0.094**	**zero**
17:33:20	0.077	0.087	
17:33:35	0.091	7.573	
17:33:50	0.122	20.655	

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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 18, 2010
Start Time 14:19
Stop time 14:56
IGS Bag Analysis

		Channel 1	Channel 2
		CO_2	**O_2**
		%dv	**%dv**
Calibration Checks			
C_{oi}	Initial zero	0.004	-0.014
C_{ui}	Initial upscale	5.898	14.197
C_{of}	Final zero	0.042	0.013
C_{uf}	Final upscale	5.894	14.158
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U2 R1 M13B**	
C_{Avg}	Average conc.	9.25	10.07
C_{Gas}	**Bias adjusted**	**9.29**	**10.02**
Analyzer Averages (concentrations)		**U2 R2 M13B**	
C_{Avg}	Average conc.	9.54	9.69
C_{Gas}	**Bias adjusted**	**9.58**	**9.64**
Analyzer Averages (concentrations)		**U2 R3 M13B**	
C_{Avg}	Average conc.	9.10	10.21
C_{Gas}	**Bias adjusted**	**9.13**	**10.15**
Analyzer Averages (concentrations)		**U1 R1 M26A Out**	
C_{Avg}	Average conc.	9.46	9.93
C_{Gas}	**Bias adjusted**	**9.50**	**9.88**
Analyzer Averages (concentrations)		**U1 R2 M26A Out**	
C_{Avg}	Average conc.	9.63	9.75
C_{Gas}	**Bias adjusted**	**9.67**	**9.69**
Analyzer Averages (concentrations)		**U1 R3 M26A Out**	
C_{Avg}	Average conc.	9.38	10.11
C_{Gas}	**Bias adjusted**	**9.42**	**10.05**
Analyzer Averages (concentrations)		**U1 R1 M26A In**	
C_{Avg}	Average conc.	10.19	9.16
C_{Gas}	**Bias adjusted**	**10.23**	**9.11**
Analyzer Averages (concentrations)		**U1 R2 M26A In**	
C_{Avg}	Average conc.	10.30	9.06
C_{Gas}	**Bias adjusted**	**10.35**	**9.01**
Analyzer Averages (concentrations)		**U1 R3 M26A In**	
C_{Avg}	Average conc.	9.78	9.75
C_{Gas}	**Bias adjusted**	**9.82**	**9.70**

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Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 18, 2010
Start Time 14:19
Stop time 14:56
IGS Bag Analysis

	Channel 1	Channel 2
	CO_2	**O_2**
	%dv	**%dv**
Analyzer Averages (concentrations)	**U2 R1 M5/29**	
C_{Avg} Average conc.	9.22	10.12
C_{Gas} Bias adjusted	**9.25**	**10.07**
Analyzer Averages (concentrations)	**U2 R2 M5/29**	
C_{Avg} Average conc.	9.57	9.80
C_{Gas} Bias adjusted	**9.60**	**9.75**
Analyzer Averages (concentrations)	**U2 R3 M5/29**	
C_{Avg} Average conc.	9.54	9.94
C_{Gas} Bias adjusted	**9.58**	**9.89**

Clock Time (at end of sample period)

032910 145749

14:20:01	0.042	0.206	
14:20:16	0.035	-0.058	
14:20:01	0.042	0.206	
14:20:16	0.035	-0.058	
14:20:31	0.044	-0.083	
14:20:46	0.044	-0.097	
14:21:01	0.049	-0.106	
14:21:16	0.037	-0.048	
14:21:31	0.015	-0.022	
14:21:46	0.014	-0.009	
14:22:01	**0.004**	**-0.014**	**zero**
14:22:16	0.021	5.537	
14:22:31	2.717	16.702	
14:22:46	6.010	14.229	
14:23:01	5.984	14.135	
14:23:16	5.915	14.143	
14:23:31	5.937	14.157	
14:23:46	5.940	14.161	
14:24:01	5.914	14.167	
14:24:16	5.904	14.190	
14:24:31	**5.898**	**14.197**	**span**
14:24:46	4.986	16.027	
14:25:01	0.340	20.872	
14:25:16	0.119	21.004	
14:25:31	6.715	12.063	
14:25:46	13.805	6.058	
14:26:01	13.901	6.012	
14:26:16	**13.948**	**6.014**	**linearity**
14:26:31	13.967	6.034	
14:26:46	4.680	18.026	
14:27:01	0.198	20.959	

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QA/QC__________
Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 18, 2010
Start Time 14:19
Stop time 14:56
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
14:27:16	5.451	13.325	
14:27:31	9.197	10.108	
14:27:46	9.230	10.080	
14:28:01	**9.255**	**10.071**	**U2 R1 M13B**
14:28:16	8.556	11.910	
14:28:31	0.793	20.562	
14:28:46	1.973	17.576	
14:29:01	9.233	9.873	
14:29:16	9.517	9.707	
14:29:31	9.533	9.697	
14:29:46	**9.542**	**9.691**	**U2 R2 M13B**
14:30:01	9.543	9.702	
14:30:16	3.232	18.659	
14:30:31	0.164	20.957	
14:30:46	5.063	13.742	
14:31:01	9.200	10.047	
14:31:16	9.199	10.084	
14:31:31	**9.097**	**10.206**	**U2 R3 M13B**
14:31:46	8.994	10.307	
14:32:01	8.889	10.744	
14:32:16	1.935	19.821	
14:32:31	0.160	20.950	
14:32:46	6.251	12.411	
14:33:01	9.410	9.967	
14:33:16	9.455	9.942	
14:33:31	**9.461**	**9.935**	**U1 R1 M26A Out**
14:33:46	9.469	9.995	
14:34:01	2.827	19.103	
14:34:16	1.539	18.206	
14:34:31	9.236	9.967	
14:34:46	**9.632**	**9.746**	**U1 R2 M26A Out**
14:35:01	9.652	9.733	
14:35:16	9.661	9.827	
14:35:31	2.762	19.187	
14:35:46	0.252	20.795	
14:36:01	6.507	12.206	
14:36:16	9.353	10.140	
14:36:31	9.375	10.114	
14:36:46	**9.382**	**10.106**	**U1 R3 M26A Out**
14:37:01	9.336	10.592	
14:37:16	1.873	19.869	
14:37:31	0.213	20.888	
14:37:46	6.336	12.267	
14:38:01	10.136	9.200	
14:38:16	10.168	9.171	
14:38:31	**10.193**	**9.162**	**U1 R1 M26A In**
14:38:46	10.114	9.145	
14:39:01	10.137	9.154	

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Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 18, 2010
Start Time 14:19
Stop time 14:56
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
14:39:16	10.198	9.154	
14:39:31	3.860	17.989	
14:39:46	0.188	20.768	
14:40:01	7.706	10.804	
14:40:16	10.264	9.075	
14:40:31	10.298	9.060	
14:40:46	**10.304**	**9.058**	**U1 R2 M26A In**
14:41:01	10.287	9.403	
14:41:16	2.334	19.601	
14:41:31	0.165	20.947	
14:41:46	5.210	13.665	
14:42:01	9.738	9.784	
14:42:16	**9.783**	**9.749**	**U1 R3 M26A In**
14:42:31	9.804	9.741	
14:42:46	9.793	9.739	
14:43:01	3.941	17.936	
14:43:16	0.203	20.913	
14:43:31	0.329	20.154	
14:43:46	7.960	10.880	
14:44:01	9.187	10.151	
14:44:16	9.205	10.135	
14:44:31	**9.217**	**10.125**	**U2 R1 M5/29**
14:44:46	9.218	10.121	
14:45:01	5.205	16.260	
14:45:16	0.214	20.907	<-- Paused at 14:45:22 -
14:49:04	0.094	21.004	
14:49:19	0.129	20.799	
14:49:34	7.222	11.369	
14:49:49	9.519	9.845	
14:50:04	9.555	9.810	
14:50:19	**9.567**	**9.800**	**U2 R2 M5/29**
14:50:34	9.572	9.797	
14:50:49	3.524	18.362	
14:51:04	0.195	20.892	
14:51:19	2.073	17.538	
14:51:34	9.241	10.117	
14:51:49	9.519	9.956	
14:52:04	9.536	9.949	
14:52:19	**9.544**	**9.941**	**U2 R3 M5/29**
14:52:34	9.439	10.622	
14:52:49	1.628	20.057	
14:53:04	0.242	20.523	
14:53:19	5.022	14.663	
14:53:34	5.880	14.159	
14:53:49	5.894	14.158	
14:54:04	**5.894**	**14.158**	**span**
14:54:19	5.125	15.781	
14:54:34	0.372	13.231	

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Date__________

Wheelabrator
CleanAir Project No. 10955
North Broward
SDA Inlet, FF Outlet

March 18, 2010
Start Time 14:19
Stop time 14:56
IGS Bag Analysis

	Channel 1	Channel 2	
	CO_2	O_2	
	%dv	%dv	
14:54:49	0.065	0.277	
14:55:04	0.054	0.058	
14:55:19	0.051	0.034	
14:55:34	**0.042**	**0.013**	**zero**
14:55:49	0.046	7.507	
14:56:04	0.098	20.670	

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Date__________

WHEELABRATOR NORTH BROWARD, INC.
Clean Air Project No: 10955
Location: Ash Conveyor/Doors to Baghouse
Date (2009): March 12
Start Time: 7:22
End Time: 8:32

METHOD 22 FIELD DATA PRINTOUT

Run	Clock Time (start)	Observation Period (minutes)	Opacity (%)
1	7:22 7:42	20	0
2	7:47 8:07	20	0
3	8:12 8:32	20	0
		Minimum	**0**
		Average	**0**
		Maximum	**0**

WHEELABRATOR NORTH BROWARD, INC.
Clean Air Project No: 10735
Location: Ash Unloading/Conveyor
Date (2009): March 12
Start Time: 8:43
End Time: 9:54

METHOD 22 FIELD DATA PRINTOUT

Run	Clock Time (start)	Observation Period (minutes)	Opacity (%)
1	8:43 9:03	20	0
2	9:08 9:28	20	0
3	9:33 9:54	20	0
		Minimum	**0**
		Average	**0**
		Maximum	**0**

WHEELABRATOR NORTH BROWARD, INC.
Clean Air Project No: 10735
Location: Rolling Door/Door to Baghouse
Date (2009): March 12
Start Time: 11:10
End Time: 12:20

METHOD 22 FIELD DATA PRINTOUT

Run	Clock Time (start)	Observation Period (minutes)	Opacity (%)
1	11:10 11:30	20	0
2	11:35 11:55	20	0
3	12:00 12:20	20	0
		Minimum	**0**
		Average	**0**
		Maximum	**0**

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LABORATORY DATA

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Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 FF Outlet

USEPA Method 5/29
Gravimetric Laboratory Data Summary

	Run No.	**Blank**	**1**	**2**	**3**
	Date (2010) ☐ Draft Lab Data		Mar 16	Mar 16	Mar 16
	Start Time (approx.)		07:21	10:00	12:36
	Stop Time (approx.)		09:32	12:14	14:47
	Filter(s) ☐ Allow Negative Filter Sum				
m_{f1}	Filter No. 1 residue mass (g)		<0.00010	<0.00010	<0.00010
m_{f2}	Filter No. 2 residue mass (g)		[redacted]	[redacted]	[redacted]
m_{f3}	Filter No. 3 residue mass (g)		[redacted]	[redacted]	[redacted]
m_{f4}	Filter No. 4 residue mass (g)		[redacted]	[redacted]	[redacted]
m_{fr}	*Total filter residue (g)*		<0.00010	<0.00010	<0.00010
m_{filter}	*Particulate on filter(s) (g)*		<0.00010	<0.00010	<0.00010
	First Solvent Rinse				
	Acetone				
ρ_1	Density (g/ml)	0.785			
v_{s1}	Rinse volume (ml)		88.0	90.0	86.0
v_{a1}	Aliquot size (ml)	139.0	88.0	90.0	86.0
r_{a1}	Aliquot residue mass (g)	0.00080	0.00100	0.00270	0.00050
r_{s1}	Sample residue mass (g)		0.00100	0.00270	0.00050
m_{b1}	Allowable blank correction (g)		0.00051	0.00052	0.00049
m_1	Net residue (g)	0.00080	0.00049	0.00218	0.00001
	Second Solvent Rinse				
	N/A				
ρ_2	Density (g/ml)				
v_{s2}	Rinse volume (ml)		[redacted]	[redacted]	[redacted]
v_{a2}	Aliquot size (ml)	[redacted]	[redacted]	[redacted]	[redacted]
r_{a2}	Aliquot residue mass (g)	[redacted]	[redacted]	[redacted]	[redacted]
r_{s2}	Sample residue mass (g)				
m_{b2}	Allowable blank correction (g)				
m_2	Net residue (g)		0.00000	0.00000	0.00000
	Third Solvent Rinse				
	N/A				
ρ_3	Density (g/ml)				
v_{s3}	Rinse volume (ml)		[redacted]	[redacted]	[redacted]
v_{a3}	Aliquot size (ml)	[redacted]	[redacted]	[redacted]	[redacted]
r_{a3}	Aliquot residue mass (g)	[redacted]	[redacted]	[redacted]	[redacted]
r_{s3}	Sample residue mass (g)				
m_{b3}	Allowable blank correction (g)				
m_3	Net residue (g)		0.00000	0.00000	0.00000
m_s	*Total Solvent Residue (g)*		0.00049	0.00218	0.00001
m_T	*Total Gravimetric Result (g)*		0.00049	0.00218	0.00011
m_D	*Minimum Detection Limit (g)*		0.00020	0.00020	0.00020
m_n	*Total Particulate Matter (g)*		0.00049	0.00218	<0.00020

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Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 FF Outlet

USEPA Method 5/29
Gravimetric Laboratory Data Summary

	Run No.	**Blank**	**1**	**2**	**3**
	Date (2010) ☐ Draft Lab Data		Mar 18	Mar 18	Mar 18
	Start Time (approx.)		07:09	09:49	12:27
	Stop Time (approx.)		09:22	12:02	14:39
	Filter(s) ☐ Allow Negative Filter Sum				
m_{f1}	Filter No. 1 residue mass (g)		0.00180	0.00100	0.00090
m_{f2}	Filter No. 2 residue mass (g)				
m_{f3}	Filter No. 3 residue mass (g)				
m_{f4}	Filter No. 4 residue mass (g)				
m_{fr}	*Total filter residue (g)*		0.00180	0.00100	0.00090
m_{filter}	*Particulate on filter(s) (g)*		0.00180	0.00100	0.00090
	First Solvent Rinse				
	Acetone				
ρ_1	Density (g/ml)	0.785			
v_{s1}	Rinse volume (ml)		98.0	67.0	84.0
v_{a1}	Aliquot size (ml)	139.0	98.0	67.0	84.0
r_{a1}	Aliquot residue mass (g)	0.00080	0.00280	0.00170	0.00210
r_{s1}	Sample residue mass (g)		0.00280	0.00170	0.00210
m_{b1}	Allowable blank correction (g)		0.00056	0.00039	0.00048
m_1	Net residue (g)	0.00080	0.00224	0.00131	0.00162
	Second Solvent Rinse				
	N/A				
ρ_2	Density (g/ml)				
v_{s2}	Rinse volume (ml)				
v_{a2}	Aliquot size (ml)				
r_{a2}	Aliquot residue mass (g)				
r_{s2}	Sample residue mass (g)				
m_{b2}	Allowable blank correction (g)				
m_2	Net residue (g)		0.00000	0.00000	0.00000
	Third Solvent Rinse				
	N/A				
ρ_3	Density (g/ml)				
v_{s3}	Rinse volume (ml)				
v_{a3}	Aliquot size (ml)				
r_{a3}	Aliquot residue mass (g)				
r_{s3}	Sample residue mass (g)				
m_{b3}	Allowable blank correction (g)				
m_3	Net residue (g)		0.00000	0.00000	0.00000
m_s	*Total Solvent Residue (g)*		0.00224	0.00131	0.00162
m_T	*Total Gravimetric Result (g)*		0.00404	0.00231	0.00252
m_D	*Minimum Detection Limit (g)*		0.00020	0.00020	0.00020
m_n	*Total Particulate Matter (g)*		0.00404	0.00231	0.00252

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Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 FF Outlet

USEPA Method 5/29
Gravimetric Laboratory Data Summary

	Run No.	**Blank**	**1**	**2**	**3**
	Date (2010) ☐ Draft Lab Data		Mar 17	Mar 17	Mar 17
	Start Time (approx.)		06:50	09:26	11:59
	Stop Time (approx.)		09:03	11:38	14:11
	Filter(s) ☐ Allow Negative Filter Sum				
m_{f1}	Filter No. 1 residue mass (g)		0.00040	<0.00010	0.00100
m_{f2}	Filter No. 2 residue mass (g)				
m_{f3}	Filter No. 3 residue mass (g)				
m_{f4}	Filter No. 4 residue mass (g)				
m_{fr}	*Total filter residue (g)*		0.00040	<0.00010	0.00100
m_{filter}	*Particulate on filter(s) (g)*		0.00040	<0.00010	0.00100
	First Solvent Rinse				
	Acetone				
ρ_1	Density (g/ml)	0.785			
v_{s1}	Rinse volume (ml)		96.0	70.0	81.0
v_{a1}	Aliquot size (ml)	139.0	96.0	70.0	81.0
r_{a1}	Aliquot residue mass (g)	0.00080	0.00130	0.00170	0.00170
r_{s1}	Sample residue mass (g)		0.00130	0.00170	0.00170
m_{b1}	Allowable blank correction (g)		0.00055	0.00040	0.00047
m_1	Net residue (g)	0.00080	0.00075	0.00130	0.00123
	Second Solvent Rinse				
	N/A				
ρ_2	Density (g/ml)				
v_{s2}	Rinse volume (ml)				
v_{a2}	Aliquot size (ml)				
r_{a2}	Aliquot residue mass (g)				
r_{s2}	Sample residue mass (g)				
m_{b2}	Allowable blank correction (g)				
m_2	Net residue (g)		0.00000	0.00000	0.00000
	Third Solvent Rinse				
	N/A				
ρ_3	Density (g/ml)				
v_{s3}	Rinse volume (ml)				
v_{a3}	Aliquot size (ml)				
r_{a3}	Aliquot residue mass (g)				
r_{s3}	Sample residue mass (g)				
m_{b3}	Allowable blank correction (g)				
m_3	Net residue (g)		0.00000	0.00000	0.00000
m_s	*Total Solvent Residue (g)*		0.00075	0.00130	0.00123
m_T	*Total Gravimetric Result (g)*		0.00115	0.00130	0.00223
m_D	*Minimum Detection Limit (g)*		0.00020	0.00020	0.00020
m_n	*Total Particulate Matter (g)*		0.00115	0.00130	0.00223

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Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 FF Outlet

USEPA Method 5/29
Mercury (Hg) Laboratory Parameters

Detection Limits				
$m_{1b\text{-}DL}$	Fraction 1B Detection Limit (µg)	0.0000		
$m_{2b\text{-}DL}$	Fraction 2B Detection Limit (µg)	0.0000		
$m_{3a\text{-}DL}$	Fraction 3A Detection Limit (µg)	0.0000		
$m_{3b\text{-}DL}$	Fraction 3B Detection Limit (µg)	0.0000		
$m_{3c\text{-}DL}$	Fraction 3C Detection Limit (µg)	0.0000		
Blank Analysis				
$m_{1b\text{-}B}$	Fraction 1B Blank (µg)	<0.1000		
$m_{2b\text{-}B}$	Fraction 2B Blank (µg)	<0.2000		
$m_{3a\text{-}B}$	Fraction 3A Blank (µg)	<0.2000		
$m_{3b\text{-}B}$	Fraction 3B Blank (µg)	<0.5000		
$m_{3c\text{-}B}$	Fraction 3C Blank (µg)	<0.4000		
$m_{total\text{-}B}$	Total Blank Amount (µg)	<1.4000		
Run No.		**1**	**2**	**3**
Date (2010)		Mar 16	Mar 16	Mar 16
Start Time (approx.)		07:21	10:00	12:36
Stop Time (approx.)		09:32	12:14	14:47
Sample Analysis				
$m_{1b\text{-}S}$	Fraction 1B Sample (µg)	<0.1000	<0.1000	<0.1000
$m_{2b\text{-}S}$	Fraction 2B Sample (µg)	7.7629	8.8151	9.7549
$m_{3a\text{-}S}$	Fraction 3A Sample (µg)	<0.2000	<0.2000	<0.2000
$m_{3b\text{-}S}$	Fraction 3B Sample (µg)	<0.5000	<0.5000	<0.5000
$m_{3c\text{-}S}$	Fraction 3C Sample (µg)	<0.4000	<0.4000	<0.4000
$m_{total\text{-}S}$	Total Sample Amount (µg)	7.7629	8.8151	9.7549
Allowable Blank				
$m_{T\text{-}B\text{-}allow}$	Total Allowable Blank (µg)	0.0000	0.0000	0.0000
Sample Corrected for Blank				
m_n	Total Sample Amount (µg)	7.7629	8.8151	9.7549
Sample Corrected for Blank				
$m_{n\text{-}1b}$	Fraction 1B (µg)	<0.1000	<0.1000	<0.1000
$m_{n\text{-}2b}$	Fraction 2B (µg)	7.7629	8.8151	9.7549
$m_{n\text{-}3a}$	Fraction 3A (µg)	<0.2000	<0.2000	<0.2000
$m_{n\text{-}3b}$	Fraction 3B (µg)	<0.5000	<0.5000	<0.5000
$m_{n\text{-}3c}$	Fraction 3C (µg)	<0.4000	<0.4000	<0.4000

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Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 FF Outlet

USEPA Method 5/29
Beryllium (Be) Laboratory Parameters

Run No.		**1**	**2**	**3**
Date (2010)		Mar 16	Mar 16	Mar 16
Start Time (approx.)		07:21	10:00	12:36
Stop Time (approx.)		09:32	12:14	14:47
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (µg)	0.0000	0.0000	0.0000
m_{FS}	Matter collected in front half sample (µg)	<0.0500	<0.0500	<0.0500
m_{FB}	Matter collected in front half blank (µg)	<0.0500	<0.0500	<0.0500
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.0000	0.0000	0.0000
m_n	Total matter corrected for allowable blanks (µg)	<0.0500	<0.0500	<0.0500

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Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 FF Outlet

USEPA Method 5/29
Cadmium (Cd) Laboratory Parameters

Run No.		**1**	**2**	**3**
Date (2010)		Mar 16	Mar 16	Mar 16
Start Time (approx.)		07:21	10:00	12:36
Stop Time (approx.)		09:32	12:14	14:47
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (µg)	0.0000	0.0000	0.0000
m_{FS}	Matter collected in front half sample (µg)	<0.2000	0.2093	<0.2000
m_{FB}	Matter collected in front half blank (µg)	<0.2000	<0.2000	<0.2000
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.0000	0.0000	0.0000
m_n	Total matter corrected for allowable blanks (µg)	<0.2000	0.2093	<0.2000

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QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 FF Outlet

USEPA Method 5/29
Lead (Pb) Laboratory Parameters

Run No.		**1**	**2**	**3**
Date (2010)		Mar 16	Mar 16	Mar 16
Start Time (approx.)		07:21	10:00	12:36
Stop Time (approx.)		09:32	12:14	14:47
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (µg)	0.0000	0.0000	0.0000
m_{FS}	Matter collected in front half sample (µg)	1.5388	1.5965	1.7279
m_{FB}	Matter collected in front half blank (µg)	0.4541	0.4541	0.4541
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.4541	0.4541	0.4541
m_n	Total matter corrected for allowable blanks (µg)	1.0847	1.1424	1.2738

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QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 FF Outlet

USEPA Method 5/29
Mercury (Hg) Laboratory Parameters

Detection Limits				
$m_{1b\text{-}DL}$	Fraction 1B Detection Limit (µg)	0.1000		
$m_{2b\text{-}DL}$	Fraction 2B Detection Limit (µg)	0.2000		
$m_{3a\text{-}DL}$	Fraction 3A Detection Limit (µg)	0.2000		
$m_{3b\text{-}DL}$	Fraction 3B Detection Limit (µg)	0.5000		
$m_{3c\text{-}DL}$	Fraction 3C Detection Limit (µg)	0.4000		
Blank Analysis				
$m_{1b\text{-}B}$	Fraction 1B Blank (µg)	<0.1000		
$m_{2b\text{-}B}$	Fraction 2B Blank (µg)	<0.2000		
$m_{3a\text{-}B}$	Fraction 3A Blank (µg)	<0.2000		
$m_{3b\text{-}B}$	Fraction 3B Blank (µg)	<0.5000		
$m_{3c\text{-}B}$	Fraction 3C Blank (µg)	<0.4000		
$m_{total\text{-}B}$	Total Blank Amount (µg)	<1.4000		
Run No.		**1**	**2**	**3**
Date (2010)		Mar 18	Mar 18	Mar 18
Start Time (approx.)		07:09	09:49	12:27
Stop Time (approx.)		09:22	12:02	14:39
Sample Analysis				
$m_{1b\text{-}S}$	Fraction 1B Sample (µg)	<0.1000	<0.1000	<0.1000
$m_{2b\text{-}S}$	Fraction 2B Sample (µg)	9.1977	9.2740	10.1318
$m_{3a\text{-}S}$	Fraction 3A Sample (µg)	<0.2000	<0.2000	<0.2000
$m_{3b\text{-}S}$	Fraction 3B Sample (µg)	<0.5000	<0.5000	<0.5000
$m_{3c\text{-}S}$	Fraction 3C Sample (µg)	<0.4000	<0.4000	<0.4000
$m_{total\text{-}S}$	Total Sample Amount (µg)	9.1977	9.2740	10.1318
Allowable Blank				
$m_{T\text{-}B\text{-}allow}$	Total Allowable Blank (µg)	0.0000	0.0000	0.0000
Sample Corrected for Blank				
m_n	Total Sample Amount (µg)	9.1977	9.2740	10.1318
Sample Corrected for Blank				
$m_{n\text{-}1b}$	Fraction 1B (µg)	<0.1000	<0.1000	<0.1000
$m_{n\text{-}2b}$	Fraction 2B (µg)	9.1977	9.2740	10.1318
$m_{n\text{-}3a}$	Fraction 3A (µg)	<0.2000	<0.2000	<0.2000
$m_{n\text{-}3b}$	Fraction 3B (µg)	<0.5000	<0.5000	<0.5000
$m_{n\text{-}3c}$	Fraction 3C (µg)	<0.4000	<0.4000	<0.4000

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QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 FF Outlet

USEPA Method 5/29
Beryllium (Be) Laboratory Parameters

Run No.		1	2	3
Date (2010)		Mar 18	Mar 18	Mar 18
Start Time (approx.)		07:09	09:49	12:27
Stop Time (approx.)		09:22	12:02	14:39
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (µg)	0.0500	0.0500	0.0500
m_{FS}	Matter collected in front half sample (µg)	<0.0500	<0.0500	<0.0500
m_{FB}	Matter collected in front half blank (µg)	<0.0500	<0.0500	<0.0500
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.0000	0.0000	0.0000
m_n	Total matter corrected for allowable blanks (µg)	<0.0500	<0.0500	<0.0500

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QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 FF Outlet

USEPA Method 5/29
Cadmium (Cd) Laboratory Parameters

Run No.		**1**	**2**	**3**
Date (2010)		Mar 18	Mar 18	Mar 18
Start Time (approx.)		07:09	09:49	12:27
Stop Time (approx.)		09:22	12:02	14:39
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (μg)	0.2000	0.2000	0.2000
m_{FS}	Matter collected in front half sample (μg)	0.4679	<0.2000	<0.2000
m_{FB}	Matter collected in front half blank (μg)	<0.2000	<0.2000	<0.2000
$m_{FB\text{-}allow}$	Allowable front half blank correction (μg)	0.0000	0.0000	0.0000
m_n	Total matter corrected for allowable blanks (μg)	0.4679	<0.2000	<0.2000

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SS Metals-1 Version 2006-12a

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 FF Outlet

USEPA Method 5/29
Lead (Pb) Laboratory Parameters

Run No.		**1**	**2**	**3**
Date (2010)		Mar 18	Mar 18	Mar 18
Start Time (approx.)		07:09	09:49	12:27
Stop Time (approx.)		09:22	12:02	14:39
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (µg)	0.2000	0.2000	0.2000
m_{FS}	Matter collected in front half sample (µg)	2.8948	0.3759	0.4443
m_{FB}	Matter collected in front half blank (µg)	0.4541	0.4541	0.4541
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.4541	0.4541	0.4541
m_n	Total matter corrected for allowable blanks (µg)	2.4408	<0.2000	<0.2000

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SS Metals-1 Version 2006-12a

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 FF Outlet

USEPA Method 5/29
Mercury (Hg) Laboratory Parameters

Detection Limits				
$m_{1b\text{-}DL}$	Fraction 1B Detection Limit (µg)	0.1000		
$m_{2b\text{-}DL}$	Fraction 2B Detection Limit (µg)	0.2000		
$m_{3a\text{-}DL}$	Fraction 3A Detection Limit (µg)	0.2000		
$m_{3b\text{-}DL}$	Fraction 3B Detection Limit (µg)	0.5000		
$m_{3c\text{-}DL}$	Fraction 3C Detection Limit (µg)	0.4000		
Blank Analysis				
$m_{1b\text{-}B}$	Fraction 1B Blank (µg)	<0.1000		
$m_{2b\text{-}B}$	Fraction 2B Blank (µg)	<0.2000		
$m_{3a\text{-}B}$	Fraction 3A Blank (µg)	<0.2000		
$m_{3b\text{-}B}$	Fraction 3B Blank (µg)	<0.5000		
$m_{3c\text{-}B}$	Fraction 3C Blank (µg)	<0.4000		
$m_{total\text{-}B}$	Total Blank Amount (µg)	<1.4000		
Run No.		**1**	**2**	**3**
Date (2010)		Mar 17	Mar 17	Mar 17
Start Time (approx.)		06:50	09:26	11:59
Stop Time (approx.)		09:03	11:38	14:11
Sample Analysis				
$m_{1b\text{-}S}$	Fraction 1B Sample (µg)	<0.1000	<0.1000	<0.1000
$m_{2b\text{-}S}$	Fraction 2B Sample (µg)	8.8257	8.9307	7.6261
$m_{3a\text{-}S}$	Fraction 3A Sample (µg)	<0.2000	<0.2000	<0.2000
$m_{3b\text{-}S}$	Fraction 3B Sample (µg)	<0.5000	<0.5000	<0.5000
$m_{3c\text{-}S}$	Fraction 3C Sample (µg)	<0.4000	<0.4000	<0.4000
$m_{total\text{-}S}$	Total Sample Amount (µg)	8.8257	8.9307	7.6261
Allowable Blank				
$m_{T\text{-}B\text{-}allow}$	Total Allowable Blank (µg)	0.0000	0.0000	0.0000
Sample Corrected for Blank				
m_n	Total Sample Amount (µg)	8.8257	8.9307	7.6261
Sample Corrected for Blank				
$m_{n\text{-}1b}$	Fraction 1B (µg)	<0.1000	<0.1000	<0.1000
$m_{n\text{-}2b}$	Fraction 2B (µg)	8.8257	8.9307	7.6261
$m_{n\text{-}3a}$	Fraction 3A (µg)	<0.2000	<0.2000	<0.2000
$m_{n\text{-}3b}$	Fraction 3B (µg)	<0.5000	<0.5000	<0.5000
$m_{n\text{-}3c}$	Fraction 3C (µg)	<0.4000	<0.4000	<0.4000

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Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 FF Outlet

USEPA Method 5/29
Beryllium (Be) Laboratory Parameters

Run No.		**1**	**2**	**3**
Date (2010)		Mar 17	Mar 17	Mar 17
Start Time (approx.)		06:50	09:26	11:59
Stop Time (approx.)		09:03	11:38	14:11
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (µg)	0.0500	0.0500	0.0500
m_{FS}	Matter collected in front half sample (µg)	<0.0500	<0.0500	<0.0500
m_{FB}	Matter collected in front half blank (µg)	<0.0500	<0.0500	<0.0500
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.0000	0.0000	0.0000
m_n	Total matter corrected for allowable blanks (µg)	<0.0500	<0.0500	<0.0500

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Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 FF Outlet

USEPA Method 5/29
Cadmium (Cd) Laboratory Parameters

Run No.		**1**	**2**	**3**
Date (2010)		Mar 17	Mar 17	Mar 17
Start Time (approx.)		06:50	09:26	11:59
Stop Time (approx.)		09:03	11:38	14:11
Combined Front and Back Analyses				
$m_{F\text{-}DL}$	Front half detection limit (μg)	0.2000	0.2000	0.2000
m_{FS}	Matter collected in front half sample (μg)	<0.2000	<0.2000	<0.2000
m_{FB}	Matter collected in front half blank (μg)	<0.2000	<0.2000	<0.2000
$m_{FB\text{-}allow}$	Allowable front half blank correction (μg)	0.0000	0.0000	0.0000
m_n	Total matter corrected for allowable blanks (μg)	<0.2000	<0.2000	<0.2000

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Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 FF Outlet

USEPA Method 5/29
Lead (Pb) Laboratory Parameters

Run No.		1	2	3
Date (2010)		Mar 17	Mar 17	Mar 17
Start Time (approx.)		06:50	09:26	11:59
Stop Time (approx.)		09:03	11:38	14:11
Combined Front and Back Analyses				
m_{F-DL}	Front half detection limit (µg)	0.2000	0.2000	0.2000
m_{FS}	Matter collected in front half sample (µg)	0.7301	0.6771	0.8289
m_{FB}	Matter collected in front half blank (µg)	0.4541	0.4541	0.4541
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.4541	0.4541	0.4541
m_n	Total matter corrected for allowable blanks (µg)	0.2760	0.2230	0.3748

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Clean Air Engineering, Inc.

500 West Wood Street
Palatine, IL 60067

Project Number: 10955

Particulate Matter, Beryllium,
Cadmium, Lead and Mercury

EPA Methods 5 & 29 Analyses

Analytical Report
14211

el1

Element One, Inc.
5022-C Wrightsville Av., Wilmington, NC 28403
910-793-0128 FAX: 910-792-6853 e1lab@e1lab.com

The following data for Analytical Report 14211
has been reviewed for completeness, accuracy,
adherence to method protocol,
and compliance with quality assurance guidelines.

Review by:

Ana White

Ana White
April 2, 2010

Report Reviewed and Finalized By:

Ken Smith, Laboratory Director
April 2, 2010

SUMMARY OF RESULTS

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Summary of Analysis

Unit 1 - Summary of Method 29 Mercury Analysis

Run Number	---	Average Total Catch, µg	Front half µg	H_2O_2 /HNO_3 µg	Empty Impinger µg	$KMnO_4$ µg	HCl µg
U1 FF Outlet R1	#1	7.76	< 0.1	7.79	< 0.2	< 0.5	< 0.4
	#2		< 0.1	7.73	< 0.2	< 0.5	< 0.4
U1 FF Outlet R2	#1	8.82	< 0.1	8.92	< 0.2	< 0.5	< 0.4
	#2		< 0.1	8.71	< 0.2	< 0.5	< 0.4
U1 FF Outlet R3	#1	9.75	< 0.1	9.77	< 0.2	< 0.5	< 0.4
	#2		< 0.1	9.74	< 0.2	< 0.5	< 0.4

Unit 1 - Summary of Method 5 Particulate Analysis

Fraction	U1 FF O R1 e14211-1 Catch, mg	U1 FF O R2 e14211-2 Catch, mg	U1 FF O R3 e14211-3 Catch, mg
Filter	< 0.1	< 0.1	< 0.1
Rinse	1.0	2.7	0.5
Total PM	1.0	2.7	0.5

Unit 1 - Summary of Method 29 Metals Analysis

Element	U1 FF O R1 e14211-1 Total µg	U1 FF O R2 e14211-2 Total µg	U1 FF O R2 e14211-2 dup Total µg	U1 FF O R3 e14211-3 Total µg
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	< 0.2	0.208	0.211	< 0.2
Lead	1.54	1.60	1.60	1.73

Summary of Analysis

Unit 2 - Summary of Method 29 Mercury Analysis

Run Number		Average Total Catch, µg	Front half µg	H_2O_2 /HNO_3 µg	Empty Impinger µg	$KMnO_4$ µg	HCl µg
U2 FF Outlet R1	#1	9.20	< 0.1	9.25	< 0.2	< 0.5	< 0.4
	#2		< 0.1	9.14	< 0.2	< 0.5	< 0.4
U2 FF Outlet R2	#1	9.27	< 0.1	9.28	< 0.2	< 0.5	< 0.4
	#2		< 0.1	9.27	< 0.2	< 0.5	< 0.4
U2 FF Outlet R3	#1	10.1	< 0.1	10.2	< 0.2	< 0.5	< 0.4
	#2		< 0.1	10.1	< 0.2	< 0.5	< 0.4

Unit 2 - Summary of Method 5 Particulate Analysis

Fraction	U2 FF O R1 e14211-4 Catch, mg	U2 FF O R2 e14211-5 Catch, mg	U2 FF O R3 e14211-6 Catch, mg
Filter	1.8	1.0	0.9
Rinse	2.8	1.7	2.1
Total PM	4.6	2.7	3.0

Unit 2 - Summary of Method 29 Metals Analysis

Element	U2 FF O R1 e14211-4 Total µg	U2 FF O R2 e14211-5 Total µg	U2 FF O R2 e14211-5 dup Total µg	U2 FF O R3 e14211-6 Total µg
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.468	< 0.2	< 0.2	< 0.2
Lead	2.89	0.382	0.370	0.444

Summary of Analysis

Unit 3 - Summary of Method 29 Mercury Analysis

Run Number		Average Total Catch, µg	Front half µg	H_2O_2 /HNO_3 µg	Empty Impinger µg	$KMnO_4$ µg	HCl µg
U3 FF Outlet R1	#1	8.83	< 0.1	8.80	< 0.2	< 0.5	< 0.4
	#2		< 0.1	8.85	< 0.2	< 0.5	< 0.4
U3 FF Outlet R2	#1	8.93	< 0.1	8.97	< 0.2	< 0.5	< 0.4
	#2		< 0.1	8.89	< 0.2	< 0.5	< 0.4
U3 FF Outlet R3	#1	7.63	< 0.1	7.64	< 0.2	< 0.5	< 0.4
	#2		< 0.1	7.61	< 0.2	< 0.5	< 0.4
Field Blank	#1	< 0.5	< 0.1	< 0.3	< 0.2	< 0.5	< 0.4
	#2		< 0.1	< 0.3	< 0.2	< 0.5	< 0.4
Reagent Blank	#1	< 0.5	< 0.1	< 0.2	< 0.2	< 0.5	< 0.4
	#2		< 0.1	< 0.2	< 0.2	< 0.5	< 0.4
Reagent Blank 03.17.10	#1	< 0.5	NA	NA	NA	< 0.5	NA
	#2		NA	NA	NA	< 0.5	NA
Reagent Blank 03.18.10	#1	< 0.5	NA	NA	NA	< 0.5	NA
	#2		NA	NA	NA	< 0.5	NA

Summary of Analysis

Unit 3 - Summary of Method 5 Particulate Analysis

Fraction	U3 FF O R1 e14211-7 Catch, mg	U3 FF O R2 e14211-8 Catch, mg	U3 FF O R3 e14211-9 Catch, mg
Filter	0.4	< 0.1	1.0
Rinse	1.3	1.7	1.7
Total PM	1.7	1.7	2.7

Unit 3 - Summary of Method 29 Metals Analysis

Element	U3 FF O R1 e14211-7 Total µg	U3 FF O R2 e14211-8 Total µg	U3 FF O R2 e14211-8 dup Total µg	U3 FF O R3 e14211-9 Total µg
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	< 0.2	< 0.2	< 0.2	< 0.2
Lead	0.730	0.700	0.654	0.829

Summary of Analysis

Summary of Method 5 Particulate Analysis

Fraction	Reagent Blank e14211-11 Catch, mg
Filter	0.5
Rinse	0.8
Total PM	1.3

Summary of Method 29 Metals Analysis

Element	Field Blank e14211-10 Total µg	Reagent Blank e14211-11 Total µg
Beryllium	< 0.05	< 0.05
Cadmium	< 0.2	< 0.2
Lead	0.290	0.454

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ANALYTICAL NARRATIVE

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Element One Analytical Narrative

Client:	Clean Air, IL	Element One #:	14211
Client ID:	Wheelabrator North Broward	Analyst:	ESS, RDT & KMS
Method:	Method 5/29	Dates Received:	03/22/2010
Analytes:	PM, Be, Cd, Pb & Hg	Dates Analyzed:	03/25-29/2010

Summary of Analysis

The Method 5 particulate samples were analyzed in accordance with EPA Method 5 guidelines. The Method 29 samples were digested, prepared, and analyzed according to Method 29 protocol. Samples were analyzed for mercury on a PerkinElmer FIMS-100 CVAA mercury analyzer. The samples were analyzed for the other metals on a PerkinElmer ELAN 6100 ICP-MS.

Detection Limits

The FIMS-100 CVAA instrument reporting limit for mercury was 0.004 µg per aliquot analyzed. The ICP-MS instrument reporting limits were 0.25µg/L for beryllium and 1.0µg/L for the other metals.

Analysis QA/QC

Duplicate analyses relative percent difference (RPD), spike sample recovery, and second source calibration verification data are summarized in the Quality Control Section. All QA/QC data was within the criteria of the method.

The audit results are summarized in the Quality Control Summary section. Copies of the audit reporting forms are included in the analytical data section.

Additional Comments

The reported results have not been corrected for any blank or spike recovery values. The Method 5 blank correction factor has not been implemented. The ICP analysis of the Field Blank and Reagent Blank samples revealed detectable concentrations of lead. Subsequent analysis produced equivalent results.

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QUALITY CONTROL SUMMARY

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Summary of Quality Control Data

Mercury Duplicate Analysis RPD

(Method 29 QC limits: < %10 for RPD)

Run Number	Front half	H_2O_2/HNO_3	Empty Imp	$KMnO_4$	HCl
U1 FF Outlet R1	NA	0.8%	NA	NA	NA
U1 FF Outlet R2	NA	2.5%	NA	NA	NA
U1 FF Outlet R3	NA	0.3%	NA	NA	NA
U2 FF Outlet R1	NA	1.2%	NA	NA	NA
U2 FF Outlet R2	NA	0.1%	NA	NA	NA
U2 FF Outlet R3	NA	0.6%	NA	NA	NA
U3 FF Outlet R1	NA	0.6%	NA	NA	NA
U3 FF Outlet R2	NA	0.8%	NA	NA	NA
U3 FF Outlet R3	NA	0.5%	NA	NA	NA
Field Blank	NA	NA	NA	NA	NA
Reagent Blank	NA	NA	NA	NA	NA

Mercury Spike Recoveries

(Method 29 QC limits: ±25% for Spike Recoveries)

Run Number		Front half	H2O2/HNO4	Empty Imp	KMnO4	HCl
U1 FF Outlet R3	#1	102%	98%	93%	106%	102%
	#2	102%	96%	94%	106%	102%
U2 FF Outlet R3	#1	102%	99%	103%	88%	101%
	#2	102%	98%	102%	86%	99%
U3 FF Outlet R3	#1	103%	94%	103%	89%	96%
	#2	103%	92%	96%	91%	95%

Summary of Quality Control Data

Metals Duplicate Analysis RPD

(Method 29 QC limits: < 20% for RPD)

Element	U1 FF O R2 RPD	U2 FF O R2 RPD	U3 FF O R2 RPD
Beryllium	NA	NA	NA
Cadmium	1.3%	NA	NA
Lead	0.1%	3.1%	6.8%

Metals Analysis Spike Recoveries

(Method 29 QC limits: ±25% for Spike Recoveries)

Element	U1 FF O R3 Recovery	U2 FF O R3 Recovery	U3 FF O R3 Recovery
Beryllium	85%	85%	87%
Cadmium	86%	87%	88%
Lead	97%	100%	102%

Second Source Calibration Check Recoveries

(Method 29 QC limits: ±10% for Second Source Continuing Check Standard)*

Element	0.25 ppb	1 ppb	50 ppb	100 ppb*	250 ppb
Beryllium	98%	97%	98%	101%	97%
Cadmium		97%	95%	99%	94%
Lead		92%	97%	100%	94%

Summary of Quality Control Data

Summary of Method 29 Mercury Audit Results

Element	HG-6117 e14211-14 Total µg
Mercury	20.4

Summary of Method 29 Metals Audit Results

Element	Fil-6057 e14211-15 Total µg	Filter Blank e14211-16 Total µg
Beryllium	16.3	< 0.025
Cadmium	28.0	< 0.1
Lead	229	0.323

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SAMPLE CUSTODY

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CHAIN OF CUSTODY FORM

14211 M5/29-NB-10955-001

CLIENT Wheelabrator North Broward PROJECT NO. 10955

PLANT Same DEPT. 66

PROJECT MANAGER Scott Brown

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	ANALYSIS REQUESTED: Hg, Be, Cd, Pb	Particulate				ADDITIONAL INFORMATION
	1	Unit 1 FF Outlet	16-Mar	Filter e115-35	1		X	X				
	1	|	16-Mar	Acetone Rinse	1		X	X				
	1	|	16-Mar	Front-Half 0.1N HNO3 Rinse	1		X					
	1	|	16-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X					
	1	|	16-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X					
	1	|	16-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X					
	1	|	16-Mar	Imp. 5,6 HCl Rinse	1		X					
	2	|	16-Mar	Filter e99-23	1		X	X				
	2	|	16-Mar	Acetone Rinse	1		X	X				
	2	|	16-Mar	Front-Half 0.1N HNO3 Rinse	1		X					
	2	|	16-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X					
	2	|	16-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X					
	2	|	16-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X					
	2	V	16-Mar	Imp. 5,6 HCl Rinse			X					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/19/10 11:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: Loa Braton	Date / Time 3/22/10 0917

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature Scott Brown Date 3/19/10

CleanAir ENGINEERING
500 West Wood Street
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(847) 991-3385 fax
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All samples received in good condition in Fisherbrand + QEC Level 2 containers.
No empty container received. LB

CHAIN OF CUSTODY FORM

14211

M5/29-NB-10955-002

CLIENT Wheelabrator North Broward — PROJECT NO. 10955

PLANT Same — DEPT. 66

PROJECT MANAGER Scott Brown

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	Hg, Be, Cd, Pb	Particulate			ADDITIONAL INFORMATION
	3	Unit 1 FF Outlet	16-Mar	Filter e115-35	1		X	X			
	3	|	16-Mar	Acetone Rinse	1		X	X			
	3	|	16-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	3	|	16-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	3	|	16-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	3	|	16-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	3	V	16-Mar	Imp. 5,6 HCl Rinse	1		X				

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Scott Brown	3/19/10 11:20				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
				Lea Braxton	3/22/10 0917

Special Handling Instructions

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Wilmington, NC 28403

PO Number:

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Signature: Scott Brown — Date: 3/19/10

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CHAIN OF CUSTODY FORM

14211 M5/29-NB-10955-003

CLIENT Wheelabrator North Broward
PLANT Same
PROJECT MANAGER Scott Brown
PROJECT NO. 10955
DEPT. 66

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	Hg, Be, Cd, Pb	Particulate			ADDITIONAL INFORMATION
	1	Unit 2 FF Outlet	18-Mar	Filter e115-30	1		X	X			
	1	|	18-Mar	Acetone Rinse	1		X	X			
	1	|	18-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	1	|	18-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	1	|	18-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	1	|	18-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	1	|	18-Mar	Imp. 5,6 HCl Rinse	1		X				
	2	|	18-Mar	Filter e115-31	1		X	X			
	2	|	18-Mar	Acetone Rinse	1		X	X			
	2	|	18-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	2	|	18-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	2	|	18-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	2	|	18-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	18-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/19/10 11:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: Lisa Braton	Date / Time 3/22/10 0917

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature: Scott Brown Date: 3/19/10

CleanAir ENGINEERING

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CHAIN OF CUSTODY FORM

14211 M5/29-NB-10955-004

CLIENT Wheelabrator North Broward — PROJECT NO. 10955
PLANT Same — DEPT. 66
PROJECT MANAGER Scott Brown

ANALYSIS REQUESTED

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	Hg, Be, Cd, Pb	Particulate			ADDITIONAL INFORMATION
	3	Unit 2 FF Outlet	18-Mar	Filter e115-32	1		X	X			
	3	|	18-Mar	Acetone Rinse	1		X	X			
	3	|	18-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	3	|	18-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	3	|	18-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	3	|	18-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	3	V	18-Mar	Imp. 5,6 HCl Rinse	1		X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/19/10 11:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: Lisa Braton	3/22/10 0917

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature: Scott Brown Date: 3/19/10

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CHAIN OF CUSTODY FORM

14211 M5/29-NB-10955-005

CLIENT Wheelabrator North Broward PROJECT NO. 10955
PLANT Same DEPT. 66
PROJECT MANAGER Scott Brown

ANALYSIS REQUESTED

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	Hg, Be, Cd, Pb	Particulate			ADDITIONAL INFORMATION
	1	Unit 3 FF Outlet	17-Mar	Filter e115-26	1		X	X			
	1	|	17-Mar	Acetone Rinse	1		X	X			
	1	|	17-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	1	|	17-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	1	|	17-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	1	|	17-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	1	|	17-Mar	Imp. 5,6 HCl Rinse	1		X				
	2	|	17-Mar	Filter e115-27	1		X	X			
	2	|	17-Mar	Acetone Rinse	1		X	X			
	2	|	17-Mar	Front-Half 0.1N HNO3 Rinse	1		X				Per Scott via phone
	2	|	17-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				03.23.10, use Run #
	2	|	17-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				on lid. LB
	2	|	17-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	17-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/19/10 11:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: Lisa Bratton	3/22/10 0917

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature: Scott Brown Date: 3/19/10

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CHAIN OF CUSTODY FORM

14211 M5/29-NB-10955-006

CLIENT Wheelabrator North Broward PROJECT NO. 10955
PLANT Same DEPT. 66
PROJECT MANAGER Scott Brown

ANALYSIS REQUESTED

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	Hg, Be, Cd, Pb	Particulate				ADDITIONAL INFORMATION
	3	Unit 3 FF Outlet	17-Mar	Filter e115-	1		X	X				
	3	|	17-Mar	Acetone Rinse	1		X	X				
	3	|	17-Mar	Front-Half 0.1N HNO3 Rinse	1		X					
	3	|	17-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X					
	3	|	17-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X					
	3	|	17-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X					
	3	V	17-Mar	Imp. 5,6 HCl Rinse	1		X					
	NA	Reagent Blank	17-Mar	4% KMnO4 / 10% H2SO4	1		X					
	NA	Reagent Blank	18-Mar	4% KMnO4 / 10% H2SO4	1		X					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/19/10 11:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: Lisa Braton	Date / Time 3/22/10 0917

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature Scott Brown Date 3/18/10

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CHAIN OF CUSTODY FORM

14211 M5/29-NB-10955-007

CLIENT Wheelabrator North Broward — PROJECT NO. 10955
PLANT Same — DEPT. 66
PROJECT MANAGER Scott Brown

ANALYSIS REQUESTED: Hg, Be, Cd, Pb

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	Hg, Be, Cd, Pb				ADDITIONAL INFORMATION
	NA	Field Blank	16-Mar	Filter e115-29	1		X				
	NA	|	16-Mar	Front Half Acetone Rinse	1		X				
	NA	|	16-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	NA	|	16-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	NA	|	16-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	NA	|	16-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	NA	V	16-Mar	Imp. 5,6 HCl Rinse	1		X				
	NA	Reagent Blanks	16-Mar	4% KMnO4 / 10% H2SO4	1	100	X				
	NA	|	16-Mar	3 Quartz Filters	1	NA	X				
	NA	|	16-Mar	0.1 N HNO3	1	300	X				
	NA	|	16-Mar	DI H2O	1	100	X				
	NA	|	16-Mar	5% HNO3 / 10% H2O2	1	200	X				
	NA	|	16-Mar	Acetone	1	200	X				
	NA	V	16-Mar	8N HCl / DI H2O	1	225	X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott B	3/19/10 11:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: Lisa Braton	3/22/10 0917

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature: Scott B — Date: 3/19/10

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CHAIN OF CUSTODY FORM

14211 M5/29-NB-10955-008

CLIENT Wheelabrator North Broward
PLANT Same
PROJECT MANAGER Scott Brown

PROJECT NO. 10955
DEPT. 66

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	ANALYSIS REQUESTED: Be, Cd, Pb	Hg			ADDITIONAL INFORMATION
	NA	Audit	17-Mar	4437-01 (FIL-6057)			X				
	NA	Audit	17-Mar	Blank Filter			X				
	NA	Audit	17-Mar	4437-02				X			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	3/19/10 11:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: [signature]	Date / Time 3/22/10 0917

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:

Scott Brown

Signature [signature] Date 3/19/10

CleanAir ENGINEERING

LD8001A_1-COC Palatine_M29, Jul 2002

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ANALYTICAL DATA

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Analytical Calculations

Metals-

Element Results (µg) =ICP Results (µg/L)*Dilution*Final Volume (L)

Where-

ICP Results= Raw sample concentration (ppb)--*ICP-Data Sheet*

Dilution= $\frac{\text{Diluted Volume}}{\text{Aliquot}}$--*ICP-MS Run Sheet*

Final Volume=FH=Final Volume (FV)--*Sample Submission*

BH= $\frac{\text{Received Volume (BV)}}{\text{Aliquot (Used)}}$.*Final Volume (FV)--*Sample Submission*

Combined Results=FH+BH

Mercury-

Mercury Results (µg) = $\mathbf{\frac{\text{CVAA Results (µg)}}{\text{Aliquot (ml)}}}$ ***Final Volume (ml)**

Where-

CVAA Results= Raw sample reading (µg)--*Hg-Data Sheet*

Aliquot= Sample Aliquot (Alq.)--*Hg-Data Sheet*

Final Volume=Final Volume (FV)*--*Sample Submission*

* With the exception of the BH fraction where-
=Received Volume (BV)--*Sample Submission*

Analytical Calculations

Spike Recovery-

$$\text{Spike (\%)} = \frac{\text{(Spiked Result (µg/L) – Sample Result (µg/L))}}{\text{Spike Amount (µg/L)}} \quad X100$$

Where-

Spike Result = Raw sample concentration (ppb)--*ICP-Data Sheet*

Sample Result = Raw sample concentration (ppb)--*ICP-Data Sheet*

Spike Amount--*ICP-MS Spike Table*

Duplicate Analysis RPD-

$$\text{RPD (\%)} = \frac{\text{(Duplicate Result (µg/L) - Sample Result (µg/L))}}{\text{Average (µg/L)}} \quad X100$$

Where-

Sample Result and Duplicate Results=Raw sample concentration (ppb)--*ICP-Data Sheet*

Average=$\frac{\textit{(Duplicate + Sample Results)}}{2}$

elementOne **AIR TESTING SAMPLE SUBMISSION FORM** **Lab ID** **14211**

Analysis Due Date	03.29.10
QA/QC/Report Due Date	03.31.10

Client	Clean Air IL
Project No	10955

Date Rec	03.22.10
Time Rec	0917

HNO_3 Lot: 109630	HF Lot: 5108072	HCl Lot: 4109630	**Ref. Method:**
Volume Marked Y / N	Volume Loss Y / N ?		**29 / 5**

Sample Identification

1	U1 FF Outlet R1	4	U2 FF Outlet R1	7	U3 FF Outlet R1
2	U1 FF Outlet R2	5	U2 FF Outlet R2	8	U3 FF Outlet R2
	U1 FF Outlet R2 Duplicate		U2 FF Outlet R2 Duplicate		U3 FF Outlet R2 Duplicate
3	U1 FF Outlet R3	6	U2 FF Outlet R3	9	U3 FF Outlet R3
	U1 FF Outlet R3 Spike		U2 FF Outlet R3 Spike		U3 FF Outlet R3 Spike

10	Field Blank	12	Reagent Blank 03.17.10 (p.2)	14	M29-4437-02/HG-6117 (p.2)
11	Reagent Blank (p.2)	13	Reagent Blank 03.18.10 (p.2)	15	M29-4437-01/Fil-6057 (p.2)
				16	Audit Filter Blank (p.2)

Analyses Requested	Samples 1-14	Hg
	Samples 1-~~13~~, 15-16	Be, Cd, Pb
	Samples 1-11	PM

Runs / FB	Fil / Ace (FH)		HNO_3 (FH)		5% HNO_3/10% H_2O_2 (BH)			HNO_3 (A)		$KMnO_4$ (B)		HCl (C)	
	pH <2.0 Y / N		pH <2.0 Y / N		pH <2.0 Y / N			pH <2.0 Y / N		pH <2.0 Y / N		pH <2.0 Y / N	
Lab ID	Fil ID	BV ml	BV ml	FV ml	BV ml	Used	FV ml	BV ml	FV ml	BV ml	FV ml	BV ml	FV ml
1	115-35		160	100	720	360	50	108	200	380	500	230	400
2.D	115-36		150		720	360		110		375		230	
3.S	115-37		130		710	355		109		372.5		230	
4	115-30		150		750	375		110		370		230	
5.D	115-31		148		710	355		112		410		230	
6.S	115-32		150		760	380		109		380		230	
7	115-26		160		756	375		110		380		230	
8.D	115-27		130		780	390		110		387.5		230	
9.S	115-28		135		750	375		110		375		230	
10	115-29		150		300	150		112		380		230	

Lab Communications

Per Scott via phone, use Run number on lid. LLB 02.23.10 1135.

SS Page1 of 2
3/23/2010 3:52:42 PM
SS by LLB
Labeled By/Date 3-23-10 ESS

FH Prep By/Date 3-25-10 ES
BH Prep By/Date 3-25-10 ESS
BH/FH Prep By/Date 3-29-10 ESS
PM Prep By / Date 3-25-10 DAP

A Prep By/Date ESS 3-24-10
B Prep By/Date MGM 3/24/10
C Prep By/Date ESS 3-26-10
ID Verification By/Date MGM 3/24/10

elementOne **AIR TESTING SAMPLE SUBMISSION FORM** **Lab ID** **14211**

Analysis	Due Date	03.29.10
QA/QC/Report	Due Date	03.31.10

Client	Clean Air IL
Project No	10955

Date Rec	03.22.10
Time Rec	0917

HNO_3 Lot:	HF Lot:	HCl Lot:	**Ref. Method:**
Volume Marked Y / N	Volume Loss Y / N / ?		**29**

Sample Identification

11	Reagent Blank	14	M29-4437-02/HG-6117		
12	Reagent Blank 03.17.10	15	M29-4437-01/Fil-6057		
13	Reagent Blank 03.18.10	16	Audit Filter Blank		

Analyses Requested	Samples 11-14	Hg
	Samples 11-13, 15-16	Be, Cd, Pb

M-29 Reagent Blank

Lab ID	Fraction			BV, ml	FV, ml	Comments
11	C-7	FH	Acetone Blank			
	C-8A	FH	0.1N HNO_3		100	used 100 mls
	C-8A	A	0.1N HNO_3	307		
	C-8B	B	DI H_2O	103	used 99 mls	
	C-9	BH	5% HNO_3/10% H_2O_2	200 bh + 100 fh = 300		150 Hg 150 metals
	C-10	B	4% $KMnO_4$/10%H_2SO_4	176	used 100 mls	
	C-11	C	8N HCl DI H_2O	230	400	
	C-12	FH	Filter			
12	C-10	B	4% $KMnO_4$/10%H_2SO_4	130		03.17.10 used 33 mls DI 100 mls $KMnO_4$
13	C-10	B	4% $KMnO_4$/10%H_2SO_4	130		03.18.10 used 33 mls DI 100 mls $KMnO_4$

Audits **See Attached Audit Instructions**

Lab ID	Audit ID	Analyses Requested	BV, ml	Prep By / Date
14	HG-6117	Hg		3-26-10 ESS
15	Fil-6057	Be, Cd, Pb		3-29-10 ESS
16	Audit Filter Blank	Be, Cd, Pb		3-29-10 ESS

Lab Communications

SS Page2 of 2
3/23/2010 3:52:42 PM
SS by LRB
Labeled By/Date

FH Prep By/Date
BH Prep By/Date
BH/FH Prep By/Date
PM Prep By / Date

A Prep By/Date
B Prep By/Date MBM 3/24/10
C Prep By/Date
ID Verification By/Date

14211 - 14

Method 29 Compliance Audit Material
(Mercury Acidified Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M29-4437-02/HG-6117 Date Issued: 03/10/10

Auditee:

Company: Element One, Inc.
Address: 5022-C Wrightsville Av.
Wilmington, NC 28403
Phone 910-793-0128 - FAX 792-6853
e1lab@e1lab.com
Attention of: Phone:

Requestor:

Agency: Florida DEP - SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee C. Hoefert Phone: 561-681-6626

Project Name: Wheelabrator North Broward

Audit Results (Results in μg)

Compound	Result
Mercury	20.4 Total μg

14211 - 15
14211 - 16

Method 29 Audit Material
(Multi-Metals Spiked Filter)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M29-4437-01/Fil-6057 Date Issued: 03/10/10

Auditee:

Company: Element One, Inc.

Address: 5022-C Wrightsville Av.
Wilmington, NC 28403
Phone 910-793-0128 - FAX 792-6853
e1lab@e1lab.com

Attention of: Phone:

Requestor:

Agency: Florida DEP - SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee C. Hoefert Phone: 561-681-6626

Project Name: Wheelabrator North Broward

Audit Results (Results in μg)

Analyte	Audit Sample Result	Blank Filter Result
Beryllium	16.3 Total μg	< 0.025 Total μg
Cadmium	28.0 Total μg	< 0.1 Total μg
Lead	229 Total μg	0.323 Total μg

elementOne **Method 5 Particulate** Lab # 14211

Clean AIR Page 1 of 2

Balance checks Date: 3-26-10 2 g = 0.0498

Date: 3-27-10 2g = 0.0498

Date:

Acetone Concentration 3.28E-05 mg/mg

Filters

Sample ID#	Filter ID	Bag ID	A	B		B		B		Catch Description and Loading
			Bag Tare, g	Date - 3/26/10 Initials - RDT		Date - 3/27/10 Initials - RDT		Date Initials		
				Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	
14211-1	e115-35	85	4.1326	5:30	4.4812	3:30	4.4813			
14211-2	e115-36	1988	3.8453	5:30	4.2096	3:30	4.2101			
14211-3	e115-37	2335	4.0350	5:30	4.3844	3:30	4.3846			
14211-4	e115-30	1474	3.9655	5:30	4.3287	3:30	4.3287			
14211-5	e115-31	210	4.0561	5:30	4.4037	3:30	4.4036			
14211-6	e115-32	801	3.5038	5:30	3.8699	3:30	3.8696			
Client Blk HERE	e115-39	50	4.2837	5:30	4.6443	3:30	4.6440			
E1 Blank										

Acetone Rinses

Sample ID#	Sample Volume, ml	Bag ID	C	D		D		D		Catch Description and Loading
			Bag Tare, g	Date - 3/26/10 Initials - RDT		Date - 3/27/10 Initials - RDT		Date Initials		
				Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	
14211-1	88	41	4.4040	5:30	4.4052	3:30	4.4050			
14211-2	90	3822	3.7405	5:30	3.7433	3:30	3.7432			
14211-3	86	1	4.5024	5:30	4.5033	3:30	4.5029			
14211-4	98	227	3.7629	5:30	3.7658	3:30	3.7657			
14211-5	67	765	4.1118	5:30	4.1140	3:30	4.1135			
14211-6	84	205	3.7668	5:30	3.7689	3:30	3.7689			
Client Ace Blk HERE	139	2414	3.3056	5:30	3.3084	3:30	3.3086			
E1 Acetone Blank	100	1032	4.0256	5:30	4.0260	3:30	4.0262			

Total Catches

Sample ID#	Filter ID	Filter Tare, g	Final Filter + Catch, g	Filter Catch, mg	Acetone Bag ID	Bag Tare, g	Final Bag + Acetone Weight, g	Acetone blank, mg	Acetone Catch, mg	Total Catch, mg
14211-1	e115-35	0.3487	4.4812	< 0.1	41	4.404	4.4050	0.0	1.0	1.0
14211-2	e115-36	0.3653	4.2096	< 0.1	3822	3.7405	3.7432	0.0	2.7	2.7
14211-3	e115-37	0.3494	4.3844	< 0.1	1	4.5024	4.5029	0.0	0.5	0.5
14211-4	e115-30	0.3614	4.3287	1.8	227	3.7629	3.7657	0.0	2.8	4.6
14211-5	e115-31	0.3465	4.4036	1.0	765	4.1118	4.1135	0.0	1.7	2.7
14211-6	e115-32	0.3649	3.8696	0.9	205	3.7668	3.7689	0.0	2.1	3.0
Client Ace Blk HERE	e115-39	0.3598	4.6440	0.5	2414	3.3056	3.3084	0.0	0.8	1.3
E1 Acetone					1032	4.0256	4.0260	0.0	0.4	0.4

Element One, Inc. Form 123 - Revision 1.10.23.07

Clean Air

Balance checks
Date: 3-26-10 2 g = 0.0498
Date: 3-27-10 2g = 0.0498
Date:

Acetone Concentration 3.28E-05 mg/mg

Filters

Sample ID #	Filter ID	Bag ID	A	B		B		B		Catch Description and Loading
			Bag Tare, g	Date - 3/26/10 Initials - RDT		Date - 3/27/10 Initials - RDT		Date Initials		
				Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	
14211-7	e115-26	2381	3.7098	5:30	4.0807	3:30	4.0802			
14211-8	e115-27	909	4.0460	5:30	4.3971	3:30	4.3974			
14211-9	e115-28	23	4.5960	5:30	4.9716	3:30	4.9715			
14211-10	e115-29	201	4.0567	5:30	4.4074	3:30	4.4071			
Client Blk HERE	e115-39	50	4.2837	5:30	4.6443	3:30	4.6440			
E1 Blank										

Acetone Rinses

Sample ID #	Sample Volume, ml	Bag ID	C	D		D		D		Catch Description and Loading
			Bag Tare, g	Date - 3/26/10 Initials - RDT		Date - 3/27/10 Initials - RDT		Date Initials		
				Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	
14211-7	96	922	3.7252	5:30	3.7265	3:30	3.7265			
14211-8	70	912	4.0102	5:30	4.0119	3:30	4.0119			
14211-9	81	2377	3.6975	5:30	3.6997	3:30	3.6992			
14211-10	78	1026	4.0320	5:30	4.0340	3:30	4.0340			
Client Ace Blk HERE	139	2414	3.3056	5:30	3.3064	3:30	3.3066			
E1 Acetone Blank	100	1032	4.0256	5:30	4.0260	3:30	4.0262			

Total Catches

Sample ID #	Filter ID	Filter Tare, g	Final Filter + Catch, g	Filter Catch, mg	Acetone Bag ID	Bag Tare, g	Final Bag + Acetone Weight, g	Acetone blank, mg	Acetone Catch, mg	Total Catch, mg
14211-7	e115-26	0.3700	4.0802	0.4	922	3.7252	3.7265	0.0	1.3	1.7
14211-8	e115-27	0.3520	4.3971	< 0.1	912	4.0102	4.0119	0.0	1.7	1.7
14211-9	e115-28	0.3745	4.9715	1.0	2377	3.6975	3.6992	0.0	1.7	2.7
Client Ace Blk HERE	e115-39	0.3598	4.644	0.5	2414	3.3056	3.3064	0.0	0.8	1.3
E1 Acetone					1032	4.0256	4.0260	0.0	0.4	0.4

Element One, Inc. Form 123 - Revision 1.10.23.07

Sample/Batch Report

User Name: icp
Computer Name: D8D4DWD1
Sample File: C:\elandata_icp\Sample\x7.sam
Report Date/Time: Tuesday, March 30, 2010 09:07:56

A/S Loc.	Batch ID	Sample ID	Description	Sample Type	Init. Quant.	Prep. Vol.	Aliquot Vol.	Diluted Vol.	Solids Ratio
5		QC Std 2	CAE	Sample					
62	X1	14211-1	CAE	Sample					
63	X1	14211-2	CAE	Sample					
64	X1d	14211-2	CAE	Duplicate of 3					
65	X1	14211-3	CAE	Sample					
66	X1s	14211-3	CAE	Spike - 1 of 5					
67	X1	14211-4	CAE	Sample					
68	X1	14211-5	CAE	Sample					
69	X1d	14211-5	CAE	Duplicate of 8					
70	X1	14211-6	CAE	Sample					
71	X1s	14211-6	CAE	Spike - 1 of 10					
72	X1	14211-7	CAE	Sample					
73	X1	14211-8	CAE	Sample					
74	X1d	14211-8	CAE	Duplicate of 13					
75	X1	14211-9	CAE	Sample					
76	X1s	14211-9	CAE	Spike - 1 of 15					
77	X1	14211-10	CAE	Sample					
78	x1	14211-11	CAE	Sample					
79	x5	14211-15	CAE	Sample					
80	x20	14211-15	CAE	Sample					
81	x50	14211-15	CAE	Sample					
82	x1	14211-16	CAE	Sample					
11	Be DL	Be DL 0.25	CAE	Sample					

Dataset Report

User Name: icp
Computer Name: D8D4DWD1
Dataset File Path: C:\elandata_icp\DataSet\032910-2\
Report Date/Time: Tuesday, March 30, 2010 09:07:45

Autosampler Position: 3

The Dataset

Time	Sample ID	Batch ID	Read Type	Description	Init. Quant	Prep. Vol.	Aliquot. Vol.	Diluted V
16:39:29 Mon 29-Mar-10	Blank		Blank					
16:41:25 Mon 29-Mar-10	Standard 1		Standard #1					
16:43:22 Mon 29-Mar-10	Standard 2		Standard #2					
16:45:20 Mon 29-Mar-10	Standard 3		Standard #3					
16:47:17 Mon 29-Mar-10	QC Std 1		QC Std #1					
16:49:15 Mon 29-Mar-10	QC Std 2		QC Std #2					
16:51:13 Mon 29-Mar-10	QC Std 3		QC Std #3					
16:53:10 Mon 29-Mar-10	QC Std 4		QC Std #4					
16:55:07 Mon 29-Mar-10	QC Std 5		QC Std #5					
16:57:04 Mon 29-Mar-10	QC Std 6		QC Std #6					
16:59:02 Mon 29-Mar-10	QC Std 7		QC Std #7					
17:01:00 Mon 29-Mar-10	QC Std 8		QC Std #8					
17:02:59 Mon 29-Mar-10	QC Std 9		QC Std #9					
17:04:58 Mon 29-Mar-10	QC Std 10		QC Std #10					
17:06:57 Mon 29-Mar-10	QC Std 2		Sample	CAE				
17:08:55 Mon 29-Mar-10	14211-1	X1	Sample	CAE				
17:10:53 Mon 29-Mar-10	14211-2	X1	Sample	CAE				
17:12:52 Mon 29-Mar-10	14211-2	X1d	Duplicate of 17	CAE				
17:14:50 Mon 29-Mar-10	14211-3	X1	Sample	CAE				
17:16:48 Mon 29-Mar-10	14211-3	X1s	Spike - 1 of 19	CAE				
17:18:46 Mon 29-Mar-10	14211-4	X1	Sample	CAE				
17:20:44 Mon 29-Mar-10	14211-5	X1	Sample	CAE				
17:22:42 Mon 29-Mar-10	14211-5	X1d	Duplicate of 22	CAE				
17:24:41 Mon 29-Mar-10	14211-6	X1	Sample	CAE				
17:26:39 Mon 29-Mar-10	14211-6	X1s	Spike - 1 of 24	CAE				
17:28:43 Mon 29-Mar-10	14211-7	X1	Sample	CAE				
17:30:42 Mon 29-Mar-10	14211-8	X1	Sample	CAE				
17:32:41 Mon 29-Mar-10	14211-8	X1d	Duplicate of 27	CAE				
17:34:39 Mon 29-Mar-10	14211-9	X1	Sample	CAE				
17:36:38 Mon 29-Mar-10	14211-9	X1s	Spike - 1 of 29	CAE				
17:38:36 Mon 29-Mar-10	14211-10	X1	Sample	CAE				
18:03:52 Mon 29-Mar-10	14211-11	x1	Sample	CAE				
18:05:50 Mon 29-Mar-10	14211-15	x5	Sample	CAE				
18:07:49 Mon 29-Mar-10	14211-15	x20	Sample	CAE				
18:09:47 Mon 29-Mar-10	14211-15	x50	Sample	CAE				
18:11:45 Mon 29-Mar-10	14211-16	x1	Sample	CAE				
18:13:44 Mon 29-Mar-10	Be DL 0.25	Be DL	Sample	CAE				
18:15:41 Mon 29-Mar-10	QC Std 1		QC Std #1					
18:17:38 Mon 29-Mar-10	QC Std 4		QC Std #4					

elementOne
Analyst:-KMS--

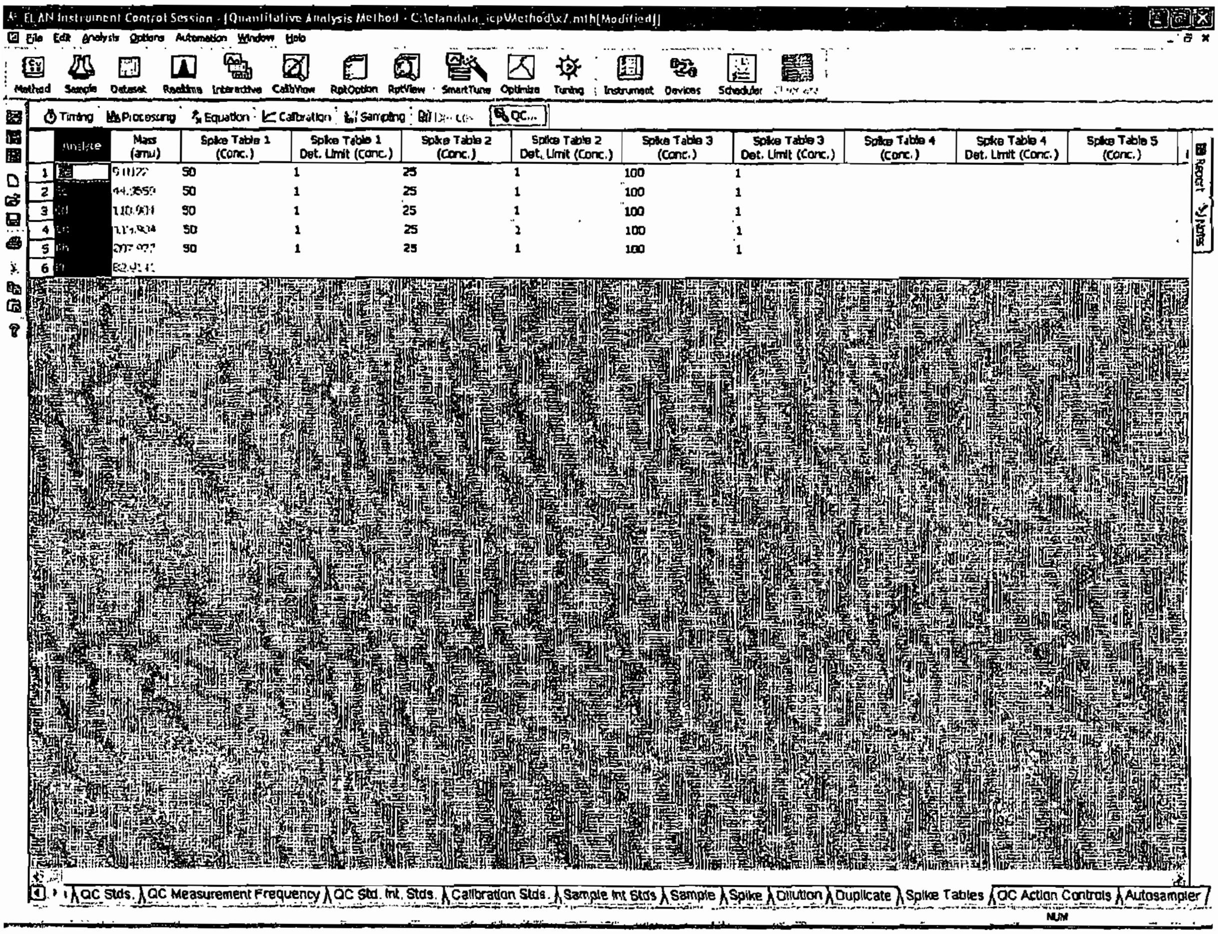
ICP-MS RUN SHEET
3/30/2010

Job Number:
~~14199~~
14211 dus

A/S Loc.	Dilution	Sample ID	Client	Type	Weight (g)	Prep Vol (ml)
5		QC Std 2	CAE	Sample		
62	X1	14211-1	CAE	Sample		
63	X1	14211-2	CAE	Sample		
64	X1d	14211-2	CAE	Duplicate of 3		
65	X1	14211-3	CAE	Sample		
66	X1s	14211-3	CAE	Spike - 1 of 5		
67	X1	14211-4	CAE	Sample		
68	X1	14211-5	CAE	Sample		
69	X1d	14211-5	CAE	Duplicate of 8		
70	X1	14211-6	CAE	Sample		
71	X1s	14211-6	CAE	Spike - 1 of 10		
72	X1	14211-7	CAE	Sample		
73	X1	14211-8	CAE	Sample		
74	X1d	14211-8	CAE	Duplicate of 13		
75	X1	14211-9	CAE	Sample		
76	X1s	14211-9	CAE	Spike - 1 of 15		
77	X1	14211-10	CAE	Sample		
78	x1	14211-11	CAE	Sample		
79	x5	14211-15	CAE	Sample		
80	x20	14211-15	CAE	Sample		
81	x50	14211-15	CAE	Sample		
82	x1	14211-16	CAE	Sample		
11	Be DL	Be DL 0.25	CAE	Sample		

Spikes are post at 0.02mL of 25ppm spiking solutions lot 021410-ABCD & F in a final volume of 10mL

Submitted for QC by:	Date/Time:		QC Review By:	Date/Time:	
KMS	3/30/10 9:11		dus	3/31/10 4:20 pm	
Re-Test Required:	No:	Yes:	Comments:		
Resubmitted for QC by:	Date/Time:		QC Review:	By:	Date/Time:



	Analyte	Mass (amu)	Spike Table 1 (Conc.)	Spike Table 1 Det. Limit (Conc.)	Spike Table 2 (Conc.)	Spike Table 2 Det. Limit (Conc.)	Spike Table 3 (Conc.)	Spike Table 3 Det. Limit (Conc.)	Spike Table 4 (Conc.)	Spike Table 4 Det. Limit (Conc.)	Spike Table 5 (Conc.)
1	[illegible]	[illegible]	50	1	25	1	100	1			
2	[illegible]	[illegible]	50	1	25	1	100	1			
3	[illegible]	[illegible]	50	1	25	1	100	1			
4	[illegible]	[illegible]	50	1	25	1	100	1			
5	[illegible]	[illegible]	50	1	25	1	100	1			
6	[illegible]	[illegible]									

Tuesday, Mar 30, 2010 09:08 AM

ICP Standards and QC Standards Values Table

Element or Test	Mass	Symbol	Std.#1 ppb	Std.#2 ppb	Std.#3 ppb	QC #1	QC #2	QC #3	QC #4	QC #6 A	QC #7 AB	QC #8 .25	QC #9 LRB	QC #10 LRB+	QC #11 LRB+
Lithium	6	*Li*													
Lithium	7	Li	1	100	500	0	1	250	100				0	50	100
Beryllium	9	Be	1	100	500	0	1	250	100			0.25	0	50	100
Boron	10	*B*	1	50	100	0	1	250	100				0	50	100
Boron	11	B	1	50	100	0	1	250	100				0	50	100
Sodium	23	Na	20	1100	5500	0	21	2500	1100				0	718	
Magnesium	24	Mg	20	1100	5500	0	21	2500	1100				0	550	
Magnesium	25	*Mg*	20	1100	5500	0	21	2500	1100				0	550	
Aluminum	27	Al	1	100	500	0	1	250	100				0	50	100
Phosphorus	31	P	20	1000	5000	0	20	2500	1000				0	200	
Potassium	39	K	20	1100	5500	0	21	2500	1100				0	500	
Calcium	44	Ca	50	1100	5500	0	21	2500	1100				0	550	
Scandium	45														
Titanium	47	Ti	1	100	500	0	1	250	100				0	50	100
Titanium	49	Ti	1	100	500	0	1	250	100				0	50	100
Vanadium	51	V	1	100	500	0	1	250	100	0	20		0	50	100
Vanadium	51	V	1	100	500	0	1	250	100	0	20		0	50	100
Chromium	52	Cr	1	100	500	0	1	250	100		10		0	50	100
Chromium	53	*Cr*	1	100	500	0	1	250	100		10		0	50	100
Iron	54	*Fe*	20	1100	5500	0	21	2500	1100	0			0		
Manganese	55	Mn	1	100	500	0	1	250	100	0	10		0	50	100
Iron	57	Fe	20	1100	5500	0	21	2500	1100	0			0		
Cobalt	59	Co	1	100	500	0	1	250	100	0	20		0	50	100
Nickel	60	Ni	1	100	500	0	1	250	100	0	20		0	50	100
Copper	63	Cu	1	100	500	0	1	250	100	0	10		0	50	100
Copper	65	Cu	1	100	500	0	1	250	100	0	10		0	50	100
Zinc	66	Zn	1	100	500	0	1	250	100	0	10		0	50	100
Zinc	67	*Zn*	1	100	500	0	1	250	100	0	10		0	50	100
Zinc	68	*Zn*	1	100	500	0	1	250	100	0	10		0	50	100
Germanium	72	Ge	1	100	500	0	1	250	100				0	50	100
Arsenic	75	As	1	100	500	0	1	250	100	0	10		0	50	100
Selenium	77	*Se*	1	100	500	0	1	250	100	0	10		0	50	100
Selenium	82	Se	1	100	500	0	1	250	100	0	10		0	50	100
Strontium	88	Sr	1	100	500	0	1	250	100	0			0	50	100
Molybdenum	95	*Mo*	1	100	500	0	1	250	100				0	50	100
Molybdenum	97	*Mo*	1	100	500	0	1	250	100				0	50	100
Molybdenum	98	Mo	1	100	500	0	1	200	100				0	50	100
Rhodium	103														
Silver	107	Ag	1	100	500	0	1	250	100	0	10		0	50	100
Silver	109	*Ag*	1	100	500	0	1	250	100	0	10		0	50	100
Cadmium	111	Cd	1	100	500	0	1	250	100	0	5		0	50	100
Cadmium	114	*Cd*	1	100	500	0	1	250	100	0	5		0	50	100
Tin	118	Sn	1	100	500	0	1	250	100	0			0	50	100
Antimony	121	*Sb*	1	100	500	0	1	250	100	0			0	50	100
Antimony	123	Sb	1	100	500	0	1	250	100	0			0	50	100
Tellurium	128	Te	1	100	500	0	1	250	100				0	50	100
Cesium	133														
Barium	135	*Ba*	1	100	500	0	1	250	100	0			0	50	100
Barium	137	Ba	1	100	500	0	1	250	100	0			0	50	100
Lanthanum	139	La	1	100	500	0	1	250	100				0	50	100
Tantalum	159	Ta	1	100	500	0	1	250	100				0	50	100
Platinum	195	Pt	1	100	500	0	1	250	100				0	50	100
Gold	181	Au	1	100	500	0	1	250	100				0	50	100
Thallium	205	Tl	1	100	500	0	1	250	100	0			0	50	100
Lead	208	Pb	1	100	500	0	1	250	100	0			0	50	100
Bismuth	209	Bi	1	100	500	0	1	250	100				0	50	100
Thorium	232	Th	1	100	500	0	1	250	100				0	50	100
Uranium	238	U	1	100	500	0	1	250	100				0	50	100
Krypton	83														

elementOne

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: Blank
Sample Da Monday, March 29, 2010 16:39:29
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	92482		ppb
|-	Be	9	38		ppb
|-	Sc	45	111219.3		ppb
|>	Rh	103	222036.4		ppb
|	Cd	111	81		ppb
|-	Cd	114	168		ppb
|>	Ho	165	586633.1		ppb
|-	Pb	208	4897.9		ppb
	Kr	83	66		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 1
Sample Da Monday, March 29, 2010 16:41:25
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	92095.5		ppb
|-	Be	9	669.4	1.05733	ppb
|-	Sc	45	109956.1		ppb
|>	Rh	103	217718.8		ppb
|	Cd	111	1573.5	1.06964	ppb
|-	Cd	114	3728.7	1.06369	ppb
|>	Ho	165	582695.7		ppb
|-	Pb	208	30663.5	0.98355	ppb
	Kr	83	-21.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 2
Sample Da Monday, March 29, 2010 16:43:22
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	93035.4		ppb
|-	Be	9	60365.9	99.9701	ppb
|-	Sc	45	110698.1		ppb
|>	Rh	103	215160.7		ppb
|	Cd	111	138336.6	100.0882	ppb
|-	Cd	114	333001.3	100.46945	ppb
|>	Ho	165	585685.3		ppb
|-	Pb	208	2698241.9	102.14655	ppb
	Kr	83	-7409.9		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 3
Sample Da Monday, March 29, 2010 16:45:20
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	88875.7		ppb
|-	Be	9	288197.2	500.00586	ppb
|-	Sc	45	107029.8		ppb
|>	Rh	103	206245.5		ppb
|	Cd	111	662077.6	499.98222	ppb
|-	Cd	114	1587626.7	499.90598	ppb
|>	Ho	165	560391.9		ppb
|-	Pb	208	12607860	499.57072	ppb
	Kr	83	-35080.1		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Monday, March 29, 2010 16:47:17
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	92788.9		ppb
|-	Be	9	140	0.17075	ppb
|-	Sc	45	110172.7		ppb
|>	Rh	103	216223.8		ppb
|	Cd	111	324.4	0.1785	ppb
|-	Cd	114	775.1	0.18518	ppb
|>	Ho	165	573210.1		ppb
|-	Pb	208	11390.9	0.2581	ppb
	Kr	83	71.8		mg/L

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Da Monday, March 29, 2010 16:49:15
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	92596.2		ppb
|-	Be	9	619.4	0.96811	ppb
|-	Sc	45	109720.1		ppb
|>	Rh	103	213245.2		ppb
|	Cd	111	1410.1	0.97394	ppb
|-	Cd	114	3347.7	0.97067	ppb
|>	Ho	165	570935		ppb
|-	Pb	208	28478.9	0.92276	ppb
	Kr	83	-9.9		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Da Monday, March 29, 2010 16:51:13
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	95487.7		ppb
|-	Be	9	150360.6	242.73219	ppb
|-	Sc	45	122357.7		ppb
|>	Rh	103	242891.5		ppb
|	Cd	111	366564.8	235.07024	ppb
|-	Cd	114	869031	232.36393	ppb
|>	Ho	165	628377		ppb
|-	Pb	208	6647084.9	234.77879	ppb
	Kr	83	-20139.9		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Monday, March 29, 2010 16:53:10
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	95574.7		ppb
|-	Be	9	62641.4	101.01059	ppb
|-	Sc	45	121224.7		ppb
|>	Rh	103	239326.1		ppb
|	Cd	111	152095.5	98.93661	ppb
|-	Cd	114	364093.2	98.75665	ppb
|>	Ho	165	621297.5		ppb
|-	Pb	208	2804876.3	100.09037	ppb
	Kr	83	-8299.4		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 5
Sample Da Monday, March 29, 2010 16:55:07
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	91968.5		ppb
|-	Be	9	29313.2	49.08931	ppb
|-	Sc	45	116398.5		ppb
|>	Rh	103	229948.8		ppb
|	Cd	111	70546.9	47.73789	ppb
|-	Cd	114	167710.8	47.32513	ppb
|>	Ho	165	593099.2		ppb
|-	Pb	208	1297718.8	48.4203	ppb
	Kr	83	89.2		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 6
Sample Da Monday, March 29, 2010 16:57:04
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	91524		ppb
|-	Be	9	43.7	0.01025	ppb
|-	Sc	45	116191.1		ppb
|>	Rh	103	215284.4		ppb
|	Cd	111	432.2	0.25592	ppb
|-	Cd	114	2922.6	0.8325	ppb
|>	Ho	165	571724		ppb
|-	Pb	208	11953.4	0.27907	ppb
	Kr	83	25.4		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 7
Sample Da Monday, March 29, 2010 16:59:02
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	89712.8		ppb
|-	Be	9	33.7	-0.00548	ppb
|-	Sc	45	114001		ppb
|>	Rh	103	210435		ppb
|	Cd	111	6560.7	4.79909	ppb
|-	Cd	114	17843	5.45817	ppb
|>	Ho	165	559679.1		ppb
|-	Pb	208	5116.6	0.0177	ppb
	Kr	83	72.3		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 9
Sample Da Monday, March 29, 2010 17:02:59
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	87951.9		ppb
|-	Be	9	13.7	-0.03938	ppb
|-	Sc	45	110295.6		ppb
|>	Rh	103	223636.7		ppb
|	Cd	111	115.4	0.02362	ppb
|-	Cd	114	248.8	0.02335	ppb
|>	Ho	165	581646.5		ppb
|-	Pb	208	16846.8	0.45805	ppb
	Kr	83	45.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 10
Sample Da Monday, March 29, 2010 17:04:58
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	85751.8		ppb
|-	Be	9	22663.3	40.68508	ppb
|-	Sc	45	111856.3		ppb
|>	Rh	103	225410.2		ppb
|	Cd	111	56185.8	38.80519	ppb
|-	Cd	114	134170.6	38.63721	ppb
|>	Ho	165	577914.6		ppb
|-	Pb	208	1094137.5	41.89907	ppb
	Kr	83	46.8		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Da Monday, March 29, 2010 17:06:57
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	92867.4		ppb
|-	Be	9	619.4	0.96548	ppb
|-	Sc	45	126014.9		ppb
|>	Rh	103	246988.7		ppb
|	Cd	111	1539.9	0.91558	ppb
|-	Cd	114	3718.7	0.92893	ppb
|>	Ho	165	607392.2		ppb
|-	Pb	208	28643.1	0.86242	ppb
	Kr	83	-19.9		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-1
Sample Da Monday, March 29, 2010 17:08:55
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	82675.4		ppb
|-	Be	9	15.7	-0.03405	ppb
|-	Sc	45	214673.5		ppb
|>	Rh	103	219687.2		ppb
|	Cd	111	1071.3	0.70255	ppb
|-	Cd	114	1526.1	0.40203	ppb
|>	Ho	165	579926.8		ppb
|-	Pb	208	205723.2	7.69412	ppb
	Kr	83	161.8		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-2
Sample Da Monday, March 29, 2010 17:10:53
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	73317.8		ppb
|-	Be	9	20.3	-0.02048	ppb
|-	Sc	45	168822.8		ppb
|>	Rh	103	192037.2		ppb
|	Cd	111	1352.3	1.03964	ppb
|-	Cd	114	2306.4	0.73085	ppb
|>	Ho	165	532016.5		ppb
|-	Pb	208	195652.4	7.98659	ppb
	Kr	83	148.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-2
Sample Da Monday, March 29, 2010 17:12:52
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	72767.7		ppb
|-	Be	9	23.3	-0.01382	ppb
|-	Sc	45	163569.9		ppb
|>	Rh	103	184916.8		ppb
|	Cd	111	1316.8	1.05317	ppb
|-	Cd	114	2155.5	0.70963	ppb
|>	Ho	165	525672.9		ppb
|-	Pb	208	193195.7	7.97831	ppb
	Kr	83	105.3		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-3
Sample Da Monday, March 29, 2010 17:14:50
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	80190.5		ppb
|-	Be	9	19.3	-0.02587	ppb
|-	Sc	45	125736.9		ppb
|>	Rh	103	201415.4		ppb
|	Cd	111	1073.7	0.77348	ppb
|-	Cd	114	1421.1	0.40902	ppb
|>	Ho	165	561017.9		ppb
|-	Pb	208	222864.9	8.6396	ppb
	Kr	83	35.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-3
Sample Da Monday, March 29, 2010 17:16:48
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	77810.4		ppb
|-	Be	9	21581.6	42.704	ppb
|-	Sc	45	122583.8		ppb
|>	Rh	103	191433.7		ppb
|	Cd	111	53146	43.20387	ppb
|-	Cd	114	125571.7	42.56716	ppb
|>	Ho	165	538296.6		ppb
|-	Pb	208	1390745.4	57.21744	ppb
	Kr	83	102.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-4
Sample Da Monday, March 29, 2010 17:18:46
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	79913		ppb
|-	Be	9	22.7	-0.01924	ppb
|-	Sc	45	109668.4		ppb
|>	Rh	103	196803.1		ppb
|	Cd	111	3027	2.3393	ppb
|-	Cd	114	6291.7	2.02785	ppb
|>	Ho	165	556331.2		ppb
|-	Pb	208	367089.9	14.47422	ppb
	Kr	83	33.4		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-5
Sample Da Monday, March 29, 2010 17:20:44
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	81335.8		ppb
|-	Be	9	18.3	-0.02852	ppb
|-	Sc	45	185274.8		ppb
|>	Rh	103	190441		ppb
|	Cd	111	474.8	0.33159	ppb
|-	Cd	114	241.9	0.03331	ppb
|>	Ho	165	540865.3		ppb
|-	Pb	208	50984.8	1.90816	ppb
	Kr	83	208.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-5
Sample Da Monday, March 29, 2010 17:22:42
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	83279.2		ppb
|-	Be	9	19.3	-0.02766	ppb
|-	Sc	45	181681.6		ppb
|>	Rh	103	194449.9		ppb
|	Cd	111	484.6	0.3314	ppb
|-	Cd	114	269	0.04014	ppb
|>	Ho	165	554227.9		ppb
|-	Pb	208	50793.5	1.85036	ppb
	Kr	83	200.1		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-6
Sample Da Monday, March 29, 2010 17:24:41
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	77500.4		ppb
|-	Be	9	16	-0.03153	ppb
|-	Sc	45	101076.3		ppb
|>	Rh	103	178480		ppb
|	Cd	111	386.2	0.28024	ppb
|-	Cd	114	114.1	-0.00616	ppb
|>	Ho	165	521398.9		ppb
|-	Pb	208	56497.5	2.22142	ppb
	Kr	83	84.2		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-6
Sample Da Monday, March 29, 2010 17:26:39
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	76261		ppb
|-	Be	9	21085.1	42.57492	ppb
|-	Sc	45	100597.1		ppb
|>	Rh	103	177068.4		ppb
|	Cd	111	49600.3	43.5694	ppb
|-	Cd	114	116858.4	42.80747	ppb
|>	Ho	165	510232.7		ppb
|-	Pb	208	1200129.6	52.06152	ppb
	Kr	83	32.3		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-7
Sample Da Monday, March 29, 2010 17:28:43
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	76722		ppb
|-	Be	9	31	-0.0009	ppb
|-	Sc	45	91466.1		ppb
|>	Rh	103	179260.5		ppb
|	Cd	111	569.6	0.43864	ppb
|-	Cd	114	150.6	0.00456	ppb
|>	Ho	165	515112.1		ppb
|-	Pb	208	88958.6	3.65046	ppb
	Kr	83	3.1		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-8
Sample Da Monday, March 29, 2010 17:30:42
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	85160.3		ppb
|-	Be	9	16	-0.03449	ppb
|-	Sc	45	228222.9		ppb
|>	Rh	103	219075		ppb
|	Cd	111	601.3	0.37072	ppb
|-	Cd	114	706.9	0.16038	ppb
|>	Ho	165	598378.7		ppb
|-	Pb	208	99303.2	3.50064	ppb
	Kr	83	19.1		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-8
Sample Da Monday, March 29, 2010 17:32:41
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	85035.7		ppb
|-	Be	9	17.7	-0.03118	ppb
|-	Sc	45	215272.3		ppb
|>	Rh	103	219070.1		ppb
|	Cd	111	541.9	0.32839	ppb
|-	Cd	114	478.4	0.0928	ppb
|>	Ho	165	601665.4		ppb
|-	Pb	208	93595.6	3.27055	ppb
	Kr	83	28.4		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-9
Sample Da Monday, March 29, 2010 17:34:39
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	75398.2		ppb
|-	Be	9	17.3	-0.02784	ppb
|-	Sc	45	247873.4		ppb
|>	Rh	103	192686.5		ppb
|	Cd	111	545	0.38319	ppb
|-	Cd	114	223.8	0.02649	ppb
|>	Ho	165	541302.7		ppb
|-	Pb	208	105524.2	4.1446	ppb
	Kr	83	267.3		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-9
Sample Da Monday, March 29, 2010 17:36:38
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	77666.6		ppb
|-	Be	9	21901.1	43.41592	ppb
|-	Sc	45	238916.4		ppb
|>	Rh	103	193512.7		ppb
|	Cd	111	54475.1	43.79773	ppb
|-	Cd	114	129439	43.39996	ppb
|>	Ho	165	548211.5		ppb
|-	Pb	208	1366327.3	55.17142	ppb
	Kr	83	293.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-10
Sample Da Monday, March 29, 2010 17:38:36
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	81115.8		ppb
|-	Be	9	23	-0.01936	ppb
|-	Sc	45	100846.5		ppb
|>	Rh	103	201515		ppb
|	Cd	111	302.4	0.1771	ppb
|-	Cd	114	-183.4	-0.11166	ppb
|>	Ho	165	561327.7		ppb
|-	Pb	208	41304.5	1.4493	ppb
	Kr	83	-35.5		mg/L

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-11
Sample Da Monday, March 29, 2010 18:03:52
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	85453.4		ppb
|-	Be	9	21.3	-0.02451	ppb
|-	Sc	45	106693.9		ppb
|>	Rh	103	209523.8		ppb
|	Cd	111	371.9	0.21983	ppb
|-	Cd	114	66.1	-0.02953	ppb
|>	Ho	165	556366.5		ppb
|-	Pb	208	61499.7	2.27043	ppb
	Kr	83	-63.4		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-15
Sample Da Monday, March 29, 2010 18:07:49
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	87177.8		ppb
|-	Be	9	4641.9	8.14725	ppb
|-	Sc	45	106547.6		ppb
|>	Rh	103	201730.4		ppb
|	Cd	111	18227.9	14.0205	ppb
|-	Cd	114	43505.4	13.95844	ppb
|>	Ho	165	541336.5		ppb
|-	Pb	208	2800923.4	114.73106	ppb
	Kr	83	40.5		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14211-16
Sample Da Monday, March 29, 2010 18:11:45
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	79707.3		ppb
|-	Be	9	39	0.01201	ppb
|-	Sc	45	96974.8		ppb
|>	Rh	103	184990.3		ppb
|	Cd	111	-65.9	-0.14814	ppb
|-	Cd	114	460.4	0.11323	ppb
|>	Ho	165	516375.7		ppb
|-	Pb	208	79248.5	3.22583	ppb
	Kr	83	-255.2		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: Be DL 0.25
Sample Da Monday, March 29, 2010 18:13:44
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	88753.5		ppb
|-	Be	9	177	0.24417	ppb
|-	Sc	45	100855.4		ppb
|>	Rh	103	197969.9		ppb
|	Cd	111	367.1	0.23171	ppb
|-	Cd	114	900.3	0.24621	ppb
|>	Ho	165	534070.9		ppb
|-	Pb	208	9220.8	0.19815	ppb
	Kr	83	32.3		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Monday, March 29, 2010 18:15:41
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|>	Li	6	90189.3		ppb
|-	Be	9	18.7	-0.03155	ppb
|-	Sc	45	105180.6		ppb
|>	Rh	103	200632.5		ppb
|	Cd	111	45.6	-0.02134	ppb
|-	Cd	114	86.7	-0.02105	ppb
|>	Ho	165	542424.4		ppb
|-	Pb	208	2722.2	-0.07389	ppb
	Kr	83	48.2		mg/L

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Monday, March 29, 2010 18:17:38
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	89110.3		ppb
|-	Be	9	57131.3	98.80924	ppb
|-	Sc	45	102055.7		ppb
|>	Rh	103	193567.5		ppb
|	Cd	111	126118	101.43338	ppb
|-	Cd	114	300775.8	100.8684	ppb
|>	Ho	165	538190.5		ppb
|-	Pb	208	2480169.3	102.1755	ppb
	Kr	83	-6735.2		mg/L

ANALYTICAL PERSPECTIVES

13 April 2010

Scott Brown
Clean Air Engineering
500 West Wood Street
Palatine, IL 60067

Ph.: 847-991-3300
Email: scott_brown@cleanair.com

Subject: Certificate of Results - Amended

Dear Scott;

Attached to this narrative are the analytical results you requested on samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. A brief description of the report's components is provided. Results reported relate only to the items tested.

Project Information Summary	When applicable, see QC Annotations for details
Client Project No.	10955
AP Project No.	**P2096**
Analytical Protocol	Method 23
No. Samples Submitted	5 & 1 audit
No. Samples Analyzed	5 & 1 audit
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	none
Date Received	21-Mar-2010
Condition Received	good
Temperature upon Receipt (C)	2 (XAD, filters), 17-19 (solvents)
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	see below
Analytical Difficulties	see below

QC Annotations:
1. See Appendix A&B for data qualifier, data attributes, and lab identifier information.
2. The letter has been amended to include a new topsheet for sample 004.

Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact us. Thank you for choosing Analytical Perspectives as part of your analytical support team.

Sincerely,

Kimberly Mace, Ph.D.
Project Manager

2714 EXCHANGE DRIVE
WILMINGTON, NC 28405
PH.: 910-794-1613

The electronic version of this report contains 329 pages.
(add one page in count for the NELAC compliance statement) +1

P2096

ANALYTICAL PERSPECTIVES

Part 1
Narrative
25 pgs
- ✓Letter
- ✓QC Annotations
- ✓Project Information

ANALYTICAL PERSPECTIVES

Part 2
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- ✓Extraction
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- ✓QC
- ✓Reporting
- ✓Special Requirements

Extraction Tracking Sheets

Fractionation Tracking Sheets

Injection Tracking Sheets

ANALYTICAL PERSPECTIVES

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Results
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ANALYTICAL PERSPECTIVES

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- ✓Initial Calibration
- ✓Continuing Calibration
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Part 4D
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94 pgs

Part 4E
Audit
17 pgs

STATE CERTIFICATION ID #s	
ARKANSAS	88-0628
CALIFORNIA	2640
FLORIDA	E87608
LOUISIANA	04024
MICHIGAN	9951
NEW JERSEY	NC005
NORTH CAROLINA	37783
PENNSYLVANIA	68-01849
SOUTH CAROLINA	99054
WASHINGTON	C2027

Picture File 23 pgs

APPENDIX A: DATA QUALIFIERS / DATA ATTRIBUTES	
*	The reported concentration exceeds the calibration range (upper point of the calibration curve).[1]
>	Indicates high recoveries. Shown with the numeric value at the top of the range.[1]
B	The analyte is found in the method blank, at a level that is <=10x the sample concentration.
C	Two or more congeners co-elute. In EDDs C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve).
EMPC	Represents an Estimated Maximum Possible Concentration. EMPC's arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), where there is a co-eluting interference, or where a single ion is utilized for quantitation due to PFK interference.
ETH	Indicates the presence of a diphenyl ether that appears to interfere with the quantitation of a furan. The reported concentration is the maximum.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.[1]
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
ND	Indicates a non-detect.
NR	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
Ra	The new ratio – [Ra] -- for 2,3,7,8-TCDD following the $^{37}Cl_4$-2,3,7,8-TCDD correction is shown between squared brackets in the DL column.[1]
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.[1]
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.
X	Indicates results reported from reinjection, refractionation, or repeat analyses.
APPENDIX B: LAB ID IDENTIFIERS	
AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

[1]Denotes data qualifiers/attributes whose use will be phased out over time

2714 EXCHANGE DRIVE
WILMINGTON, NC 28405
PH.: 910-794-1613

P2096 - TEQ

Project ID: 10955

Sample Summary Part 1 ANALYTICAL PERSPECTIVES **Method 23**

Method 23	0_7679_MB001 pg	Field Blank pg	Unit 2 FF Outlet Run 1 pg	Unit 2 FF Outlet Run 2 pg	Unit 2 FF Outlet Run 3 pg	Reagent Blank pg
2,3,7,8-TCDD	(1.46)	(1.39)	[3.64]	[2.21]	[3.21]	(1.3)
1,2,3,7,8-PeCDD	(1.79)	(1.82)	5.58	[4.52]	8.62	(1.7)
1,2,3,4,7,8-HxCDD	(2.66)	(1.83)	(2.09)	5.7	5.91	(2.2)
1,2,3,6,7,8-HxCDD	(2.48)	(1.93)	6.15	13	11	(2.16)
1,2,3,7,8,9-HxCDD	(2.79)	(2.08)	(2.31)	8.47	9.54	(2.45)
1,2,3,4,6,7,8-HpCDD	(2.74)	4.71	44.1	67.6	70	(2.81)
OCDD	14.1	14.8	76.7	122	127	(4.36)
2,3,7,8-TCDF	(1.07)	(0.973)	15.8	18.4	20.5	(0.86)
1,2,3,7,8-PeCDF	(1.09)	(1.07)	15.3	19.8	17	(1.14)
2,3,4,7,8-PeCDF	(1.03)	(1.02)	14.5	20.4	20.3	(1.19)
1,2,3,4,7,8-HxCDF	(1.78)	(1.44)	9.14	16.9	19.4	(1.68)
1,2,3,6,7,8-HxCDF	(1.66)	(1.36)	12	20.7	19.3	(1.55)
2,3,4,6,7,8-HxCDF	(1.78)	(1.44)	9.38	18	17.2	(1.7)
1,2,3,7,8,9-HxCDF	(2.42)	(1.93)	(2.04)	(3.04)	(2.53)	(2.31)
1,2,3,4,6,7,8-HpCDF	(1.69)	3.19	20.1	49.4	50.6	(1.65)
1,2,3,4,7,8,9-HpCDF	(2.53)	(2.05)	(2.25)	4.95	6.18	(2.25)
OCDF	(3.41)	6.16	[5.38]	[14.5]	24.2	(3.57)
ITEF TEQ (ND=0; EMPC=0)	0.0141	0.0999	**16.8**	**22.7**	**27.0**	**0.00**
ITEF TEQ (ND=0; EMPC=EMPC)	0.0141	0.0999	**20.4**	**27.2**	**30.2**	**0.00**
ITEF TEQ (ND=DL/2; EMPC=0)	2.34	2.19	**17.8**	**24.7**	**28.2**	**2.18**
ITEF TEQ (ND=DL/2; EMPC=EMPC)	2.34	2.19	**20.8**	**27.3**	**30.3**	**2.18**
ITEF TEQ (ND=DL; EMPC=EMPC)	4.67	4.28	**21.1**	**27.5**	**30.5**	**4.37**
Checkcode	681-930	318-336	744-657	544-695	487-158	493-202
Lab ID	MB1_7679_DF_SDS	P2096_7679_001	P2096_7679_002	P2096_7679_003	P2096_7679_004	P2096_7679_005

( ) = DL
[ ] = EMPC

P2096 - WHO-2005-TEQ

Project ID: 10955

Sample Summary Part 1 — ANALYTICAL PERSPECTIVES — **Method 23**

Analyte	0_7679_MB001 pg	Field Blank pg	Unit 2 FF Outlet Run 1 pg	Unit 2 FF Outlet Run 2 pg	Unit 2 FF Outlet Run 3 pg	Reagent Blank pg
2,3,7,8-TCDD	(1.46)	(1.39)	[3.64]	[2.21]	[3.21]	(1.3)
1,2,3,7,8-PeCDD	(1.79)	(1.82)	5.58	[4.52]	8.62	(1.7)
1,2,3,4,7,8-HxCDD	(2.66)	(1.83)	(2.09)	5.7	5.91	(2.2)
1,2,3,6,7,8-HxCDD	(2.48)	(1.93)	6.15	13	11	(2.16)
1,2,3,7,8,9-HxCDD	(2.79)	(2.08)	(2.31)	8.47	9.54	(2.45)
1,2,3,4,6,7,8-HpCDD	(2.74)	4.71	44.1	67.6	70	(2.81)
OCDD	14.1	14.8	76.7	122	127	(4.36)
2,3,7,8-TCDF	(1.07)	(0.973)	15.8	18.4	20.5	(0.86)
1,2,3,7,8-PeCDF	(1.09)	(1.07)	15.3	19.8	17	(1.14)
2,3,4,7,8-PeCDF	(1.03)	(1.02)	14.5	20.4	20.3	(1.19)
1,2,3,4,7,8-HxCDF	(1.78)	(1.44)	9.14	16.9	19.4	(1.68)
1,2,3,6,7,8-HxCDF	(1.66)	(1.36)	12	20.7	19.3	(1.55)
2,3,4,6,7,8-HxCDF	(1.78)	(1.44)	9.38	18	17.2	(1.7)
1,2,3,7,8,9-HxCDF	(2.42)	(1.93)	(2.04)	(3.04)	(2.53)	(2.31)
1,2,3,4,6,7,8-HpCDF	(1.69)	3.19	20.1	49.4	50.6	(1.65)
1,2,3,4,7,8,9-HpCDF	(2.53)	(2.05)	(2.25)	4.95	6.18	(2.25)
OCDF	(3.41)	6.16	[5.38]	[14.5]	24.2	(3.57)
WHO-2005 TEQ (ND=0; EMPC=0)	**0.00422**	**0.0852**	**16.3**	**18.1**	**26.8**	**0.00**
WHO-2005 TEQ (ND=0; EMPC=EMPC)	**0.00422**	**0.0852**	**19.9**	**24.8**	**30.0**	**0.00**
WHO-2005 TEQ (ND=DL/2; EMPC=0)	**2.67**	**2.52**	**17.3**	**20.9**	**28.0**	**2.48**
WHO-2005 TEQ (ND=DL/2; EMPC=EMPC)	**2.67**	**2.52**	**20.3**	**25.0**	**30.2**	**2.48**
WHO-2005 TEQ (ND=DL; EMPC=EMPC)	**5.33**	**4.95**	**20.6**	**25.1**	**30.3**	**4.95**
Checkcode	681-930	318-336	744-657	544-695	487-158	493-202
Lab ID	MB1_7679_DF_SDS	P2096_7679_001	P2096_7679_002	P2096_7679_003	P2096_7679_004	P2096_7679_005

( ) = DL

[ ] = EMPC

P2096 - Totals
Project ID: 10955

Sample Summary Part 2	ANALYTICAL PERSPECTIVES					Method 23
Analyte	**0_7679_MB001** pg	**Field Blank** pg	**Unit 2 FF Outlet Run 1** pg	**Unit 2 FF Outlet Run 2** pg	**Unit 2 FF Outlet Run 3** pg	**Reagent Blank** pg
Totals						
TCDDs	0	2.73	59.6	81.8	71.7	0
PeCDDs	0	0	68.5	53.4	103	0
HxCDDs	0	0	116	180	154	0
HpCDDs	0	4.71	91.4	132	142	0
OCDD	14.1	14.8	76.7	122	127	0
TCDFs	0	0	496	426	567	0
PeCDFs	0	0	251	275	275	0
HxCDFs	0	0	79.4	165	142	0
HpCDFs	0	3.19	22.8	72.6	67.9	0
OCDF	0	6.16	5.38	14.5	24.2	0
Total PCDD/Fs (ND=0; EMPC=0)	**14.1**	**31.6**	**1,260**	**1,510**	**1,670**	**0.00**
Total PCDD/Fs (ND=0; EMPC=EMPC)	**16.3**	**37.9**	**1,350**	**1,760**	**1,850**	**0.00**
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	**48.7**	**58.3**	**1,360**	**1,770**	**1,860**	**34.9**
[redacted]						
Checkcode	681-930	318-336	744-657	544-695	487-158	493-202
Lab ID	MB1_7679_DF_SDS	P2096_7679_001	P2096_7679_002	P2096_7679_003	P2096_7679_004	P2096_7679_005

( ) = DL
[ ] = EMPC

P2096 - Others
Project ID: 10955

Sample Summary Part 3 ANALYTICAL PERSPECTIVES **Method 23**

Analyte	0_7679_MB001 pg	Field Blank pg	Unit 2 FF Outlet Run 1 pg	Unit 2 FF Outlet Run 2 pg	Unit 2 FF Outlet Run 3 pg	Reagent Blank pg
Other PCDD/Fs (ND=0, EMPC=0)						
Other TCDD	0	2.73	59.6	81.8	71.7	0
Other PeCDD	0	0	62.9	53.4	94.2	0
Other HxCDD	0	0	110	152	127	0
Other HpCDD	0	0	47.3	64.6	71.6	0
Other TCDF	0	0	480	407	546	0
Other PeCDF	0	0	221	235	238	0
Other HxCDF	0	0	48.9	109	85.6	0
Other HpCDF	0	0	2.72	18.3	11.1	0
Other PCDD/Fs (ND=0, EMPC=EMPC)						
Other TCDD	2.25	2.73	72.5	104	97	0
Other PeCDD	0	0	89.8	104	117	0
Other HxCDD	0	0	110	166	165	0
Other HpCDD	0	4.03	47.3	64.6	71.6	0
Other TCDF	0	0	509	501	557	0
Other PeCDF	0	0	221	283	279	0
Other HxCDF	0	2.28	53	116	112	0
Other HpCDF	0	0	5.76	18.3	21.1	0
Checkcode	681-930	318-336	744-657	544-695	487-158	493-202
Lab ID	MB1_7679_DF_SDS	P2096_7679_001	P2096_7679_002	P2096_7679_003	P2096_7679_004	P2096_7679_005

( ) = DL
[ ] = EMPC

P2096 - DLs

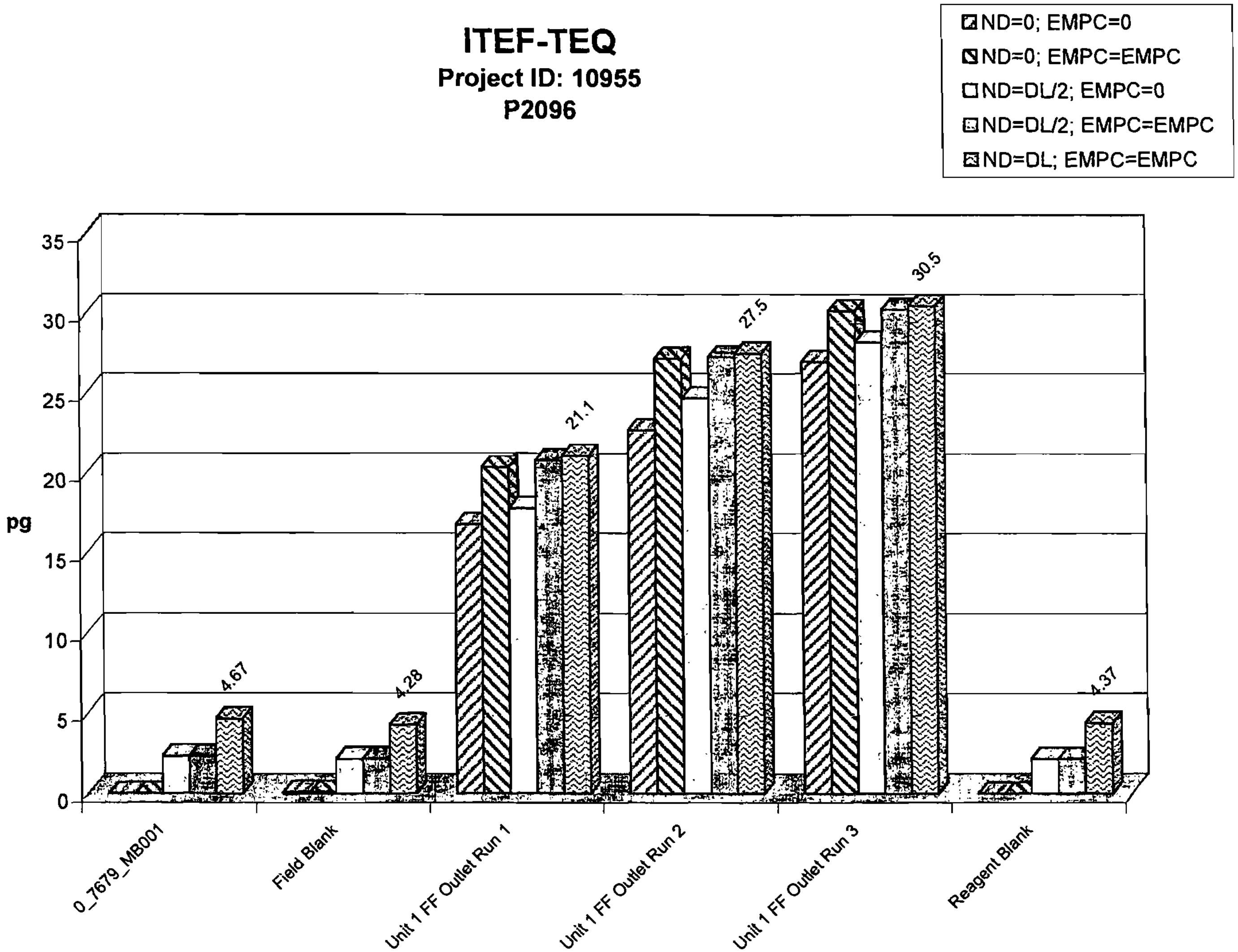
Project ID: 10955

Sample Summary
Part 5

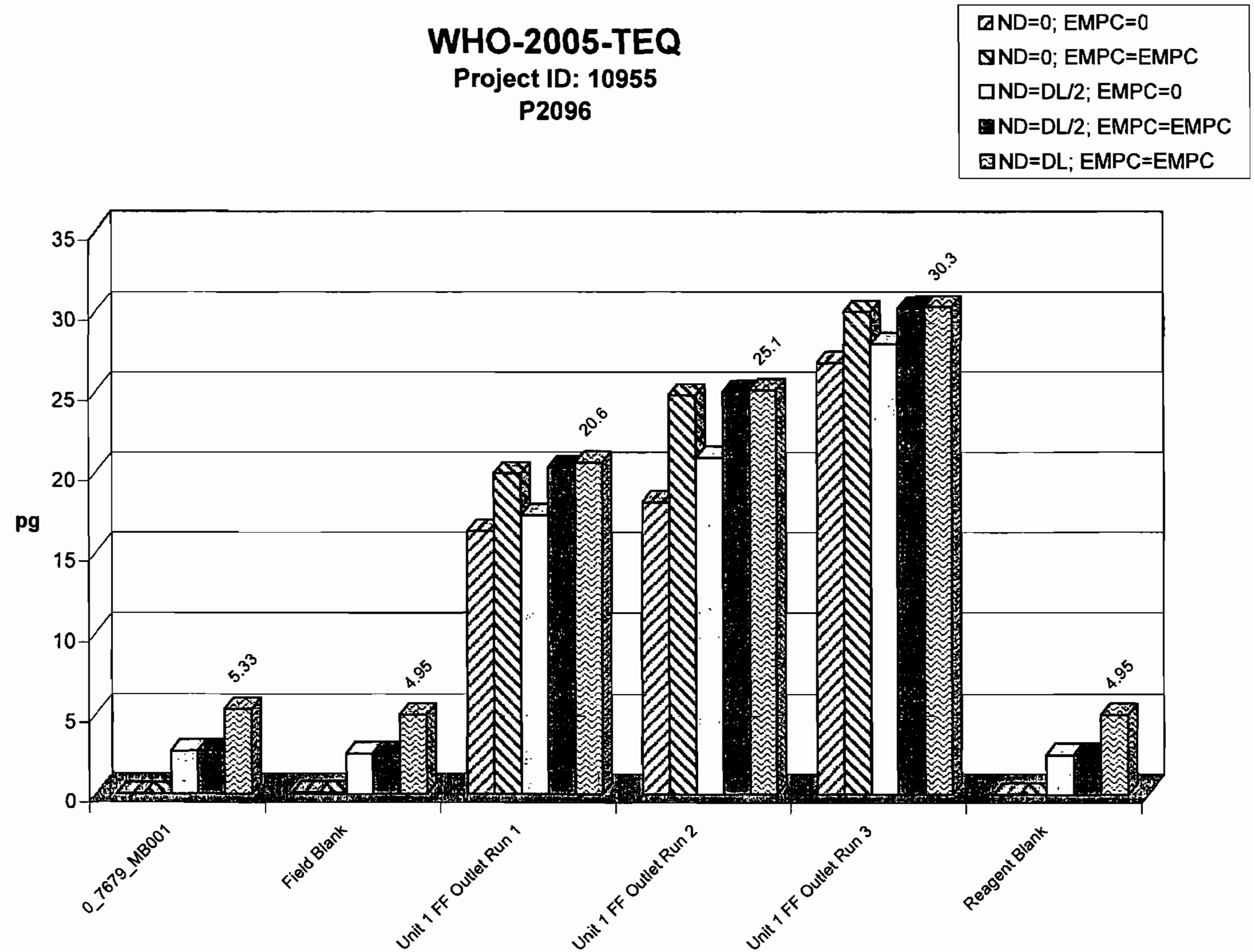
ANALYTICAL PERSPECTIVES

Method 23

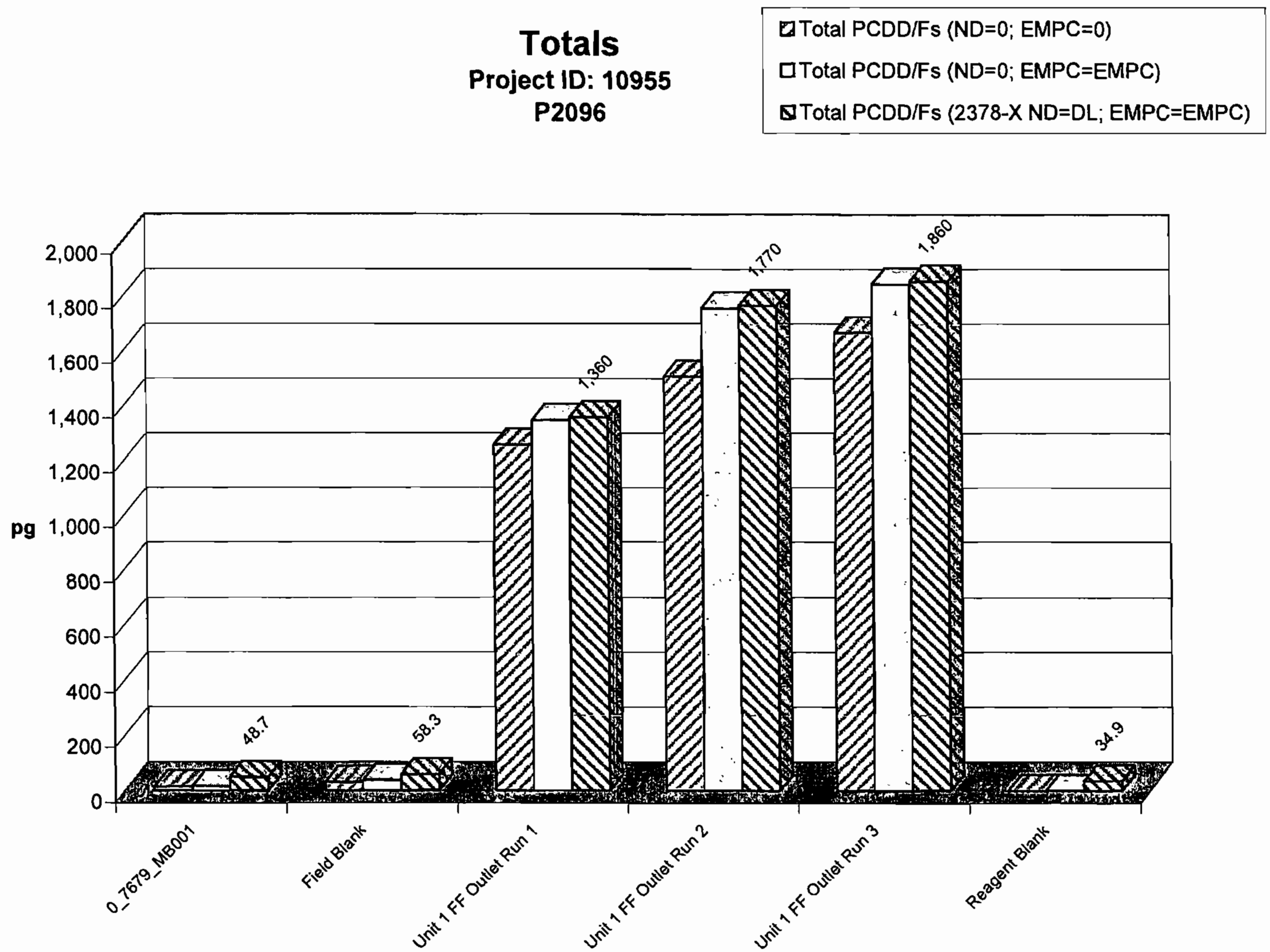
Analyte	0_7679_MB001 pg	Field Blank pg	Unit 2 FF Outlet Run 1 pg	Unit 2 FF Outlet Run 2 pg	Unit 2 FF Outlet Run 3 pg	Reagent Blank pg
2,3,7,8-TCDD	1.46	1.39	1.41	2.07	2.04	1.3
1,2,3,7,8-PeCDD	1.79	1.82	1.81	3.2	2.32	1.7
1,2,3,4,7,8-HxCDD	2.66	1.83	2.09	2.73	2.41	2.2
1,2,3,6,7,8-HxCDD	2.48	1.93	2.16	2.82	2.29	2.16
1,2,3,7,8,9-HxCDD	2.79	2.08	2.31	3.01	2.56	2.45
1,2,3,4,6,7,8-HpCDD	2.74	2.24	2.6	3.81	3.98	2.81
OCDD	4.41	3.97	4.01	5.54	4.87	4.36
2,3,7,8-TCDF	1.07	0.973	1.15	1.52	1.45	0.86
1,2,3,7,8-PeCDF	1.09	1.07	1.47	2.11	1.53	1.14
2,3,4,7,8-PeCDF	1.03	1.02	1.33	2.11	1.54	1.19
1,2,3,4,7,8-HxCDF	1.78	1.44	1.59	2.22	1.95	1.68
1,2,3,6,7,8-HxCDF	1.66	1.36	1.46	2.2	1.86	1.55
2,3,4,6,7,8-HxCDF	1.78	1.44	1.59	2.27	1.89	1.7
1,2,3,7,8,9-HxCDF	2.42	1.93	2.04	3.04	2.53	2.31
1,2,3,4,6,7,8-HpCDF	1.69	1.42	1.51	2.05	2.14	1.65
1,2,3,4,7,8,9-HpCDF	2.53	2.05	2.25	2.93	3.29	2.25
OCDF	3.41	3.09	2.9	4.36	4.27	3.57
Total TCDD	1.46	1.39	1.41	2.07	2.04	1.3
Total PeCDD	1.79	1.82	1.81	3.2	2.32	1.7
Total HxCDD	2.64	1.94	2.18	2.85	2.41	2.26
Total HpCDD	2.74	2.24	2.6	3.81	3.98	2.81
Total TCDF	1.07	0.973	1.15	1.52	1.45	0.86
Total PeCDF	1.06	1.04	1.4	2.11	1.53	1.17
Total HxCDF	1.89	1.52	1.65	2.41	2.04	1.79
Total HpCDF	2.07	1.71	1.85	2.46	2.67	1.92
Checkcode	681-930	318-336	744-657	544-695	487-158	493-202
Lab ID	MB1_7679_DF_SDS	P2096_7679_001	P2096_7679_002	P2096_7679_003	P2096_7679_004	P2096_7679_005



ITEF-TEQ
Project ID: 10955
P2096
ND=0; EMPC=0
ND=0; EMPC=EMPC
ND=DL/2; EMPC=0
ND=DL/2; EMPC=EMPC
ND=DL; EMPC=EMPC
pg
35
30
25
20
15
10
5
0
4.67
4.28
21.1
27.5
30.5
4.37
0_7679_MB001
Field Blank
Unit 1 FF Outlet Run 1
Unit 1 FF Outlet Run 2
Unit 1 FF Outlet Run 3
Reagent Blank

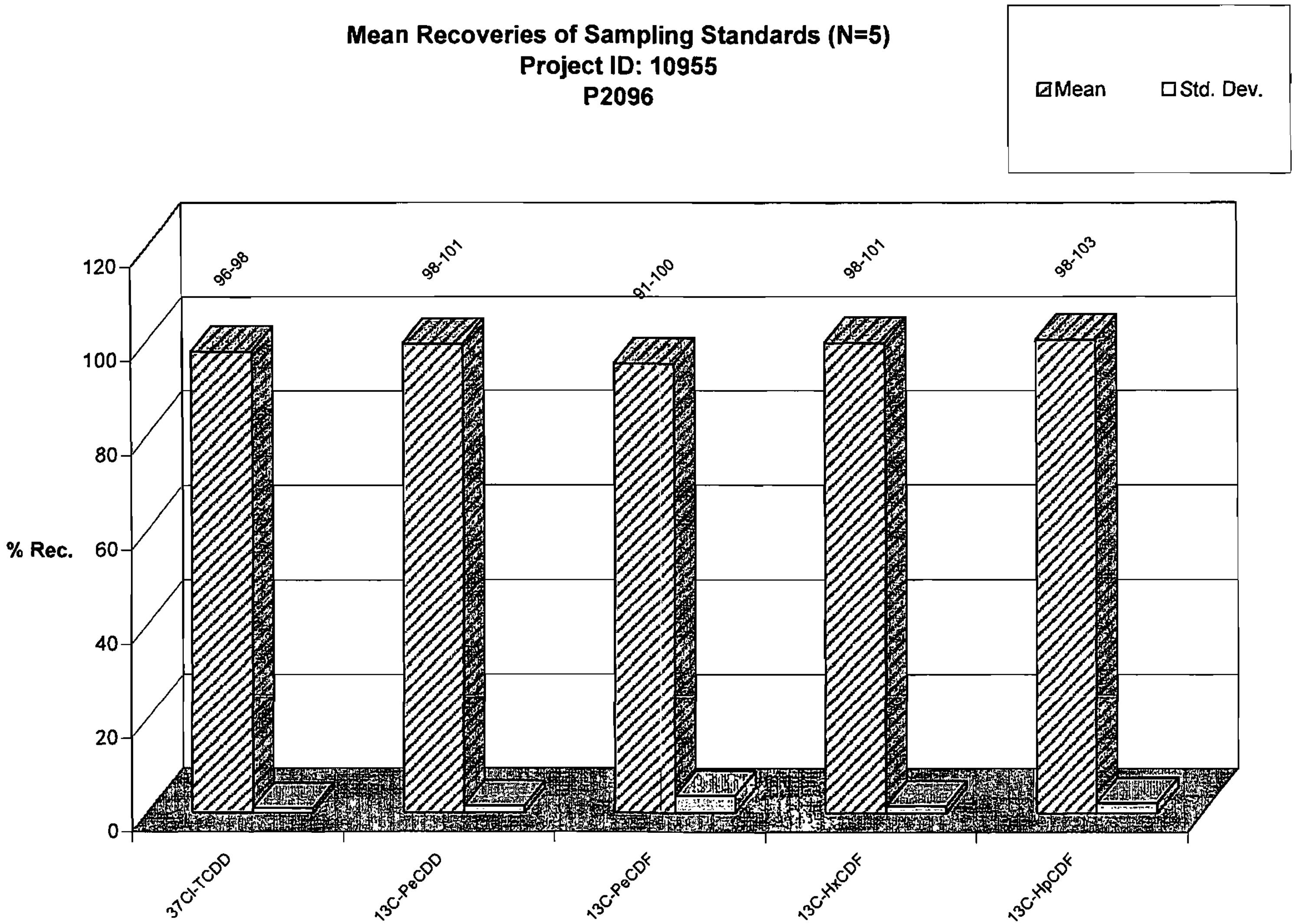


WHO-2005-TEQ
Project ID: 10955
P2096
ND=0; EMPC=0
ND=0; EMPC=EMPC
ND=DL/2; EMPC=0
ND=DL/2; EMPC=EMPC
ND=DL; EMPC=EMPC
pg
0
5
10
15
20
25
30
35
5.33
4.95
20.6
25.1
30.3
4.95
0_7679_MB001
Field Blank
Unit 1 FF Outlet Run 1
Unit 1 FF Outlet Run 2
Unit 1 FF Outlet Run 3
Reagent Blank



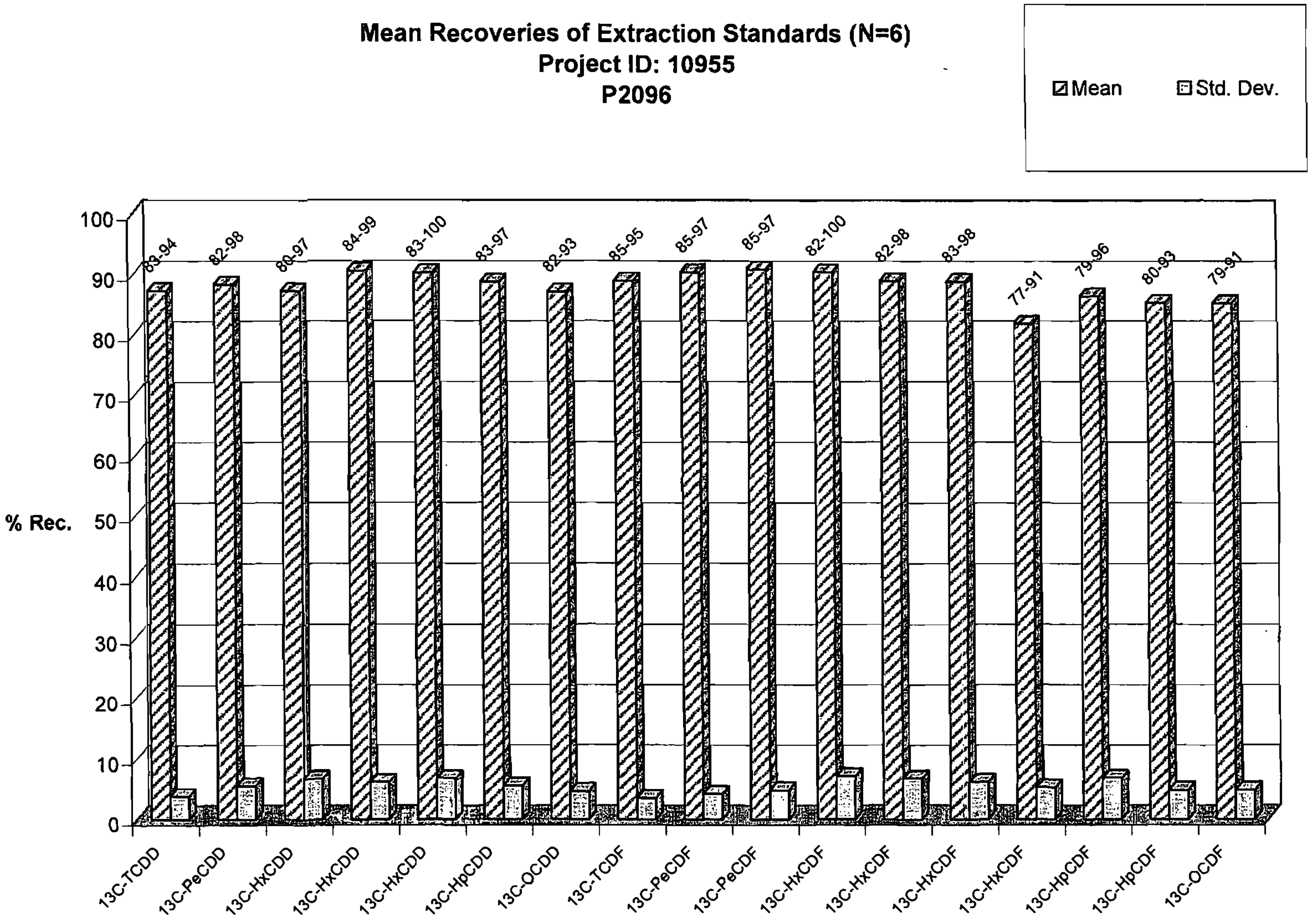
Totals
Project ID: 10955
P2096
Total PCDD/Fs (ND=0; EMPC=0)
Total PCDD/Fs (ND=0; EMPC=EMPC)
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
pg
48.7
58.3
1,360
1,770
1,860
34.9
0_7679_MB001
Field Blank
Unit 1 FF Outlet Run 1
Unit 1 FF Outlet Run 2
Unit 1 FF Outlet Run 3
Reagent Blank

Mean Recoveries of Sampling Standards (N=5)
Project ID: 10955
P2096



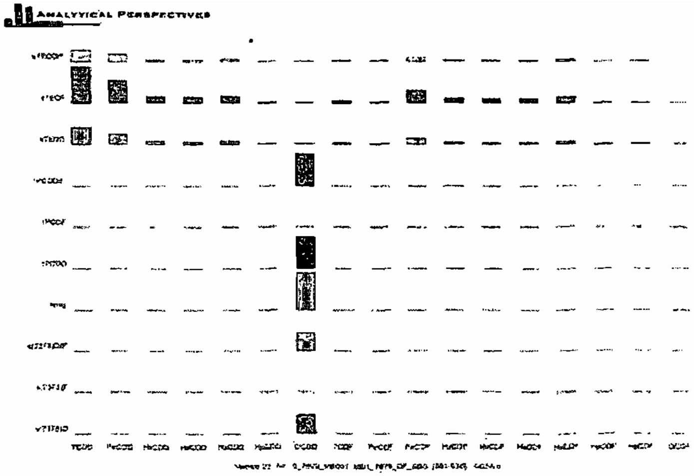
Method Specification Limits: Tetra-Octa SS: 70-130% (F = fail)

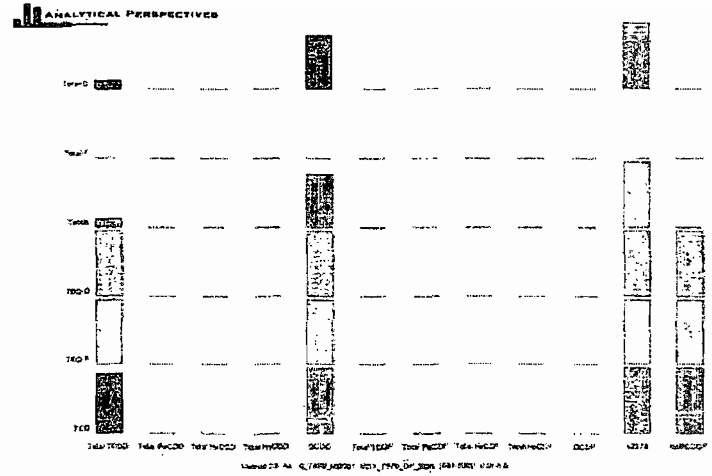
Mean Recoveries of Extraction Standards (N=6)
Project ID: 10955
P2096

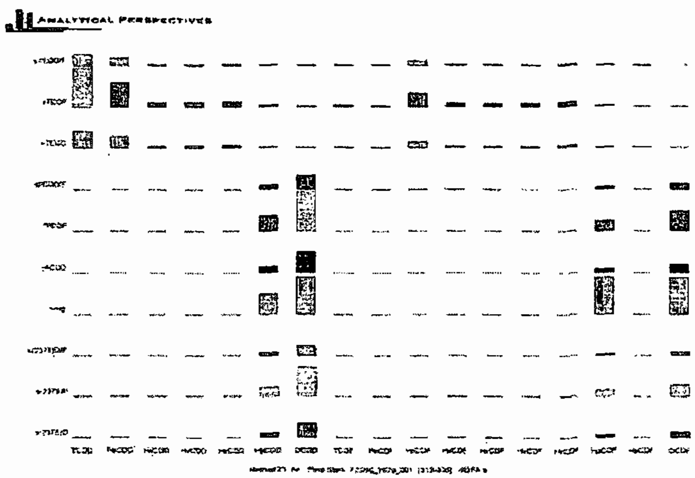


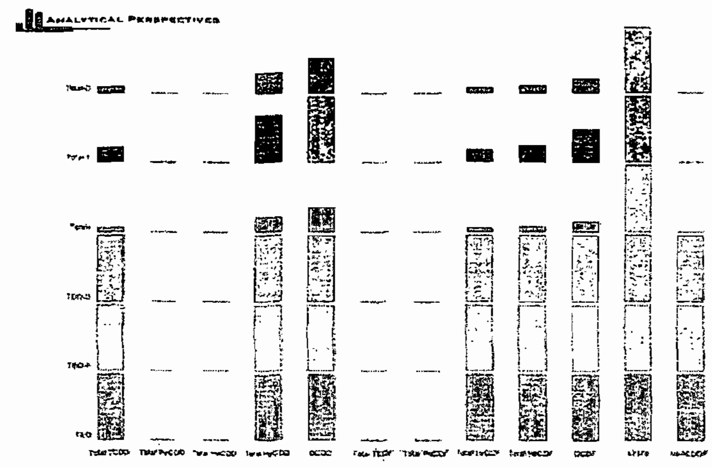
Method Specification Limits: Tetra-Hexa ES: 40-130%, Hepta-Octa ES: 25-130% (F = fail)

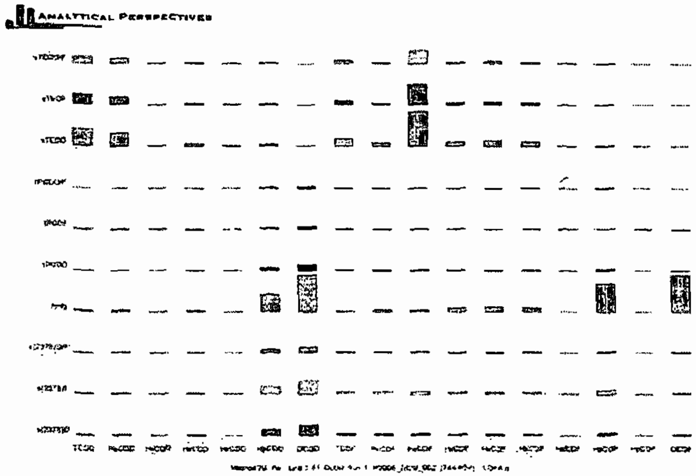
I - 86

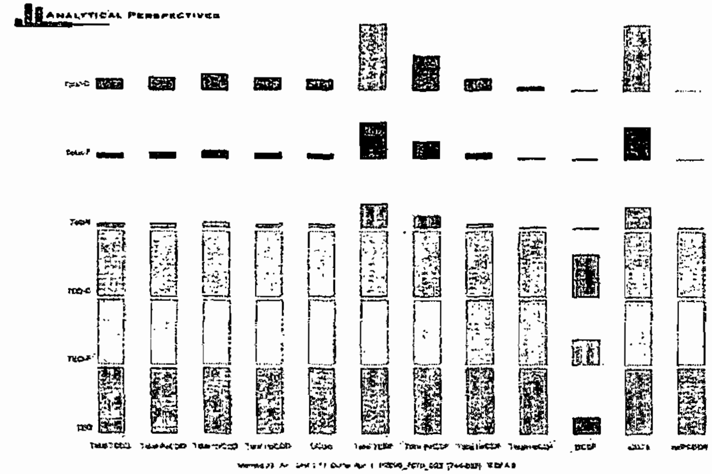

ANALYTICAL PERSPECTIVES

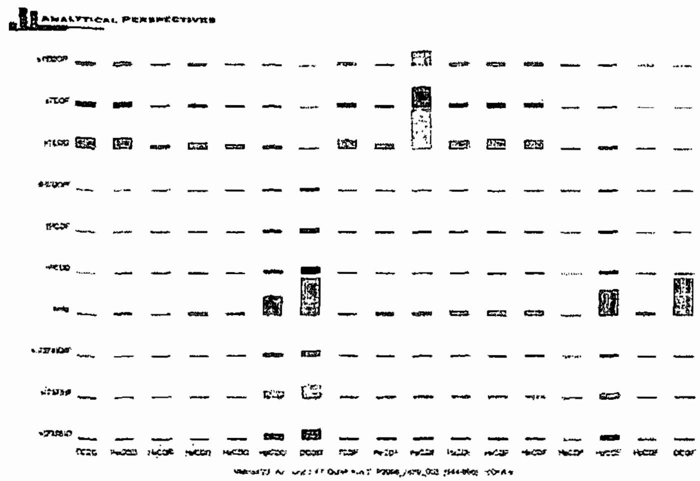

ANALYTICAL PERSPECTIVES

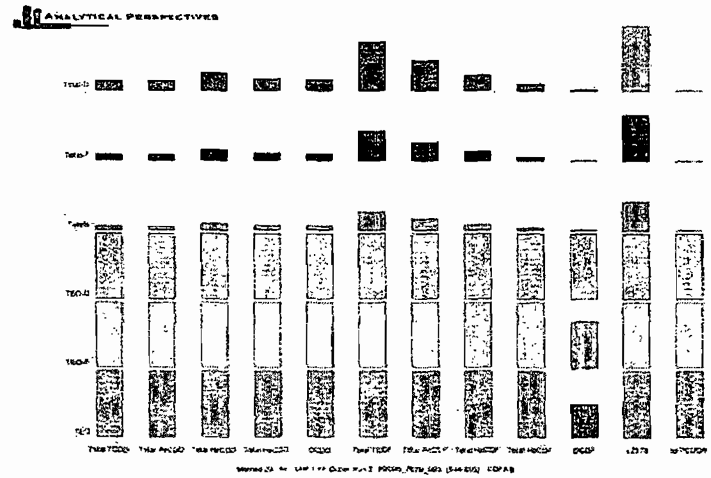

ANALYTICAL PERSPECTIVES

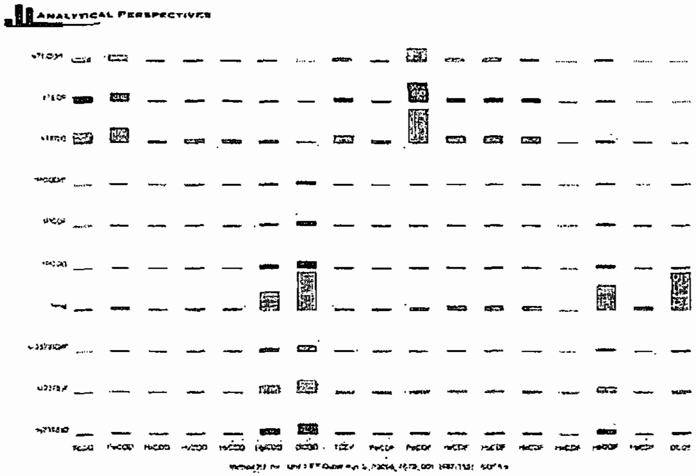

ANALYTICAL PERSPECTIVES

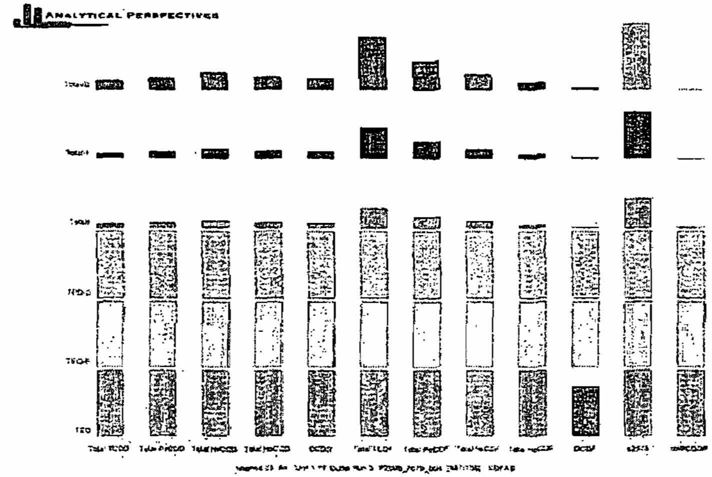


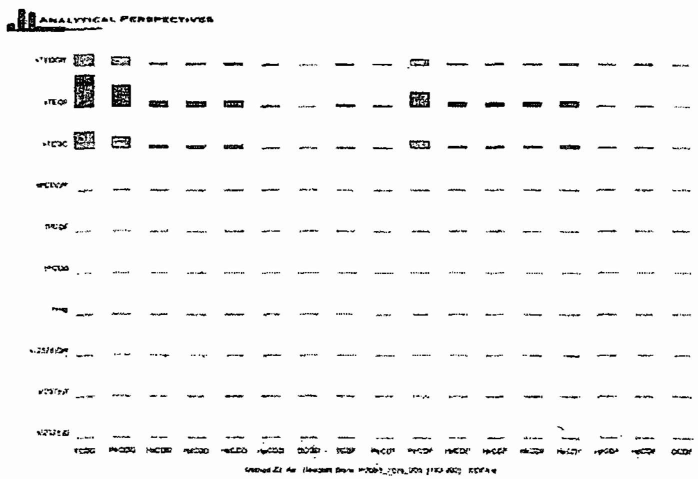


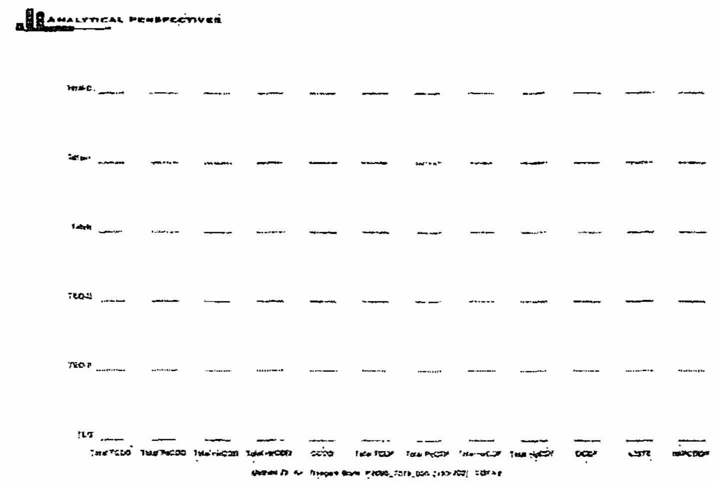












Sample ID: 0_7679_MB001 — Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2096	Date Received:	n/a
Project ID:	10955	Weight/Volume:	1	Lab Sample ID	MB1_7679_DF_SDS	Date Extracted:	06 Apr 2010
Date Collected:	n/a			QC Batch No:	7679	Date Analyzed:	09 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	09:07:26

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.46			ES 2378-TCDD	88.6	
12378-PeCDD	ND	1.79			ES 12378-PeCDD	88.9	
123478-HxCDD	ND	2.66			ES 123478-HxCDD	91.1	
123678-HxCDD	ND	2.48			ES 123678-HxCDD	92.8	
123789-HxCDD	ND	2.79			ES 123789-HxCDD	94.1	
1234678-HpCDD	ND	2.74			ES 1234678-HpCDD	91.2	
OCDD	14.1			J	ES OCDD	89.2	
2378-TCDF	ND	1.07			ES 2378-TCDF	89.1	
12378-PeCDF	ND	1.09			ES 12378-PeCDF	91.1	
23478-PeCDF	ND	1.03			ES 23478-PeCDF	91.7	
123478-HxCDF	ND	1.78			ES 123478-HxCDF	95.6	
123678-HxCDF	ND	1.66			ES 123678-HxCDF	94.2	
234678-HxCDF	ND	1.78			ES 234678-HxCDF	92.9	
123789-HxCDF	ND	2.42			ES 123789-HxCDF	83.4	
1234678-HpCDF	ND	1.69			ES 1234678-HpCDF	89.9	
1234789-HpCDF	ND	2.53			ES 1234789-HpCDF	86.2	
OCDF	ND	3.41			ES OCDF	86.9	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	98.5	
Total TCDD	ND		2.25		SS 12347-PeCDD	101	
Total PeCDD	ND	1.79	ND		SS 12346-PeCDF	94.8	
Total HxCDD	ND	2.64	ND		SS 123469-HxCDF	98.9	
Total HpCDD	ND	2.74	ND		SS 1234689-HpCDF	100	
					AS 1368-TCDD	88.8	
Total TCDF	ND	1.07	ND		AS 1368-TCDF	90.7	
Total PeCDF	ND	1.06	ND				
Total HxCDF	ND	1.89	ND				
Total HpCDF	ND	2.07	ND				
Total PCDD/Fs	**14.1**		**16.3**				
ITEF TEQs							
TEQ: ND=0	0.0141		0.0141				
TEQ: ND=DL/2	2.34		2.34				
TEQ: ND=DL	4.67		4.67				

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Sample ID: Field Blank — Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2096	Date Received:	20 Mar 2010
Project ID:	10955	Weight/Volume:	1	Lab Sample ID	P2096_7679_001	Date Extracted:	06 Apr 2010
Date Collected:	18 Mar 2010			QC Batch No:	7679	Date Analyzed:	09 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	09:57:56

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.39			ES 2378-TCDD	86.3	
12378-PeCDD	ND	1.82			ES 12378-PeCDD	89.5	
123478-HxCDD	ND	1.83			ES 123478-HxCDD	90.9	
123678-HxCDD	ND	1.93			ES 123678-HxCDD	96.6	
123789-HxCDD	ND	2.08			ES 123789-HxCDD	94.6	
1234678-HpCDD	4.71			J	ES 1234678-HpCDD	92.4	
OCDD	14.8			J B	ES OCDD	91.7	
2378-TCDF	ND	0.973			ES 2378-TCDF	88.6	
12378-PeCDF	ND	1.07			ES 12378-PeCDF	92.4	
23478-PeCDF	ND	1.02			ES 23478-PeCDF	93.6	
123478-HxCDF	ND	1.44			ES 123478-HxCDF	94.2	
123678-HxCDF	ND	1.36			ES 123678-HxCDF	92.7	
234678-HxCDF	ND	1.44			ES 234678-HxCDF	91.2	
123789-HxCDF	ND	1.93			ES 123789-HxCDF	83.1	
1234678-HpCDF	3.19			J	ES 1234678-HpCDF	91.2	
1234789-HpCDF	ND	2.05			ES 1234789-HpCDF	88.6	
OCDF	6.16			J	ES OCDF	89.9	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	98.1	
Total TCDD	2.73		2.73		SS 12347-PeCDD	97.9	
Total PeCDD	ND	1.82	ND		SS 12346-PeCDF	90.9	
Total HxCDD	ND	1.94	ND		SS 123469-HxCDF	97.6	
Total HpCDD	4.71		8.73		SS 1234689-HpCDF	98	
					AS 1368-TCDD	82.7	
Total TCDF	ND	0.973	ND		AS 1368-TCDF	80.9	
Total PeCDF	ND	1.04	ND				
Total HxCDF	ND		2.28				
Total HpCDF	3.19		3.19				
Total PCDD/Fs	**31.6**		**37.9**				
ITEF TEQs							
TEQ: ND=0	0.0999		0.0999				
TEQ: ND=DL/2	2.19		2.19				
TEQ: ND=DL	4.28		4.28				

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Checkcode: 318-336 AP D/F 2010 Rev. L Report Created: 09-Apr-2010 15:53 Analyst: MC

Sample ID: Unit 1 FF Outlet Run 1 — Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2096	Date Received:	20 Mar 2010
Project ID:	10955	Weight/Volume:	1	Lab Sample ID	P2096_7679_002	Date Extracted:	06 Apr 2010
Date Collected:	16 Mar 2010			QC Batch No:	7679	Date Analyzed:	09 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	10:48:24

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC	[Ra=0.98]	3.64	J	ES 2378-TCDD	83.1	
12378-PeCDD	5.58			J	ES 12378-PeCDD	88.6	
123478-HxCDD	ND	2.09			ES 123478-HxCDD	82.5	
123678-HxCDD	6.15			J	ES 123678-HxCDD	86.2	
123789-HxCDD	ND	2.31			ES 123789-HxCDD	82.9	
1234678-HpCDD	44.1			J	ES 1234678-HpCDD	85.3	
OCDD	76.7			J B	ES OCDD	84.7	
2378-TCDF	15.8				ES 2378-TCDF	84.6	
12378-PeCDF	15.3			J	ES 12378-PeCDF	89.3	
23478-PeCDF	14.5			J	ES 23478-PeCDF	92.7	
123478-HxCDF	9.14			J	ES 123478-HxCDF	86.9	
123678-HxCDF	12			J	ES 123678-HxCDF	84.3	
234678-HxCDF	9.38			J	ES 234678-HxCDF	82.6	
123789-HxCDF	ND	2.04			ES 123789-HxCDF	78.4	
1234678-HpCDF	20.1			J	ES 1234678-HpCDF	82.9	
1234789-HpCDF	ND	2.25			ES 1234789-HpCDF	82.6	
OCDF	EMPC		5.38	J	ES OCDF	84.2	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	98.1	
Total TCDD	59.6		76.2		SS 12347-PeCDD	98.3	
Total PeCDD	68.5		95.4		SS 12346-PeCDF	97.8	
Total HxCDD	116		116		SS 123469-HxCDF	101	
Total HpCDD	91.4		91.4		SS 1234689-HpCDF	103	
					AS 1368-TCDD	82.3	
Total TCDF	496		525		AS 1368-TCDF	80	
Total PeCDF	251		251				
Total HxCDF	79.4		83.6				
Total HpCDF	22.8		25.9				
Total PCDD/Fs	**1260**		**1350**				
ITEF TEQs							
TEQ: ND=0	16.8		20.4				
TEQ: ND=DL/2	17.8		20.8				
TEQ: ND=DL	18.8		21.1				

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Sample ID: Unit 1 FF Outlet Run 2 — Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2096	Date Received:	20 Mar 2010
Project ID:	10955	Weight/Volume:	1	Lab Sample ID	P2096_7679_003	Date Extracted:	06 Apr 2010
Date Collected:	17 Mar 2010			QC Batch No:	7679	Date Analyzed:	09 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	11:38:53

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC	[Ra=1.20]	2.21	J	ES 2378-TCDD	86.3	
12378-PeCDD	EMPC		4.52	J	ES 12378-PeCDD	82.9	
123478-HxCDD	5.7			J	ES 123478-HxCDD	82.1	
123678-HxCDD	13			J	ES 123678-HxCDD	84.3	
123789-HxCDD	8.47			J	ES 123789-HxCDD	84.4	
1234678-HpCDD	67.6				ES 1234678-HpCDD	84.1	
OCDD	122			B	ES OCDD	82.8	
2378-TCDF	18.4				ES 2378-TCDF	88.6	
12378-PeCDF	19.8			J	ES 12378-PeCDF	85.4	
23478-PeCDF	20.4			J	ES 23478-PeCDF	85.2	
123478-HxCDF	16.9			J	ES 123478-HxCDF	84.3	
123678-HxCDF	20.7			J	ES 123678-HxCDF	82.7	
234678-HxCDF	18			J	ES 234678-HxCDF	84.9	
123789-HxCDF	ND	3.04			ES 123789-HxCDF	77.9	
1234678-HpCDF	49.4			J	ES 1234678-HpCDF	79.7	
1234789-HpCDF	4.95			J	ES 1234789-HpCDF	81.6	
OCDF	EMPC		14.5	J	ES OCDF	80.2	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	98.4	
Total TCDD	81.8		106		SS 12347-PeCDD	101	
Total PeCDD	53.4		109		SS 12346-PeCDF	100	
Total HxCDD	180		194		SS 123469-HxCDF	101	
Total HpCDD	132		132		SS 1234689-HpCDF	98.7	
					AS 1368-TCDD	89.9	
Total TCDF	426		519		AS 1368-TCDF	91.5	
Total PeCDF	275		323				
Total HxCDF	165		171				
Total HpCDF	72.6		72.6				
Total PCDD/Fs	**1510**		**1760**				
ITEF TEQs							
TEQ: ND=0	22.7		27.2				
TEQ: ND=DL/2	24.7		27.3				
TEQ: ND=DL	26.7		27.5				

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Checkcode: 544-695 AP D/F 2010 Rev. L Report Created: 12-Apr-2010 15:50 Analyst: MC

Sample ID: Unit 1 FF Outlet Run 3 — Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2096	Date Received:	20 Mar 2010
Project ID:	10955	Weight/Volume:	1	Lab Sample ID	P2096_7679_004	Date Extracted:	06 Apr 2010
Date Collected:	17 Mar 2010			QC Batch No:	7679	Date Analyzed:	09 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	12:29:27

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC	[Ra=0.89]	3.21	J	ES 2378-TCDD	85.6	
12378-PeCDD	8.62			J	ES 12378-PeCDD	82.5	
123478-HxCDD	5.91			J	ES 123478-HxCDD	80	
123678-HxCDD	11			J	ES 123678-HxCDD	85.5	
123789-HxCDD	9.54			J	ES 123789-HxCDD	86	
1234678-HpCDD	70				ES 1234678-HpCDD	82.8	
OCDD	127			B	ES OCDD	81.9	
2378-TCDF	20.5				ES 2378-TCDF	87.7	
12378-PeCDF	17			J	ES 12378-PeCDF	87.3	
23478-PeCDF	20.3			J	ES 23478-PeCDF	85.3	
123478-HxCDF	19.4			J	ES 123478-HxCDF	81.6	
123678-HxCDF	19.3			J	ES 123678-HxCDF	81.9	
234678-HxCDF	17.2			J	ES 234678-HxCDF	83.6	
123789-HxCDF	ND	2.53			ES 123789-HxCDF	77.3	
1234678-HpCDF	50.6				ES 1234678-HpCDF	79.1	
1234789-HpCDF	6.18			J	ES 1234789-HpCDF	80	
OCDF	24.2			J	ES OCDF	79.4	

Totals					Standard	SS/AS/FS/TS Recoveries	
					SS 37Cl-2378-TCDD	96.1	
Total TCDD	71.7		100		SS 12347-PeCDD	99.1	
Total PeCDD	103		125		SS 12346-PeCDF	93	
Total HxCDD	154		191		SS 123469-HxCDF	100	
Total HpCDD	142		142		SS 1234689-HpCDF	102	
					AS 1368-TCDD	88.7	
Total TCDF	567		577		AS 1368-TCDF	89.2	
Total PeCDF	275		316				
Total HxCDF	142		171				
Total HpCDF	67.9		77.9				
Total PCDD/Fs	**1670**		**1850**				
ITEF TEQs							
TEQ: ND=0	27		30.2				
TEQ: ND=DL/2	28.2		30.3				
TEQ: ND=DL	29.3		30.5				

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Checkcode: 487-158 AP D/F 2010 Rev. L Report Created: 12-Apr-2010 17:37 Analyst: GG

Sample ID: Reagent Blank

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2096	Date Received:	20 Mar 2010
Project ID:	10955	Weight/Volume:	1	Lab Sample ID	P2096_7679_005	Date Extracted:	06 Apr 2010
Date Collected:	16 Mar 2010			QC Batch No:	7679	Date Analyzed:	09 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	13:19:56

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.3			ES 2378-TCDD	94.3	
12378-PeCDD	ND	1.7			ES 12378-PeCDD	97.8	
123478-HxCDD	ND	2.2			ES 123478-HxCDD	97.3	
123678-HxCDD	ND	2.16			ES 123678-HxCDD	98.7	
123789-HxCDD	ND	2.45			ES 123789-HxCDD	100	
1234678-HpCDD	ND	2.81			ES 1234678-HpCDD	96.9	
OCDD	ND	4.36			ES OCDD	92.6	
2378-TCDF	ND	0.86			ES 2378-TCDF	95.4	
12378-PeCDF	ND	1.14			ES 12378-PeCDF	97.3	
23478-PeCDF	ND	1.19			ES 23478-PeCDF	97.3	
123478-HxCDF	ND	1.68			ES 123478-HxCDF	99.9	
123678-HxCDF	ND	1.55			ES 123678-HxCDF	98	
234678-HxCDF	ND	1.7			ES 234678-HxCDF	98.2	
123789-HxCDF	ND	2.31			ES 123789-HxCDF	91.1	
1234678-HpCDF	ND	1.65			ES 1234678-HpCDF	95.9	
1234789-HpCDF	ND	2.25			ES 1234789-HpCDF	92.7	
OCDF	ND	3.57			ES OCDF	91	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	na	
Total TCDD	ND	1.3	ND		SS 12347-PeCDD	na	
Total PeCDD	ND	1.7	ND		SS 12346-PeCDF	na	
Total HxCDD	ND	2.26	ND		SS 123469-HxCDF	na	
Total HpCDD	ND	2.81	ND		SS 1234689-HpCDF	na	
					AS 1368-TCDD	93	
Total TCDF	ND	0.86	ND		AS 1368-TCDF	90.9	
Total PeCDF	ND	1.17	ND				
Total HxCDF	ND	1.79	ND				
Total HpCDF	ND	1.92	ND				
Total PCDD/Fs	**ND**		**ND**				
ITEF TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	2.18		2.18				
TEQ: ND=DL	4.37		4.37				

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Sample ID: M23-4435-01-Audit   Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2096	Date Received:	20 Mar 2010
Project ID:	10955	Weight/Volume:	1	Lab Sample ID	P2096_7679_006	Date Extracted:	06 Apr 2010
Date Collected:	nr			QC Batch No:	7679	Date Analyzed:	09 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	14:10:25

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	152	[Ra=0.80]			ES 2378-TCDD	81.6	
12378-PeCDD	150				ES 12378-PeCDD	86.6	
123478-HxCDD	146				ES 123478-HxCDD	89.4	
123678-HxCDD	140				ES 123678-HxCDD	92.3	
123789-HxCDD	150				ES 123789-HxCDD	94.5	
1234678-HpCDD	140				ES 1234678-HpCDD	96.3	
OCDD	291				ES OCDD	93.7	
2378-TCDF	172				ES 2378-TCDF	83.6	
12378-PeCDF	142				ES 12378-PeCDF	88.5	
23478-PeCDF	284				ES 23478-PeCDF	88.5	
123478-HxCDF	195				ES 123478-HxCDF	91.2	
123678-HxCDF	195				ES 123678-HxCDF	90.4	
234678-HxCDF	180				ES 234678-HxCDF	90.8	
123789-HxCDF	283				ES 123789-HxCDF	83.1	
1234678-HpCDF	132				ES 1234678-HpCDF	91.3	
1234789-HpCDF	92.9				ES 1234789-HpCDF	92.4	
OCDF	284				ES OCDF	90.9	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	na	
Total TCDD	347		347		SS 12347-PeCDD	na	
Total PeCDD	358		358		SS 12346-PeCDF	na	
Total HxCDD	647		647		SS 123469-HxCDF	na	
Total HpCDD	240		240		SS 1234689-HpCDF	na	
					AS 1368-TCDD	76.7	
Total TCDF	357		357		AS 1368-TCDF	75.1	
Total PeCDF	618		618				
Total HxCDF	959		959				
Total HpCDF	309		309				
Total PCDD/Fs	**4410**		**4410**				
ITEF TEQs							
TEQ: ND=0	527		527				
TEQ: ND=DL/2	527		527				
TEQ: ND=DL	527		527				

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USEPA Stationary Compliance Audit Program
Dioxin/Furan Audit Form

Auditor:	
Agency:	
Agency Address:	
Agency Phone #:	
Date Analyzed:	09 Apr 2010
Auditee Company:	Analytical Perspectives (Ph. 910 794-1613)
Auditee Address:	2714 Exchange Drive, Wilmington, NC 28405
Date Audit Sam Rec'd:	20 Mar 2010
Audit Sample #:	M23-4435-01-Audit P2096_7679_006
Confirmation Analysis Used:	Yes ______ No X
Auditee's Name:	Dr. Yves Tondeur
Signature:	Dr. Kimberly Mau for Dr. Tondeur

Compound	Auditee Result (ng/sample)	Compound	Auditee Result (ng/sample)
2378-TCDD	0.152	2378-TCDF	0.172
Other TCDD	0.195	Other TCDF	0.185
12378-PeCDD	0.150	12378-PeCDF	0.142
Other PeCDD	0.207	23478-PeCDF	0.284
123478-HxCDD	0.146	Other PeCDF	0.192
123678-HxCDD	0.140	123478-HxCDF	0.195
123789-HxCDD	0.150	123678-HxCDF	0.195
Other HxCDD	0.210	123789-HxCDF	0.283
1234678-HpCDD	0.140	234678-HxCDF	0.180
Other HpCDD	0.100	Other-HxCDF	0.105
OCDD	0.291	1234678-HpCDF	0.132
		1234789-HpCDF	0.093
		Other HpCDF	0.084
		OCDF	0.284

* 1,2,3,7,8,9-HxCDF co-elutes with and is inseparable from the the last eluting HxCDF isomer. The reported value is a combined result of the two isomers.

P2096

ANALYTICAL PERSPECTIVES

PART 2

SAMPLE PATH

DOCUMENTATION FOR THE ANALYSIS OF POLYCHLORINATED DIBENZO-*P*-DIOXINS & DIBENZOFURANS

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ANALYTICAL PERSPECTIVES

SAMPLE PATH

Version B

AP PROJECT NO.: P2096

PROTOCOL: 23

SAMPLE PROCESSING

Extraction
- ☑ *SDS*
- ☑ *Extraction Standards ($^{13}C_{12}$ - PCDD / F) "ES"*

Fractionation *Split 1:1*
- ☑ *Alternate Standard ($^{13}C_{12}$-TCDD/F "AS")*
- ☑ *Multi-Column Cleanup (ASECS)*
- ☑ *Final Extract*

Analysis
- ☑ *Injection Standards "JS"*
- ☑ *HRGC / HRMS*
- ☑ *12-H Performance Checks*

Interpretation
- ☑ *ID Criteria*
- ☑ *Detection Limits*
- ☑ *Recoveries*

SPIKE PROFILE

D/F: A&B

A_x:	400 PG (400 µL; 0.001 NG/ µL) FOR BCS_3 ONLY (PREPARED W/ TRAPS)
ES:	4 NG (400 µL; 0.01 NG/ µL)
SS:	4 NG (40 µL; 0.1 NG/ µL; 0.04 NG/ µL OR 1.6 NG FOR TCDD)
AS:	4 NG (400 µL; 0.01 NG/ µL)
JS:	2 NG (200 µL; 0.01 NG/ µL)

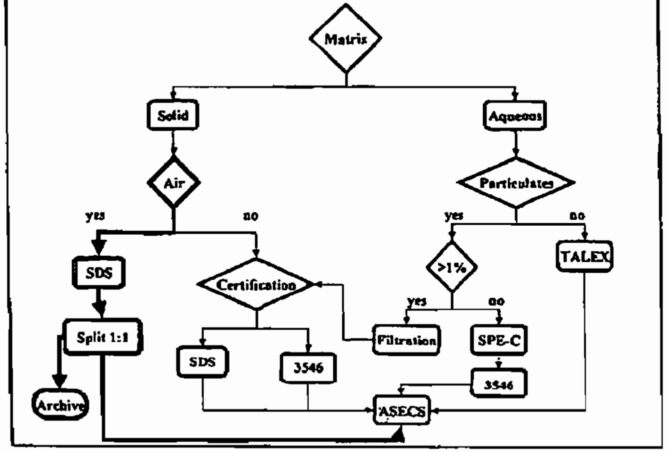
SOPs

EXTRACTION:	AP-SP-E
FRACTIONATION:	AP-SP-CU
ANALYSIS:	AP-SP-A
CONCENTRATION:	AP-SP-N
FORTIFICATION:	AP-SP-F
DATA VALIDATION:	AP-SP-R

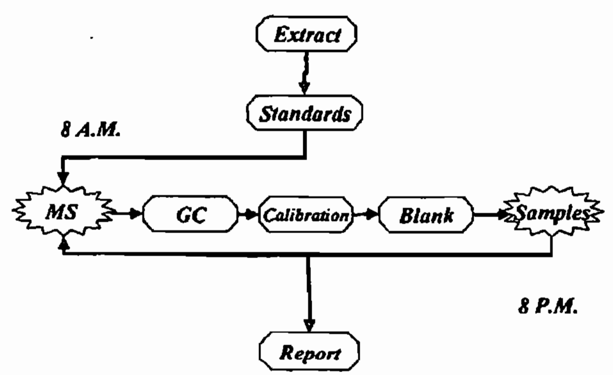
QC PROFILE

LMB:	ALWAYS REQUIRED
BCS_3:	ALWAYS REQUIRED

SAMPLE EXTRACTION



SAMPLE ANALYSIS



SPECIAL REQUIREMENTS

MONO-OCTA: YES NO

SUPPLIES IDs

SAND	
TOLUENE	094090
ACID SILICA	03302010
BASE SILICA	03252010
SILICA	03292010
FLORISIL	03262010
HEXANE	DA525
CH_2Cl_2	C7648
TETRADECANE	10292008
$AgNO_3$	04062010

09NOV08

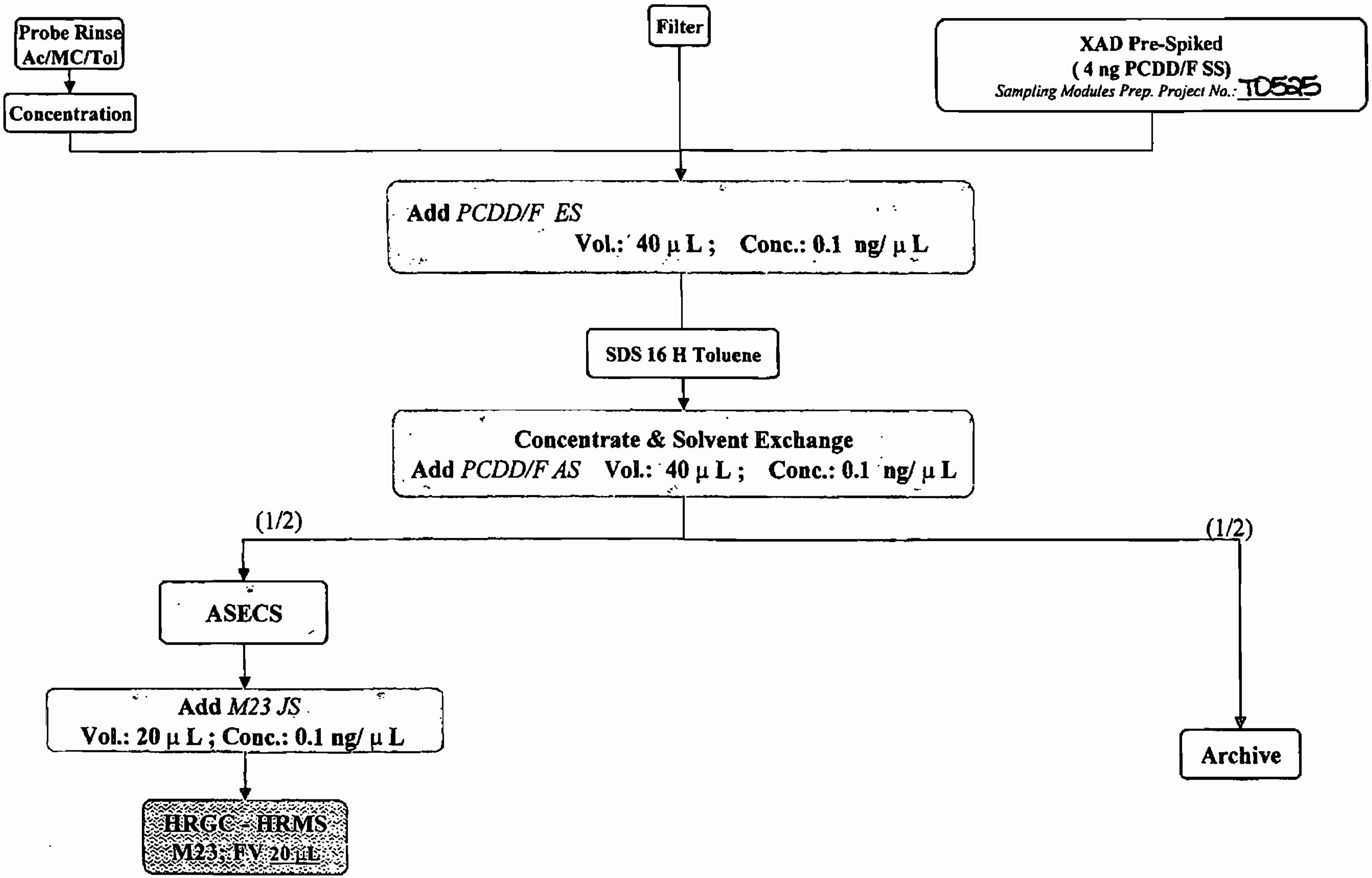
ANALYTICAL PERSPECTIVES

SAMPLE PATH

Version B

AP PROJECT NO: P2096

PROTOCOL: 23 PCDD/F



ANALYTICAL PERSPECTIVES

PCDD/PCDFs

Air

Project: P2096

Extraction Group: EPA Method 23

Extraction Batch: 7679

SDS Number	AP Sample ID	Client Sample ID	Observations	ES 400ul	Ax B	SDS TOI	AS 400ul	SPLIT 1/2 1/4	ASECS (Td) 40ul	JS 200ul
—	0_7679_BCS3	—	Std			—	au	—	zeni	Am
3	0_7679_MB001	—	Prespiked XAD		4/6/10		au	au	auau 3	Am
4	P2096_7679_001	Field Blank	see obs. sheet		—		au	au	auau 4	Am
5	P2096_7679_002	Unit 1 FF Outlet Run 1			—		au	au	auau 5	Am
6	P2096_7679_003	Unit 1 FF Outlet Run 2			—		au	au	auau 6	Am
7	P2096_7679_004	Unit 1 FF Outlet Run 3			—		au	au	auau 7	Am
8	P2096_7679_005	Reagent Blank			—		au	au	auau 8	Am
9	P2096_7679_006	M23-4435-01-Audit			—		au	au	auau 14	Am
				4/6/10		4/6/10	4-7-10	4-7-10	4-7-10	4-8-10

4/6/10 4/6/10 4/7/10 4/8/10

AxB: 01262009
10 pg/ul
01/26/11
SIL 9-2-2

TRANSFER: 4/8/10

RECEIVED: 4/8/10

ES ID: CL D/F ES	Ax ID: 07012007	AS ID: 07012007E-AS	JS ID: 07012007N-JS	Cycle Time: 4/6/10	Check Out: Chemist: 4/6/10
ES(conc.): 10 pg/ul	Ax (conc.): 0.001	AS(conc.): 10 pg/ul	JS (conc.): 10 pg/ul	Start: 3:00pm	Check-In: Chemist:
ES (exp.): 3/2015	Ax (exp.): 12/30/10	AS (exp.): 3/4/11	JS (exp.): 3/5/11	Stop: 4/7/10 9:30am	
Vial #: SIL 4-30-2	Vial #: SIL 9-82-1	Vial #: SIL 10-3-1	Vial #: SIL 10-4-2		
400 0.01	400 0.001	400 0.01	200 0.01		
ES: 23 ~~2~~ μl @ ~~0~~.2ng/μl	Ax: 23 ~~20~~ μl @ 0,~~01~~ng/μl	AS: 23 ~~2~~0μl @ ~~0~~.2ng/μl	JS: 23 ~~10~~μl @ 0,~~2~~ng/μl		

1-101

ANALYTICAL PERSPECTIVES

SAMPLE PATH

AP PROJECT NO.: P2096

VERSION B

SPIKE PROFILE & OBSERVATIONS

SPIKE PROFILE PCDD/F ONLY SAMPLING TRAIN OR PUF

Analyte	Spiked Compounds	Spiked Amount	Spiked Volume	Spiking Solution Conc.	Split Factor Factor	Final Volume	Final Solvent
PCDD/F	SS / AS	4 ng	40 µL	0.1 ng/µL	2	20 µL	Td
	ES	4 ng	400 µL	0.01 ng/µL			
ee AO 4/13/10	JS	2 ng	200 µL	0.01 ng/µL			
	Ax Batch CS3 A:B	0.4 ng	400 µL	0.001 ng/µL	2	40 µL	Td
	Td Batch CS3	-	40 µL	-		40 µL	

Sample ID	Rinses	Filter	XAD Resin	glasswool Others
001	Clean, clear	C, WH, D	C, WH, D, F	WH, C, D
002	see 001	see 001	C, WH, M, S	M, WH, C
003	see 001	see 001	see 002	see 002
004	see 001	see 001	see 002	see 002
005	see 001	sent 2 - C, WH, D	—	—
006	—	—	C, WH, D, F	—
007				
008				
009				
010				
011				
012				
013				3/6/10
014				

W = wet; S = sticky; C = clean; D = dry; F = free-flowing; WH = white; M = moist; B = bullseye; BE = beige; BK = black; YW = yellow; GY = grey; PM = particulates

ANALYTICAL PERSPECTIVES

SAMPLE PATH

AP PROJECT NO.: P2096

COMMUNICATIONS

M23-4435-01

Mar '10

T0525_MB000_2
CLEAN AIR ENGINEER ANALYTICAL PERSPECTIVES
PREP: 12 MAR 2010
ADV. EXP: 26 MAR 2010
4 NG Sampling Standard PCDD/F
AL KVK

AM
4/6/10

eeAO
4/13/10

Analytical Perspectives

Sample Path

Version B

M23 / M0023A PCDD/F Spike Profile

Analyte	Sampling Standards Amount Spiked (ng)
$^{37}Cl_4$-2,3,7,8-TCDD	1.6
$^{13}C_{12}$-1,2,3,4,7-PeCDD	4
$^{13}C_{12}$-1,2,3,4,6-PeCDF	4
$^{13}C_{12}$-1,2,3,4,6,9-HxCDF	4
$^{13}C_{12}$-1,2,3,4,6,8,9-HpCDF	4

Compound	Injection Standards Amount Spiked ng
$^{13}C_{12}$–1,2,3,4-TCDD	2
$^{13}C_{12}$-1,2,3,4-TCDF	2
$^{13}C_{12}$-1,2,3,4,6,7-HxCDD	1

Compound	Alternate Standard Amount Spiked ng
$^{13}C_{12}$–1,3,6,8-TCDD	4
$^{13}C_{12}$-1,3,6,8-TCDF	4

Compound	Extraction Standards Amount Spiked ng
$^{13}C_{12}$-2,3,7,8-TCDD	4
$^{13}C_{12}$-1,2,3,7,8-PeCDD	4
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	4
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	4
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	4
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4
$^{13}C_{12}$-OCDD	8
$^{13}C_{12}$-2,3,7,8-TCDF	4
$^{13}C_{12}$-1,2,3,7,8-PeCDF	4
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	4
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	4
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	4
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	4
$^{13}C_{12}$-OCDF	8

8290B/23 ICAL (pg/µL)

Analytical Perspectives	CS0	CS1	CS2	CS3	CS4	CS5	CS6
Unlabeled Analytes							
2,3,7,8-TCDD	0.25	0.5	2	10	40	200	500
2,3,7,8-TCDF	0.25	0.5	2	10	40	200	500
1,2,3,7,8-PeCDD	1.25	2.5	10	50	200	1000	2500
1,2,3,7,8-PeCDF	1.25	2.5	10	50	200	1000	2500
2,3,4,7,8-PeCDF	1.25	2.5	10	50	200	1000	2500
1,2,3,4,7,8-HxCDD	1.25	2.5	10	50	200	1000	2500
1,2,3,6,7,8-HxCDD	1.25	2.5	10	50	200	1000	2500
1,2,3,7,8,9-HxCDD	1.25	2.5	10	50	200	1000	2500
1,2,3,4,7,8-HxCDF	1.25	2.5	10	50	200	1000	2500
1,2,3,6,7,8-HxCDF	1.25	2.5	10	50	200	1000	2500
1,2,3,7,8,9-HxCDF	1.25	2.5	10	50	200	1000	2500
2,3,4,6,7,8-HxCDF	1.25	2.5	10	50	200	1000	2500
1,2,3,4,6,7,8-HpCDD	1.25	2.5	10	50	200	1000	2500
1,2,3,4,6,7,8-HpCDF	1.25	2.5	10	50	200	1000	2500
1,2,3,4,7,8,9-HpCDF	1.25	2.5	10	50	200	1000	2500
OCDD	2.5	5	20	100	400	2000	5000
OCDF	2.5	5	20	100	400	2000	5000
Extraction Standards							
$^{13}C_{12}$-2,3,7,8-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,7,8-TCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-OCDD	200	200	200	200	200	200	200
$^{13}C_{12}$-OCDF	200	200	200	200	200	200	200
Cleanup Standards							
$^{37}Cl_4$-2,3,7,8-TCDD	-	0.5	2	10	40	200	-
$^{13}C_{12}$-1,2,3,4,7-PeCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,9-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,8,9-HpCDF	100	100	100	100	100	100	100
Alternate Standards							
$^{13}C_{12}$-1,3,6,8-TCDD				100			
$^{13}C_{12}$-1,3,6,8-TCDF				100			
Injection Standards							
$^{13}C_{12}$-1,2,3,4-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4-TCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7-HxCDD	50	50	50	50	50	50	50

ANALYTICAL PERSPECTIVES **Sample Inventory Report: MM5 Sampling Train**

Project No.: P2096 **Date Rec.:** 21-Mar-10 **Project Name:** 10955

Lab. Sample ID	Collection Date	Client Sample ID	Component ID
001	18-Mar-10	Field Blank	Acetone
	18-Mar-10		Filter
	18-Mar-10		T0525-004
	18-Mar-10		Toluene
	18-Mar-10		XAD
002	16-Mar-10	Unit 1 FF Outlet Run 1	Acetone
	16-Mar-10		Filter
	16-Mar-10		T0525-001
	16-Mar-10		Toluene
	16-Mar-10		XAD
003	17-Mar-10	Unit 1 FF Outlet Run 2	Acetone
	17-Mar-10		Filter
	17-Mar-10		T0525-002
	17-Mar-10		Toluene
	17-Mar-10		XAD
004	17-Mar-10	Unit 1 FF Outlet Run 3	Acetone
	17-Mar-10		Filter
	17-Mar-10		T0525-003
	17-Mar-10		Toluene
	17-Mar-10		XAD
005	16-Mar-10	Reagent Blank	Acetone
	16-Mar-10		Filter
	16-Mar-10		Toluene
006		M23-4435-01-Audit	XAD

OK
AD 3/21/10

SmplnvmgnmmS.rpt

CHAIN OF COSTODY FORM

M23-NB-10955-001

P2096 1/2

CLIENT Wheelabrator North Broward | PROJECT NO. 10955
PLANT Same | DEPT. 66
PROJECT MANAGER Scott Brown

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	PCDD/PCDF				ADDITIONAL INFORMATION
	1	Unit 3 FF Outlet	3/16/2010	Filter	1		X				
	1	|	3/16/2010	Acetone Rinse	1		X				
	1	|	3/16/2010	Toluene Rinse	1		X				
	1	V	3/16/2010	Trap #T0525_001	1		X				
	2	Unit 2 FF Outlet	3/16/2010	Filter	1		X				
	2	|	3/16/2010	Acetone Rinse	1		X				
	2	|	3/16/2010	Toluene Rinse	1		X				
	2	V	3/16/2010	Trap #T0525_002	1		X				
	NA	Audit Sample	17-Mar	4435-01	1		X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	3/19/10 11:00	[signature]	20 Mar 10 10:20		
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time

Special Handling Instructions

Forwarding Lab: Analytical Perspectives

PO Number:

This form was completed by: Scott Brown

Signature [signature] Date 3/19/10

CleanAir ENGINEERING

LDS001A_2-COC Palatine_M23, Jul 2002

500 West Wood Street
Palatine, IL 60067

(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

CHAIN OF CUSTODY FORM

M23-NB-10955-002

P2096 2/2

CLIENT Wheelabrator North Broward
PLANT Same
PROJECT MANAGER Scott Brown
PROJECT NO. 10955
DEPT. 66

ANALYSIS REQUESTED

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	PCDD/PCDF				ADDITIONAL INFORMATION
	3	Unit ~~2~~ 5D FF Outlet	3/18/10	Filter	1		X				
	3	|	|	Acetone Rinse	1		X				
	3	|	|	Toluene Rinse	1		X				
	3	V	V	Trap # T0525_003	1		X				
	NA	Field Blank	3/18/2010	Filter	1		X				
	NA	|	3/18/2010	Acetone Rinse	1		X				
	NA	|	3/18/2010	Toluene Rinse	1		X				
	NA	V	3/18/2010	Trap # T0525_004	1		X				
	RB	NA	3/16/2010	Filter Reagent Blank							
	RB	NA	3/16/2010	Acetone Reagent Blank							
	RB	NA	3/16/2010	Toluene Reagent Blank							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/19/10 1100	Mussel white	20 Mar 10 10:20		
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time

Special Handling Instructions

Forwarding Lab: Analytical Perspectives

PO Number:

This form was completed by:

Scott Brown

Signature Date

CleanAir ENGINEERING

500 West Wood Street
Palatine, IL 60067

(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

INSTRUCTIONS FOR CONDUCTING A METHOD 23 DIOXIN/FURAN PERFORMANCE AUDIT

Auditor/Requestor Information

A dioxin/furan performance audit sample is provided for Method 23 analysis by the selected laboratory. Upon receipt of the audit material and forms, the auditor/requestor (or auditor/requestor's representative) should verify that the proper audit material(s), instructions, and data form(s) have been received and that the shipping material package has not been opened or has not been damaged. The auditor/requestor should not open the inner protective covering of the audit materials or alter the numbers on the audit materials. The auditor/requestor is responsible for forwarding the audit material with accompanying instructions and forms to the auditee (or auditee representative). The intent of the performance audit material is to provide quality assurance for the relative accuracy of the dioxin and furan analysis. The audit sample should be processed and analyzed in the same manner as the field samples. Upon completion of the performance audit analysis, the audit results shall be reported on the attached **Dioxin/Furan Audit Reporting Form** by the audited laboratory and then forwarded to the auditor/requestor. The auditor/requestor is to enter the audit results into the Stationary Source Audit Program (SSAP) electronic database. A dioxin/furan audit report will be developed and forwarded to the auditor within 10 work days after receipt of the report in the database. The auditor/requestor will not be informed as to which specific isomer data failed, or were acceptable, only that the results met either a 90% confidence limit or a 50% confidence limit. The auditor/requestor is responsible for providing a copy of the audit report to the tester as well as the laboratory. If, necessary, the auditor/requestor can obtain additional data quality information by contacting the SSAP staff.

Auditee Information

The auditee laboratory shall analyze the performance audit sample at the same time and in the same manner as the dioxin/furan field samples. If confirmation analysis (2,3,7,8-TCDF) is conducted and results reported for the field samples, the identical analytical procedures must be performed and results reported for the audit sample. If an isomer is not detected, the auditee should enter "0" in the appropriate space. The auditee is responsible for preparing the **Dioxin/Furan Audit Reporting Form** and forwarding the **Reporting Form** to the auditor/requestor. The auditee should carefully follow the enclosed reporting instructions listed on the attached page 3 of 4. The dioxin/furan data must be entered in the format as instructed. The **Dioxin/Furan Audit Reporting Form** has been designed to allow calculation of toxic equivalencies. The auditee may provide as many significant figures as desired. However, the database input is two significant figures. The auditee should retain a copy of the results to ensure that the audit values have been reported correctly. The auditee will not be informed as to which specific isomers are outside the confidence limits.

INSTRUCTIONS (Continued)

The dioxin/furan audit material you have received contains 17 low level dioxin/furan congeners spiked onto 20 grams of XAD-2® adsorbent. To extract and process the dioxin/furan audit sample, follow the steps below.

1) Remove the XAD-2® adsorbent from the container, and place in a Soxhlet apparatus extraction thimble. Throughly rinse the container with toluene, and place the rinses into the extraction thimble. (Note: There are no Container No. 1 filter or Container No. 2 acetone and methylene chloride rinse fractions to be incorporated.)

2) Place the extraction thimble into the extractor. Extract the contents of the extraction thimble for ~16 hours using the directions in Section 5.1.5 of Method 23.

3) Following extraction, transfer the toluene extract to a rotary evaporator and concentrate the sample to approximately 10 mL.

4) Split the concentrate sample: If the field sample concentrates are split, an identical audit concentrate split shall be performed in the same manner as the field samples. To separate the sample, split and store one/half of the fraction , and analyze the remaining fraction according to procedures in Sections 5.2 and 5.3 of Method 23.

5) Record the results on the **Dioxin/Furan Audit Reporting Form** in units of ng/sample per the instructions listed on page 3 of 4.

6) Submit the dioxin/furan audit results recorded on the **Reporting Form** to the designated agent.

INSTRUCTIONS FOR REPORTING METHOD 23 DIOXIN/FURAN PERFORMANCE AUDIT RESULTS

Note: Method 23 Dioxin/Furan Audit Samples are currently ordered using the Stationary Source Audit Program (SSAP) automated electronic database. Requestors use the *SSAP Automated Sample Request and Information System* to request audit samples and to enter the audit sample data results (answers) into the database for evaluation.

1) Please use the **enclosed Dioxin/Furan Audit Reporting Form** (page 4 of 4) as a template for reporting the dioxin/furan audit data results. The format of the form duplicates the electronic database entry table for dioxin/furan audit data results.

2) Two important components of the template are:

- Results for congeners are reported in units of **nanograms/sample**. The database will not convert other units into nanograms.
- Please note that **"Other"** is shown at the end of each congener class. Results must be reported as **other, <u>and not as total</u>**, congeners. For example, 1,2,3,7,8 -pentachlorodibenzofuran (PCDF) and 2,3,4,7,8 - PCDF are followed on the form by **Other PCDF.** "Other" DOES NOT include the individual compound values listed in 1,2,3,7,8 - and 2,3,4,7,8 - PCDF.

[Total PCDF] minus [1,2,3,7,8-PCDF] minus [2,3,4,7,8-PCDF] = **Other PCDF**

3) Please contact Thomas Mckenzie at Eastern Research Group, telephone (919) 468-7920, or Ray Merrill (919) 468-7887 with questions you may have. Their fax number is (919) 468-7803.

Dioxin/Furan Audit Reporting Form

Auditor:		
Agency:		
Agency Address:		
Agency Phone #:		
Date Analyzed:		
Auditee Company:		
Auditee Address:		
Date Audit Sam Rec'd:		
Audit Sample #:	**M23-4435-01**	
Confirmation Analysis Used:		Yes ____ No ____
Auditee's Name:		
Signature:		

Compound	**Auditee Result (ng/sample)**	**Compound**	**Auditee Result (ng/sample)**
2378-TCDD		2378-TCDF	
Other TCDD		Other TCDF	
12378-PeCDD		12378-PCDF	
Other PeCDD		23478-PCDF	
123478-HxCDD		Other PCDF	
123678-HxCDD		123478-HxCDF	
123789-HxCDD		123678-HxCDF	
Other HxCDD		123789-HxCDF	
1234678-HpCDD		234678-HxCDF	
Other HpCDD		Other HxCDF	
OCDD		1234678-HpCDF	
		1234789-HpCDF	
		Other HpCDF	
		OCDF	

1/1

CLIENT SAMPLE ID	Field Blank	Unit 1 FF Outlet Run 1	Unit 1 FF Outlet Run 2	Unit 1 FF Outlet Run 3
LAB SAMPLE #	P2096-001	-002	-003	-004
DATE SAMPLED	3/18/10	3/16/10	3/17/10	3/17/10
OBSERVATIONS				
COMPONENTS	**QUANTITY**	**QUANTITY**	**QUANTITY**	**QUANTITY**
FILTER	1	1	1	1
XAD	1	1	1	1
TRAP PREP#	T0525-004	T0525-001	T0525-002	T0525-003
ACETONE ~~/CH_2Cl_2~~ FH/BH RINSE	1	1	1	1
TOLUENE FH/BH RINSE	1	1	1	1
OTHER (IMPINGERS, ETC...)				
TRAP SOURCE	☐AP ☑CLIENT	☐AP ☑CLIENT	☐AP ☑CLIENT	☐AP ☑CLIENT

CLIENT SAMPLE ID	Reagent Blank	M23-4435-01-Audit		
LAB SAMPLE #	P2096-005	-006		
DATE SAMPLED	3/16/10			
OBSERVATIONS				
COMPONENTS	**QUANTITY**	**QUANTITY**	**QUANTITY**	**QUANTITY**
FILTER	1			
XAD		1		
TRAP PREP#				
ACETONE ~~/CH_2Cl_2~~ FH/BH RINSE	1			
TOLUENE FH/BH RINSE	1			
OTHER (IMPINGERS, ETC...)				
TRAP SOURCE	☐AP ☐CLIENT	☐AP ☐CLIENT	☐AP ☐CLIENT	☐AP ☐CLIENT

UNUSED TRAPS: T0525-006, 005

METHOD 23
PCDD/PCDFs

Sampling Module Request Form

Type & No. of Apparatus

Quantity of XAD: 12
- Resin Batch No. 5131

Quantity of PUF: 0
- Resin Batch No.: N/A

Filter Size 82.6
- Quantity of Filters: 14
- Filter Batch #: 02112010

Quantity Petri Dishes: Ø

Jars and/or Bottles: Ø

Client Specific Instructions

Hi, Please put 6 traps in one cooler and 6 in another cooler. I will be shipping the North samples on

Spike Profile

*#MB/BCS3 Needed:

Vol. PCDD/F: 40µL
Solution ID: 07012007A CS/SS
Vial ID: SK 7-23-7 Exp: 06/30/10

Vol. HR_PAH:
~~Solution ID:~~
Vial ID: ~~Exp:~~

Vol. HR_PCB:
~~Solution ID:~~
Vial ID: ~~Exp:~~

AP Project #: T0525

Following sample recovery, please return this form if necessary with the field samples to:

Analytical Perspectives

2714 Exchange Drive
Wilmington, NC 28405
Ph.: 910-794-1613
Fax.: 910-794-3919

Type of Analysis & TAT

Dioxin:	yes	TAT: 30_days
PAH:	no	
PCB:	no	
Other:	no	Desc.:

Initial Below

Prep by: OL KVC

Spike by: JW

Witness: KVC Date: 3/12/10

Client Information

Company/Org.: Clean Air Engineering

Contact: Scott Brown

Client Project ID: 10955

Client PO#: 10955
P20961/2

Date of Request: 22/02/2010,

Arrival Date: 15/03/2010

Ship to:
Wheelabrator North Broward
2600 NW 48th Street

Pompano Beach
FL 33073
United States of America
954-971-8701

sbrown@cleanair.com

All projects are shipped priority overnight via FedEx

Additional Notes

Airway Bill #: 7933 5118 3509
7933 5118 3406

Date shipped: 12-march-10

AP Invoice #: 11594

AP Rental Traps: N/A
- Quantity: N/A

P2096 2/2

TRAP BATCH

T0525

INITIAL & DATE BELOW FOR EACH TRAP

SPIKING TRAPS

ONLY FILL OUT APPLICABLE TABLE

SIL7-23-3

SOLUTION ID: 070120007A CS/SS	
SPIKE VOLUME : 40 µl	
TRAP ID	**PCDD/FS**
MB-000	KVK KVK
BCS3	KVK KVK
001	KVK
002	KVK
003	KVK
004	KVK
005	KVK
006	KVK
007	KVK
008	KVK
009	KVK
010	KVK
011	KVK
012	KVK
013	
014	
015	

03/12/10 KVK

SOLUTION ID:	
SPIKE VOLUME :	
TRAP ID	**HRPCBS**
MB-000	
BCS3	
001	
002	
003	
004	
005	
006	
007	
008	
009	
010	
011	
012	
013	
014	
015	

SOLUTION ID:	
SPIKE VOLUME :	
TRAP ID	**HRPAHS**
MB-000	
BCS3	
001	
002	
003	
004	
005	
006	
007	
008	
009	
010	
011	
012	
013	
014	
015	

SOLUTION ID:	
SPIKE VOLUME :	
TRAP ID	**OTHER**
MB-000	
BCS3	
001	
002	
003	
004	
005	
006	
007	
008	
009	
010	
011	
012	
013	
014	
015	

ANALYTICAL PERSPECTIVES

ANALYTICAL PERSPECTIVES

SAMPLE LOG-IN FORM Box# 1

Date Samples Arrived: 22 Mar. 10 Initials: NM

Time / Date logged in: 9:14 22 Mar 10 Refrigerator: F2 Initials: NM

Samples Arrived By: (circle one) FedEx UPS Airborne Express DHL Emery Freezer Truck Company Courier Other_______

Shipping Preservation: Traps & Filters: Ice / Blue Ice / Dry Ice / None Temp °C__________

Solvents: Ice / Blue Ice / Dry Ice / None Temp °C 17° VAD

Shipping Documentation Present? (circle one) Shipping Label or Airbill

# of boxes: 1 # of coolers: 1 Tracking #s: 8620 7138 4541

Shipping Container(s) intact? yes If no, describe condition:

Container Custody Seals Present & Intact? NA If not intact, describe condition:

Sample Cutody Seals Present & Intact? NA If not intact, describe condition:

# of Seals: Ø or Seal #: Ø

Sample Container Intact? yes If no, indicate sample condition:

Chain of Custody (COC) / Sample Documentation Present? yes Exceptions? N/A

If not, complete COC Anomaly Form

Shipping Containers: Coolers: Client or AP .... Return Retain Dispose

Boxes: Client or AP .... Return Retain Dispose

Sample Control Log In/Out Completed? yes

FILL BELOW IF APPLICABLE

Have all the samples arrived? yes If no, complete the following.

Shipment #:_______ Date of Arrival:__________ Condition:__________ Temp°C__________

Delivered by:__________ Tracking #s__________

COC Present?_____ Acceptable?_____ If no, document on COC Anomaly Form additional shipment comments.

Container Intact?_________ Samples Intact?_________ If no, describe:

Do we expect another shipment?_________ If yes, start a new log-in sheet. ☺

Client Project / Job ID: 10955

PO #: 10955

AP Project ID: P2096

CHAIN OF CUSTODY ANOMALY FORM

The following items were omited from the COC

Project ID and/or PO#:

Sampler:

Relinquished By:

Date:

Time:

Sample ID:

Sample Date:

Sample Collection Times:

Sample Description:

Analysis Requested:

Container Qty.:

Container Type:

Other:

COMMENTS

ANALYTICAL PERSPECTIVES

SAMPLE LOG-IN FORM Box #1

Date Samples Arrived: 22 Mar 10 Initials: DM

Time / Date logged in: 9:17 AM 22 Mar 10 Refrigerator: F2 Initials: DM

Samples Arrived By: (circle one) FedEx UPS Airborne Express DHL Emery
Freezer Truck Company Courier Other________

Shipping Preservation: Traps & Filters: Ice / Blue Ice / Dry Ice / None Temp °C________

Solvents: Ice / Blue Ice / Dry Ice / None Temp °C 19° VAD

Shipping Documentation Present? (circle one) Shipping Label or Airbill

# of boxes: 1 # of coolers: 1 Tracking #s: 8620 7138 4611

Shipping Container(s) intact? yes If no, describe condition:

Container Custody Seals Present & Intact? NA If not intact, describe condition:

Sample Cutody Seals Present & Intact? NA If not intact, describe condition:

# of Seals: Ø or Seal #: Ø

Sample Container Intact? yes If no, indicate sample condition:

Chain of Custody (COC) / Sample Documentation Present? yes Exceptions? NA

If not, complete COC Anomaly Form

Shipping Containers: Coolers: Client or AP .... Return Retain Dispose

Boxes: Client or AP .... Return Retain Dispose

Sample Control Log In/Out Completed? yes

FILL BELOW IF APPLICABLE

Have all the samples arrived? yes If no, complete the following.

Shipment #:_______ Date of Arrival:__________ Condition:__________ Temp°C__________

Delivered by:__________ Tracking #s__________________

COC Present?_____ Acceptable?_____ If no, document on COC Anomaly Form additional shipment comments.

Container Intact?__________ Samples Intact?__________ If no, describe:

Do we expect another shipment?__________ If yes, start a new log-in sheet. ☺

Client Project / Job ID: 10955

PO #: 10955

AP Project ID: P2096

CHAIN OF CUSTODY ANOMALY FORM

The following items were omited from the COC

Project ID and/or PO#:

Sampler:

Relinquished By:

Date:

Time:

Sample ID:

Sample Date:

Sample Collection Times:

Sample Description:

Analysis Requested:

Container Qty.:

Container Type:

Other:

COMMENTS

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ANALYTICAL PERSPECTIVES

SAMPLE LOG-IN FORM Cooler #1

Date Samples Arrived: 20 Mar 10 Initials: NM

Time / Date logged in: 10:20 22 Mar 10 Refrigerator: E2 Initials: NM

Samples Arrived By: (circle one) FedEx UPS Airborne Express DHL Emery Freezer Truck Company Courier Other________

Shipping Preservation: Traps & Filters: Ice / Blue Ice / Dry Ice / None Temp °C 2° VAD

Solvents: Ice / Blue Ice / Dry Ice / None Temp °C________

Shipping Documentation Present? (circle one) Shipping Label or Airbill

\# of boxes: 0 # of coolers: 1 Tracking #s: 8620 7138 4530

Shipping Container(s) intact? yes If no, describe condition:

Container Custody Seals Present & Intact? NA If not intact, describe condition:

Sample Cutody Seals Present & Intact? NA If not intact, describe condition:

\# of Seals: Ø or Seal #: Ø

Sample Container Intact? yes If no, indicate sample condition:

Chain of Custody (COC) / Sample Documentation Present? NO Exceptions? N/A

If not, complete COC Anomaly Form

Shipping Containers: Coolers: Client or AP .... Return Retain Dispose

Boxes: Client or AP .... Return Retain Dispose

Sample Control Log In/Out Completed? yes

FILL BELOW IF APPLICABLE

Have all the samples arrived? NO If no, complete the following. missing Solvents

Shipment #:______ Date of Arrival:__________ Condition:__________ Temp°C__________

Delivered by:__________ Tracking #s__________________

COC Present?_____ Acceptable?_____ If no, document on COC Anomaly Form additional shipment comments.

Container Intact?_________ Samples Intact?___________ If no, describe:

Do we expect another shipment?_________ If yes, start a new log-in sheet. ☺

Client Project / Job ID: 10955

PO #: 10955

AP Project ID: P2096

CHAIN OF CUSTODY ANOMALY FORM

The following items were omited from the COC

Project ID and/or PO#:

Sampler:

Relinquished By:

Date:

Time:

Sample ID:

Sample Date:

Sample Collection Times: missing on COC

Sample Description:

Analysis Requested:

Container Qty.:

Container Type:

Other:

COMMENTS

sample Collection times missing on samples Run 2 & Run 3 ^{SM} date/time does not match COC SM

I-118

Analytical Perspectives — Injection Log

Created: 09-Apr-2010 16:20 User: MC S/W: AP UltraTrace-Pro V4.21

Expt: DF_CL4-8A GC: DB5MS_60M Project: P2096_7679_DF

#	Datafile	Vial#	Lab ID	Client ID	Analyst	Acq Date	Acq Time
1	100409P1-01	46	BCS3_7679_DF_PA	BCS3_7679_DF_PA	MC	9-APR-2010	07:26:36
3	100409P1-03	47	MB1_7679_DF_SDS	0_7679_MB001	MC	9-APR-2010	09:07:26
4	100409P1-04	48	P2096_7679_001	Field Blank	MC	9-APR-2010	09:57:56
5	100409P1-05	49	P2096_7679_002	Unit 1 FF Outlet Run 1	MC	9-APR-2010	10:48:24
6	100409P1-06	50	P2096_7679_003	Unit 1 FF Outlet Run 2	MC	9-APR-2010	11:38:53
7	100409P1-07	51	P2096_7679_004	Unit 1 FF Outlet Run 3	MC	9-APR-2010	12:29:27
8	100409P1-08	52	P2096_7679_005	Reagent Blank	MC	9-APR-2010	13:19:56
9	100409P1-09	53	P2096_7679_006	M23-4435-01-Audit	MC	9-APR-2010	14:10:25
10	100409P1-10	46	BCS3_7679_DF_PB	BCS3_7679_DF_PB	MC	9-APR-2010	15:00:55

REVIEWED
By Michael D H Chu at 4:20 pm, Apr 09, 2010

REVIEWED
By Kimberly Mace at 3:37 pm, Apr 12, 2010

Analytical Perspectives — Injection Log

Created: 09-Apr-2010 16:20 User: MC S/W: AP UltraTrace-Pro V4.21

Expt: DF_CL4-8A GC: DB5MS_60M Project: P2096_7679_DF

#	Datafile	Vial#	Lab ID	Client ID	Analyst	Acq Date	Acq Time
1	100409P1-01	46	BCS3_7679_DF_PA	BCS3_7679_DF_PA	MC	9-APR-2010	07:26:36
3	100409P1-03	47	MB1_7679_DF_SDS	0_7679_MB001	MC	9-APR-2010	09:07:26
4	100409P1-04	48	P2096_7679_001	Field Blank	MC	9-APR-2010	09:57:56
5	100409P1-05	49	P2096_7679_002	Unit 1 FF Outlet Run 1	MC	9-APR-2010	10:48:24
6	100409P1-06	50	P2096_7679_003	Unit 1 FF Outlet Run 2	MC	9-APR-2010	11:38:53
7	100409P1-07	51	P2096_7679_004	Unit 1 FF Outlet Run 3	MC	9-APR-2010	12:29:27
8	100409P1-08	52	P2096_7679_005	Reagent Blank	MC	9-APR-2010	13:19:56
9	100409P1-09	53	P2096_7679_006	M23-4435-01-Audit	MC	9-APR-2010	14:10:25
10	100409P1-10	46	BCS3_7679_DF_PB	BCS3_7679_DF_PB	MC	9-APR-2010	15:00:55

REVIEWED
By Michael D.H. Chu at 4:20 pm, Apr 09, 2010

REVIEWED
By Kimberly Mace at 8:11 pm, Apr 12, 2010

P2096

ANALYTICAL PERSPECTIVES

PART 3

ANALYTICAL RESULTS

DOCUMENTATION FOR THE ANALYSIS OF POLYCHLORINATED DIBENZO-*P*-DIOXINS & DIBENZOFURANS

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Samples processed against BCS3. KAM 12 Apr 10

Lab ID: MB1_7679_DF_SDS	Acq'd: 09 Apr 2010 09:07 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: 0_7679_MB001	UTP: 09-Apr-2010 15:51 MC	J-level: 10 pg	Checkcode: 681-930
Datafile: 100409P1-03	Report: 09 Apr 2010 15:53 MC	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	0.99	-	1226	1.46
12378-PeCDD	NotFnd		1.0006	-		-	-	-	0.93	-	1290	1.79
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.04	-	1414	2.66
123678-HxCDD	NotFnd		1.0034	-		-	-	-	0.95	-	1414	2.48
123789-HxCDD	NotFnd		1.0116	-		-	-	-	0.93	-	1414	2.79
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	0.96	-	1204	2.74
OCDD	43.56		1.0004	1.0004	0	5.63E+04	1.02	Y	1.00	14.1	1314	4.41
2378-TCDF	NotFnd		1.0009	-		-	-	-	1.08	-	1324	1.07
12378-PeCDF	NotFnd		1.0006	-		-	-	-	1.00	-	1141	1.09
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.04	-	1141	1.03
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.14	-	1444	1.78
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.13	-	1444	1.66
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	1444	1.78
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.12	-	1444	2.42
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.38	-	1248	1.69
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.33	-	1248	2.53
OCDF	NotFnd		1.0004	-		-	-	-	0.96	-	1282	3.41

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.87	1.0259	1.0258	-0.2	3.50E+07	0.81	Y	1.01	88.6
ES 12378-PeCDD	32.48	1.2404	1.2399	-0.8	2.72E+07	1.61	Y	0.78	88.9
ES 123478-HxCDD	36.44	0.9917	0.9918	+0.2	2.19E+07	1.34	Y	0.99	91.1
ES 123678-HxCDD	36.55	0.9947	0.9948	+0.2	2.40E+07	1.22	Y	1.07	92.8
ES 123789-HxCDD	36.84	1.0028	1.0028	0	2.49E+07	1.24	Y	1.09	94.1
ES 1234678-HpCDD	40.04	1.0902	1.0897	-1.1	2.00E+07	1.06	Y	0.90	91.2
ES OCDD	43.55	1.1862	1.1852	-2.2	3.20E+07	0.91	Y	0.74	89.2
ES 2378-TCDF	25.94	1.0585	1.0584	-0.1	5.03E+07	0.80	Y	1.00	89.1
ES 12378-PeCDF	30.98	1.2646	1.2640	-0.9	3.87E+07	1.57	Y	0.75	91.1
ES 23478-PeCDF	32.12	1.3113	1.3106	-1.0	3.87E+07	1.59	Y	0.74	91.7
ES 123478-HxCDF	35.46	0.9651	0.9652	+0.2	2.76E+07	0.52	Y	1.19	95.6
ES 123678-HxCDF	35.60	0.9689	0.9691	+0.4	3.08E+07	0.53	Y	1.35	94.2
ES 234678-HxCDF	36.26	0.9867	0.9868	+0.2	2.89E+07	0.53	Y	1.28	92.9
ES 123789-HxCDF	37.21	1.0129	1.0129	0	2.42E+07	0.52	Y	1.20	83.4
ES 1234678-HpCDF	38.89	1.0589	1.0586	-0.7	2.07E+07	0.44	Y	0.95	89.9
ES 1234789-HpCDF	40.60	1.1057	1.1051	-1.3	1.71E+07	0.44	Y	0.82	86.2
ES OCDF	43.78	1.1926	1.1915	-2.4	4.04E+07	0.89	Y	0.96	86.9

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Lab ID: MB1_7679_DF_SDS | Acq'd: 09 Apr 2010 09:07 MC | WtVol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: 0_7679_MB001 | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 681-930

Datafile: 100409P1-03 | Report: 09 Apr 2010 15:53 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.20		-	-	-	3.92E+07	0.81	Y	-	-
JS 1234-TCDF	24.51		-	-	-	5.66E+07	0.80	Y	-	-
JS 123467-HxCDD	36.74		-	-	-	1.21E+07	1.28	Y	-	-
CS 37Cl-2378-TCDD	26.89		1.0268	1.0267	-0.2	1.58E+07	n/a	-	1.16	87.2
CS 12347-PeCDD	31.97		1.2209	1.2204	-0.8	2.78E+07	1.61	Y	0.79	89.7
CS 12346-PeCDF	30.44		1.2424	1.2421	-0.4	3.86E+07	1.58	Y	0.79	86.4
CS 123469-HxCDF	35.91		0.9773	0.9775	+0.4	2.77E+07	0.53	Y	1.23	93.1
CS 1234689-HpCDF	39.37		1.0720	1.0716	-0.9	1.88E+07	0.43	Y	0.86	90.2
SS 37Cl-2378-TCDD	26.89		1.0268	1.0267	-0.2	1.58E+07	n/a	-	1.14	98.5
SS 12347-PeCDD	31.97		1.2209	1.2204	-0.8	2.78E+07	1.61	Y	1.01	101
SS 12346-PeCDF	30.44		1.2424	1.2421	-0.4	3.86E+07	1.58	Y	1.05	94.8
SS 123469-HxCDF	35.91		0.9773	0.9775	+0.4	2.77E+07	0.53	Y	0.91	98.9
SS 1234689-HpCDF	39.37		1.0720	1.0716	-0.9	1.88E+07	0.43	Y	0.91	100
AS 1368-TCDD	22.92		0.8731	0.8751	+3.1	3.76E+07	0.79	Y	1.08	88.8
AS 1368-TCDF	20.79		0.8447	0.8485	+5.6	6.64E+07	0.79	Y	1.29	90.7
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.22		0.9794	0.9795	+0.2	1.46E+05	1.02	Y	0.01	95.1
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 12 Apr 10

Totals	Conc	EMPC
Total TCDD	0	2.25
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	14.1	16.3
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	14.1	16.3

Lab ID: MB1_7679_DF_SDS
Client ID: 0_7679_MB001
Datafile: 100409P1-03

Acq'd: 09 Apr 2010 09:07 MC
UTP: 09-Apr-2010 15:51 MC
Report: 09 Apr 2010 15:53 MC

Wt/Vol: 1
J-level: 10 pg
ES spike: 4000 pg

Cal: BCS3_7679_DF_PAB
Checkcode: 681-930
Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	22.96		0.8539	0.8544	+0.8	1.96E+04	0.59	N	0.99	2.25	1226	1.46
1379-TCDD	NotFnd		0.8685						0.99		1226	1.46
1369-TCDD	NotFnd		0.8863						0.99		1226	1.46
1469-TCDD	NotFnd		0.9189						0.99		1226	1.46
1247/1246/1248/1249-TCDD	NotFnd		0.9276						0.99		1226	1.46
1378-TCDD	NotFnd		0.9351						0.99		1226	1.46
1268-TCDD	NotFnd		0.9430						0.99		1226	1.46
1478-TCDD	NotFnd		0.9517						0.99		1226	1.46
1279-TCDD	NotFnd		0.9598						0.99		1226	1.46
1234/1269-TCDD	NotFnd		0.9740						0.99		1226	1.46
1236-TCDD	NotFnd		0.9801						0.99		1226	1.46
1237/1238-TCDD	NotFnd		0.9895						0.99		1226	1.46
1239-TCDD	NotFnd		0.9952						0.99		1226	1.46
2378-TCDD	**NotFnd**		**1.0008**						**0.99**		**1226**	**1.46**
1278-TCDD	NotFnd		1.0138						0.99		1226	1.46
1267-TCDD	NotFnd		1.0194						0.99		1226	1.46
1289-TCDD	NotFnd		1.0396						0.99		1226	1.46
12479/12468-PeCDD	NotFnd		0.9210						0.93		1290	1.79
12469-PeCDD	NotFnd		0.9382						0.93		1290	1.79
12368-PeCDD	NotFnd		0.9556						0.93		1290	1.79
12478-PeCDD	NotFnd		0.9614						0.93		1290	1.79
12379-PeCDD	NotFnd		0.9649						0.93		1290	1.79
12369/12467/12489-PeCDD	NotFnd		0.9732						0.93		1290	1.79
12346/12347-PeCDD	NotFnd		0.9850						0.93		1290	1.79
12378-PeCDD	**NotFnd**		**1.0006**						**0.93**		**1290**	**1.79**
12367-PeCDD	NotFnd		1.0037						0.93		1290	1.79
12389-PeCDD	NotFnd		1.0146						0.93		1290	1.79
124679/124689-HxCDD	NotFnd		0.9534						0.97		1414	2.64
123468-HxCDD	NotFnd		0.9717						0.97		1414	2.64
123679/123689-HxCDD	NotFnd		0.9793						0.97		1414	2.64
123469-HxCDD	NotFnd		0.9833						0.97		1414	2.64
123478-HxCDD	**NotFnd**		**1.0004**						**1.04**		**1414**	**2.66**
123678-HxCDD	**NotFnd**		**1.0034**						**0.95**		**1414**	**2.48**
123467-HxCDD	NotFnd		1.0088						0.97		1414	2.64
123789-HxCDD	**NotFnd**		**1.0116**						**0.93**		**1414**	**2.79**

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Lab ID: MB1_7679_DF_SDS | Acq'd: 09 Apr 2010 09:07 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB
Client ID: 0_7679_MB001 | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 681-930
Datafile: 100409P1-03 | Report: 09 Apr 2010 15:53 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9794						0.96		1204	2.74
1234678-HpCDD	**NotFnd**		**1.0003**						**0.96**		**1204**	**2.74**
OCDD	**43.56**		**1.0004**	**1.0004**	**0**	**5.63E+04**	**1.02**	**Y**	**1.00**	**14.1**	**1314**	**4.41**
OCDD-a	NotFnd		1.0003						0.06		1475	81.1
1368-TCDF	NotFnd		0.8012						1.08		1324	1.07
1468-TCDF	NotFnd		0.8216						1.08		1324	1.07
2468-TCDF	NotFnd		0.8461						1.08		1324	1.07
1346/1246-TCDF	NotFnd		0.8607						1.08		1324	1.07
1347/1378/1247-TCDF	NotFnd		0.8672						1.08		1324	1.07
1348-TCDF	NotFnd		0.8792						1.08		1324	1.07
1248/1367/1379-TCDF	NotFnd		0.8846						1.08		1324	1.07
1268-TCDF	NotFnd		0.9011						1.08		1324	1.07
1467-TCDF	NotFnd		0.9067						1.08		1324	1.07
1478-TCDF	NotFnd		0.9137						1.08		1324	1.07
1369/1237-TCDF	NotFnd		0.9293						1.08		1324	1.07
2467-TCDF	NotFnd		0.9348						1.08		1324	1.07
2368-TCDF	NotFnd		0.9408						1.08		1324	1.07
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9445						1.08		1324	1.07
1278-TCDF	NotFnd		0.9641						1.08		1324	1.07
1349-TCDF	NotFnd		0.9693						1.08		1324	1.07
1267-TCDF	NotFnd		0.9755						1.08		1324	1.07
2346/1249-TCDF	NotFnd		0.9834						1.08		1324	1.07
2347/1279-TCDF	NotFnd		0.9922						1.08		1324	1.07
2348-TCDF	NotFnd		0.9966						1.08		1324	1.07
2378-TCDF	**NotFnd**		**1.0009**						**1.08**		**1324**	**1.07**
2367/3467-TCDF	NotFnd		1.0164						1.08		1324	1.07
1269-TCDF	NotFnd		1.0260						1.08		1324	1.07
1239-TCDF	NotFnd		1.0375						1.08		1324	1.07
1289-TCDF	NotFnd		1.0834						1.08		1324	1.07
13468/12468-PeCDF	NotFnd		0.9057						1.02		1465	1.36
13678/13467/12467-PeCDF	NotFnd		0.9581						1.02		1141	1.06
12368/13478/12478-PeCDF	NotFnd		0.9620						1.02		1141	1.06
14678-PeCDF	NotFnd		0.9667						1.02		1141	1.06
13479-PeCDF	NotFnd		0.9702						1.02		1141	1.06
13469/12479-PeCDF	NotFnd		0.9781						1.02		1141	1.06
12346-PeCDF	NotFnd		0.9829						1.02		1141	1.06

Lab ID: MB1_7679_DF_SDS
Client ID: 0_7679_MB001
Datafile: 100409P1-03

Acq'd: 09 Apr 2010 09:07 MC
UTP: 09-Apr-2010 15:51 MC
Report: 09 Apr 2010 15:53 MC

Wt/Vol: 1
J-level: 10 pg
ES spike: 4000 pg

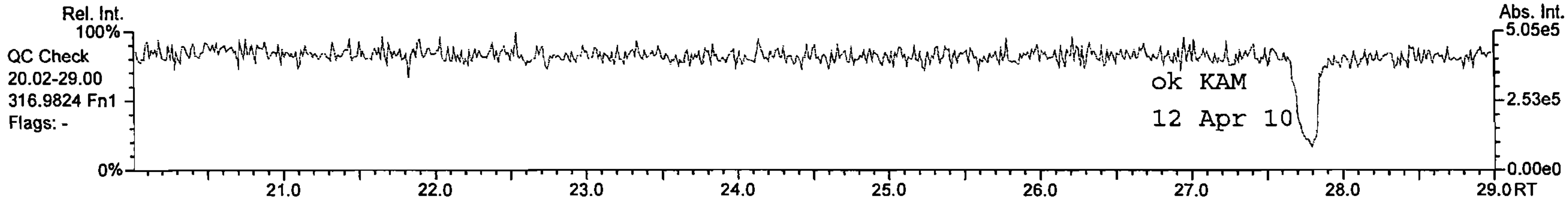
Cal: BCS3_7679_DF_PAB
Checkcode: 681-930
Split: 2

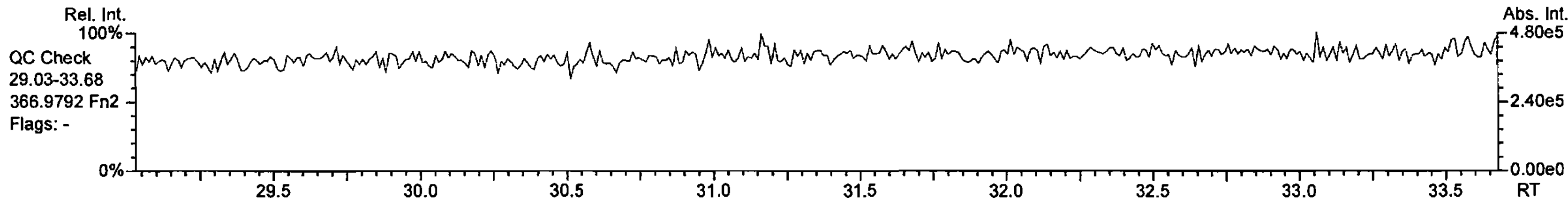
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9858						1.02		1141	1.06
12347-PeCDF	NotFnd		0.9881						1.02		1141	1.06
12348-PeCDF	NotFnd		0.9936						1.02		1141	1.06
12378-PeCDF	**NotFnd**		**1.0006**						**1.00**		**1141**	**1.09**
12678/12367-PeCDF	NotFnd		1.0104						1.02		1141	1.06
12379-PeCDF	NotFnd		1.0151						1.02		1141	1.06
12679-PeCDF	NotFnd		0.9925						1.02		1141	1.06
23467/12369-PeCDF	NotFnd		0.9981						1.02		1141	1.06
23478-PeCDF	**NotFnd**		**1.0005**						**1.04**		**1141**	**1.03**
23478/12489-PeCDF	NotFnd		1.0006						1.04		1141	1.03
12489-PeCDF	NotFnd		1.0023						1.02		1141	1.06
12349-PeCDF	NotFnd		1.0110						1.02		1141	1.06
12389-PeCDF	NotFnd		1.0350						1.02		1141	1.06
123468-HxCDF	NotFnd		0.9609						1.13		1444	1.89
124678/134678-HxCDF	NotFnd		0.9668						1.13		1444	1.89
134679-HxCDF	NotFnd		0.9733						1.13		1444	1.89
124679-HxCDF	NotFnd		0.9788						1.13		1444	1.89
124689-HxCDF	NotFnd		0.9851						1.13		1444	1.89
123467-HxCDF	NotFnd		0.9968						1.13		1444	1.89
123478-HxCDF	**NotFnd**		**1.0004**						**1.14**		**1444**	**1.78**
123678-HxCDF	**NotFnd**		**1.0005**						**1.13**		**1444**	**1.66**
123479-HxCDF	NotFnd		1.0048						1.13		1444	1.89
123469-HxCDF	NotFnd		1.0090						1.13		1444	1.89
123679-HxCDF	NotFnd		0.9943						1.13		1444	1.89
234678-HxCDF	**NotFnd**		**1.0005**						**1.14**		**1444**	**1.78**
234678/123689-HxCDF	NotFnd		1.0004						1.14		1444	1.78
123689-HxCDF	NotFnd		1.0009						1.13		1444	1.89
123789-HxCDF	**NotFnd**		**1.0005**						**1.12**		**1444**	**2.42**
123789/123489-HxCDF	NotFnd		1.0012						1.12		1444	2.42
123489-HxCDF	NotFnd		1.0017						1.13		1444	1.89
1234678-HpCDF	**NotFnd**		**1.0003**						**1.38**		**1248**	**1.69**
1234679-HpCDF	NotFnd		1.0083						1.36		1248	2.07
1234689-HpCDF	NotFnd		1.0132						1.36		1248	2.07
1234789-HpCDF	**NotFnd**		**1.0003**						**1.33**		**1248**	**2.53**
OCDF	**NotFnd**		**1.0004**						**0.96**		**1282**	**3.41**
OCDF-a	NotFnd		1.0002						0.05		1627	76

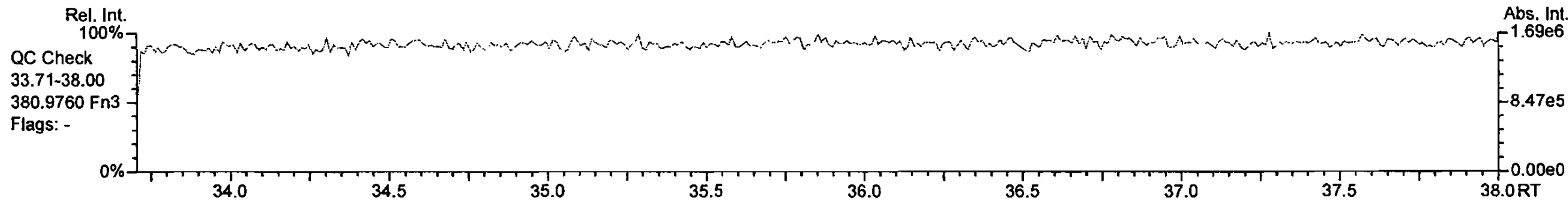
AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

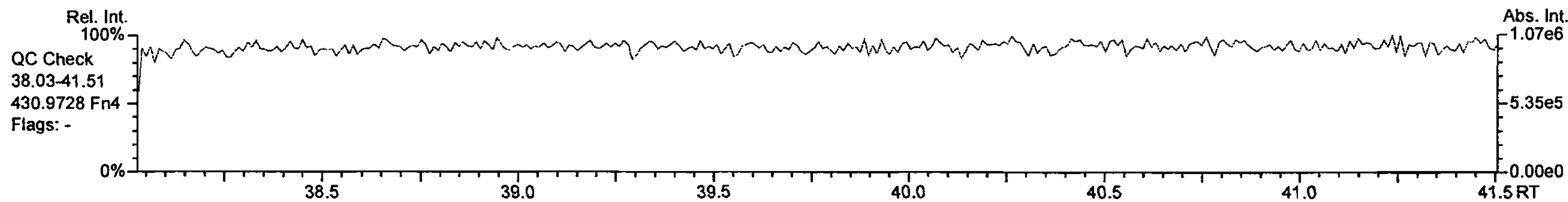
Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

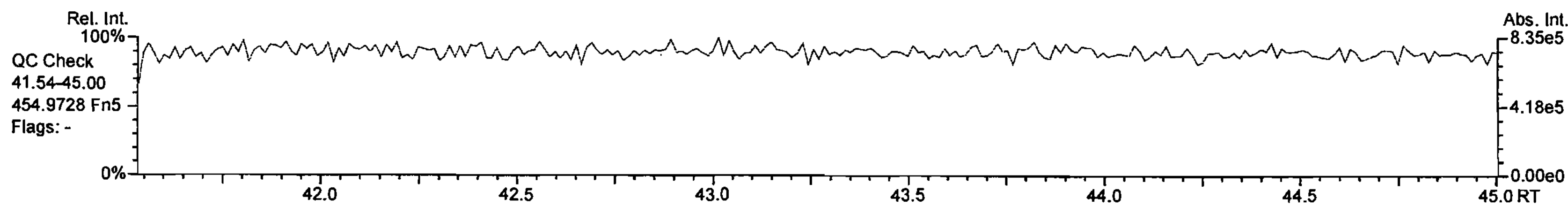
Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03











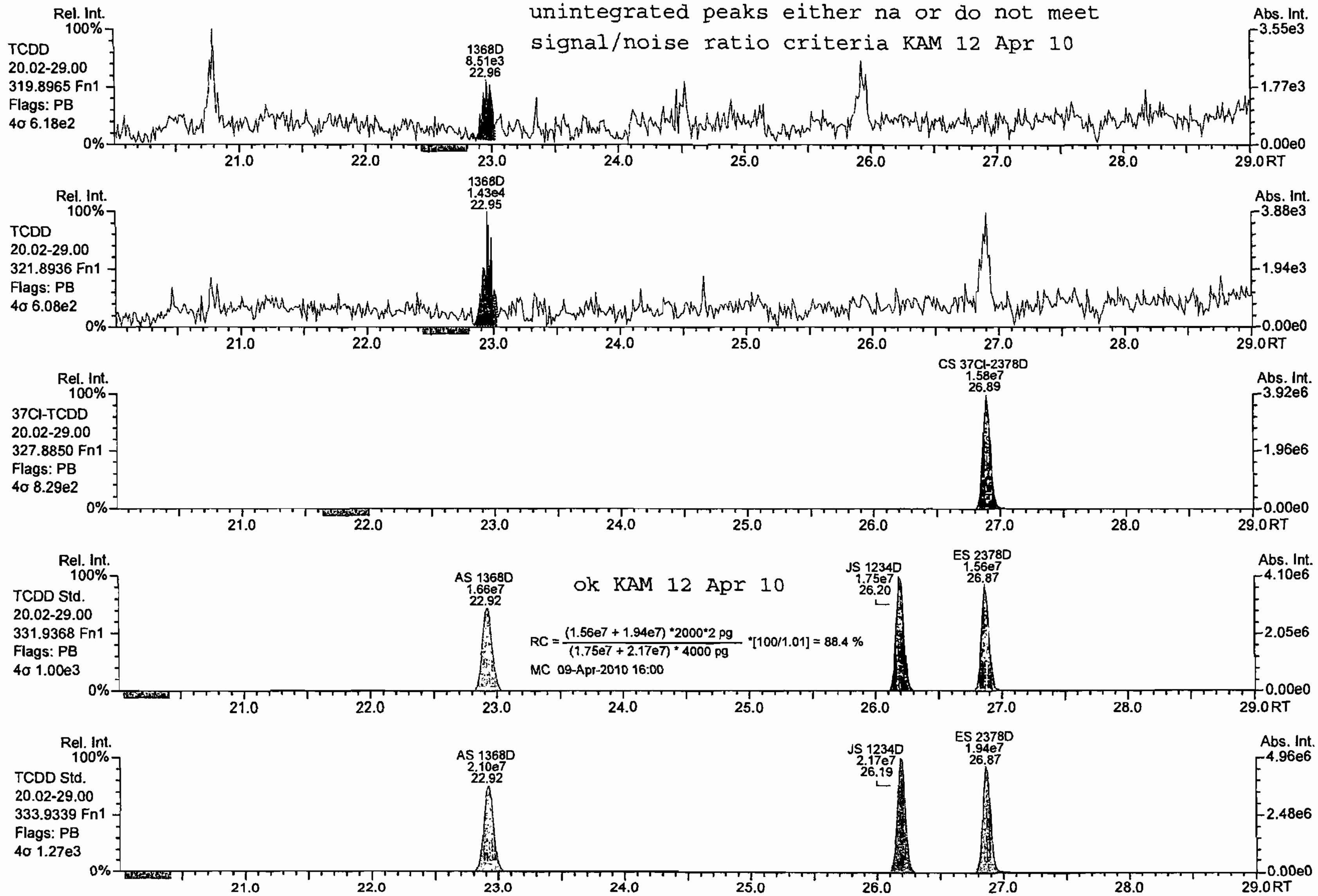
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 681-930

Peak annotation: Areas, Centroids
PKD: n/a Printed: 09-Apr-2010 16:03:31

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03



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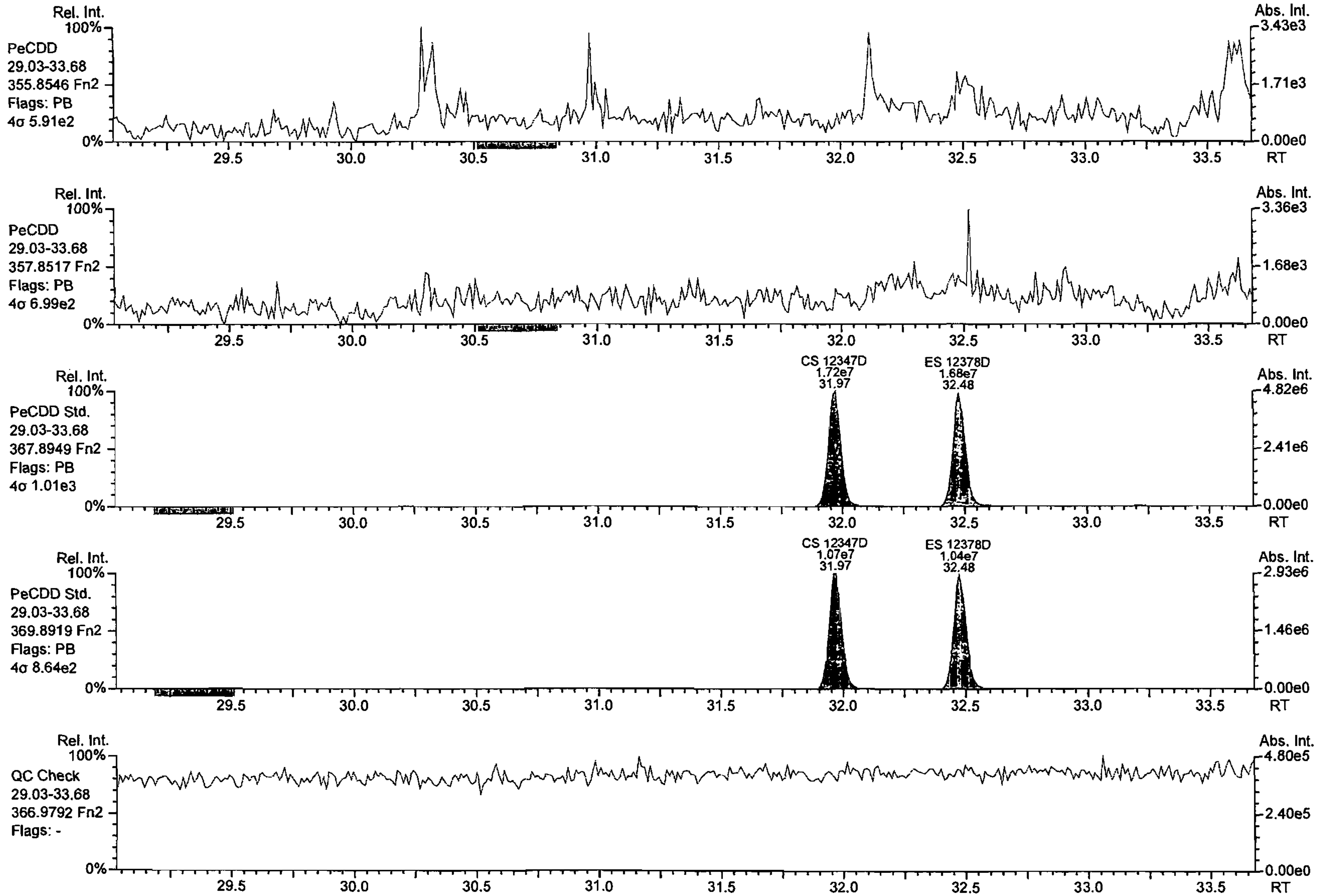
AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

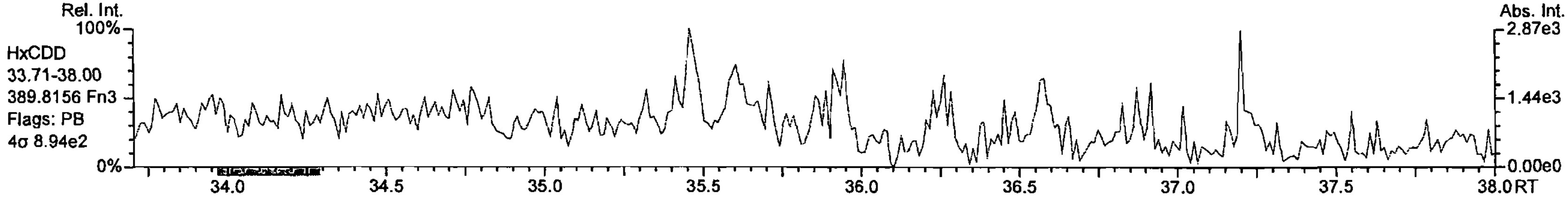
Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03

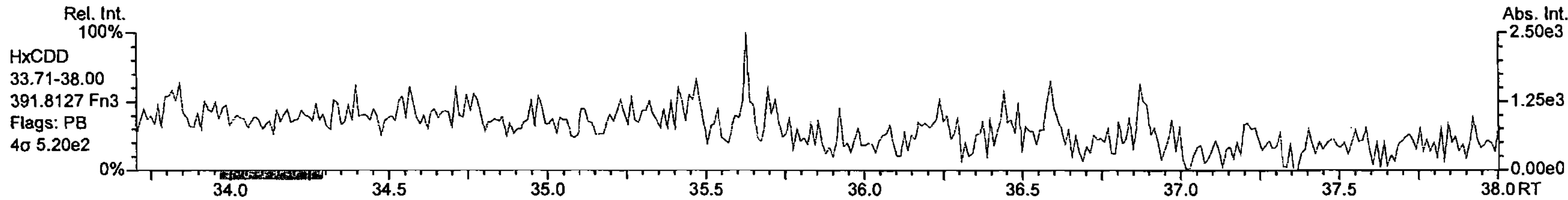


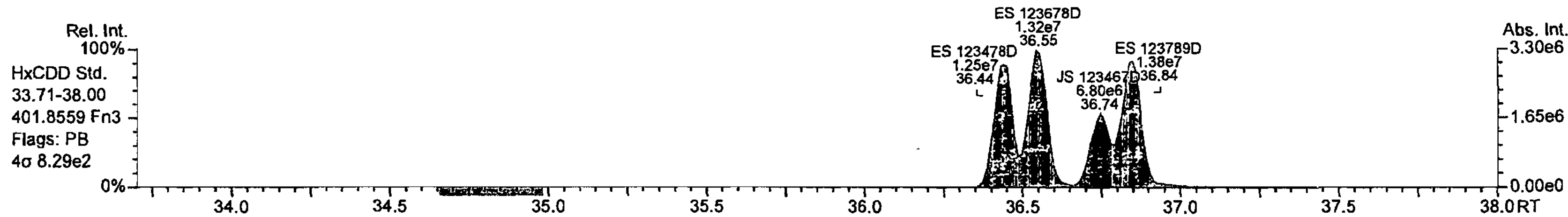
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6571, 3236 scc: 681-930

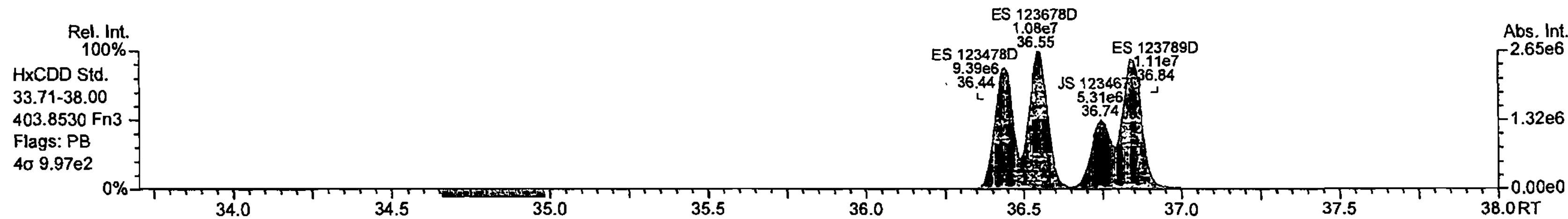
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:50:37 (MC) Printed: 09-Apr-2010 16:03:49 Page 3 of 12

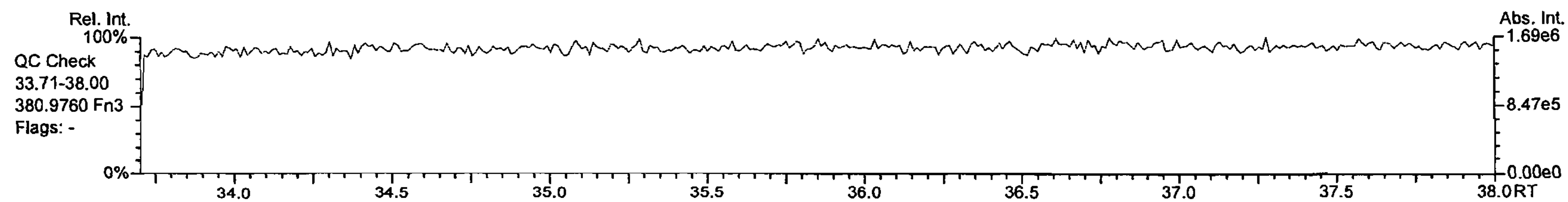
AP Lab ID: MB1_7679_DF_SDS | Sample ID: 0_7679_MB001 | Acq: 9-APR-2010 09:07:26
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47 | User: MC Datafile: 100409P1-03











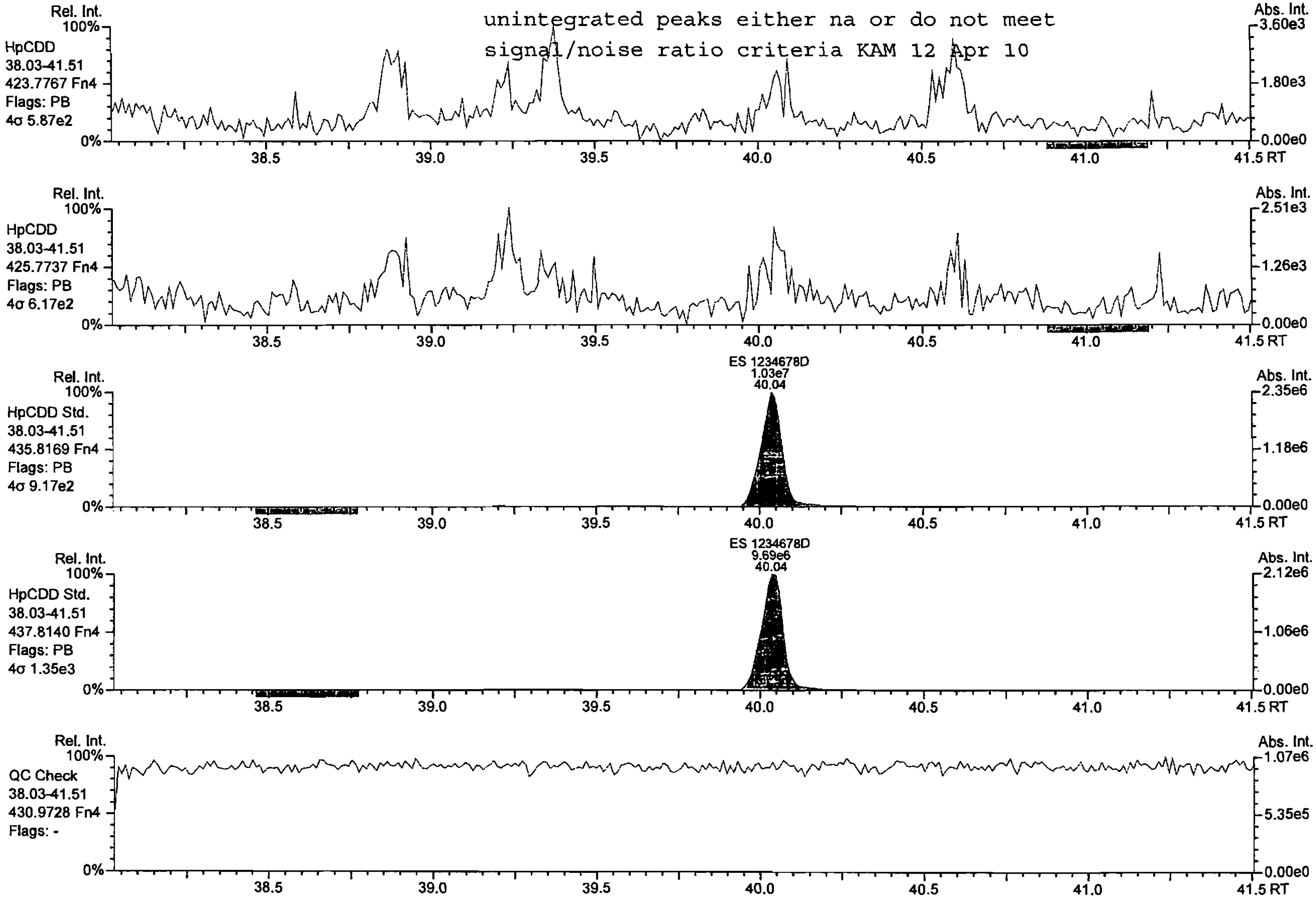
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC) *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2310, 7532 scc: 681-930 *Revised: 09-Apr-2010 11:50:00 (MC) Printed: 09-Apr-2010 16:03:56 Page 4 of 12*

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03

unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 12 Apr 10



I - 132

Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3971, 6361 scc: 681-930

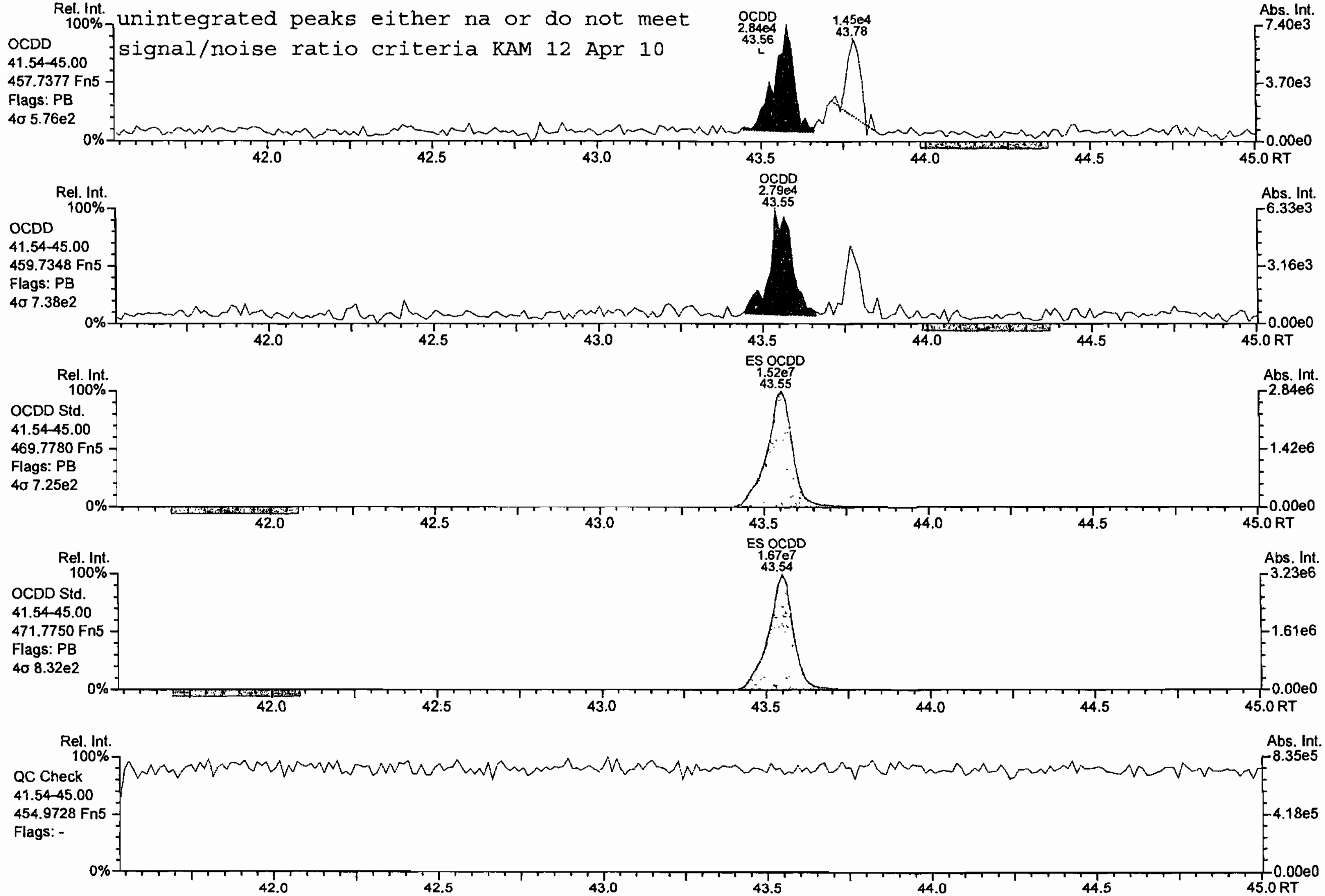
Peak annotation: Areas, Centroids
PKD: 09-Apr-2010 11:50:00 Printed: 09-Apr-2010 16:04:02

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03

unintegrated peaks either na or do not meet
signal/noise ratio criteria KAM 12 Apr 10



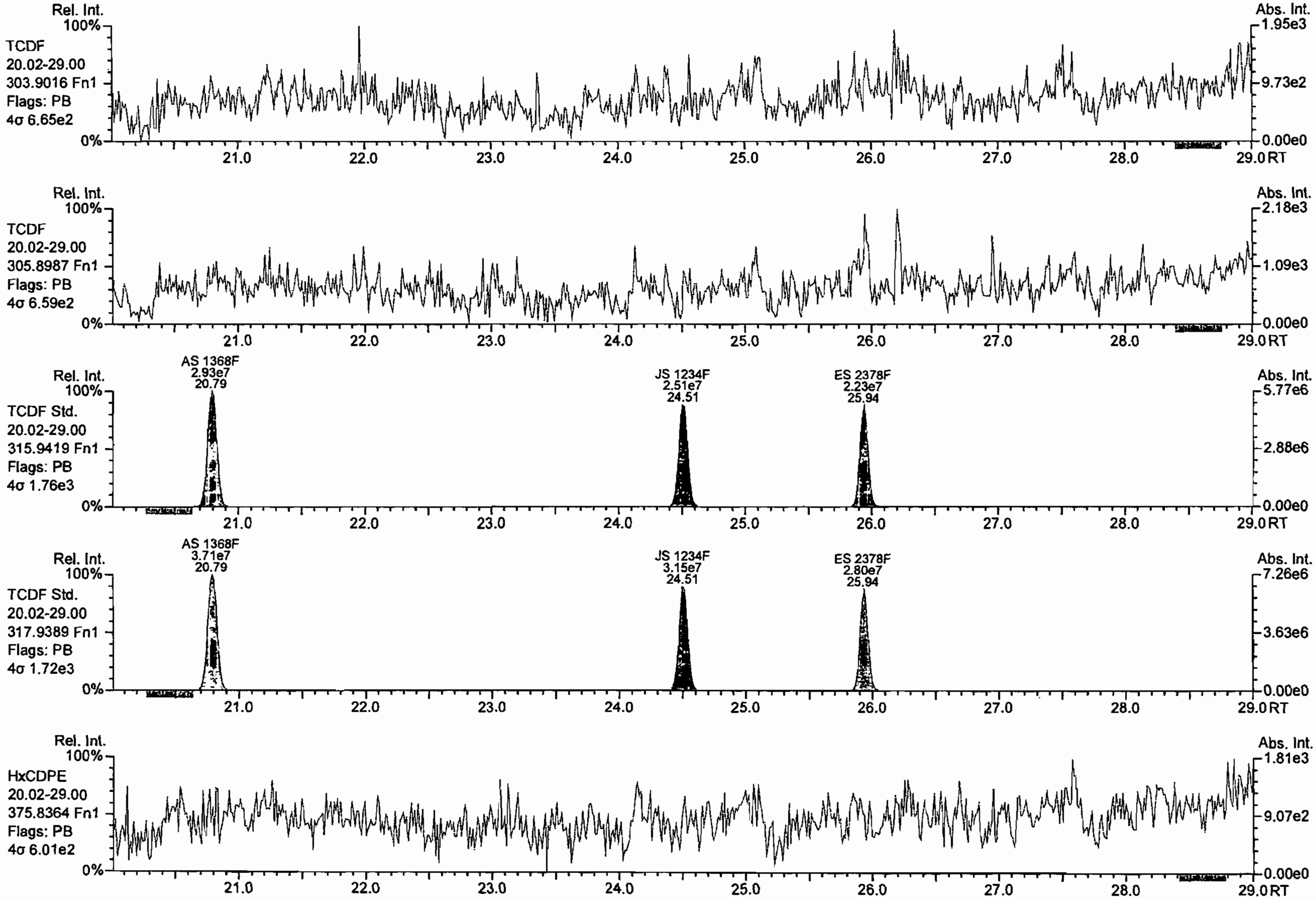
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6169, 4570 scc: 681-930

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:50:25 (MC) Printed: 09-Apr-2010 16:04:07 Page 6 of 12

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03



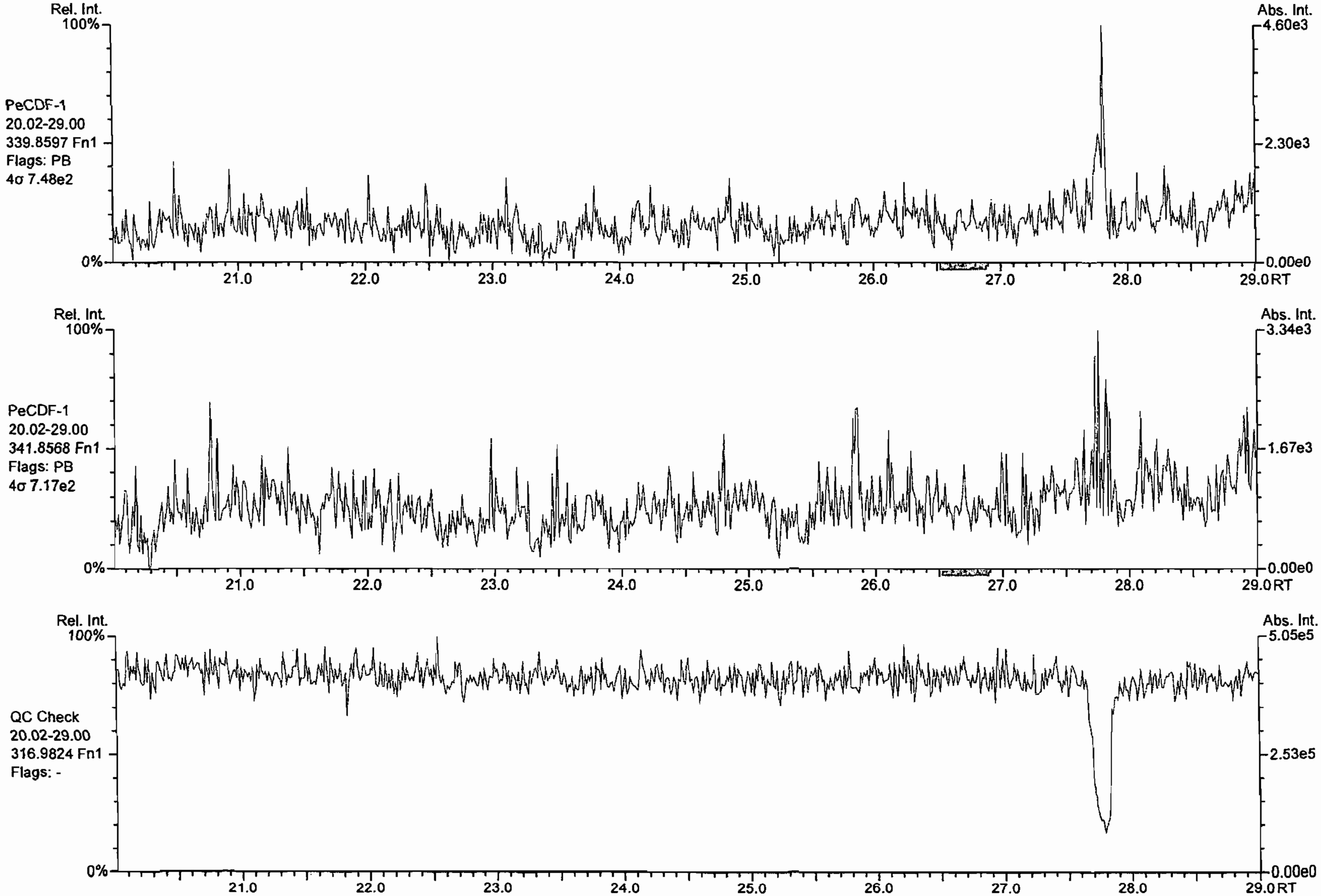
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3019, 4744, 2999 scc: 681-930

Peak annotation: Areas, Centroids

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03

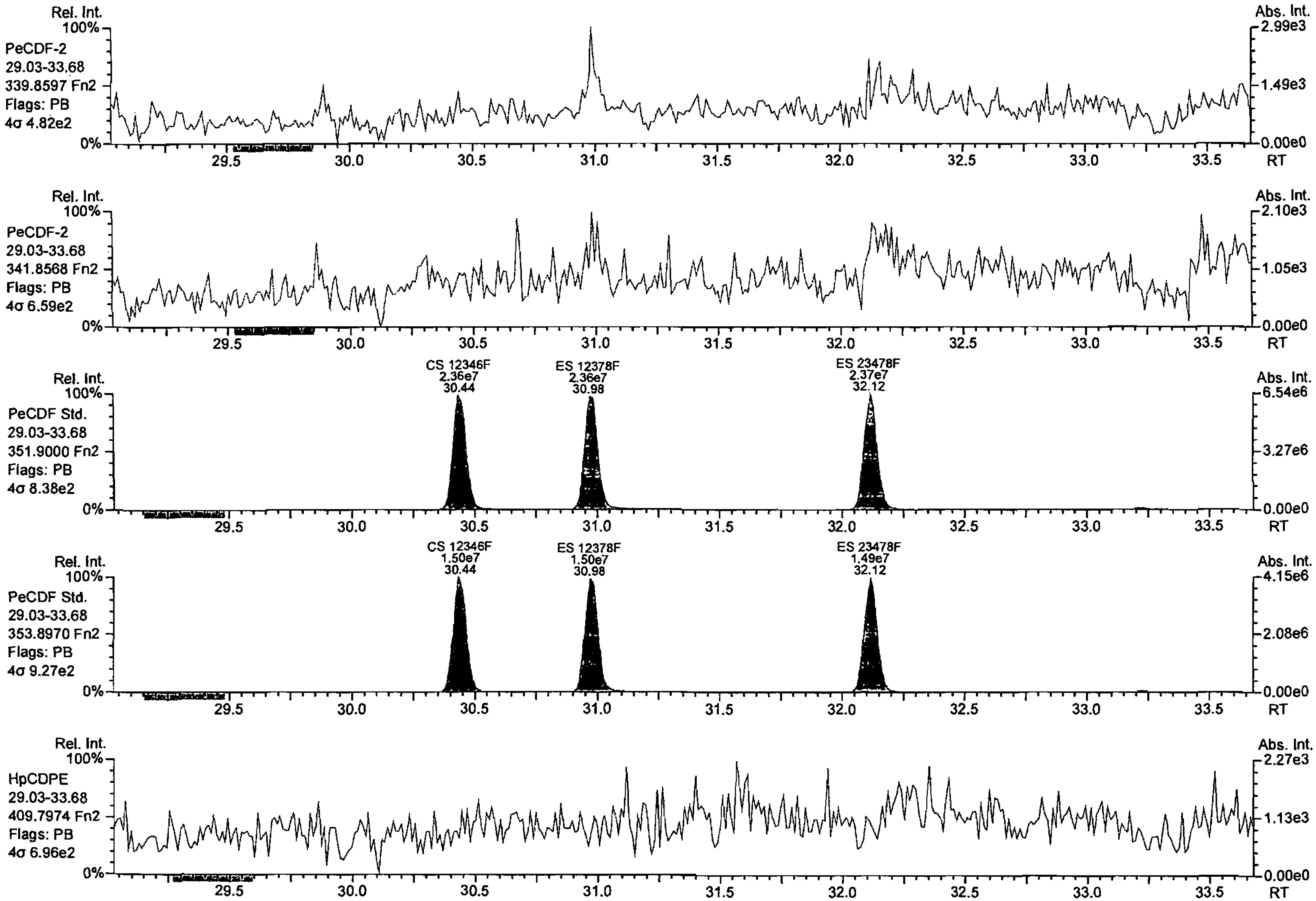


I - 135

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03



I - 136

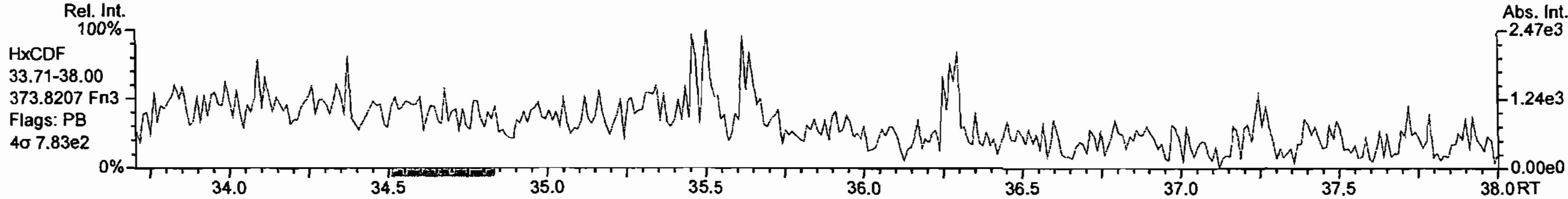
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0628, 9222, 2064 scc: 681-930

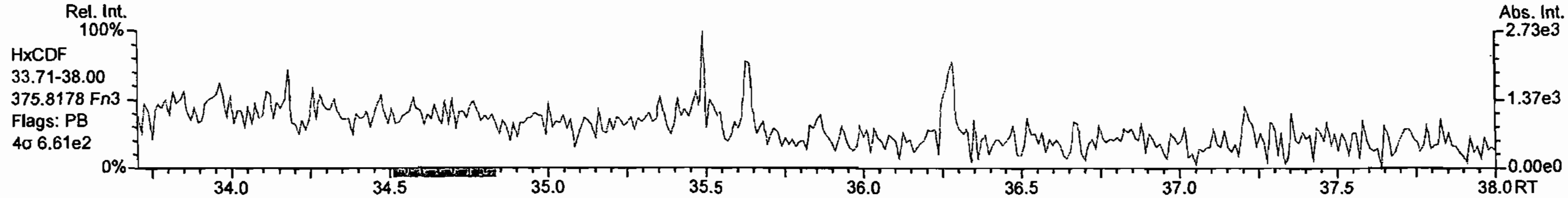
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:50:43 (MC) Printed: 09-Apr-2010 16:04:32

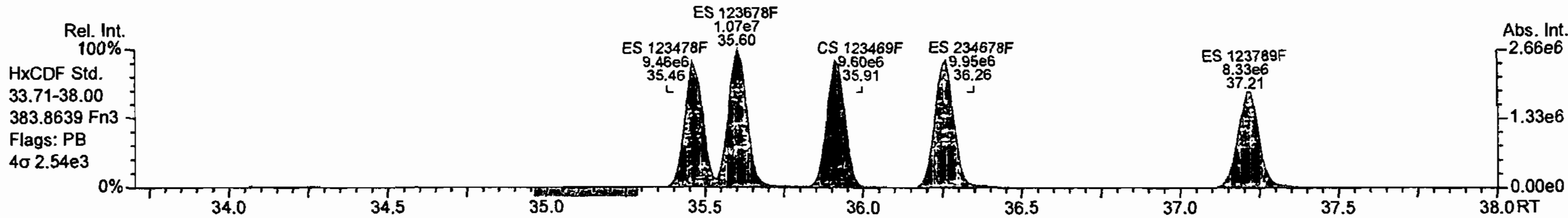
AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

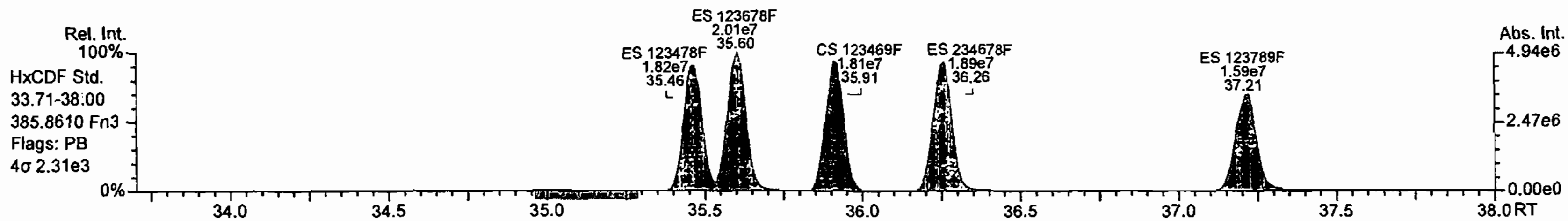
Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

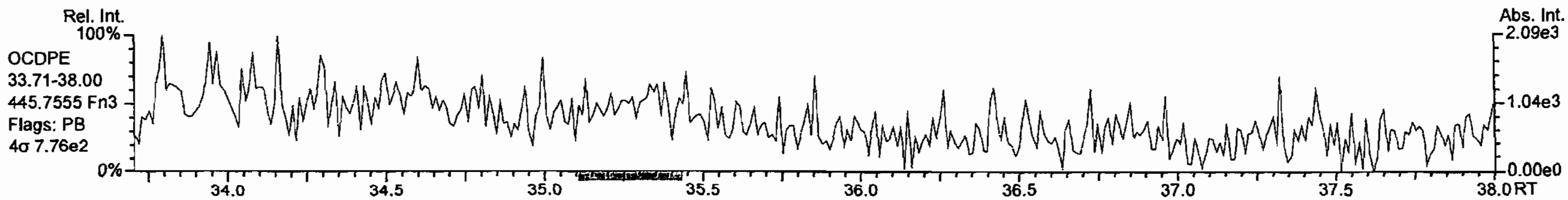
Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03











Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4453, 5615, 3964 scc: 681-930

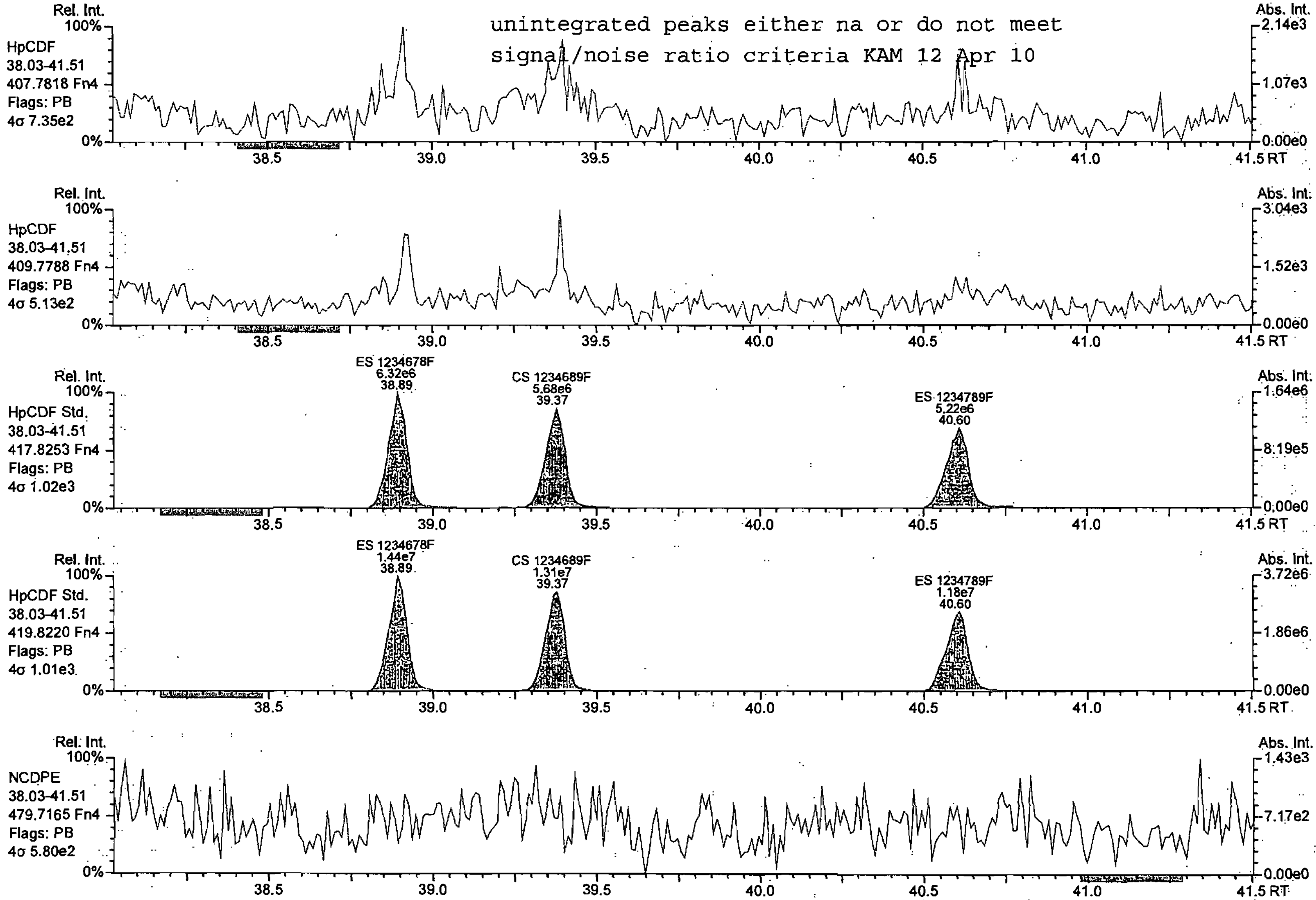
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:50:48 (MC) Printed: 09-Apr-2010 16:04:39 Page 10 of 12

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03

unintegrated peaks either na or do not meet
signal/noise ratio criteria KAM 12 Apr 10



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5939, 3093, 9306 scc: 681-930

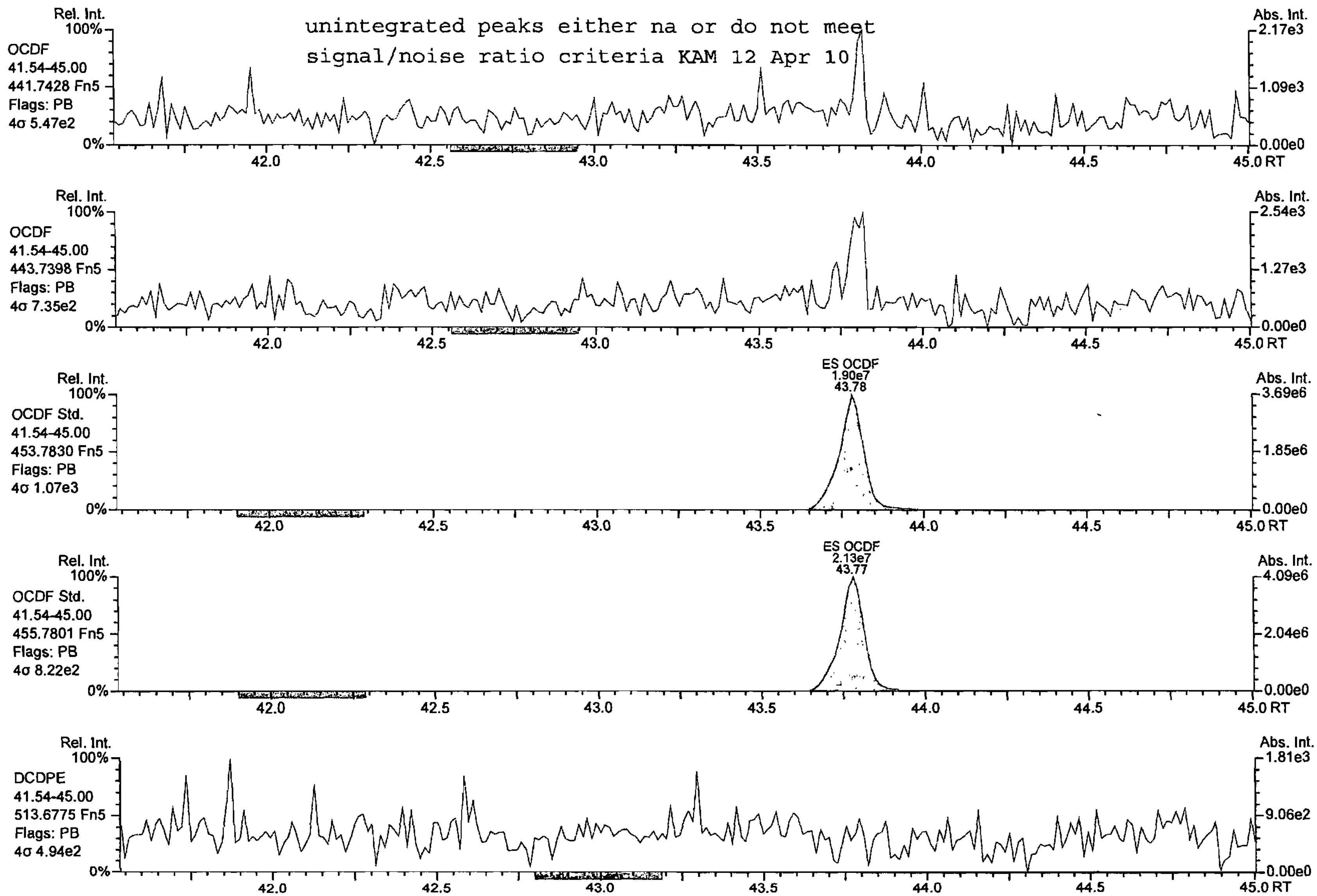
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:50:00 (MC) Printed: 09-Apr-2010 16:04:45 Page 11 of 12

AP Lab ID: MB1_7679_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7679_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 47

Acq: 9-APR-2010 09:07:26
User: MC Datafile: 100409P1-03

unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 12 Apr 10



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\MB1_7679_DF_SDS.utp_res, saved 09-Apr-2010 16:00 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6945, 8311, 3364 scc: 681-930

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:50:00 (MC) Printed: 09-Apr-2010 16:04:50

Lab ID: P2096_7679_001 | Acq'd: 09 Apr 2010 09:57 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Field Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 318-336

Datafile: 100409P1-04 | Report: 09 Apr 2010 15:53 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	0.99	-	1291	1.39
12378-PeCDD	NotFnd		1.0006	-		-	-	-	0.93	-	1425	1.82
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.04	-	1287	1.83
123678-HxCDD	NotFnd		1.0034	-		-	-	-	0.95	-	1287	1.93
123789-HxCDD	NotFnd		1.0116	-		-	-	-	0.93	-	1287	2.08
1234678-HpCDD	40.06		1.0003	1.0005	+0.5	2.75E+04	0.96	Y	0.96	4.71	1172	2.24
OCDD	43.55		1.0004	1.0002	-0.5	7.35E+04	0.94	Y	1.00	14.8	1553	3.97
2378-TCDF	NotFnd		1.0009	-		-	-	-	1.08	-	1306	0.973
12378-PeCDF	NotFnd		1.0006	-		-	-	-	1.00	-	1309	1.07
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.04	-	1309	1.02
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.14	-	1423	1.44
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.13	-	1423	1.36
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	1423	1.44
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.12	-	1423	1.93
1234678-HpCDF	38.91		1.0003	1.0004	+0.2	2.76E+04	1.08	Y	1.38	3.19	1252	1.42
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.33	-	1252	2.05
OCDF	43.79		1.0004	1.0003	-0.3	3.72E+04	0.82	Y	0.96	6.16	1361	3.09

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.86	1.0259	1.0258	-0.2	3.92E+07	0.81	Y	1.01	86.3
ES 12378-PeCDD	32.47	1.2404	1.2402	-0.3	3.15E+07	1.61	Y	0.78	89.5
ES 123478-HxCDD	36.43	0.9917	0.9917	0	2.63E+07	1.27	Y	0.99	90.9
ES 123678-HxCDD	36.54	0.9947	0.9947	0	3.00E+07	1.27	Y	1.07	96.6
ES 123789-HxCDD	36.84	1.0028	1.0028	0	3.01E+07	1.28	Y	1.09	94.6
ES 1234678-HpCDD	40.03	1.0902	1.0897	-1.1	2.43E+07	1.03	Y	0.90	92.4
ES OCDD	43.54	1.1862	1.1852	-2.2	3.95E+07	0.89	Y	0.74	91.7
ES 2378-TCDF	25.93	1.0585	1.0585	0	5.65E+07	0.81	Y	1.00	88.6
ES 12378-PeCDF	30.97	1.2646	1.2643	-0.4	4.43E+07	1.56	Y	0.75	92.4
ES 23478-PeCDF	32.11	1.3113	1.3109	-0.6	4.45E+07	1.59	Y	0.74	93.6
ES 123478-HxCDF	35.46	0.9651	0.9652	+0.2	3.27E+07	0.51	Y	1.19	94.2
ES 123678-HxCDF	35.60	0.9689	0.9690	+0.2	3.64E+07	0.52	Y	1.35	92.7
ES 234678-HxCDF	36.25	0.9867	0.9868	+0.2	3.41E+07	0.52	Y	1.28	91.2
ES 123789-HxCDF	37.21	1.0129	1.0129	0	2.90E+07	0.52	Y	1.20	83.1
ES 1234678-HpCDF	38.89	1.0589	1.0586	-0.7	2.52E+07	0.45	Y	0.95	91.2
ES 1234789-HpCDF	40.60	1.1057	1.1051	-1.3	2.11E+07	0.42	Y	0.82	88.6
ES OCDF	43.78	1.1926	1.1915	-2.4	5.02E+07	0.91	Y	0.96	89.9

Lab ID: P2096_7679_001 | Acq'd: 09 Apr 2010 09:57 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Field Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 318-336

Datafile: 100409P1-04 | Report: 09 Apr 2010 15:53 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.19		-	-	-	4.50E+07	0.80	Y	-	-
JS 1234-TCDF	24.50		-	-	-	6.40E+07	0.79	Y	-	-
JS 123467-HxCDD	36.74		-	-	-	1.45E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	26.88		1.0268	1.0267	-0.2	1.76E+07	n/a	-	1.16	84.6
CS 12347-PeCDD	31.96		1.2209	1.2206	-0.5	3.12E+07	1.59	Y	0.79	87.6
CS 12346-PeCDF	30.43		1.2424	1.2422	-0.3	4.24E+07	1.56	Y	0.79	84.1
CS 123469-HxCDF	35.91		0.9773	0.9774	+0.2	3.23E+07	0.50	Y	1.23	90.4
CS 1234689-HpCDF	39.37		1.0720	1.0717	-0.7	2.24E+07	0.44	Y	0.86	89.4
SS 37Cl-2378-TCDD	26.88		1.0268	1.0267	-0.2	1.76E+07	n/a	-	1.14	98.1
SS 12347-PeCDD	31.96		1.2209	1.2206	-0.5	3.12E+07	1.59	Y	1.01	97.9
SS 12346-PeCDF	30.43		1.2424	1.2422	-0.3	4.24E+07	1.56	Y	1.05	90.9
SS 123469-HxCDF	35.91		0.9773	0.9774	+0.2	3.23E+07	0.50	Y	0.91	97.6
SS 1234689-HpCDF	39.37		1.0720	1.0717	-0.7	2.24E+07	0.44	Y	0.91	98
AS 1368-TCDD	22.91		0.8731	0.8750	+3.0	4.02E+07	0.80	Y	1.08	82.7
AS 1368-TCDF	20.76		0.8447	0.8475	+4.1	6.68E+07	0.79	Y	1.29	80.9
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.21		0.9794	0.9795	+0.2	1.85E+05	1.13	Y	0.01	98.8
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 12 Apr 10

Totals	Conc	EMPC
Total TCDD	2.73	2.73
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	4.71	8.73
Total Tetra-Octa Dioxins	22.3	26.3
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	2.28
Total HpCDF	3.19	3.19
Total Tetra-Octa Furans	9.35	11.6
Total Tetra-Octa Dioxins & Furans	31.6	37.9

Lab ID: P2096_7679_001 | Acq'd: 09 Apr 2010 09:57 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Field Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 318-336

Datafile: 100409P1-04 | Report: 09 Apr 2010 15:53 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	22.95		0.8539	0.8544	+0.8	2.66E+04	0.81	Y	0.99	2.73	1291	1.39
1379-TCDD	NotFnd		0.8685						0.99		1291	1.39
1369-TCDD	NotFnd		0.8863						0.99		1291	1.39
1469-TCDD	NotFnd		0.9189						0.99		1291	1.39
1247/1246/1248/1249-TCDD	NotFnd		0.9276						0.99		1291	1.39
1378-TCDD	NotFnd		0.9351						0.99		1291	1.39
1268-TCDD	NotFnd		0.9430						0.99		1291	1.39
1478-TCDD	NotFnd		0.9517						0.99		1291	1.39
1279-TCDD	NotFnd		0.9598						0.99		1291	1.39
1234/1269-TCDD	NotFnd		0.9740						0.99		1291	1.39
1236-TCDD	NotFnd		0.9801						0.99		1291	1.39
1237/1238-TCDD	NotFnd		0.9895						0.99		1291	1.39
1239-TCDD	NotFnd		0.9952						0.99		1291	1.39
2378-TCDD	**NotFnd**		**1.0008**						**0.99**		**1291**	**1.39**
1278-TCDD	NotFnd		1.0138						0.99		1291	1.39
1267-TCDD	NotFnd		1.0194						0.99		1291	1.39
1289-TCDD	NotFnd		1.0396						0.99		1291	1.39
12479/12468-PeCDD	NotFnd		0.9210						0.93		1425	1.82
12469-PeCDD	NotFnd		0.9382						0.93		1425	1.82
12368-PeCDD	NotFnd		0.9556						0.93		1425	1.82
12478-PeCDD	NotFnd		0.9614						0.93		1425	1.82
12379-PeCDD	NotFnd		0.9649						0.93		1425	1.82
12369/12467/12489-PeCDD	NotFnd		0.9732						0.93		1425	1.82
12346/12347-PeCDD	NotFnd		0.9850						0.93		1425	1.82
12378-PeCDD	**NotFnd**		**1.0006**						**0.93**		**1425**	**1.82**
12367-PeCDD	NotFnd		1.0037						0.93		1425	1.82
12389-PeCDD	NotFnd		1.0146						0.93		1425	1.82
124679/124689-HxCDD	NotFnd		0.9534						0.97		1287	1.94
123468-HxCDD	NotFnd		0.9717						0.97		1287	1.94
123679/123689-HxCDD	NotFnd		0.9793						0.97		1287	1.94
123469-HxCDD	NotFnd		0.9833						0.97		1287	1.94
123478-HxCDD	**NotFnd**		**1.0004**						**1.04**		**1287**	**1.83**
123678-HxCDD	**NotFnd**		**1.0034**						**0.95**		**1287**	**1.93**
123467-HxCDD	NotFnd		1.0088						0.97		1287	1.94
123789-HxCDD	**NotFnd**		**1.0116**						**0.93**		**1287**	**2.08**

Lab ID: P2096_7679_001 | Acq'd: 09 Apr 2010 09:57 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Field Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 318-336

Datafile: 100409P1-04 | Report: 09 Apr 2010 15:53 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.22		0.9794	0.9796	+0.5	2.36E+04	0.86	N	0.96	4.03	1172	2.24
1234678-HpCDD	40.06		1.0003	1.0005	+0.5	2.75E+04	0.96	Y	0.96	4.71	1172	2.24
OCDD	43.55		1.0004	1.0002	-0.5	7.35E+04	0.94	Y	1.00	14.8	1553	3.97
OCDD-a	NotFnd		1.0003						0.06		1769	74.1
1368-TCDF	NotFnd		0.8012						1.08		1306	0.973
1468-TCDF	NotFnd		0.8216						1.08		1306	0.973
2468-TCDF	NotFnd		0.8461						1.08		1306	0.973
1346/1246-TCDF	NotFnd		0.8607						1.08		1306	0.973
1347/1378/1247-TCDF	NotFnd		0.8672						1.08		1306	0.973
1348-TCDF	NotFnd		0.8792						1.08		1306	0.973
1248/1367/1379-TCDF	NotFnd		0.8846						1.08		1306	0.973
1268-TCDF	NotFnd		0.9011						1.08		1306	0.973
1467-TCDF	NotFnd		0.9067						1.08		1306	0.973
1478-TCDF	NotFnd		0.9137						1.08		1306	0.973
1369/1237-TCDF	NotFnd		0.9293						1.08		1306	0.973
2467-TCDF	NotFnd		0.9348						1.08		1306	0.973
2368-TCDF	NotFnd		0.9408						1.08		1306	0.973
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9445						1.08		1306	0.973
1278-TCDF	NotFnd		0.9641						1.08		1306	0.973
1349-TCDF	NotFnd		0.9693						1.08		1306	0.973
1267-TCDF	NotFnd		0.9755						1.08		1306	0.973
2346/1249-TCDF	NotFnd		0.9834						1.08		1306	0.973
2347/1279-TCDF	NotFnd		0.9922						1.08		1306	0.973
2348-TCDF	NotFnd		0.9966						1.08		1306	0.973
2378-TCDF	**NotFnd**		**1.0009**						**1.08**		**1306**	**0.973**
2367/3467-TCDF	NotFnd		1.0164						1.08		1306	0.973
1269-TCDF	NotFnd		1.0260						1.08		1306	0.973
1239-TCDF	NotFnd		1.0375						1.08		1306	0.973
1289-TCDF	NotFnd		1.0834						1.08		1306	0.973
13468/12468-PeCDF	NotFnd		0.9057						1.02		1349	1.07
13678/13467/12467-PeCDF	NotFnd		0.9581						1.02		1309	1.04
12368/13478/12478-PeCDF	NotFnd		0.9620						1.02		1309	1.04
14678-PeCDF	NotFnd		0.9667						1.02		1309	1.04
13479-PeCDF	NotFnd		0.9702						1.02		1309	1.04
13469/12479-PeCDF	NotFnd		0.9781						1.02		1309	1.04
12346-PeCDF	NotFnd		0.9829						1.02		1309	1.04

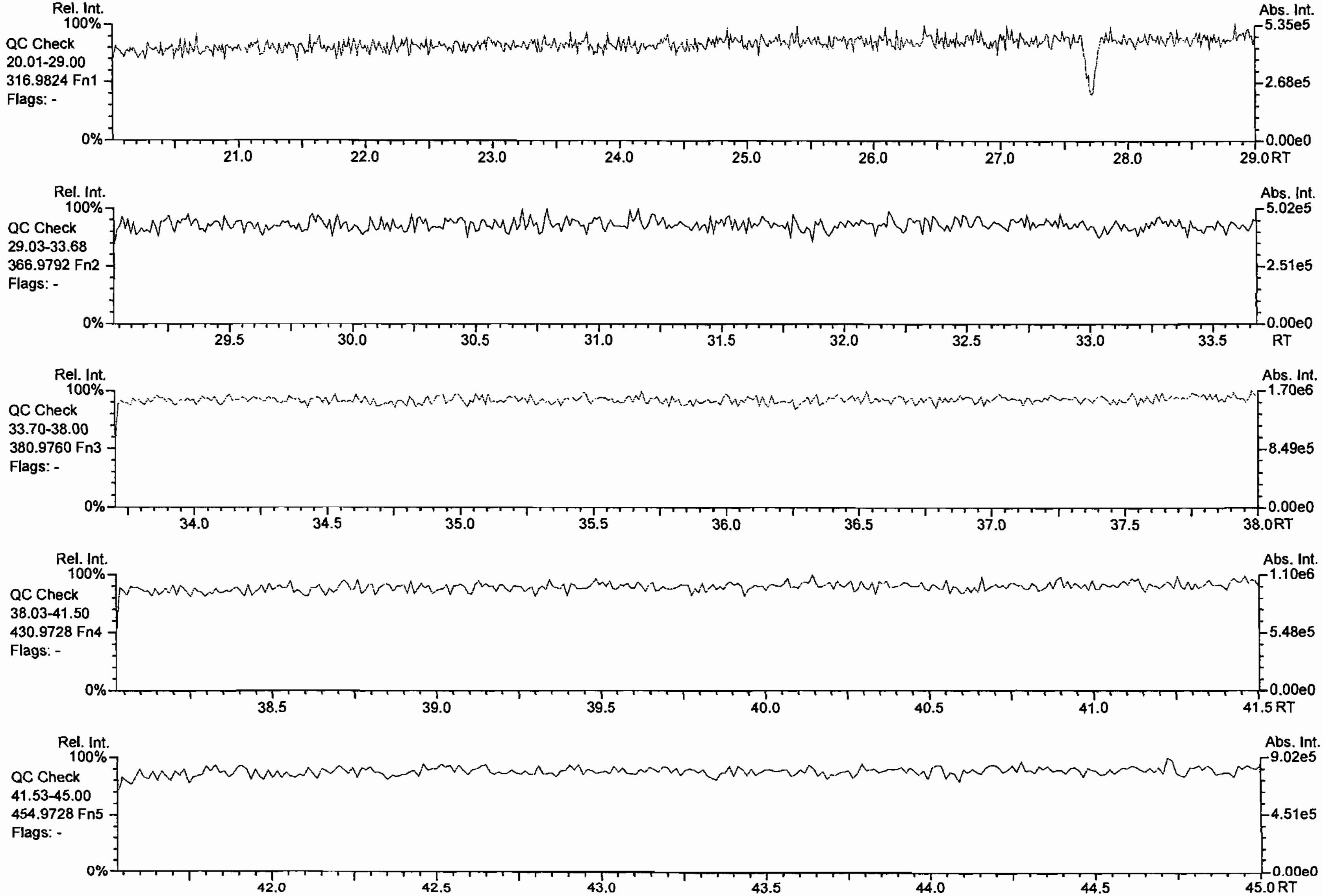
Lab ID: P2096_7679_001 | Acq'd: 09 Apr 2010 09:57 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Field Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 318-336

Datafile: 100409P1-04 | Report: 09 Apr 2010 15:53 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9858						1.02		1309	1.04
12347-PeCDF	NotFnd		0.9881						1.02		1309	1.04
12348-PeCDF	NotFnd		0.9936						1.02		1309	1.04
12378-PeCDF	**NotFnd**		**1.0006**						**1.00**		**1309**	**1.07**
12678/12367-PeCDF	NotFnd		1.0104						1.02		1309	1.04
12379-PeCDF	NotFnd		1.0151						1.02		1309	1.04
12679-PeCDF	NotFnd		0.9925						1.02		1309	1.04
23467/12369-PeCDF	NotFnd		0.9981						1.02		1309	1.04
23478-PeCDF	**NotFnd**		**1.0005**						**1.04**		**1309**	**1.02**
23478/12489-PeCDF	NotFnd		1.0006						1.04		1309	1.02
12489-PeCDF	NotFnd		1.0023						1.02		1309	1.04
12349-PeCDF	NotFnd		1.0110						1.02		1309	1.04
12389-PeCDF	NotFnd		1.0350						1.02		1309	1.04
123468-HxCDF	NotFnd		0.9609						1.13		1423	1.52
124678/134678-HxCDF	34.28		0.9668	0.9668	0	2.13E+04	1.04	N	1.13	2.28	1423	1.52
134679-HxCDF	NotFnd		0.9733						1.13		1423	1.52
124679-HxCDF	NotFnd		0.9788						1.13		1423	1.52
124689-HxCDF	NotFnd		0.9851						1.13		1423	1.52
123467-HxCDF	NotFnd		0.9968						1.13		1423	1.52
123478-HxCDF	**NotFnd**		**1.0004**						**1.14**		**1423**	**1.44**
123678-HxCDF	**NotFnd**		**1.0005**						**1.13**		**1423**	**1.36**
123479-HxCDF	NotFnd		1.0048						1.13		1423	1.52
123469-HxCDF	NotFnd		1.0090						1.13		1423	1.52
123679-HxCDF	NotFnd		0.9943						1.13		1423	1.52
234678-HxCDF	**NotFnd**		**1.0005**						**1.14**		**1423**	**1.44**
234678/123689-HxCDF	NotFnd		1.0004						1.14		1423	1.44
123689-HxCDF	NotFnd		1.0009						1.13		1423	1.52
123789-HxCDF	**NotFnd**		**1.0005**						**1.12**		**1423**	**1.93**
123789/123489-HxCDF	NotFnd		1.0012						1.12		1423	1.93
123489-HxCDF	NotFnd		1.0017						1.13		1423	1.52
1234678-HpCDF	**38.91**		**1.0003**	**1.0004**	**+0.2**	**2.76E+04**	**1.08**	**Y**	**1.38**	**3.19**	**1252**	**1.42**
1234679-HpCDF	NotFnd		1.0083						1.36		1252	1.71
1234689-HpCDF	NotFnd		1.0132						1.36		1252	1.71
1234789-HpCDF	**NotFnd**		**1.0003**						**1.33**		**1252**	**2.05**
OCDF	**43.79**		**1.0004**	**1.0003**	**-0.3**	**3.72E+04**	**0.82**	**Y**	**0.96**	**6.16**	**1361**	**3.09**
OCDF-a	NotFnd		1.0002						0.05		1677	66.7

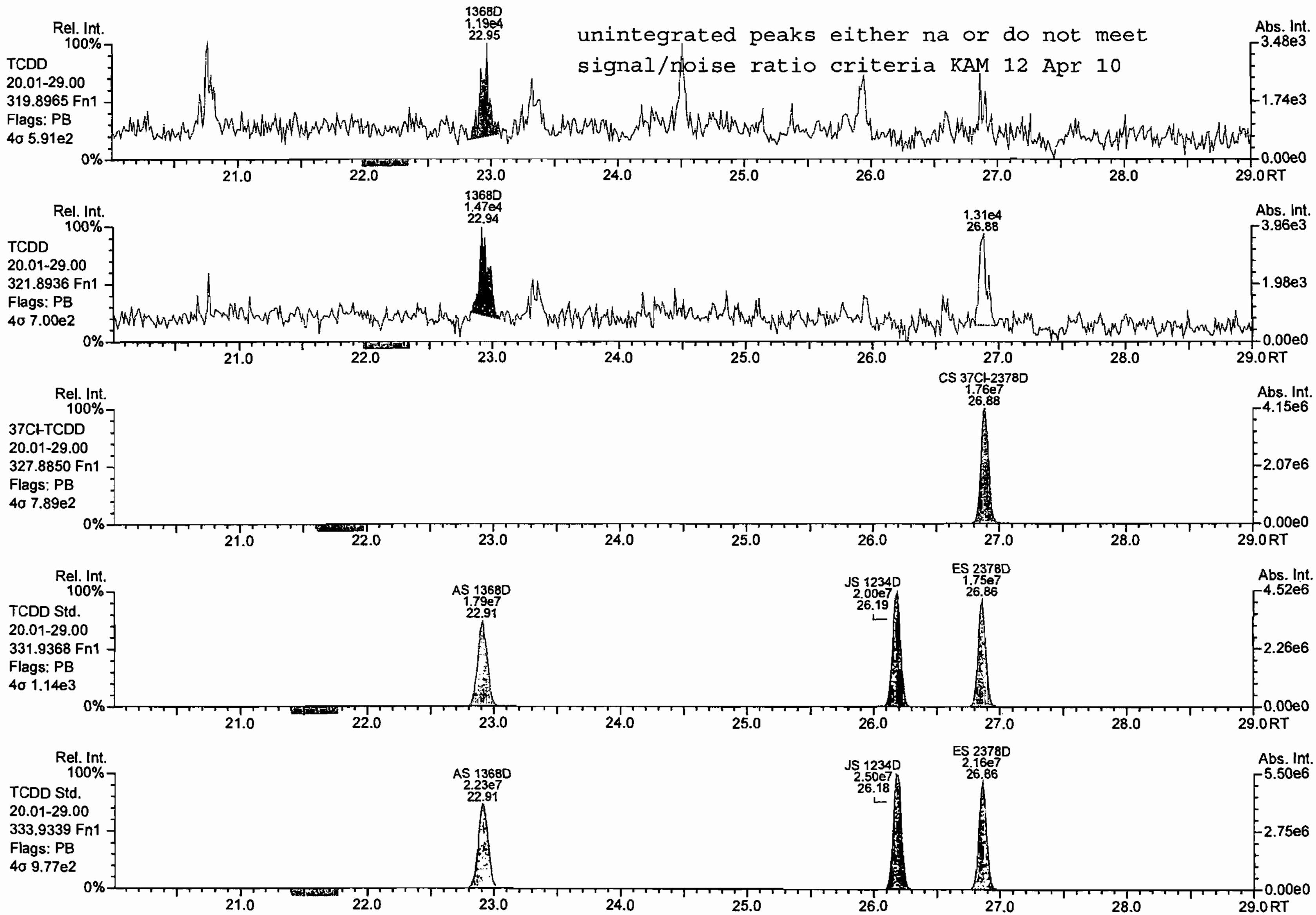
AP Lab ID: P2096_7679_001 | Sample ID: Field Blank | Acq: 9-APR-2010 09:57:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48 | User: MC Datafile: 100409P1-04



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 318-336

Peak annotation: Areas, Centroids
PKD: n/a Printed: 09-Apr-2010 16:04:58 Page 1 of 12

AP Lab ID: P2096_7679_001 | Sample ID: Field Blank | Acq: 9-APR-2010 09:57:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48 | User: MC Datafile: 100409P1-04



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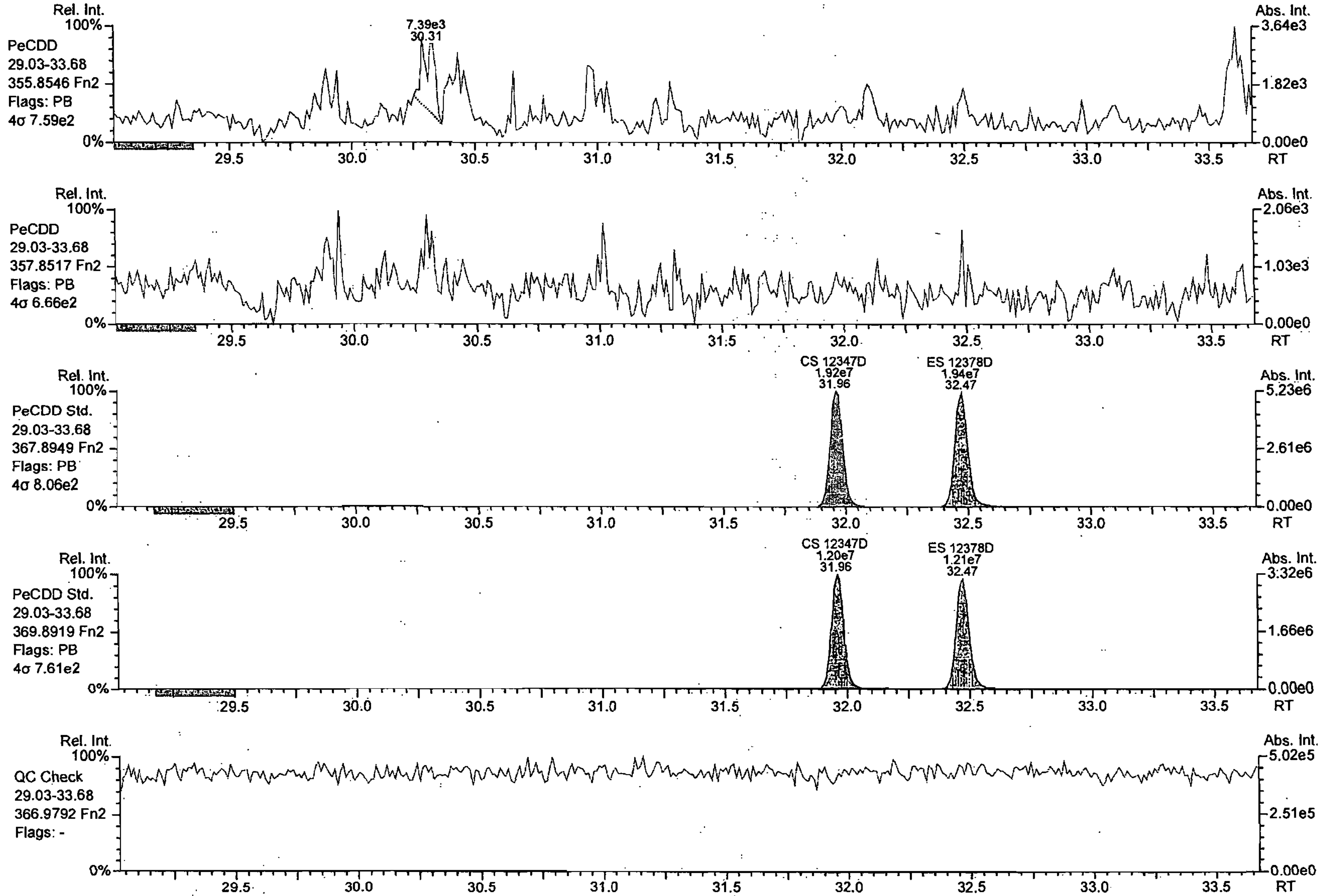
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1953, 9912, 0472 scc: 318-336

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:51:16 (MC) Printed: 09-Apr-2010 16:05:09

AP Lab ID: P2096_7679_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48

Acq: 9-APR-2010 09:57:56
User: MC Datafile: 100409P1-04



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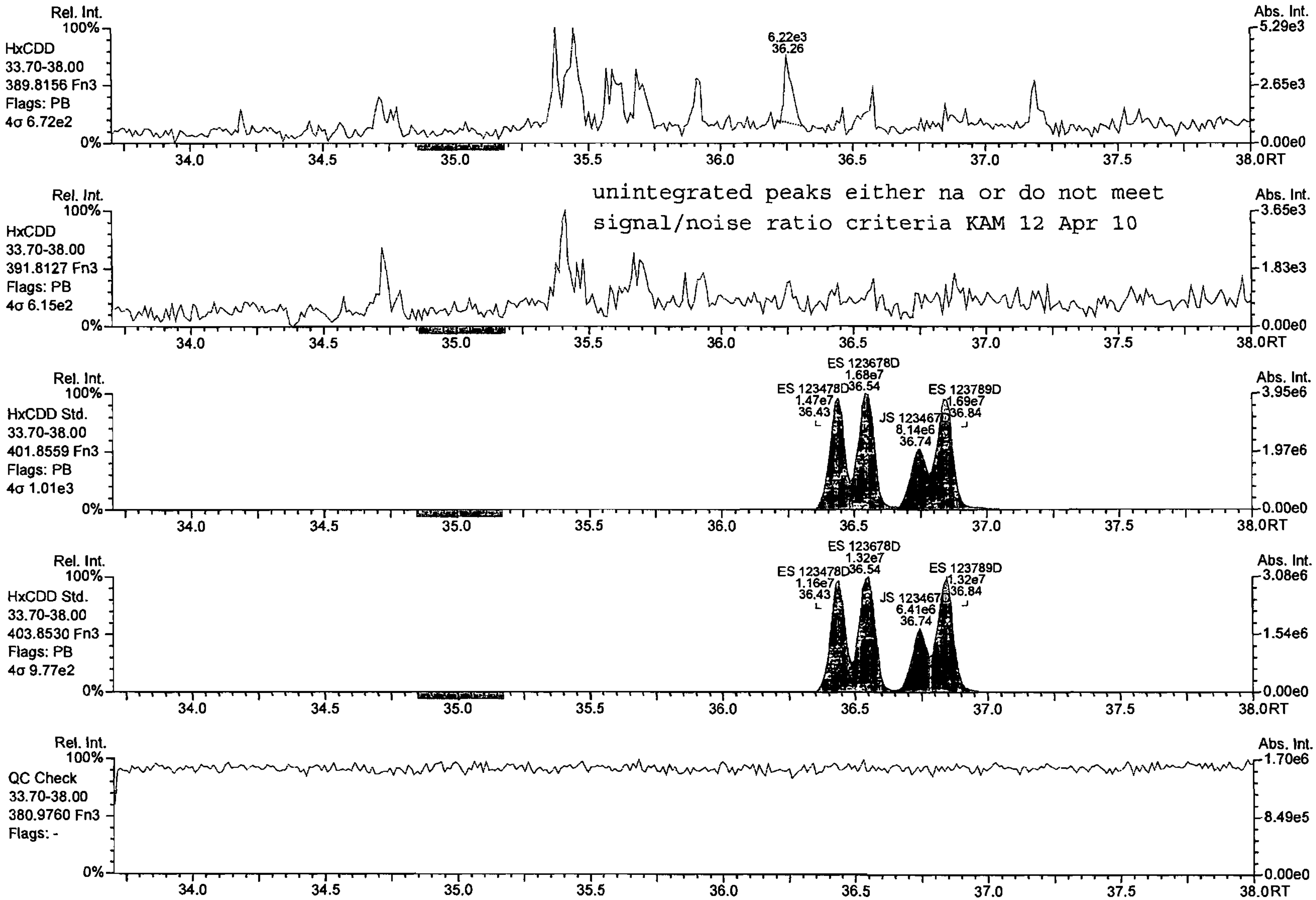
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2129, 4735 scc: 318-336

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:51:00 (MC) Printed: 09-Apr-2010 16:05:16

AP Lab ID: P2096_7679_001 Sample ID: Field Blank Acq: 9-APR-2010 09:57:56
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48 User: MC Datafile: 100409P1-04

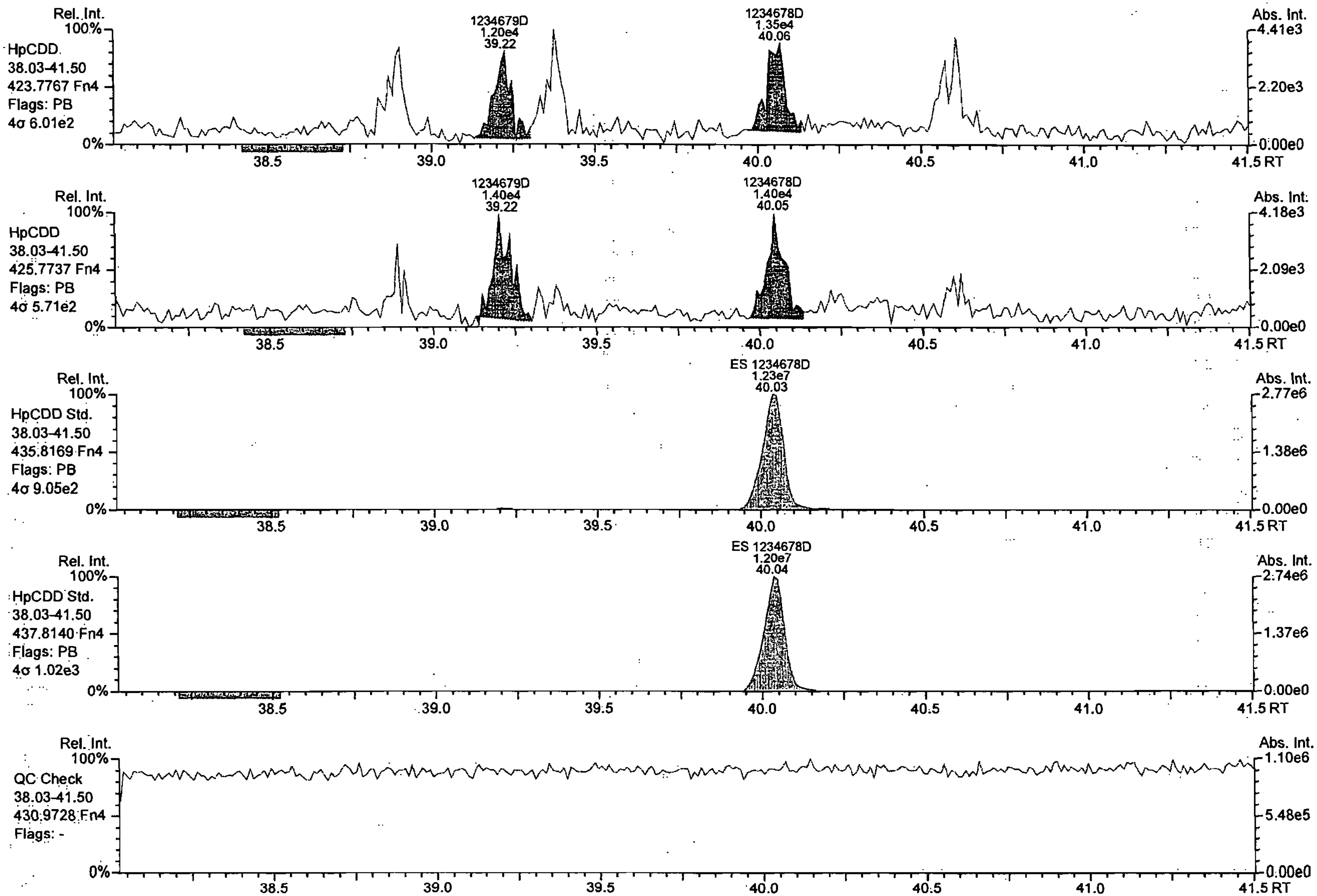


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC) *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6451, 7049 scc: 318-336 *Revised: 09-Apr-2010 11:51:00 (MC) Printed: 09-Apr-2010 16:05:23 Page 4 of 12*

unintegrated peaks either na or do not meet
signal/noise ratio criteria KAM 12 Apr 10

AP Lab ID: P2096_7679_001 | **Sample ID: Field Blank** | **Acq: 9-APR-2010 09:57:56**

Instr: AutoSpec-Ultima MM1 | **SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48** | **User: MC Datafile: 100409P1-04**



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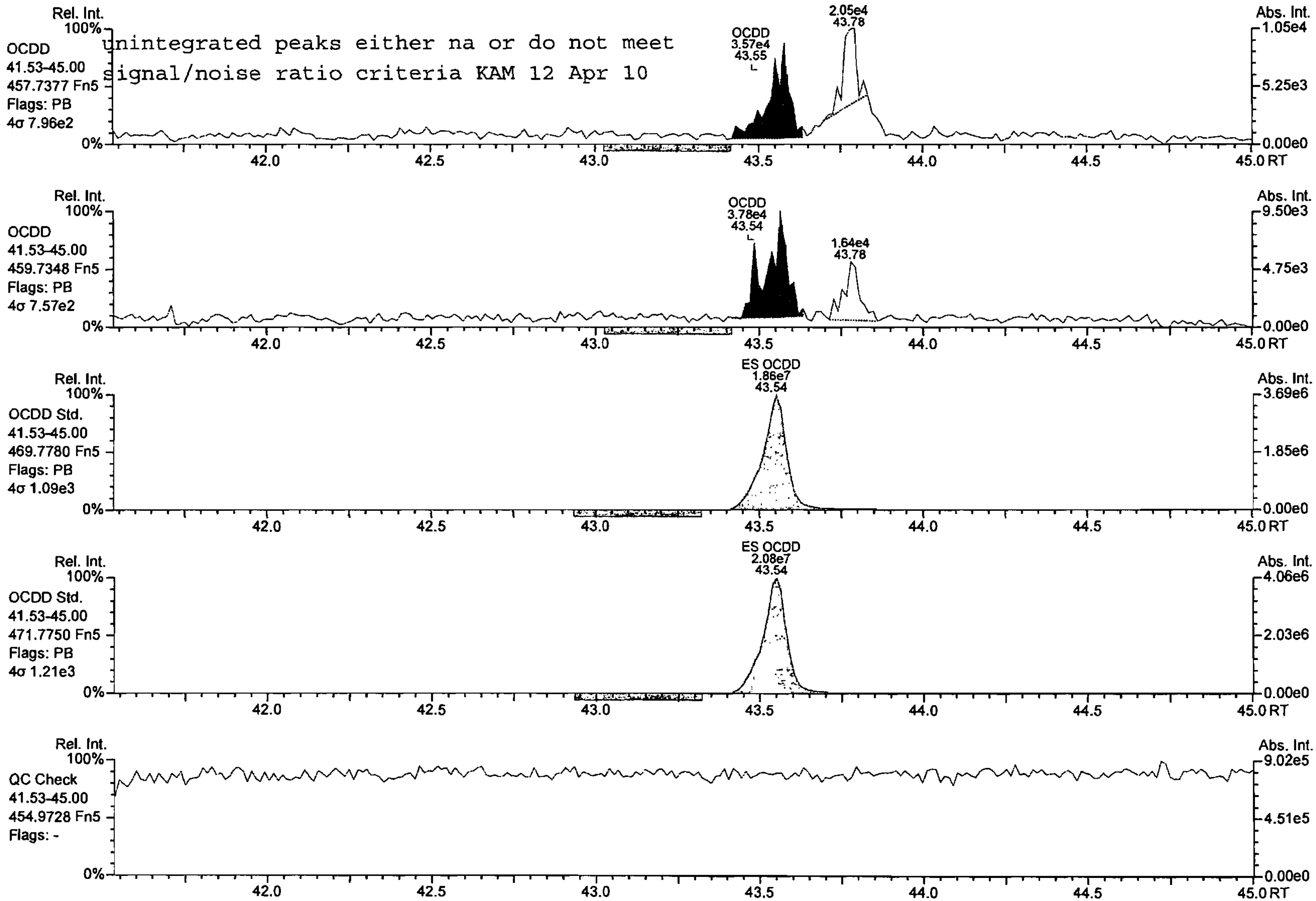
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC) | *Peak annotation: Areas, Centroids*

AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4459, 2128 scc: 318-336 | *Revised: 09-Apr-2010 11:51:29 (MC) Printed: 09-Apr-2010 16:05:29*

AP Lab ID: P2096_7679_001 | Sample ID: Field Blank | Acq: 9-APR-2010 09:57:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48 | User: MC Datafile: 100409P1-04



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1774, 5289 scc: 318-336

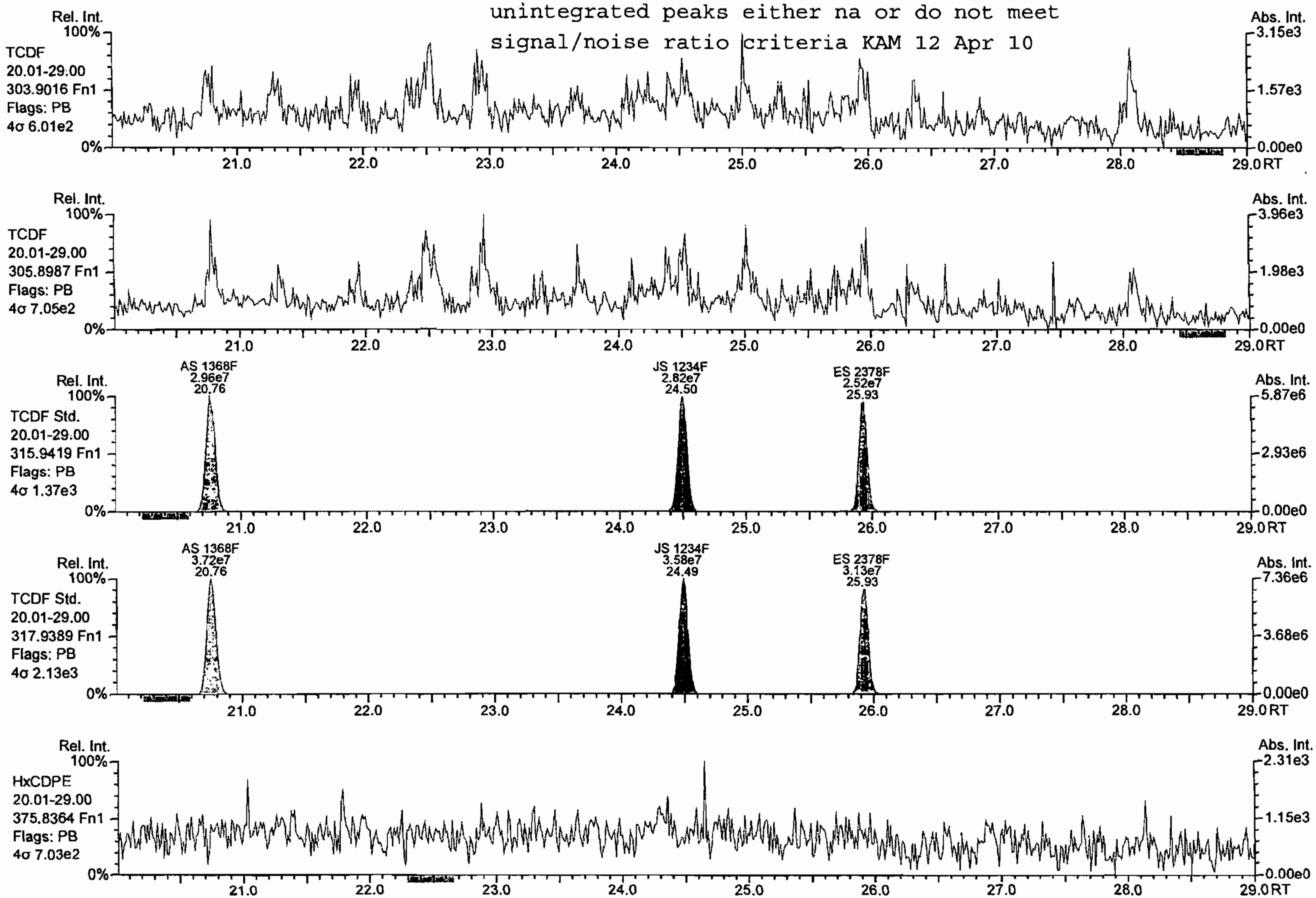
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:51:34 (MC) Printed: 09-Apr-2010 16:05:34 Page 6 of 12

AP Lab ID: P2096_7679_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48

Acq: 9-APR-2010 09:57:56
User: MC Datafile: 100409P1-04

unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 12 Apr 10



1 - 151

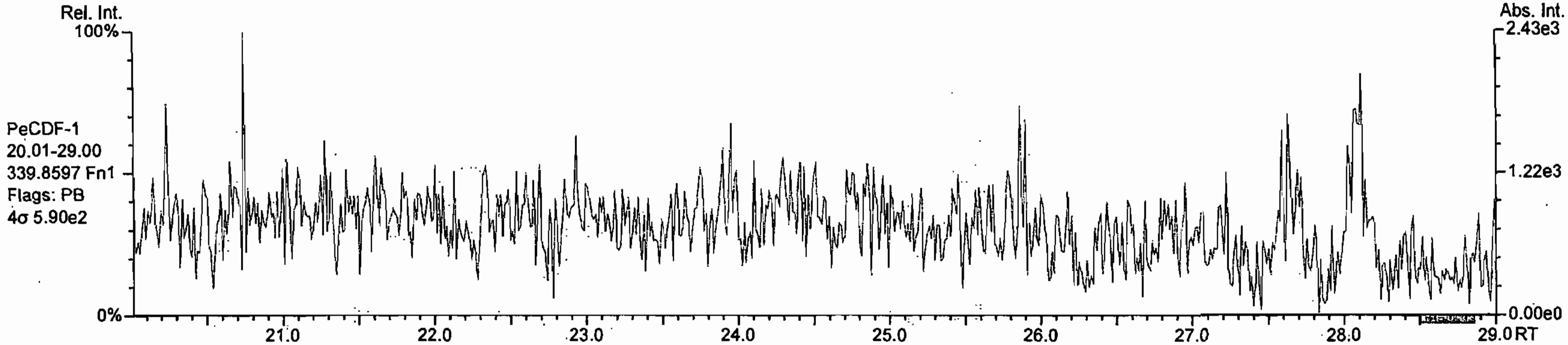
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8034, 4362, 7519 scc: 318-336

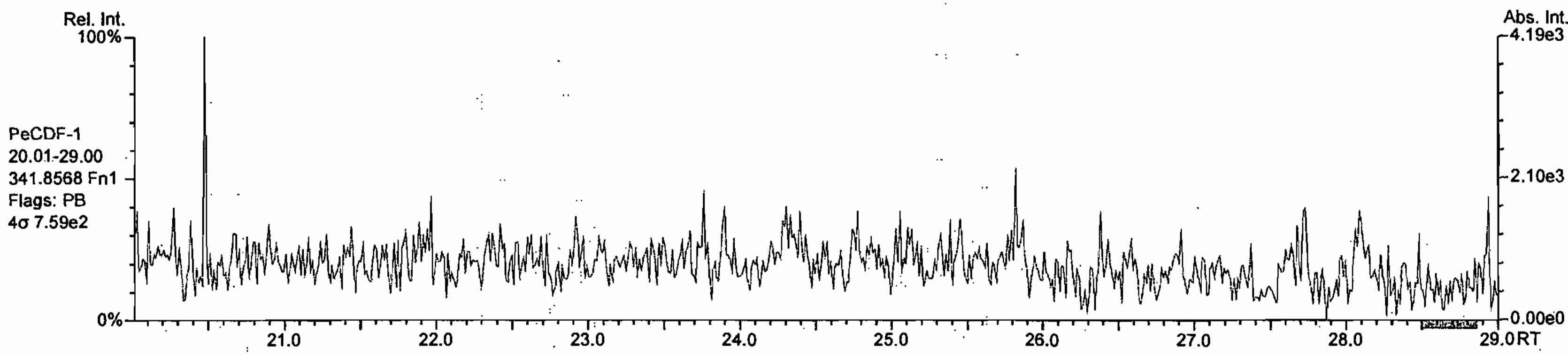
Peak annotation: Areas, Centroids
PKD: 09-Apr-2010 11:51:00 Printed: 09-Apr-2010 16:05:45

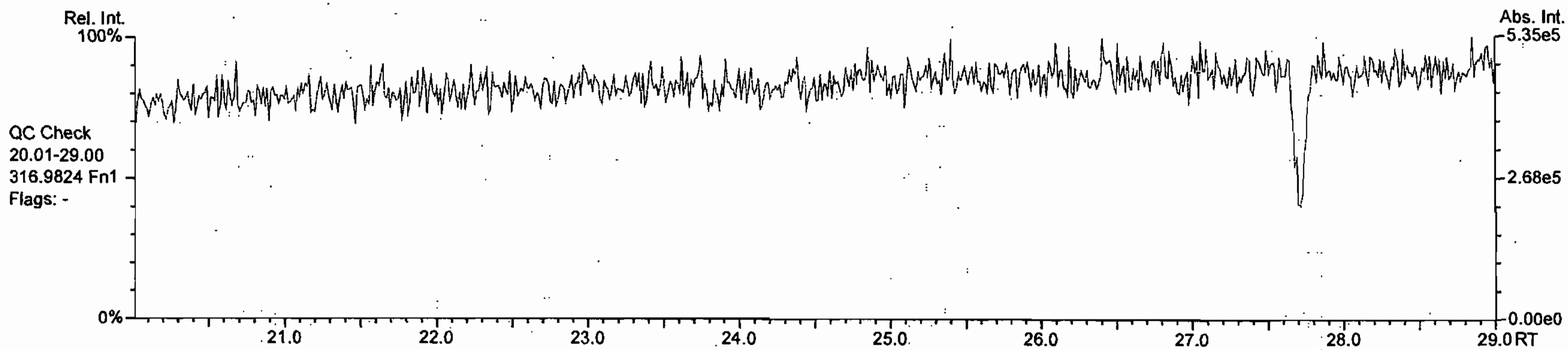
AP Lab ID: P2096_7679_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48

Acq: 9-APR-2010 09:57:56
User: MC Datafile: 100409P1-04





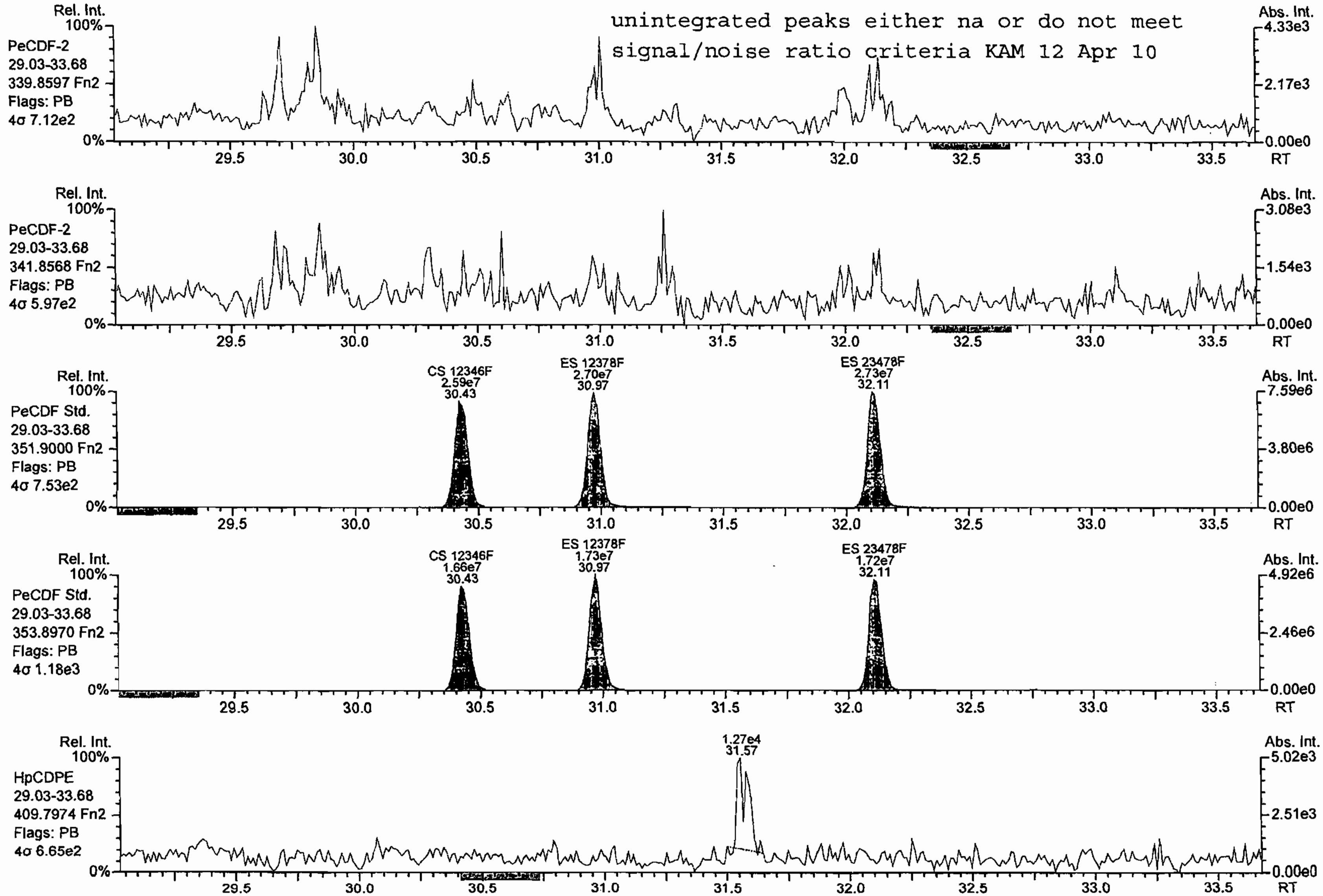


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5580 scc: 318-336

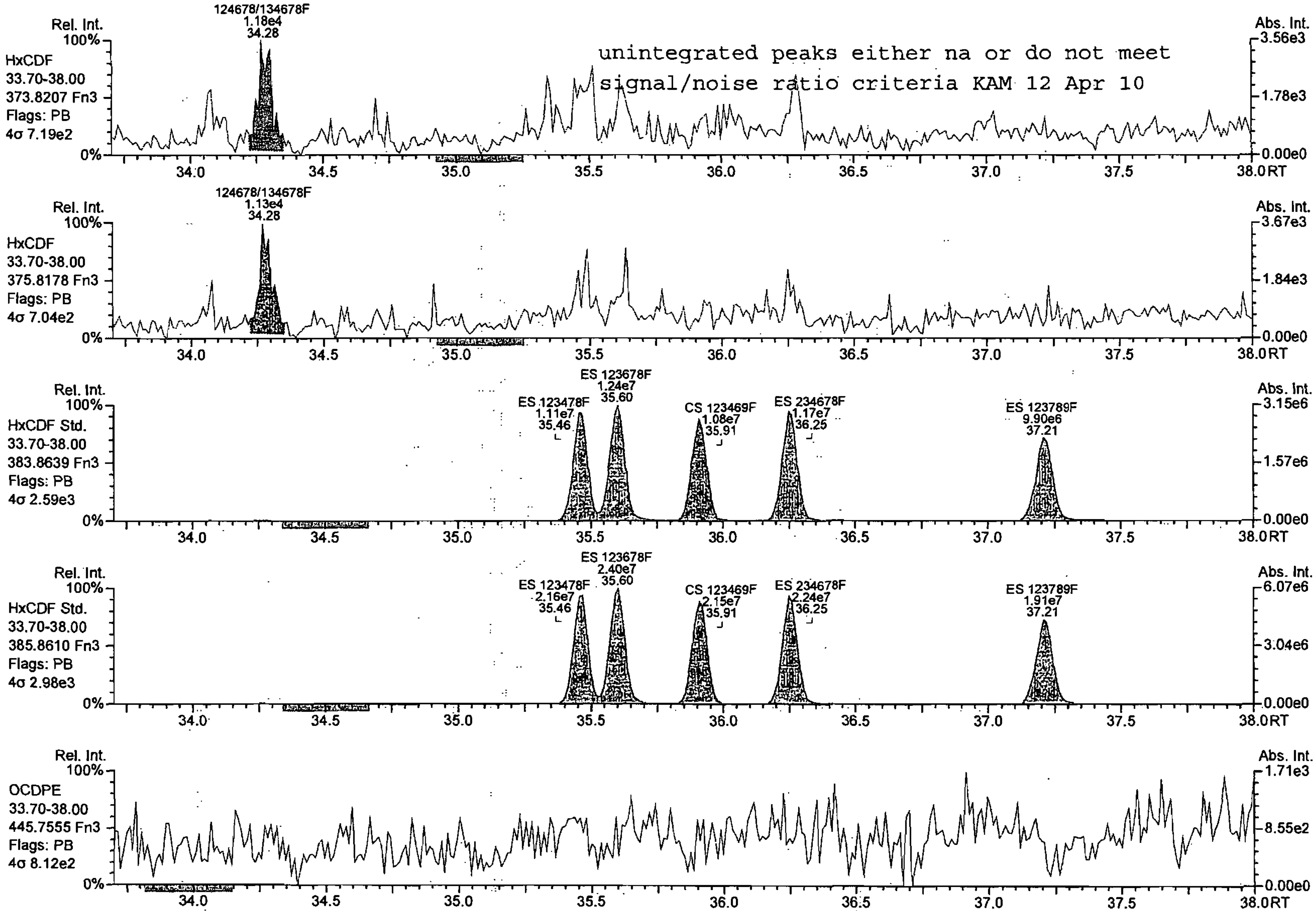
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:51:00 (MC) Printed: 09-Apr-2010 16:05:52

AP Lab ID: P2096_7679_001 **Sample ID: Field Blank** **Acq: 9-APR-2010 09:57:56**
Instr: AutoSpec-Ultima MM1 **SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48** **User: MC Datafile: 100409P1-04**

unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 12 Apr 10



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC) *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9652, 1237, 2242 scc: 318-336 *PKD: 09-Apr-2010 11:51:00 Printed: 09-Apr-2010 16:05:59*


124678/134678F
1.18e4
34.28
Rel. Int.
100%
HxCDF
33.70-38.00
373.8207 Fn3
Flags: PB
4σ 7.19e2
Abs. Int.
3.56e3
1.78e3
0.00e0
unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 12 Apr 10
124678/134678F
1.13e4
34.28
HxCDF
33.70-38.00
375.8178 Fn3
Flags: PB
4σ 7.04e2
3.67e3
1.84e3
ES 123678F
1.24e7
35.60
ES 123478F
1.11e7
35.46
CS 123469F
1.08e7
35.91
ES 234678F
1.17e7
36.25
ES 123789F
9.90e6
37.21
HxCDF Std.
33.70-38.00
383.8639 Fn3
Flags: PB
4σ 2.59e3
3.15e6
1.57e6
ES 123678F
2.40e7
35.60
ES 123478F
2.16e7
35.46
CS 123469F
2.15e7
35.91
ES 234678F
2.24e7
36.25
ES 123789F
1.91e7
37.21
HxCDF Std.
33.70-38.00
385.8610 Fn3
Flags: PB
4σ 2.98e3
6.07e6
3.04e6
OCDPE
33.70-38.00
445.7555 Fn3
Flags: PB
4σ 8.12e2
1.71e3
8.55e2
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 38.0 RT

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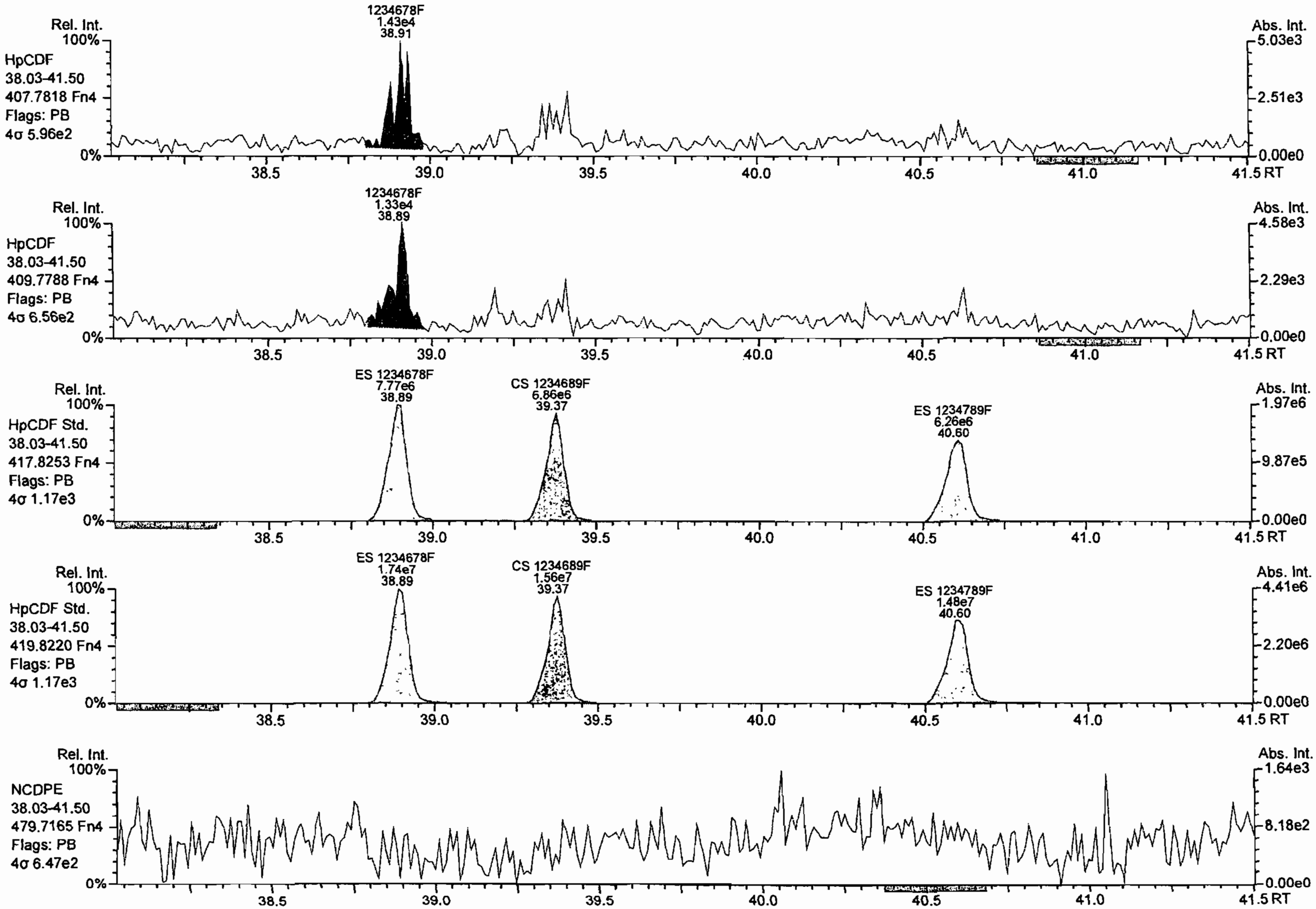
AP Lab ID: P2096_7679_001 Sample ID: Field Blank Acq: 9-APR-2010 09:57:56
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48 User: MC Datafile: 100409P1-04

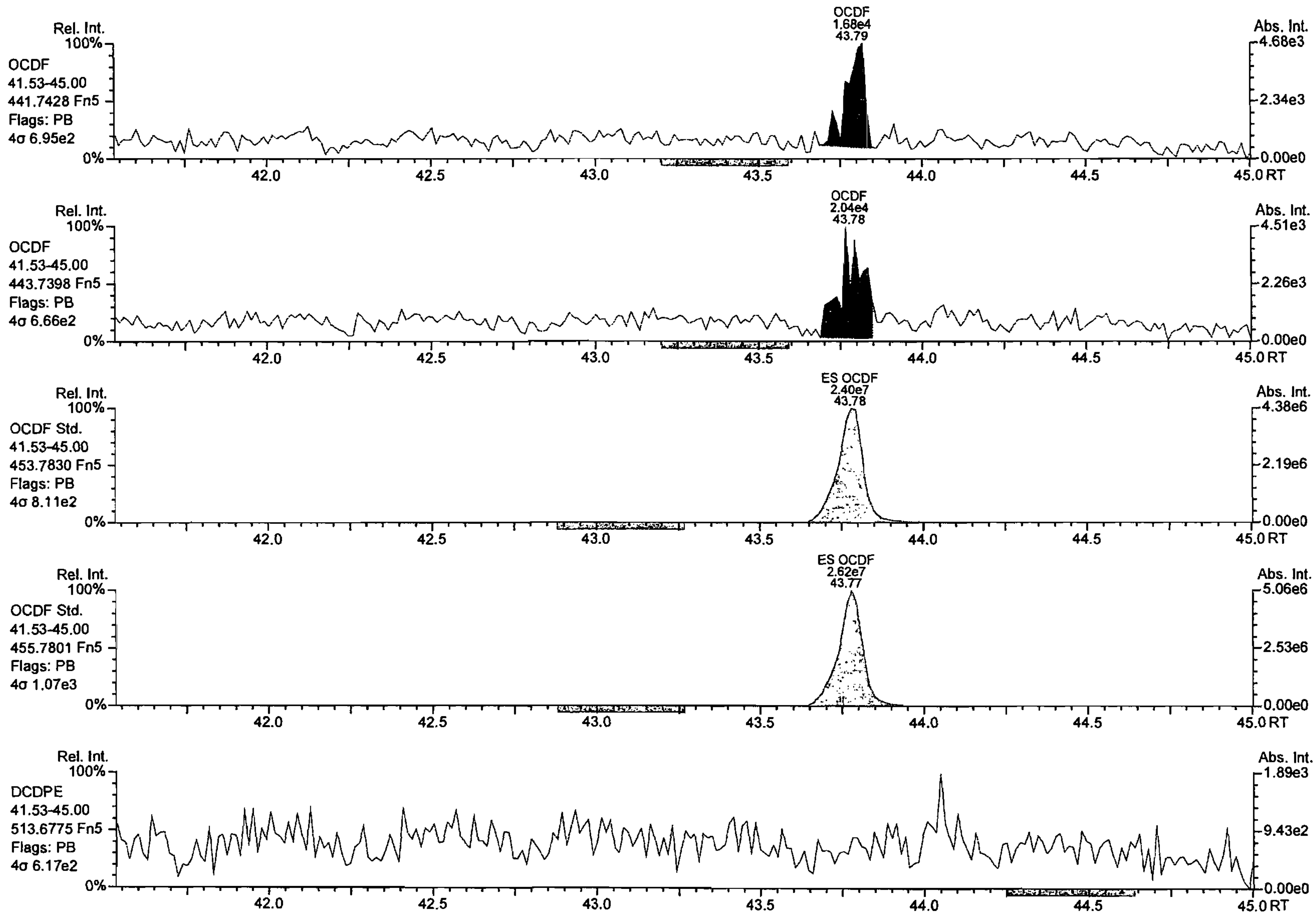


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8766, 3458, 1413 scc: 318-336 Revised: 09-Apr-2010 11:51:50 (MC) Printed: 09-Apr-2010 16:06:12

AP Lab ID: P2096_7679_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 48

Acq: 9-APR-2010 09:57:56
User: MC Datafile: 100409P1-04



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Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_001.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5738, 9781, 9943 scc: 318-336

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:51:54 (MC) Printed: 09-Apr-2010 16:06:18

Lab ID: P2096_7679_002	Acq'd: 09 Apr 2010 10:48 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: Unit 1 FF Outlet Run 1	UTP: 12-Apr-2010 15:49 MC	J-level: 10 pg	Checkcode: 744-657
Datafile: 100409P1-05	Report: 12 Apr 2010 15:50 MC	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	26.89		1.0008	1.0009	+0.2	3.40E+04	0.98	N	0.99	3.64	1222	1.41
12378-PeCDD	32.49		1.0006	1.0003	-0.6	4.03E+04	1.63	Y	0.93	5.58	1470	1.81
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.04	-	1449	2.09
123678-HxCDD	36.56		1.0034	1.0034	0	4.13E+04	1.20	Y	0.95	6.15	1449	2.16
123789-HxCDD	NotFnd		1.0116	-		-	-	-	0.93	-	1449	2.31
1234678-HpCDD	40.05		1.0003	1.0003	0	2.52E+05	0.91	Y	0.96	44.1	1393	2.6
OCDD	43.56		1.0004	1.0004	0	3.71E+05	0.86	Y	1.00	76.7	1451	4.01
2378-TCDF	25.96		1.0009	1.0009	0	2.30E+05	0.81	Y	1.08	15.8	1468	1.15
12378-PeCDF	31.00		1.0006	1.0006	0	1.65E+05	1.59	Y	1.00	15.3	1695	1.47
23478-PeCDF	32.14		1.0005	1.0005	0	1.67E+05	1.40	Y	1.04	14.5	1695	1.33
123478-HxCDF	35.48		1.0004	1.0004	0	8.32E+04	1.22	Y	1.14	9.14	1538	1.59
123678-HxCDF	35.62		1.0005	1.0005	0	1.20E+05	1.10	Y	1.13	12	1538	1.46
234678-HxCDF	36.27		1.0005	1.0005	0	8.74E+04	1.07	Y	1.14	9.38	1538	1.59
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.12	-	1538	2.04
1234678-HpCDF	38.91		1.0003	1.0004	+0.2	1.68E+05	1.00	Y	1.38	20.1	1336	1.51
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.33	-	1336	2.25
OCDF	43.80		1.0004	1.0006	+0.5	3.22E+04	0.67	N	0.96	5.38	1373	2.9

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Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.87	1.0259	1.0258	-0.2	3.76E+07	0.81	Y	1.01	83.1
ES 12378-PeCDD	32.48	1.2404	1.2401	-0.5	3.10E+07	1.58	Y	0.78	88.6
ES 123478-HxCDD	36.44	0.9917	0.9917	0	2.52E+07	1.31	Y	0.99	82.5
ES 123678-HxCDD	36.55	0.9947	0.9947	0	2.83E+07	1.23	Y	1.07	86.2
ES 123789-HxCDD	36.85	1.0028	1.0027	-0.2	2.79E+07	1.26	Y	1.09	82.9
ES 1234678-HpCDD	40.04	1.0902	1.0895	-1.5	2.37E+07	1.07	Y	0.90	85.3
ES OCDD	43.54	1.1862	1.1850	-2.6	3.86E+07	0.90	Y	0.74	84.7
ES 2378-TCDF	25.93	1.0585	1.0584	-0.1	5.39E+07	0.80	Y	1.00	84.6
ES 12378-PeCDF	30.98	1.2646	1.2646	0	4.28E+07	1.56	Y	0.75	89.3
ES 23478-PeCDF	32.12	1.3113	1.3109	-0.6	4.41E+07	1.58	Y	0.74	92.7
ES 123478-HxCDF	35.46	0.9651	0.9651	0	3.19E+07	0.52	Y	1.19	86.9
ES 123678-HxCDF	35.60	0.9689	0.9689	0	3.50E+07	0.52	Y	1.35	84.3
ES 234678-HxCDF	36.26	0.9867	0.9867	0	3.26E+07	0.51	Y	1.28	82.6
ES 123789-HxCDF	37.22	1.0129	1.0128	-0.2	2.89E+07	0.52	Y	1.20	78.4
ES 1234678-HpCDF	38.89	1.0589	1.0584	-1.1	2.42E+07	0.45	Y	0.95	82.9
ES 1234789-HpCDF	40.60	1.1057	1.1049	-1.8	2.07E+07	0.44	Y	0.82	82.6
ES OCDF	43.78	1.1926	1.1913	-2.9	4.97E+07	0.89	Y	0.96	84.2

Lab ID: P2096_7679_002 | Acq'd: 09 Apr 2010 10:48 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB
Client ID: Unit 1 FF Outlet Run 1 | UTP: 12-Apr-2010 15:49 MC | J-level: 10 pg | Checkcode: 744-657
Datafile: 100409P1-05 | Report: 12 Apr 2010 15:50 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.19		-	-	-	4.48E+07	0.81	Y	-	-
JS 1234-TCDF	24.50		-	-	-	6.39E+07	0.80	Y	-	-
JS 123467-HxCDD	36.75		-	-	-	1.54E+07	1.25	Y	-	-
CS 37Cl-2378-TCDD	26.89		1.0268	1.0267	-0.2	1.69E+07	n/a	-	1.16	81.5
CS 12347-PeCDD	31.97		1.2209	1.2207	-0.3	3.09E+07	1.62	Y	0.79	87.1
CS 12346-PeCDF	30.45		1.2424	1.2429	+0.7	4.40E+07	1.56	Y	0.79	87.3
CS 123469-HxCDF	35.91		0.9773	0.9773	0	3.20E+07	0.51	Y	1.23	84.8
CS 1234689-HpCDF	39.37		1.0720	1.0715	-1.1	2.26E+07	0.44	Y	0.86	85.1
SS 37Cl-2378-TCDD	26.89		1.0268	1.0267	-0.2	1.69E+07	n/a	-	1.14	98.1
SS 12347-PeCDD	31.97		1.2209	1.2207	-0.3	3.09E+07	1.62	Y	1.01	98.3
SS 12346-PeCDF	30.45		1.2424	1.2429	+0.7	4.40E+07	1.56	Y	1.05	97.8
SS 123469-HxCDF	35.91		0.9773	0.9773	0	3.20E+07	0.51	Y	0.91	101
SS 1234689-HpCDF	39.37		1.0720	1.0715	-1.1	2.26E+07	0.44	Y	0.91	103
AS 1368-TCDD	22.92		0.8731	0.8752	+3.3	3.98E+07	0.80	Y	1.08	82.3
AS 1368-TCDF	20.82		0.8447	0.8497	+7.4	6.60E+07	0.78	Y	1.29	80
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.21		0.9794	0.9794	0	1.47E+05	1.10	Y	0.01	80.1
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 12 Apr 10

Totals	Conc	EMPC
Total TCDD	59.6	76.2
Total PeCDD	68.5	95.4
Total HxCDD	116	116
Total HpCDD	91.4	91.4
Total Tetra-Octa Dioxins	413	456
Total TCDF	496	525
Total PeCDF	251	251
Total HxCDF	79.4	83.6
Total HpCDF	22.8	25.9
Total Tetra-Octa Furans	849	891
Total Tetra-Octa Dioxins & Furans	1260	1350

Lab ID: P2096_7679_002 | Acq'd: 09 Apr 2010 10:48 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 1 | UTP: 12-Apr-2010 15:49 MC | J-level: 10 pg | Checkcode: 744-657

Datafile: 100409P1-05 | Report: 12 Apr 2010 15:50 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	22.95		0.8539	0.8543	+0.6	2.32E+05	0.77	Y	0.99	24.9	1222	1.41
1379-TCDD	23.36		0.8685	0.8695	+1.6	8.62E+04	0.67	Y	0.99	9.24	1222	1.41
1369-TCDD	23.82		0.8863	0.8866	+0.5	2.61E+04	1.02	N	0.99	2.8	1222	1.41
1469-TCDD	NotFnd		0.9189						0.99		1222	1.41
1247/1246/1248/1249-TCDD	24.93		0.9276	0.9278	+0.3	6.82E+04	0.64	N	0.99	7.31	1222	1.41
1378-TCDD	25.13		0.9351	0.9354	+0.5	6.55E+04	0.83	Y	0.99	7.02	1222	1.41
1268-TCDD	25.36		0.9430	0.9438	+1.3	2.63E+04	1.21	N	0.99	2.82	1222	1.41
1478-TCDD	25.60		0.9517	0.9530	+2.1	1.85E+04	0.83	Y	0.99	1.99	1222	1.41
1279-TCDD	25.79		0.9598	0.9601	+0.5	3.05E+04	0.81	Y	0.99	3.27	1222	1.41
1234/1269-TCDD	26.18		0.9740	0.9744	+0.6	2.76E+04	0.78	Y	0.99	2.96	1222	1.41
1236-TCDD	NotFnd		0.9801						0.99		1222	1.41
1237/1238-TCDD	26.58		0.9895	0.9894	-0.2	5.29E+04	0.73	Y	0.99	5.67	1222	1.41
1239-TCDD	NotFnd		0.9952						0.99		1222	1.41
2378-TCDD	**26.89**		**1.0008**	**1.0009**	**+0.2**	**3.40E+04**	**0.98**	**N**	**0.99**	**3.64**	**1222**	**1.41**
1278-TCDD	27.23		1.0138	1.0135	-0.5	4.26E+04	0.73	Y	0.99	4.56	1222	1.41
1267-TCDD	NotFnd		1.0194						0.99		1222	1.41
1289-TCDD	NotFnd		1.0396						0.99		1222	1.41
12479/12468-PeCDD	29.94		0.9210	0.9218	+1.6	1.94E+05	1.79	N	0.93	26.9	1470	1.81
12469-PeCDD	30.47		0.9382	0.9383	+0.2	2.71E+04	1.40	Y	0.93	3.75	1470	1.81
12368-PeCDD	31.04		0.9556	0.9558	+0.4	1.53E+05	1.44	Y	0.93	21.2	1470	1.81
12478-PeCDD	31.24		0.9614	0.9619	+1.0	4.40E+04	1.52	Y	0.93	6.09	1470	1.81
12379-PeCDD	31.35		0.9649	0.9651	+0.4	7.79E+04	1.45	Y	0.93	10.8	1470	1.81
12369/12467/12489-PeCDD	31.61		0.9732	0.9731	-0.2	5.84E+04	1.42	Y	0.93	8.09	1470	1.81
12346/12347-PeCDD	32.00		0.9850	0.9851	+0.2	4.88E+04	1.46	Y	0.93	6.76	1470	1.81
12378-PeCDD	**32.49**		**1.0006**	**1.0003**	**-0.6**	**4.03E+04**	**1.63**	**Y**	**0.93**	**5.58**	**1470**	**1.81**
12367-PeCDD	32.60		1.0037	1.0036	-0.2	1.66E+04	1.34	Y	0.93	2.3	1470	1.81
12389-PeCDD	32.95		1.0146	1.0146	0	2.84E+04	1.41	Y	0.93	3.94	1470	1.81
124679/124689-HxCDD	34.75		0.9534	0.9536	+0.4	8.84E+04	1.21	Y	0.97	13.4	1449	2.18
123468-HxCDD	35.41		0.9717	0.9717	0	4.69E+05	1.28	Y	0.97	71	1449	2.18
123679/123689-HxCDD	35.70		0.9793	0.9796	+0.7	1.71E+05	1.09	Y	0.97	25.9	1449	2.18
123469-HxCDD	NotFnd		0.9833						0.97		1449	2.18
123478-HxCDD	**NotFnd**		**1.0004**						**1.04**		**1449**	**2.09**
123678-HxCDD	**36.56**		**1.0034**	**1.0034**	**0**	**4.13E+04**	**1.20**	**Y**	**0.95**	**6.15**	**1449**	**2.16**
123467-HxCDD	NotFnd		1.0088						0.97		1449	2.18
123789-HxCDD	**NotFnd**		**1.0116**						**0.93**		**1449**	**2.31**

Lab ID: P2096_7679_002 | Acq'd: 09 Apr 2010 10:48 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 1 | UTP: 12-Apr-2010 15:49 MC | J-level: 10 pg | Checkcode: 744-657

Datafile: 100409P1-05 | Report: 12 Apr 2010 15:50 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.22		0.9794	0.9796	+0.5	2.71E+05	1.04	Y	0.96	47.3	1393	2.6
1234678-HpCDD	**40.05**		**1.0003**	**1.0003**	**0**	**2.52E+05**	**0.91**	**Y**	**0.96**	**44.1**	**1393**	**2.6**
OCDD	**43.56**		**1.0004**	**1.0004**	**0**	**3.71E+05**	**0.86**	**Y**	**1.00**	**76.7**	**1451**	**4.01**
OCDD-a	NotFnd		1.0003						0.06		1594	72.2
1368-TCDF	20.84		0.8012	0.8038	+4.0	7.77E+05	0.76	Y	1.08	53.4	1468	1.15
1468-TCDF	21.37		0.8216	0.8240	+3.7	2.98E+05	0.79	Y	1.08	20.5	1468	1.15
2468-TCDF	21.97		0.8461	0.8473	+1.9	1.64E+05	0.84	Y	1.08	11.3	1468	1.15
1346/1246-TCDF	22.39		0.8607	0.8633	+4.0	1.33E+05	1.34	N	1.08	9.13	1468	1.15
1347/1378/1247-TCDF	22.53		0.8672	0.8688	+2.5	1.32E+06	0.72	Y	1.08	90.5	1468	1.15
1348-TCDF	22.82		0.8792	0.8801	+1.4	2.04E+05	0.62	N	1.08	14	1468	1.15
1248/1367/1379-TCDF	22.96		0.8846	0.8852	+0.9	6.30E+05	0.75	Y	1.08	43.3	1468	1.15
1268-TCDF	23.39		0.9011	0.9017	+0.9	2.54E+05	0.81	Y	1.08	17.4	1468	1.15
1467-TCDF	23.53		0.9067	0.9074	+1.1	1.96E+05	0.82	Y	1.08	13.5	1468	1.15
1478-TCDF	23.71		0.9137	0.9143	+0.9	4.20E+05	0.78	Y	1.08	28.9	1468	1.15
1369/1237-TCDF	24.10		0.9293	0.9294	+0.2	2.66E+05	0.86	Y	1.08	18.3	1468	1.15
2467-TCDF	24.25		0.9348	0.9350	+0.3	2.74E+05	0.77	Y	1.08	18.8	1468	1.15
2368-TCDF	24.41		0.9408	0.9411	+0.5	3.34E+05	0.80	Y	1.08	23	1468	1.15
1238/1234/1678/1469/1236-TCDF	24.54		0.9445	0.9462	+2.6	5.77E+05	0.75	Y	1.08	39.7	1468	1.15
1278-TCDF	25.02		0.9641	0.9646	+0.8	4.07E+05	0.84	Y	1.08	28	1468	1.15
1349-TCDF	25.14		0.9693	0.9695	+0.3	4.78E+04	0.81	Y	1.08	3.29	1468	1.15
1267-TCDF	25.30		0.9755	0.9757	+0.3	1.54E+05	0.79	Y	1.08	10.6	1468	1.15
2346/1249-TCDF	25.51		0.9834	0.9837	+0.5	1.56E+05	0.74	Y	1.08	10.8	1468	1.15
2347/1279-TCDF	25.73		0.9922	0.9922	0	2.06E+05	0.75	Y	1.08	14.2	1468	1.15
2348-TCDF	25.85		0.9966	0.9966	0	9.07E+04	0.90	N	1.08	6.24	1468	1.15
2378-TCDF	**25.96**		**1.0009**	**1.0009**	**0**	**2.30E+05**	**0.81**	**Y**	**1.08**	**15.8**	**1468**	**1.15**
2367/3467-TCDF	26.35		1.0164	1.0161	-0.5	4.44E+05	0.78	Y	1.08	30.5	1468	1.15
1269-TCDF	26.61		1.0260	1.0261	+0.2	2.81E+04	0.67	Y	1.08	1.93	1468	1.15
1239-TCDF	26.89		1.0375	1.0371	-0.6	3.10E+04	0.85	Y	1.08	2.13	1468	1.15
1289-TCDF	NotFnd		1.0834						1.08		1468	1.15
13468/12468-PeCDF	28.11		0.9057	0.9072	+2.8	3.99E+05	1.67	Y	1.02	35.9	1406	1.16
13678/13467/12467-PeCDF	29.72		0.9581	0.9592	+2.0	4.89E+05	1.39	Y	1.02	44	1695	1.4
12368/13478/12478-PeCDF	29.87		0.9620	0.9641	+3.9	6.03E+05	1.45	Y	1.02	54.3	1695	1.4
14678-PeCDF	29.98		0.9667	0.9675	+1.5	1.32E+05	1.40	Y	1.02	11.8	1695	1.4
13479-PeCDF	30.07		0.9702	0.9703	+0.2	5.25E+04	1.33	Y	1.02	4.72	1695	1.4
13469/12479-PeCDF	30.31		0.9781	0.9783	+0.4	6.68E+04	1.34	Y	1.02	6.01	1695	1.4
12346-PeCDF	30.48		0.9829	0.9837	+1.5	6.26E+04	1.54	Y	1.02	5.63	1695	1.4

Lab ID: P2096_7679_002 | Acq'd: 09 Apr 2010 10:48 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 1 | UTP: 12-Apr-2010 15:49 MC | J-level: 10 pg | Checkcode: 744-657

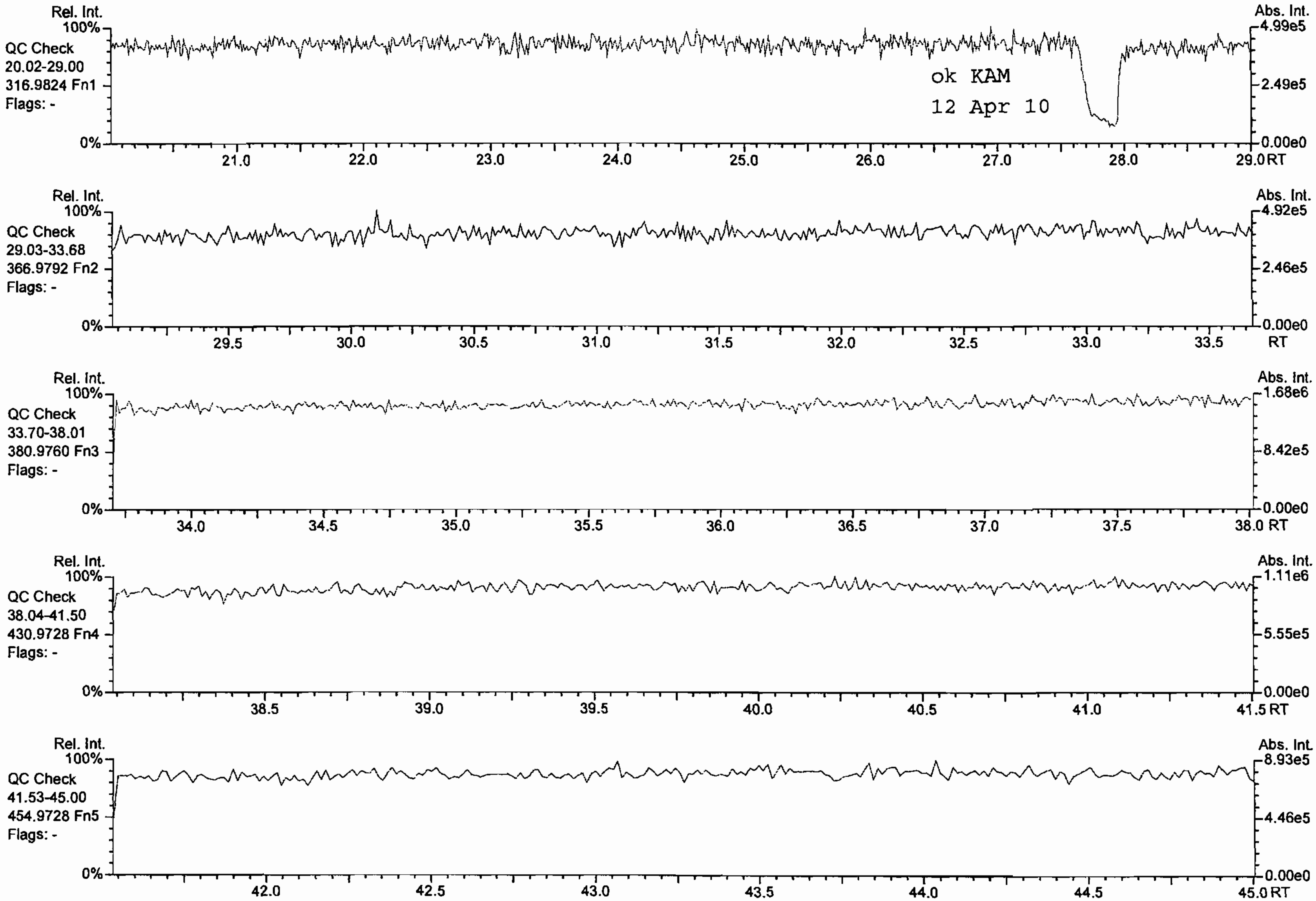
Datafile: 100409P1-05 | Report: 12 Apr 2010 15:50 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.56		0.9858	0.9862	+0.7	1.47E+05	1.51	Y	1.02	13.2	1695	1.4
12347-PeCDF	30.64		0.9881	0.9888	+1.3	5.35E+04	1.69	Y	1.02	4.82	1695	1.4
12348-PeCDF	30.79		0.9936	0.9937	+0.2	6.06E+04	1.40	Y	1.02	5.46	1695	1.4
12378-PeCDF	**31.00**		**1.0006**	**1.0006**	**0**	**1.65E+05**	**1.59**	**Y**	**1.00**	**15.3**	**1695**	**1.47**
12678/12367-PeCDF	31.28		1.0104	1.0095	-1.7	2.13E+05	1.45	Y	1.02	19.2	1695	1.4
12379-PeCDF	NotFnd		1.0151						1.02		1695	1.4
12679-PeCDF	NotFnd		0.9925						1.02		1695	1.4
23467/12369-PeCDF	32.01		0.9981	0.9967	-2.7	1.77E+05	1.48	Y	1.02	16	1695	1.4
23478-PeCDF	**32.14**		**1.0005**	**1.0005**	**0**	**1.67E+05**	**1.40**	**Y**	**1.04**	**14.5**	**1695**	**1.33**
23478/12489-PeCDF	NotFnd		1.0006						1.04		1695	1.33
12489-PeCDF	NotFnd		1.0023						1.02		1695	1.4
12349-PeCDF	NotFnd		1.0110						1.02		1695	1.4
12389-PeCDF	NotFnd		1.0350						1.02		1695	1.4
123468-HxCDF	34.08		0.9609	0.9611	+0.4	6.38E+04	1.39	Y	1.13	7.01	1538	1.65
124678/134678-HxCDF	34.29		0.9668	0.9668	0	2.93E+05	1.19	Y	1.13	32.2	1538	1.65
134679-HxCDF	34.52		0.9733	0.9733	0	2.47E+04	0.97	N	1.13	2.72	1538	1.65
124679-HxCDF	34.72		0.9788	0.9789	+0.2	1.32E+04	0.75	N	1.13	1.45	1538	1.65
124689-HxCDF	NotFnd		0.9851						1.13		1538	1.65
123467-HxCDF	35.36		0.9968	0.9972	+0.9	8.76E+04	1.11	Y	1.13	9.62	1538	1.65
123478-HxCDF	**35.48**		**1.0004**	**1.0004**	**0**	**8.32E+04**	**1.22**	**Y**	**1.14**	**9.14**	**1538**	**1.59**
123678-HxCDF	**35.62**		**1.0005**	**1.0005**	**0**	**1.20E+05**	**1.10**	**Y**	**1.13**	**12**	**1538**	**1.46**
123479-HxCDF	NotFnd		1.0048						1.13		1538	1.65
123469-HxCDF	NotFnd		1.0090						1.13		1538	1.65
123679-HxCDF	NotFnd		0.9943						1.13		1538	1.65
234678-HxCDF	**36.27**		**1.0005**	**1.0005**	**0**	**8.74E+04**	**1.07**	**Y**	**1.14**	**9.38**	**1538**	**1.59**
234678/123689-HxCDF	NotFnd		1.0004						1.14		1538	1.59
123689-HxCDF	NotFnd		1.0009						1.13		1538	1.65
123789-HxCDF	**NotFnd**		**1.0005**						**1.12**		**1538**	**2.04**
123789/123489-HxCDF	NotFnd		1.0012						1.12		1538	2.04
123489-HxCDF	NotFnd		1.0017						1.13		1538	1.65
1234678-HpCDF	**38.91**		**1.0003**	**1.0004**	**+0.2**	**1.68E+05**	**1.00**	**Y**	**1.38**	**20.1**	**1336**	**1.51**
1234679-HpCDF	39.22		1.0083	1.0085	+0.5	2.07E+04	1.17	Y	1.36	2.72	1336	1.85
1234689-HpCDF	39.38		1.0132	1.0126	-1.4	2.31E+04	0.85	N	1.36	3.04	1336	1.85
1234789-HpCDF	**NotFnd**		**1.0003**						**1.33**		**1336**	**2.25**
OCDF	**43.80**		**1.0004**	**1.0006**	**+0.5**	**3.22E+04**	**0.67**	**N**	**0.96**	**5.38**	**1373**	**2.9**
OCDF-a	NotFnd		1.0002						0.05		1414	52.4

AP Lab ID: P2096_7679_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49

Acq: 9-APR-2010 10:48:24
User: MC Datafile: 100409P1-05



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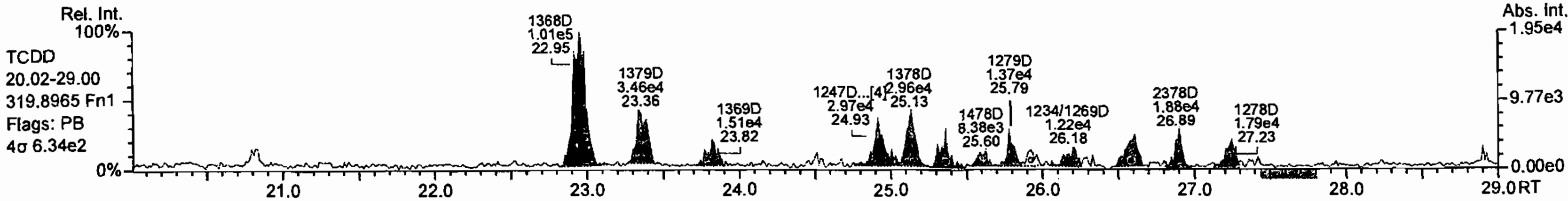
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_002.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 744-657

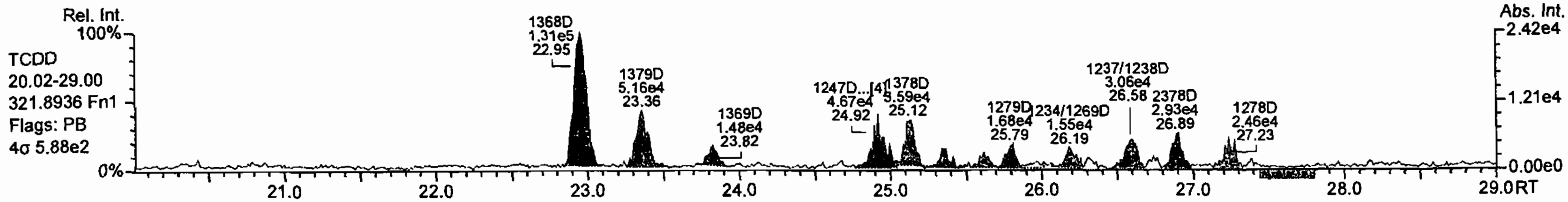
Peak annotation: Areas, Centroids
PKD: n/a Printed: 12-Apr-2010 15:51:51

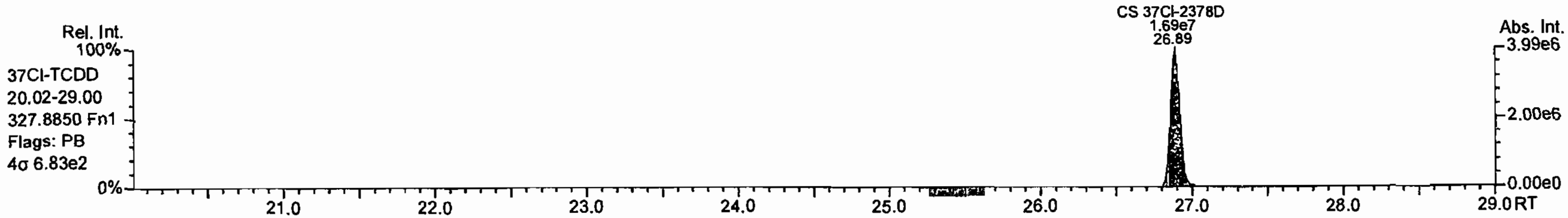
AP Lab ID: P2096_7679_002
Instr: AutoSpec-Ultima MM1

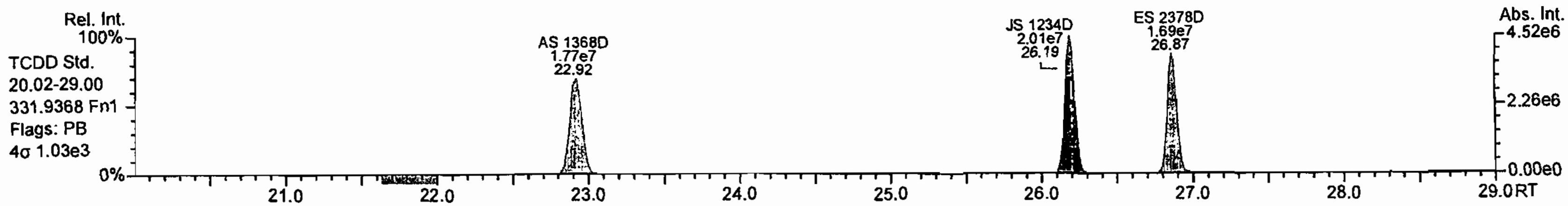
Sample ID: Unit 1 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49

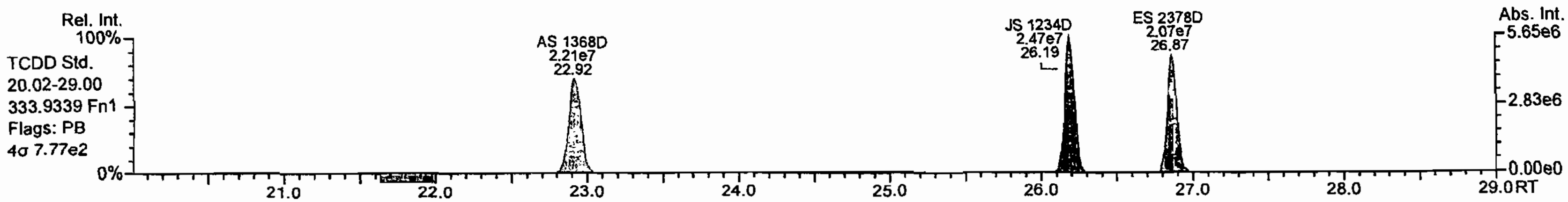
Acq: 9-APR-2010 10:48:24
User: MC Datafile: 100409P1-05











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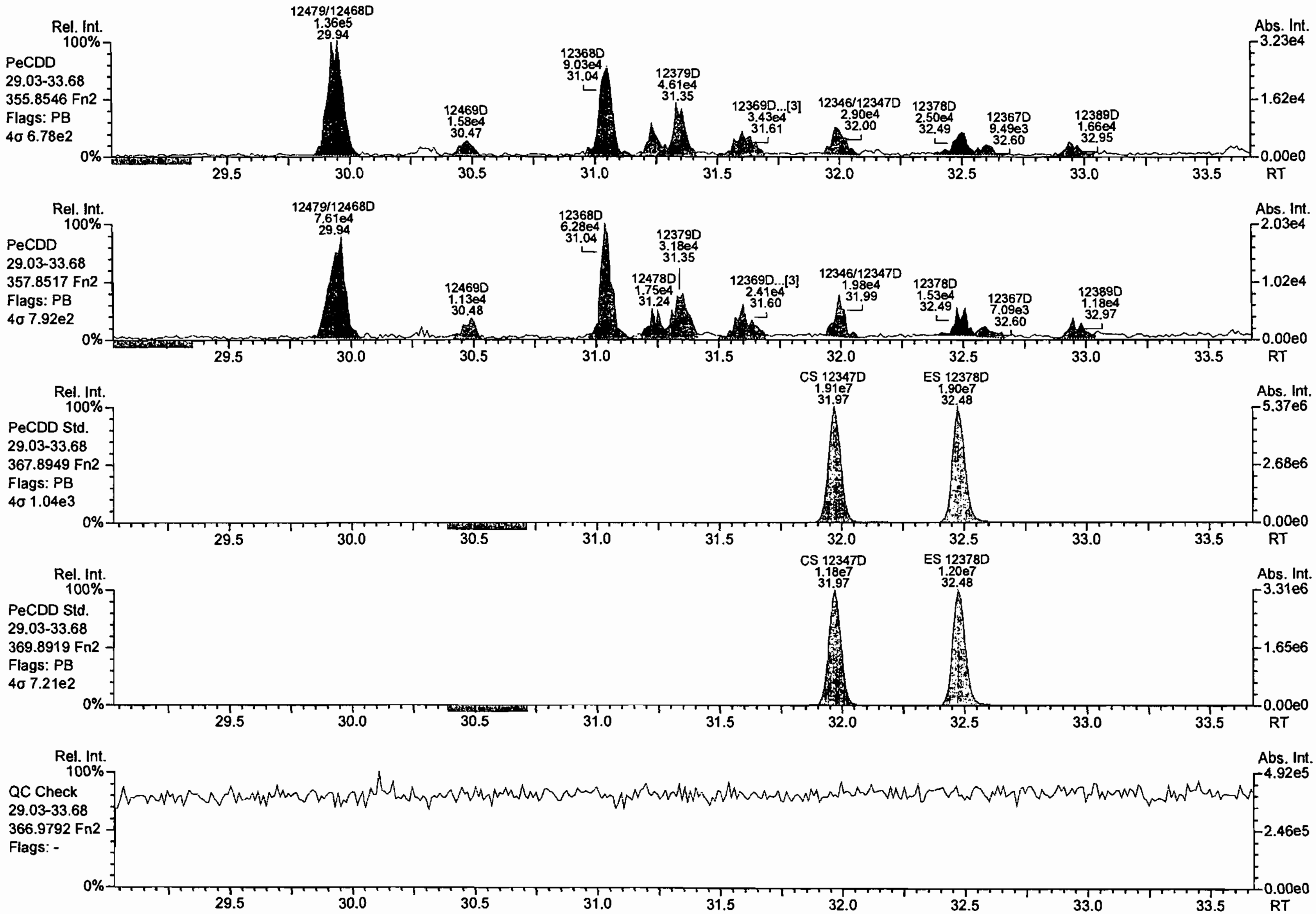
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7265, 6901, 5706 scc: 744-657

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:52:48 (MC) Printed: 12-Apr-2010 15:52:02

AP Lab ID: P2096_7679_002 | Sample ID: Unit 1 FF Outlet Run 1 | Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 | User: MC Datafile: 100409P1-05



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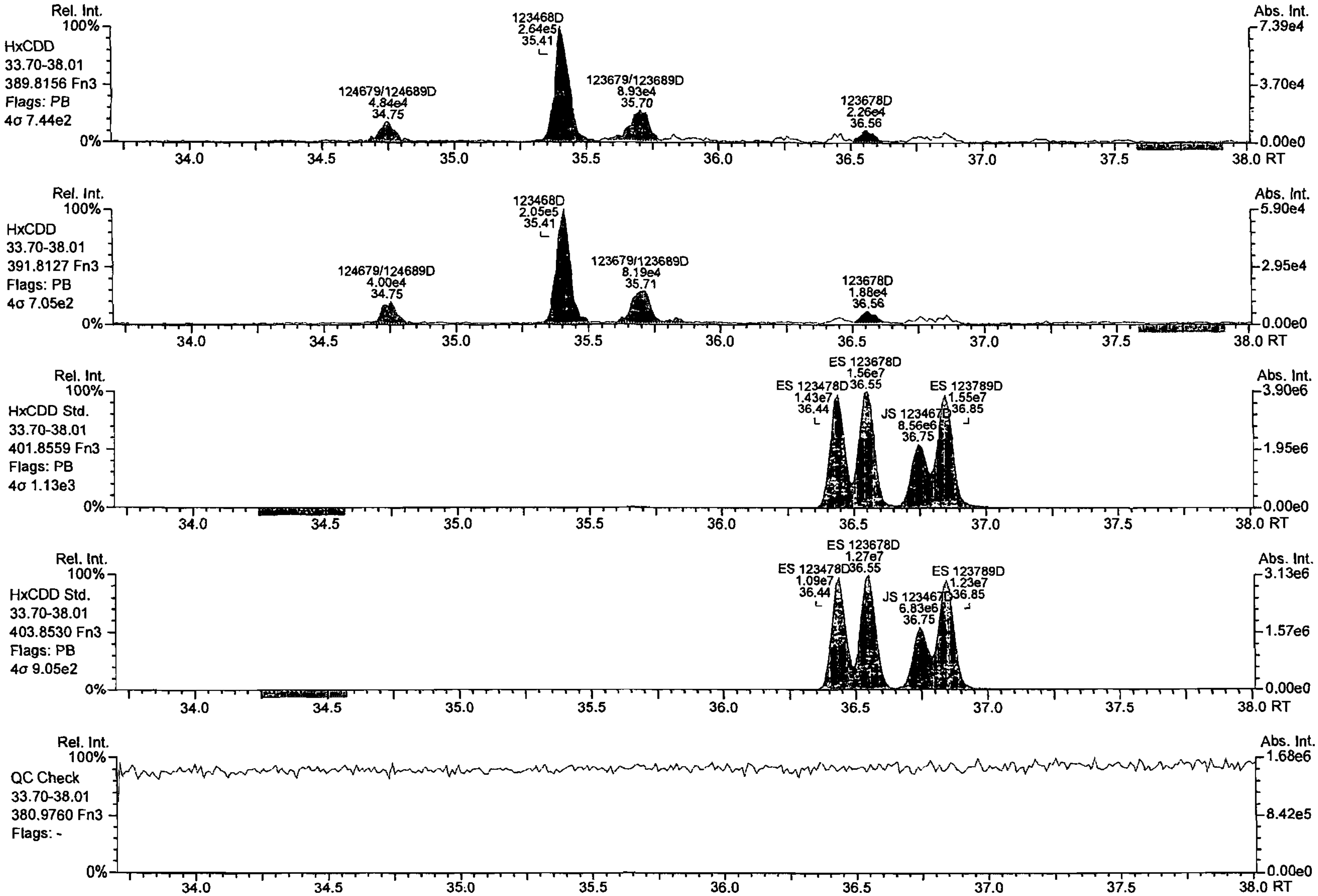
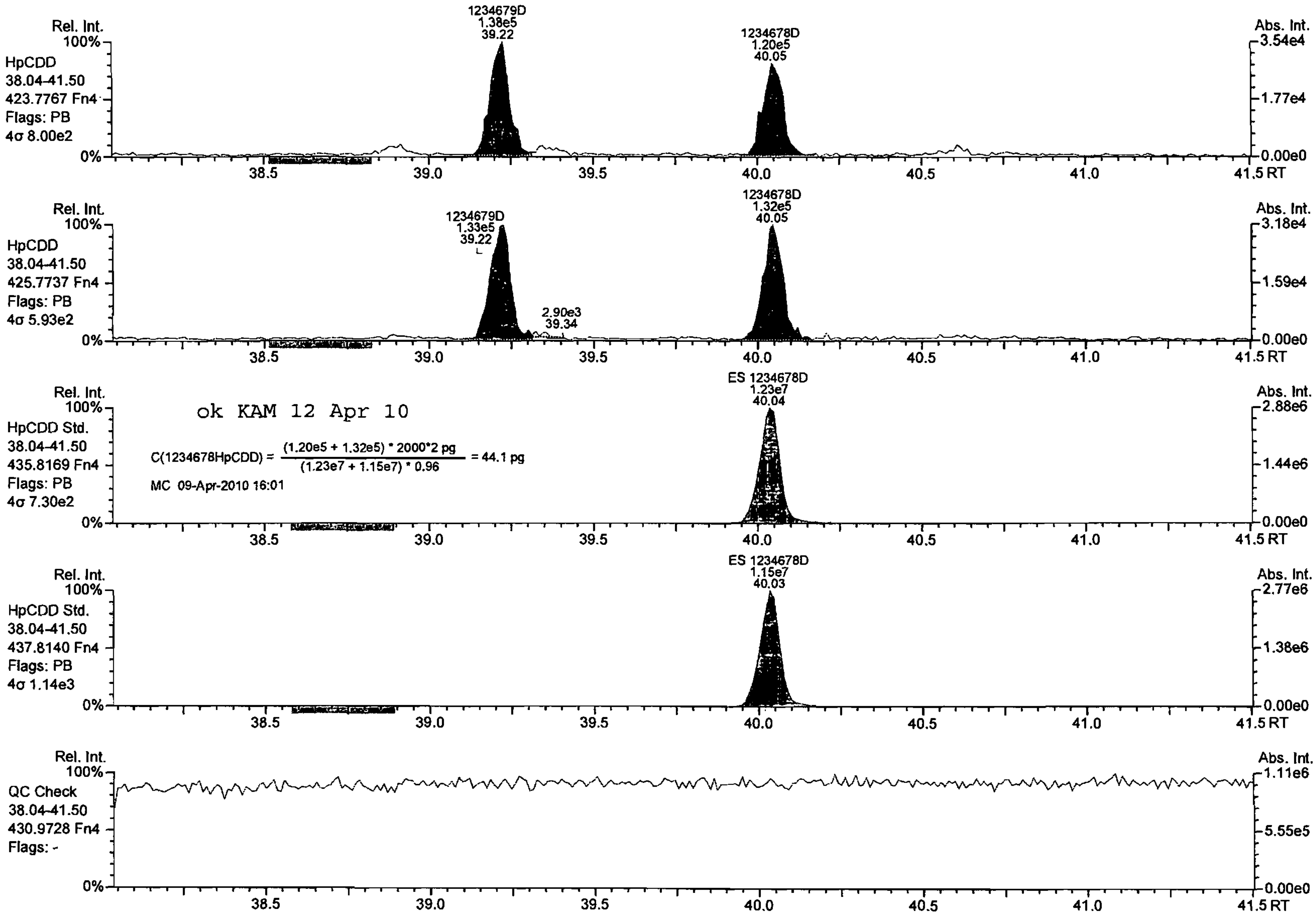
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3785, 0806 scc: 744-657 | Revised: 09-Apr-2010 11:53:06 (MC) Printed: 12-Apr-2010 15:52:10 Page 3 of 12

AP Lab ID: P2096_7679_002 | Sample ID: Unit 1 FF Outlet Run 1 | Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 | User: MC Datafile: 100409P1-05



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_002.utp_res, saved 12-Apr-2010 15:49 (MC) | Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4554, 4169 scc: 744-657 | Revised: 09-Apr-2010 11:53:13 (MC) Printed: 12-Apr-2010 15:52:16 Page 4 of 12

AP Lab ID: P2096_7679_002 | Sample ID: Unit 1 FF Outlet Run 1 | Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 | User: MC Datafile: 100409P1-05



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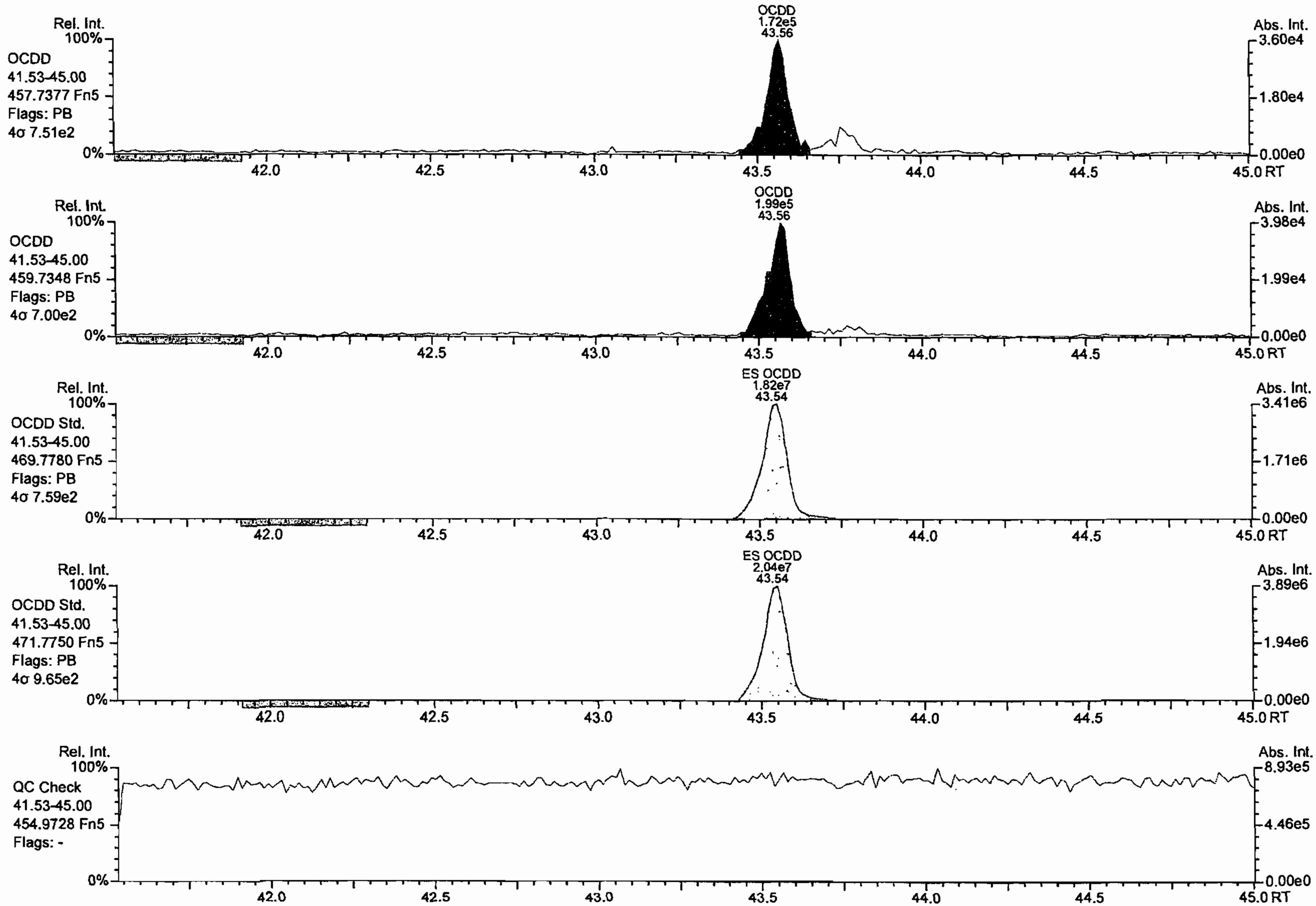
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2017, 6795 scc: 744-657

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:53:19 (MC) Printed: 12-Apr-2010 15:52:23

AP Lab ID: P2096_7679_002 | Sample ID: Unit 1 FF Outlet Run 1 | Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 | User: MC Datafile: 100409P1-05



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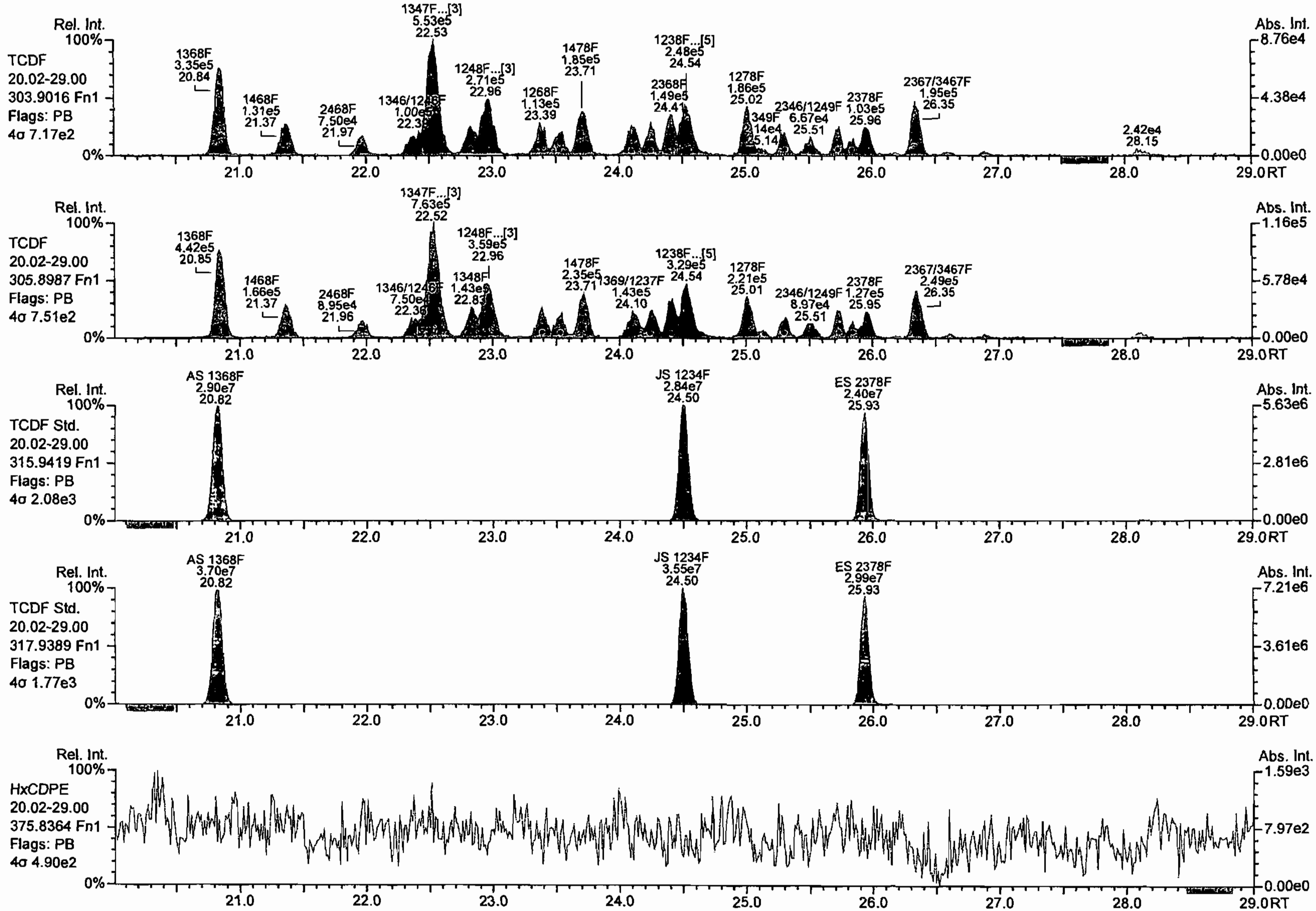
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8356, 8331 scc: 744-657

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:53:24 (MC) Printed: 12-Apr-2010 15:52:28

AP Lab ID: P2096_7679_002 | Sample ID: Unit 1 FF Outlet Run 1 | Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 | User: MC Datafile: 100409P1-05



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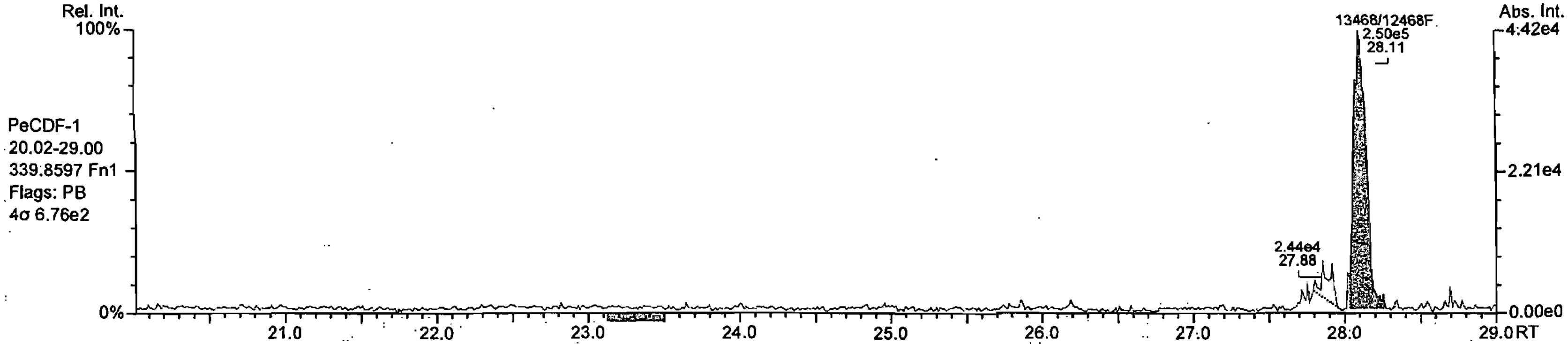
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4661, 0868, 4749 scc: 744-657

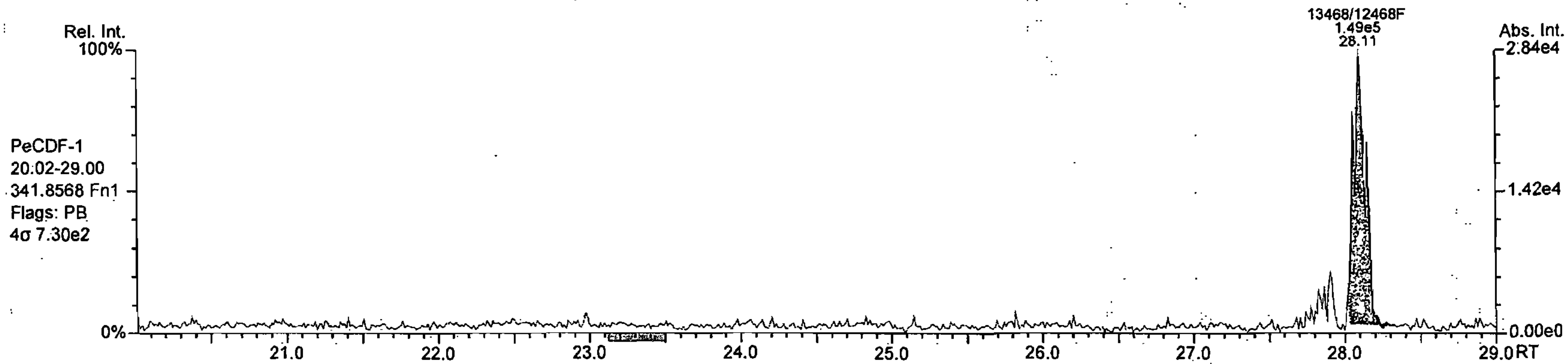
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:53:47 (MC) Printed: 12-Apr-2010 15:52:39

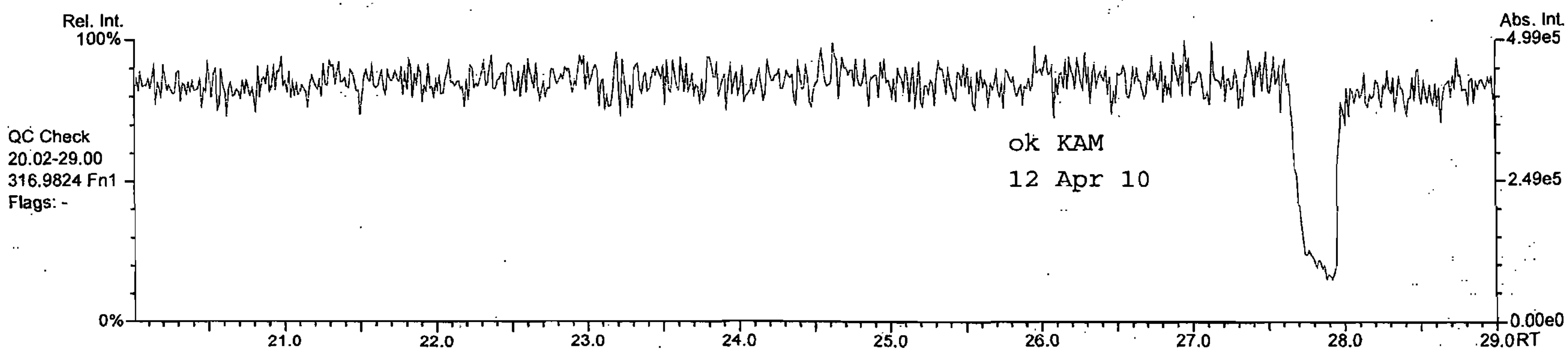
AP Lab ID: P2096_7679_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49

Acq: 9-APR-2010 10:48:24
User: MC Datafile: 100409P1-05







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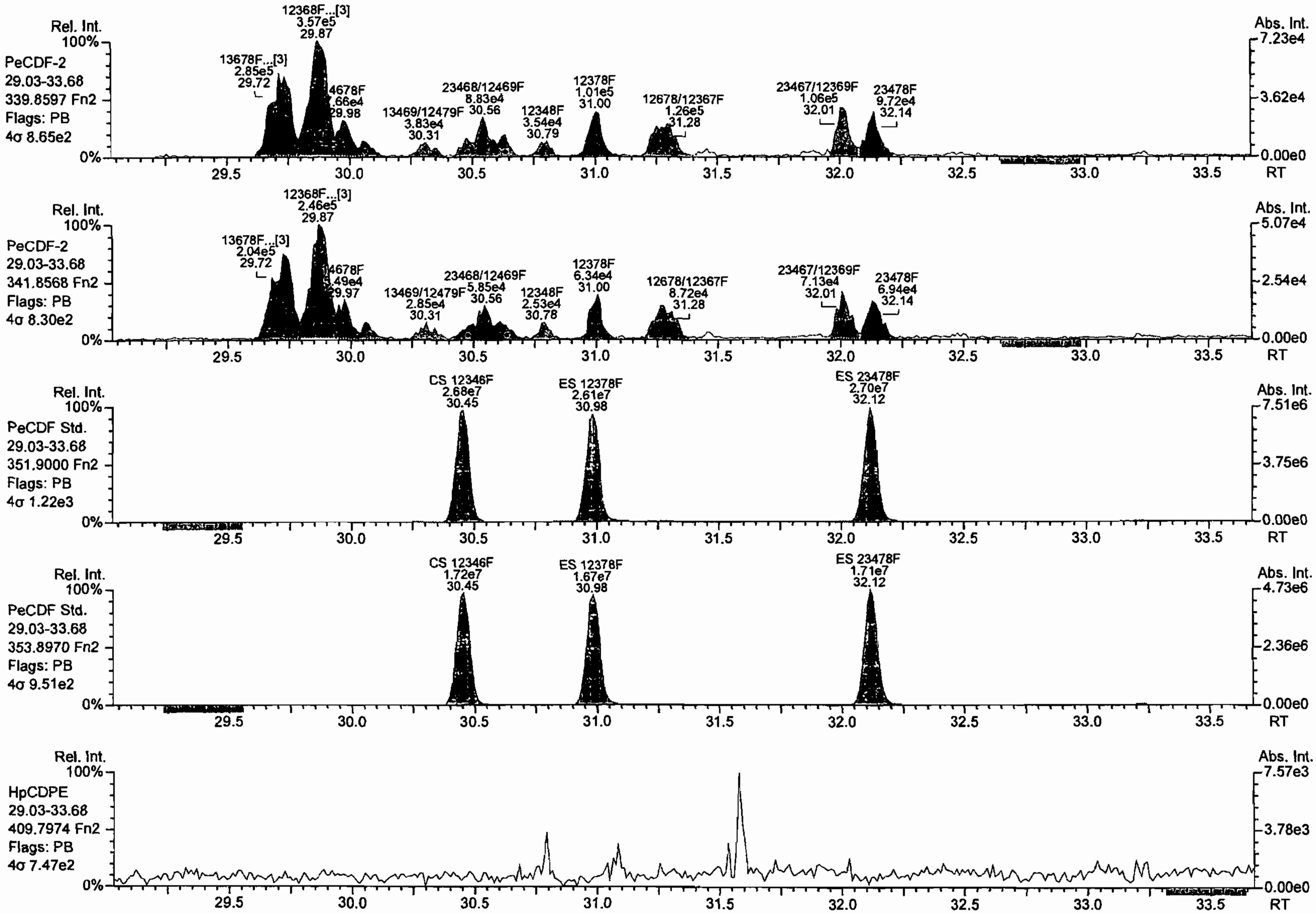
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 11:53:55 (MC) Printed: 12-Apr-2010 15:52:46 . Page 8 of 12

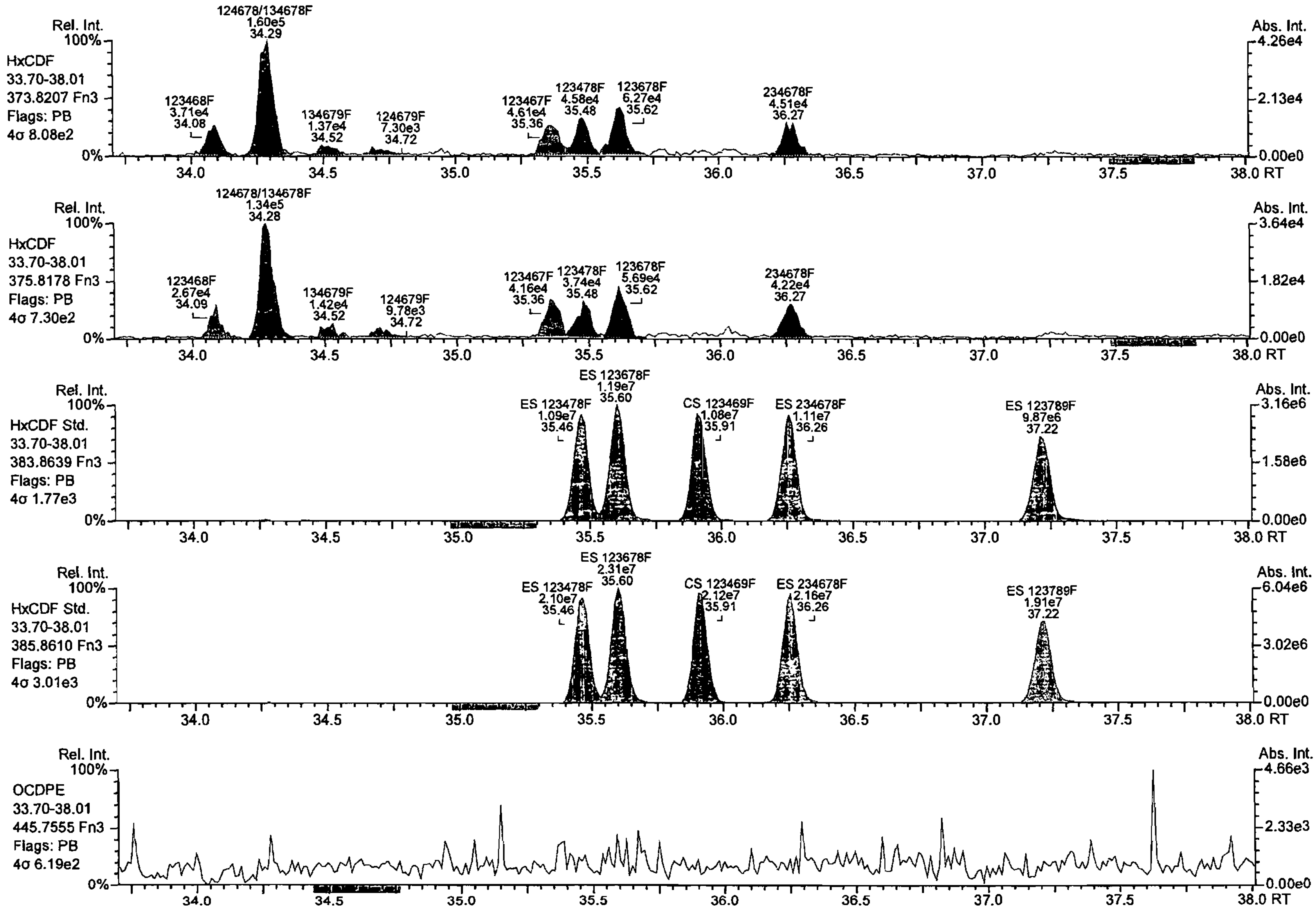
Sample ID: Unit 1 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49

Acq: 9-APR-2010 10:48:24
User: MC Datafile: 100409P1-05



1 - 170

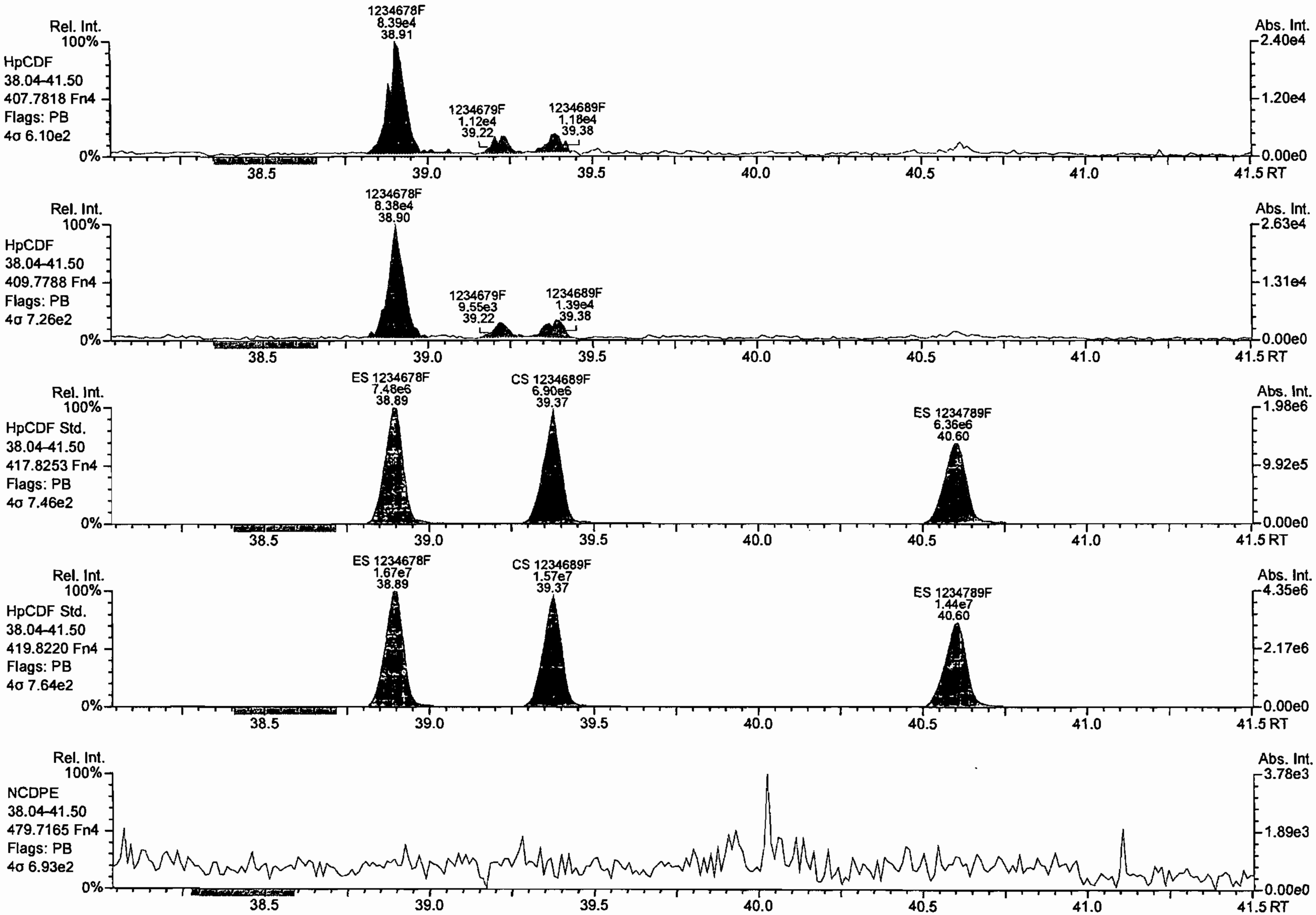
AP Lab ID: P2096_7679_002 | Sample ID: Unit 1 FF Outlet Run 1 | Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 | User: MC Datafile: 100409P1-05



I - 171

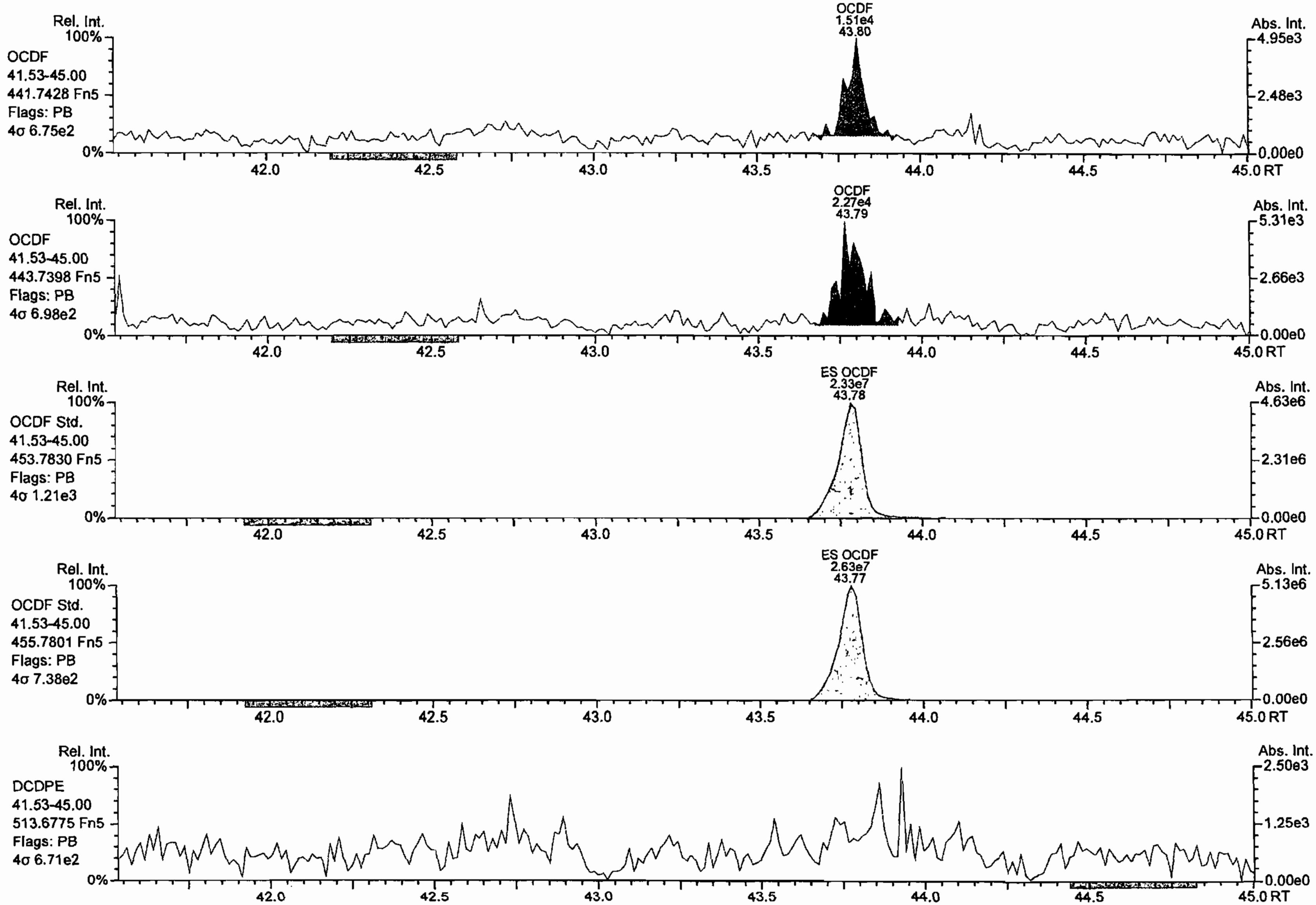
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_002.utp_res, saved 12-Apr-2010 15:49 (MC) | *Peak annotation: Areas, Centroids*

AP Lab ID: P2096_7679_002 | Sample ID: Unit 1 FF Outlet Run 1 | Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 | User: MC Datafile: 100409P1-05



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_002.utp_res, saved 12-Apr-2010 15:49 (MC) | *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2253, 8249, 3027 scc: 744-657 | *Revised: 09-Apr-2010 11:54:37 (MC) Printed: 12-Apr-2010 15:53:07 Page 11 of 12*

AP Lab ID: P2096_7679_002 Sample ID: Unit 1 FF Outlet Run 1 Acq: 9-APR-2010 10:48:24
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 49 User: MC Datafile: 100409P1-05



I - 173

Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_002.utp_res, saved 12-Apr-2010 15:49 (MC) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6575, 6725, 1299 scc: 744-657 Revised: 09-Apr-2010 11:54:47 (MC) Printed: 12-Apr-2010 15:53:12

Lab ID: P2096_7679_003	Acq'd: 09 Apr 2010 11:38 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: Unit 1 FF Outlet Run 2	UTP: 12-Apr-2010 15:49 MC	J-level: 10 pg	Checkcode: 544-695
Datafile: 100409P1-06	Report: 12 Apr 2010 15:50 MC	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	26.89		1.0008	1.0010	+0.3	1.42E+04	1.20	N	0.99	2.21	1222	2.07
12378-PeCDD	32.50		1.0006	1.0008	+0.4	2.02E+04	2.42	N	0.93	4.52	1515	3.2
123478-HxCDD	36.44		1.0004	1.0001	-0.7	2.42E+04	1.37	Y	1.04	5.7	1239	2.73
123678-HxCDD	36.56		1.0034	1.0034	0	5.54E+04	1.39	Y	0.95	13	1239	2.82
123789-HxCDD	36.86		1.0116	1.0117	+0.2	3.62E+04	1.08	Y	0.93	8.47	1239	3.01
1234678-HpCDD	40.04		1.0003	1.0003	0	2.47E+05	1.05	Y	0.96	67.6	1231	3.81
OCDD	43.55		1.0004	1.0003	-0.3	3.74E+05	0.93	Y	1.00	122	1274	5.54
2378-TCDF	25.96		1.0009	1.0013	+0.6	1.85E+05	0.74	Y	1.08	18.4	1390	1.52
12378-PeCDF	30.99		1.0006	1.0006	0	1.34E+05	1.35	Y	1.00	19.8	1550	2.11
23478-PeCDF	32.13		1.0005	1.0005	0	1.42E+05	1.66	Y	1.04	20.4	1550	2.11
123478-HxCDF	35.47		1.0004	1.0004	0	9.66E+04	1.32	Y	1.14	16.9	1428	2.22
123678-HxCDF	35.62		1.0005	1.0005	0	1.31E+05	1.16	Y	1.13	20.7	1428	2.2
234678-HxCDF	36.27		1.0005	1.0005	0	1.12E+05	1.29	Y	1.14	18	1428	2.27
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.12	-	1428	3.04
1234678-HpCDF	38.90		1.0003	1.0004	+0.2	2.57E+05	1.00	Y	1.38	49.4	1086	2.05
1234789-HpCDF	40.61		1.0003	1.0003	0	2.19E+04	1.00	Y	1.33	4.95	1086	2.93
OCDF	43.79		1.0004	1.0005	+0.3	5.33E+04	1.06	N	0.96	14.5	1262	4.36

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Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.86	1.0259	1.0258	-0.2	2.58E+07	0.80	Y	1.01	86.3
ES 12378-PeCDD	32.47	1.2404	1.2400	-0.6	1.92E+07	1.58	Y	0.78	82.9
ES 123478-HxCDD	36.43	0.9917	0.9917	0	1.63E+07	1.27	Y	0.99	82.1
ES 123678-HxCDD	36.54	0.9947	0.9947	0	1.80E+07	1.27	Y	1.07	84.3
ES 123789-HxCDD	36.84	1.0028	1.0028	0	1.84E+07	1.27	Y	1.09	84.4
ES 1234678-HpCDD	40.03	1.0902	1.0897	-1.1	1.52E+07	1.05	Y	0.90	84.1
ES OCDD	43.54	1.1862	1.1851	-2.4	2.44E+07	0.88	Y	0.74	82.8
ES 2378-TCDF	25.93	1.0585	1.0584	-0.1	3.73E+07	0.78	Y	1.00	88.6
ES 12378-PeCDF	30.97	1.2646	1.2642	-0.6	2.70E+07	1.53	Y	0.75	85.4
ES 23478-PeCDF	32.11	1.3113	1.3107	-0.9	2.67E+07	1.54	Y	0.74	85.2
ES 123478-HxCDF	35.46	0.9651	0.9652	+0.2	2.00E+07	0.52	Y	1.19	84.3
ES 123678-HxCDF	35.60	0.9689	0.9690	+0.2	2.23E+07	0.52	Y	1.35	82.7
ES 234678-HxCDF	36.25	0.9867	0.9868	+0.2	2.17E+07	0.51	Y	1.28	84.9
ES 123789-HxCDF	37.21	1.0129	1.0129	0	1.86E+07	0.51	Y	1.20	77.9
ES 1234678-HpCDF	38.89	1.0589	1.0586	-0.7	1.51E+07	0.45	Y	0.95	79.7
ES 1234789-HpCDF	40.60	1.1057	1.1051	-1.3	1.33E+07	0.45	Y	0.82	81.6
ES OCDF	43.77	1.1926	1.1914	-2.6	3.06E+07	0.88	Y	0.96	80.2

Lab ID: P2096_7679_003	Acq'd: 09 Apr 2010 11:38 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: Unit 1 FF Outlet Run 2	UTP: 12-Apr-2010 15:49 MC	J-level: 10 pg	Checkcode: 544-695
Datafile: 100409P1-06	Report: 12 Apr 2010 15:50 MC	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.19		-	-	-	2.96E+07	0.80	Y	-	-
JS 1234-TCDF	24.50		-	-	-	4.21E+07	0.80	Y	-	-
JS 123467-HxCDD	36.74		-	-	-	9.97E+06	1.23	Y	-	-
CS 37Cl-2378-TCDD	26.89		1.0268	1.0267	-0.2	1.16E+07	n/a	-	1.16	84.9
CS 12347-PeCDD	31.96		1.2209	1.2206	-0.5	1.96E+07	1.60	Y	0.79	83.8
CS 12346-PeCDF	30.44		1.2424	1.2425	+0.1	2.84E+07	1.56	Y	0.79	85.4
CS 123469-HxCDF	35.91		0.9773	0.9774	+0.2	2.05E+07	0.52	Y	1.23	83.8
CS 1234689-HpCDF	39.37		1.0720	1.0716	-0.9	1.35E+07	0.45	Y	0.86	78.7
SS 37Cl-2378-TCDD	26.89		1.0268	1.0267	-0.2	1.16E+07	n/a	-	1.14	98.4
SS 12347-PeCDD	31.96		1.2209	1.2206	-0.5	1.96E+07	1.60	Y	1.01	101
SS 12346-PeCDF	30.44		1.2424	1.2425	+0.1	2.84E+07	1.56	Y	1.05	100
SS 123469-HxCDF	35.91		0.9773	0.9774	+0.2	2.05E+07	0.52	Y	0.91	101
SS 1234689-HpCDF	39.37		1.0720	1.0716	-0.9	1.35E+07	0.45	Y	0.91	98.7
AS 1368-TCDD	22.92		0.8731	0.8752	+3.3	2.88E+07	0.79	Y	1.08	89.9
AS 1368-TCDF	20.80		0.8447	0.8491	+6.5	4.98E+07	0.79	Y	1.29	91.5
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.21		0.9794	0.9795	+0.2	1.12E+05	1.00	Y	0.01	95.4
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 12 Apr 10

Totals	Conc	EMPC
Total TCDD	81.8	106
Total PeCDD	53.4	109
Total HxCDD	180	194
Total HpCDD	132	132
Total Tetra-Octa Dioxins	569	663
Total TCDF	426	519
Total PeCDF	275	323
Total HxCDF	165	171
Total HpCDF	72.6	72.6
Total Tetra-Octa Furans	938	1100
Total Tetra-Octa Dioxins & Furans	1510	1760

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Lab ID: P2096_7679_003 | **Acq'd:** 09 Apr 2010 11:38 MC | **Wt/Vol:** 1 | **Cal:** BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 2 | **UTP:** 12-Apr-2010 15:49 MC | **J-level:** 10 pg | **Checkcode:** 544-695

Datafile: 100409P1-06 | **Report:** 12 Apr 2010 15:50 MC | **ES spike:** 4000 pg | **Split:** 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	22.95		0.8539	0.8543	+0.6	2.52E+05	0.79	Y	0.99	39.3	1222	2.07
1379-TCDD	23.36		0.8685	0.8694	+1.5	1.00E+05	0.80	Y	0.99	15.6	1222	2.07
1369-TCDD	23.82		0.8863	0.8866	+0.5	2.50E+04	0.93	N	0.99	3.9	1222	2.07
1469-TCDD	NotFnd		0.9189						0.99		1222	2.07
1247/1246/1248/1249-TCDD	24.92		0.9276	0.9276	0	5.43E+04	0.87	Y	0.99	8.47	1222	2.07
1378-TCDD	25.11		0.9351	0.9347	-0.6	6.56E+04	0.77	Y	0.99	10.2	1222	2.07
1268-TCDD	25.32		0.9430	0.9427	-0.5	2.18E+04	1.20	N	0.99	3.4	1222	2.07
1478-TCDD	NotFnd		0.9517						0.99		1222	2.07
1279-TCDD	25.80		0.9598	0.9605	+1.1	2.76E+04	0.84	Y	0.99	4.31	1222	2.07
1234/1269-TCDD	26.19		0.9740	0.9750	+1.6	2.95E+04	0.63	N	0.99	4.6	1222	2.07
1236-TCDD	26.34		0.9801	0.9804	+0.5	1.53E+04	0.90	N	0.99	2.39	1222	2.07
1237/1238-TCDD	26.58		0.9895	0.9894	-0.2	4.41E+04	1.04	N	0.99	6.88	1222	2.07
1239-TCDD	26.73		0.9952	0.9952	0	6.95E+03	0.65	N	0.99	1.08	1222	2.07
2378-TCDD	**26.89**		**1.0008**	**1.0010**	**+0.3**	**1.42E+04**	**1.20**	**N**	**0.99**	**2.21**	**1222**	**2.07**
1278-TCDD	27.22		1.0138	1.0134	-0.6	2.51E+04	0.72	Y	0.99	3.92	1222	2.07
1267-TCDD	NotFnd		1.0194						0.99		1222	2.07
1289-TCDD	NotFnd		1.0396						0.99		1222	2.07
12479/12468-PeCDD	29.93		0.9210	0.9218	+1.6	1.68E+05	1.59	Y	0.93	37.5	1515	3.2
12469-PeCDD	NotFnd		0.9382						0.93		1515	3.2
12368-PeCDD	31.03		0.9556	0.9557	+0.2	1.33E+05	1.31	N	0.93	29.8	1515	3.2
12478-PeCDD	31.22		0.9614	0.9614	0	3.41E+04	1.47	Y	0.93	7.62	1515	3.2
12379-PeCDD	31.34		0.9649	0.9651	+0.4	6.48E+04	1.26	N	0.93	14.5	1515	3.2
12369/12467/12489-PeCDD	31.60		0.9732	0.9733	+0.2	3.05E+04	1.11	N	0.93	6.82	1515	3.2
12346/12347-PeCDD	31.99		0.9850	0.9851	+0.2	3.67E+04	1.73	Y	0.93	8.22	1515	3.2
12378-PeCDD	**32.50**		**1.0006**	**1.0008**	**+0.4**	**2.02E+04**	**2.42**	**N**	**0.93**	**4.52**	**1515**	**3.2**
12367-PeCDD	NotFnd		1.0037						0.93		1515	3.2
12389-PeCDD	NotFnd		1.0146						0.93		1515	3.2
124679/124689-HxCDD	34.74		0.9534	0.9536	+0.4	5.96E+04	1.49	N	0.97	14	1239	2.85
123468-HxCDD	35.40		0.9717	0.9717	0	4.66E+05	1.27	Y	0.97	109	1239	2.85
123679/123689-HxCDD	35.69		0.9793	0.9797	+0.9	1.58E+05	1.13	Y	0.97	37.1	1239	2.85
123469-HxCDD	NotFnd		0.9833						0.97		1239	2.85
123478-HxCDD	**36.44**		**1.0004**	**1.0001**	**-0.7**	**2.42E+04**	**1.37**	**Y**	**1.04**	**5.7**	**1239**	**2.73**
123678-HxCDD	**36.56**		**1.0034**	**1.0034**	**0**	**5.54E+04**	**1.39**	**Y**	**0.95**	**13**	**1239**	**2.82**
123467-HxCDD	36.76		1.0088	1.0091	+0.7	2.67E+04	1.16	Y	0.97	6.26	1239	2.85
123789-HxCDD	**36.86**		**1.0116**	**1.0117**	**+0.2**	**3.62E+04**	**1.08**	**Y**	**0.93**	**8.47**	**1239**	**3.01**

Lab ID: P2096_7679_003
Client ID: Unit 1 FF Outlet Run 2
Datafile: 100409P1-06

Acq'd: 09 Apr 2010 11:38 MC
UTP: 12-Apr-2010 15:49 MC
Report: 12 Apr 2010 15:50 MC

Wt/Vol: 1
J-level: 10 pg
ES spike: 4000 pg

Cal: BCS3_7679_DF_PAB
Checkcode: 544-695
Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.21		0.9794	0.9796	+0.5	2.36E+05	1.06	Y	0.96	64.6	1231	3.81
1234678-HpCDD	40.04		1.0003	1.0003	0	2.47E+05	1.05	Y	0.96	67.6	1231	3.81
OCDD	43.55		1.0004	1.0003	-0.3	3.74E+05	0.93	Y	1.00	122	1274	5.54
OCDD-a	NotFnd		1.0003						0.06		1453	103
1368-TCDF	20.83		0.8012	0.8033	+3.3	5.69E+05	0.77	Y	1.08	56.6	1390	1.52
1468-TCDF	21.36		0.8216	0.8236	+3.1	1.82E+05	0.80	Y	1.08	18.1	1390	1.52
2468-TCDF	21.96		0.8461	0.8469	+1.2	8.76E+04	0.94	N	1.08	8.72	1390	1.52
1346/1246-TCDF	22.39		0.8607	0.8635	+4.4	1.25E+05	1.01	N	1.08	12.5	1390	1.52
1347/1378/1247-TCDF	22.53		0.8672	0.8688	+2.5	8.04E+05	0.75	Y	1.08	80	1390	1.52
1348-TCDF	22.82		0.8792	0.8801	+1.4	1.22E+05	1.02	N	1.08	12.1	1390	1.52
1248/1367/1379-TCDF	22.95		0.8846	0.8852	+0.9	3.78E+05	0.90	N	1.08	37.6	1390	1.52
1268-TCDF	23.38		0.9011	0.9018	+1.1	1.25E+05	1.10	N	1.08	12.4	1390	1.52
1467-TCDF	23.53		0.9067	0.9073	+0.9	6.68E+04	1.37	N	1.08	6.65	1390	1.52
1478-TCDF	23.71		0.9137	0.9143	+0.9	2.52E+05	0.81	Y	1.08	25.1	1390	1.52
1369/1237-TCDF	24.09		0.9293	0.9290	-0.5	1.90E+05	0.79	Y	1.08	18.9	1390	1.52
2467-TCDF	24.24		0.9348	0.9348	0	2.04E+05	0.84	Y	1.08	20.3	1390	1.52
2368-TCDF	24.41		0.9408	0.9412	+0.6	2.21E+05	0.80	Y	1.08	22	1390	1.52
1238/1234/1678/1469/1236-TCDF	24.54		0.9445	0.9464	+3.0	4.21E+05	0.84	Y	1.08	41.9	1390	1.52
1278-TCDF	25.01		0.9641	0.9646	+0.8	2.65E+05	0.81	Y	1.08	26.4	1390	1.52
1349-TCDF	25.13		0.9693	0.9692	-0.2	4.90E+04	0.75	Y	1.08	4.87	1390	1.52
1267-TCDF	25.29		0.9755	0.9754	-0.2	1.45E+05	0.87	Y	1.08	14.5	1390	1.52
2346/1249-TCDF	25.51		0.9834	0.9836	+0.3	1.43E+05	0.86	Y	1.08	14.2	1390	1.52
2347/1279-TCDF	25.73		0.9922	0.9921	-0.2	1.94E+05	0.81	Y	1.08	19.4	1390	1.52
2348-TCDF	25.84		0.9966	0.9967	+0.2	1.06E+05	0.81	Y	1.08	10.5	1390	1.52
2378-TCDF	**25.96**		**1.0009**	**1.0013**	**+0.6**	**1.85E+05**	**0.74**	**Y**	**1.08**	**18.4**	**1390**	**1.52**
2367/3467-TCDF	26.35		1.0164	1.0162	-0.3	2.94E+05	0.82	Y	1.08	29.2	1390	1.52
1269-TCDF	26.60		1.0260	1.0257	-0.5	3.30E+04	0.81	Y	1.08	3.28	1390	1.52
1239-TCDF	26.90		1.0375	1.0374	-0.2	2.02E+04	0.85	Y	1.08	2.02	1390	1.52
1289-TCDF	28.11		1.0834	1.0842	+1.2	3.42E+04	1.23	N	1.08	3.4	1390	1.52
13468/12468-PeCDF	28.10		0.9057	0.9072	+2.8	3.07E+05	1.51	Y	1.02	44.7	1568	2.13
13678/13467/12467-PeCDF	29.70		0.9581	0.9590	+1.7	3.71E+05	1.56	Y	1.02	54	1550	2.11
12368/13478/12478-PeCDF	29.85		0.9620	0.9639	+3.5	4.23E+05	1.57	Y	1.02	61.6	1550	2.11
14678-PeCDF	29.96		0.9667	0.9672	+0.9	1.08E+05	1.71	Y	1.02	15.8	1550	2.11
13479-PeCDF	30.05		0.9702	0.9701	-0.2	5.32E+04	1.41	Y	1.02	7.75	1550	2.11
13469/12479-PeCDF	30.30		0.9781	0.9784	+0.6	6.36E+04	1.20	N	1.02	9.25	1550	2.11
12346-PeCDF	30.46		0.9829	0.9835	+1.1	3.82E+04	1.93	N	1.02	5.56	1550	2.11

I-177

Lab ID: P2096_7679_003 | Acq'd: 09 Apr 2010 11:38 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 2 | UTP: 12-Apr-2010 15:49 MC | J-level: 10 pg | Checkcode: 544-695

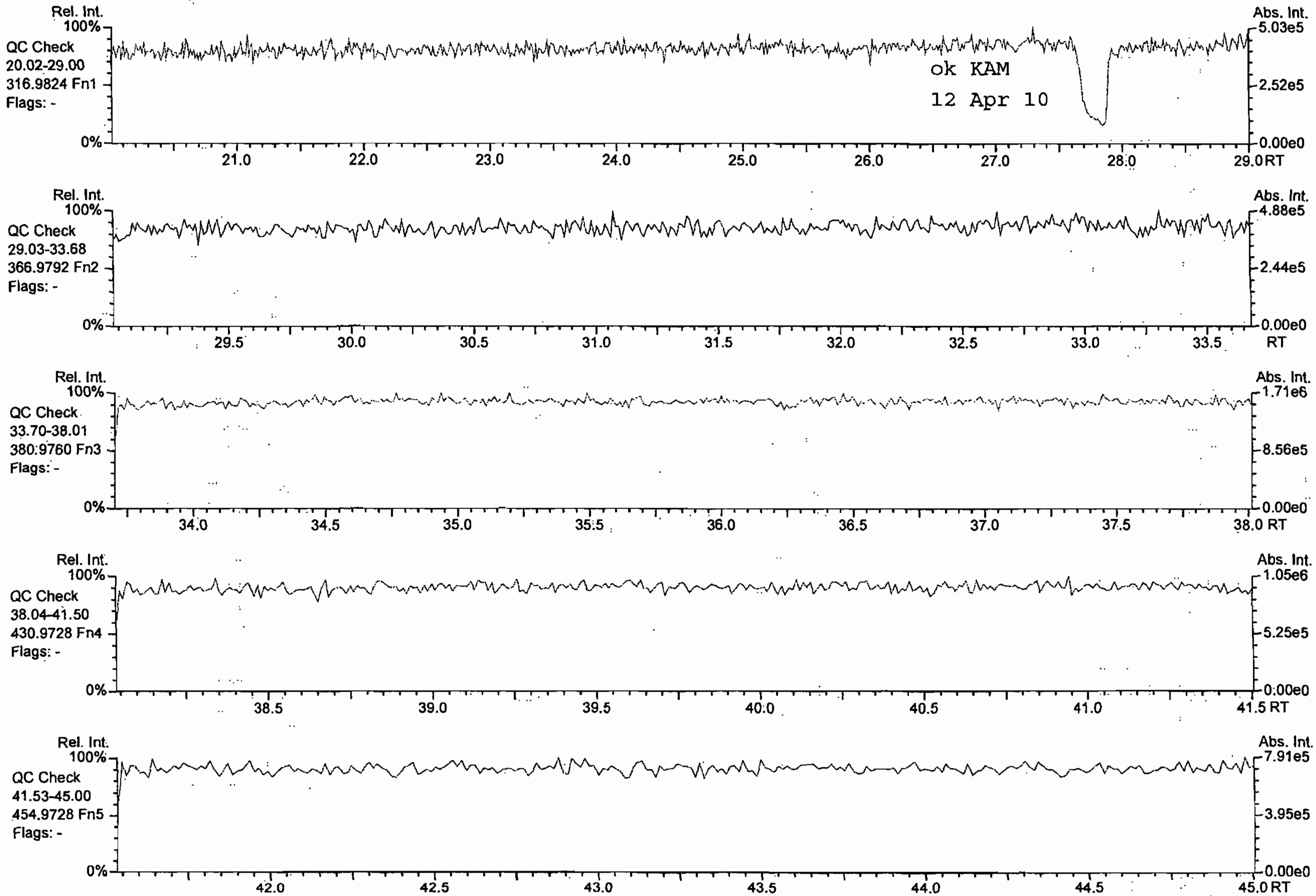
Datafile: 100409P1-06 | Report: 12 Apr 2010 15:50 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.54		0.9858	0.9859	+0.2	1.47E+05	1.44	Y	1.02	21.4	1550	2.11
12347-PeCDF	30.62		0.9881	0.9888	+1.3	5.73E+04	1.41	Y	1.02	8.34	1550	2.11
12348-PeCDF	30.78		0.9936	0.9939	+0.6	4.76E+04	1.83	N	1.02	6.92	1550	2.11
12378-PeCDF	**30.99**		**1.0006**	**1.0006**	**0**	**1.34E+05**	**1.35**	**Y**	**1.00**	**19.8**	**1550**	**2.11**
12678/12367-PeCDF	31.28		1.0104	1.0098	-1.1	1.45E+05	1.31	N	1.02	21.1	1550	2.11
12379-PeCDF	31.43		1.0151	1.0148	-0.6	3.25E+04	1.09	N	1.02	4.73	1550	2.11
12679-PeCDF	31.87		0.9925	0.9926	+0.2	1.72E+04	1.57	Y	1.02	2.5	1550	2.11
23467/12369-PeCDF	32.01		0.9981	0.9967	-2.7	1.30E+05	1.40	Y	1.02	18.9	1550	2.11
23478-PeCDF	**32.13**		**1.0005**	**1.0005**	**0**	**1.42E+05**	**1.66**	**Y**	**1.04**	**20.4**	**1550**	**2.11**
23478/12489-PeCDF	NotFnd		1.0006						1.04		1550	2.11
12489-PeCDF	NotFnd		1.0023						1.02		1550	2.11
12349-PeCDF	NotFnd		1.0110						1.02		1550	2.11
12389-PeCDF	NotFnd		1.0350						1.02		1550	2.11
123468-HxCDF	34.07		0.9609	0.9610	+0.2	1.00E+05	1.27	Y	1.13	17.1	1428	2.41
124678/134678-HxCDF	34.28		0.9668	0.9668	0	2.98E+05	1.21	Y	1.13	50.9	1428	2.41
134679-HxCDF	34.51		0.9733	0.9733	0	2.95E+04	1.26	Y	1.13	5.03	1428	2.41
124679-HxCDF	34.71		0.9788	0.9789	+0.2	3.90E+04	0.96	N	1.13	6.66	1428	2.41
124689-HxCDF	34.92		0.9851	0.9849	-0.4	2.63E+04	1.13	Y	1.13	4.49	1428	2.41
123467-HxCDF	35.36		0.9968	0.9971	+0.6	9.64E+04	1.13	Y	1.13	16.5	1428	2.41
123478-HxCDF	**35.47**		**1.0004**	**1.0004**	**0**	**9.66E+04**	**1.32**	**Y**	**1.14**	**16.9**	**1428**	**2.22**
123678-HxCDF	**35.62**		**1.0005**	**1.0005**	**0**	**1.31E+05**	**1.16**	**Y**	**1.13**	**20.7**	**1428**	**2.2**
123479-HxCDF	35.77		1.0048	1.0047	-0.2	2.68E+04	1.30	Y	1.13	4.58	1428	2.41
123469-HxCDF	35.93		1.0090	1.0093	+0.6	2.83E+04	1.29	Y	1.13	4.83	1428	2.41
123679-HxCDF	36.05		0.9943	0.9944	+0.2	3.29E+04	1.32	Y	1.13	5.61	1428	2.41
234678-HxCDF	**36.27**		**1.0005**	**1.0005**	**0**	**1.12E+05**	**1.29**	**Y**	**1.14**	**18**	**1428**	**2.27**
234678/123689-HxCDF	NotFnd		1.0004						1.14		1428	2.27
123689-HxCDF	NotFnd		1.0009						1.13		1428	2.41
123789-HxCDF	**NotFnd**		**1.0005**						**1.12**		**1428**	**3.04**
123789/123489-HxCDF	NotFnd		1.0012						1.12		1428	3.04
123489-HxCDF	NotFnd		1.0017						1.13		1428	2.41
1234678-HpCDF	**38.90**		**1.0003**	**1.0004**	**+0.2**	**2.57E+05**	**1.00**	**Y**	**1.38**	**49.4**	**1086**	**2.05**
1234679-HpCDF	39.22		1.0083	1.0085	+0.5	4.03E+04	0.91	Y	1.36	8.37	1086	2.46
1234689-HpCDF	39.39		1.0132	1.0128	-0.9	4.78E+04	0.93	Y	1.36	9.93	1086	2.46
1234789-HpCDF	**40.61**		**1.0003**	**1.0003**	**0**	**2.19E+04**	**1.00**	**Y**	**1.33**	**4.95**	**1086**	**2.93**
OCDF	**43.79**		**1.0004**	**1.0005**	**+0.3**	**5.33E+04**	**1.06**	**N**	**0.96**	**14.5**	**1262**	**4.36**
OCDF-a	NotFnd		1.0002						0.05		1466	88.8

AP Lab ID: P2096_7679_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50

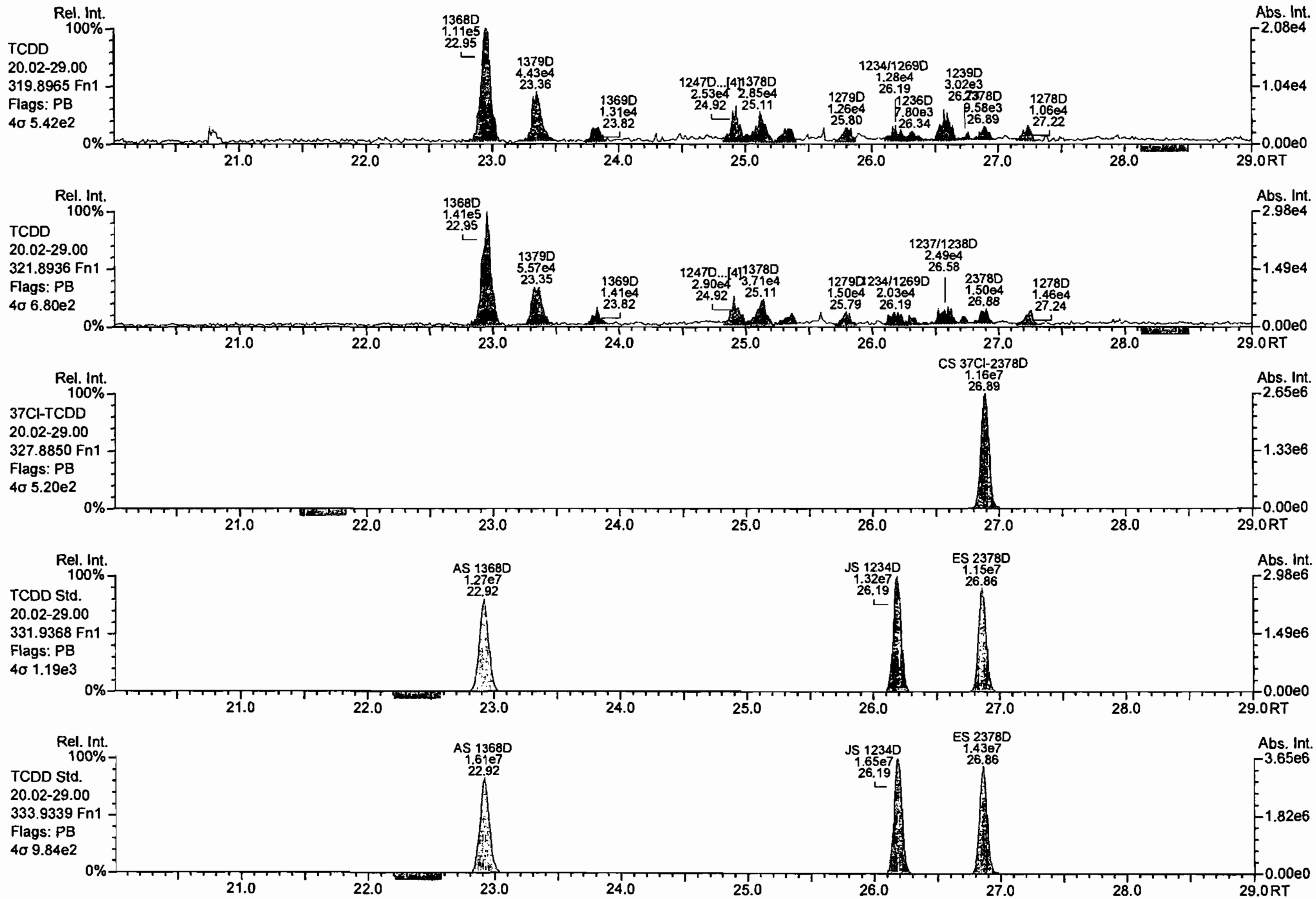
Acq: 9-APR-2010 11:38:53
User: MC Datafile: 100409P1-06



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 544-695

Peak annotation: Areas, Centroids
PKD: n/a Printed: 12-Apr-2010 15:53:19 Page 1 of 12

AP Lab ID: P2096_7679_003 | Sample ID: Unit 1 FF Outlet Run 2 | Acq: 9-APR-2010 11:38:53
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50 | User: MC Datafile: 100409P1-06



I - 180

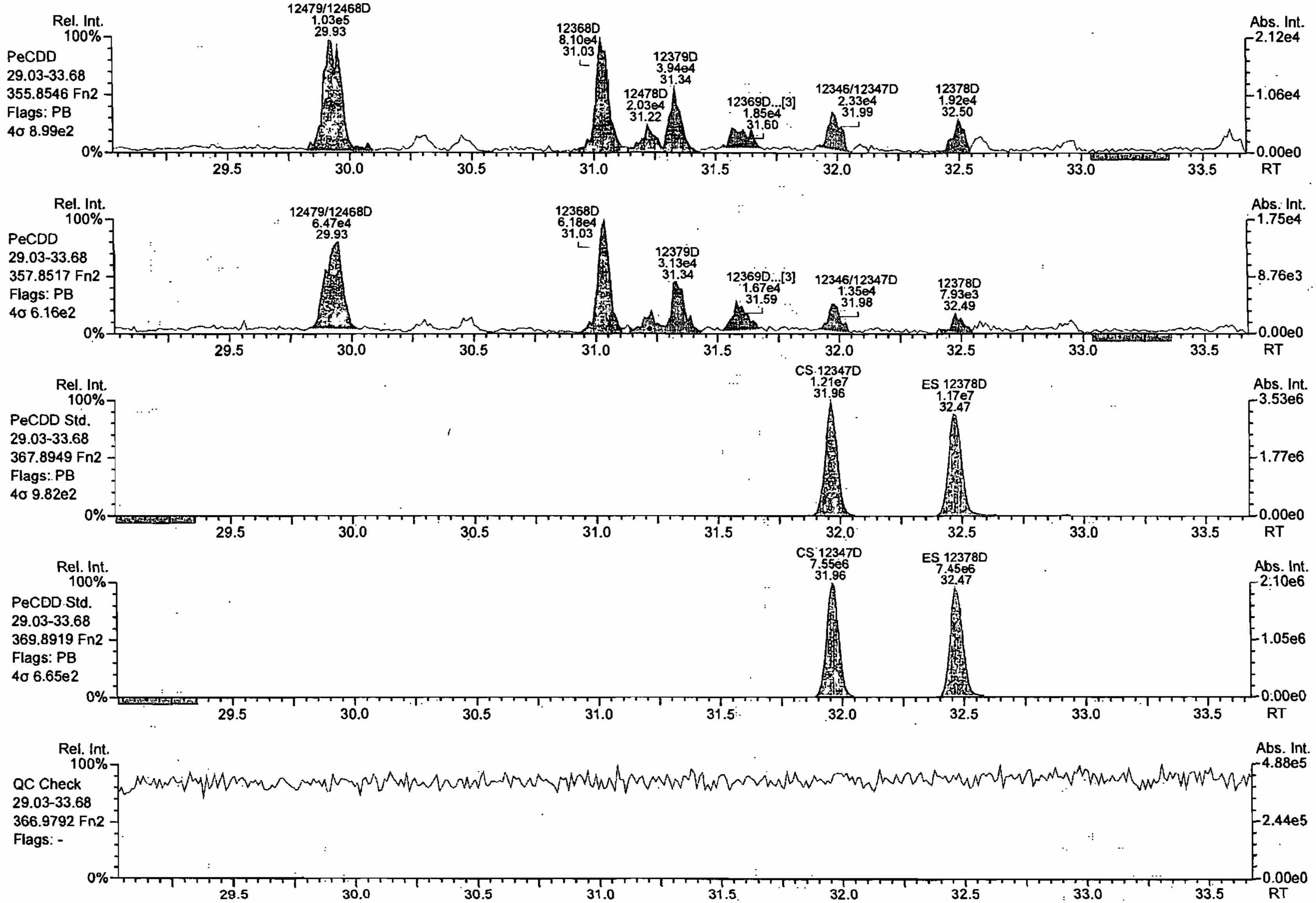
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3354, 5735, 6872 scc: 544-695

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 12:34:41 (MC) Printed: 12-Apr-2010 15:53:31

AP Lab ID: P2096_7679_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50

Acq: 9-APR-2010 11:38:53
User: MC Datafile: 100409P1-06



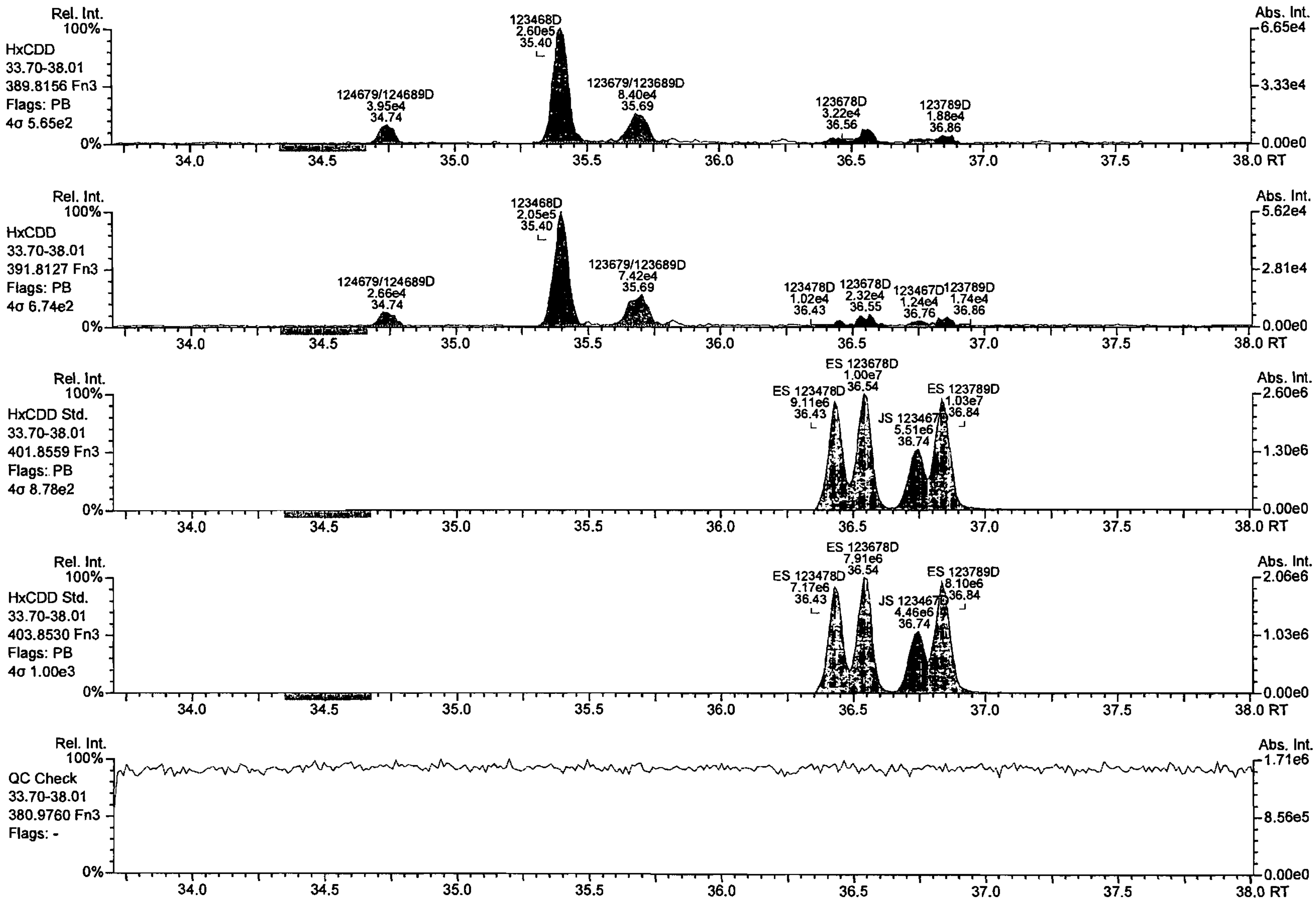
I - 181

Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MC/7-047 cc: 6298, 7116 scc: 544-695

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 12:34:53 (MC). Printed: 12-Apr-2010 15:53:38

Sample ID: Unit 1 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50

Acq: 9-APR-2010 11:38:53
User: MC Datafile: 100409P1-06



I - 182

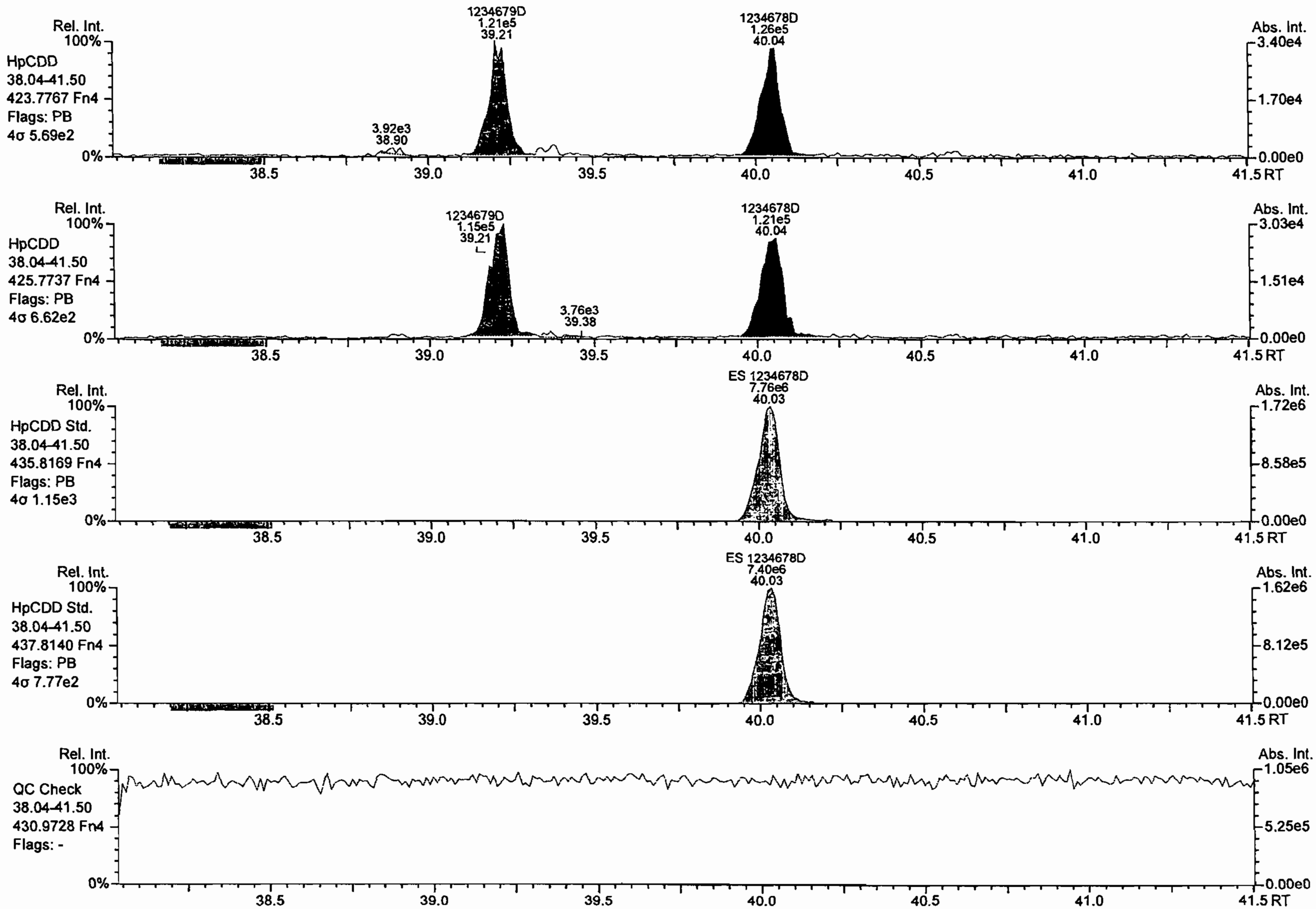
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5065, 3185 scc: 544-695

Peak annotation: Areas, Centroids

AP Lab ID: P2096_7679_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50

Acq: 9-APR-2010 11:38:53
User: MC Datafile: 100409P1-06



1-183

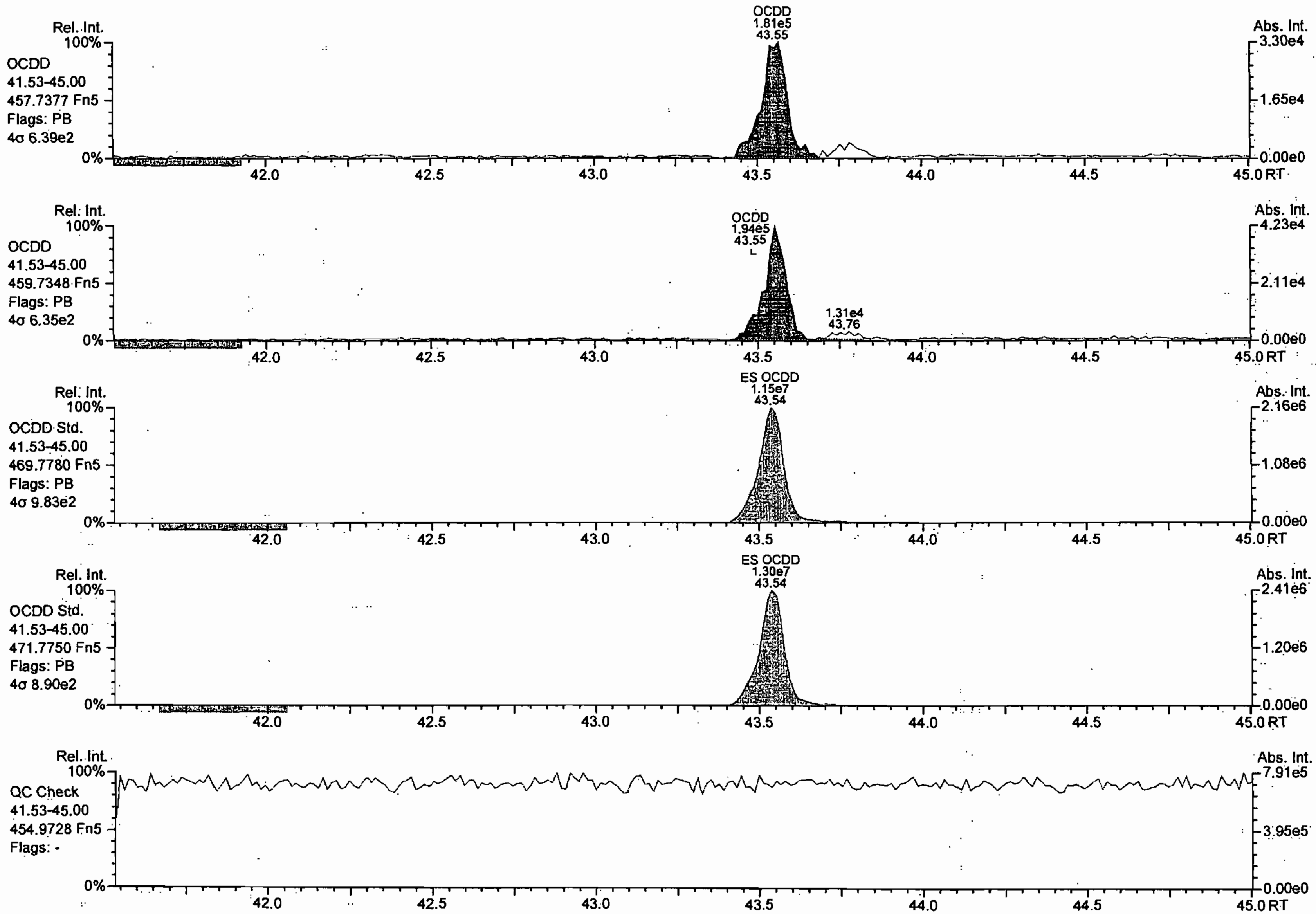
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6281, 4732 scc: 544-695

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 12:36:58 (MC) Printed: 12-Apr-2010 15:53:51

AP Lab ID: P2096_7679_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50

Acq: 9-APR-2010 11:38:53
User: MC Datafile: 100409P1-06



I - 184

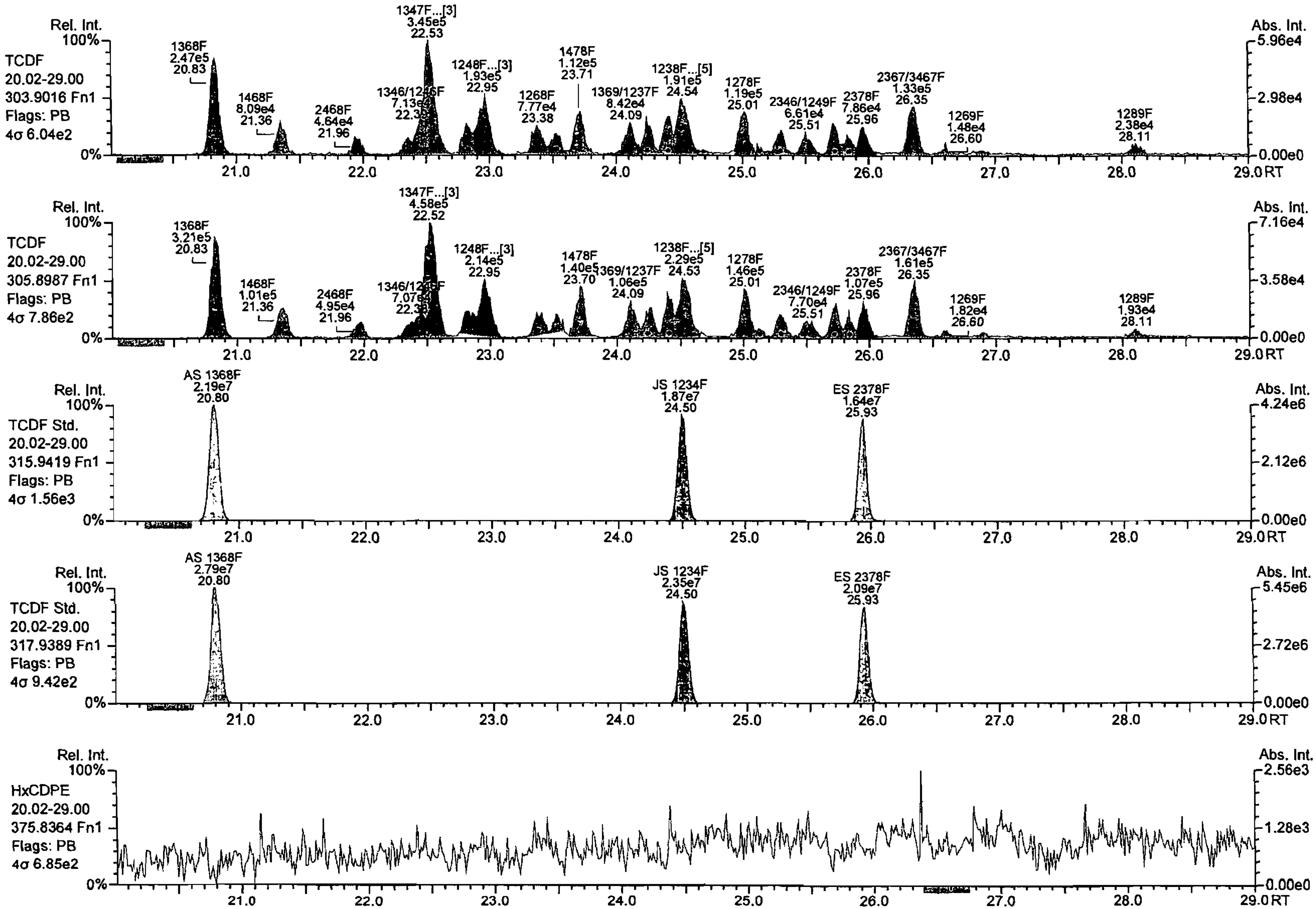
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9340, 4787 scc: 544-695

Peak annotation: Areas, Centroids

AP Lab ID: P2096_7679_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50

Acq: 9-APR-2010 11:38:53
User: MC Datafile: 100409P1-06

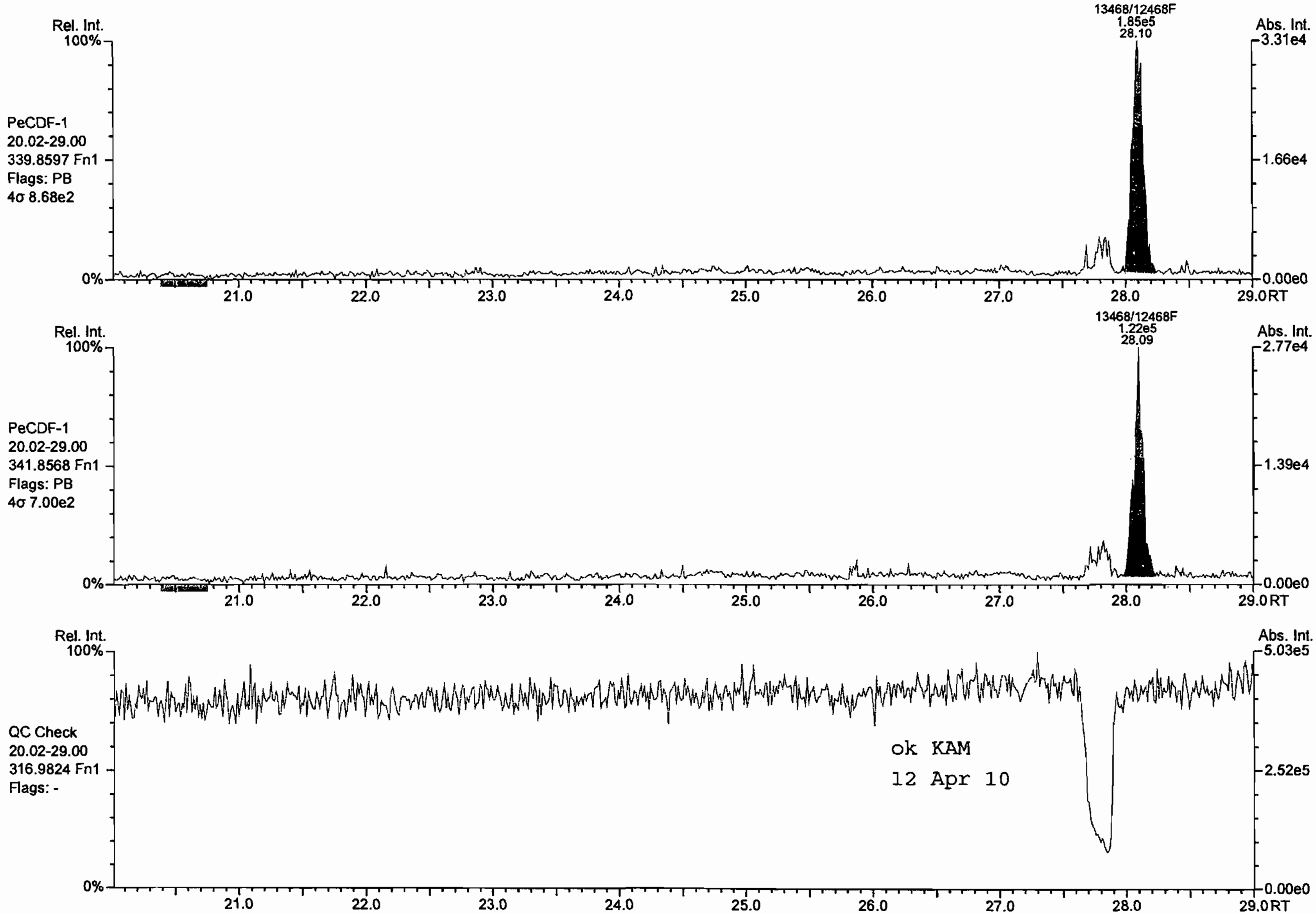


I - 185

Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9121, 6379, 4365 scc: 544-695

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 12:35:54 (MC) Printed: 12-Apr-2010 15:54:08

AP Lab ID: P2096_7679_003 Sample ID: Unit 1 FF Outlet Run 2 Acq: 9-APR-2010 11:38:53
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50 User: MC Datafile: 100409P1-06



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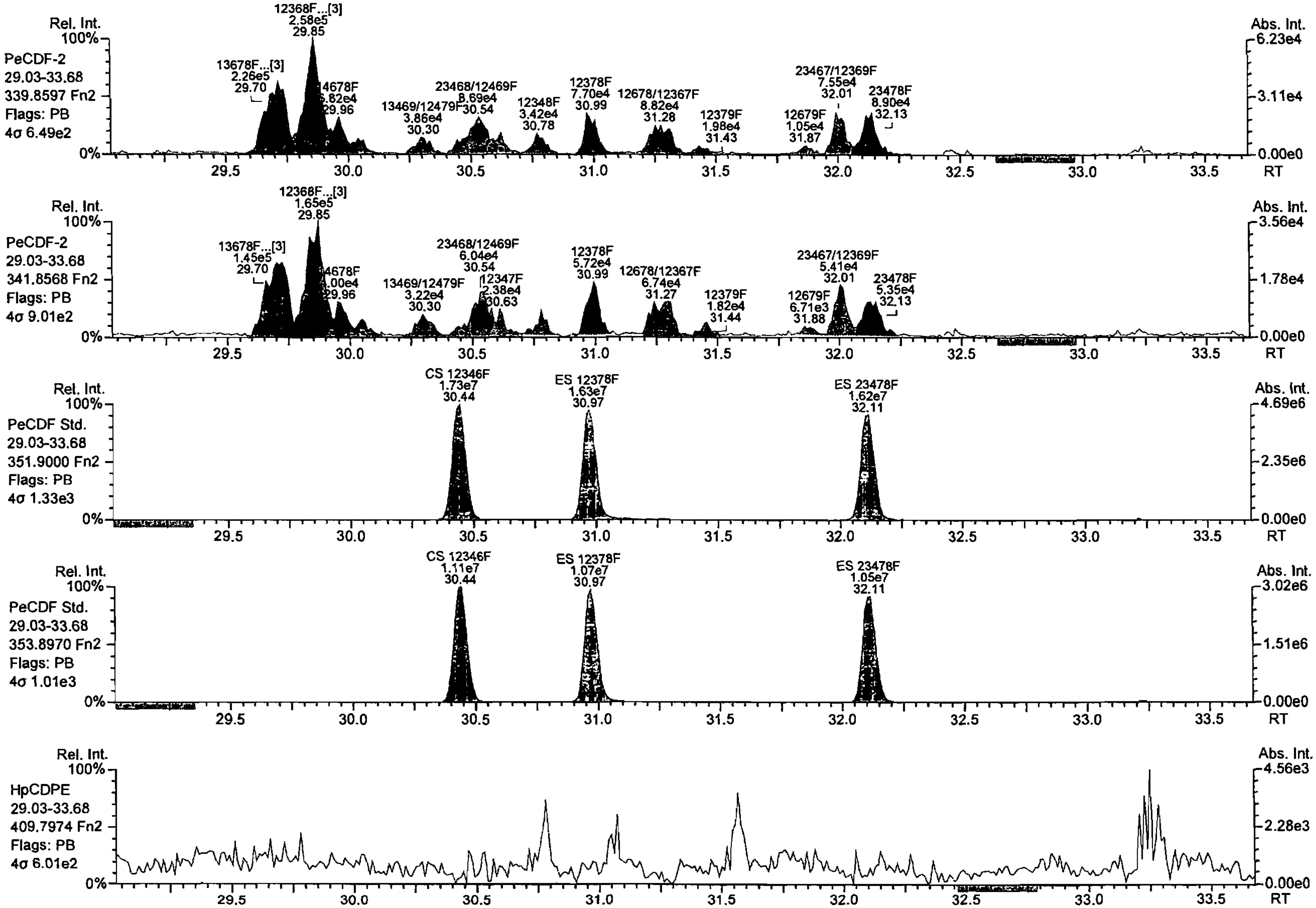
AP Lab ID: P2096_7679_003 Sample ID: Unit 1 FF Outlet Run 2 Acq: 9-APR-2010 11:38:53
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50 User: MC Datafile: 100409P1-06



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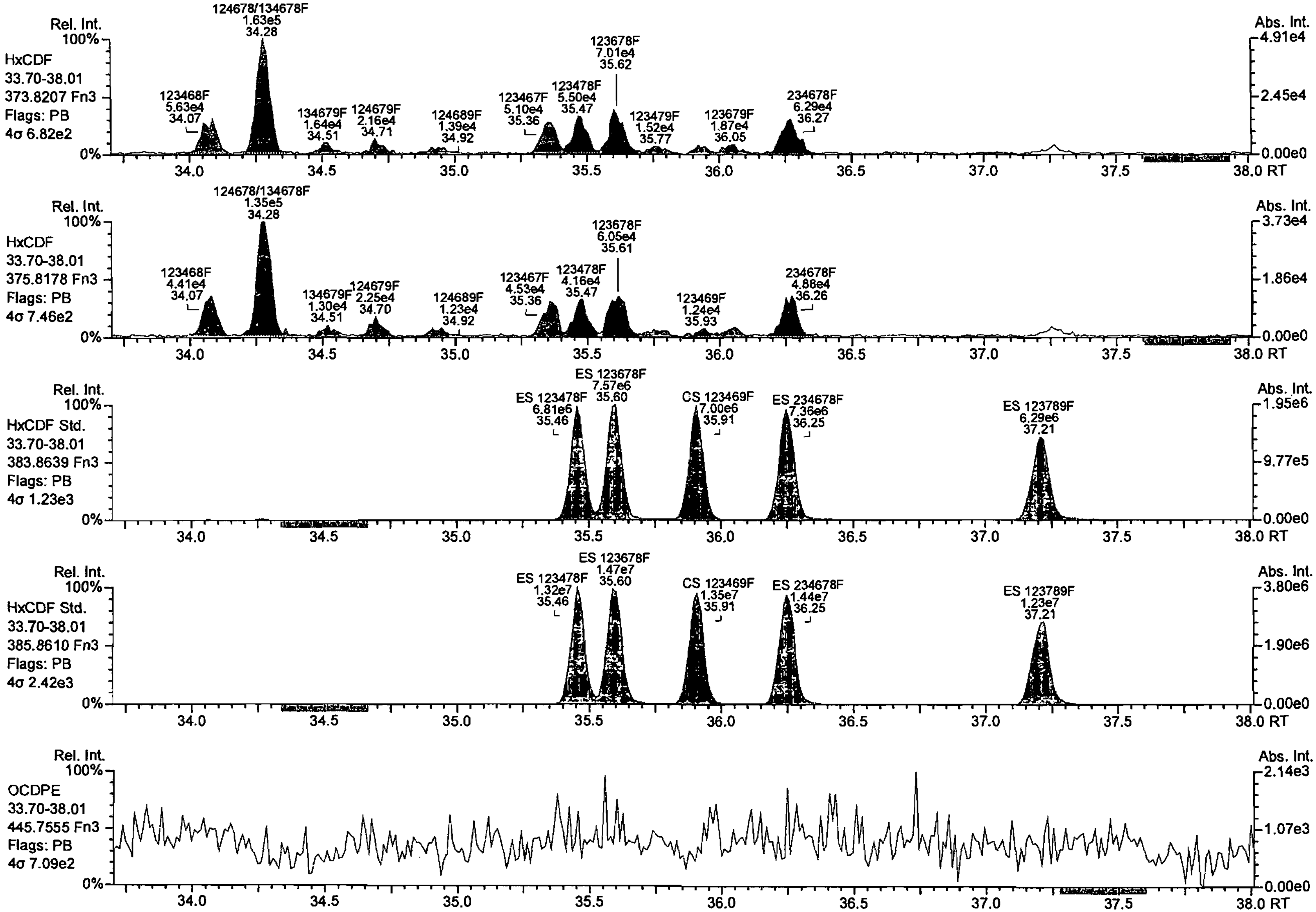
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3880, 5352, 0037 scc: 544-695 Revised: 09-Apr-2010 12:36:20 (MC) Printed: 12-Apr-2010 15:54:22



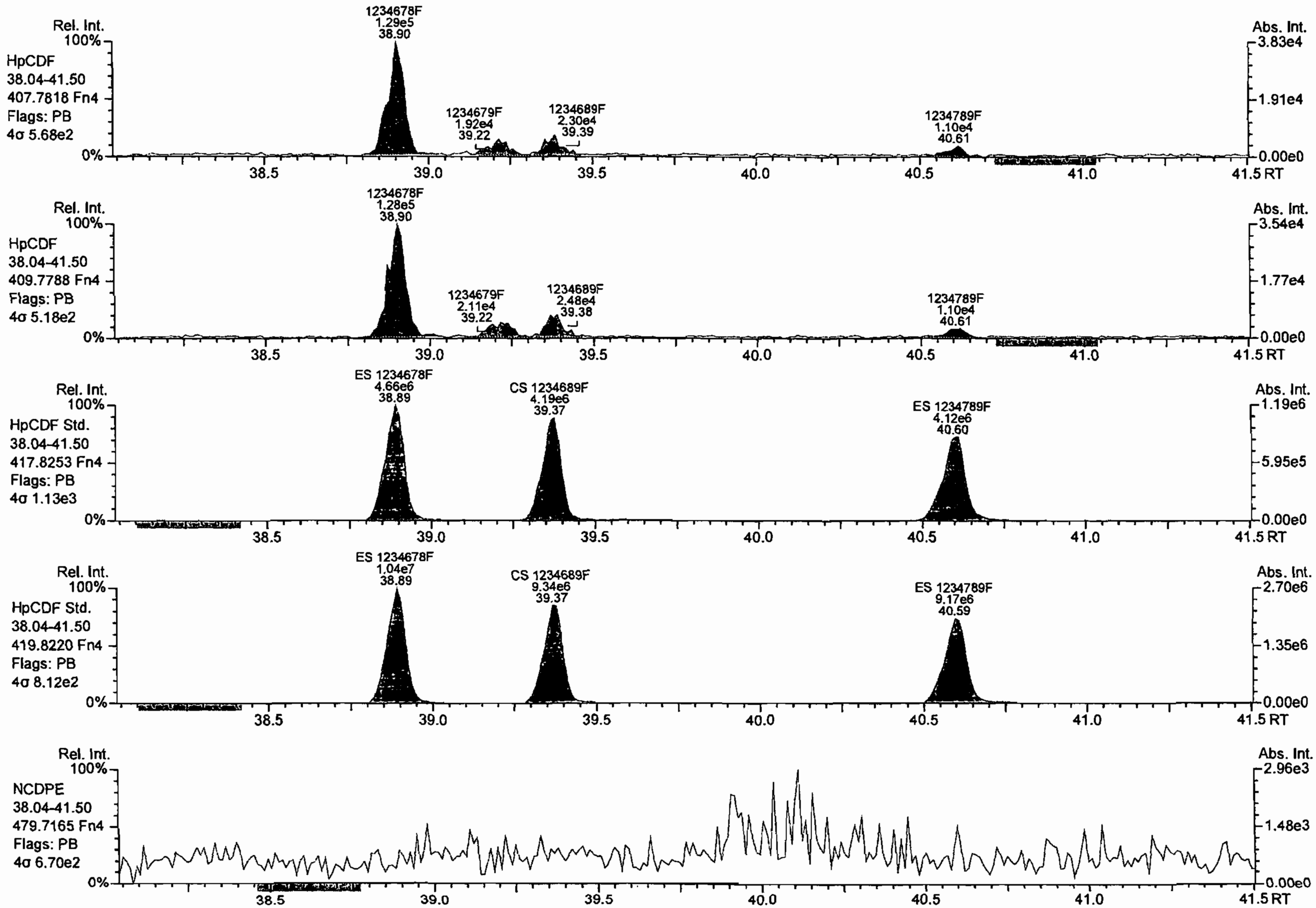
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8332, 1100, 3273 scc: 544-695

Peak annotation: Areas, Centroids

AP Lab ID: P2096_7679_003
Instr: AutoSpec-Ultima MM1

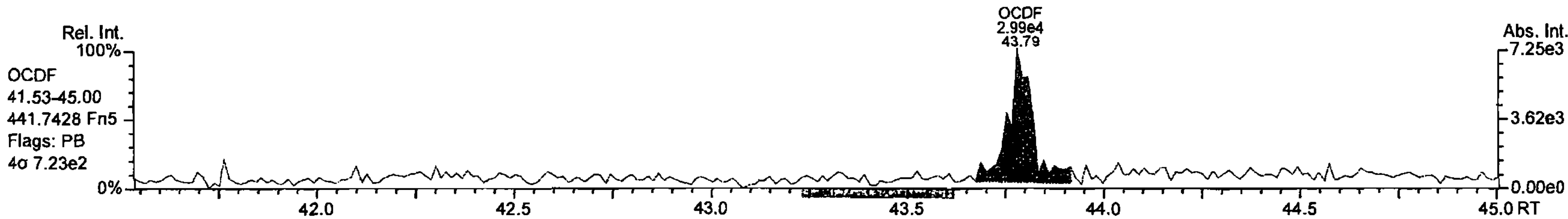
Sample ID: Unit 1 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50

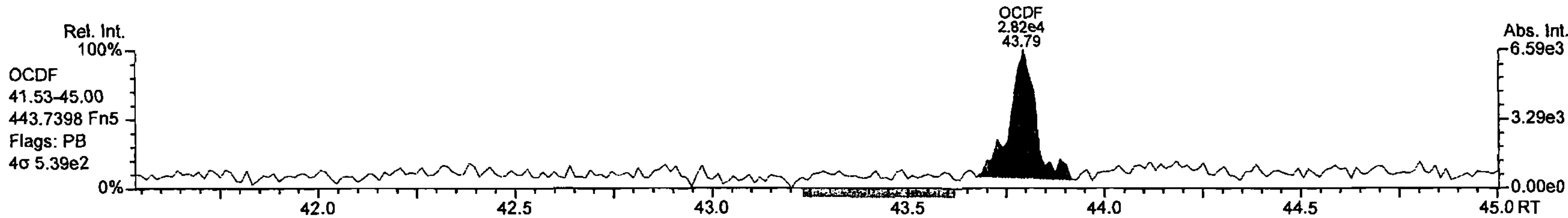
Acq: 9-APR-2010 11:38:53
User: MC Datafile: 100409P1-06

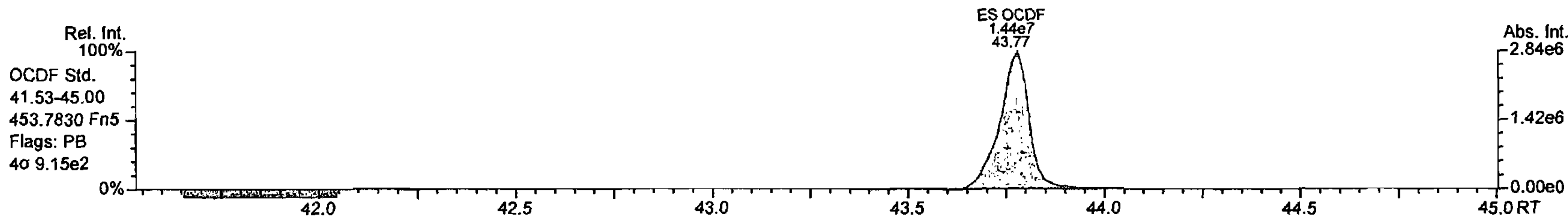


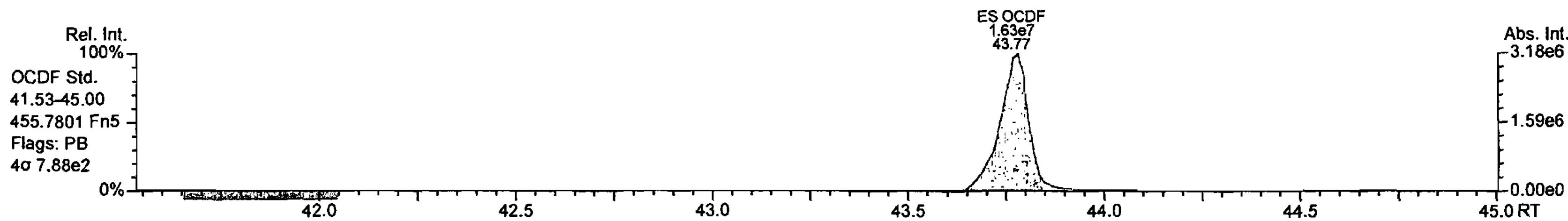
I - 189

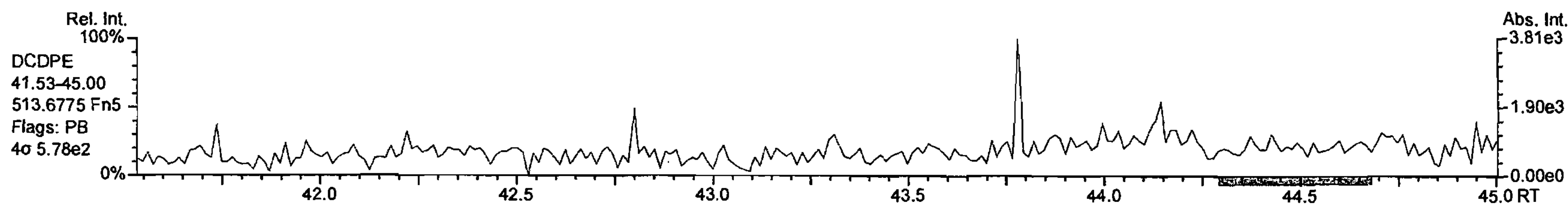
AP Lab ID: P2096_7679_003 | Sample ID: Unit 1 FF Outlet Run 2 | Acq: 9-APR-2010 11:38:53
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 50 | User: MC Datafile: 100409P1-06











Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_003.utp_res, saved 12-Apr-2010 15:49 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4193, 0897, 7239 scc: 544-695

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 12:36:50 (MC) Printed: 12-Apr-2010 15:54:40

Lab ID: P2096_7679_004 | Acq'd: 09 Apr 2010 12:29 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 3 | UTP: 12-Apr-2010 17:24 GG | J-level: 10 pg | Checkcode: 487-158

Datafile: 100409P1-07 | Report: 12 Apr 2010 17:37 GG | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	26.87		1.0008	1.0004	-0.6	2.28E+04	0.89	N	0.99	3.21	1361	2.04
12378-PeCDD	32.49		1.0006	1.0006	0	4.28E+04	1.49	Y	0.93	8.62	1294	2.32
123478-HxCDD	36.45		1.0004	1.0005	+0.2	2.71E+04	1.22	Y	1.04	5.91	1173	2.41
123678-HxCDD	36.56		1.0034	1.0034	0	5.28E+04	1.13	Y	0.95	11	1173	2.29
123789-HxCDD	36.86		1.0116	1.0116	0	4.63E+04	1.18	Y	0.93	9.54	1173	2.56
1234678-HpCDD	40.05		1.0003	1.0004	+0.2	2.80E+05	1.09	Y	0.96	70	1431	3.98
OCDD	43.55		1.0004	1.0004	0	4.30E+05	1.00	Y	1.00	127	1373	4.87
2378-TCDF	25.95		1.0009	1.0007	-0.3	2.27E+05	0.75	Y	1.08	20.5	1400	1.45
12378-PeCDF	30.99		1.0006	1.0005	-0.2	1.31E+05	1.32	Y	1.00	17	1349	1.53
23478-PeCDF	32.14		1.0005	1.0007	+0.4	1.58E+05	1.69	Y	1.04	20.3	1349	1.54
123478-HxCDF	35.48		1.0004	1.0005	+0.2	1.20E+05	1.10	Y	1.14	19.4	1378	1.95
123678-HxCDF	35.62		1.0005	1.0006	+0.2	1.34E+05	1.17	Y	1.13	19.3	1378	1.86
234678-HxCDF	36.26		1.0005	1.0003	-0.4	1.17E+05	1.38	Y	1.14	17.2	1378	1.89
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.12	-	1378	2.53
1234678-HpCDF	38.90		1.0003	1.0003	0	2.91E+05	1.07	Y	1.38	50.6	1405	2.14
1234789-HpCDF	40.60		1.0003	1.0001	-0.5	2.99E+04	1.11	Y	1.33	6.18	1405	3.29
OCDF	43.77		1.0004	1.0002	-0.5	9.85E+04	0.91	Y	0.96	24.2	1348	4.27

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.86	1.0259	1.0259	0	2.86E+07	0.79	Y	1.01	85.6
ES 12378-PeCDD	32.48	1.2404	1.2403	-0.2	2.13E+07	1.58	Y	0.78	82.5
ES 123478-HxCDD	36.43	0.9917	0.9917	0	1.76E+07	1.25	Y	0.99	80
ES 123678-HxCDD	36.54	0.9947	0.9947	0	2.03E+07	1.26	Y	1.07	85.5
ES 123789-HxCDD	36.84	1.0028	1.0028	0	2.09E+07	1.24	Y	1.09	86
ES 1234678-HpCDD	40.03	1.0902	1.0896	-1.3	1.66E+07	1.08	Y	0.90	82.8
ES OCDD	43.54	1.1862	1.1850	-2.6	2.69E+07	0.90	Y	0.74	81.9
ES 2378-TCDF	25.93	1.0585	1.0586	+0.1	4.11E+07	0.80	Y	1.00	87.7
ES 12378-PeCDF	30.98	1.2646	1.2648	+0.3	3.07E+07	1.58	Y	0.75	87.3
ES 23478-PeCDF	32.12	1.3113	1.3112	-0.1	2.98E+07	1.57	Y	0.74	85.3
ES 123478-HxCDF	35.46	0.9651	0.9652	+0.2	2.16E+07	0.52	Y	1.19	81.6
ES 123678-HxCDF	35.60	0.9689	0.9690	+0.2	2.45E+07	0.52	Y	1.35	81.9
ES 234678-HxCDF	36.25	0.9867	0.9868	+0.2	2.38E+07	0.52	Y	1.28	83.6
ES 123789-HxCDF	37.21	1.0129	1.0129	0	2.06E+07	0.52	Y	1.20	77.3
ES 1234678-HpCDF	38.89	1.0589	1.0585	-0.9	1.67E+07	0.43	Y	0.95	79.1
ES 1234789-HpCDF	40.60	1.1057	1.1050	-1.5	1.45E+07	0.45	Y	0.82	80
ES OCDF	43.77	1.1926	1.1913	-2.9	3.38E+07	0.89	Y	0.96	79.4

Lab ID: P2096_7679_004	Acq'd: 09 Apr 2010 12:29 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: Unit 1 FF Outlet Run 3	UTP: 12-Apr-2010 17:24 GG	J-level: 10 pg	Checkcode: 487-158
Datafile: 100409P1-07	Report: 12 Apr 2010 17:37 GG	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.18		-	-	-	3.31E+07	0.79	Y	-	-
JS 1234-TCDF	24.49		-	-	-	4.70E+07	0.79	Y	-	-
JS 123467-HxCDD	36.74		-	-	-	1.11E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	26.89		1.0268	1.0268	0	1.26E+07	n/a	-	1.16	82.2
CS 12347-PeCDD	31.97		1.2209	1.2208	-0.2	2.14E+07	1.63	Y	0.79	81.7
CS 12346-PeCDF	30.45		1.2424	1.2430	+0.9	3.01E+07	1.55	Y	0.79	81.2
CS 123469-HxCDF	35.91		0.9773	0.9774	+0.2	2.23E+07	0.53	Y	1.23	82
CS 1234689-HpCDF	39.37		1.0720	1.0716	-0.9	1.55E+07	0.44	Y	0.86	81.1
SS 37Cl-2378-TCDD	26.89		1.0268	1.0268	0	1.26E+07	n/a	-	1.14	96.1
SS 12347-PeCDD	31.97		1.2209	1.2208	-0.2	2.14E+07	1.63	Y	1.01	99.1
SS 12346-PeCDF	30.45		1.2424	1.2430	+0.9	3.01E+07	1.55	Y	1.05	93
SS 123469-HxCDF	35.91		0.9773	0.9774	+0.2	2.23E+07	0.53	Y	0.91	100
SS 1234689-HpCDF	39.37		1.0720	1.0716	-0.9	1.55E+07	0.44	Y	0.91	102
AS 1368-TCDD	22.91		0.8731	0.8750	+3.0	3.17E+07	0.80	Y	1.08	88.7
AS 1368-TCDF	20.80		0.8447	0.8491	+6.5	5.41E+07	0.79	Y	1.29	89.2
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.21		0.9794	0.9794	0	1.07E+05	1.37	N	0.01	83.5
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 12 Apr 10

Totals	Conc	EMPC
Total TCDD	71.7	100
Total PeCDD	103	125
Total HxCDD	154	191
Total HpCDD	142	142
Total Tetra-Octa Dioxins	597	686
Total TCDF	567	577
Total PeCDF	275	316
Total HxCDF	142	171
Total HpCDF	67.9	77.9
Total Tetra-Octa Furans	1080	1170
Total Tetra-Octa Dioxins & Furans	1670	1850

Lab ID: P2096_7679_004	Acq'd: 09 Apr 2010 12:29 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: Unit 1 FF Outlet Run 3	UTP: 12-Apr-2010 17:24 GG	J-level: 10 pg	Checkcode: 487-158
Datafile: 100409P1-07	Report: 12 Apr 2010 17:37 GG	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	22.94		0.8539	0.8540	+0.2	2.77E+05	0.77	Y	0.99	39	1361	2.04
1379-TCDD	23.35		0.8685	0.8691	+1.0	9.21E+04	0.82	Y	0.99	13	1361	2.04
1369-TCDD	23.81		0.8863	0.8865	+0.3	3.55E+04	1.08	N	0.99	5.01	1361	2.04
1469-TCDD	NotFnd		0.9189						0.99		1361	2.04
1247/1246/1248/1249-TCDD	24.92		0.9276	0.9277	+0.2	5.84E+04	0.82	Y	0.99	8.24	1361	2.04
1378-TCDD	25.11		0.9351	0.9349	-0.3	5.54E+04	1.05	N	0.99	7.82	1361	2.04
1268-TCDD	25.33		0.9430	0.9431	+0.2	2.70E+04	1.01	N	0.99	3.8	1361	2.04
1478-TCDD	25.60		0.9517	0.9530	+2.1	1.77E+04	0.77	Y	0.99	2.49	1361	2.04
1279-TCDD	25.79		0.9598	0.9600	+0.3	2.37E+04	0.98	N	0.99	3.34	1361	2.04
1234/1269-TCDD	26.17		0.9740	0.9744	+0.6	2.54E+04	1.00	N	0.99	3.58	1361	2.04
1236-TCDD	NotFnd		0.9801						0.99		1361	2.04
1237/1238-TCDD	26.58		0.9895	0.9896	+0.2	4.24E+04	0.80	Y	0.99	5.98	1361	2.04
1239-TCDD	26.73		0.9952	0.9952	0	1.28E+04	0.93	N	0.99	1.8	1361	2.04
2378-TCDD	**26.87**		**1.0008**	**1.0004**	**-0.6**	**2.28E+04**	**0.89**	**N**	**0.99**	**3.21**	**1361**	**2.04**
1278-TCDD	27.23		1.0138	1.0135	-0.5	2.10E+04	0.73	Y	0.99	2.96	1361	2.04
1267-TCDD	NotFnd		1.0194						0.99		1361	2.04
1289-TCDD	NotFnd		1.0396						0.99		1361	2.04
12479/12468-PeCDD	29.93		0.9210	0.9217	+1.4	2.00E+05	1.50	Y	0.93	40.3	1294	2.32
12469-PeCDD	30.47		0.9382	0.9381	-0.2	1.88E+04	1.74	Y	0.93	3.78	1294	2.32
12368-PeCDD	31.04		0.9556	0.9558	+0.4	1.48E+05	1.61	Y	0.93	29.9	1294	2.32
12478-PeCDD	31.23		0.9614	0.9616	+0.4	3.32E+04	1.87	N	0.93	6.68	1294	2.32
12379-PeCDD	31.34		0.9649	0.9650	+0.2	7.87E+04	1.27	N	0.93	15.9	1294	2.32
12369/12467/12489-PeCDD	31.61		0.9732	0.9733	+0.2	5.06E+04	1.42	Y	0.93	10.2	1294	2.32
12346/12347-PeCDD	31.98		0.9850	0.9849	-0.2	4.95E+04	1.41	Y	0.93	9.96	1294	2.32
12378-PeCDD	**32.49**		**1.0006**	**1.0006**	**0**	**4.28E+04**	**1.49**	**Y**	**0.93**	**8.62**	**1294**	**2.32**
12367-PeCDD	NotFnd		1.0037						0.93		1294	2.32
12389-PeCDD	NotFnd		1.0146						0.93		1294	2.32
124679/124689-HxCDD	34.74		0.9534	0.9536	+0.4	6.88E+04	1.20	Y	0.97	14.4	1173	2.41
123468-HxCDD	35.41		0.9717	0.9718	+0.2	5.03E+05	1.23	Y	0.97	105	1173	2.41
123679/123689-HxCDD	35.69		0.9793	0.9796	+0.7	1.62E+05	1.03	N	0.97	34.1	1173	2.41
123469-HxCDD	35.82		0.9833	0.9831	-0.4	1.67E+04	0.97	N	0.97	3.5	1173	2.41
123478-HxCDD	**36.45**		**1.0004**	**1.0005**	**+0.2**	**2.71E+04**	**1.22**	**Y**	**1.04**	**5.91**	**1173**	**2.41**
123678-HxCDD	**36.56**		**1.0034**	**1.0034**	**0**	**5.28E+04**	**1.13**	**Y**	**0.95**	**11**	**1173**	**2.29**
123467-HxCDD	36.76		1.0088	1.0088	0	3.42E+04	1.21	Y	0.97	7.18	1173	2.41
123789-HxCDD	**36.86**		**1.0116**	**1.0116**	**0**	**4.63E+04**	**1.18**	**Y**	**0.93**	**9.54**	**1173**	**2.56**

Lab ID: P2096_7679_004 | Acq'd: 09 Apr 2010 12:29 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 3 | UTP: 12-Apr-2010 17:24 GG | J-level: 10 pg | Checkcode: 487-158

Datafile: 100409P1-07 | Report: 12 Apr 2010 17:37 GG | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.21		0.9794	0.9795	+0.2	2.87E+05	1.08	Y	0.96	71.6	1431	3.98
1234678-HpCDD	**40.05**		**1.0003**	**1.0004**	**+0.2**	**2.80E+05**	**1.09**	**Y**	**0.96**	**70**	**1431**	**3.98**
OCDD	**43.55**		**1.0004**	**1.0004**	**0**	**4.30E+05**	**1.00**	**Y**	**1.00**	**127**	**1373**	**4.87**
OCDD-a	NotFnd		1.0003						0.06		1650	95.9
1368-TCDF	20.82		0.8012	0.8031	+3.0	6.12E+05	0.73	Y	1.08	55.2	1400	1.45
1468-TCDF	21.35		0.8216	0.8234	+2.8	2.36E+05	0.80	Y	1.08	21.3	1400	1.45
2468-TCDF	21.95		0.8461	0.8467	+0.9	1.08E+05	0.78	Y	1.08	9.75	1400	1.45
1346/1246-TCDF	22.36		0.8607	0.8625	+2.8	1.75E+05	0.77	Y	1.08	15.8	1400	1.45
1347/1378/1247-TCDF	22.52		0.8672	0.8685	+2.0	9.77E+05	0.77	Y	1.08	88.1	1400	1.45
1348-TCDF	22.80		0.8792	0.8795	+0.5	2.07E+05	0.82	Y	1.08	18.7	1400	1.45
1248/1367/1379-TCDF	22.95		0.8846	0.8850	+0.6	5.22E+05	0.79	Y	1.08	47.1	1400	1.45
1268-TCDF	23.36		0.9011	0.9010	-0.2	2.12E+05	0.83	Y	1.08	19.1	1400	1.45
1467-TCDF	23.52		0.9067	0.9070	+0.5	1.67E+05	0.74	Y	1.08	15	1400	1.45
1478-TCDF	23.70		0.9137	0.9141	+0.6	3.21E+05	0.77	Y	1.08	29	1400	1.45
1369/1237-TCDF	24.10		0.9293	0.9295	+0.3	2.34E+05	0.78	Y	1.08	21.1	1400	1.45
2467-TCDF	24.25		0.9348	0.9351	+0.5	2.00E+05	0.85	Y	1.08	18	1400	1.45
2368-TCDF	24.39		0.9408	0.9408	0	2.47E+05	0.81	Y	1.08	22.2	1400	1.45
1238/1234/1678/1469/1236-TCDF	24.53		0.9445	0.9460	+2.3	5.03E+05	0.78	Y	1.08	45.4	1400	1.45
1278-TCDF	25.00		0.9641	0.9642	+0.2	3.26E+05	0.78	Y	1.08	29.4	1400	1.45
1349-TCDF	25.12		0.9693	0.9688	-0.8	5.84E+04	0.89	N	1.08	5.27	1400	1.45
1267-TCDF	25.30		0.9755	0.9758	+0.5	1.37E+05	0.67	Y	1.08	12.3	1400	1.45
2346/1249-TCDF	25.51		0.9834	0.9840	+0.9	1.50E+05	0.88	Y	1.08	13.6	1400	1.45
2347/1279-TCDF	25.72		0.9922	0.9918	-0.6	1.85E+05	0.79	Y	1.08	16.7	1400	1.45
2348-TCDF	25.83		0.9966	0.9961	-0.8	1.27E+05	0.71	Y	1.08	11.5	1400	1.45
2378-TCDF	**25.95**		**1.0009**	**1.0007**	**-0.3**	**2.27E+05**	**0.75**	**Y**	**1.08**	**20.5**	**1400**	**1.45**
2367/3467-TCDF	26.35		1.0164	1.0162	-0.3	3.49E+05	0.76	Y	1.08	31.4	1400	1.45
1269-TCDF	26.61		1.0260	1.0262	+0.3	2.68E+04	0.80	Y	1.08	2.42	1400	1.45
1239-TCDF	26.88		1.0375	1.0368	-1.1	3.33E+04	0.70	Y	1.08	3.01	1400	1.45
1289-TCDF	28.11		1.0834	1.0843	+1.4	5.58E+04	1.32	N	1.08	5.04	1400	1.45
13468/12468-PeCDF	28.10		0.9057	0.9070	+2.4	3.74E+05	1.49	Y	1.02	48.3	1261	1.43
13678/13467/12467-PeCDF	29.71		0.9581	0.9590	+1.7	3.93E+05	1.55	Y	1.02	50.8	1349	1.53
12368/13478/12478-PeCDF	29.86		0.9620	0.9640	+3.7	5.16E+05	1.60	Y	1.02	66.6	1349	1.53
14678-PeCDF	29.97		0.9667	0.9673	+1.1	1.08E+05	1.19	N	1.02	13.9	1349	1.53
13479-PeCDF	30.05		0.9702	0.9701	-0.2	6.11E+04	1.43	Y	1.02	7.89	1349	1.53
13469/12479-PeCDF	30.31		0.9781	0.9784	+0.6	5.89E+04	1.28	N	1.02	7.61	1349	1.53
12346-PeCDF	30.47		0.9829	0.9835	+1.1	3.31E+04	1.19	N	1.02	4.28	1349	1.53

Lab ID: P2096_7679_004 | Acq'd: 09 Apr 2010 12:29 MC | WtVol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Unit 1 FF Outlet Run 3 | UTP: 12-Apr-2010 17:24 GG | J-level: 10 pg | Checkcode: 487-158

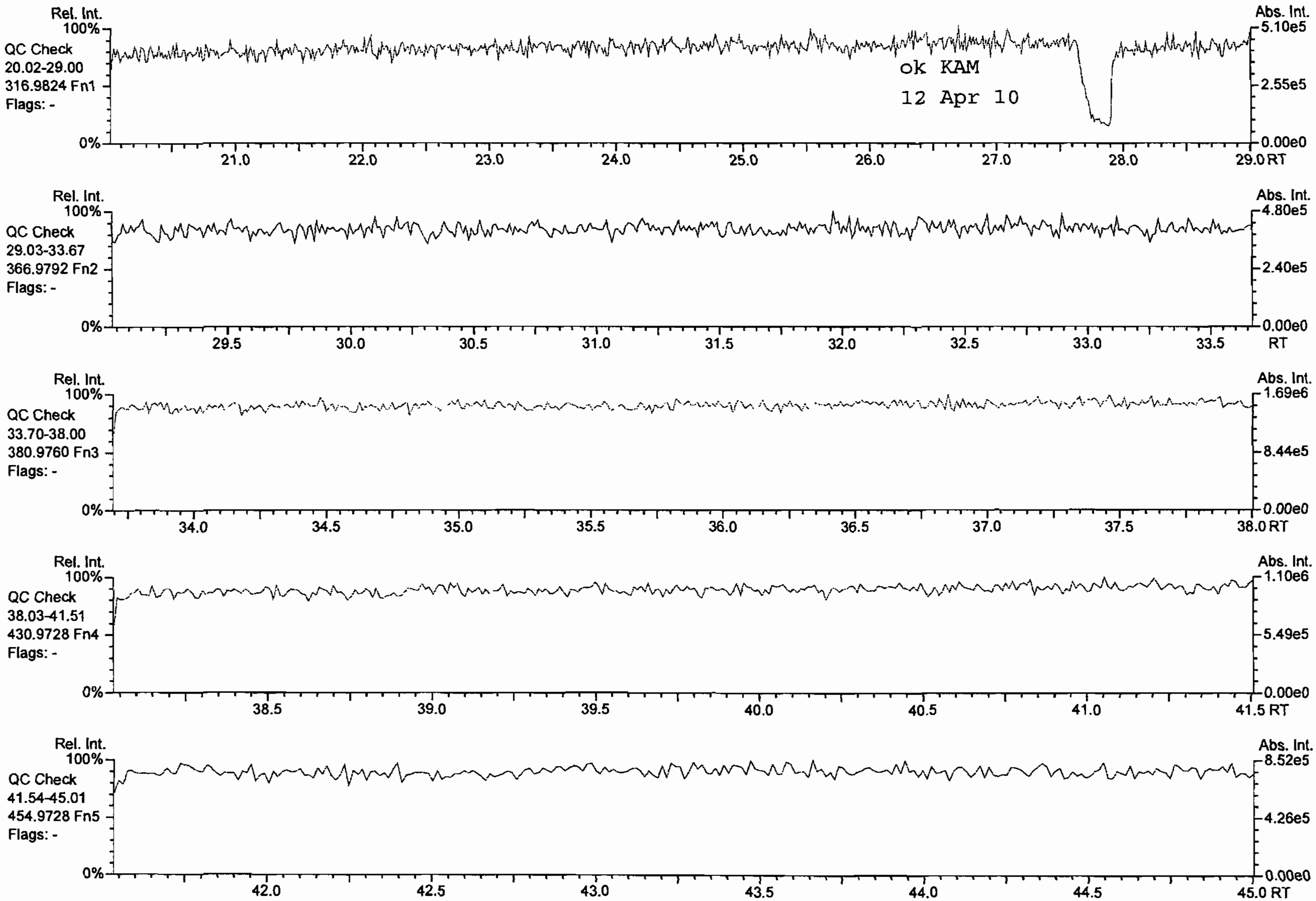
Datafile: 100409P1-07 | Report: 12 Apr 2010 17:37 GG | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.54		0.9858	0.9858	0	1.44E+05	1.64	Y	1.02	18.6	1349	1.53
12347-PeCDF	30.61		0.9881	0.9882	+0.2	7.19E+04	1.31	N	1.02	9.28	1349	1.53
12348-PeCDF	30.79		0.9936	0.9938	+0.4	4.79E+04	1.29	N	1.02	6.18	1349	1.53
12378-PeCDF	**30.99**		**1.0006**	**1.0005**	**-0.2**	**1.31E+05**	**1.32**	**Y**	**1.00**	**17**	**1349**	**1.53**
12678/12367-PeCDF	31.28		1.0104	1.0097	-1.3	2.01E+05	1.39	Y	1.02	25.9	1349	1.53
12379-PeCDF	NotFnd		1.0151						1.02		1349	1.53
12679-PeCDF	NotFnd		0.9925						1.02		1349	1.53
23467/12369-PeCDF	32.01		0.9981	0.9968	-2.5	1.52E+05	1.46	Y	1.02	19.7	1349	1.53
23478-PeCDF	**32.14**		**1.0005**	**1.0007**	**+0.4**	**1.58E+05**	**1.69**	**Y**	**1.04**	**20.3**	**1349**	**1.54**
23478/12489-PeCDF	NotFnd		1.0006						1.04		1349	1.54
12489-PeCDF	NotFnd		1.0023						1.02		1349	1.53
12349-PeCDF	NotFnd		1.0110						1.02		1349	1.53
12389-PeCDF	NotFnd		1.0350						1.02		1349	1.53
123468-HxCDF	34.08		0.9609	0.9610	+0.2	1.12E+05	1.14	Y	1.13	17.5	1378	2.04
124678/134678-HxCDF	34.28		0.9668	0.9667	-0.2	3.54E+05	1.20	Y	1.13	55.1	1378	2.04
134679-HxCDF	34.51		0.9733	0.9732	-0.2	2.81E+04	1.12	Y	1.13	4.38	1378	2.04
124679-HxCDF	34.71		0.9788	0.9787	-0.2	3.34E+04	1.05	N	1.13	5.21	1378	2.04
124689-HxCDF	34.94		0.9851	0.9853	+0.4	2.31E+04	1.09	Y	1.13	3.6	1378	2.04
123467-HxCDF	35.36		0.9968	0.9971	+0.6	8.16E+04	1.54	N	1.13	12.7	1378	2.04
123478-HxCDF	**35.48**		**1.0004**	**1.0005**	**+0.2**	**1.20E+05**	**1.10**	**Y**	**1.14**	**19.4**	**1378**	**1.95**
123678-HxCDF	**35.62**		**1.0005**	**1.0006**	**+0.2**	**1.34E+05**	**1.17**	**Y**	**1.13**	**19.3**	**1378**	**1.86**
123479-HxCDF	35.77		1.0048	1.0049	+0.2	2.66E+04	0.96	N	1.13	4.15	1378	2.04
123469-HxCDF	35.91		1.0090	1.0089	-0.2	3.20E+04	1.25	Y	1.13	4.98	1378	2.04
123679-HxCDF	36.03		0.9943	0.9939	-0.9	2.93E+04	1.53	N	1.13	4.56	1378	2.04
234678-HxCDF	**36.26**		**1.0005**	**1.0003**	**-0.4**	**1.17E+05**	**1.38**	**Y**	**1.14**	**17.2**	**1378**	**1.89**
234678/123689-HxCDF	NotFnd		1.0004						1.14		1378	1.89
123689-HxCDF	NotFnd		1.0009						1.13		1378	2.04
123789-HxCDF	**NotFnd**		**1.0005**						**1.12**		**1378**	**2.53**
123789/123489-HxCDF	37.26		1.0012	1.0013	+0.2	1.84E+04	1.93	N	1.12	3.2	1378	2.53
123489-HxCDF	NotFnd		1.0017						1.13		1378	2.04
1234678-HpCDF	**38.90**		**1.0003**	**1.0003**	**0**	**2.91E+05**	**1.07**	**Y**	**1.38**	**50.6**	**1405**	**2.14**
1234679-HpCDF	39.21		1.0083	1.0083	0	5.88E+04	0.97	Y	1.36	11.1	1405	2.67
1234689-HpCDF	39.38		1.0132	1.0125	-1.6	5.28E+04	0.88	N	1.36	10	1405	2.67
1234789-HpCDF	**40.60**		**1.0003**	**1.0001**	**-0.5**	**2.99E+04**	**1.11**	**Y**	**1.33**	**6.18**	**1405**	**3.29**
OCDF	**43.77**		**1.0004**	**1.0002**	**-0.5**	**9.85E+04**	**0.91**	**Y**	**0.96**	**24.2**	**1348**	**4.27**
OCDF-a	NotFnd		1.0002						0.05		1651	91.7

AP Lab ID: P2096_7679_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51

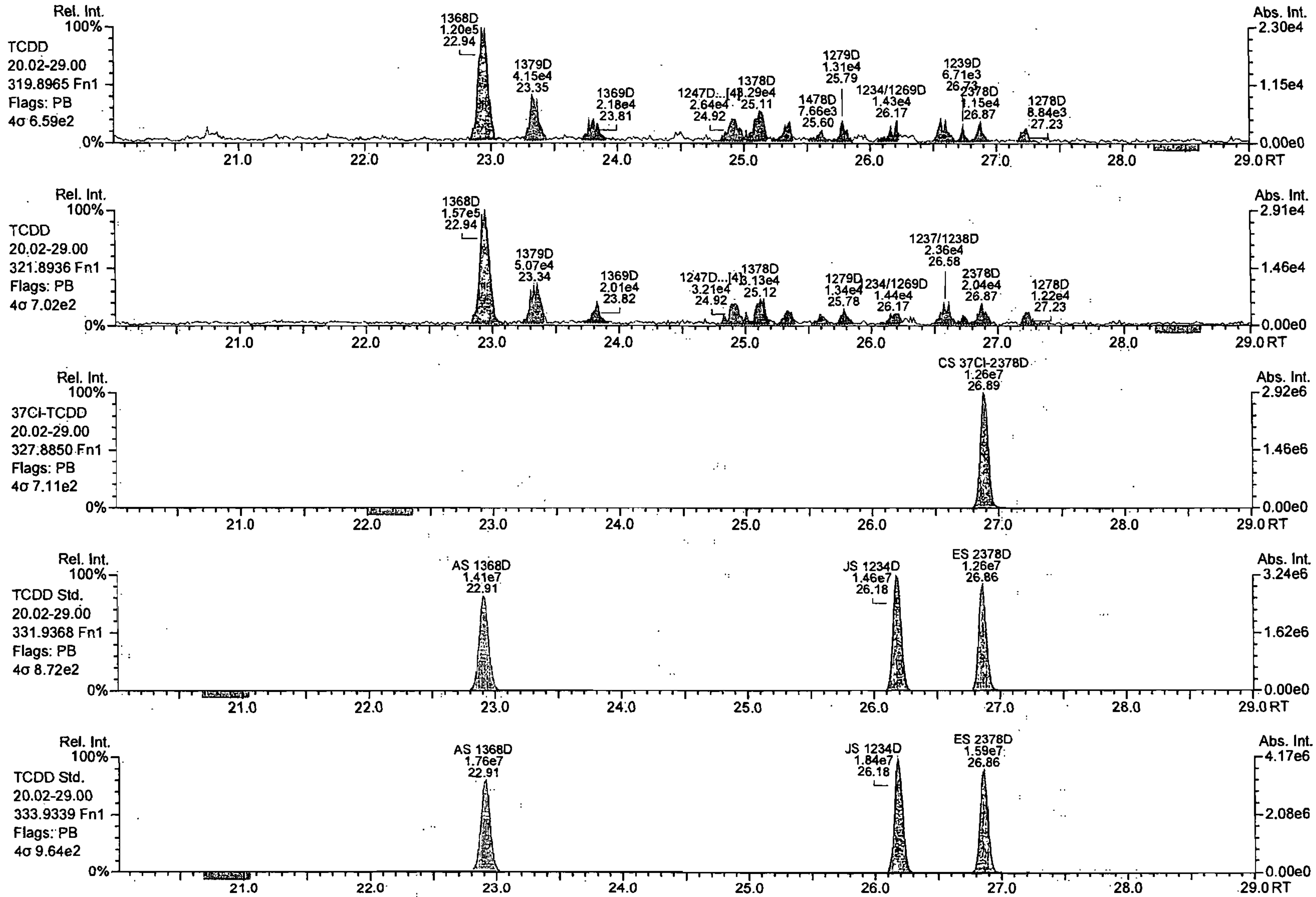
Acq: 9-APR-2010 12:29:27
User: MC Datafile: 100409P1-07



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG)
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 scc: 487-158

Peak annotation: Areas, Centroids
PKD: n/a Printed: 12-Apr-2010 17:24:22 Page 1 of 12

AP Lab ID: P2096_7679_004 | Sample ID: Unit 1 FF Outlet Run 3 | Acq: 9-APR-2010 12:29:27
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51 | User: MC Datafile: 100409P1-07



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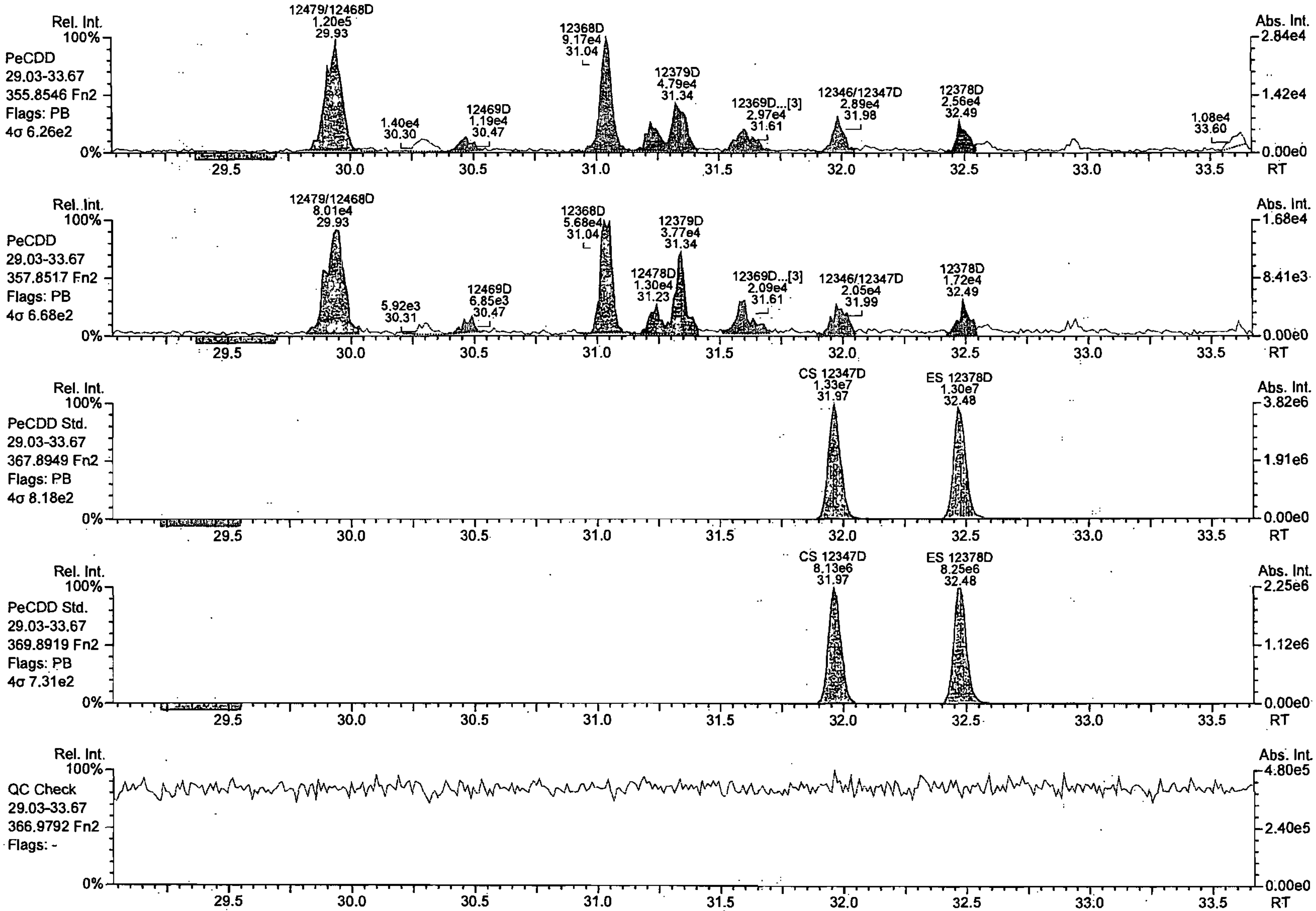
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG) | Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 5329, 4090, 6026 scc: 487-158 | Revised: 09-Apr-2010 13:23:28 (MC) Printed: 12-Apr-2010 17:24:33

AP Lab ID: P2096_7679_004 | Sample ID: Unit 1 FF Outlet Run 3 | Acq: 9-APR-2010 12:29:27
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51 | User: MC Datafile: 100409P1-07



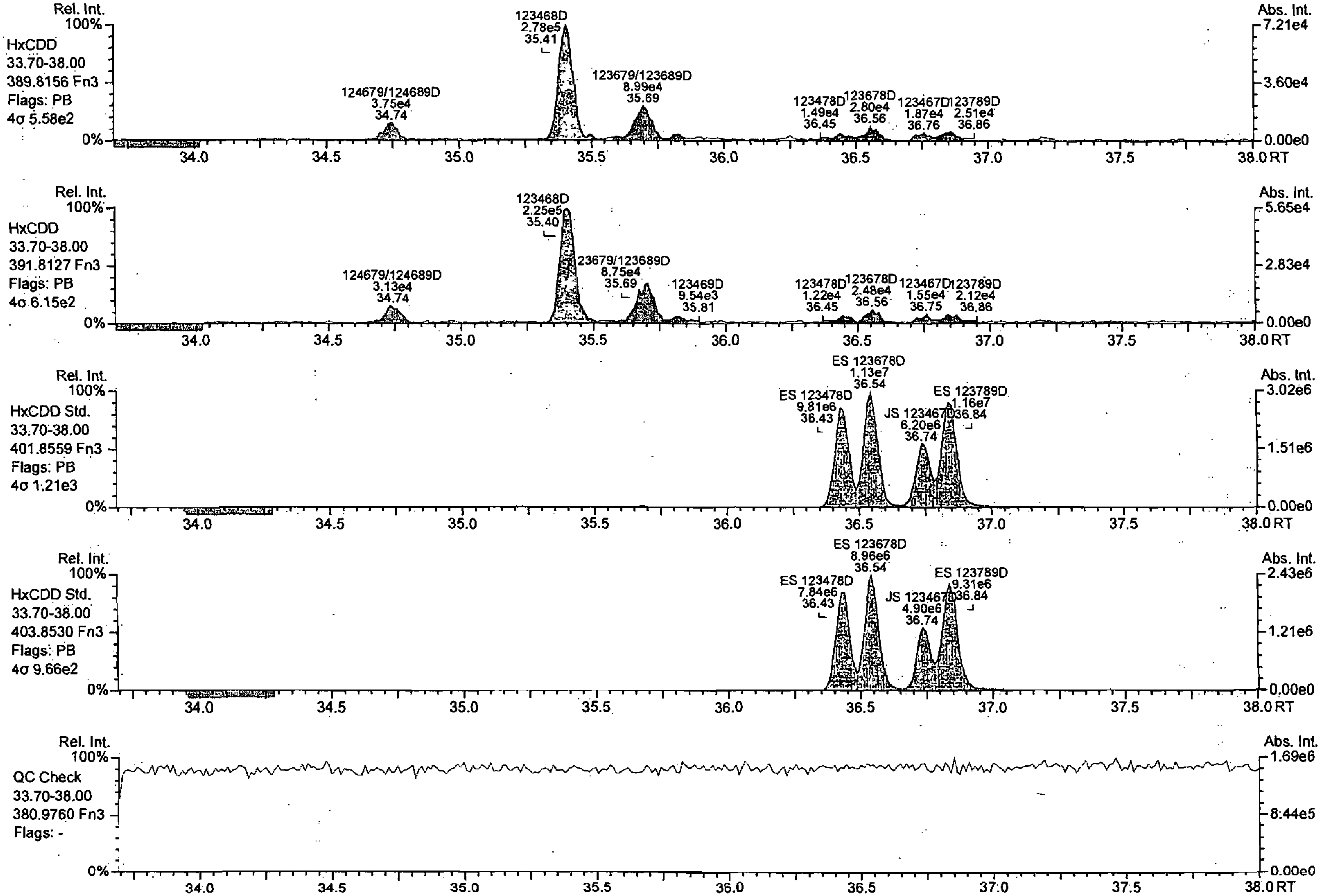
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG)
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 8266, 0648 scc: 487-158

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 13:23:49 (MC) Printed: 12-Apr-2010 17:24:41

AP Lab ID: P2096_7679_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51

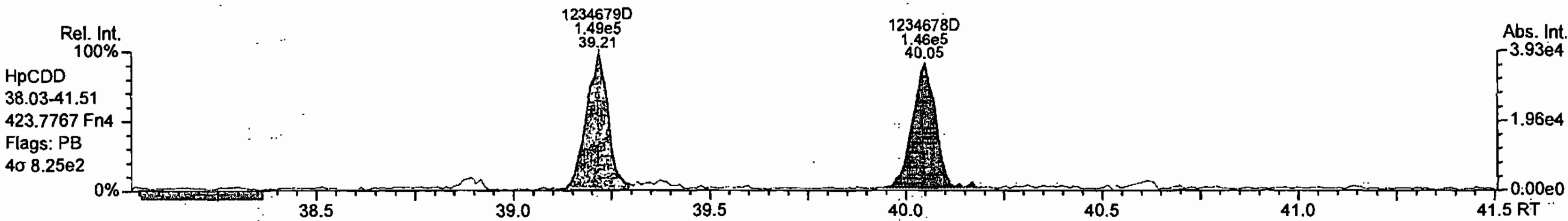
Acq: 9-APR-2010 12:29:27
User: MC Datafile: 100409P1-07

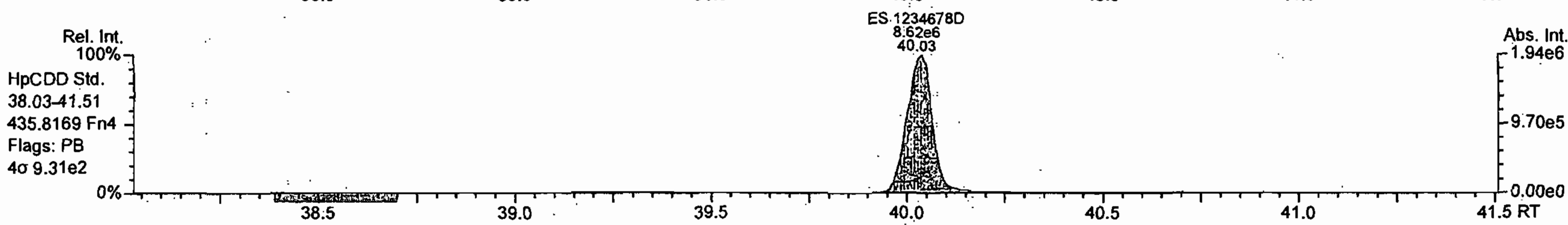


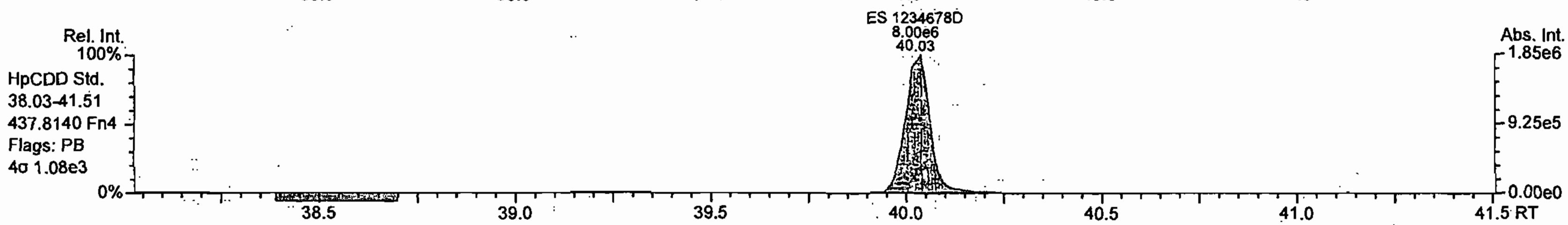
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG)
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 9533, 8947 scc: 487-158

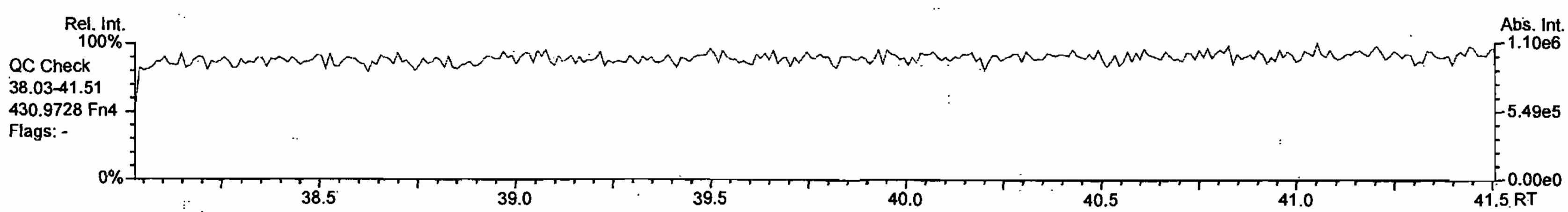
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 13:24:07 (MC) Printed: 12-Apr-2010 17:24:48 Page 4 of 12

AP Lab ID: P2096_7679_004 Sample ID: Unit 1 FF Outlet Run 3 Acq: 9-APR-2010 12:29:27
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51 User: MC Datafile: 100409P1-07



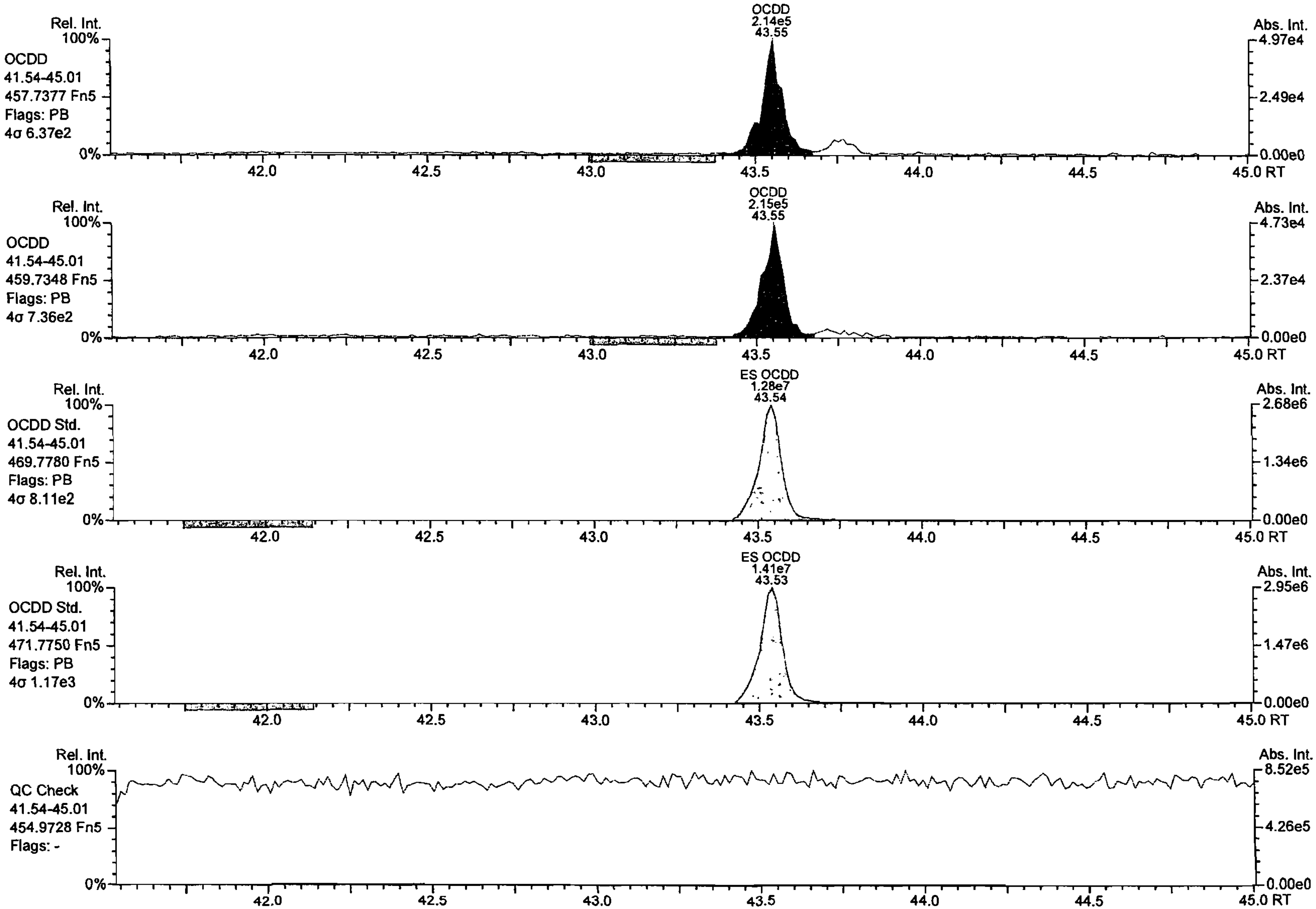






Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 3887, 9738 scc: 487-158 Revised: 09-Apr-2010 13:24:12 (MC) Printed: 12-Apr-2010 17:24:53 Page 5 of 12

AP Lab ID: P2096_7679_004 | Sample ID: Unit 1 FF Outlet Run 3 | Acq: 9-APR-2010 12:29:27
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51 | User: MC Datafile: 100409P1-07

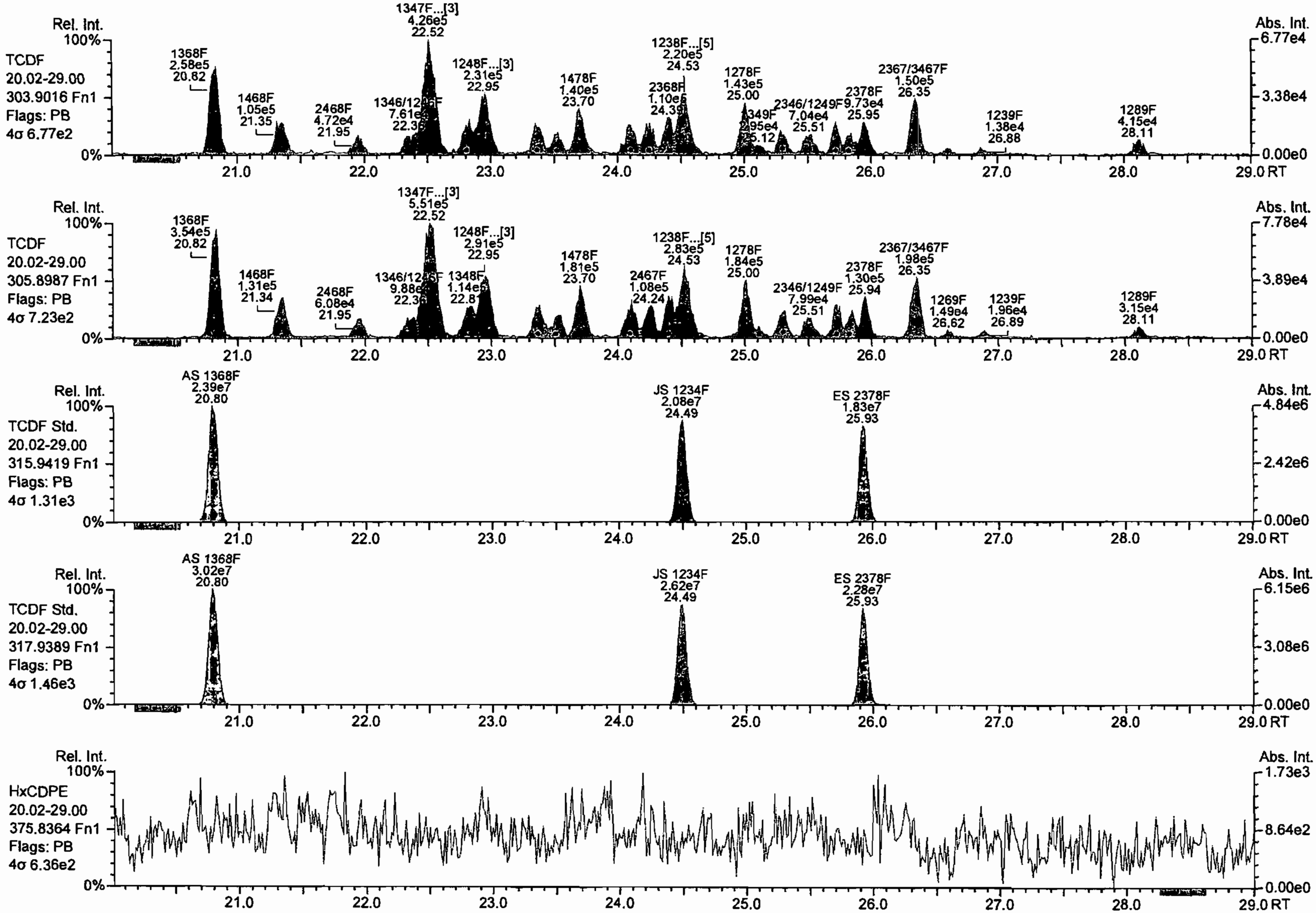


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG) | Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 0090, 2907 scc: 487-158 | Revised: 09-Apr-2010 13:24:15 (MC) Printed: 12-Apr-2010 17:24:58 Page 6 of 12

AP Lab ID: P2096_7679_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51

Acq: 9-APR-2010 12:29:27
User: MC Datafile: 100409P1-07



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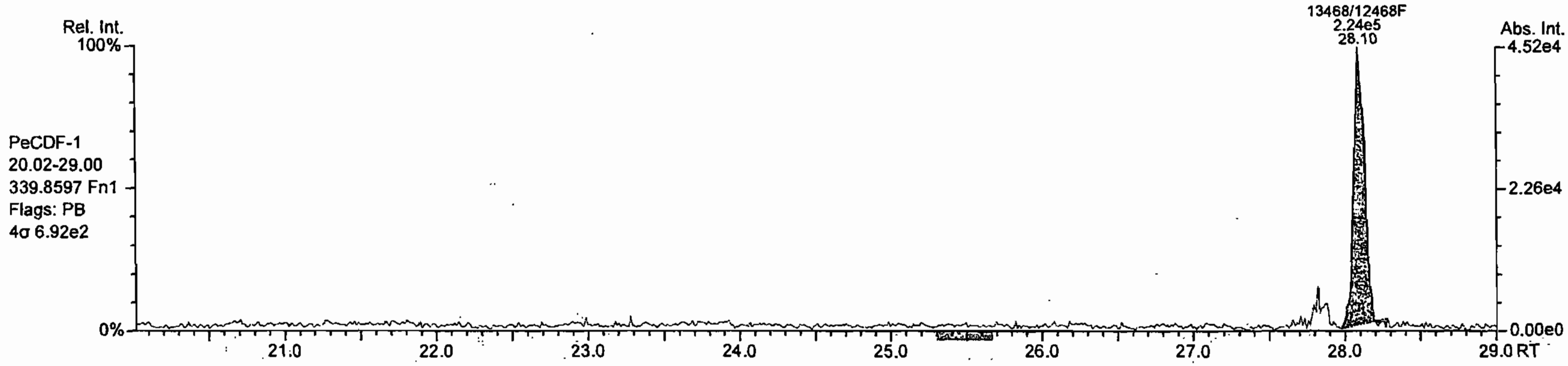
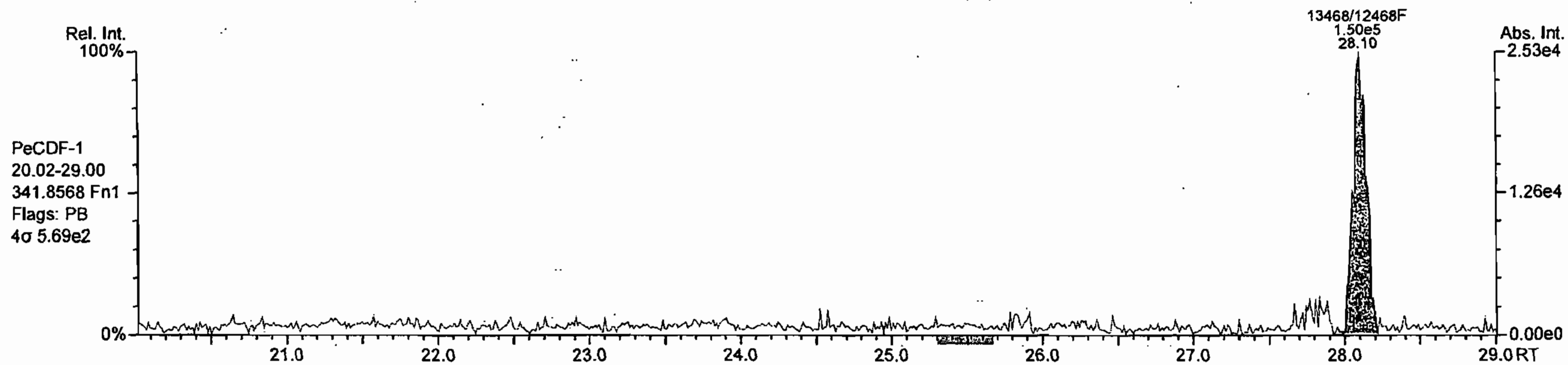
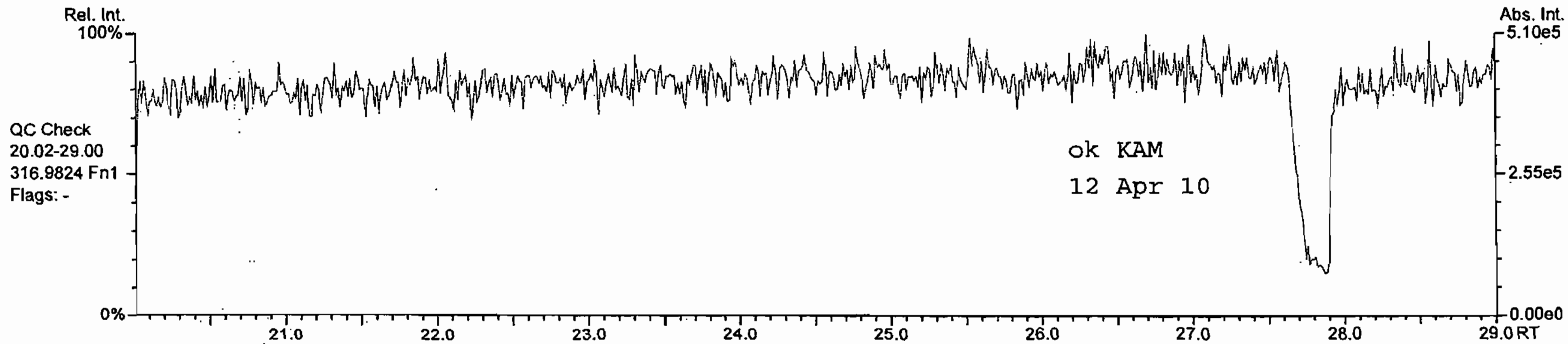
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG)
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 6346, 3088, 6047 scc: 487-158

Peak annotation: Areas, Centroids
Revised: 12-Apr-2010 16:57:56 (GG) Printed: 12-Apr-2010 17:25:10

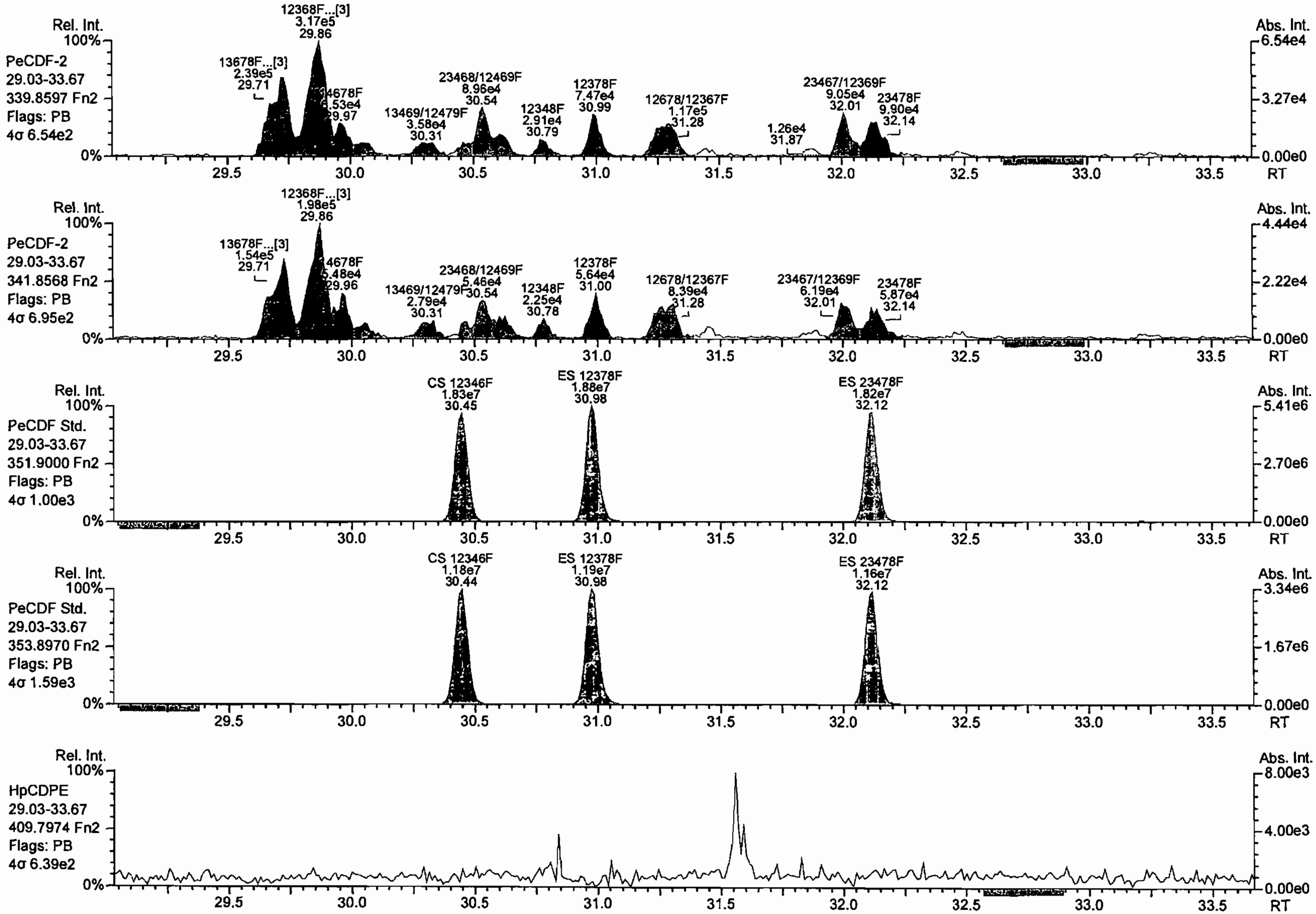
AP Lab ID: P2096_7679_004 | Sample ID: Unit 1 FF Outlet Run 3 | Acq: 9-APR-2010 12:29:27
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51 | User: MC Datafile: 100409P1-07







Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG) | *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 2922 scc: 487-158 | *Revised: 09-Apr-2010 13:22:40 (MC) Printed: 12-Apr-2010 17:25:20 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
29.03-33.67
339.8597 Fn2
Flags: PB
4σ 6.54e2
12368F...[3] 3.17e5 29.86
13678F...[3] 2.39e5 29.71
14678F 6.53e4 29.97
13469/12479F 3.58e4 30.31
23468/12469F 8.96e4 30.54
12348F 2.91e4 30.79
12378F 7.47e4 30.99
12678/12367F 1.17e5 31.28
1.26e4 31.87
23467/12369F 9.05e4 32.01
23478F 9.90e4 32.14
Abs. Int.
6.54e4
3.27e4
0.00e0
RT
PeCDF-2
29.03-33.67
341.8568 Fn2
Flags: PB
4σ 6.95e2
12368F...[3] 1.98e5 29.86
13678F...[3] 1.54e5 29.71
14678F 5.48e4 29.96
13469/12479F 2.79e4 30.31
23468/12469F 5.46e4 30.54
12348F 2.25e4 30.78
12378F 5.64e4 31.00
12678/12367F 8.39e4 31.28
23467/12369F 6.19e4 32.01
23478F 5.87e4 32.14
4.44e4
2.22e4
PeCDF Std.
29.03-33.67
351.9000 Fn2
Flags: PB
4σ 1.00e3
CS 12346F 1.83e7 30.45
ES 12378F 1.88e7 30.98
ES 23478F 1.82e7 32.12
5.41e6
2.70e6
PeCDF Std.
29.03-33.67
353.8970 Fn2
Flags: PB
4σ 1.59e3
CS 12346F 1.18e7 30.44
ES 12378F 1.19e7 30.98
ES 23478F 1.16e7 32.12
3.34e6
1.67e6
HpCDPE
29.03-33.67
409.7974 Fn2
Flags: PB
4σ 6.39e2
8.00e3
4.00e3
29.5
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5

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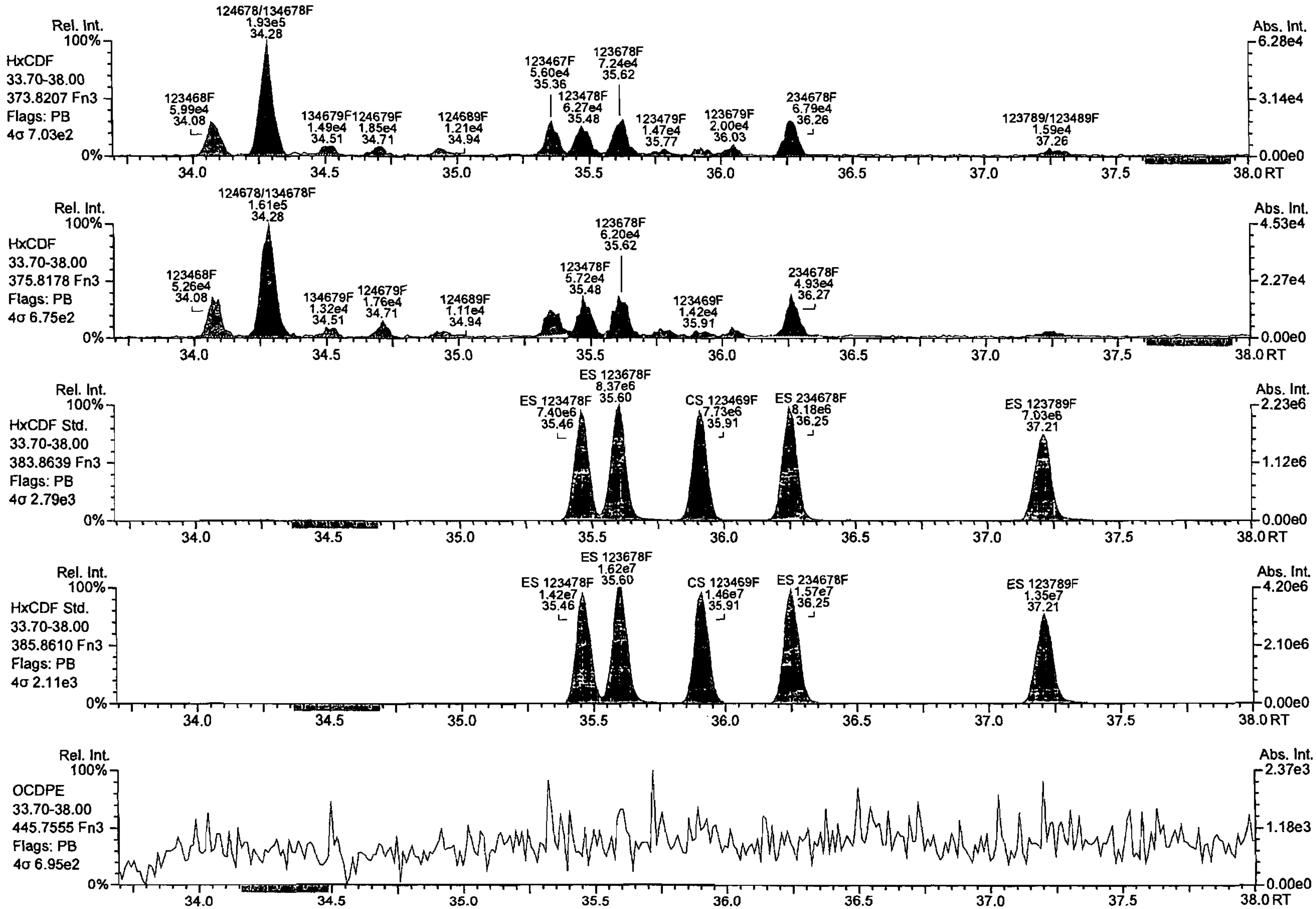
AP Lab ID: P2096_7679_004 | **Sample ID: Unit 1 FF Outlet Run 3** | **Acq: 9-APR-2010 12:29:27**
Instr: AutoSpec-Ultima MM1 | **SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51** | **User: MC Datafile: 100409P1-07**

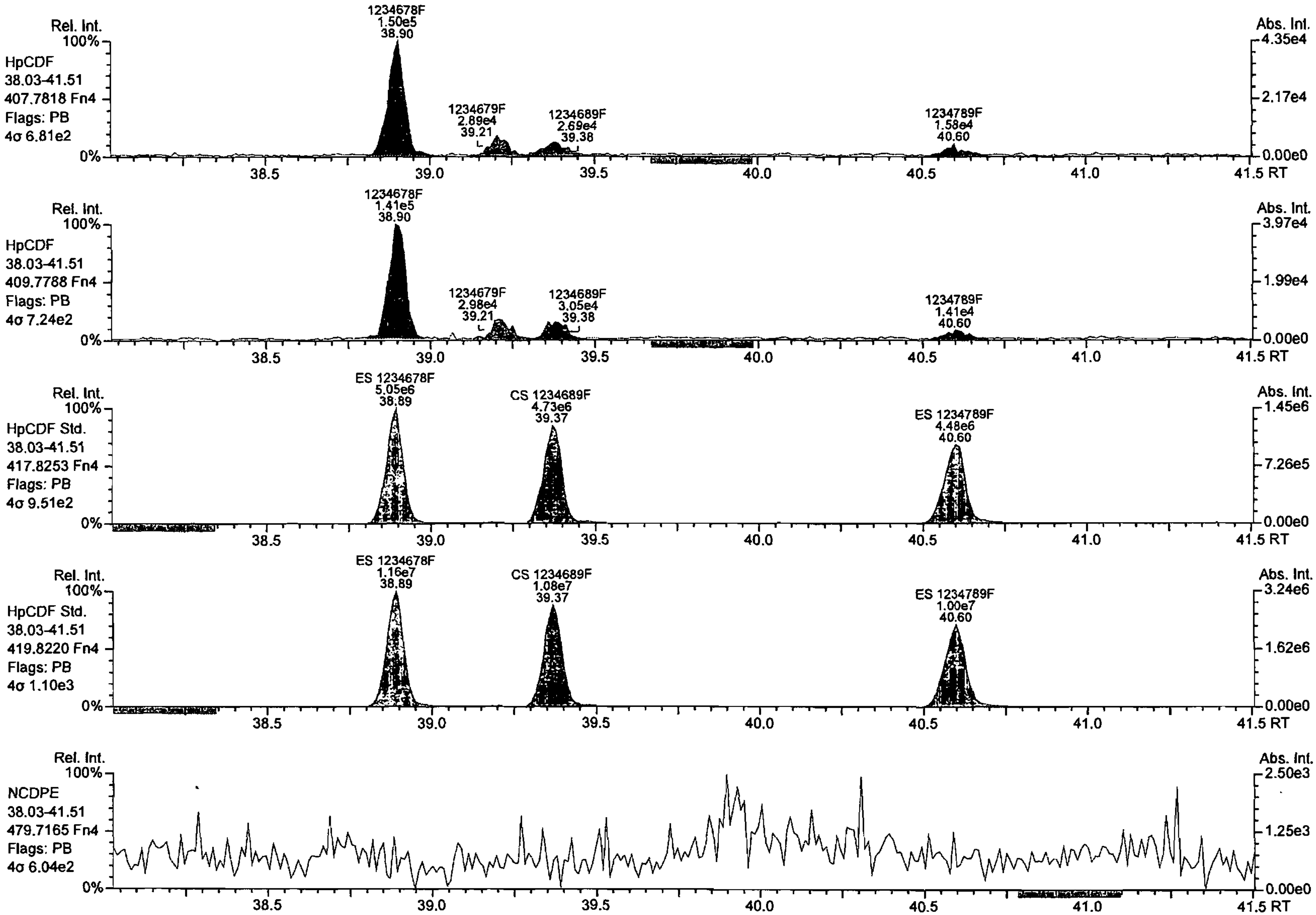


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG) | *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 4378, 0651, 7685 scc: 487-158 | *Revised: 09-Apr-2010 13:26:09 (MC) Printed: 12-Apr-2010 17:25:35 Page 10 of 12*

AP Lab ID: P2096_7679_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 1 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51

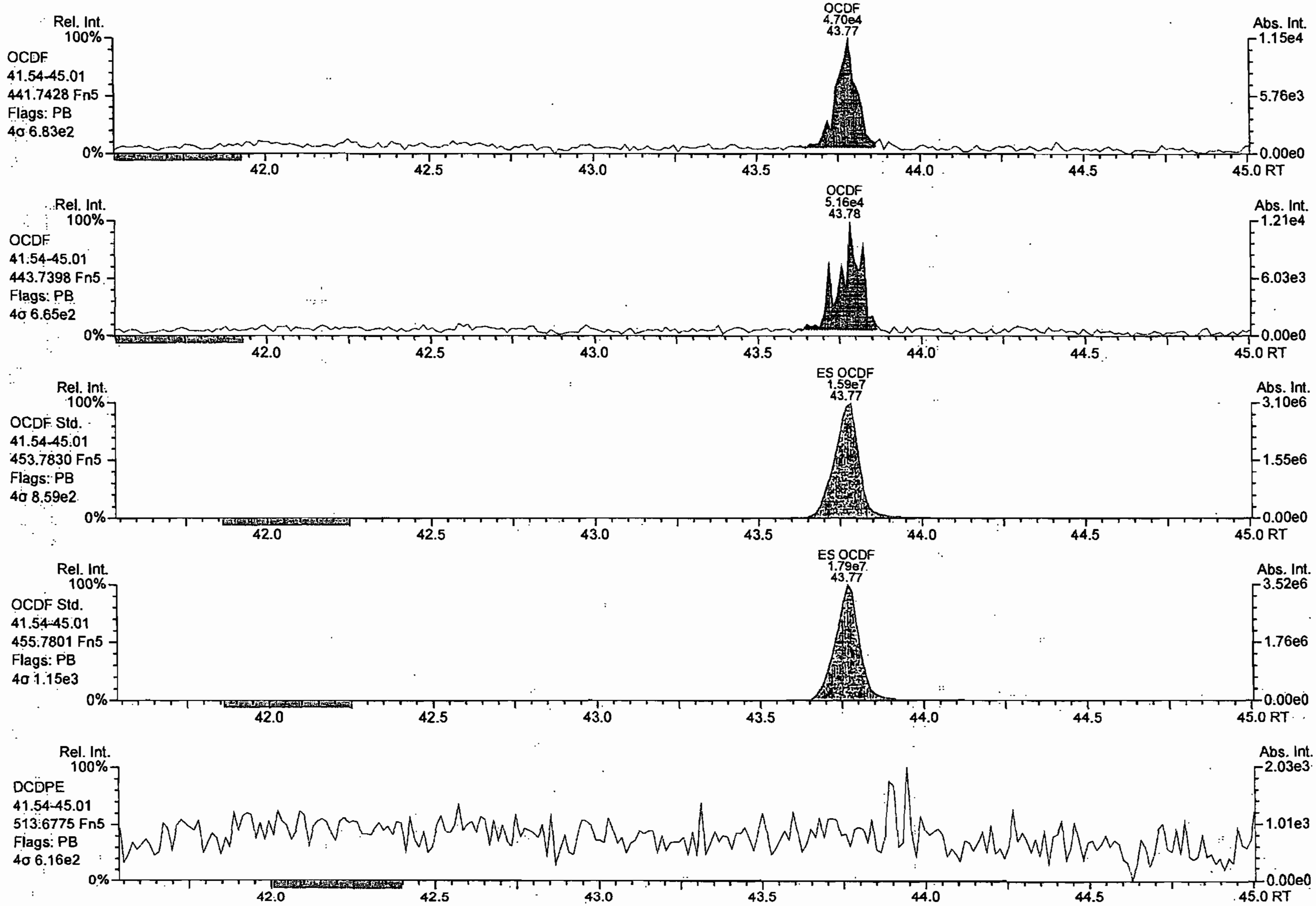
Acq: 9-APR-2010 12:29:27
User: MC Datafile: 100409P1-07



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG)
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 0537, 6949, 3429 scc: 487-158

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 13:25:52 (MC) Printed: 12-Apr-2010 17:25:41 Page 11 of 12

AP Lab ID: P2096_7679_004 | Sample ID: Unit 1 FF Outlet Run 3 | Acq: 9-APR-2010 12:29:27
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 51 | User: MC Datafile: 100409P1-07



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Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_004.utp_res, saved 12-Apr-2010 17:24 (GG) | Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.2 User/System: GG/GGI7-048 cc: 2109, 7382, 8756 scc: 487-158 | Revised: 09-Apr-2010 13:25:58 (MC) Printed: 12-Apr-2010 17:25:46

Lab ID: P2096_7679_005 | Acq'd: 09 Apr 2010 13:19 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Reagent Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 493-202

Datafile: 100409P1-08 | Report: 09 Apr 2010 15:54 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	0.99	-	981	1.3
12378-PeCDD	NotFnd		1.0006	-		-	-	-	0.93	-	1138	1.7
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.04	-	1240	2.2
123678-HxCDD	NotFnd		1.0034	-		-	-	-	0.95	-	1240	2.16
123789-HxCDD	NotFnd		1.0116	-		-	-	-	0.93	-	1240	2.45
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	0.96	-	1289	2.81
OCDD	NotFnd		1.0004	-		-	-	-	1.00	-	1317	4.36
2378-TCDF	NotFnd		1.0009	-		-	-	-	1.08	-	1008	0.86
12378-PeCDF	NotFnd		1.0006	-		-	-	-	1.00	-	1205	1.14
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.04	-	1205	1.19
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.14	-	1387	1.68
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.13	-	1387	1.55
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	1387	1.7
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.12	-	1387	2.31
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.38	-	1122	1.65
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.33	-	1122	2.25
OCDF	NotFnd		1.0004	-		-	-	-	0.96	-	1362	3.57

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.86	1.0259	1.0259	0	3.24E+07	0.79	Y	1.01	94.3
ES 12378-PeCDD	32.47	1.2404	1.2403	-0.2	2.60E+07	1.58	Y	0.78	97.8
ES 123478-HxCDD	36.43	0.9917	0.9918	+0.2	2.19E+07	1.27	Y	0.99	97.3
ES 123678-HxCDD	36.54	0.9947	0.9948	+0.2	2.38E+07	1.27	Y	1.07	98.7
ES 123789-HxCDD	36.83	1.0028	1.0028	0	2.48E+07	1.28	Y	1.09	100
ES 1234678-HpCDD	40.03	1.0902	1.0897	-1.1	1.98E+07	1.04	Y	0.90	96.9
ES OCDD	43.53	1.1862	1.1851	-2.4	3.10E+07	0.90	Y	0.74	92.6
ES 2378-TCDF	25.92	1.0585	1.0585	0	4.73E+07	0.80	Y	1.00	95.4
ES 12378-PeCDF	30.97	1.2646	1.2644	-0.3	3.62E+07	1.57	Y	0.75	97.3
ES 23478-PeCDF	32.11	1.3113	1.3110	-0.4	3.60E+07	1.55	Y	0.74	97.3
ES 123478-HxCDF	35.45	0.9651	0.9653	+0.4	2.69E+07	0.53	Y	1.19	99.9
ES 123678-HxCDF	35.59	0.9689	0.9690	+0.2	2.99E+07	0.51	Y	1.35	98
ES 234678-HxCDF	36.25	0.9867	0.9868	+0.2	2.85E+07	0.53	Y	1.28	98.2
ES 123789-HxCDF	37.21	1.0129	1.0129	0	2.47E+07	0.53	Y	1.20	91.1
ES 1234678-HpCDF	38.88	1.0589	1.0586	-0.7	2.06E+07	0.44	Y	0.95	95.9
ES 1234789-HpCDF	40.59	1.1057	1.1050	-1.5	1.71E+07	0.44	Y	0.82	92.7
ES OCDF	43.76	1.1926	1.1914	-2.6	3.94E+07	0.89	Y	0.96	91

Lab ID: P2096_7679_005 | Acq'd: 09 Apr 2010 13:19 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Reagent Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 493-202

Datafile: 100409P1-08 | Report: 09 Apr 2010 15:54 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.18		-	-	-	3.40E+07	0.81	Y	-	-
JS 1234-TCDF	24.49		-	-	-	4.96E+07	0.80	Y	-	-
JS 123467-HxCDD	36.73		-	-	-	1.13E+07	1.25	Y	-	-
CS 37Cl-2378-TCDD	NotFnd		1.0268				n/a	-		
CS 12347-PeCDD	NotFnd		1.2209							
CS 12346-PeCDF	NotFnd		1.2424							
CS 123469-HxCDF	NotFnd		0.9773							
CS 1234689-HpCDF	NotFnd		1.0720							
SS 37Cl-2378-TCDD	NotFnd		1.0268				n/a	-		
SS 12347-PeCDD	NotFnd		1.2209							
SS 12346-PeCDF	NotFnd		1.2424							
SS 123469-HxCDF	NotFnd		0.9773							
SS 1234689-HpCDF	NotFnd		1.0720							
AS 1368-TCDD	22.91		0.8731	0.8750	+3.0	3.42E+07	0.80	Y	1.08	93
AS 1368-TCDF	20.78		0.8447	0.8486	+5.7	5.83E+07	0.79	Y	1.29	90.9
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	31.24		0.9617	0.9620	+0.6	1.85E+04	+3.2	N	1.00	0.0711
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.2		0.9794	0.9793	-0.2	1.70E+05	1.08	Y	0.01	111
TS 1378-TCDD	NotFnd		0.9345							

FS and TS
KAM 12 Apr 10

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: P2096_7679_005 | Acq'd: 09 Apr 2010 13:19 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB
Client ID: Reagent Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 493-202
Datafile: 100409P1-08 | Report: 09 Apr 2010 15:54 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8539						0.99		981	1.3
1379-TCDD	NotFnd		0.8685						0.99		981	1.3
1369-TCDD	NotFnd		0.8863						0.99		981	1.3
1469-TCDD	NotFnd		0.9189						0.99		981	1.3
1247/1246/1248/1249-TCDD	NotFnd		0.9276						0.99		981	1.3
1378-TCDD	NotFnd		0.9351						0.99		981	1.3
1268-TCDD	NotFnd		0.9430						0.99		981	1.3
1478-TCDD	NotFnd		0.9517						0.99		981	1.3
1279-TCDD	NotFnd		0.9598						0.99		981	1.3
1234/1269-TCDD	NotFnd		0.9740						0.99		981	1.3
1236-TCDD	NotFnd		0.9801						0.99		981	1.3
1237/1238-TCDD	NotFnd		0.9895						0.99		981	1.3
1239-TCDD	NotFnd		0.9952						0.99		981	1.3
2378-TCDD	**NotFnd**		**1.0008**						**0.99**		**981**	**1.3**
1278-TCDD	NotFnd		1.0138						0.99		981	1.3
1267-TCDD	NotFnd		1.0194						0.99		981	1.3
1289-TCDD	NotFnd		1.0396						0.99		981	1.3
12479/12468-PeCDD	NotFnd		0.9210						0.93		1138	1.7
12469-PeCDD	NotFnd		0.9382						0.93		1138	1.7
12368-PeCDD	NotFnd		0.9556						0.93		1138	1.7
12478-PeCDD	NotFnd		0.9614						0.93		1138	1.7
12379-PeCDD	NotFnd		0.9649						0.93		1138	1.7
12369/12467/12489-PeCDD	NotFnd		0.9732						0.93		1138	1.7
12346/12347-PeCDD	NotFnd		0.9850						0.93		1138	1.7
12378-PeCDD	**NotFnd**		**1.0006**						**0.93**		**1138**	**1.7**
12367-PeCDD	NotFnd		1.0037						0.93		1138	1.7
12389-PeCDD	NotFnd		1.0146						0.93		1138	1.7
124679/124689-HxCDD	NotFnd		0.9534						0.97		1240	2.26
123468-HxCDD	NotFnd		0.9717						0.97		1240	2.26
123679/123689-HxCDD	NotFnd		0.9793						0.97		1240	2.26
123469-HxCDD	NotFnd		0.9833						0.97		1240	2.26
123478-HxCDD	**NotFnd**		**1.0004**						**1.04**		**1240**	**2.2**
123678-HxCDD	**NotFnd**		**1.0034**						**0.95**		**1240**	**2.16**
123467-HxCDD	NotFnd		1.0088						0.97		1240	2.26
123789-HxCDD	**NotFnd**		**1.0116**						**0.93**		**1240**	**2.45**

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Lab ID: P2096_7679_005 | Acq'd: 09 Apr 2010 13:19 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: Reagent Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 493-202

Datafile: 100409P1-08 | Report: 09 Apr 2010 15:54 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9794						0.96		1289	2.81
1234678-HpCDD	**NotFnd**		**1.0003**						**0.96**		**1289**	**2.81**
OCDD	**NotFnd**		**1.0004**						**1.00**		**1317**	**4.36**
OCDD-a	NotFnd		1.0003						0.06		1496	81.2
1368-TCDF	NotFnd		0.8012						1.08		1008	0.86
1468-TCDF	NotFnd		0.8216						1.08		1008	0.86
2468-TCDF	NotFnd		0.8461						1.08		1008	0.86
1346/1246-TCDF	NotFnd		0.8607						1.08		1008	0.86
1347/1378/1247-TCDF	NotFnd		0.8672						1.08		1008	0.86
1348-TCDF	NotFnd		0.8792						1.08		1008	0.86
1248/1367/1379-TCDF	NotFnd		0.8846						1.08		1008	0.86
1268-TCDF	NotFnd		0.9011						1.08		1008	0.86
1467-TCDF	NotFnd		0.9067						1.08		1008	0.86
1478-TCDF	NotFnd		0.9137						1.08		1008	0.86
1369/1237-TCDF	NotFnd		0.9293						1.08		1008	0.86
2467-TCDF	NotFnd		0.9348						1.08		1008	0.86
2368-TCDF	NotFnd		0.9408						1.08		1008	0.86
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9445						1.08		1008	0.86
1278-TCDF	NotFnd		0.9641						1.08		1008	0.86
1349-TCDF	NotFnd		0.9693						1.08		1008	0.86
1267-TCDF	NotFnd		0.9755						1.08		1008	0.86
2346/1249-TCDF	NotFnd		0.9834						1.08		1008	0.86
2347/1279-TCDF	NotFnd		0.9922						1.08		1008	0.86
2348-TCDF	NotFnd		0.9966						1.08		1008	0.86
2378-TCDF	**NotFnd**		**1.0009**						**1.08**		**1008**	**0.86**
2367/3467-TCDF	NotFnd		1.0164						1.08		1008	0.86
1269-TCDF	NotFnd		1.0260						1.08		1008	0.86
1239-TCDF	NotFnd		1.0375						1.08		1008	0.86
1289-TCDF	NotFnd		1.0834						1.08		1008	0.86
13468/12468-PeCDF	NotFnd		0.9057						1.02		1465	1.42
13678/13467/12467-PeCDF	NotFnd		0.9581						1.02		1205	1.17
12368/13478/12478-PeCDF	NotFnd		0.9620						1.02		1205	1.17
14678-PeCDF	NotFnd		0.9667						1.02		1205	1.17
13479-PeCDF	NotFnd		0.9702						1.02		1205	1.17
13469/12479-PeCDF	NotFnd		0.9781						1.02		1205	1.17
12346-PeCDF	NotFnd		0.9829						1.02		1205	1.17

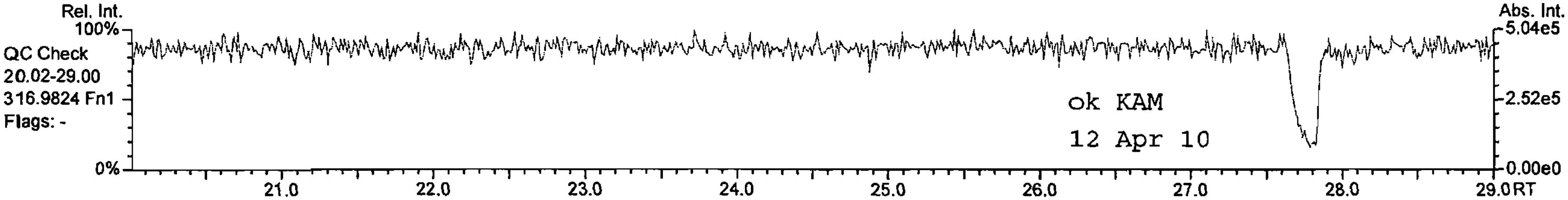
Lab ID: P2096_7679_005 | Acq'd: 09 Apr 2010 13:19 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

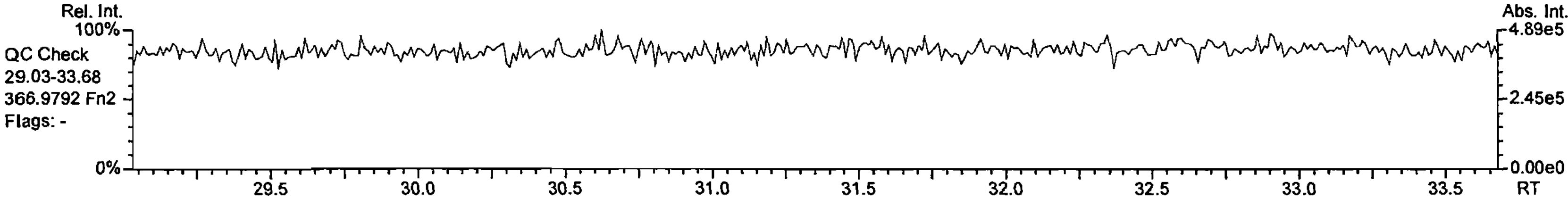
Client ID: Reagent Blank | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 493-202

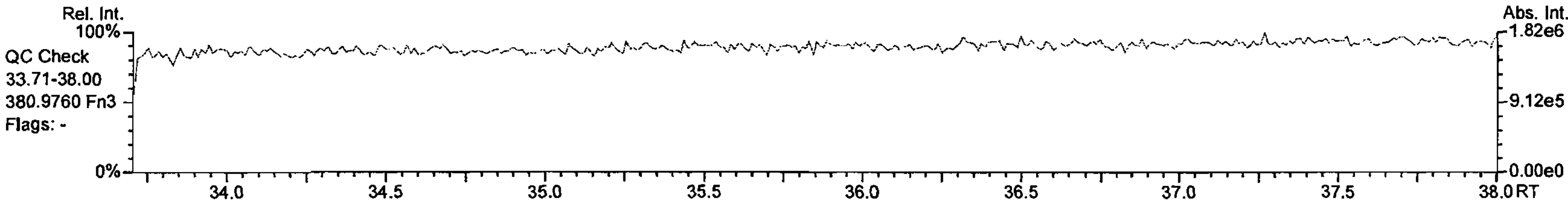
Datafile: 100409P1-08 | Report: 09 Apr 2010 15:54 MC | ES spike: 4000 pg | Split: 2

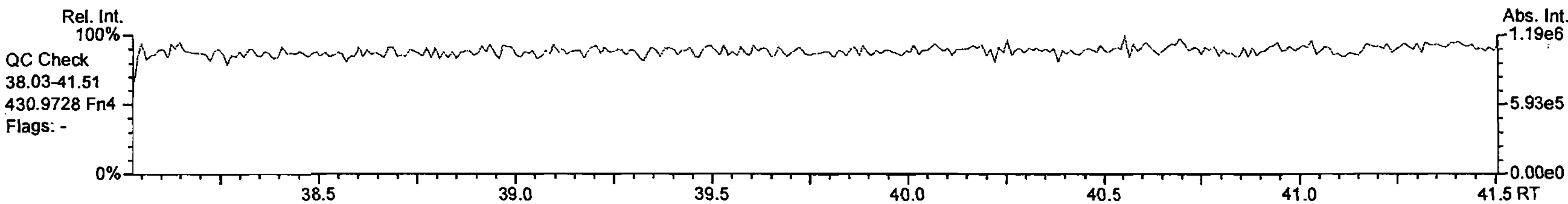
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9858						1.02		1205	1.17
12347-PeCDF	NotFnd		0.9881						1.02		1205	1.17
12348-PeCDF	NotFnd		0.9936						1.02		1205	1.17
12378-PeCDF	**NotFnd**		**1.0006**						**1.00**		**1205**	**1.14**
12678/12367-PeCDF	NotFnd		1.0104						1.02		1205	1.17
12379-PeCDF	NotFnd		1.0151						1.02		1205	1.17
12679-PeCDF	NotFnd		0.9925						1.02		1205	1.17
23467/12369-PeCDF	NotFnd		0.9981						1.02		1205	1.17
23478-PeCDF	**NotFnd**		**1.0005**						**1.04**		**1205**	**1.19**
23478/12489-PeCDF	NotFnd		1.0006						1.04		1205	1.19
12489-PeCDF	NotFnd		1.0023						1.02		1205	1.17
12349-PeCDF	NotFnd		1.0110						1.02		1205	1.17
12389-PeCDF	NotFnd		1.0350						1.02		1205	1.17
123468-HxCDF	NotFnd		0.9609						1.13		1387	1.79
124678/134678-HxCDF	NotFnd		0.9668						1.13		1387	1.79
134679-HxCDF	NotFnd		0.9733						1.13		1387	1.79
124679-HxCDF	NotFnd		0.9788						1.13		1387	1.79
124689-HxCDF	NotFnd		0.9851						1.13		1387	1.79
123467-HxCDF	NotFnd		0.9968						1.13		1387	1.79
123478-HxCDF	**NotFnd**		**1.0004**						**1.14**		**1387**	**1.68**
123678-HxCDF	**NotFnd**		**1.0005**						**1.13**		**1387**	**1.55**
123479-HxCDF	NotFnd		1.0048						1.13		1387	1.79
123469-HxCDF	NotFnd		1.0090						1.13		1387	1.79
123679-HxCDF	NotFnd		0.9943						1.13		1387	1.79
234678-HxCDF	**NotFnd**		**1.0005**						**1.14**		**1387**	**1.7**
234678/123689-HxCDF	NotFnd		1.0004						1.14		1387	1.7
123689-HxCDF	NotFnd		1.0009						1.13		1387	1.79
123789-HxCDF	**NotFnd**		**1.0005**						**1.12**		**1387**	**2.31**
123789/123489-HxCDF	NotFnd		1.0012						1.12		1387	2.31
123489-HxCDF	NotFnd		1.0017						1.13		1387	1.79
1234678-HpCDF	**NotFnd**		**1.0003**						**1.38**		**1122**	**1.65**
1234679-HpCDF	NotFnd		1.0083						1.36		1122	1.92
1234689-HpCDF	NotFnd		1.0132						1.36		1122	1.92
1234789-HpCDF	**NotFnd**		**1.0003**						**1.33**		**1122**	**2.25**
OCDF	**NotFnd**		**1.0004**						**0.96**		**1362**	**3.57**
OCDF-a	NotFnd		1.0002						0.05		1452	66.8

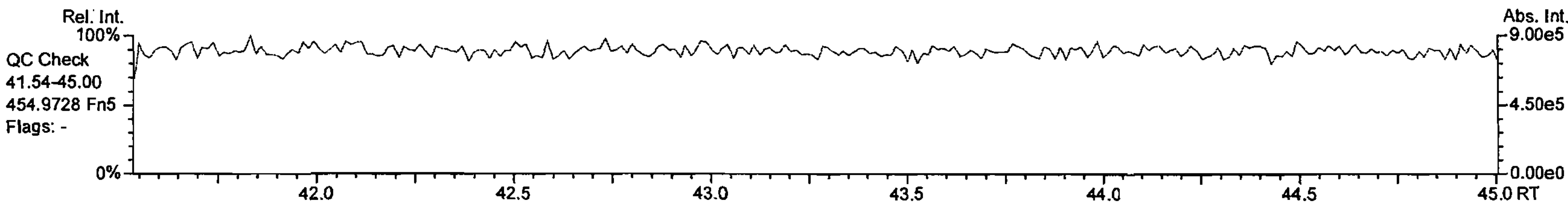
AP Lab ID: P2096_7679_005 | Sample ID: Reagent Blank | Acq: 9-APR-2010 13:19:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52 | User: MC Datafile: 100409P1-08



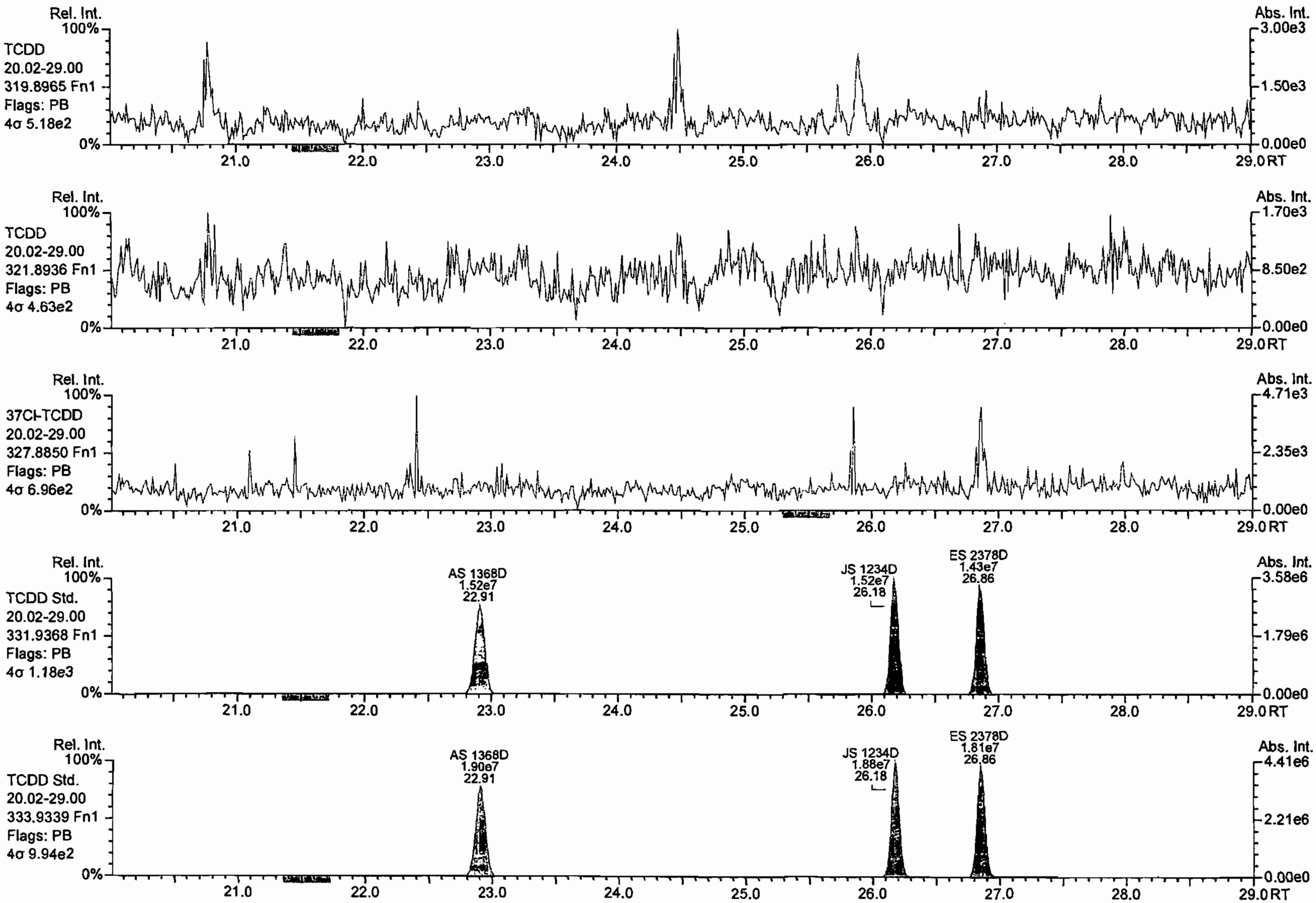








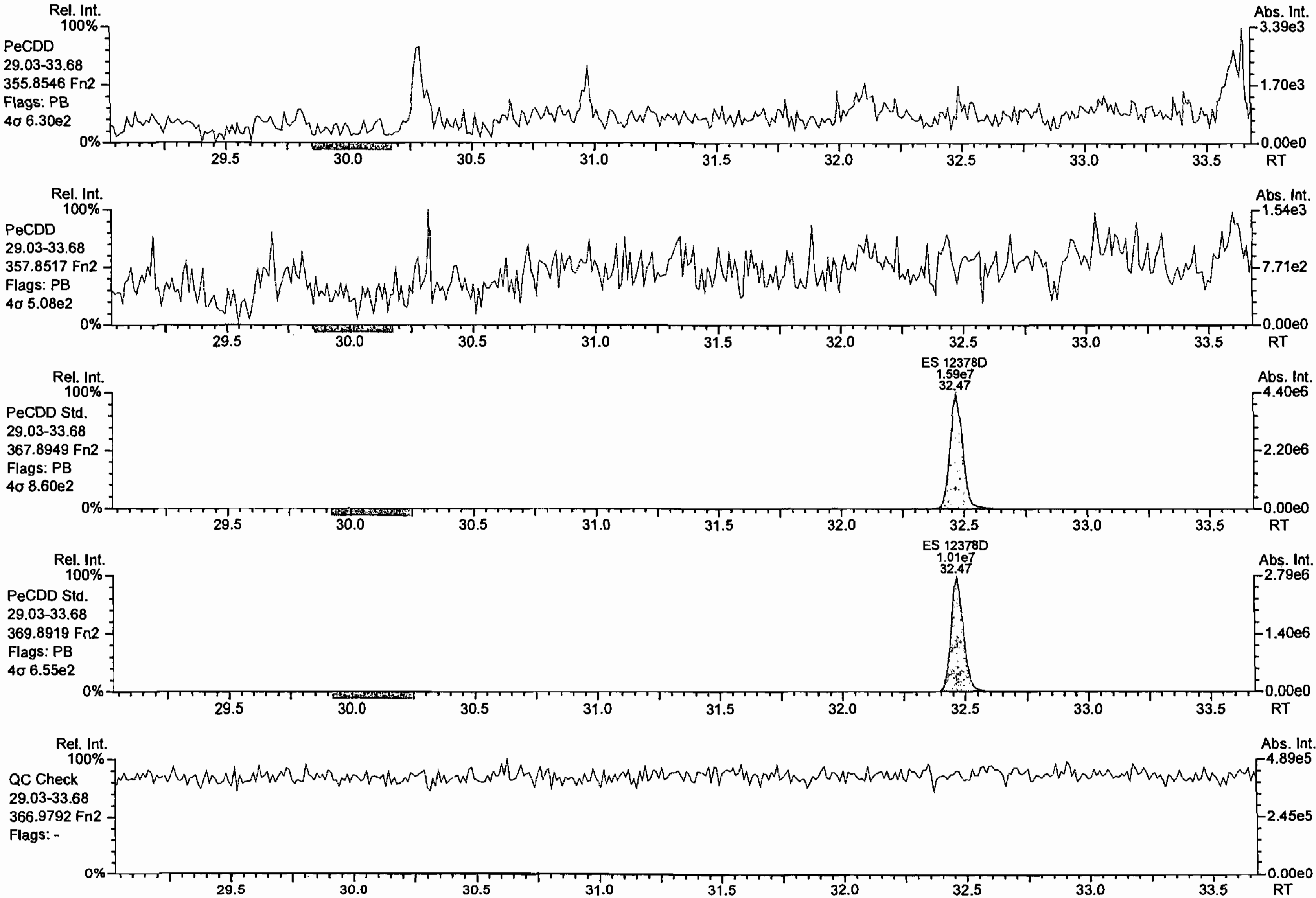
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.ulp_res, saved 09-Apr-2010 15:51 (MC) | *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 493-202 | *PKD: n/a Printed: 09-Apr-2010 16:10:53 Page 1 of 12*


Rel. Int.
100%
TCDD
20.02-29.00
319.8965 Fn1
Flags: PB
4σ 5.18e2
0%
Abs. Int.
3.00e3
1.50e3
0.00e0
21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 RT
Rel. Int.
100%
TCDD
20.02-29.00
321.8936 Fn1
Flags: PB
4σ 4.63e2
0%
Abs. Int.
1.70e3
8.50e2
0.00e0
Rel. Int.
100%
37Cl-TCDD
20.02-29.00
327.8850 Fn1
Flags: PB
4σ 6.96e2
0%
Abs. Int.
4.71e3
2.35e3
0.00e0
Rel. Int.
100%
TCDD Std.
20.02-29.00
331.9368 Fn1
Flags: PB
4σ 1.18e3
0%
AS 1368D
1.52e7
22.91
JS 1234D
1.52e7
26.18
ES 2378D
1.43e7
26.86
Abs. Int.
3.58e6
1.79e6
0.00e0
Rel. Int.
100%
TCDD Std.
20.02-29.00
333.9339 Fn1
Flags: PB
4σ 9.94e2
0%
AS 1368D
1.90e7
22.91
JS 1234D
1.88e7
26.18
ES 2378D
1.81e7
26.86
Abs. Int.
4.41e6
2.21e6
0.00e0

AP Lab ID: P2096_7679_005
Instr: AutoSpec-Ultima MM1

Sample ID: Reagent Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52

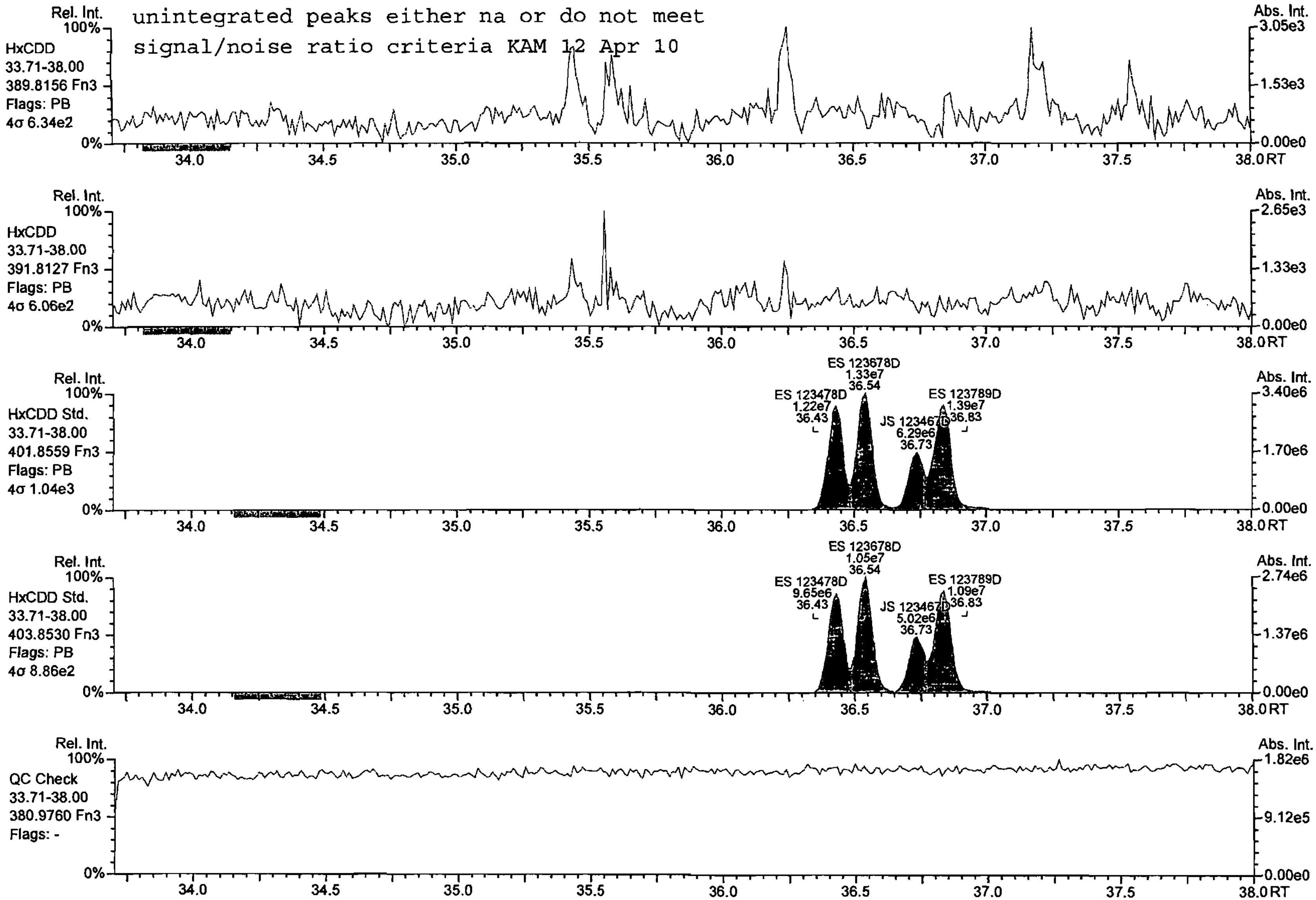
Acq: 9-APR-2010 13:19:56
User: MC Datafile: 100409P1-08



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8506, 3731 scc: 493-202

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 14:26:09 (MC) Printed: 09-Apr-2010 16:11:11 Page 3 of 12

AP Lab ID: P2096_7679_005 | Sample ID: Reagent Blank | Acq: 9-APR-2010 13:19:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52 | User: MC Datafile: 100409P1-08



I - 216

Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8218, 0198 scc: 493-202

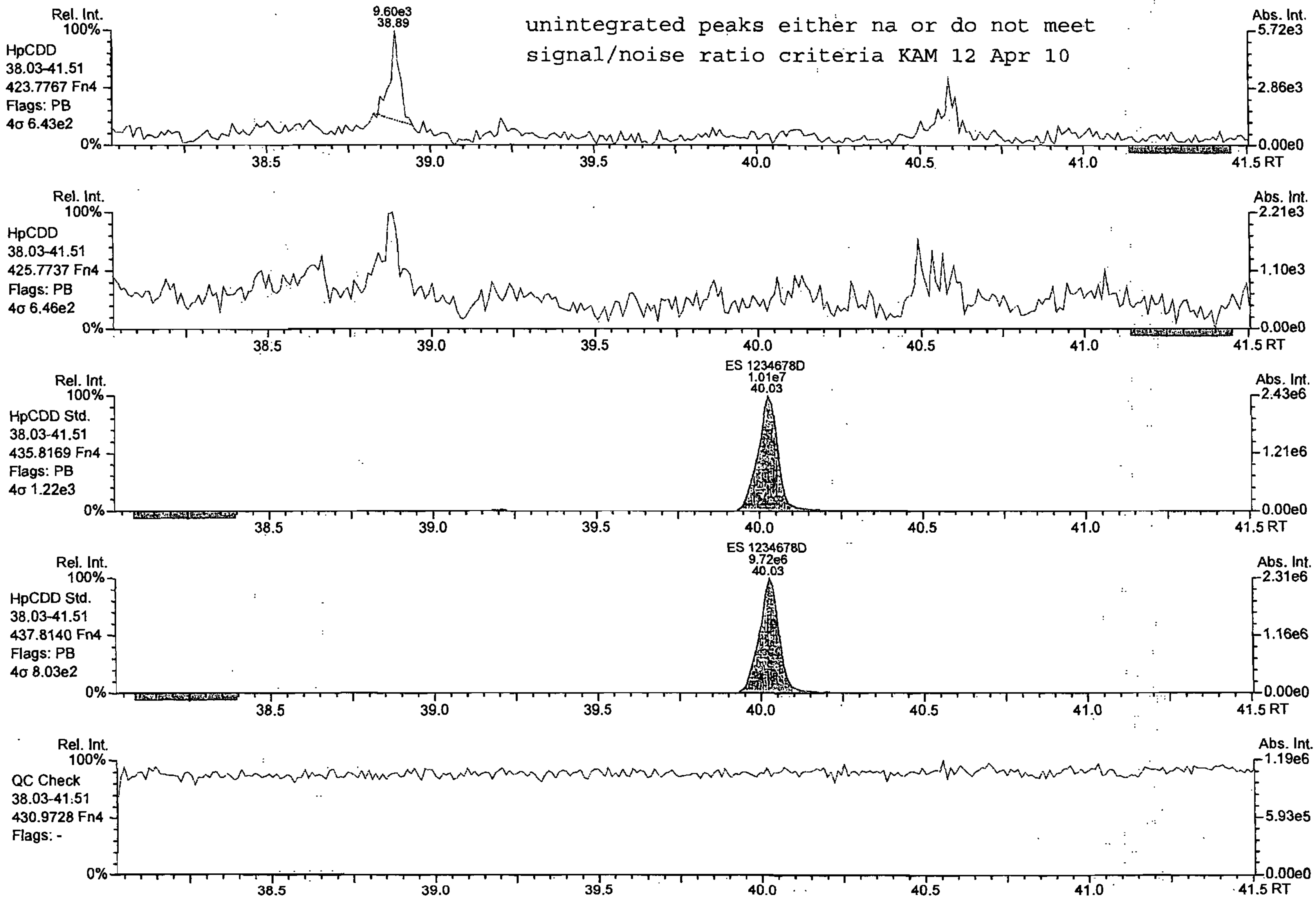
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 14:26:09 (MC) Printed: 09-Apr-2010 16:11:18

AP Lab ID: P2096_7679_005
Instr: AutoSpec-Ultima MM1

Sample ID: Reagent Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52

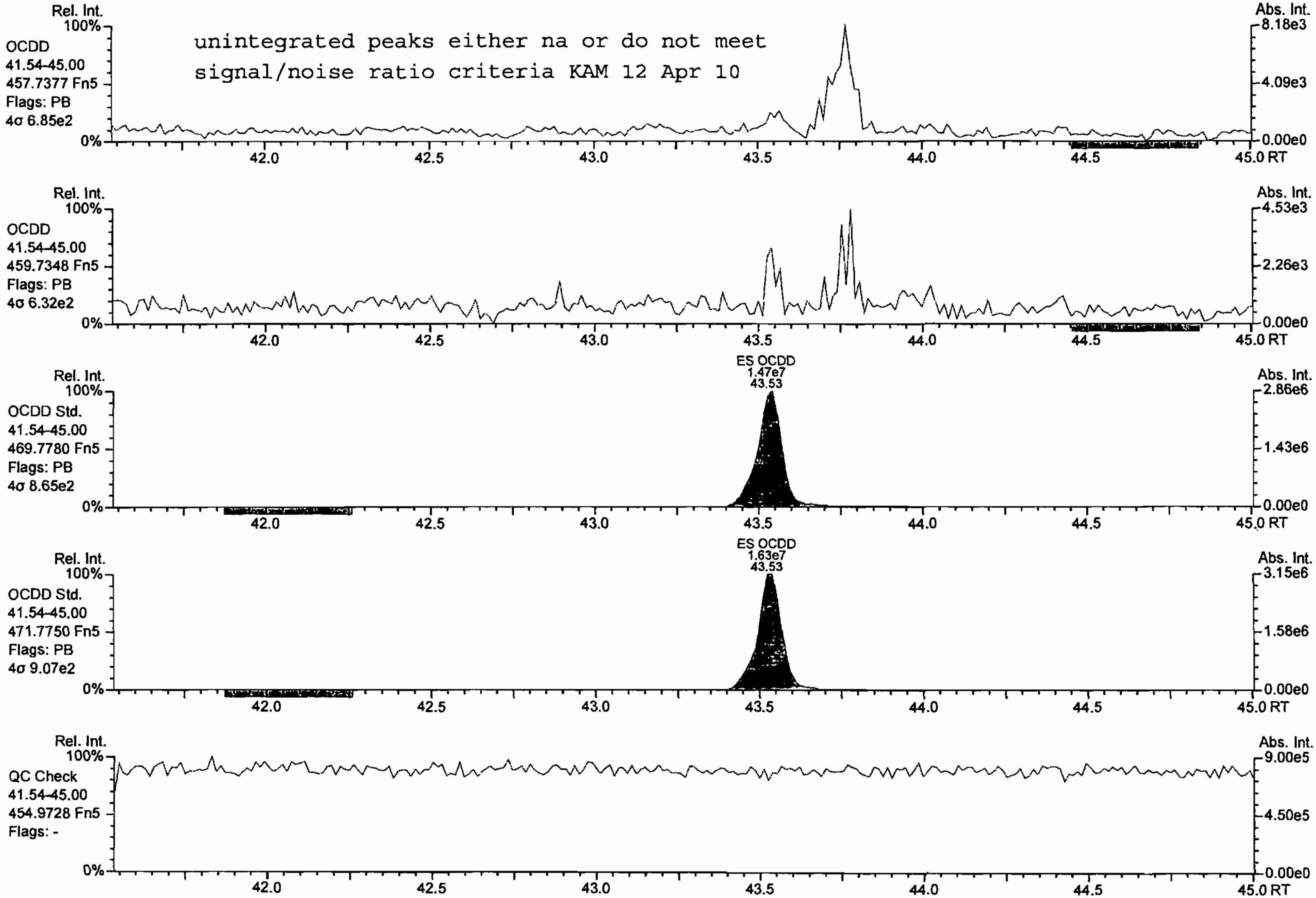
Acq: 9-APR-2010 13:19:56
User: MC Datafile: 100409P1-08

unintegrated peaks either na or do not meet
signal/noise ratio criteria KAM 12 Apr 10



I - 217

AP Lab ID: P2096_7679_005 | Sample ID: Reagent Blank | Acq: 9-APR-2010 13:19:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52 | User: MC Datafile: 100409P1-08



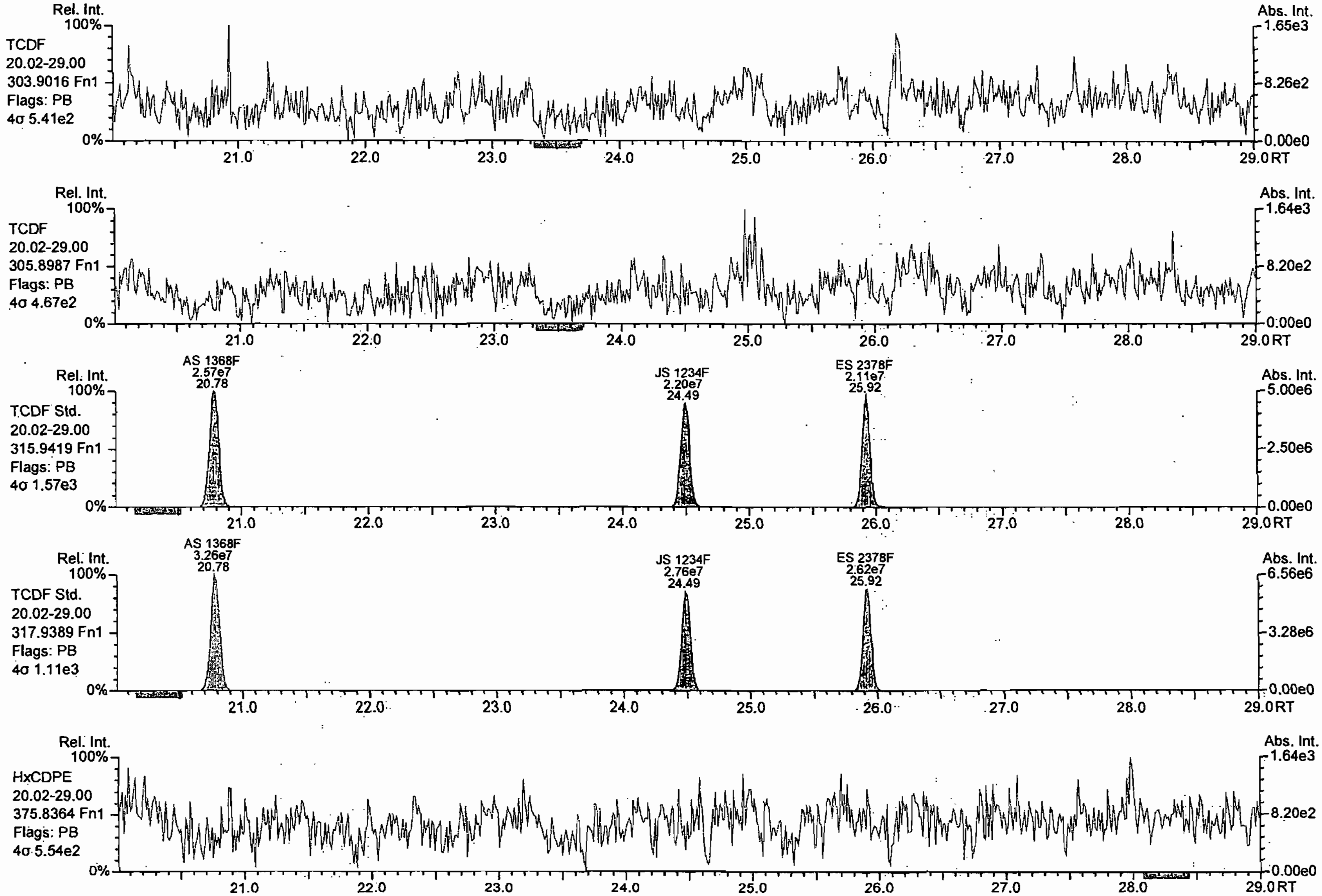
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4990, 7384 scc: 493-202

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 14:26:09 (MC) Printed: 09-Apr-2010 16:11:29 Page 6 of 12

AP Lab ID: P2096_7679_005
Instr: AutoSpec-Ultima MM1

Sample ID: Reagent Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52

Acq: 9-APR-2010 13:19:56
User: MC Datafile: 100409P1-08



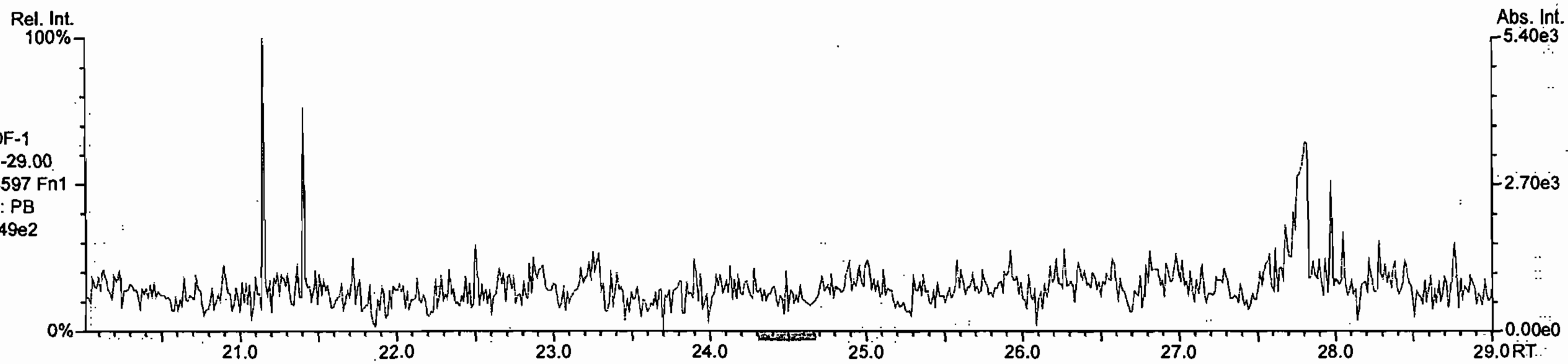
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1297, 3838, 7459 scc: 493-202

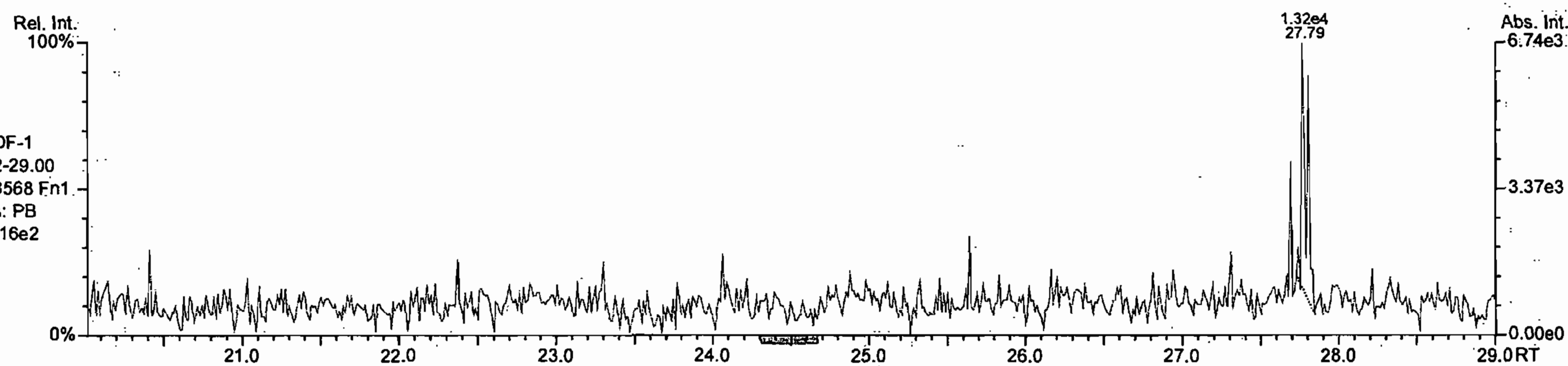
Peak annotation: Areas, Centroids
PKD: 09-Apr-2010 14:26:09 Printed: 09-Apr-2010 16:11:40 Page 7 of 12

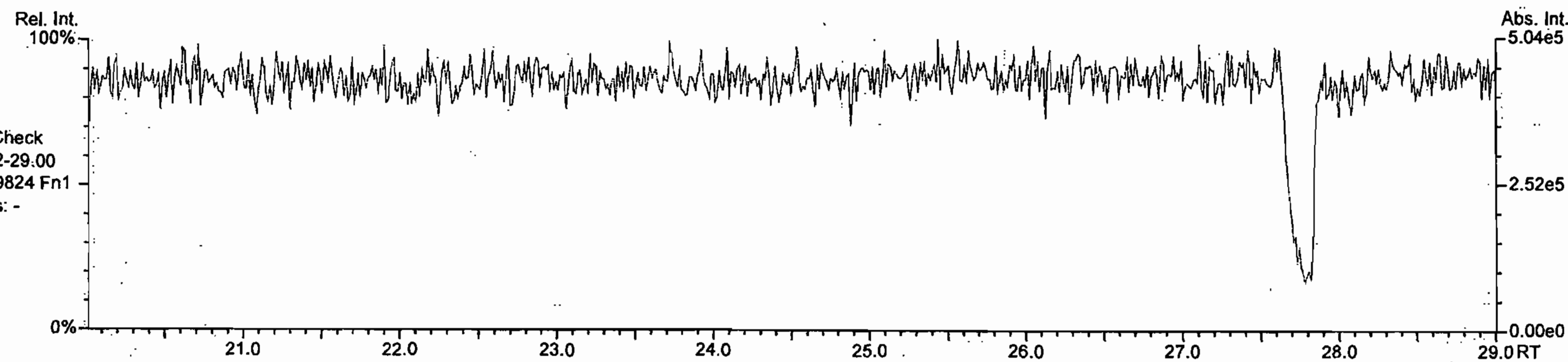
AP Lab ID: P2096_7679_005
Instr: AutoSpec-Ultima MM1

Sample ID: Reagent Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52

Acq: 9-APR-2010 13:19:56
User: MC Datafile: 100409P1-08







1 - 220

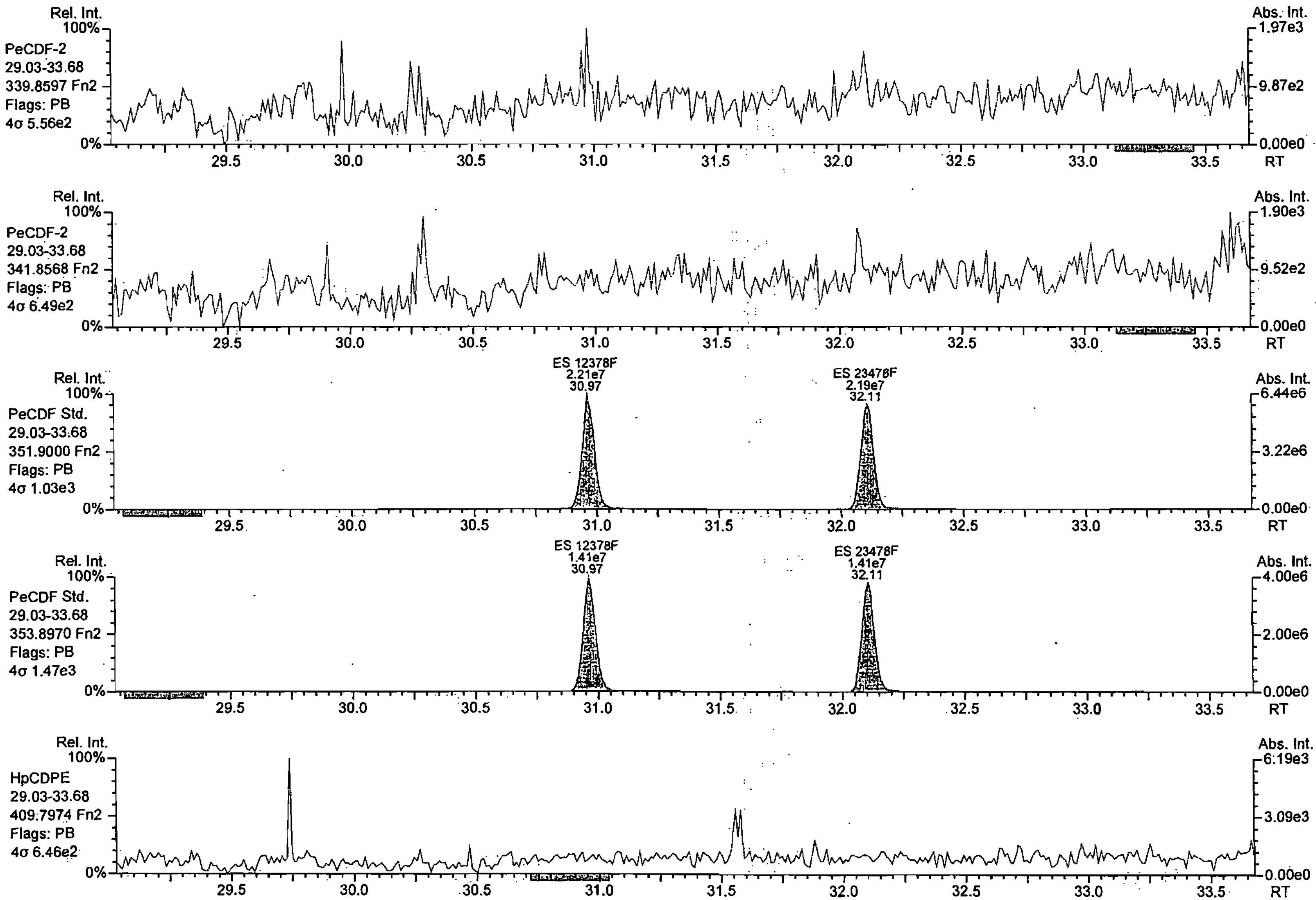
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1700 scc: 493-202

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 14:26:09 (MC) Printed: 09-Apr-2010 16:11:47

AP Lab ID: P2096_7679_005
Instr: AutoSpec-Ultima MM1

Sample ID: Reagent Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52

Acq: 9-APR-2010 13:19:56
User: MC Datafile: 100409P1-08

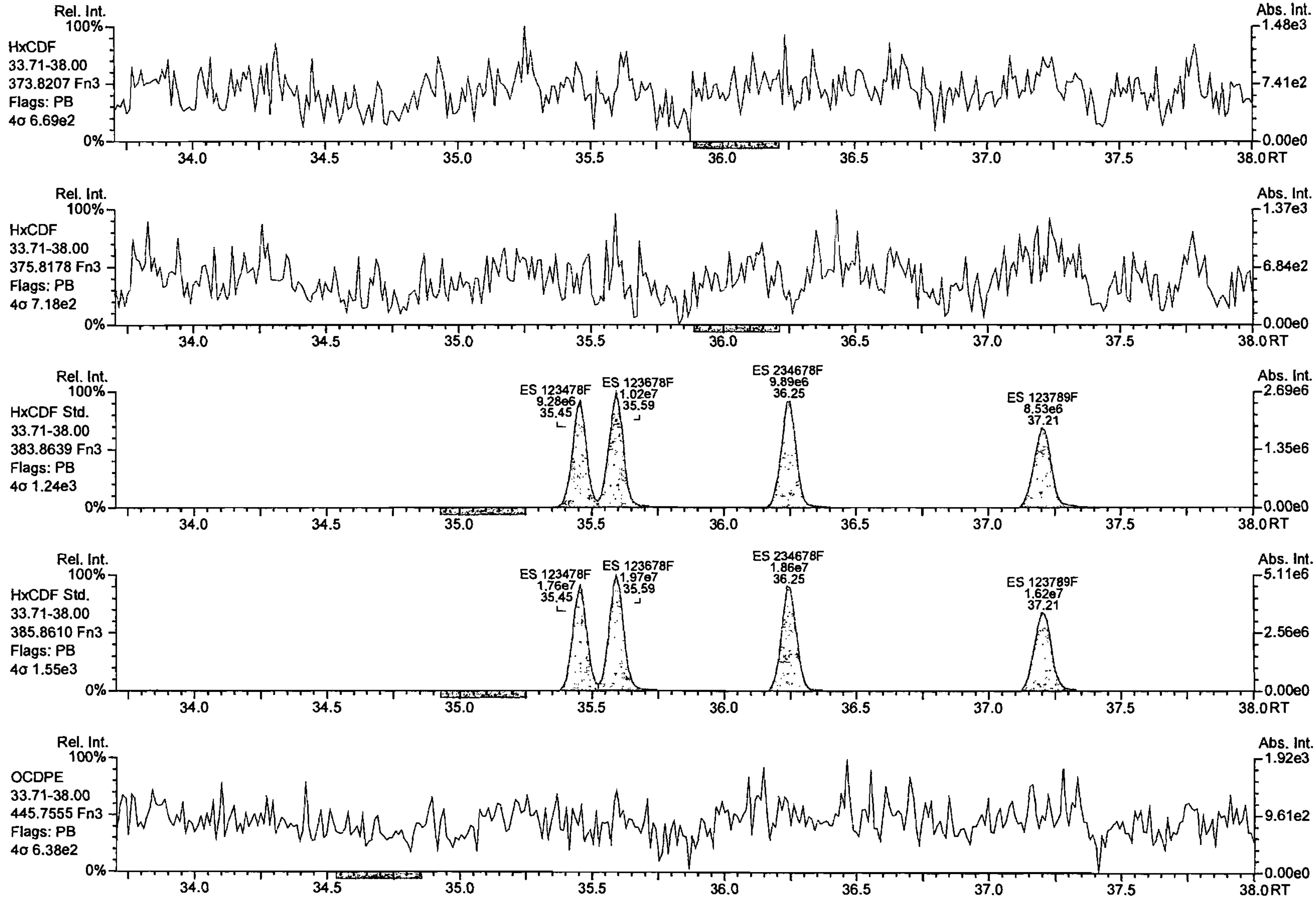


1-221

Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0768, 3641, 1012 scc: 493-202

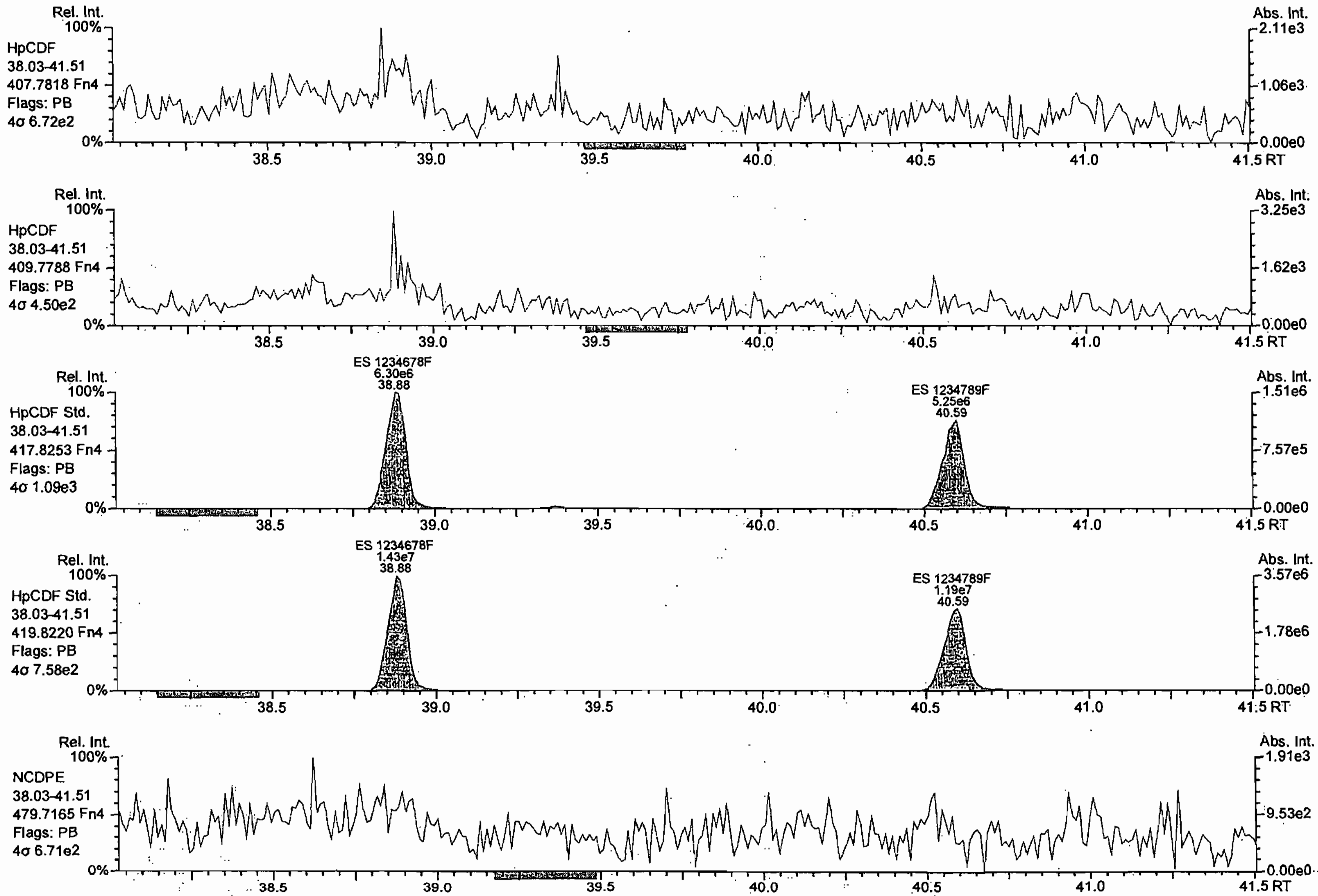
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 14:26:52 (MC) Printed: 09-Apr-2010 16:11:55

AP Lab ID: P2096_7679_005 | Sample ID: Reagent Blank | Acq: 9-APR-2010 13:19:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52 | User: MC Datafile: 100409P1-08



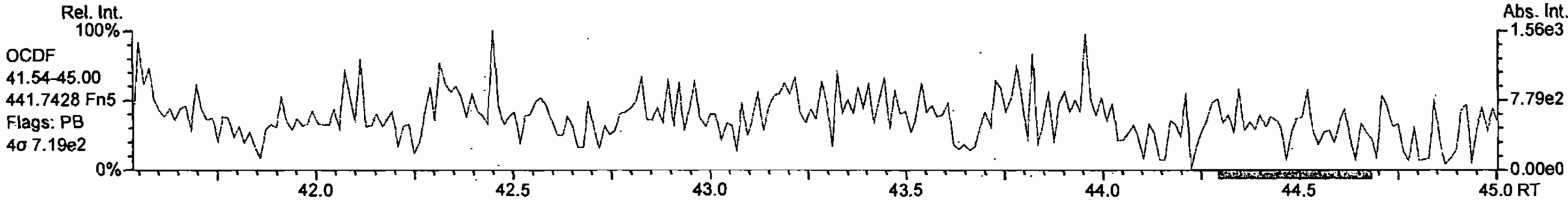
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC) | *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0569, 2624, 6192 scc: 493-202 | *Revised: 09-Apr-2010 14:26:41 (MC) Printed: 09-Apr-2010 16:12:02*

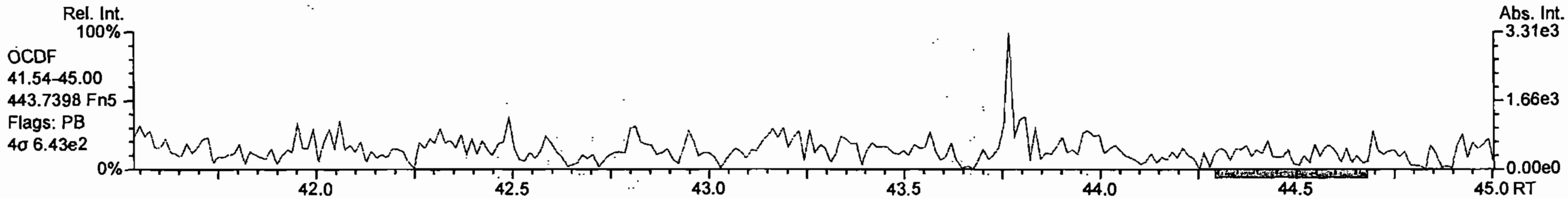
AP Lab ID: P2096_7679_005 | Sample ID: Reagent Blank | Acq: 9-APR-2010 13:19:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52 | User: MC Datafile: 100409P1-08

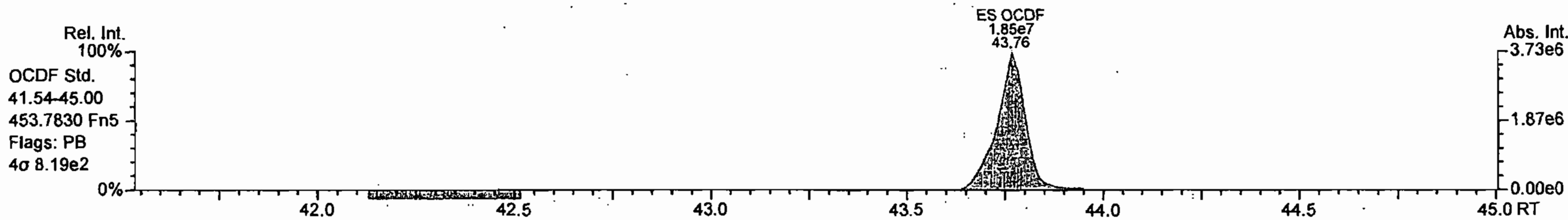


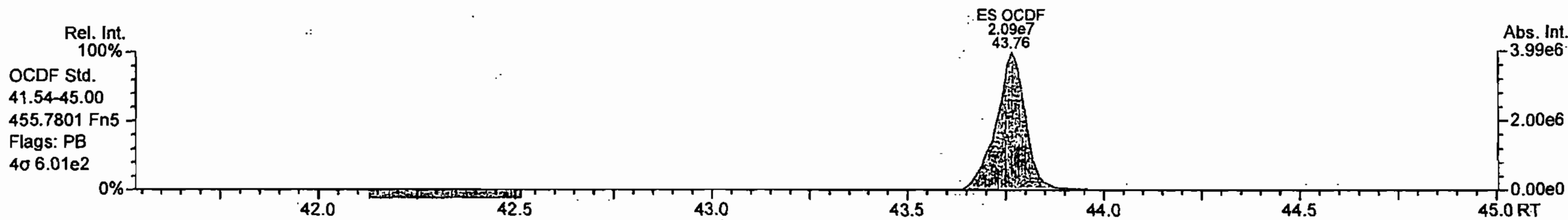
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_005.utp_res, saved 09-Apr-2010 15:51 (MC) | Peak annotation: Areas; Centroids
AP UltraTrace-Pro V4:21 User/System: MC/MCI7-047 cc: 6152, 6957, 9867 scc: 493-202 | PKD: 09-Apr-2010 14:26:09 Printed: 09-Apr-2010 16:12:08 Page 11 of 12

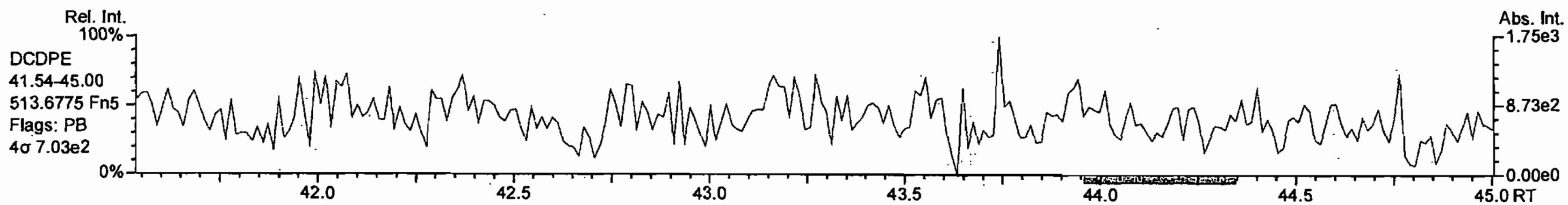
AP Lab ID: P2096_7679_005 | Sample ID: Reagent Blank | Acq: 9-APR-2010 13:19:56
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 52 | User: MC Datafile: 100409P1-08











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Peak annotation: Areas, Centroids

P2096

ANALYTICAL PERSPECTIVES

PART 4

SYSTEM PERFORMANCE

MS & GC

BCS_3 - CONCAL

DOCUMENTATION FOR THE ANALYSIS
OF
POLYCHLORINATED DIBENZO-*p*-DIOXINS & DIBENZOFURANS

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	BCS3_7679_DF_PA 09-APR-2010 07:26 100409P1-01			BCS3_7679_DF_PB 09-APR-2010 15:00 100409P1-10			BCS3_7679_DF_PAB ICAL: MM1_DF_122509						
Name	**RT**	**Response**	**Ra**	**RT**	**Response**	**Ra**	**ICAL**	**RRF(A)**	**RRF(B)**	**AB Avg**	**A-I**	**B-I**	**AB RPD**
2378-TCDD	26.88	2.60E+06	0.77 Y	26.87	2.70E+06	0.81 Y	1.23	0.99	0.99	0.99	-19%	-19%	0%
12378-PeCDD	32.48	9.50E+06	1.55 Y	32.47	9.72E+06	1.58 Y	1.14	0.93	0.93	0.93	-18%	-18%	0%
123478-HxCDD	36.44	8.88E+06	1.25 Y	36.43	9.32E+06	1.24 Y	1.19	1.06	1.03	1.04	-12%	-14%	3%
123678-HxCDD	36.55	8.86E+06	1.25 Y	36.54	8.96E+06	1.25 Y	1.09	0.95	0.95	0.95	-13%	-13%	0%
123789-HxCDD	36.85	8.76E+06	1.23 Y	36.84	9.12E+06	1.21 Y	1.08	0.92	0.94	0.93	-15%	-13%	2%
1234678-HpCDD	40.04	7.30E+06	1.03 Y	40.03	8.05E+06	1.02 Y	1.04	0.96	0.96	0.96	-7%	-7%	0%
OCDD	43.55	1.30E+07	0.89 Y	43.54	1.31E+07	0.91 Y	1.10	1.01	0.99	1.00	-7%	-9%	2%
2378-TCDF	25.94	4.05E+06	0.74 Y	25.94	4.18E+06	0.73 Y	1.13	1.08	1.08	1.08	-4%	-4%	0%
12378-PeCDF	30.98	1.43E+07	1.53 Y	30.97	1.44E+07	1.53 Y	1.16	0.99	1.01	1.00	-15%	-13%	2%
23478-PeCDF	32.12	1.48E+07	1.53 Y	32.11	1.49E+07	1.52 Y	1.13	1.04	1.05	1.04	-9%	-8%	1%
123478-HxCDF	35.47	1.16E+07	1.24 Y	35.46	1.24E+07	1.22 Y	1.26	1.13	1.15	1.14	-10%	-9%	1%
123678-HxCDF	35.61	1.33E+07	1.25 Y	35.60	1.36E+07	1.23 Y	1.25	1.15	1.11	1.13	-8%	-11%	4%
234678-HxCDF	36.26	1.27E+07	1.26 Y	36.25	1.30E+07	1.28 Y	1.18	1.15	1.13	1.14	-2%	-4%	2%
123789-HxCDF	37.22	1.16E+07	1.25 Y	37.21	1.20E+07	1.25 Y	1.20	1.13	1.11	1.12	-6%	-8%	2%
1234678-HpCDF	38.89	1.12E+07	1.03 Y	38.88	1.18E+07	1.03 Y	1.39	1.37	1.39	1.38	-2%	0%	2%
1234789-HpCDF	40.60	9.35E+06	1.06 Y	40.59	9.81E+06	1.04 Y	1.42	1.34	1.32	1.33	-6%	-7%	2%
OCDF	43.78	1.57E+07	0.91 Y	43.77	1.68E+07	0.91 Y	1.01	0.96	0.97	0.96	-5%	-5%	1%
ES 2378-TCDD	26.85	2.62E+07	0.81 Y	26.85	2.72E+07	0.79 Y	1.04	1.01	1.01	1.01	-3%	-3%	0%
ES 12378-PeCDD	32.47	2.04E+07	1.65 Y	32.46	2.09E+07	1.59 Y	0.96	0.79	0.78	0.78	-18%	-19%	1%
ES 123478-HxCDD	36.43	1.68E+07	1.26 Y	36.42	1.82E+07	1.28 Y	1.01	1.01	0.98	0.99	0%	-3%	3%
ES 123678-HxCDD	36.54	1.87E+07	1.28 Y	36.53	1.89E+07	1.27 Y	1.14	1.12	1.02	1.07	-1%	-11%	10%
ES 123789-HxCDD	36.83	1.91E+07	1.26 Y	36.82	1.94E+07	1.25 Y	1.14	1.14	1.04	1.09	0%	-9%	9%
ES 1234678-HpCDD	40.03	1.52E+07	1.06 Y	40.02	1.67E+07	1.06 Y	0.98	0.91	0.90	0.90	-7%	-9%	1%
ES OCDD	43.53	2.57E+07	0.90 Y	43.52	2.64E+07	0.88 Y	0.76	0.77	0.71	0.74	1%	-7%	8%
ES 2378-TCDF	25.92	3.76E+07	0.80 Y	25.92	3.88E+07	0.80 Y	0.94	0.99	1.00	1.00	6%	7%	1%
ES 12378-PeCDF	30.96	2.89E+07	1.59 Y	30.95	2.84E+07	1.57 Y	0.95	0.76	0.74	0.75	-19%	-22%	4%
ES 23478-PeCDF	32.10	2.86E+07	1.56 Y	32.09	2.83E+07	1.55 Y	0.90	0.76	0.73	0.74	-16%	-18%	3%
ES 123478-HxCDF	35.45	2.05E+07	0.52 Y	35.44	2.15E+07	0.52 Y	1.50	1.23	1.16	1.19	-18%	-23%	6%
ES 123678-HxCDF	35.59	2.31E+07	0.52 Y	35.58	2.44E+07	0.51 Y	1.63	1.39	1.31	1.35	-15%	-19%	5%
ES 234678-HxCDF	36.24	2.21E+07	0.52 Y	36.24	2.31E+07	0.51 Y	1.50	1.33	1.24	1.28	-12%	-17%	7%
ES 123789-HxCDF	37.20	2.05E+07	0.52 Y	37.19	2.17E+07	0.53 Y	1.32	1.23	1.17	1.20	-7%	-12%	5%
ES 1234678-HpCDF	38.88	1.64E+07	0.44 Y	38.87	1.70E+07	0.45 Y	1.11	0.98	0.92	0.95	-12%	-18%	7%
ES 1234789-HpCDF	40.59	1.39E+07	0.44 Y	40.58	1.48E+07	0.45 Y	0.92	0.83	0.80	0.82	-9%	-13%	5%
ES OCDF	43.77	3.28E+07	0.90 Y	43.75	3.47E+07	0.89 Y	1.07	0.98	0.93	0.96	-8%	-13%	5%

Name	BCS3_7679_DF_PA 09-APR-2010 07:26 100409P1-01			BCS3_7679_DF_PB 09-APR-2010 15:00 100409P1-10			BCS3_7679_DF_PAB ICAL: MM1_DF_122509						
Name	RT	Response	Ra	RT	Response	Ra	ICAL	RRF(A)	RRF(B)	AB Avg	A-I	B-I	AB RPD
JS 1234-TCDD	26.18	1.29E+07	0.81 Y	26.17	1.35E+07	0.79 Y	-						
JS 1234-TCDF	24.49	1.89E+07	0.80 Y	24.49	1.93E+07	0.79 Y	-						
JS 123467-HxCDD	36.73	4.16E+06	1.21 Y	36.72	4.65E+06	1.29 Y	-						
CS 37Cl-2378-TCDD	26.88	1.19E+07	-	26.87	1.26E+07	-	1.11	1.15	1.17	1.16	3%	5%	2%
CS 12347-PeCDD	31.95	2.06E+07	1.65 Y	31.94	2.12E+07	1.62 Y	1.03	0.80	0.79	0.79	-23%	-24%	1%
CS 12346-PeCDF	30.42	3.03E+07	1.56 Y	30.41	3.01E+07	1.55 Y	0.92	0.80	0.78	0.79	-13%	-15%	3%
CS 123469-HxCDF	35.90	2.12E+07	0.53 Y	35.89	2.19E+07	0.51 Y	1.31	1.28	1.18	1.23	-2%	-10%	8%
CS 1234689-HpCDF	39.36	1.47E+07	0.44 Y	39.35	1.57E+07	0.45 Y	0.91	0.88	0.84	0.86	-3%	-7%	5%
SS 37Cl-2378-TCDD	26.88	1.19E+07	-	26.87	1.26E+07	-	1.07	1.13	1.16	1.14	6%	8%	2%
SS 12347-PeCDD	31.95	2.06E+07	1.65 Y	31.94	2.12E+07	1.62 Y	1.08	1.01	1.01	1.01	-6%	-6%	0%
SS 12346-PeCDF	30.42	3.03E+07	1.56 Y	30.41	3.01E+07	1.55 Y	0.97	1.05	1.06	1.05	8%	9%	1%
SS 123469-HxCDF	35.90	2.12E+07	0.53 Y	35.89	2.19E+07	0.51 Y	0.81	0.92	0.90	0.91	14%	11%	2%
SS 1234689-HpCDF	39.36	1.47E+07	0.44 Y	39.35	1.57E+07	0.45 Y	0.81	0.90	0.92	0.91	10%	13%	3%
AS 1368-TCDD	22.90	2.83E+07	0.79 Y	22.91	2.87E+07	0.81 Y	1.09	1.09	1.07	1.08	0%	-2%	3%
AS 1368-TCDF	20.74	4.89E+07	0.80 Y	20.75	5.00E+07	0.80 Y	1.12	1.29	1.29	1.29	15%	15%	0%
FS 1278-TCDD	NotFnd	-	-	NotFnd	-	-	-						
FS 12478-PeCDD	NotFnd	-	-	NotFnd	-	-	-						
FS 123468-HxCDD	NotFnd	-	-	NotFnd	-	-	-						
FS 1234679-HpCDD	39.21	1.03E+05	1.39 N	39.20	1.44E+05	1.01 Y	-	0.01	0.01	0.01			24%
TS 1378-TCDD	NotFnd	-	-	NotFnd	-	-	-						
OCDD-a	43.55	7.83E+05	2.57 Y	43.53	8.09E+05	2.27 Y	0.07	0.06	0.06	0.06	-9%	-9%	1%
OCDF-a	43.78	8.92E+05	2.57 Y	43.77	9.60E+05	2.44 Y	0.06	0.05	0.06	0.05	-9%	-7%	1%
Total TCDD	-	-	-	-	-	-	1.23	0.99	0.99	0.99	-19%	-19%	0%
Total PeCDD	-	-	-	-	-	-	1.14	0.93	0.93	0.93	-18%	-18%	0%
Total HxCDD	-	-	-	-	-	-	1.12	0.97	0.97	0.97	-13%	-13%	0%
Total HpCDD	-	-	-	-	-	-	1.04	0.96	0.96	0.96	-7%	-7%	0%
Total TCDF	-	-	-	-	-	-	1.13	1.08	1.08	1.08	-4%	-4%	0%
Total PeCDF	-	-	-	-	-	-	1.15	1.01	1.03	1.02	-12%	-10%	2%
Total HxCDF	-	-	-	-	-	-	1.22	1.14	1.13	1.13	-7%	-8%	2%
Total HpCDF	-	-	-	-	-	-	1.41	1.36	1.36	1.36	-4%	-4%	0%

	BCS3_7679_DF_PA 09-APR-2010 07:26 100409P1-01	BCS3_7679_DF_PB 09-APR-2010 15:00 100409P1-10

BCS3_7679_DF_PAB
ICAL: MM1_DF_122509

Name	RT	RT
Window Defining Standards Results		
First Eluting Isomer		
1368-TCDD	22.93	22.94
12479/12468-PeCDD	29.90	29.90
124679/124689-HxCDD	34.74	34.73
1234679-HpCDD	39.21	39.20
1368-TCDF	20.77	20.78
13468/12468-PeCDF	28.04	28.04
123468-HxCDF	34.07	34.06
1234678-HpCDF	38.89	38.88
Last Eluting Isomer		
1289-TCDD	27.91	27.91
12389-PeCDD	32.94	32.93
123789-HxCDD	36.85	36.84
1234678-HpCDD	40.04	40.03
1289-TCDF	28.08	28.07
12389-PeCDF	33.22	33.22
123789-HxCDF	37.22	37.21
1234789-HpCDF	40.60	40.59
Isomer Specificity Test Standard Results		
1239-TCDD	26.73	26.72
2378-TCDD	26.88	26.87
2348-TCDF	25.83	25.83
2378-TCDF	25.94	25.94

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METHOD 23 **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name:	Analytical Perspectives		
Initial Calibration:	ICAL: MM1_DF_122509		
Instrument ID:	MM1	GC Column ID:	ZB-5ms
VER Data Filename:	100409P1-01	Analysis Date:	09-APR-2010 07:26:36

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.77	0.65 - 0.89	Y	10	8 - 12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	50.1	40 - 60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.7	40 - 60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.1	40 - 60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	49.4	40 - 60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50	40 - 60	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	101	80 - 120	Y
2,3,7,8-TCDF	M/M+2	0.74	0.65 - 0.89	Y	9.99	8 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32 - 1.78	Y	49.4	40 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32 - 1.78	Y	49.7	40 - 60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	49.7	40 - 60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.9	40 - 60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.5	40 - 60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.5	40 - 60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.6	40 - 60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88 - 1.20	Y	50.4	40 - 60	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	99.7	80 - 120	Y

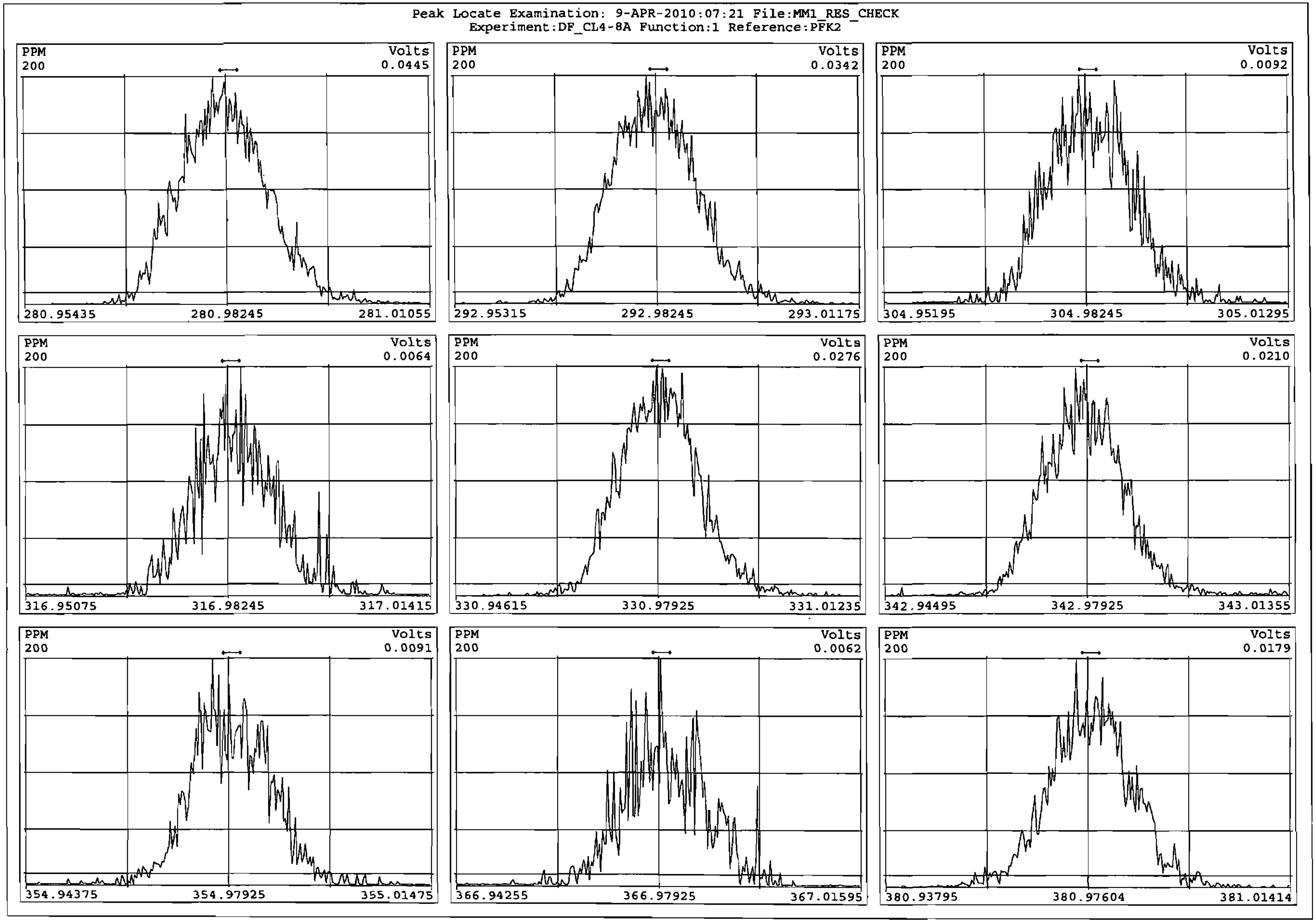
Processed: 09 Apr 2010 15:52 Analyst: MC

METHOD 23 **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: Analytical Perspectives
Initial Calibration: ICAL: MM1_DF_122509
Instrument ID: MM1 GC Column ID: ZB-5ms
VER Data Filename: 100409P1-01 Analysis Date: 09-APR-2010 07:26:36

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	100	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	102	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	105	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	105	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	101	70	-	130	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	208	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	99.6	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32	-	1.78	Y	102	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	102	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	102	70	-	130	Y
13C-OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	205	140	-	260	Y
SURROGATE STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						39.6	28	-	52	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	100	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	99.4	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	101	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	98.7	70	-	130	Y

Processed: 09 Apr 2010 15:52 Analyst: MC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Experiment:DF_CL4-8A Function:1 Reference:PFK2
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PPM 200 Volts 0.0342
292.95315 292.98245 293.01175
PPM 200 Volts 0.0092
304.95195 304.98245 305.01295
PPM 200 Volts 0.0064
316.95075 316.98245 317.01415
PPM 200 Volts 0.0276
330.94615 330.97925 331.01235
PPM 200 Volts 0.0210
342.94495 342.97925 343.01355
PPM 200 Volts 0.0091
354.94375 354.97925 355.01475
PPM 200 Volts 0.0062
366.94255 366.97925 367.01595
PPM 200 Volts 0.0179
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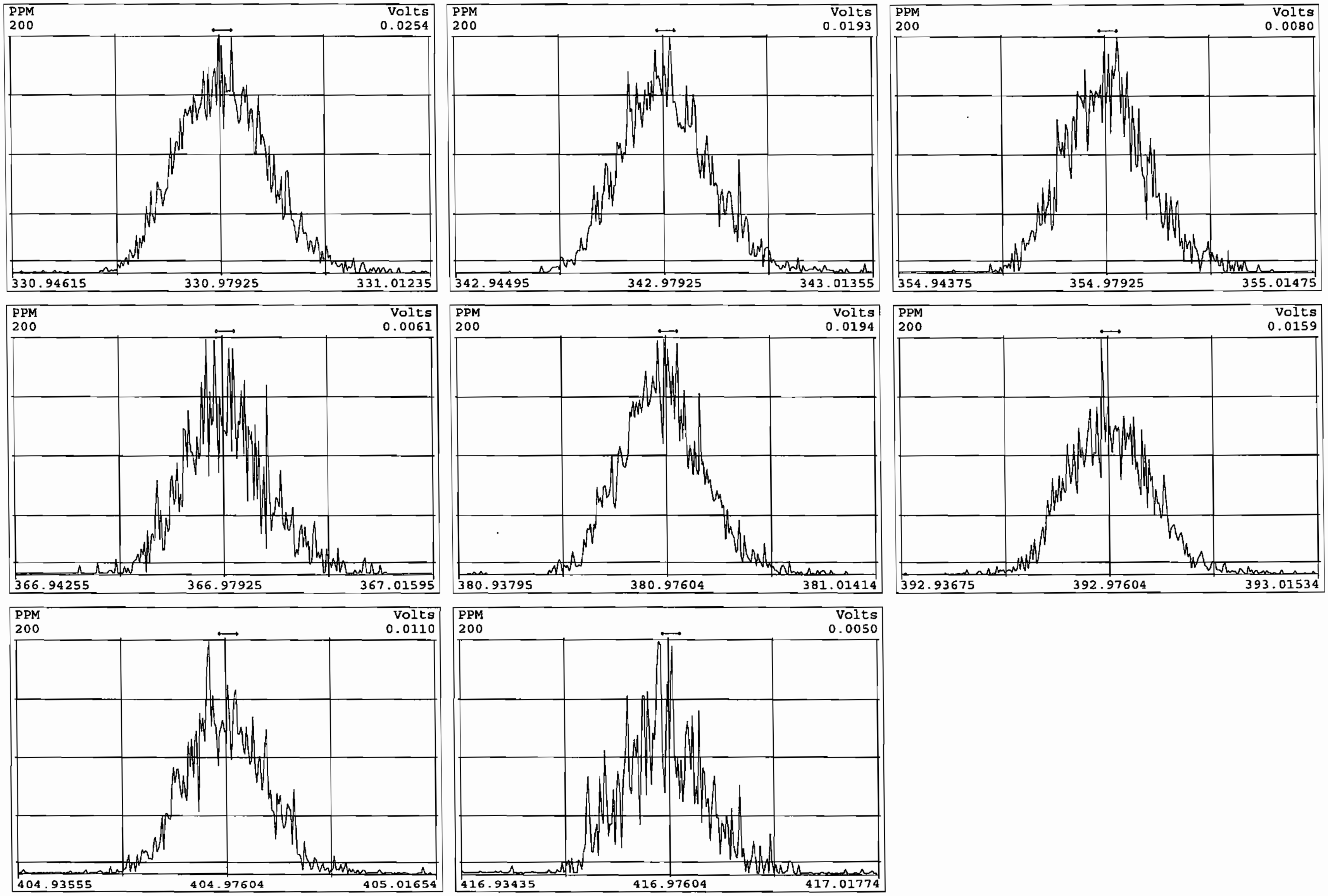
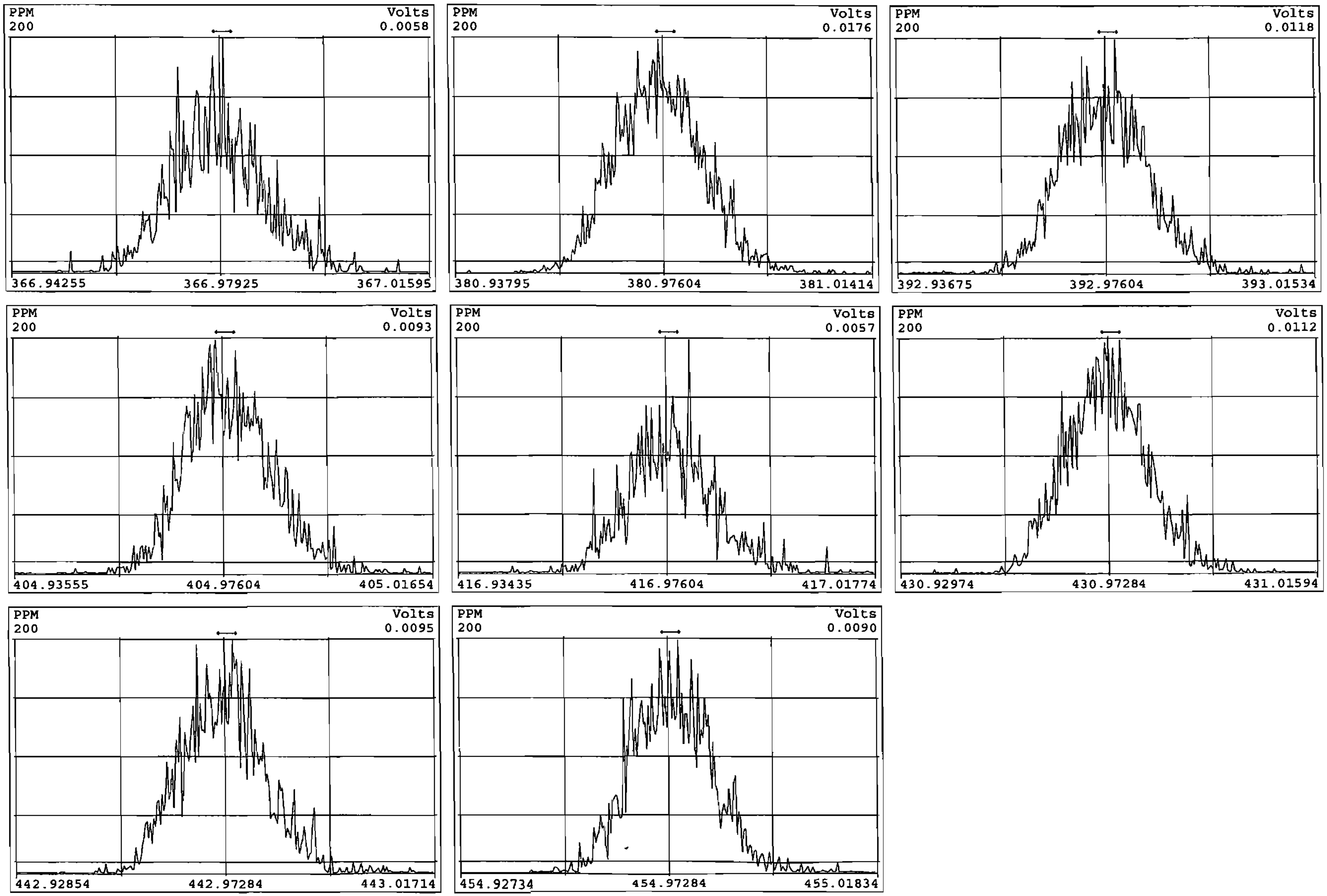
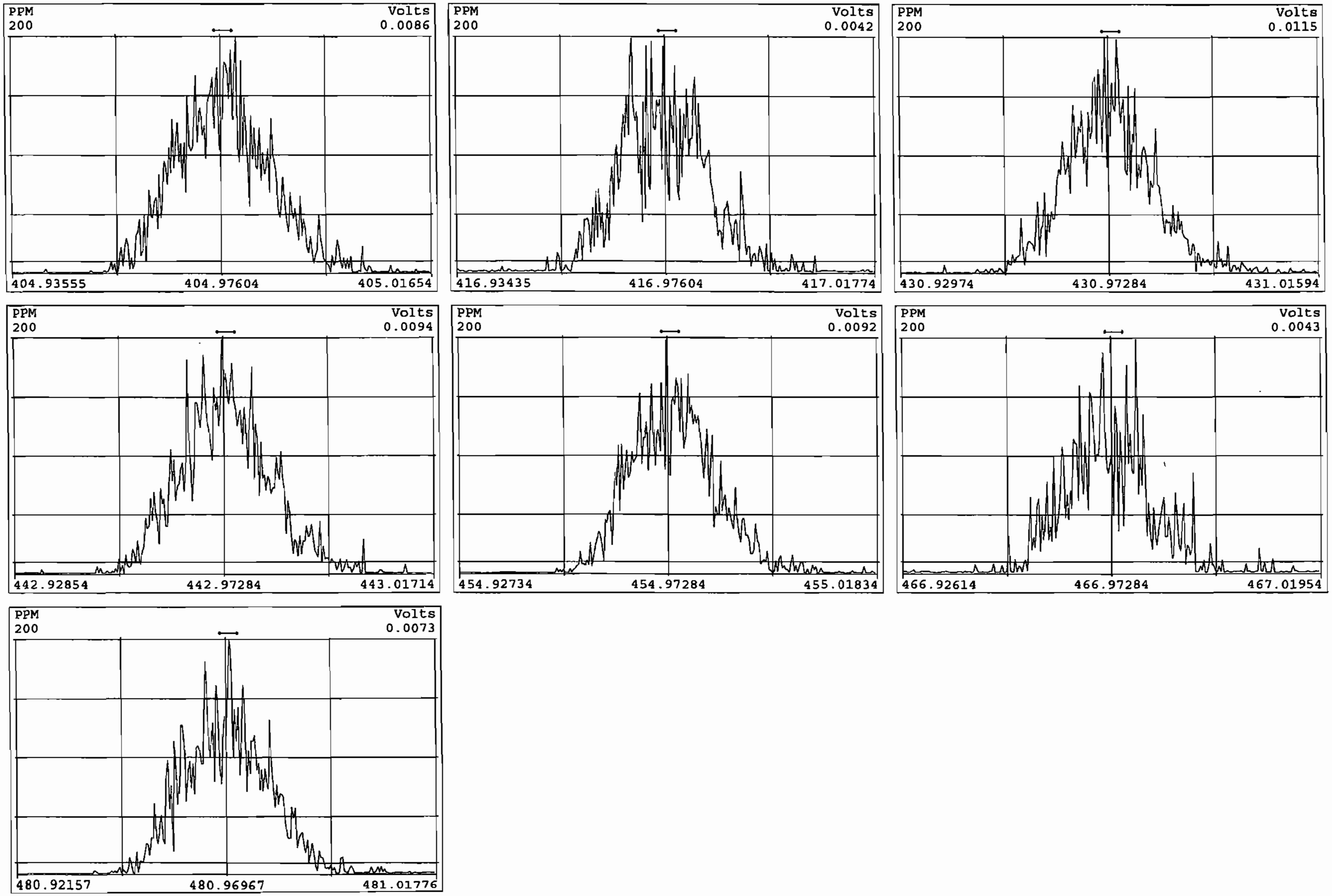
Peak Locate Examination: 9-APR-2010:07:22 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:2 Reference:PFK2



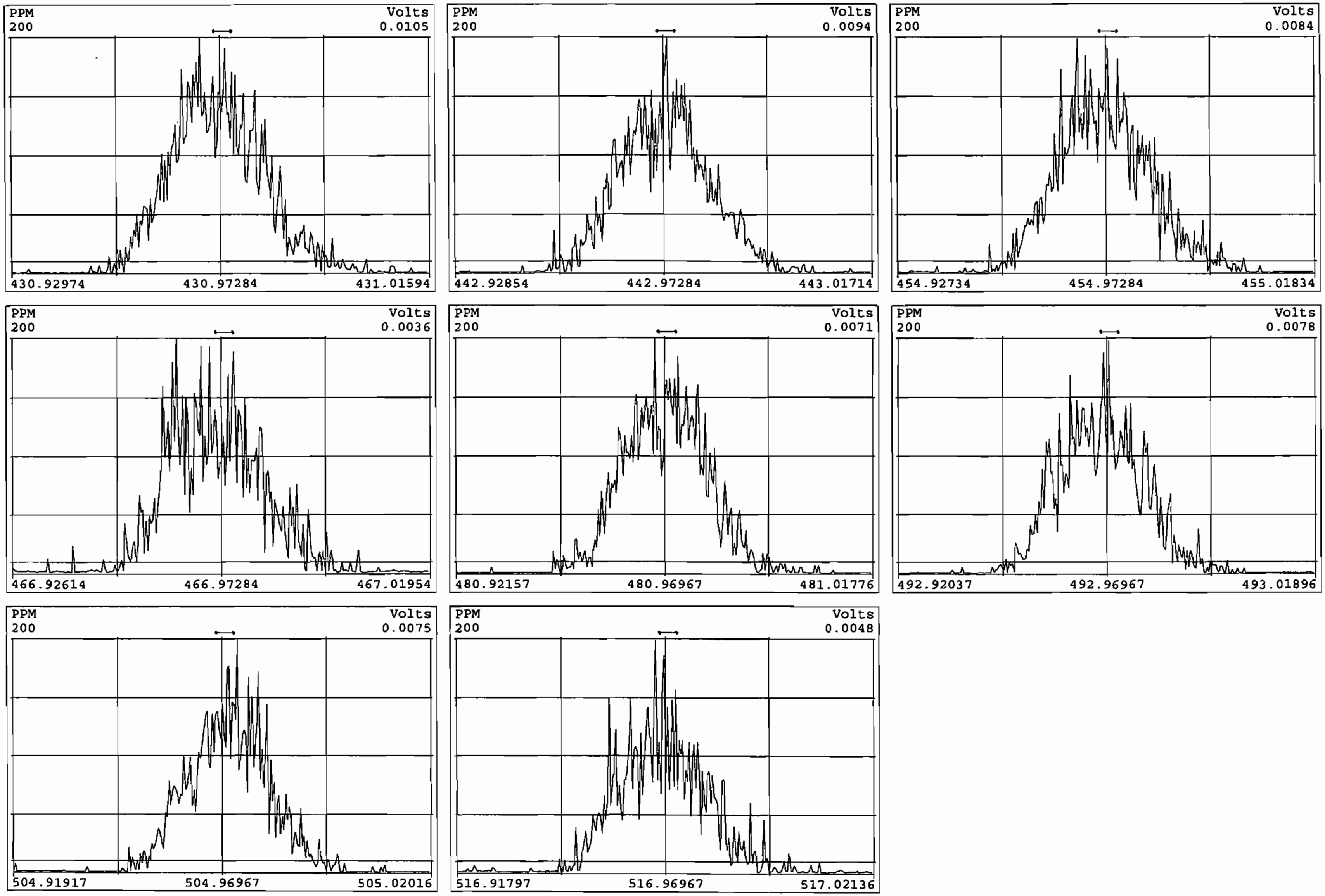
Peak Locate Examination: 9-APR-2010:07:23 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:3 Reference:PFK2



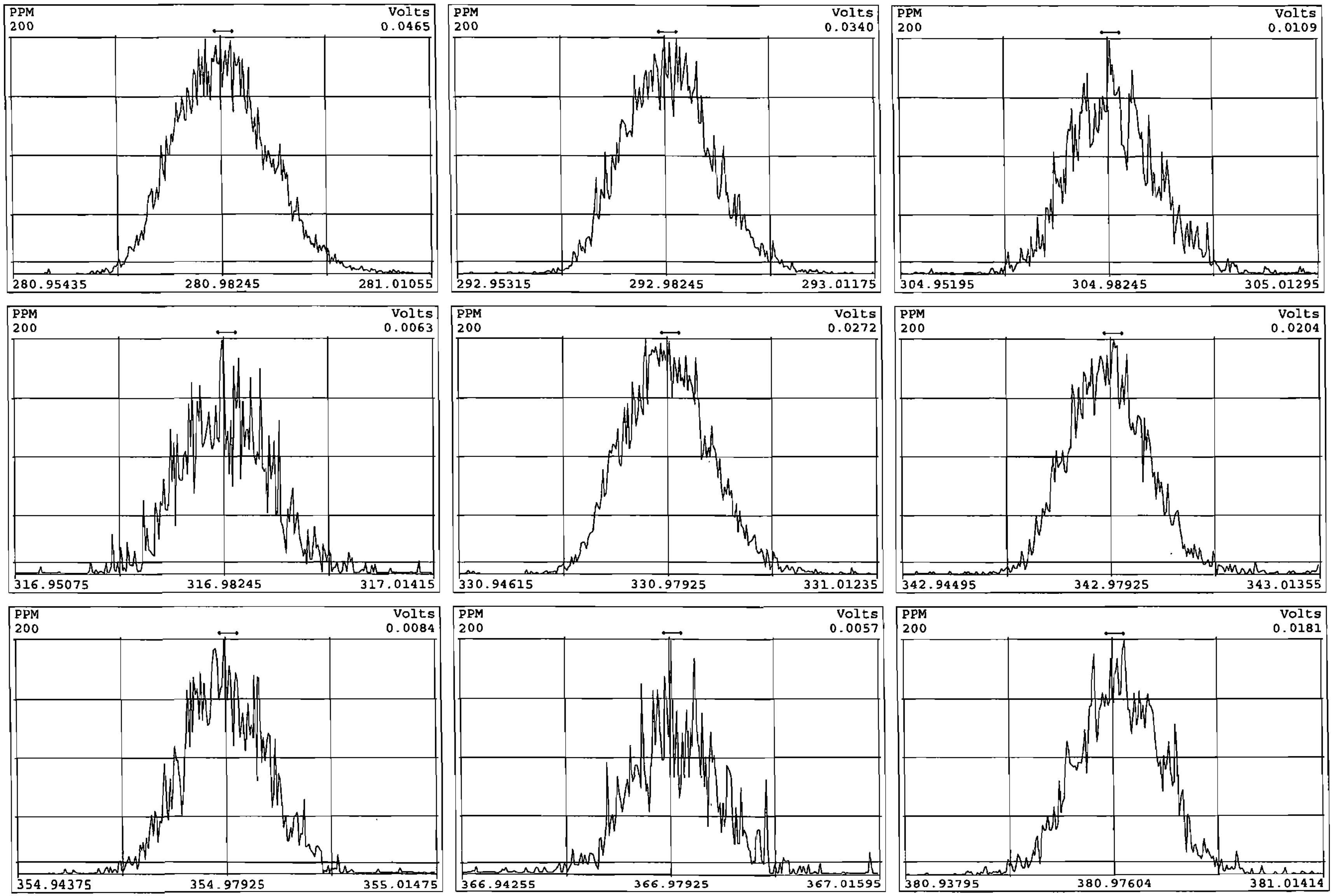
Peak Locate Examination: 9-APR-2010:07:24 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:4 Reference:PFK2



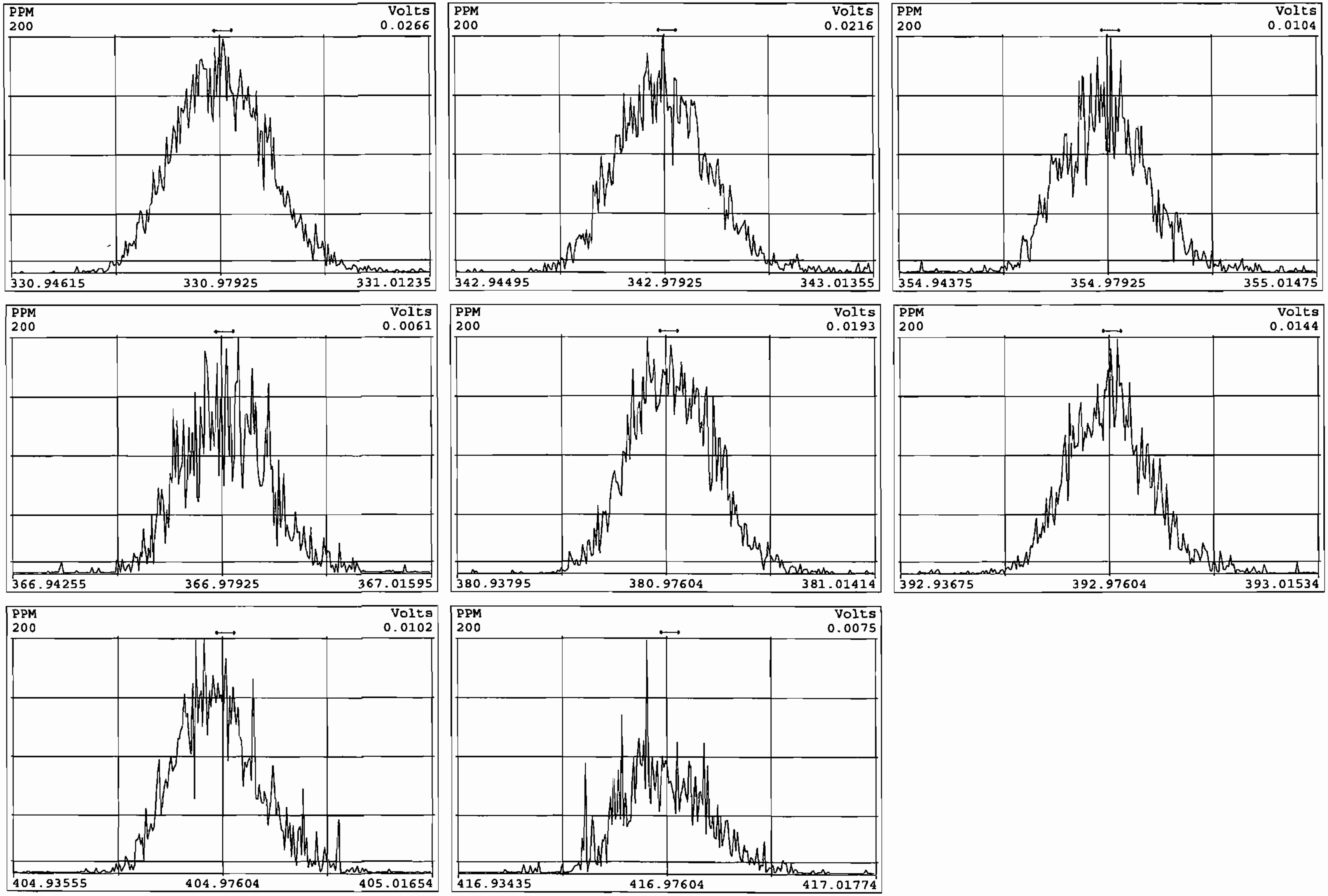
Peak Locate Examination: 9-APR-2010:07:25 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:5 Reference:PFK2



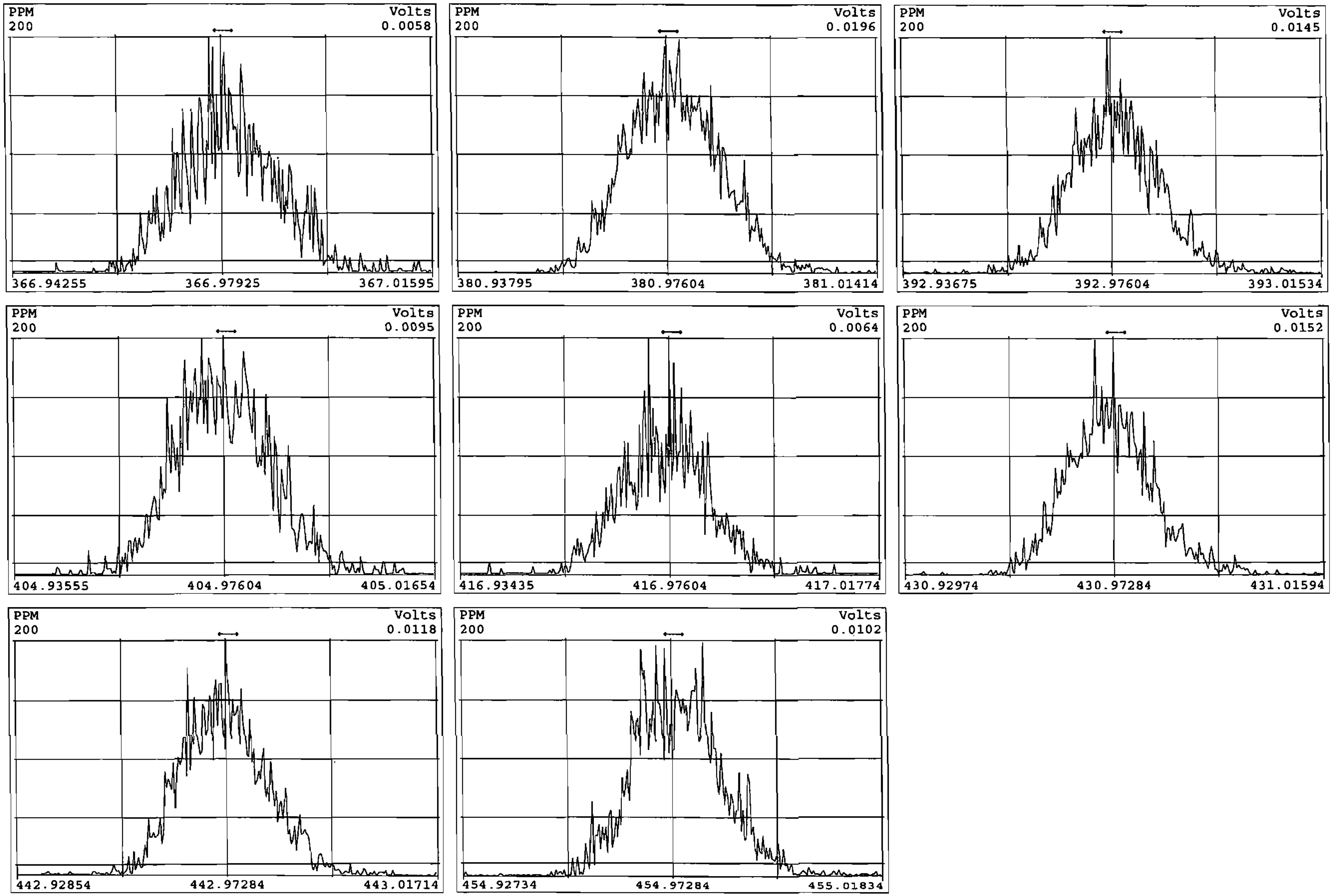
Peak Locate Examination: 9-APR-2010:15:54 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:1 Reference:PFK2



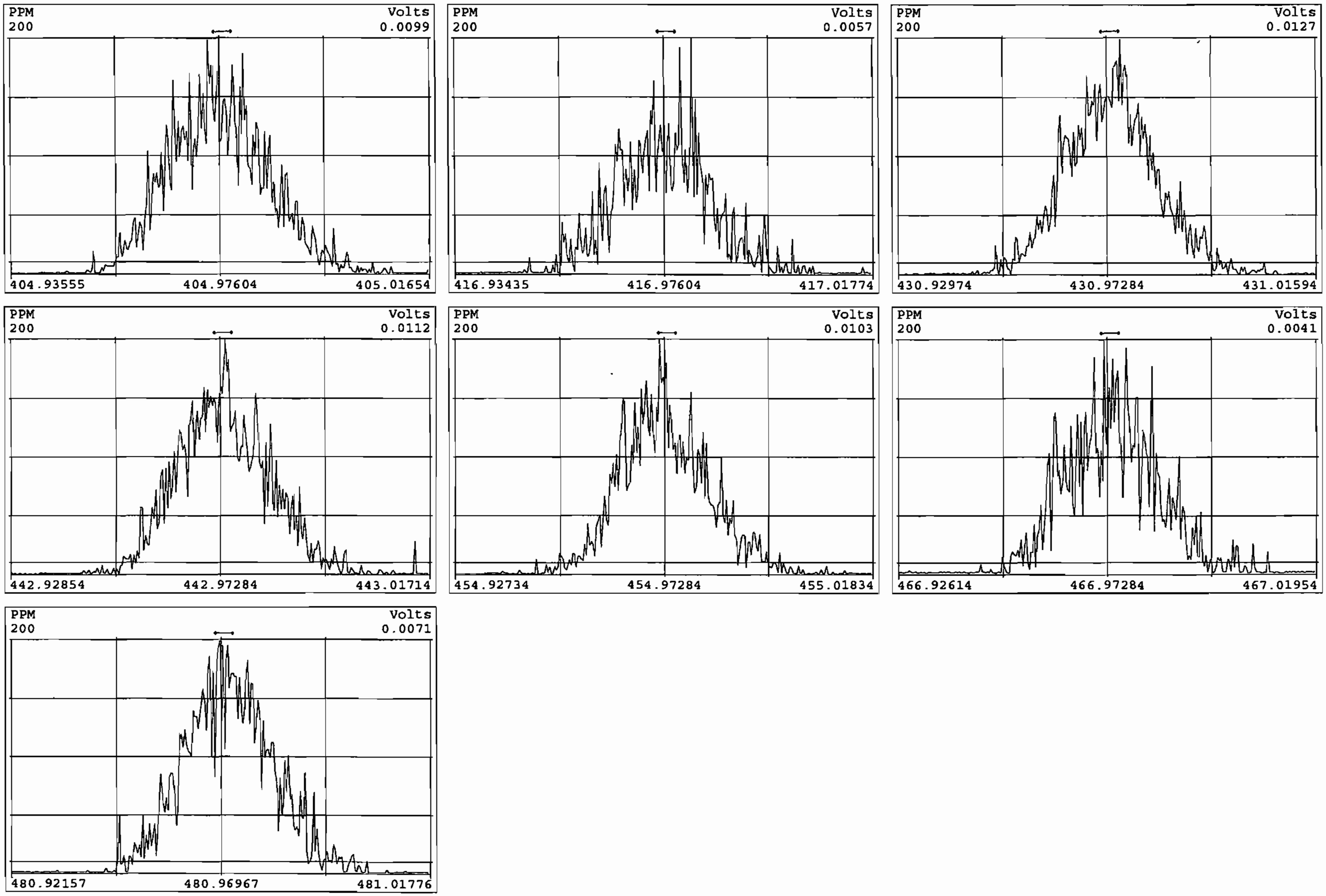
Peak Locate Examination: 9-APR-2010:15:54 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:2 Reference:PFK2



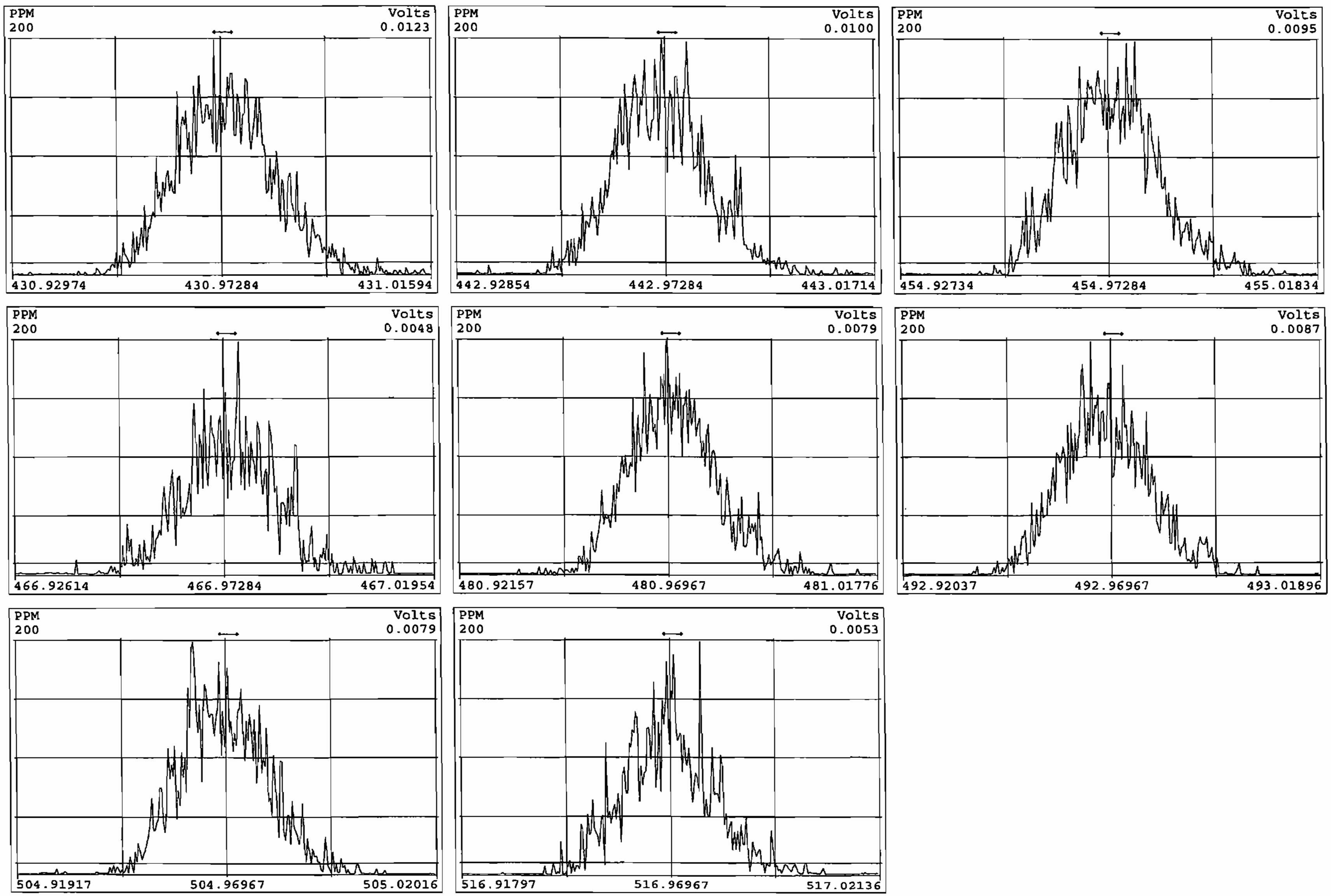
Peak Locate Examination: 9-APR-2010:15:55 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:3 Reference:PFK2



Peak Locate Examination: 9-APR-2010:15:56 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:4 Reference:PFK2



Peak Locate Examination: 9-APR-2010:15:57 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:5 Reference:PFK2

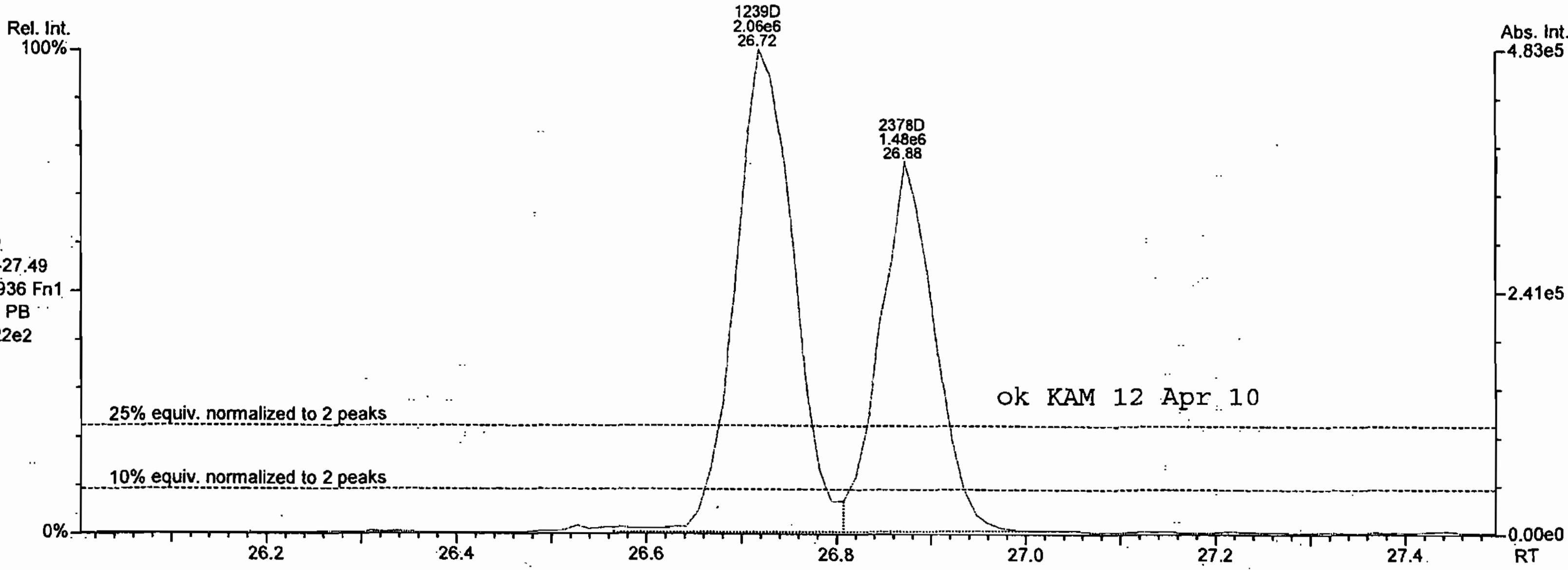


AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

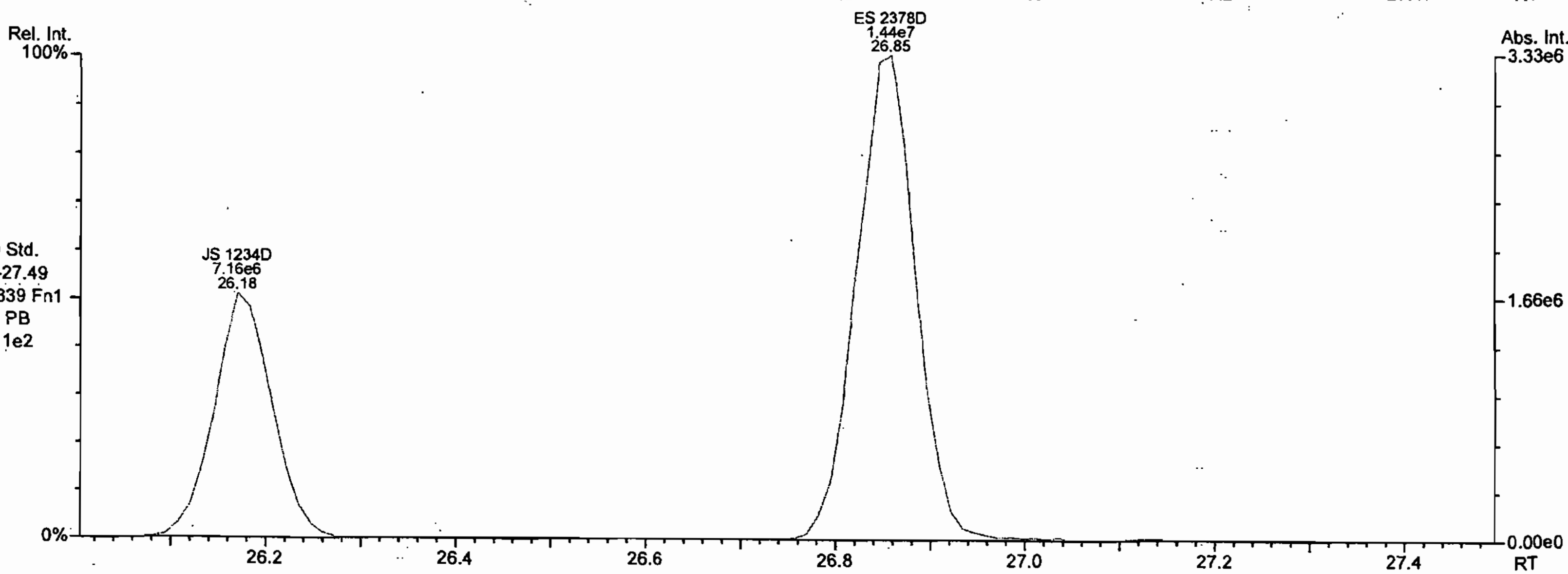
Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01

TCDD
26.01-27.49
321.8936 Fn1
Flags: PB
4σ 7.22e2



TCDD Std.
26.01-27.49
333.9339 Fn1
Flags: PB
4σ 9.11e2



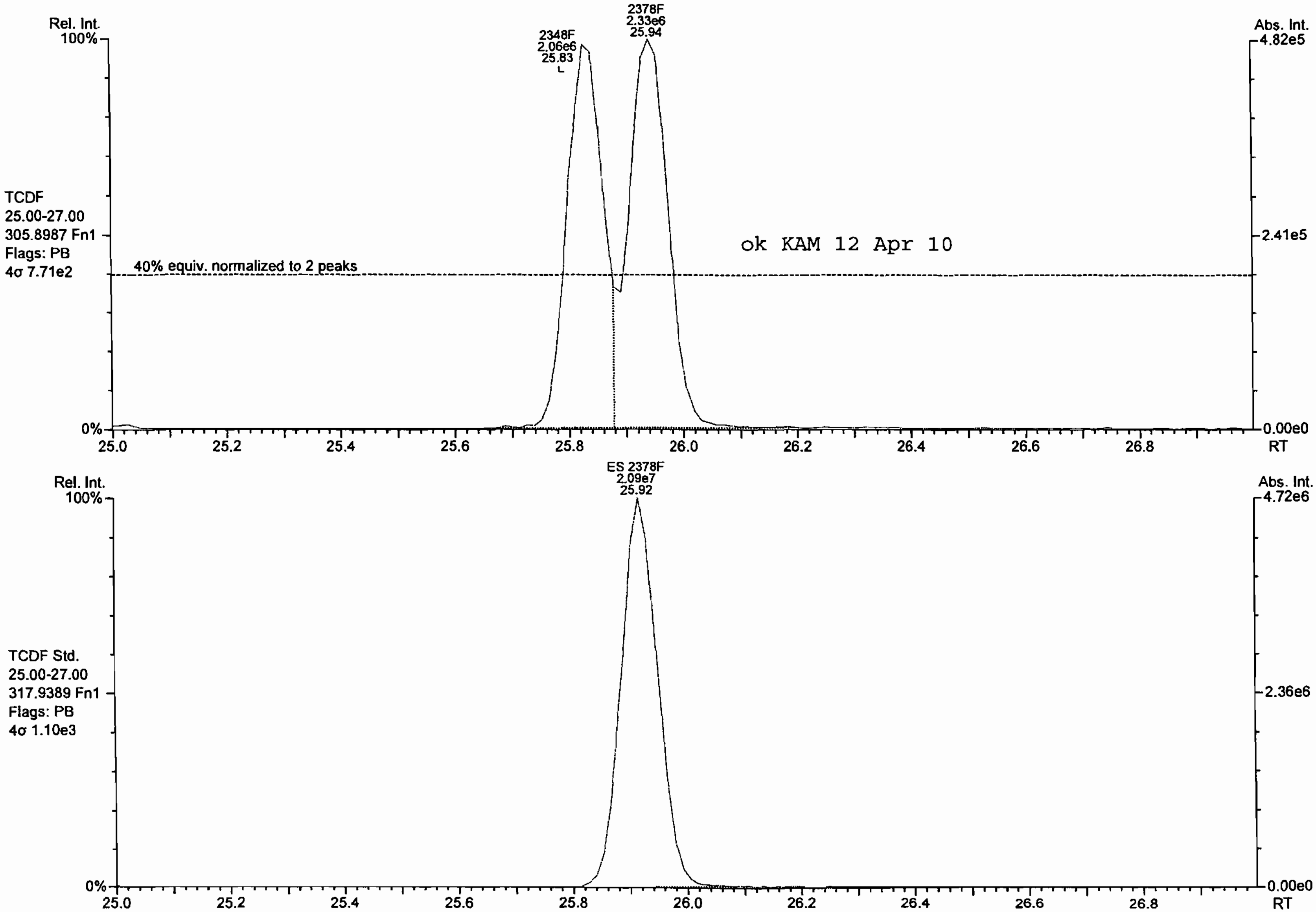
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:56:18 (MC) Printed: 09-Apr-2010 15:58:26

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



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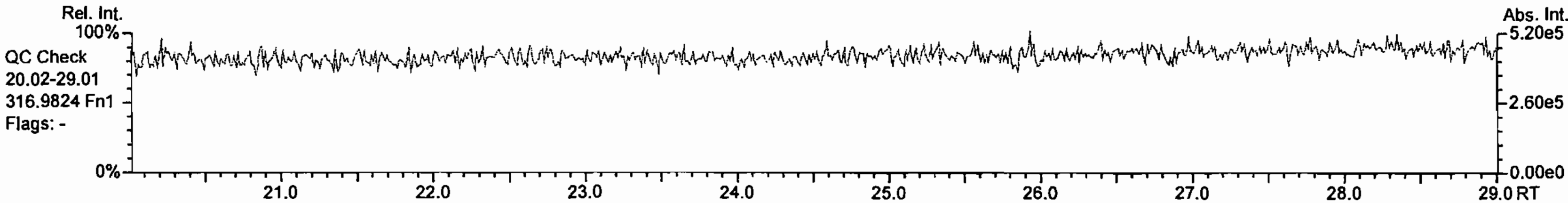
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047

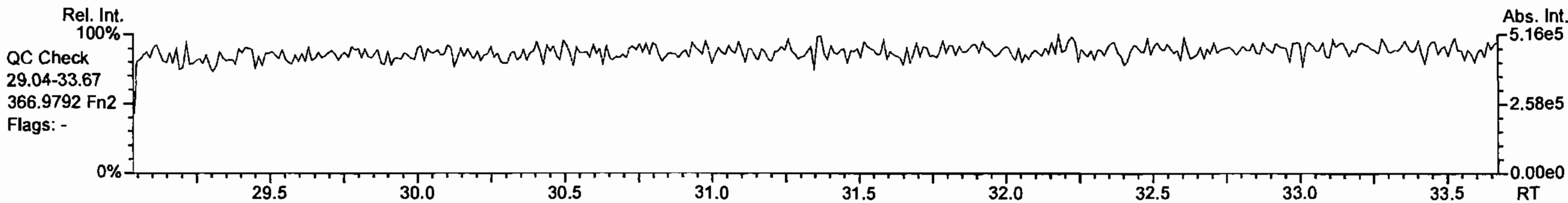
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:58:44 (MC) Printed: 09-Apr-2010 15:58:53

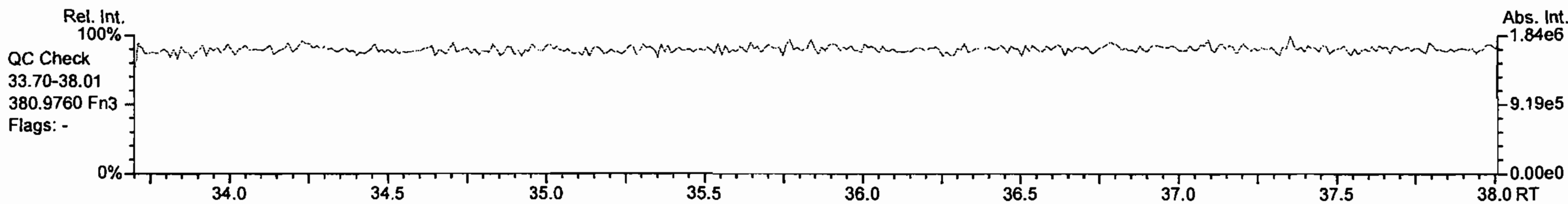
AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

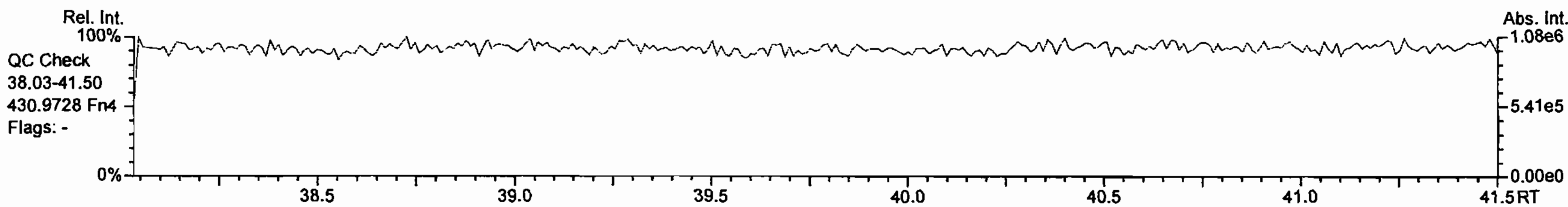
Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

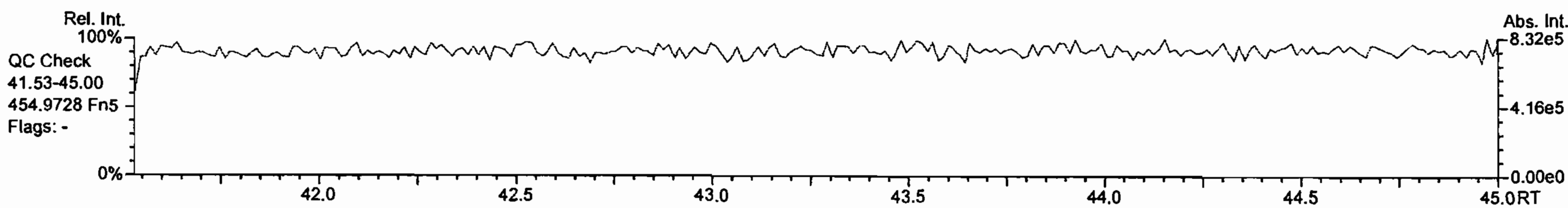
Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01











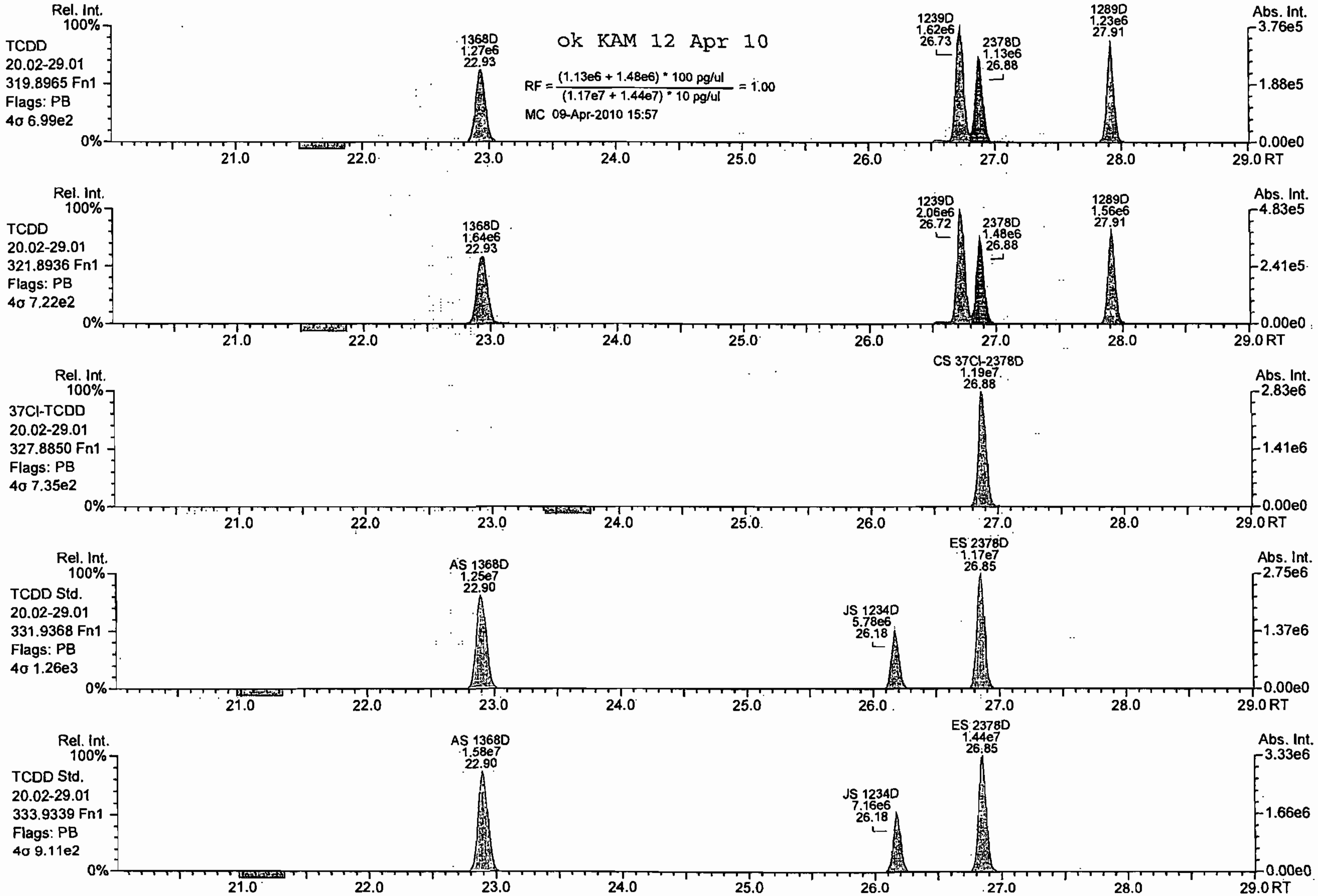
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 480-564

Peak annotation: Areas, Centroids
PKD: n/a Printed: 09-Apr-2010 16:02:03 Page 1 of 12

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



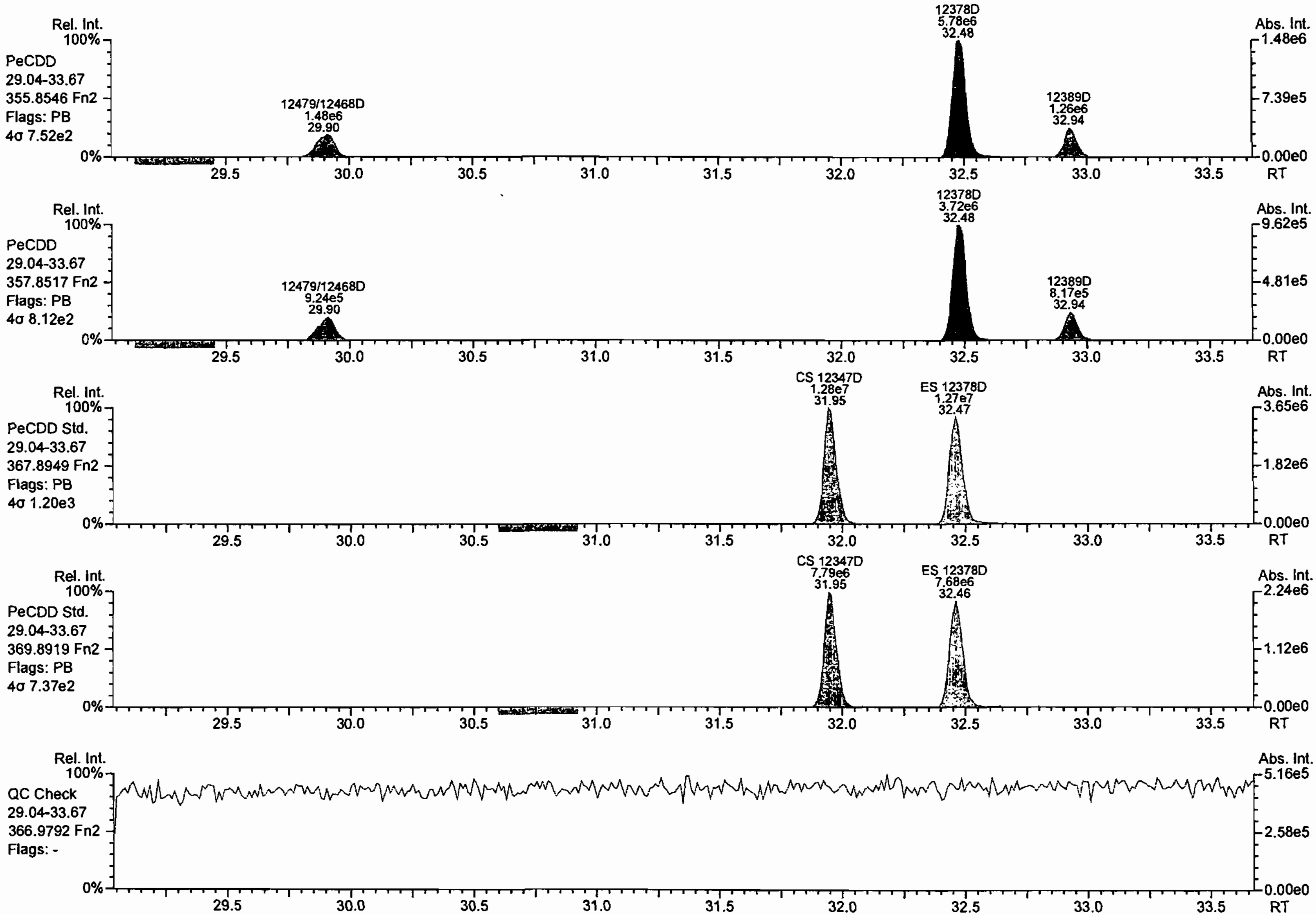
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9638, 3114, 7870 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:56:18 (MC) Printed: 09-Apr-2010 16:02:14 Page 2 of 12

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



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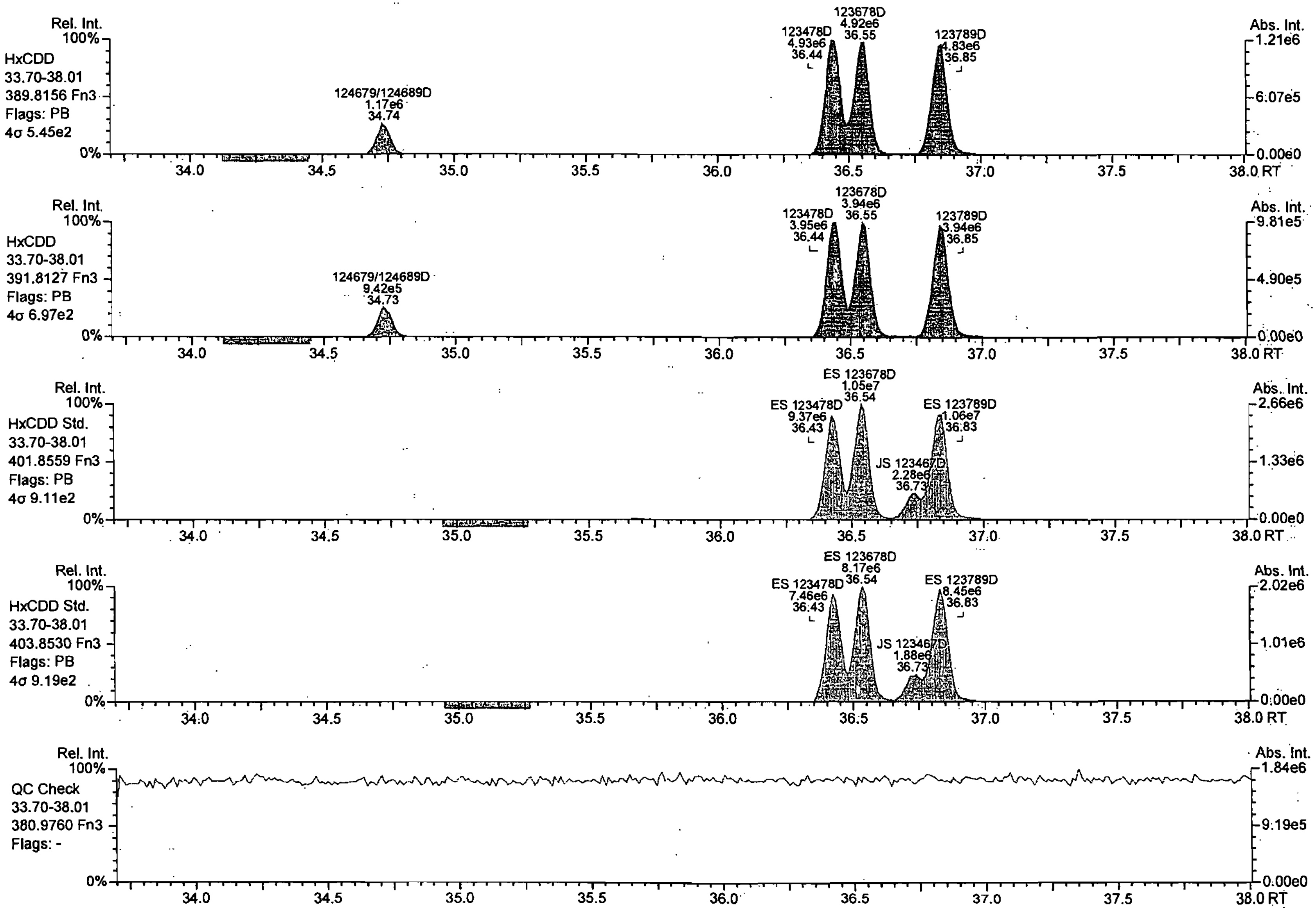
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8334, 2133 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:56:31 (MC) Printed: 09-Apr-2010 16:02:21

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



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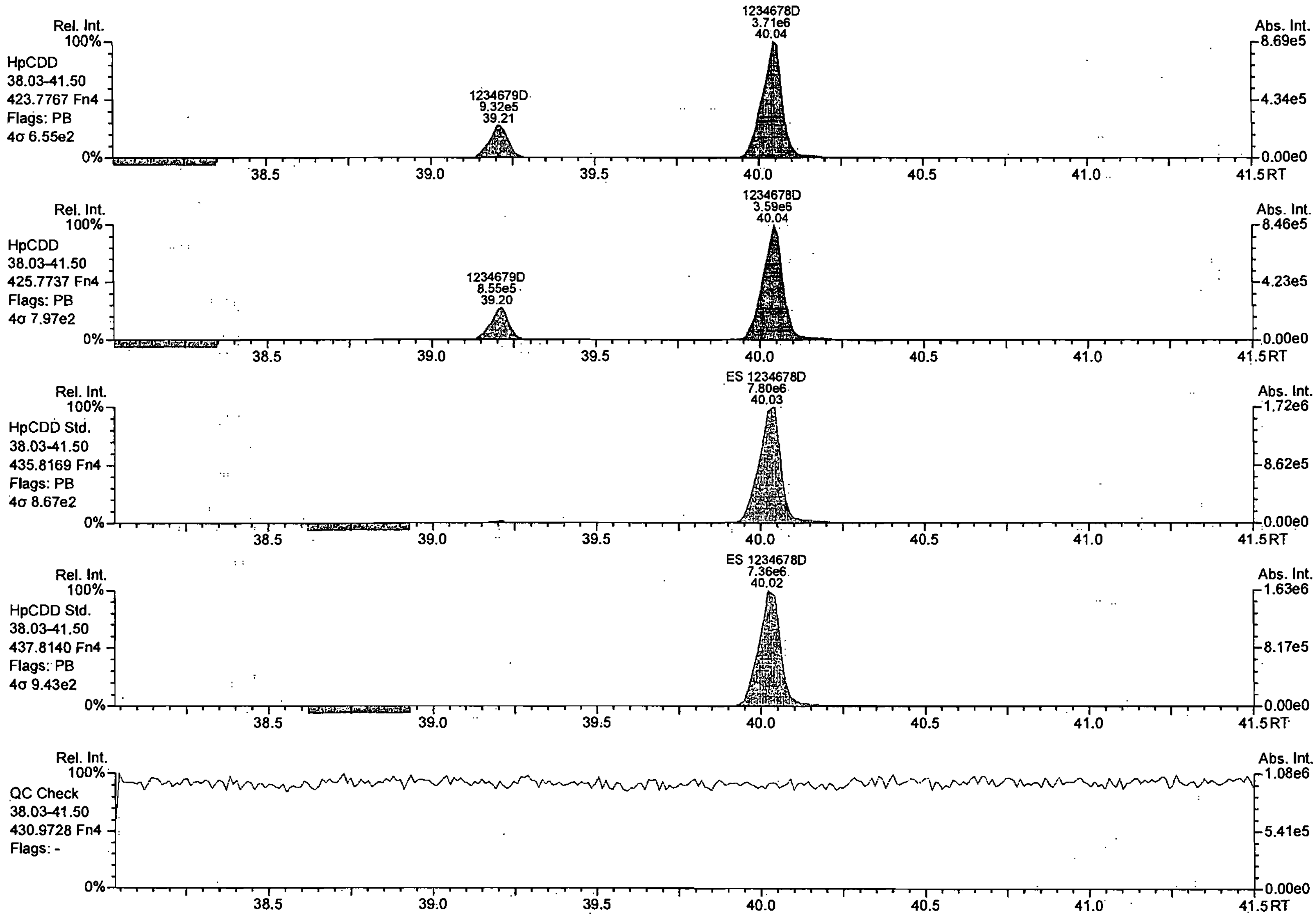
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2756, 7547 scc: 480-564

Peak annotation: Areas, Centroids

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



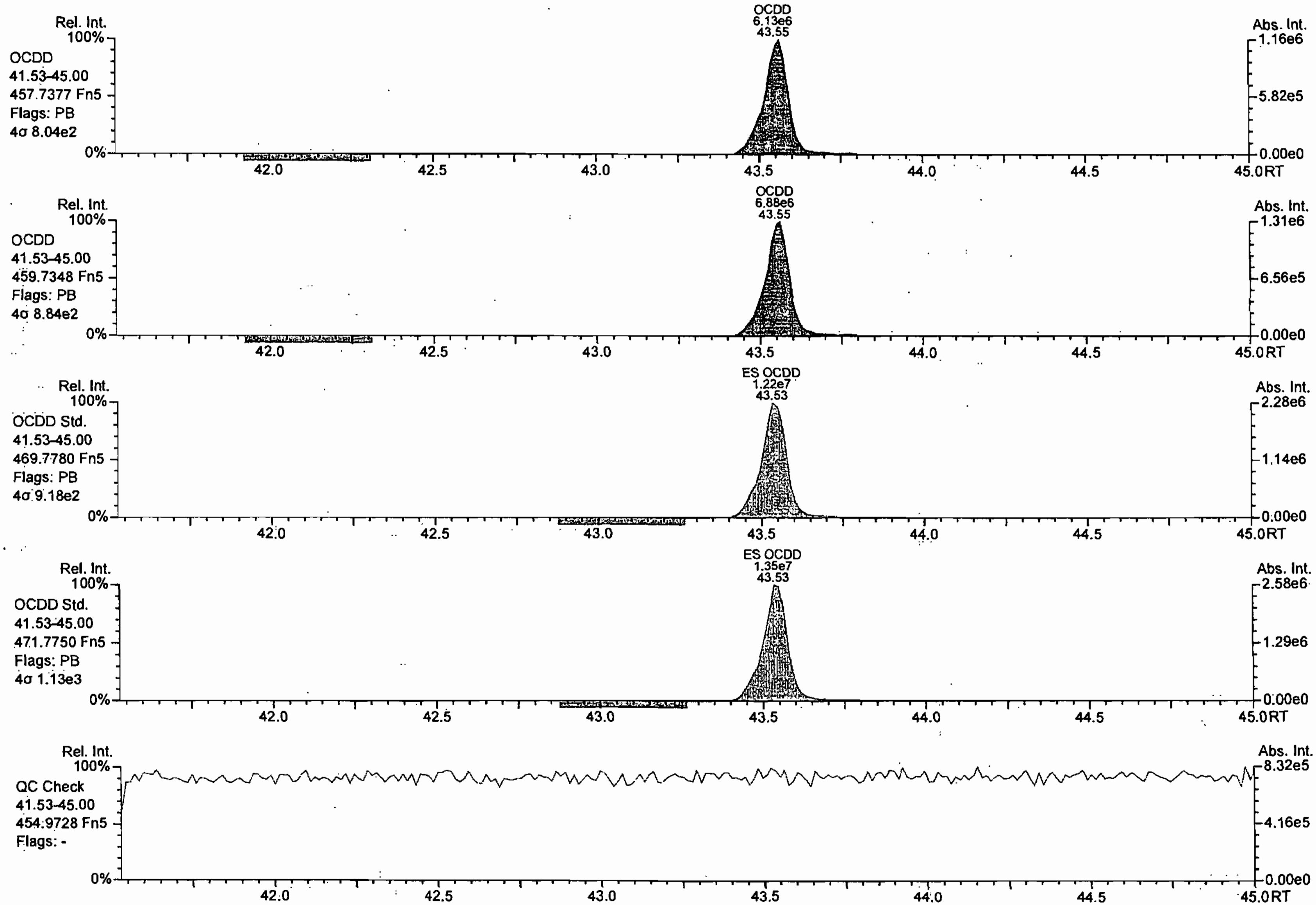
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5896, 9607 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:55:37 (MC) Printed: 09-Apr-2010 16:02:34

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



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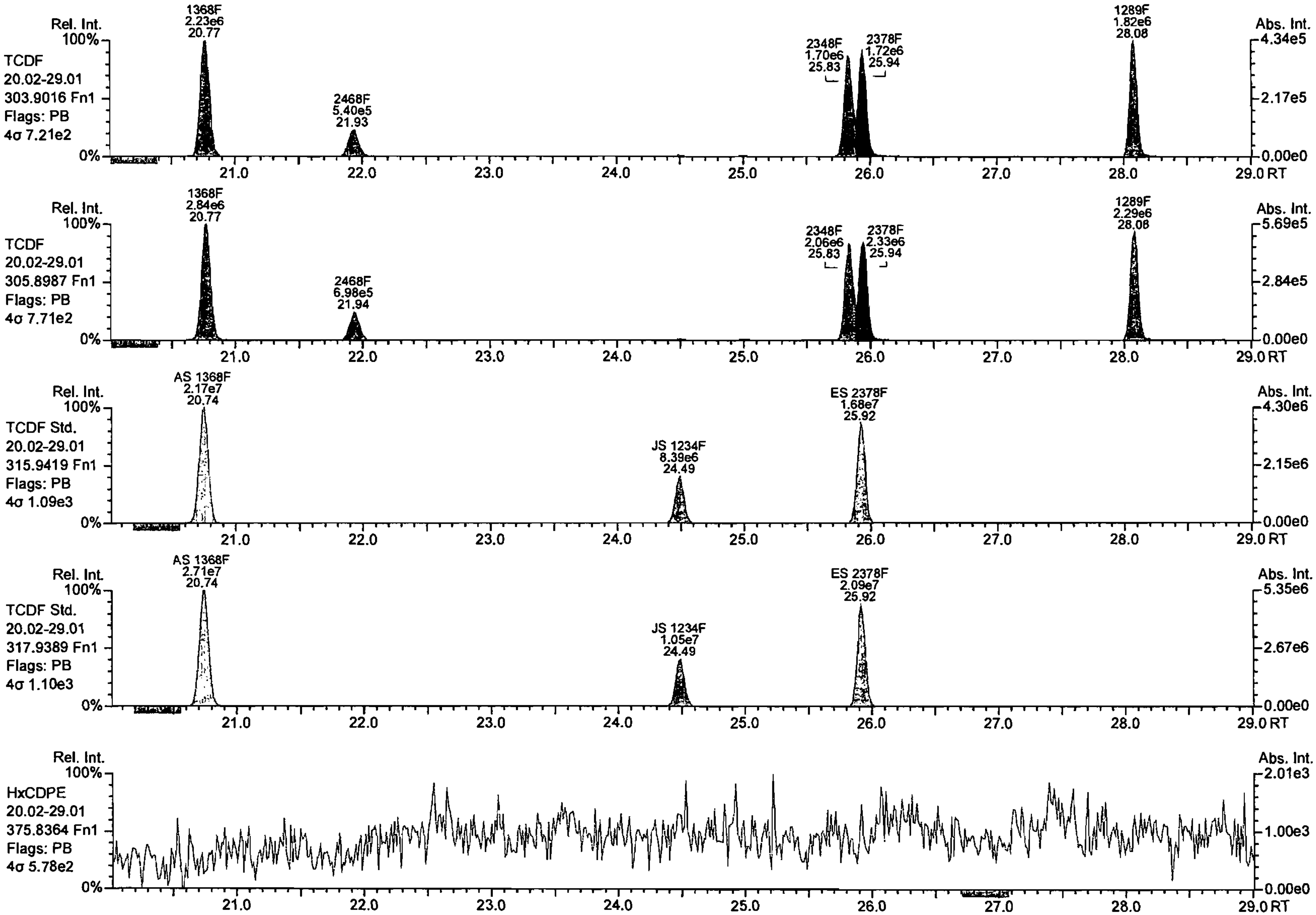
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9729, 8979 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:55:37 (MC) Printed: 09-Apr-2010 16:02:40 Page 6 of 12

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4548, 6832, 0940 scc: 480-564

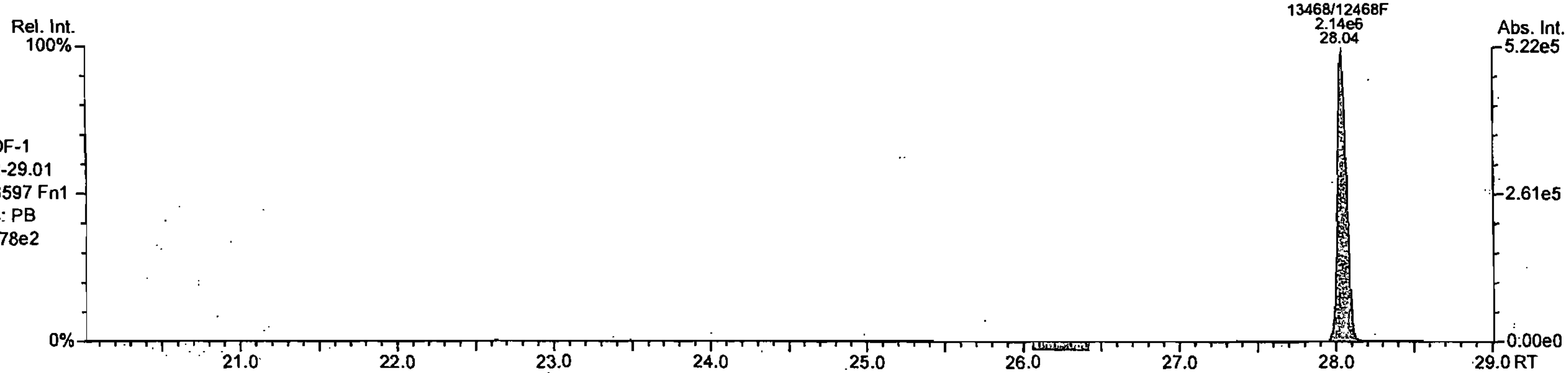
Peak annotation: Areas, Centroids
PKD: 09-Apr-2010 10:55:37 Printed: 09-Apr-2010 16:02:51

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

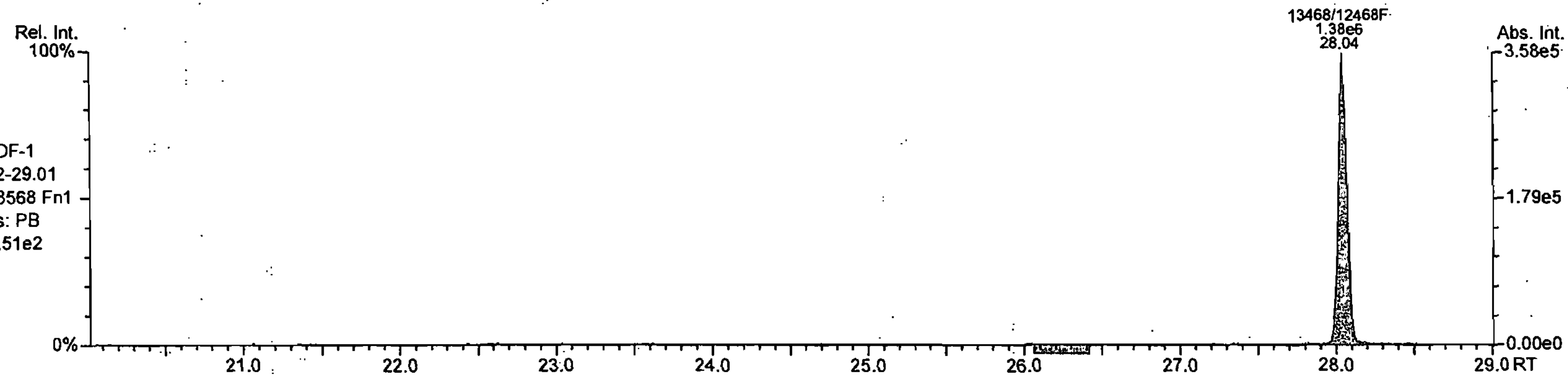
Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01

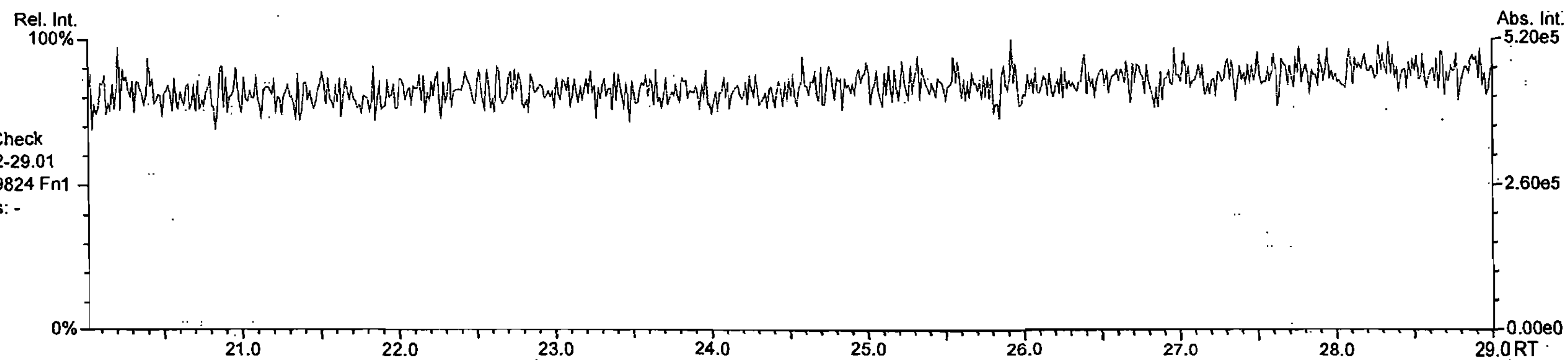
PeCDF-1
20.02-29.01
339.8597 Fn1
Flags: PB
4σ 8.78e2



PeCDF-1
20.02-29.01
341.8568 Fn1
Flags: PB
4σ 7.51e2



QC Check
20.02-29.01
316.9824 Fn1
Flags: -



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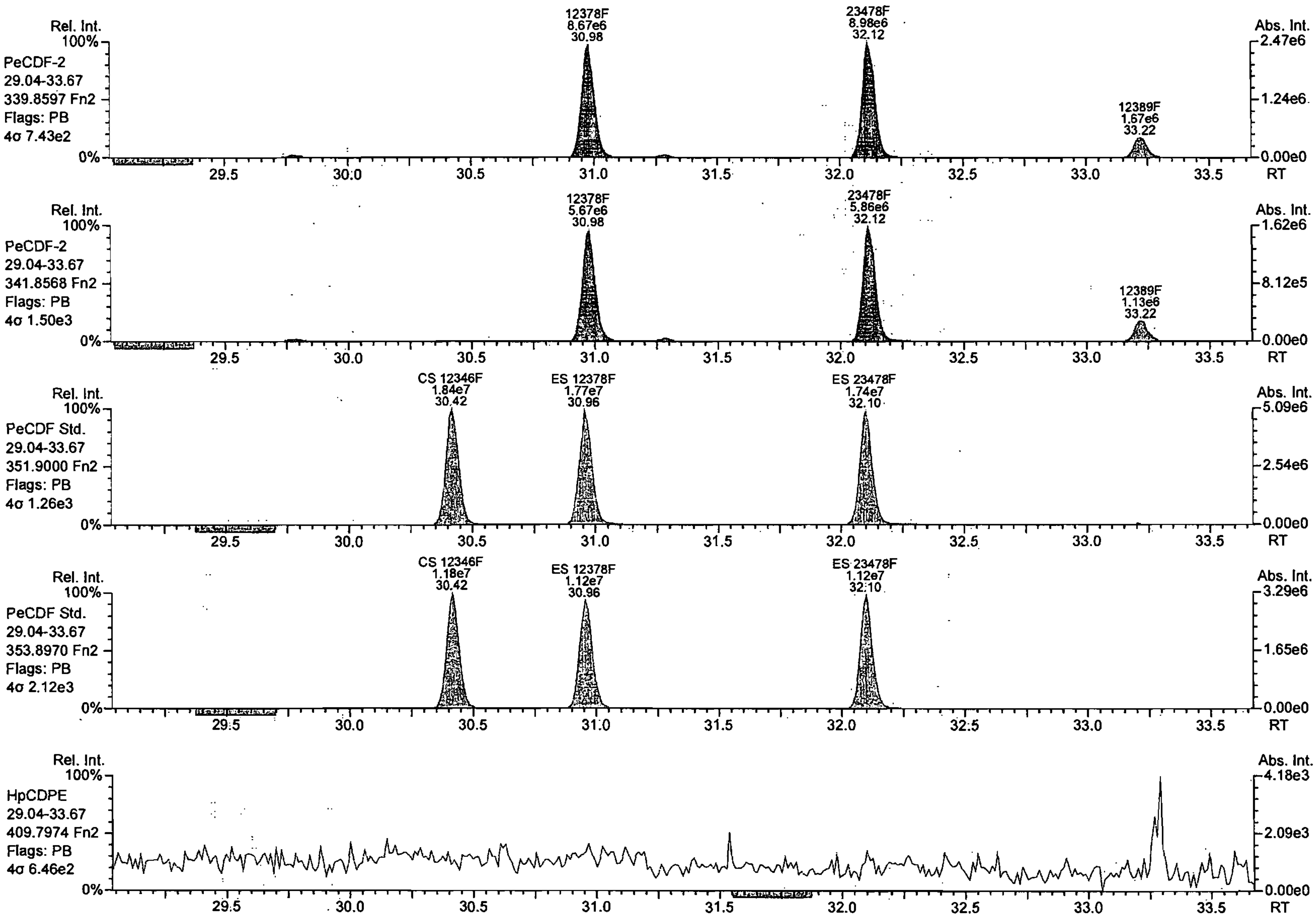
AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



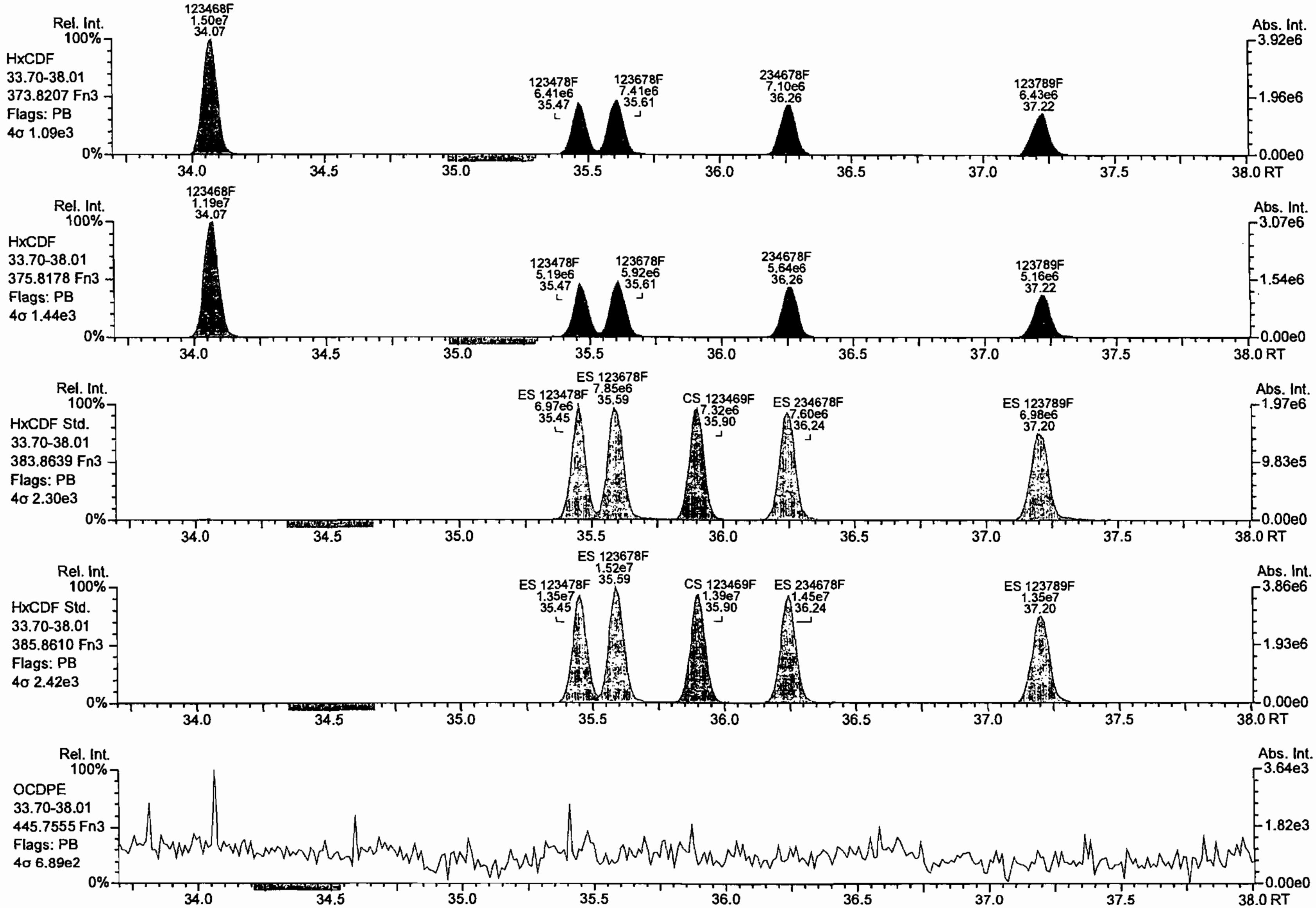
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4842, 7264, 4666 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:56:25 (MC) Printed: 09-Apr-2010 16:03:05 Page 9 of 12

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



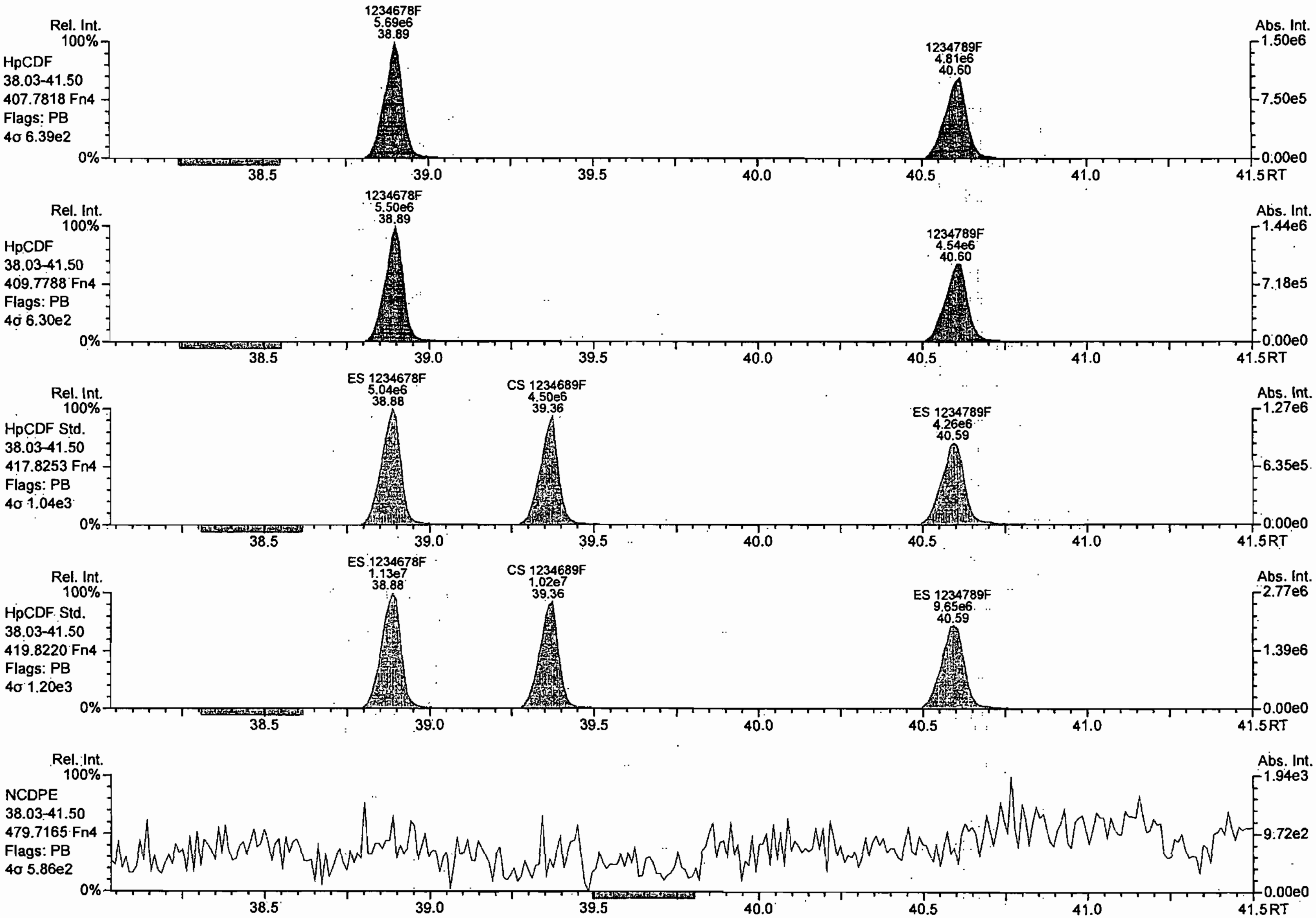
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3930, 9124, 4337 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:56:39 (MC) Printed: 09-Apr-2010 16:03:12 Page 10 of 12

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



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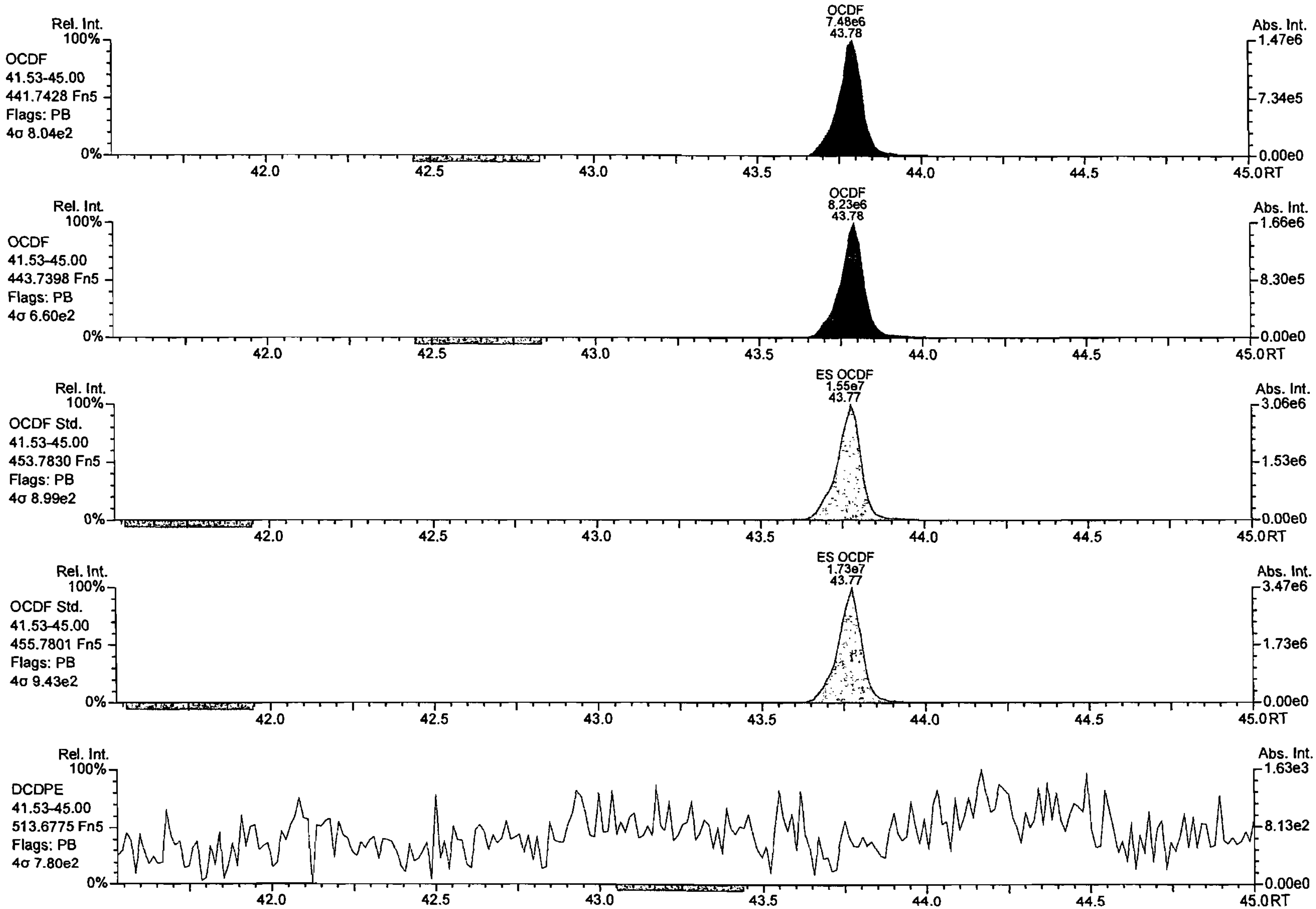
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8842, 2630, 8156 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:56:44 (MC) Printed: 09-Apr-2010 16:03:18

AP Lab ID: BCS3_7679_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 07:26:36
User: MC Datafile: 100409P1-01



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PA.utp_res, saved 09-Apr-2010 15:58 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8909, 8589, 6043 scc: 480-564

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 10:55:37 (MC) Printed: 09-Apr-2010 16:03:23 Page 12 of 12

METHOD 23 **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: Analytical Perspectives
Initial Calibration: ICAL: MM1_DF_122509
Instrument ID: MM1 GC Column ID: ZB-5ms
VER Data Filename: 100409P1-10 Analysis Date: 09-APR-2010 15:00:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	9.99	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	49.9	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	49.3	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.9	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.21	1.05	-	1.43	Y	50.6	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88	-	1.20	Y	50	40	-	60	Y
OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	98.9	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.73	0.65	-	0.89	Y	10	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32	-	1.78	Y	50.6	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	50.3	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05	-	1.43	Y	50.3	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05	-	1.43	Y	49.1	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.28	1.05	-	1.43	Y	49.5	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	49.5	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	50.4	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88	-	1.20	Y	49.6	40	-	60	Y
OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	100	80	-	120	Y

Processed: 09 Apr 2010 15:52 Analyst: MC

METHOD 23 **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

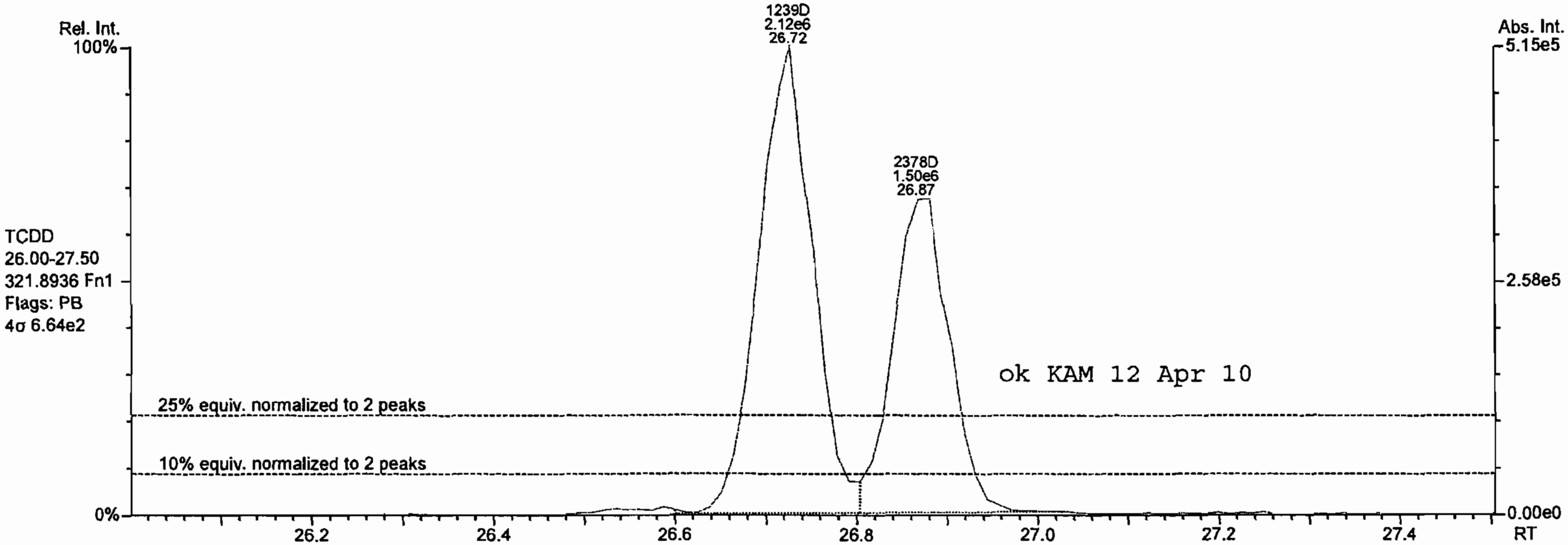
Lab Name:	Analytical Perspectives		
Initial Calibration:	ICAL: MM1_DF_122509		
Instrument ID:	MM1	GC Column ID:	ZB-5ms
VER Data Filename:	100409P1-10	Analysis Date:	09-APR-2010 15:00:55

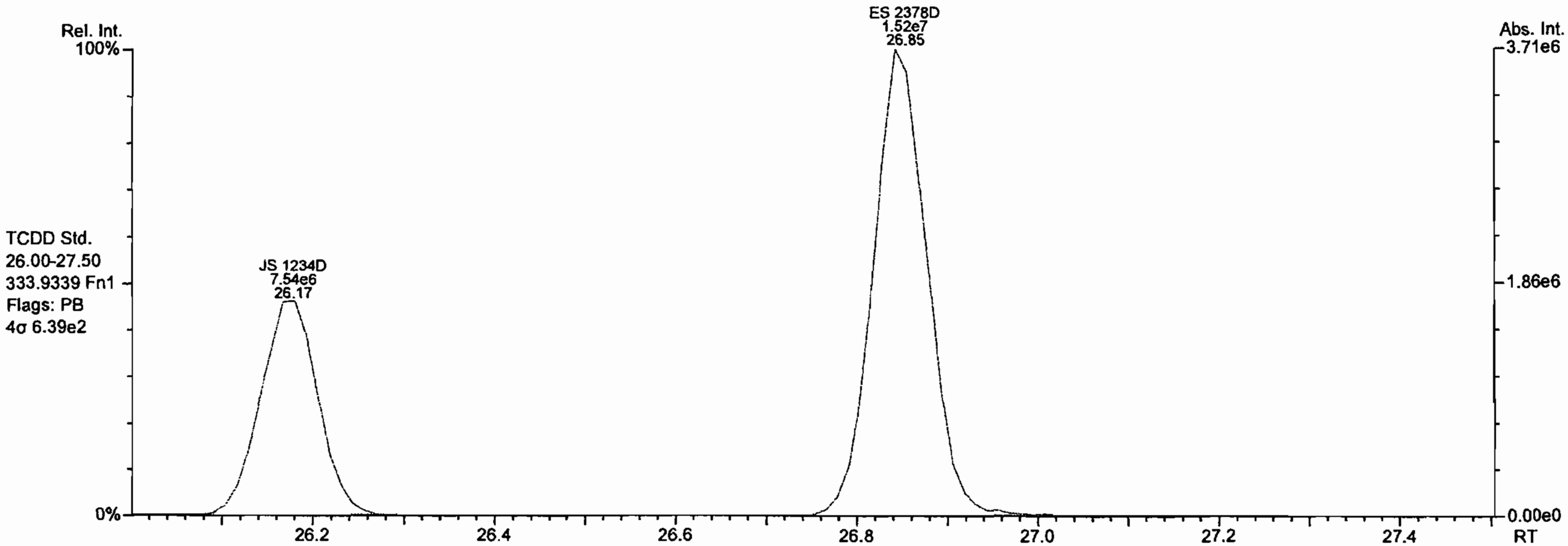
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	99.9	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32	-	1.78	Y	99.3	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.3	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	95.2	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	95.4	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	99.3	70	-	130	Y
13C-OCDD	M+2/M+4	0.88	0.76	-	1.02	Y	192	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	100	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	98.1	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	98.4	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	97	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	97.3	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	96.6	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	97.3	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	96.4	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	97.7	70	-	130	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	195	140	-	260	Y
SURROGATE STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						40.4	28	-	52	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.62	1.32	-	1.78	Y	100	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	98.8	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	101	70	-	130	Y

Processed: 09 Apr 2010 15:52 Analyst: MC

AP Lab ID: BCS3_7679_DF_PB | **Sample ID: BCS3_7679_DF_PB** | **Acq: 9-APR-2010 15:00:55**

Instr: AutoSpec-Ultima MM1 | **SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46** | **User: MC Datafile: 100409P1-10**





Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PB.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047

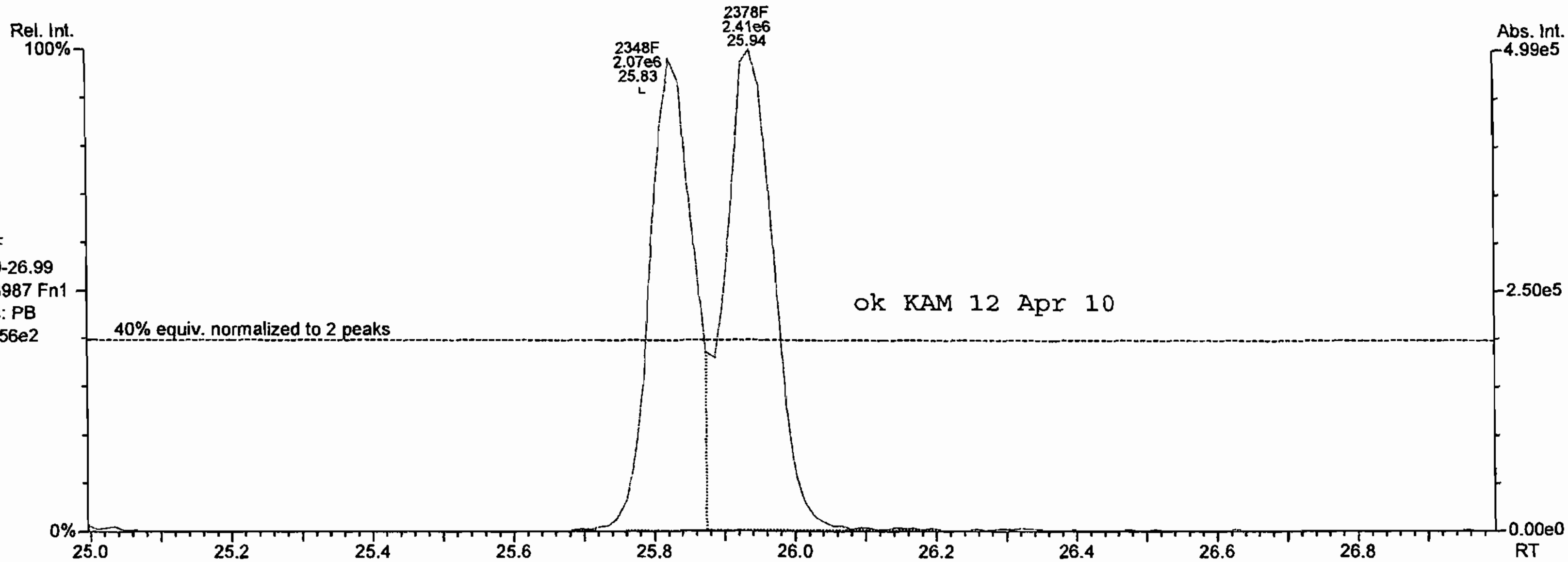
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:50:16 (MC) Printed: 09-Apr-2010 15:59:06

AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

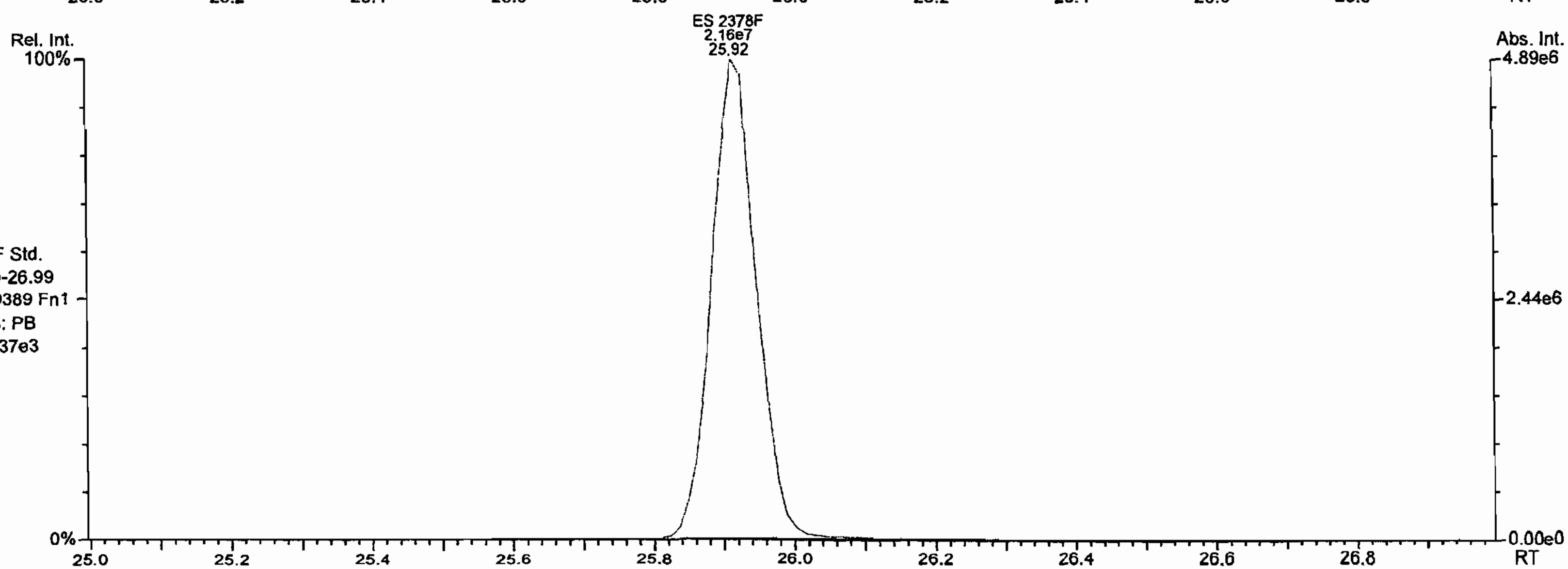
Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10

TCDF
25.00-26.99
305.8987 Fn1
Flags: PB
4σ 8.56e2



TCDF Std.
25.00-26.99
317.9389 Fn1
Flags: PB
4σ 1.37e3



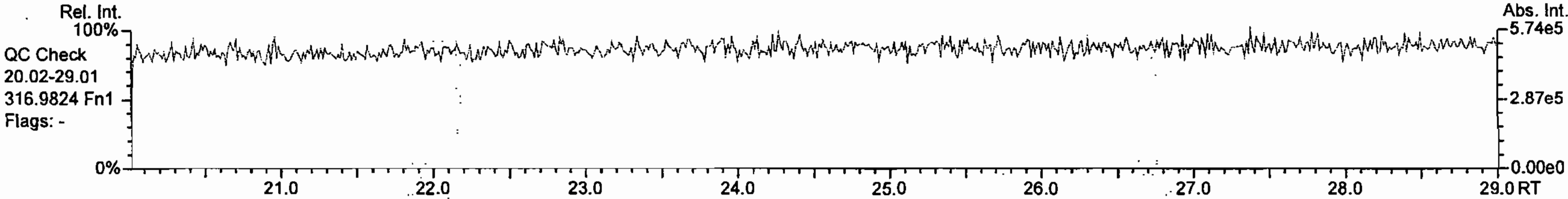
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PB.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047

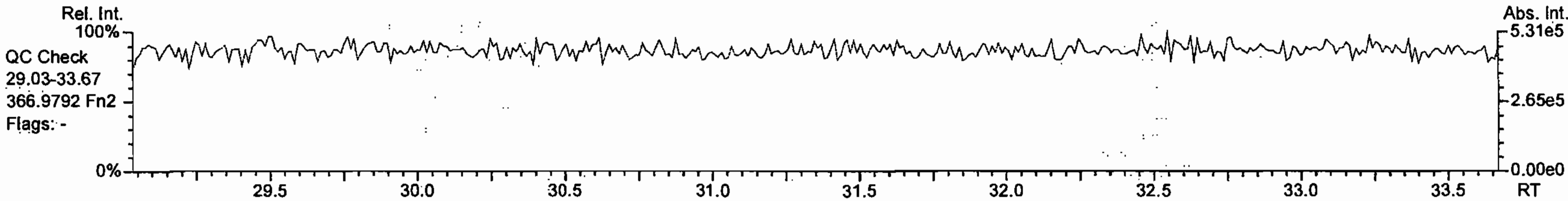
Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:50:24 (MC) Printed: 09-Apr-2010 15:59:11

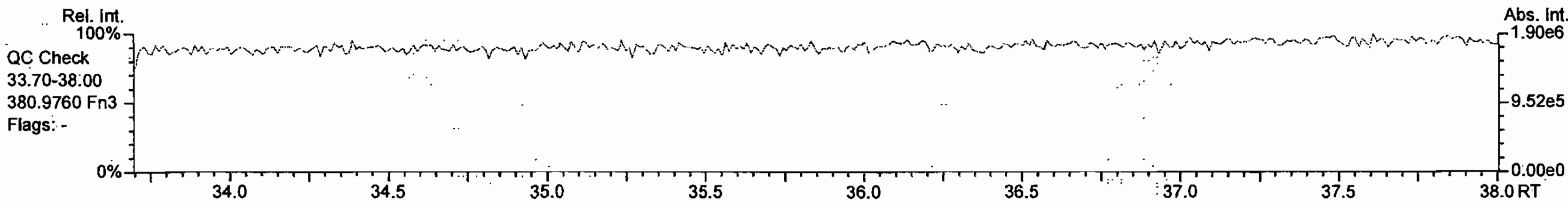
AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

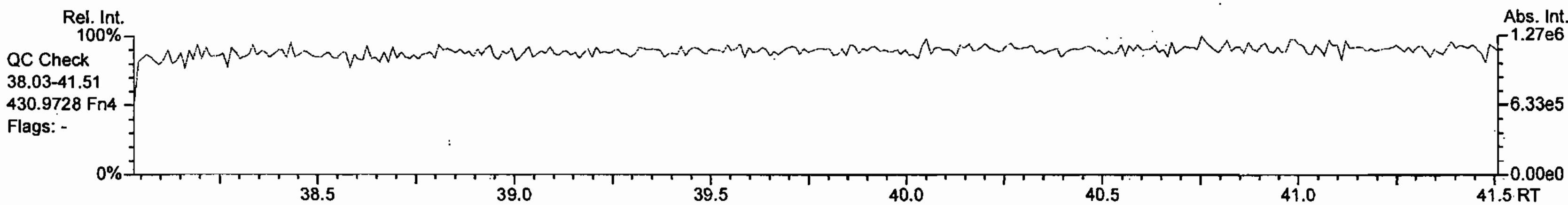
Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

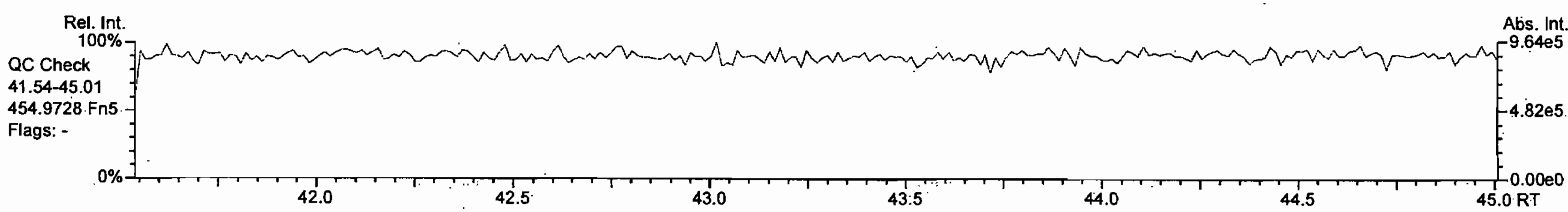
Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10











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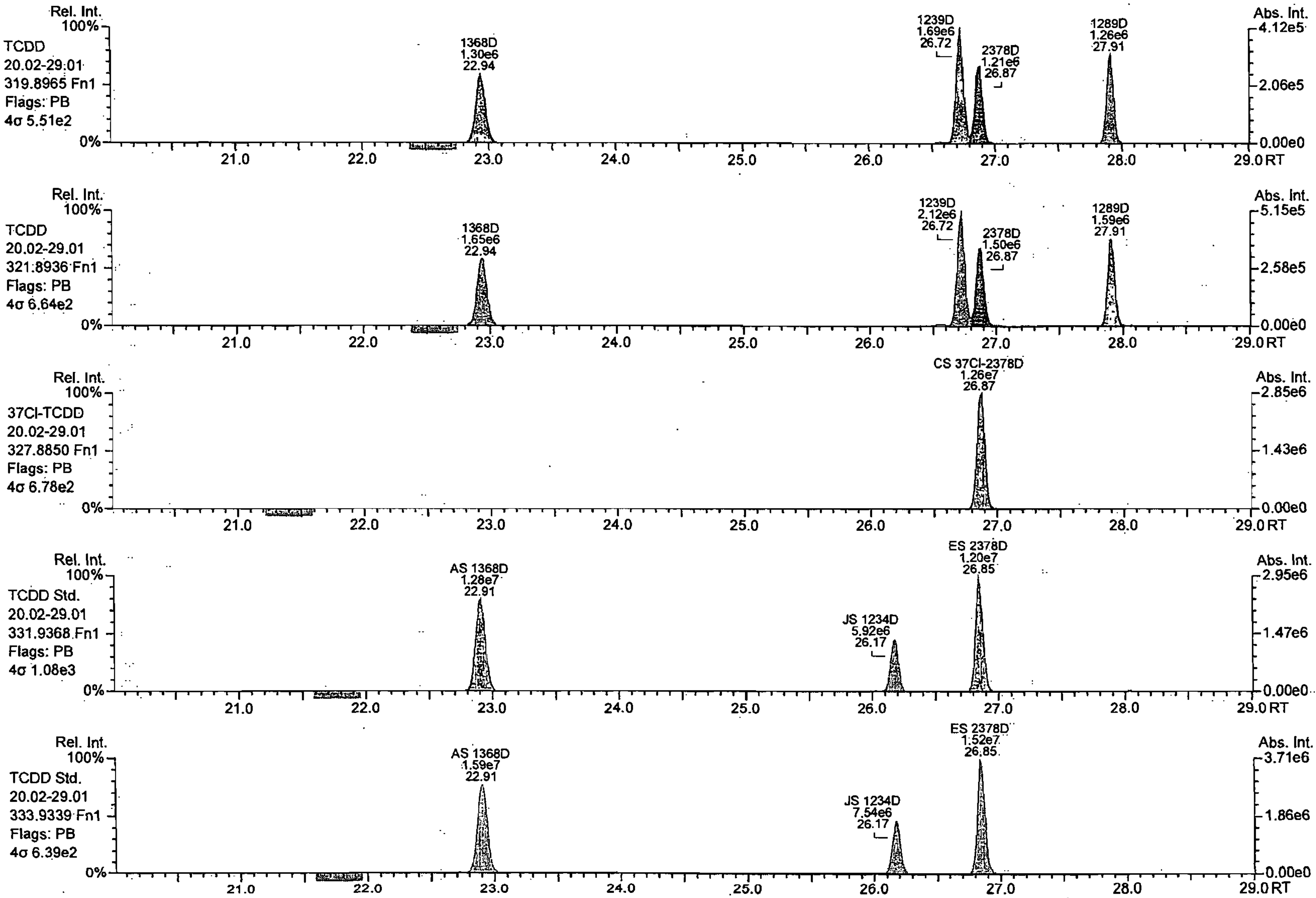
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 559-021

Peak annotation: Areas, Centroids

AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

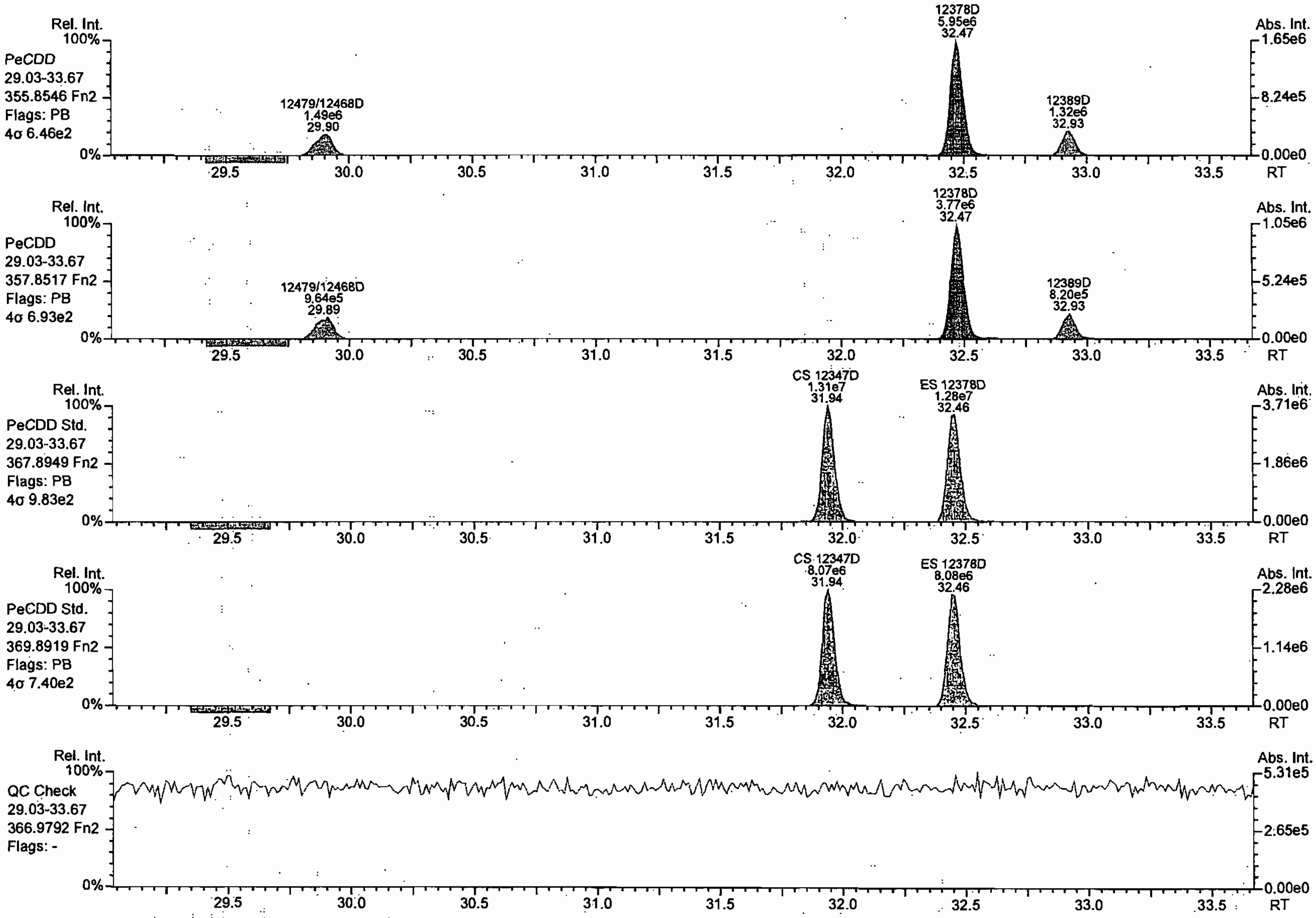
Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PB.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9471, 7970, 5415 scc: 559-021

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:50:16 (MC) Printed: 09-Apr-2010 16:13:59 Page 2 of 12

AP Lab ID: BCS3_7679_DF_PB Sample ID: BCS3_7679_DF_PB Acq: 9-APR-2010 15:00:55
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46 User: MC Datafile: 100409P1-10

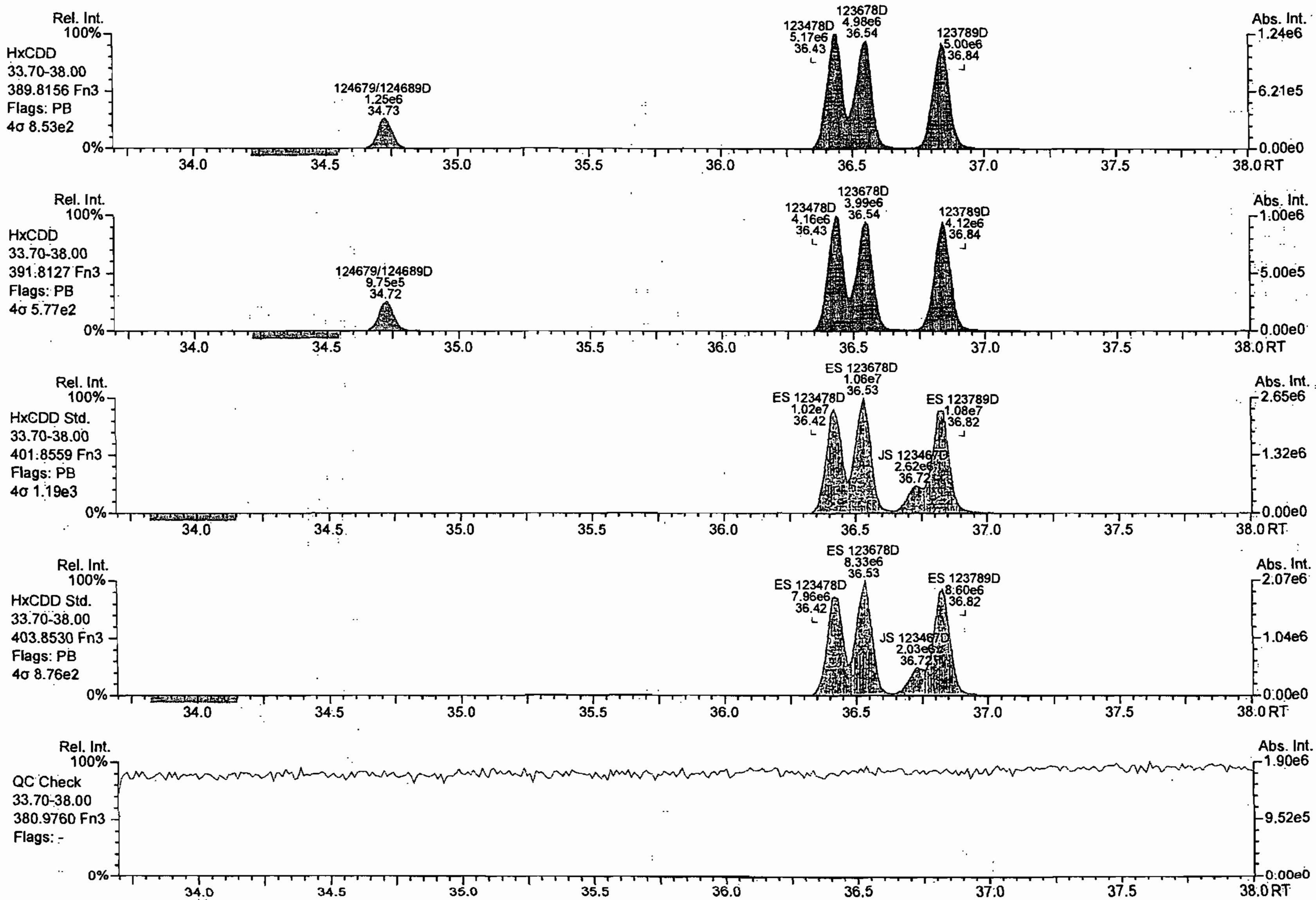


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PB.utp_res, saved 09-Apr-2010 15:51 (MC) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6752, 1453 scc: 559-021 Revised: 09-Apr-2010 15:50:37 (MC) Printed: 09-Apr-2010 16:14:06 Page 3 of 12

AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10



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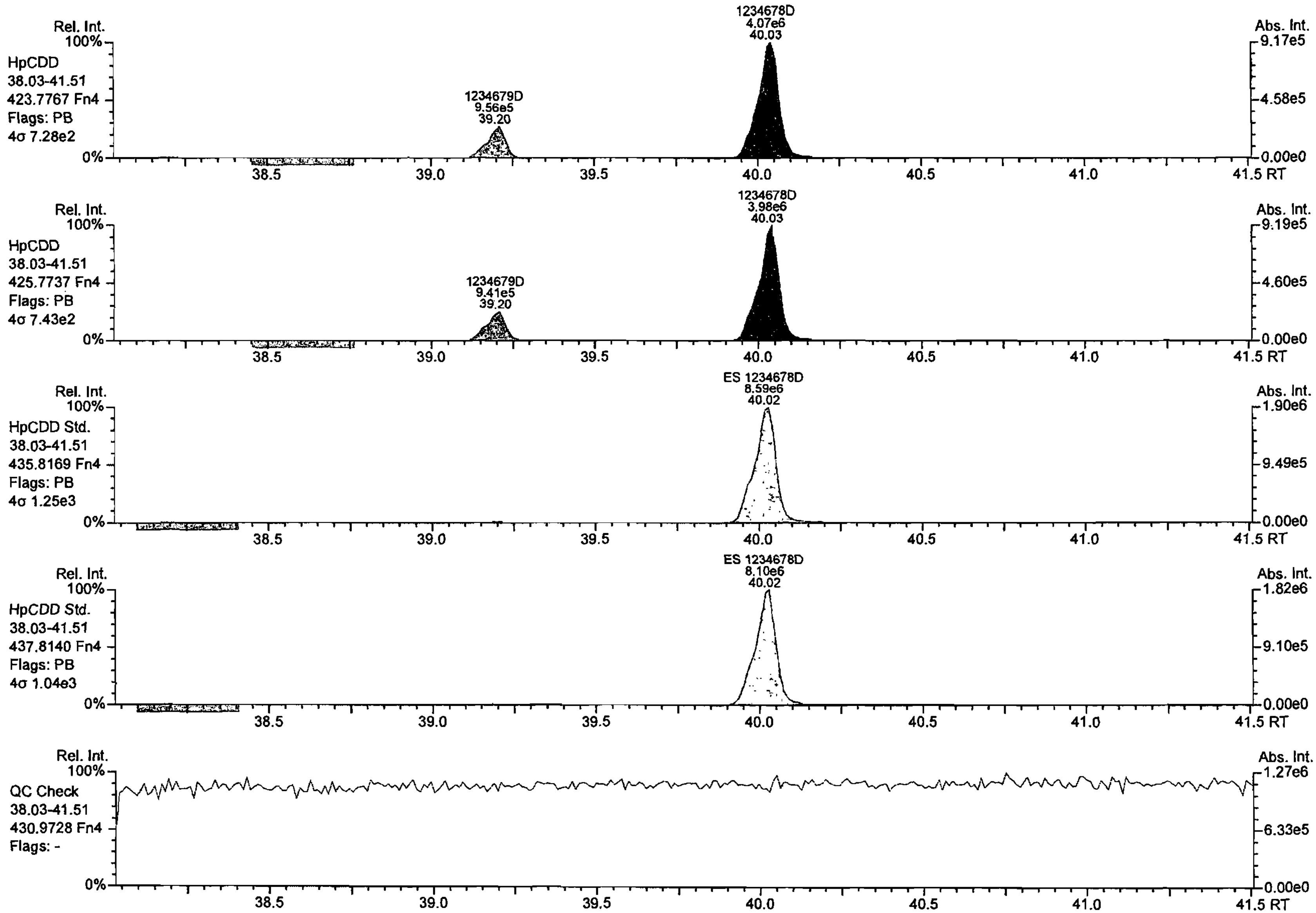
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7764, 0458 scc: 559-021

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:49:59 (MC) Printed: 09-Apr-2010 16:14:13

AP Lab ID: BCS3_7679_DF_PB Sample ID: BCS3_7679_DF_PB Acq: 9-APR-2010 15:00:55
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46 User: MC Datafile: 100409P1-10

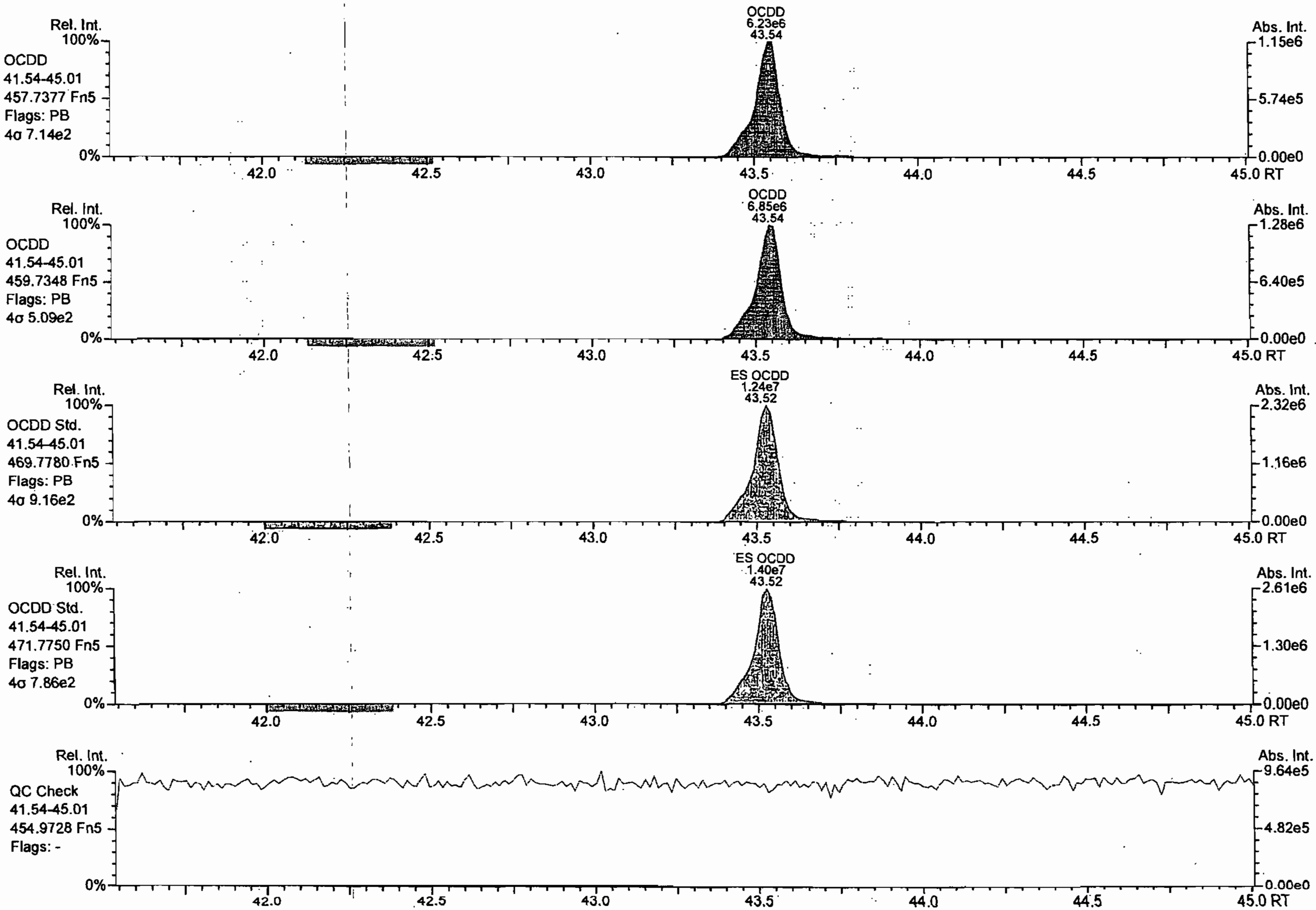


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PB.utp_res, saved 09-Apr-2010 15:51 (MC) *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4122, 6949 scc: 559-021 *Revised: 09-Apr-2010 15:50:44 (MC) Printed: 09-Apr-2010 16:14:19 Page 5 of 12*

AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10



I - 265

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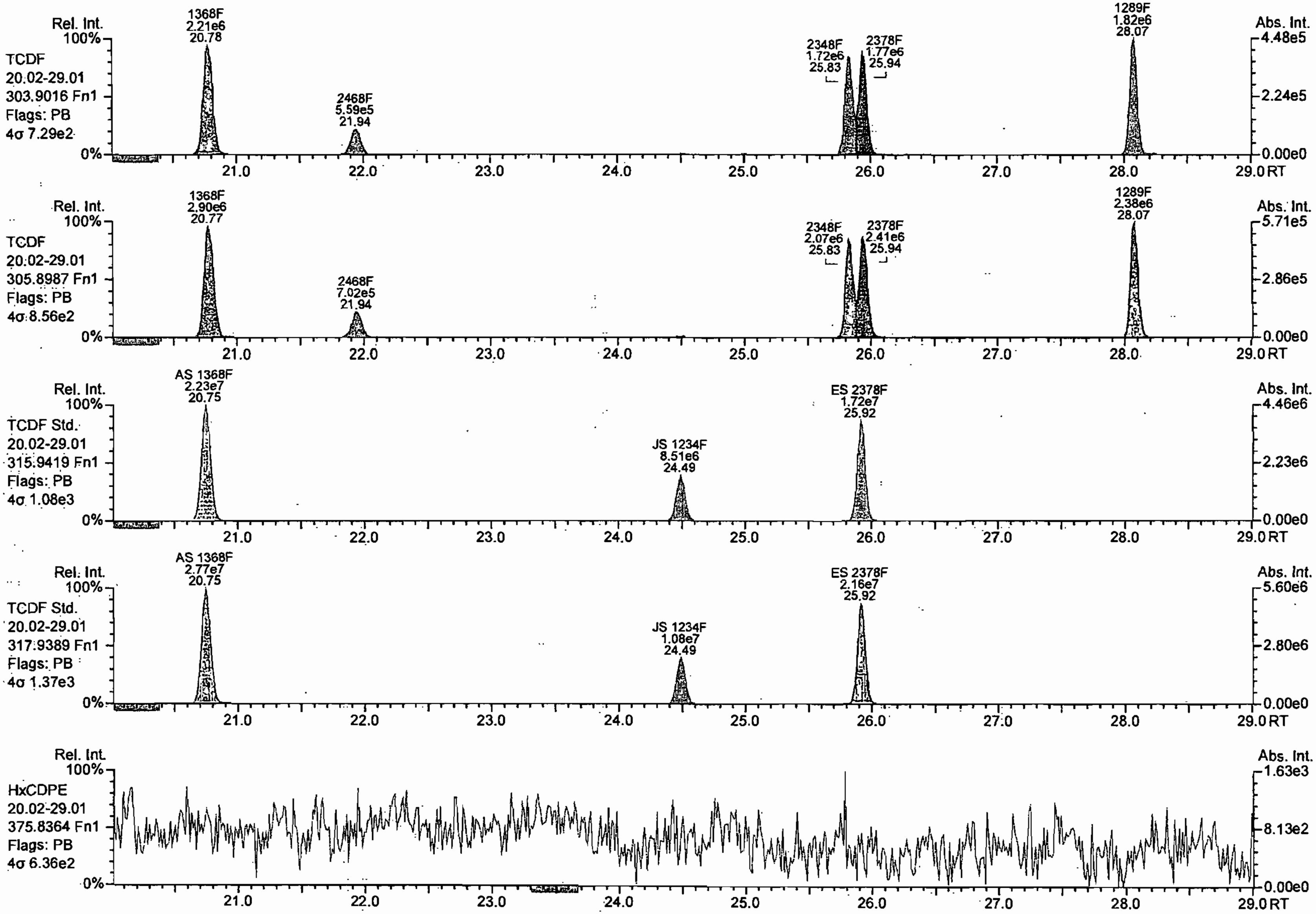
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc:13464, 9035 scc: 559-021

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:49:59 (MC) Printed: 09-Apr-2010 16:14:24

AP Lab ID: BCS3_7679_DF_PB Sample ID: BCS3_7679_DF_PB Acq: 9-APR-2010 15:00:55
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46 User: MC Datafile: 100409P1-10



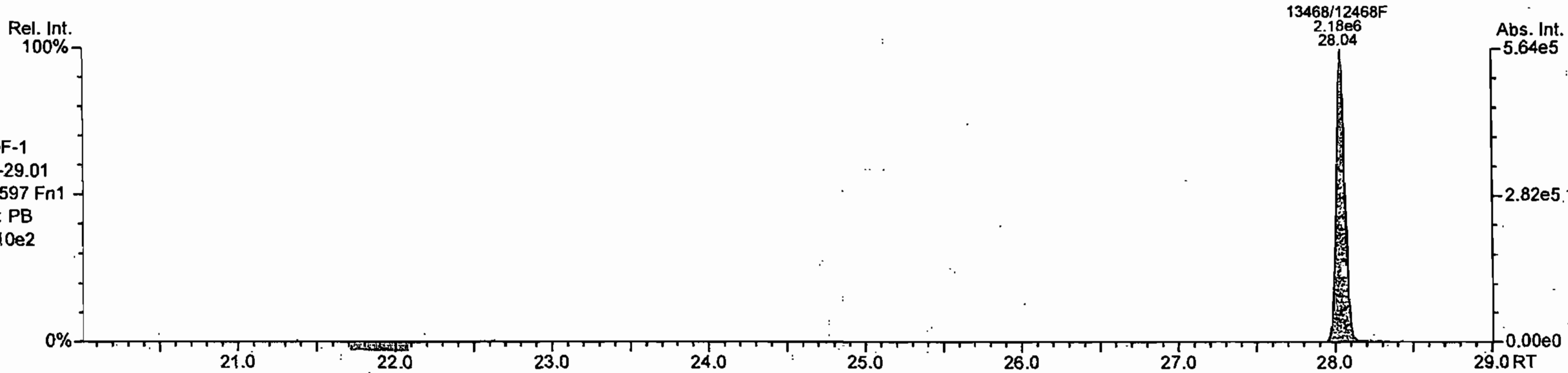
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PB:utp_res, saved 09-Apr-2010 15:51 (MC) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9824, 8117, 9989 scc: 559-021 Revised: 09-Apr-2010 15:50:24 (MC) Printed: 09-Apr-2010 16:14:35 Page 7 of 12

AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

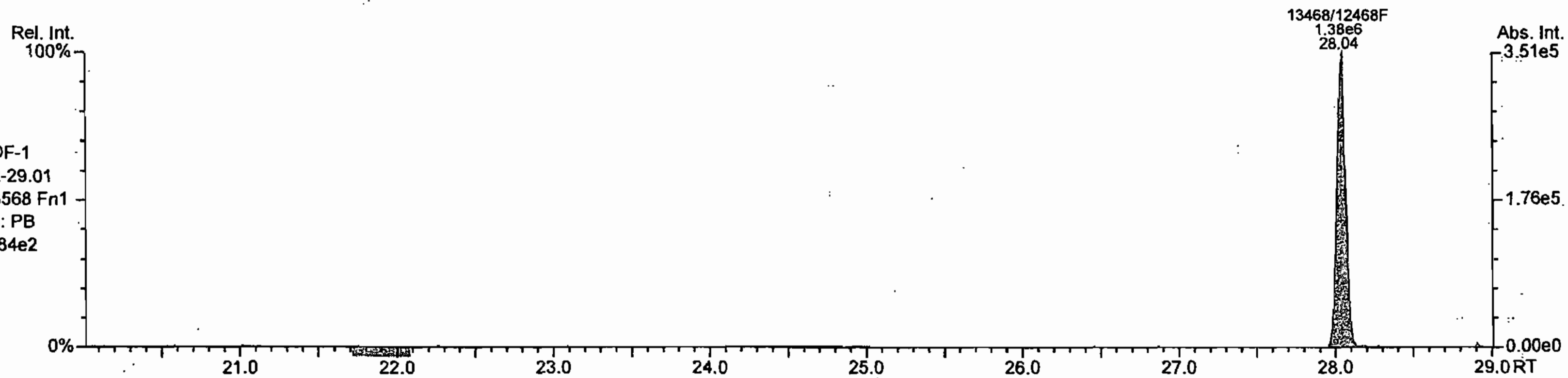
Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10

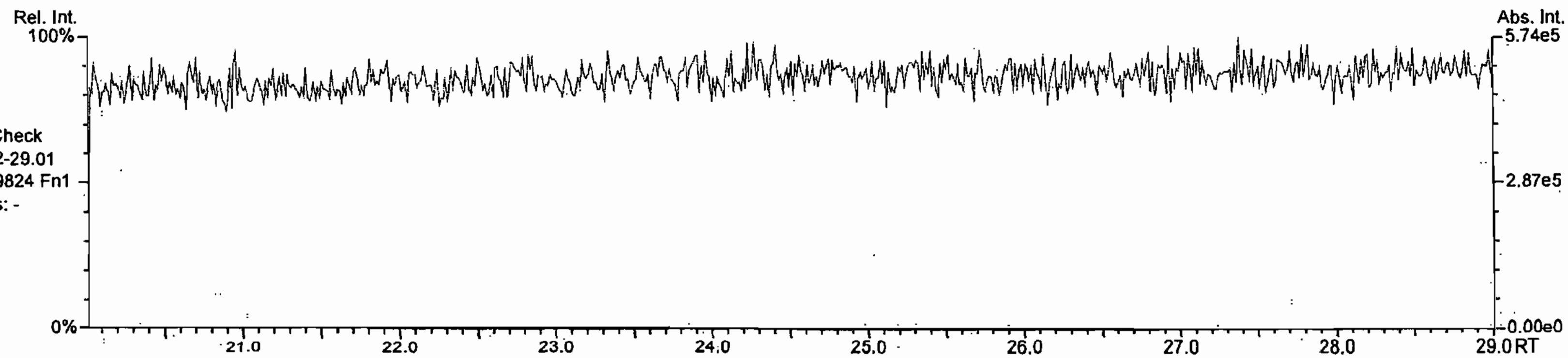
PeCDF-1
20.02-29.01
339.8597 Fn1
Flags: PB
4σ 7.10e2



PeCDF-1
20.02-29.01
341.8568 Fn1
Flags: PB
4σ 6.84e2



QC Check
20.02-29.01
316.9824 Fn1
Flags: -



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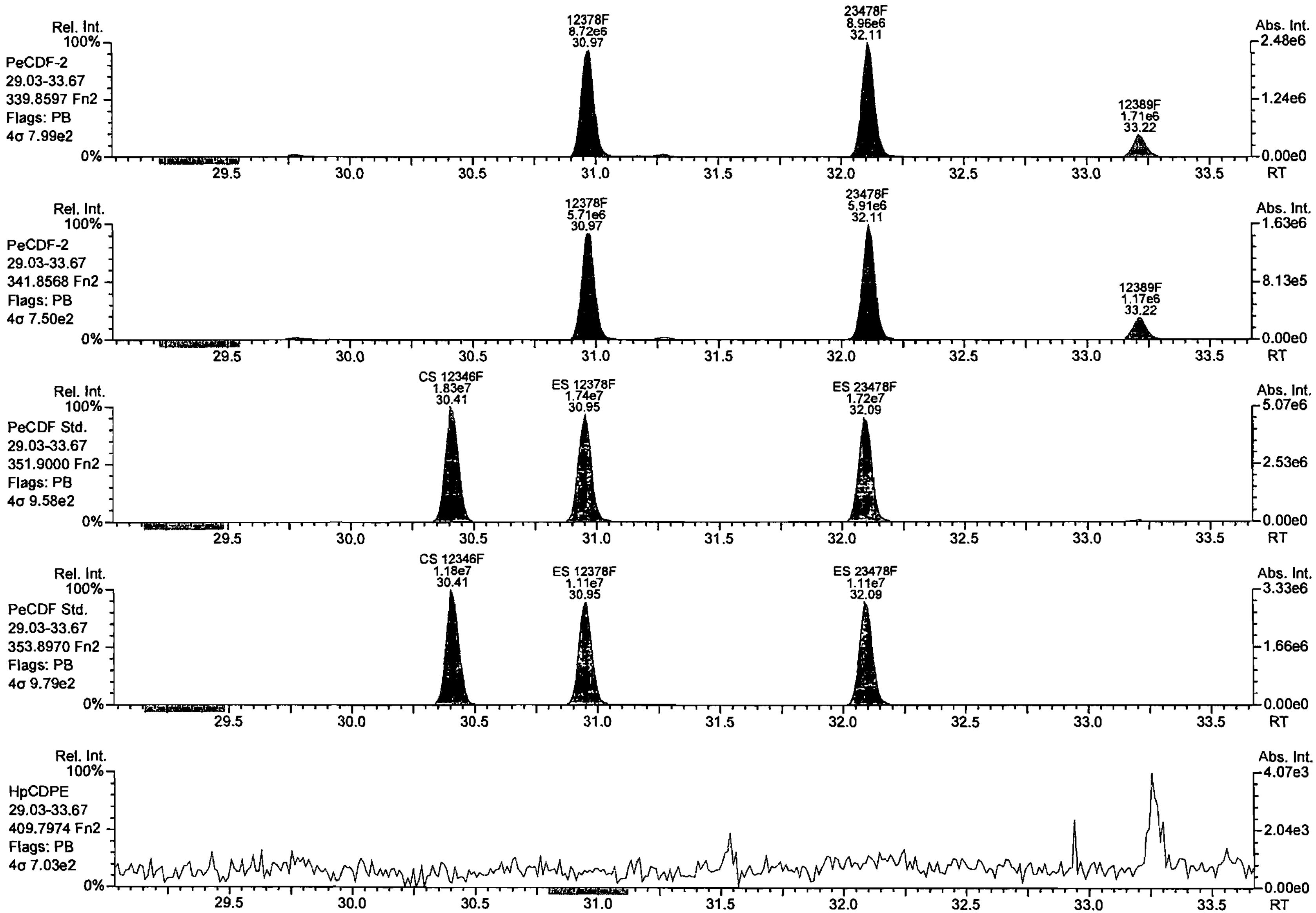
AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10



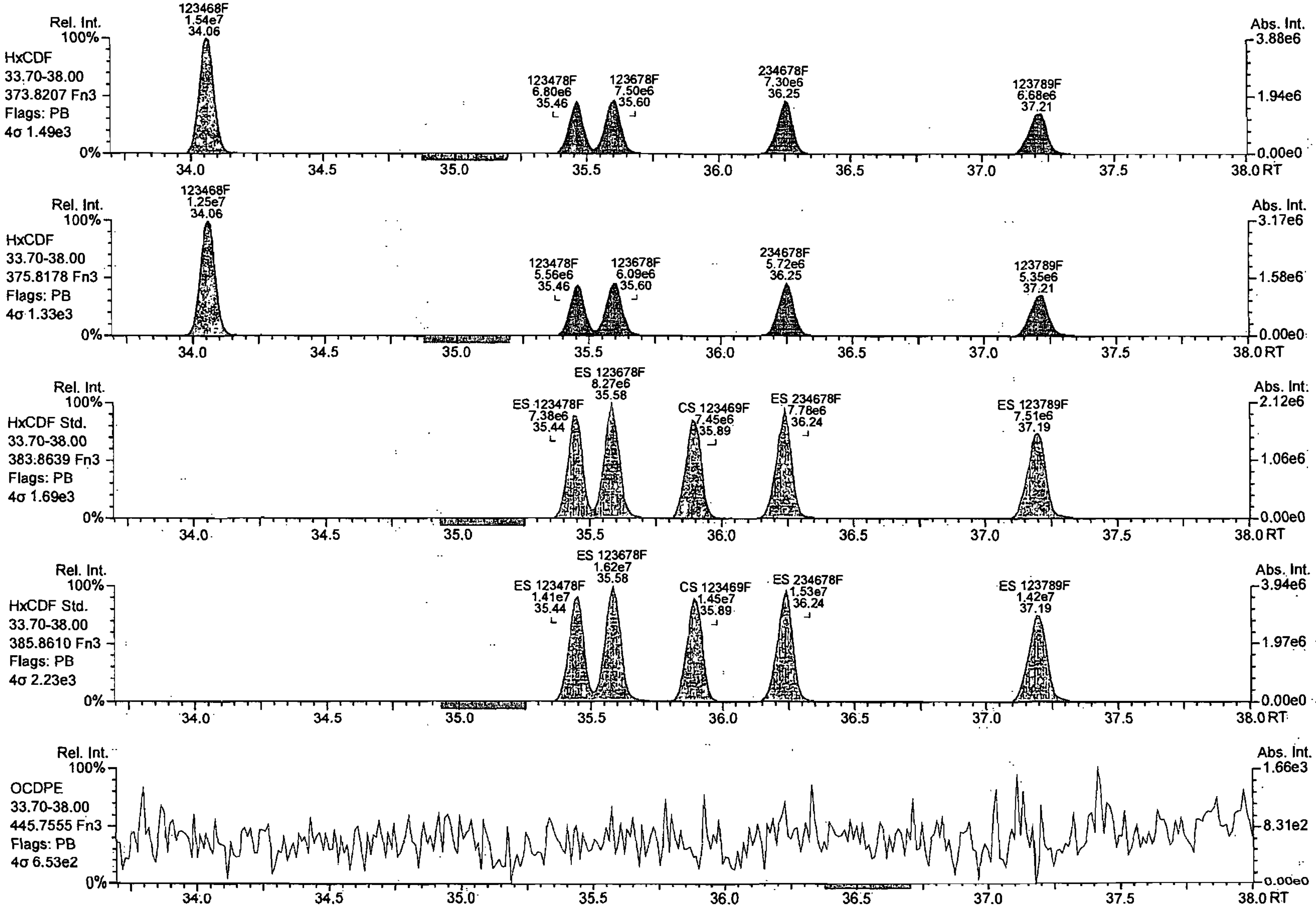
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\BCS3_7679_DF_PB.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3743, 4245, 0409 scc: 559-021

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:50:49 (MC) Printed: 09-Apr-2010 16:14:50

AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10



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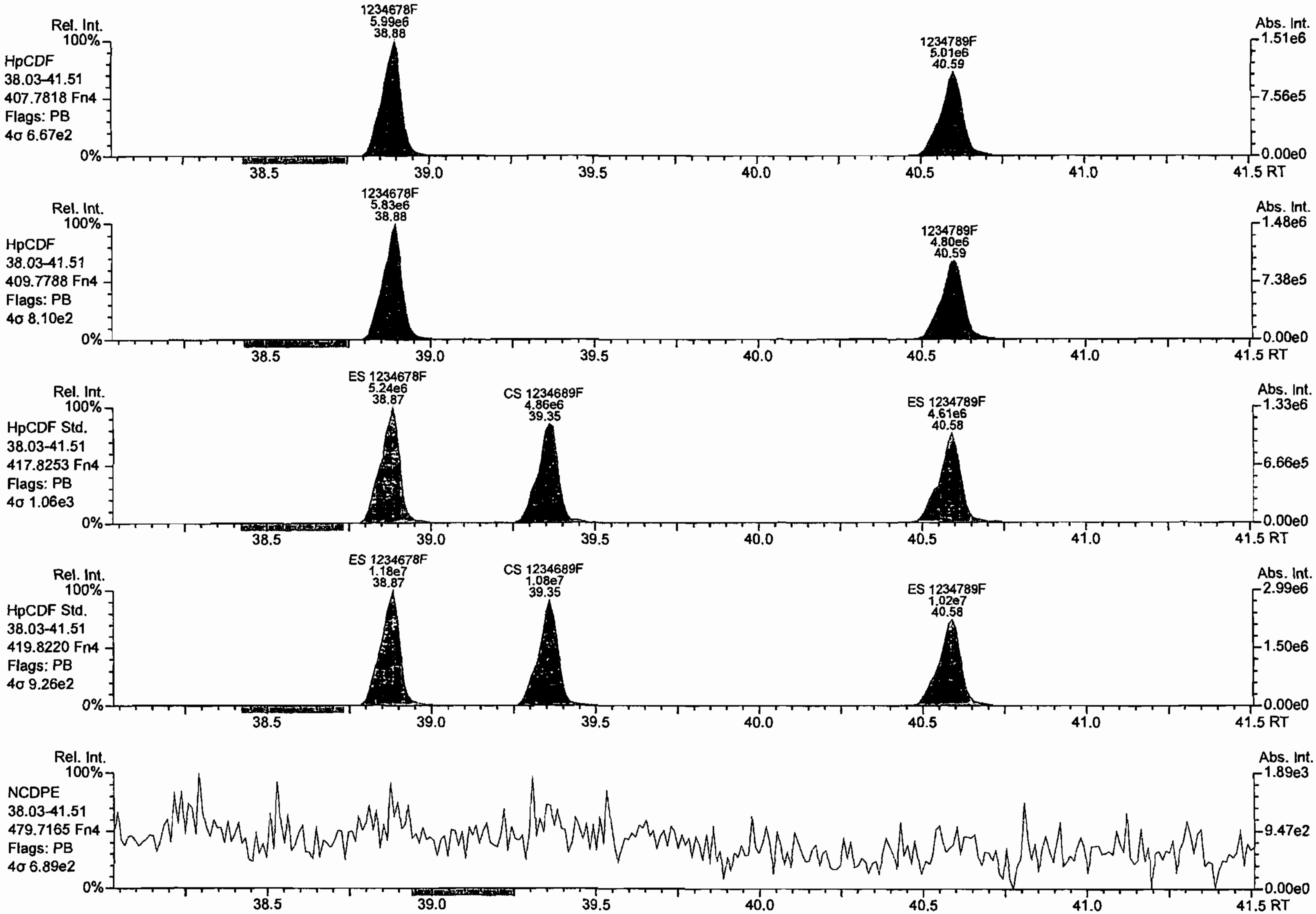
AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10

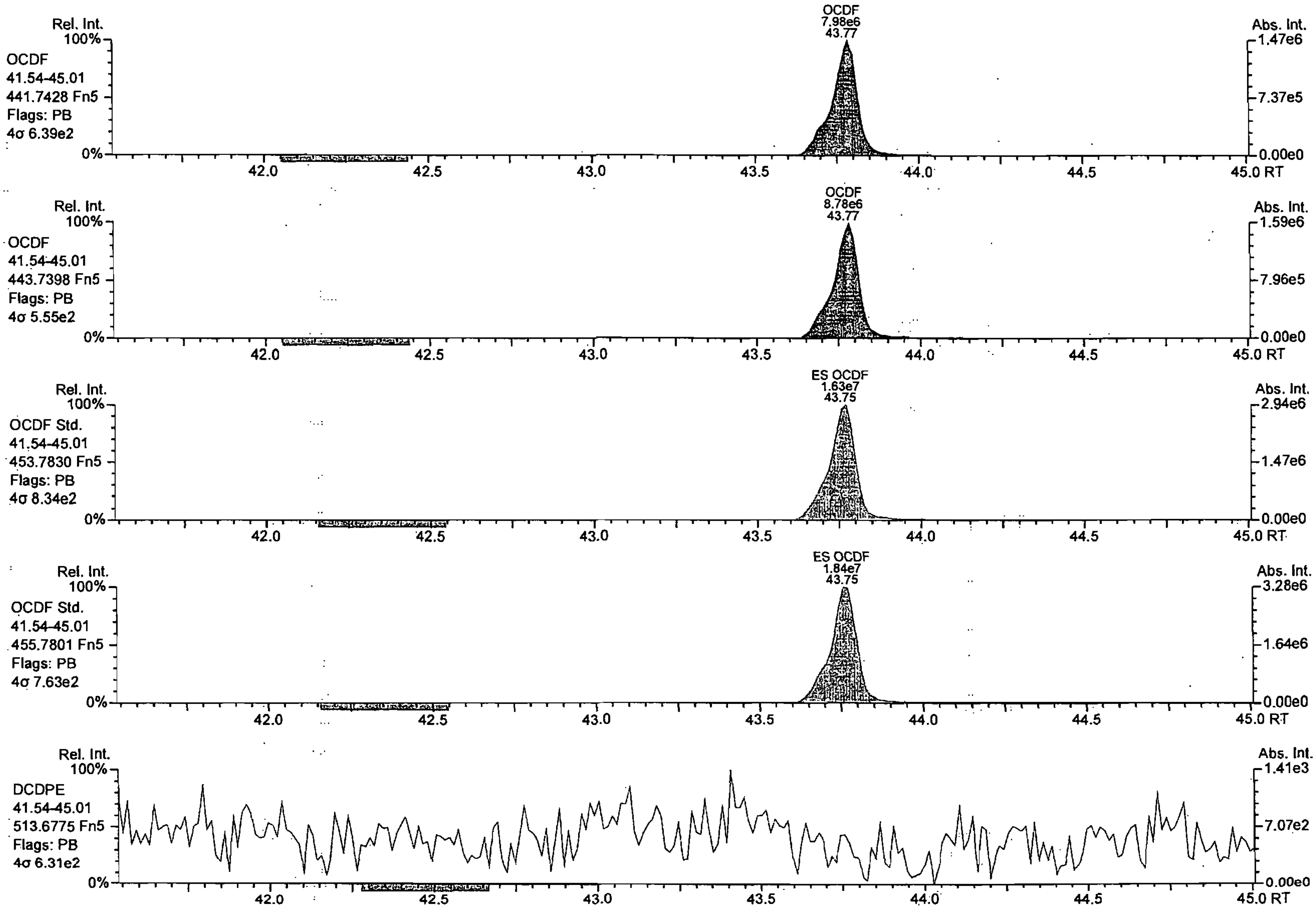


I - 270

AP Lab ID: BCS3_7679_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7679_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 46

Acq: 9-APR-2010 15:00:55
User: MC Datafile: 100409P1-10



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P2096

ANALYTICAL PERSPECTIVES

PART 4D

SYSTEM PERFORMANCE

"INITIAL CALIBRATION"

DOCUMENTATION FOR THE ANALYSIS
OF
POLYCHLORINATED DIBENZO-*p*-DIOXINS & DIBENZOFURANS

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ICAL: MM1_ical_122509
Data Acquired: 25-Dec-2009

Name	Mean	% RSD	091225P1-01 0.25 CS0	091225P1-02 0.5 CS1	091225P1-03 2.0 CS2	091225P1-04 10 CS3	091225P1-05 40 CS4	091225P1-06 200 CS5	091225P1-07 500 CS6
2378-TCDD	1.23	5.3%	1.36	1.17	1.19	1.17	1.24	1.23	1.23
12378-PeCDD	1.14	3.9%	1.22	1.13	1.07	1.12	1.14	1.14	1.15
123478-HxCDD	1.19	3.6%	1.10	1.21	1.18	1.23	1.21	1.22	1.21
123678-HxCDD	1.09	4.5%	1.19	1.11	1.06	1.05	1.08	1.07	1.07
123789-HxCDD	1.08	1.3%	1.10	1.06	1.07	1.07	1.09	1.09	1.08
1234678-HpCDD	1.04	4.6%	0.94	1.06	1.02	1.05	1.06	1.09	1.05
OCDD	1.10	4.2%	1.19	1.07	1.07	1.05	1.09	1.08	1.12
2378-TCDF	1.13	2.9%	1.18	1.16	1.11	1.08	1.11	1.12	1.13
12378-PeCDF	1.16	2.1%	1.21	1.14	1.14	1.14	1.18	1.17	1.16
23478-PeCDF	1.13	1.7%	1.12	1.15	1.11	1.11	1.16	1.15	1.14
123478-HxCDF	1.26	2.7%	1.21	1.26	1.23	1.25	1.31	1.26	1.28
123678-HxCDF	1.25	2.8%	1.33	1.22	1.24	1.24	1.25	1.25	1.25
234678-HxCDF	1.18	2.9%	1.12	1.22	1.15	1.19	1.21	1.18	1.19
123789-HxCDF	1.20	2.9%	1.17	1.24	1.15	1.17	1.23	1.22	1.22
1234678-HpCDF	1.39	2.8%	1.39	1.31	1.39	1.41	1.41	1.40	1.42
1234789-HpCDF	1.42	2.4%	1.45	1.38	1.38	1.41	1.46	1.45	1.42
OCDF	1.01	1.8%	1.02	1.00	0.98	1.02	1.01	1.03	1.03
ES 2378-TCDD	1.04	1.8%	1.04	1.02	1.02	1.05	1.04	1.06	1.07
ES 12378-PeCDD	0.96	4.2%	0.97	0.94	0.92	0.91	0.93	0.99	1.03
ES 123478-HxCDD	1.01	7.0%	1.01	0.94	0.99	0.93	1.04	1.01	1.14
ES 123678-HxCDD	1.14	6.2%	1.13	1.09	1.10	1.05	1.17	1.14	1.27
ES 123789-HxCDD	1.14	6.7%	1.14	1.07	1.13	1.06	1.17	1.13	1.29
ES 1234678-HpCDD	0.98	7.1%	0.98	0.91	0.98	0.92	0.99	0.96	1.12
ES OCDD	0.76	8.1%	0.75	0.73	0.72	0.70	0.76	0.79	0.89
ES 2378-TCDF	0.94	1.7%	0.94	0.92	0.91	0.94	0.94	0.95	0.95
ES 12378-PeCDF	0.95	3.8%	0.96	0.91	0.91	0.93	0.93	0.98	1.00
ES 23478-PeCDF	0.90	3.5%	0.91	0.88	0.87	0.88	0.87	0.93	0.95
ES 123478-HxCDF	1.50	4.4%	1.50	1.42	1.51	1.42	1.50	1.49	1.62
ES 123678-HxCDF	1.63	5.6%	1.61	1.54	1.62	1.53	1.66	1.63	1.81
ES 234678-HxCDF	1.50	5.5%	1.49	1.43	1.50	1.40	1.53	1.49	1.66
ES 123789-HxCDF	1.32	7.0%	1.42	1.24	1.27	1.22	1.32	1.31	1.47
ES 1234678-HpCDF	1.11	5.7%	1.11	1.07	1.11	1.03	1.12	1.13	1.23
ES 1234789-HpCDF	0.92	7.6%	0.90	0.86	0.92	0.85	0.91	0.91	1.06
ES OCDF	1.07	10.9%	1.04	0.99	1.00	0.96	1.09	1.11	1.31

ICAL: MM1_ical_122509
Data Acquired: 18-Jun-2009

Name	Mean	% RSD	091225P1-01 0.25 CS0	091225P1-02 0.5 CS1	091225P1-03 2.0 CS2	091225P1-04 10 CS3	091225P1-05 40 CS4	091225P1-06 200 CS5	091225P1-07 500 CS6
CS 37Cl-2378-TCDD	1.11	6.6%	-	1.03	1.03	1.15	1.17	1.18	-
CS 12347-PeCDD	1.03	2.3%	1.08	1.05	1.03	1.01	1.02	1.03	1.02
CS 12346-PeCDF	0.92	1.6%	0.95	0.91	0.92	0.91	0.91	0.93	0.91
CS 123469-HxCDF	1.31	3.9%	1.34	1.29	1.35	1.28	1.37	1.22	1.31
CS 1234689-HpCDF	0.91	3.9%	0.92	0.94	0.93	0.86	0.94	0.85	0.89
SS 37Cl-2378-TCDD	1.07	5.2%	-	1.01	1.01	1.09	1.13	1.11	-
SS 12347-PeCDD	1.08	4.5%	1.11	1.12	1.11	1.11	1.10	1.04	0.99
SS 12346-PeCDF	0.97	3.6%	0.99	1.00	1.01	0.98	0.98	0.95	0.91
SS 123469-HxCDF	0.81	5.7%	0.83	0.83	0.84	0.84	0.83	0.75	0.73
SS 1234689-HpCDF	0.81	6.6%	0.83	0.88	0.84	0.84	0.83	0.76	0.72
AS 1368-TCDD	1.09	-	-	-	-	1.09	-	-	-
AS 1368-TCDF	1.12	-	-	-	-	1.12	-	-	-
OCDD-a	0.07	5.3%	-	-	-	0.06	0.07	0.07	0.07
OCDF-a	0.06	2.2%	-	-	-	0.06	0.06	0.06	0.06
Totals									
Total TCDD	1.23	5.3%	1.36	1.17	1.19	1.17	1.24	1.23	1.23
Total PeCDD	1.14	3.9%	1.22	1.13	1.07	1.12	1.14	1.14	1.15
Total HxCDD	1.12	0.8%	1.13	1.13	1.10	1.12	1.13	1.13	1.12
Total HpCDD	1.04	4.6%	0.94	1.06	1.02	1.05	1.06	1.09	1.05
Total TCDF	1.13	2.9%	1.18	1.16	1.11	1.08	1.11	1.12	1.13
Total PeCDF	1.15	1.4%	1.16	1.15	1.13	1.13	1.17	1.16	1.15
Total HxCDF	1.22	1.6%	1.21	1.23	1.19	1.21	1.25	1.23	1.24
Total HpCDF	1.41	2.3%	1.42	1.34	1.39	1.41	1.44	1.43	1.42

P2096

ANALYTICAL PERSPECTIVES

PART 4E

SYSTEM PERFORMANCE

"AUDIT SAMPLE"

DOCUMENTATION FOR THE ANALYSIS
OF
POLYCHLORINATED DIBENZO-p-DIOXINS & DIBENZOFURANS

I-277

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Lab ID: P2096_7679_006 | Acq'd: 09 Apr 2010 14:10 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: M23-4435-01-Audit | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 025-176

Datafile: 100409P1-09 | Report: 09 Apr 2010 15:55 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	26.88		1.0008	1.0009	+0.2	1.30E+06	0.80	Y	0.99	152	1096	1.39
12378-PeCDD	32.49		1.0006	1.0006	0	9.95E+05	1.58	Y	0.93	150	1272	1.67
123478-HxCDD	36.44		1.0004	1.0004	0	9.39E+05	1.16	Y	1.04	146	1419	2.08
123678-HxCDD	36.55		1.0034	1.0034	0	9.10E+05	1.27	Y	0.95	140	1419	2.16
123789-HxCDD	36.84		1.0116	1.0115	-0.2	1.00E+06	1.23	Y	0.93	150	1419	2.16
1234678-HpCDD	40.04		1.0003	1.0004	+0.2	8.15E+05	1.05	Y	0.96	140	1126	2.09
OCDD	43.54		1.0004	1.0003	-0.3	1.40E+06	0.88	Y	1.00	291	1243	3.53
2378-TCDF	25.94		1.0009	1.0009	0	2.33E+06	0.78	Y	1.08	172	1224	0.989
12378-PeCDF	30.98		1.0006	1.0006	0	1.42E+06	1.54	Y	1.00	142	1189	1.08
23478-PeCDF	32.12		1.0005	1.0005	0	2.93E+06	1.53	Y	1.04	284	1189	1.01
123478-HxCDF	35.47		1.0004	1.0005	+0.2	1.68E+06	1.25	Y	1.14	195	1718	1.83
123678-HxCDF	35.61		1.0005	1.0005	0	1.87E+06	1.20	Y	1.13	195	1718	1.7
234678-HxCDF	36.26		1.0005	1.0005	0	1.66E+06	1.24	Y	1.14	180	1718	1.86
123789-HxCDF	37.23		1.0005	1.0008	+0.7	2.19E+06	1.24	Y	1.12	283	1718	2.29
1234678-HpCDF	38.89		1.0003	1.0003	0	1.09E+06	1.00	Y	1.38	132	1383	1.72
1234789-HpCDF	40.60		1.0003	1.0003	0	6.47E+05	1.05	Y	1.33	92.9	1383	2.25
OCDF	43.78		1.0004	1.0003	-0.3	1.65E+06	0.93	Y	0.96	284	1205	2.75

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Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.85	1.0259	1.0259	0	3.46E+07	0.79	Y	1.01	81.6
ES 12378-PeCDD	32.47	1.2404	1.2403	-0.2	2.84E+07	1.63	Y	0.78	86.6
ES 123478-HxCDD	36.43	0.9917	0.9917	0	2.46E+07	1.27	Y	0.99	89.4
ES 123678-HxCDD	36.54	0.9947	0.9947	0	2.74E+07	1.26	Y	1.07	92.3
ES 123789-HxCDD	36.83	1.0028	1.0028	0	2.87E+07	1.22	Y	1.09	94.5
ES 1234678-HpCDD	40.02	1.0902	1.0896	-1.3	2.41E+07	1.07	Y	0.90	96.3
ES OCDD	43.53	1.1862	1.1850	-2.6	3.84E+07	0.92	Y	0.74	93.7
ES 2378-TCDF	25.92	1.0585	1.0586	+0.1	5.01E+07	0.80	Y	1.00	83.6
ES 12378-PeCDF	30.96	1.2646	1.2647	+0.1	3.99E+07	1.57	Y	0.75	88.5
ES 23478-PeCDF	32.11	1.3113	1.3114	+0.1	3.95E+07	1.57	Y	0.74	88.5
ES 123478-HxCDF	35.45	0.9651	0.9651	0	3.01E+07	0.52	Y	1.19	91.2
ES 123678-HxCDF	35.59	0.9689	0.9690	+0.2	3.38E+07	0.51	Y	1.35	90.4
ES 234678-HxCDF	36.24	0.9867	0.9867	0	3.23E+07	0.52	Y	1.28	90.8
ES 123789-HxCDF	37.20	1.0129	1.0128	-0.2	2.76E+07	0.52	Y	1.20	83.1
ES 1234678-HpCDF	38.88	1.0589	1.0585	-0.9	2.40E+07	0.45	Y	0.95	91.3
ES 1234789-HpCDF	40.59	1.1057	1.1049	-1.8	2.09E+07	0.42	Y	0.82	92.4
ES OCDF	43.76	1.1926	1.1914	-2.6	4.83E+07	0.89	Y	0.96	90.9

Lab ID: P2096_7679_006	Acq'd: 09 Apr 2010 14:10 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: M23-4435-01-Audit	UTP: 09-Apr-2010 15:51 MC	J-level: 10 pg	Checkcode: 025-176
Datafile: 100409P1-09	Report: 09 Apr 2010 15:55 MC	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.18		-	-	-	4.20E+07	0.81	Y	-	-
JS 1234-TCDF	24.48		-	-	-	6.01E+07	0.80	Y	-	-
JS 123467-HxCDD	36.73		-	-	-	1.39E+07	1.42	Y	-	-
CS 37Cl-2378-TCDD	NotFnd		1.0268				n/a	-		
CS 12347-PeCDD	NotFnd		1.2209							
CS 12346-PeCDF	NotFnd		1.2424							
CS 123469-HxCDF	NotFnd		0.9773							
CS 1234689-HpCDF	NotFnd		1.0720							
SS 37Cl-2378-TCDD	NotFnd		1.0268				n/a	-		
SS 12347-PeCDD	NotFnd		1.2209							
SS 12346-PeCDF	NotFnd		1.2424							
SS 123469-HxCDF	NotFnd		0.9773							
SS 1234689-HpCDF	NotFnd		1.0720							
AS 1368-TCDD	22.90		0.8731	0.8747	+2.5	3.48E+07	0.81	Y	1.08	76.7
AS 1368-TCDF	20.75		0.8447	0.8474	+4.0	5.83E+07	0.79	Y	1.29	75.1
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.2		0.9794	0.9795	+0.2	1.79E+05	1.26	N	0.01	96
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 12 Apr 10

Totals	Conc	EMPC
Total TCDD	347	347
Total PeCDD	358	358
Total HxCDD	647	647
Total HpCDD	240	240
Total Tetra-Octa Dioxins	1880	1880
Total TCDF	357	357
Total PeCDF	618	618
Total HxCDF	959	959
Total HpCDF	309	309
Total Tetra-Octa Furans	2530	2530
Total Tetra-Octa Dioxins & Furans	4410	4410

Lab ID: P2096_7679_006	Acq'd: 09 Apr 2010 14:10 MC	Wt/Vol: 1	Cal: BCS3_7679_DF_PAB
Client ID: M23-4435-01-Audit	UTP: 09-Apr-2010 15:51 MC	J-level: 10 pg	Checkcode: 025-176
Datafile: 100409P1-09	Report: 09 Apr 2010 15:55 MC	ES spike: 4000 pg	Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	22.93		0.8539	0.8538	-0.2	7.78E+05	0.77	Y	0.99	90.5	1096	1.39
1379-TCDD	NotFnd		0.8685						0.99		1096	1.39
1369-TCDD	NotFnd		0.8863						0.99		1096	1.39
1469-TCDD	NotFnd		0.9189						0.99		1096	1.39
1247/1246/1248/1249-TCDD	NotFnd		0.9276						0.99		1096	1.39
1378-TCDD	NotFnd		0.9351						0.99		1096	1.39
1268-TCDD	NotFnd		0.9430						0.99		1096	1.39
1478-TCDD	NotFnd		0.9517						0.99		1096	1.39
1279-TCDD	NotFnd		0.9598						0.99		1096	1.39
1234/1269-TCDD	NotFnd		0.9740						0.99		1096	1.39
1236-TCDD	NotFnd		0.9801						0.99		1096	1.39
1237/1238-TCDD	NotFnd		0.9895						0.99		1096	1.39
1239-TCDD	NotFnd		0.9952						0.99		1096	1.39
2378-TCDD	**26.88**		**1.0008**	**1.0009**	**+0.2**	**1.30E+06**	**0.80**	**Y**	**0.99**	**152**	**1096**	**1.39**
1278-TCDD	NotFnd		1.0138						0.99		1096	1.39
1267-TCDD	NotFnd		1.0194						0.99		1096	1.39
1289-TCDD	27.92		1.0396	1.0397	+0.2	9.01E+05	0.77	Y	0.99	105	1096	1.39
12479/12468-PeCDD	29.91		0.9210	0.9213	+0.6	6.95E+05	1.51	Y	0.93	105	1272	1.67
12469-PeCDD	NotFnd		0.9382						0.93		1272	1.67
12368-PeCDD	NotFnd		0.9556						0.93		1272	1.67
12478-PeCDD	NotFnd		0.9614						0.93		1272	1.67
12379-PeCDD	NotFnd		0.9649						0.93		1272	1.67
12369/12467/12489-PeCDD	NotFnd		0.9732						0.93		1272	1.67
12346/12347-PeCDD	NotFnd		0.9850						0.93		1272	1.67
12378-PeCDD	**32.49**		**1.0006**	**1.0006**	**0**	**9.95E+05**	**1.58**	**Y**	**0.93**	**150**	**1272**	**1.67**
12367-PeCDD	NotFnd		1.0037						0.93		1272	1.67
12389-PeCDD	32.94		1.0146	1.0146	0	6.79E+05	1.58	Y	0.93	102	1272	1.67
124679/124689-HxCDD	34.74		0.9534	0.9536	+0.4	7.60E+05	1.27	Y	0.97	116	1419	2.13
123468-HxCDD	NotFnd		0.9717						0.97		1419	2.13
123679/123689-HxCDD	NotFnd		0.9793						0.97		1419	2.13
123469-HxCDD	NotFnd		0.9833						0.97		1419	2.13
123478-HxCDD	**36.44**		**1.0004**	**1.0004**	**0**	**9.39E+05**	**1.16**	**Y**	**1.04**	**146**	**1419**	**2.08**
123678-HxCDD	**36.55**		**1.0034**	**1.0034**	**0**	**9.10E+05**	**1.27**	**Y**	**0.95**	**140**	**1419**	**2.16**
123467-HxCDD	36.75		1.0088	1.0088	0	6.11E+05	1.19	Y	0.97	93.5	1419	2.13
123789-HxCDD	**36.84**		**1.0116**	**1.0115**	**-0.2**	**1.00E+06**	**1.23**	**Y**	**0.93**	**150**	**1419**	**2.16**

Lab ID: P2096_7679_006 | Acq'd: 09 Apr 2010 14:10 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: M23-4435-01-Audit | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 025-176

Datafile: 100409P1-09 | Report: 09 Apr 2010 15:55 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.21		0.9794	0.9796	+0.5	5.81E+05	1.10	Y	0.96	100	1126	2.09
1234678-HpCDD	**40.04**		**1.0003**	**1.0004**	**+0.2**	**8.15E+05**	**1.05**	**Y**	**0.96**	**140**	**1126**	**2.09**
OCDD	**43.54**		**1.0004**	**1.0003**	**-0.3**	**1.40E+06**	**0.88**	**Y**	**1.00**	**291**	**1243**	**3.53**
OCDD-a	NotFnd		1.0003						0.06		1481	69
1368-TCDF	20.77		0.8012	0.8015	+0.5	1.29E+06	0.80	Y	1.08	95.2	1224	0.989
1468-TCDF	NotFnd		0.8216						1.08		1224	0.989
2468-TCDF	NotFnd		0.8461						1.08		1224	0.989
1346/1246-TCDF	NotFnd		0.8607						1.08		1224	0.989
1347/1378/1247-TCDF	NotFnd		0.8672						1.08		1224	0.989
1348-TCDF	NotFnd		0.8792						1.08		1224	0.989
1248/1367/1379-TCDF	NotFnd		0.8846						1.08		1224	0.989
1268-TCDF	NotFnd		0.9011						1.08		1224	0.989
1467-TCDF	NotFnd		0.9067						1.08		1224	0.989
1478-TCDF	NotFnd		0.9137						1.08		1224	0.989
1369/1237-TCDF	NotFnd		0.9293						1.08		1224	0.989
2467-TCDF	NotFnd		0.9348						1.08		1224	0.989
2368-TCDF	NotFnd		0.9408						1.08		1224	0.989
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9445						1.08		1224	0.989
1278-TCDF	NotFnd		0.9641						1.08		1224	0.989
1349-TCDF	NotFnd		0.9693						1.08		1224	0.989
1267-TCDF	NotFnd		0.9755						1.08		1224	0.989
2346/1249-TCDF	NotFnd		0.9834						1.08		1224	0.989
2347/1279-TCDF	NotFnd		0.9922						1.08		1224	0.989
2348-TCDF	NotFnd		0.9966						1.08		1224	0.989
2378-TCDF	**25.94**		**1.0009**	**1.0009**	**0**	**2.33E+06**	**0.78**	**Y**	**1.08**	**172**	**1224**	**0.989**
2367/3467-TCDF	NotFnd		1.0164						1.08		1224	0.989
1269-TCDF	NotFnd		1.0260						1.08		1224	0.989
1239-TCDF	NotFnd		1.0375						1.08		1224	0.989
1289-TCDF	28.09		1.0834	1.0838	+0.6	1.21E+06	0.77	Y	1.08	89.4	1224	0.989
13468/12468-PeCDF	28.06		0.9057	0.9061	+0.7	1.10E+06	1.72	Y	1.02	109	1477	1.3
13678/13467/12467-PeCDF	NotFnd		0.9581						1.02		1189	1.04
12368/13478/12478-PeCDF	NotFnd		0.9620						1.02		1189	1.04
14678-PeCDF	NotFnd		0.9667						1.02		1189	1.04
13479-PeCDF	NotFnd		0.9702						1.02		1189	1.04
13469/12479-PeCDF	NotFnd		0.9781						1.02		1189	1.04
12346-PeCDF	NotFnd		0.9829						1.02		1189	1.04

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Lab ID: P2096_7679_006 | Acq'd: 09 Apr 2010 14:10 MC | Wt/Vol: 1 | Cal: BCS3_7679_DF_PAB

Client ID: M23-4435-01-Audit | UTP: 09-Apr-2010 15:51 MC | J-level: 10 pg | Checkcode: 025-176

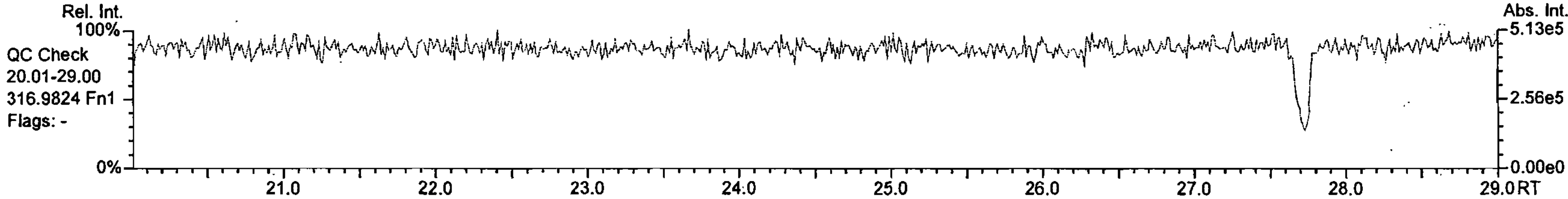
Datafile: 100409P1-09 | Report: 09 Apr 2010 15:55 MC | ES spike: 4000 pg | Split: 2

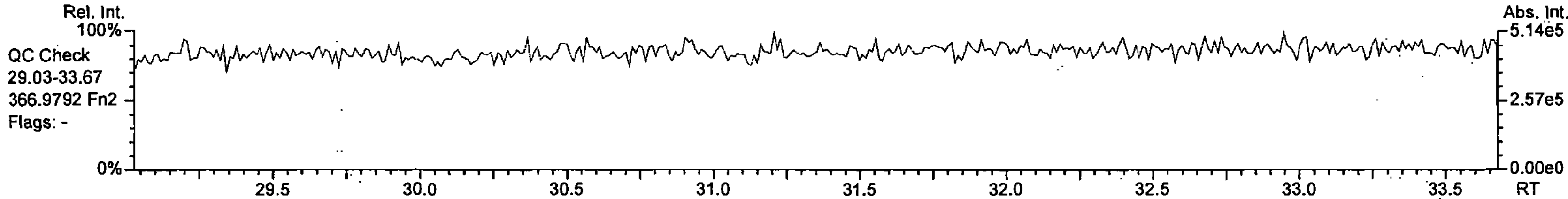
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9858						1.02		1189	1.04
12347-PeCDF	NotFnd		0.9881						1.02		1189	1.04
12348-PeCDF	NotFnd		0.9936						1.02		1189	1.04
12378-PeCDF	**30.98**		**1.0006**	**1.0006**	**0**	**1.42E+06**	**1.54**	**Y**	**1.00**	**142**	**1189**	**1.08**
12678/12367-PeCDF	NotFnd		1.0104						1.02		1189	1.04
12379-PeCDF	NotFnd		1.0151						1.02		1189	1.04
12679-PeCDF	NotFnd		0.9925						1.02		1189	1.04
23467/12369-PeCDF	NotFnd		0.9981						1.02		1189	1.04
23478-PeCDF	**32.12**		**1.0005**	**1.0005**	**0**	**2.93E+06**	**1.53**	**Y**	**1.04**	**284**	**1189**	**1.01**
23478/12489-PeCDF	NotFnd		1.0006						1.04		1189	1.01
12489-PeCDF	NotFnd		1.0023						1.02		1189	1.04
12349-PeCDF	NotFnd		1.0110						1.02		1189	1.04
12389-PeCDF	33.23		1.0350	1.0350	0	8.43E+05	1.61	Y	1.02	83	1189	1.04
123468-HxCDF	34.07		0.9609	0.9611	+0.4	9.23E+05	1.27	Y	1.13	105	1718	1.9
124678/134678-HxCDF	NotFnd		0.9668						1.13		1718	1.9
134679-HxCDF	NotFnd		0.9733						1.13		1718	1.9
124679-HxCDF	NotFnd		0.9788						1.13		1718	1.9
124689-HxCDF	NotFnd		0.9851						1.13		1718	1.9
123467-HxCDF	NotFnd		0.9968						1.13		1718	1.9
123478-HxCDF	**35.47**		**1.0004**	**1.0005**	**+0.2**	**1.68E+06**	**1.25**	**Y**	**1.14**	**195**	**1718**	**1.83**
123678-HxCDF	**35.61**		**1.0005**	**1.0005**	**0**	**1.87E+06**	**1.20**	**Y**	**1.13**	**195**	**1718**	**1.7**
123479-HxCDF	NotFnd		1.0048						1.13		1718	1.9
123469-HxCDF	NotFnd		1.0090						1.13		1718	1.9
123679-HxCDF	NotFnd		0.9943						1.13		1718	1.9
234678-HxCDF	**36.26**		**1.0005**	**1.0005**	**0**	**1.66E+06**	**1.24**	**Y**	**1.14**	**180**	**1718**	**1.86**
234678/123689-HxCDF	NotFnd		1.0004						1.14		1718	1.86
123689-HxCDF	NotFnd		1.0009						1.13		1718	1.9
123789-HxCDF	**37.23**		**1.0005**	**1.0008**	**+0.7**	**2.19E+06**	**1.24**	**Y**	**1.12**	**283**	**1718**	**2.29**
123789/123489-HxCDF	NotFnd		1.0012						1.12		1718	2.29
123489-HxCDF	NotFnd		1.0017						1.13		1718	1.9
1234678-HpCDF	**38.89**		**1.0003**	**1.0003**	**0**	**1.09E+06**	**1.00**	**Y**	**1.38**	**132**	**1383**	**1.72**
1234679-HpCDF	NotFnd		1.0083						1.36		1383	1.97
1234689-HpCDF	39.37		1.0132	1.0127	-1.2	6.43E+05	1.01	Y	1.36	84.5	1383	1.97
1234789-HpCDF	**40.60**		**1.0003**	**1.0003**	**0**	**6.47E+05**	**1.05**	**Y**	**1.33**	**92.9**	**1383**	**2.25**
OCDF	**43.78**		**1.0004**	**1.0003**	**-0.3**	**1.65E+06**	**0.93**	**Y**	**0.96**	**284**	**1205**	**2.75**
OCDF-a	43.77		1.0002	1.0001	-0.3	3.30E+04	5.01	N	0.05	99.4	1474	59.1

AP Lab ID: P2096_7679_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4435-01-Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53

Acq: 9-APR-2010 14:10:25
User: MC Datafile: 100409P1-09





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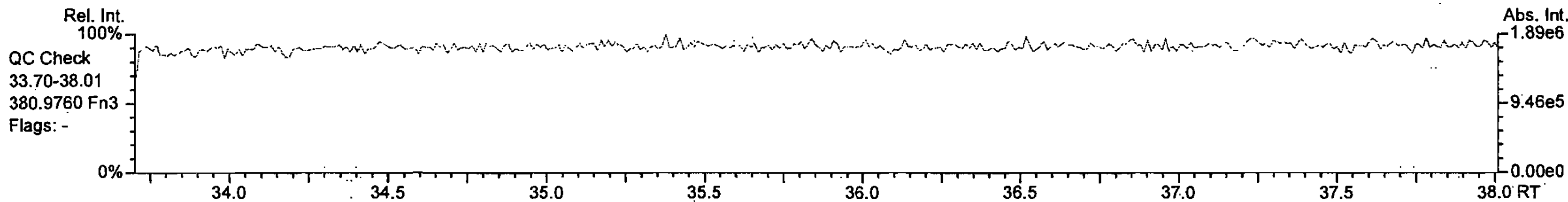
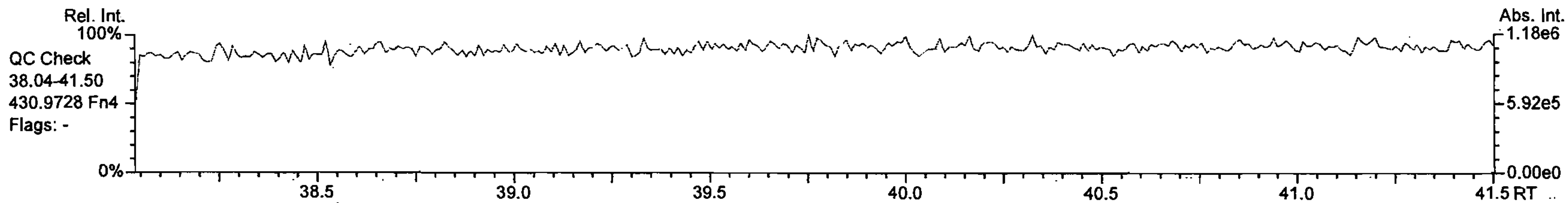
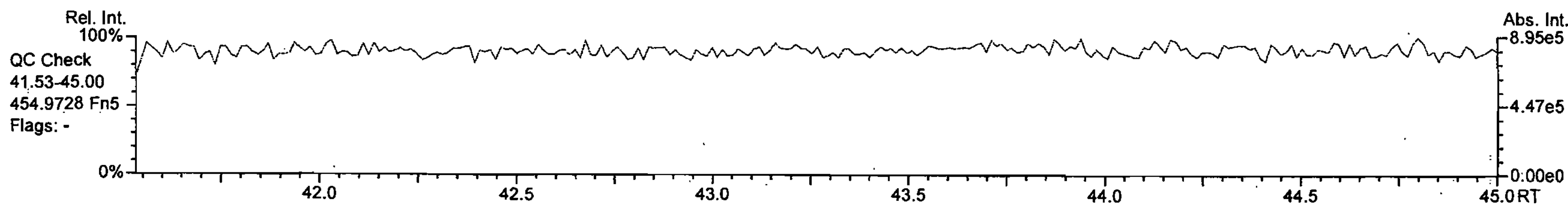
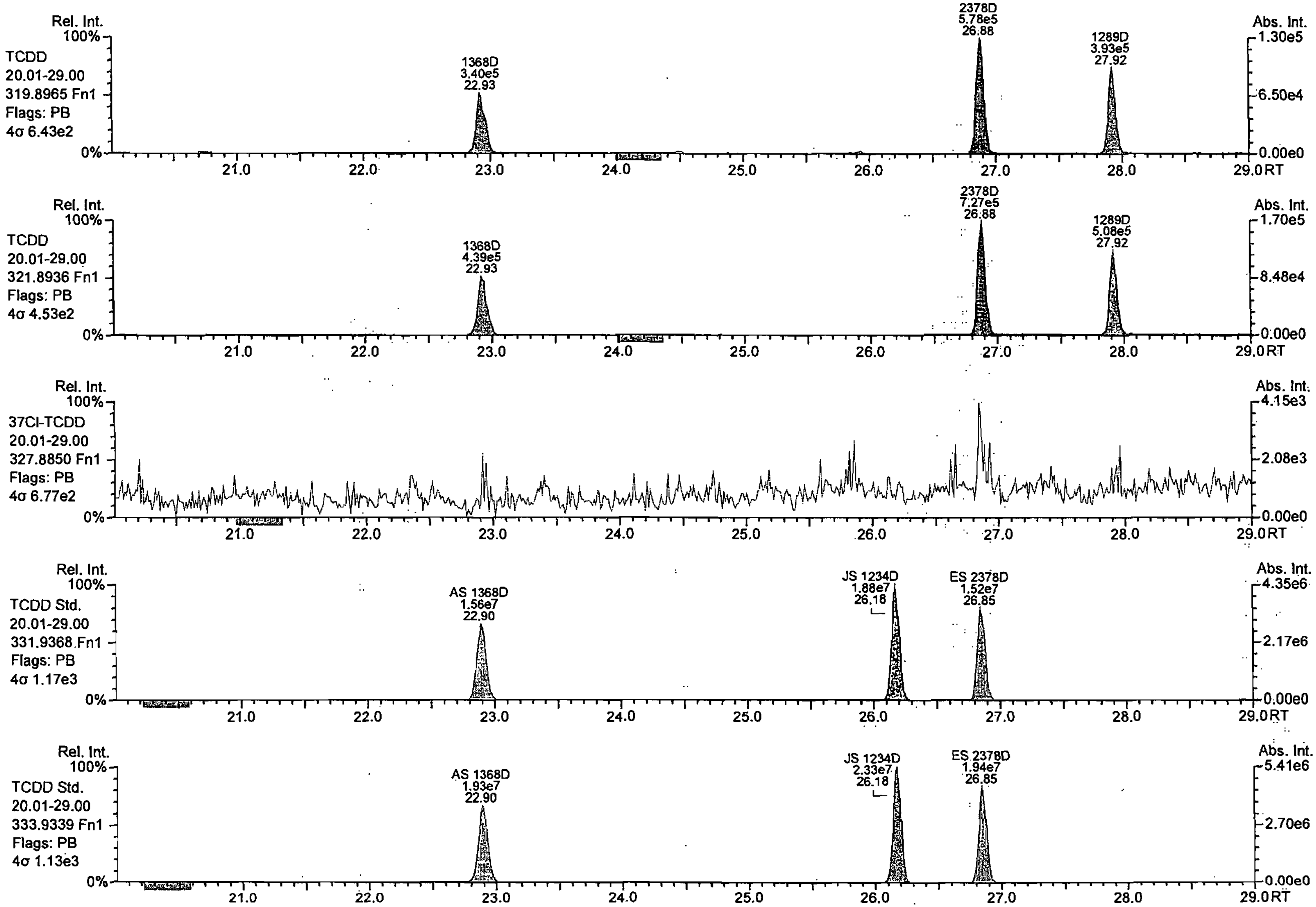






AP Lab ID: P2096_7679_006 Sample ID: M23-4435-01-Audit Acq: 9-APR-2010 14:10:25
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53 User: MC Datafile: 100409P1-09

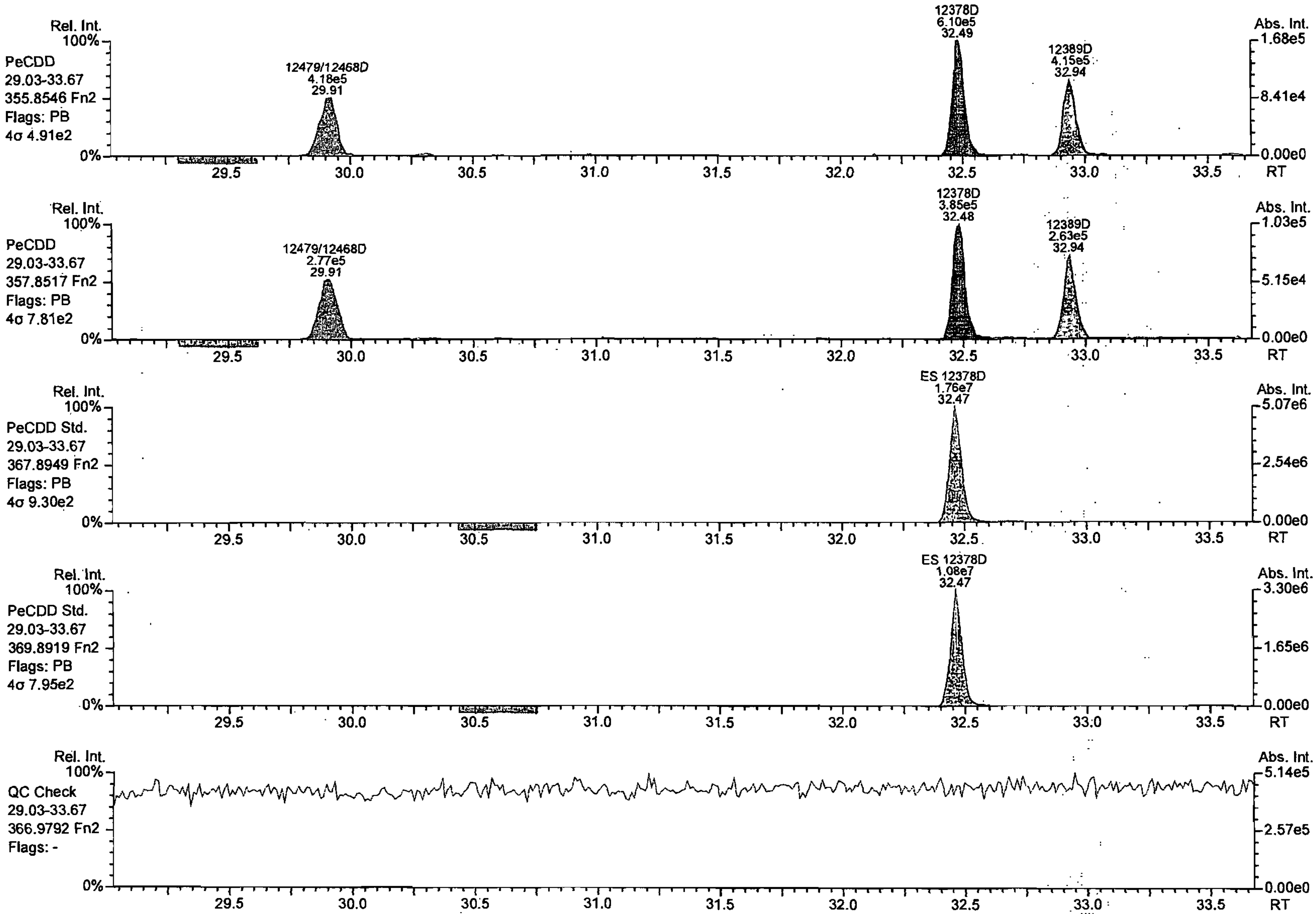


Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4711, 5173, 8235 scc: 025-176 PKD: 09-Apr-2010 15:00:04 Printed: 09-Apr-2010 16:12:31 Page 2 of 12

AP Lab ID: P2096_7679_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4435-01-Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53

Acq: 9-APR-2010 14:10:25
User: MC Datafile: 100409P1-09



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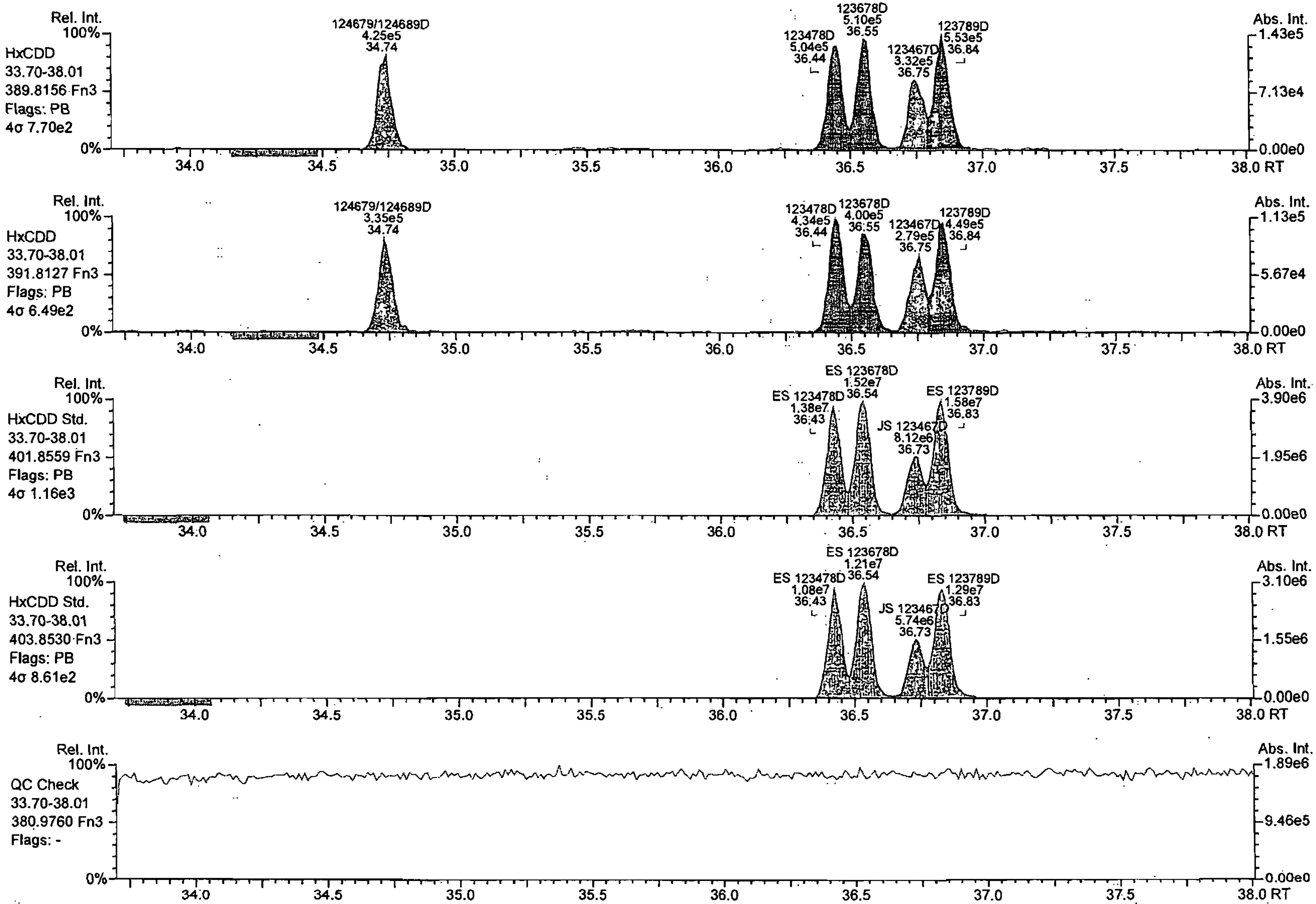
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1523, 9684 scc: 025-176

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:00:04 (MC) Printed: 09-Apr-2010 16:12:39 Page 3 of 12

AP Lab ID: P2096_7679_006 | Sample ID: M23-4435-01-Audit | Acq: 9-APR-2010 14:10:25

Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53 | User: MC Datafile: 100409P1-09



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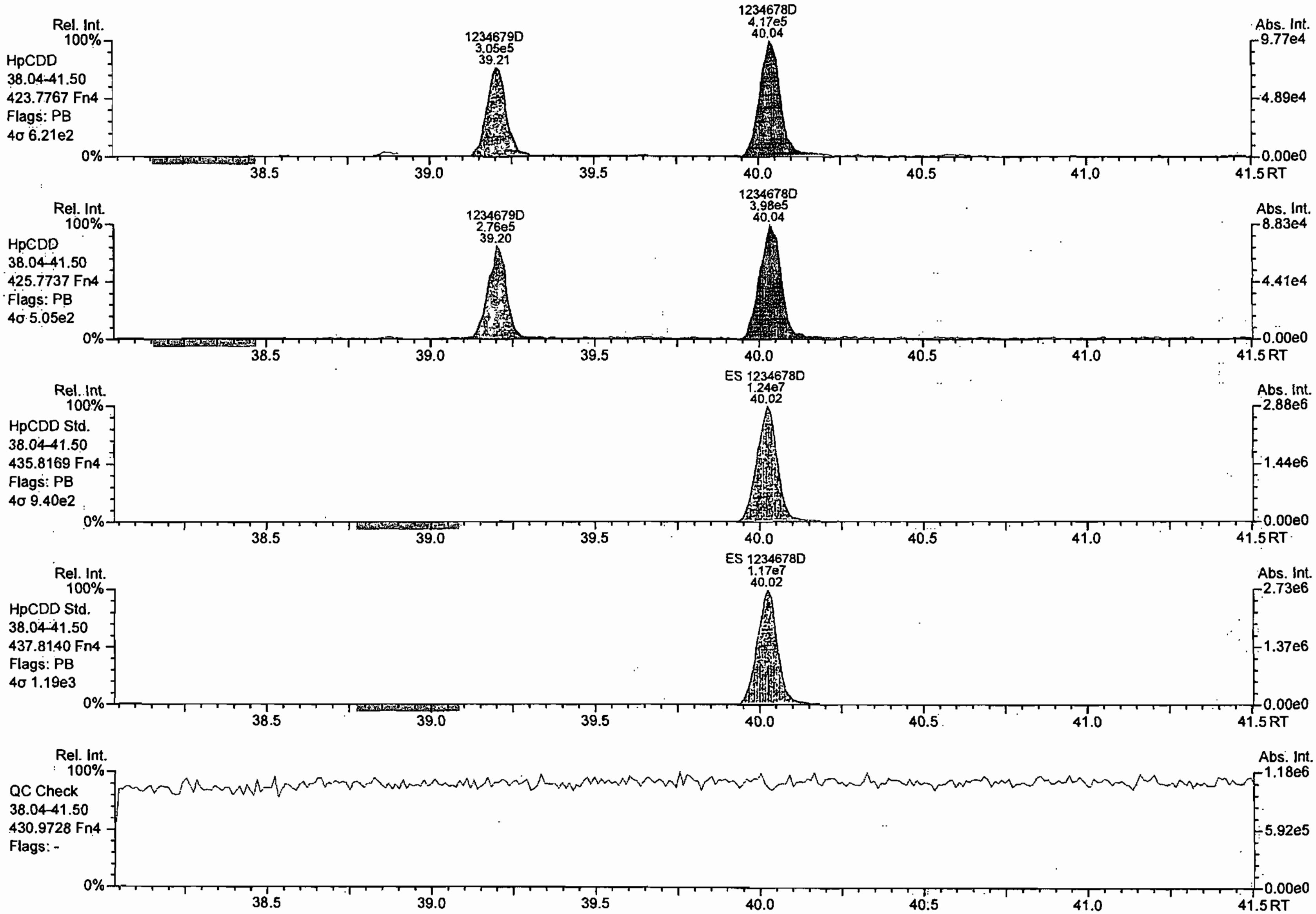
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC) | *Peak annotation: Areas, Centroids*

AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5033, 8614 scc: 025-176 | *Revised: 09-Apr-2010 15:00:04 (MC) Printed: 09-Apr-2010 16:12:46*

AP Lab ID: P2096_7679_006 | Sample ID: M23-4435-01-Audit | Acq: 9-APR-2010 14:10:25
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53 | User: MC Datafile: 100409P1-09



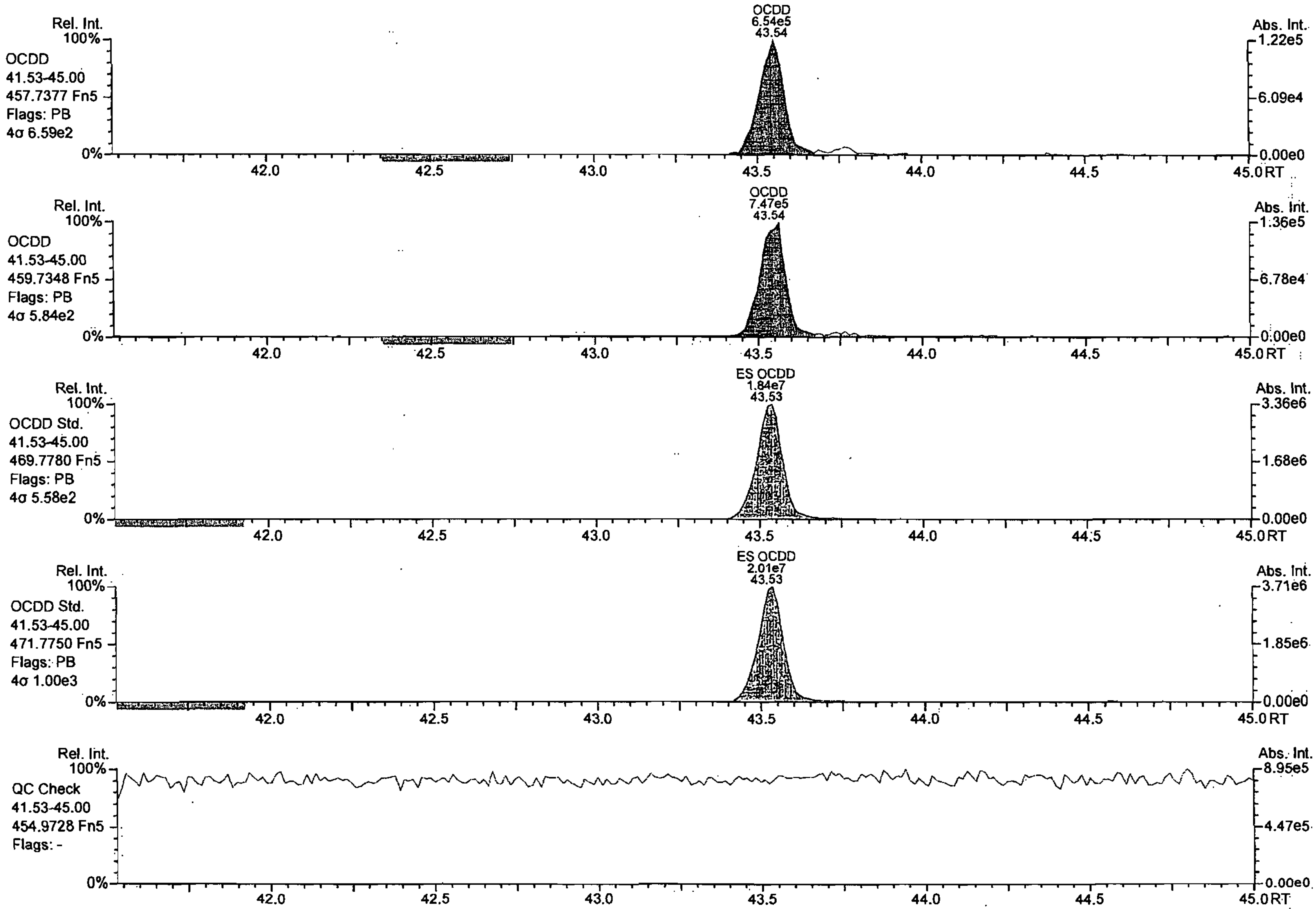
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6659, 3596 scc: 025-176

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:00:42 (MC) Printed: 09-Apr-2010 16:12:52 Page 5 of 12

AP Lab ID: P2096_7679_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4435-01-Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53

Acq: 9-APR-2010 14:10:25
User: MC Datafile: 100409P1-09



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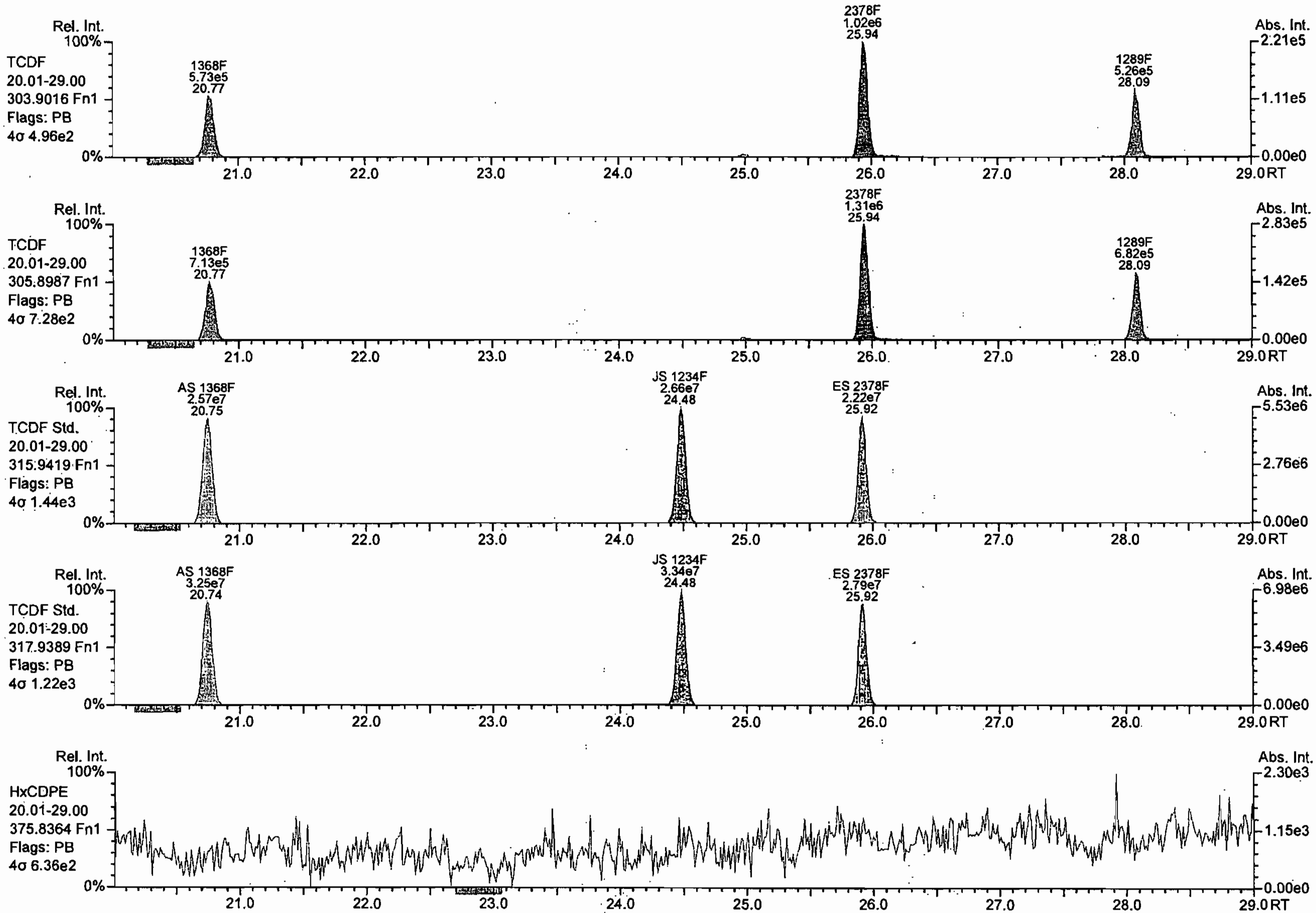
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC).
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1822, 9572 scc: 025-176

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:00:46 (MC) Printed: 09-Apr-2010 16:12:57

AP Lab ID: P2096_7679_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4435-01-Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53

Acq: 9-APR-2010 14:10:25
User: MC Datafile: 100409P1-09



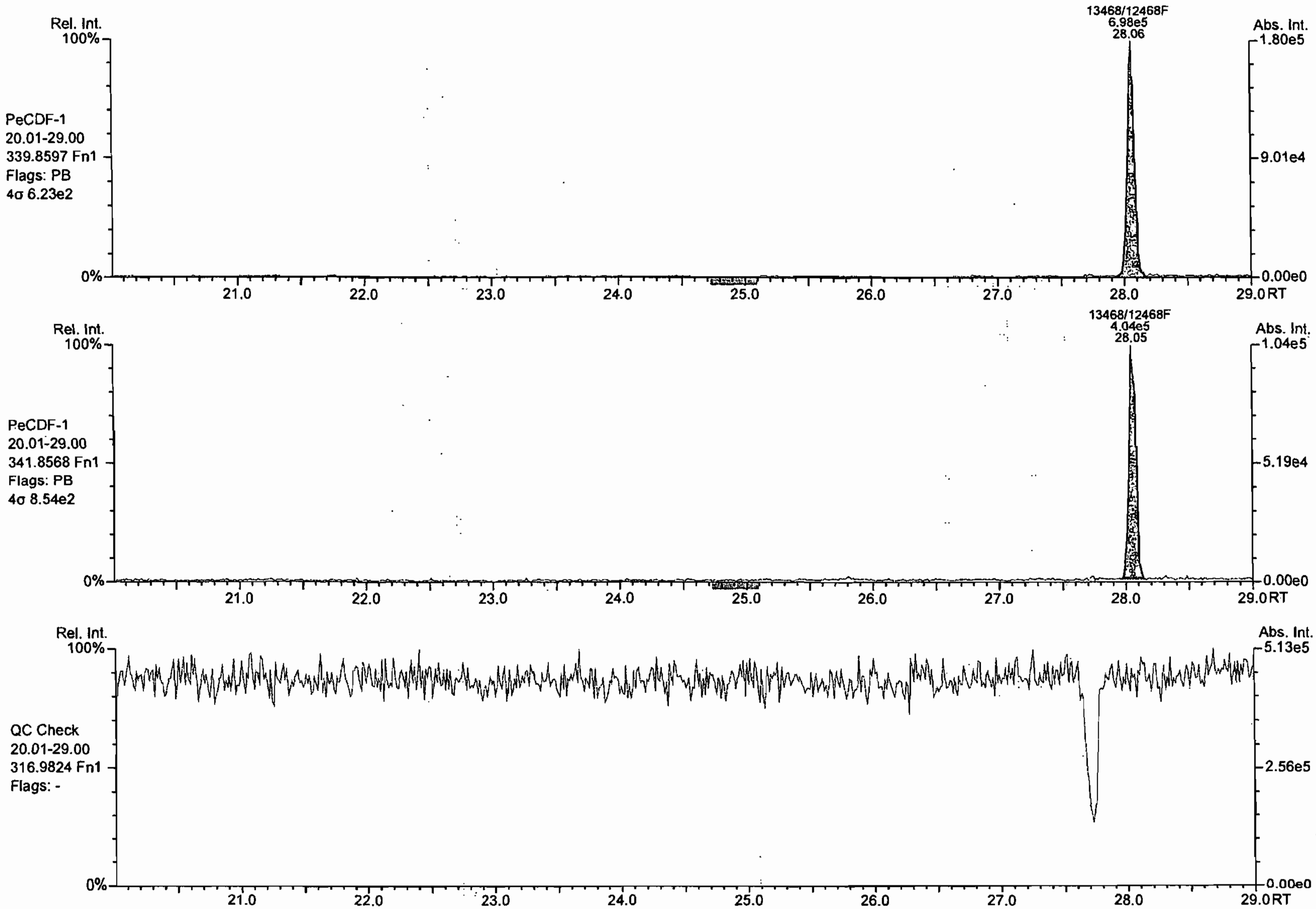
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.ulp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0564, 4435, 1143 scc: 025-176

Peak annotation: Areas, Centroids
PKD: 09-Apr-2010 15:00:04 Printed: 09-Apr-2010 16:13:08

AP Lab ID: P2096_7679_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4435-01-Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53

Acq: 9-APR-2010 14:10:25
User: MC Datafile: 100409P1-09



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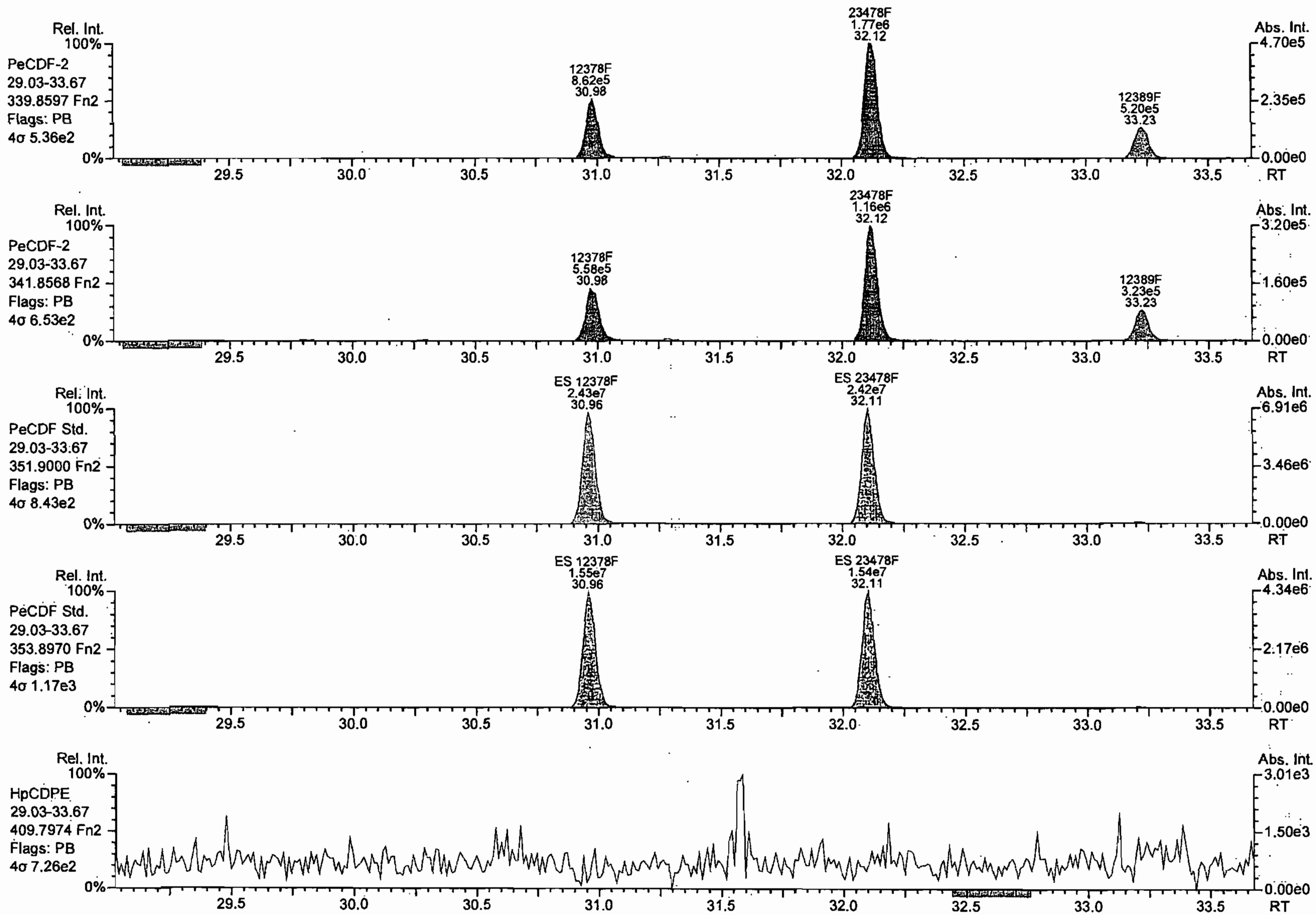
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2389 scc: 025-176

Peak annotation: Areas, Centroids
Revised: 09-Apr-2010 15:00:04 (MC) Printed: 09-Apr-2010 16:13:15


Rel. Int.
100%
PeCDF-2
29.03-33.67
339.8597 Fn2
Flags: PB
4σ 5.36e2
0%
12378F
8.62e5
30.98
23478F
1.77e6
32.12
12389F
5.20e5
33.23
Abs. Int.
4.70e5
2.35e5
0.00e0
RT
Rel. Int.
100%
PeCDF-2
29.03-33.67
341.8568 Fn2
Flags: PB
4σ 6.53e2
0%
12378F
5.58e5
30.98
23478F
1.16e6
32.12
12389F
3.23e5
33.23
Abs. Int.
3.20e5
1.60e5
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
29.03-33.67
351.9000 Fn2
Flags: PB
4σ 8.43e2
0%
ES 12378F
2.43e7
30.96
ES 23478F
2.42e7
32.11
Abs. Int.
6.91e6
3.46e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
29.03-33.67
353.8970 Fn2
Flags: PB
4σ 1.17e3
0%
ES 12378F
1.55e7
30.96
ES 23478F
1.54e7
32.11
Abs. Int.
4.34e6
2.17e6
0.00e0
RT
Rel. Int.
100%
HpCDPE
29.03-33.67
409.7974 Fn2
Flags: PB
4σ 7.26e2
0%
Abs. Int.
3.01e3
1.50e3
0.00e0
RT
29.5
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5

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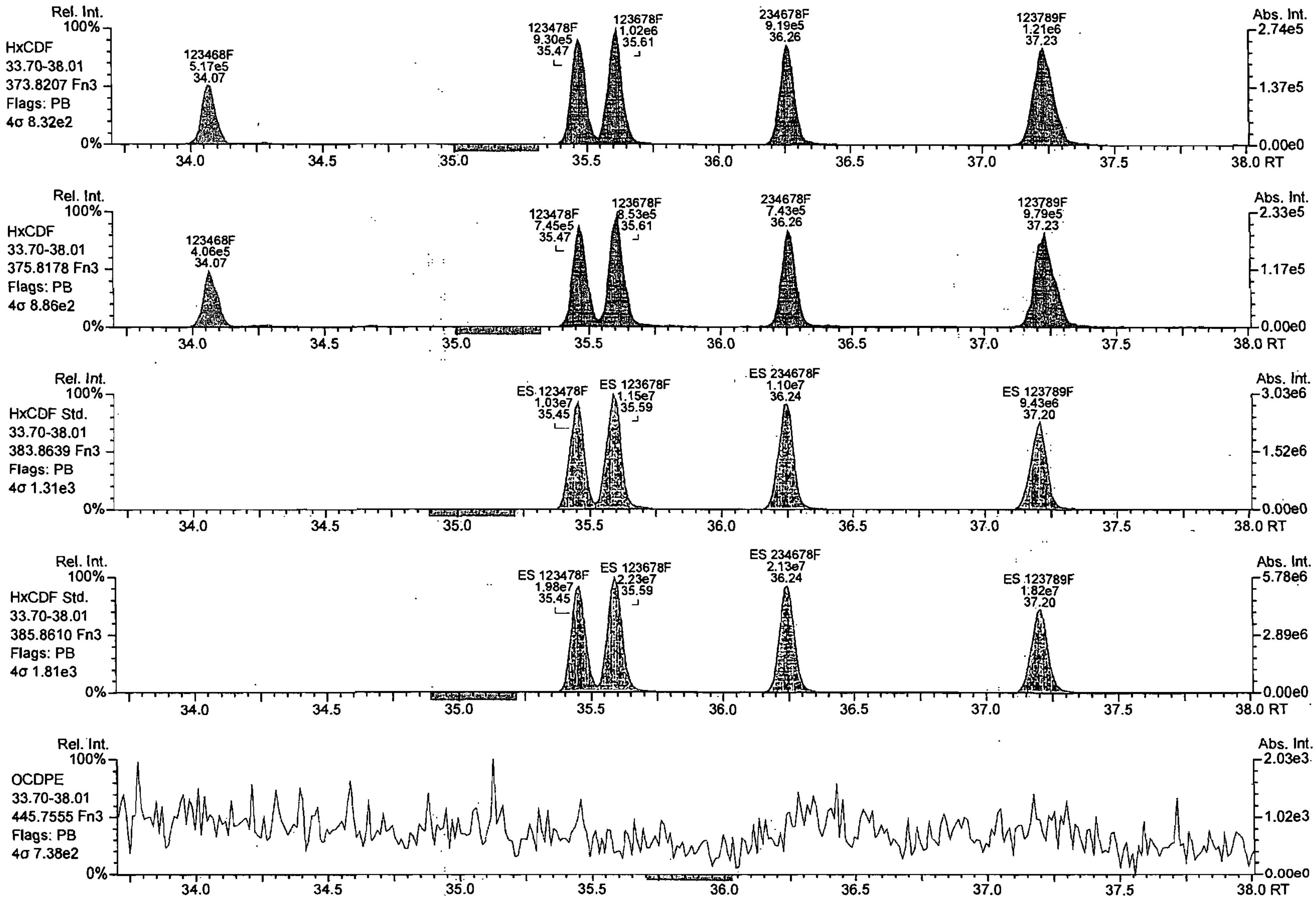
AP Lab ID: P2096_7679_006 | Sample ID: M23-4435-01-Audit | Acq: 9-APR-2010 14:10:25
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53 | User: MC Datafile: 100409P1-09



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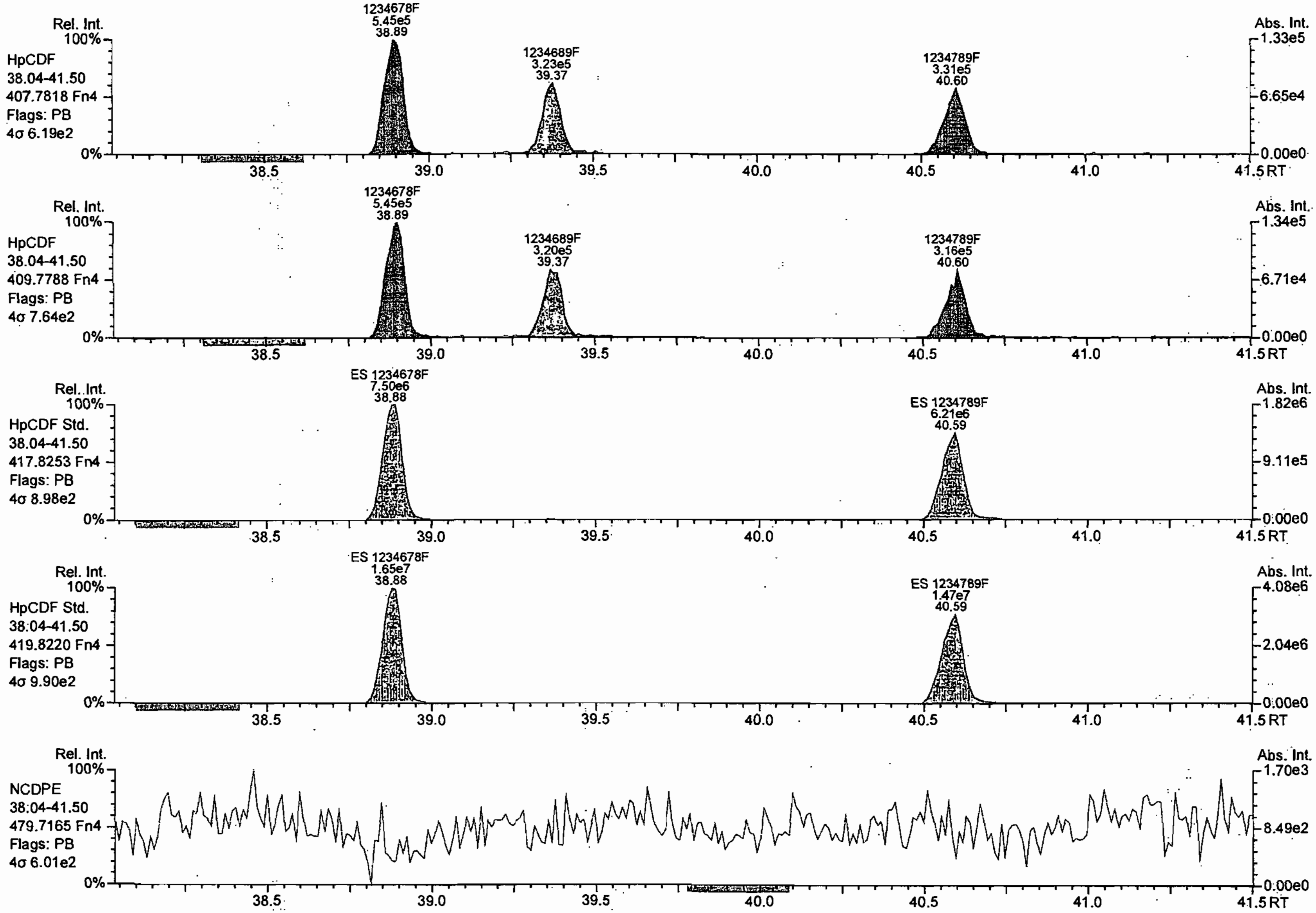
Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0541, 3884, 2034 scc: 025-176

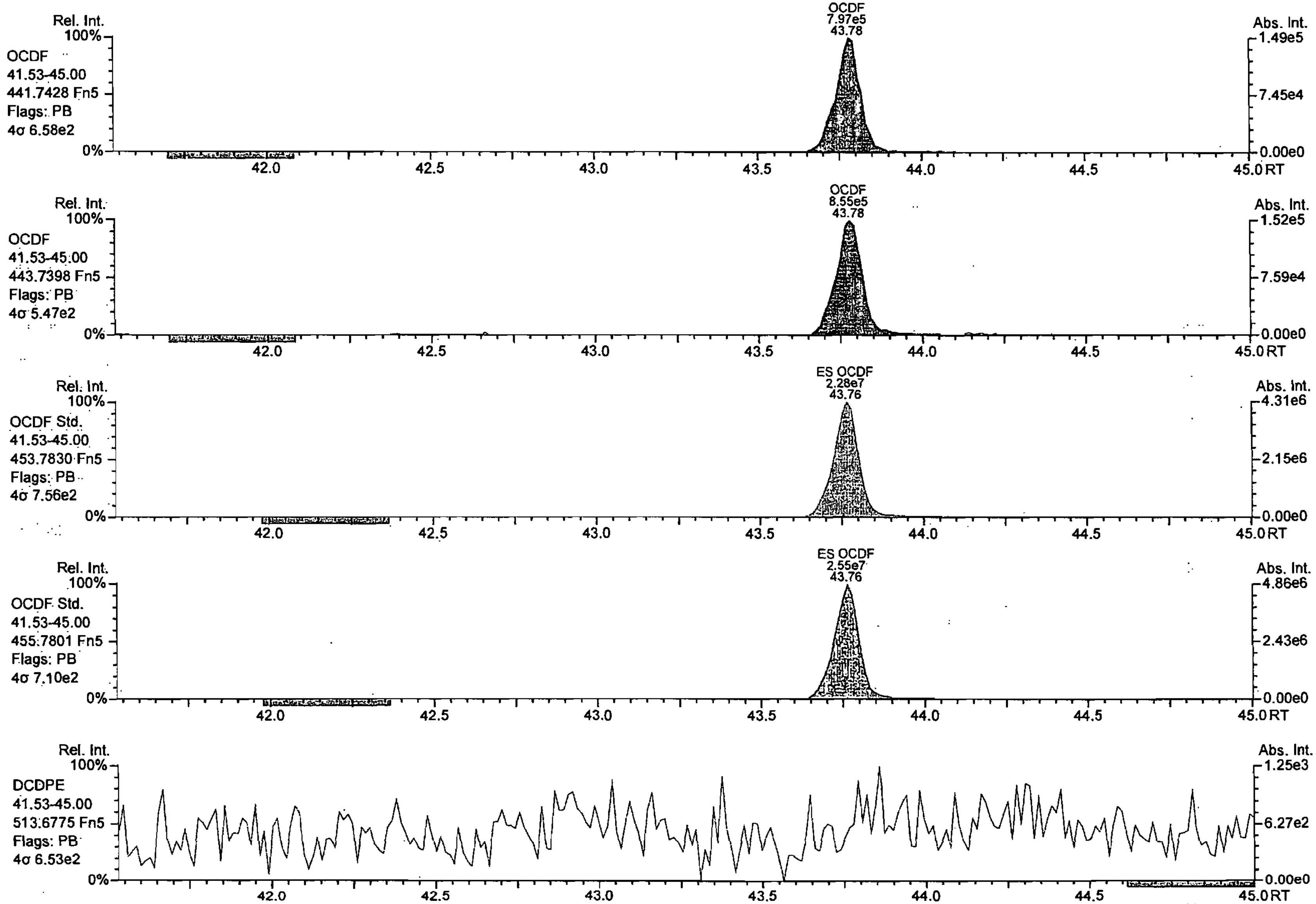
Peak annotation: Areas, Centroids
PKD: 09-Apr-2010 15:00:04 Printed: 09-Apr-2010 16:13:29

AP Lab ID: P2096_7679_006 Sample ID: M23-4435-01-Audit Acq: 9-APR-2010 14:10:25
Instr: AutoSpec-Ultima MM1 SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53 User: MC Datafile: 100409P1-09



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC) Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4370, 4937, 2772 scc: 025-176 Revised: 09-Apr-2010 15:00:59 (MC) Printed: 09-Apr-2010 16:13:35 Page 11 of 12

AP Lab ID: P2096_7679_006 **Sample ID: M23-4435-01-Audit** **Acq: 9-APR-2010 14:10:25**
Instr: AutoSpec-Ultima MM1 **SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 53** **User: MC Datafile: 100409P1-09**



Results: P:\P2000_P2099\P2096\P2096_7679 DF\Resources\P2096_7679_006.utp_res, saved 09-Apr-2010 15:51 (MC) *Peak annotation: Areas, Centroids*
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3543, 1482, 5671 scc: 025-176 *PKD: 09-Apr-2010 15:00:04 Printed: 09-Apr-2010 16:13:40 Page 12 of 12*

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 SDA Inlet

USEPA Method 26A
Chloride Laboratory Data Summary

Run No.		Blank	1	2	3
Date (2010)			Mar 18	Mar 18	Mar 18
Start Time (approx.)			07:02	09:26	11:49
Stop Time (approx.)			08:02	10:37	12:49

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0150			
	HCl as Total Chloride				
B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0770			
S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		917.4200	1066.7800	920.9000
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		837.0	802.0	700.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		789.3812	879.5132	662.6796
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		789.3812	879.5132	662.6796
m_{MDL}	Minimum detectable HCl (mg)		0.0129	0.0124	0.0108
m_n	*Total HCl used in emission calculations (mg)*		789.3812	879.5132	662.6796

042210 100919
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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (Cl)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 FF Outlet

USEPA Method 26A
Chloride Laboratory Data Summary

	Run No.	Blank	1	2	3
	Date (2010)		Mar 18	Mar 18	Mar 18
	Start Time (approx.)		07:02	09:26	11:49
	Stop Time (approx.)		08:02	10:37	12:49

☐ DRAFT LAB DATA

		Blank	1	2	3
MDL	Min. detectable limit (mg Cl^-/liter)	0.0150			
	HCl as Total Chloride				
B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0770			
S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		35.0100	30.2700	33.5900
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		847.0	808.0	766.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		30.4838	25.1430	26.4504
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		30.4838	25.1430	26.4504
m_{MDL}	Minimum detectable HCl (mg)		0.0131	0.0125	0.0118
m_n	*Total HCl used in emission calculations (mg)*		30.4838	25.1430	26.4504

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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (Cl)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 FF Outlet

USEPA Method 26A
Chloride Laboratory Data Summary

Run No.		**Blank**	**1**	**2**	**3**
Date (2010)			Mar 17	Mar 17	Mar 17
Start Time (approx.)			06:54	09:02	10:25
Stop Time (approx.)			07:54	10:02	11:25

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0150			
	HCl as Total Chloride				
B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0770			
S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		32.2600	24.0400	28.3500
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		897.0	861.0	797.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		29.7475	21.2780	23.2276
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		29.7475	21.2780	23.2276
m_{MDL}	Minimum detectable HCl (mg)		0.0138	0.0133	0.0123
m_n	*Total HCl used in emission calculations (mg)*		29.7475	21.2780	23.2276

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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (Cl)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 SDA Inlet

USEPA Method 26A
Chloride Laboratory Data Summary

Run No.		Blank	1	2	3
Date (2010)			Mar 17	Mar 17	Mar 17
Start Time (approx.)			06:54	09:02	10:25
Stop Time (approx.)			07:54	10:02	11:25

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0150			
	HCl as Total Chloride				
B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0770			
S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		898.8100	728.0000	796.5900
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
V_1	Fraction 1 sample volume (ml)		737.0	868.0	790.0
V_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		680.9708	649.5973	646.9267
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		680.9708	649.5973	646.9267
m_{MDL}	Minimum detectable HCl (mg)		0.0114	0.0134	0.0122
m_n	*Total HCl used in emission calculations (mg)*		680.9708	649.5973	646.9267

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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (Cl)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 SDA Inlet

USEPA Method 26A
Chloride Laboratory Data Summary

Run No.		**Blank**	**1**	**2**	**3**
Date (2010)			Mar 17	Mar 17	Mar 17
Start Time (approx.)			06:54	09:02	10:25
Stop Time (approx.)			07:54	10:02	11:25

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0180			
	HCl as Total Chloride				
B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0880			
S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		898.8100	728.0000	796.5900
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		737.0	868.0	790.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		680.9708	649.5973	646.9267
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		680.9708	649.5973	646.9267
m_{MDL}	Minimum detectable HCl (mg)		0.0136	0.0161	0.0146
m_n	*Total HCl used in emission calculations (mg)*		680.9708	649.5973	646.9267

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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (Cl)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 SDA Inlet

USEPA Method 26A
Chloride Laboratory Data Summary

Run No.		Blank	1	2	3
Date (2010)			Mar 16	Mar 16	Mar 16
Start Time (approx.)			07:17	09:04	10:32
Stop Time (approx.)			08:17	10:04	11:32

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0150			
	HCl as Total Chloride				
B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0770			
S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		1154.2300	1129.2900	1225.4200
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		725.0	701.0	723.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		860.2476	813.7980	910.7861
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		860.2476	813.7980	910.7861
m_{MDL}	Minimum detectable HCl (mg)		0.0112	0.0108	0.0111
m_n	*Total HCl used in emission calculations (mg)*		860.2476	813.7980	910.7861

042210 101340
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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (Cl)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 FF Outlet

USEPA Method 26A
Chloride Laboratory Data Summary

Run No.		Blank	1	2	3
Date (2010)			Mar 16	Mar 16	Mar 16
Start Time (approx.)			07:17	09:04	10:32
Stop Time (approx.)			08:17	10:04	11:32

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0150			
	HCl as Total Chloride				
B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0770			
S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		29.9300	33.4400	28.9700
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
V_1	Fraction 1 sample volume (ml)		848.0	956.0	802.0
V_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		26.0913	32.8638	23.8845
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		26.0913	32.8638	23.8845
m_{MDL}	Minimum detectable HCl (mg)		0.0131	0.0147	0.0124
m_n	*Total HCl used in emission calculations (mg)*		26.0913	32.8638	23.8845

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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (Cl)

QA/QC ________
Date ________

CleanAir Engineering
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CleanAir®

CleanAir Engineering, Inc.

500 West Wood Street
Palatine, IL 60067

<u>Laboratory Report</u>
Customer Reference No: 10955
Laboratory Project No: 28557

<u>Analytes</u>
Chloride

<u>Customer</u>
Palatine Engineering Group
500 W Wood St
Palatine, IL 60067

Revision 0 - Dated: 04/09/2010
Revision 1 - Dated: 04/22/2010

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CleanAir.

Analysis Case Narrative

Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	Date Received:	3/29/2010
Plant/Facility:	Wheelabrator North Broward	Date Reported:	4/22/2010
Laboratory Project No:	28557	Sample Type:	Varied
Customer Reference No:	10955	Parameters:	Chloride
Sample Numbers:	1-22	Received From:	Scott Brown
Applicable Analytical Method			U.S. EPA Method 26A

Summary of Analysis

This report summarizes the results of the analysis performed on samples received on: 03/29/10
The samples were anlayzed following procedures found in U.S. EPA Method 26A and U.S. EPA Method 300.1.

Detection Limits

Method Detection Limits have been determined in accordance with procedures in 40 CFR 136, Appendix B. Documentation showing the determination of detection limits are included with this report.

Sample Preparation

Samples were prepared according to the procedures listed in the EPA Method above. Each sample was analyzed at full strength and a dilution was prepared if necessary to achieve a concentration that was within calibration range limits.

Standard Tracability

Each calibration standard has been prepared in accordance with US EPA Method 300.1 and US EPA Method 26 and has been designated an original lot number. This number can be used to trace back to the original dry salts used in the preparation of these standards. This number is included on the calibration page of this report.

Instrument Calibration

Instrument calibration followed regulations found in US EPA Method 300.1 and U.S. EPA Method 26A.
Calibration standards were prepared from ACS grade dry salts as per section 7.3 of US EPA Method 300.1. As per section 4.2.2 of US EPA CTM-027, a series of 6 diluted standards are prepared from the original calibration standard and run through the column in duplicate from lowest concentration to highest. The average peak area for each calibration point is gathered and plotted against the expected solution concentration. In accordance with section 7.2.3 of EPA Method 9057, a least-squares regression with an r^2 value of .995 or greater must be produced from the resulting curve. In accordance with US EPA Method 26 a full post-test calibration is preformed. The pre test calibration and post test calibration average peak area for any standard must agree within ± 5% of any observed area.

Chromatograms

All chromatograms are included as an appendix of this report. Please note: Chromatograms marked as "End" are place markers meant to signify the end of a batch run and are purposfully left blank as no data was aquired for that run.

Analysis QA/QC

Many elements of various EPA methods have been combined and are adhered to:

EPA Method 300.1 quality procedures:

1 Before the first sample was analyzed and every twenty samples thereafter (and before the post-test calibration) a laboratory blank and a Continuing Calibration Verification (CCV) were analyzed.
The CCV is prepared from the same calibration standard as used to create the 7 diluted standards that make up the calibration curve.
The laboratory blank must show a regression concentration of zero, and the CCV must show a regression concentration within 10 percent of the expected concentration
2 After the first ten samples and every twenty there after, a Quality Control (QC) sample was analyzed.

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Analysis Case Narrative

Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	**Date Received:**	3/29/2010
Plant/Facility:	Wheelabrator North Broward	**Date Reported:**	4/22/2010
Laboratory Project No:	28557	**Sample Type:**	Varied
Customer Reference No:	10955	**Parameters:**	Chloride
Sample Numbers:	1-22	**Received From:**	Scott Brown
Applicable Analytical Method			U.S. EPA Method 26A

The QC sample was created using ACS grade dry salts from a different manufacturer and or lot number than for the salts used to create the calibration standards.
The QC must meet the same acceptance criteria as noted for the CCV above.

3 A matrix spike analysis was performed on ten percent of the total number of samples. This sample was prepared with equal amounts of a sample and a calibration standard whose concentration was known to be larger than that of the sample.
The matrix spike is acceptable when the recovery is found to be 100 ± 10 percent.

4 As a measure of precision, all matrix spikes were prepared and analyzed in duplicate. The average area count of two identical matrix spikes may not have a relative percent difference of more that 10 percent.

EPA Method 26 quality procedure:

1 As per section 11.1.3, every sample was analyzed in duplicate and the mean area count used to determine the concentration. The duplicate area counts must have a relative percent difference of no greater than five percent. If this was the case, a third injection was made and the average of the three injections was used to determine the concentration.

EPA Method 7E quality procedures:

1 Each point on the calibration curve should be within ± 2 percent of the calibration span of the curve used.

Other CleanAir quality procedures:

1 The observed concentration value of each point on the calibration curve should have a relative percent difference of no more than 10 percent from its expected concentration.

Additional Comments

CleanAir Lab Services is accredited by NELAC through the state of Texas for this analysis. Our certificate number is T104704431-09-TX and expires 6/10/2010.

Audit sample L3586 did not pass with the originally reported result. An investigation into this failed audit sample analysis determined that the result was most likely caused by erroneously contaminated glassware. All samples were reananalyzed and both audit samples were found to have passing results. In addition, sample number 28557-07 was found to have a value differing greatly from its original reported value of 47.71 mg/L. This difference is also believed to have stemmed from the above-mentioned erroneously contaminateed glassware.

CleanAir.

CERTIFICATE OF ANALYSIS

Client Name:	Palatine Engineering Group	**Date Received:**	3/29/2010
Plant/Facility:	Wheelabrator North Broward	**Date Reported:**	4/22/2010
Lab Project No:	28557	**Sample Type:**	Varied
Sample Numbers:	1-22	**Parameters:**	Chloride

Laboratory Number	Sample Identification	Sample Volume (ml)	Chloride Sample Conc. (mg/L)	Detection Limit (mg/L)	Reporting Limit (mg/L)
Reagent Blanks					
28557-01	DI H2O Blank	300	<	0.015	0.077
28557-02	0.1N H2SO4 Blank	300	<	0.015	0.077
Unit 1					
28557-03	U1 SDA Inlet R1	837	917.42	0.015	0.077
28557-04	U1 SDA Inlet R2	802	1,066.78	0.015	0.077
28557-05	U1 SDA Inlet R3	700	920.90	0.015	0.077
28557-06	U1 FF Outlet R1	847	35.01	0.015	0.077
28557-07	U1 FF Outlet R2	808	30.27	0.015	0.077
28557-08	U1 FF Outlet R3	766	33.59	0.015	0.077
Unit 2					
28557-09	U2 SDA Inlet R1	737	898.81	0.015	0.077
28557-10	U2 SDA Inlet R2	868	728.00	0.015	0.077
28557-11	U2 SDA Inlet R3	790	796.59	0.015	0.077
28557-12	U2 FF Outlet R1	897	32.26	0.015	0.077
28557-13	U2 FF Outlet R2	861	24.04	0.015	0.077
28557-14	U2 FF Outlet R3	797	28.35	0.015	0.077
Unit 3					
28557-15	U3 SDA Inlet R1	725	1,154.23	0.015	0.077
28557-16	U3 SDA Inlet R2	701	1,129.29	0.015	0.077
28557-17	U3 SDA Inlet R3	723	1,225.42	0.015	0.077
28557-18	U3 FF Outlet R1	848	29.93	0.015	0.077
28557-19	U3 FF Outlet R2	956	33.44	0.015	0.077
28557-20	U3 FF Outlet R3	802	28.97	0.015	0.077
Audit Samples					
28557-21	Audit Sample L3937	500	32.96	0.015	0.077
28557-22	Audit Sample L3586	500	142.64	0.015	0.077

To the best of our knowledge, the data presented in this report are accurate, complete, error free, legible and representative of the samples received by the laboratory.

Analyst: Eric Ewing
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Team Leader, Lab Services: Douglas D. Rhoades
email: drhoades@cleanair.com
Ph: 847-654-4504

ACCREDITED IN ACCORDANCE WITH nelac

CleanAir

Differences Between Current Revision and Originally Reported Data

Ion Chromatography Analysis

Customer:	Wheelabrator N. Broward	Lab Project No:	28557	Analyst:	Eric Ewing
Plant:	North Broward	Customer Reference No:	10959		
Received:	3/29/10	Method:	EPA Method 26A		

Laboratory Sample Identification Number	Sample Identification	Sample Volume (mL)		Originally Reported Sample Concentration (mg/L)	Revised Sample Concentration (mg/L)	Difference in Reported Sample Concentrations (%)
			Reagent Blanks			
28557-01	DI H2O Blank	300		<	<	
28557-02	0.1N H2SO4 Blank	300		<	<	
			Unit 1			
28557-03	U1 SDA Inlet R1	837		895.2	917.4	2.5%
28557-04	U1 SDA Inlet R2	802		1,120	1,066.8	4.8%
28557-05	U1 SDA Inlet R3	700		884.4	920.9	4.0%
28557-06	U1 FF Outlet R1	847		34.35	35.01	1.9%
28557-07	U1 FF Outlet R2	808		47.71	30.27	44.7%
28557-08	U1 FF Outlet R3	766		35.22	33.59	4.7%
			Unit 2			
28557-09	U2 SDA Inlet R1	737		857.2	898.8	4.7%
28557-10	U2 SDA Inlet R2	868		737.0	728.0	1.2%
28557-11	U2 SDA Inlet R3	790		763.0	796.6	4.3%
28557-12	U2 FF Outlet R1	897		30.69	32.26	5.0%
28557-13	U2 FF Outlet R2	861		22.74	24.04	5.6%
28557-14	U2 FF Outlet R3	797		29.53	28.35	4.1%
			Unit 3			
28557-15	U3 SDA Inlet R1	725		1,204	1,154	4.2%
28557-16	U3 SDA Inlet R2	701		1,079	1,129	4.5%
28557-17	U3 SDA Inlet R3	723		1,192	1,225	2.7%
28557-18	U3 FF Outlet R1	848		30.69	29.93	2.5%
28557-19	U3 FF Outlet R2	956		32.23	33.44	3.7%
28557-20	U3 FF Outlet R3	802		29.60	28.97	2.1%
			Audit Samples			
28557-21	Audit Sample L3937	500		32.44	32.96	1.6%
28557-22	Audit Sample L3586	500		158.1	142.64	10.3%

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CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28557
Analyte	Chloride
Date	4/22/2010
Stock Standard	1008.91 mg/l
Lot Number	04151002-64-00000-01
Working Stock Conc.	10.0891 mg/l
CCV	1.01 mg/l
QC	209.28 mg/l
Lot Number	03261002-64-00000-07

Analyte: **Chloride**

Standards Calibration Data

Calibration Point	**Date of**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Conc. (mg/l)	**Injection**	**0.0000**	**0.1513**	**0.4036**	**0.8071**	**1.2611**	**1.6142**	**2.5223**
Cal 1 Trial 1	04/15/2010	0.0000	0.1401	0.3729	0.7090	1.0475	1.3417	2.1125
Cal 1 Trial 2		0.0000	0.1340	0.3799	0.6879	1.0590	1.3316	2.0868
Cal 2 Trial 1	04/16/2010		0.1456					
Cal 2 Trial 2			0.1441					
Cal 3 Trial 1	04/18/2010							2.1989
Cal 3 Trial 2								2.2174
Cal 4 Trial 1	04/18/2010		0.1353					
Cal 4 Trial 2			0.1423					
Cal 5 Trial 1	04/21/2010		0.1359	0.3885	0.7367	1.0944	1.3607	2.1559
Cal 5 Trial 2			0.1420	0.3726	0.7452	1.0912	1.3582	2.2020
n		**2**	**8**	**4**	**4**	**4**	**4**	**6**
Average		**0.0000**	**0.1399**	**0.3785**	**0.7197**	**1.0730**	**1.3481**	**2.1623**
Standard Deviation		**0.0000**	**0.0043**	**0.0075**	**0.0262**	**0.0233**	**0.0138**	**0.0532**
%RSD		0.00	3.11	1.98	3.65	2.18	1.03	2.46

Measured Area Counts (Counts)	Actual Concentration (mg/L)	Regression Concentration (mg/L)	Quality Control Checks: Difference pt-Line (% Scale)	Is Difference Less Than 2% of Scale?	Difference pt-Line (Relative %)	Is Relative Difference Less Than 10%?
0.0000	0.000	-0.017	0.68%	Yes	0.00%	Yes
0.1399	0.151	0.148	0.12%	Yes	2.02%	Yes
0.3785	0.404	0.430	-1.06%	Yes	-6.60%	Yes
0.7197	0.807	0.833	-1.04%	Yes	-3.26%	Yes
1.0730	1.261	1.251	0.40%	Yes	0.81%	Yes
1.3481	1.614	1.576	1.52%	Yes	2.38%	Yes
2.1623	2.522	2.538	-0.63%	Yes	-0.63%	Yes

Regression Constants			Is Coefficient of Regression > 0.995?
Slope	m =	1.1817	
Intercept	b =	-0.0171	
Coeff.	R^2 =	0.9993	Yes

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File: SPS-64-28557_Cl_V1
Date: 4/22/2010
Time: 9:47 AM

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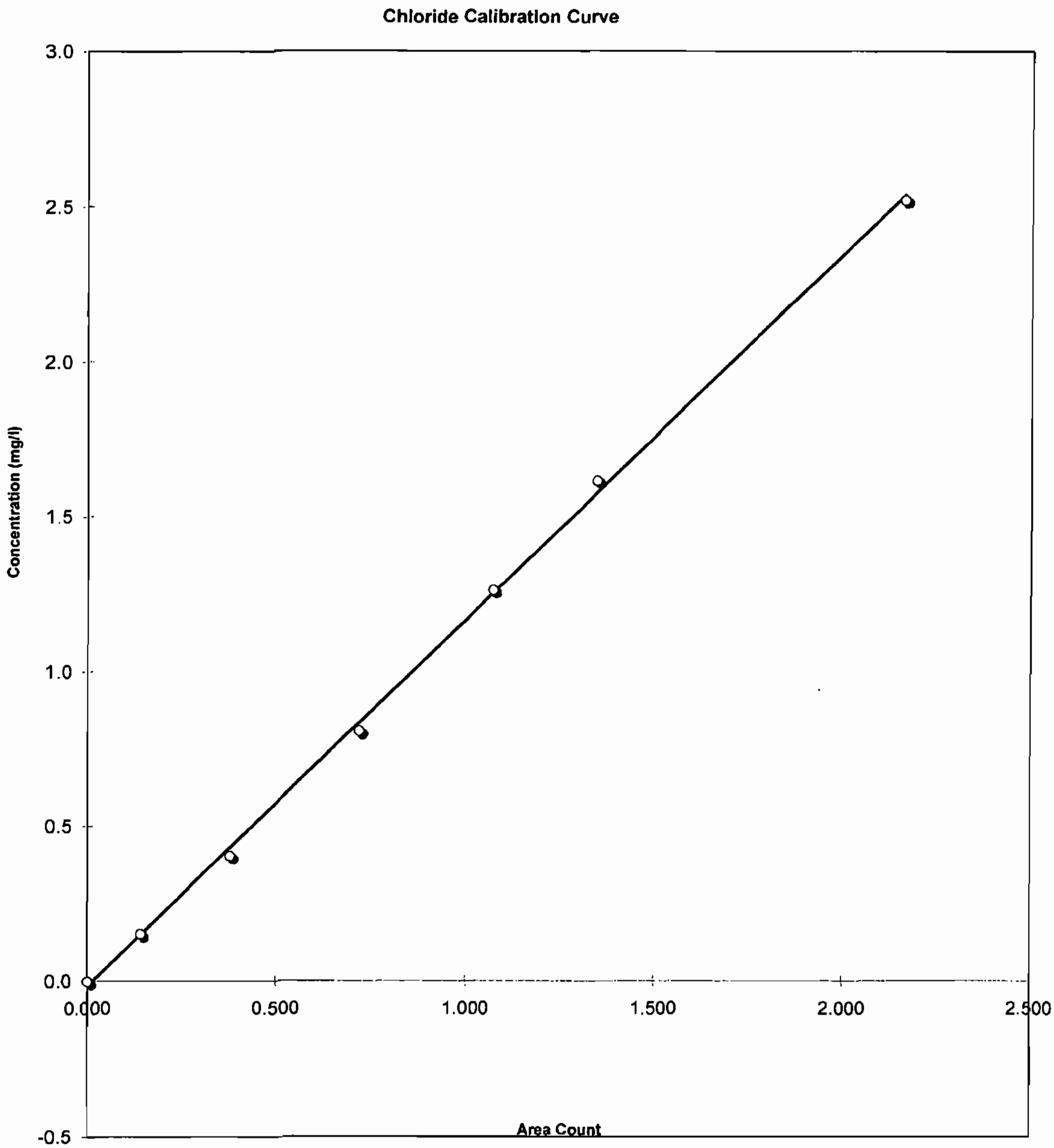
CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28557
Analyte	Chloride
Date	4/22/2010



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File: SPS-64-28557_Cl_V1
Date: 4/22/2010
Time: 9:47 AM

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CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group		
Lab Project No:	28557		
Analyte	Chloride	MDL= 0.015 mg/L	Average Flow Rate
Date	4/22/2010	MRL= 0.077 mg/L	0.80 mL/min

Sample Location	Sample Identification Number	Sample Idenification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	DF (Analysis Dilution Factor)	V_{sdn} (Total Sample Volume, mL)	C_{Reg} (Concentration, mg/L from Reg Curve)	$M_{analyte}$ Total Amount of Analyte (mg)
Reagent Blank	28557-01	DI H2O Blank	04/19/10	0.0000	0.0000	0.0000	1	300.0	<	<0.023
Reagent Blank	28557-02	0.1N H2SO4 Blank	04/19/10	0.0000	0.0000	0.0000	1	300.0	<	<0.023
U1 SDA Inlet	28557-03	U1 SDA Inlet R1	04/19/10	0.7969	0.7847	0.7908	1000	836.6	917.42	767.51
U1 SDA Inlet	28557-04	U1 SDA Inlet R2	04/19/10	0.9003	0.9341	0.9172	1000	801.9	1,066.78	855.45
U1 SDA Inlet	28557-05	U1 SDA Inlet R3	04/19/10	0.7840	0.8035	0.7938	1000	700.0	920.90	644.63
U1 FF Outlet	28557-06	U1 FF Outlet R1	04/20/10	0.5968	0.6171	0.6070	50	847.0	35.01	29.65
U1 FF Outlet	28557-07	U1 FF Outlet R2	04/20/10	0.5202	0.5333	0.5268	50	807.8	30.27	24.45
U1 FF Outlet	28557-08	U1 FF Outlet R3	04/20/10	0.5809	0.5849	0.5829	50	766.0	33.59	25.73
U2 SDA Inlet	28557-09	U2 SDA Inlet R1	04/20/10	0.7673	0.7828	0.7751	1000	737.0	898.81	662.42
U2 SDA Inlet	28557-10	U2 SDA Inlet R2	04/20/10	0.6154	0.6456	0.6305	1000	867.9	728.00	631.83
U2 SDA Inlet	28557-11	U2 SDA Inlet R3	04/20/10	0.6953	0.6818	0.6886	1000	790.0	796.59	629.31
U2 FF Outlet	28557-12	U2 FF Outlet R1	04/20/10	0.5624	0.5584	0.5604	50	896.8	32.26	28.92
U2 FF Outlet	28557-13	U2 FF Outlet R2	04/20/10	0.4163	0.4264	0.4214	50	861.4	24.04	20.71
U2 FF Outlet	28557-14	U2 FF Outlet R3	04/20/10	0.4895	0.4991	0.4943	50	797.0	28.35	22.60
U3 SDA Inlet	28557-15	U3 SDA Inlet R1	04/20/10	0.9827	0.9997	0.9912	1000	725.0	1,154.23	836.81
U3 SDA Inlet	28557-16	U3 SDA Inlet R2	04/20/10	0.9882	0.9520	0.9701	1000	701.0	1,129.29	791.63
U3 SDA Inlet	28557-17	U3 SDA Inlet R3	04/20/10	1.0625	1.0404	1.0515	1000	723.0	1,225.42	885.98
U3 FF Outlet	28557-18	U3 FF Outlet R1	04/20/10	0.5309	0.5112	0.5211	50	848.0	29.93	25.38
U3 FF Outlet	28557-19	U3 FF Outlet R2	04/20/10	0.5753	0.5856	0.5805	50	956.0	33.44	31.97
U3 FF Outlet	28557-20	U3 FF Outlet R3	04/20/10	0.5121	0.4975	0.5048	50	802.0	28.97	23.24
Audit Sample	28557-21	Audit Sample L3937	04/20/10	0.5825	0.5622	0.5724	50	500.0	32.96	16.48
Audit Sample	28557-22	Audit Sample L3586	04/20/10	0.6088	0.6272	0.6180	200	500.0	142.64	71.32

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CHROMATOGRAPHIC DATA REDUCTION

Client Palatine Engineering Group
Lab Project No: 28557
Analyte Chloride
Date 4/22/2010

QUALITY CONTROL CHECKS

Sample Location	Sample Identification Number	Sample Idenification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	Area Count Duplicate Difference	Duplicate Relative Difference (%)
Reagent Blank	28557-01	DI H2O Blank	04/19/10	0.0000	0.0000	0.0000	na	na
Reagent Blank	28557-02	0.1N H2SO4 Blank	04/19/10	0.0000	0.0000	0.0000	na	na
U1 SDA Inlet	28557-03	U1 SDA Inlet R1	04/19/10	0.7969	0.7847	0.7908	0.0122	1.5%
U1 SDA Inlet	28557-04	U1 SDA Inlet R2	04/19/10	0.9003	0.9341	0.9172	0.0338	3.7%
U1 SDA Inlet	28557-05	U1 SDA Inlet R3	04/19/10	0.7840	0.8035	0.7938	0.0195	2.5%
U1 FF Outlet	28557-06	U1 FF Outlet R1	04/20/10	0.5968	0.6171	0.6070	0.0203	3.3%
U1 FF Outlet	28557-07	U1 FF Outlet R2	04/20/10	0.5202	0.5333	0.5268	0.0131	2.5%
U1 FF Outlet	28557-08	U1 FF Outlet R3	04/20/10	0.5809	0.5849	0.5829	0.0040	0.7%
U2 SDA Inlet	28557-09	U2 SDA Inlet R1	04/20/10	0.7673	0.7828	0.7751	0.0155	2.0%
U2 SDA Inlet	28557-10	U2 SDA Inlet R2	04/20/10	0.6154	0.6456	0.6305	0.0302	4.8%
U2 SDA Inlet	28557-11	U2 SDA Inlet R3	04/20/10	0.6953	0.6818	0.6886	0.0135	2.0%
U2 FF Outlet	28557-12	U2 FF Outlet R1	04/20/10	0.5624	0.5584	0.5604	0.0040	0.7%
U2 FF Outlet	28557-13	U2 FF Outlet R2	04/20/10	0.4163	0.4264	0.4214	0.0101	2.4%
U2 FF Outlet	28557-14	U2 FF Outlet R3	04/20/10	0.4895	0.4991	0.4943	0.0096	1.9%
U3 SDA Inlet	28557-15	U3 SDA Inlet R1	04/20/10	0.9827	0.9997	0.9912	0.0170	1.7%
U3 SDA Inlet	28557-16	U3 SDA Inlet R2	04/20/10	0.9882	0.9520	0.9701	0.0362	3.7%
U3 SDA Inlet	28557-17	U3 SDA Inlet R3	04/20/10	1.0625	1.0404	1.0515	0.0221	2.1%
U3 FF Outlet	28557-18	U3 FF Outlet R1	04/20/10	0.5309	0.5112	0.5211	0.0197	3.8%
U3 FF Outlet	28557-19	U3 FF Outlet R2	04/20/10	0.5753	0.5856	0.5805	0.0103	1.8%
U3 FF Outlet	28557-20	U3 FF Outlet R3	04/20/10	0.5121	0.4975	0.5048	0.0146	2.9%
Audit Sample	28557-21	Audit Sample L3937	04/20/10	0.5825	0.5622	0.5724	0.0203	3.5%
Audit Sample	28557-22	Audit Sample L3586	04/20/10	0.6088	0.6272	0.6180	0.0184	3.0%

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group				
Lab Project No:	28557				
Analyte	Chloride	MDL=	0.015 mg/L	Average Flow Rate	QC Dilution Factor
Date	4/22/2010	MRL=	0.077 mg/L	0.80 mL/min	200

QUALITY CONTROL CHECKS (CONT)

Sample Location	Sample Identification Number	Sample Idenification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	Area Count Duplicate Difference	Duplicate Relative Difference (%)	C_{Reg} (Concentration, mg/L from Reg Curve)	Percent Difference from Actual Value (%)
CleanAir	28557-00	CCB	04/19/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28557-990	CCV	04/19/10	0.9241	0.9110	0.9176	0.0131	1.4%	1.07	5.78%
CleanAir	28557-991	QC	04/20/10	0.9302	0.8928	0.9115	0.0374	4.1%	212.01	1.30%
CleanAir	28557-00	CCB	04/20/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28557-992	CCV	04/20/10	0.8978	0.9352	0.9165	0.0374	4.1%	1.07	5.65%
				Matrix Spike Recoveries						
									Precision	Spike Recovery
Matrix Spike	28557-05	U1 SDA Inlet R:	04/20/10	1.5481	1.5870	1.5676	0.0389	2.5%		107.8%
Matrix Spike	28557-05	U1 SDA Inlet R:	04/20/10	1.5834	1.5810	1.5822	0.0024	0.2%	0.9%	109.2%
Matrix Spike	28557-20	U3 FF Outlet R:	04/21/10	1.4216	1.4261	1.4239	0.0045	0.3%		108.7%
Matrix Spike	28557-20	U3 FF Outlet R:	04/21/10	1.4140	1.3650	1.3895	0.0490	3.5%	2.4%	105.5%
Matrix Spike	28557-21	\udit Sample L3ε	04/21/10	1.3853	1.4529	1.4191	0.0676	4.8%		105.3%

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28557
Analyte	Chloride
Date	4/22/2010

Determination of Detection Limit

(in accordance with 40 CFR 136, Appendix B)

Analyte	Chloride
Area Count	
Trial 1	0.1401
Trial 2	0.1340
Trial 3	0.1456
Trial 4	0.1441
Trial 5	0.1353
Trial 6	0.1423
Trial 7	0.1359
Trial 8	0.1420
Average	**0.1399**
Std Dev	0.0043
RMS Dev	3.11%

n	$t_{(n-1,0.99)}$
7	3.143
8	2.998
9	2.896
10	2.821
11	2.764
16	2.602
21	2.528

Average % Recovery	97.98%
Measured Concentration (mg/l)	
Trial 1	0.149
Trial 2	0.141
Trial 3	0.155
Trial 4	0.153
Trial 5	0.143
Trial 6	0.151
Trial 7	0.144
Trial 8	0.151
Average	**0.148**
Std Dev	0.0051
RMS Dev	3.46%
$t_{(n-1,0.99)}$	2.998
Det Lim (mg/l)	**0.015**
Rep Lim (mg/L)	**0.077**

Is the spike level higher than the MDL? Yes
Does the spike level exceed ten times the MDL? No
Is the Avg Recovery between 90% < Ra < 110% ? Yes

Actual Conc	0.1513
Slope	1.18E+00
Intercept	-0.0171
Coeff of Corr	0.9993

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

1. Difference between duplicate injections for pre-test calibration (Pre Cal 1).

$$\Delta_{Injection} = \left| Area_{Trial\,2} - Area_{Trial\,1} \right|$$

Where:

$\Delta_{Injection}$ = Area count difference between duplicate injections
$Area_{Trial2}$ = Area count for injection Trial 2
$Area_{Trial1}$ = Area count for injection Trial 1

$\Delta_{Injection}$ = 0.0070
$Area_{Trial2}$ = 0.3799
$Area_{Trial1}$ = 0.3729

2. Average area count value for duplicate injections for pre-test calibration (Pre Cal 1).

$$Avg_{PreInj} = \frac{\left(Area_{Trial1} + Area_{Trial2}\right)}{2}$$

Where:

Avg_{PreInj} = Average of duplicate injection area counts
$Area_{Trial2}$ = Area count for injection Trial 2
$Area_{Trial1}$ = Area count for injection Trial 1
2 = Constant (number of values)

Avg_{Inj} = 0.3764
$Area_{Trial2}$ = 0.3799
$Area_{Trial1}$ = 0.3729

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

3. Difference between individual injection and average area count for pre-test calibration.

$$\Delta_{PreMean\%} = \frac{\left|Area_{Trail2} - Avg_{PreInj}\right|}{Avg_{PreInj}} 100$$

Where:

$\Delta_{PreMean\%}$ = Difference between individual injection and average area count (%).

Avg_{PreInj} = Average of duplicate injection area counts

$Area_{Trial2}$ = Area count for injection Trial 2

100 = Constant (conversion factor for percentage)

$\Delta_{PreMean\%}$ = 0.9213

Avg_{PreInj} = 0.3764

$Area_{Trial2}$ = 0.3799

Note: EPA Method 26 requires $\Delta_{PreMean\%}$ to be less than 5%.

4. Average of all area count values for a given calibration point.

$$\overline{X} = \frac{\sum_{i=1}^{n} x_i}{n}$$

Where:

$\overline{X}$ = Average of all area count values for a given calibration point.

x_i = Individual area count values for each individual injection.

i = Iteration value.

n = Number of injections for the calibration point under question.

$\overline{X}$ = 0.3785

x_1 = 0.3729

x_2 = 0.3799

n = 4.0000

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

5. Average of all concentration values for used in generating calibration curve.

$$\overline{Y_{All}} = \frac{\sum_{i=1}^{n} y_i}{n}$$

Where:

$\overline{Y}_{All}$ = Average of all area concentration values.
y_i = Individual concentration values for each individual injection.
n = Number of injections.

$\overline{Y}_{All}$ = 0.9657
y_1 = 0.0000
y_2 = 0.1513
n = 7.0000

6. Average of all area count values for the calibration curve.

$$\overline{X_{All}} = \frac{\sum_{i=1}^{n} x_i}{n}$$

Where:

$\overline{X}_{All}$ = Average of all area count values.
x_i = Individual area count values.
i = Iteration value.
n = Number of injections.

$\overline{X}_{All}$ = 0.8803
x_1 = 0.3729
x_2 = 0.3799
n = 32.0000

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

7. Determination of slope (least-squares regression) value for calibration curve.

$$m = \frac{\sum_{i=1}^{n} (x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^{n} (x_i - \bar{x})^2}$$

Where:

m = Slope of least-squares regression curve.
x_i = Individual area count values for each individual injection.
$\bar{x}$ = Average of all area count values = $\overline{X}_{All}$
y_i = Actual area concentration values for each individual injection.
$\bar{y}$ = Average of all concentration values = $\overline{Y}_{All}$
i = Iteration value.
n = Number of injections.

m = 1.18168
x_1 = 0.3729
x_2 = 0.3799
$\bar{x}$ = 0.8803
y_1 = 0.0000
y_2 = 0.1513
$\bar{y}$ = 0.9657
n = 32.0000

8. Determination of y-intercept (least-squares regression) value for calibration curve.

$$b = \bar{y} - m\bar{x}$$

Where:

b = Y-axis intercept.
$\bar{x}$ = Average of all area count values = $\overline{X}_{All}$
$\bar{y}$ = Average of all concentration values = $\overline{Y}_{All}$

b = -0.01705
m = 1.18168
$\bar{x}$ = 0.8803
$\bar{y}$ = 0.9657

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

$\bar{y}$

9. Determination of coefficient of correlation (least-squares regression) value for calibration curve.

$$r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2 \sum_{i=1}^{n}(y_i - \bar{y})^2}}$$

Where:

r^2 = Square of the Pearson product moment correlation coefficient through data points in known y's and known x's.

r = Pearson product moment correlation coefficient through data points in known y's and known x's.

x_i = Individual area count values for each individual injection.

y_i = Actual area concentration values for each individual injection.

$\bar{x}$ = Average of all area count values = $\overline{X}_{All}$

$\bar{y}$ = Average of all concentration values = $\overline{Y}_{All}$

i = Iteration value.

n = Number of injections.

r^2 = 0.99928

r = 0.99964

x_1 = 0.3729

x_2 = 0.3799

$\bar{x}$ = 0.8803

y_1 = 0.0000

y_2 = 0.1513

$\bar{y}$ = 0.9657

n = 32.0000

CleanAir

Sample Calculations

Customer: Palatine Engineering Group	Lab Project No: 28557	Analyst Eric Ewing
Plant: Wheelabrator North Broward	Customer Ref No: 10955	Method U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

10. Determination of average sample area counts from duplicate injections.

$$Avg_{Sample} = \frac{(Area_{Trial1} + Area_{Trial2})}{2}$$

Where:

Avg_{Sample} = Average of duplicate injection area counts

$Area_{Trial2}$ = Area count for injection Trial 2

$Area_{Trial1}$ = Area count for injection Trial 1

2 = Constant (number of injections)

Avg_{Inj} = 0.7908

$Area_{Trial2}$ = 0.7847

$Area_{Trial1}$ = 0.7969

11. Difference between duplicate injections for the sample.

$$\Delta_{Injection} = |Area_{Trial\,2} - Area_{Trial\,1}|$$

Where:

$\Delta_{Injection}$ = Area count difference between duplicate injections

$Area_{Trial2}$ = Area count for injection Trial 2

$Area_{Trial1}$ = Area count for injection Trial 1

$\Delta_{Injection}$ = 0.0122

$Area_{Trial2}$ = 0.7847

$Area_{Trial1}$ = 0.7969

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

12. Difference between individual injection and average area count for the sample.

$$\Delta_{Injection} = \frac{\left|Area_{Trail2} - Avg_{Inj}\right|}{Avg_{Inj}}100$$

Where:

$\Delta_{Injection}$ = Difference between individual injection and average area count (%).
Avg_{Inj} = Average of duplicate injection area counts
$Area_{Trial2}$ = Area count for injection Trial 2
100 = Constant (conversion factor for percentage)

$\Delta_{Injection}$ = 0.8%
Avg_{Inj} = 0.7908
$Area_{Trial2}$ = 0.7847

Note: EPA Method 26 requires $\Delta_{Injection}$ to be less than 5%.

13. Determination of sample concentration from least-squares regression curve (mg/L).

$$C_{Reg} = DF\left[m\left(Avg_{Inj}\right) + b\right]$$

Where:

C_{Reg} = Sample concentration determined using the regression curve (mg/L)
DF = Sample dilution factor
Avg_{Inj} = Average of duplicate injection area counts.
m = Slope of least-squares regression curve.
b = Y-intercept of least-squares regression curve.

C_{Reg} = 917.42
DF = 1000.0000
Avg_{Inj} = 0.7908
m = 1.1817
b = -0.0171

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

14. Determination of total amount of analyte in sample (total mg).

$$M_{Analyte} = \frac{(C_{Reg})(V_{Soln})}{1000}$$

Where:

$M_{Analyte}$ = Amount of analyte in sample (total mg)
C_{Reg} = Sample concentration determined using the response factor (mg/L)
V_{Soln} = Sample volume (ml)
1000 = Conversion constant (ml to L)

$M_{Analyte}$ = 767.51
C_{Reg} = 917.4185
V_{Soln} = 836.6000

15. Determination of Method Detection Limits (MDL).

15a. Determination of average spike result.

$$AvgM_{f\_i} = \frac{\sum_{i=1}^{n} M_{f\_i}}{n}$$

Where:

$AvgM_{f\_i}$ = Average of spike result (mg/L)
M_{f_i} = Net results recorded for each iteration (mg/L)
n = Number of iterations.
i = Placeholder for iteration.

$AvgM_{f\_i}$	=	0.148			
M_{f_1}	=	0.149	M_{f_5}	=	0.143
M_{f_2}	=	0.141	M_{f_6}	=	0.151
M_{f_3}	=	0.155	M_{f_7}	=	0.144
M_{f_4}	=	0.153	M_{f_8}	=	0.151
n	=	8			

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

15b. Determination of standard deviation of spike result.

$$\sigma_{f-i} = \sqrt{\frac{\sum_{i=1}^{n}\left(M_{f\_i} - AvgM_{f\_i}\right)^2}{(n-1)}}$$

Where:

σ_{f_i}	=	Standard deviation of spike result.
$AvgM_{f\_i}$	=	Average of spike result net weights (g)
M_{f_i}	=	Net weights recorded for each iteration (g)
n	=	Number of iterations.
i	=	Placeholder for iteration.

σ_{f_i}	=	0.0051			
$AvgM_{f\_i}$	=	0.148			
M_{f_1}	=	0.149	M_{f_5}	=	0.143
M_{f_2}	=	0.141	M_{f_6}	=	0.151
M_{f_3}	=	0.155	M_{f_7}	=	0.144
M_{f_4}	=	0.153	M_{f_8}	=	0.151
n	=	8			

15c. Determination of variance of spike result.

$$V_{f\_i} = (\sigma_{f\_i})^2$$

Where:

V_{f_i}	=	Variance of spike result.
σ_{f_i}	=	Standard deviation of spike result.

V_{f_i}	=	2.64E-05
σ_{f_i}	=	0.0051

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

15d. Determination of RMS deviation of spike result.

$$RMS_{f\_i} = 100 \frac{\sigma_{f\_i}}{AvgM_{f\_i}}$$

Where:

RMS_{f_i}	=	RMS deviation of spike results (%).
σ_{f_i}	=	Standard deviation of spike result.
$AvgM_{f\_i}$	=	Average of spike result net weights (g)
100	=	Conversion constant (fraction to percent)

RMS_{f_i}	=	0.0346
σ_{f_i}	=	0.0051
$AvgM_{f\_i}$	=	0.1483

15e. Determination of average spike recovery.

$$R_f = 100 \frac{AvgM_{f\_i}}{RA}$$

Where:

R_f	=	Average spike recovery (%)
$AvgM_{f\_i}$	=	Average of spike result net weights (g)
RA	=	Amount of spike residue added (g)
100	=	Conversion constant (fraction to percent)

R_f	=	98.0%
$AvgM_{f\_i}$	=	0.14828
RA	=	0.15134

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

15f. Determination of $t_{(n-1,\,0.99)}$.

Value taken from the following Table:

n	$t_{(n-1,\,0.99)}$
7	3.143
8	2.998
9	2.896
10	2.821
11	2.764
16	2.602
21	2.528

Where:

$t_{(n-1,\,0.99)}$ = Students' t value appropriate for a 99% confidence level and a standard deviation estimate with n-1 degrees of freedom.

n = Number of iterations.

$t_{(n-1,\,0.99)}$ = 2.998

n = 8

15g. Determination of Method Detection Limit (MDL).

$$MDL = \sigma_{f\_i}\, t_{(n-1,0.99)}$$

Where:

MDL = Method detection limit (mg/L)

$t_{(n-1,\,0.99)}$ = Students' t value appropriate for a 99% confidence level and a standard deviation estimate with n-1 degrees of freedom.

σ_{f_i} = Standard deviation of spike result.

MDL = 0.015

$t_{(n-1,\,0.99)}$ = 2.998

σ_{f_i} = 0.0051

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-03
Sample Location: U1 SDA Inlet

15h. Determination of Method Reporting Limit (MRL).

$$MRL = 5(MDL)$$

Where:

MRL = Method reporting limit (mg/L)

MDL = Method detection Limit (mg/L)

5 = Constant

MRL = 0.077

MDL = 0.015

Method 26A Audit Material
(Cl- Spiked Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M26A-4436-02/L3937 Date Issued: 03/10/10

Auditee:

Company: Clean Air Engineering

Address: 500 W Wood St Palatine, IL 60067

Attention of: Eric Ewing Phone: 847-654-4519

Requestor:

Agency: Florida DEP - SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee C. Hoefert Phone: 561-681-6626

Project Name: Wheelabrator North Broward

Audit Results **(Results in mg/L)** Reanalyzed

Analyte	Result
Chloride concentration	32.96 mg/L

Revised 10/03

Method 26A Audit Material
(Cl- Spiked Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M26A-4436-01/L3586 Date Issued: 03/10/10

Auditee:

Company: Clean Air Engineering

Address: 500 W Wood St Palatine, IL, 60067

Attention of: Eric Ewing Phone: 847-654-4519

Requestor:

Agency: Florida DEP - SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee C. Hoefert Phone: 561-681-6626

Project Name: Wheelabrator North Broward

Audit Results (Results in mg/L) Reanalyzed

Analyte	Result
Chloride concentration	142.64 mg/L

Revised 10/03

Method 26A Audit Material
(Cl- Spiked Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M26A-4436-02/L3937 Date Issued: 03/10/10

Auditee:

Company: Clean Air Engineering

Address: 500 West Wood st Palatine, IL 60067

Attention of: Eric Ewing Phone: 847-654-4519

Requestor:

Agency: Florida DEP - SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee C. Hoefert Phone: 561-681-6626

Project Name: Wheelabrator North Broward

Audit Results **(Results in mg/L)** initial

Analyte	Result
Chloride concentration	32.44 mg/L

Revised 10/03

Method 26A Audit Material
(Cl- Spiked Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M26A-4436-01/L3586 Date Issued: 03/10/10

Auditee:

Company: Clean Air Engineering

Address: 500 west Wood St Palatine, IL 60067

Attention of: Eric Ewing Phone: 847-654-4519

Requestor:

Agency: Florida DEP - SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee C. Hoefert Phone: 561-681-6626

Project Name: Wheelabrator North Broward

Audit Results (Results in mg/L) Initial

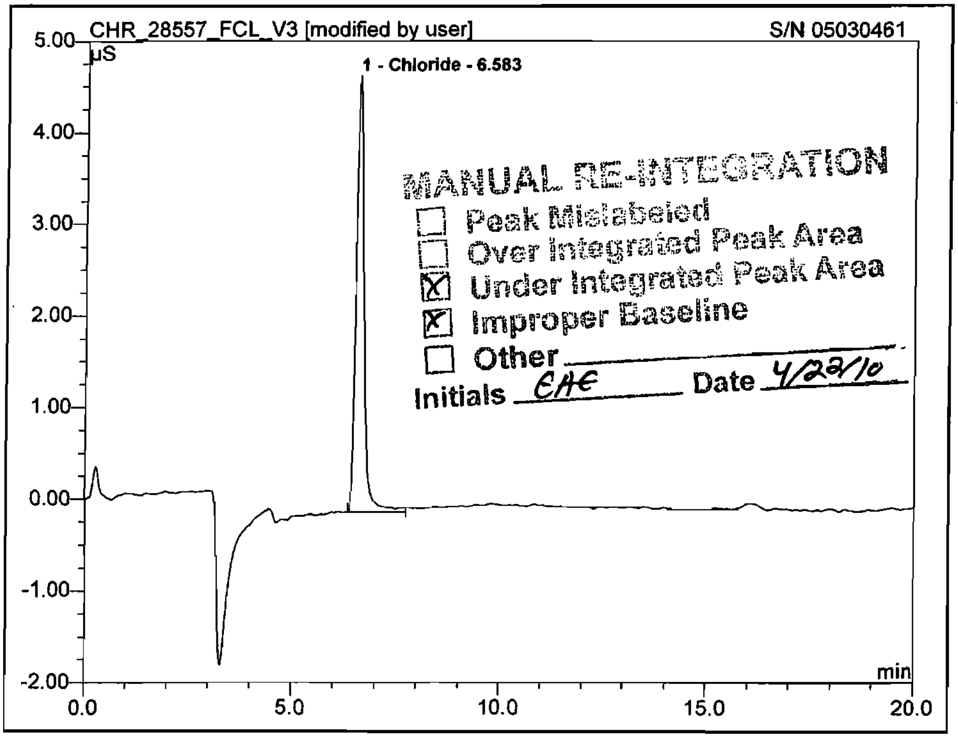
Analyte	Result
Chloride concentration	158.15 mg/L

Revised 10/03

11 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**49.221**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1249.28**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	

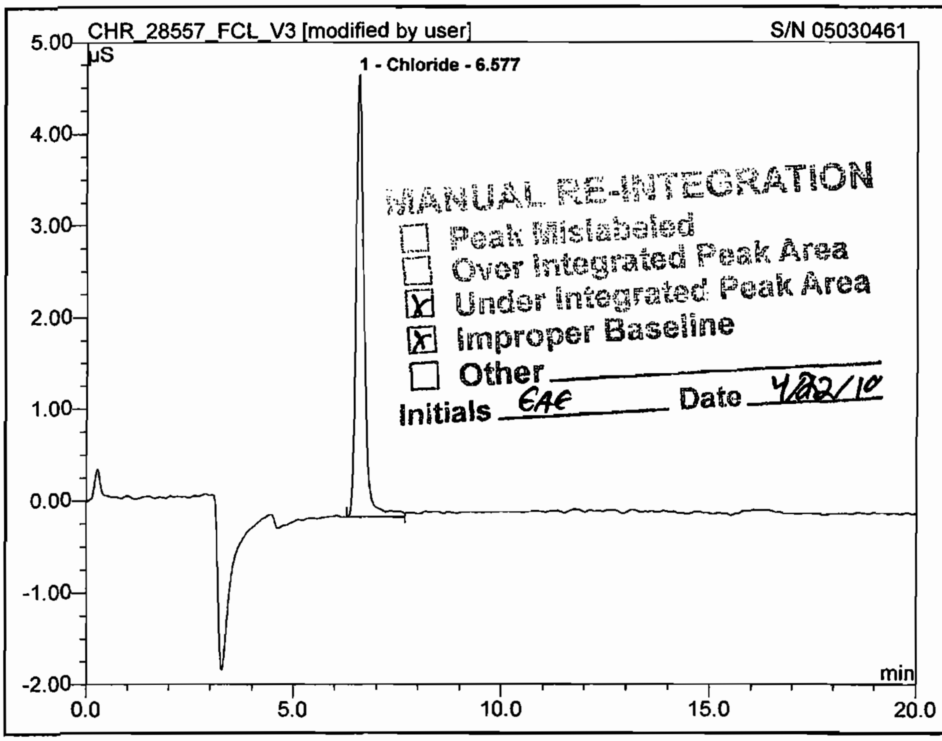


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.58	Chloride	1.0475	100.00	BM *	0.93
Total:			1.047	100.000	0.00	

12 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**49.130**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1252.86**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I.	

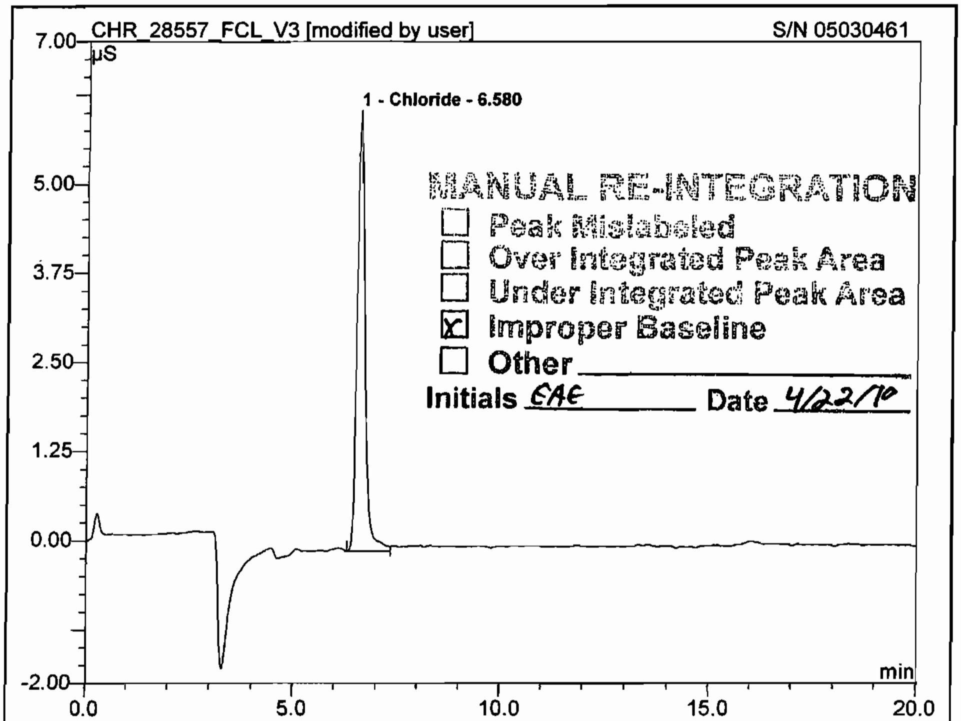


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.58	Chloride	1.0590	100.00	BM *	0.93
Total:			1.059	100.000	0.00	

13 Cal 05

CleanAir

Sample Name:	**Cal 05**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.981**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1250.48**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	

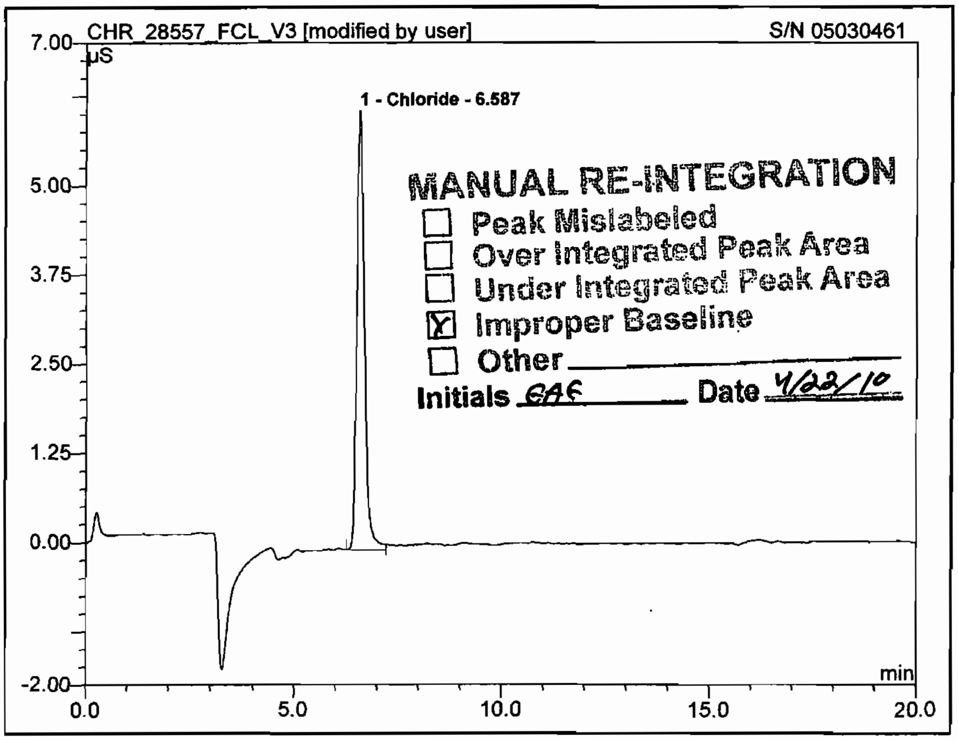


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.58	Chloride	1.3417	100.00	BM *	0.92
Total:			1.342	100.000	0.00	

14 Cal 05

CleanAir

Sample Name:	**Cal 05**	*Sample Vo*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.904**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1249.35**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	

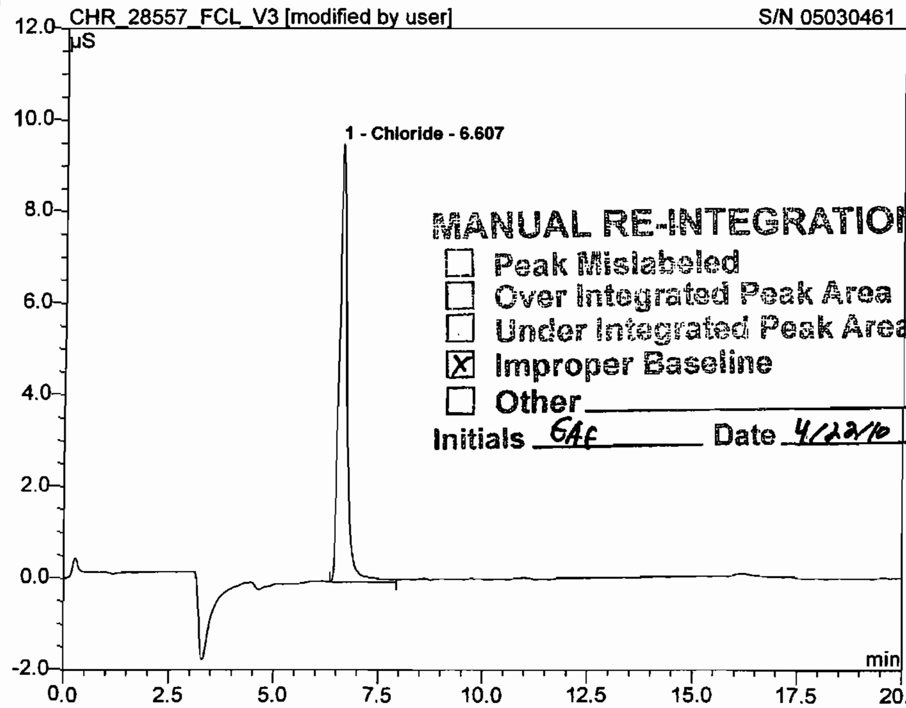


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.59	Chloride	1.3316	100.00	BM *	0.92
Total:			1.332	100.000	0.00	

15 Cal 06

CleanAir

Sample Name:	**Cal 06**	*Sample Vo*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.924**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1245.44**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	



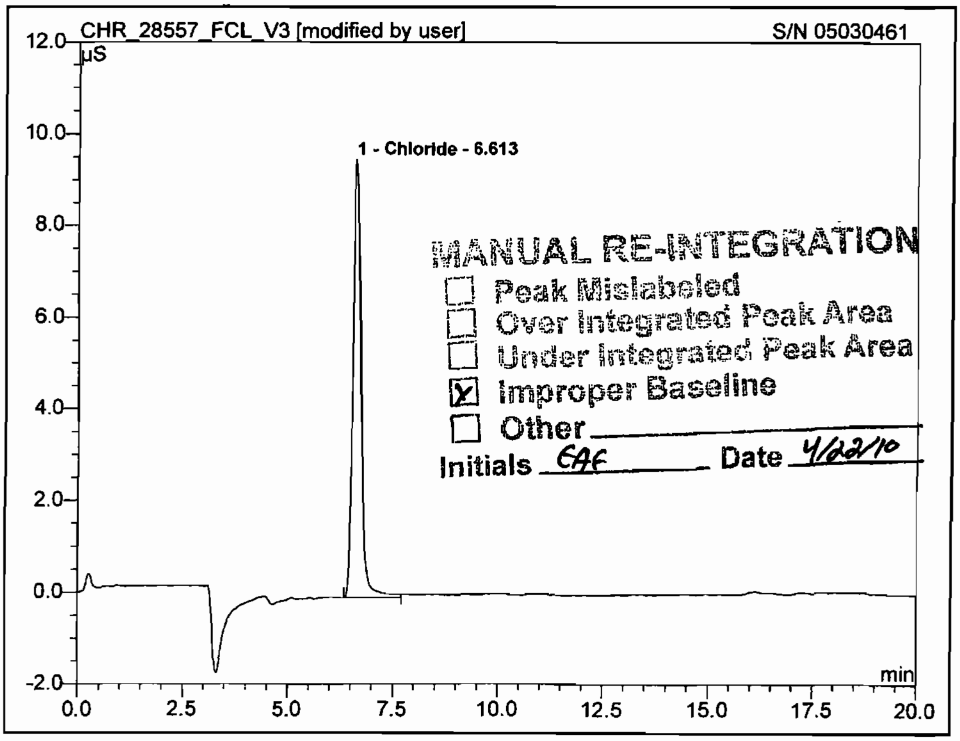
MANUAL RE-INTEGRATION
☐ Peak Mislabeled
☐ Over Integrated Peak Area
☐ Under Integrated Peak Area
☒ Improper Baseline
☐ Other ____
Initials GAE Date 4/22/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.61	Chloride	2.1125	100.00	BM *	0.92
Total:			2.113	100.000	0.00	

16 Cal 06

CleanAir

Sample Name:	**Cal 06**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.928**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1245.96**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	

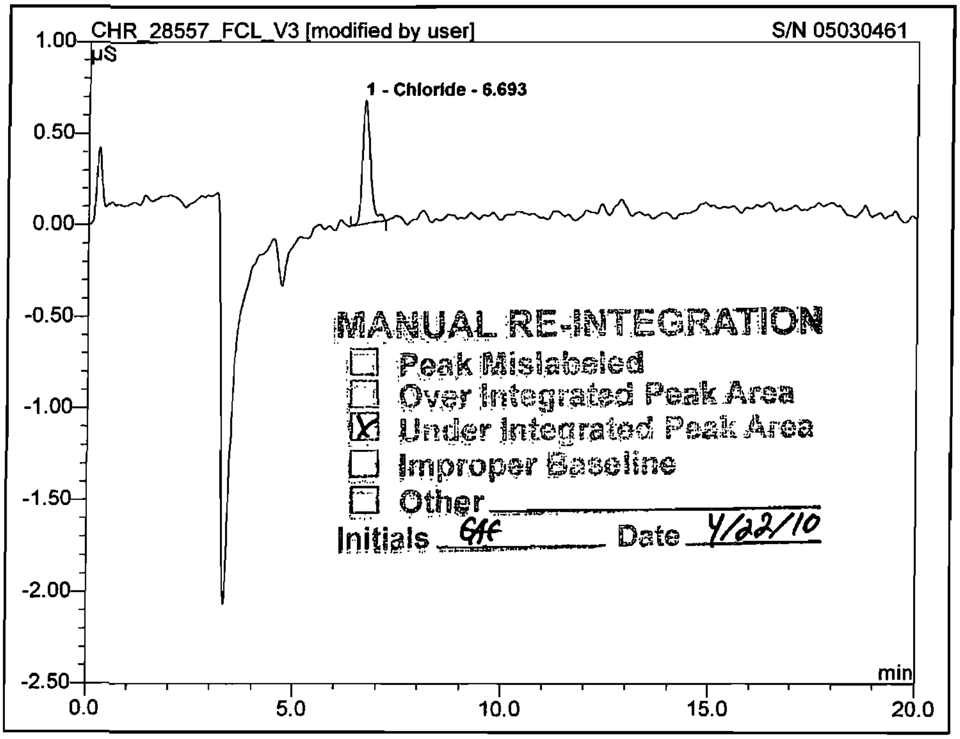


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.61	Chloride	2.0868	100.00	BM *	0.93
Total:			2.087	100.000	0.00	

46 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**52.182**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1264.49**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	

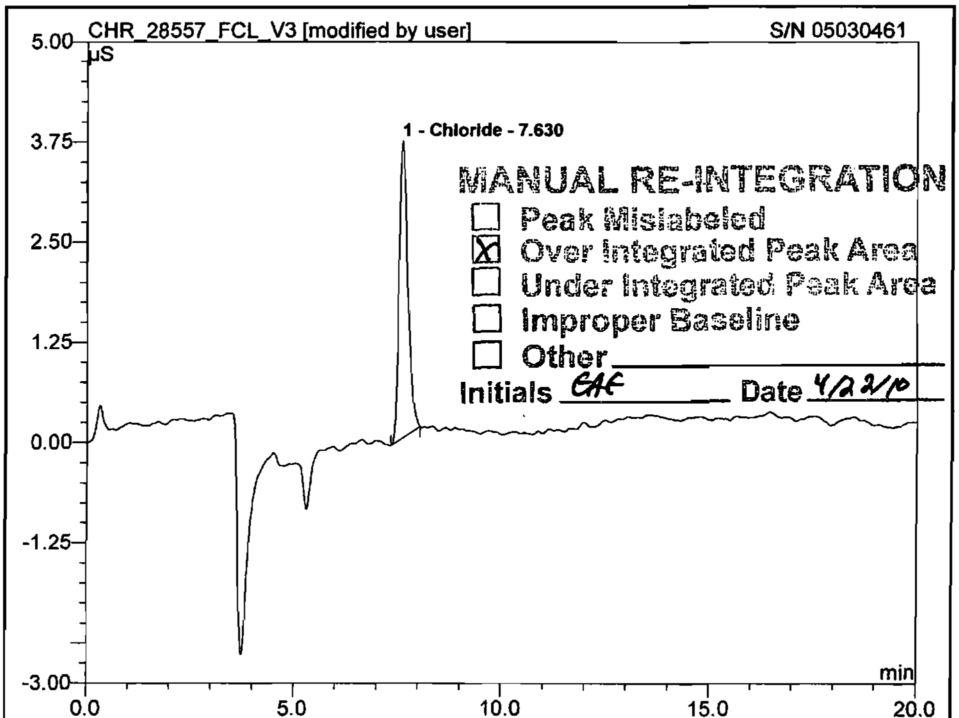


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.69	Chloride	0.1456	100.00	BMB*	0.94
Total:			0.146	100.000	0.00	

189 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**57.711**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1407.61**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	

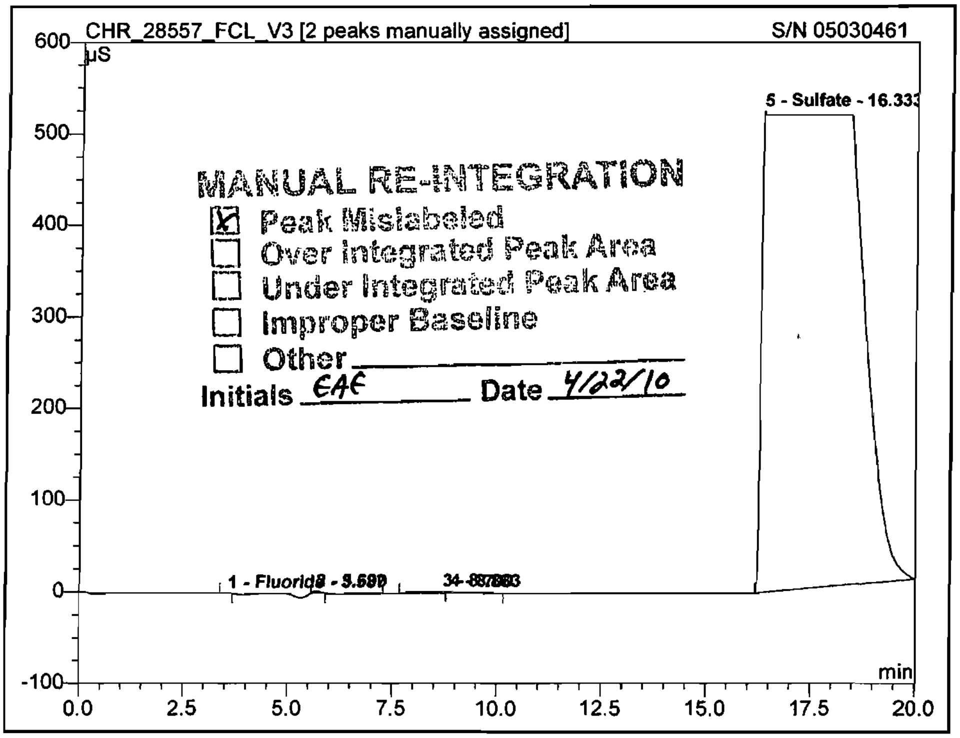


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.63	Chloride	0.9110	100.00	BMB*	0.95
Total:			0.911	100.000	0.00	

194 0.1N H2SO4 Blank

Reagent Blank

Sample Name:	**0.1N H2SO4 Blank**	*Sample Vo.*	**300.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.051**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1409.28**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-002**
		Replicate II	

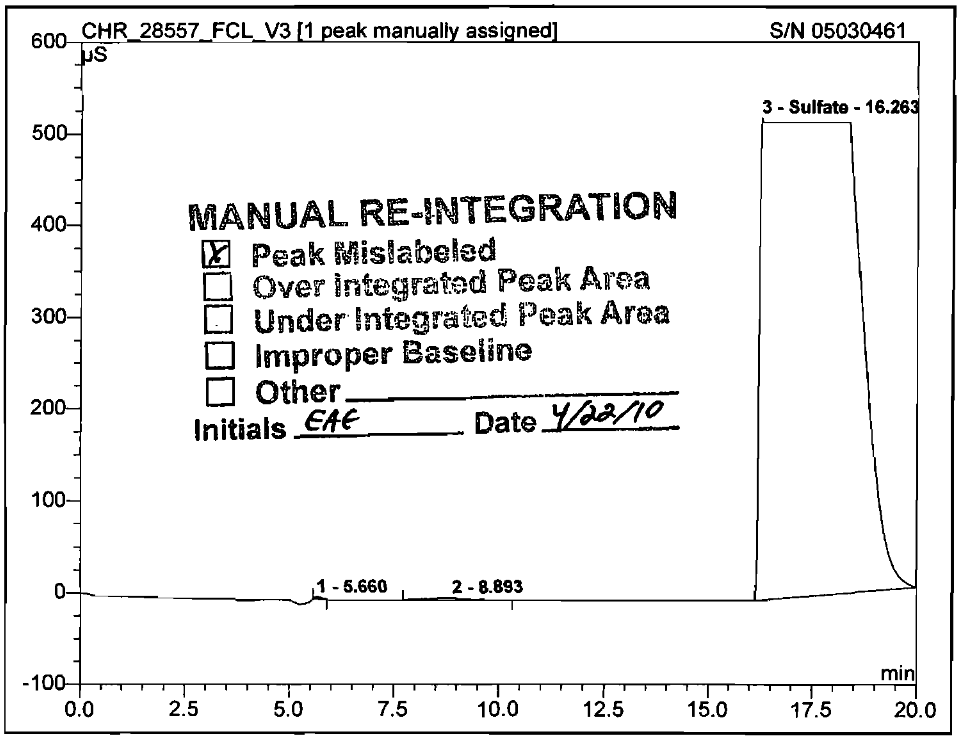


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	3.59	Fluoride	0.0544	0.00	BM	n.a.
2	5.69	n.a.	0.3474	0.03	BMB	1.23
3	8.70	n.a.	0.4915	0.04	Ru^	n.a.
4	8.88	n.a.	1.7266	0.13	MB^	0.56
5	16.33	Sulfate	1344.6083	99.81	BMB	1.51
Total:			1347.228	100.000	0.00	

195 0.1N H2SO4 Blank

Reagent Blank

Sample Name:	**0.1N H2SO4 Blank**	*Sample Vo.*	**300.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**69.771**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1388.48**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	**28557-002**

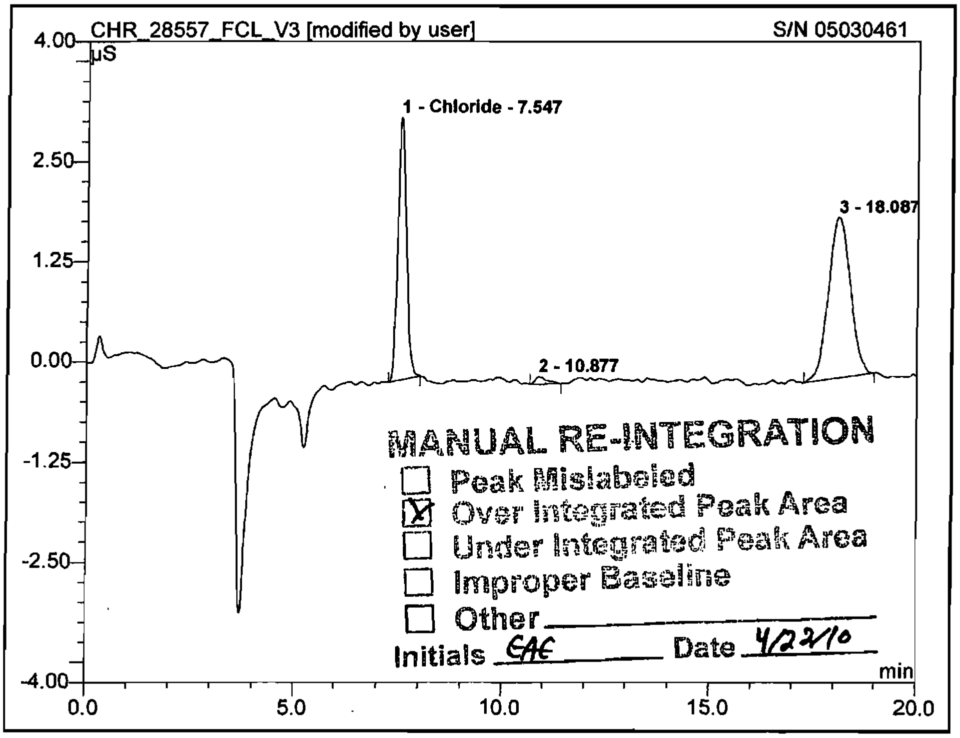


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	5.66	n.a.	0.4416	0.03	BM	1.21
2	8.89	n.a.	2.3431	0.17	BMB^	0.93
3	16.26	Sulfate	1346.2704	99.79	BMB	1.51
Total:			1349.055	100.000	0.00	

197 U1 SDA Inlet R1

U1 SDA Inlet

Sample Name:	**U1 SDA Inlet R1**	*Sample Vo.*	**836.6 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**56.851**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1397.04**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	**28557-003**

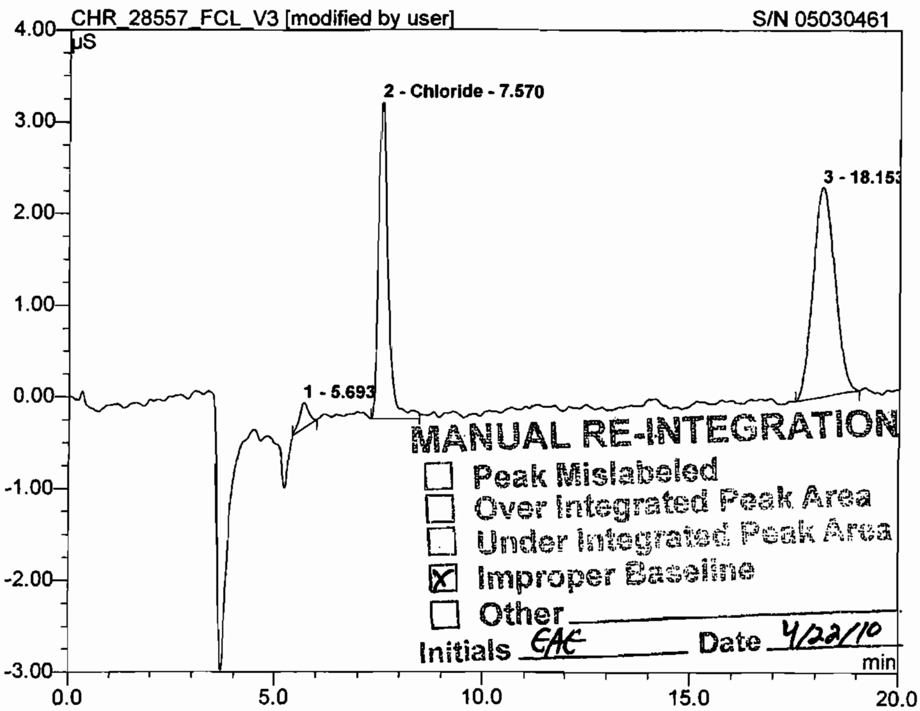


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.55	Chloride	0.7847	38.41	BMB*	0.97
2	10.88	n.a.	0.0310	1.52	BMB	0.84
3	18.09	n.a.	1.2272	60.07	BMB	1.01
Total:			2.043	100.000	0.00	

198 U1 SDA Inlet R2

U1 SDA Inlet

Sample Name:	**U1 SDA Inlet R2**	*Sample Vo*	**801.9 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**56.662**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1398.24**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-004**
		Replicate I	

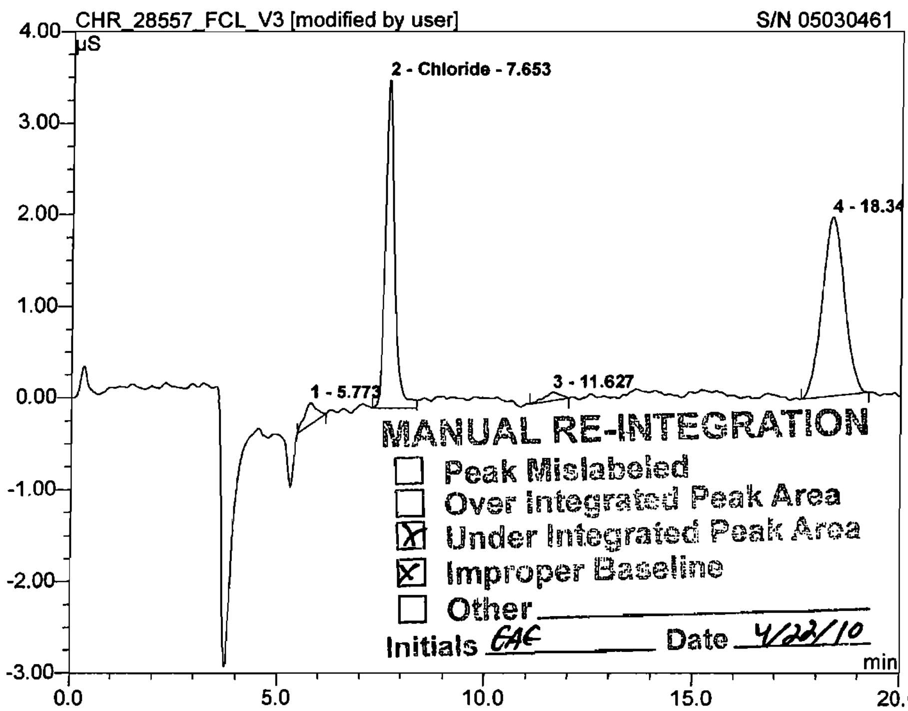


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	5.69	n.a.	0.0702	2.97	BMB	0.87
2	7.57	Chloride	0.9003	38.10	BM *	0.94
3	18.15	n.a.	1.3922	58.92	BMB	1.02
Total:			2.363	100.000	0.00	

199 U1 SDA Inlet R2

U1 SDA Inlet

Sample Name:	**U1 SDA Inlet R2**	*Sample Vo.*	**801.9 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**56.683**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1398.86**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	**28557-004**



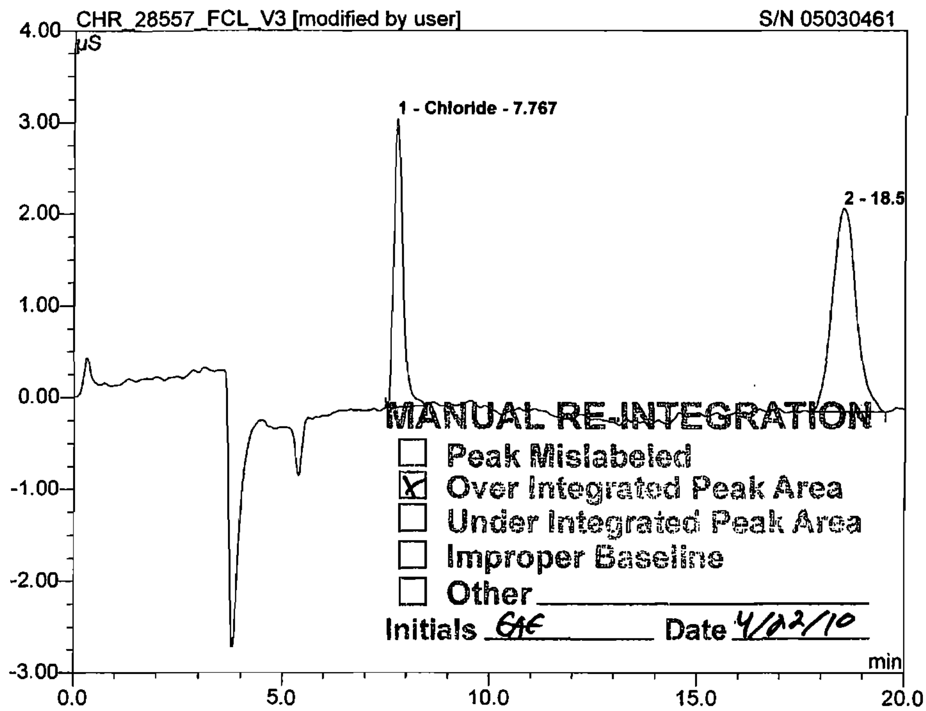
MANUAL RE-INTEGRATION
☐ Peak Mislabeled
☐ Over Integrated Peak Area
☒ Under Integrated Peak Area
☒ Improper Baseline
☐ Other ____
Initials EAE Date 4/22/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	5.77	n.a.	0.0809	3.56	BMB	0.93
2	7.65	Chloride	0.9341	41.14	BM *	0.91
3	11.63	n.a.	0.0408	1.80	BMB	0.93
4	18.34	n.a.	1.2150	53.51	BMB	0.95
Total:			2.271	100.000	0.00	

201 U1 SDA Inlet R3

U1 SDA Inlet

Sample Name:	**U1 SDA Inlet R3**	*Sample Vo*	**700.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**56.916**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1406.16**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-005**



MANUAL RE-INTEGRATION
- [ ] Peak Mislabeled
- [x] Over Integrated Peak Area
- [ ] Under Integrated Peak Area
- [ ] Improper Baseline
- [ ] Other

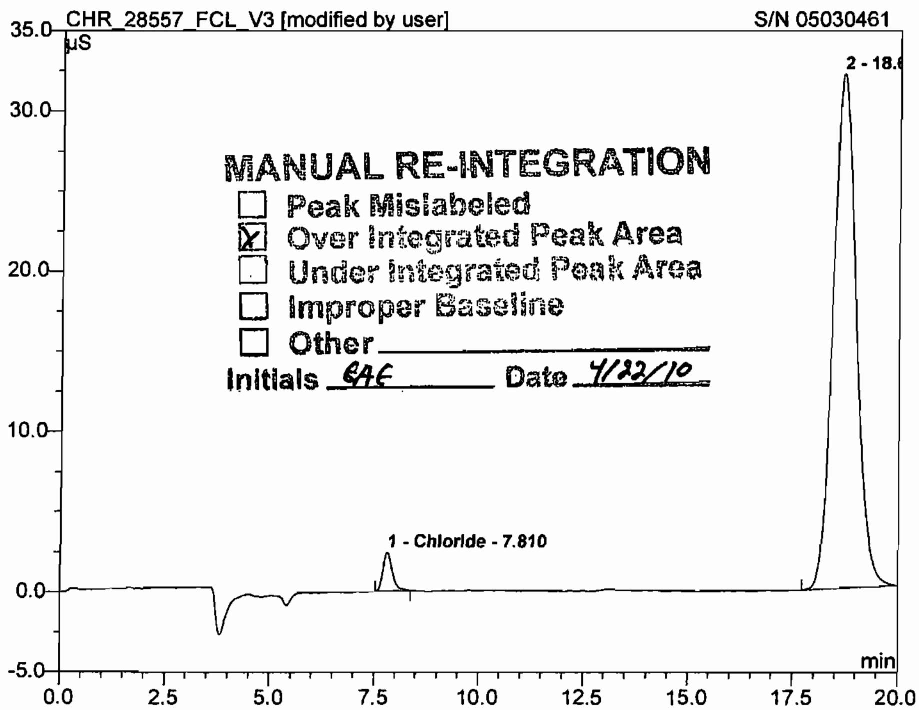
Initials GAE Date 4/22/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.77	Chloride	0.8035	35.19	BMB*	0.93
2	18.52	n.a.	1.4796	64.81	BMB	0.93
Total:			2.283	100.000	0.00	

203 U1 FF Outlet R1

U1 FF Outlet

Sample Name:	**U1 FF Outlet R1**	*Sample Vo.*	**847.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**56.902**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1411.29**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-006**

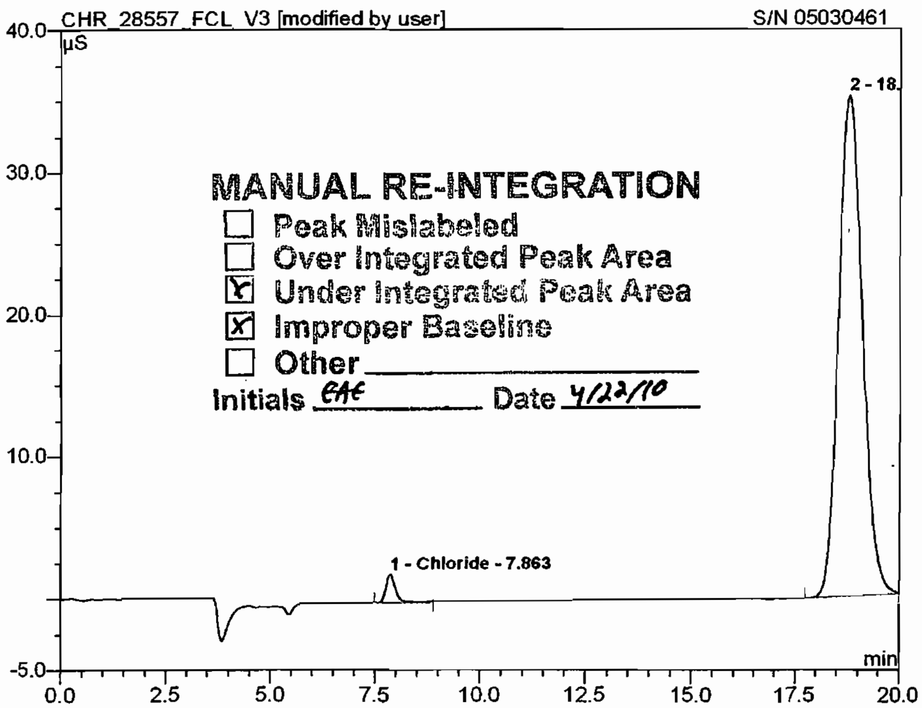


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.81	Chloride	0.6171	2.90	BMB*	0.95
2	18.66	n.a.	20.6775	97.10	BMB	0.98
Total:			21.295	100.000	0.00	

206 U1 FF Outlet R3

U1 FF Outlet

Sample Name:	**U1 FF Outlet R3**	*Sample Vo*	**766.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**57.280**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1408.47**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-008**
		Replicate IL	

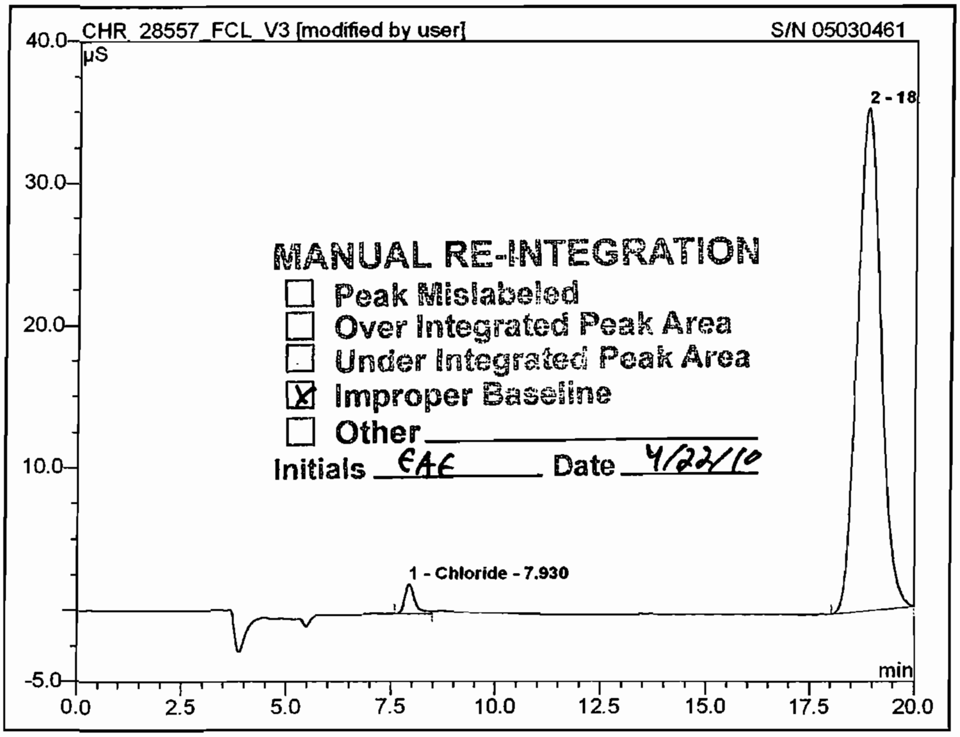


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.86	Chloride	0.5809	2.44	BM *	0.92
2	18.79	n.a.	23.2082	97.56	BMB	0.99
Total:			23.789	100.000	0.00	

207 U1 FF Outlet R3

U1 FF Outlet

Sample Name:	**U1 FF Outlet R3**	*Sample Vo*	**766.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**57.313**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1408.00**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-008**

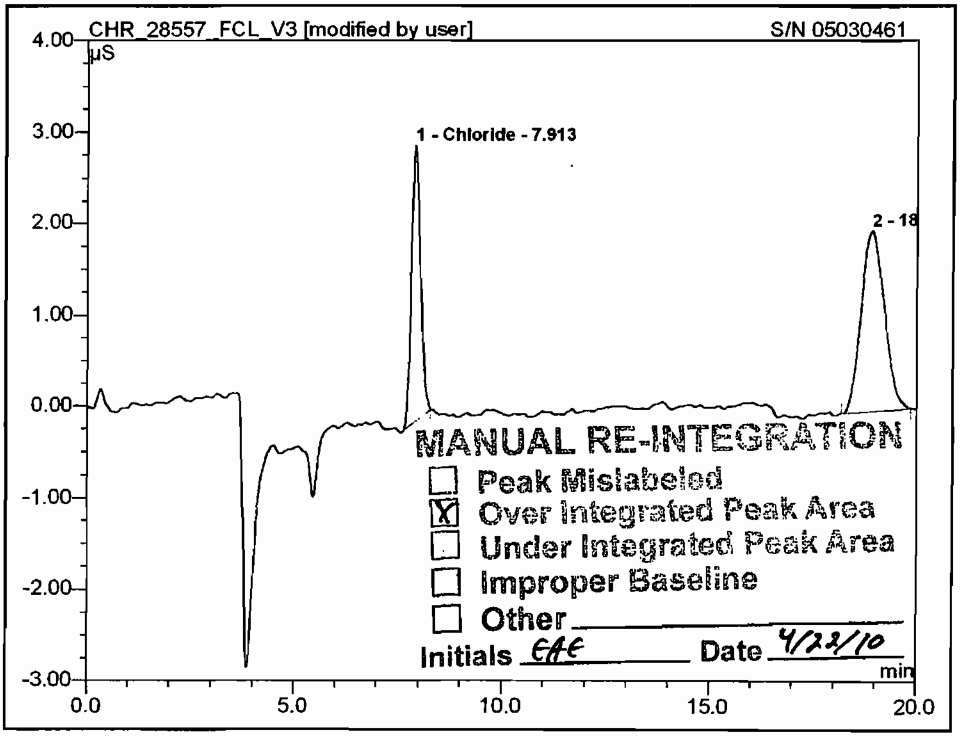


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.93	Chloride	0.5849	2.47	BM *	0.84
2	18.86	n.a.	23.1246	97.53	BMB	0.99
Total:			23.710	100.000	0.00	

208 U2 SDA Inlet R1

U2 SDA Inlet

Sample Name:	**U2 SDA Inlet R1**	*Sample Vo*	**737.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**57.253**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1409.84**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-009**
		Replicate I	

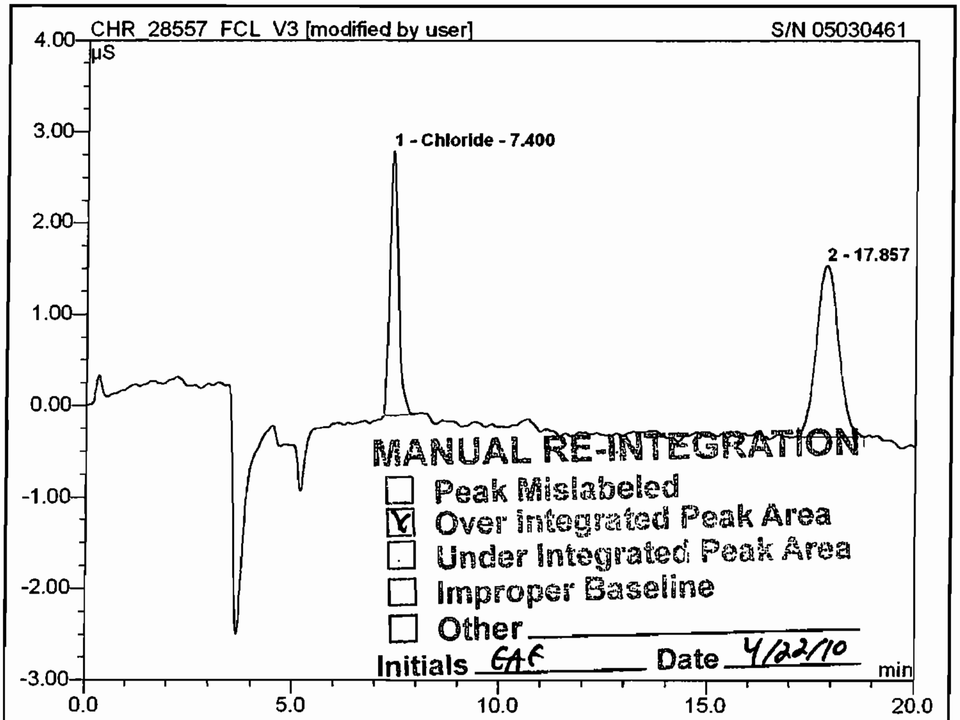


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.91	Chloride	0.7673	37.11	BMB*	0.97
2	18.91	n.a.	1.3001	62.89	BMB	1.02
Total:			2.067	100.000	0.00	

218 U2 SDA Inlet R3

U2 SDA Inlet

Sample Name:	**U2 SDA Inlet R3**	*Sample Vo*	**790.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.892**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1390.08**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-011**
		Replicate II	

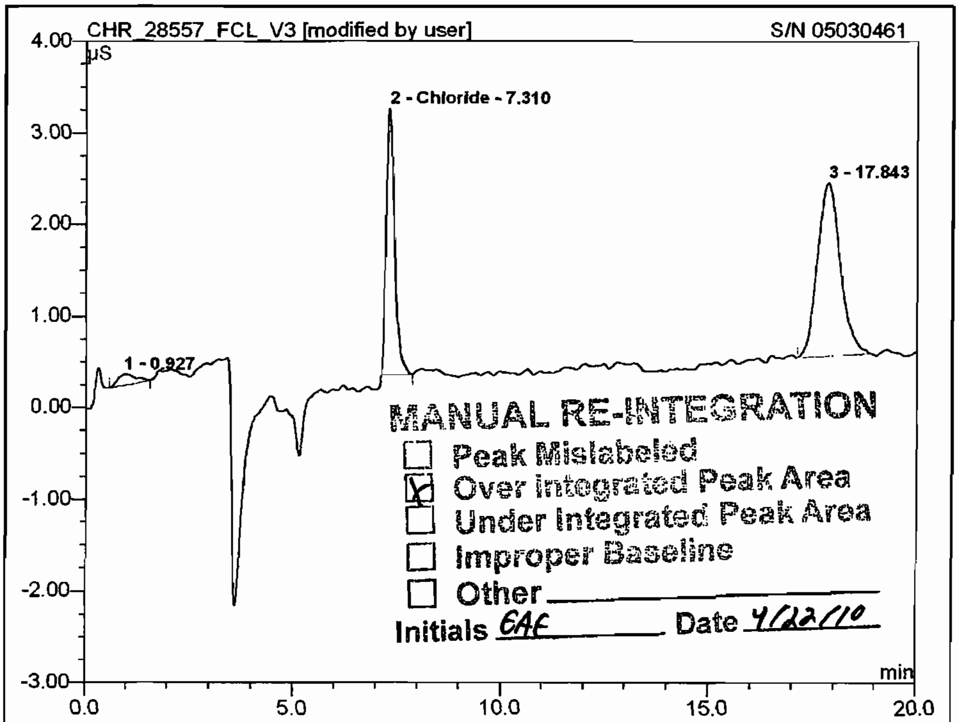


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.40	Chloride	0.6953	37.49	BMB*	0.93
2	17.86	n.a.	1.1595	62.51	BMB	0.99
Total:			1.855	100.000	0.00	

219 U2 SDA Inlet R3

U2 SDA Inlet

Sample Name:	**U2 SDA Inlet R3**	*Sample Vo*	**790.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.534**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1383.44**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-011**

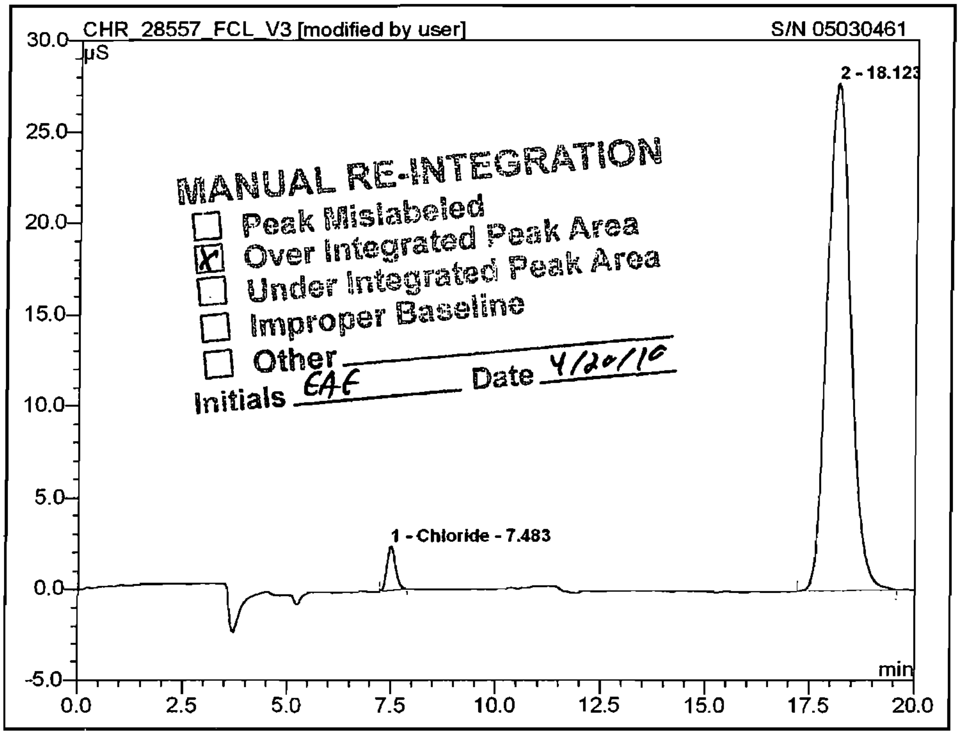


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	0.93	n.a.	0.0589	3.01	BMB	0.98
2	7.31	Chloride	0.6818	34.85	BMB*	0.96
3	17.84	n.a.	1.2158	62.14	BMB	0.95
Total:			1.957	100.000	0.00	

220 U2 FF Outlet R1

U2 FF Outlet

Sample Name:	**U2 FF Outlet R1**	*Sample Vo*	**896.6 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**59.130**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1390.05**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-012**
		Replicate I	

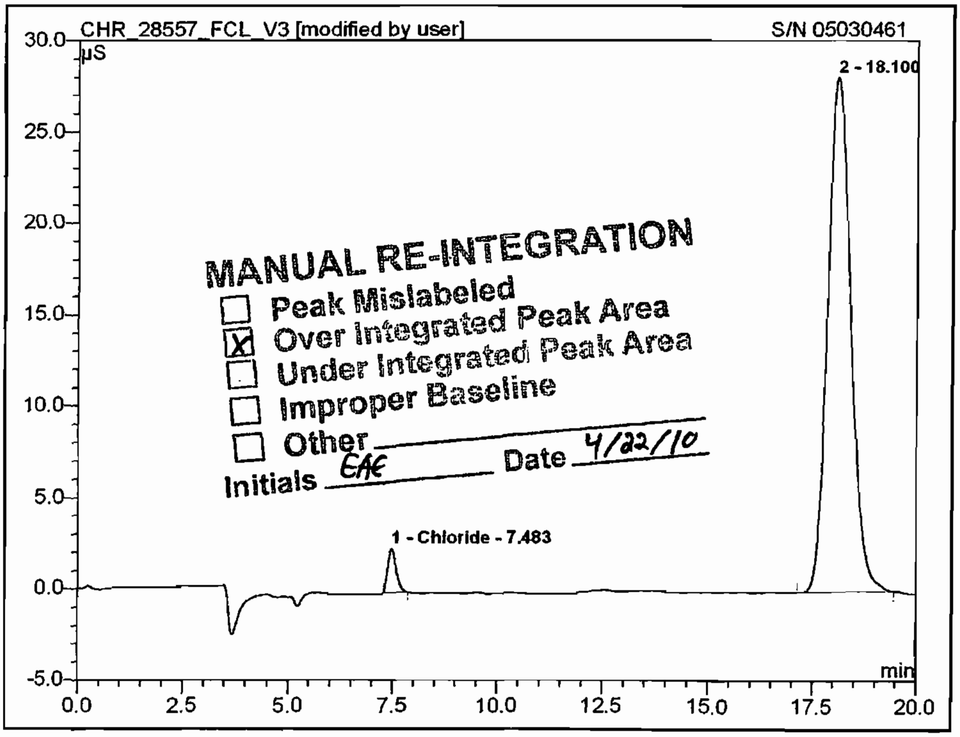


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.48	Chloride	0.5624	3.06	BMB*	0.99
2	18.12	n.a.	17.8130	96.94	BMB	0.99
Total:			18.375	100.000	0.00	

221 U2 FF Outlet R1

U2 FF Outlet

Sample Name:	**U2 FF Outlet R1**	*Sample Vo*	**896.6 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**59.001**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1393.89**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	**28557-012**



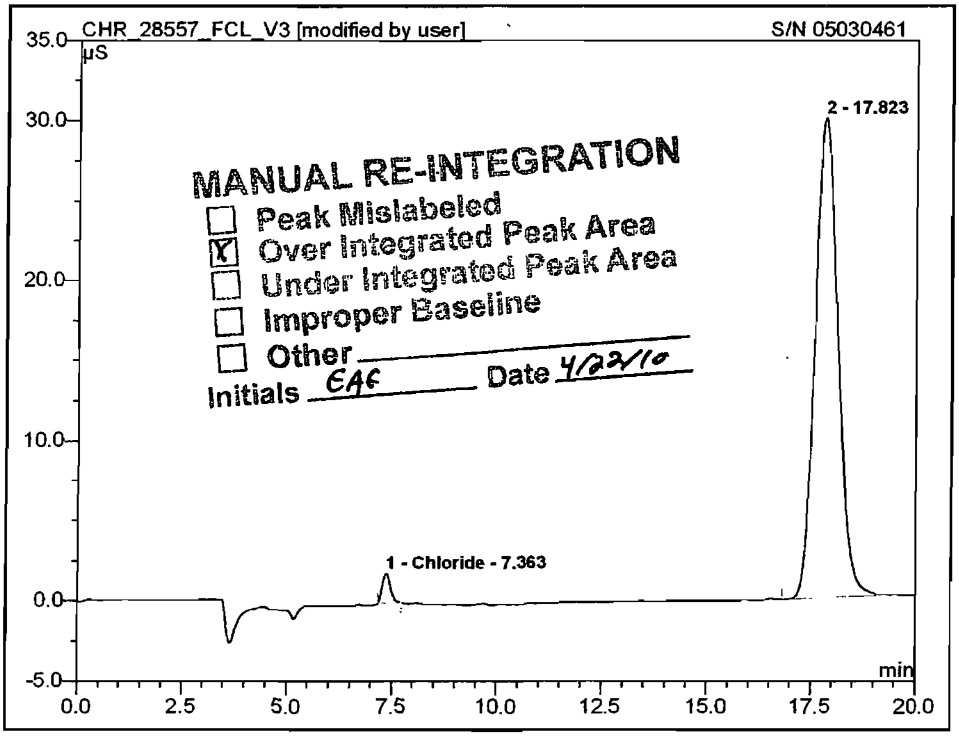
MANUAL RE-INTEGRATION
☐ Peak Mislabeled
☒ Over Integrated Peak Area
☐ Under Integrated Peak Area
☐ Improper Baseline
☐ Other
Initials EAE Date 4/22/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.48	Chloride	0.5584	3.00	BMB*	0.98
2	18.10	n.a.	18.0757	97.00	BMB	0.99
Total:			18.634	100.000	0.00	

222 U2 FF Outlet R2

U2 FF Outlet

Sample Name:	**U2 FF Outlet R2**	*Sample Vo*	**861.4 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.746**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1393.42**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-013**
		Replicate IL	

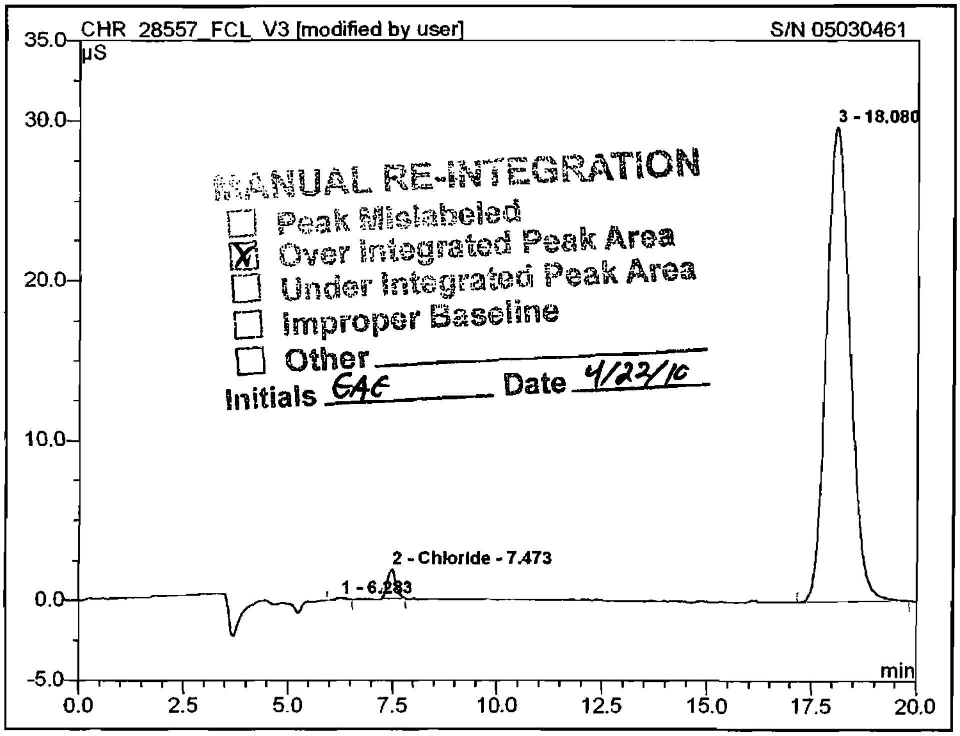


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.36	Chloride	0.4163	2.14	BMB*	0.99
2	17.82	n.a.	19.0109	97.86	BMB	0.99
Total:			19.427	100.000	0.00	

223 U2 FF Outlet R2

U2 FF Outlet

Sample Name:	**U2 FF Outlet R2**	*Sample Vo*	**861.4 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.925**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1389.47**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-013**

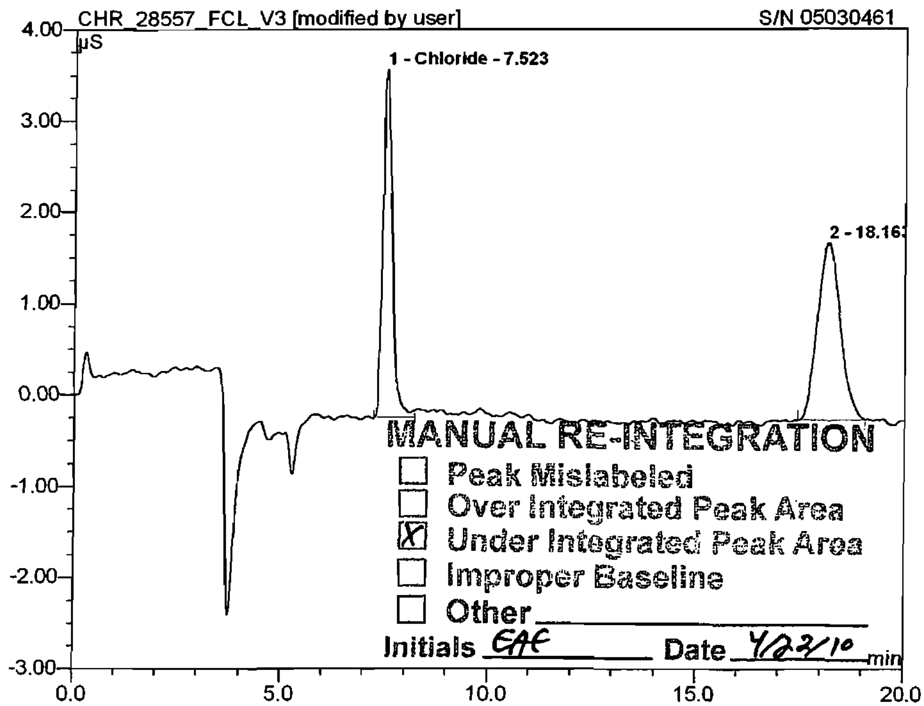


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.28	n.a.	0.0424	0.21	BMB	1.24
2	7.47	Chloride	0.4264	2.16	MB*	0.98
3	18.08	n.a.	19.2553	97.62	BMB	0.99
Total:			19.724	100.000	0.00	

226 U3 SDA Inlet R1

U3 SDA Inlet

Sample Name:	**U3 SDA Inlet R1**	*Sample Vo*	**725.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**59.071**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1385.87**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-015**
		Replicate IL	

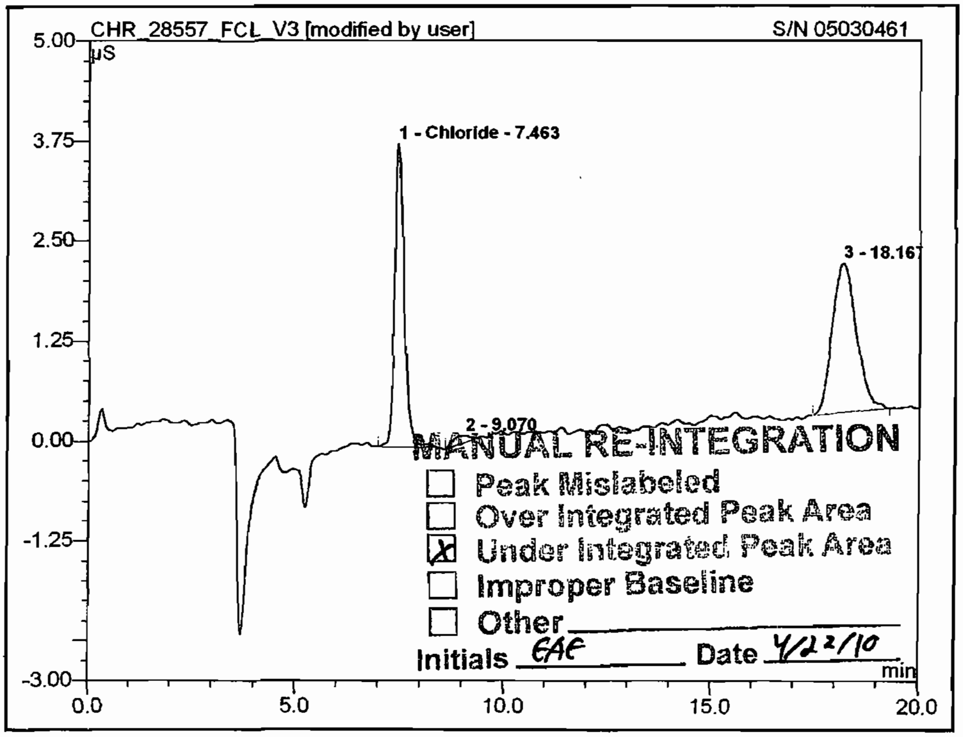


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.52	Chloride	0.9827	44.42	BM *	0.94
2	18.16	n.a.	1.2294	55.58	BMB	1.00
Total:			2.212	100.000	0.00	

227 U3 SDA Inlet R1

U3 SDA Inlet

Sample Name:	**U3 SDA Inlet R1**	*Sample Vo*	**725.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.797**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1389.74**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-016**

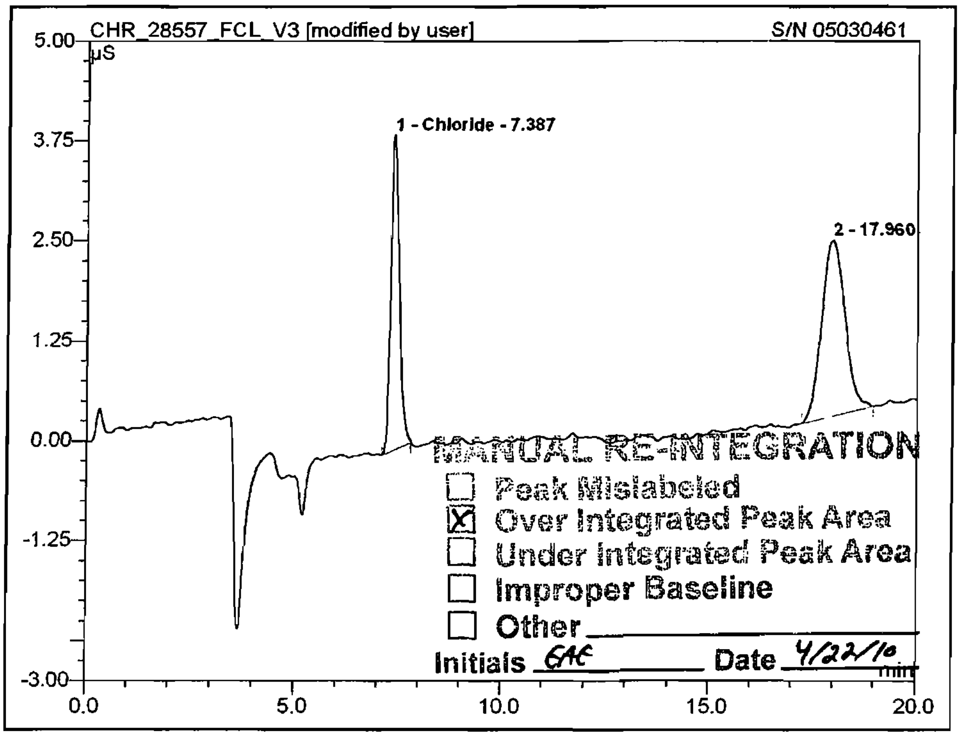


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.46	Chloride	0.9997	43.49	BMB*	0.92
2	9.07	n.a.	0.0449	1.96	BMB	1.35
3	18.17	n.a.	1.2539	54.55	BMB	0.99
Total:			2.299	100.000	0.00	

229 U3 SDA Inlet R2

U3 SDA Inlet

Sample Name:	**U3 SDA Inlet R2**	*Sample Vo*	**701.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.572**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1386.00**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-015**

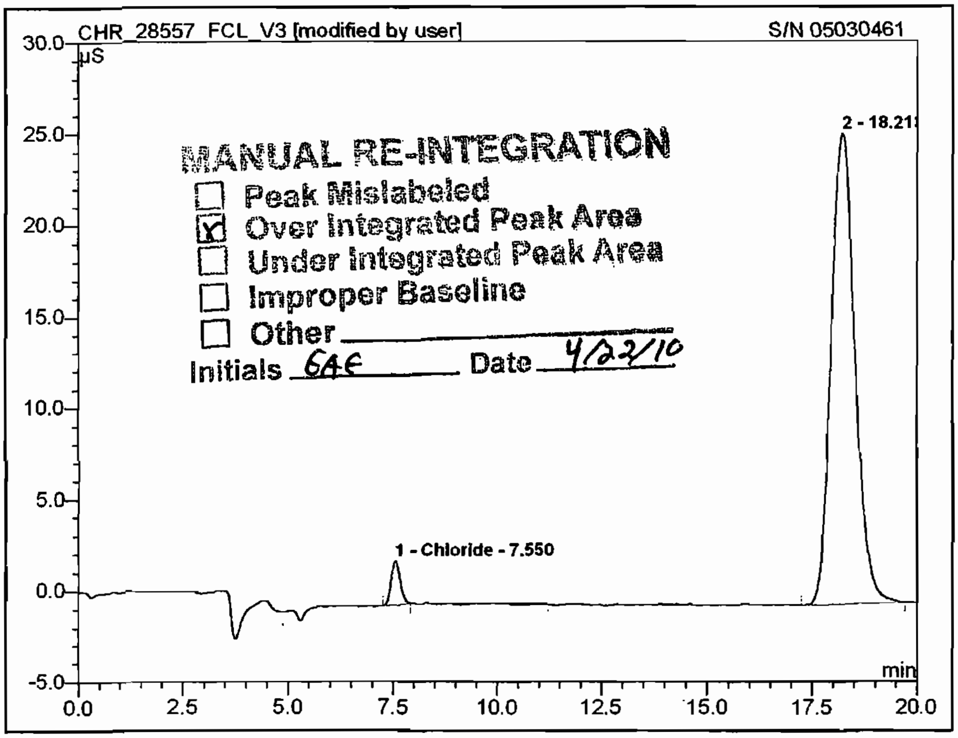


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.39	Chloride	0.9520	39.65	BMB*	0.96
2	17.96	n.a.	1.4487	60.35	BMB	1.01
Total:			2.401	100.000	0.00	

234 U3 FF Outlet R2

U3 FF Outlet

Sample Name:	**U3 FF Outlet R2**	*Sample Vo*	**956.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**59.416**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1391.93**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-019**
		Replicate II	

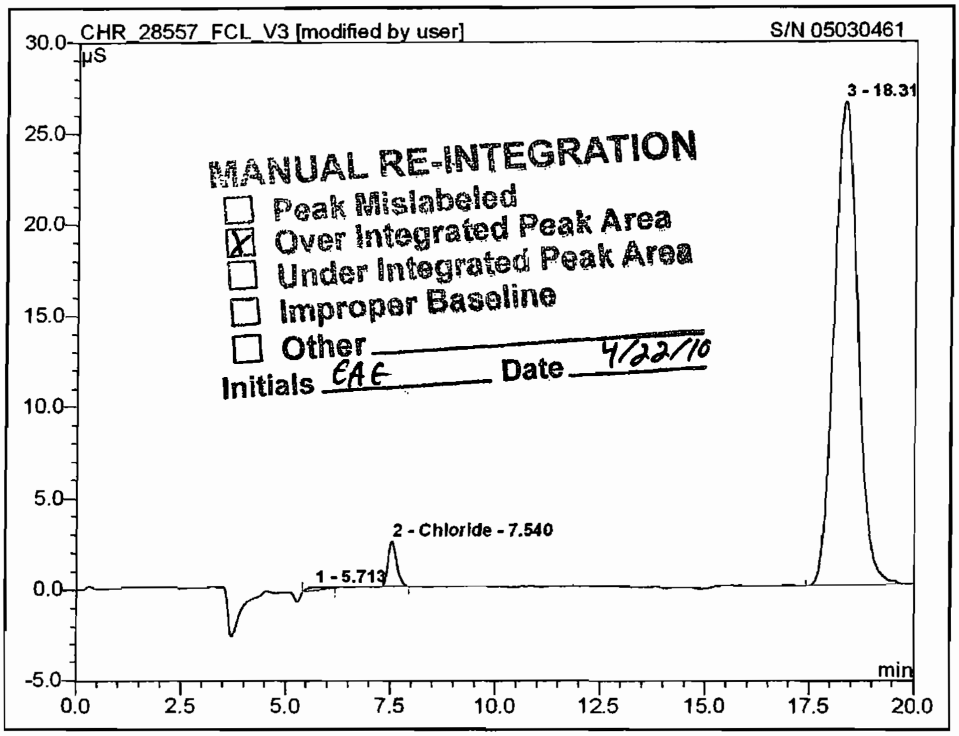


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.55	Chloride	0.5753	3.29	BMB*	0.99
2	18.21	n.a.	16.9045	96.71	BMB	0.99
Total:			17.480	100.000	0.00	

235 U3 FF Outlet R2

U3 FF Outlet

Sample Name:	**U3 FF Outlet R2**	*Sample Vo*	**956.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.712**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1389.05**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	**28557-019**

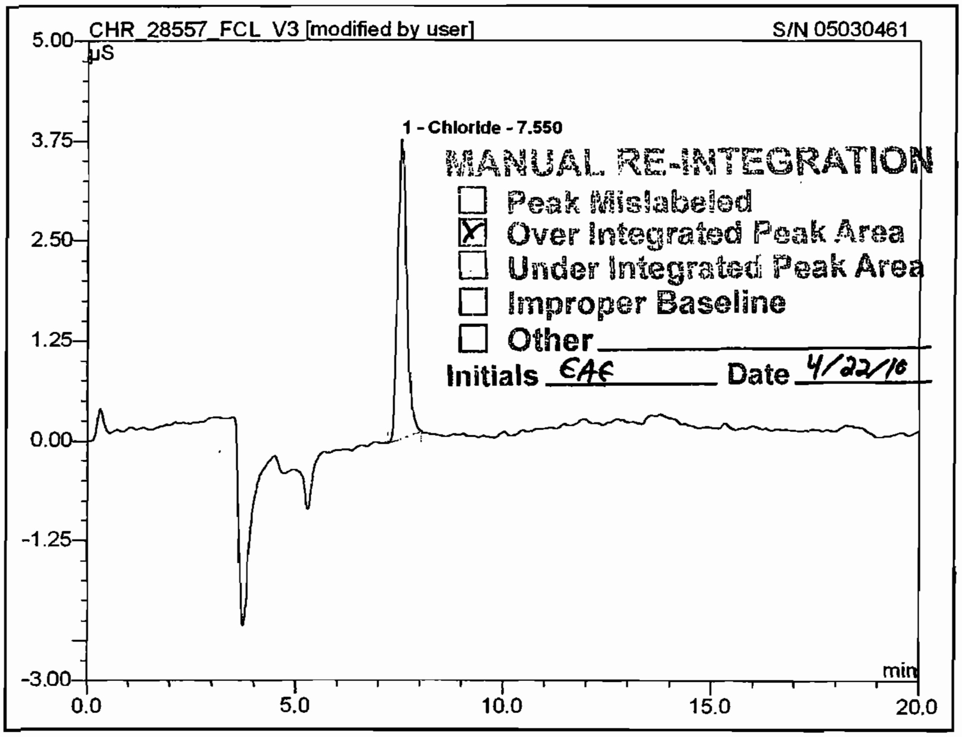


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	5.71	n.a.	0.0754	0.42	BMB	1.19
2	7.54	Chloride	0.5856	3.24	BMB*	0.97
3	18.31	n.a.	17.4210	96.34	BMB	0.99
Total:			18.082	100.000	0.00	

241 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**58.900**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1383.39**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	

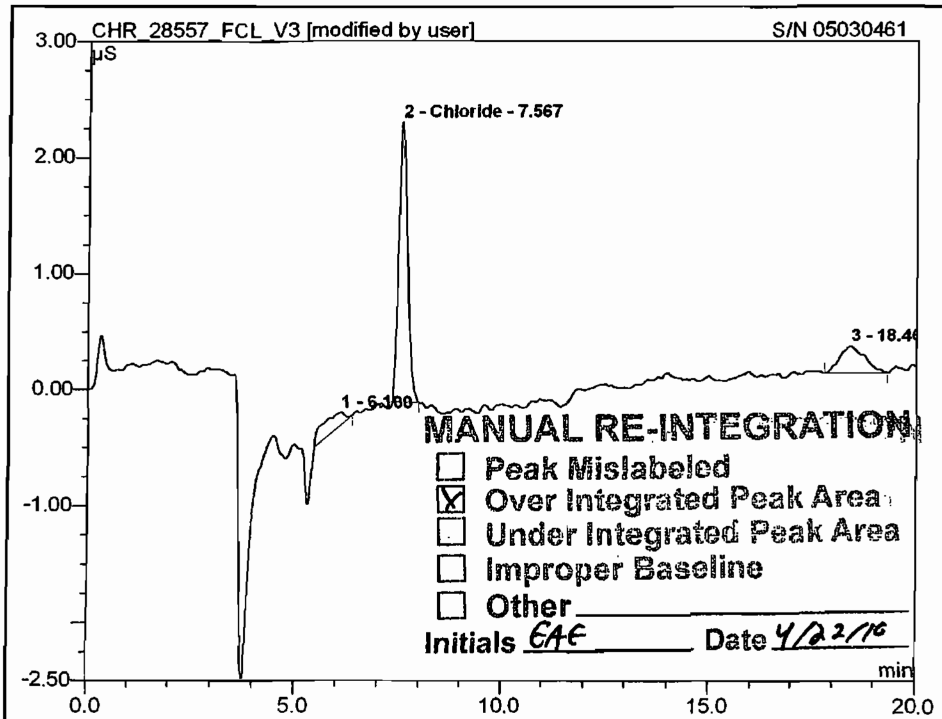


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.55	Chloride	0.9352	100.00	BMB*	0.94
Total:			0.935	100.000	0.00	

244 Audit Sample L3937

Audit Sample

Sample Name:	**Audit Sample L3937**	*Sample Vo*	**500.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**59.067**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1385.31**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-021**
		Replicate II	

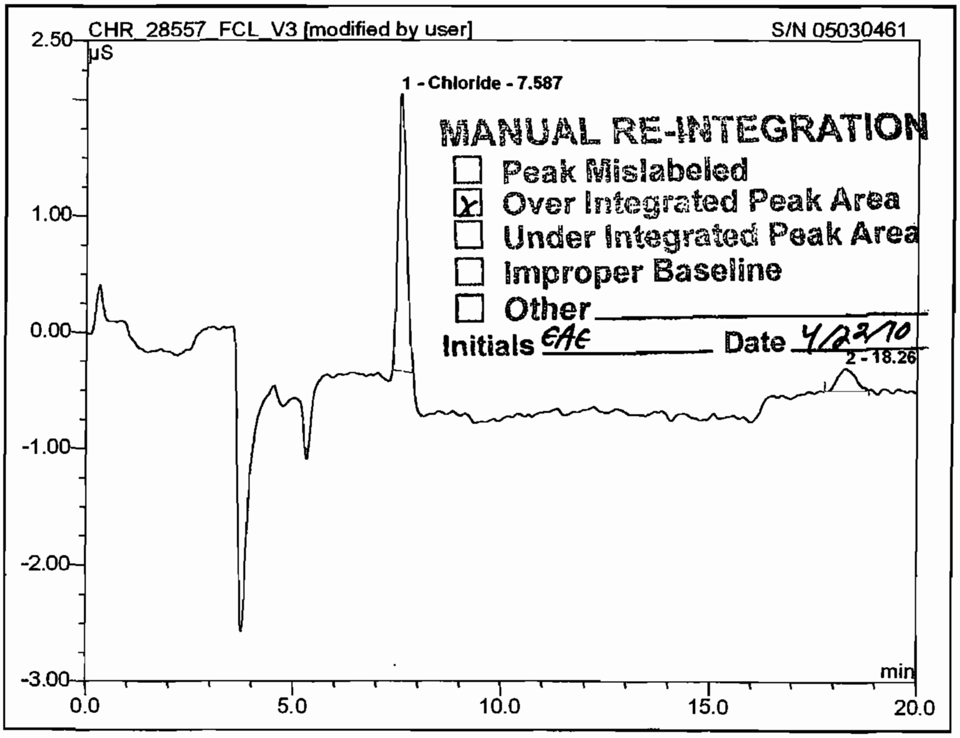


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.10	n.a.	0.0903	10.80	BMB	1.58
2	7.57	Chloride	0.5825	69.65	BMB*	0.96
3	18.41	n.a.	0.1635	19.55	BMB	1.00
Total:			0.836	100.000	0.00	

245 Audit Sample L3937

Audit Sample

Sample Name:	**Audit Sample L3937**	*Sample Vo*	**500.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**59.349**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1389.02**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-021**

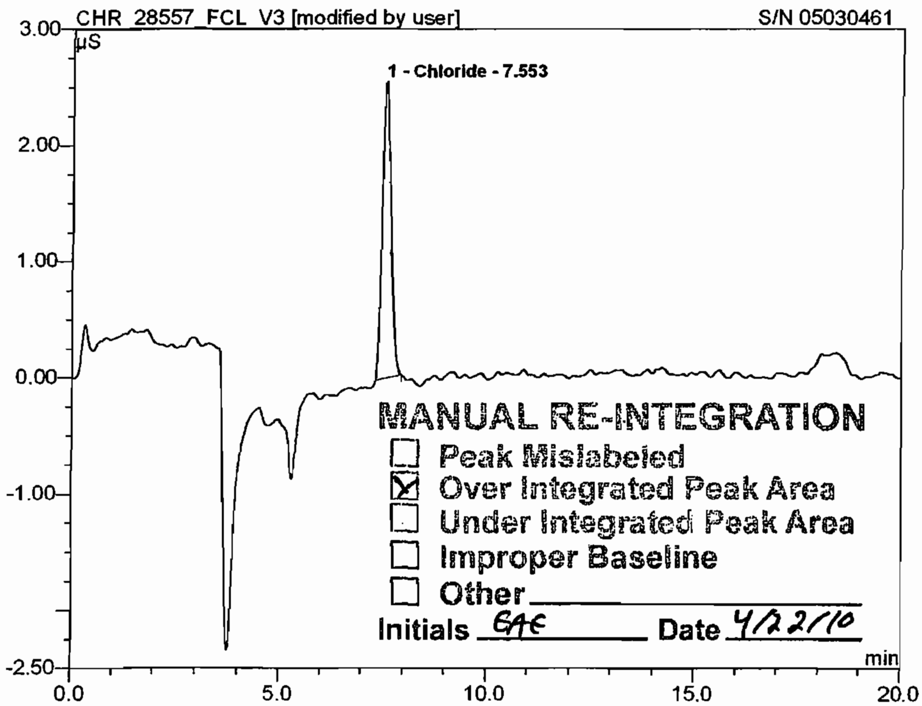


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.59	Chloride	0.5622	85.35	BMB*	1.00
2	18.26	n.a.	0.0965	14.65	BMB	1.07
Total:			0.659	100.000	0.00	

246 Audit Sample L3586

Audit Sample

Sample Name:	**Audit Sample L3586**	*Sample Vo*	**500.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.802**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1384.01**
Quantif. Method:	**default**	*Dilution Fa*	**200.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-022**
		Replicate II	

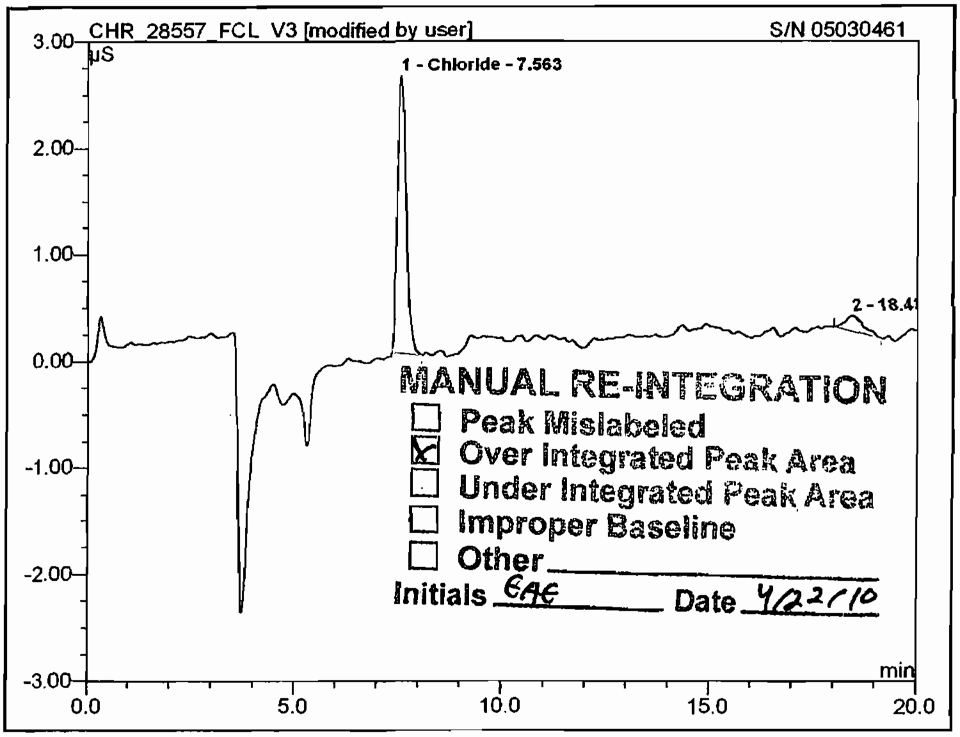


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.55	Chloride	0.6088	100.00	BMB*	0.98
Total:			0.609	100.000	0.00	

247 Audit Sample L3586

Audit Sample

Sample Name:	**Audit Sample L3586**	*Sample Vo*	**500.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**58.864**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1385.76**
Quantif. Method:	**default**	*Dilution Fa*	**200.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	**28557-022**

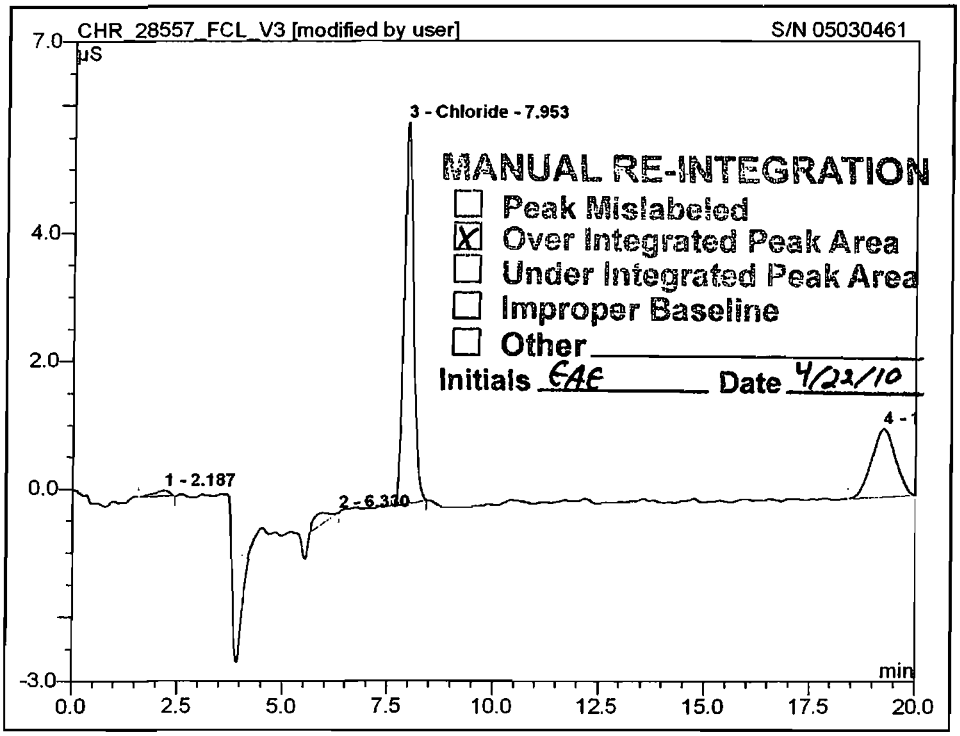


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.56	Chloride	0.6272	88.93	BMB*	0.97
2	18.43	n.a.	0.0780	11.07	BMB	0.85
Total:			0.705	100.000	0.00	

258 Matrix Spike

U1 SDA Inlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**700.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**58.913**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1395.27**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-005**
		Replicate IL	

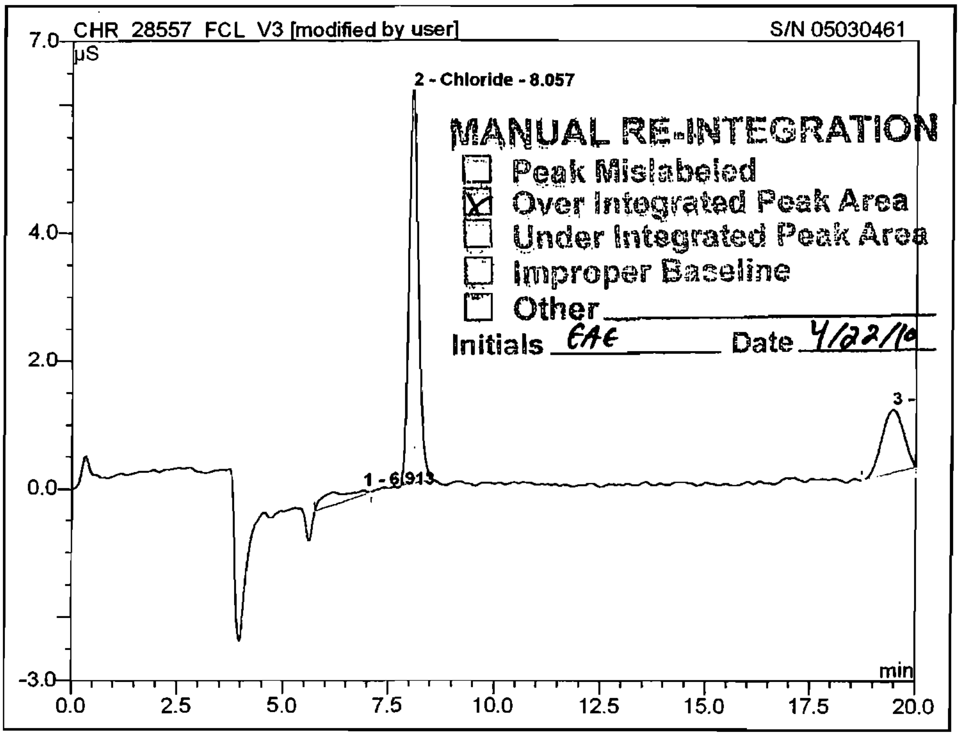


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	2.19	n.a.	0.0397	1.68	BMB	1.13
2	6.33	n.a.	0.0712	3.02	BMB	n.a.
3	7.95	Chloride	1.5481	65.64	BMB*	0.96
4	19.23	n.a.	0.6996	29.66	BMB	1.01
Total:			2.359	100.000	0.00	

259 Matrix Spike

U1 SDA Inlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**700.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**58.752**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1391.13**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-005**

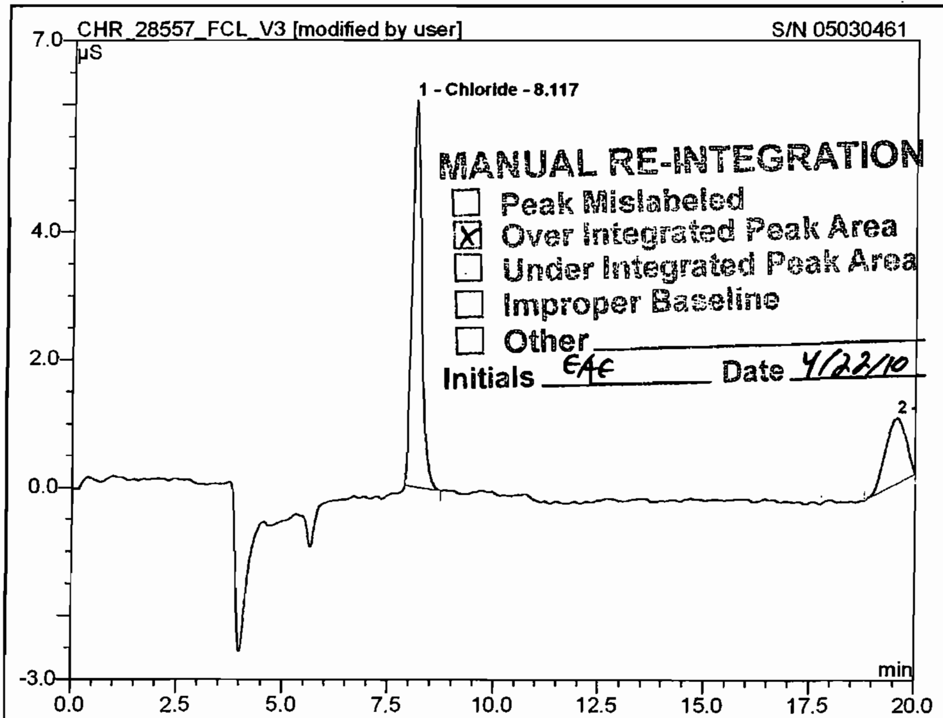


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.91	n.a.	0.1580	6.77	BMB	1.73
2	8.06	Chloride	1.5870	67.97	BMB*	0.95
3	19.45	n.a.	0.5899	25.26	BMB	1.09
Total:			2.335	100.000	0.00	

260 Matrix Spike

U1 SDA Inlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**700.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**58.938**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1384.96**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-005**
		Replicate IL	

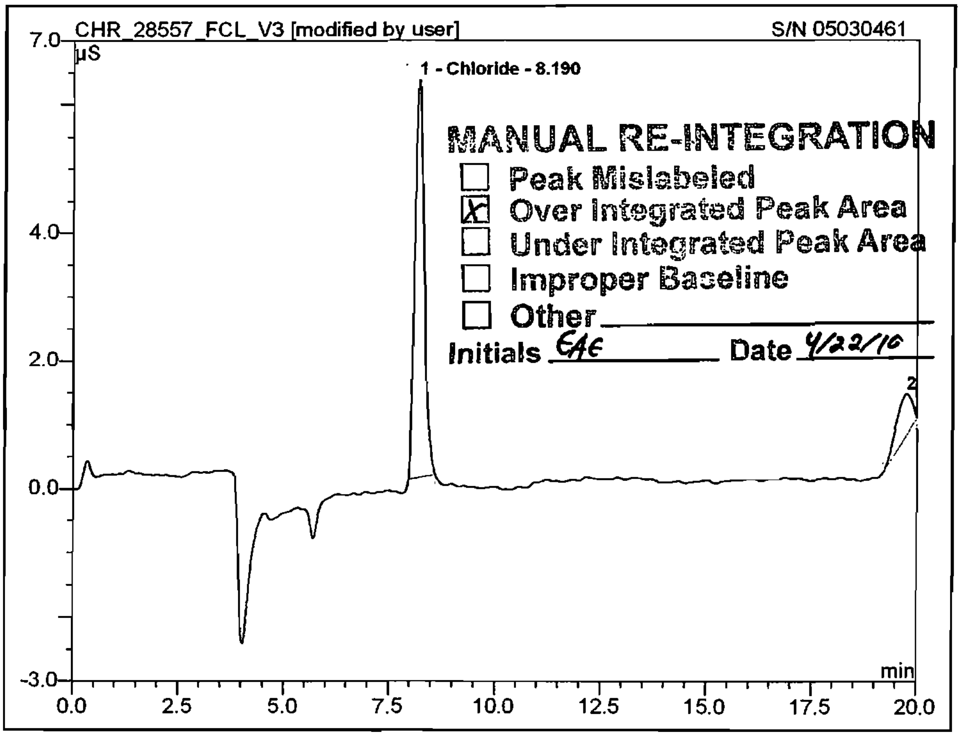


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	8.12	Chloride	1.5834	73.29	BMB*	0.96
2	19.55	n.a.	0.5771	26.71	BMB	1.16
Total:			2.161	100.000	0.00	

261 Matrix Spike

U1 SDA Inlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**700.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**58.844**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1384.65**
Quantif. Method:	**default**	*Dilution Fa*	**1000.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	**28557-005**

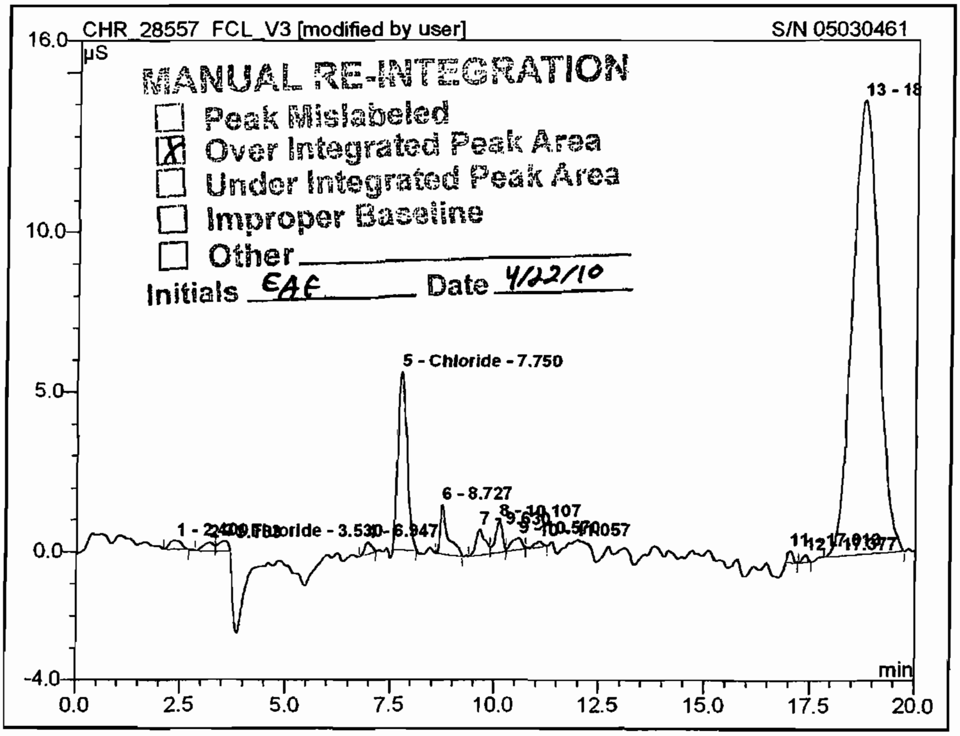


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	8.19	Chloride	1.5810	84.80	BMB*	0.98
2	19.76	n.a.	0.2834	15.20	BMB	1.23
Total:			1.864	100.000	0.00	

262 Matrix Spike

U3 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**802.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**61.041**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1429.66**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-020**
		Replicate IL	

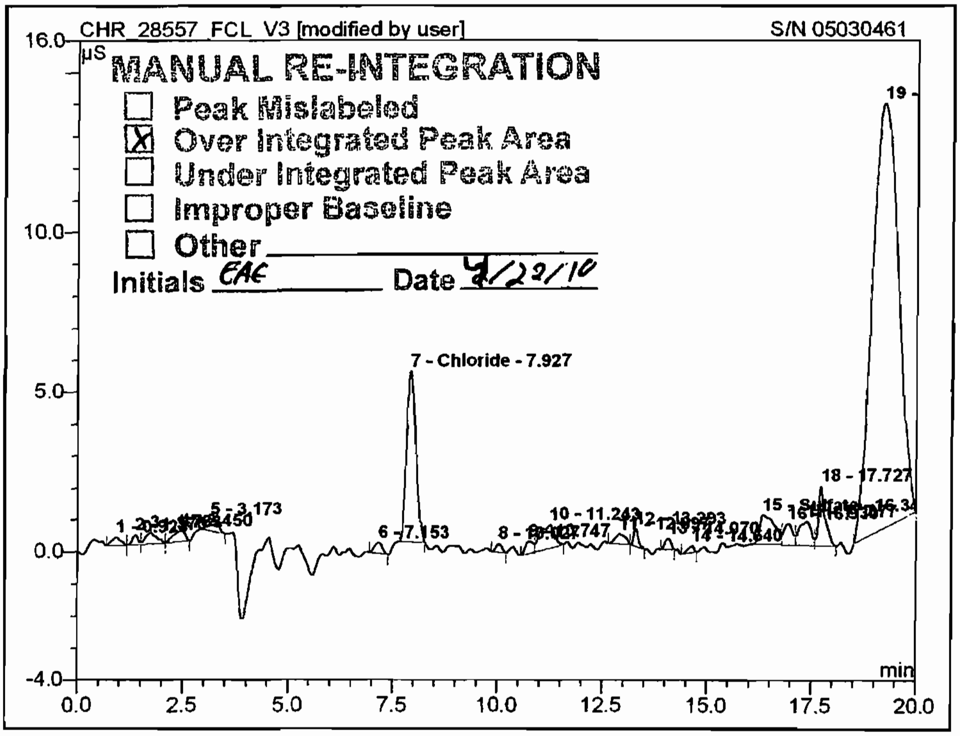


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	2.40	n.a.	0.0907	0.70	BMB	1.34
2	3.18	n.a.	0.0765	0.59	BM	n.a.
3	3.53	Fluoride	0.0886	0.69	MB	n.a.
4	6.95	n.a.	0.0678	0.53	BMB	1.08
5	7.75	Chloride	1.4216	11.02	BMB*	1.00
6	8.73	n.a.	0.3271	2.54	BMB	0.47
7	9.63	n.a.	0.1983	1.54	BM	n.a.
8	10.11	n.a.	0.1902	1.47	M	n.a.
9	10.57	n.a.	0.1036	0.80	M	n.a.
10	11.06	n.a.	0.0398	0.31	MB	0.95
11	17.01	n.a.	0.0534	0.41	BMB	1.23

264 Matrix Spike

U3 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**802.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**61.224**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1424.69**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-020**
		Replicate IL	

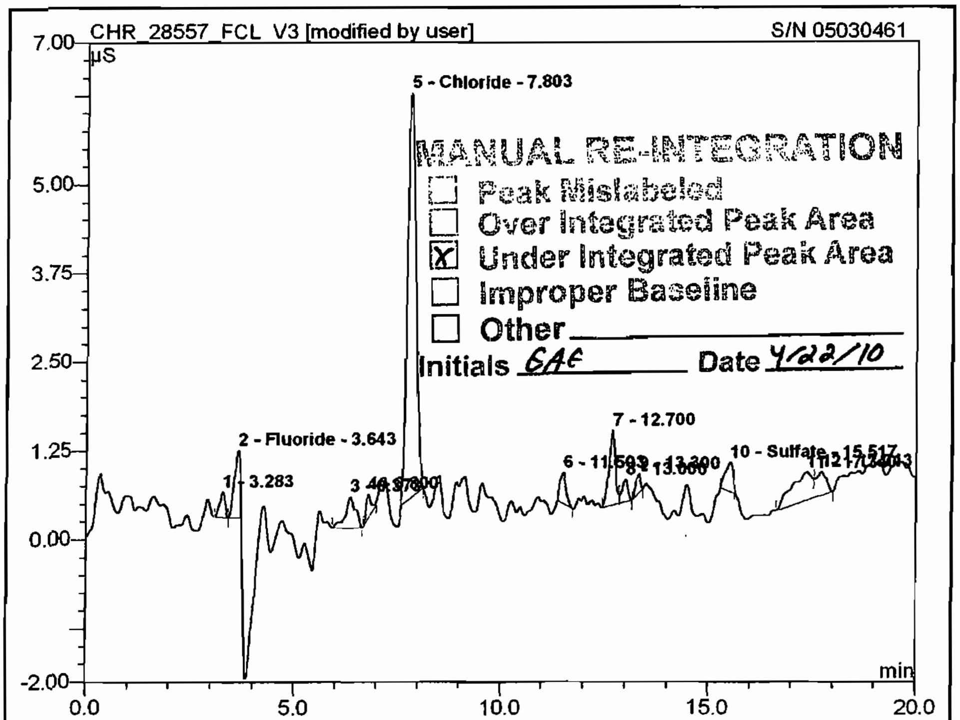


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	0.92	n.a.	0.0605	0.46	BMB	1.18
2	1.37	n.a.	0.0477	0.36	BM	n.a.
3	1.73	n.a.	0.1117	0.84	MB	n.a.
4	2.45	n.a.	0.1102	0.83	BMB	1.36
5	3.17	n.a.	0.1074	0.81	BMB	1.34
6	7.15	n.a.	0.0732	0.55	BMB	1.17
7	7.93	Chloride	1.4140	10.66	BMB*	1.02
8	10.03	n.a.	0.0435	0.33	BMB	1.14
9	10.75	n.a.	0.0818	0.62	BM	n.a.
10	11.24	n.a.	0.2918	2.20	MB	n.a.
11	12.90	n.a.	0.0870	0.66	BMB	1.25

266 Matrix Spike

Audit Sample

Sample Name:	**Matrix Spike**	*Sample Vo*	**500.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**61.429**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1430.71**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	**28557-021**
		Replicate II	

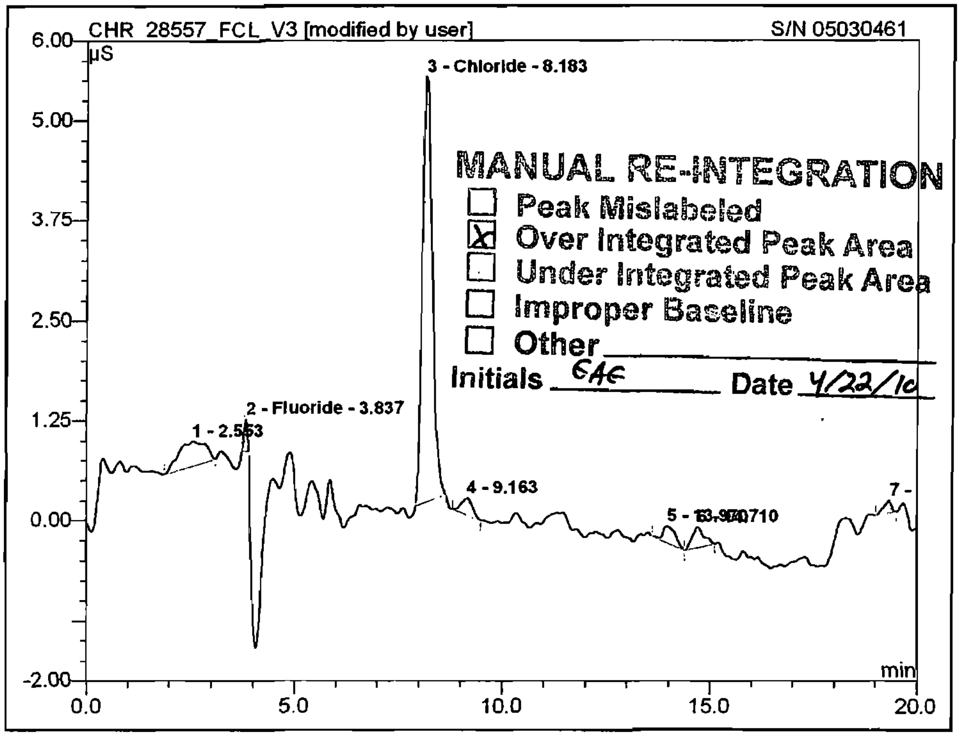


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	3.28	n.a.	0.0572	2.27	BM	1.09
2	3.64	Fluoride	0.1568	6.21	MB	1.16
3	6.37	n.a.	0.1277	5.06	BMB	0.81
4	6.80	n.a.	0.0412	1.63	BMB	0.90
5	7.80	Chloride	1.3853	54.91	BMB*	1.02
6	11.50	n.a.	0.0727	2.88	BMB	0.97
7	12.70	n.a.	0.1814	7.19	BM	n.a.
8	13.00	n.a.	0.0473	1.88	MB	n.a.
9	13.30	n.a.	0.0342	1.36	BMB	1.13
10	15.52	Sulfate	0.0915	3.63	BM	n.a.
11	17.34	n.a.	0.2303	9.13	BM	n.a.

267 Matrix Spike

Audit Sample

Sample Name:	**Matrix Spike**	*Sample Vo*	**500.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**61.771**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1432.12**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	**28557-021**

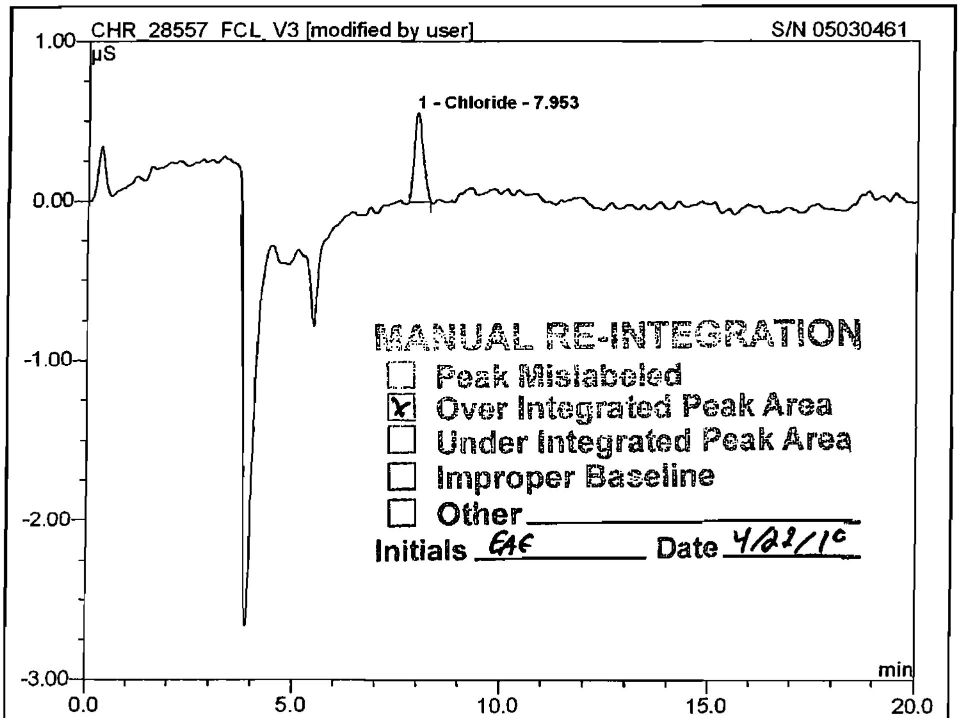


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	2.55	n.a.	0.2371	11.96	BMB	1.31
2	3.84	Fluoride	0.0354	1.79	BM	1.23
3	8.18	Chloride	1.4529	73.28	BMB*	0.99
4	9.16	n.a.	0.0649	3.27	BMB*	1.09
5	13.97	n.a.	0.0742	3.74	BMB	1.22
6	14.71	n.a.	0.0836	4.22	BMB	0.87
7	19.35	n.a.	0.0346	1.74	BMB	1.03
Total:			1.983	100.000	0.00	

271 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**54.036**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1453.92**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	

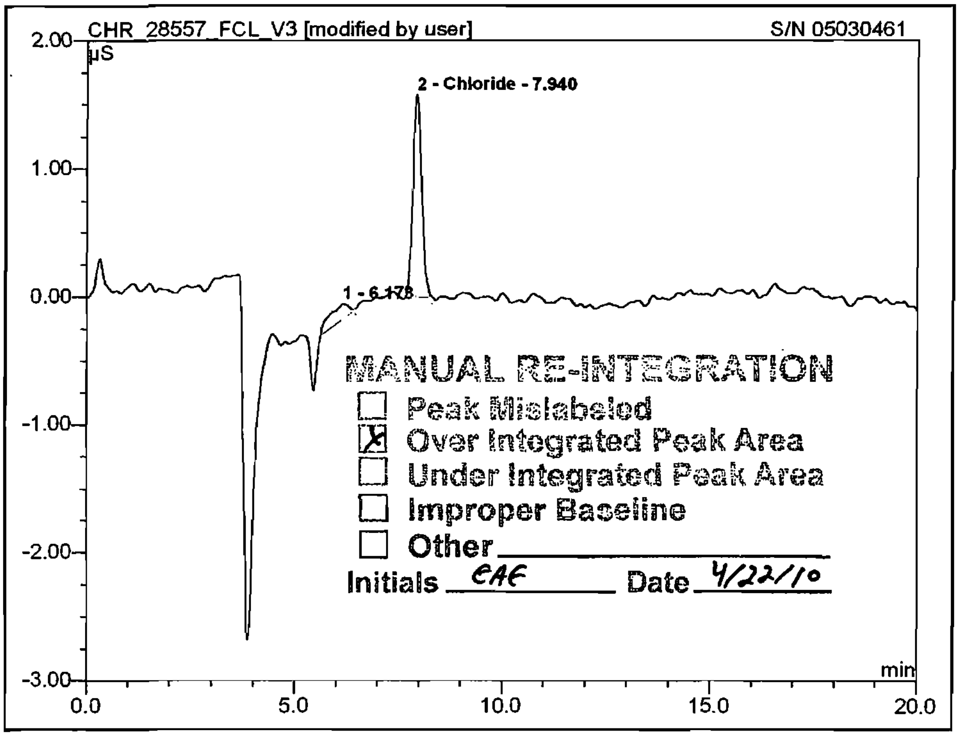


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.95	Chloride	0.1420	100.00	BMB*	1.01
Total:			0.142	100.000	0.00	

272 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**54.014**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1453.97**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	

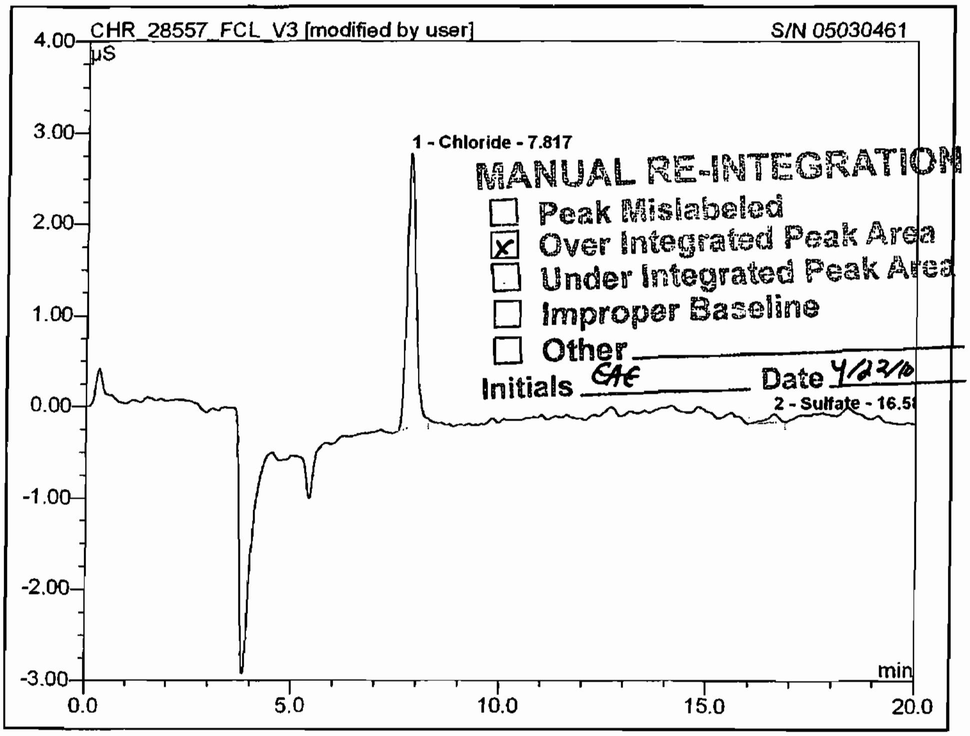


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.17	n.a.	0.0688	15.05	BMB	1.57
2	7.94	Chloride	0.3885	84.95	BMB*	0.98
Total:			0.457	100.000	0.00	

274 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**53.970**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1448.22**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate I	

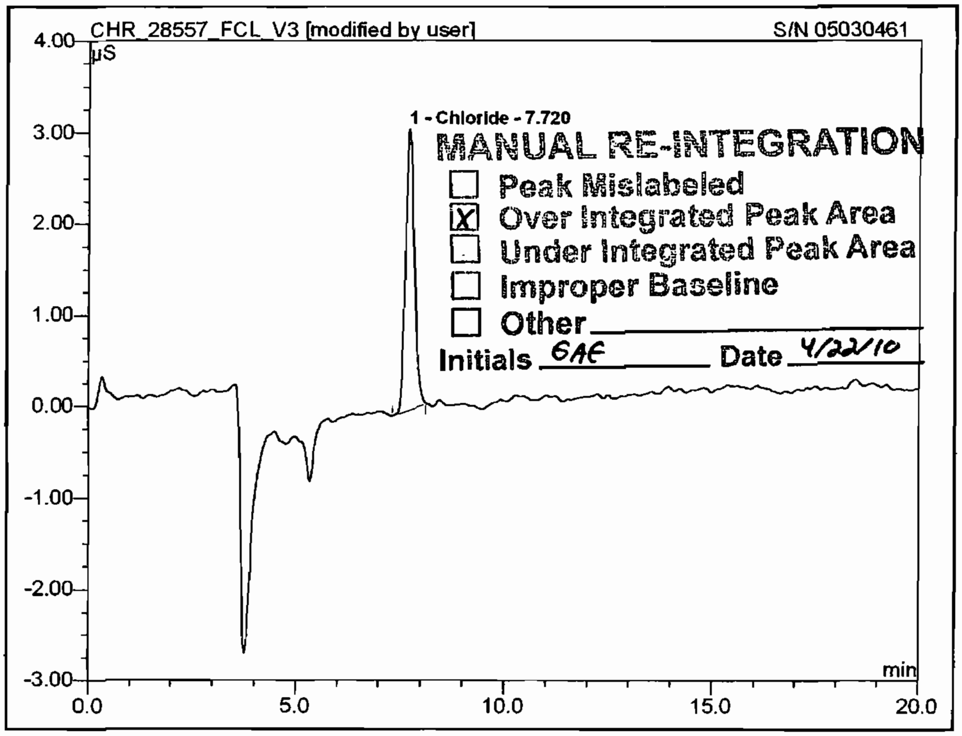


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.82	Chloride	0.7367	95.74	BMB*	0.96
2	16.59	Sulfate	0.0328	4.26	BMB	0.73
Total:			0.770	100.000	0.00	

275 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**53.883**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1444.31**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	

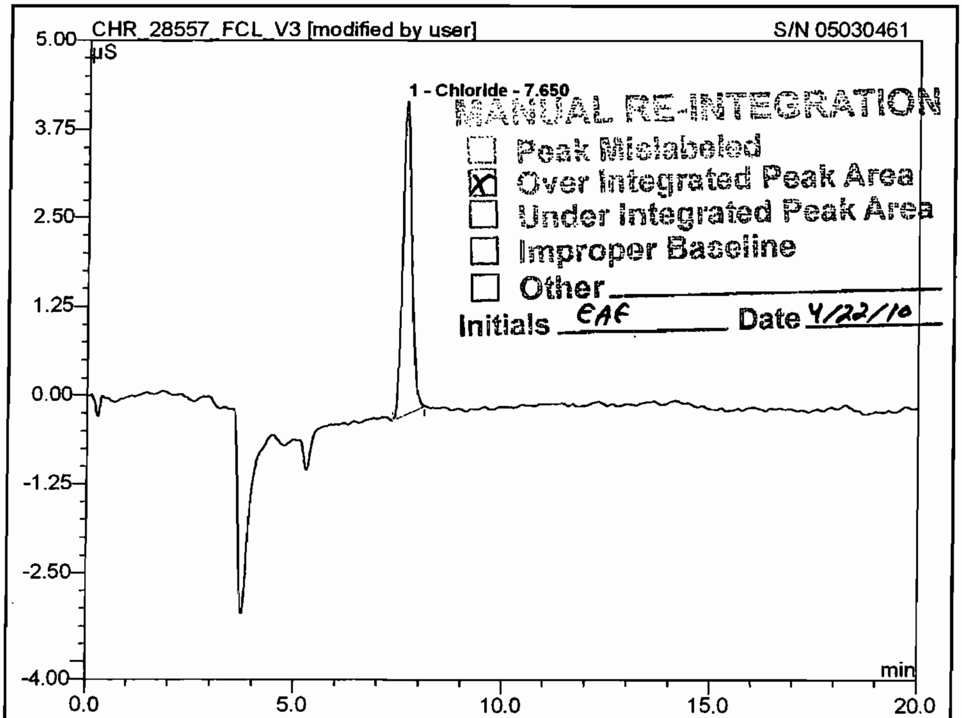


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.72	Chloride	0.7452	100.00	BMB*	0.96
Total:			0.745	100.000	0.00	

276 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo*	**1.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**54.100**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1444.94**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	

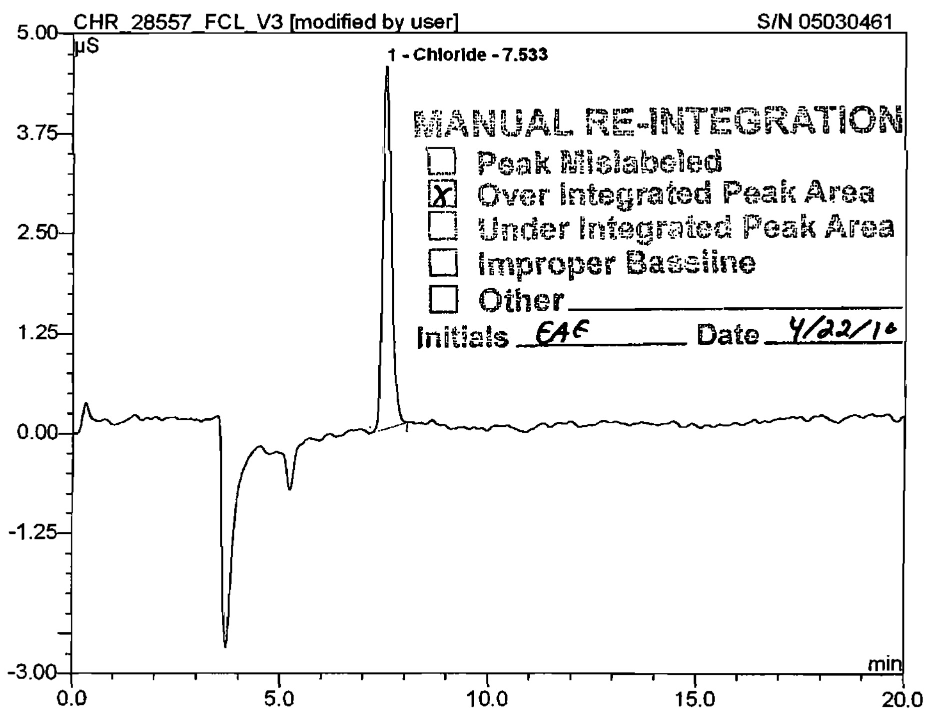


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.65	Chloride	1.0944	100.00	BMB*	0.95
Total:			1.094	100.000	0.00	

277 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo*	**1.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**53.886**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1445.27**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	

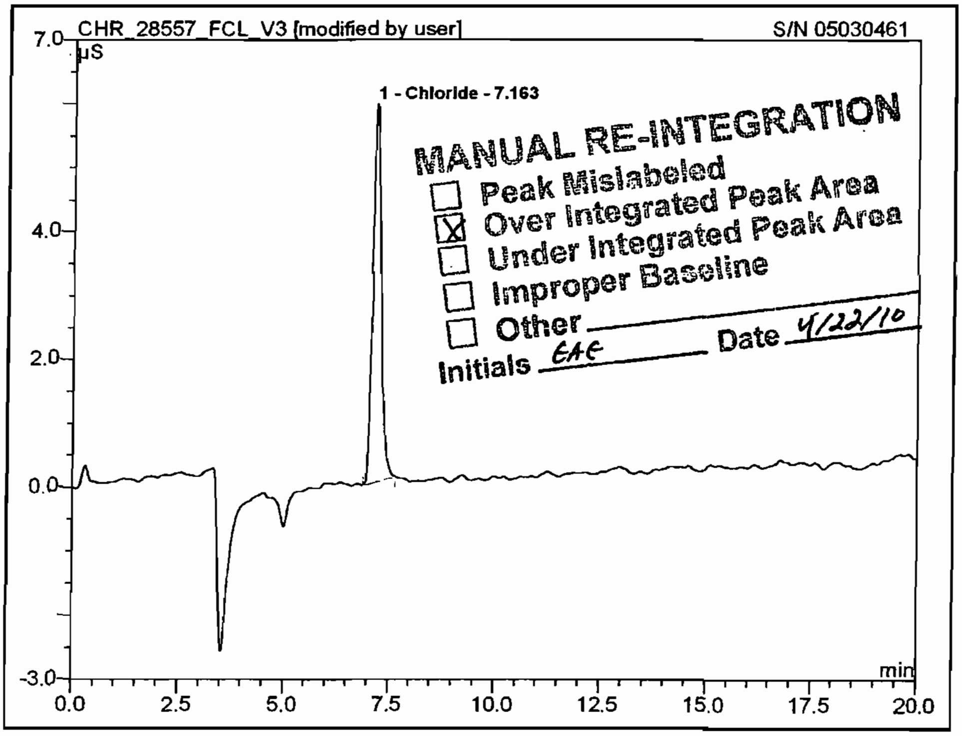


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.53	Chloride	1.0912	100.00	BMB*	0.95
Total:			1.091	100.000	0.00	

279 Cal 05

CleanAir

Sample Name:	**Cal 05**	*Sample Vo*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**54.470**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1423.80**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Run Time (min):	**20.00**	*Sample ID:*	
		Replicate II	



No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	7.16	Chloride	1.3582	100.00	BMB*	0.95
Total:			1.358	100.000	0.00	

CHAIN OF CUSTODY FORM

M26A-NB-10955-002

CLIENT: Wheelabrator North Broward   PROJECT NO. 10955
PLANT: Same   DEPT. 66
PROJECT MANAGER: Scott Brown

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	ANALYSIS REQUESTED: HCl				ADDITIONAL INFORMATION
R	1	Unit 1 FF Outlet	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 2 FF Outlet	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 3 FF Outlet	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	NA	Audit Sample	17-Mar	4436-01	1		X				L3586
R	NA	Audit Sample	17-Mar	4436-02	1		X				L3937

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	3/28/10	[signature]	3/29/10 1200		
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time

Special Handling Instructions

Forwarding Lab: Palatine

PO Number:

This form was completed by: Scott Brown

Signature [signature]   Date 3/28/10

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500 West Wood Street
Palatine, IL 60067
(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

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Box 2

CHAIN OF CUSTODY FORM

M26A-NB-10955-001

CLIENT: Wheelabrator North Broward   PROJECT NO. 10955
PLANT: Same   DEPT. 66
PROJECT MANAGER: Scott Brown

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	ANALYSIS REQUESTED: HCl				ADDITIONAL INFORMATION
R	1	Unit 1 Inlet	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 2 Inlet	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 3 Inlet	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	NA	Reagent Blank	16-Mar	0.1 N H2SO4	1		X				
R	NA	Reagent Blank	16-Mar	DI H2O	1		X				

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		[illegible]	3/29/10 1200		
Courier:	**Date / Time**	**Relinquished by: (Signature)**	**Date / Time**	**Received for Analysis by:**	**Date / Time**

Special Handling Instructions

Forwarding Lab: Palatine

PO Number:

This form was completed by:

Scott Brown

Signature   Date

CleanAir ENGINEERING

LDS001A-COC Palatine, Jul 2002

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Palatine, IL 60067

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(847) 991-3385 fax
www.cleanair.com

CHAIN OF CUSTODY FORM

M13B-NB-10955--001.

CLIENT Wheelabrator North Broward | PROJECT NO. 10955

PLANT Same | DEPT. 66

PROJECT MANAGER Scott Brown

CLEANAIR LAB NO.	RUN NO.	TEST LOCATION	DATE	SAMPLE MATRIX	NO. OF CONTAINERS	ORIGINAL VOLUME	ANALYSIS REQUESTED: Fluorides				ADDITIONAL INFORMATION
R	1	Unit 1 FF Outlet	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/17/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 2 FF Outlet	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/18/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 3 FF Outlet	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	|	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/16/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	NA	Reagent Blank	17-Mar	DI H2O			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
		[signature]	5/25/10 12:00		
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time

Special Handling Instructions

Forwarding Lab: Palatine

PO Number:

This form was completed by:

Scott Brown

Signature Date

CleanAir ENGINEERING

LDS001A-COC Palatine, Jul 2002

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Palatine, IL 60067

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(847) 991-3385 fax
www.cleanair.com

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 1 FF Outlet

USEPA Method 13B
Fluoride Laboratory Data Summary

Run No.		**Blank**	**1**	**2**	**3**
Date (2010)			Mar 17	Mar 17	Mar 17
Start Time (approx.)			11:46	13:15	14:45
Stop Time (approx.)			12:56	14:27	15:53

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg F^-/liter)	0.0080			
	HF as Total Fluoride				
B_F	Blank concentration (mg F^-/liter)	<0.0380			
S_{F-1}	Fraction 1 concentration (mg F^-/liter)		<0.0380	<0.0380	<0.0380
S_{F-2}	Fraction 2 concentration (mg F^-/liter)				
V_1	Fraction 1 sample volume (ml)		920.0	846.0	972.0
V_2	Fraction 2 sample volume (ml)				
m_{HF}	HF collected before blank subtraction (mg)		<0.0368	<0.0339	<0.0389
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HF collected after blank subtraction (mg)		<0.0368	<0.0339	<0.0389
m_{MDL}	Minimum detectable HF (mg)		0.0078	0.0071	0.0082
m_n	*Total HF used in emission calculations (mg)*		<0.0368	<0.0339	<0.0389

041310 104014
N

Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (F)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 2 FF Outlet

USEPA Method 13B
Fluoride Laboratory Data Summary

Run No.		**Blank**	**1**	**2**	**3**
Date (2010)			Mar 18	Mar 18	Mar 18
Start Time (approx.)			07:09	08:56	10:45
Stop Time (approx.)			08:24	10:10	12:05

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg F^-/liter)	0.0080			
	HF as Total Fluoride				
B_F	Blank concentration (mg F^-/liter)	<0.0380			
S_{F-1}	Fraction 1 concentration (mg F^-/liter)		<0.0380	<0.0380	<0.0380
S_{F-2}	Fraction 2 concentration (mg F^-/liter)				
V_1	Fraction 1 sample volume (ml)		900.0	862.0	884.0
V_2	Fraction 2 sample volume (ml)				
m_{HF}	HF collected before blank subtraction (mg)		<0.0360	<0.0345	<0.0354
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HF collected after blank subtraction (mg)		<0.0360	<0.0345	<0.0354
m_{MDL}	Minimum detectable HF (mg)		0.0076	0.0073	0.0074
m_n	*Total HF used in emission calculations (mg)*		<0.0360	<0.0345	<0.0354

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L

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SS EPA26-1 Version 2006-10a (F)

QA/QC ________
Date ________

Wheelabrator North Broward, Inc.
Clean Air Project No: 10955
Unit 3 FF Outlet

USEPA Method 13B
Fluoride Laboratory Data Summary

Run No.		Blank	1	2	3
Date (2010)			Mar 16	Mar 16	Mar 16
Start Time (approx.)			11:49	13:33	15:07
Stop Time (approx.)			13:07	14:44	16:16

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg F^-/liter)	0.0080			
	HF as Total Fluoride				
B_F	Blank concentration (mg F^-/liter)	<0.0380			
S_{F-1}	Fraction 1 concentration (mg F^-/liter)		<0.0380	<0.0380	<0.0380
S_{F-2}	Fraction 2 concentration (mg F^-/liter)				
v_1	Fraction 1 sample volume (ml)		897.0	870.0	815.0
v_2	Fraction 2 sample volume (ml)				
m_{HF}	HF collected before blank subtraction (mg)		<0.0359	<0.0348	<0.0326
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HF collected after blank subtraction (mg)		<0.0359	<0.0348	<0.0326
m_{MDL}	Minimum detectable HF (mg)		0.0076	0.0073	0.0069
m_n	*Total HF used in emission calculations (mg)*		<0.0359	<0.0348	<0.0326

041310 104026
P

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SS EPA26-1 Version 2006-10a (F)

QA/QC ________
Date ________

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CleanAir Engineering
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CleanAir®

CleanAir Engineering, Inc.

500 West Wood Street
Palatine, IL 60067

Laboratory Report
Customer Reference No: 10955
Laboratory Project No: 28557

Analytes
Fluoride

Customer
Palatine Engineering Group
500 W Wood St
Palatine, IL 60067

Revision 0 - Dated: 04/09/2010

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CleanAir.

Analysis Case Narrative

Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	**Date Received:**	3/29/2010
Plant/Facility:	Wheelabrator North Broward	**Date Reported:**	4/7/2010
Laboratory Project No:	28557	**Sample Type:**	Varied
Customer Reference No:	10955	**Parameters:**	Fluoride
Sample Numbers:	23-32	**Received From:**	Scott Brown
Applicable Analytical Method			U.S. EPA Method 26A

Summary of Analysis

This report summarizes the results of the analysis performed on samples received on: 03/29/10
The samples were anlayzed following procedures found in U.S. EPA Method 26A and U.S. EPA Method 300.1.

Detection Limits

Method Detection Limits have been determined in accordance with procedures in 40 CFR 136, Appendix B. Documentation showing the determination of detection limits are included with this report.

Sample Preparation

Samples were prepared according to the procedures listed in the EPA Method above. Each sample was analyzed at full strength and a dilution was prepared if necessary to achieve a concentration that was within calibration range limits.

Standard Tracability

Each calibration standard has been prepared in accordance with US EPA Method 300.1 and US EPA Method 26 and has been designated an original lot number. This number can be used to trace back to the original dry salts used in the preparation of these standards. This number is included on the calibration page of this report.

Instrument Calibration

Instrument calibration followed regulations found in US EPA Method 300.1 and U.S. EPA Method 26A.
Calibration standards were prepared from ACS grade dry salts as per section 7.3 of US EPA Method 300.1. As per section 4.2.2 of US EPA CTM-027, a series of 6 diluted standards are prepared from the original calibration standard and run through the column in duplicate from lowest concentration to highest. The average peak area for each calibration point is gathered and plotted against the expected solution concentration. In accordance with section 7.2.3 of EPA Method 9057, a least-squares regression with an r^2 value of .995 or greater must be produced from the resulting curve. In accordance with US EPA Method 26 a full post-test calibration is preformed. The pre test calibration and post test calibration average peak area for any standard must agree within ± 5% of any observed area.

Chromatograms

All chromatograms are included as an appendix of this report. Please note: Chromatograms marked as "End" are place markers meant to signify the end of a batch run and are purposfully left blank as no data was aquired for that run.

Analysis QA/QC

Many elements of various EPA methods have been combined and are adhered to:

EPA Method 300.1 quality procedures:

1. Before the first sample was analyzed and every twenty samples thereafter (and before the post-test calibration) a laboratory blank and a Continuing Calibration Verification (CCV) were analyzed.
   The CCV is prepared from the same calibration standard as used to create the 7 diluted standards that make up the calibration curve.
   The laboratory blank must show a regression concentration of zero, and the CCV must show a regression concentration within 10 percent of the expected concentration
2. After the first ten samples and every twenty there after, a Quality Control (QC) sample was analyzed.

CleanAir

Analysis Case Narrative

Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	**Date Received:**	3/29/2010
Plant/Facility:	Wheelabrator North Broward	**Date Reported:**	4/7/2010
Laboratory Project No:	28557	**Sample Type:**	Varied
Customer Reference No:	10955	**Parameters:**	Fluoride
Sample Numbers:	23-32	**Received From:**	Scott Brown
Applicable Analytical Method			U.S. EPA Method 26A

The QC sample was created using ACS grade dry salts from a different manufacturer and or lot number than for the salts used to create the calibration standards.
The QC must meet the same acceptance criteria as noted for the CCV above.

3 A matrix spike analysis was performed on ten percent of the total number of samples. This sample was prepared with equal amounts of a sample and a calibration standard whose concentration was known to be larger than that of the sample.
The matrix spike is acceptable when the recovery is found to be 100 ± 10 percent.

4 As a measure of precision, all matrix spikes were prepared and analyzed in duplicate. The average area count of two identical matrix spikes may not have a relative percent difference of more that 10 percent.

EPA Method 26 quality procedure:

1 As per section 11.1.3, every sample was analyzed in duplicate and the mean area count used to determine the concentration. The duplicate area counts must have a relative percent difference of no greater than five percent. If this was the case, a third injection was made and the average of the three injections was used to determine the concentration.

EPA Method 7E quality procedures:

1 Each point on the calibration curve should be within ± 2 percent of the calibration span of the curve used.

Other CleanAir quality procedures:

1 The observed concentration value of each point on the calibration curve should have a relative percent difference of no more than 10 percent from its expected concentration.

Additional Comments

CleanAir Lab Services is accredited by NELAC through the state of Texas for this analysis. Our certificate number is T104704431-09-TX and expires 6/10/2010.

CleanAir.

CERTIFICATE OF ANALYSIS

Client Name: Palatine Engineering Group
Plant/Facility: Wheelabrator North Broward
Lab Project No: 28557
Sample Numbers: 23-32

Date Received: 3/29/2010
Date Reported: 4/7/2010
Sample Type: Varied
Parameters: Fluoride

Laboratory Number	Sample Identification	Sample Volume (ml)	Fluoride Sample Conc. (mg/L)	Detection Limit (mg/L)	Reporting Limit (mg/L)
Reagent Blank					
28557-23	DI H2O Blank	303	<	0.008	0.038
Unit 1					
28557-24	U1 FF Outlet R1	920	<	0.008	0.038
28557-25	U1 FF Outlet R2	846	<	0.008	0.038
28557-26	U1 FF Outlet R3	972	<	0.008	0.038
Unit 2					
28557-27	U2 FF Outlet R1	900	<	0.008	0.038
28557-28	U2 FF Outlet R2	862	<	0.008	0.038
28557-29	U2 FF Outlet R3	884	<	0.008	0.038
Unit 3					
28557-30	U3 FF Outlet R1	897	<	0.008	0.038
28557-31	U3 FF Outlet R2	870	<	0.008	0.038
28557-32	U3 FF Outlet R3	815	<	0.008	0.038

To the best of our knowledge, the data presented in this report are accurate, complete, error free, legible and representative of the samples received by the laboratory.

Analyst: Eric Ewing
email: eewing@cleanair.com
Ph: 847-654-4519

Quality Leader, Lab Services: Michael Tuegel
email: mtuegel@cleanair.com
Ph: 847-654-4557

ACCREDITED IN ACCORDANCE WITH nelac

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28557
Analyte	Fluoride
Date	4/7/2010
Stock Standard	502.62 mg/l
Lot Number	03241002-64-00000-01
Working Stock Conc.	5.0262 mg/l
CCV	0.50 mg/l
QC	139.55 mg/l
Lot Number	03261002-64-00000-07

Analyte: **Fluoride**

Standards Calibration Data

Calibration Point Conc. (mg/l)	**Date of Injection**	**1** **0.0000**	**2** **0.0754**	**3** **0.2010**	**4** **0.2513**	**5** **0.6283**	**6** **0.8042**	**7** **1.2566**
Cal 1 Trial 1	03/29/2010	0.0000	0.0573	0.1583	0.2288	0.5777	0.7329	1.1434
Cal 1 Trial 2		0.0000	0.0600	0.1647	0.2330	0.5996	0.7458	1.1197
Cal 2 Trial 1	03/30/2010		0.0614					
Cal 2 Trial 2			0.0613					
Cal 3 Trial 1	03/31/2010		0.0572					
Cal 3 Trial 2			0.0599					
Cal 4 Trial 1	04/03/2010			0.1655	0.2207			
Cal 4 Trial 2				0.1670	0.2270			
Cal 5 Trial 1	04/05/2010		0.0558	0.1598	0.2270	0.5658	0.7039	1.1563
Cal 5 Trial 2			0.0560	0.1609	0.2207	0.5792	0.7084	1.1651
n		**2**	**8**	**6**	**6**	**4**	**4**	**4**
Average		**0.0000**	**0.0586**	**0.1627**	**0.2262**	**0.5806**	**0.7228**	**1.1461**
Standard Deviation		**0.0000**	**0.0023**	**0.0035**	**0.0048**	**0.0140**	**0.0200**	**0.0197**
%RSD		0.00	3.92	2.15	2.12	2.42	2.76	1.72

Quality Control Checks

Measured Area Counts (Counts)	Actual Concentration (mg/L)	Regression Concentration (mg/L)	Difference pt-Line (% Scale)	Is Difference Less Than 2% of Scale?	Difference pt-Line (Relative %)	Is Relative Difference Less Than 10%?
0.0000	0.000	0.009	-0.71%	Yes	0.00%	Yes
0.0586	0.075	0.073	0.21%	Yes	3.49%	Yes
0.1627	0.201	0.186	1.19%	Yes	7.44%	Yes
0.2262	0.251	0.255	-0.31%	Yes	-1.56%	Yes
0.5806	0.628	0.641	-1.02%	Yes	-2.04%	Yes
0.7228	0.804	0.796	0.66%	Yes	1.04%	Yes
1.1461	1.257	1.257	-0.02%	Yes	-0.02%	Yes

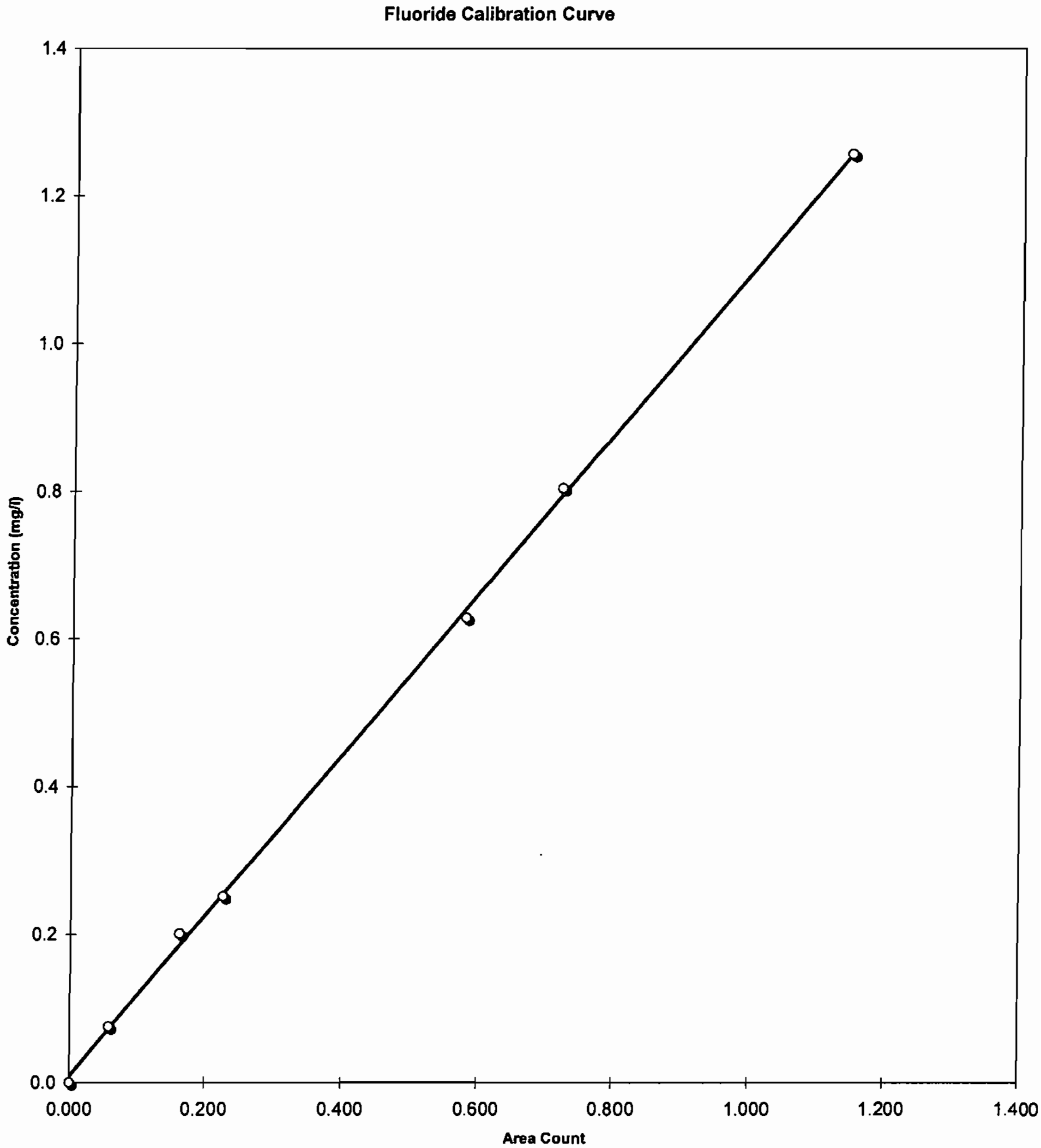
Regression Constants			Is Coefficient of Regression > 0.995?
Slope	m =	1.0888	
Intercept	b =	0.0090	
Coeff.	R^2 =	0.9996	Yes

Page 5 of 22
File: SPS-64-28557_F_V0
Date: 4/9/2010
Time: 10:37 AM

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28557
Analyte	Fluoride
Date	4/7/2010



CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client: Palatine Engineering Group
Lab Project No: 28557
Analyte: Fluoride
Date: 4/7/2010

MDL=	0.008 mg/L	Average Flow Rate
MRL=	0.038 mg/L	0.81 mL/min

Sample Location	Sample Identification Number	Sample Idenification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	DF (Analysis Dilution Factor)	V_{soln} (Total Sample Volume, mL)	C_{Reg} (Concentration, mg/L from Reg Curve)	$M_{analyte}$ Total Amount of Analyte (mg)
Reagent Blank	28557-23	DI H2O Blank	03/31/10	0.0000	0.0000	0.0000	1	303.0	<	<0.011
U1 FF Outlet	28557-24	U1 FF Outlet R1	03/31/10	0.0000	0.0000	0.0000	1	919.7	<	<0.035
U1 FF Outlet	28557-25	U1 FF Outlet R2	03/31/10	0.0000	0.0000	0.0000	1	846.0	<	<0.032
U1 FF Outlet	28557-26	U1 FF Outlet R3	03/31/10	0.0000	0.0000	0.0000	1	971.9	<	<0.036
U2 FF Outlet	28557-27	U2 FF Outlet R1	04/01/10	0.0000	0.0000	0.0000	1	900.0	<	<0.034
U2 FF Outlet	28557-28	U2 FF Outlet R2	04/01/10	0.0000	0.0000	0.0000	1	862.0	<	<0.032
U2 FF Outlet	28557-29	U2 FF Outlet R3	04/01/10	0.0000	0.0000	0.0000	1	884.0	<	<0.033
U3 FF Outlet	28557-30	U3 FF Outlet R1	04/01/10	0.0000	0.0000	0.0000	1	896.5	<	<0.034
U3 FF Outlet	28557-31	U3 FF Outlet R2	04/01/10	0.0000	0.0000	0.0000	1	870.0	<	<0.033
U3 FF Outlet	28557-32	U3 FF Outlet R3	04/01/10	0.0000	0.0000	0.0000	1	815.0	<	<0.031

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client Palatine Engineering Group
Lab Project No: 28557
Analyte Fluoride
Date 4/7/2010

QUALITY CONTROL CHECKS

Sample Location	Sample Identification Number	Sample Idenification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	Area Count Duplicate Difference	Duplicate Relative Difference (%)
Reagent Blank	28557-23	DI H2O Blank	03/31/10	0.0000	0.0000	0.0000	na	na
U1 FF Outlet	28557-24	U1 FF Outlet R1	03/31/10	0.0000	0.0000	0.0000	na	na
U1 FF Outlet	28557-25	U1 FF Outlet R2	03/31/10	0.0000	0.0000	0.0000	na	na
U1 FF Outlet	28557-26	U1 FF Outlet R3	03/31/10	0.0000	0.0000	0.0000	na	na
U2 FF Outlet	28557-27	U2 FF Outlet R1	04/01/10	0.0000	0.0000	0.0000	na	na
U2 FF Outlet	28557-28	U2 FF Outlet R2	04/01/10	0.0000	0.0000	0.0000	na	na
U2 FF Outlet	28557-29	U2 FF Outlet R3	04/01/10	0.0000	0.0000	0.0000	na	na
U3 FF Outlet	28557-30	U3 FF Outlet R1	04/01/10	0.0000	0.0000	0.0000	na	na
U3 FF Outlet	28557-31	U3 FF Outlet R2	04/01/10	0.0000	0.0000	0.0000	na	na
U3 FF Outlet	28557-32	U3 FF Outlet R3	04/01/10	0.0000	0.0000	0.0000	na	na

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group			
Lab Project No:	28557			
Analyte	Fluoride	MDL= 0.008 mg/L	Average Flow Rate	QC Dilution Factor
Date	4/7/2010	MRL= 0.038 mg/L	0.81 mL/min	200.000

QUALITY CONTROL CHECKS (CONT)

Sample Location	Sample Identification Number	Sample Idenification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	Area Count Duplicate Difference	Duplicate Relative Difference (%)	C_{Reg} (Concentration, mg/L from Reg Curve)	Percent Difference from Actual Value (%)
CleanAir	28557-00	CCB	03/29/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28557-990	CCV	03/29/10	0.4661	0.4599	0.4630	0.0062	1.3%	0.51	2.07%
CleanAir	28557-991	QC	03/30/10	0.6268	0.5984	0.6126	0.0284	4.6%	135.19	3.13%
CleanAir	28557-00	CCB	03/31/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28557-992	CCV	03/31/10	0.4223	0.4230	0.4227	0.0007	0.2%	0.47	6.67%
CleanAir	28557-993	QC	04/01/10	0.5766	0.5868	0.5817	0.0102	1.8%	128.46	7.95%
CleanAir	28557-00	CCB	04/02/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28557-994	CCV	04/02/10	0.4434	0.4526	0.4480	0.0092	2.1%	0.50	1.17%
CleanAir	28557-995	QC	04/02/10	0.5875	0.5956	0.5916	0.0081	1.4%	130.60	6.41%
CleanAir	28557-00	CCB	04/06/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28557-996	CCV	04/06/10	0.4153	0.4219	0.4186	0.0066	1.6%	0.46	7.54%
				Matrix Spike Recoveries						
									Precision	Spike Recovery
Matrix Spike	28557-28	U2 FF Outlet R:	04/05/10	0.5606	0.5673	0.5640	0.0067	1.2%		98.4%
Matrix Spike	28557-28	U2 FF Outlet R:	04/05/10	0.5384	0.5356	0.5370	0.0028	0.5%	4.9%	93.7%

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File: SPS-64-28557_F_V0
Date: 4/9/2010
Time: 10:37 AM

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28557
Analyte	Fluoride
Date	4/7/2010

Determination of Detection Limit

(in accordance with 40 CFR 136, Appendix B)

Analyte	**Fluoride**
Area Count	
Trial 1	0.0573
Trial 2	0.0600
Trial 3	0.0614
Trial 4	0.0613
Trial 5	0.0572
Trial 6	0.0599
Trial 7	0.0558
Trial 8	0.0560
Average	**0.0586**
Std Dev	0.0023
RMS Dev	3.92%

n	$t_{(n-1,0.99)}$
7	3.143
8	2.998
9	2.896
10	2.821
11	2.764
16	2.602
21	2.528

Average % Recovery	96.51%
Measured Concentration (mg/l)	
Trial 1	0.071
Trial 2	0.074
Trial 3	0.076
Trial 4	0.076
Trial 5	0.071
Trial 6	0.074
Trial 7	0.070
Trial 8	0.070
Average	**0.073**
Std Dev	0.0025
RMS Dev	3.44%
$t_{(n-1,0.99)}$	2.998
Det Lim (mg/l)	**0.008**
Rep Lim (mg/L)	**0.038**

Is the spike level higher than the MDL? Yes
Does the spike level exceed ten times the MDL? No
Is the Avg Recovery between 90% < Ra < 110% ? Yes

Actual Conc	0.0754
Slope	1.09E+00
Intercept	0.0090
Coeff of Corr	0.9996

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

1. Difference between duplicate injections for pre-test calibration (Pre Cal 1).

$$\Delta_{Injection} = \left| Area_{Trial\ 2} - Area_{Tria\ 1} \right|$$

Where:

$\Delta_{Injection}$ = Area count difference between duplicate injections
$Area_{Trial2}$ = Area count for injection Trial 2
$Area_{Trial1}$ = Area count for injection Trial 1

$\Delta_{Injection}$ = 0.0064
$Area_{Trial2}$ = 0.1647
$Area_{Trial1}$ = 0.1583

2. Average area count value for duplicate injections for pre-test calibration (Pre Cal 1).

$$Avg_{PreInj} = \frac{(Area_{Trial1} + Area_{Trial2})}{2}$$

Where:

Avg_{PreInj} = Average of duplicate injection area counts
$Area_{Trial2}$ = Area count for injection Trial 2
$Area_{Trial1}$ = Area count for injection Trial 1
2 = Constant (number of values)

Avg_{Inj} = 0.1615
$Area_{Trial2}$ = 0.1647
$Area_{Trial1}$ = 0.1583

CleanAir

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

3. Difference between individual injection and average area count for pre-test calibration.

$$\Delta_{PreMean\%} = \frac{\left|Area_{Trail2} - Avg_{PreInj}\right|}{Avg_{PreInj}} 100$$

Where:

$\Delta_{PreMean\%}$	=	Difference between individual injection and average area count (%).
Avg_{PreInj}	=	Average of duplicate injection area counts
$Area_{Trial2}$	=	Area count for injection Trial 2
100	=	Constant (conversion factor for percentage)

$\Delta_{PreMean\%}$	=	1.9429
Avg_{PreInj}	=	0.1615
$Area_{Trial2}$	=	0.1647

Note: EPA Method 26 requires $\Delta_{PreMean\%}$ to be less than 5%.

4. Average of all area count values for a given calibration point.

$$\overline{X} = \frac{\sum_{i=1}^{n} x_i}{n}$$

Where:

$\overline{X}$	=	Average of all area count values for a given calibration point.
x_i	=	Individual area count values for each individual injection.
i	=	Iteration value.
n	=	Number of injections for the calibration point under question.

$\overline{X}$	=	0.1627
x_1	=	0.1583
x_2	=	0.1647
n	=	6.0000

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

5. Average of all concentration values for used in generating calibration curve.

$$\overline{Y_{All}} = \frac{\sum_{i=1}^{n} y_i}{n}$$

Where:

$\overline{Y}_{All}$ = Average of all area concentration values.

y_i = Individual concentration values for each individual injection.

n = Number of injections.

$\overline{Y}_{All}$ = 0.4595

y_1 = 0.0000

y_2 = 0.0754

n = 7.0000

6. Average of all area count values for the calibration curve.

$$\overline{X_{All}} = \frac{\sum_{i=1}^{n} x_i}{n}$$

Where:

$\overline{X}_{All}$ = Average of all area count values.

x_i = Individual area count values.

i = Iteration value.

n = Number of injections.

$\overline{X}_{All}$ = 0.3706

x_1 = 0.1583

x_2 = 0.1647

n = 34.0000

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

7. Determination of slope (least-squares regression) value for calibration curve.

$$m = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^{n}(x_i - \bar{x})^2}$$

Where:

m = Slope of least-squares regression curve.

x_i = Individual area count values for each individual injection.

$\bar{x}$ = Average of all area count values = $\overline{X}_{All}$

y_i = Actual area concentration values for each individual injection.

$\bar{y}$ = Average of all concentration values = $\overline{Y}_{All}$

i = Iteration value.

n = Number of injections.

m = 1.08878

x_1 = 0.1583

x_2 = 0.1647

$\bar{x}$ = 0.3706

y_1 = 0.0000

y_2 = 0.0754

$\bar{y}$ = 0.4595

n = 34.0000

8. Determination of y-intercept (least-squares regression) value for calibration curve.

$$b = \bar{y} - m\,\bar{x}$$

Where:

b = Y-axis intercept.

$\bar{x}$ = Average of all area count values = $\overline{X}_{All}$

$\bar{y}$ = Average of all concentration values = $\overline{Y}_{All}$

b = 0.00895

m = 1.08878

$\bar{x}$ = 0.3706

$\bar{y}$ = 0.4595

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

9. Determination of coefficient of correlation (least-squares regression) value for calibration curve.

$$r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2 \sum_{i=1}^{n}(y_i - \bar{y})^2}}$$

Where:

r^2	=	Square of the Pearson product moment correlation coefficient through data points in known y's and known x's.
r	=	Pearson product moment correlation coefficient through data points in known y's and known x's.
x_i	=	Individual area count values for each individual injection.
y_i	=	Actual area concentration values for each individual injection.
$\bar{x}$	=	Average of all area count values = $\overline{X}_{All}$
$\bar{y}$	=	Average of all concentration values = $\overline{Y}_{All}$
i	=	Iteration value.
n	=	Number of injections.

r^2	=	0.99955
r	=	0.99978
x_1	=	0.1583
x_2	=	0.1647
$\bar{x}$	=	0.3706
y_1	=	0.0000
y_2	=	0.0754
$\bar{y}$	=	0.4595
n	=	34.0000

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

10. Determination of average sample area counts from duplicate injections.

$$Avg_{Sample} = \frac{(Area_{Trial1} + Area_{Trial2})}{2}$$

Where:

Avg_{Sample} = Average of duplicate injection area counts

$Area_{Trial2}$ = Area count for injection Trial 2

$Area_{Trial1}$ = Area count for injection Trial 1

2 = Constant (number of injections)

Avg_{Inj} = 0.0000

$Area_{Trial2}$ = 0.0000

$Area_{Trial1}$ = 0.0000

11. Difference between duplicate injections for the sample.

$$\Delta_{Injection} = |Area_{Trial\ 2} - Area_{Tria\ 1}|$$

Where:

$\Delta_{Injection}$ = Area count difference between duplicate injections

$Area_{Trial2}$ = Area count for injection Trial 2

$Area_{Trial1}$ = Area count for injection Trial 1

$\Delta_{Injection}$ = 0.0000

$Area_{Trial2}$ = 0.0000

$Area_{Trial1}$ = 0.0000

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

12. Difference between individual injection and average area count for the sample.

$$\Delta_{Injection} = \frac{\left|Area_{Trail2} - Avg_{Inj}\right|}{Avg_{Inj}} 100$$

Where:

$\Delta_{Injection}$ = Difference between individual injection and average area count (%).
Avg_{Inj} = Average of duplicate injection area counts
$Area_{Trial2}$ = Area count for injection Trial 2
100 = Constant (conversion factor for percentage)

$\Delta_{Injection}$ = 0.0%
Avg_{Inj} = 0.0000
$Area_{Trial2}$ = 0.0000

Note: EPA Method 26 requires $\Delta_{Injection}$ to be less than 5%.

13. Determination of sample concentration from least-squares regression curve (mg/L).

$$C_{Reg} = DF\left\lfloor m\left(Avg_{Inj}\right) + b\right\rfloor$$

Where:

C_{Reg} = Sample concentration determined using the regression curve (mg/L)
DF = Sample dilution factor
Avg_{Inj} = Average of duplicate injection area counts.
m = Slope of least-squares regression curve.
b = Y-intercept of least-squares regression curve.

C_{Reg} = <
DF = 1.0000
Avg_{Inj} = 0.0000
m = 1.0888
b = 0.0090

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

14. Determination of total amount of analyte in sample (total mg).

$$M_{Analyte} = \frac{(C_{Reg})(V_{Soln})}{1000}$$

Where:

$M_{Analyte}$ = Amount of analyte in sample (total mg)

C_{Reg} = Sample concentration determined using the response factor (mg/L)

V_{Soln} = Sample volume (ml)

1000 = Conversion constant (ml to L)

$M_{Analyte}$ = <0.032

C_{Reg} = <

V_{Soln} = 846.0000

15. Determination of Method Detection Limits (MDL).

15a. Determination of average spike result.

$$AvgM_{f\_i} = \frac{\sum_{i=1}^{n} M_{f\_i}}{n}$$

Where:

$AvgM_{f\_i}$ = Average of spike result (mg/L)

M_{f_i} = Net results recorded for each iteration (mg/L)

n = Number of iterations.

i = Placeholder for iteration.

$AvgM_{f\_i}$	=	0.073			
M_{f_1}	=	0.071	M_{f_5}	=	0.071
M_{f_2}	=	0.074	M_{f_6}	=	0.074
M_{f_3}	=	0.076	M_{f_7}	=	0.070
M_{f_4}	=	0.076	M_{f_8}	=	0.070
n	=	8			

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

15b. Determination of standard deviation of spike result.

$$\sigma_{f-i} = \sqrt{\frac{\sum_{i=1}^{n}\left(M_{f\_i} - AvgM_{f\_i}\right)^2}{(n-1)}}$$

Where:

σ_{f_i}	=	Standard deviation of spike result.
$AvgM_{f\_i}$	=	Average of spike result net weights (g)
M_{f_i}	=	Net weights recorded for each iteration (g)
n	=	Number of iterations.
i	=	Placeholder for iteration.

σ_{f_i}	=	0.0025			
$AvgM_{f\_i}$	=	0.073			
M_{f_1}	=	0.071	M_{f_5}	=	0.071
M_{f_2}	=	0.074	M_{f_6}	=	0.074
M_{f_3}	=	0.076	M_{f_7}	=	0.070
M_{f_4}	=	0.076	M_{f_8}	=	0.070
n	=	8			

15c. Determination of variance of spike result.

$$V_{f\_i} = (\sigma_{f\_i})^2$$

Where:

V_{f_i}	=	Variance of spike result.
σ_{f_i}	=	Standard deviation of spike result.

V_{f_i}	=	6.27E-06
σ_{f_i}	=	0.0025

CleanAir

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

15d. Determination of RMS deviation of spike result.

$$RMS_{f\_i} = 100 \frac{\sigma_{f\_i}}{AvgM_{f\_i}}$$

Where:

RMS_{f_i} = RMS deviation of spike results (%).

σ_{f_i} = Standard deviation of spike result.

$AvgM_{f\_i}$ = Average of spike result net weights (g)

100 = Conversion constant (fraction to percent)

RMS_{f_i} = 0.0344

σ_{f_i} = 0.0025

$AvgM_{f\_i}$ = 0.0728

15e. Determination of average spike recovery.

$$R_f = 100 \frac{AvgM_{f\_i}}{RA}$$

Where:

R_f = Average spike recovery (%)

$AvgM_{f\_i}$ = Average of spike result net weights (g)

RA = Amount of spike residue added (g)

100 = Conversion constant (fraction to percent)

R_f = 96.5%

$AvgM_{f\_i}$ = 0.07277

RA = 0.07539

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

15f. Determination of $t_{(n-1,\ 0.99)}$.

Value taken from the following Table:

n	$t_{(n-1,\ 0.99)}$
7	3.143
8	2.998
9	2.896
10	2.821
11	2.764
16	2.602
21	2.528

Where:

$t_{(n-1,\ 0.99)}$ = Students' t value appropriate for a 99% confidence level and a standard deviation estimate with n-1 degrees of freedom.

n = Number of iterations.

$t_{(n-1,\ 0.99)}$ = 2.998

n = 8

15g. Determination of Method Detection Limit (MDL).

$$MDL = \sigma_{f\_i} t_{(n-1,0.99)}$$

Where:

MDL = Method detection limit (mg/L)

$t_{(n-1,\ 0.99)}$ = Students' t value appropriate for a 99% confidence level and a standard deviation estimate with n-1 degrees of freedom.

σ_{f_i} = Standard deviation of spike result.

MDL = 0.008

$t_{(n-1,\ 0.99)}$ = 2.998

σ_{f_i} = 0.0025

CleanAir.

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28557	Analyst	Eric Ewing
Plant:	Wheelabrator North Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28557-25
Sample Location: U1 FF Outlet

15h. Determination of Method Reporting Limit (MRL).

$$MRL = 5(MDL)$$

Where:

MRL = Method reporting limit (mg/L)

MDL = Method detection Limit (mg/L)

5 = Constant

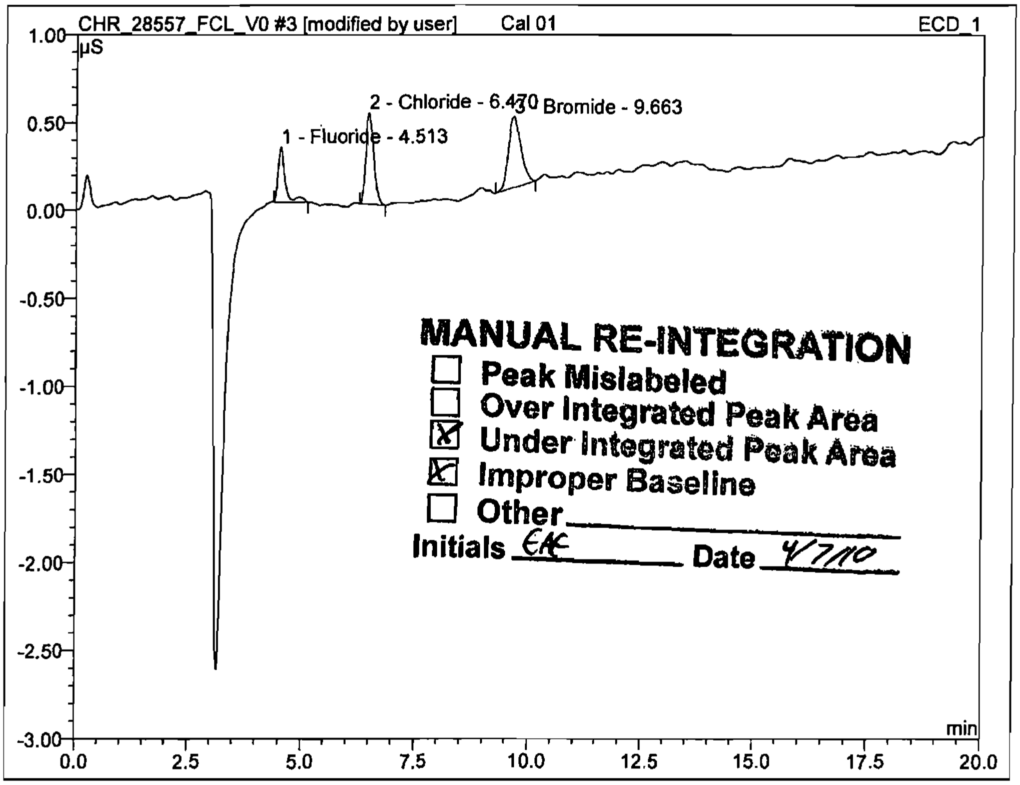
MRL = 0.038

MDL = 0.008

3 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**42.287**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1275.96**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 16:12**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	



MANUAL RE-INTEGRATION

- ☐ Peak Mislabeled
- ☐ Over Integrated Peak Area
- ☒ Under Integrated Peak Area
- ☒ Improper Baseline
- ☐ Other

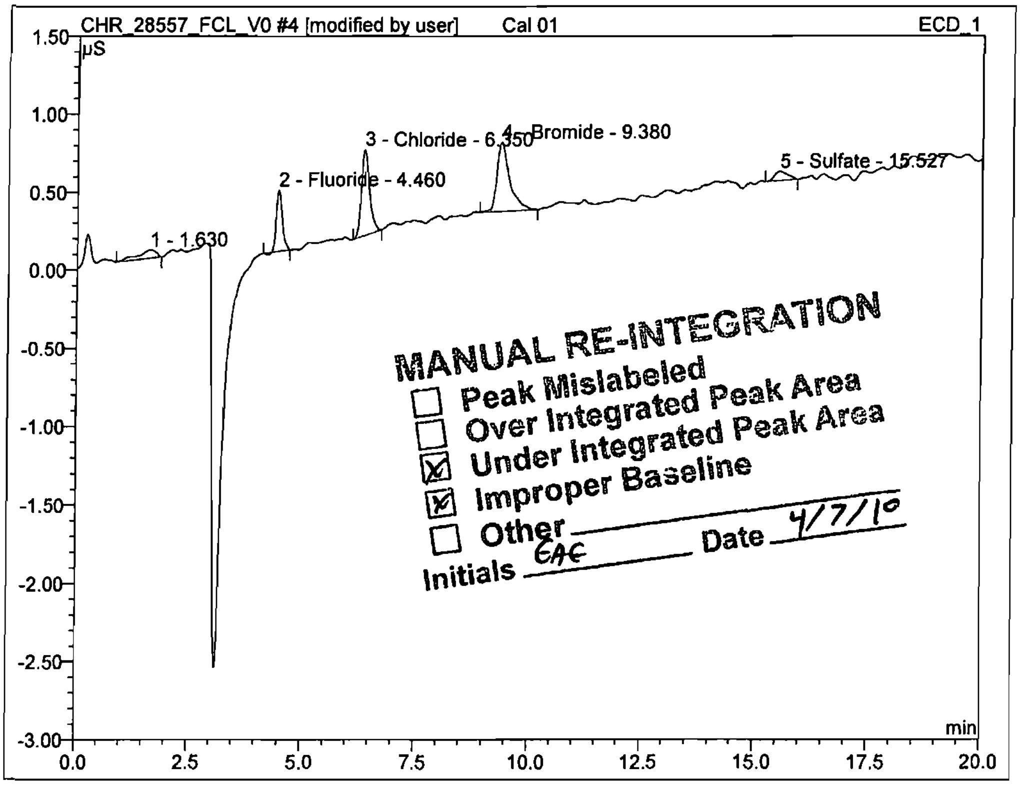
Initials EAE Date 4/7/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.51	Fluoride	0.0573	19.79	MB*	0.91
2	6.47	Chloride	0.1046	36.13	BMB	0.99
3	9.66	Bromide	0.1276	44.08	BMB	0.93
Total:			0.289	100.000	0.00	

4 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**42.768**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1249.43**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 16:33**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

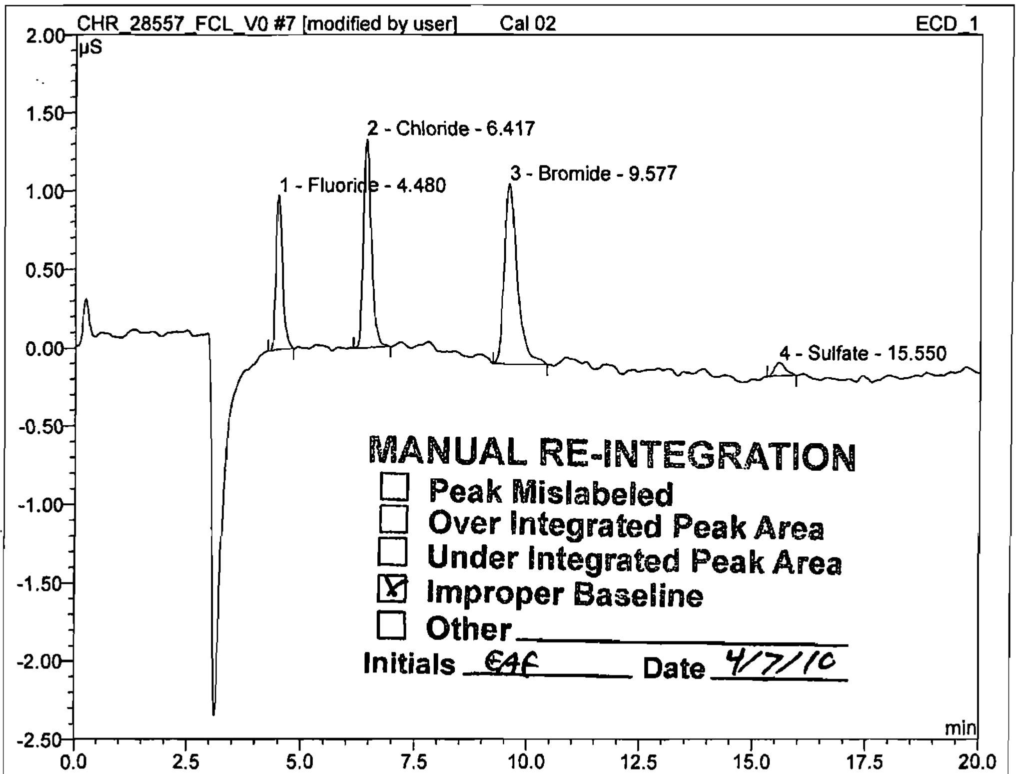


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	1.63	n.a.	0.0259	6.98	BMB	0.80
2	4.46	Fluoride	0.0600	16.19	BMB*	0.92
3	6.35	Chloride	0.1161	31.33	BMB	0.93
4	9.38	Bromide	0.1484	40.05	BMB	0.79
5	15.53	Sulfate	0.0202	5.46	BMB	1.11
Total:			0.371	100.000	0.00	

7 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.136**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1294.19**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 17:36**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	



MANUAL RE-INTEGRATION

- ☐ Peak Mislabeled
- ☐ Over Integrated Peak Area
- ☐ Under Integrated Peak Area
- ☒ Improper Baseline
- ☐ Other________

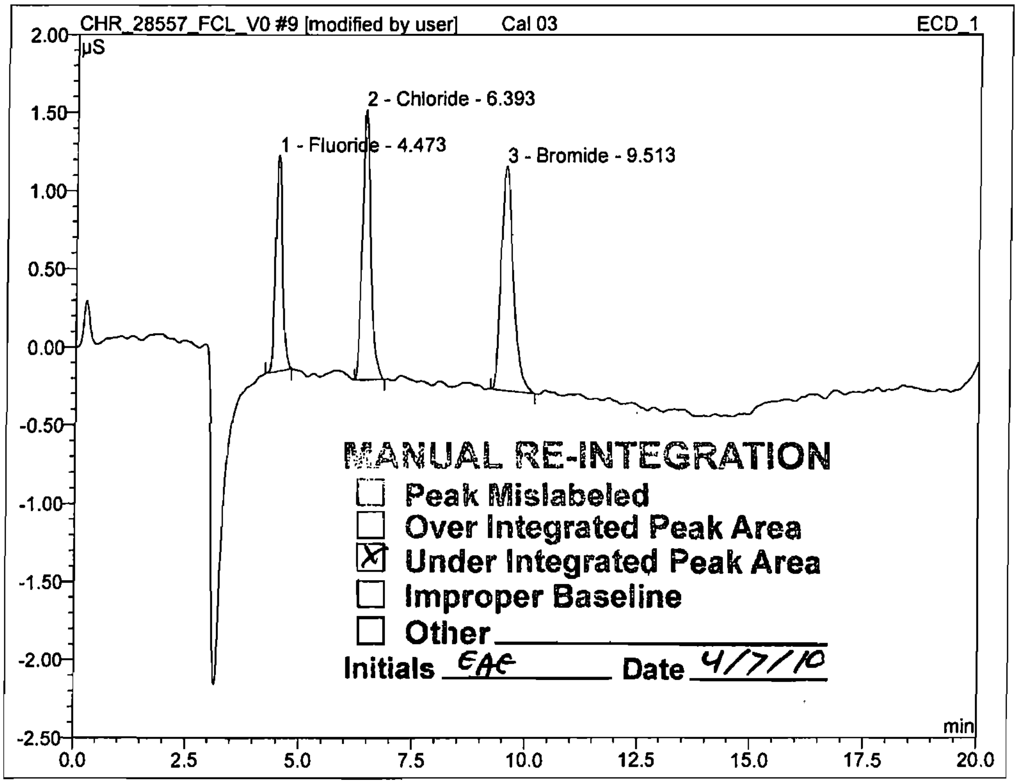
Initials EAE Date 4/7/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.48	Fluoride	0.1583	18.70	BMB*	0.92
2	6.42	Chloride	0.2768	32.69	BMB	0.95
3	9.58	Bromide	0.3883	45.86	BMB	0.88
4	15.55	Sulfate	0.0233	2.76	BMB	0.87
Total:			0.847	100.000	0.00	

9 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.549**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1250.22**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 18:19**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

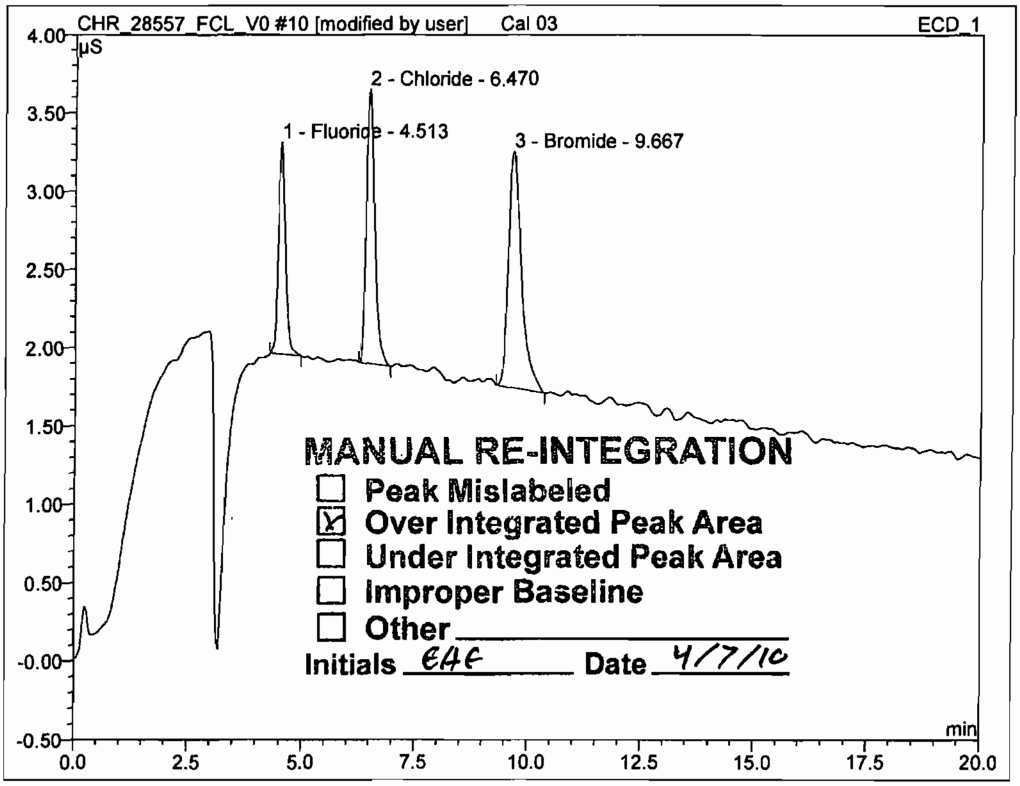


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.47	Fluoride	0.2288	21.82	BMB*	0.92
2	6.39	Chloride	0.3687	35.16	BMB	0.91
3	9.51	Bromide	0.4511	43.02	BMB	0.94
Total:			1.049	100.000	0.00	

10 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.526**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1279.74**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 18:40**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

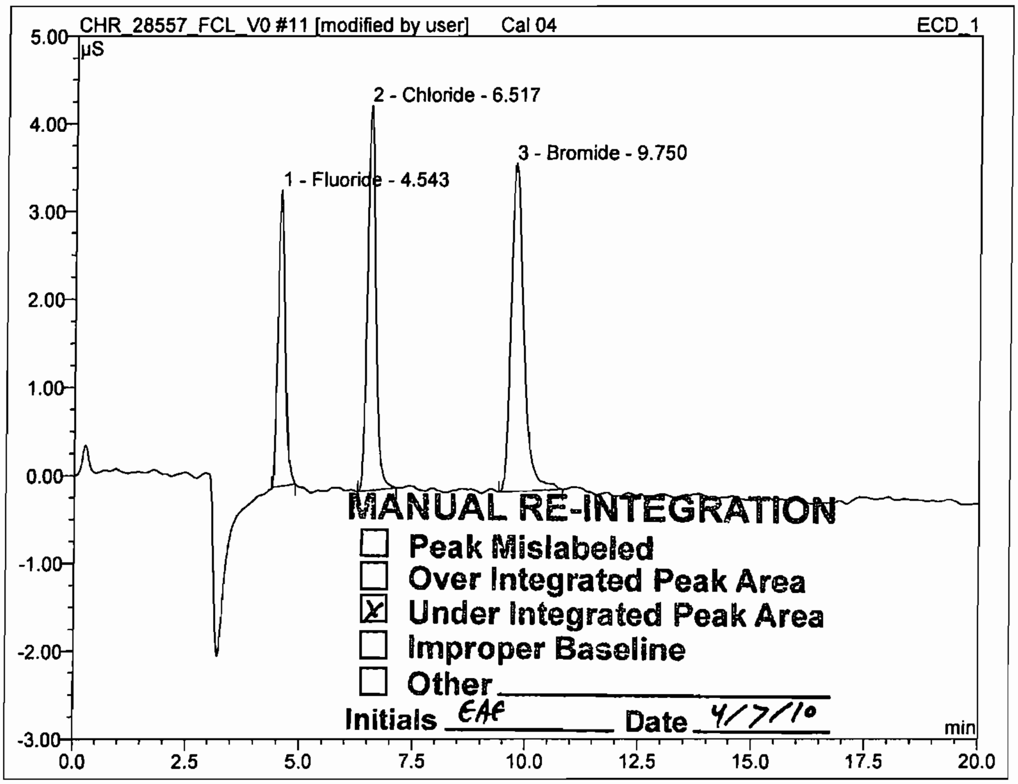


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.51	Fluoride	0.2330	20.82	BMB*	0.91
2	6.47	Chloride	0.3780	33.77	BMB*	0.93
3	9.67	Bromide	0.5083	45.41	BMB	0.88
Total:			1.119	100.000	0.00	

11 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.037**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1295.79**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 19:01**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

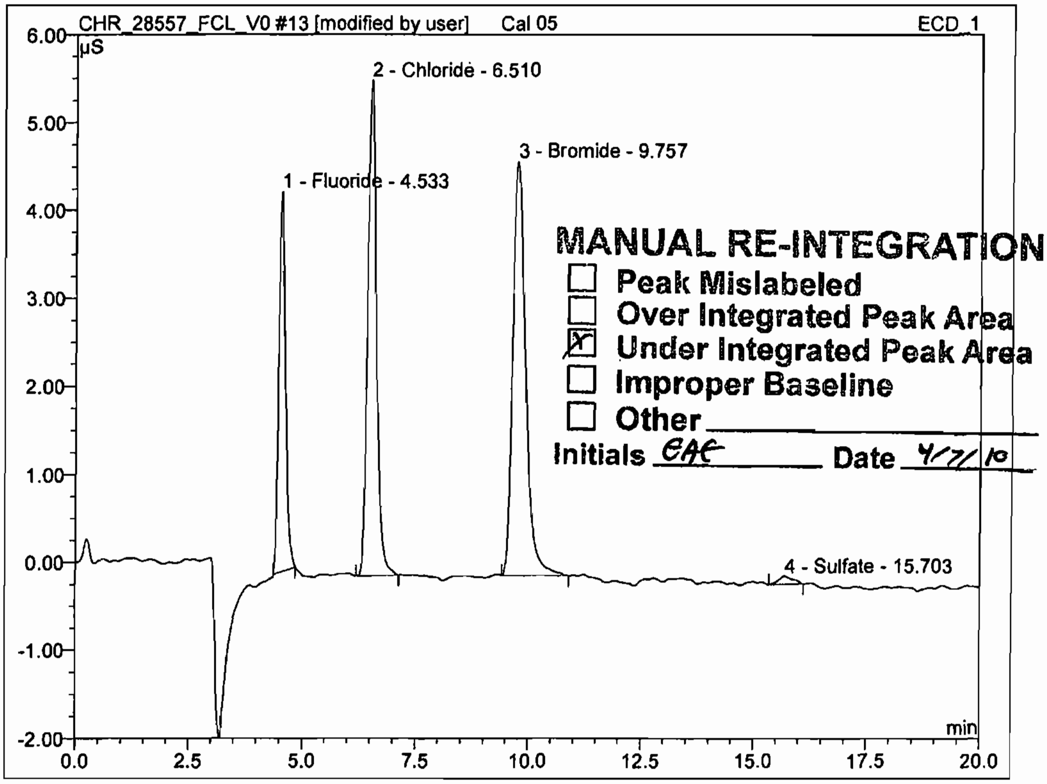


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.54	Fluoride	0.5777	20.92	BMB*	0.91
2	6.52	Chloride	0.9481	34.34	BMB	0.94
3	9.75	Bromide	1.2355	44.74	BMB	0.93
Total:			2.761	100.000	0.00	

13 Cal 05

CleanAir

Sample Name:	**Cal 05**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.263**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1310.59**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 19:43**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

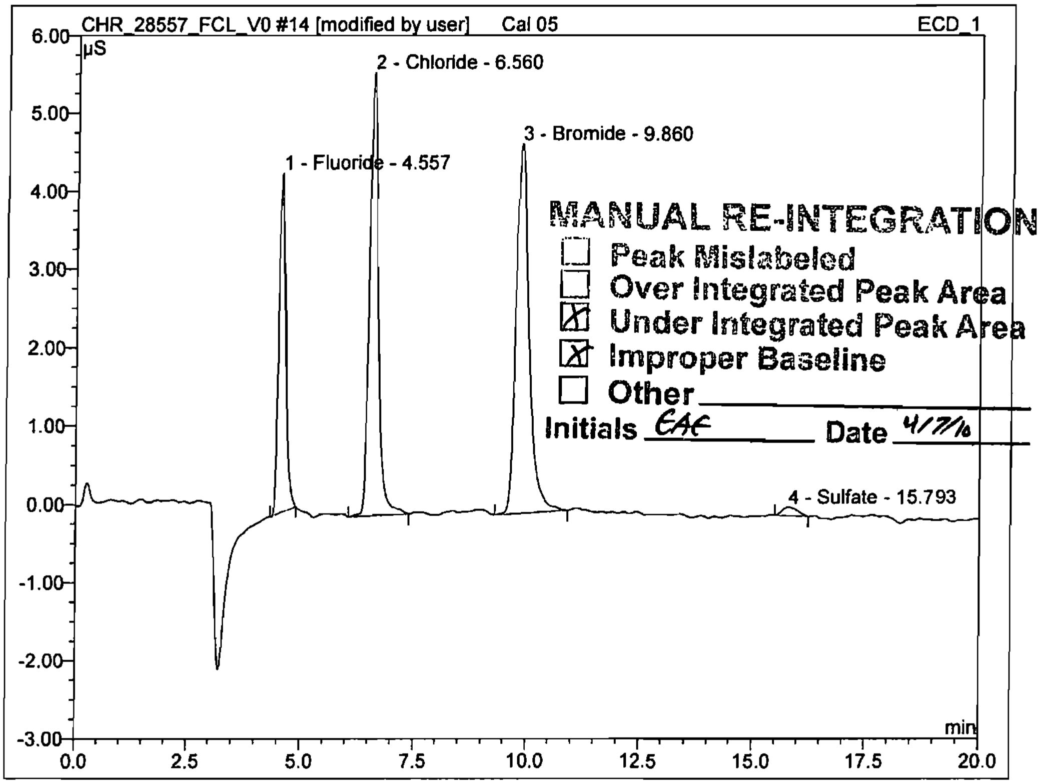


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.53	Fluoride	0.7329	20.65	BMB*	0.92
2	6.51	Chloride	1.2294	34.63	BMB	0.93
3	9.76	Bromide	1.5537	43.77	BMB	0.93
4	15.70	Sulfate	0.0337	0.95	BMB	1.01
Total:			3.550	100.000	0.00	

14 Cal 05

CleanAir

Sample Name:	**Cal 05**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.993**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1322.37**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 20:05**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

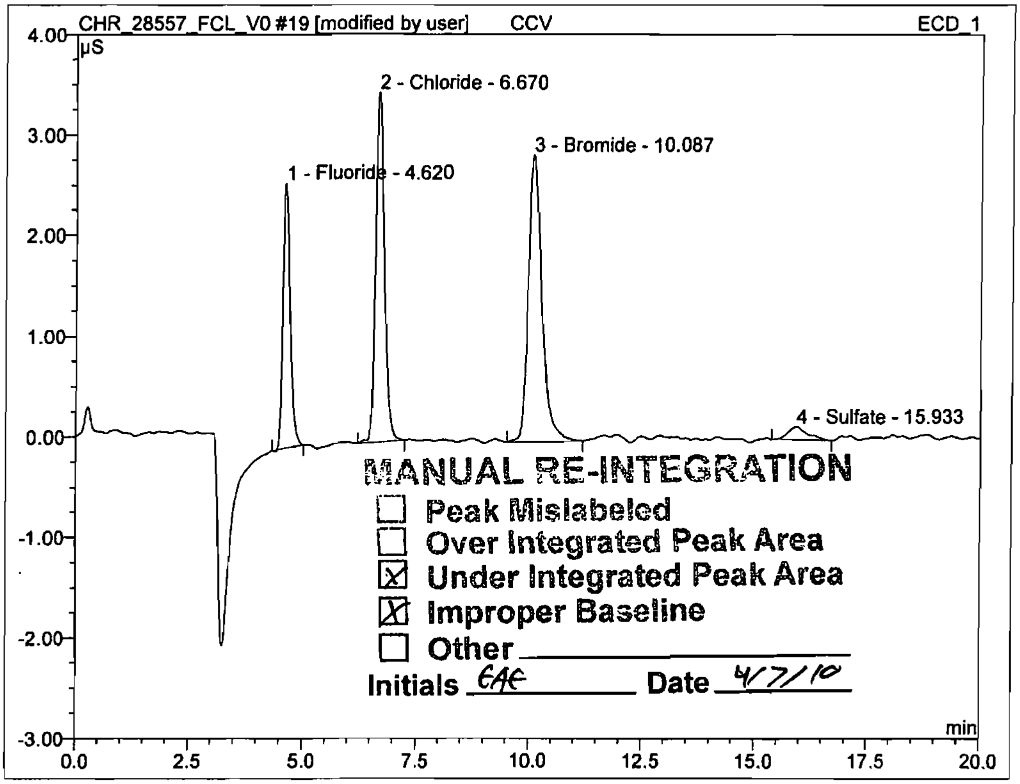


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.56	Fluoride	0.7458	20.29	BMB*	0.93
2	6.56	Chloride	1.2913	35.14	BMB	0.91
3	9.86	Bromide	1.5959	43.43	BMB	0.91
4	15.79	Sulfate	0.0421	1.14	BMB	1.13
Total:			3.675	100.000	0.00	

19 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**46.268**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1337.78**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 21:50**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

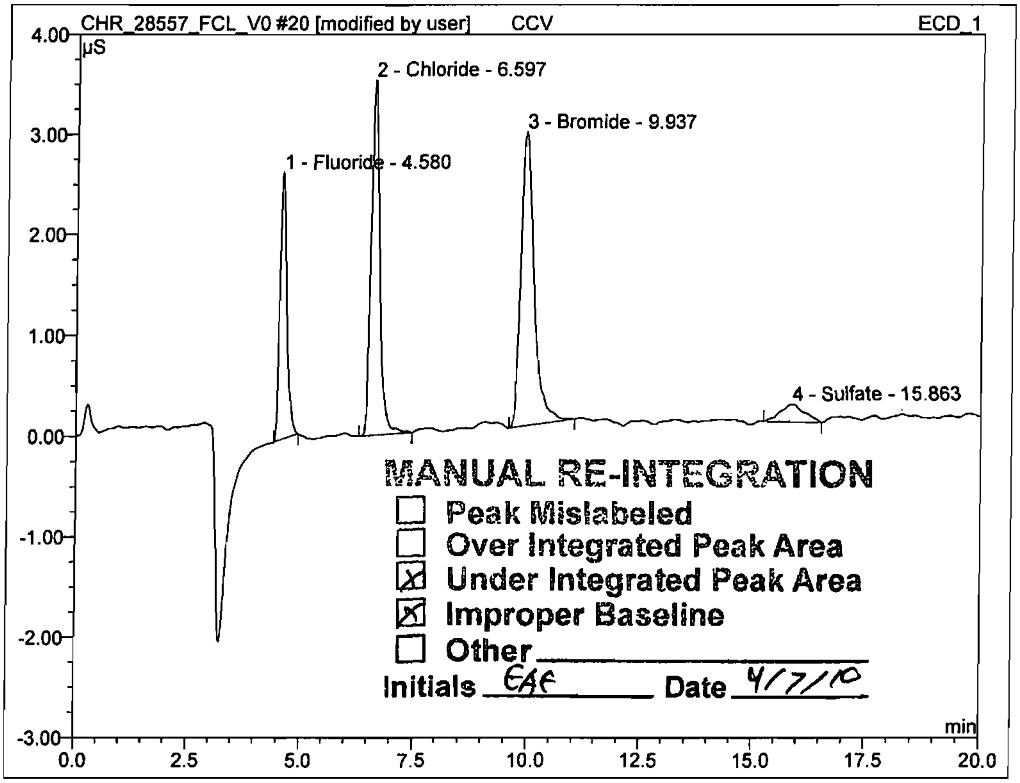


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.62	Fluoride	0.4661	20.24	BMB*	0.91
2	6.67	Chloride	0.7783	33.80	BMB	0.93
3	10.09	Bromide	0.9936	43.15	BMB	0.92
4	15.93	Sulfate	0.0646	2.81	BMB	0.82
Total:			2.303	100.000	0.00	

20 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**46.244**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1328.69**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/29/2010 22:11**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

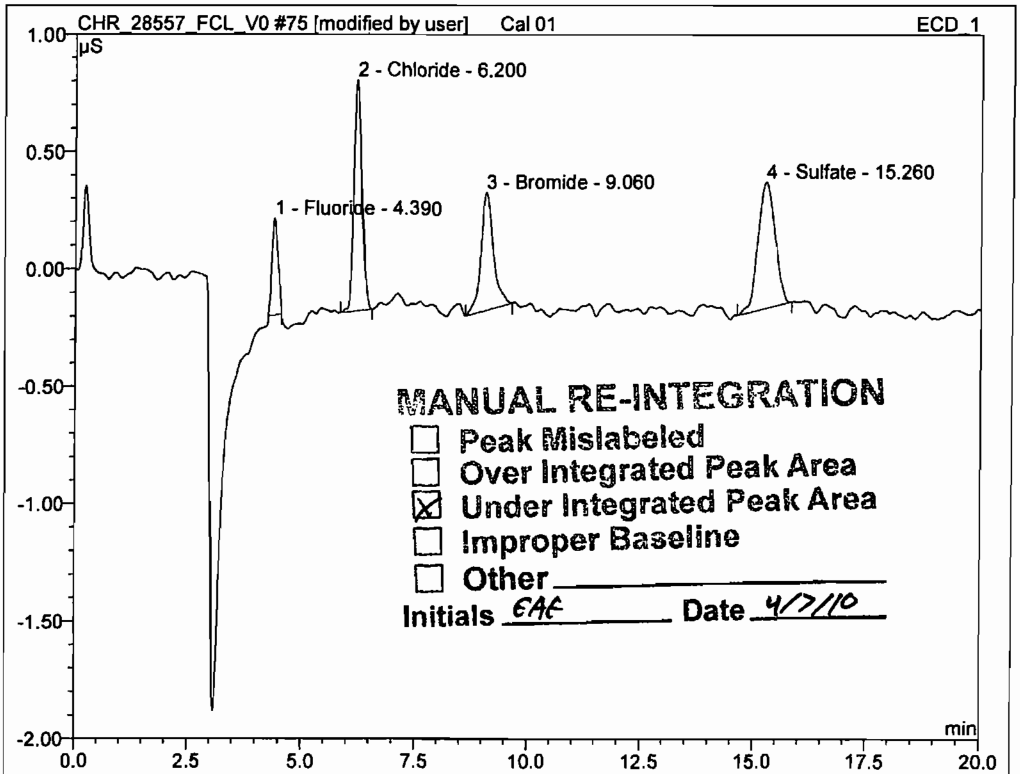


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.58	Fluoride	0.4599	19.58	BMB*	0.93
2	6.60	Chloride	0.7930	33.76	BMB	0.93
3	9.94	Bromide	0.9893	42.12	BMB	0.90
4	15.86	Sulfate	0.1066	4.54	BMB	1.00
Total:			2.349	100.000	0.00	

75 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.930**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1241.00**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/30/2010 17:34**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	



MANUAL RE-INTEGRATION
- ☐ Peak Mislabeled
- ☐ Over Integrated Peak Area
- ☒ Under Integrated Peak Area
- ☐ Improper Baseline
- ☐ Other ________

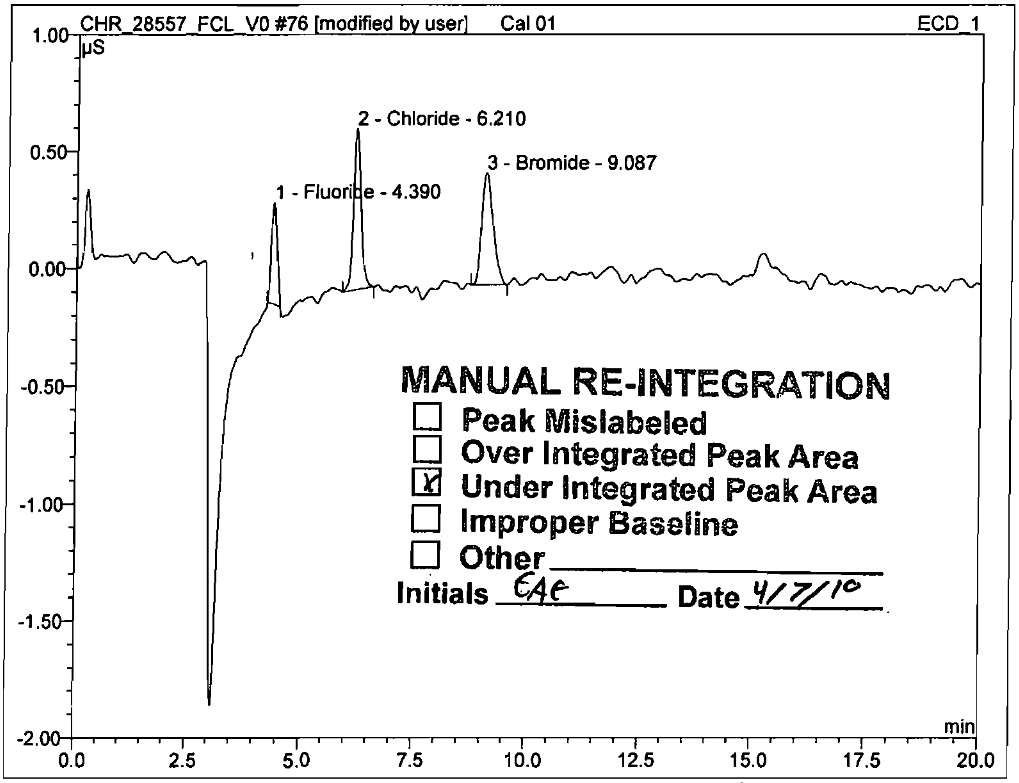
Initials EAE Date 4/7/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.39	Fluoride	0.0614	9.39	BMB*	1.11
2	6.20	Chloride	0.1935	29.61	BMB	0.94
3	9.06	Bromide	0.1625	24.87	BMB	0.78
4	15.26	Sulfate	0.2361	36.13	BMB	1.05
Total:			0.653	100.000	0.00	

76 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.732**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1241.64**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/30/2010 17:55**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

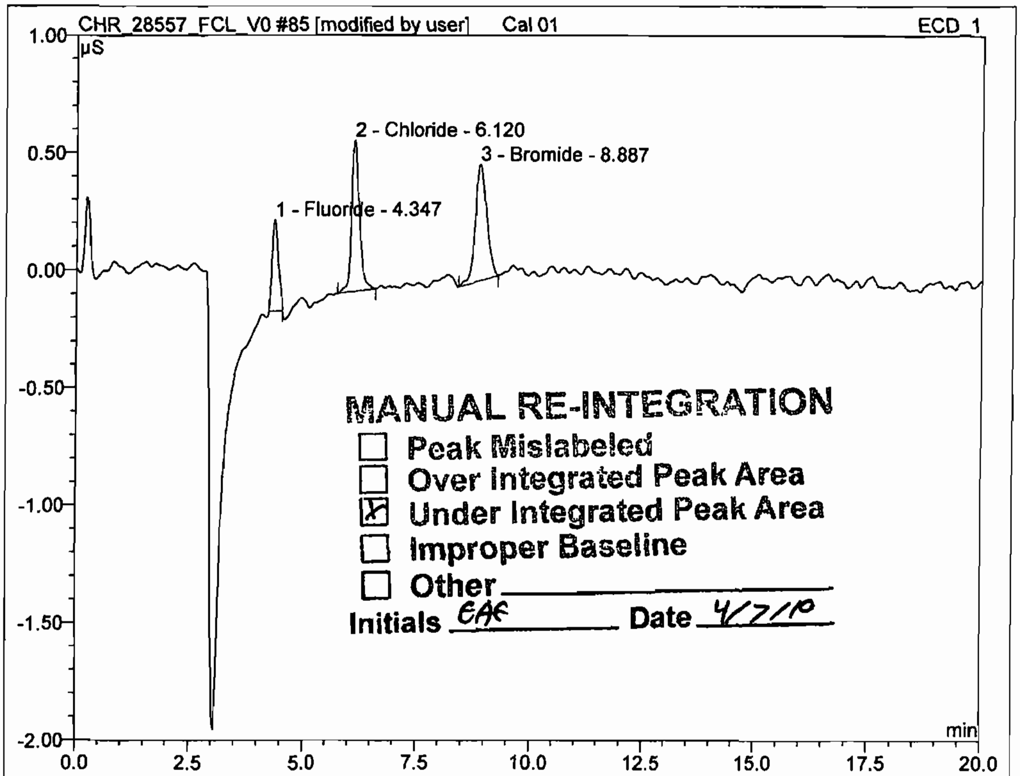


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.39	Fluoride	0.0613	18.48	BMB*	1.08
2	6.21	Chloride	0.1313	39.54	BMB	0.94
3	9.09	Bromide	0.1394	41.99	BMB	0.97
Total:			0.332	100.000	0.00	

85 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**50.658**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1219.08**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**3/31/2010 16:26**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	



MANUAL RE-INTEGRATION

- ☐ Peak Mislabeled
- ☐ Over Integrated Peak Area
- ☒ Under Integrated Peak Area
- ☐ Improper Baseline
- ☐ Other ____________

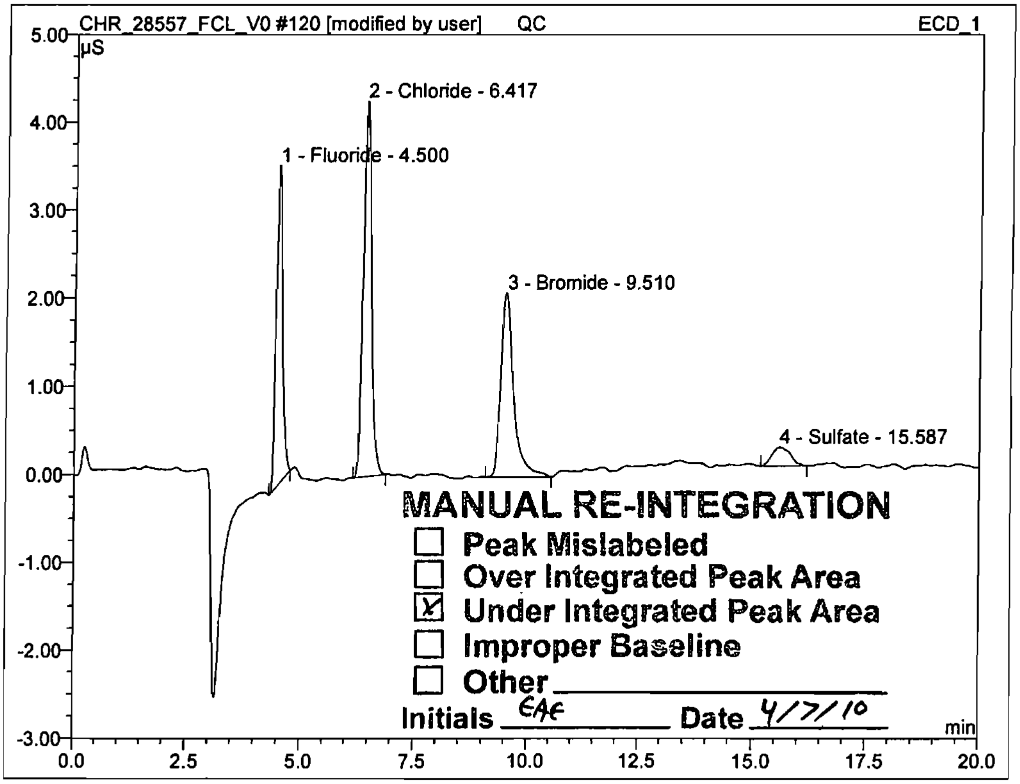
Initials EAE Date 4/7/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.35	Fluoride	0.0599	18.12	BMB*	1.03
2	6.12	Chloride	0.1275	38.61	BMB	0.93
3	8.89	Bromide	0.1429	43.27	BMB	0.93
Total:			0.330	100.000	0.00	

120 QC

CleanAir

Sample Name:	**QC**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**50.922**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1301.52**
Quantif. Method:	**default**	*Dilution Fa*	**200.0X**
Recording Time:	**4/1/2010 16:37**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

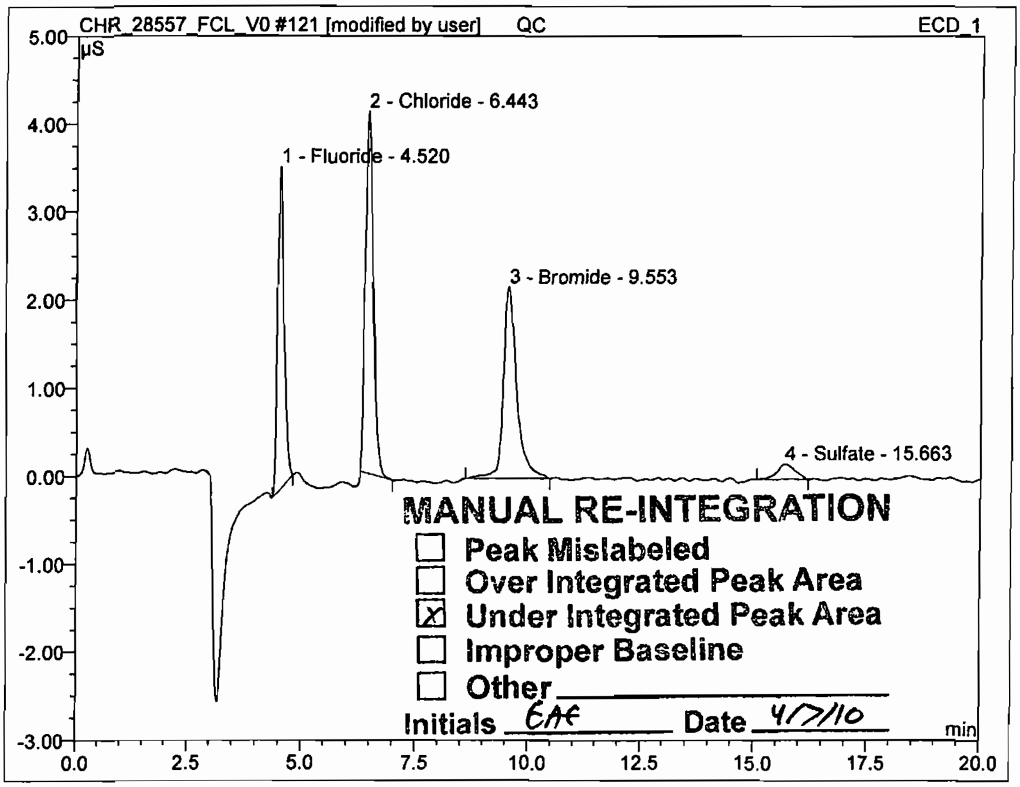


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.50	Fluoride	0.5766	25.68	BMB*	0.94
2	6.42	Chloride	0.8742	38.94	BMB	0.94
3	9.51	Bromide	0.6946	30.94	BMB	0.85
4	15.59	Sulfate	0.0998	4.44	BMB	1.10
Total:			2.245	100.000	0.00	

121 QC

CleanAir

Sample Name:	**QC**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**51.019**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1300.56**
Quantif. Method:	**default**	*Dilution Fa*	**200.0X**
Recording Time:	**4/1/2010 16:58**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

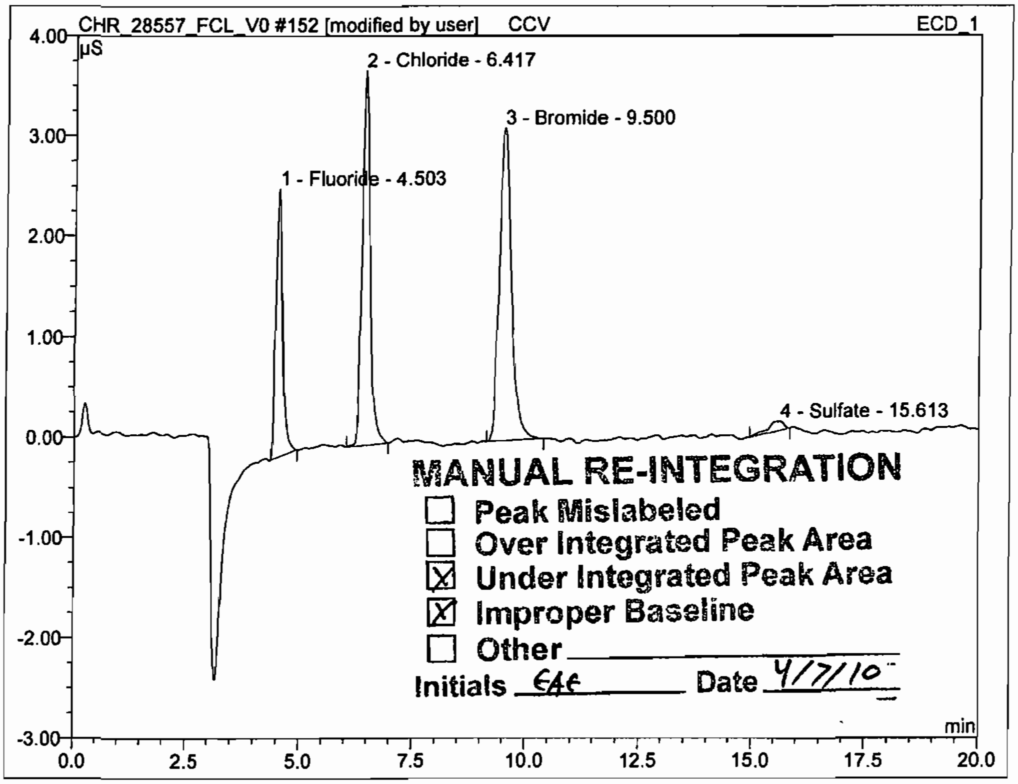


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.52	Fluoride	0.5868	26.20	BMB*	0.94
2	6.44	Chloride	0.8204	36.62	BMB	0.96
3	9.55	Bromide	0.7520	33.57	BMB	0.85
4	15.66	Sulfate	0.0808	3.61	BMB	0.92
Total:			2.240	100.000	0.00	

152 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**50.182**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1313.74**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/2/2010 14:45**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

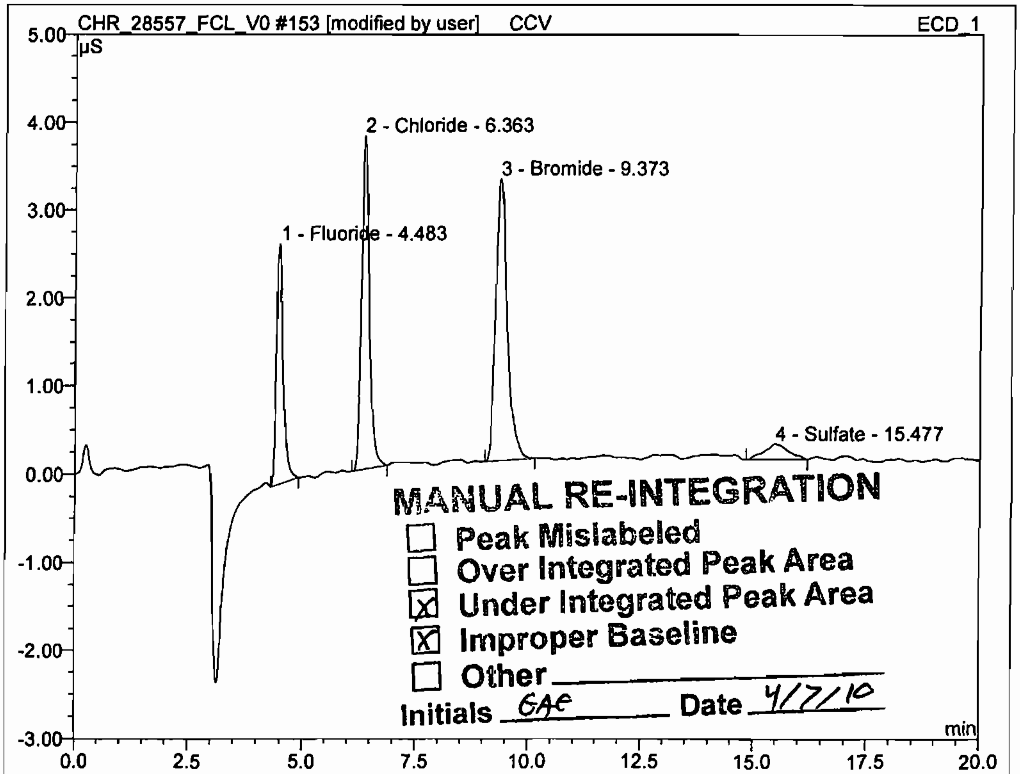


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.50	Fluoride	0.4434	19.92	BMB*	0.91
2	6.42	Chloride	0.7809	35.07	BMB	0.92
3	9.50	Bromide	0.9623	43.22	BMB	0.93
4	15.61	Sulfate	0.0397	1.78	BMB	0.86
Total:			2.226	100.000	0.00	

153 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**50.247**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1300.85**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/2/2010 15:06**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	



MANUAL RE-INTEGRATION
- ☐ Peak Mislabeled
- ☐ Over Integrated Peak Area
- ☒ Under Integrated Peak Area
- ☒ Improper Baseline
- ☐ Other ______

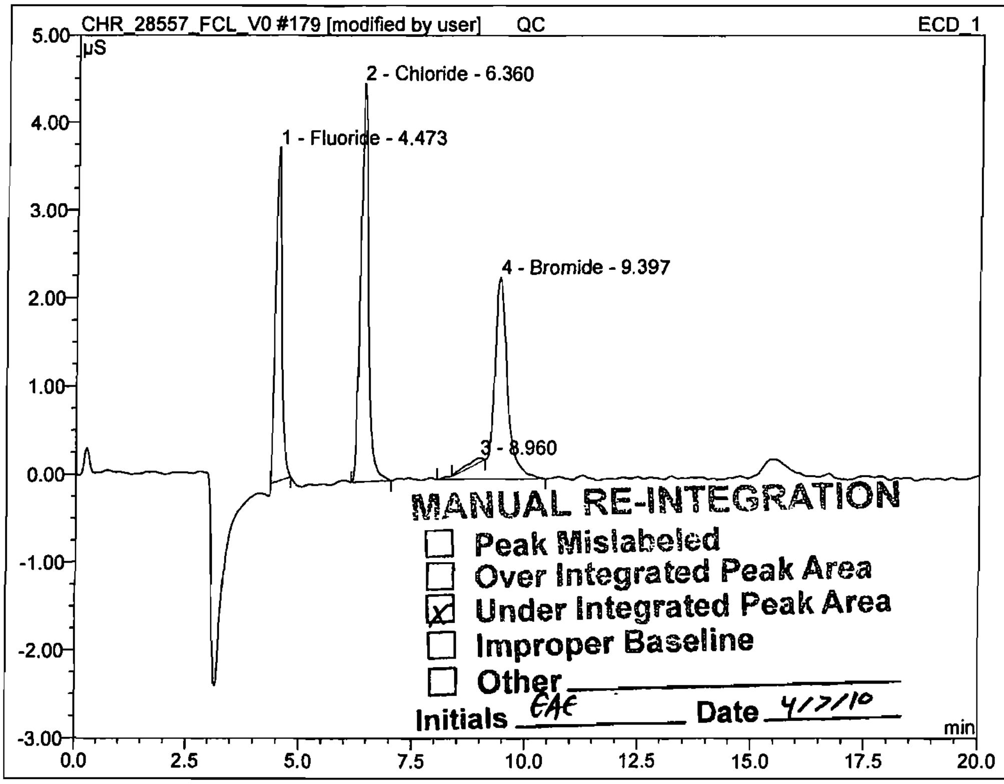
Initials GAE Date 4/7/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.48	Fluoride	0.4526	19.75	BMB*	0.90
2	6.36	Chloride	0.7730	33.74	BMB	0.93
3	9.37	Bromide	0.9597	41.88	BMB	0.91
4	15.48	Sulfate	0.1059	4.62	BMB	0.87
Total:			2.291	100.000	0.00	

179 QC

CleanAir

Sample Name:	**QC**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**50.092**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1321.65**
Quantif. Method:	**default**	*Dilution Fa*	**200.0X**
Recording Time:	**4/3/2010 0:16**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

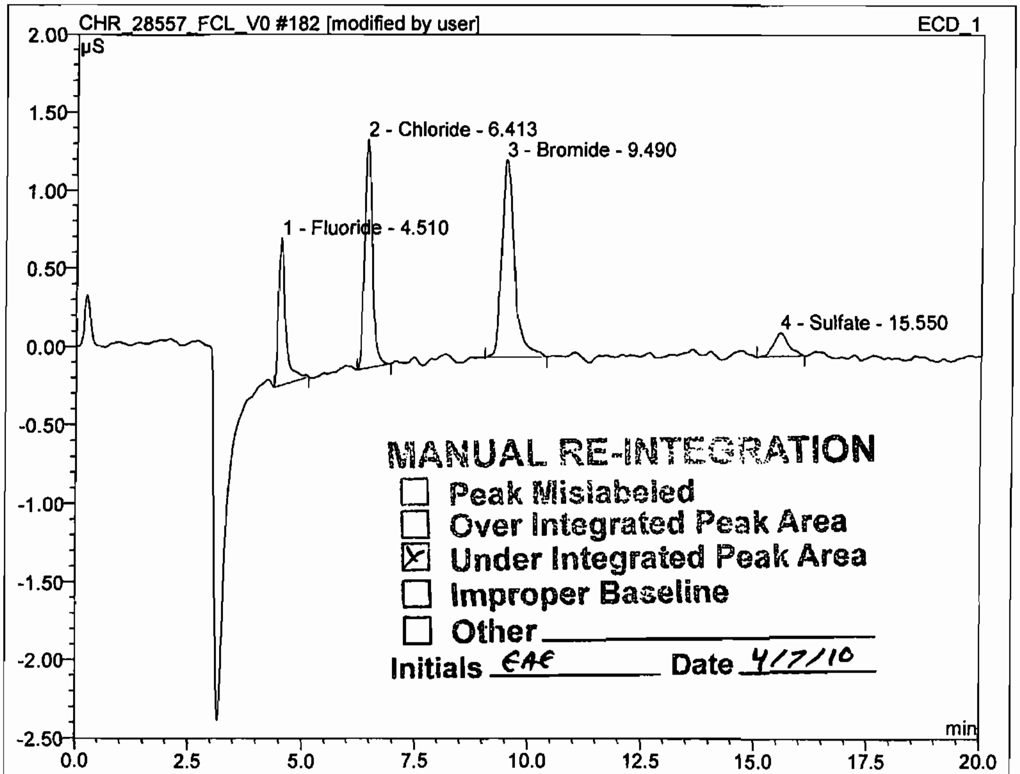


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.47	Fluoride	0.5956	24.51	BMB*	0.95
2	6.36	Chloride	0.9391	38.65	BMB	0.92
3	8.96	n.a.	0.0244	1.01	Ru	n.a.
4	9.40	Bromide	0.8708	35.84	BMB	0.79
Total:			2.430	100.000	0.00	

182 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**50.126**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1314.04**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/3/2010 1:19**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

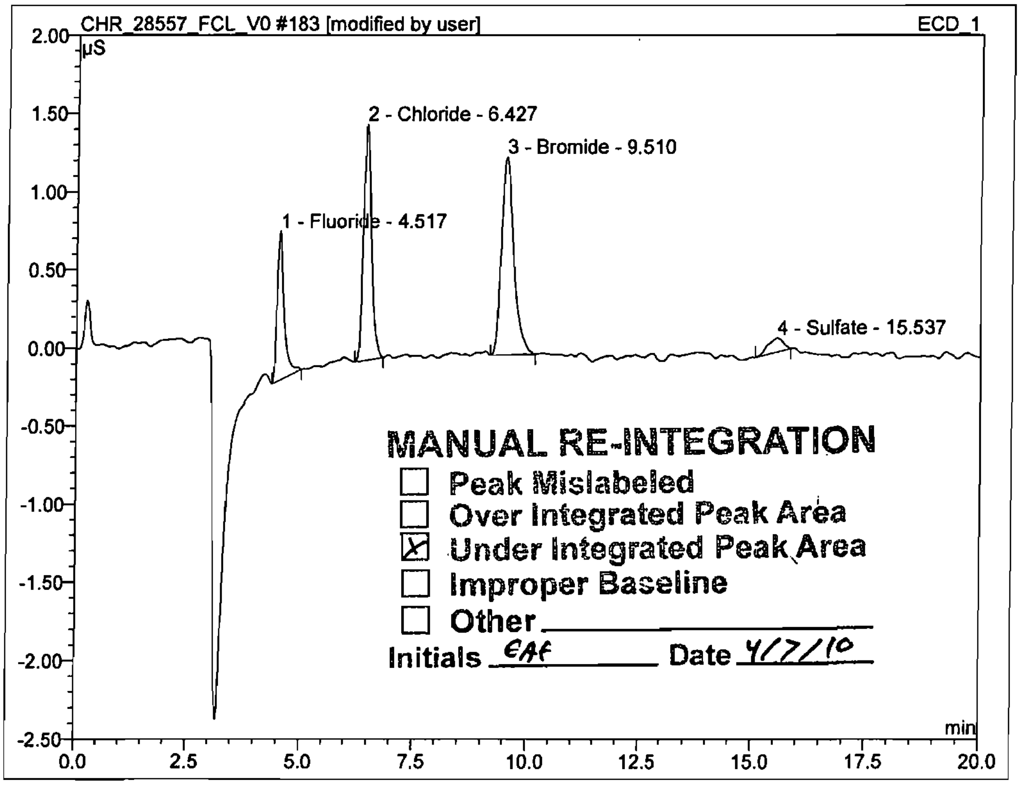


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.51	Fluoride	0.1655	17.75	BMB*	0.84
2	6.41	Chloride	0.2928	31.40	BMB	0.95
3	9.49	Bromide	0.4152	44.53	BMB	0.88
4	15.55	Sulfate	0.0589	6.32	BMB	0.81
Total:			0.932	100.000	0.00	

183 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**50.096**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1311.55**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/3/2010 1:40**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

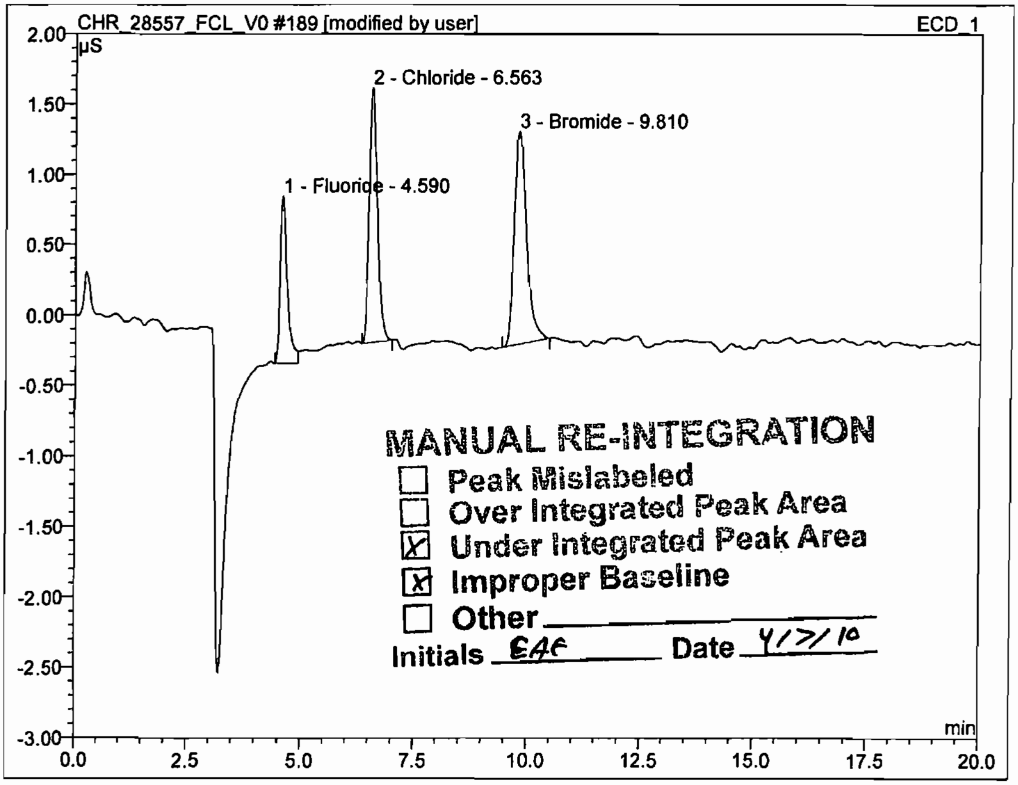


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.52	Fluoride	0.1670	18.37	BMB*	0.81
2	6.43	Chloride	0.3088	33.96	BMB	0.93
3	9.51	Bromide	0.3976	43.73	BMB	0.90
4	15.54	Sulfate	0.0359	3.95	BMB	1.19
Total:			0.909	100.000	0.00	

189 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**49.213**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1338.96**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/3/2010 13:27**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

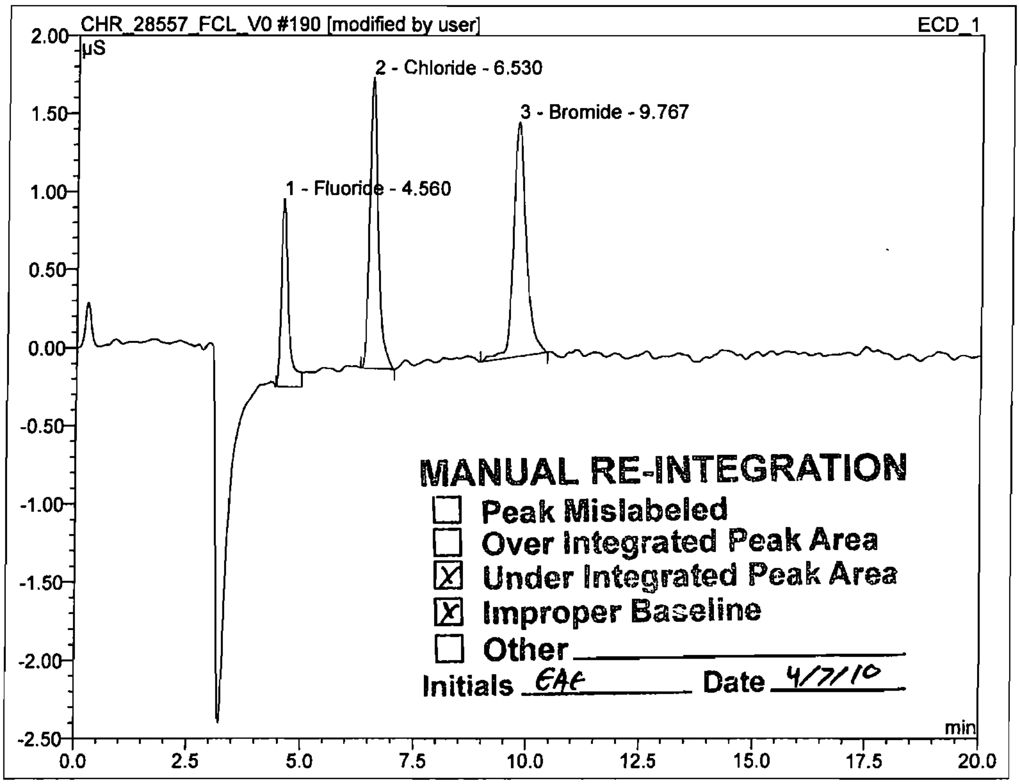


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.59	Fluoride	0.2207	20.70	BM *	0.79
2	6.56	Chloride	0.3728	34.98	BMB	0.95
3	9.81	Bromide	0.4725	44.32	BMB	0.94
Total:			1.066	100.000	0.00	

190 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**49.036**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1342.97**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/3/2010 13:48**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

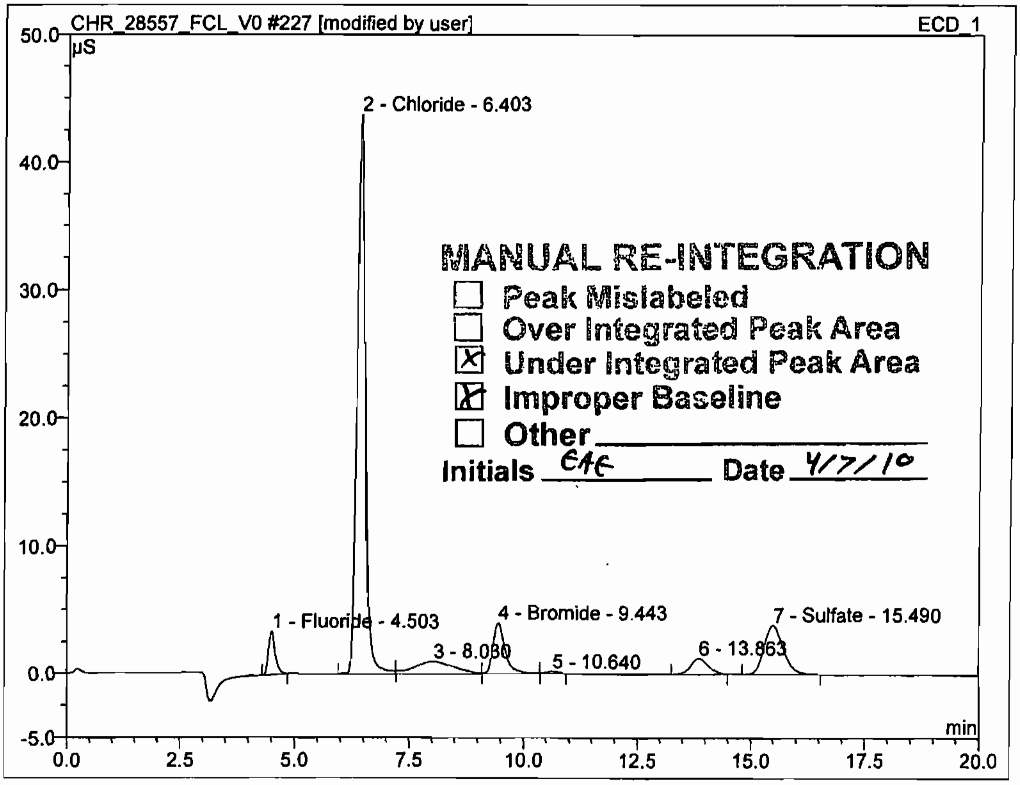


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.56	Fluoride	0.2270	20.18	BM *	0.81
2	6.53	Chloride	0.4034	35.85	BMB	0.89
3	9.77	Bromide	0.4947	43.97	BMB	0.90
Total:			1.125	100.000	0.00	

227 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**862.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**49.266**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1314.48**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 18:45**	*Sample ID:*	**28557-028**
Run Time (min):	**20.00**	*Replicate I*	

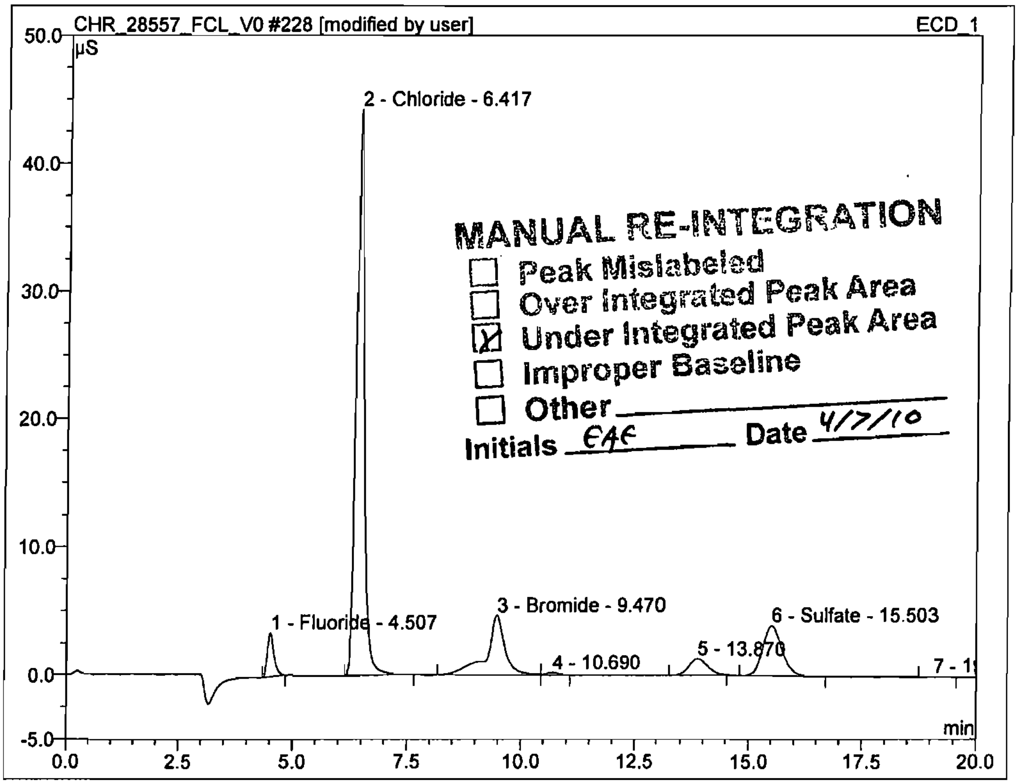


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.50	Fluoride	0.5606	3.91	BMB*	0.92
2	6.40	Chloride	8.9771	62.65	BM	0.91
3	8.03	n.a.	0.9900	6.91	M	n.a.
4	9.44	Bromide	1.2543	8.75	M	0.90
5	10.64	n.a.	0.0501	0.35	MB	n.a.
6	13.86	n.a.	0.5805	4.05	BMB	0.98
7	15.49	Sulfate	1.9164	13.37	BMB	0.97
Total:			14.329	100.000	0.00	

228 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo.*	**862.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**49.147**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1317.15**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 19:06**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	**28557-028**

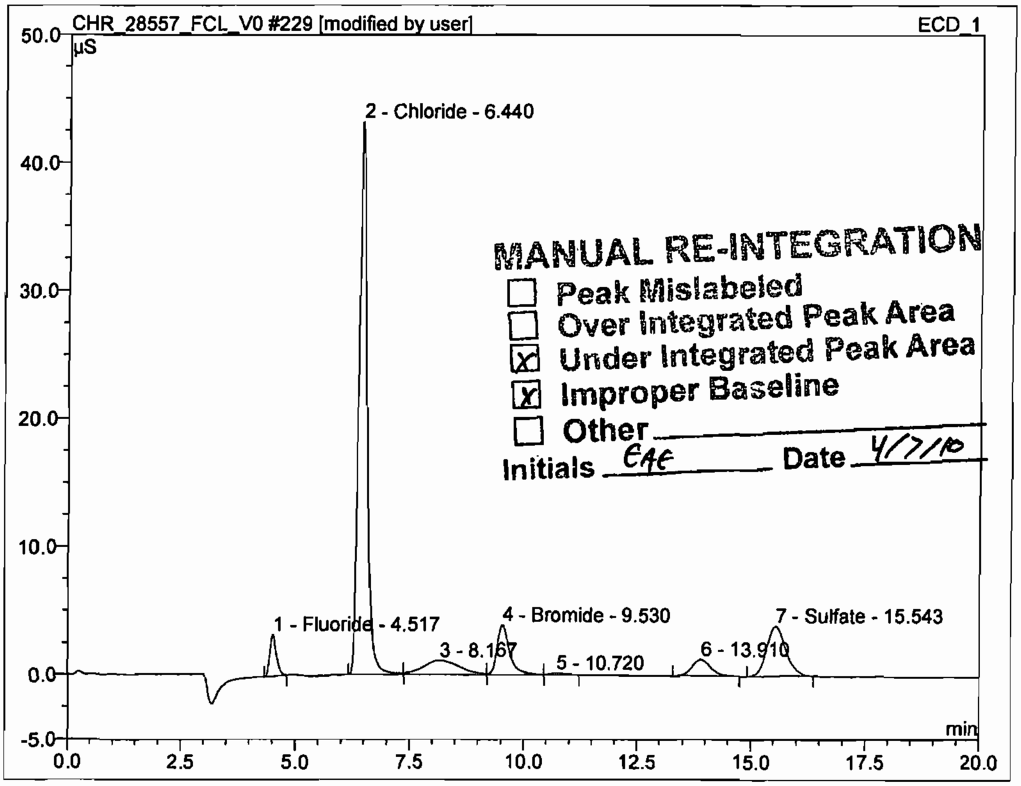


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.51	Fluoride	0.5673	3.91	BMB*	0.91
2	6.42	Chloride	9.0521	62.45	BMB	0.92
3	9.47	Bromide	2.2282	15.37	BM	0.47
4	10.69	n.a.	0.0622	0.43	MB	n.a.
5	13.87	n.a.	0.6074	4.19	BMB	0.97
6	15.50	Sulfate	1.9505	13.46	BMB	0.95
7	19.06	n.a.	0.0282	0.19	BMB	1.32
Total:			14.496	100.000	0.00	

229 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo.*	**862.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**48.992**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1326.17**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 19:27**	*Sample ID:*	**28557-028**
Run Time (min):	**20.00**	*Replicate I*	

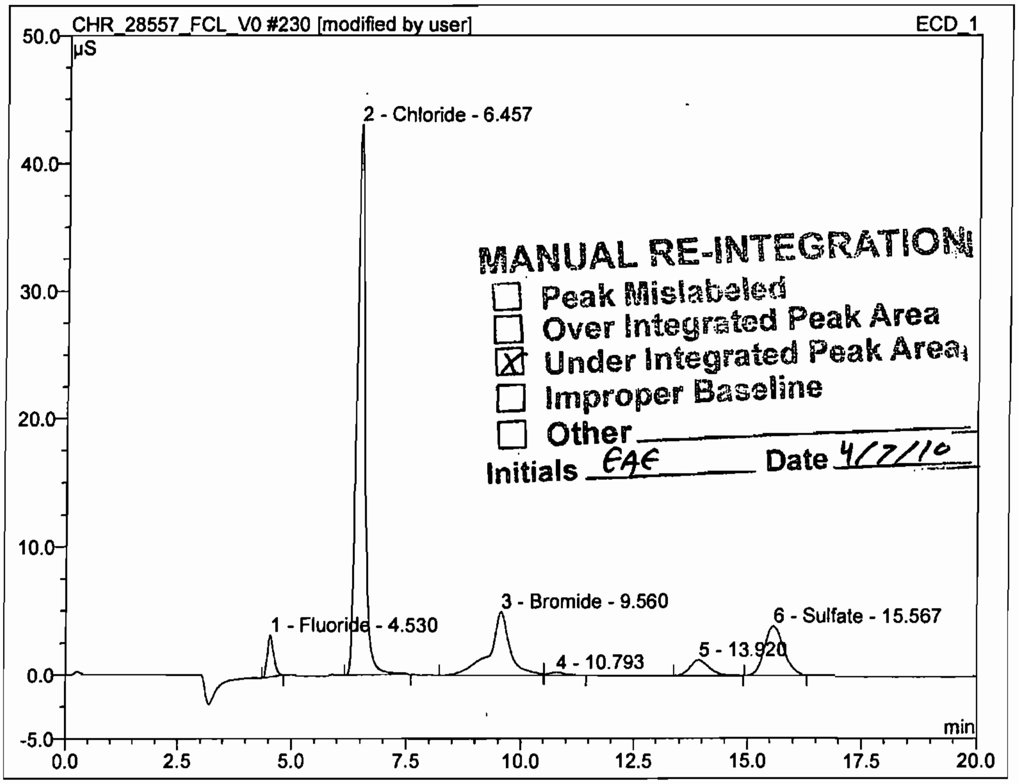


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.52	Fluoride	0.5384	3.77	BMB*	0.92
2	6.44	Chloride	8.9048	62.33	BM	0.92
3	8.17	n.a.	1.0360	7.25	M	0.94
4	9.53	Bromide	1.2485	8.74	M	0.88
5	10.72	n.a.	0.0511	0.36	MB	0.98
6	13.91	n.a.	0.5946	4.16	BMB	0.99
7	15.54	Sulfate	1.9142	13.40	BMB	0.96
Total:			14.288	100.000	0.00	

230 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo.*	**862.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**48.869**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1329.37**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 19:49**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	**28557-028**

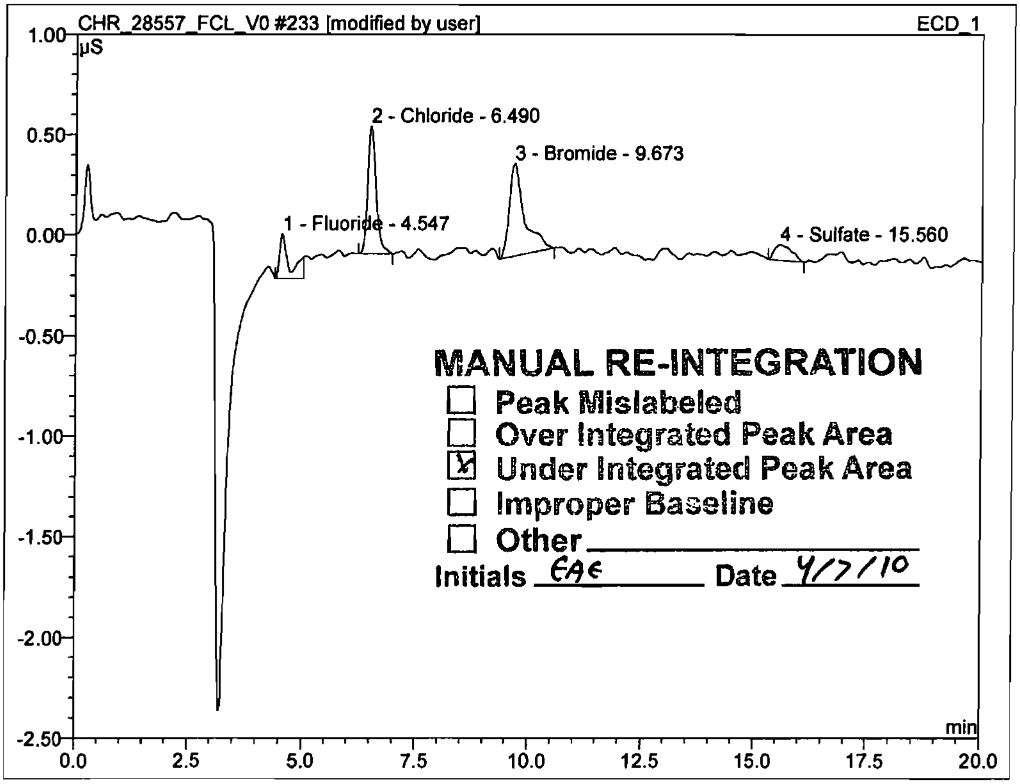


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.53	Fluoride	0.5356	3.64	BMB*	0.93
2	6.46	Chloride	8.9417	60.75	BMB	0.91
3	9.56	Bromide	2.6404	17.94	BM	0.47
4	10.79	n.a.	0.0964	0.66	MB	n.a.
5	13.92	n.a.	0.6040	4.10	BMB	0.94
6	15.57	Sulfate	1.8996	12.91	BMB	0.96
Total:			14.718	100.000	0.00	

233 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.297**
Control Program:	**AS40lnj1**	*ICS Pressu*	**1347.58**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 20:52**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

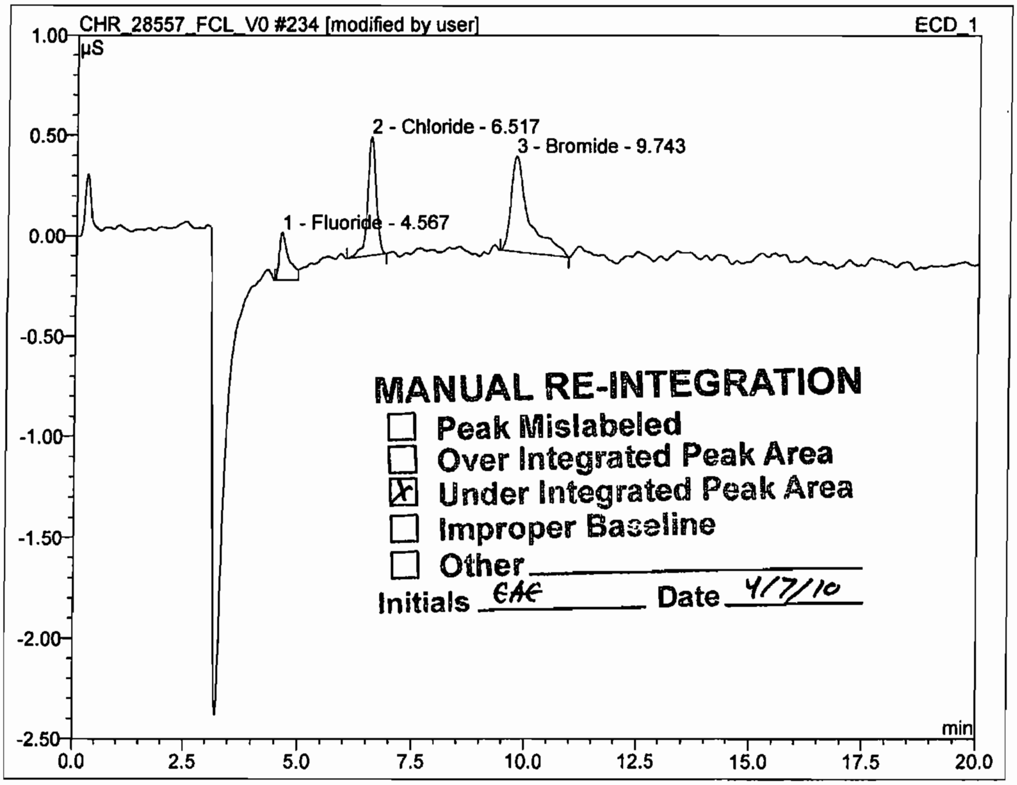


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.55	Fluoride	0.0558	13.75	BM *	n.a.
2	6.49	Chloride	0.1359	33.47	BMB	0.94
3	9.67	Bromide	0.1799	44.33	BMB	0.61
4	15.56	Sulfate	0.0343	8.46	BMB	1.32
Total:			0.406	100.000	0.00	

234 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**48.118**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1352.89**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 21:13**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

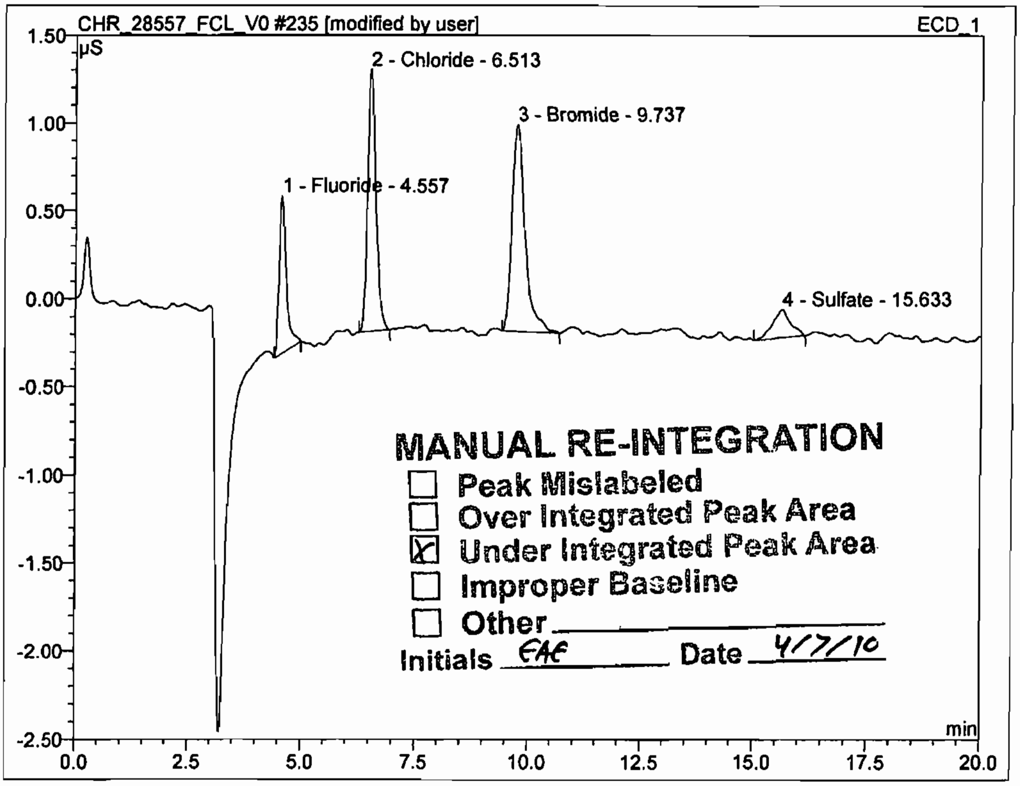


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.57	Fluoride	0.0560	13.53	BM *	n.a.
2	6.52	Chloride	0.1317	31.84	BMB	0.94
3	9.74	Bromide	0.2260	54.63	BMB	0.50
Total:			0.414	100.000	0.00	

235 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.990**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1357.98**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 21:34**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

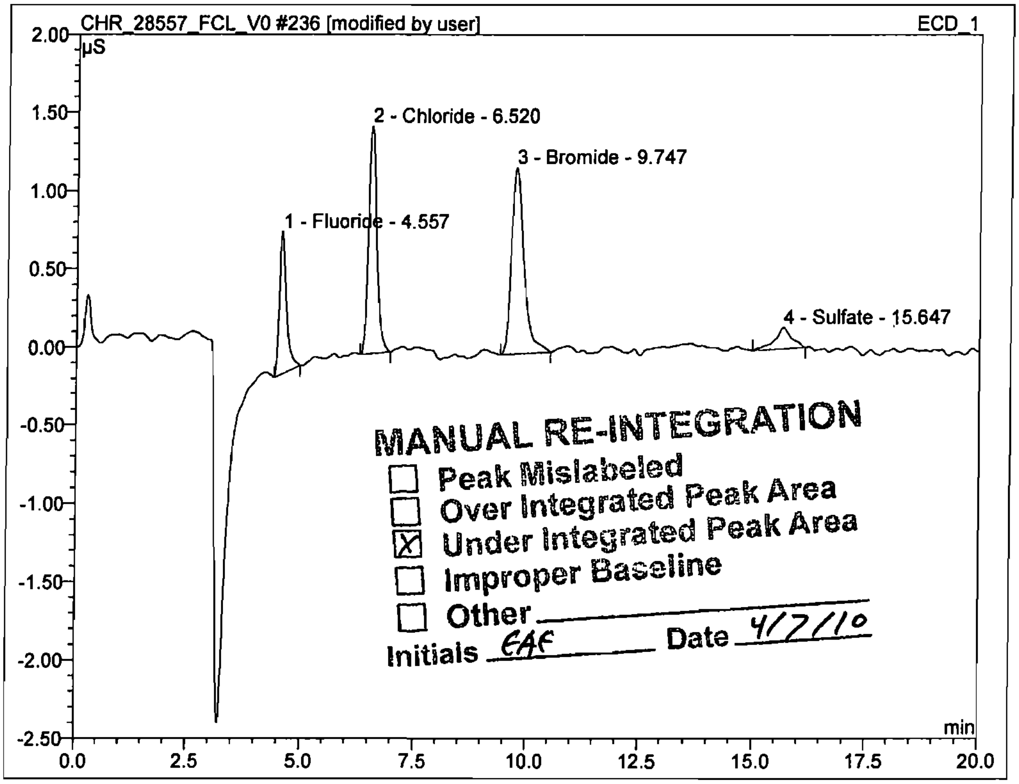


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.56	Fluoride	0.1598	17.01	BMB*	0.86
2	6.51	Chloride	0.3162	33.66	BMB	0.93
3	9.74	Bromide	0.3907	41.59	BMB	0.86
4	15.63	Sulfate	0.0728	7.75	BMB	0.84
Total:			0.940	100.000	0.00	

236 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.758**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1355.35**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 21:55**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

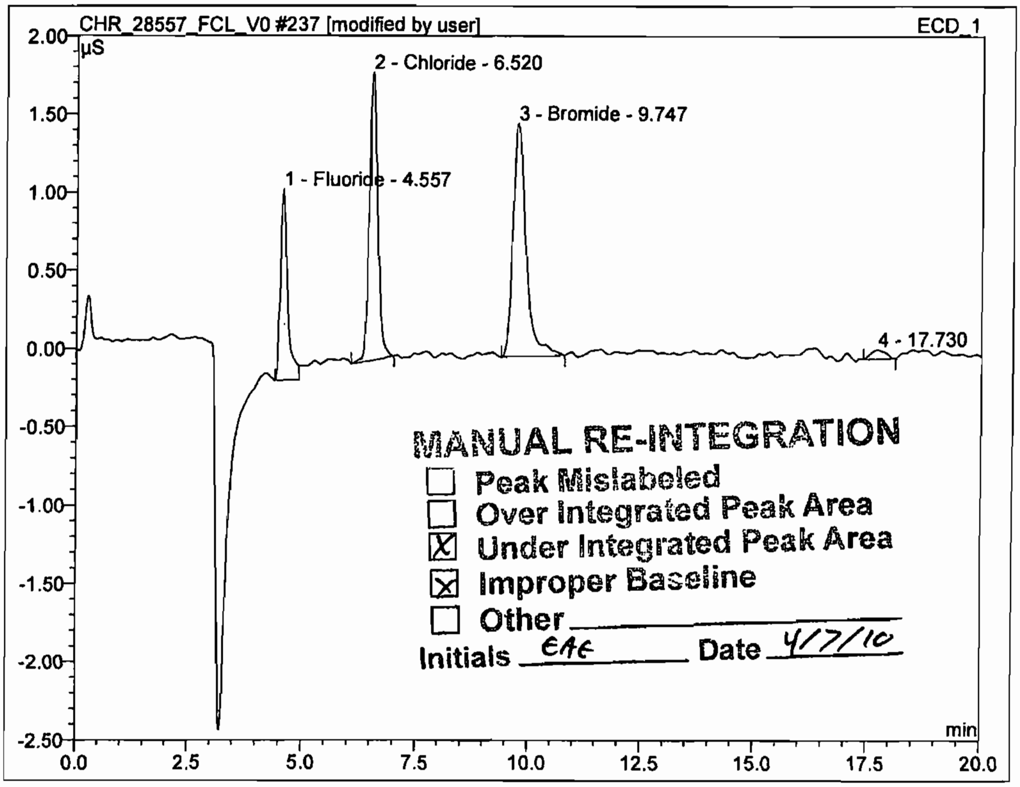


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.56	Fluoride	0.1609	17.48	BMB*	0.86
2	6.52	Chloride	0.3071	33.35	BMB	0.94
3	9.75	Bromide	0.3933	42.71	BMB	0.94
4	15.65	Sulfate	0.0595	6.46	BMB	0.64
Total:			0.921	100.000	0.00	

237 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.688**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1352.63**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 22:16**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

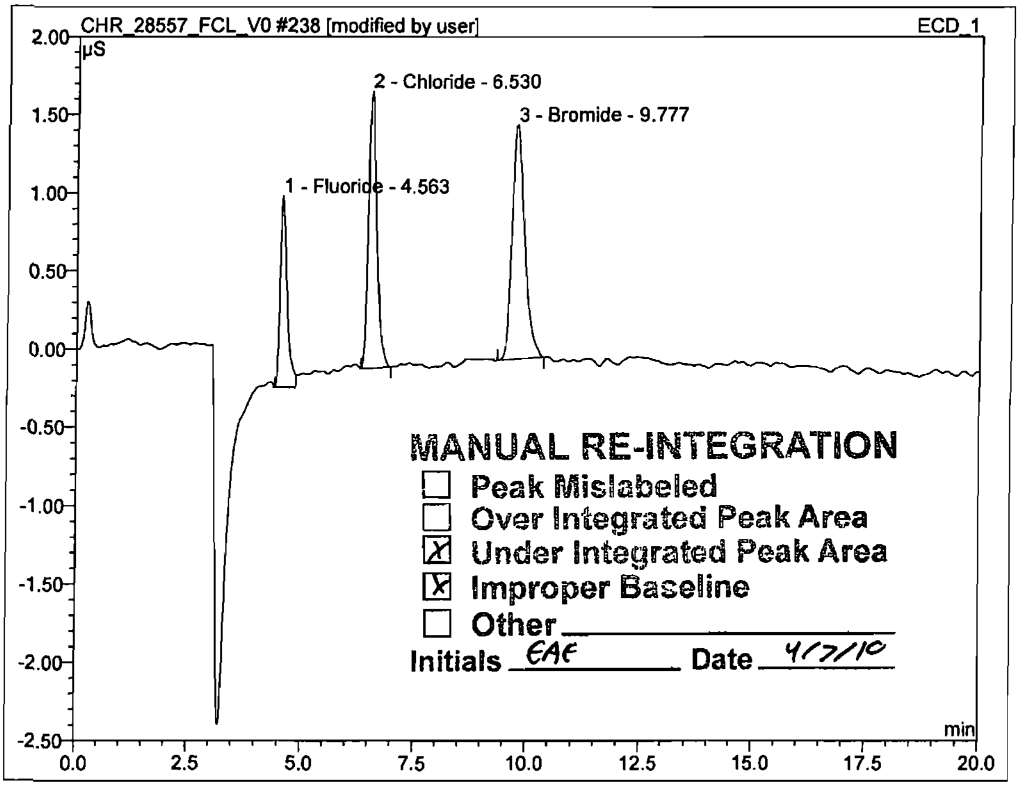


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.56	Fluoride	0.2270	19.91	BM *	0.75
2	6.52	Chloride	0.3913	34.31	BMB	0.95
3	9.75	Bromide	0.4999	43.83	BMB	0.88
4	17.73	n.a.	0.0223	1.96	BMB	1.32
Total:			1.141	100.000	0.00	

238 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.616**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1361.16**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 22:38**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate I*	

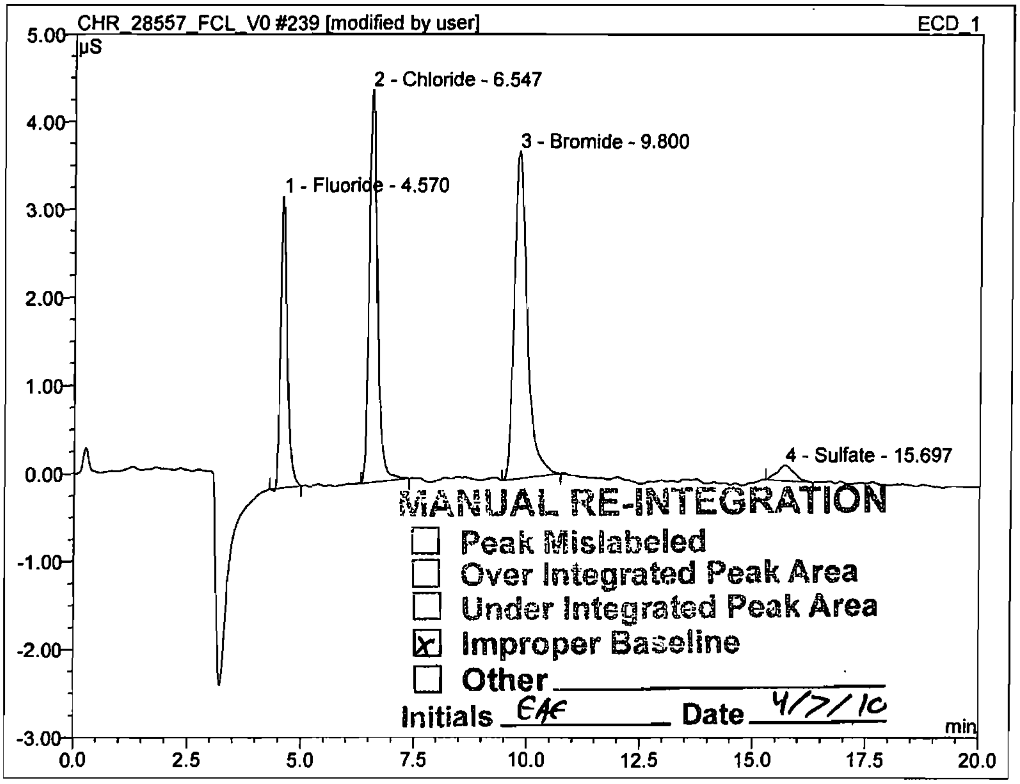


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.56	Fluoride	0.2207	20.53	BM *	0.82
2	6.53	Chloride	0.3733	34.73	BMB	0.93
3	9.78	Bromide	0.4809	44.74	BMB	0.91
Total:			1.075	100.000	0.00	

239 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.480**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1367.08**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 22:58**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

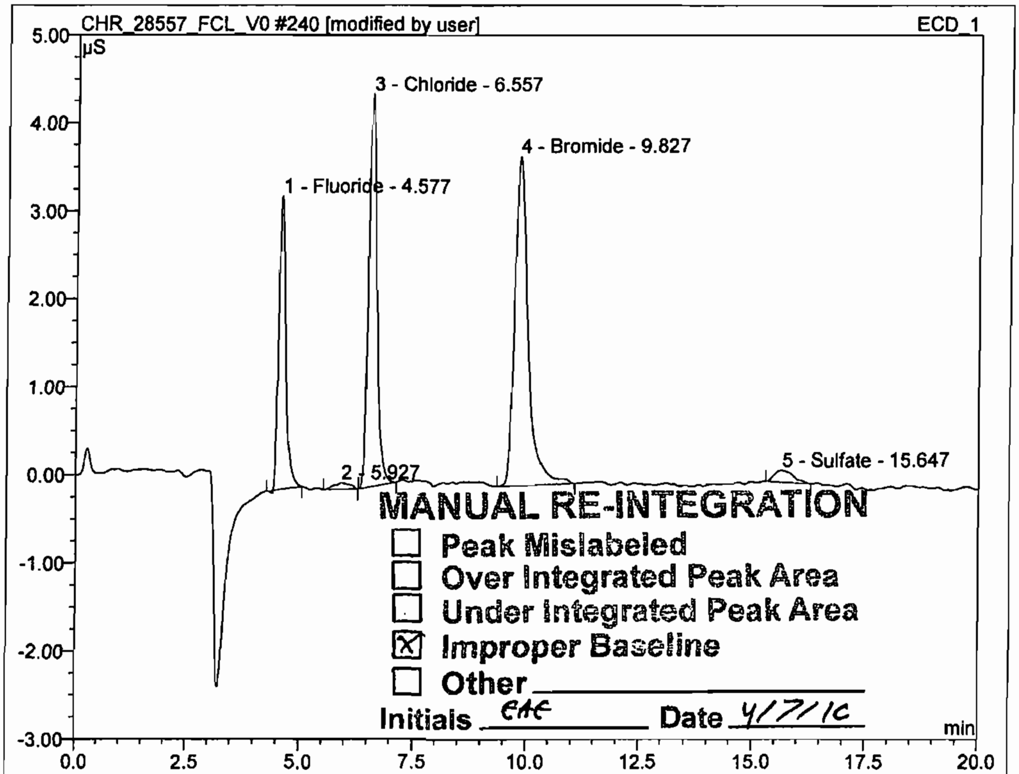


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.57	Fluoride	0.5658	19.97	BMB*	0.91
2	6.55	Chloride	0.9592	33.86	BMB	0.93
3	9.80	Bromide	1.2334	43.53	BMB	0.91
4	15.70	Sulfate	0.0748	2.64	BMB	0.89
Total:			2.833	100.000	0.00	

240 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.334**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1378.07**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/5/2010 23:20**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	



MANUAL RE-INTEGRATION

- ☐ Peak Mislabeled
- ☐ Over Integrated Peak Area
- ☐ Under Integrated Peak Area
- ☒ Improper Baseline
- ☐ Other ______

Initials EAE Date 4/7/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.58	Fluoride	0.5792	19.79	BMB*	0.90
2	5.93	n.a.	0.0302	1.03	BMB	1.37
3	6.56	Chloride	0.9554	32.65	BMB	0.93
4	9.83	Bromide	1.2950	44.26	BMB	0.88
5	15.65	Sulfate	0.0662	2.26	BMB	1.08
Total:			2.926	100.000	0.00	

Lab Project No.: 28557

CleanAir No.: 10955
66

Date Received: 3/29/2010

Nort It

Customer : 66

Contact : Scott Brown

Phone :

Fax :

Email : sbrown@cleanair.com

Requested Analysis

Due	Analyst	Status	Sample	Type	Container	Method
4/12/2010	EE	In Queue	1-20	Imp C&R	500 mL Nalgen	EPA Method 26A
4/12/2010	EE	In Queue	21-22	Imp C&R	Glass Vials	EPA Method 26A 2 State Audit Samples
4/12/2010	EE	In Queue	23-32	Imp C&R	500 mL Nalgen	US EPA Method 13B

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PERTINENT CERTIFICATIONS

J

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AeroMet

Engineering, Inc.

Solutions for a Changing Environment

Certification of Visible Opacity Reading

J-3

Raina Vicere

qualified to conduct EPA Method 9 Tests for visible opacity in accordance with the methods established for such qualification in 40 CFR Part 60 Appendix A.

Certification Date: September 30, 2009 Expiration Date: March 30, 2010

AeroMet Instructor: Trey Beauchamp

Trey Beauchamp

AEROMET ENGINEERING INC. CERTIFIES THAT

Raina Vicere

has qualified as a CERTIFIED VISIBLE EMISSIONS READER

per Title 40 Part 60 Appendix A USEPA Method 9

Issued: 9/30/09 **Expires: 3/30/10**

Questions? Call 573.636.6393

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CORRESPONDENCE AND CLARIFICATIONS

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

JAN 16 2002

Yves Tondeur, Ph.D.
Alta Analytical Perspectives
2714 Exchange Drive
Wilmington, NC 28405

Dear Dr. Tondeur:

We have reviewed your request dated April 26, 2001, to use an alternative gas chromatography separation column for the EPA Method 23 (40 CFR 60, Appendix A). Method 23 currently specifies the use of a DB-5 column to separate the polychlorinated dibenzodioxins (PCDD's) and polychlorinated dibenzofurans (PCDF's) that exhibit the 2, 3, 7, 8 chlorine substitution pattern from the many other PCDD and PCDF isomers. In addition, a DB-225 column must be used to separate the 2,3,7,8 tetrachloro dibenzofuran (2, 3, 7, 8 TCDF) from its nearest isomers because the DB-5 cannot make this separation. Method 23 does allow the user to substitute another column provided that it can achieve adequate separation of 2, 3, 7, 8 tetrachloro dibenzodioxin (2, 3, 7, 8 TCDD) from the other TCDD isomers and adequate separation of 2, 3, 7, 8 TCDF from the other TCDF isomers.

You are proposing to use a DB-5S column as a substitute for the combination of the DB-5 and DB-225 columns. In addition, you propose to modify the calibration and quality assurance procedures of Method 23 to demonstrate that the DB-5S column is achieving the necessary separation. Method 23 specifies an initial calibration using a series of 5 standard solutions having a range of concentrations of the various 2, 3, 7, 8 substituted PCDD and PCDF isomers. In addition to the initial calibration, Method 23 specifies a continuing calibration check with a midrange standard solution of the same isomers. If the results from the midrange standard solution meet certain performance requirements described in Method 23, the analytical system is in control and the analyst may continue to analyze samples. If the results do not meet those requirements, then the tester must repeat the initial calibration and continuing calibration until they do. As part of your alternative request, you are proposing to perform the initial calibration with the specified standard solutions. You are also proposing to perform the continuing calibration with a midrange standard solution that additionally contains the nearest eluting compounds to the 2, 3, 7, 8 TCDF isomer. The system would have to meet the usual performance requirements.

Method 23 contains a performance specification to demonstrate that alternative column systems can achieve adequate separation. This specification uses peak resolution as a surrogate for actual separation. You are requesting the use of the new column and the modified calibration procedures as an alternative because the DB-5S column does not meet the peak resolution specification of Method 23. We have determined that you may use the proposed new column without requesting an alternative method because the quality assurance requirements you have added will demonstrate that the column is meeting the separation requirement, and therefore, meeting the peak resolution specification (which serves as a surrogate for adequate separation) is not necessary.

If you have any questions about my decision, please feel free to contact Mr. Gary McAlister at (919)-541-1062.

Sincerely

J. David Mobley Acting Director
Emissions, Monitoring, and Analysis Division

cc: Deputy Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning and Protection, Region II
Director, Air Protection Division, Region III
Director, Air, Pesticides, and Toxics Management Division, Region IV
Acting Director, Air and Radiation Division, Region V
Director, Multimedia Planning and Permitting Division, Region VI
Director, Air, RCRA, and Toxics Division, Region VII
Director, Air & Radiation Program, Region VIII
Director, Air Division, Region IX
Director, Office of Air, Region X
Director, Air Enforcement Division, OECA (2242A)
Director, Compliance Assurance and Media Programs Division, OECA (2223A)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

JUN 3 2004

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Mr. Herbert T. Dixon, Jr.
Vice President
TESTAR, Inc.
7424-108 ACC Boulevard
Raleigh, NC 27617

Dear Mr. Dixon:

This is in response to your letter dated May 6, 2004, that requested approval for a modification to EPA Method 23 (40 CFR 60, Appendix A). Method 23 is required for determining compliance with polychlorinated dibenzo-p-dioxin and polychlorinated dibenzofuran emission limits in 40 CFR 60.30b - 60.39b (Subpart Cb), 40 CFR 60.50a - 60.59a (Subpart Ea), 40 CFR 60.50b - 60.59b (Subpart Eb), and 40 CFR 63.1340 - 63.1359 (Subpart LLL). In your letter you also cited Subpart Ca. Subpart Ca was withdrawn in 1995 when Subpart Cb became a final rule.

Method 23 specifies that the tester use acetone, methylene chloride, and toluene to recover the sample from the sampling train glassware. You have requested that we approve an alternative test procedure to omit the methylene chloride rinse. You are proposing this modification on behalf of your clients who operate municipal waste combustors subject to either Subpart Cb, Ea or Eb or operate Portland cement plants subject to Subpart LLL at the locations shown in the enclosure.

In addition, you requested approval of the same modification to EPA Method 0023A (EPA Publication # SW-846) on behalf of your clients who operate hazardous waste combustors. Method 0023A is required for determining compliance with polychlorinated dibenzo-p-dioxin and polychlorinated dibenzofuran emission limits in 40 CFR 264.340 - 264.347 (Subpart O). EPA's Office of Solid Waste is responsible for the emission limits on hazardous waste combustors in 40 CFR 264.343 as well as Method 0023A, and we do not have the delegated authority to approve alternatives to their test procedures.

Based on data that the EPA collected on the relative efficiency of rinsing with methylene chloride and toluene as opposed to rinsing with toluene alone, we agree that it is acceptable to omit the methylene chloride rinse. Therefore, we are approving your request to omit the methylene chloride rinse from Method 23, when the method is used to determine compliance with either 40 CFR 60.30b - 60.39b (Subpart Cb), 40 CFR 60.50a - 60.59a (Subpart Ea), 40 CFR

60.50b - 60.59b (Subpart Eb), or 40 CFR 63.1340 - 63.1359 (Subpart LLL) at the individual facilities specified in the enclosure (Tables I, II, and III).

If you need further assistance, please contact Gary McAlister at (919) 541-1062.

Sincerely,

Robin R. Segall for CBO

Conniesue B. Oldham, Ph.D., Group Leader
Source Measurement Technology Group

Enclosure

cc: Jack Harvanek, Region I
Donald Wright, Region II
Chris Pilla, Region III
Dave McNeal, Region IV
Nabil Fayoumi, Region V
Charles Ritchey, Region VI
Don Bahnke, Region VII
Stanley Tong, Region IX
Paul Boys, Region X

ATTACHMENT 1
MUNICIPAL WASTE COMBUSTION FACILITIES

Facility Name	Facility Address
Wheelabrator Saugus, Inc.	Saugus, MA
Wheelabrator North Andover, Inc.	North Andover, MA
Wheelabrator Millbury, Inc.	Millbury, MA
Wheelabrator Concord, Inc.	Concord, NH
Wheelabrator Claremont, Inc.	Claremont, NH
Wheelabrator Lisbon, Inc.	Lisbon, CT
Wheelabrator Bridgeport, Inc.	Bridgeport, CT
Wheelabrator Hudson Falls, Inc.	Hudson Falls, NY
Wheelabrator Westchester, Inc.	Peekskill, NY
Wheelabrator Falls, Inc.	Morrisville PA
Wheelabrator Gloucester, Inc.	Westville, NJ
Wheelabrator Baltimore, Inc.	Baltimore, MD
Wheelabrator North Broward, Inc.	Pompano Beach, FL
Wheelabrator South Broward, Inc.	Ft. Lauderdale, FL
Wheelabrator Pinellas, Inc.	St. Petersburg, FL
Wheelabrator McKay Bay, Inc.	Tampa, FL
Wheelabrator Ridge, Inc.	Auburndale, FL
Wheelabrator Spokane, Inc.	Spokane, WA
Covanta Haverhill, Inc.	Haverhill, MA
Mid-Conn Resource Recovery Facility	Hartford, CT
Bristol Resource Recovery Facility	Bristol, CT
Wallingford Resource Recovery Facility	Wallingford, CT
Onondaga County Resource Recovery Facility	Syracuse, NY
Babylon Resource Recovery Facility	Babylon, NY
Huntington Resource Recovery Facility	Huntington, NY
Warren County Resource Recovery Facility	Oxford, NJ
Union County Resource Recovery Facility	Rahway, NJ
Lancaster County Resource Recovery Facility	Bainbridge, PA
Montgomery County Resource Recovery Facility	Dickerson, MD
Alexandria Waste to Energy Facility	Alexandria, VA
I-95 Energy / Resource Recovery Facility	Lorton, FL
Huntsville Resource Recovery Facility	Huntsville, AL
Lake County Resource Recovery Facility	Okahumpka, FL
Pasco County Resource Recovery Facility	Spring Hill, FL
Hillsborough County Resource Recovery Facility	Tampa, FL
Lee County Resource Recovery Facility	Ft. Meyers, FL
Michigan Waste Energy, Inc.	Detroit, MI
Kent County Resource Recovery Facility	Grand Rapids, MI
Indianapolis Resource Recovery Facility	Indianapolis, IN
Hennepin Resource Recovery Facility	Minneapolis, MN
Marion County Resource Recovery Facility	Salem, OR
Stanislaus Resource Recovery Facility	Crows Landing, CA
Honolulu Resource Recovery Venture	Honolulu, HI
York County Resource Recovery Facility	York, PA

ATTACHMENT 1
MUNICIPAL WASTE COMBUSTION FACILITIES
(continued)

Metro-Dade Resource Recovery Facility	Miami, FL
Panama City Resource Recovery Facility	Panama City, FL
Camden County Resource Recovery Facility	Camden, NJ
Montenay Charleston Resource Recovery, Inc.	Charleston, SC
Southeastern Connecticut Resource Recovery Facility	Preston, CT
Hempstead Resource Recovery Facility	Hempstead, NY
Mid-Maine Waste Action Corporation	Auburn, ME
Maine Energy Recovery Company	Biddeford, ME
SPSA	Portsmouth, VA

End of Appendix