CleanAir.

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

Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, FL 33314

REPORT ON COMPLIANCE TESTING

Performed for:

WHEELABRATOR SOUTH BROWARD, INC.
UNITS 1, 2 AND 3 SDA INLETS, FF OUTLETS, ASH HANDLING SYSTEM AND LIME SILO VENT
FT. LAUDERDALE, FL
VOLUME II OF II

CleanAir Project No: 10955-4
Revision 0: May 5, 2010

Wheelabrator South Broward Inc.
A Waste Management Company
4400 South State Road 7
Ft. Lauderdale, FL 33314
(954) 581-6606
(954) 581-6705 Fax

May 6, 2010 UPS#70072680000087713974

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 South 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 22-24 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) 581-6606.

Sincerely,

Ganeesh Siewrattan
Operations Manager

cc: USEPA, Region IV, Pesticides and Toxics Management Division, Air & EPCRA Enforcement Branch, Air Enforcement Section (with) UPS#70072680000087713981
FDEP, Tallahassee, Bureau of Air Regulation, New Source Review Section, (with) UPS#70072680000087713998
Broward County Department of Planning and Environmental Protection, Air Quality Division (with) UPS#70072680000087714001
Chuck Faller (with)
Ram Tewari – BCWRS (without)
Tim Porter (without)
Rob French – MPI (with) UPS#70072680000087714018

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	S. Broward	Date	3-23-10
Meter Operator	A. Obuchowski		
Probe Operator	A. Obuchowski		

Meter Box	66-22	Sample Box No.	M15
Meter Y_d	1.0005	Meter $\Delta H_@$	1.8097
K Factor	2.48	Pitot C_p	0.805
Leak Rate Before	0.003 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	10 (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]
-11.0	10		

Amb. Temp. (°F)	70	Bar. Press. 30.1	[in. Hg] [mbar]
Probe I.D. No.	67-E-4		
Liner Material	glass		

Filter No.	E14-16		
Thimble No.	—		
Nozzle Diameter	0.270	Nozzle I.D.	.270-1

Start Time:	7:43	Stop Time:	9:58

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] 381.105	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. 02 T_t (°F)	Notes 02	
5-1	5	0.40	0.99	383.94	295	253	251	59	62	61	2	0.20	10.1	
-2	10	0.45	1.1	386.87	296	252	250	55	65	61	2	0.20	10.4 -0.10	-0.10
-3	15	0.51	1.3	390.05	297	252	251	54	67	62	3	0.20	9.0	
-4	20	0.58	1.4	393.38	297	250	250	55	69	62	3	0.20	9.5	
-5	25	0.57	1.4	396.73	296	249	248	58	71	63	3	0.20	9.7	
4-1	30	0.45	1.1	399.74	295	248	250	61	68	64	2	0.20	10.5	
-2	35	0.43	1.1	402.64	296	248	249	61	67	63	2	0.20	9.4	
-3	40	0.40	0.99	405.51	297	251	251	62	68	63	2	0.20	9.0	
-4	45	0.54	1.3	408.67	296	251	250	63	68	64	3	0.20	9.4 -0.08	-0.08
-5	50	0.52	1.3	411.87	295	249	249	63	69	64	3	0.20	9.6	
3-1	55	0.40	0.99	414.75	295	250	251	64	68	65	2	0.20	9.3	
-2	60	0.39	0.97	417.55	295	251	250	60	70	66	2	0.20	9.5	
-3	65	0.41	1.0	420.41	295	250	250	54	71	66	2	0.20	10.1	
	Total	17.2330	29.630	76.5450	7380				1762	1661				
	Average	0.6893	1.1852		295.20					66.460				

Sum of square roots: 14.94 3645 883 824

Circle correct bracketed units on data sheet.

QA/QC ___ Date 3-23

CleanAir ENGINEERING

TEST LOCATION: FF outlet **TESTING** particulate/metals **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3-23-10
Meter Operator	A. Obuchowski
Probe Operator	A. Obuchowski

Cross-Section of Test Location

[N] [UP]

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

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 ☐

Duct Dimensions (in.)

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

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_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes
-4	70	0.51	1.3	423.60	296	251	250	53	73	67	3	0.20	9.0
-5	75	0.60	1.5	427.01	296	249	250	52	74	68	3	0.20	9.7 -0.13 -0.13
2-1	80	0.44	1.1	430.12	295	248	250	54	73	69	3	0.20	10.2
-2	85	0.41	1.0	433.00	295	250	250	52	75	70	3	0.20	11.2
-3	90	0.40	0.99	435.84	293	251	251	52	73	70	2	0.20	9.8
-4	95	0.52	1.3	439.02	295	252	250	54	75	71	3	0.20	9.3
-5	100	0.68	1.7	442.64	295	250	252	54	74	70	4	0.20	9.2
1-1	105	0.41	1.0	445.68	294	248	251	57	71	70	3	0.20	10.3
-2	110	0.44	1.1	448.64	295	250	250	57	73	71	3	0.20	10.2 -0.10 -0.10
-3	115	0.42	1.0	451.52	292	250	249	56	72	71	3	0.20	10.6
-4	120	0.45	1.1	454.52	294	251	251	57	72	70	3	0.20	10.1
-5	125	0.63	1.6	458.06	295	250	250	59	74	70	4	0.20	8.8
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC TB

Date 3/29

CleanAir ENGINEERING

TEST LOCATION: FF outlet particulate/metals TESTING METHOD: 5/29 PAGE 1 OF 2

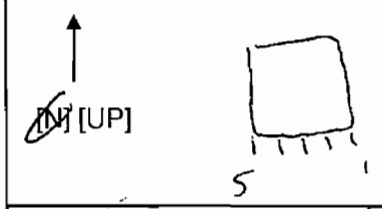
UNIT: 1 RUN: 2

FIELD DATA SHEET

Client	wheelabrator	Project No.	10955
Plant	S. Broward	Date	3-23-10
Meter Operator	A. Obuchowski		
Probe Operator	A. Obuchowski		

Meter Box	66-22	Sample Box No.	
Meter Y_d	1.0005	Meter $\Delta H_@$	1.8097
K Factor	2.48-2.45	Pitot C_p	0.805
Leak Rate Before	0.003 [cfm] [Lpm]	@ 15	(in. Hg)
Leak Rate After	0.001 [cfm] [Lpm]	@ 16	(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]
-0.8	10		

Amb. Temp. (°F)	70	Bar. Press. 30.10	[in Hg] [mbar]
Probe I.D. No.	67-E-4		
Liner Material	glass		

Filter No.	E114-17		
Thimble No.	—		
Nozzle Diameter	0.80	Nozzle I.D.	.270-1

Start Time:	10:31	Stop Time:	12:45

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] 45E.65	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. or T_t V_{mi} (°F)	Notes
						250	250						O2
1-1	5	0.42	1.0	461.52	294	259	253	64	72	72	3	0.20	10.3
-2	10	0.42	1.0	464.39	294	25E	251	63	73	71	3	0.20	9.9
-3	15	0.39	0.96	467.1E	294	R50	249	62	75	72	3	0.20	9.9
-4	20	0.43	1.1	470.15	293	24E	253	62	77	73	4	0.20	10.4
-5	25	0.5E	1.4	473.50	294	249	248	62	76	73	4	0.20	9.6
2-1	30	0.47	1.2	476.6E	294	24E	252	63	72	72	4	0.20	10.3
-2	35	0.41	1.0	479.57	294	251	251	63	73	72	4	0.20	10.4
-3	40	0.41	1.0	482.43	293	251	247	63	75	72	4	0.20	10.2
-4	45	0.56	1.4	485.79	294	251	24E	63	75	72	4	0.20	10.7
-5	50	0.70	1.7	489.4E	293	251	251	63	75	72	5	0.20	9.5
3-1	55	0.3E	0.93	492.34	294	247	250	64	74	73	3	0.20	10.7
-2	60	0.42	1.0	495.20	295	250	250	63	76	74	4	0.20	9.8
-3	65	0.46	1.2	498.31	295	251	250	62	75	74	4	0.20	10.6
	Total	*17.5081	30.270	77.70	7375				1E9E	1E94			
	Average	0.7003	1.210E		295.120				74.94E				

0.10

-0.12

*Sum of square roots.

Circle correct bracketed units on data sheet.

14.69 3821 QA/QC C Date 7-22 46E 942

CleanAir ENGINEERING

TEST LOCATION: FF outlet / particulate / metals **TESTING METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client: Whitaker	Project No.: 10955
Plant: S. Broward	Date: 3-23-10
Meter Operator: A. Obuchowski	
Probe Operator: A. Obuchowski	

Cross-Section of Test Location

[N] [UP]

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

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 ☐

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

Duct Dimensions (in.)

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

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	70	0.56	1.4	501.64	295	250	250	62	77	74	4	0.20	9.1
-5	75	0.60	1.5	505.10	296	251	249	60	77	74	5	0.20	9.4
4-1	80	0.45	1.1	508.17	293	247	251	62	76	75	4	0.20	9.9
-2	85	0.40	0.98	511.02	298	249	252	62	78	75	4	0.20	9.9
-3	90	0.47	1.2	514.14	296	252	250	62	76	75	4	0.20	9.4
-4	95	0.54	1.3	517.36	296	250	249	63	78	76	4	0.20	10.3
-5	100	0.65	1.6	520.69	299	251	250	63	79	76	5	0.20	10.0
5-1	105	0.46	1.1	523.95	296	248	249	63	77	76	4	0.20	10.6
-2	110	0.48	1.2	527.02	298	250	250	63	77	76	4	0.20	10.2
-3	115	0.53	1.3	530.22	298	252	251	63	79	77	4	0.20	9.3
-4	120	0.59	1.4	533.53	298	249	249	62	79	77	5	0.20	8.8
-5	125	0.55	1.3	536.78	294	251	252	63	77	76	5	0.20	9.8
	Total	*											
	Average												

0.11

0.10

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC: JB

Date: 3/28

CleanAir ENGINEERING

TEST LOCATION: FF outlet **TESTING** particulate/metals **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3-23-10
Meter Operator A. Obuchowski	
Probe Operator A. Obuchowski	

Cross-Section of Test Location

Amb. Temp. (°F) 70	Bar. Press. 30.1 [in. Hg] [mbar]
Probe I.D. No.	67-E-4
Liner Material	glass

Meter Box 66-22	Sample Box No. M15		
Meter Y_d 1.0005	Meter $\Delta H_@$ 1.6097	Filter No.	514-18
K Factor 2.45	Pitot C_p 0.E05	Thimble No.	—
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)		Nozzle Diameter 0.270	Nozzle I.D. .270-1
Leak Rate After 0.003 [cfm] [Lpm] @ 15 (in. Hg)			
Pitot Leak Check Before: ☒ After: Good ☒ Bad ☐			

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]
-10.9	16		

Start Time: 13:32 Stop Time: 15:46

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. 538.17 [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. O_2 T_t $V_{m,i}$ (°F)	Notes O_2
						250	250						
5-1	5	0.40	0.9E	541.01	296	252	260	64	76	76	3	0.20	10.7
-2	10	0.40	0.9E	543.E5	296	251	261	5E	76	76	3	0.20	8.E
-3	15	0.4E	1.2	546.92	296	250	253	56	77	75	3	0.20	10.7
-4	20	0.5E	1.4	550.26	296	251	250	57	76	74	3	0.20	9.9
-5	25	0.54	1.3	553.44	296	249	249	57	78	75	3	0.20	10.3
4-1	30	0.45	1.1	556.47	295	249	250	56	76	74	3	0.20	10.6
-2	35	0.45	1.1	559.40	296	251	250	54	79	75	3	0.20	11.2
-3	40	0.4E	1.2	562.51	298	251	250	55	79	75	3	0.20	10.4
-4	45	0.59	1.4	565.E5	298	250	252	56	7E	75	4	0.20	9.6
-5	50	0.65	1.6	569.40	297	250	251	57	78	75	4	0.20	10.0
3-1	55	0.47	1.2	572.65	297	249	249	60	77	75	4	0.20	9.9
-2	60	0.43	1.1	575.64	297	249	250	60	80	75	3	0.20	10.4
-3	65	0.56	1.2	578.72	298	249	250	60	80	76	3	0.20	10.3
	Total	17.6902	30.70	7E.1E0	7406				1954	1EE2			
	Average	0.7076	1.2280		296.240				76.720				

0.10

0.12

Sum of square roots. 15.76

Circle correct bracketed units on data sheet. 3E56 QA/QC 0 Date 3-27

1010 976

CleanAir ENGINEERING

TEST LOCATION: FF outlet **particulate/metals TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3-23-10
Meter Operator A. Obuchowski	
Probe Operator A. Obuchowski	

Cross-Section of Test Location

[N] [UP]

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

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 ☐

Duct Dimensions (in.)

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

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	70	0.59	1.4	562.02	298	251	251	60	80	75	4	0.20	9.2
-5	75	0.63	1.5	565.48	297	252	248	61	80	76	4	0.20	9.6
2-1	80	0.46	1.1	588.59	296	247	250	62	78	75	3	0.20	10.5
-2	85	0.40	0.98	591.44	296	251	251	62	79	76	3	0.20	10.3
-3	90	0.40	0.98	594.36	294	250	250	62	79	76	3	0.20	10.5
-4	95	0.55	1.3	597.52	296	251	251	62	79	76	4	0.20	11.1
-5	100	0.70	1.7	601.21	296	251	250	61	78	75	5	0.20	9.6
1-1	105	0.50	1.2	604.46	296	247	247	62	76	75	4	0.20	10.0
-2	110	0.43	1.1	607.39	294	252	250	62	78	75	3	0.20	9.4
-3	115	0.36	0.88	610.14	295	250	250	63	78	75	3	0.20	10.1
-4	120	0.51	1.2	613.27	295	249	249	64	79	76	4	0.20	9.8
-5	125	0.67	1.6	616.470	297	250	250	64	80	76	5	0.20	9.5
	Total	*											
	Average												

-0.15

-0.15

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/28

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. M15
Date 3/23/10	Lot No.		pH
Analyst B. Wilbe	Filter No. E-114-16		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	722.2	462.0	260.2	
Impinger 2	100 ml 5%HNO3/10%H2O2	665.9	538.6	127.3	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	587.5	547.6	39.9	Date 3/23
Impinger 4	Empty	449.5	440.0	9.5	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	565.9	559.6	6.3	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	542.3	540.3	2.0	445.2
Impinger 7	Silica Gel	720.2	702.2	18.0	463.2

Run No. 2	Filter Type Quartz		Sample Box No. M10
Date 3/23/10	Lot No.		pH
Analyst B. Wilbe	Filter No. E-114-17		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	729.4	440.0	289.4	
Impinger 2	100 ml 5%HNO3/10%H2O2	689.3	556.3	133.0	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	565.7	535.7	30.0	Date 3/23
Impinger 4	Empty	451.1	446.9	4.2	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	543.3	541.8	1.5	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	545.3	545.8	-0.5	497.6
Impinger 7	Silica Gel	764.7	749.6	15.1	472.7

Run No. 3	Filter Type Quartz		Sample Box No. MK
Date 3/23/10	Lot No.		pH
Analyst B. Wilbe	Filter No. E-114-18		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	749.5	461.4	288.1	
Impinger 2	100 ml 5%HNO3/10%H2O2	661.4	538.1	123.3	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	575.8	552.6	23.2	Date 3/23
Impinger 4	Empty	442.8	439.9	2.9	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	561.2	559.2	2.0	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	540.1	538.8	1.3	440.8
Impinger 7	Silica Gel	732.4	714.5	17.9	458.7

CleanAir ENGINEERING

QA/QC SB
Date 3/23

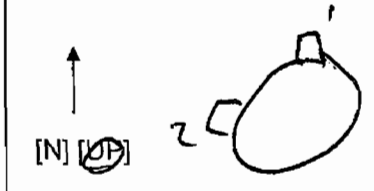
TEST LOCATION: Inlet Metals TESTING METHOD: 29 PAGE 1 OF 2

UNIT: 1 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10755
Plant South Brownfield	Date 3/23/10
Meter Operator D. Luckhard	
Probe Operator P. Dihn	

Cross-Section of Test Location



Amb. Temp. (°F) 65	Bar. Press. 30.1 (in. Hg) [mbar]
Probe I.D. No. 67-10-3	
Liner Material Glass	

Meter Box 61-8	Sample Box No. M7	
Meter Y_d 0.9916	Meter $\Delta H_@$ 1.7580	
K Factor 21.5	Pitot C_p 0.825	
Leak Rate Before 0.004 [cfm] [Lpm]	@ 15 (in. Hg)	
Leak Rate After 0.007 [cfm] [Lpm]	@ 12 (in. Hg)	
Pitot Leak Check Before: [X]	After: Good [X] Bad [ ]	

Filter No.	NA	—	—
Thimble No.	NA	—	—
Nozzle Diameter 0.270	Nozzle I.D.	270-2	

Duct Dimensions (in.) 105

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow	First point all the way
-1.4	14	(In) [Out] of page	(In) [Out]

Start Time: 743	Stop Time: 958

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. 321.470 [ft^3] [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_1 DL (°F) 0	Notes
1	5	0.50	1.1	324.38	506	250	241	54	69	68	3.0	9.0	
2	10	0.53	1.1	327.29	508	252	257	48	69	68	3.5	8.9	
3	15	0.50	1.1	330.18	509	254	259	46	72	69	4.0	7.9	
4	20	0.48	1.0	333.02	507	252	254	47	74	70	4.0	7.9	
5	25	0.45	0.97	335.81	507	251	250	48	76	71	4.0	8.3	
6	30	0.46	0.99	338.63	506	251	249	48	77	72	5.0	7.9	
7	35	0.47	1.0	341.46	499	250	248	49	78	74	5.0	7.6	
8	40	0.46	0.99	344.31	493	249	250	49	79	75	5.0	7.2	
9	45	0.46	0.99	347.16	491	248	249	50	81	75	5.5	7.2	
10	50	0.36	0.77	349.67	492	248	249	50	81	76	5.0	8.3	
11	55	0.38	0.82	352.22	497	249	249	51	81	77	5.0	7.9	Leak check 0.008 at 10"
12	60	0.38	0.82	354.800	493	249	250	51	84	78	5.0	8.2	
			11.65		6008				921	873			
	Total	16.9362	26.22	70.497	11984				1976	1877			
	Average	0.7057	.0925	70.145	499.3333				80.2708				

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

QA/QC SB

Date 3/23

CleanAir ENGINEERING

TEST LOCATION: Inlet Metals TESTING METHOD: 29 PAGE 2 OF 2

UNIT: 1 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Broward	Date 3/23/10
Meter Operator D. Luckhard	
Probe Operator P. Bishop	

Cross-Section of Test Location

[N] [UP]

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

Meter Box	Sample Box No.
Meter Y_d	Meter $\Delta H_@$
K Factor 2.22	Pitot C_p
Leak Rate Before [cfm] [Lpm] @ (in. Hg)	
Leak Rate After [cfm] [Lpm] @ (in. Hg)	
Pitot Leak Check Before: ☐	After: Good ☐ Bad ☐

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

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)	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
				355.150	485	250	256						
-1	65	0.84	1.8	358.86	~~484~~	251	242	64	82	81	9.0	9.0	
2	70	0.61	1.3	362.04	~~485~~	251	254	52	83	81	8.0	8.5	
3	75	0.52	1.2	365.10	483	253	256	52	84	81	8.0	9.9	
4	80	0.41	0.91	367.82	486	251	253	54	86	81	7.5	7.9	
5	85	0.42	0.93	370.57	487	250	248	56	87	82	8.0	7.6	
6	90	0.42	0.93	373.31	493	252	249	57	88	83	8.0	7.8	
7	95	0.55	1.2	376.35	503	248	249	57	90	84	9.0	7.9	
8	100	0.60	1.3	379.51	505	249	250	57	91	85	9.5	7.9	
9	105	0.61	1.4	382.81	509	249	251	58	90	86	10.0	8.9	
10	110	0.55	1.2	385.90	511	250	249	59	91	86	10.0	8.7	
11	115	0.54	1.2	388.95	514	250	250	61	92	87	10.0	7.9	
12	120	0.56	1.2	391.975	515	249	249	62	91	87	10.0	7.7	
			14.57		5976				1055	1064			
	Total	*	26.22		11984								
	Average		1.0925		499.3333								

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/25

CleanAir ENGINEERING

TEST LOCATION: SDA Inlet Metals **TESTING** **METHOD:** 29 **PAGE** 1 **OF** 2

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client	[illegible]	Project No.	10918
Plant	S. Broward	Date	3/23/10
Meter Operator	P. Bilney		
Probe Operator	D. Luckhardt		
Meter Box	61-8	Sample Box No.	M1
Meter Y_d	0.9916	Meter $\Delta H_@$	1.7280
K Factor	2.22	Pitot C_p	0.825
Leak Rate Before	0.003 [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.)	106.0		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.4	14/20	In	In

Amb. Temp. (°F) 80	Bar. Press. 30.10 [in. Hg] [mbar]		
Probe I.D. No.	67-10-3		
Liner Material	Glass		
Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	.220	Nozzle I.D.	220-2
Start Time:	10:31	Stop Time:	12:45

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] 392.720	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 O_2
1-1	5	0.41	0.90	395.39	481	255	243	65	87	86	3.0	N/A	8.0
2	10	0.37	0.81	397.91	481	254	250	64	87	87	3.0		8.2
3	15	0.41	0.90	400.55	482	253	260	60	89	87	3.5		8.2
4	20	0.37	0.81	403.10	485	251	255	57	89	87	3.5		8.6
5	25	0.38	0.84	405.68	490	250	247	56	90	87	3.5		7.5
6	30	0.55	1.2	408.75	505	250	249	56	91	88	5.5		7.2
7	35	0.45	0.99	411.59	507	251	251	57	92	88	5.0		7.7
8	40	0.62	1.4	414.91	516	249	252	57	93	89	6.5		8.1
9	45	0.58	1.3	418.13	518	250	250	57	92	89	6.5		8.2
10	50	0.67	1.5	421.57	517	250	249	59	92	88	7.5		8.0
11	55	0.61	1.3	424.76	518	250	252	62	91	88	7.0		7.9
12	60	0.61	1.3	427.950	519	250	251	63	92	88	7.0		8.1
													Leak V ok 420.100 / 0.450
	Total			35.230									
	Average	0.6870	1.0919		505.0833				89.0208				

Sum of square roots 13.25

Circle correct bracketed units on data sheet. 6019 2237

QA/QC PB

Date 3/23/10

FDS006-General.xls, Feb 2002

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TEST LOCATION: SDA Inlet Metals **TESTING METHOD:** 29 **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator		Project No. 10955	
Plant S. Broward		Date 3/23/10	
Meter Operator P. Bikun			
Probe Operator D. Archibald			
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)	Notes O_2
2-1	65	0.50	1.1	431.00	576	249	243	64	88	88	7.0	N/A	8.4
2	70	0.49	1.1	433.90	575	254	248	64	91	88	7.0		8.7
3	75	0.52	1.1	436.77	574	257	254	56	90	88	7.5		8.4
4	80	0.49	1.1	439.64	575	250	256	54	94	89	8.0		8.3
5	85	0.45	0.99	442.44	570	247	249	54	90	88	8.0		8.6
6	90	0.47	1.0	445.27	571	249	246	53	92	89	8.0		7.5
7	95	0.51	1.1	448.12	502	249	248	54	92	89	8.5		8.3
8	100	0.56	1.2	451.21	501	249	250	58	90	89	9.5		8.8
9	105	0.56	1.2	454.27	503	251	252	59	92	89	9.5		8.3
10	110	0.33	0.73	456.68	506	249	250	59	90	89	7.5		8.5
11	115	0.28	0.62	458.86	505	245	246	60	85	87	7.0		7.3
12	120	~~0.4~~ PB 0.30	0.66	461.55	505	250	247	60	86	86	7.0		8.6
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/23/10

CleanAir ENGINEERING

FDS005-General.xls, Feb 2002

TEST LOCATION: SRP Tank Modules TESTING METHOD: 29 PAGE 1 OF 2

UNIT: 1 RUN: 3

FIELD DATA SHEET

Client	Clearwater	Project No.	12957
Plant	S. Broward	Date	3/23/10
Meter Operator	Blackwell		
Probe Operator	R. Bitner		

Cross-Section of Test Location

Amb. Temp. (°F)	83	Bar. Press.	30.10 (in. Hg) [mbar]
Probe I.D. No.	67-10-3		
Liner Material	Glass		

Meter Box	61-F	Sample Box No.	M7
Meter Y_d	0.9916	Meter $\Delta H_@$	1.7180
K Factor	2.2	Pitot C_p	Default
Leak Rate Before	0.004 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.003 [cfm] [Lpm]	@	12 (in. Hg)
Pitot Leak Check Before: [X]	After: Good [X]	Bad [ ]	

Filter No.	N 104		
Thimble No.	N 104		
Nozzle Diameter	0.270	Nozzle I.D.	270-2

Duct Dimensions (in.)			
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.5	14/20	6	[In]

Start Time:	1332	Stop Time:	1546

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. 461.981 [m^3] [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 O_2
2-1	5	0.55	1.2	465.01	516	250	250	63	87	88	4.0	N/A	9.1
2	10	0.52	1.1	467.92	514	251	251	56	89	88	4.0		8.4
3	15	0.47	1.0	470.74	515	271	252	53	92	89	4.0		9.0
4	20	0.43	0.95	473.48	512	250	250	53	94	90	4.0		9.2
5	25	0.48	1.1	476.35	515	248	249	55	96	92	5.0		8.5
6	30	0.36	0.79	878.85	511	249	250	57	96	93	4.0		8.3
7	35	0.39	0.86	481.46	504	248	249	58	96	94	4.5		9.7
8	40	0.43	0.95	484.20	503	249	249	58	95	95	5.0		8.9
9	45	0.44	0.97	486.97	504	249	250	59	96	95	5.0		9.0
10	50	0.41	0.90	489.63	502	249	250	59	97	96	5.0		8.6
11	55	0.42	0.92	492.34	503	249	250	61	96	97	5.0		8.5
12	60	0.41	0.90	495.010	508	250	250	62	98	98	5.0		8.0
			11.64	33.025	6107				1132	1115			
	Total	*16.5456	25.30	68.8600	12170				2231	2206			
	Average	0.6894	.0542		507.0833				92.11375				

*Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PL

Date 3/23/10

CleanAir ENGINEERING

TEST LOCATION: SDA Inlet Metals **TESTING** **METHOD:** 29 **PAGE** 2 **OF** 2

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Brainard	Date 3/23/10
Meter Operator D. Luckhard	
Probe Operator P. Bihun	

Cross-Section of Test Location

[N] [UP]

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

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 ☐

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

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] 495.220	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 O_2
1-1	05	0.71	1.6	498.75	493	248	247	64	95	98	8.5	NA	8.6
2	70	0.41	0.96	501.47	487	251	250	61	94	97	6.0		8.3
3	75	0.40	0.88	504.13	488	253	251	57	93	95	6.0		8.4
4	80	0.38	0.84	506.73	491	254	250	56	93	93	6.0		8.3
5	85	0.38	0.84	509.33	492	249	250	56	92	92	6.0		8.7
6	90	0.47	1.0	512.18	507	250	251	56	91	90	7.0		10.1
7	95	0.62	1.4	515.47	511	251	250	55	91	89	9.0		8.3
8	100	0.59	1.3	518.63	519	250	249	54	91	89	9.0		9.0
9	105	0.57	1.3	521.82	519	252	251	58	89	87	9.0		8.3
10	110	0.54	1.2	524.94	517	251	250	56	90	87	9.0		8.7
11	115	0.56	1.2	527.98	520	249	250	56	90	87	9.0		8.3
12	120	0.56	1.2	531.055	519	250	250	57	90	87	9.0		8.3
			13.66	35.835	6063				1099	1091			
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC DL

Date 3/23/10

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 1 SDA Inlet
Plant South Broward	Job No. 10955	Method 29

Run No. 1	Filter Type Quartz		Sample Box No. M7
Date 3/23/10	Lot No.		pH
Analyst R.Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	834.8	443.8	291.0	
Impinger 2	100 ml 5%HNO3/10%H2O2	572.6	556.8	15.8	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	588.8	585.1	3.7	Date 3/23
Impinger 4	Empty	442.8	442.0	0.8	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	536.6	537.4	-0.8	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	543.0	543.8	-0.8	309.7
Impinger 7	Silica Gel	732.9	718.5	14.4	324.1

Run No. 2	Filter Type Quartz		Sample Box No. M1
Date 3/23/10	Lot No.		pH
Analyst R.Vicere	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	831.0	444.5	286.5	
Impinger 2	100 ml 5%HNO3/10%H2O2	558.5	544.0	14.5	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	545.5	542.9	2.6	Date 3/23
Impinger 4	Empty	444.2	443.9	0.3	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	540.5	540.9	-0.4	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	549.0	549.0	0.0	303.5
Impinger 7	Silica Gel	778.1	763.3	14.8	318.3

Run No. 3	Filter Type Quartz		Sample Box No. M7
Date	Lot No.		pH
Analyst	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	813.3	443.6	269.7	
Impinger 2	100 ml 5%HNO3/10%H2O2	570.3	555.8	14.5	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	591.0	585.0	6.0	Date 3/23
Impinger 4	Empty	442.4	441.8	0.6	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	536.9	537.0	-0.1	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	547.8	546.2	1.6	292.3
Impinger 7	Silica Gel	756.1	739.5	16.6	308.9

CleanAir ENGINEERING

QA/QC SB
Date 3/23

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

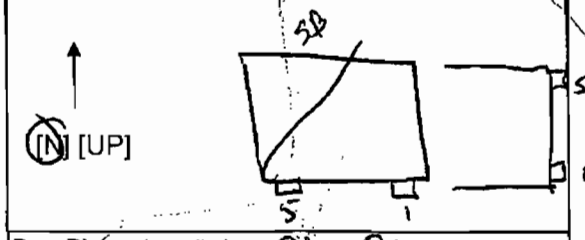
UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3.22.10
Meter Operator A. Karony	
Probe Operator B. Arnold	

Meter Box 66-22	Sample Box No. B6
Meter Y_d ~~1.005~~ 1.0005 AK	Meter $\Delta H_@$ 1.8097
K Factor 2.45	Pitot C_p 0.812
Leak Rate Before ~~0.002~~ 0.000 AK [cfm] [Lpm]	@ 16 (in. Hg)
Leak Rate After 0.002 [cfm] [Lpm]	@ 7 (in. Hg)
Pitot Leak Check Before: ~~X~~	After: Good ☒ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.) 96 x 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow	First point all the way
~~-10.6~~ -10.2 AK	10	(In) [Out] of page	(In) [Out]

Amb. Temp. (°F) 63	Bar. Press. 30.1 (in. Hg) [mbar]
Probe I.D. No. 67-8-14	
Liner Material glass	

Filter No.		
Thimble No.		
Nozzle Diameter 0.268	Nozzle I.D.	0.298-1

Start Time: 13:19	Stop Time: 14:34

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] 265.135	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.~~ IC Bag (°F) (lpm)	Notes	O2 L/min
1-1	2:30	0.42	1.029	266.62	295	255	253	50	64	64	3	6.1	6 2	0.30
1-2	5	0.44	1.1	268.12	295	254	252	48	65	64	3	6.4		0.30
1-3	7:30	0.48	1.2	269.59	295	253	252	46	68	65	3.5	6.4		↓
1-4	10	0.56	1.4	271.10	295	252	250	45	68	69	3.5	6.3	~~272.610~~ 272.685	
1-5	12:30	0.51	1.2	272.610	296	251	250	45	70	65	3.5	6.5	.075	
2-1	15	0.45	1.1		296	247	251	49	68	65	3.5	6.5	missed @ 15	
2-2	17:30	0.42	1.0	275.68	295	247	248	47	71	66	3.5	7.0		
2-3	20	0.46	1.3	277.17	294	251	251	47	71	66	3.5	6.9		
2-4	22:30	0.52	1.3	278.77	296	252	250	48	72	66	3.5	6.5		
2-5	25	0.54	1.3	299.82	295	252	251	50	73	66	3.5	7.2	280.580 .776	
~~3-1~~ 2-6 AK	27:30	0.48	1.2	282.05	295	247	250	55	71	67	3.5	8.1		
3-2	30	0.43	1.1	283.61	295	248	249	52	72	67	3.5	7.2		
3-3	32:30	0.43	1.1	285.05	294	250	249	52	71	67	3.5	7.3		
~~3-4~~	Total	~~7.105~~ 16	Σ 8.60 AK	36.710	7328	~~7328~~	5756	1247	1720	1554				
~~3-5~~	Average	(.682)	(1.1440)		(293.120)	293.	230	50	65.5	58				

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

65.480 AK 69.600

5757 AK 250 AK

QA/QC AK

Date 3/22/10

CleanAir ENGINEERING

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

UNIT: 1 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator		Project No. 10955	
Plant S. Broward		Date 3/22/10	
Meter Operator A. Karony			
Probe Operator B. Arnold			
Meter Box 66-22		Sample Box No. B6	
Meter Y_d 1.0005		Meter $\Delta H_@$ 1.8097	
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	First point all the way
~~-10.6~~ -10.2 AK	10	(In) [Out] of page	(In) [Out]

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

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

Start Time:	Stop Time:

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 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. T_t (°F)	Notes
~~4-1~~ 3-5	35	0.50	1.2	286.56	295	251	249	54	73	67	3.5	7.2	
~~4-2~~ 3-5	37:30	0.56	1.3	288.175	294	251	251	54	74	68	3.5	7.0	288.270 0.095
~~4-3~~ 4-1	40	0.50	1.2	289.98	294	247	249	57	72	68	4.0	8.4	
~~4-4~~ 4-2	42:30	0.36	0.8	291.19	294	249	251	56	74	69	3.0	6.9	
~~4-5~~ 4-3	45	0.38	0.9	292.42	292	251	251	56	74	69	3.0	7.2	
~~5-1~~ 4-4	47:30	0.49	1.2	294.02	294	252	251	55	74	69	4.0	6.5	
~~5-2~~ 4-5	50	0.58	1.4	295.640	292	251	251	55	76	70	4.0	7.0	~~298~~ 295.720 0.08
~~5-3~~ 5-1	52:30	0.42	1.0	297.16	291	247	248	57	74	70	3.5	7.6	
~~5-4~~ 5-2	55	0.44	1.1	298.65	294	248	251	57	76	70	4.0	6.7	
~~5-5~~ 5-3	57:30	0.37	0.9	300.01	291	251	250	56	74	70	4.0	7.3	
5-4	60	0.40	1.0	301.42	279	—	—	56	75	71	3.5	7.5	
5-5	62:30	0.54	1.3	302.865	282				76	71	3.5		
	Total	*	28.6			5757		1247					
	Average		1.1440			250		~~4~~ AK 60					

Right margin: 0.2 l/min 0.30 ↓

* Sum of squares roots.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/22/10

CleanAir ENGINEERING

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

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3/22/10
Meter Operator	A. Karony		
Probe Operator	B. ~~Ed~~ Arnold		

Meter Box	66-22	Sample Box No.	36
Meter Y_d	1.0005	Meter $\Delta H_@$	1.8097
K Factor	2.45	Pitot C_p	0.812
Leak Rate Before	0.002 [cfm] (circled) [Lpm]	@ 14	(in. Hg)
Leak Rate After	0.002 [cfm] (circled) [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]
~~-10.6~~ -10.2 AK	10	In (circled)	In (circled)

Amb. Temp. (°F) 63	Bar. Press. 30.1	[in. Hg] (circled) [mbar]	
Probe I.D. No.	67-8-H		
Liner Material	Glass		

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

Start Time:	15:07	Stop Time:	16:21

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] 303.505	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. T_t~~ FG bag (LPM)	Notes O_2	
AK 5 ~~1~~-1	2:30	0.72	1.8	305.48	292	255	257	68	71	71	6.0	—	8.1	
1-2	5	0.48	1.1	307.06	293	252	255	68	74	71	~~7.4~~	0.4	7.7	
1-3	7:30	0.38	1.0	308.47	290	~~252~~	250	65	74	71	4	0.9	7.8	
1-4	10	0.38	1.0	309.775	291	252	249	62	74	71	4	0.4	7.4	309.915 0.14
1-5	12:30	0.50	1.2	311.61	294	249	250	59	74	71	4.5	↓	7.3	
AK 4 ~~2~~-1	15	0.38	1.0	AK ~~311.61~~ 312.93	293	251	252	61	86	71	4.0		6.8	
~~2~~-2	17:30	0.34	AK ~~1.0~~ 1.0	AK ~~312.93~~ 314.34	293	251	251	61	74	71	4.0		6.8	
~~2~~-3	20	0.34	~~1.0~~ 0.83	315.78	292	251	250	63	76	72	4.0		7.1	
~~2~~-4	22:30	0.43	1.0	317.31	292	251	249	63	74	71	4.0		6.9	
~~2~~-5	25	0.63	1.5	318.670	293	251	250	56	74	71	5.0		7.5	318.76 0.09
3-1	27:30	0.54	1.3	320.49	289	249	249	53	72	71	5.0		8.9	
3-2	30	0.41	1.0	321.83	295	248	250	49	74	71	4.0		7.3	
3-3	32:30	0.4 AK	0.98	323.37	295	250	250	49	71	71	4.0	▽	7.4	
	Total	* ~~0.5717~~ AK	~~9.~~ 27.5600 SB	38.000	~~29~~ 3337	~~251~~	~~250~~	~~48~~	1880	1789				
	Average	0.6822	1.1024		293.4800				73.3800					

* Sum of square roots 1.154

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/22

CleanAir ENGINEERING

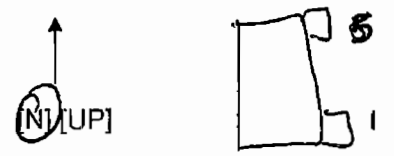
TEST LOCATION: FF Outlet Fluoride TESTING METHOD: 13B PAGE 2 OF 2

UNIT: 1 RUN: 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10958
Plant	Date 3/22/10
Meter Operator A. Karony	
Probe Operator B. Arnold	

Cross-Section of Test Location



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

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 ☐

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.2	10	(In)	(In)

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
						250	250						
3-4	35	0.51	1.2	324.98	295	251	250	48	74	71	4.5	.4	7.4
3-5	37:30	0.64	1.6	326.63	295	251	249	48	74	71	6.0		7.2
4-1	40	0.45	1.1	328.22	292	249	249	51	74	71	4.0		7.6
4-2	42:30	0.39	0.96	329.60	295	248	249	49	76	72	4.0		7.3
4-3	45	0.45	1.1	331.06	295	250	250	49	76	72	4.0		6.7
4-4	47:30	0.54	1.3	332.78	295	251	250	48	76	72	5.0		6.9
4-5	50	0.57	1.3	334.39	295	251	251	48	77	72	5.0		6.8
5-1	52:30	0.37	0.91	335.89	294	248	250	49	76	72	4.0		7.3
5-2	55	0.40	0.98	337.23	295	248	250	49	76	73	4.0		7.1
5-3	57:30	0.49	1.2	338.87	295	250	251	49	76	73	4.5		7.1
5-4	60	0.48	1.2	340.89	295	250	251	49	77	73	4.5		7.2
5-5	62:30	0.54	1.3	341.995	294	—	—	48	77	73	5.0		7.0
						—	—						
	Total												
	Average												

316.79
0.16

334.49
0.10

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SG
Date 3/22

CleanAir ENGINEERING

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

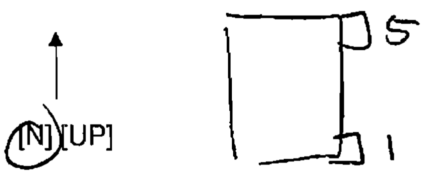
UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client: Wheelabrator	Project No. 10955
Plant: S. Broward	Date: 3/22/10
Meter Operator: A. Karony	
Probe Operator: B. Arnold	

Meter Box: 66-22	Sample Box No. B5
Meter Y_d: 1.0005	Meter $\Delta H_@$: 1.8097
K Factor: 2.45	Pitot C_p: 0.812
Leak Rate Before: 0.003 (cfm) [Lpm] @ 15 (in. Hg)	
Leak Rate After: 0.001 (cfm) [Lpm] @ 7 (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]
-10.2	10		

Amb. Temp. (°F) 63	Bar. Press. 30.10	(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: 16:30	Stop Time: 17:41	

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] 342.145	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. ~~TS VAC (CDM)~~	Notes O_2	
1-1	2:30	0.38	0.93	343.63	291	255	255	~~70~~ 68 AK	74	73	3.5	~~47.3~~ 0.4 AK	7.3	
2	5	0.40	0.98	345.03	294	260	262	~~79~~ 67	75	74	3.5	0.4	7.6	
3	7:30	0.49	1.2	346.69	294	260	260	64	75	74	4.0	↓	7.5	
4	10	0.52	1.3	348.15	295	258	254	57	77	74	4.0		6.7	
5	12:30	0.48	1.2	349.72	294	253	253	53	77	74	4.0		6.8	349.81
2-1	15	0.44	1.1	351.46	293	247	251	52	75	74	3.5		8.6	0.09
2	17:30	0.34	0.90	352.87	294	249	251	49	77	73	3.5		7.1	
3	20	0.43	1.0	354.10	294	251	252	49	77	74	3.5		7.3	
4	22:30	0.52	1.3	355.65	294	252	251	49	77	74	4.0		7.0	
5	25	0.50	1.2	357.21	294	252	252	50	80	75	4.0		6.7	357.39
3-1	27:30	0.36	0.88	358.85	291	247	248	51	78	74	3.0		8.3	0.18
2	30	0.32	0.78	259.93	294	248	250	49	77	74	2.5		7.4	
3	32:30	0.36	0.88	361.29	294	250	250	48	77	74	3.0		7.4	
~~4~~	Total 58	~~29.2654~~	1.2000	(36.495)	3508.0000				1925.00	1853.00				
	Average 58	~~1.1706~~	~~0.0480~~		~~146.5200~~				(78.5600)			↓		

Sum of square roots (0.6568) 1.0652 AK

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

(292.9600) QA/QC AK

Date 3/22/10

FDS005-General.xls, Feb 2002

CleanAir ENGINEERING

G-21

TEST LOCATION: FF Outlet TESTING METHOD: 19B PAGE 2 OF 2

UNIT: 1 RUN: 3

FIELD DATA SHEET

Client	Project No.
Plant	Date
Meter Operator	
Probe Operator	

Cross-Section of Test Location

[N] [UP]

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

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 ☐

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

Duct Dimensions (in.)

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

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. IGS (°F) (LPm)	Notes O_2	
3-4	35	0.51	1.3 ~~1.25~~ AK	362.99	294	251	251	47	78	75	4.0	0.4	7.1	
5	37:30	0.55	1.3	364.58	295	251	250	47	79	75	4.5		7.5	368.69
4-1	40	0.47	1.2	366.12	294	247	248	49	77	74	4.0		8.6	0.11
2	42:30	0.36	0.88	368.33	293	249	250	47	78	75	4.0		7.0	
3	45	0.36	0.88	368.81	292	251	251	47	79	74	3.5		7.2	
4	47:30	0.45	1.1	370.30	293	252	250	47	78	75	4.0		7.0	
5	50	0.54	1.3	371.90	292	251	250	46	77	74	4.0		6.7	372.01
5-1	52:30	0.48	1.2	373.53	289	249	249	49	76	74	4.0		8.3	0.11
2	55	0.40	0.98	374.95	294	248	250	49	77	74	3.5		6.6	
3	57:30	0.32	0.78	376.23	289	251	251	51	~~87~~	74	3.0		6.1	
4	60	0.35	0.86	377.66	291	251	251	52	77	74	3.5		6.8	
5	62:30	0.5	1.2	379.130	292	←	—	50	76	74	4.0	▽	6.7	
									1925.00					
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/22/10

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Teflon glass mat		Sample Box No. B6
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	686.0	548.0	138.0
Impinger 2	100 mL DI H2O	617.4	563.1	54.3
Impinger 3	Empty	471.2	459.3	11.9
Impinger 4	Silica Gel	812.0	797.3	14.7

QA/QC BW
Date 3/22

Total Weight (gm)
204.2
218.9

Run No. 2	Filter Type Teflon glass mat		Sample Box No. B7
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	684.9	543.1	141.8
Impinger 2	100 mL DI H2O	601.8	542.7	59.1
Impinger 3	Empty	446.6	437.2	9.4
Impinger 4	Silica Gel	782.4	768.7	13.7

QA/QC BW
Date 3/22

Total Weight (gm)
210.3
224.0

Run No. 3	Filter Type Teflon glass mat		Sample Box No. B5
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	688.4	540.4	148.0
Impinger 2	100 mL DI H2O	596.9	549.9	SB ~~200~~ 47.0
Impinger 3	Empty	461.4	452.5	8.9
Impinger 4	Silica Gel	763.2	748.8	14.4

QA/QC BW
Date 3/22

Total Weight (gm)
SB ~~176.9~~ 203.9
SB ~~191~~ 218.3

CleanAir ENGINEERING

QA/QC SB
Date 3/22

TEST LOCATION: FF outlet RT AK Wheelabrator TESTING METHOD: 26A PAGE 1 OF 1

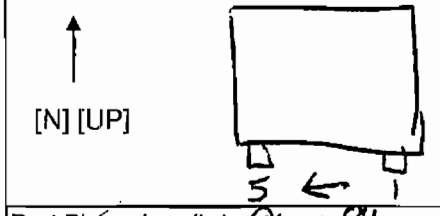
UNIT: 1 RUN: 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10953
Plant	S. Broward	Date	3/22/10
Meter Operator	Amy Karony		
Probe Operator	Amy Karony		

Meter Box	26-22	Sample Box No.	B11
Meter Y_d	1.0005	Meter $\Delta H_@$	1.8097
K Factor	—	Pitot C_p	—
Leak Rate Before	0.005 (cfm) [Lpm]	@ 15	(in. Hg)
Leak Rate After	0.001 (cfm) [Lpm]	@ ~~15~~ 15 AK	(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)	63	Bar. Press. 30.1	[in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

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

Start Time: ~~8:31~~ Stop Time: 9:31

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume @5 V_m Init. Vol. [ft³] [L] 139.145	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F) ~~48~~	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	0.48	1.5	142.68	294	303	300	48	64	64	3	NA	10.1
	10	0.55	1.5	146.14 AK	294	303	301	44	68	64	3	NA	10.1
	15	0.49	1.5	149.55	295	300	300	43	70	65	3		9.3 AK
	20	0.52		152.98	295	300	300	44	72	65	3		10.2
	25	0.50		156.40	295	301	301	45	71	65	3		10.0
	30	0.54		159.87	295	299	299	46	70	65	3		10.5
	35	0.47		163.35	295	300	300	47	71	65	3		9.4
	40	0.46		166.78	295	301	301	46	72	65	3		9.6
	45	0.50		190.22	296	299	299	46	71	65	3		9.5
	50	0.52		173.64	294	300	300	46	72	65	3		9.8
	55	0.50		177.02	294	301	300	46	71	65	3		9.5
	60	0.50		180.465	295	300	299	46	72	65	3		9.3
	Total	*		41.32	1768	3607	3600	547	844	778			
	Average		1.5		5B 1473 294.66	300.6	300.0	45.6	67.58				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC 5B

Date 3/22

CleanAir ENGINEERING

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

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10965
Plant	S. Broward	Date	3/22/10
Meter Operator	A. Karony		
Probe Operator	A. Karony		

Meter Box	26-22	Sample Box No.	B11
Meter Y_d	1.005	Meter $\Delta H_@$	1.8197
K Factor	—	Pitot C_p	—
Leak Rate Before	0.001 (cfm) [Lpm]	@	14 (in. Hg)
Leak Rate After	0.00 (cfm) [Lpm]	@	6.5 (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]
-0.6	10		

Amb. Temp. (°F)	63	Bar. Press. 30.1 [in. Hg] [mbar]
Probe I.D. No.	67-4-3	
Liner Material	glass	

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

Start Time: 9:58 Stop Time: 10:15

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. 181.410 (ft³) [L]	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
3-4 AK	5	0.49	1.5	185.51	294	298	301	61	67	63	3		9.3
	10	0.50		188.58	295	294	301	57	67	63	3		9.1
	15	0.53		192.02	294	301	301	58	70	64	3.5		9.4
	20	0.56		195.28	294	303	300	62	70	64	3.5		9.8
	25	0.56		198.64	294	301	300	68	69	63	3.5		9.6
	30	0.53		202.04	295	300	300	74	71	64	3.5		9.5
	35	0.50		205.49	295	302	301	65	72	65	3.5		9.1
	40	0.51		208.88	295	299	300	60	70	64	3.5		9.6
	45	0.52		212.29	296	300	301	56	71	65	3.5		9.0
	50	0.51		215.76	294	300	300	53	72	65	3.5		8.9
	55	0.52		219.20	295	299	299	52	73	66	3.5		9.2
	60	0.51		222.645	295	299	301	52	73	66	3.5		8.7
	Total	*		41.235	~~353~~ 353 AK	3594	3005	688	845	772			
	Average				294.9	299.7	300.4	57.3	67.375				

* Sum of square roots.

Circle correct bracketed units on data sheet.

294.915

QA/QC JD

Date 3/22

CleanAir. ENGINEERING

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

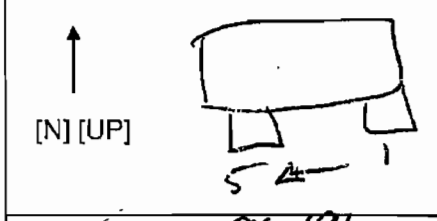
UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Brainard	Date	3/22/10
Meter Operator	A Karony		
Probe Operator	A Karony		

Meter Box	06-22	Sample Box No.	B11
Meter Y_d	1.0085	Meter $\Delta H_@$	1.8894
K Factor	—	Pitot C_p	—
Leak Rate Before	0.001 [cfm]	[Lpm] @	14 (in. Hg)
Leak Rate After	0.001 [cfm]	[Lpm] @	5 (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	Out	X

Amb. Temp. (°F)	63	Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	Glass		

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

Start Time:	11:30	Stop Time:	12:47

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. 223.495 [ft^3] [L]	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_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2
3-1	5	0.46	1.5	227.41	296	303	303	47	57	64	3		7.2
	10	0.48		230.64	293	302	302	43	68	64	2.5		6.6
	15	0.48		234.32	295	300	300	43	69	64	2.5		7.9
	20	0.45		237.15	294	302	301	44	70	64	2.5		7.3
	25	0.46		240.46	294	302	301	47	71	64	2.5		7.2
	30	0.49		243.81	296	300	303	50	72	65	2.5		7.9
	35	0.51		247.26	306	301	300	53	72	65	2.5		7.3
	40	0.51		250.79	300	299	301	56	70	65	2.5		7.4
	45	0.51		254.23	295	301	298	50	69	64	3		7.5
	50	0.49		257.64	296	300	301	51	71	65	3		7.8
	55	0.45		260.03	296	301	300	52	71	65	3		7.4
	60	0.46		264.485	294	300	300	54	70	65	3		7.6
	Total	*		36.535 AK	3555	3611	3610	590	829	774			
	Average			40.99	296.25	301.0	301.0	49.2	66.8				

* Sum of square roots.

Circle correct bracketed units on data sheet. (66.792)

QA/QC AK

Date 3/22/10

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. BW 1 2	Filter Type Quartz		Sample Box No. B21
Date 3/22/10	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	517.8	462.4	SB ~~88.1~~ 55.4	
Impinger 2	100 mL 01.N H2SO4	734.3	638.5	95.8 ~~117.5~~ SB ~~117.8~~ SB	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	584.3	536.1	SB ~~24.8~~ 48.2	Date 3/22
Impinger 4	Empty	469.4	451.3	SB ~~4.7~~ 18.1	
Impinger 5	Silica Gel	754.5	735.1	19.4	Total Weight (gm)
					217.5
					236.9

Run No. BW 2 1	Filter Type Quartz		Sample Box No. B11
Date 3/22/10	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	557.3	469.2	88.1	
Impinger 2	100 mL 01.N H2SO4	678.9	561.4	117.5	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	578.9	554.1	24.8	Date 3/22
Impinger 4	Empty	460.4	456.1	SB ~~4.7~~ 4.3	
Impinger 5	Silica Gel	782.2	769.3	12.9	Total Weight (gm)
					SB ~~225.1~~ 234.7
					SB ~~238.6~~ 247.6

Run No. 3	Filter Type Quartz		Sample Box No. B11
Date 3/22/10	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	529.3	467.3	62.0	
Impinger 2	100 mL 01.N H2SO4	689.1	563.3	125.8	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	594.4	554.3	40.1	Date 3/22
Impinger 4	Empty	464.6	456.7	7.9	
Impinger 5	Silica Gel	793.5	781.4	12.1	Total Weight (gm)
					235.8
					247.9

CleanAir. ENGINEERING

QA/QC SB
Date 3/22

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: BLOUNT	Date: 3-18-10 3-22-10
Meter Operator: B. ARNOLD	
Probe Operator: B. ARNOLD	

Cross-Section of Test Location

[N] (UP)

Amb. Temp. (°F): 66	Bar. Press.: 30.00 [in. Hg] [mbar]
Probe I.D. No.: 67-4-F	
Liner Material: GLASS	

Meter Box: 41-8	Sample Box No.: B22		
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 ☐		

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

Duct Dimensions (in.): 105			
Static Pres (in. H_2O): -1.6	Port Len. (in.): 14	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Start Time: 8:31	Stop Time: 9:31

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. 211.955 [ft^3] [L]	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 BA (°F) 62	Notes
1-1	5		1.2	214.97	493	355	355	62	69	68	3.0	8.8	
	10			217.97	491	357	354	49	66	67	4.0	9.4	
	15			220.98	495	355	356	48	68	67	6.0	9.0	
	20			223.99	494	356	356	50	69	67	8.0	9.3	
	25			227.03	497	354	354	54	68	66	10.5	9.4	
	30			230.04	497	354	356	58	67	65	12.0	10.0	
	35			233.07	497	355	355	62	67	64	14.0	8.6	
	40			236.07	492	355	354	61	67	64	15.5	9.1	
	45		1.1	238.96	494	354	354	57	65	64	17.0	8.7	
	50		OK 0.96 1.0	241.72	496	355	354	56	63	62	17.5	9.0	
	55		0.96	244.38	496	354	355	54	63	62	17.5	8.2	
	60		0.85	246.980	497	354	355	53	63	62	17.5	7.8	
	Total	*	3.5100	35.0250					795	778			
	Average		1.1258		494.967				65.5417				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC JG

Date 3/22

CleanAir ENGINEERING

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

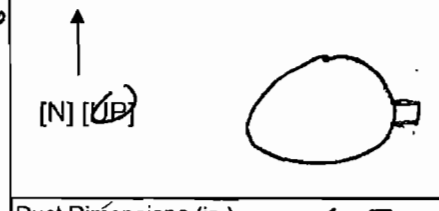
UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant ~~Ft. Blount~~	Date ~~3-19-10~~ 3-22-10
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 0.005 (cfm) [Lpm]	@ 15 (in. Hg)
Leak Rate After 0.008 [cfm] [Lpm]	@ 18 (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]
-1.8	14	[In]	[In]

Amb. Temp. (°F)		Bar. Press. 30.10	[in. Hg] [mbar]
Probe I.D. No.	~~67-4-5~~	67-4-L	
Liner Material	GLASS		

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

Start Time: 9:58 Stop Time: 10:58

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. 247.290 [ft^3] [L]	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) 02	Notes
1-1	5		1.2	250.31	496	353	360	61	66	65	2.5	8.8	
	10			253.31	497	356	360	56	68	65	3.0	9.0	
	15			256.34	495	356	356	55	71	66	4.0	9.0	
	20			259.34	492	356	355	54	74	67	6.0	10.2	
	25			262.38	494	355	356	57	74	68	7.0	9.1	
	30			265.40	496	355	357	60	74	68	8.5	8.8	
	35			268.39	499	355	355	64	74	68	10.5	8.2	
	40			271.39	495	355	355	62	75	69	11.5	9.0	
	45			274.45	500	355	355	63	74	70	13.0	8.2	
	50			277.50	504	355	356	64	72	69	15.5	7.5	
	55			280.49	497	355	355	64	71	69	16.5	8.4	
	60		1.1	283.455	498	355	355	65	71	69	18.0	7.5	
	Total	*	14.3000	36.1650	5963				864	813			
	Average		1.1917		496.9167				69.8750				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-22-10

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: Broward	Date: ~~2-18-10~~ 3-22-10
Meter Operator: R. ARNOLD	
Probe Operator: R. ARNOLD	

Meter Box 61-8	Sample Box No.
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 0.005 [cfm] [Lpm] @ 16 (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) 69	Bar. Press. 30.10 [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: 11:36	Stop Time: 12:46

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] 283.635	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) O2	Notes
1-1	5		1.2	286.64	495	354	361	65	68	67	2.5	6.7	
↓	10		↓	289.56	492	355	367	63	69	67	4.0	6.6	
	15			292.41	489	355	359	56	71	67	6.0	8.2	
	20			~~298.~~ BA	496	355	357	57	73	67	9.0	7.4	missed 20:00
	25			298.42	493	355	356	59	73	68	11.0	7.9	
	30			301.42	494	355	356	53	74	68	12.5	8.6	
	35			304.43	495	355	355	53	74	69	15.0	7.2	Pause for filter
	40			307.81	495	353	357	55	72	70	2.5	7.8	Change @ 35 MIN
	45			310.78	493	356	362	50	74	71	3.5	8.3	Leak ✓ @ 0.006 @ 15 cfm
	50			313.78	494	356	360	49	77	71	5.5	8.5	
	55			316.81	494	356	357	48	78	71	7.0	8.2	304.825 /
	60			319.760	495	355	356	49	78	71	8.5	8.3	-.3950
	Total	*	14.4000	~~.49~~ 35.7300	5925				881	827			
	Average		1.2000		493.7500				71.1667				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA
Date 3-22-10

G - 30

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. B22
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	503.1	474.3	28.8	
Impinger 2	100 mL 01.N H2SO4	613.2	537.1	76.1	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	579.3	553.9	25.4	Date 3/22
Impinger 4	Empty	444.3	430.6	13.7	
Impinger 5	Silica Gel	737.3	722.0	15.3	Total Weight (gm)
					144.0
					159.3

Run No. 2	Filter Type Quartz		Sample Box No. B16
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	502.5	471.5	31.0	
Impinger 2	100 mL 01.N H2SO4	620.3	547.2	73.1	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	568.8	539.5	29.3	Date 3/22
Impinger 4	Empty	472.9	465.1	7.8	
Impinger 5	Silica Gel	707.5	689.6	17.9	Total Weight (gm)
					141.2
					159.1

Run No. 3	Filter Type Quartz		Sample Box No. B22
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	521.4	471.4	50.0	
Impinger 2	100 mL 01.N H2SO4	626.8	535.8	91.0	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	571.6	552.8	18.8	Date 3/22
Impinger 4	Empty	434.9	430.5	4.4	
Impinger 5	Silica Gel	714.5	700.9	13.6	Total Weight (gm)
					164.2
					177.8

CleanAir. ENGINEERING

QA/QC SB
Date 3/22

2.28

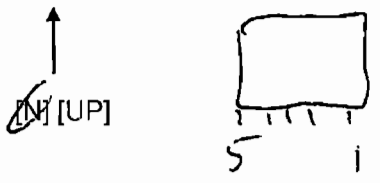
TEST LOCATION: FF outlet **particulate/metals TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3-24-10
Meter Operator	A. Obuchowski		
Probe Operator	A. Obuchowski		

Cross-Section of Test Location



Amb. Temp. (°F)	60	Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	67-E-4		
Liner Material	glass		

Meter Box	E5-2	Sample Box No.	M10
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7759
K Factor	2.38	Pitot C_p	0.805
Leak Rate Before	0.002 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	13 (in. Hg)
Pitot Leak Check Before: ☑	After: Good ☑	Bad ☐	

Filter No.	E114-01		
Thimble No.	—		
Nozzle Diameter	0.270	Nozzle I.D.	.270-1

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	16		

Start Time:	7:53	Stop Time:	10:06

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. 516.930 [ft^3] [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. 02 T_t (°F)	Notes 02	
1-1	5	0.46	1.1	519.81	295	257	250	60	62	59	3	0.20	10.0	
-2	10	0.46	1.1	522.66	295	260	250	57	62	59	3	0.20	9.7	0.16
-3	15	0.51	1.2	525.55	292	255	249	56	63	59	4	0.20	10.5	
-4	20	0.50	1.2	528.45	296	250	250	55	66	60	4	0.20	9.5	
-5	25	0.58	1.4	531.64	297	255	250	56	67	60	5	0.20	9.0	
2-1	30	0.40	0.95	534.43	294	252	250	57	66	61	3	0.20	10.4	
-2	35	0.44	1.0	537.17	295	248	250	58	68	61	3	0.20	9.9	
-3	40	0.52	1.2	540.11	295	251	250	58	69	62	3	0.20	10.5	
-4	45	0.56	1.3	543.19	297	256	250	59	70	63	4	0.20	9.0	
-5	50	0.62	1.5	546.46	297	250	251	59	71	64	5	0.20	9.0	0.18
3-1	55	0.33	0.79	549.65	295	252	251	58	69	65	3	0.20	9.4	
-2	60	0.41	0.98	551.79	295	251	251	59	69	65	3	0.20	9.9	
-3	65	0.42	1.0	554.55	295	245	249	60	70	66	4	0.20	9.2	
	Total	16.8451	27.030	70.2050	7379				1753	1635				
	Average	0.6758	1.0812		295.160				67.760					

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

14.32 3638 QA/QC Q Date 3-24-10 672 604

CleanAir ENGINEERING

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TEST LOCATION: EF outlet particulate/metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client: Whitehead Car	Project No.: 10055
Plant: S. Broward	Date: 3-24-10
Meter Operator: A. Obuchowski	
Probe Operator: A. Obuchowski	

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	70	0.46	1.1	557.41	295	254	251	60	71	66	4	0.20	9.3
-5	75	0.44	1.0	560.18	298	253	250	60	71	66	4	0.20	9.5 -0.12 avr
4-1	80	0.43	1.0	563.02	294	248	249	62	71	67	4	0.20	10.3
-2	85	0.44	1.0	565.80	295	255	249	63	73	68	4	0.20	9.3
-3	90	0.44	1.0	568.75	295	246	249	63	74	69	4	0.20	10.0
-4	95	0.43	1.0	571.36	294	245	250	64	74	71	4	0.20	10.1
-5	100	0.39	0.93	574.05	293	249	249	63	74	72	3	0.20	10.8
5-1	105	0.41	0.98	576.92	294	245	250	63	72	70	3	0.20	10.9 -0.13 -0.13
-2	110	0.42	1.0	579.67	295	248	250	63	74	70	4	0.20	9.7
-3	115	~~0.46~~ 0.42	~~0.96~~ 1.0	582.47	295	257	250	62	75	70	4	0.20	10.0
-4	120	0.51	1.2	585.42	297	250	250	62	76	71	4	0.20	9.9
-5	125	0.47	1.1	588.325	296	255	250	63	76	71	4	0.20	9.7
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

E31

QA/QC SB
Date 3/29

CleanAir ENGINEERING

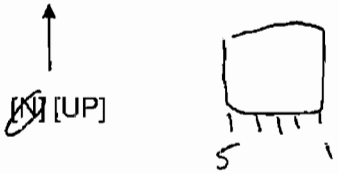
TEST LOCATION: FF outlet **TESTING** particulate/metals **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator
Plant	S. Broward
Meter Operator	A. Obuchowski
Probe Operator	A. Obuchowski
Project No.	10955
Date	3-24-10

Cross-Section of Test Location



Amb. Temp. (°F)	72
Bar. Press.	30.10 [in. Hg] [mbar]
Probe I.D. No.	67-E-4
Liner Material	Glass

Meter Box	E5-2	Sample Box No.	M15
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7759
K Factor	2.38	Pitot C_p	0.E05
Leak Rate Before	0.005 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	7 (in. Hg)
Pitot Leak Check Before: ☒	After: Good ☐	Bad ☐	

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		

Filter No.	E-114-02		
Thimble No.	—		
Nozzle Diameter	0.270	Nozzle I.D.	.270-1

Start Time:	11:03	Stop Time:	13:35

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] 589.07	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. Oz T_t (°F)	Notes Oz
1-1	5	0.47	1.1	592.04	298	257	249	64	75	74	3	0.20	10.0
-2	10	0.47	1.1	595.04	297	257	250	58	79	74	3	0.20	9.6
-3	15	0.48	1.1	597.E9	298	255	251	57	E1	75	3	0.20	9.3
-4	20	0.49	1.2	600.93	299	24E	250	57	E3	76	3	0.20	9.6 -0.16 0.16
-5	25	0.55	1.3	604.04	298	255	250	59	E3	76	3	0.20	9.2
2-1	30	0.56	1.3	607.30	297	254	251	60	E1	76	3	0.20	9.6
-2	35	0.51	1.2	610.70	298	249	250	61	E3	77	3	0.20	9.0
-3	40	0.51	1.2	613.31	298	244	250	61	E5	78	3	0.20	9.7
-4	45	0.51	1.2	616.29	298	245	249	56	E6	78	3	0.20	9.3
-5	50	0.58	1.4	619.49	297	255	250	54	86	78	4	0.20	9.5 -0.15 -0.15
3-1	55	0.40	0.95	622.31	294	246	250	57	E3	78	3	0.20	10.E
-2	66	0.44	1.0	625.15	297	247	250	57	E5	79	3	0.20	9.6
-3	65	0.45	1.1	628.04	298	255	250	58	E7	E0	3	0.20	9.0
	Total	*17.3674	28.80	73.E60	7441				2042	1946			
	Average	0.6947	1.1520		297.640				E0.EC				

Sum of square roots. 15.15

Circle correct bracketed units on data sheet. 3E67 1077 999

QA/QC Q Date 3-24-10

CleanAir ENGINEERING

TEST LOCATION: FF outlet / particulate/ metals **TESTING** **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3-24-10
Meter Operator	A. Obuchowski
Probe Operator	A. Obuchowski

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	70	0.50	1.2	631.03	298	256	250	57	85	79	3	0.20	9.8
-5	75	0.40	0.95	633.78	297	247	251	58	86	80	3	0.20	10.0 -0.13 0.13
4-1	80	0.45	1.1	636.74	297	255	250	60	82	78	3	0.20	10.0
-2	85	0.43	1.0	639.53	299	245	250	61	82	77	3	0.20	9.7
-3	90	0.49	1.2	642.56	298	255	251	59	84	78	3	0.20	10.5
-4	95	0.46	1.1	645.49	298	260	250	60	85	79	3	0.20	9.8
-5	100	0.53	1.3	648.67	297	250	250	61	86	80	3	0.20	9.6
3 -1	105	0.45	1.1	651.64	297	245	250	62	84	79	3	0.20	10.2
-2	110	0.47	1.1	654.47	298	246	250	62	85	80	3	0.20	9.9
-3	115	0.49	1.2	657.48	298	252	250	62	86	80	3	0.20	10.4 -0.14 0.14
-4	120	0.49	1.2	660.50	299	252	250	63	85	79	3	0.20	10.7
-5	125	0.51	1.2	663.51	300	250	250	64	85	80	3	0.20	10.0
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC JB

Date 3/24

CleanAir ENGINEERING

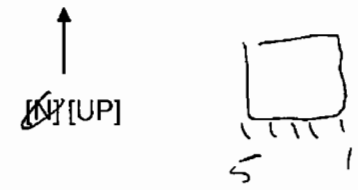
TEST LOCATION: FF outlet **TESTING** particulate / metals **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3-24-10
Meter Operator	A. Obubowski
Probe Operator	A. Obubowski

Cross-Section of Test Location



Amb. Temp. (°F) 75	Bar. Press. 30.1 [in. Hg] [mbar]
Probe I.D. No.	67-E-4
Liner Material	glass

Meter Box	E5-2	Sample Box No.	
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7759
K Factor	2.41 2.3E	Pitot C_p	0.E65
Leak Rate Before	0.002 [cfm] [Lpm]	@ 15	(in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@ 10	(in. Hg)
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐		

Filter No.	E114-07		
Thimble No.	—		
Nozzle Diameter	0.270	Nozzle I.D.	.270-1

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]
-11.1	10		

Start Time:	14:12 ~~14:20~~	Stop Time:	16:22

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]	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. 02 T_t (°F)	Notes
				663.92		250	250						02
5-1	5	0.40	0.96	666.63	297	250	250	64	79	78	3	0.20	10.5
-2	10	0.41	0.99	669.37	297	251	251	63	82	78	3	0.20	10.1
-3	15	0.42	1.0	672.15	297	251	250	61	E3	78	3	0.20	10.1
-4	20	0.51	1.2	675.12	297	252	249	60	E4	78	3	0.20	9.6 -0.12 -0.12
-5	25	0.55	1.3	678.27	298	250	249	61	E6	78	4	0.20	10.0
4-1	30	0.45	1.1	681.18	296	248	250	62	E4	79	3	0.20	10.1
-2	35	0.43	1.0	683.94	297	248	250	63	E6	80	3	0.20	9.9
-3	40	0.45	1.1	686.80	297	252	250	59	E6	79	3	0.20	10.2
-4	45	0.52	1.3	689.95	299	251	250	54	E6	79	4	0.20	10.3
-5	50	0.43	1.0	692.77	298	250	250	53	E6	80	3	0.20	10.0 -0.13 -0.13
3-1	55	0.34	0.82	695.38	297	249	250	56	E3	80	3	0.20	11.0
-2	60	0.46	1.1	698.22	366	250	249	57	E5	80	4	0.20	10.0
-3	65	0.56	1.2	701.29	297	251	251	56	E4	80	4	0.20	10.5
	Total	*17.5656	29.570	74.5150	7433				2115	1980			
	Average	0.7662	1.1828		297.320				E1.90				

Sum of square roots: 14.07

Circle correct bracketed units on data sheet.

~~3512~~ 3667 QA/QC ☑ Date 3-24

1044 1027

CleanAir ENGINEERING

TEST LOCATION: Ft outlet particulate/metals **TESTING METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 16955
Plant S.Broward	Date 3-24-10
Meter Operator A.Obuchowski	
Probe Operator A.Obuchowski	

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	70	0.54	1.3	704.36	298	250	250	55	87	80	4	0.20	11.0 -0.10
-5	75	0.55	1.3	707.55	297	249	249	56	87	81	4	0.20	11.1 -0.10
2-1	80	0.51	1.2	710.56	297	249	250	59	85	80	4	0.20	10.4
-2	85	0.47	1.1	713.45	297	251	250	58	85	80	4	0.20	9.8
-3	90	0.51	1.2	716.43	297	251	250	58	84	80	4	0.20	10.9
-4	95	0.51	1.2	719.42	298	251	250	59	84	79	4	0.20	10.3
-5	100	0.64	1.5	722.74	298	249	249	60	85	79	5	0.20	10.2
1-1	105	0.52	1.3	726.16	297	248	246	61	84	79	4	0.20	10.8 -0.14 -0.14
-2	110	0.48	1.2	729.18	297	250	250	61	85	79	4	0.20	10.4
-3	115	0.54	1.3	732.30	297	252	250	62	85	79	4	0.20	10.9
-4	120	0.66	1.4	735.55	298	250	249	63	85	78	5	0.20	9.9
-5	125	0.61	1.5	738.925	295	250	251	63	85	79	5	0.20	10.4
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/24

CleanAir ENGINEERING

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Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. M10
Date 3/24/10	Lot No.		pH
Analyst B. Wilhite	Filter No. E-114-01		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	692.9	439.6	253.3	
Impinger 2	100 ml 5%HNO3/10%H2O2	674.8	555.3	119.5	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	567.9	535.7	32.2	Date 3/24
Impinger 4	Empty	453.6	446.9	6.7	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	543.3	541.2	2.1	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	545.2	544.9	0.3	414.1
Impinger 7	Silica Gel	768.2	749.8	18.4	432.5

Run No. 2	Filter Type Quartz		Sample Box No.
Date 3/24/10	Lot No.		pH
Analyst B. Wilhite	Filter No. E-114-02		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	744.8	461.7	283.1	
Impinger 2	100 ml 5%HNO3/10%H2O2	656.3	535.8	120.5	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	573.8	548.3	25.5	Date 3/24
Impinger 4	Empty	443.8	440.1	3.7	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	562.5	560.5	2.0	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	542.5	541.0	1.5	436.3
Impinger 7	Silica Gel	767.8 BW	309.4 749.1	18.7	455.0

Run No. 3	Filter Type Quartz		Sample Box No.
Date 3/24/10	Lot No.		pH
Analyst B. Wilhite	Filter No. E-114-03		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	704.3	439.8	264.5	
Impinger 2	100 ml 5%HNO3/10%H2O2	676.1	558.4	117.7	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	570.6	537.2	33.4	Date 3/24
Impinger 4	Empty	454.4	447.1	7.3	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	544.3	540.4	3.9	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	545.8	545.0	0.8	427.6
Impinger 7	Silica Gel	776.6	762.0	14.6	442.2

CleanAir ENGINEERING

QA/QC SB 3/24
Date

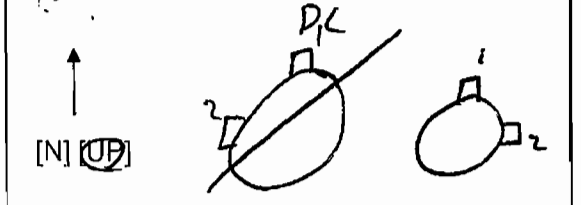
TEST LOCATION: SDA Inlet Metals TESTING METHOD: 29 PAGE 1 OF 2

UNIT: 2 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10956
Plant South Bronwards	Date 3/24/10
Meter Operator D. Lockard	
Probe Operator P. Bruce	

Cross-Section of Test Location



Amb. Temp. (°F) 57	Bar. Press. 30.1 [in. Hg] [mbar]
Probe I.D. No. 67-10-3	
Liner Material Glass	

Meter Box 66-11	Sample Box No. M 1	
Meter Y_d 0.9933	Meter $\Delta H_@$ 1.8619	
K Factor 2.33	Pitot C_p 0.825	
Leak Rate Before 0.004 [cfm] [Lpm]	@ 15 (in. Hg)	
Leak Rate After 0.004 [cfm] [Lpm]	@ 13 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐	

Filter No.	NA	—	—
Thimble No.	NA	—	—
Nozzle Diameter	0.270	Nozzle I.D.	270-2

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]
-1.4	14/20		

Start Time: 753 Stop Time: 1006

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. 704.316 [ft^3] [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 O_2
2-1	5	0.44	1.0	707.18	480	255	250	60	56	59	3.0	NA	7.8
2	10	0.45	1.0	709.75	482	256	250	~~57~~ 49 DL	60	60	3.0		8.3
3	15	0.47	1.1	712.58	486	249	250	47	61	60	4.0		7.4
4	20	0.48	1.1	715.37	478	245	250	46	63	60	4.0		9.0
5	25	0.43	1.0	718.05	483	250	251	46	64	60	4.0		7.8
6	30	0.43	1.0	720.76	483	250	250	47	66	61	4.5		8.7
7	35	0.44	1.0	723.47	483	249	249	48	68	63	4.5		7.9
8	40	0.48	1.1	726.26	483	249	250	49	69	64	5.0		7.8
9	45	0.45	1.0	728.96	487	249	250	49	67	64	5.0		8.1
10	50	0.44	1.0	731.64	484	249	250	49	67	64	5.5		7.9
11	55	0.43	1.0	734.36	484	249	250	49	68	64	6.0		6.9
12	60	0.43	1.0	737.100	487	250	250	50	68	64	6.0	↓	7.1
			12.3	32.79	5794				~~589~~ 777	743			
	Total	15.9706	24.68	65.6450	11597				1698	1606			
	Average	0.6654	1.0283		483.2083				68.8333				

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

QA/QC DL

Date 3/24/10

CleanAir ENGINEERING

TEST LOCATION: SDA Inlet Metals TESTING METHOD: 29 PAGE 2 OF 2

UNIT: 2 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Brainard	Date 3/24/10
Meter Operator D. Lackard	
Probe Operator P. Bihn	

Cross-Section of Test Location

[N] [UP]

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

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 ☐

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.4			

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] 737.285	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 O_2
1-1	5	0.31	0.72	739.57	471	247	251	61	68	66	5.0	NA	9.3
2	10	0.31	0.72	741.86	472	250	249	55	68	66	5.0		8.3
3	15	0.31	0.72	744.14	473	251	250	53	71	67	5.5		7.9
4	80	0.35	0.82	746.60	475	253	249	54	75	69	6.0		7.9
5	85	0.46	1.1	749.37	479	252	254	54	76	71	7.5		8.6
6	90	0.51	1.2	752.33	485	251	247	54	79	72	8.0		9.3
7	95	0.43	1.0	755.07	485	249	248	55	80	73	8.0		8.6
8	100	0.49	1.1	757.92	496	248	246	57	80	74	8.0		8.9
9	105	0.61	1.4	761.18	495	250	252	60	79	75	9.5		8.1
10	110	0.59	1.4	764.35	495	251	252	57	81	76	10.0		7.9
11	115	0.48	1.1	767.22	496	250	248	58	83	77	9.0		9.4
12	120	0.48	1.1	770.040	487	250	249	59	81	77	9.0	↓	8.7
			12.38	32.755	5803				921	863			
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC DL

Date 3/24/10

CleanAir ENGINEERING

TEST LOCATION: SDA Inlet Metals TESTING METHOD: 29 PAGE 1 OF 2

UNIT: 2 RUN: 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Brevard	Date 3/24/10
Meter Operator D. Lockhart	
Probe Operator P. Bishop	PB

Cross-Section of Test Location

Amb. Temp. (°F) 76	Bar. Press. 30.10 [in. Hg] [mbar]
Probe I.D. No. 67-10-3	
Liner Material Glass	

Meter Box 66-11	Sample Box No. M7		
Meter Y_d 0.9933	Meter $\Delta H_@$ 1.8619		
K Factor 2.33	Pitot C_p 0.825		
Leak Rate Before 0.004 [cfm] [Lpm]	@ 16 (in. Hg)		
Leak Rate After 0.003 [cfm] [Lpm]	@ 10 (in. Hg)		
Pitot Leak Check Before: [X]	After: Good [X] Bad [ ]		

Filter No. NA	—	—	
Thimble No. NH	—	—	
Nozzle Diameter 0.270	Nozzle I.D.	270-2	

Duct Dimensions (in.) 105, D			
Static Pres (in. H_2O) -1.6 -1.4	Port Len. (in.) 14/20	Gas Flow (In) [Out] of page	First point all the way (In) [Out]

Start Time: 11:03	Stop Time: 13:32

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] 770.680	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_t (°F)	Notes
1-1	5	0.30	0.70	773.96	474	250	250	64	82	82	3.5	NA	8.1
2	10	0.28	0.65	775.14	474	256	245	51	80	82	2.5		8.3
3	15	0.30	0.70	777.38	474	253	245	48	80	81	3.0		9.0
4	20	0.37	0.84	779.88	476	249	251	47	78	80	3.5		9.5 K=2.028
5	25	0.47	1.1	782.64	482	250	244	47	80	79	4.5		9.0
6	30	0.41	1.0	785.39	484	248	248	49	79	79	4.5		8.2
7	35	0.52	1.2	788.31	495	248	244	51	79	79	5.5		8.0
8	40	0.51	1.2	791.34	492	249	244	51	82	79	5.5		8.5
9	45	0.50	1.1	794.16	491	248	245	53	83	80	5.5		8.7
10	50	0.50	1.1	796.96	491	249	247	53	82	79	5.5		8.4
11	55	0.43	0.98	799.64	488	250	245	54	83	80	6.0		9.0
12	60	0.48	1.1	802.425	487	249	246	55	81	80	6.5	V	9.0
													Leak 0.004
	Total	*		64.535									0.485
	Average	0.6588	0.9978		488.0833				79.9375				

Sum of square roots 11.67

Circle correct bracketed units on data sheet

QA/QC PB

Date 3/24/10

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CleanAir ENGINEERING

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TEST LOCATION: SDA Inlet | Metals **TESTING** | **METHOD:** 29 | **PAGE** 2 **OF** 2

UNIT: 2 | **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Broward	Date 3/24/10
Meter Operator P. Bihuy	
Probe Operator D. Lockhard	

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] (circled) [L]	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. T_t (°F)	Notes O_2
2-1	65	0.43	0.98	805.29	489	240	250	61	79	79	6.5	N/A	8.9
2	70	0.45	1.0	808.79	490	250	247	60	79	79	6.0		8.3
3	75	0.51	1.2	811.77	494	253	246	60	80	79	4.0		8.3
4	80	0.51	1.2	814.72	489	250	250	61	82	79	4.5		8.8
5	85	0.48	1.1	817.50	493	253	248	58	81	79	4.5		9.7
6	90	0.40	0.91	820.09	496	251	249	58	80	79	4.0		9.2
7	95	0.38	0.87	822.60	494	249	250	59	80	78	4.0		8.9
8	100	0.45	1.0	825.32	491	250	250	61	81	78	5.0		8.3
9	105	0.47	1.1	828.10	491	249	250	60	81	78	5.5		8.7
10	110	0.40	0.91	830.71	495	249	250	60	81	78	5.0		7.8
11	115	0.45	1.0	833.40	492	249	249	61	81	78	5.5		9.6
12	120	~~0.40~~ 0.45	~~.91~~ PB 1.0	836.125	492	250	249	61	81	78	5.5		9.4
	Total	* PB											
	Average												

Notes (margin): new filter; leak ✓ ok; 805.880; 806.635; -0.755

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC PB
Date 3/24/10

CleanAir ENGINEERING

TEST LOCATION: SDA Inlet **TESTING** Metals **METHOD:** 29 **PAGE** 1

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10511
Plant	S. Broward	Date	3/24/10
Meter Operator	D. Lockhart		
Probe Operator	P. Bigan		

Cross-Section of Test Location

Amb. Temp. (°F)	70	Bar. Press.	30.10 (in. Hg) [mbar]
Probe I.D. No.			67-10-3
Liner Material			Glass

Meter Box	Yle-C	Sample Box No.	M7
Meter Y_d	0.9973	Meter $\Delta H_@$	1.8619
K Factor	2.32	Pitot C_p	0.825
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 ☐

Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	0.270	Nozzle I.D.	270-2

Duct Dimensions (in.)				105.0
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]	
-1.6	14/20			

Start Time:	1412	Stop Time:	1619

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
				837.285		250	250						
1	5	0.47	1.1	840.02	489	248	244	64	78	77	3.0	N/A	9.4
2	10	0.48	1.1	842.83	492	257	248	61	79	77	3.5		7.9
3	15	0.50	1.2	845.76	489	252	255	56	82	77	4.5		7.3
4	20	0.52	1.2	849.70	488	248	242	55	82	78	4.5		7.5
5	25	0.52	1.2	851.63	495	252	249	56	81	79	5.0		7.9
6	30	0.44	1.0	854.37	495	250	249	56	80	78	5.0		8.5
7	35	0.48	1.1	857.18	498	249	249	56	81	78	5.5		8.9
8	40	0.56	1.3	860.27	498	250	249	56	81	78	5.5		9.1
9	45	0.52	1.2	863.26	497	249	256	56	83	78	6.5		8.3
10	50	0.45	1.0	~~866.0~~ 866.13	496	249	249	57	82	79	6.0		9.3
11	55	0.52	1.2	868.95	505	249	256	58	81	79	6.5		9.2
12	60	0.41	0.95	871.600	493	249	250	58	81	79	6.0		9.7
			13.55	34.315	5935				971	937			
	Total	16.5645	26.68	68.1250	11876				1920	1859			
	Average	0.6902	1.1117		494.8333					78.7292			

Sum of square roots.

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

QA/QC PL

Date 3/24/10

CleanAir ENGINEERING

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TEST LOCATION: SDA Inlet Metals **TESTING** **METHOD:** 29 **PAGE** 2 **OF** 2

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10257
Plant S. Broward	Date 3/24/10
Meter Operator D. Lockhard	
Probe Operator P. B:h..	

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] 871.810	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 O_2
1-1	65	0.34	0.79	874.24	486	246	243	63	77	77	5.5	N/A	9.8
2	70	0.36	0.84	876.~~21~~ 26 70	490	250	248	62	78	77	6.0		9.7
3	75	0.36	0.84	879.17	489	254	248	61	79	78	6.0		8.9
4	80	0.37	0.86	881.68	489	252	250	60	80	77	6.5		9.3
5	85	0.48	1.1	884.50	484	253	250	59	78	77	8.0		9.2
6	90	0.54	1.3	887.58	497	251	249	58	78	77	9.0		9.4
7	95	0.55	1.3	890.67	498	249	250	58	78	76	9.0		8.9
8	100	0.56	1.3	893.76	502	249	250	58	79	76	9.5		9.7
9	105	0.54	1.3	896.87	501	249	250	59	80	76	10.0		9.7
10	110	0.49	1.1	899.73	499	250	252	60	82	77	9.5		9.3
11	115	0.50	1.2	902.66	501	248	250	61	80	77	9.5		9.9
12	120	0.53	1.2	905.620	505	249	249	62	80	77	10.0		9.1
			13.13	33.810	~~10441~~ 5941				949	922			
	Total	*											
	Average												

*Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC DL
Date 3/24/10

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 2 SDA Inlet
Plant South Broward	Job No. 10955	Method 29

Run No. 1	Filter Type Quartz		Sample Box No. M1
Date 3/24/10	Lot No.		pH
Analyst B.W.Hsc	Filter No. NA		Rinse 100

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	831.7	496.5	235.2	
Impinger 2	100 ml 5%HNO3/10%H2O2	627.2	544.3	82.9	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	544.5	542.8	1.7	Date 3/24
Impinger 4	Empty	446.0	445.6	0.4	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	542.1	543.0	-0.9	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	548.1	547.8	0.3	319.6
Impinger 7	Silica Gel	791.5	777.7	13.8	333.4

Run No. 2	Filter Type Quartz		Sample Box No. M7
Date 3/24/10	Lot No.		pH
Analyst R.Vilca	Filter No. NA		Rinse 100

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	884.5	496.6	287.9	
Impinger 2	100 ml 5%HNO3/10%H2O2	562.4	555.3	7.1	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	588.5	587.3	1.2	Date 3/24
Impinger 4	Empty	442.2	442.4	-0.2	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	540.2	547.1	-6.9	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	547.6	539.9	7.7	296.8
Impinger 7	Silica Gel	768.0	755.7	12.3	309.1

Run No. 3	Filter Type Quartz		Sample Box No. M1
Date 3/24/10	Lot No.		pH
Analyst R.Vilca	Filter No. NA		Rinse 100

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	843.4	445.1	298.3	
Impinger 2	100 ml 5%HNO3/10%H2O2	553.7	545.0	8.7	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	545.1	543.1	2.0	Date 3/24
Impinger 4	Empty	446.3	445.7	0.6	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	543.7	544.6	-0.9	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	546.3	~~546.1~~ 546.1 ~~540.8~~	0.2	308.9
Impinger 7	Silica Gel	772.4	~~791.3~~ 754.4 SB	18.0	326.9

CleanAir ENGINEERING

QA/QC SB
Date 3/24

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

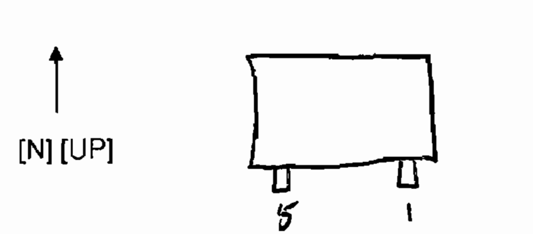
UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Browards	Date 3-24-10
Meter Operator N. Aitchins	
Probe Operator	

Meter Box 60-24	Sample Box No. B6
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.32	Pitot C_p 0.812
Leak Rate Before 0.006 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.001 [cfm] [Lpm] @ 9 (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]
-11.0	10		

Amb. Temp. (°F) 60	Bar. Press. 30.10 [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: 7:53	Stop Time: 9:11

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] 138.015	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 750	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	Notes IGS	
2-1	2:30	0.43	1.0	139.43	291	250	250	55	58	58	4	11.0	0.4	
2	5	0.42	0.97	140.79	291	252	252	52	59	58	4	9.0	0.4	
3	7:30	0.45	1.0	142.20	292	252	252	57	60	58	4	9.0	0.4	
4	10	0.51	1.2	143.55	292	251	251	50	61	58	4	9.0	0.4	
5	12:30	0.64	1.5	145.275	292	251	252	49	62	58	4	9.1	0.4	145.365
3-1	15	0.41	0.95	146.73	291	247	250	57	62	59	4	11.0	0.4	
2	17:30	0.45	1.0	148.13	292	250	250	51	63	59	4	9.0	0.4	
3	20	0.45	1.0	149.52	293	251	250	51	63	59	4	9.0	0.4	
4	22:30	0.51	1.2	151.07	293	251	250	53	64	59	5	9.3	0.4	
5	25	0.47	1.1	152.530	293	257	257	56	65	60	5	9.2	0.4	152.260
4-1	27:30	0.45	1.0	154.05	291	247	248	59	64	60	4	10.6	0.4	
2	30	0.43	1.0	155.45	292	250	250	60	65	60	4	9.4	0.4	
3	32:30	0.46	1.1	156.92	292	251	250	63	65	61	4	9.0	0.4	
	Total	*16.9421	26.4900	35.9350	7298				811	767				
	Average	0.6777	1.0596		291.9200				62.7802					

* Sum of square roots.

14.02

.09
.13
.045 0.3800
.1150

3795

Circle correct bracketed units on data sheet.

QA/QC NH

Date 3-24-10

CleanAir ENGINEERING

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

UNIT: 2 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10953
Plant S. Broward	Date 3.24.10
Meter Operator N. Hitchings	
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 IGS	
						250	250							
4-4	35	0.44	1.0	158.32	293	250	251	63	67	60	4	9.3	0.4	
5	37:30	0.50	1.2	159.885	293	250	250	63	67	61	5	9.2	0.4	159.930
5-1	40	0.42	0.97	161.33	292	249	250	60	65	62	4	10.0	0.4	
2	42:30	0.40	0.93	162.67	292	250	250	56	66	62	4	8.6	0.4	
3	45	0.42	1.0	164.07	292	251	250	54	66	63	4	9.1	0.4	
4	47:30	0.45	1.0	165.49	292	250	250	53	67	63	4	9.3	0.4	
5	50	0.44	1.0	166.905	291	250	250	52	67	63	4	9.0	0.4	167.020
1-1	52:30	0.47	1.1	168.49	290	248	252	52	66	64	4	10.9	0.4	
2	55	0.42	0.97	169.87	291	249	250	48	67	65	4	9.0	0.4	
3	57:30	0.46	1.0	171.28	291	251	251	46	68	65	4	8.7	0.4	
4	60	0.49	1.1	172.76	292	251	250	45	68	65	4	8.9	0.4	
5	62:30	0.51	1.2	174.330	294	251	250	44	69	65	5	9.0	0.4	
	Total	*							803	758				
	Average													

* Sum of square roots. 12.47

Circle correct bracketed units on data sheet.

3503 QA/QC SB Date 3/29

CleanAir ENGINEERING

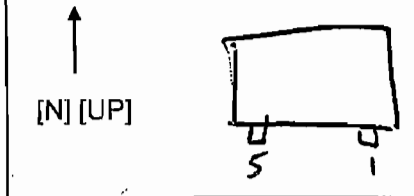
TEST LOCATION: FF OUTLET FLUORIDE TESTING METHOD: 13B PAGE 1 OF 2

UNIT: 2 RUN: 2

FIELD DATA SHEET

Client: Wheelabrator	Project No.: 10955
Plant: S. Broward	Date: 3.24.10
Meter Operator: Mr. Hutchins	
Probe Operator:	

Cross-Section of Test Location



Amb. Temp. (°F): 68	Bar. Press.: 30.10 [in. Hg] [mbar]
Probe I.D. No.: 67-F-14	
Liner Material: GLASS	

Meter Box: 66-24	Sample Box No.: B7	
Meter Y_d: 0.9900	Meter $\Delta H@$: 1.7576	
K Factor: 2.32	Pitot C_p: 0.872	
Leak Rate Before: 0.005 (cfm) [Lpm] @ 15 (in. Hg)		
Leak Rate After: 0.004 (cfm) [Lpm] @ 10 (in. Hg)		
Pitot Leak Check Before: ☒	After: Good ☑ Bad ☐	

Duct Dimensions (in.): 96 x 96			
Static Pres (in. H_2O): -11	Port Len. (in.): 10	Gas Flow (In) [Out] of page	First point all the way (In) [Out]

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

Start Time: 9:37 Stop Time: 10:54

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) 174.580	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_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F) O_2	Notes IGS	
1-1	2:30	0.50	1.2	176.18	291	254	254	60	68	68	5	11.0	0.4	
2	5	0.47	1.1	177.66	291	252	253	60	70	68	5	10.0	0.4	
3	7:30	0.46	1.1	179.14	292	257	257	60	71	68	5	8.8	0.4	
4	10	0.52	1.2	180.67	291	250	253	60	72	68	5	9.5	0.4	
5	12:30	0.64	1.5	182.400	292	250	250	60	73	69	6	9.5	0.4	182.490
2-1	15	0.47	1.1	183.99	290	248	257	57	72	69	5	10.7	0.4	
2	17:30	0.45	1.10	185.40	292	249	250	55	73	69	5	9.3	0.4	
3	20	0.47	1.1	186.89	292	251	251	56	74	69	5	9.2	0.4	
4	22:30	6.49	1.1	188.37	292	251	251	57	74	69	5	9.5	0.4	
5	25	0.59	1.4	190.025	293	251	252	60	75	70	6	9.0	0.4	190.110
3-1	27:30	0.34	0.79	191.35	293	248	250	61	73	70	5	10.5	0.4	
2	30	0.43	1.10	192.76	292	249	252	61	74	71	5	8.8	0.4	
3	32:30	0.45	1.0	194.16	292	250	250	61	74	71	5	9.6	0.4	
	Total	*16.9241	24.6800	36.3750	7301				943	849				
	Average	0.6772	1.0672		292.0400				72.8200					

Sum of square roots: 14.59

0.040 0.090 0.085 0.1 0.155 .43

Circle correct bracketed units on data sheet.

3793 QA/QC N/A

Date 3.24.10

CleanAir ENGINEERING

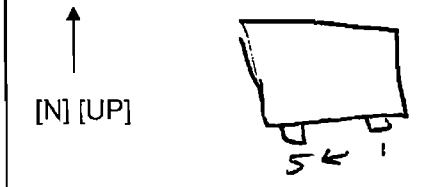
TEST LOCATION: FF OUTLET Fluoride TESTING METHOD: 13B PAGE 2 OF 2

UNIT: 2 RUN: 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3.24.10
Meter Operator	N. Hutchins		
Probe Operator			

Cross-Section of Test Location



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

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 ☐	

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

Duct Dimensions (in.)

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

Start Time:	Stop Time:

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	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. (°F)	Notes
						250	250					O_2	IC's
3-4	35	0.52	1.2	195.58	293	251	248	62	75	71	5	9.5	0.4
-5	37:30	0.47	1.1	197.090	291	251	251	62	76	71	5	9.5	0.4 197.190
4-1	40	0.44	1.0	198.64	293	248	249	62	75	72	5	10.5	0.4
2	42:30	0.41	0.95	200.00	292	249	252	62	76	72	5	9.0	0.4
3	45	0.44	1.0	201.41	293	250	250	55	77	72	5	8.1	0.4
4	47:30	0.51	1.2	202.95	293	252	251	56	79	72	5	9.2	0.4
5	50	0.48	1.1	204.475	292	252	250	53	80	73	5	9.0	0.4 204.680
5-1	52:30	0.39	0.90	205.98	291	247	249	57	76	73	5	10.8	0.4
2	55	0.37	0.86	207.28	292	249	249	54	77	74	5	9.0	0.4
3	57:30	0.39	0.90	208.62	292	251	250	53	78	74	5	9.4	0.4
4	60	0.38	0.88	209.97	294	251	250	53	79	74	5	8.6	0.4
5	62:30	0.44	1.0	211.385	292	251	250	53	79	74	5	9.1	0.4
	Total	*			3508				927	872			
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

1209

QA/QC SG

Date 3/24

FDS005-GeneralAls, Feb 2002

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 S. Broward	Date 3-24-10		
Meter Operator N. Hutchins			
Probe Operator			

Meter Box 66-24	Sample Box No. B5
Meter Y_d ~~1.757~~ 0.994	Meter $\Delta H_@$ 1.7516
K Factor 2.32	Pitot C_p 0.812
Leak Rate Before 0.003 [cfm] [Lpm] @ 15 (in. Hg)	
Leak Rate After 0.002 [cfm] [Lpm] @ 10 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

Cross-Section of Test Location

Duct Dimensions (in.) 46 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) 75	Bar. Press. 30.10 [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: 11:24	Stop Time: 12:46

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] 211.765	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~~ O_2 (°F)	Notes IGS
5-1	2:30	0.43	1.0	213.23	293	252	250	63	76	76	4	10.5	0.4
2	5	0.42	0.97	214.62	293	250	250	57	77	76	4	9.4	0.4
3	7:30	0.40	0.93	216.00	294	252	253	50	79	76	4	9.1	0.4
4	10	0.37	0.86	217.29	292	252	250	47	80	76	4	8.9	0.4
5	12:30	0.34	0.79	218.550	291	252	252	46	80	76	4	9.1	0.4 218.675
4-1	15	0.46	1.1	220.16	292	247	257	48	83	77	5	10.5	0.4
2	17:30	0.43	1.0	221.58	293	247	257	48	80	77	5	9.0	0.4
3	20	0.42	0.97	222.97	293	250	250	44	82	77	5	9.3	0.4
4	22:30	0.42	0.97	224.39	295	251	250	44	82	77	5	9.4	0.4
5	25	0.40	0.93	225.755	292	251	250	45	83	78	5	9.3	0.4 225.825
3-1	27:30	0.30	0.70	227.02	295	248	250	55	79	78	4	10.8	0.4
2	30	0.42	0.97	228.40	292	250	250	49	81	79	5	9.9	0.4
3	32:30	0.42	0.97	~~229.81~~ .88	293	252	251	46	82	79	5	9.3	0.4
	Total	16.5356	25.4600	~~35.6600~~	7326				1044	1002			
	Average	0.6614	1.0184	35.790	293.0400				79.4800				

Sum of square roots 12.16 1.0264

.125 0.200 0.108 .485 0.8 3808

Circle correct bracketed units on data sheet.

QA/QC NA

Date 3.24.10

FDS005-GeneralLxls, Feb 2002

CleanAir ENGINEERING

G - 50

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 S. BROWARD	Date 3.24.10
Meter Operator N. HITCHINS	
Probe Operator	

Cross-Section of Test Location

[N] [UP]

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

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 ☐

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

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	
						250	250					O_2	IGS	
3 - 4	35	0.49	1.1	231.21	294	251	250	46	84	79	5	9.2	0.4	
5	37:30	0.50	1.2	232.775	294	251	249	56	83	79	5	8.5	0.4	232.855
2 - 1	40	0.90	0.93	234.24	293	247	251	54	81	80	5	10.2	0.4	
2	42:30	0.43	1.0	235.66	294	249	249	50	82	79	5	9.0	0.4	
3	45	0.46	1.1	237.17	294	251	250	49	82	79	5	9.2	0.4	
4	47:30	0.50	1.2	238.74	294	251	251	48	83	79	5	9.4	0.4	
5	50	0.62	1.4	240.395	294	251	250	49	83	79	5	9.3	0.4	240.475
1 - 1	52:30	0.39	0.90	241.82	291	249	252	55	79	79	5	10.0	0.4	
2	55	0.41	0.94	243.19	292	250	251	55	80	78	5	9.3	0.4	
3	57:30	0.40	0.93	244.57	292	250	250	54	81	78	5	9.8	0.4	
4	60	0.59	1.4	246.25	293	250	250	54	82	79	5	10.1	0.4	
5	62:30	0.59	1.4	247.910	293	250	250	54	82	78	5	10.0	0.4	
	Total	*							982	946				
	Average													

* Sum of square roots. 13.3

Circle correct bracketed units on data sheet.

3518 QA/QC SG Date 3/29

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Teflon glass mat		Sample Box No. B6
Date 3/23/10 BV 3/24/10	Lot No.		pH
Analyst B. White	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	677.3	541.4	135.9
Impinger 2	100 mL DI H2O	616.4	562.3	54.1
Impinger 3	Empty	473.0	460.6	12.4
Impinger 4	Silica Gel	773.0	758.1	14.9
				Total Weight (gm)
				202.4
				217.3

QA/QC BW
Date 3/24

Run No. 2	Filter Type Teflon glass mat		Sample Box No. B7
Date 3/24/10	Lot No.		pH
Analyst B. White	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	690.6	542.9	147.7
Impinger 2	100 mL DI H2O	589.9	541.9	48.0
Impinger 3	Empty	446.5	438.5	8.0
Impinger 4	Silica Gel	753.1	739.1	14.0
				Total Weight (gm)
				203.7
				217.7

QA/QC BW
Date 3/24

Run No. 3	Filter Type Teflon glass mat		Sample Box No.
Date 3/24/10	Lot No.		pH
Analyst B. White	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	693.5	536.7	156.8
Impinger 2	100 mL DI H2O	588.7	549.5	39.2
Impinger 3	Empty	457.9	451.8	6.1
Impinger 4	Silica Gel	767.9	759.7	8.2
				Total Weight (gm)
				202.1
				210.3

QA/QC BW
Date 3/24

CleanAir ENGINEERING

QA/QC SB
Date 3/24

TEST LOCATION: FF outlet D.oxin TESTING METHOD: 23 PAGE 1 OF 4

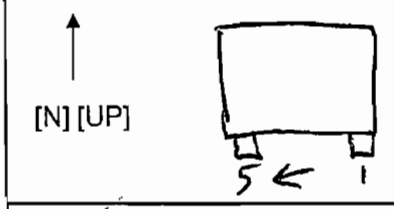
UNIT: 2 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10555
Plant S. Broward	Date 3-22-10
Meter Operator	N. Hutchins
Probe Operator	N. Hutchins

Meter Box 66-24	Sample Box No. D7
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.34	Pitot C_p 0.834
Leak Rate Before 0.004 [cfm] [Lpm] @ 16 (in. Hg)	
Leak Rate After 0.004 [cfm] [Lpm] @ 13 (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]
-10.8	10		

Amb. Temp. (°F) 60	Bar. Press 30.10	[in Hg] [mbar]
Probe I.D. No.	67-8-17	
Liner Material	GLASS	

Filter No.		
Thimble No.		
Nozzle Diameter 0.269	Nozzle I.D.	.269-1

Start Time: 10:04	Stop Time: 14:44

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] 699.390	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_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2	Notes IGS
1-1	5	0.47	1.1	702.42	292	250	250	58	66	63	6	43	10.1	0.1
1	10	0.44	1.0	705.25	292	250	250	57	68	64	7	41	9.4	0.1
1-2	15	0.44	1.0	708.05	293	250	250	47	71	65	7	42	9.0	0.1
2	20	0.43	1.0	710.88	292	250	250	46	74	65	7	40	9.8	0.1
2-3	25	0.47	1.1	713.79	292	250	250	46	75	66	7	40	9.6	0.1
3	30	0.47	1.1	716.71	292	250	250	46	76	67	7	41	9.4	0.1
3-4	35	0.43	1.0	719.54	292	250	255	46	76	68	7	44	9.3	0.1
4	40	0.43	1.0	722.37	292	250	252	48	75	68	7	47	9.0	0.1
4-5	45	0.50	1.2	725.40	290	250	253	50	76	68	8	51	9.2	0.1
5	50	0.52	1.2	728.445	291	249	248	52	75	68	8	55	9.8	0.1
5-1	55	0.43	1.0	731.57	292	249	256	58	66	66	7	52	11.2	0.1
1	60	0.43	1.0	734.40	291	250	250	59	67	66	7	53	9.5	0.1
5-2	65	0.43	1.0	737.17	291	250	250	60	70	66	7	58	9.5	0.1
	Total		38	146.9400										
	Average	0.6541	1.0046		293.3000				72.5800					
	Sum of square roots		1.0038											

728.770

Circle correct bracketed units on data sheet.

QA/QC NH

Date 3-22-10

CleanAir ENGINEERING

TEST LOCATION: FF OUTLET Dioxin TESTING METHOD: 23 PAGE 2 OF 4

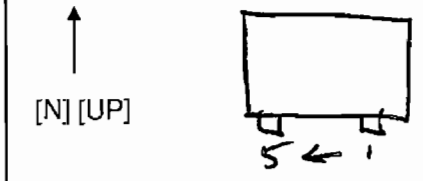
UNIT: 2 RUN: 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3.22.10
Meter Operator	M. Hutchins		
Probe Operator			

Meter Box	Cole 24	Sample Box No.	57
Meter Y_d	0.9904	Meter $\Delta H_@$	1.7516
K Factor	2.34	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	First point all the way
-10.8	10	(In) [Out] of page	(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 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. T_t (°F)	Notes O_2	Notes 765
2-2	70	0.40	0.94	739.93	291	251	253	62	72	67	7	63	9.6	0.1
2-3	75	0.43	1.0	742.76	292	250	257	52	73	67	7	44	9.3	0.1
3	80	0.43	1.0	745.64	293	250	254	47	74	67	7	40	9.7	0.1
2-4	85	0.46	1.1	748.53	295	250	249	46	75	68	7	40	8.9	0.1
4	90	0.53	1.2	751.56	293	250	252	45	76	68	7	40	5.7	0.1
4-5	95	0.57	1.2	754.62	286	250	249	44	75	68	7	42	8.7	0.1
5	100	0.52	1.2	757.660	290	250	257	46	75	68	8	45	8.7	0.1
3-1	105	0.41	0.96	760.85	293	249	257	52	71	69	7	46	11.0	0.1
1	110	0.40	0.94	763.57	297	249	251	51	74	69	7	45	8.8	0.1
3-2	115	0.36	0.84	766.15	290	251	247	53	75	69	7	49	9.1	0.1
2	120	0.38	0.89	768.82	295	252	248	55	75	69	7	53	8.8	0.1
3-3	125	0.41	0.96	771.57	293	251	248	58	77	70	7	52	9.3	0.1
3	130	0.42	0.98	774.40	295	250	248	62	76	70	7	59	10.1	
	Total	*												
	Average	0.65411	1.00460		293.300				72.5800					

765: 0.60

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SG

Date 3/24/10

CleanAir ENGINEERING

0.004 @ 15

TEST LOCATION: FF OUTLET DIOXIN TESTING METHOD: 23 PAGE 3 OF 4

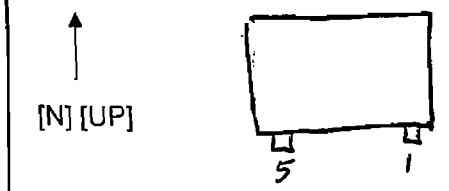
UNIT: 2 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3.22.10
Meter Operator N. Hutchins	
Probe Operator	

Meter Box 66-24	Sample Box No. D7
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.34	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.) 96 x 84

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.8	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 O2	Notes IGS
3-4	135	0.43	1.0	777.26	294	249	249	54	77	70	8	49	8.8	0.1
4	140	0.41	0.96	780.03	293	250	251	49	77	71	7	42	9.5	0.1
3-5	145	0.42	0.98	782.85	286	250	250	46	77	71	7	41	9.5	0.1
5	150	0.45	1.1	785.780	294	250	250	46	76	71	7	42	10.4	0.1
4-1	155	0.46	1.1	789.13	294	249	255	53	73	71	8	44	11.6	0.1
1	160	0.48	1.1	792.04	295	249	252	49	75	71	8	41	10.2	0.1
4-2	165	0.41	0.96	794.82	295	251	249	50	76	71	8	42	9.8	0.1
2	170	0.44	1.0	797.66	295	252	252	57	77	71	8	47	10.0	0.1
4-3	175	0.40	0.94	800.41	295	251	251	54	76	71	8	50	9.7	0.1
3	180	0.40	0.94	803.16	297	250	250	58	76	71	7	55	9.0	0.1
4-4	185	0.48	1.1	806.11	297	250	250	61	77	71	8	58	9.0	0.1
4	190	0.46	1.1	809.04	296	250	250	56	77	72	8	50	8.6	0.1
4-5	195	0.46	1.1	812.19	295	250	249	57	79	72	8	43	9.1	0.1
	Total	*												
	Average													

786.185

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/22

CleanAir ENGINEERING

ODU 0.5

TEST LOCATION: FF OUTLET Dioxin **TESTING** **METHOD:** 23 **PAGE** 4 **OF** 4

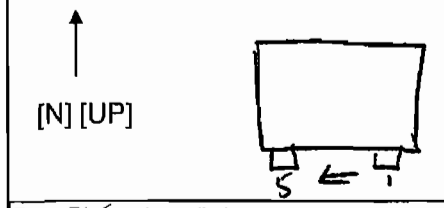
UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3.22.10
Meter Operator N. Mathis	
Probe Operator	

Meter Box GG-24	Sample Box No. 57
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.34	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]
-10.8	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	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2	Notes IGS
4-5	200	0.46	1.1	814.945	294	250	250	50	79	72	8	45	9.1	0.1
5-1	205	0.35	0.82	817.91	295	250	250	53	75	72	7	44	11.0	0.1
1	210	0.33	0.77	820.40	295	250	250	51	77	72	7	41	9.5	0.1
5-2	215	0.38	0.89	823.07	297	250	250	51	79	73	7	41	8.0	0.1
2	220	0.38	0.89	825.74	295	250	250	51	80	74	7	44	5.0	0.1
5-3	225	0.38	0.89	828.40	295	250	253	54	80	74	7	48	9.6	0.1
3	230	0.38	0.89	831.07	295	250	249	57	81	75	7	51	9.0	0.1
5-4	235	0.37	0.87	833.72	294	250	250	55	82	75	7	56	9.0	0.1
4	240	0.38	0.89	836.40	294	250	250	63	81	75	7	57	9.2	0.1
5-5	245	~~0.39~~ 0.43	1.0	839.24	295	250	250	63	81	75	7	62	9.5	0.1
5	250	0.38	0.89	841.880	295	250	250	65	81	76	7	63	9.1	0.1
	Total	*												
	Average													

85-76.5

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/28

CleanAir ENGINEERING

002 @ 13

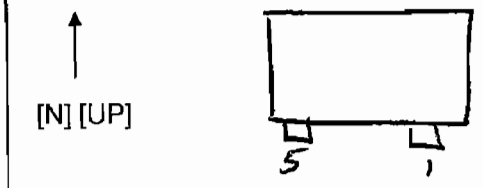
TEST LOCATION: FF OUTLET DIOXIN TESTING METHOD: 23 PAGE 1 OF 4

UNIT: 2 RUN: 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10953
Plant S Broward	Date 3.23.10
Meter Operator N Hitchins	
Probe Operator	

Cross-Section of Test Location



Amb. Temp. (°F) 65	Bar. Press. 30.10 [in. Hg] [mbar]
Probe I.D. No. 67-8-17	
Liner Material GLASS	

Meter Box 66-24	Sample Box No. D8	
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516	
K Factor 2.33 → 2.35	Pitot C_p 0.834	
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 ☐	

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		

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

Start Time: 7:36	Stop Time: 12:10

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] 842.350	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 O_2	IGS
5-1	5	0.40	0.93	845.09	296	250	250	52	64	62	5	51	10.3	0.1
1	10	0.39	0.90	847.75	295	250	250	53	66	62	5	45	9.8	0.1
5-2	15	0.41	0.95	850.49	295	250	250	47	69	63	5	44	10.1	0.1
2	20	0.43	1.0	853.29	295	250	250	43	71	63	5	46	10.1	0.1
5-3	25	0.49	1.1	856.24	298	250	250	42	74	65	6	47	9.4	0.1
3	30	0.38	0.88	858.88	297	250	250	42	74	65	5	50	8.7	0.1
5-4	35	0.39	0.90	861.54	296	250	250	43	74	67	5	46	9.5	0.1
4	40	0.40	0.93	864.26	296	250	250	44	76	67	5	45	9.3	0.1
5-5	45	0.38	0.88	866.90	297	250	250	45	77	69	5	49	9.3	0.1
5	50	0.39	0.90	869.575	297	250	250	46	77	70	5	53	9.0	0.1
4-1	55	0.40	0.93	872.59	297	250	250	48	76	73	5	50	10.3	0.1
1	60	0.41	0.95	875.34	297	250	250	44	78	73	5	45	9.2	0.1
4-2	65	0.45	~~1.0~~ 1.1	878.26	298	251	251	43	81	75	6	46	10.2	0.1
	Total	*	58	1415.9200										
	Average	0.6716	1.0606		296.9000				78.6302					

* Sum of square roots. 1.0594

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/28

CleanAir ENGINEERING

FDS005-General.xls, Feb 2002

.0044@13

TEST LOCATION: FF OUTLET **DOXIN TESTING** **METHOD:** 23 **PAGE** 2 **OF** 4

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S BROWARD	Date	3.23.10
Meter Operator	N HITCHINS		
Probe Operator			

Meter Box	66-24	Sample Box No.	D8
Meter Y_d	1.7516	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.) 96 x 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow	First point all the way
-19.0	10	(In) [Out] of page	(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)	Notes O_2	Notes IGS	
4-2	70	0.38	0.89	880.93	298	252	252	44	82	76	5	47	9.9	0.1	
4-3	75	0.43	1.0	883.78	298	250	250	43	81	76	6	47	9.4	0.1	
3	80	0.40	0.94	886.53	300	250	250	44	81	76	5	48	9.2	0.1	
4-4	85	0.38	0.89	889.21	298	252	252	45	81	76	5	49	9.0	0.1	
4	90	NA 0.48	NA 1.1	892.18	298	250	250	47	81	77	6	51	9.6	0.1	
4-5	95	NA 0.440	NA 0.94	894.95	296	250	250	49	81	78	6	53	9.2	0.1	
5	100	0.39	0.92	897.685	298	250	250	52	81	78	6	55	8.7	0.1	897.685
3-1	105	0.41	0.96	900.78	299	252	252	58	79	78	5	56	11.0	0.1	
1	110	0.40	0.94	903.54	298	250	250	51	83	80	5	57	8.8	0.1	
3-2	115	0.42	0.99	906.40	299	252	252	47	84	80	6	47	9.9	0.1	
2	120	0.44	1.0	909.27	298	252	247	48	85	81	6	49	9.2	0.1	
3-3	125	0.47	1.1	912.29	299	250	250	50	85	82	6	53	9.1	0.1	
3	130	0.44	1.0	915.15	297	250	250	51	85	81	6	55	9.6	0.1	
	Total	*													
	Average	0.6716	1.6606		296.9000				78.6300						

Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC JB

Date 3/23

CleanAir. ENGINEERING

003@14

TEST LOCATION: FF OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 3 **OF** 4

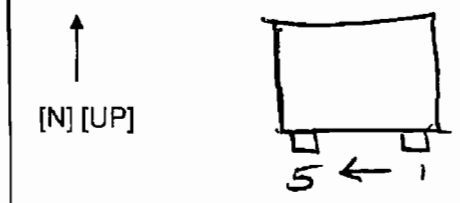
UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10953
Plant	S BROWARD	Date	3.23.10
Meter Operator	N HITCHINS		
Probe Operator			

Meter Box	66-24	Sample Box No.	DS
Meter Y_d	0.9902	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.)	56 x 56		
Static Pres ($in. H_2O$)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
	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. [ft^3] [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 O_2	Notes IGS
3-4	135	0.49	1.2	918.27	298	250	252	49	85	82	6	46	10.1	0.1
4	140	0.54	1.3	421.55	297	250	250	49	84	81	6	44	10.6	0.1
3-5	145	0.44	1.0	924.40	297	249	250	49	86	81	6	46	10.0	0.1
5	150	0.55	1.3	427.660	297	249	250	49	84	81	6	47	10.4	0.1
2-1	155	0.46	1.1	931.05	296	248	252	54	82	82	6	49	10.5	0.1
1	160	0.50	1.2	934.15	295	250	251	54	84	82	6	49	9.6	0.1
2-2	165	0.43	1.0	937.02	295	250	251	54	86	82	6	50	9.5	0.1
2	170	0.52	1.2	940.13	295	250	251	50	86	82	6	49	10.1	0.1
2-3	175	0.55	1.3	943.39	297	250	253	47	85	82	6	45	9.5	0.1
3	180	0.51	1.2	946.56	296	250	250	46	85	81	6	45	9.0	0.1
2-4	185	0.54	1.3	949.80	296	250	251	47	85	81	6	45	9.5	0.1
4	190	0.54	1.3	953.04	296	250	250	47	85	81	6	45	9.1	0.1
2-5	195	0.61	1.4	956.42	298	250	250	49	85	81	6	46	8.5	0.1
	Total	*												
	Average													

927.665

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB
Date 3/23

CleanAir ENGINEERING

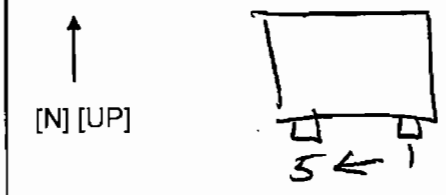
TEST LOCATION: FF OUTLET **DIOXIN TESTING** **METHOD:** 23 **PAGE** 4 **OF** 4

UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S Broward	Date	3.23.10
Meter Operator	N Hitchins		
Probe Operator			

Cross-Section of Test Location



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

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 ☐		

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

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		

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)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2	Notes IGS
						250	250							
2-5	200	0.58	1.4	959.795	297	250	250	50	84	80	6	47	9.4	0.1
1-1	205	0.47	1.1	962.99	296	249	247	55	79	79	6	47	9.8	0.1
1	210	0.51	1.2	966.11	297	251	255	53	81	80	6	50	10.3	0.1
1-2	215	0.42	0.99	968.93	297	251	252	54	83	79	6	52	9.1	0.1
2	220	0.44	1.0	971.78	297	250	250	53	83	79	6	47	9.1	0.1
1-3	225	0.47	1.1	974.79	297	250	250	53	83	79	6	47	9.3	0.1
3	230	0.39	0.92	977.51	295	250	250	54	84	79	6	48	8.8	0.1
1-4	235	0.47	1.1	980.49	295	250	250	54	84	79	6	49	9.2	0.1
4	240	0.40	0.94	983.24	295	250	250	55	83	79	6	50	9.3	0.1
1-5	245	0.53	1.2	986.32	298	250	249	58	83	79	6	53	9.0	0.1
5	250	0.53	1.2	989.435	298	250	249	61	84	78	6	56	9.0	0.1
	Total	*												
	Average													

460.055

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/23

CleanAir ENGINEERING

003@12

TEST LOCATION: FF OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 1 **OF** 4

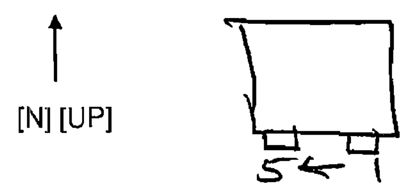
UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10455
Plant S BROWARD	Date 3.23.10
Meter Operator N HITCHINS	
Probe Operator	

Meter Box 66-24	Sample Box No. D7
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
K Factor 2.35	Pitot C_p 0.834
Leak Rate Before 0.002 [cfm] [Lpm]	@ 16 (in. Hg)
Leak Rate After 0.009 [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]
-11.0	10	[In] circled	[In] circled

Amb. Temp. (°F) 75	Bar. Press. 30.1 [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: 12:32	Stop Time: 17:02

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] 990.040	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 O_2	Notes 165
1-1	5	0.40	0.94	992.88	297	250	250	63	74	74	6	63	11.0	0.1
1	10	0.40	0.94	995.51	297	250	250	59	75	75	6	55	9.8	0.1
1-2	15	0.48	1.1	998.41	299	250	250	50	77	77	7	42	9.5	0.1
2	20	0.40	0.94	1001.16	300	250	250	49	80	75	7	44	8.8	0.1
1-3	25	0.43	1.0	1004.02	300	250	250	49	78	74	7	49	9.0	0.1
3	30	0.43	1.0	1006.86	299	250	250	49	80	75	7	53	9.0	0.1
1-4	35	0.48	1.1	1009.78	299	250	252	49	82	76	7	53	9.1	0.1
4	40	0.48	1.1	1012.76	299	250	250	45	82	76	7	45	9.3	0.1
1-5	45	~~0.52~~ NH 0.48	~~1.2~~ NH 1.1	1015.74	297	250	250	44	84	77	7	45	8.5	0.1
5	50	0.58	1.2	1018.845	299	250	250	44	86	78	7	46	9.0	0.1	1019.085
2-1	55	0.44	1.0	1021.95	300	250	250	46	83	80	7	49	11.1	0.1
1	60	0.52	1.2	1025.03	300	250	250	44	85	81	8	48	9.2	0.1
2-2	65	0.40	0.94	1027.80	300	251	251	45	86	81	8	50	9.5	0.1
	Total	*	1.0590	146.0200										
	Average	0.66738	~~1.0598~~ SB		298.5200				82.9900					

* ~~Sum of square roots.~~

Circle correct bracketed units on data sheet.

AMB 75
30.10
DGM 80
O_2 9
CO_2 10
295
2.35

QA/QC NH
Date 3.23.10

CleanAir ENGINEERING

003 @ 16

TEST LOCATION: FF OUTLET DIOXIN TESTING METHOD: 23 PAGE 2 OF 4

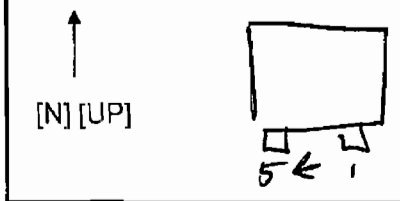
UNIT: 2 RUN: 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. BROWARD	Date	3.23.10
Meter Operator	N. HITCHINS		
Probe Operator			

Meter Box	66-24	Sample Box No.	B7
Meter Y_d	0.9904	Meter $\Delta H_@$	1.7516
K Factor	2.35 2.30	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	First point
-11.0	18	[In] [Out] of page	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_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2	Notes IGS
2-2	70	0.45	1.1	1030.77	300	252	252	47	86	82	8	55	9.2	0.1
2-3	75	0.43	1.0	1033.62	300	252	252	49	87	82	8	59	9.3	0.1
3	80	0.49	1.2	1036.87	301	250	251	54	87	83	8	55	9.6	0.1
2-4	85	0.52	1.2	1039.92	299	250	250	58	88	83	8	50	9.6	0.1
4	90	0.52	1.2	1043.06	299	249	253	57	88	83	8	49	9.8	0.1
2-5	95	NR 0.66 AVG 0.725	1.6	1046.65	298	249	248	54	89	83	10	45	9.5	0.1
5	100	0.60	1.4	1050.055	299	250	252	53	89	84	10	45	9.0	0.1
3-1	105	0.33	0.79	1053.21	297	249	255	60	84	83	7	46	11.5	0.1
1	110	0.30	0.71	1055.63	297	249	247	56	86	83	NR 4 7	47	9.3	0.1
3-2	115	0.42	1.0	1058.50	297	251	250	46	85	83	8	47	9.0	0.1
2	120	0.40	0.95	1061.27	296	251	250	42	84	82	7	43	9.2	0.1
3-3	125	0.43	1.0	1064.13	297	251	250	41	85	82	8	44	9.2	0.1
3	130	0.43	1.0	1066.99	296	250	250	42	86	82	8	40	9.6	0.1
	Total	*												
	Average													

050.
040

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/23

CleanAir ENGINEERING

0030 12

TEST LOCATION: FF OUTLET DIOXIN **TESTING** **METHOD:** 23 **PAGE** 3 **OF** 4

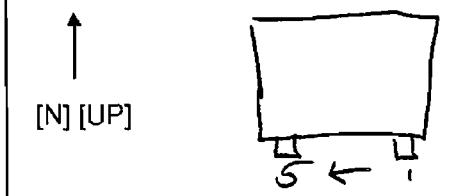
UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. BROWARD	Date 3.23.10
Meter Operator N. HITCHINS	
Probe Operator	

Meter Box 60-24	Sample Box No. D7
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516
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



Duct Dimensions (in.)			
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)	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 ⅚ 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 O_2	Notes IGS
3-4	135	0.45	1.1	1069.96	298	249	247	44	84	81	8	39	9.6	0.1
4	140	0.54	1.3	1073.16	298	250	247	47	85	81	8	39	10.2	0.1
3-5	145	0.61	1.5	1076.65	298	250	250	50	84	80	10	40	9.2	0.1
5	150	0.61	1.5	1080.085	299	250	253	49	85	80	10	40	9.1	0.1
4-1	155	0.40	0.95	1083.36	297	249	253	55	83	81	8	44	11.2	0.1
1	160	0.45	1.1	1086.29	298	249	253	54	85	81	8	45	9.4	0.1
4-2	165	0.47	1.1	1089.25	298	251	248	55	87	81	8	49	9.1	0.1
2	170	0.40	0.95	1092.03	298	252	249	58	87	81	8	53	9.3	0.1
4-3	175	0.42	1.0	1094.89	298	251	249	60	87	81	8	56	9.2	0.1
3	180	0.47	1.1	1097.85	298	250	250	56	88	82	8	53	10.2	0.1
4-4	185	0.42	1.0	1100.74	298	250	250	50	89	83	8	48	9.5	0.1
4	190	0.42	1.0	1103.62	298	250	250	49	89	83	8	46	9.0	0.1
4-5	195	0.39	0.93	1106.38	296	250	250	50	89	83	8	47	9.3	0.1
	Total	*												
	Average													

080.555

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/23

CleanAir ENGINEERING

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

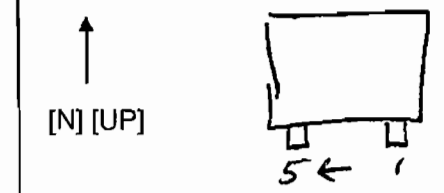
UNIT: 2 **RUN:** 3

FIELD DATA SHEET

003 of 3

Client WHEELABRATOR	Project No. 10955
Plant S. BROWARD	Date 3.23.10
Meter Operator N. HITCHINS	
Probe Operator	

Cross-Section of Test Location



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

Meter Box 66-24	Sample Box No. D7	
Meter Y_d 0.9904	Meter $\Delta H_@$ 1.7516	
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 ☐	

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		

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	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 O_2	Notes IGS
						250	250							
4-5	200	0.40	0.95	1109.170	298	250	247	50	88	83	8	47	9.2	0.1
5-1	205	0.37	0.88	1112.23	299	249	250	56	85	83	8	47	10.7	0.1
1	210	0.37	0.88	1114.90	298	250	250	54	86	83	8	46	9.2	0.1
5-2	215	0.39	0.93	1117.65	299	250	250	55	86	83	8	48	10.1	0.1
2	220	0.37	0.88	1120.33	298	250	250	57	87	83	8	48	9.7	0.1
5-3	225	0.53	1.3	1123.56	299	250	250	59	86	83	9	51	10.3	0.1
3	230	0.48	1.1	1126.62	300	250	250	60	87	83	8	54	9.8	0.1
5-4	235	0.43	1.0	1129.49	300	250	254	62	87	83	8	58	8.9	0.1
4	240	0.35	0.83	1132.14	301	250	250	62	88	83	7	60	9.0	0.1
5-5	245	0.41	0.98	1134.89	300	250	250	63	88	83	8	62	9.0	0.1
5	250	0.41	0.98	1137.710	300	250	250	64	88	83	8	62	8.8	0.1
	Total	*												
	Average													

109.525

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/23

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. #1 RV	Filter Type		Sample Box No. D7
Date 3/22/10	Lot No.		pH
Analyst R. Vicere	Filter No.		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	1389.9	634.7	755.2	
Impinger 2	100 ml HPLC H2O	536.8	~~426.0~~ RV	535.6 1.2	QA/QC SB
Impinger 3	100 ml HPLC H2O	547.3	545.5	1.8	Date 3/22
~~Impinger 4~~	~~Empty~~				
Impinger 5	Trap # T025_010	344.7	332.9	11.8	Total Weight (gm)
Impinger 6	Silica Gel	794.3	748.8	45.5	780.0
					815.5

Run No. ~~3~~ RV 2	Filter Type		Sample Box No. D8
Date 3/23/10	Lot No.		pH
Analyst R. Vicere	Filter No.		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	1406.1	630.9	775.2	
Impinger 2	100 ml HPLC H2O	552.8	550.0	2.8	QA/QC SB
Impinger 3	100 ml HPLC H2O	539.4	538.1	1.3	Date 3/23
~~Impinger 4~~	~~Empty~~				
Impinger 5	Trap # T025_008	410.9	398.9	12.0	Total Weight (gm)
Impinger 6	Silica Gel	848.8	810.1	38.7	791.3
					830.0

Run No. ~~2~~ RV 3	Filter Type		Sample Box No. D7
Date 3/23/10	Lot No.		pH
Analyst R. Vicere	Filter No.		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)		
Impinger 1	Empty	1437.7	635.5	~~802.2~~		
Impinger 2	100 ml HPLC H2O	534.4	532.3	2.1	QA/QC SB	
Impinger 3	100 ml HPLC H2O	546.7	544.5	2.2	Date 3/23	
~~Impinger 4~~	~~Empty~~					
Impinger 5	Trap # ~~T0525-007~~ RV	327.0	~~328.6~~ RV	313.6 13.4		Total Weight (gm)
Impinger 6	Silica Gel T0525_009	804.1	756.4	47.7		819.9
						867.6

CleanAir ENGINEERING

QA/QC SB
Date 3/23

TEST LOCATION: FFoutlet | Hcl | TESTING METHOD: 26A PAGE 1 OF 1

UNIT: 2 RUN: 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3/23/10
Meter Operator	A. Karony		
Probe Operator			

Meter Box	85-2	Sample Box No.	B21
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7959
K Factor		Pitot C_p	
Leak Rate Before	0.005 [cfm] [Lpm]	@	20 (in. Hg)
Leak Rate After	[cfm] [Lpm]	@	9 (in. Hg)
Pitot Leak Check Before: ☒	After: Good ☐ Bad ☐		

Cross-Section of Test Location

Amb. Temp. (°F)	65	Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	07-4-3		
Liner Material	glass		

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

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	10		

Start Time: 7:55 Stop Time: 8:55

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. 392.870 [ft³] [L]	Stack Temp. (1) Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. (4) T_c (°F)	DGM Inlet (6) $T_{m\,in}$ (°F)	DGM Outlet (7) $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2
3-1	5	0.39	1.5	396.26	301	298	301	50	69	64	3		10.7
	10	0.39		399.52	300	297	301	40	75	65	3		8.8
	15	0.42		402.79	299	299	297	38	77	66	3		9.8
	20	0.41		405.97	300	299	299	39	79	67	3.5		9.2
	25	0.42		409.17	300	297	300	41	80	68	3.5		9.3
	30	0.41		412.40	300	299	301	45	81	70	3		8.9
	35	0.43		415.89	301	297	299	59	85	73	4		9.2
	40	0.44		419.19	301	299	300	60	85	73	4		9.4
	45	0.43		422.55	301	297	302	63	84	74	4		9.6
	50	0.43		425.88	303	296	298	66	85	75	3.5		10.8
	55	0.43		429.29	302	300	301	61	86	76	3		8.9
	60	0.46		SB 439.91 432.91	303	300	302	56	87	77	3		9.7
	Total	*		SB 47.0400	3611.0000				937.0000	848.0000			
	Average			40.040	300.9167				74.3750 58				

* Sum of square roots.

Circle correct bracketed units on data sheet.

75.875

QA/QC AK

Date 3/23/10

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	S. Broward	Date	3/23/10
Meter Operator	A. Karony		
Probe Operator			

Meter Box	85-2	Sample Box No.	B21
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7459
K Factor		Pitot C_p	
Leak Rate Before	0.002 (cfm) [Lpm]	@	15.5 (in. Hg)
Leak Rate After	0.001 (cfm) [Lpm]	@	9 (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]
-11	10		

Amb. Temp. (°F)	65	Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

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

Start Time: 9:30 Stop Time: 10:31

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	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 O_2
				432.805 433.100		300	300						
9-1	5	0.46	1.75	436.38	302	298	298	68	78	79	2.5		10.4
	10	0.40		439.42	304	300	304	55	86	81	3		9.2
	15	0.45		442.91	303	297	298	47	87	87	3		9.9
	20	0.38		446.31	301	301	301	49	89	81	3.5		10.4
	25	0.41		449.77	302	300	300	54	88	81	3		9.2
	30	0.43		453.27	300	300	300	60	90	82	3		9.9
	35	0.42		456.66	300	297	300	54	88	81	3		10.6
	40	0.45		460.04	302	300	301	53	88	81	3		10.9
	45	0.42		463.44	301	297	298	52	89	82	3		10.8
	50	0.50		466.86	300	298	299	50	87	81	3		11.1
	55	0.44		470.25	300	297	301	49	81	81	3		10.3
	60	0.45		473.63	300	300	301	48	87	80	3		9.6
	Total	*		40.5300	3616				1038	977			
	Average				301.2500				86.5	83.9583			

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/23/10

CleanAir ENGINEERING

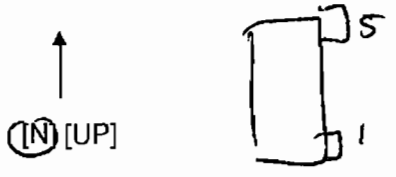
TEST LOCATION: FF outlet HCl **TESTING METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3/23/10
Meter Operator	A. Karony		
Probe Operator			

Cross-Section of Test Location



Amb. Temp. (°F)	65	Bar. Press. 30.1	(in. Hg) [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

Meter Box	85-2	Sample Box No.	B21
Meter Y_d	1.0066	Meter $\Delta H_@$	1.7759
K Factor		Pitot C_p	
Leak Rate Before	0.002 [cfm] [Lpm]	@ 14	(in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@ 9	(in. Hg)
Pitot Leak Check Before: [X]	After: Good [X]	Bad [ ]	

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

Duct Dimensions (in.)

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow (In) [Out] of page	First point all the way [In] [Out]
-11	10		

Start Time:	10:55	Stop Time:	12:06

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. 475.045 (ft³) [L]	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	0.44	1.5	478.42	300	300	300	59	77	78	3		11.2
	10	0.42		481.88	298	299	301	52	79	77	3		9.5
	15	0.48		485.02	301	297	299	50	83	76	3.5		11.1
	20	0.37		488.37 NC	300	298	298	52	85	77	3.5		8.8
	25	0.46		491.78	301	298	305	56	84	76	4.0		9.7
	30	0.38		495.32	299	299	298	56	86	77	4		8.8
	35	0.39		498.52	300	297	300	57	87	78	4		9.4
	40	0.40		501.88	300	298	301	61	86	78	4		9.2
	45	0.43		505.76	299	299	299	60	87	77	4		9.8
	50	0.36		508.66	301	298	300	58	88	78	4		8.4
	55	0.41		512.04	301	297	298	57	86	78	4		9.3
↓	60	0.42	↓	516.22	301	296	298	57	86	78	4		8.8
	Total	*		41.1750	3601.00				1014.00	930.00			
	Average				300.0833				84.5000	77.5000			

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC NC

Date 3/24/10

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. B21
Date 3/23/10	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	530.6	~~464.1~~ R1 474.9	55.7	
Impinger 2	100 mL 01.N H2SO4	732.4	639.2	93.2	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	584.4	535.3	49.1	Date 3/23
Impinger 4	Empty	467.6	452.5	15.1	
Impinger 5	Silica Gel	763.9	745.3	18.6	Total Weight (gm)
					213.1
					231.7

Run No. 2	Filter Type Quartz		Sample Box No. B11
Date 3/23/10	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	527.8	469.2	58.6	
Impinger 2	100 mL 01.N H2SO4	667.6	561.0	106.6	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	595.0	555.0	40.0	Date 3/23
Impinger 4	Empty	468.3	457.1	11.2	
Impinger 5	Silica Gel	766.1	749.0	~~58~~ 17.1	Total Weight (gm)
					216.4
					233.5

Run No. 3	Filter Type Quartz		Sample Box No. B21
Date 3/23/10	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	548.8	479.6	69.2	
Impinger 2	100 mL 01.N H2SO4	581.1 ↑	646.5	111.0	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	757.5 ↓	537.0	44.1	Date 3/23
Impinger 4	Empty	459.4	451.7	7.7	
Impinger 5	Silica Gel	778.8	763.7	15.1	Total Weight (gm)
					232.0
					247.1

CleanAir ENGINEERING

QA/QC SB
Date 3/23

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

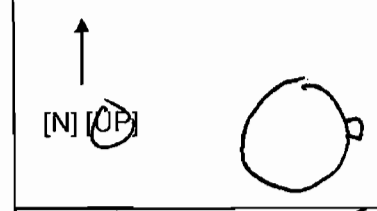
UNIT: 2 RUN: 1

FIELD DATA SHEET

Client: Wheelabrator	Project No.: 10155
Plant: S. Bloomfield	Date: 3-23-10
Meter Operator: B. Arnold	
Probe Operator: B. Arnold	

Meter Box: 66-11	Sample Box No.: B16
Meter Y_d: 0.9933	Meter $\Delta H_@$: 1.8619
K Factor: N/A	Pitot C_p:
Leak Rate Before: 0.004 [cfm] [Lpm] @ 25 (in. Hg)	
Leak Rate After: 0.005 [cfm] [Lpm] @ 23 (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]
-1.4	14	[In]	[In]

Amb. Temp. (°F): 75	Bar. Press.: 36.10 [in Hg] [mbar]
Probe I.D. No.: 1,7-4-5	
Liner Material: GLASS	

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

Start Time: 7:55	Stop Time: 8:55

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. 598.135 [ft^3] [L]	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)	Notes
1-1	5		1.2	601.04	497	355	353	63	70	68	3.0	79	
	10			603.93	489	355	354	61	71	67	4.0	7.8	
	15			606.76	487	355	353	56	73	68	5.5	8.4	
	20			609.67	489	356	355	48	76	69	7.5	8.7	
	25			612.57	489	355	355	45	77	70	~~7.5~~ 8.5	7.3	
	30			615.48	489	355	355	46	77	71	11.0	7.9	
	35			618.41	489	355	355	48	79	72	13.0	7.4	
	40			621.37	486	355	354	50	79	72	15.5	7.4	
	45			624.29	486	355	355	51	79	73	16.5	7.6	
	50			627.22	489	355	356	51	80	73	18.0	8.7	
	55			630.15	496	355	356	51	79	74	21.0	7.0	
	60		1.1	633.040	493	355	354	52	77	74	22.5	8.0	
	Total	*	14.3000	34.9050					917	851			
	Average		1.1917		489.9167				77.0007				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-23-10

CleanAir ENGINEERING

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 S. Broward	Date 3-23-10
Meter Operator B. Arnold	
Probe Operator B. Arnold	

Cross-Section of Test Location

[N] [UP]

Amb. Temp. (°F) 77	Bar. Press. 30.10 [in.Hg] [mbar]
Probe I.D. No. 67-4-5	
Liner Material GLASS	

Meter Box 606-11	Sample Box No. B22
Meter Y_d 0.9933	Meter $\Delta H_@$ 1.8619
K Factor N/A	Pitot C_p
Leak Rate Before 0.003 [cfm] [Lpm]	@ 15 (in. Hg)
Leak Rate After 0.004 [cfm] [Lpm]	@ 17 (in. Hg)
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐

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]
-1.4	14		

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

Start Time: 9:30	Stop Time: 10:30

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
				633.275		355	355						
1-1	5		1-2	636.17	491	355	355	61	82	80	2.0	7.9	
	10			639.11	491	357	355	47	82	80	2.5	7.7	
	15			642.05	490	356	354	47	84	80	4.0	8.9	
	20			645.00	496	355	353	46	86	81	6.0	7.6	
	25			647.92	493	355	353	46	86	82	7.0	8.8	
	30			650.87	493	355	355	46	88	82	8.0	7.9	
	35			653.80	497	355	354	46	86	82	9.0	8.0	
	40			656.77	497	355	355	47	85	81	10.5	8.3	
	45			659.73	495	355	355	48	84	81	12.0	8.3	
	50			662.67	497	355	355	51	85	82	13.0	9.2	
	55			665.64	497	355	355	52	85	82	14.5	8.3	
	60			668.625	498	355	355	55	85	82	15.0	7.9	
	Total	*	14.4000	35.3500					1018	975			
	Average		1.2000		494.5833				84.9167				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-23-10

CleanAir ENGINEERING

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

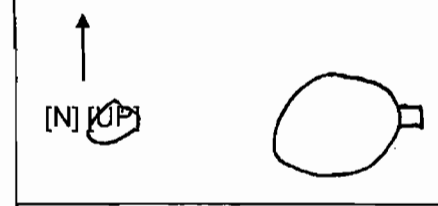
UNIT: 2 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. BROWARD	Date 3-23-10
Meter Operator B. ARNOLD	
Probe Operator B. ARNOLD	

Meter Box 46-11	Sample Box No. 816
Meter Y_d 0.9933	Meter $\Delta H_@$ 1.8619
K Factor N/A	Pitot C_p
Leak Rate Before 0.004 [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



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]
1.5	14		

Amb. Temp. (°F) 85	Bar. Press. 30.10	[in. Hg] [mbar]	
Probe I.D. No. 674-5			
Liner Material			

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

Start Time: 10:55	Stop Time: 12:06

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. 669.070 [ft^3] [L]	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) 02	Notes
1-1	5		1.2	671.88	492	355	359	65	81	80	2.5	7.8	Stop @ 3:06 min
	10			674.80	490	355	354	56	83	80	3.5	7.7	Restart 11:09
	15			677.75	491	357	353	48	86	83	5.5	8.2	
	20			680.67	501	355	355	47	87	84	7.5	6.6	
	25			683.57	499	355	357	48	88	84	9.0	4.9	
	30			686.50	495	356	356	48	88	85	10.5	6.9	
	35			689.45	494	355	354	50	88	85	11.5	7.0	
	40			692.34	492	355	355	51	89	85	13.0	7.0	
	45			695.25	492	355	358	54	88	86	14.0	6.3	
	50			698.18	495	355	354	56	89	86	16.0	5.9	
	55			701.15	493	355	357	59	88	86	17.5	6.9	
	60			704.180	492	355	353	62	89	86	19.0	5.7	
	Total	*	14.4000	35.1100					1044	1010			
	Average		1.2000		493.8333				85.5833				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA
Date 3-23-10

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. B16
Date 3/23/10	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	488.4	454.9	33.5	
Impinger 2	100 mL 01.N H2SO4	618.3	544.1	74.2	QA/QC BW
Impinger 3	100 mL 01.N H2SO4	570.5	541.1	29.4	Date 3/23
Impinger 4	Empty	472.2	464.7	7.5	
Impinger 5	Silica Gel	719.8	707.6	12.2	Total Weight (gm)
					144.6
					156.8

Run No. 2	Filter Type Quartz		Sample Box No. B22
Date 3/23/10	Lot No.		pH
Analyst R. Vicen	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	527.8	470.9	56.9	
Impinger 2	100 mL 01.N H2SO4	614.1	538.1	76.0	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	570.9	555.1	15.8	Date 3/23
Impinger 4	Empty	432.5	430.4	2.1	
Impinger 5	Silica Gel	715.5	708.2	7.3	Total Weight (gm)
					150.8
					158.1

Run No. 3	Filter Type Quartz		Sample Box No.
Date 3/23/10	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	526.7	456.4	70.3	
Impinger 2	100 mL 01.N H2SO4	618.7	544.9	73.8	QA/QC BW
Impinger 3	100 mL 01.N H2SO4	556.4	540.6	15.8	Date 3/23
Impinger 4	Empty	467.8	464.7	3.1	
Impinger 5	Silica Gel	720.4	707.3	13.1	Total Weight (gm)
					163.0
					176.1

CleanAir ENGINEERING

ImpFieldWtSht_200408a
NS ImpFieldWtSht

QA/QC SB
Date 3/23

TEST LOCATION: FF outlet **particulate/metals TESTING METHOD:** 5/29 **PAGE** 1 **OF** 2

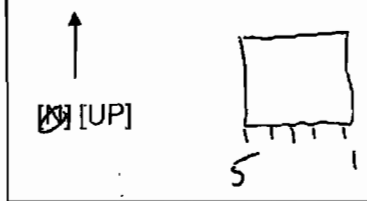
UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3-22-10
Meter Operator	A. Obuchowski		
Probe Operator	A. Obuchowski		

Meter Box	85-4	Sample Box No.	M10
Meter Y_d	1.0085	Meter $\Delta H_@$	1.7723
K Factor	2.43 2.40	Pitot C_p	0.805
Leak Rate Before	0.005 [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.)	96x96		
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.	30.1 [in Hg] [mbar]
Probe I.D. No.	67-E-4		
Liner Material	glass		

Filter No.	E115-33		
Thimble No.	—		
Nozzle Diameter	0.270	Nozzle I.D.	1 .270 -1

Start Time:	8:47	Stop Time:	11:05

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. [In] [L] 726.33	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 $V_{m,n}$ (°F)	Notes O_2
1-1	5	0.60	1.465	731.72	295	249	250	46	78	72	4	0.20	10.3
-2	10	0.52	1.3	734.78	295	250	250	44	78	72	4	0.20	10.6
-3	15	0.52	1.3	737.92	295	251	250	43	81	72	4	0.20	10.3 -0.16
-4	20	0.52	1.3	741.05	296	251	250	43	83	73	4	0.20	11.0
-5	25	0.60	1.49	744.38	296	250	250	45	84	73	5	0.20	10.3
2-1	30	0.66	1.6	748.05	296	247	250	47	83	74	5	0.20	10.9
-2	35	0.60	1.4	751.35	297	249	251	45	84	74	5	0.20	11.1
-3	40	0.51	1.2	754.45	297	252	250	46	85	74	4	0.20	10.7
-4	45	0.53	1.3	757.63	297	253	250	47	84	74	5	0.20	11.5 761.21
-5	50	0.63	1.5	760.99	298	250	250	47	85	75	5	0.20	10.8 761.21
3-1	55	0.35	0.84	763.71	296	249	251	52	82	75	3	0.20	10.7 -0.22 -0.22
-2	60	0.53	1.3	766.89	297	250	250	51	83	75	5	0.20	10.6
-3	65	0.58	1.4	770.16	297	250	250	50	84	75	5	0.20	11.0
	Total	10.0333	31.740	77.990	7414				2091	1872			
	Average	0.7213	1.269658		296.560				79.260				

Sum of square roots: 1.2684

Circle correct bracketed units on data sheet.

QA/QC ☑

Date 3-22-10

CleanAir ENGINEERING

TEST LOCATION: FF outlet **TESTING** particulate/ metals **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10455
Plant S. Broward	Date 3-22-10
Meter Operator	A. Obuchowski
Probe Operator	A. Obuchowski

Cross-Section of Test Location

[N] [UP]

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

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 ☐

Duct Dimensions (in.)

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

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	
						250	250							
3-4	70	0.57	1.4	773.46	298	250	249	51	85	76	5	0.20	10.5	
-5	75	0.50	1.2	776.60	297	251	250	51	86	76	5	0.20	10.5 -0.14	0.14
4-1	80	0.65	1.6	780.21	298	247	249	56	82	76	5	0.20	10.8	
-2	85	0.61	1.5	783.65	298	250	251	55	85	76	5	0.20	11.0	
-3	90	0.51	1.2	786.77	297	253	250	55	86	76	5	0.20	10.0	
-4	95	0.44	1.1	789.69	296	252	250	56	85	76	4	0.20	10.0	
-5	100	0.44	1.1	792.58	296	250	250	58	85	76	4	0.20	10.5 -0.15	0.15
5-1	105	0.51	1.2	795.69	297	249	250	58	83	76	4	0.20	10.1	
-2	110	0.46	1.1	798.71	295	250	251	60	84	76	4	0.20	10.0	
-3	115	0.37	0.89	801.31	296	252	250	59	85	76	3	0.20	10.2	
-4	120	0.41	0.98	804.06	297	250	250	61	85	77	3	0.20	9.6	
-5	125	0.47	1.1	806.99	297	249	250	62	86	77	4	0.20	8.9	
	Total	*												
	Average													

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SJ

Date 3/22

CleanAir ENGINEERING

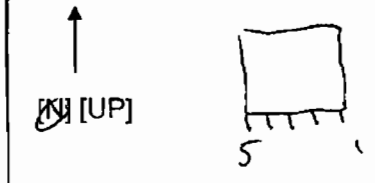
TEST LOCATION: FF outlet **PARTICULATE/METALS TESTING** **METHOD:** 5/29 **PAGE** 1 **OF** 2

UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator
Plant	S. Broward
Meter Operator	A. Obuchowski
Probe Operator	A. Obuchowski
Project No.	10955
Date	3-22-10

Cross-Section of Test Location



Amb. Temp. (°F)	70
Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	67-E-4
Liner Material	glass

Meter Box	E5-4	Sample Box No.	M5
Meter Y_d	1.0085	Meter $\Delta H_@$	1.7723
K Factor	~~2.640~~ 2.45	Pitot C_p	0.805
Leak Rate Before	0.003 [cfm] [Lpm]	@ 15	(in. Hg)
Leak Rate After	0.001 [cfm] [Lpm]	@ 10	(in. Hg)
Pitot Leak Check Before: ☒	After: Good ☒	Bad ☐	

Filter No.	E115-34		
Thimble No.	—		
Nozzle Diameter	0.276	Nozzle I.D.	.270-1

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]
-10.0	10		

Start Time:	11:43	Stop Time:	13:57

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] 807.355	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. $O_2 T_t$ 1/min (°F)	Notes O_2
5-1	5	0.42	1.0	810.12	295	256	253	51	74	74	3	0.20	10.1
-2	10	0.40	0.98	812.82	295	255	250	48	76	74	3	0.20	10.3
-3	15	0.45	1.1	815.72	297	252	250	47	79	74	3	0.20	10.0
-4	20	0.38	0.93	818.40	299	249	250	46	81	74	3	0.20	9.6 -0.15 -0.15
-5	25	0.41	1.0	821.06	296	249	250	50	82	74	3	0.20	10.1
4-1	30	0.48	1.2	~~824.~~ 822	295	249	250	53	81	74	3	0.20	10.5
-2	35	0.55	1.3	827.44	298	249	250	54	83	74	4	0.20	9.6
-3	40	0.46	1.1	830.33	297	250	250	56	84	75	3	0.20	10.3
-4	45	0.40	0.98	833.08	296	250	250	58	84	75	3	0.20	10.0
-5	50	0.40	0.98	835.84	294	251	250	59	84	~~75~~	3	0.20	10.0 -0.14 -0.14
3-1	55	0.35	0.88	838.55	295	246	251	60	82	~~75~~	3	0.20	10.2
-2	60	0.42	1.0	841.32	296	247	251	59	83	~~76~~	3	0.20	10.0
-3	65	0.43	1.1	844.21	297	254	250	58	83	75	3	0.20	10.6
	Total	*16.6670	27.320	72.456	7397				2082	1893			
	Average	0.6667	1.0928		296.660				79.50				

Sum of square roots. 13.55

Circle correct bracketed units on data sheet. 365 ~~1766~~ 1056 964

QA/QC Date 3-22

CleanAir ENGINEERING

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. 10955
Plant S. Broward	Date 3-22-10
Meter Operator A. Obuchowski	
Probe Operator A. Obuchowski	

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
						250	250						
-4	70	0.47	1.2	E47.29	296	251	249	58	E4	76	3	0.20	10.5
-5	75	0.38	0.93	E50.00	295	250	250	59	85	76	3	0.20	10.1 -0.12 -0.12
2-1	E0	0.53	1.3	E53.2E	295	247	250	61	83	76	3	0.20	10.0
-2	E5	0.48	1.2	E56.3E	295	250	250	61	86	77	3	0.20	9.E
-3	90	0.50	1.2	E59.49	296	251	250	61	E6	77	3	0.20	10.0
-4	95	0.43	1.1	E62.56	297	250	250	61	E7	77	3	0.20	10.3
-5	100	0.40	0.98	E65.34	297	249	250	62	E6	77	3	0.20	10.0
1-1	105	0.51	1.2	E68.50	294	249	250	63	E3	77	3	0.20	10.3
-2	110	0.46	1.2	E71.57	295	251	249	63	86	77	3	0.20	9.E
-3	115	0.35	0.66	E74.1E	293	251	250	64	E6	78	3	0.20	11.1 -0.12 -0.12
-4	120	0.51	1.2	E77.25	294	249	250	63	86	78	3	0.20	10.9
-5	125	0.57	1.4	E80.335	295	249	249	63	E6	78	3	0.26	10.4
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SA

Date 3/22

CleanAir ENGINEERING

TEST LOCATION: FF outlet particulate / metals TESTING METHOD: 5/29 PAGE 1 OF 2

UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10455
Plant	S. Broward	Date	3-22-10
Meter Operator	A. Obuchowski		
Probe Operator	A. Obuchowski		

Meter Box	E5-4	Sample Box No.	
Meter Y_d	1.0085	Meter $\Delta H_@$	1.7723
K Factor	2.45	Pitot C_p	0.805
Leak Rate Before 0.004 [cfm] [Lpm] @ 15 (in. Hg)			
Leak Rate After 0.001 [cfm] [Lpm] @ 16 (in. Hg)			
Pitot Leak Check Before: ☒		After: Good ☒ Bad ☐	

Cross-Section of Test Location

[N] [UP]

5 1

Duct Dimensions (in.)	46x66		
Static Pres ($in. H_2O$)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.1	10		

Amb. Temp. (°F)	70	Bar. Press.	30.10 [in Hg] [mbar]
Probe I.D. No.	67-E-4		
Liner Material	glass		

E114-12

Filter No.	~~2-E115-35~~		
Thimble No.	—		
Nozzle Diameter	0.270	Nozzle I.D.	.270-1
Start Time:	14:24	Stop Time:	16:39

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] 880.835	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) O2 Vac	Notes O2
1-1	5	0.53	1.3	884.06	295	245	255	63	80	78	3	0.20	10.0
-2	10	0.49	1.2	887.15	295	258	256	59	82	79	3	0.20	10.2
-3	15	0.42	1.0	889.95	295	255	251	55	86	79	3	0.20	9.2 -0.15
-4	20	0.47	1.2	893.03	296	250	250	55	87	79	3	0.20	9.3
-5	25	0.58	1.4	896.38	296	249	250	57	89	80	4	0.20	8.5
2-1	30	0.58	1.4	899.82	296	249	251	60	87	80	4	0.20	10.8
-2	35	0.56	1.4	903.13	297	253	251	60	89	81	4	0.20	9.6
-3	40	0.51	1.2	906.25	295	251	249	60	90	81	3	0.20	10.4
-4	45	0.53	1.3	909.49	296	250	250	60	90	81	3	0.20	9.9
-5	50	0.43	1.1	912.45	295	249	249	60	91	82	3	0.20	10.3
3-1	55	0.35	0.86	915.09	294	249	251	61	88	82	3	0.20	10.8 -0.14
-2	60	0.51	1.2	918.22	296	251	250	62	90	82	3	0.20	9.8
-3	65	0.47	1.2	921.37	295	252	250	62	90	82	3	0.20	10.0
	Total	*16.9782	28.510	75.050	7382				2220	2044			
	Average	0.6791	1.1404		295.280				85.280				

-0.15

-0.14

*Sum of square roots. 15.76

Circle correct bracketed units on data sheet.

3841 @ ~~1439~~ 1046 1139

QA/QC ___

Date 3/22

FDS005-General.xls, Feb 2002

CleanAir ENGINEERING

G-78

TEST LOCATION: FF outlet **TESTING** particulate/metals **METHOD:** 5/29 **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Brownsville	Date 3-22-10
Meter Operator	A. Obuchowski
Probe Operator	A. Obuchowski

Cross-Section of Test Location

[N] [UP]

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

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 ☐

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

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 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	70	0.48	1.2	924.54	295	250	249	60	90	82	3	0.20	10.3
-5	75	0.45	1.1	927.50	297	249	250	59	90	83	3	0.20	10.6 −0.13 −0.13
4-1	80	0.44	1.1	930.49	293	249	249	61	88	83	3	0.20	10.8
-2	85	0.47	1.2	933.63	295	251	251	62	89	83	3	0.20	9.6
-3	90	0.45	1.1	936.66	296	251	250	61	90	83	3	0.20	9.4
-4	95	0.45	1.1	939.56	295	251	250	61	90	83	3	0.20	9.5
-5	100	0.46	0.98	942.34	295	250	250	62	91	83	3	0.20	10.0 Q ~~-0.14~~
5-1	105	0.43	1.1	945.34	295	249	251	63	88	83	3	0.20	9.9 −0.14 0.14
-2	110	0.41	1.0	948.16	294	250	251	63	90	83	3	0.20	9.7
-3	115	0.40	0.98	950.95	295	252	250	63	91	84	3	0.20	9.8
-4	120	0.40	0.98	953.73	296	250	250	63	92	84	3	0.20	9.8
-5	125	0.37	0.91	956.445	295	250	250	64	92	84	3	0.20	9.6
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SG

Date 3/20

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. M10
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. E-115-33		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	720.5	440.9	279.6	
Impinger 2	100 ml 5%HNO3/10%H2O2	670.8	558.0	112.8	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	562.2	539.9	22.3	Date 3/22
Impinger 4	Empty	452.3	447.7	4.6	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	547.7	544.2	3.5	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	545.0	544.5	0.5	423.3
Impinger 7	Silica Gel	740.6	722.7	17.9	441.2

Run No. 2	Filter Type Quartz		Sample Box No. M15
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. E-115-34		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	667.5	462.0	205.5	
Impinger 2	100 ml 5%HNO3/10%H2O2	668.6	538.9	129.7	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	584.9	549.4	35.5	Date 3/22
Impinger 4	Empty	447.1	439.8	7.3	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	544.8	539.6	5.2	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	562.7	561.6	SB 1.1	SB ~~387.3~~ 384.3
Impinger 7	Silica Gel	720.2	705.1	15.1	SB ~~407.4~~ 399.4

Run No. 3	Filter Type Quartz		Sample Box No.
Date 3/22/10	Lot No.		pH
Analyst B. Wilkie	Filter No. E-114-12		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	669.3	439.8	229.5	
Impinger 2	100 ml 5%HNO3/10%H2O2	671.7	557.9	113.8	QA/QC BW
Impinger 3	100 ml 5%HNO3/10%H2O2	570.8	536.1	34.7	Date 3/22
Impinger 4	Empty	455.6	447.2	8.4	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	544.8	539.7	5.1	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	545.7	544.5	1.2	392.7
Impinger 7	Silica Gel	750.7	735.1	15.6	408.3

CleanAir. ENGINEERING

QA/QC SB
Date 3/22

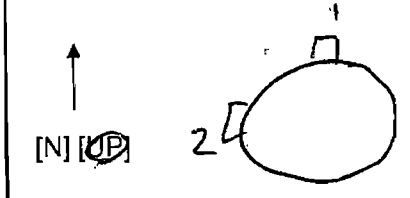
TEST LOCATION: Inlet Metals/Mercury TESTING METHOD: 29 PAGE 1 OF 2

UNIT: 3 RUN: 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	South Broward	Date	3/22/10
Meter Operator	D. Luckhard		
Probe Operator	P. Bishop		

Cross-Section of Test Location



Amb. Temp. (°F)	64	Bar. Press.	30.1 (in. Hg) [mbar]
Probe I.D. No.	67-10-3		
Liner Material	glass		

Meter Box	61-6	Sample Box No.	M1
Meter Y_d	0.9906	Meter $\Delta H_@$	1.9 1.682
K Factor	2.13	Pitot C_p	0.825
Leak Rate Before	0.005 (cfm) [Lpm]	@	17 (in. Hg)
Leak Rate After	0.006 (cfm) [Lpm]	@	12 (in. Hg)
Pitot Leak Check Before:	☒	After: Good ☒	Bad ☐

Filter No.	NA	—	—
Thimble No.	NA	—	—
Nozzle Diameter	0.270	Nozzle I.D.	270-2

Duct Dimensions (in.)	105		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow	First point all the way
-1.3	14 (P2) 20 (P1)	(In) [Out] DL of page	(In) [Out]

Start Time:	847	Stop Time:	1105

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. 453.400 [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) DL O2	Notes
2-1	5	0.48	1.0	456.29	473	252	250	53	66	66	3.0	7.8	
-2	10	0.48	1.0	459.18	472	258	253	48	67	66	3.0	7.6	
-3	15	0.49	1.0	462.06	471	253	252	46	69	66	3.5	8.1	
-4	20	0.47	1.6	464.95	475	247	250	46	67	67	4.0	7.9	
-5	25	0.53	1.1	467.88	476	249	245	46	71	67	4.0	8.9	
-6	30	0.46	0.98	470.72	482	249	253	47	72	67	4.0	9.1	
-7	35	0.47	1.0	473.61	478	248	251	48	72	67	4.5	10.4	
-8	40	0.47	1.0	476.52	471	248	250	49	71	67	4.5	10.3	
-9	45	0.47	1.0	479.41	470	249	250	49	71	66	5.0	10.8	
-10	50	0.42	0.89	482.14	485	250	251	48	72	66	5.0	8.9	
-11	55	0.38	0.81	484.74	476	250	250	49	73	67	5.0	10.8	
-12	60	0.27	0.58	486.940	465	250	250	50	73	67	4.0	10.6	Leak Check 0.005 @ 10"
			11.36		5694				848	799			
	Total	*16.2348	23.41	68.335	11357				1734	1632			
	Average	0.6765	0.9754	67.980	473.2083				70.1250				

*Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/22

CleanAir ENGINEERING

TEST LOCATION: Inlet Metals/Mercury **TESTING** **METHOD:** 29 **PAGE** 2 **OF** 2

UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Broward	Date 3/22/10
Meter Operator D. Lucksted	
Probe Operator P. Bihun	

Cross-Section of Test Location

[N] [UP]

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

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 ☐	

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

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. 487.300 [ft^3] [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
1-1	65	0.41	0.87	490.04	467	250	255	56	70	69	5.0	10.3	
2	70	0.40	0.85	492.69	467	250	248	51	72	69	5.5	10.1	
3	75	0.40	0.85	495.34	471	252	247	49	73	69	5.5	10.2	
4	80	0.44	0.94	498.21	470	253	251	49	74	69	6.0	10.3	
5	85	0.47	1.0	501.64	480	250	251	49	75	69	7.0	8.5	
6	90	0.47	1.0	503.92	476	251	250	49	75	69	7.0	8.8	
7	95	0.57	1.2	506.96	479	249	250	50	75	70	8.0	8.3	
8	100	0.57	1.2	510.03	475	248	250	53	73	70	8.0	9.1	
9	105	0.56	1.2	513.14	473	250	250	51	75	70	8.5	8.1	
10	110	0.50	1.1	516.23	467	250	250	51	75	70	8.5	9.2	
11	115	0.43	0.92	518.96	469	249	250	52	75	70	7.5	9.5	
12	120	0.43	0.92	521.740	469	249	250	52	74	69	7.5	8.3	
			12.05		5663				886	833			
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SB

Date 3/22

CleanAir ENGINEERING

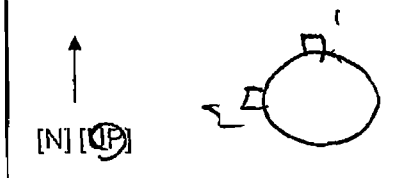
TEST LOCATION: Inlet Metals TESTING METHOD: 29 PAGE 1 OF 2

UNIT: 3 RUN: 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Brevard	Date 3/22/10
Meter Operator D. Luckhard	
Probe Operator P. Bishop	

Cross-Section of Test Location



Amb. Temp. (°F) 67	Bar. Press. 30.1 [in. Hg] [mbar]		
Probe I.D. No. 67-10-3			
Liner Material glass			

Meter Box 61-6	Sample Box No. M7	
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6820	
K Factor 2.13	Pitot C_p 0.825	
Leak Rate Before 0.007 [cfm] [Lpm]	@ 16 (in. Hg)	
Leak Rate After 0.006 [cfm] [Lpm]	@ 10 (in. Hg)	
Pitot Leak Check Before: [X]	After: Good [X] Bad [ ]	

Filter No. NA	—	—	
Thimble No. NA	—	—	
Nozzle Diameter 0.270	Nozzle I.D.	270-2	

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]
-1.3	14 20		

Start Time: 1143	Stop Time: 1357		

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] 522.410	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 DC (°F)	Notes
						250	250						
1-1	5	0.36	0.77	524.94	459	252	245	57	68	69	2.0	9.3	
2	10	0.35	0.75	527.42	456	254	250	54	69	68	2.0	7.5	
3	15	0.35	0.75	529.93	458	253	251	53	71	69	2.0	6.6	
4	20	0.36	0.77	532.46	459	251	253	52	72	68	2.0	6.8	
5	25	0.48	1.0	535.39	464	250	250	53	74	69	4.0	7.2	
6	30	0.49	1.0	538.27	477	251	250	53	75	69	4.0	7.0	
7	35	0.59	1.3	541.51	486	250	250	53	75	69	5.0	6.5	
8	40	0.57	1.2	544.61	474	250	251	54	76	69	5.0	7.1	
9	45	0.51	1.1	547.59	470	249	251	55	76	69	5.0	7.2	
10	50	0.47	1.0	550.50	470	249	250	55	76	70	6.0	7.1	
11	55	0.45	0.96	553.31	469	249	250	55	76	70	5.0	6.6	
12	60	0.46	0.98	556.180	468	249	250	55	76	70	5.5	7.5	Leak check 0.005 at 11
			11.58		5177				884	829			
	Total	*15.6675	22	(65.7850)	16931				1806	1687			
	Average	(0.6528)	(0.9167)		(469.2917)				(72.6458)				

Sum of square roots.

Circle correct bracketed units on data sheet.

(469.083)

QA/QC DL

Date 3/22/10

CleanAir ENGINEERING

TEST LOCATION: Inlet Metals TESTING METHOD: 29 PAGE 2 OF 2

UNIT: 3 RUN: 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Bronaugh	Date 3/22/10
Meter Operator D. Luckhard	
Probe Operator P. Bihun	

Cross-Section of Test Location

[N] [UP]

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

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 ☐	

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

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. 556.406 [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
2-1	65	0.50	1.1	559.20	473	248	248	56	73	70	6.0	5.5	
2	70	0.48	1.0	562.19	471	250	250	54	74	70	6.0	6.1	
3	75	0.48	1.0	565.18	472	252	250	53	76	71	6.5	7.2	
4	80	0.47	1.0	567.98	468	252	250	54	77	71	7.0	7.6	
5	85	0.50	1.1	570.93	472	252	250	55	77	72	7.5	7.5	
6	90	0.41	0.87	573.66	482	251	250	57	76	72	7.0	5.9	
7	95	0.38	0.81	576.27	473	250	250	58	76	71	7.0	7.0	
8	100	0.39	0.83	578.89	464	249	250	60	77	72	7.0	7.5	
9	105	0.35	0.75	581.40	466	249	249	61	78	73	6.5	7.6	
10	110	0.30	0.64	583.71	469	249	250	61	77	72	6.0	7.6	
11	115	0.31	0.66	586.05	469	250	250	62	77	72	6.0	7.7	
12	120	0.31	0.66	588.415	475	250	250	62	78	73	6.6	7.8	
~~ΔP~~			10.42		5654				916	858			
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC DL

Date 3/22/10

CleanAir ENGINEERING

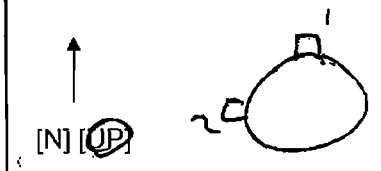
TEST LOCATION: Inlet Metals TESTING METHOD: 29 PAGE 1 OF 2

UNIT: 3 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Brownsville	Date 3/22/10
Meter Operator D. Lockhard	
Probe Operator P. Dishon	

Cross-Section of Test Location



Amb. Temp. (°F) 73	Bar. Press. 30.1 [in. Hg] [mbar]
Probe I.D. No. 67-10-3	
Liner Material glass	

Meter Box 61-6	Sample Box No.	
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6820	
K Factor ~~2.13~~ DL 2.16	Pitot C_p 0.825	
Leak Rate Before 0.005 [cfm] [Lpm]	@ 16 (in. Hg)	
Leak Rate After 0.005 [cfm] [Lpm]	@ 12 (in. Hg)	
Pitot Leak Check Before: [X]	After: Good [X] Bad [ ]	

Duct Dimensions (in.)	108		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-1.3	14 20		

Filter No.	NA	— / —
Thimble No.	NA	— / —
Nozzle Diameter	0.270	Nozzle I.D. 270-2

Start Time:	1427
Stop Time:	1639

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	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
				589.015		250	250						
2-1	5	0.47	1.0	591.92	474	255	241	61	76	75	2.0	8.5	
2	10	0.40	0.85	594.59	468	251	246	58	77	75	2.0	7.6	
3	15	0.47	1.0	597.50	473	252	251	56	79	76	3.0	5.9	
4	20	0.47	1.0	600.41	470	253	252	54	80	76	3.5	6.5	
5	25	0.47	1.0	603.29	476	252	252	55	~~77~~ 81 DL	77	4.0	5.8	
6	30	0.36	0.77	605.82	478	251	251	56	80	77	3.5	6.8	
7	35	0.41	0.88	608.55	474	249	249	57	81	77	4.0	6.6	
8	40	0.35	0.75	~~610~~ DL 611.09	474	249	250	57	83	78	4.0	7.0	
9	45	0.37	0.80	613.70	473	248	249	57	83	78	4.0	7.4	
10	50	0.30	0.65	616.08	472	249	250	57	84	78	3.5	7.4	
11	55	0.30	0.65	618.42	472	250	250	57	84	79	4.0	7.9	
12	60	0.29	0.62	620.705	473	250	250	57	84	79	4.0	7.9	Leak check 0.003 at 16 in
			9.97	SB	5679				972	925			
	Total	15.6596	22.07	31.6900	11308				1981	1883			
	Average	0.6525	0.9196		471.1667				80.5000				

Sum of square roots. SB 66.822 66.610 Circle correct bracketed units on data sheet.

QA/QC DL

Date 3/22/10

CleanAir ENGINEERING

TEST LOCATION: Inlet Metals TESTING METHOD: 29 PAGE 2 OF 2

UNIT: 3 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant South Brunswick	Date 3/22/10
Meter Operator D. Luckhard	
Probe Operator P. Bihun	

Cross-Section of Test Location

[N] [UP]

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

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 ☐	

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

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. 620.920 [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) DL / O_2	Notes
1-1	65	0.68	1.5	624.42	460	248	247	62	82	80	7.0	8.0	
2	70	0.44	0.95	627.29	460	251	250	58	~~79~~ DL 83	79	7.0	7.9	
3	75	0.35	0.75	629.85	466	252	251	59	83	79	5.5	7.7	
4	80	0.37	0.80	632.43	465	251	250	60	82	79	5.5	8.0	
5	85	0.43	0.92	635.23	477	251	251	61	83	79	6.0	7.4	
6	90	0.41	0.88	637.98	476	251	251	61	84	79	6.5	7.6	
7	95	0.53	1.1	640.95	476	250	250	61	85	79	7.0	7.0	
8	100	0.54	1.2	644.08	475	248	250	66	83	80	8.0	7.3	
9	105	0.48	1.0	647.04	472	251	250	64	85	81	7.5	6.8	
10	110	0.47	1.0	649.96	467	250	250	62	87	81	7.5	6.8	
11	115	0.48	1.0	652.90	468	250	250	62	86	81	8.0	7.4	
12	120	0.48	1.0	655.840	469	250	250	62	86	81	8.0	6.9	
			12.1		5631				1009	958			
	Total	*								1883			
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC DL

Date 3/22/10

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name/Location Unit 3 SDA Inlet
Plant South Broward	Job No. 10955	Method 29

Run No. 1	Filter Type Quartz		Sample Box No. M1
Date 3/22/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse 100ml, 0.1N HNO3

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	821.9	440.3	281.6	
Impinger 2	100 ml 5%HNO3/10%H2O2	555.0	538.7	16.3	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	542.6	539.4	3.2	Date 3/22
Impinger 4	Empty	443.8	442.4	1.4	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	536.8	537.2	-0.4	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	541.3	540.6	0.7	302.8
Impinger 7	Silica Gel	783.8	~~686.2~~ RV	768.0 15.8	318.6

Run No. 2	Filter Type Quartz		Sample Box No. M1
Date 3/22/10	Lot No.		pH
Analyst R. Vicere	Filter No. NA		Rinse 100ml, 0.1N HNO3

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	808.0	~~450.6~~ 439.5	268.5	
Impinger 2	100 ml 5%HNO3/10%H2O2	567.3	550.4	16.9	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	584.8	581.0	3.8	Date 3/22
Impinger 4	Empty	440.0	438.8	1.2	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	532.5	533.4	-0.9	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	542.3	541.2	1.1	290.6
Impinger 7	Silica Gel	719.0	701.6	17.4	308.0

Run No. 3	Filter Type Quartz		Sample Box No. M1
Date	Lot No.		pH
Analyst	Filter No. NA		Rinse 100ml, 0.1N HNO3

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	Empty	807.3	444.7	262.6	
Impinger 2	100 ml 5%HNO3/10%H2O2	559.6	544.5	15.1	QA/QC SB
Impinger 3	100 ml 5%HNO3/10%H2O2	547.8	543.0	4.8	Date 3/22
Impinger 4	Empty	447.6	446.8	0.8	
Impinger 5	100 ml 4%KMnO4/10%H2SO4	540.2	539.1	1.1	Total Weight (gm)
Impinger 6	100 ml 4%KMnO4/10%H2SO4	543.0	543.5	-0.5	283.9
Impinger 7	Silica Gel	796.4	783.2	13.2	297.1

CleanAir. ENGINEERING

QA/QC SB
Date 3/22

TEST LOCATION: FF Outlet   ~~~~mod 26A~~~~ SB Fluoride **TESTING**   **METHOD:** 13B   **PAGE** 1 **OF** 2

UNIT: U3 FF Outlet   **RUN:** 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	South Broward	Date	3/23/10
Meter Operator	SB ~~A. Karony~~ B. Arnold		
Probe Operator	SB ~~B. Arnold~~ A. Karony		

Meter Box	85-4	Sample Box No.	B6
Meter Y_d	1.0085	Meter $\Delta H_@$	1.7723
K Factor	2.45	Pitot C_p	0.812
Leak Rate Before 0.005 [cfm] [Lpm] @ 15 (in. Hg)			
Leak Rate After 0.003 [cfm] [Lpm] @ 7 (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]
-10.2	10		

Amb. Temp. (°F)	84	Bar. Press.	30.10 [in. Hg] [mbar]
Probe I.D. No.	67-8-14		
Liner Material	GLASS		

Filter No.			
Thimble No.	N/A		
Nozzle Diameter	0.268	Nozzle I.D.	0.268-1
Start Time:	12:41	Stop Time:	13:54

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] 956.735	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) 165	Notes O2
1-1	2.5	0.39	0.96	958.27	299	250	249	65	79	79	3.0	0.40	10.5
2	5	0.45	1.1	959.66	297	251	249	59	80	79	3.0	0.40	10.6
3	7.5	0.37	0.91	960.93	296	252	251	55	81	79	3.0	0.40	10.2
4	10	0.42	1.0	962.32	297	252	249	52	84	79	3.5	0.40	10.1
5	12.5	0.36	0.88	963.65	298	251	248	51	85	79	3.5	0.4	9.5 963.71 -.06
2-1	15.	0.47	1.2	965.23	296	~~247~~ 247	252	54	84	80	4.0	0.4	11.0 963.71 -.06
2	17.5	0.44	1.1	966.71	298	247	252	52	87	80	4.0	0.4	10.5
3	20	0.50	1.2	968.24	297	249	250	52	88	80	4.0	0.4	9.3
4	22.5	0.46	1.1	969.77	299	251	250	54	90	81	4.0	0.4	9.7
5	25	0.45	1.1	971.20	299	251	250	56	91	81	4.0	0.4	10.1 976.39 976.39 -.19
3-1	27.5	0.34	0.83	972.56	298	248	250	62	90	83	3.0	0.4	10.6
2	30	0.46	1.1	974.03	298	247	250	61	90	83	3.5	0.4	9.8
3	32.5	0.42	1.0	~~975.45~~	299	250	251	62	93	83	3.5	0.4	9.3
	Total	16.7942	25.6000	36.9700					2239	2064			
	Average	0.6718	1.0240 SB		296.7600				86.0600				

Sum of square roots. 1.116

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

QA/QC BA

Date 3-23-10

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CleanAir ENGINEERING

TEST LOCATION: outlet HF TESTING METHOD: 13B PAGE 2 OF 2

UNIT: 3 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3-23-10
Meter Operator B. Arnold	
Probe Operator A. Karony	

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)	ProbeT$_p$ (°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) 165-0.4	Notes
3-4	40 35	0.37	0.91	976.79	300	251	249	58	93	84	3.0	0.4	10.3
5	~~42.5~~ 37.5	0.37	0.91	978.13	298	251	250	56	93	86	3.0	0.4	9.9 978.19 978.19 -06
4-1	45 40	0.48	1.2	979.71	~~298~~ 296	248	251	55	91	84	3.5	0.4	10.8
2	42.5	0.52	1.3	981.33	297	248	251	52	93	84	4.0	0.4	10.8
3	45	0.49	1.2	982.88	297	251	251	52	93	85	4.0	0.4	10.7
4	47.5	0.48	1.2	984.43	297	251	250	51	94	85	4.0	0.4	10.2
5	50	0.44	1.1	~~985~~ 93	291	251	250	51	94	85	4.0	0.4	10.1 985.98 985.98 -.05
5-1	52.5	0.70	1.7	987.79	296	248	251	53	91	85	5.0	0.4	10.7
2	55	0.54	1.4	989.45	296	249	248	53	93	85	4.5	0.4	10.7
3	57.5	0.45	1.1	990.96	296	250	249	48	94	85	4.0	0.4	10.6
4	60	0.48	1.2	992.50	295	251	250	48	94	85	4.0	0.4	11.3
5	62.5	0.48	1.2	994.065	289	250	250	49	94	85	4.0	0.4	10.2
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC SA

Date 3/25

CleanAir ENGINEERING

TEST LOCATION: Ff outlet **HF (Total Fluorides) TESTING** **METHOD:** 13B **PAGE** 1 **OF** 2

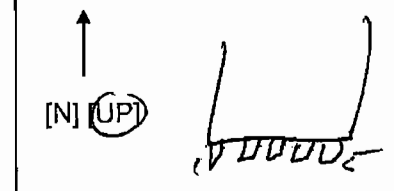
UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3/23/10
Meter Operator	A. Karony		
Probe Operator	B. Arnold		

Meter Box	B7 AK B5-4	Sample Box No.	B4 AK
Meter Y_d	1.0085	Meter $\Delta H_@$	1.7723
K Factor	2.45	Pitot C_p	0.812
Leak Rate Before	0.004 (cfm) [Lpm]	@	15 (in. Hg)
Leak Rate After	0.001 (cfm) [Lpm]	@	9 (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]
-10.2	10		

Amb. Temp. (°F)	87	Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	07-8-14		
Liner Material	glass		

Filter No.		
Thimble No.	N/A	
Nozzle Diameter	0.268	Nozzle I.D. 0.268-1

14:31 AK

Start Time:	14:26	Stop Time:	15:39

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. 994.670 [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_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. (°F)	Notes O_2 Leak check
						250	250						
5-1	2:30	0.52	1.2	995.96	292	248	258	62 AK	84	84	5		10.3
2	6	0.42	1.0	997.21	294	250	272	64 AK	84	84	5	0.4	10.5
3	7:30	0.46	1.2	998.68	292	251	265	43	86	85	5	0.4	11.4
4	10	0.50	1.2 AK	000.22	297	252	258	40	87	84	5		10.8
5	12:30	0.60	~~1.2~~ 1.5 AK	001.93	298	252	253	39	89	85	7		10.3 002.08
4-1	15	0.74	1.8	003.83	298	247	250	41	88	84	7.5		11.3 ~~DK~~ .1500
2	~~20~~ 17:30	0.65	1.6	005.68	299	247	250	40	89	84	7		10.2
3	20	0.51	1.2	007.13	297	249	250	40	90	85	7		10.9
4	22:30	0.52	1.3 AK	008.74	296	251	250	40	91	84	6		10.9
5	25	~~0.52~~ 0.53 AK	~~1.3~~ 1.3 AK	010.30	297	252	250	42	90	85	6		10.0
3-1	27:30	0.56	1.4	012.07	296	251	250	44	90	85	6		10.8 00.49
2	30	0.53	1.3	013.78	296	247	250	46	89	84	6.5		10.9 0.1900
												▽	
	Total	~~17.3125~~ 17.5300	29.5300	~~36.3100~~ 37.850 5B	7409.00				2216	2118			
	Average	0.6925	1.1812	(37.850)	(296.3600)					(86.6800)			

Sum of ~~square~~ roots.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/27/10

CleanAir ENGINEERING

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

UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant	Date
Meter Operator	
Probe Operator	

Cross-Section of Test Location

[N] [UP]

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

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 ☐

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

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. (11[0]) [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 O_2
				015.37		250	250					0.4	
3-3	32:30	0.52	1.3	~~013.78~~ AK	297	250	250	45	90	85	6	~~11.2~~ N	11.2
4	35	0.41	1.0	016.70	299	251	251	47	90	85	6		9.4
5	37:30	0.41	1.0	018.15	296	251	250	48	90	85	5		10.9 018.22
2-1	40	0.53	1.2	019.72	295	250	249	49	90	85	5		10.5 0.0700
2	42:30	0.37	0.91	021.07	295	250	250	51	87	85	5		10.6
3	45	0.40	0.98	022.57	296	248	250	50	89	85	4.5		10.4
4	47:30	0.40	0.98	023.98	296	250	250	49	89	85	5		9.7
5	50	0.48	1.2	025.45	297	251	249	49	89	85	5		10.9
1-1	52:30	0.40	0.98	026.94	298	251	250	49	89	85	6		10.4 025.54
2	55	0.48	1.2	028.58	295	249	251	51	88	85	5		11.6 0.0900
3	57:30	0.41	1.0	029.87	298	249	250	51	89	85	6		9.5
4	60	0.43	1.1	031.42	298	250	250	52	89	85	5		10.3
5	62:30	0.40	0.98	033.02	297	251	250	53	90	85	5		10.1
	Total	*											
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/23/10

CleanAir ENGINEERING

TEST LOCATION: FF Outlet HF **TESTING** **METHOD:** 13B **PAGE** 1 **OF** 2

UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3/23/10
Meter Operator A. Karony	
Probe Operator B. Arnold	

Meter Box 85-4	Sample Box No.
Meter Y_d 1.0085	Meter $\Delta H_@$ 1.7723
K Factor 2.45	Pitot C_p 0.812
Leak Rate Before 0.005 [cfm] [Lpm]	@ 15 (in. Hg)
Leak Rate After 0.002 [cfm] [Lpm]	@ 7 (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]
-10.2	10		

Amb. Temp. (°F)	Bar. Press. 30.1 [in. Hg] [mbar]
Probe I.D. No. 67-8-14	
Liner Material glass	

Filter No.		
Thimble No. N/A		
Nozzle Diameter 0.268	Nozzle I.D.	0.268-1

Start Time: 15:54	Stop Time: 17:02

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] 033.290	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. FGS (LPM)	Notes O_2	Leak check
1-1	2:30	0.35	0.86	035.57	292	251	256	60	69	84	8	0.4	9.8	
2	5	0.37	0.90	036.80	296	257	261	65	86	84	3	0.4	10.0	
3	7:30	0.36	0.88	038.12	296	258	258	59	87	83	3	0.4	10.0	
4	10	0.43	1.0	039.49	296	258	258	58	87	83	3	0.4	10.4	
5	12:30	0.35	0.86	040.81	297	256	254	54	85	83	4	0.4	10.4	040.90
2-1	15	0.41	1.0	042.31	298	253	251	51	87	83	3	0.4	10.2	0.090
2	17:30	0.43	1.0	043.86	296	250	249	51	86	83	4	0.4	11.2	
3	20	0.41	1.0	045.21	297	249	250	48	89	88	4	0.4	9.9	
4	22:30	0.41	1.0	046.62	297	251	250	48	89	84	4	0.4	10.0	
5	25	0.38	0.93	047.97	298	251	250	48	90	84	4	0.4	9.7	048.06
3-1	27:30	0.38	0.93	049.43	297	251	250	47	90	84	4	0.4	10.1	0.090
2	30	0.46	1.1	050.98	297	249	250	48	86	84	4	0.4	11.5	
3	32:30	0.44	1.1	052.32	298	248	250	46	88	84	4	0.4	10.2	
	Total	*[illegible]	25.1800	36.32 SR	7410.0				2188.00	2090.00				
	Average	0.6423	1.0072	35.990	296.4000				85.5600					

*Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/23/10

CleanAir ENGINEERING

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

UNIT: 3 **RUN:** 3

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. (°F)	Notes O_2
						250	250						
3-4	35	0.41	1.0	053.72	298	250	250	48	89	85	4	0.4	10.1
5	37:30	0.35	0.86	055.06	297	251	250	45	89	84	4	0.4	9.7 055.14
4-1	40	0.47	1.2	056.77	298	251	251	46	88	83	3	0.4	9.8 0.080
4-2	42:30	0.45	1.1	058.11	295	250	251	49	86	83	4	0.4	11.1
3	45	0.47	1.2	059.62	298	248	251	47	87	83	4	0.4	10.3
4	47:30	0.46	1.1	061.09	298	250	249	46	87	83	4	0.4	9.8
5	50	0.44	1.1	062.55	298	251	250	46	88	83	4	0.4	9.9 062.62
5-1	52:30	0.44	1.1	064.07	298	251	250	46	86	83	4	0.4	10.1 0.070
2	55	0.35	0.86	065.37	294	249	249	49	86	83	4	0.4	11.2
3	57:30	0.43	1.0	066.88	292	249	250	48	87	83	3.5	0.4	10.0
4	60	0.46	1.1	068.20	292	250	250	48	88	83	4	0.4	11.3
5	62:30	0.43	1.0	069.610	297	250	250	48	88	83	4	0.4	10.4
	Total	*							21880				
	Average												

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC KK

Date 3/23/10

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CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Teflon glass mat		Sample Box No.
Date 3/23/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	685.5	549.2	136.3
Impinger 2	100 mL DI H2O	623.7	566.1	57.6
Impinger 3	Empty	472.5	459.3	13.2
Impinger 4	Silica Gel	817.5	807.1	10.4

QA/QC SB
Date 3/23

Total Weight (gm)
207.1
217.5

Run No. 2	Filter Type Teflon glass mat		Sample Box No. B7
Date 3/23/10	Lot No.		pH
Analyst R. Vicer	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	667.7	540.6	~~126.8~~ 127.1
Impinger 2	100 mL DI H2O	610.6	543.6	67.0
Impinger 3	Empty	450.3	436.9	13.4
Impinger 4	Silica Gel	791.9	782.4	9.5

QA/QC RV
Date 3/23

Total Weight (gm)	
207.5	~~209.2~~ SB
217.0	~~216.7~~ SB

Run No. 3	Filter Type Teflon glass mat		Sample Box No. B5
Date 3/23/10	Lot No.		pH
Analyst B. Wilkie	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)
Impinger 1	100 mL DI H2O	694.6	539.0	155.6
Impinger 2	100 mL DI H2O	586.8	547.7	39.1
Impinger 3	Empty	458.4	451.9	6.5
Impinger 4	Silica Gel	760.6	752.1	8.5

QA/QC RV
Date 3/23

Total Weight (gm)
201.2
209.7

CleanAir ENGINEERING

QA/QC SB
Date 3/23

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

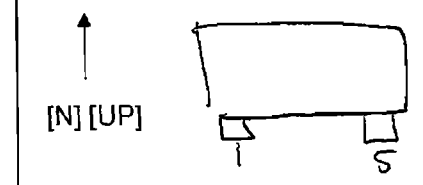
UNIT: 3 RUN: 1

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3/24/10
Meter Operator	A. Karony		
Probe Operator			

Meter Box	66-14	Sample Box No.	B11
Meter Y_d	0.9898	Meter $\Delta H_@$	1.7643
K Factor		Pitot C_p	
Leak Rate Before	0.005 (cfm)	[Lpm] @	15 (in. Hg)
Leak Rate After	0.002 (cfm)	[Lpm] @	5 (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	10		

Amb. Temp. (°F)	74 AK 59	Bar. Press.	30.10 [in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

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

Start Time: 7:45 Stop Time: 8:45

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. [cf] [L] 616.135	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	0.24	1.5	619.71	296	297	295	61	60	59	3		10.0
	10	0.22		622.95	295	299	295	58	65	59	3		9.3
	15	0.24		626.48	295	299	296	58	69	60	3		9.8
	20	0.26		629.84	296	299	295	60	71	61	3		8.9
	25	0.24		633.31	294	300	297	54	72	62	3		9.2
	30	0.22		636.72	294	300	297	51	74	63	3		9.9
	35	0.23		640.27	294	300	297	51	74	63	3		9.5
	40	0.23		643.67	295	300	297	51	76	64	3		9.9
	45	0.24		647.07	295	300	298	51 AK	76	65	3		11.0
	50	0.24		650.40	295	300	298	50 51	77	66	3		10.5
	55	0.23		653.98	295	300	299	53	77	67	3		10.3
	60	0.23		656.350	295	300	299	53	75	67	3		10.1
	Total	*		40.2150	339.000				865.00	786.00			
	Average				294.9167				67.5417				

67.583

* Sum of squares.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/24/10

CleanAir ENGINEERING

G-95

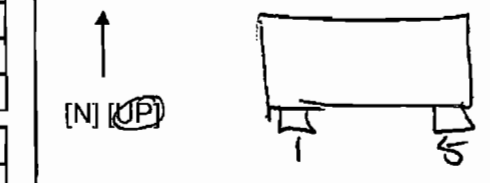
TEST LOCATION: FF outlet HCl TESTING METHOD: 26A PAGE 1 OF 1

UNIT: 3 RUN: 2

FIELD DATA SHEET

Client	Mecklenator	Project No.	10955
Plant	S. Broward	Date	3/24/10
Meter Operator	A. Karony		
Probe Operator			

Cross-Section of Test Location



Amb. Temp. (°F)	77	Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

Meter Box	66-14	Sample Box No.	772
Meter Y_d	0.9898	Meter $\Delta H_@$	1.7643
K Factor		Pitot C_p	
Leak Rate Before	0.005 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.001 [cfm] [Lpm]	@	6 (in. Hg)
Pitot Leak Check Before:	☒	After: Good	☒ Bad ☐

Duct Dimensions (in.): 96 x 96

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

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

Start Time:	9:16	Stop Time:	10:16

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] 658.275	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 200	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	0.25	1.5	661.74	296	298	296	59	72	70	2.5		11.4
	10	0.26		665.18	296	299	296	53	76	71	3		10.0
	15	0.24		668.76	295	299	298	53	80	71	3		8.8
	20	0.21		672.02	295	300	299	56	82	72	3		9.9
	25	0.21		675.58	295	300	297	62	83	72	3		9.3
	30	0.21		678.98	295	300	297	57	84	73	3		9.4
	35	0.26		682.47	296	300	299	62	85	75	3		8.7
	40	0.20		686.07	295	300	299	61	85	75	3		9.2
	45	0.21		689.45	295	300	298	57	86	76	3		8.9
	50	0.21		692.90	297	300	299	56	87	76	3.5		9.6
	55	0.21		696.35	295	300	299	54	87	77	3.5		9.3
	60	0.23		699.845	296	300	299	54	88	78	3		9.3
	Total	*		41.570	3546.00				995	885			
	Average				295.5000					78.3333			

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC AK

Date 3/24/10

CleanAir ENGINEERING

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

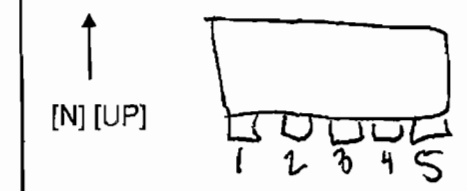
UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	10955
Plant	S. Broward	Date	3/24/10
Meter Operator	A. Karony		
Probe Operator			

Meter Box	66-14	Sample Box No.	B11
Meter Y_d	0.9898	Meter $\Delta H_@$	1.7643
K Factor	—	Pitot C_p	—
Leak Rate Before	0.002 (cfm) [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 (cfm) [Lpm]	@	10 (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	10		

Amb. Temp. (°F)	77	Bar. Press.	30.1 [in. Hg] [mbar]
Probe I.D. No.	67-4-3		
Liner Material	glass		

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

Start Time: 10:54 Stop Time: 11:54

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] 701.355	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_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes O_2
3-1	5	0.24	1.5	705.37	295	300	299	104	83	80	6.5		9.3
	10	0.24		708.81	296	300	297	45	87	80	2.5		8.8
	15	0.22		712.19	296	300	297	45	90	81	2.5		9.4
	20	0.21		715.56	296	300	299	48	91	82	2.5		8.5
	25	0.22		718.95	295	300	299	51	93	83	2.5		9.3
	30	0.21		722.35	295	300	298	55	93	84	3		9.4
	35	0.25		725.76	295	300	298	49	93	84	2.8		9.5
	40	0.23		729.21	295	300	299	45	93	84	3		9.3
	45	0.20		732.61	295	300	300	45	93	84	3		9.5
	50	0.20		736.01	295	300	298	44	93	85	3		8.8
	55	0.20		739.43	296	300	298	45	94	85	3		9.8
	60	0.18		742.840	295	300	300	45	95	86			9.1
	Total	*		41.4850	3544.00				1099.00	998.00			
	Average				295.3333				87.3750				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC AK
Date 3/24/10

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. B1
Date 3/24/10	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	538.7	468.7	70.0	
Impinger 2	100 mL 01.N H2SO4	683.8	560.9	122.9	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	587.1	558.4	28.7	Date 3/24
Impinger 4	Empty	460.9	456.0	4.9	
Impinger 5	Silica Gel	769.6	759.2	10.4	Total Weight (gm)
					226.5
					236.9

Run No. 2	Filter Type Quartz		Sample Box No. B21
Date 3/24/10	Lot No.		pH
Analyst S. Brown	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	554.4	478.8	75.6	
Impinger 2	100 mL 01.N H2SO4	745.5	646.2	99.3	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	569.4	535.0	34.4	Date 3/24
Impinger 4	Empty	464.9	451.7	13.2	
Impinger 5	Silica Gel	791.4	777.1	14.3	Total Weight (gm)
					222.5
					236.8

Run No. 3	Filter Type Quartz		Sample Box No. B11
Date 3/24/10	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	547.1	464.5	82.6	
Impinger 2	100 mL 01.N H2SO4	676.1	555.6	120.5	QA/QC BW
Impinger 3	100 mL 01.N H2SO4	582.5	554.7	27.8	Date 3/24
Impinger 4	Empty	460.7	455.5	5.2	
Impinger 5	Silica Gel	771.2	762.6	8.6	Total Weight (gm)
					236.1
					244.7

CleanAir ENGINEERING

QA/QC SB
Date 3/24

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

UNIT: 3 RUN: 1

FIELD DATA SHEET

Client Wheelabrator	Project No. 10585
Plant S. Broward	Date 3-24-10
Meter Operator B. ARNOLD	
Probe Operator B. ARNOLD	

Meter Box 61-6	Sample Box No. B22
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6820
K Factor N/A	Pitot C_p
Leak Rate Before 0.005 [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

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	14		

Amb. Temp. (°F) 62	Bar. Press. 30.10 [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: 7:45	Stop Time: 8:45

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. 657.195 [ft^3] [L]	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)	Notes
1-1	5		1-2	660.18	469	351	355	51	64	63	2.0	4.3	
	10			663.21	466	353	356	48	65	62	2.5	4.1	
	15			664.94	471	354	355	44	67	63	5.5	4.3	
	20			668.95	464	356	356	44	68	63	6.5	4.5	
	25			672.01	464	356	356	45	67	63	8.0	4.3	
	30			675.00	464	356	355	45	67	63	9.0	4.3	
	35			678.99	461	353	355	46	68	63	10.0	4.5	
	40			681.02	463	353	354	48	68	63	11.5	4.1	
	45			684.02	464	354	354	49	68	64	12.5	4.6	
	50			687.04	466	356	355	51	69	64	14.0	4.6	
	55			690.08	465	356	356	53	69	65	16.0	4.2	
	60			693.135	465	356	355	54	69	65	17.0	4.4	
	Total	*	14.4000	35.9400					809	741			
	Average		1.2000		465.1667					65.4167			

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC ΔP

Date 3-24-10

CleanAir ENGINEERING

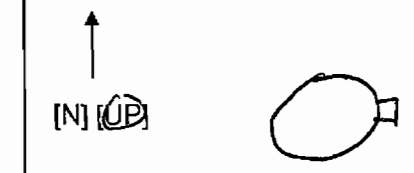
TEST LOCATION: SDA INLET **HCL TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client Wheelabrator	Project No. 10955
Plant S. Broward	Date 3-24-10
Meter Operator B. Arnold	
Probe Operator B. Arnold	

Cross-Section of Test Location



Amb. Temp. (°F) 69	Bar. Press. 30.10 [in. Hg] [mbar]
Probe I.D. No. 67-4-5	
Liner Material GLASS	

Meter Box 61-6	Sample Box No. B16	
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6820	
K Factor ~~1.6820~~ N/A	Pitot C_p	
Leak Rate Before 0.003 [cfm] [Lpm]	@ 15 (in. Hg)	
Leak Rate After 0.003 [cfm] [Lpm]	@ 21 (in. Hg)	
Pitot Leak Check Before: ☒	After: Good ☑ Bad ☐	

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]
-1.1	14		

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

Start Time: 9:16	Stop Time: 10:16

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)	Probe T_p (°F) Set Points 355	Filter T_f (°F) Set Points 355	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in.Hg)	XAD Trap Temp. T_t (°F)	Notes
				~~695.485~~ 694.885									
1-1	5		1.2	697.89	463	354	355	60	69	67	2.5	8.7	
	10			700.92	466	359	355	48	71	68	3.0	8.5	
	15			703.98	469	355	356	46	73	69	4.5	7.3	
	20			~~704.~~ 707.02	464	355	357	46	74	69	6.0	7.8	
	25			710.05	462	355	356	45	74	69	8.0	7.8	
	30			713.09	463	355	354	46	74	70	9.0	8.3	
	35			716.16	465	354	355	47	74	70	11.0	7.6	
	40			719.18	463	353	355	49	74	70	12.5	7.9	
	45			722.27	461	354	355	52	75	70	13.0	8.3	
	50			725.32	462	355	355	53	75	71	16.0	7.9	
	55			728.37	466	356	356	53	75	71	18.0	7.3	
	60		1.1	731.410	466	356	355	55	74	71	20.0	7.2	
	Total	*	14.3000	14.3000					882	835			
	Average		1.1923	36.525	464.1667				73.5417				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC [illegible]
Date 3-24-10

CleanAir ENGINEERING

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

UNIT: 3 RUN: 3

FIELD DATA SHEET

Client Wheelabrator	Project No. 10855
Plant S. Broward	Date 3-24-10
Meter Operator B. Arnold	
Probe Operator B. Arnold	

Cross-Section of Test Location

Amb. Temp. (°F) 74	Bar. Press. 30.1 [in. Hg] [mbar]
Probe I.D. No. 67-4-5	
Liner Material GLASS	

Meter Box 61.6	Sample Box No. B22	
Meter Y_d 0.9900	Meter $\Delta H_@$ 1.6820	
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 ☐	

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]
-1.2	14	[In]	

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

Start Time: 10:54 Stop Time: 11:54

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
				731.680		355	355						
1-1	5		1.2	734.76	470	354	357	56	72	72	2.0	8.1	
	10			737.86	468	358	355	46	73	72	2.0	8.4	
	15			740.94	466	355	355	45	75	72	3.0	7.7	
	20			~~743~~ 744.04	466	356	355	46	77	73	3.5	7.8	
	25			747.13	466	356	355	47	78	73	4.5	7.8	
	30			750.18	472	356	356	49	79	74	7.0	7.1	
	35			753.28	471	354	357	50	~~78~~	73	8.5	7.4	
	40			756.36	470	355	355	56	78	74	10.0	8.2	
	45			759.49	468	356	354	58	78	74	12.0	8.3	
	50			762.57	468	353	355	59	79	75	13.0	7.6	
	55			765.64	466	355	355	61	78	75	14.0	7.8	
	60			768.720	465	355	354	61	78	75	17.5	8.5	
	Total	*	14.4000	37.0400					922	882			
	Average		1.2000		468.0000				75.1667				

* Sum of square roots.

Circle correct bracketed units on data sheet.

QA/QC BA

Date 3-24-10

CleanAir ENGINEERING

Impinger Weight Sheet

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

Run No. 1	Filter Type Quartz		Sample Box No. B22
Date 3/24/10	Lot No.		pH
Analyst S-Brown	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	507.0	472.5	34.5	
Impinger 2	100 mL 01.N H2SO4	628.3	539.6	88.7	QA/QC 3/24
Impinger 3	100 mL 01.N H2SO4	578.9	554.0	24.9	Date SB
Impinger 4	Empty	435.4	430.9	4.5	
Impinger 5	Silica Gel	754.3	740.5	13.8	Total Weight (gm)
					152.6
					166.9

Run No. 2	Filter Type Quartz		Sample Box No.
Date 3/24/10	Lot No.		pH
Analyst B. White	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	504.6	454.7	49.9	
Impinger 2	100 mL 01.N H2SO4	625.8	543.0	82.8	QA/QC BW
Impinger 3	100 mL 01.N H2SO4	564.2	541.7	22.5	Date 3/24
Impinger 4	Empty	468.0	464.2	3.8	
Impinger 5	Silica Gel	731.3	718.9	12.4	Total Weight (gm)
					159.0
					171.4

Run No. 3	Filter Type Quartz		Sample Box No. B22
Date 3/24/10	Lot No.		pH
Analyst B. White	Filter No. NA		Rinse

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	522.1	471.4	50.7	
Impinger 2	100 mL 01.N H2SO4	626.3	537.0	89.3	QA/QC BW
Impinger 3	100 mL 01.N H2SO4	572.2	552.4	19.8	Date 3/24
Impinger 4	Empty	437.4	430.1	7.3	
Impinger 5	Silica Gel	758.1	747.2	10.9	Total Weight (gm)
					167.1
					178.0

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ImpFieldWSht_20040ds
NS ImpFieldWSht

QA/QC SB
Date 3/24

Visible Emissions Observation Form

CLIENT/OWNER	PROJECT NUMBER	OBSERVATION DATE	START TIME	END TIME
Wheelabrator	10955	3/24/10	10:32	11:32

PLANT	UNIT	RUN
South Broward		1

PROCESS EQUIPMENT	OPERATING MODE
Lime Silo	intermittent/cont

CONTROL EQUIPMENT	OPERATING MODE
FF Baghouse	Continuous

DESCRIBE EMISSION POINT: vent / Vent

HEIGHT ABOVE GROUND LEVEL	DISTANCE FROM OBSERVER
60 ft	180 ft

HEIGHT RELATIVE TO OBSERVER	DIRECTION FROM OBSERVER
60 ft	

DESCRIBE EMISSIONS: clear

EMISSION COLOR: clear

PLUME TYPE: CONTINUOUS ☒ FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT: YES ☐ NO ☒

IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐

POINT IN PLUME AT WHICH EMISSIONS WERE DETERMINED: 3' past vent opening

DESCRIBE BACKGROUND: cloudy sky

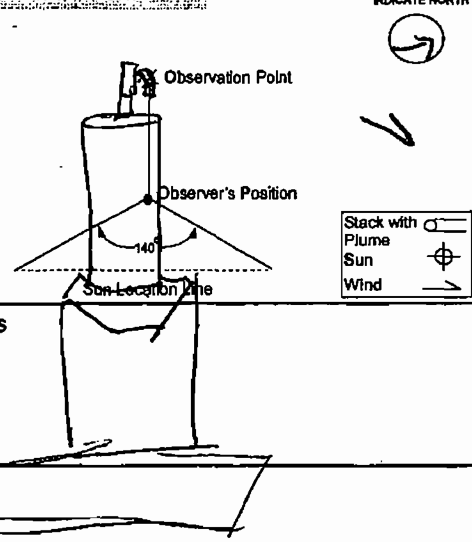
WIND SPEED	WIND DIRECTION
8	NNE

AMBIENT TEMPERATURE	RELATIVE HUMIDITY
73	63

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

INDICATE NORTH



RANGE OF OPACITY READINGS

MINIMUM	MAXIMUM
0	0

OBSERVER'S NAME (PRINT): Raina Vicere

OBSERVER'S SIGNATURE	DATE
Raina Vicere	3/24/10

CERTIFIED BY	DATE

COMMENTS

QA/QC RV
Date 3/24/10

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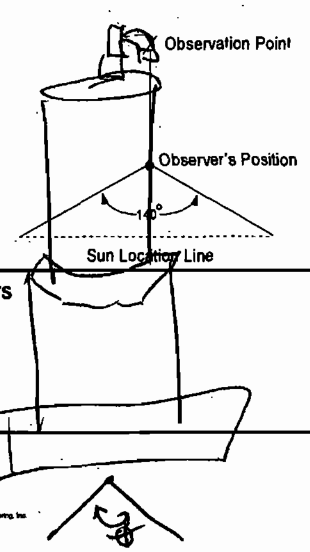
Visible Emissions Observation Form

Field	Entry
CLIENT/OWNER	Wheelabrator
PROJECT NUMBER	10955
OBSERVATION DATE	3/24/10
START TIME	11:32
END TIME	11:51
PLANT	South Broward
UNIT	
RUN	1
PROCESS EQUIPMENT	Lime Silo
OPERATING MODE	
CONTROL EQUIPMENT	
OPERATING MODE	
DESCRIBE EMISSION POINT	vent
HEIGHT ABOVE GROUND LEVEL	
DISTANCE FROM OBSERVER	
HEIGHT RELATIVE TO OBSERVER	
DIRECTION FROM OBSERVER	
DESCRIBE EMISSIONS	clear
EMISSION COLOR	clear
PLUME TYPE	CONTINUOUS ☒ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT	YES ☐ NO ☒
IF WATER DROPLET PLUME	ATTACHED ☐ DETACHED ☐
POINT IN PLUME AT WHICH EMISSIONS WERE DETERMINED	3" past vent opening
DESCRIBE BACKGROUND	~~partly~~ Mostly cloudy sky
WIND SPEED	14
WIND DIRECTION	E
AMBIENT TEMPERATURE	74
RELATIVE HUMIDITY	62

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

INDICATE NORTH



Stack with Plume
Sun
Wind

Field	Entry
RANGE OF OPACITY READINGS — MINIMUM	0
MAXIMUM	0
OBSERVER'S NAME (PRINT)	Raina Vicere
OBSERVER'S SIGNATURE	[signature]
DATE	3/24/10
CERTIFIED BY	
DATE	

COMMENTS

QA/QC______
Date______

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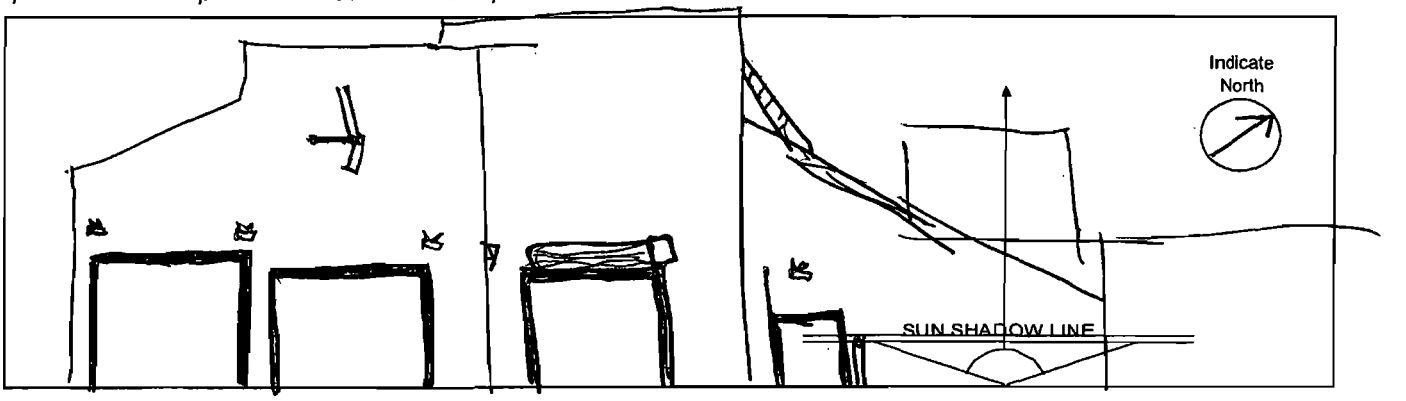
EPA METHOD 22
Fugitive or Smoke Emission Inspection
Outdoor Location

Job No.	10955	Date	3/24/10
Client	Wheelabrator	Observer	Raina Vicere
Plant	South Broward	Affiliation	Clean Air

Industry	MSW	Process Unit	Ash Handling System

Precipitation	none	Wind Direction	NNW
Sky Conditions	partly cloudy	Wind Speed	3

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 Conveyor/ ~~Doors to Ba SB~~ Ash/unloading	Start 7:52	20:00	00:00
	Stop 8:12		
	Start 8:17	20:00	00:00
	Stop 8:37		
	Start 8:42	20:00	00:00
	Stop 9:02		
	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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QA/QC RV
Date 3/24/10

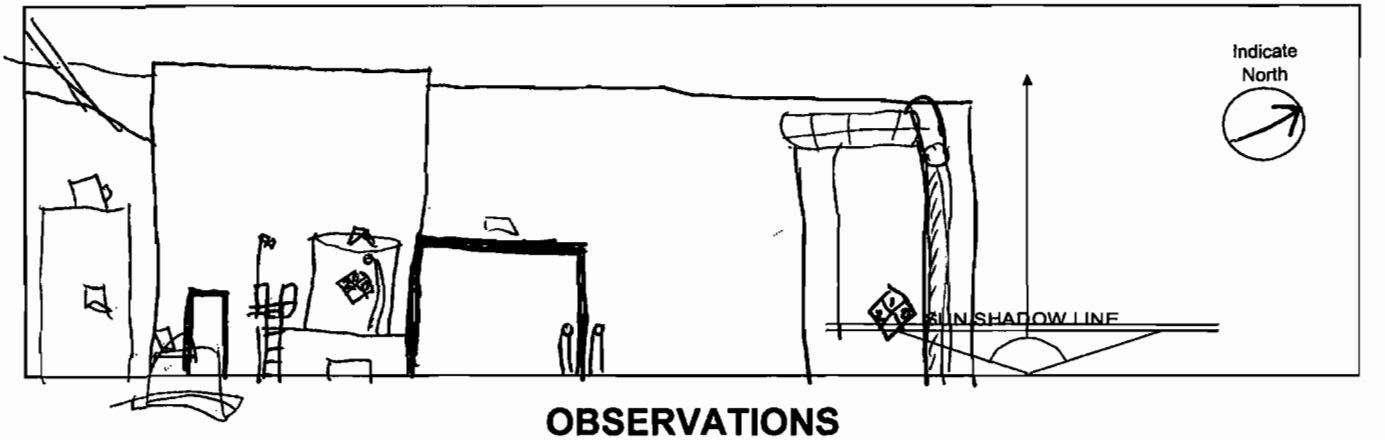
EPA METHOD 22
Fugitive or Smoke Emission Inspection
Outdoor Location

Job No.	10955	Date	3/24/10
Client	Wheelabrator	Observer	Raina Vicere
Plant	South Broward	Affiliation	Clean Air

Industry	MSW	Process Unit	Ash Handling System

Precipitation	none	Wind Direction	N
Sky Conditions	partly Cloudy	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 Conveyor Doors to Baghouse	Start	9:07	20:00	00:00
	Stop	9:27		
	Start	9:32	20:00	00:00
	Stop	9:52		
	Start	9:57	20:00	00:00
	Stop	10:17		
	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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QA/QC RV
Date 3/24/10

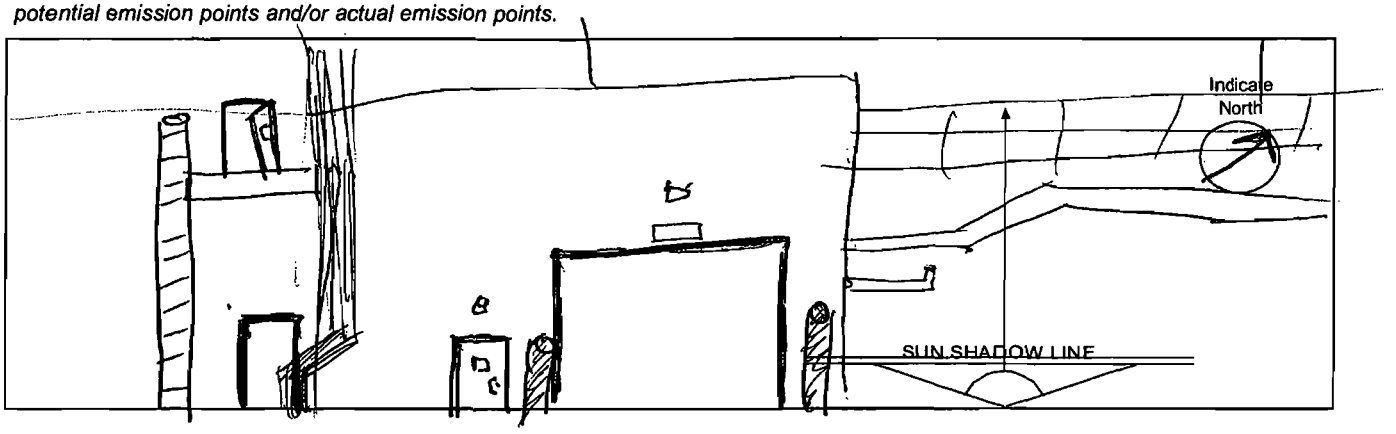
EPA METHOD 22
Fugitive or Smoke Emission Inspection
Outdoor Location

Job No.	10955	Date	3/24/10
Client	wheelabrator	Observer	Raina Vicere
Plant	South Broward	Affiliation	Clean Air

Industry	MSW	Process Unit	Ash Handling System

Precipitation	none	Wind Direction	E
Sky Conditions	partly Cloudy	Wind Speed	16

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)
Rolling Door Door to Baghouse	Start 12:55	20:00	00:00
	Stop 13:15		
	Start 13:20	20:00	00:00
	Stop 13:40		
	Start 13:45	20:00	00:00
	Stop 14:05		
	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 3/24/10

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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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/23/10
Start Time: 07:43
Stop Time: 09:58
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.57
CO_2 (dry volume %): 9.69
N_2+CO (dry volume %): 80.74
H_2O (condensate, ml or gm): 445.2
H_2O (silica, g): 18.0
Actual Moisture (%): 22.03

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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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			381.105						
5-01	5.0	0.40	0.99	384.940	295	62	61	0.63	3.83	145.5*
5-02	10.0	0.45	1.10	386.870	296	65	61	0.67	1.93	68.9*
5-03	15.0	0.51	1.30	390.050	297	67	62	0.71	3.18	106.5
5-04	20.0	0.58	1.40	393.380	297	69	62	0.76	3.33	104.4
5-05	25.0	0.57	1.40	396.730	296	71	63	0.75	3.35	105.5
LEAK CHECK	25.0			396.830						
4-01	30.0	0.45	1.10	399.740	295	68	64	0.67	2.91	103.2
4-02	35.0	0.43	1.10	402.640	296	67	63	0.66	2.90	105.5
4-03	40.0	0.40	0.99	405.510	297	68	63	0.63	2.87	108.2
4-04	45.0	0.54	1.30	408.670	296	68	64	0.73	3.16	102.5
4-05	50.0	0.52	1.30	411.870	295	69	64	0.72	3.20	105.6
LEAK CHECK	50.0			411.950						
3-01	55.0	0.40	0.99	414.750	295	68	65	0.63	2.80	105.2
3-02	60.0	0.39	0.97	417.550	295	70	66	0.62	2.80	106.3
3-03	65.0	0.41	1.00	420.410	295	71	66	0.64	2.86	105.8
3-04	70.0	0.51	1.30	423.600	296	73	67	0.71	3.19	105.6
3-05	75.0	0.60	1.50	427.010	296	74	68	0.77	3.41	103.9
LEAK CHECK	75.0			427.140						
2-01	80.0	0.44	1.10	430.120	295	73	69	0.66	2.98	105.9
2-02	85.0	0.41	1.00	433.000	295	75	70	0.64	2.88	105.7
2-03	90.0	0.40	0.99	435.840	293	73	70	0.63	2.84	105.6
2-04	95.0	0.52	1.30	439.020	295	75	71	0.72	3.18	103.6
2-05	100.0	0.68	1.70	442.640	295	74	70	0.82	3.62	103.4
LEAK CHECK	100.0			442.740						
1-01	105.0	0.41	1.00	445.680	294	71	70	0.64	2.94	108.2
1-02	110.0	0.44	1.10	448.640	295	73	71	0.66	2.96	105.0
1-03	115.0	0.42	1.00	451.520	292	72	71	0.65	2.88	104.4
1-04	120.0	0.45	1.10	454.520	294	72	70	0.67	3.00	105.4
1-05	125.0	0.63	1.60	458.060	295	74	70	0.79	3.54	105.1
Final	125.0		1.18520	76.54500	295.20000	68.46000		0.68932	76.54500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6893	1.1852	76.5450	295.2000	68.4600		2RSD = 11.6%		
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/23/10
Start Time: 10:31
Stop Time: 12:45
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.8
O_2 (dry volume %): 9.38
CO_2 (dry volume %): 9.94
N_2+CO (dry volume %): 80.68
H_2O (condensate, ml or gm): 457.6
H_2O (silica, g): 15.1
Actual Moisture (%): 22.33

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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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			458.650						
1-01	5.0	0.42	1.00	461.520	294	72	72	0.65	2.87	104.5
1-02	10.0	0.42	1.00	464.390	294	73	71	0.65	2.87	104.5
1-03	15.0	0.39	0.96	467.180	294	75	72	0.62	2.79	105.1
1-04	20.0	0.43	1.10	470.150	293	77	73	0.66	2.97	106.2
1-05	25.0	0.58	1.40	473.500	294	76	73	0.76	3.35	103.4
LEAK CHECK	25.0			473.600						
2-01	30.0	0.47	1.20	476.680	294	72	72	0.69	3.08	106.0
2-02	35.0	0.41	1.00	479.570	294	73	72	0.64	2.89	106.4
2-03	40.0	0.41	1.00	482.430	293	75	72	0.64	2.86	105.0
2-04	45.0	0.56	1.40	485.790	294	75	72	0.75	3.36	105.7
2-05	50.0	0.70	1.70	489.480	293	75	72	0.84	3.69	103.8
LEAK CHECK	50.0			489.600						
3-01	55.0	0.38	0.93	492.340	294	74	73	0.62	2.74	104.5
3-02	60.0	0.42	1.00	495.200	295	76	74	0.65	2.86	103.6
3-03	65.0	0.48	1.20	498.310	295	75	74	0.69	3.11	105.5
3-04	70.0	0.56	1.40	501.640	295	77	74	0.75	3.33	104.5
3-05	75.0	0.60	1.50	505.100	296	77	74	0.77	3.48	104.9
LEAK CHECK	75.0			505.210						
4-01	80.0	0.45	1.10	508.170	293	76	75	0.67	2.96	103.4
4-02	85.0	0.40	0.98	511.020	298	78	75	0.63	2.85	105.7
4-03	90.0	0.47	1.20	514.140	296	76	75	0.69	3.12	106.8
4-04	95.0	0.54	1.30	517.360	296	78	76	0.73	3.22	102.6
4-05	100.0	0.65	1.60	520.890	299	79	76	0.81	3.53	102.7
LEAK CHECK	100.0			520.990						
5-01	105.0	0.46	1.10	523.950	296	77	76	0.68	2.96	102.2
5-02	110.0	0.48	1.20	527.020	298	77	76	0.69	3.07	104.0
5-03	115.0	0.53	1.30	530.220	298	79	77	0.73	3.20	102.9
5-04	120.0	0.59	1.40	533.530	298	79	77	0.77	3.31	100.9
5-05	125.0	0.55	1.30	536.780	294	77	76	0.74	3.25	102.6
Final	125.0		1.21080	77.70000	295.12000	74.94000		0.70033	77.70000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7003	1.2108	77.7000	295.1200	74.9400		2RSD = 12.2%		
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC _____
Date _____

Field Data Printout

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

Location: Unit 1 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/23/10
Start Time: 13:32
Stop Time: 15:46
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.9
O_2 (dry volume %): 9.73
CO_2 (dry volume %): 9.84
N_2+CO (dry volume %): 80.43
H_2O (condensate, ml or gm): 440.8
H_2O (silica, g): 17.9
Actual Moisture (%): 21.76

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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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			538.170						
5-01	5.0	0.40	0.98	541.010	296	76	76	0.63	2.84	104.6
5-02	10.0	0.40	0.98	543.850	296	76	76	0.63	2.84	104.6
5-03	15.0	0.48	1.20	546.920	296	77	75	0.69	3.07	103.3
5-04	20.0	0.58	1.40	550.260	296	76	74	0.76	3.34	102.5
5-05	25.0	0.54	1.30	553.440	296	78	75	0.73	3.18	100.8
LEAK CHECK	25.0			553.540						
4-01	30.0	0.45	1.10	556.470	295	76	74	0.67	2.93	101.9
4-02	35.0	0.45	1.10	559.400	296	79	75	0.67	2.93	101.6
4-03	40.0	0.48	1.20	562.510	298	79	75	0.69	3.11	104.6
4-04	45.0	0.59	1.40	565.850	298	78	75	0.77	3.34	101.5
4-05	50.0	0.65	1.60	569.400	297	78	75	0.81	3.55	102.7
LEAK CHECK	50.0			569.520						
3-01	55.0	0.47	1.20	572.650	297	77	75	0.69	3.13	106.5
3-02	60.0	0.43	1.10	575.640	297	80	75	0.66	2.99	106.1
3-03	65.0	0.50	1.20	578.720	298	80	76	0.71	3.08	101.3
3-04	70.0	0.59	1.40	582.020	298	80	75	0.77	3.30	100.1
3-05	75.0	0.63	1.50	585.480	297	80	76	0.79	3.46	101.4
LEAK CHECK	75.0			585.630						
2-01	80.0	0.46	1.10	588.590	296	78	75	0.68	2.96	101.6
2-02	85.0	0.40	0.98	591.440	296	79	76	0.63	2.85	104.7
2-03	90.0	0.40	0.98	594.300	294	79	76	0.63	2.86	104.9
2-04	95.0	0.55	1.30	597.520	296	79	76	0.74	3.22	101.0
2-05	100.0	0.70	1.70	601.210	296	78	75	0.84	3.69	102.9
LEAK CHECK	100.0			601.360						
1-01	105.0	0.50	1.20	604.400	296	76	75	0.71	3.04	100.3
1-02	110.0	0.43	1.10	607.390	294	78	75	0.66	2.99	106.0
1-03	115.0	0.36	0.88	610.140	295	78	75	0.60	2.75	106.6
1-04	120.0	0.51	1.20	613.270	295	79	76	0.71	3.13	101.8
1-05	125.0	0.67	1.60	616.870	297	80	76	0.82	3.60	102.3
Final	125.0		1.22800	78.18000	296.24000	76.72000		0.70761	78.18000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7076	1.2280	78.1800	296.2400	76.7200		2RSD = 13.1%		
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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USEPA Method 3 Laboratory Data

Location: Unit 1 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 10855
Method: Select Method
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

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

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:		9.69000		9.57000	80.74000	29.93320	1.18925	☑ 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:		9.94000		9.38000	80.68000	29.96560	1.15895	☑ 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:		9.84000		9.73000	80.43000	29.98360	1.13518	☑ 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 South 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	722.2	462.0	260.2
Impinger 2	5%HNO3/10%H2O2	665.9	538.6	127.3
Impinger 3	5%HNO3/10%H2O2	587.5	547.6	39.9
Impinger 4	Empty	449.5	440.0	9.5
Impinger 5	4%KMnO4/10%H2SO4	565.9	559.6	6.3
Impinger 6	4%KMnO4/10%H2SO4	542.3	540.3	2.0
Impinger 7	Silica Gel	720.2	702.2	18.0
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
+ 18.0	Silica Gel (gm)	18.0	☑QA/QC OK
463.2	Total Vlc (gm)	463.2	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	729.4	440.0	289.4
Impinger 2	5%HNO3/10%H2O2	689.3	556.3	133.0
Impinger 3	5%HNO3/10%H2O2	565.7	535.7	30.0
Impinger 4	Empty	451.1	446.9	4.2
Impinger 5	4%KMnO4/10%H2SO4	543.3	541.8	1.5
Impinger 6	4%KMnO4/10%H2SO4	545.3	545.8	-0.5
Impinger 7	Silica Gel	764.7	749.6	15.1
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
457.6	Liquid (gm)		
0.0	less rinse (gm)		
457.6	Net Liquid (gm)	457.6	☑QA/QC OK
+ 15.1	Silica Gel (gm)	15.1	☑QA/QC OK
472.7	Total Vlc (gm)	472.7	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	749.5	461.4	288.1
Impinger 2	5%HNO3/10%H2O2	661.4	538.1	123.3
Impinger 3	5%HNO3/10%H2O2	575.8	552.6	23.2
Impinger 4	Empty	442.8	439.9	2.9
Impinger 5	4%KMnO4/10%H2SO4	561.2	559.2	2.0
Impinger 6	4%KMnO4/10%H2SO4	540.1	538.8	1.3
Impinger 7	Silica Gel	732.4	714.5	17.9
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
440.8	Liquid (gm)		
0.0	less rinse (gm)		
440.8	Net Liquid (gm)	440.8	☑QA/QC OK
+ 17.9	Silica Gel (gm)	17.9	☑QA/QC OK
458.7	Total Vlc (gm)	458.7	☑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 29**
Analyte: **Trace Metals**

Location: Unit 1 SDA Inlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: D. Luckhard 568
Probe Operator: P. Bihun 505
Test Date: 3/23/10
Start Time: 07:43
Stop Time: 09:58
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.007 cfm @ 12 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.4
O_2 (dry volume %): 8.09
CO_2 (dry volume %): 10.95
N_2+CO (dry volume %): 80.96
H_2O (condensate, ml or gm): 309.7
H_2O (silica, g): 14.4
Actual Moisture (%): 18.20

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
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)	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			321.470						
2-01	5.0	0.50	1.10	324.380	506	69	68	0.71	2.91	101.5
2-02	10.0	0.53	1.10	327.290	508	69	68	0.73	2.91	98.7
2-03	15.0	0.50	1.10	330.180	509	72	69	0.71	2.89	100.6
2-04	20.0	0.48	1.00	333.020	507	74	70	0.69	2.84	100.4
2-05	25.0	0.45	0.97	335.810	507	76	71	0.67	2.79	101.6
2-06	30.0	0.46	0.99	338.630	506	77	72	0.68	2.82	101.4
2-07	35.0	0.47	1.00	341.460	499	78	74	0.69	2.83	100.0
2-08	40.0	0.46	0.99	344.310	493	79	75	0.68	2.85	101.3
2-09	45.0	0.46	0.99	347.160	491	81	75	0.68	2.85	101.0
2-10	50.0	0.36	0.77	349.670	492	81	76	0.60	2.51	100.4
2-11	55.0	0.38	0.82	352.220	497	81	77	0.62	2.55	99.5
2-12	60.0	0.38	0.82	354.800	493	84	78	0.62	2.58	100.1
LEAK CHECK	60.0			355.160						
1-01	65.0	0.84	1.80	358.860	485	82	81	0.92	3.70	96.3
1-02	70.0	0.61	1.30	362.040	485	83	81	0.78	3.18	96.9
1-03	75.0	0.52	1.20	365.100	483	84	81	0.72	3.06	100.7
1-04	80.0	0.41	0.91	367.820	486	86	81	0.64	2.72	100.8
1-05	85.0	0.42	0.93	370.570	487	87	82	0.65	2.75	100.5
1-06	90.0	0.42	0.93	373.310	493	88	83	0.65	2.74	100.3
1-07	95.0	0.55	1.20	376.350	503	90	84	0.74	3.04	97.5
1-08	100.0	0.60	1.30	379.510	505	91	85	0.77	3.16	97.0
1-09	105.0	0.61	1.40	382.810	509	90	86	0.78	3.30	100.7
1-10	110.0	0.55	1.20	385.900	511	91	86	0.74	3.09	99.3
1-11	115.0	0.54	1.20	388.950	514	92	87	0.73	3.05	98.9
1-12	120.0	0.56	1.20	391.975	515	91	87	0.75	3.03	96.4
Final	120.0		1.09250	70.14500	499.33333	80.27083		0.70567	70.14500	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7057	1.0925	70.1450	499.3333	80.2708				
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: USEPA Method 29
Analyte: Trace Metals

Location: Unit 1 SDA Inlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: P. Bihun 505
Probe Operator: D. Luckhard 568
Test Date: 3/23/10
Start Time: 10:31
Stop Time: 12:45
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 12 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.4
O_2 (dry volume %): 8.33
CO_2 (dry volume %): 10.94
N_2+CO (dry volume %): 80.73

H_2O (condensate, ml or gm): 303.5
H_2O (silica, g): 14.8
Actual Moisture (%): 18.58

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
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)	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			392.720						
1-01	5.0	0.41	0.90	395.390	481	87	86	0.64	2.67	98.5
1-02	10.0	0.37	0.81	397.910	481	87	87	0.61	2.52	97.7
1-03	15.0	0.41	0.90	400.580	482	89	87	0.64	2.67	98.3
1-04	20.0	0.37	0.81	403.100	485	89	87	0.61	2.52	97.8
1-05	25.0	0.38	0.84	405.680	490	90	87	0.62	2.58	98.9
1-06	30.0	0.55	1.20	408.750	505	91	88	0.74	3.07	98.5
1-07	35.0	0.45	0.99	411.590	507	92	88	0.67	2.84	100.7
1-08	40.0	0.62	1.40	414.910	516	93	89	0.79	3.32	100.7
1-09	45.0	0.58	1.30	418.130	518	92	89	0.76	3.22	101.2
1-10	50.0	0.67	1.50	421.570	517	92	88	0.82	3.44	100.6
1-11	55.0	0.61	1.30	424.760	518	91	88	0.78	3.19	97.9
1-12	60.0	0.61	1.30	427.950	519	92	88	0.78	3.19	97.9
LEAK CHECK	60.0			428.100						
2-01	65.0	0.50	1.10	431.000	516	88	88	0.71	2.90	98.4
2-02	70.0	0.49	1.10	433.900	515	91	88	0.70	2.90	99.1
2-03	75.0	0.52	1.10	436.770	514	90	88	0.72	2.87	95.2
2-04	80.0	0.49	1.10	439.640	515	91	89	0.70	2.87	98.0
2-05	85.0	0.45	0.99	442.440	510	90	88	0.67	2.80	99.7
2-06	90.0	0.47	1.00	445.270	511	92	89	0.69	2.83	98.3
2-07	95.0	0.51	1.10	448.120	502	92	89	0.71	2.85	94.7
2-08	100.0	0.56	1.20	451.210	501	90	89	0.75	3.09	98.1
2-09	105.0	0.56	1.20	454.270	503	92	89	0.75	3.06	97.1
2-10	110.0	0.33	0.73	456.680	506	90	89	0.57	2.41	99.8
2-11	115.0	0.28	0.62	458.860	505	85	87	0.53	2.18	98.6
2-12	120.0	0.30	0.66	461.155	505	86	86	0.55	2.29	100.2
Final	120.0		1.04792	68.28500	505.08333	89.02083		0.68760	68.28500	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6876	1.0479	68.2850	505.0833	89.0208				
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: USEPA Method 29
Analyte: Trace Metals

Location: Unit 1 SDA Inlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205

Meter Operator:	D. Luckhard	568
Probe Operator:	P. Bihun	505

Test Date: 3/23/10
Start Time: 13:32
Stop Time: 15:46

Leak Rate Before:	0.004 cfm	@ 15 "Hg
Leak Rate After:	0.003 cfm	@ 12 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.5
O_2 (dry volume %): 8.49
CO_2 (dry volume %): 10.95
N_2+CO (dry volume %): 80.56

H_2O (condensate, ml or gm): 292.3
H_2O (silica, g): 16.6
Actual Moisture (%): 18.10

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
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)	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			461.985						
2-01	5.0	0.55	1.20	465.010	516	87	88	0.74	3.02	97.6
2-02	10.0	0.52	1.10	467.920	514	89	88	0.72	2.91	96.2
2-03	15.0	0.47	1.00	470.740	515	92	89	0.69	2.82	97.7
2-04	20.0	0.43	0.95	473.480	512	94	90	0.66	2.74	98.9
2-05	25.0	0.48	1.10	476.350	515	96	92	0.69	2.87	97.8
2-06	30.0	0.36	0.79	478.850	511	96	93	0.60	2.50	98.0
2-07	35.0	0.39	0.86	481.460	504	96	94	0.62	2.61	97.9
2-08	40.0	0.43	0.95	484.200	503	95	95	0.66	2.74	97.9
2-09	45.0	0.44	0.97	486.970	504	96	95	0.66	2.77	97.8
2-10	50.0	0.41	0.90	489.630	502	97	96	0.64	2.66	97.0
2-11	55.0	0.42	0.92	492.340	503	96	97	0.65	2.71	97.7
2-12	60.0	0.41	0.90	495.010	508	98	98	0.64	2.67	97.4
LEAK CHECK	60.0			495.220						
1-01	65.0	0.71	1.60	498.750	493	95	98	0.84	3.53	97.5
1-02	70.0	0.41	0.90	501.470	487	94	97	0.64	2.72	98.6
1-03	75.0	0.40	0.88	504.130	488	93	95	0.63	2.66	97.9
1-04	80.0	0.38	0.84	506.730	491	93	93	0.62	2.60	98.5
1-05	85.0	0.38	0.84	509.330	492	92	92	0.62	2.60	98.7
1-06	90.0	0.47	1.00	512.180	507	91	90	0.69	2.85	98.4
1-07	95.0	0.62	1.40	515.470	511	91	89	0.79	3.29	99.3
1-08	100.0	0.59	1.30	518.630	519	91	89	0.77	3.16	98.1
1-09	105.0	0.57	1.30	521.820	519	89	87	0.75	3.19	101.1
1-10	110.0	0.54	1.20	524.940	517	90	87	0.73	3.12	101.4
1-11	115.0	0.56	1.20	527.980	520	90	87	0.75	3.04	97.2
1-12	120.0	0.56	1.20	531.055	519	90	87	0.75	3.07	98.2
Final	120.0		1.05417	68.86000	507.08333	92.43750		0.68937	68.86000	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6894	1.0542	68.8600	507.0833	92.4375				
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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USEPA Method 3 Laboratory Data

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

Test Method: USEPA Method 29
Analyte: Trace Metals

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:		10.95000		8.09000	80.96000	30.07560	1.16986	☑ 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		8.33000	80.73000	30.08360	1.14899	☑ 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:		10.95000		8.49000	80.56000	30.09160	1.13333	☑ 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 SDA Inlet
Client: Wheelabrator South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 29
Analyte: Trace Metals
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	834.8	443.8	391.0
Impinger 2	5%HNO3/10%H2O2	572.6	556.8	15.8
Impinger 3	5%HNO3/10%H2O2	588.8	585.1	3.7
Impinger 4	Empty	442.8	442.0	0.8
Impinger 5	4%KMnO4/10%H2SO4	536.6	537.4	-0.8
Impinger 6	4%KMnO4/10%H2SO4	543.0	543.8	-0.8
Impinger 7	Silica Gel	732.9	718.5	14.4
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
409.7	Liquid (gm)		
-100.0	less rinse (gm)		
309.7	Net Liquid (gm)	309.7	☑QA/QC OK
+ 14.4	Silica Gel (gm)	14.4	☑QA/QC OK
324.1	Total Vlc (gm)	324.1	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	831.0	444.5	386.5
Impinger 2	5%HNO3/10%H2O2	558.5	544.0	14.5
Impinger 3	5%HNO3/10%H2O2	545.5	542.9	2.6
Impinger 4	Empty	444.2	443.9	0.3
Impinger 5	4%KMnO4/10%H2SO4	540.5	540.9	-0.4
Impinger 6	4%KMnO4/10%H2SO4	549.0	549.0	0.0
Impinger 7	Silica Gel	778.1	763.3	14.8
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
403.5	Liquid (gm)		
-100.0	less rinse (gm)		
303.5	Net Liquid (gm)	303.5	☑QA/QC OK
+ 14.8	Silica Gel (gm)	14.8	☑QA/QC OK
318.3	Total Vlc (gm)	318.3	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	813.3	443.6	369.7
Impinger 2	5%HNO3/10%H2O2	570.3	555.8	14.5
Impinger 3	5%HNO3/10%H2O2	591.0	585.0	6.0
Impinger 4	Empty	442.4	441.8	0.6
Impinger 5	4%KMnO4/10%H2SO4	536.9	537.0	-0.1
Impinger 6	4%KMnO4/10%H2SO4	547.8	546.2	1.6
Impinger 7	Silica Gel	756.1	739.5	16.6
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
392.3	Liquid (gm)		
-100.0	less rinse (gm)		
292.3	Net Liquid (gm)	292.3	☑QA/QC OK
+ 16.6	Silica Gel (gm)	16.6	☑QA/QC OK
308.9	Total Vlc (gm)	308.9	☑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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator: B. Arnold 770
Test Date: 3/22/10
Start Time: 13:19
Stop Time: 14:34
Leak Rate Before: 0.001 cfm @ 16 "Hg
Leak Rate After: 0.002 cfm @ 7 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.2
O_2 (dry volume %): 9.17
CO_2 (dry volume %): 10.32
N_2+CO (dry volume %): 80.51
H_2O (condensate, ml or gm): 204.2
H_2O (silica, g): 14.7
Actual Moisture (%): 21.81

Nozzle ID No: 0.268-1
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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			265.135						
1-01	2.5	0.42	1.00	266.620	295	64	64	0.65	1.49	109.9
1-02	5.0	0.44	1.10	268.120	295	65	64	0.66	1.50	108.4
1-03	7.5	0.48	1.20	269.590	295	68	65	0.69	1.47	101.3
1-04	10.0	0.56	1.40	271.100	295	68	64	0.75	1.51	96.5
1-05	12.5	0.51	1.20	272.610	296	70	65	0.71	1.51	100.9
LEAK CHECK	12.5			272.685						
2-01	15.0	0.45	1.10	274.200	296	68	65	0.67	1.51	107.9
2-02	17.5	0.42	1.00	275.680	295	71	66	0.65	1.48	108.6
2-03	20.0	0.46	1.30	277.170	294	71	66	0.68	1.49	104.5
2-04	22.5	0.52	1.30	278.770	296	72	66	0.72	1.60	105.6
2-05	25.0	0.54	1.30	279.820	295	73	66	0.73	1.05	67.9*
LEAK CHECK	25.0			280.580						
3-01	27.5	0.48	1.20	282.050	295	71	67	0.69	1.47	100.9
3-02	30.0	0.43	1.10	283.610	295	72	67	0.66	1.56	112.9*
3-03	32.5	0.43	1.10	285.050	294	71	67	0.66	1.44	104.3
3-04	35.0	0.50	1.20	286.560	295	73	67	0.71	1.51	101.3
3-05	37.5	0.56	1.30	288.175	294	74	68	0.75	1.62	102.1
LEAK CHECK	37.5			288.270						
4-01	40.0	0.50	1.20	289.980	294	72	68	0.71	1.71	114.7*
4-02	42.5	0.36	0.80	291.190	294	74	69	0.60	1.21	95.2
4-03	45.0	0.38	0.90	292.420	292	74	69	0.62	1.23	94.1
4-04	47.5	0.49	1.20	294.020	294	74	69	0.70	1.60	108.1
4-05	50.0	0.58	1.40	295.640	292	76	70	0.76	1.62	100.2
LEAK CHECK	50.0			295.720						
5-01	52.5	0.42	1.00	297.160	291	74	70	0.65	1.44	104.7
5-02	55.0	0.44	1.10	298.650	294	76	70	0.66	1.49	105.9
5-03	57.5	0.37	0.90	300.010	291	74	70	0.61	1.36	105.3
5-04	60.0	0.40	1.00	301.420	279	75	71	0.63	1.41	104.0
5-05	62.5	0.54	1.30	302.865	282	76	71	0.73	1.44	91.9
Final	62.5		1.14400	36.72000	293.12000	69.60000		0.68207	36.72000	
		Sq.Rt.ΔP								
25 points sampled		0.6821	1.1440	36.7200	293.1200	69.6000				
QC-Check: Field Averages		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

2RSD = 9.1%
Bold is estimated - reading missed

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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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator: B. Arnold 770
Test Date: 3/22/10
Start Time: 15:07
Stop Time: 16:21
Leak Rate Before: 0.002 cfm @ 14 "Hg
Leak Rate After: 0.002 cfm @ 8 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.2
O_2 (dry volume %): 9.31
CO_2 (dry volume %): 10.04
N_2+CO (dry volume %): 80.65
H_2O (condensate, ml or gm): 210.3
H_2O (silica, g): 13.7
Actual Moisture (%): 21.74

Nozzle ID No: 0.268-1
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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			303.505						
5-01	2.5	0.72	1.80	305.480	292	71	71	0.85	1.98	110.0*
5-02	5.0	0.45	1.10	307.060	293	74	71	0.67	1.58	110.9*
5-03	7.5	0.38	1.00	308.470	290	74	71	0.62	1.41	107.5
5-04	10.0	0.38	1.00	309.775	291	74	71	0.62	1.30	99.5
LEAK CHECK	10.0			309.915						
5-05	12.5	0.50	1.20	311.610	294	74	71	0.71	1.69	113.0*
4-01	15.0	0.38	1.00	312.930	293	86	71	0.62	1.32	99.7
4-02	17.5	0.36	1.00	314.360	293	74	71	0.60	1.43	112.2*
4-03	20.0	0.34	0.83	315.780	292	76	72	0.58	1.42	114.2*
4-04	22.5	0.43	1.00	317.310	292	74	71	0.66	1.53	109.8
4-05	25.0	0.63	1.50	318.670	293	74	71	0.79	1.36	80.8*
LEAK CHECK	25.0			318.760						
3-01	27.5	0.54	1.30	320.490	289	72	71	0.73	1.73	110.8*
3-02	30.0	0.41	1.00	321.830	295	74	71	0.64	1.34	98.6
3-03	32.5	0.40	0.98	323.370	295	74	71	0.63	1.54	114.8*
3-04	35.0	0.51	1.20	324.980	295	74	71	0.71	1.61	106.3
3-05	37.5	0.64	1.60	326.630	295	74	71	0.80	1.65	97.4
LEAK CHECK	37.5			326.790						
2-01	40.0	0.45	1.10	328.220	292	74	71	0.67	1.43	100.3
2-02	42.5	0.39	0.96	329.600	295	76	72	0.62	1.38	103.9
2-03	45.0	0.45	1.10	331.060	295	76	72	0.67	1.46	102.3
2-04	47.5	0.54	1.30	332.780	295	76	72	0.73	1.72	110.1*
2-05	50.0	0.57	1.30	334.390	295	77	72	0.75	1.61	100.2
LEAK CHECK	50.0			334.490						
1-01	52.5	0.37	0.91	335.890	294	76	72	0.61	1.40	108.1
1-02	55.0	0.40	0.98	337.230	295	76	73	0.63	1.34	99.5
1-03	57.5	0.49	1.20	338.870	295	76	73	0.70	1.64	110.1*
1-04	60.0	0.48	1.20	340.390	295	77	73	0.69	1.52	103.0
1-05	62.5	0.54	1.30	341.995	294	77	73	0.73	1.61	102.5
Final	62.5		1.15440	38.00000	293.48000	73.38000		0.68218	38.00000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6822	1.1544	38.0000	293.4800	73.3800		2RSD = 13.9%		
		☑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: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator: B. Arnold 770
Test Date: 3/22/10
Start Time: 16:30
Stop Time: 17:41
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 7 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.2
O_2 (dry volume %): 9.15
CO_2 (dry volume %): 10.31
N_2+CO (dry volume %): 80.54
H_2O (condensate, ml or gm): 203.9
H_2O (silica, g): 14.4
Actual Moisture (%): 22.06

Nozzle ID No: 0.268-1
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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			342.145						
1-01	2.5	0.38	0.93	343.630	291	74	73	0.62	1.49	113.5*
1-02	5.0	0.40	0.98	345.030	294	75	74	0.63	1.40	104.3
1-03	7.5	0.49	1.20	346.690	294	75	74	0.70	1.66	111.8*
1-04	10.0	0.52	1.30	348.150	295	77	74	0.72	1.46	95.3
1-05	12.5	0.48	1.20	349.720	294	77	74	0.69	1.57	106.6
LEAK CHECK	12.5			349.810						
2-01	15.0	0.44	1.10	351.460	293	75	74	0.66	1.65	117.1*
2-02	17.5	0.37	0.90	352.870	294	77	73	0.61	1.41	109.1
2-03	20.0	0.43	1.00	354.100	294	77	74	0.66	1.23	88.2*
2-04	22.5	0.52	1.30	355.650	294	77	74	0.72	1.55	101.2
2-05	25.0	0.50	1.20	357.210	294	80	75	0.71	1.56	103.4
LEAK CHECK	25.0			357.390						
3-01	27.5	0.36	0.88	358.850	291	78	74	0.60	1.46	114.1*
3-02	30.0	0.32	0.78	359.930	294	77	74	0.57	1.08	89.7*
3-03	32.5	0.36	0.88	361.390	294	77	74	0.60	1.46	114.4*
3-04	35.0	0.51	1.30	362.990	294	78	75	0.71	1.60	105.2
3-05	37.5	0.55	1.30	364.580	295	79	75	0.74	1.59	100.7
LEAK CHECK	37.5			364.690						
4-01	40.0	0.47	1.20	366.120	294	77	74	0.69	1.43	98.1
4-02	42.5	0.36	0.88	367.330	293	78	75	0.60	1.21	94.6
4-03	45.0	0.36	0.88	368.810	292	79	74	0.60	1.48	115.6*
4-04	47.5	0.45	1.10	370.300	293	78	75	0.67	1.49	104.2
4-05	50.0	0.54	1.30	371.900	292	77	74	0.73	1.60	102.3
LEAK CHECK	50.0			372.010						
5-01	52.5	0.48	1.20	373.530	289	76	74	0.69	1.52	103.0
5-02	55.0	0.40	0.98	374.950	294	77	74	0.63	1.42	105.6
5-03	57.5	0.32	0.78	376.230	289	77	74	0.57	1.28	106.0
5-04	60.0	0.35	0.86	377.660	291	77	74	0.59	1.43	113.4*
5-05	62.5	0.50	1.20	379.130	292	76	74	0.71	1.47	97.8
Final	62.5		1.06520	36.49500	292.96000	75.56000		0.65683	36.49500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6568	1.0652	36.4950	292.9600	75.5600		2RSD = 11.1%		
		☑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 1 FF Outlet
Client: Wheelabrator South 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:		10.32000		9.17000	80.51000	30.01800	1.13663	☑ 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		9.31000	80.65000	29.97880	1.15438	☑ 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:		10.31000		9.15000	80.54000	30.01560	1.13987	☑ 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 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 13B
Analyte: Total Fluorides
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	686.0	548.0	138.0
Impinger 2	DI Water	617.4	563.1	54.3
Impinger 3	Empty	471.2	459.3	11.9
Impinger 4	Silica Gel	812.0	797.3	14.7
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
204.2	Liquid (gm)		
0.0	less rinse (gm)		
204.2	Net Liquid (gm)	204.2	☑QA/QC OK
+ 14.7	Silica Gel (gm)	14.7	☑QA/QC OK
218.9	Total Vlc (gm)	218.9	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	684.9	543.1	141.8
Impinger 2	DI Water	601.8	542.7	59.1
Impinger 3	Empty	446.6	437.2	9.4
Impinger 4	Silica Gel	782.4	768.7	13.7
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
210.3	Liquid (gm)		
0.0	less rinse (gm)		
210.3	Net Liquid (gm)	210.3	☑QA/QC OK
+ 13.7	Silica Gel (gm)	13.7	☑QA/QC OK
224.0	Total Vlc (gm)	224.0	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	688.4	540.4	148.0
Impinger 2	DI Water	596.9	549.9	47.0
Impinger 3	Empty	461.4	452.5	8.9
Impinger 4	Silica Gel	763.2	748.8	14.4
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
203.9	Liquid (gm)		
0.0	less rinse (gm)		
203.9	Net Liquid (gm)	203.9	☑QA/QC OK
+ 14.4	Silica Gel (gm)	14.4	☑QA/QC OK
218.3	Total Vlc (gm)	218.3	☑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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Field Data Printout

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 1 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/22/10
Start Time: 08:31
Stop Time: 09:31
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.6
O_2 (dry volume %): 10.02
CO_2 (dry volume %): 9.24
N_2+CO (dry volume %): 80.74
H_2O (condensate, ml or gm): 234.7
H_2O (silica, g): 12.9
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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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			139.145						
3-01	5.0		1.50	142.680	294	64	64		3.54	
3-01	10.0		1.50	146.140	294	68	64		3.46	
3-01	15.0		1.50	149.550	295	70	65		3.41	
3-01	20.0		1.50	152.980	295	72	65		3.43	
3-01	25.0		1.50	156.400	295	71	65		3.42	
3-01	30.0		1.50	159.870	295	70	65		3.47	
3-01	35.0		1.50	163.350	295	71	65		3.48	
3-01	40.0		1.50	166.780	295	72	65		3.43	
3-01	45.0		1.50	170.220	295	71	65		3.44	
3-01	50.0		1.50	173.640	294	72	65		3.42	
3-01	55.0		1.50	177.020	294	71	65		3.38	
3-01	60.0		1.50	180.465	295	72	65		3.44	
Final	60.0		1.50000	41.32000	294.66667	67.58333		0.00000	41.32000	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.3200	294.6660	67.5800				
		☐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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/22/10
Start Time: 09:58
Stop Time: 10:58
Leak Rate Before: 0.001 cfm @ 14 "Hg
Leak Rate After: 0.001 cfm @ 7 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.6
O_2 (dry volume %): 9.52
CO_2 (dry volume %): 9.96
N_2+CO (dry volume %): 80.52
H_2O (condensate, ml or gm): 217.5
H_2O (silica, g): 18.4
Actual Moisture (%): 21.10

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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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			181.410						
3-01	5.0		1.50	185.510	294	67	63		4.10	
3-01	10.0		1.50	188.580	295	67	63		3.07	
3-01	15.0		1.50	192.020	294	70	64		3.44	
3-01	20.0		1.50	195.280	294	70	64		3.26	
3-01	25.0		1.50	198.640	294	69	63		3.36	
3-01	30.0		1.50	202.040	295	71	64		3.40	
3-01	35.0		1.50	205.490	295	72	65		3.45	
3-01	40.0		1.50	208.880	295	70	64		3.39	
3-01	45.0		1.50	212.290	296	71	65		3.41	
3-01	50.0		1.50	215.760	297	72	65		3.47	
3-01	55.0		1.50	219.200	295	73	66		3.44	
3-01	60.0		1.50	222.645	295	73	66		3.45	
Final	60.0		1.50000	41.23500	294.91667	67.37500		0.00000	41.23500	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.2350	294.9160	67.3750				
		☐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: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/22/10
Start Time: 11:30
Stop Time: 12:47
Leak Rate Before: 0.001 cfm @ 14 "Hg
Leak Rate After: 0.001 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.6
O_2 (dry volume %): 9.19
CO_2 (dry volume %): 10.24
N_2+CO (dry volume %): 80.57
H_2O (condensate, ml or gm): 235.8
H_2O (silica, g): 12.1
Actual Moisture (%): 21.95

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: 66-22
Meter ΔH@: 1.80970
Meter Y_d: 1.00050

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			223.495						
3-01	5.0		1.50	227.410	296	57	64		3.91	
3-01	10.0		1.50	230.640	293	68	64		3.23	
3-01	15.0		1.50	234.320	295	69	64		3.68	
3-01	20.0		1.50	237.150	294	70	64		2.83	
3-01	25.0		1.50	240.460	294	71	64		3.31	
3-01	30.0		1.50	243.810	296	72	65		3.35	
3-01	35.0		1.50	247.260	306	72	65		3.45	
3-01	40.0		1.50	250.790	300	70	65		3.53	
3-01	45.0		1.50	254.230	295	68	64		3.44	
3-01	50.0		1.50	257.640	296	71	65		3.41	
3-01	55.0		1.50	260.530	296	71	65		2.89	
3-01	60.0		1.50	264.485	294	70	65		3.96	
Final	60.0		1.50000	40.99000	296.25000	66.79167		0.00000	40.99000	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	40.9900	296.2500	66.7920				
		☐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 South 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:		9.24000		10.02000	80.74000	29.87920	1.17749	☑ Fo value within expected range.
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.96000		9.52000	80.52000	29.97440	1.14257	☑ Fo value within expected range.
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.24000		9.19000	80.57000	30.00600	1.14355	☑ Fo value within expected range.
	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 South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 26A
Analyte: HCl
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	557.3	469.2	88.1
Impinger 2	100 ml 0.1N H2SO4	678.9	561.4	117.5
Impinger 3	100 ml 0.1N H2SO4	578.9	554.1	24.8
Impinger 4	Empty	460.4	456.1	4.3
Impinger 5	Silica Gel	782.2	769.3	12.9
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
234.7	Liquid (gm)		
0.0	less rinse (gm)		
234.7	Net Liquid (gm)	234.7	☑QA/QC OK
+ 12.9	Silica Gel (gm)	12.9	☑QA/QC OK
247.6	Total Vlc (gm)	247.6	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	517.8	462.4	55.4
Impinger 2	100 ml 0.1N H2SO4	734.3	638.5	95.8
Impinger 3	100 ml 0.1N H2SO4	584.3	536.1	48.2
Impinger 4	Empty	469.4	451.3	18.1
Impinger 5	Silica Gel	754.5	735.1	19.4
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
217.5	Liquid (gm)		
0.0	less rinse (gm)		
217.5	Net Liquid (gm)	217.5	☑QA/QC OK
+ 19.4	Silica Gel (gm)	19.4	☑QA/QC OK
236.9	Total Vlc (gm)	236.9	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	529.3	467.3	62.0
Impinger 2	100 ml 0.1N H2SO4	689.1	563.3	125.8
Impinger 3	100 ml 0.1N H2SO4	594.4	554.3	40.1
Impinger 4	Empty	464.6	456.7	7.9
Impinger 5	Silica Gel	793.5	781.4	12.1
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
235.8	Liquid (gm)		
0.0	less rinse (gm)		
235.8	Net Liquid (gm)	235.8	☑QA/QC OK
+ 12.1	Silica Gel (gm)	12.1	☑QA/QC OK
247.9	Total Vlc (gm)	247.9	☑QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1				
Impinger 2				
Impinger 3				
Impinger 4				
Impinger 5				
Impinger 6				
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 1 SDA Inlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/22/10
Start Time: 08:31
Stop Time: 09:31
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 18 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.6
O_2 (dry volume %): 8.45
CO_2 (dry volume %): 10.87
N_2+CO (dry volume %): 80.68
H_2O (condensate, ml or gm): 144.0
H_2O (silica, g): 15.3
Actual Moisture (%): 17.56

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
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)	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			211.955						
1-01	5.0		1.20	214.970	493	69	68		3.01	
1-01	10.0		1.20	217.970	491	66	67		3.00	
1-01	15.0		1.20	220.980	495	68	67		3.01	
1-01	20.0		1.20	223.990	494	69	67		3.01	
1-01	25.0		1.20	227.030	497	68	66		3.04	
1-01	30.0		1.20	230.040	497	67	65		3.01	
1-01	35.0		1.20	233.070	497	67	64		3.03	
1-01	40.0		1.20	236.070	492	67	64		3.00	
1-01	45.0		1.10	238.960	494	65	64		2.89	
1-01	50.0		1.00	241.720	496	63	62		2.76	
1-01	55.0		0.96	244.380	496	63	62		2.66	
1-01	60.0		0.85	246.980	497	63	62		2.60	
Final	60.0		1.12583	35.02500	494.91667	65.54167		0.00000	35.02500	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.1258	35.0250	494.9167	65.5417				
		☐ 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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/22/10
Start Time: 09:58
Stop Time: 10:58
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.008 cfm @ 18 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.8
O_2 (dry volume %): 8.59
CO_2 (dry volume %): 10.82
N_2+CO (dry volume %): 80.59
H_2O (condensate, ml or gm): 141.2
H_2O (silica, g): 17.9
Actual Moisture (%): 17.20

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
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)	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			247.290						
1-01	5.0		1.20	250.310	496	66	65		3.02	
1-01	10.0		1.20	253.310	497	68	65		3.00	
1-01	15.0		1.20	256.340	495	71	66		3.03	
1-01	20.0		1.20	259.340	492	74	67		3.00	
1-01	25.0		1.20	262.380	494	74	68		3.04	
1-01	30.0		1.20	265.400	496	74	68		3.02	
1-01	35.0		1.20	268.390	499	74	68		2.99	
1-01	40.0		1.20	271.390	495	75	69		3.00	
1-01	45.0		1.20	274.450	500	74	70		3.06	
1-01	50.0		1.20	277.500	504	72	69		3.05	
1-01	55.0		1.20	280.490	497	71	69		2.99	
1-01	60.0		1.10	283.455	498	71	69		2.96	
Final	60.0		1.19167	36.16500	496.91667	69.87500		0.00000	36.16500	
1 points sampled		Sq.RtΔP								
QC-Check: Field Averages			1.1917	36.1650	496.9167	69.8750				
		☐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: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205

Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/22/10
Start Time: 11:30
Stop Time: 12:46
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.005 cfm @ 16 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.7
O_2 (dry volume %): 7.92
CO_2 (dry volume %): 11.39
N_2+CO (dry volume %): 80.69
H_2O (condensate, ml or gm): 164.2
H_2O (silica, g): 13.6
Actual Moisture (%): 19.07

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)	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			283.635						
1-01	5.0		1.20	286.640	495	68	67		3.01	
1-01	10.0		1.20	289.560	492	69	67		2.92	
1-01	15.0		1.20	292.410	489	71	67		2.85	
1-01	20.0		1.20	292.410	496	73	67		0.00	
1-01	25.0		1.20	298.420	493	73	68		6.01	
1-01	30.0		1.20	301.420	494	74	68		3.00	
1-01	35.0		1.20	304.430	495	74	69		3.01	
LEAK CHECK	35.0			304.825						
1-01	40.0		1.20	307.810	495	72	70		2.99	
1-01	45.0		1.20	310.780	493	74	71		2.97	
1-01	50.0		1.20	313.780	494	77	71		3.00	
1-01	55.0		1.20	316.810	494	78	71		3.03	
1-01	60.0		1.20	319.760	495	78	71		2.95	
Final	60.0		1.20000	35.73000	493.75000	71.16667		0.00000	35.73000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.2000	35.7300	493.7500	71.1667				
		☐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 SDA Inlet
Client: Wheelabrator South 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:		10.87000		8.45000	80.68000	30.07720	1.14535	☑ 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:		10.82000		8.59000	80.59000	30.07480	1.13771	☑ 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:		11.39000		7.92000	80.69000	30.13920	1.13960	☑ 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 SDA Inlet
Client: Wheelabrator South 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	503.1	474.3	28.8
Impinger 2	100 ml 0.1N H2SO4	613.2	537.1	76.1
Impinger 3	100 ml 0.1N H2SO4	579.3	553.9	25.4
Impinger 4	Empty	444.3	430.6	13.7
Impinger 5	Silica Gel	737.3	722.0	15.3
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
144.0	Liquid (gm)		
0.0	less rinse (gm)		
144.0	Net Liquid (gm)	144.0	☑QA/QC OK
+ 15.3	Silica Gel (gm)	15.3	☑QA/QC OK
159.3	Total Vlc (gm)	159.3	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	502.5	471.5	31.0
Impinger 2	100 ml 0.1N H2SO4	620.3	547.2	73.1
Impinger 3	100 ml 0.1N H2SO4	568.8	539.5	29.3
Impinger 4	Empty	472.9	465.1	7.8
Impinger 5	Silica Gel	707.5	689.6	17.9
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
141.2	Liquid (gm)		
0.0	less rinse (gm)		
141.2	Net Liquid (gm)	141.2	☑QA/QC OK
+ 17.9	Silica Gel (gm)	17.9	☑QA/QC OK
159.1	Total Vlc (gm)	159.1	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	521.4	471.4	50.0
Impinger 2	100 ml 0.1N H2SO4	626.8	535.8	91.0
Impinger 3	100 ml 0.1N H2SO4	571.6	552.8	18.8
Impinger 4	Empty	434.9	430.5	4.4
Impinger 5	Silica Gel	714.5	700.9	13.6
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
164.2	Liquid (gm)		
0.0	less rinse (gm)		
164.2	Net Liquid (gm)	164.2	☑QA/QC OK
+ 13.6	Silica Gel (gm)	13.6	☑QA/QC OK
177.8	Total Vlc (gm)	177.8	☑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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/24/10
Start Time: 07:53
Stop Time: 10:06
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 13 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.45
CO_2 (dry volume %): 9.91
N_2+CO (dry volume %): 80.64
H_2O (condensate, ml or gm): 414.1
H_2O (silica, g): 18.4
Actual Moisture (%): 22.06

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: 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 $T_{m\text{-}in}$ (°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			516.930						
1-01	5.0	0.46	1.10	519.810	295	62	59	0.68	2.88	102.8
1-02	10.0	0.46	1.10	522.660	295	62	59	0.68	2.85	101.8
1-03	15.0	0.51	1.20	525.550	292	63	59	0.71	2.89	97.7
1-04	20.0	0.50	1.20	528.450	296	66	60	0.71	2.90	98.9
1-05	25.0	0.58	1.40	531.640	297	67	60	0.76	3.19	101.1
LEAK CHECK	25.0			531.800						
2-01	30.0	0.40	0.95	534.430	294	66	61	0.63	2.63	100.0
2-02	35.0	0.44	1.00	537.170	295	68	61	0.66	2.74	99.2
2-03	40.0	0.52	1.20	540.110	295	69	62	0.72	2.94	97.8
2-04	45.0	0.56	1.30	543.190	297	70	63	0.75	3.08	98.7
2-05	50.0	0.62	1.50	546.480	297	71	64	0.79	3.29	100.1
LEAK CHECK	50.0			546.660						
3-01	55.0	0.33	0.79	549.050	295	69	65	0.57	2.39	99.4
3-02	60.0	0.41	0.98	551.790	295	69	65	0.64	2.74	102.3
3-03	65.0	0.42	1.00	554.550	295	70	66	0.65	2.76	101.6
3-04	70.0	0.46	1.10	557.410	295	71	66	0.68	2.86	100.6
3-05	75.0	0.44	1.00	560.180	298	71	66	0.66	2.77	98.8
LEAK CHECK	75.0			560.300						
4-01	80.0	0.43	1.00	563.020	294	71	67	0.66	2.72	98.7
4-02	85.0	0.44	1.00	565.800	295	73	68	0.66	2.78	99.6
4-03	90.0	0.44	1.00	568.750	295	74	69	0.66	2.95	105.4
4-04	95.0	0.43	1.00	571.360	294	74	71	0.66	2.61	94.1
4-05	100.0	0.39	0.93	574.050	293	74	72	0.62	2.69	101.7
LEAK CHECK	100.0			574.180						
5-01	105.0	0.41	0.98	576.920	294	72	70	0.64	2.74	101.5
5-02	110.0	0.42	1.00	579.670	295	74	70	0.65	2.75	100.5
5-03	115.0	0.42	1.00	582.430	295	75	70	0.65	2.76	100.8
5-04	120.0	0.51	1.20	585.420	297	76	71	0.71	2.99	99.1
5-05	125.0	0.47	1.10	588.325	296	76	71	0.69	2.91	100.2
Final	125.0		1.08120	70.80500	295.16000	67.76000		0.67580	70.80500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6758	1.0812	70.8050	295.1600	67.7600		2RSD = 9.3%		
		☑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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/24/10
Start Time: 11:03
Stop Time: 13:35
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 7 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.39
CO_2 (dry volume %): 10.15
N_2+CO (dry volume %): 80.46

H_2O (condensate, ml or gm): 436.3
H_2O (silica, g): 18.7
Actual Moisture (%): 22.63

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: 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 $T_{m\text{-}in}$ (°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			589.070						
1-01	5.0	0.47	1.10	592.040	298	75	74	0.69	2.97	103.0
1-02	10.0	0.47	1.10	595.040	297	79	74	0.69	3.00	103.6
1-03	15.0	0.48	1.10	597.890	298	81	75	0.69	2.85	97.2
1-04	20.0	0.49	1.20	600.930	299	83	76	0.70	3.04	102.4
1-05	25.0	0.55	1.30	604.040	298	83	76	0.74	3.11	98.9
LEAK CHECK	25.0			604.200						
2-01	30.0	0.56	1.30	607.300	297	81	76	0.75	3.10	97.8
2-02	35.0	0.51	1.20	610.300	298	83	77	0.71	3.00	98.9
2-03	40.0	0.51	1.20	613.310	298	85	78	0.71	3.01	99.0
2-04	45.0	0.51	1.20	616.290	298	86	78	0.71	2.98	97.9
2-05	50.0	0.58	1.40	619.490	297	86	78	0.76	3.20	98.6
LEAK CHECK	50.0			619.640						
5-01	55.0	0.40	0.95	622.310	294	83	78	0.63	2.67	99.0
5-02	60.0	0.44	1.00	625.150	297	85	79	0.66	2.84	100.3
5-03	65.0	0.45	1.10	628.040	298	87	80	0.67	2.89	100.8
5-04	70.0	0.50	1.20	631.030	298	85	79	0.71	2.99	99.2
5-05	75.0	0.40	0.95	633.780	297	86	80	0.63	2.75	101.7
LEAK CHECK	75.0			633.910						
4-01	80.0	0.45	1.10	636.740	297	82	78	0.67	2.83	99.3
4-02	85.0	0.43	1.00	639.530	299	82	77	0.66	2.79	100.3
4-03	90.0	0.49	1.20	642.560	298	84	78	0.70	3.03	101.7
4-04	95.0	0.46	1.10	645.490	298	85	79	0.68	2.93	101.3
4-05	100.0	0.53	1.30	648.670	297	86	80	0.73	3.18	102.2
LEAK CHECK	100.0			648.810						
3-01	105.0	0.45	1.10	651.640	297	84	79	0.67	2.83	99.0
3-02	110.0	0.47	1.10	654.470	298	85	80	0.69	2.83	96.7
3-03	115.0	0.49	1.20	657.480	298	86	80	0.70	3.01	100.7
3-04	120.0	0.49	1.20	660.500	297	85	79	0.70	3.02	101.2
3-05	125.0	0.51	1.20	663.510	300	85	80	0.71	3.01	98.9
Final	125.0		1.15200	73.86000	297.64000	80.80000		0.69470	73.86000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6947	1.1520	73.8600	297.6400	80.8000		2RSD = 6.4%		
		☑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: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/24/10
Start Time: 14:12
Stop Time: 16:22
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.1
O_2 (dry volume %): 9.79
CO_2 (dry volume %): 9.86
N_2+CO (dry volume %): 80.35
H_2O (condensate, ml or gm): 427.6
H_2O (silica, g): 14.6
Actual Moisture (%): 22.02

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: 85-2
Meter ΔH@: 1.77590
Meter Y_d: 1.00660

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s	Sample ΔH	Metered	Stack	Dry Gas Meter		$\sqrt{\Delta P_s}$	Volume	Isokinetics
				(dcf)	T_s	$T_{m\text{-}in}$	$T_{m\text{-}out}$	(calculated)	(calculated)	(calculated)
	0.0	(in. H_2O)	(in. H_2O)	663.920	(°F)	(°F)	(°F)	($\sqrt{in.\ H_2O}$)	(ft^3)	(%)
5-01	5.0	0.40	0.96	666.630	297	79	78	0.63	2.71	100.4
5-02	10.0	0.41	0.99	669.370	297	82	78	0.64	2.74	100.0
5-03	15.0	0.42	1.00	672.150	297	83	78	0.65	2.78	100.1
5-04	20.0	0.51	1.20	675.120	297	84	78	0.71	2.97	97.0
5-05	25.0	0.55	1.30	678.270	298	86	78	0.74	3.15	99.0
LEAK CHECK	25.0			678.390						
4-01	30.0	0.45	1.10	681.180	296	84	79	0.67	2.79	96.8
4-02	35.0	0.43	1.00	683.940	297	86	80	0.66	2.76	97.8
4-03	40.0	0.45	1.10	686.800	297	86	79	0.67	2.86	99.2
4-04	45.0	0.52	1.30	689.950	299	86	79	0.72	3.15	101.8
4-05	50.0	0.43	1.00	692.770	298	86	80	0.66	2.82	100.0
LEAK CHECK	50.0			692.900						
3-01	55.0	0.34	0.82	695.380	297	83	80	0.58	2.48	99.0
3-02	60.0	0.46	1.10	698.220	300	85	80	0.68	2.84	97.6
3-03	65.0	0.50	1.20	701.290	297	84	80	0.71	3.07	101.1
3-04	70.0	0.54	1.30	704.360	298	87	80	0.73	3.07	97.1
3-05	75.0	0.55	1.30	707.550	297	87	81	0.74	3.19	99.8
LEAK CHECK	75.0			707.650						
2-01	80.0	0.51	1.20	710.560	297	85	80	0.71	2.91	94.8
2-02	85.0	0.47	1.10	713.450	297	85	80	0.69	2.89	98.0
2-03	90.0	0.51	1.20	716.430	297	84	80	0.71	2.98	97.2
2-04	95.0	0.51	1.20	719.420	298	84	79	0.71	2.99	97.6
2-05	100.0	0.64	1.50	722.740	298	85	79	0.80	3.32	96.8
LEAK CHECK	100.0			722.880						
1-01	105.0	0.52	1.30	726.160	297	84	79	0.72	3.28	106.0
1-02	110.0	0.48	1.20	729.180	297	85	79	0.69	3.02	101.5
1-03	115.0	0.54	1.30	732.300	297	85	79	0.73	3.12	98.9
1-04	120.0	0.60	1.40	735.550	298	85	78	0.77	3.25	97.9
1-05	125.0	0.61	1.50	738.925	295	85	79	0.78	3.38	100.6
Final	125.0		1.18280	74.51500	297.32000	81.90000		0.70113	74.51500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7002	1.1828	74.5150	297.3200	81.9000		2RSD = 10.0%		
		☐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 South Broward, Inc.
Project No: 10955
Method: Select Method
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:		9.91000		9.45000	80.64000	29.96360	1.15540	☑ 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:		10.15000		9.39000	80.46000	29.99960	1.13399	☑ 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:		9.86000		9.79000	80.35000	29.96920	1.12677	☑ 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 FF Outlet
Client: Wheelabrator South 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	692.9	439.6	253.3
Impinger 2	5%HNO3/10%H2O2	674.8	555.3	119.5
Impinger 3	5%HNO3/10%H2O2	567.9	535.7	32.2
Impinger 4	Empty	453.6	446.9	6.7
Impinger 5	4%KMnO4/10%H2SO4	543.3	541.2	2.1
Impinger 6	4%KMnO4/10%H2SO4	545.2	544.9	0.3
Impinger 7	Silica Gel	768.2	749.8	18.4
Impinger 8				

Rinse: (ml or gm)

414.1 Liquid (gm)
0.0 less rinse (gm)
414.1 Net Liquid (gm)
+ 18.4 Silica Gel (gm)
432.5 Total Vlc (gm)

Field Data Check

414.1	☑QA/QC OK	
18.4	☑QA/QC OK	
432.5	☑QA/QC OK	

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	744.8	461.7	283.1
Impinger 2	5%HNO3/10%H2O2	656.3	535.8	120.5
Impinger 3	5%HNO3/10%H2O2	573.8	548.3	25.5
Impinger 4	Empty	443.8	440.1	3.7
Impinger 5	4%KMnO4/10%H2SO4	562.5	560.5	2.0
Impinger 6	4%KMnO4/10%H2SO4	542.5	541.0	1.5
Impinger 7	Silica Gel	767.8	749.1	18.7
Impinger 8				

Rinse: (ml or gm)

436.3 Liquid (gm)
0.0 less rinse (gm)
436.3 Net Liquid (gm)
+ 18.7 Silica Gel (gm)
455.0 Total Vlc (gm)

Field Data Check

436.3	☑QA/QC OK	
18.7	☑QA/QC OK	
455.0	☑QA/QC OK	

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	704.3	439.8	264.5
Impinger 2	5%HNO3/10%H2O2	676.1	558.4	117.7
Impinger 3	5%HNO3/10%H2O2	570.6	537.2	33.4
Impinger 4	Empty	454.4	447.1	7.3
Impinger 5	4%KMnO4/10%H2SO4	544.3	540.4	3.9
Impinger 6	4%KMnO4/10%H2SO4	545.8	545.0	0.8
Impinger 7	Silica Gel	776.6	762.0	14.6
Impinger 8				

Rinse: (ml or gm)

427.6 Liquid (gm)
0.0 less rinse (gm)
427.6 Net Liquid (gm)
+ 14.6 Silica Gel (gm)
442.2 Total Vlc (gm)

Field Data Check

427.6	☑QA/QC OK	
14.6	☑QA/QC OK	
442.2	☑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)

Liquid (gm)
less rinse (gm)
Net Liquid (gm)
Silica Gel (gm)
Total Vlc (gm)

Field Data Check

	☐QA/QC OK	
	☐QA/QC OK	
	☐QA/QC OK	

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Date _____

Field Data Printout

Test Method: USEPA Method 29
Analyte: Trace Metals

Location: Unit 2 SDA Inlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205

Meter Operator:	D. Luckhard	568
Probe Operator:	P. Bihun	505

Test Date: 3/24/10
Start Time: 07:53
Stop Time: 10:06
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 13 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.4
O_2 (dry volume %): 7.79
CO_2 (dry volume %): 11.41
N_2+CO (dry volume %): 80.80

H_2O (condensate, ml or gm): 319.6
H_2O (silica, g): 13.8
Actual Moisture (%): 19.32

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-11
Meter ΔH@: 1.86190
Meter Y_d: 0.99330

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			704.310						
2-01	5.0	0.44	1.00	707.180	480	56	59	0.66	2.87	109.0
2-02	10.0	0.45	1.00	709.750	482	60	60	0.67	2.57	96.1
2-03	15.0	0.47	1.10	712.580	480	61	60	0.69	2.83	103.4
2-04	20.0	0.48	1.10	715.370	478	63	60	0.69	2.79	100.6
2-05	25.0	0.43	1.00	718.050	483	64	60	0.66	2.68	102.2
2-06	30.0	0.43	1.00	720.760	483	66	61	0.66	2.71	103.1
2-07	35.0	0.44	1.00	723.470	483	68	63	0.66	2.71	101.5
2-08	40.0	0.48	1.10	726.260	483	69	64	0.69	2.79	99.9
2-09	45.0	0.45	1.00	728.960	487	67	64	0.67	2.70	100.2
2-10	50.0	0.44	1.00	731.640	484	67	64	0.66	2.68	100.4
2-11	55.0	0.43	1.00	734.360	484	68	64	0.66	2.72	103.0
2-12	60.0	0.43	1.00	737.100	487	68	64	0.66	2.74	103.9
LEAK CHECK	60.0			737.285						
1-01	65.0	0.31	0.72	739.570	471	68	66	0.56	2.29	100.9
1-02	70.0	0.31	0.72	741.860	472	68	66	0.56	2.29	101.2
1-03	75.0	0.31	0.72	744.140	473	71	67	0.56	2.28	100.4
1-04	80.0	0.35	0.82	746.600	475	75	69	0.59	2.46	101.6
1-05	85.0	0.46	1.10	749.370	479	76	71	0.68	2.77	99.7
1-06	90.0	0.51	1.20	752.330	485	79	72	0.71	2.96	101.2
1-07	95.0	0.43	1.00	755.070	485	80	73	0.66	2.74	101.8
1-08	100.0	0.49	1.10	757.920	486	80	74	0.70	2.85	99.7
1-09	105.0	0.61	1.40	761.180	495	79	75	0.78	3.26	102.2
1-10	110.0	0.59	1.40	764.350	495	81	76	0.77	3.17	100.8
1-11	115.0	0.48	1.10	767.220	490	83	77	0.69	2.87	100.5
1-12	120.0	0.48	1.10	770.040	487	81	77	0.69	2.82	98.8
Final	120.0		1.02833	65.54500	483.20833	68.83333		0.66544	65.54500	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6654	1.0283	65.5450	483.2083	68.8333				
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Field Data Printout

Test Method: USEPA Method 29
Analyte: Trace Metals

Location: Unit 2 SDA Inlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205

Meter Operator:	P. Bihun	505
Probe Operator:	D. Luckhard	568

Test Date: 3/24/10
Start Time: 11:03
Stop Time: 13:32

Leak Rate Before:	0.004 cfm	@ 16 "Hg
Leak Rate After:	0.003 cfm	@ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.6
O_2 (dry volume %): 8.03
CO_2 (dry volume %): 11.39
N_2+CO (dry volume %): 80.58

H_2O (condensate, ml or gm): 296.8
H_2O (silica, g): 12.3
Actual Moisture (%): 18.71

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
Pitot Leak Check: ☑Pass ☐Fail

Meter Box ID. No: 66-11
Meter ΔH@: 1.86190
Meter Y_d: 0.99330

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			770.680						
1-01	5.0	0.30	0.70	773.960	474	82	82	0.55	3.28	142.6*
1-02	10.0	0.28	0.65	775.140	474	80	82	0.53	1.18	53.2*
1-03	15.0	0.30	0.70	777.380	474	80	81	0.55	2.24	97.7
1-04	20.0	0.37	0.84	779.880	476	78	80	0.61	2.50	98.6
1-05	25.0	0.47	1.10	782.680	482	80	79	0.69	2.80	98.2
1-06	30.0	0.45	1.00	785.390	484	79	79	0.67	2.71	97.3
1-07	35.0	0.52	1.20	788.350	495	79	79	0.72	2.96	99.5
1-08	40.0	0.51	1.20	791.340	492	82	79	0.71	2.99	101.1
1-09	45.0	0.50	1.10	794.160	491	83	80	0.71	2.82	96.0
1-10	50.0	0.50	1.10	796.960	491	82	79	0.71	2.80	95.5
1-11	55.0	0.43	0.98	799.640	488	83	80	0.66	2.68	98.2
1-12	60.0	0.48	1.10	802.425	487	81	80	0.69	2.78	96.8
LEAK CHECK	60.0			802.580						
2-01	65.0	0.43	0.98	805.290	489	79	79	0.66	2.71	99.8
2-02	66.0	0.45	1.00	805.880	490	79	79	0.67	0.59	106.3
LEAK CHECK	66.0			806.635						
2-02	70.0	0.45	1.00	808.790	490	79	79	0.67	2.15	97.0
2-03	75.0	0.51	1.20	811.770	494	80	79	0.71	2.98	101.0
2-04	80.0	0.51	1.20	814.720	489	82	79	0.71	2.95	99.6
2-05	85.0	0.48	1.10	817.500	493	81	79	0.69	2.78	97.0
2-06	90.0	0.40	0.91	820.090	496	80	79	0.63	2.59	99.2
2-07	95.0	0.38	0.87	822.600	494	80	78	0.62	2.51	98.6
2-08	100.0	0.45	1.00	825.320	491	81	78	0.67	2.72	98.0
2-09	105.0	0.47	1.10	828.100	491	81	78	0.69	2.78	98.0
2-10	110.0	0.40	0.91	830.710	495	81	78	0.63	2.61	99.9
2-11	115.0	0.45	1.00	833.400	492	81	78	0.67	2.69	96.9
2-12	120.0	0.45	1.00	836.125	492	81	78	0.67	2.73	98.2
Final	120.0		0.99750	64.53500	488.08333	79.93750		0.65893	64.53500	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6589	0.9975	64.5350	488.0833	79.9375				
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 29**
Analyte: **Trace Metals**

Location: Unit 2 SDA Inlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: D. Luckhard 568
Probe Operator: P. Bihun 505
Test Date: 3/24/10
Start Time: 14:12
Stop Time: 16:19
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.6
O_2 (dry volume %): 8.19
CO_2 (dry volume %): 11.37
N_2+CO (dry volume %): 80.44
H_2O (condensate, ml or gm): 308.9
H_2O (silica, g): 18.0
Actual Moisture (%): 18.70

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
Pitot Leak Check: ☑Pass ☐Fail
Meter Box ID. No: 66-11
Meter ΔH@: 1.86190
Meter Y_d: 0.99330

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			837.285						
2-01	5.0	0.47	1.10	840.020	489	78	77	0.69	2.74	96.7
2-02	10.0	0.48	1.10	842.830	492	79	77	0.69	2.81	98.3
2-03	15.0	0.50	1.20	845.760	489	82	77	0.71	2.93	100.0
2-04	20.0	0.52	1.20	848.700	488	82	78	0.72	2.94	98.3
2-05	25.0	0.52	1.20	851.630	495	81	79	0.72	2.93	98.3
2-06	30.0	0.44	1.00	854.370	495	80	78	0.66	2.74	100.1
2-07	35.0	0.48	1.10	857.180	498	81	78	0.69	2.81	98.4
2-08	40.0	0.56	1.30	860.270	498	81	78	0.75	3.09	100.2
2-09	45.0	0.52	1.20	863.260	497	83	78	0.72	2.99	100.3
2-10	50.0	0.45	1.00	866.130	496	82	79	0.67	2.87	103.4
2-11	55.0	0.52	1.20	868.950	505	81	79	0.72	2.82	95.1
2-12	60.0	0.41	0.95	871.600	493	81	79	0.64	2.65	100.0
LEAK CHECK	60.0			871.810						
1-01	65.0	0.34	0.79	874.240	486	77	77	0.58	2.43	100.8
1-02	70.0	0.36	0.84	876.700	490	78	77	0.60	2.46	99.3
1-03	75.0	0.36	0.84	879.170	489	79	78	0.60	2.47	99.5
1-04	80.0	0.37	0.86	881.680	489	80	77	0.61	2.51	99.7
1-05	85.0	0.48	1.10	884.500	484	78	77	0.69	2.82	98.4
1-06	90.0	0.54	1.30	887.580	497	78	77	0.73	3.08	102.0
1-07	95.0	0.55	1.30	890.670	498	78	76	0.74	3.09	101.6
1-08	100.0	0.56	1.30	893.760	502	79	76	0.75	3.09	100.8
1-09	105.0	0.54	1.30	896.870	501	80	76	0.73	3.11	103.1
1-10	110.0	0.49	1.10	899.730	499	82	77	0.70	2.86	99.1
1-11	115.0	0.50	1.20	902.660	501	80	77	0.71	2.93	100.9
1-12	120.0	0.53	1.20	905.620	505	80	77	0.73	2.96	99.2
Final	120.0		1.11167	68.12500	494.83333	78.72917		0.69019	68.12500	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6902	1.1117	68.1250	494.8333	78.7292				
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC _____
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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 29
Analyte: Trace Metals

Location: Unit 2 SDA Inlet
Client: Wheelabrator South Broward, Inc.
Project No: t0955
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:		11.41000		7.79000	80.80000	30.13720	1.14899	☑ 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:		11.39000		8.03000	80.58000	30.14360	1.12994	☑ 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:		11.37000		8.19000	80.44000	30.14680	1.11785	☑ 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
Client: Wheelabrator South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 29
Analyte: Trace Metals
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	831.7	498.5	335.2
Impinger 2	5%HNO3/10%H2O2	627.2	544.3	82.9
Impinger 3	5%HNO3/10%H2O2	544.5	542.8	1.7
Impinger 4	Empty	446.0	445.6	0.4
Impinger 5	4%KMnO4/10%H2SO4	542.1	543.0	-0.9
Impinger 6	4%KMnO4/10%H2SO4	548.1	547.8	0.3
Impinger 7	Silica Gel	791.5	777.7	13.8
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
419.6	Liquid (gm)		
-100.0	less rinse (gm)		
319.6	Net Liquid (gm)	319.8	☑QA/QC OK
+ 13.8	Silica Gel (gm)	13.8	☑QA/QC OK
333.4	Total Vic (gm)	333.4	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	884.5	496.6	387.9
Impinger 2	5%HNO3/10%H2O2	562.4	555.3	7.1
Impinger 3	5%HNO3/10%H2O2	588.5	587.3	1.2
Impinger 4	Empty	442.2	442.4	-0.2
Impinger 5	4%KMnO4/10%H2SO4	540.2	547.1	-6.9
Impinger 6	4%KMnO4/10%H2SO4	547.6	539.9	7.7
Impinger 7	Silica Gel	788.0	755.7	12.3
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
396.8	Liquid (gm)		
-100.0	less rinse (gm)		
296.8	Net Liquid (gm)	296.8	☑QA/QC OK
+ 12.3	Silica Gel (gm)	12.3	☑QA/QC OK
309.1	Total Vic (gm)	309.1	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	843.4	445.1	398.3
Impinger 2	5%HNO3/10%H2O2	553.7	545.0	8.7
Impinger 3	5%HNO3/10%H2O2	545.1	543.1	2.0
Impinger 4	Empty	446.3	445.7	0.6
Impinger 5	4%KMnO4/10%H2SO4	543.7	544.6	-0.9
Impinger 6	4%KMnO4/10%H2SO4	546.3	546.1	0.2
Impinger 7	Silica Gel	772.4	754.4	18.0
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
408.9	Liquid (gm)		
-100.0	less rinse (gm)		
308.9	Net Liquid (gm)	308.9	☑QA/QC OK
+ 18.0	Silica Gel (gm)	18.0	☑QA/QC OK
326.9	Total Vic (gm)	326.9	☑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 Vic (gm)		☐QA/QC 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: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000

Meter Operator:	N. Hitchins	569
Probe Operator:		

Test Date: 3/24/10
Start Time: 07:53
Stop Time: 09:11

Leak Rate Before:	0.006	cfm	@ 15 "Hg
Leak Rate After:	0.001	cfm	@ 9 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.38
CO_2 (dry volume %): 10.00
N_2+CO (dry volume %): 80.62

H_2O (condensate, ml or gm): 202.4
H_2O (silica, g): 14.9
Actual Moisture (%): 22.01

Nozzle ID No: 0.268-1
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: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			138.015						
2-01	2.5	0.43	1.00	139.430	291	58	58	0.66	1.42	103.6
2-02	5.0	0.42	0.97	140.790	291	59	58	0.65	1.36	100.7
2-03	7.5	0.45	1.00	142.200	292	60	58	0.67	1.41	100.8
2-04	10.0	0.51	1.20	143.550	292	61	58	0.71	1.35	90.6
2-05	12.5	0.64	1.50	145.275	292	62	58	0.80	1.72	103.3
LEAK CHECK	12.5			145.365						
3-01	15.0	0.41	0.95	146.730	291	62	59	0.64	1.36	101.9
3-02	17.5	0.45	1.00	148.130	292	63	59	0.67	1.40	99.7
3-03	20.0	0.45	1.00	149.520	293	63	59	0.67	1.39	99.1
3-04	22.5	0.51	1.20	151.070	293	64	59	0.71	1.55	103.7
3-05	25.0	0.47	1.10	152.530	293	65	60	0.69	1.46	101.5
LEAK CHECK	25.0			152.660						
4-01	27.5	0.45	1.00	154.050	291	64	60	0.67	1.39	98.7
4-02	30.0	0.43	1.00	155.450	292	65	60	0.66	1.40	101.7
4-03	32.5	0.46	1.10	156.920	292	65	61	0.68	1.47	103.2
4-04	35.0	0.44	1.00	158.320	293	67	60	0.66	1.40	100.4
4-05	37.5	0.50	1.20	159.885	293	67	61	0.71	1.57	105.3
LEAK CHECK	37.5			159.930						
5-01	40.0	0.42	0.97	161.330	292	65	62	0.65	1.40	102.7
5-02	42.5	0.40	0.93	162.670	292	66	62	0.63	1.34	100.6
5-03	45.0	0.43	1.00	164.070	292	66	63	0.66	1.40	101.3
5-04	47.5	0.45	1.00	165.490	292	67	63	0.67	1.42	100.4
5-05	50.0	0.44	1.00	166.905	291	67	63	0.66	1.41	101.1
LEAK CHECK	50.0			167.020						
1-01	52.5	0.47	1.10	168.490	290	66	64	0.69	1.47	101.5
1-02	55.0	0.42	0.97	169.870	291	67	65	0.65	1.38	100.7
1-03	57.5	0.46	1.00	171.280	291	68	65	0.68	1.41	98.2
1-04	60.0	0.49	1.10	172.760	292	68	65	0.70	1.48	100.0
1-05	62.5	0.51	1.20	174.330	294	69	65	0.71	1.57	104.0
Final	62.5		1.05960	35.93500	291.92000	62.78000		0.67768	35.93500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6777	1.0596	35.9350	291.9200	62.7800		2RSD = 6.9%		
		☑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: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator:
Test Date: 3/24/10
Start Time: 09:37
Stop Time: 10:54
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 10 "Hg

Bar. Press. (In. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.32
CO_2 (dry volume %): 10.00
N_2+CO (dry volume %): 80.68

H_2O (condensate, ml or gm): 203.7
H_2O (silica, g): 14.0
Actual Moisture (%): 22.16

Nozzle ID No: 0.268-1
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: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			174.580						
1-01	2.5	0.50	1.20	176.180	291	68	68	0.71	1.60	106.8
1-02	5.0	0.47	1.10	177.660	291	70	68	0.69	1.48	101.7
1-03	7.5	0.46	1.10	179.140	292	71	68	0.68	1.48	102.8
1-04	10.0	0.52	1.20	180.670	291	72	68	0.72	1.53	99.8
1-05	12.5	0.64	1.50	182.400	292	73	69	0.80	1.73	101.7
LEAK CHECK	12.5			182.490						
2-01	15.0	0.47	1.10	183.990	290	72	69	0.69	1.50	102.7
2-02	17.5	0.45	1.00	185.400	292	73	69	0.67	1.41	98.7
2-03	20.0	0.47	1.10	186.890	292	74	69	0.69	1.49	102.0
2-04	22.5	0.49	1.10	188.370	292	74	69	0.70	1.48	99.2
2-05	25.0	0.59	1.40	190.025	293	75	70	0.77	1.66	101.0
LEAK CHECK	25.0			190.110						
3-01	27.5	0.34	0.79	191.350	293	73	70	0.58	1.24	99.8
3-02	30.0	0.43	1.00	192.760	292	74	71	0.66	1.41	100.7
3-03	32.5	0.45	1.00	194.160	292	74	71	0.67	1.40	97.7
3-04	35.0	0.52	1.20	195.580	293	75	71	0.72	1.42	92.2
3-05	37.5	0.47	1.10	197.090	291	76	71	0.69	1.51	102.9
LEAK CHECK	37.5			197.190						
4-01	40.0	0.44	1.00	198.640	293	75	72	0.66	1.45	102.2
4-02	42.5	0.41	0.95	200.000	292	76	72	0.64	1.36	99.1
4-03	45.0	0.44	1.00	201.410	293	77	72	0.66	1.41	99.2
4-04	47.5	0.51	1.20	202.950	293	79	72	0.71	1.54	100.5
4-05	50.0	0.48	1.10	204.475	292	80	73	0.69	1.53	102.3
LEAK CHECK	50.0			204.630						
5-01	52.5	0.39	0.90	205.980	291	76	73	0.62	1.35	100.7
5-02	55.0	0.37	0.86	207.280	292	77	74	0.61	1.30	99.5
5-03	57.5	0.39	0.90	208.620	292	78	74	0.62	1.34	99.8
5-04	60.0	0.38	0.88	209.970	294	79	74	0.62	1.35	101.9
5-05	62.5	0.44	1.00	211.385	292	79	74	0.66	1.41	99.1
Final	62.5		1.06720	36.37500	292.04000	72.82000		0.67718	36.37500	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6772	1.0672	36.3750	292.0400	72.8200		2RSD = 9.6%		
		☑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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator:
Test Date: 3/24/10
Start Time: 11:24
Stop Time: 12:46
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.36
CO_2 (dry volume %): 10.11
N_2+CO (dry volume %): 80.53
H_2O (condensate, ml or gm): 202.1
H_2O (silica, g): 8.2
Actual Moisture (%): 22.06

Nozzle ID No: 0.268-1
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: 66-24
Meter ΔH@: 1.75160
Meter Y_d: 0.99040

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			211.765						
5-01	2.5	0.43	1.00	213.230	293	76	76	0.66	1.47	103.9
5-02	5.0	0.42	0.97	214.620	293	77	76	0.65	1.39	99.6
5-03	7.5	0.40	0.93	216.000	294	79	76	0.63	1.38	101.2
5-04	10.0	0.37	0.86	217.290	292	80	76	0.61	1.29	98.2
5-05	12.5	0.34	0.79	218.550	291	80	76	0.58	1.26	99.9
LEAK CHECK	12.5			218.675						
4-01	15.0	0.46	1.10	220.160	292	83	77	0.68	1.48	101.0
4-02	17.5	0.43	1.00	221.580	293	80	77	0.66	1.42	100.2
4-03	20.0	0.42	0.97	222.970	293	82	77	0.65	1.39	99.1
4-04	22.5	0.42	0.97	224.390	295	82	77	0.65	1.42	101.4
4-05	25.0	0.40	0.93	225.755	292	83	78	0.63	1.37	99.4
LEAK CHECK	25.0			225.825						
3-01	27.5	0.30	0.70	227.020	295	79	78	0.55	1.20	101.1
3-02	30.0	0.42	0.97	228.400	292	81	79	0.65	1.38	98.2
3-03	32.5	0.42	0.97	229.810	293	82	79	0.65	1.41	100.3
3-04	35.0	0.49	1.10	231.210	294	84	79	0.70	1.40	92.1
3-05	37.5	0.50	1.20	232.775	294	83	79	0.71	1.57	102.1
LEAK CHECK	37.5			232.855						
2-01	40.0	0.40	0.93	234.240	293	81	80	0.63	1.39	101.0
2-02	42.5	0.43	1.00	235.660	294	82	79	0.66	1.42	99.9
2-03	45.0	0.46	1.10	237.170	294	82	79	0.68	1.51	102.8
2-04	47.5	0.50	1.20	238.740	294	83	79	0.71	1.57	102.4
2-05	50.0	0.62	1.40	240.395	294	83	79	0.79	1.66	97.0
LEAK CHECK	50.0			240.475						
1-01	52.5	0.39	0.90	241.820	291	79	79	0.62	1.35	99.4
1-02	55.0	0.41	0.94	243.190	292	80	78	0.64	1.37	98.9
1-03	57.5	0.40	0.93	244.570	292	81	78	0.63	1.38	100.7
1-04	60.0	0.59	1.40	246.250	293	82	79	0.77	1.68	101.0
1-05	62.5	0.59	1.40	247.910	293	82	78	0.77	1.66	99.9
Final	62.5		1.02640	35.79000	293.04000	79.48000		0.66143	35.79000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6614	1.0264	35.7900	293.0400	79.4800		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 2 FF Outlet
Client: Wheelabrator South 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:		10.00000		9.38000	80.62000	29.97520	1.15200	☑ 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:		10.00000		9.32000	80.68000	29.97280	1.15800	☑ 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:		10.11000		9.36000	80.53000	29.99200	1.14144	☑ 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
Client: Wheelabrator South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 13B
Analyte: Total Fluorides
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	677.3	541.4	135.9
Impinger 2	DI Water	616.4	562.3	54.1
Impinger 3	Empty	473.0	460.6	12.4
Impinger 4	Silica Gel	773.0	758.1	14.9
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: _____ (ml or gm)

		Field Data Check	
202.4	Liquid (gm)		
0.0	less rinse (gm)		
202.4	Net Liquid (gm)	202.4	☑QA/QC OK
+ 14.9	Silica Gel (gm)	14.9	☑QA/QC OK
217.3	Total Vlc (gm)	217.3	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	690.6	542.9	147.7
Impinger 2	DI Water	589.9	541.9	48.0
Impinger 3	Empty	446.5	438.5	8.0
Impinger 4	Silica Gel	753.1	739.1	14.0
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: _____ (ml or gm)

		Field Data Check	
203.7	Liquid (gm)		
0.0	less rinse (gm)		
203.7	Net Liquid (gm)	203.7	☑QA/QC OK
+ 14.0	Silica Gel (gm)	14.0	☑QA/QC OK
217.7	Total Vlc (gm)	217.7	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	693.5	536.7	156.8
Impinger 2	DI Water	588.7	549.5	39.2
Impinger 3	Empty	457.9	451.8	6.1
Impinger 4	Silica Gel	767.9	759.7	8.2
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: _____ (ml or gm)

		Field Data Check	
202.1	Liquid (gm)		
0.0	less rinse (gm)		
202.1	Net Liquid (gm)	202.1	☑QA/QC OK
+ 8.2	Silica Gel (gm)	8.2	☑QA/QC OK
210.3	Total Vlc (gm)	210.3	☑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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Field Data Printout

Test Method: USEPA Method 23
Analyte: PCDD/F

Location: Unit 2 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator: N. Hitchins 569
Test Date: 3/22/10
Start Time: 10:04
Stop Time: 14:44
Leak Rate Before: 0.004 cfm @ 16 "Hg
Leak Rate After: 0.004 cfm @ 13 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.8
O_2 (dry volume %): 9.21
CO_2 (dry volume %): 10.16
N_2+CO (dry volume %): 80.63
H_2O (condensate, ml or gm): 770.0
H_2O (silica, g): 45.5
Actual Moisture (%): 21.57

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			699.390						
1-01	5.0	0.47	1.10	702.420	292	66	63	0.69	3.03	104.8
1-01	10.0	0.44	1.00	705.250	292	68	64	0.66	2.83	100.8
1-02	15.0	0.44	1.00	708.050	293	71	65	0.66	2.80	99.4
1-02	20.0	0.43	1.00	710.880	292	74	65	0.66	2.83	101.3
1-03	25.0	0.47	1.10	713.790	292	75	66	0.69	2.91	99.5
1-03	30.0	0.47	1.10	716.710	292	76	67	0.69	2.92	99.6
1-04	35.0	0.43	1.00	719.540	292	76	68	0.66	2.83	100.8
1-04	40.0	0.43	1.00	722.370	292	75	68	0.66	2.83	100.9
1-05	45.0	0.50	1.20	725.400	290	76	68	0.71	3.03	100.0
1-05	50.0	0.52	1.20	728.445	291	75	68	0.72	3.05	98.7
LEAK CHECK	50.0			728.770						
2-01	55.0	0.43	1.00	731.570	292	66	66	0.66	2.80	100.9
2-01	60.0	0.43	1.00	734.400	291	67	66	0.66	2.83	101.8
2-02	65.0	0.43	1.00	737.120	291	70	66	0.66	2.72	97.6
2-02	70.0	0.40	0.94	739.930	291	72	67	0.63	2.81	104.2
2-03	75.0	0.43	1.00	742.760	292	73	67	0.66	2.83	101.2
2-03	80.0	0.43	1.00	745.640	293	74	67	0.66	2.88	103.0
2-04	85.0	0.46	1.10	748.530	295	75	68	0.68	2.89	99.9
2-04	90.0	0.53	1.20	751.560	293	76	68	0.73	3.03	97.4
2-05	95.0	0.51	1.20	754.620	286	75	68	0.71	3.06	99.9
2-05	100.0	0.52	1.20	757.660	290	75	68	0.72	3.04	98.5
LEAK CHECK	100.0			758.060						
3-01	105.0	0.41	0.96	760.850	293	71	69	0.64	2.79	102.3
3-01	110.0	0.40	0.94	763.570	297	74	69	0.63	2.72	100.9
3-02	115.0	0.36	0.84	766.150	290	75	69	0.60	2.58	100.3
3-02	120.0	0.38	0.89	768.820	295	75	69	0.62	2.67	101.4
3-03	125.0	0.41	0.96	771.570	293	77	70	0.64	2.75	100.1
3-03	130.0	0.42	0.98	774.400	295	76	70	0.65	2.83	102.0
3-04	135.0	0.43	1.00	777.260	294	77	70	0.66	2.86	101.8
3-04	140.0	0.41	0.96	780.030	293	77	71	0.64	2.77	100.8
3-05	145.0	0.42	0.98	782.850	286	77	71	0.65	2.82	100.9
3-05	150.0	0.45	1.10	785.780	294	76	71	0.67	2.93	101.9
LEAK CHECK	150.0			786.185						
4-01	155.0	0.46	1.10	789.130	294	73	71	0.68	2.95	101.6
4-01	160.0	0.46	1.10	792.004	295	75	71	0.68	2.87	99.0
4-02	165.0	0.41	0.96	794.820	295	76	71	0.64	2.82	102.7
4-02	170.0	0.44	1.00	797.660	295	77	71	0.66	2.84	99.9
4-03	175.0	0.40	0.94	800.410	295	76	71	0.63	2.75	101.5
4-03	180.0	0.40	0.94	803.160	297	76	71	0.63	2.75	101.6
4-04	185.0	0.48	1.10	806.110	297	77	71	0.69	2.95	99.5
4-04	190.0	0.46	1.10	809.040	296	77	72	0.68	2.93	100.8
4-05	195.0	0.46	1.10	812.190	295	79	72	0.68	3.15	108.0
4-05	200.0	0.46	1.10	814.945	294	79	72	0.68	2.76	94.4
LEAK CHECK	200.0			815.365						
5-01	205.0	0.35	0.82	817.910	295	75	72	0.59	2.54	100.4
5-01	210.0	0.33	0.77	820.400	295	77	72	0.57	2.49	100.9
5-02	215.0	0.38	0.89	823.070	297	79	73	0.62	2.67	100.8
5-02	220.0	0.38	0.89	825.740	295	80	74	0.62	2.67	100.4
5-03	225.0	0.38	0.89	828.400	295	80	74	0.62	2.66	100.1
5-03	230.0	0.38	0.89	831.070	295	81	75	0.62	2.67	100.2
5-04	235.0	0.37	0.87	833.720	294	82	75	0.61	2.65	100.7
6-04	240.0	0.38	0.89	836.400	294	81	75	0.62	2.68	100.6
5-05	245.0	0.43	1.00	839.240	295	81	75	0.66	2.84	100.3
5-05	250.0	0.38	0.89	841.880	295	81	76	0.62	2.64	99.0
Final	250.0		1.00380	140.94000	293.30000	72.58000		0.65411	140.94000	
25 points sampled		Sq.RtΔP								
QC-Check: Field Averages		0.6541	1.0038	140.9400	293.3000	72.5800		2RSD = 6.9%		
		☑ 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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: N. Hitchins 568
Probe Operator: N. Hitchins 569
Test Date: 3/23/10
Start Time: 07:36
Stop Time: 12:10
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 12 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.57
CO_2 (dry volume %): 9.69
N_2+CO (dry volume %): 80.74
H_2O (condensate, ml or gm): 791.3
H_2O (silica, g): 38.7
Actual Moisture (%): 21.47

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			842.350						
5-01	5.0	0.40	0.93	845.090	296	64	62	0.63	2.74	103.1
5-01	10.0	0.39	0.90	847.750	295	66	62	0.62	2.66	101.0
5-02	15.0	0.41	0.95	850.490	295	69	63	0.64	2.74	101.1
5-02	20.0	0.43	1.00	853.290	295	71	63	0.66	2.80	100.7
5-03	25.0	0.49	1.10	856.240	298	74	65	0.70	2.95	99.2
5-03	30.0	0.38	0.88	858.880	297	74	65	0.62	2.64	100.7
5-04	35.0	0.39	0.90	861.540	296	76	67	0.62	2.66	99.7
5-04	40.0	0.40	0.93	864.260	296	76	67	0.63	2.72	100.7
5-05	45.0	0.38	0.88	866.900	297	77	69	0.62	2.64	100.0
5-05	50.0	0.39	0.90	869.575	297	77	70	0.62	2.68	99.9
LEAK CHECK	50.0			869.865						
4-01	55.0	0.40	0.93	872.590	297	76	73	0.63	2.73	100.3
4-01	60.0	0.41	0.95	875.340	297	78	73	0.64	2.75	99.8
4-02	65.0	0.45	1.10	878.260	298	81	75	0.67	2.92	100.8
4-02	70.0	0.38	0.89	880.930	298	82	76	0.62	2.67	100.1
4-03	75.0	0.43	1.00	883.780	298	81	76	0.66	2.85	100.6
4-03	80.0	0.40	0.94	886.630	300	81	76	0.63	2.75	100.7
4-04	85.0	0.38	0.89	889.210	298	81	76	0.62	2.68	100.6
4-04	90.0	0.48	1.10	892.180	298	81	77	0.69	2.97	99.1
4-05	95.0	0.40	0.94	894.950	296	81	78	0.63	2.77	101.0
4-05	100.0	0.39	0.92	897.685	298	81	78	0.62	2.73	101.1
LEAK CHECK	100.0			897.995						
3-01	105.0	0.41	0.98	900.780	299	79	78	0.64	2.78	100.7
3-01	110.0	0.40	0.94	903.540	298	83	80	0.63	2.76	100.4
3-02	115.0	0.42	0.99	906.400	299	84	80	0.65	2.86	101.5
3-02	120.0	0.44	1.00	909.270	298	85	81	0.66	2.87	99.3
3-03	125.0	0.47	1.10	912.290	299	85	82	0.69	3.02	101.1
3-03	130.0	0.44	1.00	915.150	297	85	81	0.66	2.88	98.9
3-04	135.0	0.49	1.20	918.270	298	85	82	0.70	3.12	102.2
3-04	140.0	0.54	1.30	921.550	297	84	81	0.73	3.28	102.5
3-05	145.0	0.44	1.00	924.400	297	86	81	0.66	2.85	98.4
3-05	150.0	0.55	1.30	927.660	297	84	81	0.74	3.26	101.0
LEAK CHECK	150.0			927.965						
2-01	155.0	0.46	1.10	931.050	296	82	82	0.68	3.08	104.4
2-01	160.0	0.50	1.20	934.150	295	84	82	0.71	3.10	100.4
2-02	165.0	0.43	1.00	937.020	295	86	82	0.66	2.87	100.0
2-02	170.0	0.52	1.20	940.130	295	86	82	0.72	3.11	98.6
2-03	175.0	0.55	1.30	943.390	297	85	82	0.74	3.26	100.8
2-03	180.0	0.51	1.20	946.560	296	85	81	0.71	3.17	101.8
2-04	185.0	0.54	1.30	949.800	296	85	81	0.73	3.24	101.1
2-04	190.0	0.54	1.30	953.040	296	85	81	0.73	3.24	101.1
2-05	195.0	0.61	1.40	956.420	298	85	81	0.78	3.38	99.4
2-05	200.0	0.58	1.40	959.795	297	84	80	0.76	3.38	101.9
LEAK CHECK	200.0			960.055						
1-01	205.0	0.47	1.10	962.990	298	79	79	0.69	2.94	98.9
1-01	210.0	0.51	1.20	966.110	297	81	80	0.71	3.12	100.7
1-02	215.0	0.42	0.99	968.930	297	83	79	0.65	2.82	100.1
1-02	220.0	0.44	1.00	971.780	297	83	79	0.66	2.85	98.9
1-03	225.0	0.47	1.10	974.790	297	83	79	0.69	3.01	101.1
1-03	230.0	0.39	0.92	977.510	295	84	79	0.62	2.72	100.0
1-04	235.0	0.47	1.10	980.490	295	84	79	0.69	2.98	99.8
1-04	240.0	0.40	0.94	983.240	295	83	79	0.63	2.75	99.9
1-05	245.0	0.53	1.20	986.320	298	83	79	0.73	3.08	97.5
1-05	250.0	0.53	1.20	989.435	298	84	78	0.73	3.11	98.6
Final	250.0		1.05940	145.92000	296.90000	78.63000		0.67160	145.92000	
25 points sampled		Sq.RtΔP								
QC-Check: Field Averages		0.6716	1.0594	145.9200	296.9000	78.6300		2RSD = 8.9%		
		☑ 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: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft^2): 64.00000
Meter Operator: N. Hitchins 569
Probe Operator: N. Hitchins 569
Test Date: 3/23/10
Start Time: 12:32
Stop Time: 17:02
Leak Rate Before: 0.002 cfm @ 16 "Hg
Leak Rate After: 0.003 cfm @ 12 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.28
CO_2 (dry volume %): 10.20
N_2+CO (dry volume %): 80.52
H_2O (condensate, ml or gm): 819.9
H_2O (silica, g): 47.7
Actual Moisture (%): 22.36

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: 88-24
Meter ΔH@: 1.75180
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			990.040						
1-01	5.0	0.40	0.94	992.880	297	74	74	0.63	2.84	105.8
1-01	10.0	0.40	0.94	995.510	297	75	75	0.63	2.63	97.8
1-02	15.0	0.48	1.10	998.410	299	77	77	0.69	2.90	98.2
1-02	20.0	0.40	0.94	1001.160	300	80	75	0.63	2.75	102.0
1-03	25.0	0.43	1.00	1004.020	300	78	74	0.66	2.86	102.6
1-03	30.0	0.43	1.00	1006.860	299	80	75	0.66	2.84	101.5
1-04	35.0	0.48	1.10	1009.780	299	82	76	0.69	2.92	98.5
1-04	40.0	0.48	1.10	1012.760	299	82	76	0.69	2.98	100.6
1-05	45.0	0.48	1.10	1015.740	297	84	77	0.69	2.98	100.1
1-05	50.0	0.53	1.20	1018.845	299	86	78	0.73	3.11	99.2
LEAK CHECK	50.0			1019.085						
2-01	55.0	0.44	1.00	1021.950	300	83	80	0.66	2.87	100.5
2-01	60.0	0.52	1.20	1025.030	300	85	81	0.72	3.08	99.2
2-02	65.0	0.40	0.94	1027.800	300	86	81	0.63	2.77	101.6
2-02	70.0	0.45	1.10	1030.770	300	86	82	0.67	2.97	102.6
2-03	75.0	0.43	1.00	1033.620	300	87	82	0.66	2.85	100.6
2-03	80.0	0.49	1.20	1036.870	301	87	83	0.70	3.25	107.5
2-04	85.0	0.52	1.20	1039.920	299	88	83	0.72	3.05	97.7
2-04	90.0	0.52	1.20	1043.060	299	88	83	0.72	3.14	100.6
2-05	95.0	0.66	1.60	1046.650	298	89	83	0.81	3.59	102.0
2-05	100.0	0.60	1.40	1050.055	299	89	84	0.77	3.40	101.4
LEAK CHECK	100.0			1050.640						
3-01	105.0	0.33	0.79	1053.210	297	84	83	0.57	2.57	103.5
3-01	110.0	0.30	0.71	1055.630	297	86	83	0.55	2.42	102.0
3-02	115.0	0.42	1.00	1058.500	297	85	83	0.65	2.87	102.4
3-02	120.0	0.40	0.95	1061.270	296	84	82	0.63	2.77	101.4
3-03	125.0	0.43	1.00	1064.130	297	85	82	0.66	2.86	101.0
3-03	130.0	0.43	1.00	1066.990	296	86	82	0.66	2.86	100.8
3-04	135.0	0.45	1.10	1069.960	298	84	81	0.67	2.97	102.8
3-04	140.0	0.54	1.30	1073.160	298	85	81	0.73	3.20	101.0
3-05	145.0	0.61	1.50	1076.650	298	84	80	0.78	3.49	103.9
3-05	150.0	0.61	1.50	1080.085	299	85	80	0.78	3.43	102.3
LEAK CHECK	150.0			1080.555						
4-01	155.0	0.40	0.95	1083.360	297	83	81	0.63	2.80	102.9
4-01	160.0	0.45	1.10	1086.290	298	85	81	0.67	2.93	101.3
4-02	165.0	0.47	1.10	1089.250	298	87	81	0.69	2.96	99.9
4-02	170.0	0.40	0.95	1092.030	298	87	81	0.63	2.78	101.7
4-03	175.0	0.42	1.00	1094.890	298	87	81	0.65	2.86	102.1
4-03	180.0	0.47	1.10	1097.850	298	88	82	0.69	2.98	99.8
4-04	185.0	0.42	1.00	1100.740	298	89	83	0.65	2.89	102.8
4-04	190.0	0.42	1.00	1103.620	298	89	83	0.65	2.88	102.5
4-05	195.0	0.39	0.93	1106.380	296	89	83	0.62	2.76	101.7
4-05	200.0	0.40	0.95	1109.170	298	88	83	0.63	2.79	101.8
LEAK CHECK	200.0			1109.525						
5-01	205.0	0.37	0.88	1112.230	299	85	83	0.61	2.70	102.9
5-01	210.0	0.37	0.88	1114.900	298	86	83	0.61	2.67	101.5
5-02	215.0	0.39	0.93	1117.650	299	86	83	0.62	2.75	101.9
5-02	220.0	0.37	0.88	1120.330	298	87	83	0.61	2.68	101.7
5-03	225.0	0.53	1.30	1123.560	299	86	83	0.73	3.23	102.7
5-03	230.0	0.48	1.10	1126.620	300	87	83	0.69	3.06	102.2
5-04	235.0	0.43	1.00	1129.490	300	87	83	0.66	2.87	101.2
5-04	240.0	0.35	0.83	1132.140	301	88	83	0.59	2.65	103.5
5-05	245.0	0.41	0.98	1134.890	300	88	83	0.64	2.75	99.2
5-05	250.0	0.41	0.98	1137.710	300	88	83	0.64	2.82	101.8
Final	250.0		1.05900	146.02000	298.52000	82.99000		0.66738	146.02000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6674	1.0590	146.0200	298.5200	82.9900		2RSD = 10.8%		
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 23
Analyte: PCDD/F

Location: Unit 2 FF Outlet
Client: Wheelabrator South 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:		10.16000		9.21000	80.63000	29.99400	1.15059	☑ 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:		9.69000		9.57000	80.74000	29.93320	1.16925	☑ 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:		10.20000		9.28000	80.52000	30.00320	1.13922	☑ 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 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 23
Analyte: PCDD/F
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	1389.9	634.7	755.2
Impinger 2	100 ml HPLC H2O	536.8	535.6	1.2
Impinger 3	100 ml HPLC H2O	547.3	545.5	1.8
Impinger 4	Trap# T025-010	344.7	332.9	11.8
Impinger 5	Silica Gel	794.3	748.8	45.5
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
770.0	Liquid (gm)		
0.0	less rinse (gm)		
770.0	Net Liquid (gm)	770.0	☑QA/QC OK
+ 45.5	Silica Gel (gm)	45.5	☑QA/QC OK
815.5	Total Vlc (gm)	815.5	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	1406.1	630.9	775.2
Impinger 2	100 ml HPLC H2O	552.8	550.0	2.8
Impinger 3	100 ml HPLC H2O	539.4	538.1	1.3
Impinger 4	Trap# T025-008	410.9	398.9	12.0
Impinger 5	Silica Gel	848.8	810.1	38.7
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
791.3	Liquid (gm)		
0.0	less rinse (gm)		
791.3	Net Liquid (gm)	791.3	☑QA/QC OK
+ 38.7	Silica Gel (gm)	38.7	☑QA/QC OK
830.0	Total Vlc (gm)	830.0	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	1437.7	635.5	802.2
Impinger 2	100 ml HPLC H2O	534.4	532.3	2.1
Impinger 3	100 ml HPLC H2O	546.7	544.5	2.2
Impinger 4	Trap# T0525-009	327.0	313.6	13.4
Impinger 5	Silica Gel	804.1	756.4	47.7
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
819.9	Liquid (gm)		
0.0	less rinse (gm)		
819.9	Net Liquid (gm)	819.9	☑QA/QC OK
+ 47.7	Silica Gel (gm)	47.7	☑QA/QC OK
867.6	Total Vlc (gm)	867.6	☑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 2 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/23/10
Start Time: 07:55
Stop Time: 08:55
Leak Rate Before: 0.005 cfm @ 20 "Hg
Leak Rate After: 0.005 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.54
CO_2 (dry volume %): 9.66
N_2+CO (dry volume %): 80.80

H_2O (condensate, ml or gm): 213.1
H_2O (silica, g): 18.6
Actual Moisture (%): 21.39

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 $T_{m\text{-}in}$ (°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			392.870						
3-01	5.0		1.50	396.260	301	69	64		3.39	
3-01	10.0		1.50	399.560	300	75	65		3.30	
3-01	15.0		1.50	402.790	299	77	66		3.23	
3-01	20.0		1.50	405.970	300	79	67		3.18	
3-01	25.0		1.50	409.170	300	80	68		3.20	
3-01	30.0		1.50	412.400	300	81	70		3.23	
3-01	35.0		1.50	415.890	301	85	73		3.49	
3-01	40.0		1.50	419.190	301	85	73		3.30	
3-01	45.0		1.50	422.550	301	84	74		3.36	
3-01	50.0		1.50	425.880	303	85	75		3.33	
3-01	55.0		1.50	429.201	302	86	76		3.32	
3-01	60.0		1.50	432.910	303	87	77		3.71	
Final	60.0		1.50000	40.04000	300.91667	75.87500		0.00000	40.04000	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	40.0400	300.9167	75.8750				
		☐ 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 2 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/23/10
Start Time: 09:30
Stop Time: 10:31
Leak Rate Before: 0.002 cfm @ 16 "Hg
Leak Rate After: 0.001 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 10.10
CO_2 (dry volume %): 9.27
N_2+CO (dry volume %): 80.63

H_2O (condensate, ml or gm): 216.4
H_2O (silica, g): 17.1
Actual Moisture (%): 21.56

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 $T_{m\text{-}in}$ (°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			433.100						
4-01	5.0		1.50	436.380	302	78	79		3.28	
4-01	10.0		1.50	439.420	304	86	81		3.04	
4-01	15.0		1.50	442.910	303	87	87		3.49	
4-01	20.0		1.50	446.310	301	89	81		3.40	
4-01	25.0		1.50	449.770	302	88	81		3.46	
4-01	30.0		1.50	453.270	300	90	82		3.50	
4-01	35.0		1.50	456.660	300	88	81		3.39	
4-01	40.0		1.50	460.040	302	88	81		3.38	
4-01	45.0		1.50	463.440	301	89	82		3.40	
4-01	50.0		1.50	466.860	300	87	81		3.42	
4-01	55.0		1.50	470.250	300	81	81		3.39	
4-01	60.0		1.50	473.630	300	87	80		3.38	
Final	60.0		1.50000	40.53000	301.25000	83.95833		0.00000	40.53000	
4 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	40.5300	301.2500	83.9583				
		☐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 2 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/23/10
Start Time: 10:55
Stop Time: 12:06
Leak Rate Before: 0.002 cfm @ 14 "Hg
Leak Rate After: 0.002 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.0
O_2 (dry volume %): 9.26
CO_2 (dry volume %): 10.13
N_2+CO (dry volume %): 80.61
H_2O (condensate, ml or gm): 232.0
H_2O (silica, g): 15.1
Actual Moisture (%): 22.17

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: 1.00860

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			475.045						
3-01	5.0		1.50	478.420	300	77	78		3.38	
3-01	10.0		1.50	481.880	298	79	77		3.46	
3-01	15.0		1.50	485.020	301	83	76		3.14	
3-01	20.0		1.50	488.370	300	85	77		3.35	
3-01	25.0		1.50	491.780	301	84	76		3.41	
3-01	30.0		1.50	495.320	299	86	77		3.54	
3-01	35.0		1.50	498.520	300	87	78		3.20	
3-01	40.0		1.50	501.880	300	86	78		3.36	
3-01	45.0		1.50	505.260	299	87	79		3.38	
3-01	50.0		1.50	508.660	301	88	78		3.40	
3-01	55.0		1.50	512.040	301	86	78		3.38	
3-01	60.0		1.50	516.220	301	86	78		4.18	
Final	60.0		1.50000	41.17500	300.08333	81.00000		0.00000	41.17500	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.1750	300.0833	81.0000				
		☐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 South 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:		9.66000		9.54000	80.80000	29.92720	1.17598	☑ 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:		9.27000		10.10000	80.63000	29.88720	1.16505	☑ 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:		10.13000		9.26000	80.61000	29.99120	1.14906	☑ 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 South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 26A
Analyte: HCl
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	530.6	474.9	55.7
Impinger 2	100 ml 0.1N H2SO4	732.4	639.2	93.2
Impinger 3	100 ml 0.1N H2SO4	584.4	535.3	49.1
Impinger 4	Empty	467.6	452.5	15.1
Impinger 5	Silica Gel	763.9	745.3	18.6
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
213.1	Liquid (gm)		
0.0	less rinse (gm)		
213.1	Net Liquid (gm)	213.1	☑QA/QC OK
+ 18.6	Silica Gel (gm)	18.6	☑QA/QC OK
231.7	Total Vlc (gm)	231.7	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	527.8	469.2	58.6
Impinger 2	100 ml 0.1N H2SO4	667.6	561.0	106.6
Impinger 3	100 ml 0.1N H2SO4	595.0	555.0	40.0
Impinger 4	Empty	468.3	457.1	11.2
Impinger 5	Silica Gel	766.1	749.0	17.1
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
216.4	Liquid (gm)		
0.0	less rinse (gm)		
216.4	Net Liquid (gm)	216.4	☑QA/QC OK
+ 17.1	Silica Gel (gm)	17.1	☑QA/QC OK
233.5	Total Vlc (gm)	233.5	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	548.8	479.6	69.2
Impinger 2	100 ml 0.1N H2SO4	757.5	646.5	111.0
Impinger 3	100 ml 0.1N H2SO4	581.1	537.0	44.1
Impinger 4	Empty	459.4	451.7	7.7
Impinger 5	Silica Gel	778.8	763.7	15.1
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
232.0	Liquid (gm)		
0.0	less rinse (gm)		
232.0	Net Liquid (gm)	232.0	☑QA/QC OK
+ 15.1	Silica Gel (gm)	15.1	☑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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Field Data Printout

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

Location: Unit 2 SDA Inlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205

Meter Operator:		B. Arnold	770
Probe Operator:		B. Arnold	770
Test Date:	3/23/10		
Start Time:	07:55		
Stop Time:	08:55		
Leak Rate Before:	0.004	cfm	@ 15 "Hg
Leak Rate After:	0.005	cfm	@ 23 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.4
O_2 (dry volume %): 8.14
CO_2 (dry volume %): 10.89
N_2+CO (dry volume %): 80.97

H_2O (condensate, ml or gm): 144.6
H_2O (silica, g): 12.2
Actual Moisture (%): 17.58

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: 66-11
Meter ΔH@: 1.86190
Meter Y_d: 0.99330

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			598.135						
1-01	5.0		1.20	601.040	497	70	68		2.90	
1-01	10.0		1.20	603.930	489	71	67		2.89	
1-01	15.0		1.20	606.760	487	73	68		2.83	
1-01	20.0		1.20	609.670	489	76	69		2.91	
1-01	25.0		1.20	612.570	489	77	70		2.90	
1-01	30.0		1.20	615.480	489	77	71		2.91	
1-01	35.0		1.20	618.410	489	79	72		2.93	
1-01	40.0		1.20	621.370	486	79	72		2.96	
1-01	45.0		1.20	624.290	486	79	73		2.92	
1-01	50.0		1.20	627.220	489	80	73		2.93	
1-01	55.0		1.20	630.150	496	79	74		2.93	
1-01	60.0		1.10	633.040	493	77	74		2.89	
Final	60.0		1.19167	34.90500	489.91667	73.66667		0.00000	34.90500	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.1917	34.9050	489.9167	73.6667				
		☐ 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 2 SDA Inlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/23/10
Start Time: 09:30
Stop Time: 10:30
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 17 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.4
O_2 (dry volume %): 8.71
CO_2 (dry volume %): 10.49
N_2+CO (dry volume %): 80.80
H_2O (condensate, ml or gm): 150.8
H_2O (silica, g): 7.3
Actual Moisture (%): 17.77

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: 66-11
Meter ΔH@: 1.86190
Meter Y_d: 0.99330

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			633.275						
1-01	5.0		1.20	636.170	491	82	80		2.89	
1-01	10.0		1.20	639.110	491	82	80		2.94	
1-01	15.0		1.20	642.050	490	84	80		2.94	
1-01	20.0		1.20	645.000	496	86	81		2.95	
1-01	25.0		1.20	647.920	493	86	82		2.92	
1-01	30.0		1.20	650.870	493	88	82		2.95	
1-01	35.0		1.20	653.800	497	86	82		2.93	
1-01	40.0		1.20	656.770	497	85	81		2.97	
1-01	45.0		1.20	659.730	495	84	81		2.96	
1-01	50.0		1.20	662.670	497	85	82		2.94	
1-01	55.0		1.20	665.640	497	85	82		2.97	
1-01	60.0		1.20	668.625	498	85	82		2.99	
Final	60.0		1.20000	35.35000	494.58333	83.04167		0.00000	35.35000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.2000	35.3500	494.5833	83.0417				
		☐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 2 SDA Inlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205

Meter Operator:		B. Arnold	770
Probe Operator:		B. Arnold	770

Test Date: 3/23/10
Start Time: 10:55
Stop Time: 12:08
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 20 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.5
O_2 (dry volume %): 7.59
CO_2 (dry volume %): 11.59
N_2+CO (dry volume %): 80.82

H_2O (condensate, ml or gm): 163.0
H_2O (silica, g): 13.1
Actual Moisture (%): 19.58

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: 66-11
Meter ΔH@: 1.86190
Meter Y_d: 0.99330

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			669.070						
1-01	5.0		1.20	671.880	492	81	80		2.81	
1-01	10.0		1.20	674.800	490	83	80		2.92	
1-01	15.0		1.20	677.750	491	86	83		2.95	
1-01	20.0		1.20	680.670	501	87	84		2.92	
1-01	25.0		1.20	683.570	499	88	84		2.90	
1-01	30.0		1.20	686.500	495	88	85		2.93	
1-01	35.0		1.20	689.450	494	88	85		2.95	
1-01	40.0		1.20	692.340	492	89	85		2.89	
1-01	45.0		1.20	695.250	492	88	86		2.91	
1-01	50.0		1.20	698.180	495	89	86		2.93	
1-01	55.0		1.20	701.130	493	88	86		2.95	
1-01	60.0		1.20	704.180	492	89	86		3.05	
Final	60.0		1.20000	35.11000	493.83333	85.58333		0.00000	35.11000	
1 points sampled		Sq.Rt ΔP								
QC-Check: Field Averages			1.2000	35.1100	493.8333	85.5833				
		☐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 SDA Inlet
Client: Wheelabrator South 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:		10.89000		8.14000	80.97000	30.06800	1.17172	☑ 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:		10.49000		8.71000	80.80000	30.02680	1.18206	☑ 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:		11.59000		7.59000	80.82000	30.15800	1.14840	☑ 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 SDA Inlet
Client: Wheelabrator South 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	488.4	454.9	33.5
Impinger 2	100 ml 0.1N H2SO4	618.3	544.1	74.2
Impinger 3	100 ml 0.1N H2SO4	570.5	541.1	29.4
Impinger 4	Empty	472.2	464.7	7.5
Impinger 5	Silica Gel	719.8	707.6	12.2
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

	Field Data Check	
144.6 Liquid (gm)		
0.0 less rinse (gm)		
144.6 Net Liquid (gm)	144.6	☑QA/QC OK
+ 12.2 Silica Gel (gm)	12.2	☑QA/QC OK
156.8 Total Vlc (gm)	156.8	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	527.8	470.9	56.9
Impinger 2	100 ml 0.1N H2SO4	614.1	538.1	76.0
Impinger 3	100 ml 0.1N H2SO4	570.9	555.1	15.8
Impinger 4	Empty	432.5	430.4	2.1
Impinger 5	Silica Gel	715.5	708.2	7.3
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

	Field Data Check	
150.8 Liquid (gm)		
0.0 less rinse (gm)		
150.8 Net Liquid (gm)	150.8	☑QA/QC OK
+ 7.3 Silica Gel (gm)	7.3	☑QA/QC OK
158.1 Total Vlc (gm)	158.1	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	526.7	456.4	70.3
Impinger 2	100 ml 0.1N H2SO4	618.7	544.9	73.8
Impinger 3	100 ml 0.1N H2SO4	556.4	540.6	15.8
Impinger 4	Empty	467.8	464.7	3.1
Impinger 5	Silica Gel	720.4	707.3	13.1
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

	Field Data Check	
163.0 Liquid (gm)		
0.0 less rinse (gm)		
163.0 Net Liquid (gm)	163.0	☑QA/QC OK
+ 13.1 Silica Gel (gm)	13.1	☑QA/QC OK
176.1 Total Vlc (gm)	176.1	☑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 _____

Field Data Printout

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

Location: Unit 3 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/22/10
Start Time: 08:47
Stop Time: 11:05
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.3
O_2 (dry volume %): 10.02
CO_2 (dry volume %): 9.42
N_2+CO (dry volume %): 80.56
H_2O (condensate, ml or gm): 423.3
H_2O (silica, g): 17.9
Actual Moisture (%): 21.09

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: 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) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			728.330						
1-01	5.0	0.60	1.50	731.720	295	78	72	0.77	3.39	102.2
1-02	10.0	0.52	1.30	734.780	295	78	72	0.72	3.08	99.0
1-03	15.0	0.52	1.30	737.920	295	81	72	0.72	3.14	101.3
1-04	20.0	0.52	1.30	741.050	296	83	73	0.72	3.13	100.8
1-05	25.0	0.60	1.40	744.380	296	84	73	0.77	3.33	99.8
LEAK CHECK	25.0			744.540						
2-01	30.0	0.66	1.60	748.050	296	83	74	0.81	3.51	100.3
2-02	35.0	0.60	1.40	751.350	297	84	74	0.77	3.30	98.8
2-03	40.0	0.51	1.20	754.450	297	85	74	0.71	3.10	100.6
2-04	45.0	0.53	1.30	757.630	297	84	74	0.73	3.18	101.3
2-05	50.0	0.63	1.50	760.990	298	85	75	0.79	3.36	98.1
LEAK CHECK	50.0			761.210						
3-01	55.0	0.35	0.84	763.710	296	82	75	0.59	2.50	97.9
3-02	60.0	0.53	1.30	766.890	297	83	75	0.73	3.18	101.3
3-03	65.0	0.58	1.40	770.180	297	84	75	0.76	3.29	100.1
3-04	70.0	0.57	1.40	773.460	298	85	76	0.75	3.28	100.6
3-05	75.0	0.50	1.20	776.600	297	86	76	0.71	3.14	102.6
LEAK CHECK	75.0			776.740						
4-01	80.0	0.65	1.60	780.210	298	82	76	0.81	3.47	100.0
4-02	85.0	0.61	1.50	783.650	298	85	76	0.78	3.44	102.0
4-03	90.0	0.51	1.20	786.770	297	86	76	0.71	3.12	100.9
4-04	95.0	0.44	1.10	789.690	296	85	76	0.66	2.92	101.7
4-05	100.0	0.44	1.10	792.580	296	85	76	0.66	2.89	100.6
LEAK CHECK	100.0			792.730						
5-01	105.0	0.51	1.20	795.890	297	83	76	0.71	3.16	102.5
5-02	110.0	0.46	1.10	798.710	295	84	76	0.68	2.82	98.1
5-03	115.0	0.37	0.89	801.310	296	85	76	0.61	2.60	98.7
5-04	120.0	0.41	0.98	804.060	297	85	77	0.64	2.75	99.2
5-05	125.0	0.47	1.10	806.990	297	86	77	0.69	2.93	98.6
Final	125.0		1.26840	77.99000	296.56000	79.26000		0.72133	77.99000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7213	1.2684	77.9900	296.5600	79.2560		2RSD = 11.7%		
		☑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 3 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000

Meter Operator:	A. Obuchowski	567
Probe Operator:	A. Obuchowski	567

Test Date: 3/22/10
Start Time: 11:43
Stop Time: 13:57
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.0
O_2 (dry volume %): 9.70
CO_2 (dry volume %): 9.78
N_2+CO (dry volume %): 80.52

H_2O (condensate, ml or gm): 384.3
H_2O (silica, g): 15.1
Actual Moisture (%): 20.68

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: 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) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			807.355						
5-01	5.0	0.42	1.00	810.120	295	74	74	0.65	2.76	99.3
5-02	10.0	0.40	0.98	812.820	295	76	74	0.63	2.70	99.1
5-03	15.0	0.45	1.10	815.720	297	79	74	0.67	2.90	100.3
5-04	20.0	0.38	0.93	818.400	299	81	74	0.62	2.68	100.7
5-05	25.0	0.41	1.00	821.060	296	82	74	0.64	2.66	96.0
LEAK CHECK	25.0			821.210						
4-01	30.0	0.48	1.20	824.220	295	81	74	0.69	3.01	100.5
4-02	35.0	0.55	1.30	827.440	298	83	74	0.74	3.22	100.4
4-03	40.0	0.46	1.10	830.330	297	84	75	0.68	2.89	98.3
4-04	45.0	0.40	0.98	833.080	296	84	75	0.63	2.75	100.2
4-05	50.0	0.40	0.98	835.840	294	84	75	0.63	2.76	100.4
LEAK CHECK	50.0			835.980						
3-01	55.0	0.35	0.88	838.550	295	82	75	0.59	2.57	100.2
3-02	60.0	0.42	1.00	841.320	296	83	76	0.65	2.77	98.5
3-03	65.0	0.43	1.10	844.210	297	83	75	0.66	2.89	101.8
3-04	70.0	0.47	1.20	847.290	296	84	76	0.69	3.08	103.5
3-05	75.0	0.38	0.93	850.000	295	85	76	0.62	2.71	101.0
LEAK CHECK	75.0			850.120						
2-01	80.0	0.53	1.30	853.280	295	83	76	0.73	3.16	100.0
2-02	85.0	0.48	1.20	856.380	295	86	77	0.69	3.10	102.7
2-03	90.0	0.50	1.20	859.490	296	86	77	0.71	3.11	101.0
2-04	95.0	0.43	1.10	862.560	297	87	77	0.66	3.07	107.5
2-05	100.0	0.40	0.98	865.340	297	86	77	0.63	2.78	101.0
LEAK CHECK	100.0			865.460						
1-01	105.0	0.51	1.20	868.500	294	83	77	0.71	3.04	97.9
1-02	110.0	0.48	1.20	871.570	295	86	77	0.69	3.07	101.7
1-03	115.0	0.35	0.86	874.180	293	86	78	0.59	2.61	101.0
1-04	120.0	0.51	1.20	877.250	294	86	78	0.71	3.07	98.5
1-05	125.0	0.57	1.40	880.335	295	88	78	0.75	3.09	93.6
Final	125.0		1.09280	72.45000	295.68000	79.50000		0.66668	72.45000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6667	1.0928	72.4500	295.6800	79.5000		2RSD = 9.0%		
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. 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: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator: A. Obuchowski 567
Test Date: 3/22/10
Start Time: 14:24
Stop Time: 16:39
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.1
O_2 (dry volume %): 9.50
CO_2 (dry volume %): 9.98
N_2+CO (dry volume %): 80.52
H_2O (condensate, ml or gm): 392.7
H_2O (silica, g): 15.6
Actual Moisture (%): 20.63

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: 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) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			880.835						
1-01	5.0	0.53	1.30	884.060	295	80	78	0.73	3.22	102.2
1-02	10.0	0.49	1.20	887.150	295	82	79	0.70	3.09	101.5
1-03	15.0	0.42	1.00	889.950	295	86	79	0.65	2.80	99.0
1-04	20.0	0.47	1.20	893.030	296	87	79	0.69	3.08	102.9
1-05	25.0	0.58	1.40	896.380	296	89	80	0.76	3.35	100.5
LEAK CHECK	25.0			896.530						
2-01	30.0	0.58	1.40	899.820	296	87	80	0.76	3.29	98.9
2-02	35.0	0.56	1.40	903.130	297	89	81	0.75	3.31	101.1
2-03	40.0	0.51	1.20	906.250	295	90	81	0.71	3.12	99.6
2-04	45.0	0.53	1.30	909.490	296	90	81	0.73	3.24	101.5
2-05	50.0	0.43	1.10	912.450	295	91	82	0.66	2.96	102.7
LEAK CHECK	50.0			912.590						
3-01	55.0	0.35	0.86	915.090	294	88	82	0.59	2.50	96.2
3-02	60.0	0.51	1.20	918.220	296	90	82	0.71	3.13	99.9
3-03	65.0	0.47	1.20	921.370	295	90	82	0.69	3.15	104.6
3-04	70.0	0.48	1.20	924.540	295	90	82	0.69	3.17	104.2
3-05	75.0	0.45	1.10	927.500	297	90	83	0.67	2.96	100.5
LEAK CHECK	75.0			927.630						
4-01	80.0	0.44	1.10	930.490	293	88	83	0.66	2.86	98.1
4-02	85.0	0.47	1.20	933.630	295	89	83	0.69	3.14	104.3
4-03	90.0	0.45	1.10	936.600	296	90	83	0.67	2.97	100.7
4-04	95.0	0.45	1.10	939.560	295	90	83	0.67	2.96	100.3
4-05	100.0	0.40	0.98	942.340	295	91	83	0.63	2.78	99.8
LEAK CHECK	100.0			942.480						
5-01	105.0	0.43	1.10	945.340	295	88	83	0.66	2.86	99.4
5-02	110.0	0.41	1.00	948.160	294	90	83	0.64	2.82	100.1
5-03	115.0	0.40	0.98	950.950	295	91	84	0.63	2.79	100.1
5-04	120.0	0.40	0.98	953.730	296	92	84	0.63	2.78	99.7
5-05	125.0	0.37	0.91	956.445	295	92	84	0.61	2.72	101.2
Final	125.0		1.14040	75.05000	295.28000	85.28000		0.67913	75.05000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6791	1.1404	75.0500	295.2800	85.2800		2RSD = 9.1%		
		☑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 5/29
Analyte: Particulate/Metals

Location: Unit 3 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Method: Select Method
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:		9.42000		10.02000	80.56000	29.90800	1.15499	☑ 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:		9.78000		9.70000	80.52000	29.95280	1.14519	☑ 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:		9.98000		9.50000	80.52000	29.97680	1.14228	☑ 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 FF Outlet
Client: Wheelabrator South 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	720.5	440.9	279.6
Impinger 2	5%HNO3/10%H2O2	670.8	558.0	112.8
Impinger 3	5%HNO3/10%H2O2	562.2	539.9	22.3
Impinger 4	Empty	452.3	447.7	4.6
Impinger 5	4%KMnO4/10%H2SO4	547.7	544.2	3.5
Impinger 6	4%KMnO4/10%H2SO4	545.0	544.5	0.5
Impinger 7	Silica Gel	740.6	722.7	17.9
Impinger 8				

Rinse: _____ (ml or gm)

423.3 Liquid (gm) — *Field Data Check*
0.0 less rinse (gm)
423.3 Net Liquid (gm) — 423.3 ☑QA/QC OK
+ 17.9 Silica Gel (gm) — 17.9 ☑QA/QC OK
441.2 Total Vlc (gm) — 441.2 ☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	667.5	462.0	205.5
Impinger 2	5%HNO3/10%H2O2	668.6	538.9	129.7
Impinger 3	5%HNO3/10%H2O2	584.9	549.4	35.5
Impinger 4	Empty	447.1	439.8	7.3
Impinger 5	4%KMnO4/10%H2SO4	544.8	539.6	5.2
Impinger 6	4%KMnO4/10%H2SO4	562.7	561.6	1.1
Impinger 7	Silica Gel	720.2	705.1	15.1
Impinger 8				

Rinse: _____ (ml or gm)

384.3 Liquid (gm) — *Field Data Check*
0.0 less rinse (gm)
384.3 Net Liquid (gm) — 384.3 ☑QA/QC OK
+ 15.1 Silica Gel (gm) — 15.1 ☑QA/QC OK
399.4 Total Vlc (gm) — 399.4 ☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	669.3	439.8	229.5
Impinger 2	5%HNO3/10%H2O2	671.7	557.9	113.8
Impinger 3	5%HNO3/10%H2O2	570.8	536.1	34.7
Impinger 4	Empty	455.6	447.2	8.4
Impinger 5	4%KMnO4/10%H2SO4	544.8	539.7	5.1
Impinger 6	4%KMnO4/10%H2SO4	545.7	544.5	1.2
Impinger 7	Silica Gel	750.7	735.1	15.6
Impinger 8				

Rinse: _____ (ml or gm)

392.7 Liquid (gm) — *Field Data Check*
0.0 less rinse (gm)
392.7 Net Liquid (gm) — 392.7 ☑QA/QC OK
+ 15.6 Silica Gel (gm) — 15.6 ☑QA/QC OK
408.3 Total Vlc (gm) — 408.3 ☑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)

Liquid (gm) — *Field Data Check*
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 29**
Analyte: **Trace Metals**

Location: Unit 3 SDA Inlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: D. Luckhard 568
Probe Operator: P. Bihun 505
Test Date: 3/22/10
Start Time: 08:47
Stop Time: 11:05
Leak Rate Before: 0.005 cfm @ 17 "Hg
Leak Rate After: 0.006 cfm @ 12 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.3
O_2 (dry volume %): 9.19
CO_2 (dry volume %): 10.47
N_2+CO (dry volume %): 80.34
H_2O (condensate, ml or gm): 302.8
H_2O (silica, g): 15.8
Actual Moisture (%): 18.16

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
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) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			453.400						
2-01	5.0	0.48	1.00	456.290	473	66	66	0.69	2.89	101.3
2-02	10.0	0.48	1.00	459.180	472	67	66	0.69	2.89	101.1
2-03	15.0	0.49	1.00	462.080	471	69	66	0.70	2.88	99.5
2-04	20.0	0.47	1.00	464.950	475	71	67	0.69	2.89	101.9
2-05	25.0	0.53	1.10	467.880	476	71	67	0.73	2.93	97.3
2-06	30.0	0.46	0.98	470.720	482	72	67	0.68	2.84	101.5
2-07	35.0	0.47	1.00	473.610	478	72	67	0.69	2.89	101.9
2-08	40.0	0.47	1.00	476.520	471	71	67	0.69	2.91	102.4
2-09	45.0	0.47	1.00	479.410	470	71	66	0.69	2.89	101.7
2-10	50.0	0.42	0.89	482.140	485	72	66	0.65	2.73	102.3
2-11	55.0	0.38	0.81	484.740	476	73	67	0.62	2.60	101.8
2-12	60.0	0.27	0.58	486.940	465	73	67	0.52	2.20	101.5
LEAK CHECK	60.0			487.300						
1-01	65.0	0.41	0.87	490.040	467	70	69	0.64	2.74	102.8
1-02	70.0	0.40	0.85	492.690	467	72	69	0.63	2.65	100.5
1-03	75.0	0.40	0.85	495.340	471	73	69	0.63	2.65	100.6
1-04	80.0	0.44	0.94	498.210	470	74	69	0.66	2.87	103.8
1-05	85.0	0.47	1.00	501.040	480	75	69	0.69	2.83	99.5
1-06	90.0	0.47	1.00	503.920	476	75	69	0.69	2.88	101.0
1-07	95.0	0.57	1.20	506.960	479	75	70	0.75	3.04	96.9
1-08	100.0	0.57	1.20	510.030	475	73	70	0.75	3.07	97.9
1-09	105.0	0.56	1.20	513.140	473	75	70	0.75	3.11	99.7
1-10	110.0	0.50	1.10	516.230	467	75	70	0.71	3.09	104.5
1-11	115.0	0.43	0.92	518.960	469	75	70	0.66	2.73	99.6
1-12	120.0	0.43	0.92	521.740	469	74	69	0.66	2.78	101.6
Final	120.0		0.97542	67.98000	473.20833	70.12500		0.67645	67.98000	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6765	0.9754	67.9800	473.2083	70.1250				
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Field Data Printout

Test Method: USEPA Method 29
Analyte: Trace Metals

Location: Unit 3 SDA Inlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205

Meter Operator:	D. Luckhard	568
Probe Operator:	P. Bihun	505

Test Date: 3/22/10
Start Time: 11:43
Stop Time: 13:57
Leak Rate Before: 0.007 cfm @ 16 "Hg
Leak Rate After: 0.006 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.3
O_2 (dry volume %): 8.19
CO_2 (dry volume %): 11.10
N_2+CO (dry volume %): 80.71
H_2O (condensate, ml or gm): 290.6
H_2O (silica, g): 17.4
Actual Moisture (%): 18.22

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
Pitot Leak Check: ☑Pass ☐Fail
Meter Box ID. No: 61-6
Meter ΔH@: 1.66200
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) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			522.410						
1-01	5.0	0.36	0.77	524.940	459	68	69	0.60	2.53	101.2
1-02	10.0	0.35	0.75	527.420	456	69	68	0.59	2.48	100.5
1-03	15.0	0.35	0.75	529.930	458	71	69	0.59	2.51	101.5
1-04	20.0	0.36	0.77	532.460	459	72	68	0.60	2.53	100.9
1-05	25.0	0.48	1.00	535.390	464	74	69	0.69	2.93	101.3
1-06	30.0	0.49	1.00	538.270	477	75	69	0.70	2.88	99.1
1-07	35.0	0.59	1.30	541.510	480	75	69	0.77	3.24	101.9
1-08	40.0	0.57	1.20	544.610	474	76	69	0.75	3.10	98.7
1-09	45.0	0.51	1.10	547.590	470	76	69	0.71	2.98	100.1
1-10	50.0	0.47	1.00	550.500	470	76	70	0.69	2.91	101.7
1-11	55.0	0.45	0.96	553.310	469	76	70	0.67	2.81	100.3
1-12	60.0	0.46	0.98	556.180	468	76	70	0.68	2.87	101.3
LEAK CHECK	60.0			556.400						
2-01	65.0	0.50	1.10	559.200	473	73	70	0.71	2.80	95.3
2-02	70.0	0.48	1.00	562.190	471	74	70	0.69	2.99	103.6
2-03	75.0	0.48	1.00	565.180	472	76	71	0.69	2.99	103.4
2-04	80.0	0.47	1.00	567.980	468	77	71	0.69	2.80	97.6
2-05	85.0	0.50	1.10	570.930	472	77	72	0.71	2.95	99.8
2-06	90.0	0.41	0.87	573.660	482	76	72	0.64	2.73	102.6
2-07	95.0	0.38	0.81	576.270	473	76	71	0.62	2.61	101.5
2-08	100.0	0.39	0.83	578.890	464	77	72	0.62	2.62	99.9
2-09	105.0	0.35	0.75	581.400	466	78	72	0.59	2.51	101.0
2-10	110.0	0.30	0.64	583.710	469	77	72	0.55	2.31	100.6
2-11	115.0	0.31	0.66	586.050	469	77	72	0.56	2.34	100.3
2-12	120.0	0.31	0.66	588.415	475	78	73	0.56	2.37	101.5
Final	120.0		0.91667	65.78500	469.08333	72.64583		0.65281	65.78500	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6528	0.9167	65.7850	469.0830	72.6458				
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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Field Data Printout

Test Method: USEPA Method 29
Analyte: Trace Metals

Location: Unit 3 SDA Inlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: D. Luckhard .568
Probe Operator: P. Bihun 505
Test Date: 3/22/10
Start Time: 14:27
Stop Time: 16:39
Leak Rate Before: 0.005 cfm @ 16 "Hg
Leak Rate After: 0.005 cfm @ 12 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.3
O_2 (dry volume %): 8.14
CO_2 (dry volume %): 11.19
N_2+CO (dry volume %): 80.67
H_2O (condensate, ml or gm): 283.9
H_2O (silica, g): 13.2
Actual Moisture (%): 17.72

Nozzle ID No: 270-2
Nozzle Diameter (D_n): 0.270
Probe ID No: 67-10-3
Pitot C_p: 0.8250
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) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			589.015						
2-01	5.0	0.47	1.00	591.920	474	76	75	0.69	2.90	100.8
2-02	10.0	0.40	0.85	594.590	468	77	75	0.63	2.67	99.9
2-03	15.0	0.47	1.00	597.500	473	79	76	0.69	2.91	100.5
2-04	20.0	0.47	1.00	600.410	470	80	76	0.69	2.91	100.3
2-05	25.0	0.47	1.00	603.290	476	81	77	0.69	2.88	99.4
2-06	30.0	0.36	0.77	605.820	478	80	77	0.60	2.53	99.9
2-07	35.0	0.41	0.88	608.550	474	81	77	0.64	2.73	100.7
2-08	40.0	0.35	0.75	611.090	474	83	78	0.59	2.54	101.1
2-09	45.0	0.37	0.80	613.700	473	83	78	0.61	2.61	101.0
2-10	50.0	0.30	0.65	616.080	472	84	78	0.55	2.38	102.1
2-11	55.0	0.30	0.65	618.420	472	84	79	0.55	2.34	100.3
2-12	60.0	0.29	0.62	620.705	473	84	79	0.54	2.29	99.6
LEAK CHECK	60.0			620.920						
1-01	65.0	0.68	1.50	624.420	460	82	80	0.82	3.50	99.3
1-02	70.0	0.44	0.95	627.290	460	83	79	0.66	2.87	101.1
1-03	75.0	0.35	0.75	629.850	466	83	79	0.59	2.56	101.4
1-04	80.0	0.37	0.80	632.430	465	82	79	0.61	2.58	99.4
1-05	85.0	0.43	0.92	635.230	477	83	79	0.66	2.80	100.7
1-06	90.0	0.41	0.88	637.980	476	84	79	0.64	2.75	101.1
1-07	95.0	0.53	1.10	640.950	476	85	79	0.73	2.97	96.0
1-08	100.0	0.54	1.20	644.080	475	83	80	0.73	3.13	100.3
1-09	105.0	0.48	1.00	647.040	472	85	81	0.69	2.96	100.1
1-10	110.0	0.47	1.00	649.960	467	87	81	0.69	2.92	99.3
1-11	115.0	0.48	1.00	652.900	468	86	81	0.69	2.94	99.1
1-12	120.0	0.48	1.00	655.840	469	86	81	0.69	2.94	99.2
Final	120.0		0.91958	66.61000	471.16667	80.50000		0.65249	66.61000	
24 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6525	0.9196	66.6100	471.1667	80.5000				
		☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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USEPA Method 3 Laboratory Data

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

Test Method: USEPA Method 29
Analyte: Trace Metals

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:		10.47000		9.19000	80.34000	30.04280	1.11843	☑ 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:		11.10000		8.19000	80.71000	30.10360	1.14505	☑ 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:		11.19000		8.14000	80.67000	30.11600	1.14030	☑ 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 SDA Inlet
Client: Wheelabrator South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 29
Analyte: Trace Metals
Analyst: R. Vicere
Analyst Emp No: 563

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	821.9	440.3	381.6
Impinger 2	5%HNO3/10%H2O2	555.0	538.7	16.3
Impinger 3	5%HNO3/10%H2O2	542.6	539.4	3.2
Impinger 4	Empty	443.8	442.4	1.4
Impinger 5	4%KMnO4/10%H2SO4	536.8	537.2	-0.4
Impinger 6	4%KMnO4/10%H2SO4	541.3	540.6	0.7
Impinger 7	Silica Gel	783.8	768.0	15.8
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
402.8	Liquid (gm)		
-100.0	less rinse (gm)		
302.8	Net Liquid (gm)	302.8	☑QA/QC OK
+ 15.8	Silica Gel (gm)	15.8	☑QA/QC OK
318.6	Total Vlc (gm)	318.6	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	808.0	439.5	368.5
Impinger 2	5%HNO3/10%H2O2	567.3	550.4	16.9
Impinger 3	5%HNO3/10%H2O2	584.8	581.0	3.8
Impinger 4	Empty	440.0	438.8	1.2
Impinger 5	4%KMnO4/10%H2SO4	532.5	533.4	-0.9
Impinger 6	4%KMnO4/10%H2SO4	542.3	541.2	1.1
Impinger 7	Silica Gel	719.0	701.6	17.4
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
390.6	Liquid (gm)		
-100.0	less rinse (gm)		
290.6	Net Liquid (gm)	290.6	☑QA/QC OK
+ 17.4	Silica Gel (gm)	17.4	☑QA/QC OK
308.0	Total Vlc (gm)	308.0	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	Empty	807.3	444.7	362.6
Impinger 2	5%HNO3/10%H2O2	559.6	544.5	15.1
Impinger 3	5%HNO3/10%H2O2	547.8	543.0	4.8
Impinger 4	Empty	447.6	446.8	0.8
Impinger 5	4%KMnO4/10%H2SO4	540.2	539.1	1.1
Impinger 6	4%KMnO4/10%H2SO4	543.0	543.5	-0.5
Impinger 7	Silica Gel	796.4	783.2	13.2
Impinger 8				

Rinse: 100.0 (ml or gm)

		Field Data Check	
383.9	Liquid (gm)		
-100.0	less rinse (gm)		
283.9	Net Liquid (gm)	283.9	☑QA/QC OK
+ 13.2	Silica Gel (gm)	13.2	☑QA/QC OK
297.1	Total Vlc (gm)	297.1	☑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 3 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator: B. Arnold 770
Probe Operator:
Test Date: 3/23/10
Start Time: 12:41
Stop Time: 13:54
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 7 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.2
O_2 (dry volume %): 9.75
CO_2 (dry volume %): 9.58
N_2+CO (dry volume %): 80.67
H_2O (condensate, ml or gm): 207.1
H_2O (silica, g): 10.4
Actual Moisture (%): 22.30

Nozzle ID No: 0.268-1
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: 85-4
Meter ΔH@: 1.77230
Meter Y_d: 1.00850

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			956.735						
1-01	2.5	0.39	0.96	958.230	299	79	79	0.62	1.50	113.2*
1-02	5.0	0.45	1.10	959.660	297	80	79	0.67	1.43	100.6
1-03	7.5	0.37	0.91	960.930	296	81	79	0.61	1.27	98.4
1-04	10.0	0.42	1.00	962.320	297	84	79	0.65	1.39	100.9
1-05	12.5	0.36	0.88	963.650	298	85	79	0.60	1.33	104.2
LEAK CHECK	12.5			963.710						
2-01	15.0	0.47	1.20	965.230	296	84	80	0.69	1.52	104.2
2-02	17.5	0.44	1.10	966.710	298	87	80	0.66	1.48	104.6
2-03	20.0	0.50	1.20	968.260	297	88	80	0.71	1.55	102.7
2-04	22.5	0.46	1.10	969.770	299	90	81	0.68	1.51	104.1
2-05	25.0	0.45	1.10	971.200	299	91	81	0.67	1.43	99.6
LEAK CHECK	25.0			971.390						
3-01	27.5	0.34	0.83	972.560	298	90	83	0.58	1.17	93.5
3-02	30.0	0.46	1.10	974.030	298	90	83	0.68	1.47	101.1
3-03	32.5	0.42	1.00	975.450	299	93	83	0.65	1.42	102.0
3-04	35.0	0.37	0.91	976.790	300	93	84	0.61	1.34	102.5
3-05	37.5	0.37	0.91	978.130	298	93	86	0.61	1.34	102.1
LEAK CHECK	37.5			978.900						
4-01	40.0	0.48	1.20	979.710	296	91	84	0.69	0.81	54.4*
4-02	42.5	0.52	1.30	981.330	297	93	84	0.72	1.62	104.4
4-03	45.0	0.49	1.20	982.880	297	93	85	0.70	1.55	102.8
4-04	47.5	0.48	1.20	984.430	297	94	85	0.69	1.55	103.7
4-05	50.0	0.44	1.10	985.930	291	94	85	0.66	1.50	104.4
LEAK CHECK	50.0			985.980						
5-01	52.5	0.70	1.70	987.790	296	91	85	0.84	1.81	100.6
5-02	55.0	0.56	1.40	989.450	296	93	85	0.75	1.66	102.9
5-03	57.5	0.45	1.10	990.960	296	94	85	0.67	1.51	104.3
5-04	60.0	0.48	1.20	992.500	295	94	85	0.69	1.54	102.9
5-05	62.5	0.48	1.20	994.065	289	94	85	0.69	1.57	104.2
Final	62.5		1.11600	36.26000	296.76000	86.08000		0.67177	36.26000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6718	1.1160	36.2600	296.7600	86.0600		2RSD = 10.7%		
		☑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 3 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator: B. Arnold 770
Test Date: 3/23/10
Start Time: 14:31
Stop Time: 15:39
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.2
O_2 (dry volume %): 9.93
CO_2 (dry volume %): 9.62
N_2+CO (dry volume %): 80.45
H_2O (condensate, ml or gm): 207.5
H_2O (silica, g): 9.5
Actual Moisture (%): 21.55

Nozzle ID No: 0.268-1
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: 85-4
Meter ΔH@: 1.77230
Meter Y_d: 1.00850

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			994.670						
5-01	2.5	0.52	1.20	995.960	292	84	84	0.72	1.29	82.9*
5-02	5.0	0.42	1.00	997.210	294	84	84	0.65	1.25	89.4*
5-03	7.5	0.46	1.20	998.680	292	86	85	0.68	1.47	100.1
5-04	10.0	0.50	1.20	1000.220	297	87	84	0.71	1.54	100.9
1-05	12.5	0.60	1.50	1001.930	298	89	85	0.77	1.71	102.2
LEAK CHECK	12.5			1002.080						
4-01	15.0	0.74	1.80	1003.830	298	88	84	0.86	1.75	94.4
4-02	17.5	0.65	1.60	1005.680	299	89	84	0.81	1.85	106.4
4-03	20.0	0.51	1.20	1007.130	297	90	85	0.71	1.45	93.7
4-04	22.5	0.52	1.30	1008.740	296	91	84	0.72	1.61	103.0
4-05	25.0	0.43	1.00	1010.300	297	90	85	0.66	1.56	109.8
LEAK CHECK	25.0			1010.490						
3-01	27.5	0.56	1.40	1012.070	296	90	85	0.75	1.58	97.5
3-02	30.0	0.53	1.30	1013.780	296	89	84	0.73	1.71	108.6
3-03	32.5	0.52	1.30	1015.370	297	90	85	0.72	1.59	101.8
3-04	35.0	0.41	1.00	1016.700	299	90	85	0.64	1.33	96.0
3-05	37.5	0.41	1.00	1018.150	296	90	85	0.64	1.45	104.4
LEAK CHECK	37.5			1018.220						
2-01	40.0	0.53	1.20	1019.720	295	90	85	0.73	1.50	95.0
2-02	42.5	0.37	0.91	1021.070	295	87	85	0.61	1.35	102.5
2-03	45.0	0.40	0.98	1022.570	296	89	85	0.63	1.50	109.5
2-04	47.5	0.40	0.98	1023.980	296	89	85	0.63	1.41	102.9
2-05	50.0	0.48	1.20	1025.450	297	89	85	0.69	1.47	98.1
LEAK CHECK	50.0			1025.540						
1-01	52.5	0.40	0.98	1026.940	298	89	85	0.63	1.40	102.3
1-02	55.0	0.48	1.20	1028.580	295	88	85	0.69	1.64	109.4
1-03	57.5	0.41	1.00	1029.870	298	89	85	0.64	1.29	93.1
1-04	60.0	0.43	1.10	1031.420	298	89	85	0.66	1.55	109.3
1-05	62.5	0.40	0.98	1033.020	297	90	85	0.63	1.60	116.7*
Final	62.5		1.18120	37.85000	296.36000	86.68000		0.69250	37.85000	
20 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6925	1.1812	37.8500	296.3600	86.6800		2RSD = 12.3%		
		☑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 3 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator: B. Arnold 770
Test Date: 3/23/10
Start Time: 15:54
Stop Time: 17:02
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 7 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.2
O_2 (dry volume %): 9.40
CO_2 (dry volume %): 10.19
N_2+CO (dry volume %): 80.41
H_2O (condensate, ml or gm): 201.2
H_2O (silica, g): 8.5
Actual Moisture (%): 21.79

Nozzle ID No: 0.268-1
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: 85-4
Meter ΔH@: 1.77230
Meter Y_d: 1.00850

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) (ft^3)	Isokinetics (calculated) (%)
	0.0			33.290						
1-01	2.5	0.35	0.86	35.570	292	89	84	0.59	2.28	178.2*
1-02	5.0	0.37	0.90	36.800	296	86	84	0.61	1.23	94.0
1-03	7.5	0.36	0.88	38.120	296	87	83	0.60	1.32	102.3
1-04	10.0	0.43	1.00	39.490	296	87	83	0.66	1.37	97.1
1-05	12.5	0.35	0.86	40.810	297	85	83	0.59	1.32	104.0
LEAK CHECK	12.5			40.900						
2-01	15.0	0.41	1.00	42.310	298	87	83	0.64	1.41	102.5
2-02	17.5	0.43	1.00	43.860	296	86	83	0.66	1.55	110.0*
2-03	20.0	0.41	1.00	45.210	297	89	88	0.64	1.35	97.5
2-04	22.5	0.41	1.00	46.620	297	89	84	0.64	1.41	102.2
2-05	25.0	0.38	0.93	47.970	298	90	84	0.62	1.35	101.6
LEAK CHECK	25.0			48.060						
3-01	27.5	0.38	0.93	49.430	297	90	84	0.62	1.37	103.0
3-02	30.0	0.46	1.10	50.980	297	86	84	0.68	1.55	106.4
3-03	32.5	0.44	1.10	52.320	298	88	84	0.66	1.34	93.9
3-04	35.0	0.41	1.00	53.720	298	89	85	0.64	1.40	101.4
3-05	37.5	0.35	0.86	55.060	297	89	84	0.59	1.34	105.1
LEAK CHECK	37.5			55.140						
4-01	40.0	0.47	1.20	56.770	298	88	83	0.69	1.63	110.7*
4-02	42.5	0.45	1.10	58.110	295	86	83	0.67	1.34	92.9
4-03	45.0	0.47	1.20	59.620	298	87	83	0.69	1.51	102.6
4-04	47.5	0.46	1.10	61.090	298	87	83	0.68	1.47	100.9
4-05	50.0	0.44	1.10	62.550	298	88	83	0.66	1.46	102.4
LEAK CHECK	50.0			62.620						
5-01	52.5	0.44	1.10	64.070	298	86	83	0.66	1.45	101.9
5-02	55.0	0.35	0.86	65.370	294	86	83	0.59	1.30	102.1
5-03	57.5	0.43	1.00	66.880	292	87	83	0.66	1.51	106.8
5-04	60.0	0.46	1.10	68.200	292	88	83	0.68	1.32	90.2
5-05	62.5	0.43	1.00	69.610	297	88	83	0.66	1.41	100.0
Final	62.5		1.00720	35.99000	296.40000	85.56000		0.64234	35.99000	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6423	1.0072	35.9900	296.4000	85.5600		2RSD = 6.5%		
		☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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QA/QC _____
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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 13B
Analyte: Total Fluorides

Location: Unit 3 FF Outlet
Client: Wheelabrator South 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:		9.58000		9.75000	80.67000	29.92280	1.16388	☑ 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		9.93000	80.45000	29.93640	1.14033	☑ 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:		10.19000		9.40000	80.41000	30.00640	1.12856	☑ 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 South Broward, Inc.
Project No: 10955

Test Method: USEPA Method 13B
Analyte: Total Fluorides
Analyst: B. Wiltse
Analyst Emp No: 561

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	685.5	549.2	136.3
Impinger 2	DI Water	623.7	566.1	57.6
Impinger 3	Empty	472.5	459.3	13.2
Impinger 4	Silica Gel	817.5	807.1	10.4
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
207.1	Liquid (gm)		
0.0	less rinse (gm)		
207.1	Net Liquid (gm)	207.1	☑QA/QC OK
+ 10.4	Silica Gel (gm)	10.4	☑QA/QC OK
217.5	Total Vic (gm)	217.5	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	687.7	540.6	127.1
Impinger 2	DI Water	610.6	543.6	67.0
Impinger 3	Empty	450.3	436.9	13.4
Impinger 4	Silica Gel	791.9	782.4	9.5
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
207.5	Liquid (gm)		
0.0	less rinse (gm)		
207.5	Net Liquid (gm)	207.5	☑QA/QC OK
+ 9.5	Silica Gel (gm)	9.5	☑QA/QC OK
217.0	Total Vic (gm)	217.0	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	694.6	539.0	155.6
Impinger 2	DI Water	586.6	547.7	39.1
Impinger 3	Empty	458.4	451.9	6.5
Impinger 4	Silica Gel	760.6	752.1	8.5
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
201.2	Liquid (gm)		
0.0	less rinse (gm)		
201.2	Net Liquid (gm)	201.2	☑QA/QC OK
+ 8.5	Silica Gel (gm)	8.5	☑QA/QC OK
209.7	Total Vic (gm)	209.7	☑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 Vic (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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/24/10
Start Time: 07:45
Stop Time: 08:45
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.0
O_2 (dry volume %): 9.61
CO_2 (dry volume %): 9.75
N_2+CO (dry volume %): 80.64
H_2O (condensate, ml or gm): 226.5
H_2O (silica, g): 10.4
Actual Moisture (%): 21.71

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: 66-14
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 $T_{m\text{-}in}$ (°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			616.135						
3-01	5.0		1.50	619.710	296	60	59		3.58	
3-01	10.0		1.50	622.950	295	65	59		3.24	
3-01	15.0		1.50	626.480	295	69	60		3.53	
3-01	20.0		1.50	629.840	296	71	61		3.36	
3-01	25.0		1.50	633.310	294	72	62		3.47	
3-01	30.0		1.50	636.720	294	74	63		3.41	
3-01	35.0		1.50	640.270	294	74	63		3.55	
3-01	40.0		1.50	643.670	295	76	64		3.40	
3-01	45.0		1.50	647.070	295	76	65		3.40	
3-01	50.0		1.50	650.400	295	77	66		3.33	
3-01	55.0		1.50	653.980	295	77	67		3.58	
3-01	60.0		1.50	656.350	295	75	67		2.37	
Final	60.0		1.50000	40.21500	294.91667	67.58333		0.00000	40.21500	
3 points sampled		Sq.RtΔP								
QC-Check: Field Averages			1.5000	40.2150	294.9167	67.5830				
		☐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 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/24/10
Start Time: 09:16
Stop Time: 10:16
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 6 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.0
O_2 (dry volume %): 9.07
CO_2 (dry volume %): 10.29
N_2+CO (dry volume %): 80.64
H_2O (condensate, ml or gm): 222.5
H_2O (silica, g): 14.3
Actual Moisture (%): 21.48

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: 66-14
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 $T_{m\text{-}in}$ (°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		1.50	658.275						
3-01	5.0		1.50	661.740	296	72	70		3.47	
3-01	10.0		1.50	665.180	296	76	70		3.44	
3-01	15.0		1.50	668.760	295	80	71		3.58	
3-01	20.0		1.50	672.020	295	82	72		3.26	
3-01	25.0		1.50	675.580	295	83	72		3.56	
3-01	30.0		1.50	678.980	295	84	73		3.40	
3-01	35.0		1.50	682.470	296	85	75		3.49	
3-01	40.0		1.50	686.070	295	85	75		3.60	
3-01	45.0		1.50	689.450	295	86	76		3.38	
3-01	50.0		1.50	692.900	297	87	76		3.45	
3-01	55.0		1.50	696.350	295	87	77		3.45	
3-01	60.0		1.50	699.845	296	88	78		3.50	
Final	60.0		1.50000	41.57000	295.50000	78.33333		0.00000	41.57000	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.5700	295.5000	78.3333				
		☐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 South Broward, Inc.
Project No: 10955
Source Area (ft²): 64.00000
Meter Operator:
Probe Operator:
Test Date: 3/24/10
Start Time: 10:54
Stop Time: 11:54
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 10 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.0
O_2 (dry volume %): 9.08
CO_2 (dry volume %): 10.30
N_2+CO (dry volume %): 80.62
H_2O (condensate, ml or gm): 236.1
H_2O (silica, g): 8.6
Actual Moisture (%): 22.36

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: 66-14
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 $T_{m\text{-}in}$ (°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			701.355						
3-01	5.0		1.50	705.370	295	83	80		4.01	
3-01	10.0		1.50	708.810	296	87	80		3.44	
3-01	15.0		1.50	712.190	296	90	81		3.38	
3-01	20.0		1.50	715.560	296	92	82		3.37	
3-01	25.0		1.50	718.950	295	93	83		3.39	
3-01	30.0		1.50	722.350	295	93	84		3.40	
3-01	35.0		1.50	725.760	295	93	84		3.41	
3-01	40.0		1.50	729.210	295	93	84		3.45	
3-01	45.0		1.50	732.610	295	93	84		3.40	
3-01	50.0		1.50	736.010	295	93	85		3.40	
3-01	55.0		1.50	739.430	296	94	85		3.42	
3-01	60.0		1.50	742.840	295	95	86		3.41	
Final	60.0		1.50000	41.48500	295.33333	87.37500		0.00000	41.48500	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.4850	295.3333	87.3750				
		☐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 3 FF Outlet
Client: Wheelabrator South 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:		9.75000		9.61000	80.64000	29.94440	1.15795	☑ 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:		10.29000		9.07000	80.64000	30.00920	1.14966	☑ 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:		10.30000		9.08000	80.62000	30.01120	1.14757	☑ 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 FF Outlet
Client: Wheelabrator South 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	538.7	468.7	70.0
Impinger 2	100 ml 0.1N H2SO4	683.8	560.9	122.9
Impinger 3	100 ml 0.1N H2SO4	587.1	558.4	28.7
Impinger 4	Empty	460.9	456.0	4.9
Impinger 5	Silica Gel	769.6	759.2	10.4
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
226.5	Liquid (gm)		
0.0	less rinse (gm)		
226.5	Net Liquid (gm)	226.5	☑QA/QC OK
+ 10.4	Silica Gel (gm)	10.4	☑QA/QC OK
236.9	Total Vlc (gm)	236.9	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	554.4	478.8	75.6
Impinger 2	100 ml 0.1N H2SO4	745.5	646.2	99.3
Impinger 3	100 ml 0.1N H2SO4	569.4	535.0	34.4
Impinger 4	Empty	464.9	451.7	13.2
Impinger 5	Silica Gel	791.4	777.1	14.3
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
222.5	Liquid (gm)		
0.0	less rinse (gm)		
222.5	Net Liquid (gm)	222.5	☑QA/QC OK
+ 14.3	Silica Gel (gm)	14.3	☑QA/QC OK
236.8	Total Vlc (gm)	236.8	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	547.1	464.5	82.6
Impinger 2	100 ml 0.1N H2SO4	676.1	555.6	120.5
Impinger 3	100 ml 0.1N H2SO4	582.5	554.7	27.8
Impinger 4	Empty	460.7	455.5	5.2
Impinger 5	Silica Gel	771.2	762.6	8.6
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
236.1	Liquid (gm)		
0.0	less rinse (gm)		
236.1	Net Liquid (gm)	236.1	☑QA/QC OK
+ 8.6	Silica Gel (gm)	8.6	☑QA/QC OK
244.7	Total Vlc (gm)	244.7	☑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 SDA Inlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/24/10
Start Time: 07:45
Stop Time: 08:45
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 18 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.1
O_2 (dry volume %): 8.98
CO_2 (dry volume %): 10.36
N_2+CO (dry volume %): 80.66
H_2O (condensate, ml or gm): 152.6
H_2O (silica, g): 13.8
Actual Moisture (%): 17.84

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: 61-6
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) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			657.195						
1-01	5.0		1.20	660.180	469	64	63		2.98	
1-01	10.0		1.20	663.210	466	65	62		3.03	
1-01	15.0		1.20	664.940	471	67	63		1.73	
1-01	20.0		1.20	668.950	464	68	63		4.01	
1-01	25.0		1.20	672.010	464	67	63		3.06	
1-01	30.0		1.20	675.000	464	67	63		2.99	
1-01	35.0		1.20	678.790	461	68	63		3.79	
1-01	40.0		1.20	681.020	463	68	63		2.23	
1-01	45.0		1.20	684.020	464	68	64		3.00	
1-01	50.0		1.20	687.040	466	69	64		3.02	
1-01	55.0		1.20	690.080	465	69	65		3.04	
1-01	60.0		1.20	693.135	465	69	65		3.05	
Final	60.0		1.20000	35.94000	465.16667	65.41667		0.00000	35.94000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.2000	35.9400	465.1667	65.4167				
		☐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: 2
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/24/10
Start Time: 09:16
Stop Time: 10:16
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.003 cfm @ 21 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.1
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): 159.0
H_2O (silica, g): 12.4
Actual Moisture (%): 18.21

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: 61-6
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) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0		1.20	694.885	463	69	67		3.01	
1-01	5.0		1.20	697.890	463	69	67		3.01	
1-01	10.0		1.20	700.920	466	71	68		3.03	
1-01	15.0		1.20	703.980	469	73	69		3.06	
1-01	20.0		1.20	707.020	464	74	69		3.04	
1-01	25.0		1.20	710.050	462	74	69		3.03	
1-01	30.0		1.20	713.090	463	74	70		3.04	
1-01	35.0		1.20	716.160	465	74	70		3.07	
1-01	40.0		1.20	719.180	463	74	70		3.02	
1-01	45.0		1.20	722.270	461	75	70		3.09	
1-01	50.0		1.20	725.320	462	75	71		3.05	
1-01	55.0		1.20	728.370	466	75	71		3.05	
1-01	60.0		1.10	731.410	466	74	71		3.04	
Final	60.0		1.19167	36.52500	464.16667	71.54167		0.00000	36.52500	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.1917	36.5250	464.1667	71.5417				
		☐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: 3
Client: Wheelabrator South Broward, Inc.
Project No: 10955
Source Area (ft²): 60.13205
Meter Operator: B. Arnold 770
Probe Operator: B. Arnold 770
Test Date: 3/24/10
Start Time: 10:54
Stop Time: 11:54
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.004 cfm @ 20 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -1.2
O_2 (dry volume %): 8.03
CO_2 (dry volume %): 11.26
N_2+CO (dry volume %): 80.71
H_2O (condensate, ml or gm): 167.1
H_2O (silica, g): 10.9
Actual Moisture (%): 18.67

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: 61-6
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) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			731.680						
1-01	5.0		1.20	734.760	470	72	72		3.08	
1-01	10.0		1.20	737.860	468	73	72		3.10	
1-01	15.0		1.20	740.940	466	75	72		3.08	
1-01	20.0		1.20	744.004	466	77	73		3.06	
1-01	25.0		1.20	747.130	466	78	73		3.13	
1-01	30.0		1.20	750.180	472	79	74		3.05	
1-01	35.0		1.20	753.280	471	77	73		3.10	
1-01	40.0		1.20	756.360	470	78	74		3.08	
1-01	45.0		1.20	759.490	468	78	74		3.13	
1-01	50.0		1.20	762.570	468	79	75		3.08	
1-01	55.0		1.20	765.640	466	78	75		3.07	
1-01	60.0		1.20	768.720	465	78	75		3.08	
Final	60.0		1.20000	37.04000	468.00000	75.16667		0.00000	37.04000	
1 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.2000	37.0400	468.0000	75.1667				
		☐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 3 SDA Inlet
Client: Wheelabrator South 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:		10.36000		8.98000	80.66000	30.01680	1.15058	☑ 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:		11.16000		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: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		11.26000		8.03000	80.71000	30.12280	1.14298	☑ 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
Client: Wheelabrator South 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	507.0	472.5	34.5
Impinger 2	100 ml 0.1N H2SO4	628.3	539.6	88.7
Impinger 3	100 ml 0.1N H2SO4	578.9	554.0	24.9
Impinger 4	Empty	435.4	430.9	4.5
Impinger 5	Silica Gel	754.3	740.5	13.8
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
152.6	Liquid (gm)		
0.0	less rinse (gm)		
152.6	Net Liquid (gm)	152.6	☑QA/QC OK
+ 13.8	Silica Gel (gm)	13.8	☑QA/QC OK
166.4	Total Vlc (gm)	166.4	☑QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	504.6	454.7	49.9
Impinger 2	100 ml 0.1N H2SO4	625.8	543.0	82.8
Impinger 3	100 ml 0.1N H2SO4	564.2	541.7	22.5
Impinger 4	Empty	468.0	464.2	3.8
Impinger 5	Silica Gel	731.3	718.9	12.4
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
159.0	Liquid (gm)		
0.0	less rinse (gm)		
159.0	Net Liquid (gm)	159.0	☑QA/QC OK
+ 12.4	Silica Gel (gm)	12.4	☑QA/QC OK
171.4	Total Vlc (gm)	171.4	☑QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	50 ml 0.1N H2SO4	522.1	471.4	50.7
Impinger 2	100 ml 0.1N H2SO4	626.3	537.0	89.3
Impinger 3	100 ml 0.1N H2SO4	572.2	552.4	19.8
Impinger 4	Empty	437.4	430.1	7.3
Impinger 5	Silica Gel	758.1	747.2	10.9
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
167.1	Liquid (gm)		
0.0	less rinse (gm)		
167.1	Net Liquid (gm)	167.1	☑QA/QC OK
+ 10.9	Silica Gel (gm)	10.9	☑QA/QC OK
178.0	Total Vlc (gm)	178.0	☑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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QA/QC _____
Date _____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 22, 2010
Start Time 14:01
Stop time 14:25
IGS Bag Analysis

		Channel 1 CO2 %dv	Channel 2 O2 %dv
Calibration Checks			
C_{oi}	Initial zero	-0.012	-0.010
C_{ui}	Initial upscale	5.938	14.100
C_{of}	Final zero	0.033	-0.016
C_{uf}	Final upscale	5.928	14.113
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U1 R1 M26A In**	
C_{Avg}	Average conc.	10.90	8.45
C_{Gas}	**Bias adjusted**	**10.87**	**8.45**
Analyzer Averages (concentrations)		**U1 R2 M26A In**	
C_{Avg}	Average conc.	10.86	8.59
C_{Gas}	**Bias adjusted**	**10.82**	**8.59**
Analyzer Averages (concentrations)		**U1 R3 M26A In**	
C_{Avg}	Average conc.	11.43	7.92
C_{Gas}	**Bias adjusted**	**11.39**	**7.92**
Analyzer Averages (concentrations)		**U1 R1 M26A Out**	
C_{Avg}	Average conc.	9.27	10.02
C_{Gas}	**Bias adjusted**	**9.24**	**10.02**
Analyzer Averages (concentrations)		**U1 R2 M26A Out**	
C_{Avg}	Average conc.	9.99	9.52
C_{Gas}	**Bias adjusted**	**9.96**	**9.52**
Analyzer Averages (concentrations)		**U1 R3 M26A Out**	
C_{Avg}	Average conc.	10.27	9.19
C_{Gas}	**Bias adjusted**	**10.24**	**9.19**
Analyzer Averages (concentrations)		**U3 R1 M29 In**	
C_{Avg}	Average conc.	10.50	8.91
C_{Gas}	**Bias adjusted**	**10.47**	**8.91**
Analyzer Averages (concentrations)		**U3 R1 M5/29**	
C_{Avg}	Average conc.	9.45	10.02
C_{Gas}	**Bias adjusted**	**9.42**	**10.02**
Analyzer Averages (concentrations)		**U3 R2 M5/29**	
C_{Avg}	Average conc.	9.81	9.70
C_{Gas}	**Bias adjusted**	**9.78**	**9.70**

Clock Time (at end of sample period)

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14:02:03	0.016	0.026
14:02:18	-0.001	0.001
14:02:33	-0.012	-0.010

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QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 22, 2010
Start Time 14:01
Stop time 14:25
IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
14:02:18	-0.001	0.001	
14:02:33	-0.012	-0.010	zero
14:02:48	0.028	5.408	
14:03:03	3.901	15.064	
14:03:18	5.847	14.074	
14:03:33	5.923	14.079	
14:03:48	5.917	14.094	
14:04:03	5.938	14.100	span
14:04:18	4.657	16.371	
14:04:33	3.798	15.521	
14:04:48	12.615	7.044	
14:05:03	13.974	5.971	
14:05:18	14.010	5.976	
14:05:33	14.027	5.980	linearity
14:05:48	12.978	8.590	
14:06:03	1.109	20.404	
14:06:18	3.492	15.655	
14:06:33	10.747	8.553	
14:06:48	10.886	8.470	
14:07:03	10.899	8.452	U1 R1 M26A In
14:07:18	10.694	9.497	
14:07:33	1.578	20.135	
14:07:48	2.638	16.743	
14:08:03	10.606	8.730	
14:08:18	10.835	8.606	
14:08:33	10.848	8.594	
14:08:48	10.856	8.590	U1 R2 M26A In
14:09:03	10.861	8.655	
14:09:18	3.286	18.870	
14:09:33	0.247	20.550	
14:09:48	9.121	9.385	
14:10:03	11.395	7.941	
14:10:18	11.428	7.917	U1 R3 M26A In
14:10:33	11.384	8.476	
14:10:48	2.257	19.761	
14:11:03	0.181	20.994	
14:11:18	0.146	21.020	
14:11:33	5.262	13.534	
14:11:48	9.238	10.021	
14:12:03	9.268	10.024	U1 R1 M26A Out
14:12:18	7.936	12.821	
14:12:33	0.497	20.791	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 22, 2010
Start Time 14:01
Stop time 14:25

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
14:12:48	1.551	18.219	
14:13:03	9.598	9.738	
14:13:18	9.978	9.527	
14:13:33	9.993	9.516	U1 R2 M26A Out
14:13:48	10.014	9.508	
14:14:03	5.136	16.643	
14:14:18	0.234	20.723	
14:14:33	7.969	10.748	
14:14:48	10.257	9.243	
14:15:03	10.273	9.205	
14:15:18	10.275	9.191	U1 R3 M26A Out
14:15:33	10.283	9.185	
14:15:48	4.354	17.535	
14:16:03	0.202	20.885	
14:16:18	0.146	20.918	
14:16:33	0.131	20.943	
14:16:48	0.706	19.332	
14:17:03	9.620	9.416	
14:17:18	10.482	8.832	
14:17:33	10.503	8.910	U3 R1 M29 In
14:17:48	10.515	8.905	
14:18:03	7.862	13.420	
14:18:18	1.007	19.973	
14:18:33	0.163	20.910	
14:18:48	6.063	12.665	
14:19:03	9.315	10.032	
14:19:18	9.438	10.026	
14:19:33	9.447	10.022	U3 R1 M5/29
14:19:48	9.457	10.014	
14:20:03	7.369	13.734	
14:20:18	0.354	20.774	
14:20:33	2.381	17.090	
14:20:48	9.577	9.839	
14:21:03	9.798	9.716	
14:21:18	9.814	9.705	U3 R2 M5/29
14:21:33	9.819	9.699	
14:21:48	4.904	16.802	
14:22:03	0.211	20.871	
14:22:18	1.806	18.172	
14:22:33	5.821	14.166	
14:22:48	5.920	14.115	
14:23:03	5.928	14.113	span
14:23:18	5.056	15.882	
14:23:33	0.310	8.806	
14:23:48	0.024	0.053	
14:24:03	-0.037	-0.086	
14:24:18	-1.693	-0.048	
14:24:33	0.033	-0.016	zero
14:24:48	0.060	11.128	
14:25:03	0.104	20.800	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 22, 2010
Start Time 17:16
Stop time 17:49
IGS Bag Analysis

		Channel 1 CO2 %dv	Channel 2 O2 %dv
Calibration Checks			
C_{oi}	Initial zero	-0.019	0.000
C_{ui}	Initial upscale	5.907	14.079
C_{of}	Final zero	0.029	0.039
C_{uf}	Final upscale	5.880	14.088
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.	9.95	9.50
C_{Gas}	**Bias adjusted**	**9.98**	**9.50**
Analyzer Averages (concentrations)		**U2 R1 M23**	
C_{Avg}	Average conc.	10.12	9.21
C_{Gas}	**Bias adjusted**	**10.16**	**9.21**
Analyzer Averages (concentrations)		**U3 R2 M29 In**	
C_{Avg}	Average conc.	11.07	8.19
C_{Gas}	**Bias adjusted**	**11.10**	**8.19**
Analyzer Averages (concentrations)		**U3 R3 M29 In**	
C_{Avg}	Average conc.	11.16	8.14
C_{Gas}	**Bias adjusted**	**11.19**	**8.14**
Analyzer Averages (concentrations)		**U1 R1 M13B**	
C_{Avg}	Average conc.	10.29	9.16
C_{Gas}	**Bias adjusted**	**10.32**	**9.17**
Analyzer Averages (concentrations)		**U1 R2 M13B**	
C_{Avg}	Average conc.	10.01	9.31
C_{Gas}	**Bias adjusted**	**10.04**	**9.31**
Analyzer Averages (concentrations)		**U1 R3 M13B**	
C_{Avg}	Average conc.	10.28	9.15
C_{Gas}	**Bias adjusted**	**10.31**	**9.15**

Clock Time (at end of sample period)

033010 112830

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 22, 2010
Start Time 17:16
Stop time 17:49

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
17:17:49	-0.005	0.364	
17:18:04	0.007	0.090	
17:17:49	-0.005	0.364	
17:18:04	0.007	0.090	
17:18:19	0.016	-0.015	
17:18:34	**-0.019**	0.000	**zero**
17:18:49	0.016	7.099	
17:19:04	0.065	20.475	
17:19:19	3.902	15.341	
17:19:34	5.760	13.956	
17:19:49	5.805	14.035	
17:20:04	5.885	14.081	
17:20:19	5.896	14.083	
17:20:34	5.907	**14.079**	**span**
17:20:49	5.899	14.073	
17:21:04	5.904	14.150	
17:21:19	1.605	19.981	
17:21:34	3.122	16.083	
17:21:49	13.711	6.059	
17:22:04	14.005	5.879	
17:22:19	**14.028**	**5.876**	**linearity**
17:22:34	13.872	6.929	
17:22:49	2.117	19.923	
17:23:04	0.182	20.915	
17:23:19	5.946	12.797	
17:23:34	9.893	9.539	
17:23:49	9.935	9.505	
17:24:04	**9.946**	**9.497**	**U3 R3 M5/29**
17:24:19	9.489	10.990	
17:24:34	0.976	20.452	
17:24:49	0.165	20.900	
17:25:04	0.140	20.924	
17:25:19	0.126	20.935	
17:25:34	3.963	15.048	
17:25:49	10.016	9.289	
17:26:04	10.106	9.230	
17:26:19	**10.124**	**9.207**	**U2 R1 M23**
17:26:34	10.128	9.201	
17:26:49	6.184	15.276	
17:27:04	0.239	20.840	
17:27:19	1.836	17.627	
17:27:34	10.705	8.418	
17:27:49	11.053	8.213	
17:28:04	**11.068**	**8.192**	**U3 R2 M29 In**
17:28:19	11.082	8.197	
17:28:34	10.516	9.998	
17:28:49	0.994	20.437	
17:29:04	5.040	13.749	
17:29:19	11.082	8.192	
17:29:34	11.144	8.154	
17:29:49	**11.160**	**8.143**	**U3 R3 M29 In**
17:30:04	10.959	9.172	
17:30:19	1.541	20.138	
17:30:34	1.693	17.915	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 22, 2010
Start Time 17:16
Stop time 17:49

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
17:30:49	9.914	9.350	
17:31:04	10.263	9.175	
17:31:19	10.279	9.169	
17:31:34	**10.287**	**9.163**	**U1 R1 M13B**
17:31:49	9.807	10.723	
17:32:04	0.974	20.422	
17:32:19	0.165	20.879	
17:32:34	0.138	20.904	
17:32:49	4.301	14.631	
17:33:04	9.908	9.365	
17:33:19	9.990	9.323	
17:33:34	**10.010**	**9.309**	**U1 R2 M13B**
17:33:49	10.013	9.301	<-- Paused at 17:34:08
17:44:47	0.346	20.014	- Note: Waiting for 13B Run 3
17:45:02	8.889	10.002	
17:45:17	10.247	9.175	
17:45:32	10.270	9.159	
17:45:47	**10.283**	**9.147**	**U1 R3 M13B**
17:46:02	10.291	9.141	
17:46:17	4.574	17.215	
17:46:32	3.947	15.614	
17:46:47	5.868	14.103	
17:47:02	5.872	14.098	
17:47:17	**5.880**	**14.088**	**span**
17:47:32	5.198	15.582	
17:47:47	0.437	14.560	
17:48:02	0.061	0.421	
17:48:17	0.031	0.048	
17:48:32	**0.029**	**0.039**	**zero**
17:48:47	0.033	3.770	
17:49:02	0.063	8.320	
17:49:17	0.047	8.433	
17:49:32	1.327	10.295	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 23, 2010
Start Time 12:13
Stop time 12:38
IGS Bag Analysis

		Channel 1 CO2 %dv	Channel 2 O2 %dv
Calibration Checks			
C_{oi}	Initial zero	0.014	-0.013
C_{ui}	Initial upscale	5.950	14.159
C_{of}	Final zero	0.040	-0.006
C_{uf}	Final upscale	5.944	14.164
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U1 R1 M29 In**	
C_{Avg}	Average conc.	11.00	8.12
C_{Gas}	**Bias adjusted**	**10.95**	8.09
Analyzer Averages (concentrations)		**U1 R1 M5/29**	
C_{Avg}	Average conc.	9.74	9.61
C_{Gas}	**Bias adjusted**	**9.69**	**9.57**
Analyzer Averages (concentrations)		**U2 R1 M26A Out**	
C_{Avg}	Average conc.	9.71	9.58
C_{Gas}	**Bias adjusted**	**9.66**	**9.54**
Analyzer Averages (concentrations)		**U2 R2 M26A Out**	
C_{Avg}	Average conc.	9.31	10.14
C_{Gas}	**Bias adjusted**	**9.27**	**10.10**
Analyzer Averages (concentrations)		**U2 R3 M26A Out**	
C_{Avg}	Average conc.	10.17	9.30
C_{Gas}	**Bias adjusted**	**10.13**	**9.26**
Analyzer Averages (concentrations)		**U2 R1 M26A In**	
C_{Avg}	Average conc.	10.94	8.18
C_{Gas}	**Bias adjusted**	**10.89**	**8.14**
Analyzer Averages (concentrations)		**U2 R2 M26A In**	
C_{Avg}	Average conc.	10.53	8.74
C_{Gas}	**Bias adjusted**	**10.49**	**8.71**
Analyzer Averages (concentrations)		**U2 R3 M26A In**	
C_{Avg}	Average conc.	11.64	7.61
C_{Gas}	**Bias adjusted**	**11.59**	**7.59**
Analyzer Averages (concentrations)		**U2 R2 M23**	
C_{Avg}	Average conc.	9.74	9.61
C_{Gas}	**Bias adjusted**	**9.69**	**9.57**

Clock Time (at end of sample period)

033010 112830

12:14:22	0.009	0.153
12:14:37	0.020	0.002
12:14:22	0.009	0.153

Prepared by Clean Air Engineering Proprietary Software
SS CEM Version 05-2004a

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 23, 2010
Start Time 12:13
Stop time 12:38

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
12:14:37	0.020	0.002	
12:14:52	**0.014**	**-0.013**	**zero**
12:15:07	0.037	-0.032	
12:15:22	0.065	13.994	
12:15:37	2.144	17.787	
12:15:52	5.971	14.176	
12:16:07	5.920	14.156	
12:16:22	5.931	14.158	
12:16:37	5.942	14.158	
12:16:52	**5.950**	**14.159**	**span**
12:17:07	4.891	16.200	
12:17:22	2.329	17.226	
12:17:37	13.433	6.238	
12:17:52	13.935	5.988	
12:18:07	**13.976**	**5.979**	**linearity**
12:18:22	13.984	5.974	
12:18:37	10.503	11.657	
12:18:52	0.420	20.891	
12:19:07	2.460	16.941	
12:19:22	10.737	8.280	
12:19:37	10.981	8.131	
12:19:52	**10.997**	**8.120**	**U1 R1 M29 in**
12:20:07	10.716	9.402	
12:20:22	2.894	18.234	<-- Paused at 16:27:36
12:20:37	0.709	20.727	- Note: waiting for Run 3
12:20:52	1.774	17.942	
12:21:07	9.401	9.809	
12:21:22	9.718	9.624	
12:21:37	**9.735**	**9.612**	**U1 R1 M5/29**
12:21:52	9.746	9.611	
12:22:07	6.988	14.300	
12:22:22	0.292	20.994	
12:22:37	1.908	17.764	
12:22:52	9.399	9.772	
12:23:07	9.695	9.605	
12:23:22	**9.708**	**9.576**	**U2 R1 M26A Out**
12:23:37	9.717	9.591	
12:23:52	3.292	18.785	
12:24:07	0.186	21.015	
12:24:22	6.642	12.067	
12:24:37	9.289	10.145	
12:24:52	9.316	10.135	
12:25:07	**9.311**	**10.139**	**U2 R2 M26A Out**
12:25:22	8.599	12.038	
12:25:37	0.735	20.748	
12:25:52	2.033	17.630	
12:26:07	9.886	9.466	
12:26:22	10.157	9.309	
12:26:37	**10.174**	**9.298**	**U2 R3 M26A Out**
12:26:52	10.186	9.292	<-- Paused at 12:27:00
12:28:25	0.129	21.128	
12:28:40	0.124	21.140	
12:28:55	0.122	21.148	
12:29:10	0.122	21.146	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 23, 2010
Start Time 12:13
Stop time 12:38

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
12:29:25	3.540	15.585	
12:29:40	10.823	8.301	
12:29:55	10.898	8.181	
12:30:10	**10.935**	**8.176**	**U2 R1 M26A In**
12:30:25	10.956	8.199	
12:30:40	10.985	8.174	
12:30:55	3.952	18.127	
12:31:10	0.181	20.960	
12:31:25	0.166	20.798	
12:31:40	8.099	10.339	
12:31:55	10.506	8.766	
12:32:10	**10.534**	**8.743**	**U2 R2 M26A In**
12:32:25	10.403	9.591	
12:32:40	1.604	20.146	
12:32:55	0.173	20.970	
12:33:10	7.370	10.982	
12:33:25	11.571	7.646	
12:33:40	11.620	7.606	
12:33:55	**11.639**	**7.615**	**U2 R3 M26A In**
12:34:10	11.649	7.622	
12:34:25	3.821	18.464	
12:34:40	0.218	20.933	
12:34:55	2.464	17.048	
12:35:10	9.522	9.738	
12:35:25	9.718	9.617	
12:35:40	**9.736**	**9.606**	**U2 R2 M23**
12:35:55	9.659	10.262	
12:36:10	1.634	20.182	
12:36:25	3.976	15.658	
12:36:40	5.929	14.168	
12:36:55	**5.944**	**14.164**	**span**
12:37:10	4.293	16.945	
12:37:25	0.223	13.537	
12:37:40	0.066	0.182	
12:37:55	0.054	0.001	
12:38:10	**0.040**	**-0.006**	**zero**
12:38:25	0.035	-0.015	
12:38:40	0.037	1.336	
12:38:55	0.115	19.630	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 23, 2010
Start Time 17:01
Stop time 17:24
IGS Bag Analysis

		Channel 1 CO2 %dv	Channel 2 O2 %dv
Calibration Checks			
C_{oi}	Initial zero	0.010	0.083
C_{ui}	Initial upscale	5.916	14.124
C_{of}	Final zero	0.041	0.122
C_{uf}	Final upscale	5.925	14.159
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U1 R2 M29 In**	
C_{Avg}	Average conc.	10.94	8.40
C_{Gas}	**Bias adjusted**	**10.94**	**8.33**
Analyzer Averages (concentrations)		**U1 R3 M29 In**	
C_{Avg}	Average conc.	10.95	8.56
C_{Gas}	**Bias adjusted**	**10.95**	**8.49**
Analyzer Averages (concentrations)		**U1 R2 M5/29**	
C_{Avg}	Average conc.	9.94	9.44
C_{Gas}	**Bias adjusted**	**9.94**	**9.38**
Analyzer Averages (concentrations)		**U1 R3 M5/29**	
C_{Avg}	Average conc.	9.84	9.79
C_{Gas}	**Bias adjusted**	**9.84**	**9.73**
Analyzer Averages (concentrations)		**U3 R1 M13B**	
C_{Avg}	Average conc.	9.58	9.81
C_{Gas}	**Bias adjusted**	**9.58**	**9.75**
Analyzer Averages (concentrations)		**U3 R2 M13B**	
C_{Avg}	Average conc.	9.62	9.99
C_{Gas}	**Bias adjusted**	**9.62**	**9.93**
Analyzer Averages (concentrations)		**U3 R3 M13B**	
C_{Avg}	Average conc.	10.19	9.47
C_{Gas}	**Bias adjusted**	**10.19**	**9.40**
Analyzer Averages (concentrations)		**U2 R3 M23**	
C_{Avg}	Average conc.	10.20	9.34
C_{Gas}	**Bias adjusted**	**10.20**	**9.28**

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 23, 2010
Start Time 17:01
Stop time 17:24
IGS Bag Analysis

Clock Time (at end of sample period)	Channel 1 CO2 %dv	Channel 2 O2 %dv	
033010 112830			
17:02:23	0.100	20.946	
17:02:38	0.018	20.954	
17:02:23	0.100	20.946	
17:02:38	0.018	20.954	
17:02:53	0.034	20.951	
17:03:08	0.098	20.997	
17:03:23	0.094	18.232	
17:03:38	0.016	0.947	
17:03:53	0.004	0.138	
17:04:08	0.020	0.108	
17:04:23	0.010	0.083	**zero**
17:04:38	0.064	5.922	
17:04:53	4.675	14.430	
17:05:08	5.741	14.109	
17:05:23	5.914	14.103	
17:05:38	5.914	14.121	
17:05:53	5.916	14.124	**span**
17:06:08	4.475	16.618	
17:06:23	6.366	12.536	
17:06:38	13.924	6.075	
17:06:53	14.021	6.011	
17:07:08	14.037	5.998	**linearity**
17:07:23	10.802	11.299	
17:07:38	0.469	20.761	
17:07:53	6.610	11.965	
17:08:08	10.885	8.440	
17:08:23	10.926	8.413	
17:08:38	10.936	8.398	**U1 R2 M29 In**
17:08:53	10.729	9.413	
17:09:08	1.562	20.113	
17:09:23	2.362	17.087	<-- Paused at 16:27:36
17:09:38	10.667	8.700	- Note: waiting for Run 3
17:09:53	10.911	8.568	
17:10:08	10.936	8.556	
17:10:23	10.953	8.555	**U1 R3 M29 In**
17:10:38	8.358	13.007	
17:10:53	0.367	20.798	
17:11:08	1.177	18.646	
17:11:23	9.398	9.748	
17:11:38	9.918	9.470	
17:11:53	9.937	9.448	
17:12:08	9.944	9.438	**U1 R2 M5/29**
17:12:23	8.070	12.973	
17:12:38	0.420	20.748	
17:12:53	5.501	13.428	
17:13:08	9.771	9.839	
17:13:23	9.818	9.802	
17:13:38	9.833	9.806	
17:13:53	9.839	9.792	**U1 R3 M5/29**
17:14:08	9.345	11.305	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 23, 2010
Start Time 17:01
Stop time 17:24

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
17:14:23	0.984	20.434	
17:14:38	0.166	20.911	
17:14:53	0.143	20.927	
17:15:08	4.993	13.880	
17:15:23	9.492	9.893	
17:15:38	9.582	9.817	
17:15:53	**9.585**	**9.808**	**U3 R1 M13B**
17:16:08	9.594	9.962	
17:16:23	2.501	19.414	
17:16:38	0.343	20.475	
17:16:53	7.363	11.472	
17:17:08	9.581	10.022	
17:17:23	9.615	10.007	
17:17:38	9.612	10.014	
17:17:53	**9.617**	**9.993**	**U3 R2 M13B**
17:18:08	7.027	14.328	
17:18:23	0.310	20.808	
17:18:38	2.260	17.272	
17:18:53	9.924	9.604	
17:19:08	10.159	9.481	
17:19:23	10.188	9.471	
17:19:38	**10.191**	**9.467**	**U3 R3 M13B**
17:19:53	7.504	13.917	
17:20:08	0.335	20.828	
17:20:23	5.750	13.077	
17:20:38	10.134	9.379	
17:20:53	10.177	9.354	
17:21:08	10.189	9.347	
17:21:23	**10.198**	**9.343**	**U2 R3 M23**
17:21:38	7.486	13.876	
17:21:53	0.330	20.838	
17:22:08	2.501	17.367	
17:22:23	5.869	14.177	
17:22:38	5.915	14.158	
17:22:53	**5.925**	**14.159**	**span**
17:23:08	4.884	14.539	
17:23:23	0.261	1.373	
17:23:38	0.080	0.176	
17:23:53	0.054	0.145	
17:24:08	0.052	0.130	
17:24:23	**0.041**	**0.122**	**zero**
17:24:38	0.062	8.369	
17:24:53	0.110	20.715	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 24, 2010
Start Time 11:51
Stop time 12:16
IGS Bag Analysis

		Channel 1 CO2 %dv	Channel 2 O2 %dv
Calibration Checks			
C_{ol}	Initial zero	0.020	0.003
C_{ul}	Initial upscale	5.915	14.093
C_{of}	Final zero	0.044	-0.015
C_{uf}	Final upscale	5.920	14.066
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.	9.99	9.37
C_{Gas}	Bias adjusted	10.00	9.38
Analyzer Averages (concentrations)		**U2 R2 M13B**	
C_{Avg}	Average conc.	9.99	9.30
C_{Gas}	Bias adjusted	10.00	9.32
Analyzer Averages (concentrations)		**U2 R1 M5/29**	
C_{Avg}	Average conc.	9.90	9.43
C_{Gas}	Bias adjusted	9.91	9.45
Analyzer Averages (concentrations)		**U2 R1 M29 In**	
C_{Avg}	Average conc.	11.40	7.77
C_{Gas}	Bias adjusted	11.41	7.79
Analyzer Averages (concentrations)		**U3 R1 M26A Out**	
C_{Avg}	Average conc.	9.75	9.59
C_{Gas}	Bias adjusted	9.75	9.61
Analyzer Averages (concentrations)		**U3 R2 M26A Out**	
C_{Avg}	Average conc.	10.28	9.06
C_{Gas}	Bias adjusted	10.29	9.07
Analyzer Averages (concentrations)		**U3 R3 M26A Out**	
C_{Avg}	Average conc.	10.29	9.07
C_{Gas}	Bias adjusted	10.30	9.08
Analyzer Averages (concentrations)		**U3 R1 M26A In**	
C_{Avg}	Average conc.	10.35	8.96
C_{Gas}	Bias adjusted	10.36	8.98
Analyzer Averages (concentrations)		**U3 R2 M26A In**	
C_{Avg}	Average conc.	11.14	8.05
C_{Gas}	Bias adjusted	11.16	8.07
Analyzer Averages (concentrations)		**U3 R3 M26A In**	
C_{Avg}	Average conc.	11.25	8.02
C_{Gas}	Bias adjusted	11.26	8.03

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 24, 2010
Start Time 11:51
Stop time 12:16

IGS Bag Analysis

Clock Time (at end of sample period)	Channel 1 CO2 %dv	Channel 2 O2 %dv	
033010 112830			
11:52:27	0.020	0.003	
11:52:42	0.045	8.620	
11:52:57	1.459	19.004	
11:52:27	0.020	0.003	**zero**
11:52:42	0.045	8.620	
11:52:57	1.459	19.004	
11:53:12	5.771	14.626	
11:53:27	5.895	14.158	
11:53:42	5.907	14.084	
11:53:57	5.895	13.946	
11:54:12	**5.915**	**14.093**	**span**
11:54:27	5.084	15.817	
11:54:42	6.165	12.729	
11:54:57	13.762	6.018	
11:55:12	13.965	5.984	
11:55:27	13.981	5.974	
11:55:42	**14.003**	**5.970**	**linearity**
11:55:57	10.701	11.398	
11:56:12	0.409	20.752	
11:56:27	0.172	20.900	
11:56:42	4.387	14.570	
11:56:57	9.887	9.417	
11:57:12	9.959	9.381	<-- Paused at 16:27:36
11:57:27	9.982	9.373	- Note: waiting for Run 3
11:57:42	**9.990**	**9.369**	**U2 R1 M13B**
11:57:57	9.591	10.764	
11:58:12	1.063	20.362	
11:58:27	2.444	16.949	
11:58:42	9.782	9.434	
11:58:57	9.981	9.316	
11:59:12	9.981	9.307	
11:59:27	**9.989**	**9.302**	**U2 R2 M13B**
11:59:42	9.925	9.880	
11:59:57	1.764	19.985	
12:00:12	0.181	20.891	
12:00:27	6.250	12.346	
12:00:42	9.848	9.475	
12:00:57	9.894	9.438	
12:01:12	**9.902**	**9.433**	**U2 R1 M5/29**
12:01:27	9.551	10.751	
12:01:42	1.080	20.383	
12:01:57	2.039	17.369	
12:02:12	11.027	7.975	
12:02:27	11.362	7.792	
12:02:42	11.382	7.780	
12:02:57	**11.399**	**7.773**	**U2 R1 M29 In**
12:03:12	11.277	8.629	
12:03:27	1.803	19.990	
12:03:42	3.595	15.538	
12:03:57	9.630	9.660	
12:04:12	9.725	9.594	
12:04:27	9.736	9.590	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 24, 2010
Start Time 11:51
Stop time 12:16

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
12:04:42	**9.746**	**9.590**	**U3 R1 M26A Out**
12:04:57	9.717	9.977	
12:05:12	1.974	19.845	
12:05:27	2.966	16.295	
12:05:42	10.114	9.164	
12:05:57	10.267	9.065	
12:06:12	**10.280**	**9.058**	**U3 R2 M26A Out**
12:06:27	10.289	9.056	
12:06:42	9.499	11.140	
12:06:57	0.782	20.362	
12:07:12	7.929	10.598	
12:07:27	10.251	9.097	
12:07:42	10.281	9.073	
12:07:57	10.283	9.067	
12:08:12	**10.293**	**9.068**	**U3 R3 M26A Out**
12:08:27	10.147	9.919	
12:08:42	1.535	20.083	
12:08:57	2.203	17.188	
12:09:12	10.112	9.132	
12:09:27	10.350	8.994	
12:09:42	10.359	8.988	
12:09:57	**10.353**	**8.965**	**U3 R1 M26A In**
12:10:12	10.311	9.446	
12:10:27	1.978	19.777	
12:10:42	4.649	14.149	
12:10:57	11.039	8.123	
12:11:12	11.116	8.068	
12:11:27	11.137	8.044	
12:11:42	**11.142**	**8.055**	**U3 R2 M26A In**
12:11:57	10.090	10.604	
12:12:12	0.716	20.507	
12:12:27	2.380	16.927	
12:12:42	10.966	8.189	
12:12:57	11.230	8.034	
12:13:12	11.235	8.015	
12:13:27	**11.249**	**8.020**	**U3 R3 M26A In**
12:13:42	11.084	8.994	
12:13:57	1.639	19.978	
12:14:12	4.218	15.271	
12:14:27	5.899	14.063	
12:14:42	5.914	14.064	
12:14:57	**5.920**	**14.066**	**span**
12:15:12	4.623	16.362	
12:15:27	0.245	11.321	
12:15:42	0.058	0.155	
12:15:57	0.044	0.042	
12:16:12	0.048	0.029	
12:16:27	**0.044**	**-0.015**	**zero**
12:16:42	0.064	8.687	
12:16:57	0.125	20.674	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 24, 2010
Start Time 16:16
Stop time 16:56
IGS Bag Analysis

		Channel 1 CO2 %dv	Channel 2 O2 %dv
Calibration Checks			
C_{oi}	Initial zero	0.032	0.058
C_{ui}	Initial upscale	5.868	14.061
C_{of}	Final zero	0.043	0.091
C_{uf}	Final upscale	5.853	14.049
C_{ma}	Actual gas value	5.910	14.100
	Linearity gas value	13.900	6.010
Analyzer Averages (concentrations)		**U2 R3 M13B**	
C_{Avg}	Average conc.	10.00	9.35
C_{Gas}	**Bias adjusted**	**10.11**	**9.36**
Analyzer Averages (concentrations)		**U2 R2 M5/29**	
C_{Avg}	Average conc.	10.04	9.39
C_{Gas}	**Bias adjusted**	**10.15**	**9.39**
Analyzer Averages (concentrations)		**U2 R2 M29 In**	
C_{Avg}	Average conc.	11.26	8.04
C_{Gas}	**Bias adjusted**	**11.39**	**8.03**
Analyzer Averages (concentrations)		**U2 R3 M5/29**	
C_{Avg}	Average conc.	9.75	9.78
C_{Gas}	**Bias adjusted**	**9.86**	**9.79**
Analyzer Averages (concentrations)		**U2 R3 M29 In**	
C_{Avg}	Average conc.	11.24	8.19
C_{Gas}	**Bias adjusted**	**11.37**	**8.19**

Clock Time (at end of sample period)

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16:17:27	0.026	3.551	
16:17:42	0.029	0.445	
16:17:27	0.026	3.551	
16:17:42	0.029	0.445	
16:17:57	0.038	0.178	
16:18:12	0.026	0.106	
16:18:27	0.026	0.067	
16:18:42	**0.032**	**0.058**	**zero**
16:18:57	0.043	7.783	
16:19:12	1.270	18.371	
16:19:27	5.555	14.119	
16:19:42	5.781	14.053	
16:19:57	5.839	14.058	
16:20:12	5.850	14.056	
16:20:27	**5.868**	**14.061**	**span**
16:20:42	5.188	15.528	
16:20:57	5.341	13.691	
16:21:12	13.782	6.102	
16:21:27	13.985	5.996	
16:21:42	**14.006**	**5.988**	**linearity**
16:21:57	14.013	6.052	

QA/QC_____
Date_____

Wheelabrator
CleanAir Project No. 10955
South Broward
SDA Inlet, FF Outlet

March 24, 2010
Start Time 16:16
Stop time 16:56

IGS Bag Analysis

	Channel 1 CO2 %dv	Channel 2 O2 %dv	
16:22:12	4.492	18.006	
16:22:27	0.236	20.516	
16:22:42	7.578	11.009	
16:22:57	9.947	9.377	
16:23:12	9.984	9.359	
16:23:27	**9.998**	**9.354**	**U2 R3 M13B**
16:23:42	9.987	9.567	
16:23:57	2.659	19.143	
16:24:12	0.193	20.670	
16:24:27	7.243	11.359	
16:24:42	9.980	9.420	
16:24:57	10.010	9.397	
16:25:12	**10.038**	**9.386**	**U2 R2 M5/29**
16:25:27	10.045	9.380	
16:25:42	4.906	16.732	
16:25:57	0.240	20.771	
16:26:12	3.844	15.146	
16:26:27	11.044	8.193	
16:26:42	11.238	8.047	
16:26:57	11.246	8.062	
16:27:12	**11.256**	**8.038**	**U2 R2 M29 In**
16:27:27	10.667	9.870	<-- Paused at 16:27:36
16:50:00	0.079	20.802	- Note: waiting for Run 3
16:50:15	0.297	19.876	
16:50:30	8.647	10.388	
16:50:45	9.724	9.809	
16:51:00	9.732	9.769	
16:51:15	9.745	9.785	
16:51:30	**9.751**	**9.777**	**U2 R3 M5/29**
16:51:45	9.619	10.608	
16:52:00	0.620	19.986	
16:52:15	0.057	20.745	
16:52:30	4.710	14.124	
16:52:45	11.136	8.241	
16:53:00	11.232	8.178	
16:53:15	11.241	8.197	
16:53:30	**11.244**	**8.192**	**U2 R3 M29 In**
16:53:45	10.114	10.843	
16:54:00	3.125	16.751	
16:54:15	5.831	14.057	
16:54:30	**5.853**	**14.049**	**span**
16:54:45	5.850	14.050	
16:55:00	4.006	12.334	
16:55:15	0.127	0.408	
16:55:30	0.061	0.125	
16:55:45	0.049	0.108	
16:56:00	**0.043**	**0.091**	**zero**
16:56:15	0.058	9.049	
16:56:30	0.099	20.651	

QA/QC_____
Date_____

WHEELABRATOR NORTH BROWARD, INC.
Clean Air Project No: 10955
Location: Ash Unloading/Conveyor
Date (2010): March 24
Start Time: 7:52
End Time: 9:02

METHOD 22 FIELD DATA PRINTOUT

Run	Clock Time (start)	Observation Period (minutes)	Opacity (%)
1	7:52 8:12	20	0
2	8:17 8:37	20	0
3	8:42 9:02	20	0
		Minimum	**0**
		Average	**0**
		Maximum	**0**

WHEELABRATOR NORTH BROWARD, INC.
Clean Air Project No: 10955
Location: Ash Conveyor/Doors to Baghouse
Date (2010): March 24
Start Time: 9:07
End Time: 10:17

METHOD 22 FIELD DATA PRINTOUT

Run	Clock Time (start)	Observation Period (minutes)	Opacity (%)
1	9:07 9:27	20	0
2	9:32 9:52	20	0
3	9:57 10:17	20	0
		Minimum	**0**
		Average	**0**
		Maximum	**0**

WHEELABRATOR NORTH BROWARD, INC.
Clean Air Project No: 10955
Location: Rolling Door/Door to Baghouse
Date (2010): March 24
Start Time: 12:55
End Time: 14:05

METHOD 22 FIELD DATA PRINTOUT

Run	Clock Time (start)	Observation Period (minutes)	Opacity (%)
1	12:55 13:15	20	0
2	13:20 13:40	20	0
3	13:45 14:05	20	0
		Minimum	**0**
		Average	**0**
		Maximum	**0**

LABORATORY DATA

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Wheelabrator South 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 23	Mar 23	Mar 23
Start Time (approx.)			07:43	10:31	13:32
Stop Time (approx.)			09:58	12:45	15:46
	Filter(s) ☐ Allow Negative Filter Sum				
m_{f1}	Filter No. 1 residue mass (g)		0.00050	<0.00010	0.00070
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)*		0.00050	<0.00010	0.00070
m_{filter}	*Particulate on filter(s) (g)*		0.00050	<0.00010	0.00070
	First Solvent Rinse				
	Acetone				
ρ_1	Density (g/ml)	0.785			
v_{s1}	Rinse volume (ml)		76.0	80.0	77.0
v_{a1}	Aliquot size (ml)	146.0	76.0	80.0	77.0
r_{a1}	Aliquot residue mass (g)	<0.00010	0.00060	0.00210	0.00150
r_{s1}	Sample residue mass (g)		0.00060	0.00210	0.00150
m_{b1}	Allowable blank correction (g)		0.00000	0.00000	0.00000
m_1	Net residue (g)	0.00000	0.00060	0.00210	0.00150
	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)*		0.00060	0.00210	0.00150
m_T	*Total Gravimetric Result (g)*		0.00110	0.00220	0.00220
m_D	*Minimum Detection Limit (g)*		0.00020	0.00020	0.00020
m_n	*Total Particulate Matter (g)*		0.00110	0.00220	0.00220

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QA/QC _____
Date _____

Wheelabrator South 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 24	Mar 24	Mar 24
Start Time (approx.)			07:53	11:03	14:12
Stop Time (approx.)			10:06	13:35	16:22
	Filter(s) ☐ Allow Negative Filter Sum				
m_{f1}	Filter No. 1 residue mass (g)		0.00110	0.00060	0.00030
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)*		0.00110	0.00060	0.00030
m_{filter}	*Particulate on filter(s) (g)*		0.00110	0.00060	0.00030
	First Solvent Rinse				
	Acetone				
ρ_1	Density (g/ml)	0.785			
v_{s1}	Rinse volume (ml)		96.0	98.0	68.0
v_{a1}	Aliquot size (ml)	146.0	96.0	98.0	68.0
r_{a1}	Aliquot residue mass (g)	<0.00010	0.00140	0.00240	0.00120
r_{s1}	Sample residue mass (g)		0.00140	0.00240	0.00120
m_{b1}	Allowable blank correction (g)		0.00000	0.00000	0.00000
m_1	Net residue (g)	0.00000	0.00140	0.00240	0.00120
	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_e	*Total Solvent Residue (g)*		0.00140	0.00240	0.00120
m_T	*Total Gravimetric Result (g)*		0.00250	0.00300	0.00150
m_D	*Minimum Detection Limit (g)*		0.00020	0.00020	0.00020
m_n	*Total Particulate Matter (g)*		0.00250	0.00300	0.00150

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QA/QC _____
Date _____

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SS EPA 5-1 Version 2008-08b

Wheelabrator South 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 22	Mar 22	Mar 22
Start Time (approx.)			08:47	11:43	14:24
Stop Time (approx.)			11:05	13:57	16:39
	Filter(s) ☐ Allow Negative Filter Sum				
m_{f1}	Filter No. 1 residue mass (g)		0.00290	0.00110	0.00160
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)*		0.00290	0.00110	0.00160
m_{filter}	*Particulate on filter(s) (g)*		0.00290	0.00110	0.00160
	First Solvent Rinse				
	Acetone				
ρ_1	Density (g/ml)	0.785			
v_{s1}	Rinse volume (ml)		108.0	82.0	84.0
v_{a1}	Aliquot size (ml)	146.0	108.0	82.0	84.0
r_{a1}	Aliquot residue mass (g)	<0.0001	0.00100	0.00230	0.00170
r_{a1}	Sample residue mass (g)		0.00100	0.00230	0.00170
m_{b1}	Allowable blank correction (g)		0.00000	0.00000	0.00000
m_1	Net residue (g)	0.00000	0.00100	0.00230	0.00170
	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)*		0.00100	0.00230	0.00170
m_T	*Total Gravimetric Result (g)*		0.00390	0.00340	0.00330
m_D	*Minimum Detection Limit (g)*		0.00020	0.00020	0.00020
m_n	*Total Particulate Matter (g)*		0.00390	0.00340	0.00330

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Date _____

Wheelabrator South 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)	0.1000		
$m_{2b\text{-}DL}$	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 23	Mar 23	Mar 23
Start Time (approx.)		07:43	10:31	13:32
Stop Time (approx.)		09:58	12:45	15:46
Sample Analysis				
$m_{1b\text{-}S}$	Fraction 1B Sample (µg)	<0.1000	<0.1000	<0.1000
$m_{2b\text{-}S}$	Fraction 2B Sample (µg)	4.8386	4.5386	5.0072
$m_{3a\text{-}S}$	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)	4.8386	4.5386	5.0072
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)	4.8386	4.5386	5.0072
Sample Corrected for Blank				
$m_{n\text{-}1b}$	Fraction 1B (µg)	<0.1000	<0.1000	<0.1000
$m_{n\text{-}2b}$	Fraction 2B (µg)	4.8386	4.5386	5.0072
$m_{n\text{-}3a}$	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 South 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 23	Mar 23	Mar 23
Start Time (approx.)		07:43	10:31	13:32
Stop Time (approx.)		09:58	12:45	15:46
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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Wheelabrator South 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 23	Mar 23	Mar 23
Start Time (approx.)		07:43	10:31	13:32
Stop Time (approx.)		09:58	12:45	15:46
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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Wheelabrator South Broward, Inc.
Clean Air Project No: 10955
Unit 1 SDA Inlet

USEPA Method 29
Mercury (Hg) Laboratory Parameters

Detection Limits		
m_{1b-DL}	Fraction 1B Detection Limit (µg)	0.1000
m_{2b-DL}	Fraction 2B Detection Limit (µg)	0.2000
m_{3a-DL}	Fraction 3A Detection Limit (µg)	0.2000
m_{3b-DL}	Fraction 3B Detection Limit (µg)	0.5000
m_{3c-DL}	Fraction 3C Detection Limit (µg)	0.4000
Blank Analysis		
m_{1b-B}	Fraction 1B Blank (µg)	<0.1000
m_{2b-B}	Fraction 2B Blank (µg)	<0.2000
m_{3a-B}	Fraction 3A Blank (µg)	<0.2000
m_{3b-B}	Fraction 3B Blank (µg)	<0.5000
m_{3c-B}	Fraction 3C Blank (µg)	<0.4000
$m_{total-B}$	Total Blank Amount (µg)	<1.4000

Run No.		1	2	3
Date (2010)		Mar 23	Mar 23	Mar 23
Start Time (approx.)		07:43	10:31	13:32
Stop Time (approx.)		09:58	12:45	15:46
Sample Analysis				
m_{1b-S}	Fraction 1B Sample (µg)	22.5792	69.6536	55.4324
m_{2b-S}	Fraction 2B Sample (µg)	50.8761	24.7029	27.0182
m_{3a-S}	Fraction 3A Sample (µg)	<0.2000	<0.2000	<0.2000
m_{3b-S}	Fraction 3B Sample (µg)	<0.5000	<0.5000	0.7870
m_{3c-S}	Fraction 3C Sample (µg)	4.6198	1.0851	2.9106
$m_{total-S}$	Total Sample Amount (µg)	78.0752	95.4417	86.1483
Allowable Blank				
$m_{T-B-allow}$	Total Allowable Blank (µg)	0.0000	0.0000	0.0000
Sample Corrected for Blank				
m_n	Total Sample Amount (µg)	78.0752	95.4417	86.1483
Sample Corrected for Blank				
m_{n-1b}	Fraction 1B (µg)	22.5792	69.6536	55.4324
m_{n-2b}	Fraction 2B (µg)	50.8761	24.7029	27.0182
m_{n-3a}	Fraction 3A (µg)	<0.2000	<0.2000	<0.2000
m_{n-3b}	Fraction 3B (µg)	<0.5000	<0.5000	0.7870
m_{n-3c}	Fraction 3C (µg)	4.6198	1.0851	2.9106

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Date _____

Wheelabrator South 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 24	Mar 24	Mar 24
Start Time (approx.)		07:53	11:03	14:12
Stop Time (approx.)		10:06	13:35	16:22
Sample Analysis				
$m_{1b\text{-}S}$	Fraction 1B Sample (µg)	<0.1000	<0.1000	<0.1000
$m_{2b\text{-}S}$	Fraction 2B Sample (µg)	2.8801	3.2488	3.4006
$m_{3a\text{-}S}$	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)	2.8801	3.2488	3.4006
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)	2.8801	3.2488	3.4006
Sample Corrected for Blank				
$m_{n\text{-}1b}$	Fraction 1B (µg)	<0.1000	<0.1000	<0.1000
$m_{n\text{-}2b}$	Fraction 2B (µg)	2.8801	3.2488	3.4006
$m_{n\text{-}3a}$	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 South 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 24	Mar 24	Mar 24
Start Time (approx.)		07:53	11:03	14:12
Stop Time (approx.)		10:06	13:35	16:22
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 _____
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Wheelabrator South 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 24	Mar 24	Mar 24
Start Time (approx.)		07:53	11:03	14:12
Stop Time (approx.)		10:06	13:35	16:22
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)	0.5113	0.9717	0.9525
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)	0.5113	0.9717	0.9525

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Date _____

Wheelabrator South 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 24	Mar 24	Mar 24
Start Time (approx.)		07:53	11:03	14:12
Stop Time (approx.)		10:06	13:35	16:22
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)	5.5338	5.8607	6.5256
m_{FB}	Matter collected in front half blank (µg)	0.2067	0.2067	0.2067
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.2067	0.2067	0.2067
m_n	Total matter corrected for allowable blanks (µg)	5.3271	5.6541	6.3189

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Wheelabrator South Broward, Inc.
Clean Air Project No: 10955
Unit 2 SDA Inlet

USEPA Method 29
Mercury (Hg) Laboratory Parameters

Detection Limits				
m_{1b-DL}	Fraction 1B Detection Limit (µg)	0.1000		
m_{2b-DL}	Fraction 2B Detection Limit (µg)	0.2000		
m_{3a-DL}	Fraction 3A Detection Limit (µg)	0.2000		
m_{3b-DL}	Fraction 3B Detection Limit (µg)	0.5000		
m_{3c-DL}	Fraction 3C Detection Limit (µg)	0.4000		
Blank Analysis				
m_{1b-B}	Fraction 1B Blank (µg)	<0.1000		
m_{2b-B}	Fraction 2B Blank (µg)	<0.2000		
m_{3a-B}	Fraction 3A Blank (µg)	<0.2000		
m_{3b-B}	Fraction 3B Blank (µg)	<0.5000		
m_{3c-B}	Fraction 3C Blank (µg)	<0.4000		
$m_{total-B}$	Total Blank Amount (µg)	<1.4000		
Run No.		**1**	**2**	3
Date (2010)		Mar 24	Mar 24	Mar 24
Start Time (approx.)		07:53	11:03	14:12
Stop Time (approx.)		10:06	13:32	16:19
Sample Analysis				
m_{1b-S}	Fraction 1B Sample (µg)	32.2231	63.8393	28.8006
m_{2b-S}	Fraction 2B Sample (µg)	26.7448	50.0603	50.0603
m_{3a-S}	Fraction 3A Sample (µg)	<0.2000	<0.2000	<0.5000
m_{3b-S}	Fraction 3B Sample (µg)	<0.5000	<0.5000	<0.5000
m_{3c-S}	Fraction 3C Sample (µg)	0.4458	0.5270	2.0492
$m_{total-S}$	Total Sample Amount (µg)	59.4137	114.4267	80.9101
Allowable Blank				
$m_{T-B-allow}$	Total Allowable Blank (µg)	0.0000	0.0000	0.0000
Sample Corrected for Blank				
m_n	Total Sample Amount (µg)	59.4137	114.4267	80.9101
Sample Corrected for Blank				
m_{n-1b}	Fraction 1B (µg)	32.2231	63.8393	28.8006
m_{n-2b}	Fraction 2B (µg)	26.7448	50.0603	50.0603
m_{n-3a}	Fraction 3A (µg)	<0.2000	<0.2000	<0.5000
m_{n-3b}	Fraction 3B (µg)	<0.5000	<0.5000	<0.5000
m_{n-3c}	Fraction 3C (µg)	0.4458	0.5270	2.0492

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QA/QC _____
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Wheelabrator South 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 22	Mar 22	Mar 22
Start Time (approx.)		08:47	11:43	14:24
Stop Time (approx.)		11:05	13:57	16:39
Sample Analysis				
$m_{1b\text{-}S}$	Fraction 1B Sample (µg)	<0.1000	<0.1000	<0.1000
$m_{2b\text{-}S}$	Fraction 2B Sample (µg)	3.6560	3.5329	3.2883
$m_{3a\text{-}S}$	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)	3.6560	3.5329	3.2883
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)	3.6560	3.5329	3.2883
Sample Corrected for Blank				
$m_{n\text{-}1b}$	Fraction 1B (µg)	<0.1000	<0.1000	<0.1000
$m_{n\text{-}2b}$	Fraction 2B (µg)	3.6560	3.5329	3.2883
$m_{n\text{-}3a}$	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 South 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 22	Mar 22	Mar 22
Start Time (approx.)		08:47	11:43	14:24
Stop Time (approx.)		11:05	13:57	16:39
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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Wheelabrator South 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 22	Mar 22	Mar 22
Start Time (approx.)		08:47	11:43	14:24
Stop Time (approx.)		11:05	13:57	16:39
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)	0.7733	0.7704	0.7331
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)	0.7733	0.7704	0.7331

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Wheelabrator South 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 22	Mar 22	Mar 22
Start Time (approx.)		08:47	11:43	14:24
Stop Time (approx.)		11:05	13:57	16:39
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)	7.0783	5.7427	6.1738
m_{FB}	Matter collected in front half blank (µg)	0.2067	0.2067	0.2067
$m_{FB\text{-}allow}$	Allowable front half blank correction (µg)	0.2067	0.2067	0.2067
m_n	Total matter corrected for allowable blanks (µg)	6.8716	5.5360	5.9671

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Wheelabrator South Broward, Inc.
Clean Air Project No: 10955
Unit 3 SDA Inlet

USEPA Method 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 22	Mar 22	Mar 22
Start Time (approx.)		08:47	11:43	14:27
Stop Time (approx.)		11:05	13:57	16:39
Sample Analysis				
$m_{1b\text{-}S}$	Fraction 1B Sample (µg)	46.7982	94.5017	74.2463
$m_{2b\text{-}S}$	Fraction 2B Sample (µg)	21.1531	22.0588	25.4675
$m_{3a\text{-}S}$	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)	1.8293	1.7245	0.9416
$m_{total\text{-}S}$	Total Sample Amount (µg)	69.7807	118.2850	100.6553
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)	69.7807	118.2850	100.6553
Sample Corrected for Blank				
$m_{n\text{-}1b}$	Fraction 1B (µg)	46.7982	94.5017	74.2463
$m_{n\text{-}2b}$	Fraction 2B (µg)	21.1531	22.0588	25.4675
$m_{n\text{-}3a}$	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)	1.8293	1.7245	0.9416

042010 126953
N

QA/QC _____
Date _____

Clean Air Engineering, Inc.

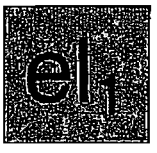
500 West Wood Street
Palatine, IL 60067

Project Number: 10955

Particulate Matter, Beryllium,
Cadmium, Lead and Mercury

EPA Methods 29 & 5 Analyses

Analytical Report
14232



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 14232
has been reviewed for completeness, accuracy,
adherence to method protocol,
and compliance with quality assurance guidelines.

Review by:

Daphne Woodman, Chemist
April 9, 2010

Report Reviewed and Finalized By:

Ken Smith, Laboratory Director
April 9, 2010

SUMMARY OF RESULTS

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-SDA-I-R1	#1	78.1	22.6	51.2	< 0.2	< 0.5	4.64
	#2		22.6	50.5	< 0.2	< 0.5	4.60
U1-SDA-I-R2	#1	95.4	70.1	24.9	< 0.2	< 0.5	1.08
	#2		69.2	24.5	< 0.2	< 0.5	1.09
U1-SDA-I-R3	#1	86.1	55.9	27.2	< 0.2	0.800	2.94
	#2		55.0	26.9	< 0.2	0.774	2.88
U1-FF-O-R1	#1	4.84	< 0.1	4.86	< 0.2	< 0.5	< 0.4
	#2		< 0.1	4.81	< 0.2	< 0.5	< 0.4
U1-FF-O-R2	#1	4.54	< 0.1	4.57	< 0.2	< 0.5	< 0.4
	#2		< 0.1	4.51	< 0.2	< 0.5	< 0.4
U1-FF-O-R3	#1	5.01	< 0.1	4.98	< 0.2	< 0.5	< 0.4
	#2		< 0.1	5.04	< 0.2	< 0.5	< 0.4

Summary of Analysis

Unit 1 - Summary of Method 5 Particulate Analysis

Fraction	U1-FF-O-R1 e14232-4 Catch, mg	U1-FF-O-R2 e14232-5 Catch, mg	U1-FF-O-R3 e14232-6 Catch, mg
Filter	0.5	< 0.1	0.7
Rinse	0.6	2.1	1.5
Total PM	1.1	2.1	2.2

Unit 1 - Summary of Method 29 Metals Analysis

Element	U1-FF-O-R1 e14232-4 Total µg	U1-FF-O-R2 e14232-5 Total µg	U1-FF-O-R2 e14232-5 dup Total µg	U1-FF-O-R3 e14232-6 Total µg
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	< 0.2	< 0.2	< 0.2	< 0.2
Lead	0.588	0.915	0.920	0.749

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-SDA-I-R1	#1	59.4	32.3	28.0	< 0.2	< 0.5	0.449
	#2		32.1	25.5	< 0.2	< 0.5	0.442
U2-SDA-I-R2	#1	114	63.5	50.4	< 0.2	< 0.5	0.532
	#2		64.2	49.7	< 0.2	< 0.5	0.522
U2-SDA-I-R3	#1	52.0	28.7	20.5	< 0.2	< 0.5	2.07
	#2		29.0	21.7	< 0.2	< 0.5	2.03
U2-FF-O-R1	#1	2.88	< 0.1	2.89	< 0.2	< 0.5	< 0.4
	#2		< 0.1	2.87	< 0.2	< 0.5	< 0.4
U2-FF-O-R2	#1	3.25	< 0.1	3.25	< 0.2	< 0.5	< 0.4
	#2		< 0.1	3.25	< 0.2	< 0.5	< 0.4
U2-FF-O-R3	#1	3.40	< 0.1	3.40	< 0.2	< 0.5	< 0.4
	#2		< 0.1	3.40	< 0.2	< 0.5	< 0.4

Summary of Analysis

Unit 2 - Summary of Method 5 Particulate Analysis

Fraction	U2-FF-O-R1 e14232-10 Catch, mg	U2-FF-O-R2 e14232-11 Catch, mg	U2-FF-O-R3 e14232-12 Catch, mg
Filter	1.1	0.6	0.3
Rinse	1.4	2.4	1.2
Total PM	2.5	3.0	1.5

Unit 2 - Summary of Method 29 Metals Analysis

Element	U2-FF-O-R1 e14232-10 Total µg	U2-FF-O-R2 e14232-11 Total µg	U2-FF-O-R2 e14232-11 dup Total µg	U2-FF-O-R3 e14232-12 Total µg
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.511	0.964	0.980	0.953
Lead	5.53	5.85	5.87	6.53

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-SDA-I-R1	#1	69.8	47.1	21.2	< 0.2	< 0.5	1.83
	#2		46.5	21.1	< 0.2	< 0.5	1.83
U3-SDA-I-R2	#1	118	95.1	22.4	< 0.2	< 0.5	1.73
	#2		93.9	21.7	< 0.2	< 0.5	1.72
U3-SDA-I-R3	#1	104	74.7	29.2	< 0.2	< 0.5	0.935
	#2		73.8	29.1	< 0.2	< 0.5	0.948
U3-FF-O-R1	#1	3.66	< 0.1	3.76	< 0.2	< 0.5	< 0.4
	#2		< 0.1	3.55	< 0.2	< 0.5	< 0.4
U3-FF-O-R2	#1	3.53	< 0.1	3.51	< 0.2	< 0.5	< 0.4
	#2		< 0.1	3.56	< 0.2	< 0.5	< 0.4
U3-FF-O-R3	#1	3.29	< 0.1	3.33	< 0.2	< 0.5	< 0.4
	#2		< 0.1	3.24	< 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 3/23/10	#1	< 0.5	-------	------	-----	< 0.5	------
	#2		-------	------	-----	< 0.5	-----

Summary of Analysis

Unit 3 - Summary of Method 5 Particulate Analysis

Fraction	U3-FF-O-R1 e14232-16 Catch, mg	U3-FF-O-R2 e14232-17 Catch, mg	U3-FF-O-R3 e14232-18 Catch, mg
Filter	2.9	1.1	1.6
Rinse	1.0	2.3	1.7
Total PM	3.9	3.4	3.3

Unit 3 - Summary of Method 29 Metals Analysis

Element	U3-FF-O-R1 e14232-16 Total µg	U3-FF-O-R2 e14232-17 Total µg	U3-FF-O-R2 e14232-17 dup Total µg	U3-FF-O-R3 e14232-18 Total µg
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.773	0.718	0.822	0.733
Lead	7.08	5.39	6.10	6.17

Summary of Analysis

Summary of Method 5 Particulate Analysis

Fraction	Reagent Blank e14232-20 Catch, mg
Filter	0.8
Rinse	< 0.1
Total PM	0.8

Summary of Method 29 Metals Analysis

Element	Field Blank e14232-19 Total µg	Reagent Blank e14232-20 Total µg
Beryllium	< 0.05	< 0.05
Cadmium	< 0.2	< 0.2
Lead	0.308	0.207

ANALYTICAL NARRATIVE

Element One Analytical Narrative

Client:	Clean Air, IL	Element One #:	14232
Client ID:	10955/Wheelabrator South Broward	Analyst:	KMS, RDT & ESS
Method:	Method 29 & 5	Dates Received:	03/25/10
Analytes:	PM, Be, Cd, Pb & Hg	Dates Analyzed:	04/01-08/10

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 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 cadmium and lead.

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 values 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.

QUALITY CONTROL SUMMARY

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-SDA-I-R1	0.1%	1.4%	NA	NA	0.9%
U1-SDA-I-R2	1.4%	1.4%	NA	NA	1.6%
U1-SDA-I-R3	1.6%	1.2%	NA	3.4%	1.8%
U1-FF-O-R1	NA	1.0%	NA	NA	NA
U1-FF-O-R2	NA	1.3%	NA	NA	NA
U1-FF-O-R3	NA	1.1%	NA	NA	NA
U2-SDA-I-R1	0.7%	9.6%	NA	NA	1.7%
U2-SDA-I-R2	1.2%	1.5%	NA	NA	1.9%
U2-SDA-I-R3	1.0%	5.7%	NA	NA	1.8%
U2-FF-O-R1	NA	0.9%	NA	NA	NA
U2-FF-O-R2	NA	0.2%	NA	NA	NA
U2-FF-O-R3	NA	0.1%	NA	NA	NA
U3-SDA-I-R1	1.1%	0.8%	NA	NA	0.1%
U3-SDA-I-R2	1.2%	3.2%	NA	NA	0.3%
U3-SDA-I-R3	1.1%	0.3%	NA	NA	1.3%
U3-FF-O-R1	NA	5.6%	NA	NA	NA
U3-FF-O-R2	NA	1.3%	NA	NA	NA
U3-FF-O-R3	NA	2.7%	NA	NA	NA
Field Blank	NA	NA	NA	NA	NA
Reagent Blank	NA	NA	NA	NA	NA
Reagent Blank 3/23/10				NA	

Summary of Quality Control Data

Mercury Spike Recoveries

(Method 29 QC limits: ±25% for Spike Recoveries)

Run Number		Front half	H2O2/HNO4	Empty Imp	KMnO4	HCl
U1-SDA-I-R3	#1	122%	104%	100%	86%	99%
	#2	118%	106%	101%	84%	97%
U1-FF-O-R3	#1	116%	104%	81%	82%	100%
	#2	113%	103%	83%	84%	98%
U2-SDA-I-R3	#1	106%	107%	99%	88%	103%
	#2	102%	107%	97%	85%	102%
U2-FF-O-R3	#1	123%	96%	102%	81%	104%
	#2	122%	96%	99%	76%	103%
U3-SDA-I-R3	#1	124%	116%	87%	100%	101%
	#2	122%	110%	87%	102%	101%
U3-FF-O-R3	#1	90%	99%	100%	91%	98%
	#2	93%	101%	102%	90%	97%

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	NA	1.6%	13.5%
Lead	0.5%	0.3%	12.4%

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	86%	89%	87%
Cadmium	91%	89%	85%
Lead	98%	97%	97%

Second Source Calibration Check Recoveries

(QC limits: ±10% for Second Source Continuing Check Standard)*

Element	0.25 ppb	1 ppb	50 ppb	100 ppb*	250 ppb
Beryllium	124%	100%	97%	99%	95%
Cadmium		100%	96%	100%	94%
Lead		92%	96%	99%	95%

Summary of Quality Control Data

Summary of Method 29 Mercury Audit Results

Element	HG-4029 e14232-22 Total µg
Mercury	58.4

Summary of Method 29 Metals Audit Results

Element	Fil-4860 e14232-23 Total µg	Filter Blank e14232-24 Total µg
Beryllium	73.1	< 0.025
Cadmium	78.8	< 0.1
Lead	86.5	0.147

SAMPLE CUSTODY

CHAIN OF CUSTODY FORM

e14232 M29-SB-10955-001

CLIENT Wheelabrator South 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				ADDITIONAL INFORMATION
	1	Unit 1 SDA Inlet	23-Mar	Filter	1		X				
	1	"	23-Mar	Front-Half 0.1N HNO3 Rinse	1		X				There is a discrepency in the
	1	"	23-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				SDA Inlet Sample labels mostly for
	1	"	23-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	1	"	23-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				specifies method 29 is an SDA Inlet
	1	V	23-Mar	Imp. 5,6 HCl Rinse	1		X				sample. The FF Outlet samples
											are all specified as Method 5/29.
	2	Unit 1 SDA Inlet	23-Mar	Filter	1		X				To verify the sample location look
	2	"	23-Mar	Front-Half 0.1N HNO3 Rinse	1		X				at the sample container lid.
	2	"	23-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	2	"	23-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	2	"	23-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	23-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
	3/24/10 1800				3.25.10 1000

Special Handling Instructions

Forwarding Lab: Element One, Wilmington, NC 28403

PO Number:

This form was completed by: Scott Brown

Signature: 3/24/10 Date

CleanAir ENGINEERING
500 West Wood Street
Palatine, IL 60067
(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

All samples for Clean Air, 10955 received in good condition in Fisherbrand + QEC Level 2 Containers
No Empty container received 3.25.10

CHAIN OF CUSTODY FORM

e14232 M29-SB-10955-002

CLIENT Wheelabrator South 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				ADDITIONAL INFORMATION
	3	Unit 1 SDA Inlet	23-Mar	Filter	1		X				
	3	"	23-Mar	Front-Half 0.1N HNO3 Rinse	1		X				There is a discrepency in the
	3	"	23-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				SDA Inlet Sample labels mostly for
	3	"	23-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	3	"	23-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				specifies method 29 is an SDA Inlet
	3	V	23-Mar	Imp. 5,6 HCl Rinse	1		X				sample. The FF Outlet samples
											are all specified as Method 5/29.
											To verify the sample location look
											at the sample container lid.

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	3/24/10 18:00	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by: 3-25-10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature Date 3/24/10

CleanAir ENGINEERING
LD5001A_1-COC Palatine_M29, Jul 2002
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Palatine, IL 60067

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CHAIN OF CUSTODY FORM

e14232 M529-SB-10955-001

CLIENT Wheelabrator South 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	ANALYSIS REQUESTED: Particulate	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ADDITIONAL INFORMATION
	1	Unit 1 FF Outlet	23-Mar	Filter e114-16	1		X	X			There is a discrepency in the
	1	"	23-Mar	Acetone Rinse	1		X	X			SDA Inlet Sample labels mostly for
	1	"	23-Mar	Front-Half 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	1	"	23-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				specifies method 29 is an SDA Inlet
	1	"	23-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				sample. The FF Outlet samples
	1	"	23-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				are all specified as Method 5/29.
	1	"	23-Mar	Imp. 5,6 HCl Rinse	1		X				To verify the sample location look
	2	"	23-Mar	e114-17	1		X	X			at the sample container lid.
	2	"	23-Mar	Acetone Rinse	1		X	X			
	2	"	23-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	2	"	23-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	2	"	23-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	2	"	23-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	23-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
					3/25/10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:

Scott Brown

Signature Date 3/24/10

CleanAir ENGINEERING

LD5001A_1-COC Palatine_M29, Jul 2002
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CHAIN OF CUSTODY FORM

e14232 M529-SB-10955-002

CLIENT Wheelabrator South 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	ANALYSIS REQUESTED: Particulate	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ADDITIONAL INFORMATION
	3	Unit 1 FF Outlet	23-Mar	Filter e114-18	1		X	X			There is a discrepency in the
	3	"	23-Mar	Acetone Rinse	1		X	X			SDA Inlet Sample labels mostly for
	3	"	23-Mar	Front-Half 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	3	"	23-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				specifies method 29 is an SDA inlet
	3	"	23-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				sample. The FF Outlet samples
	3	"	23-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				are all specified as Method 5/29.
	3	V	23-Mar	Imp. 5,6 HCl Rinse	1		X				To verify the sample location look
											at the sample container lid.
	NA	Reagent Blank	23-Mar	4% KMnO4 / 10% H2SO4	1	100	X				This problem was rectified for Unit
											2 but there may be a few Unit 1
											labels with the same problem.

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	3/24/10 18:00				
	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
					3-25-10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:

Scott Brown

Signature Date 3/24/10

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CHAIN OF CUSTODY FORM

e14232 M29-SB-10955-003

CLIENT Wheelabrator South 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				ADDITIONAL INFORMATION
	1	Unit 2 SDA Inlet	24-Mar	Filter	1		X				
	1	"	24-Mar	Front-Half 0.1N HNO3 Rinse	1		X				There is a discrepency in the
	1	"	24-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				SDA Inlet Sample labels mostly for
	1	"	24-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	1	"	24-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				specifies method 29 is an SDA inlet
	1	V	24-Mar	Imp. 5,6 HCl Rinse	1		X				sample. The FF Outlet samples
											are all specified as Method 5/29.
	2	Unit 2 SDA Inlet	24-Mar	Filter	1		X				To verify the sample location look
	2	"	24-Mar	Front-Half 0.1N HNO3 Rinse	1		X				at the sample container lid.
	2	"	24-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	2	"	24-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	2	"	24-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	24-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 18:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
				Rachel Smith	3-25-10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

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Signature Scott Brown Date 3/24/10

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CHAIN OF CUSTODY FORM

e14232 M29-SB-10955-004

CLIENT Wheelabrator South Broward PROJECT NO. t0955

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				ADDITIONAL INFORMATION
	3	Unit 1 SDA Inlet	24-Mar	Filter	1		X				
	3	"	24-Mar	Front-Half 0.1N HNO3 Rinse	1		X				There is a discrepency in the
	3	"	24-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				SDA Inlet Sample labels mostly for
	3	"	24-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	3	"	24-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				specifies method 29 is an SDA inlet
	3	"	24-Mar	Imp. 5,6 HCl Rinse	1		X				sample. The FF Outlet samples
											are all specified as Method 5/29.
											To verify the sample location look
											at the sample container lid.

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 1500				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
				Richard Smith	3-25-10 1005

Special Handling Instructions

Forwarding Lab: Element One
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PO Number:

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Signature Scott Brown Date 3/24/10

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CHAIN OF CUSTODY FORM

e14232 M529-SB-10955-003

CLIENT Wheelabrator South 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	ANALYSIS REQUESTED: Particulate	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ADDITIONAL INFORMATION
	1	Unit 2 FF Outlet	24-Mar	Filter [redacted] e114-01	1		X	X			There is a discrepency in the
	1	"	24-Mar	Acetone Rinse	1		X	X			SDA Inlet Sample labels mostly for
	1	"	24-Mar	Front-Half 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	1	"	24-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				specifies method 29 is an SDA inlet
	1	"	24-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				sample. The FF Outlet samples
	1	"	24-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				are all specified as Method 5/29.
	1	"	24-Mar	Imp. 5,6 HCl Rinse	1		X				To verify the sample location look
	2	"	24-Mar	Filter [redacted] e114-02	1		X	X			at the sample container lid.
	2	"	24-Mar	Acetone Rinse	1		X	X			
	2	"	24-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	2	"	24-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	2	"	24-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	2	"	24-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	24-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown 3/24/10	18:00				
Courier:	**Date / Time**	**Relinquished by: (Signature)**	**Date / Time**	**Received for Analysis by:**	**Date / Time**
				Paul Smith	3-25-10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

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Scott Brown

Signature: Scott Brown Date: 3/24/10

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CHAIN OF CUSTODY FORM

e14232 M529-SB-10955-004

CLIENT Wheelabrator South 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	ANALYSIS REQUESTED: Particulate	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ADDITIONAL INFORMATION
	3	Unit 2 FF Outlet	24-Mar	Filter [redacted] e14-03	1		X	X			There is a discrepency in the
	3	"	24-Mar	Acetone Rinse	1		X	X			SOA Inlet Sample labels mostly for
	3	"	24-Mar	Front-Half 0.1N HNO3 Rinse	t		X				Unit 3. Any sample label that
	3	"	24-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				specifies method 29 is an SDA Inlet
	3	"	24-Mar	Imp. 4 + 0.1N HNO3 Rinse	t		X				sample. The FF Outlet samplas
	3	"	24-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				are all specified as Method 5/29.
	3	V	24-Mar	Imp. 5,6 HCl Rinse	t		X				To verify the sample location look
											at the sample container lid.
	NA	Reagent Blank	24-Mar	4% KMnO4 / 10% H2SO4	1	100	X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	3/24/10 1800				
	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
					3-25-10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

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Scott Brown

Signature Date 3/24/10

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CHAIN OF CUSTODY FORM

e14232 M29-SB-10955-005

CLIENT Wheelabrator South 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				ADDITIONAL INFORMATION
	1	Unit 3 SDA Inlet	22-Mar	Filter	1		X	~~Did not receive~~ filter is in FH Rinse 3-25-10			
	1	|	22-Mar	Front-Half 0.1N HNO3 Rinse	1		X				There is a discrepency in the
	1	|	22-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				SDA Inlet Sample labels mostly for
	1	|	22-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	1	|	22-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				specifies method 29 is an SDA Inlet
	1	V	22-Mar	Imp. 5,6 HCl Rinse	1		X				sample. The FF Outlet samples
											are all specified as Method 5/29.
	2	Unit 3 SDA Inlet	22-Mar	Filter	1		X				To verify the sample location look
	2	|	22-Mar	Front-Half 0.1N HNO3 Rinse	1		X				at the sample container lid.
	2	|	22-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	2	|	22-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	2	|	22-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	22-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 1800				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
				[signature]	3-25-10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:

Scott Brown

Signature: Scott Brown Date: 3/24/10

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CHAIN OF CUSTODY FORM

c14232 M29-SB-10955-005

CLIENT Wheelabrator South 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				ADDITIONAL INFORMATION
	3	Unit 3 SDA Inlet	22-Mar	Filter	1		X				
	3	"	22-Mar	Front-Half 0.1N HNO3 Rinse	1		X				There is a discrepancy in the
	3	"	22-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				SDA Inlet Sample labels mostly for
	3	"	22-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	3	"	22-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				specifies method 29 is an SDA Inlet
	3	"	22-Mar	Imp. 5,6 HCl Rinse	1		X				sample. The FF Outlet samples
											are all specified as Method 5/29.
											To verify the sample location look
											at the sample container lid.

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time

Special Handling Instructions

Forwarding Lab: Element One, Wilmington, NC 28403

PO Number:

This form was completed by: Scott Brown

Signature Date 3/24/10

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CHAIN OF CUSTODY FORM

e14232

M529-SB-10955-005

CLIENT Wheelabrator South 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	ANALYSIS REQUESTED: Particulate	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ADDITIONAL INFORMATION
	1	Unit 3 FF Outlet	22-Mar	Filter e115-33	1		X	X			There is a discrepency in the
	1	"	22-Mar	Acetone Rinse	1		X	X			SDA Inlet Sample labels mostly for
	1	"	22-Mar	Front-Half 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	1	"	22-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				specifies method 29 is an SDA Inlet
	1	"	22-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				sample. The FF Outlet samples
	1	"	22-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				are all specified as Method 5/29.
	1	"	22-Mar	Imp. 5,6 HCl Rinse	1		X				To verify the sample location look
	2	"	22-Mar	e1 t5-34	1		X	X			at the sample container lid.
	2	"	22-Mar	Acetone Rinse	1		X	X			
	2	"	22-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	2	"	22-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	2	"	22-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	2	"	22-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	2	V	22-Mar	Imp. 5,6 HCl Rinse			X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 1500				
Courier:	**Date / Time**	**Relinquished by: (Signature)**	**Date / Time**	**Received for Analysis by:**	**Date / Time**
				Paul Smith	3-25-10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:

Scott Brown

Signature: Scott Brown Date: 3/24/10

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CHAIN OF CUSTODY FORM

e14232 M529-SB-10955-006

CLIENT Wheelabrator South 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	ANALYSIS REQUESTED: Particulate	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ADDITIONAL INFORMATION
	3	Unit 3 FF Outlet	22-Mar	Filter e114-12	1		X	X			There is a discrepency in the
	3	"	22-Mar	Acetone Rinse	1		X	X			SDA Inlet Sample labels mostly for
	3	"	22-Mar	Front-Half 0.1N HNO3 Rinse	1		X				Unit 3. Any sample label that
	3	"	22-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				specifies method 29 is an SDA Inlet
	3	"	22-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				sample. The FF Outlet samples
	3	"	22-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				are all specified as Method 5/29.
	3	V	22-Mar	Imp. 5,6 HCl Rinse	1		X				To verify the sample location look
											at the sample container lid.
	NA	Reagent Blank	22-Mar	4% KMnO4 / 10% H2SO4	1	100	X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 18:00				
Courier:	**Date / Time**	**Relinquished by: (Signature)**	**Date / Time**	**Received for Analysis by:**	**Date / Time**
				[signature]	3/25/10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

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Scott Brown

Signature Scott Brown Date 3/24/10

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CHAIN OF CUSTODY FORM

e14232 M529-SB-10955-007

CLIENT Wheelabrator South 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				ADDITIONAL INFORMATION
	NA	Field Blank	24-Mar	Filter e114-04	1		X				
	NA	"	24-Mar	Front Half Acetone Rinse	1		X				
	NA	"	24-Mar	Front-Half 0.1N HNO3 Rinse	1		X				
	NA	"	24-Mar	Imp. 1,2,3 + 0.1N HNO3 Rinse	1		X				
	NA	"	24-Mar	Imp. 4 + 0.1N HNO3 Rinse	1		X				
	NA	"	24-Mar	Imp. 5,6 KMnO4+H2O Rinse	1		X				
	NA	"	24-Mar	Imp. 5,6 HCl Rinse	1		X				
	NA	Reagent Blanks	22-Mar	3 Quartz Filters	1	NA	X				
	NA	"	22-Mar	0.1 N HNO3	1	300	X				
	NA	"	22-Mar	DI H2O	1	100	X				
	NA	"	22-Mar	5% HNO3 / 10% H2O2	1	200	X				
	NA	"	22-Mar	Acetone	1	200	X				
	NA	"	22-Mar	6N HCl / DI H2O	1	225	X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
	3/24/10 18:00				3/25/10 1000

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:
Scott Brown
Signature Date
3/24/10

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CHAIN OF CUSTODY FORM

e14232 M29-SB-10955-008

CLIENT Wheelabrator South 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: Be, Cd, Pb	ANALYSIS REQUESTED: Hg	ANALYSIS REQUESTED	ANALYSIS REQUESTED	ADDITIONAL INFORMATION
	NA	Audit	3/24/10	F1-4860(4440-01)	1		X				
	NA	Audit	↓	M29 Filter Blank	1		X				
	NA	Audit		4440-02	1			X			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 18:00				
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time
				[signature]	3-25-10 1025

Special Handling Instructions

Forwarding Lab: Element One
Wilmington, NC 28403

PO Number:

This form was completed by:

Scott Brown

Signature [signature] Date 3/24/10

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ANALYTICAL DATA

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= Diluted Volume--*ICP-MS Run Sheet*
Aliquot

Final Volume=FH=Final Volume (FV)--*Sample Submission*
BH=Received Volume (BV).*Final Volume (FV)--*Sample Submission*
Aliquot (Used)
Combined Results=FH+BH

Mercury-

$$\textbf{Mercury Results (µg)} = \frac{\textbf{CVAA Results (µg)}}{\textbf{Aliquot (ml)}} * \textbf{Final Volume (ml)}$$

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-

$$\text{Spike (\%)} = \frac{\text{(Spiked Result (µg/L) – Sample Result (µg/L))}}{\text{Spike Amount (µg/L)}} \quad \text{X100}$$

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-

$$\text{RPD (\%)} = \frac{\text{(Duplicate Result (µg/L) - Sample Result (µg/L))}}{\text{Average (µg/L)}} \quad \text{X100}$$

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 **14232**

Analysis Due Date 04.02.10
QA/QC/Report Due Date 04.06.10

Client	Clean Air 1L
Project No	10955—S. Broward

Date Rec	02.25.10
Time Rec	1000

HNO_3 Lot: A109030	HF Lot: 5108070	HCl Lot: A109030	**Ref. Method: 29 / 5**
Volume Marked (Y) / N	Volume Loss Y / (N) / ?		

Sample Identification

1	U1-SDA-I-M29-R1	7	U2-SDA-I-M29-R1	13	U3-SDA-I-M29-R1
2	U1-SDA-I-M29-R2	8	U2-SDA-I-M29-R2	14	U3-SDA-I-M29-R2
	U1-SDA-I-M29-R2 Duplicate		U2-SDA-I-M29-R2 Duplicate		U3-SDA-I-M29-R2 Duplicate
3	U1-SDA-I-M29-R3	9	U2-SDA-I-M29-R3	15	U3-SDA-I-M29-R3
	U1-SDA-I-M29-R3 Spike		U2-SDA-I-M29-R3 Spike		U3-SDA-I-M29-R3 Spike
4	U1-FF-O-M5/29-R1	10	U2-FF-O-M5/29-R1	16	U3-FF-O-M5/29-R1
5	U1-FF-O-M5/29-R2	11	U2-FF-O-M5/29-R2	17	U3-FF-O-M5/29-R2
	U1-FF-O-M5/29-R2 Duplicate		U2-FF-O-M5/29-R2 Duplicate		U3-FF-O-M5/29-R2 Duplicate
6	U1-FF-O-M5/29-R3	12	U2-FF-O-M5/29-R3	18	U3-FF-O-M5/29-R3
	U1-FF-O-M5/29-R3 Spike		U2-FF-O-M5/29-R3 Spike		U3-FF-O-M5/29-R3 Spike
				19	Field Blank

Analyses Requested	Samples 1-19 Hg
	Samples 4-6, 10-12, 16-19 Be, Cd, Pb, --------- PM
NOTE	**Filter for U3-I-R1 is in the FH HNO_3 Rinse (e14232-13)**

Runs / FB	Fil / Ace (FH) pH <2.0 Y / N		HNO_3 (FH) pH <2.0 Y / N		5% HNO_3/10% H_2O_2 (BH) pH <2.0 (Y) N			HNO_3 (A) pH <2.0 (Y) / N		$KMnO_4$ (B) pH <2.0 (Y) N		HCl (C) 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			240	100	700			108	200	360	500	230	400
2.D			180		710			108		370		230	
3.S			205		680			106		380		230	
4	114-16		125		730	365	50	112		380		230	
5.D	114-17		125		760	380		108		370		230	
6.S	114-18		160		740	370	V	108		370		230	
7			200		770			108		375		230	
8.D			260		756			108		380		230	
9.S			200		730			112		360		230	
10	114-01		130		700	350	50	112		380		230	
11.D	114-02		175		730	365		110		390		230	
12.S	114-03		125		720	360	V	112		360		230	
13			175		710			108		360		230	
14.D			155		670			100		365		230	
15.S			212		690			108		370		230	
16	115-33		190		720	360	50	112		370		230	
17.D	115-34		150		670	335		112		380		230	
18.S	114-12		200		686	340		112		390		230	
19	114-04		110	V	300	150	V	108	V	370	V	230	V

SS Page1 of 2
3/27/2010 3:54:52 PM
SS by Tara Smith
Labeled By

FH Prep By/Date 3-31-10 ES
BH Prep By/Date 3-31-10 ES
BH/FH Prep By/Date 4-2-10 ES
PM Prep By/Date 3-31-10 BDT
A Prep By/Date 3-29-10 ES
B Prep By/Date 3-29-10 ES
C Prep By/Date 3-30-10 ES
ID Verification By / Date BDT/3-27-10

elementOne AIR TESTING SAMPLE SUBMISSION FORM Lab ID **14232**

Analysis Due Date 04.02.10
QA/QC/Report Due Date 04.06.10

Client	Clean Air IL
Project No	10955—S. Broward

Date Rec	02.25.10
Time Rec	1000

HNO_3 Lot:	HF Lot:	HCl Lot:	**Ref. Method:**
Volume Marked Y / N	Volume Loss Y / N / ?		**29 / 5**

Sample Identification

20	Reagent Blank	22	M29-4440-02/HG-4029		
21	Reagent Blank—C10—03.23.10	23	M29-4440-01/Fil-4860		
		24	Audit Filter Blank		

Analyses Requested	Samples 20-22	Hg
	Samples 20, 23-24	Be, Cd, Pb
	Samples 20	PM (Acetone Only RB)

M-29 Reagent Blank

Lab ID	Fraction			BV, ml	FV, ml	Notes
20	C-7	FH	Acetone Blank			
	C-8	FH	0.1N HNO_3	310		used 100 mls
	C-8	A	0.1N HNO_3			
	C-8	B	DI H_2O	100		60 mls used
	C-9	BH	5% HNO_3/10% H_2O_2	240	200bh	+ 100fh = 300 < 150 Hg
	C-10	B	4% $KMnO_4$/10%H_2SO_4 03.22.10	180		Total V used 150 metals
	C-11	C	8N HCl	230	400	
	C-12	FH	Filter ——————e114-13, e114-14, e114-15			
21	C-10	B	4% $KMnO_4$/10%H_2SO_4 03.23.10	210	500	

Audits **See Attached Audit Instructions**

Sample ID		Analyses Requested	BV, ml	Prep By / Date
22	HG-4029	Hg		3-31-10 ESS
23	Fil-4860	Be, Cd, Pb		4-2-10 ESS
24	Audit Filter Blank	Be, Cd, Pb		4-2-10 ESS

Lab Communications

NOTE: Filter for U3-I-R1 is in the FH HNO_3 Rinse (e14232-13)

Fractions Received: Runs/FB; C1, C2, C3, C4, C5A, C5B, C5C—RB; C7, C8A, C8B, C9, C10(2), C11, C12(3) PDS 03.25.09

SS Page2 of 2
3/27/2010 3:54:52 PM
SS by [signature]
Labeled By_____

FH Prep By/Date_____ A Prep By/Date_____
BH Prep By/Date_____ B Prep By/Date_____
BH/FH Prep By/Date_____ C Prep By/Date_____
PM Prep By/Date_____ ID Verification By / Date_____

e14232-22

Method 29 Compliance Audit Material
(Mercury Acidified Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M29-4440-02/HG-4029 Date Issued: 03/17/10

Auditee:

Company: Element One, Inc.
Address: 5022-C Wrightsville Av. Wilmington, NC 28403
Phone 910-793-0128 - FAX 792-6853
Attention of: e1lab@e1lab.com Phone:

Requestor:

Agency: Florida DEP-SED
Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401
Attention of: Lee Hoefert Phone: 561-681-6626

Project Name: Wheelabrator South Broward

Audit Results (Results in µg)

Compound	Result
Mercury	Mercury 58.4 Total µg

e14232-23
e14232-24

Method 29 Compliance Audit Material
(Multi-Metals Spiked Filter)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M29-4440-01/Fil-4860 Date Issued: 03/17/10

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 Hoefert Phone: 561-681-6626

Project Name: Wheelabrator South Broward

Audit Results (Results in µg)

Compound		Result		Blank Filter Result		
Beryllium	**Beryllium**	**73.1**	**Total µg**	**Beryllium**	**< 0.025**	**Total µg**
Cadmium	***Cadmium***	**78.8**	**Total µg**	**Cadmium**	**< 0.1**	**Total µg**
Lead	**Lead**	**86.5**	**Total µg**	**Lead**	**0.147**	**Total µg**

elementOne **Method 5 Particulate** Lab # 14232

CAE Page 1 of 2

Balance checks Date: 4-1-10 2 g = 2.0002
Date: 4-2-10 2g = 1.9998
Date:

Acetone Concentration
0.00E+00 mg/mg

Filters

Sample ID #	Filter ID	Bag ID	A	B		B		B		
			Bag Tare, g	Date - 4-1-10 Initials - RDT		Date - 4-2-10 Initials- RDT		Date Initials		Catch Description and Loading
				Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	
14232-4	e114-16	217	3.3924	2:00	3.7738	8:00	3.7739			
14232-5	e114-17	2396	3.7150	2:00	4.0913	8:00	4.0911			
14232-6	e114-18	164	3.7059	2:00	4.0823	8:00	4.0821			
14232-10	e114-01	919	3.8544	2:00	4.2379	8:00	4.2378			
14232-11	e114-02	224	4.2589	2:00	4.6446	8:00	4.6449			
14232-12	e114-03	2381	3.7112	2:00	4.0982	8:00	4.0979			
Client Blk HERE	e114-15	1996	3.8150	2:00	4.1998	8:00	4.2000			
E1 Blank										

Acetone Rinses

Sample ID #	Sample Volume, ml	Bag ID	C	D		D		D		
			Bag Tare, g	Date - 4-1-10 Initials - RDT		Date - 4-2-10 Initials- RDT		Date Initials		Catch Description and Loading
				Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	
14232-4	76	2414	3.3074	2:00	3.3082	8:00	3.3080			
14232-5	80	1474	3.9646	2:00	3.9667	8:00	3.9668			
14232-6	77	2335	4.0334	2:00	4.0350	8:00	4.0349			
14232-10	96	2364	3.7071	2:00	3.7085	8:00	3.7090			
14232-11	98	988	3.8398	2:00	3.8422	8:00	3.8422			
14232-12	68	50	4.2829	2:00	4.2841	8:00	4.2843			
Client Ace Blk HERE	146	210	4.0569	2:00	4.0563	8:00	4.0564			
E1 Acetone Blank	100	269	3.7436	2:00	3.7435	8:00	3.7434			

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
14232-4	e114-16	0.3809	3.7738	0.5	2414	3.3074	3.3080	0.0	0.6	1.1
14232-5	e114-17	0.3765	4.0911	< 0.1	1474	3.9646	3.9667	0.0	2.1	2.1
14232-6	e114-18	0.3755	4.0821	0.7	2335	4.0334	4.0349	0.0	1.5	2.2
14232-10	e114-01	0.3823	4.2378	1.1	2364	3.7071	3.7085	0.0	1.4	2.5
14232-11	e114-02	0.3851	4.6446	0.6	988	3.8398	3.8422	0.0	2.4	3.0
14232-12	e114-03	0.3864	4.0979	0.3	50	4.2829	4.2841	0.0	1.2	1.5
Client Ace Blk HERE	e114-15	0.3840	4.1998	0.8	210	4.0569	4.0563	0.0	< 0.1	0.8
E1 Acetone					269	3.7436	3.7434	0.0	< 0.1	< 0.1

Element One, Inc. Form 123 - Revision 1.10.23.07

elementOne | **Method 5 Particulate** | Lab # 14232

CAE | Page 2 of 2

Balance checks Date: 4-1-10 2 g = 2.0002
Date: 4-2-10 2g = 1.9998
Date:

Acetone Concentration 0.00E+00 mg/mg

Filters

Sample ID #	Filter ID	Bag ID	A	B		B		B		
			Bag Tare, g	Date - 4-1-10 Initials - RDT		Date - 4-2-10 Initials - RDT		Date Initials		Catch Description and Loading
				Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	Time	Bag & Filter Weight, g	
14232-16	e115-33	85	4.1316	2:00	4.4886	8:00	4.4889			
14232-17	e115-34	744	3.5773	2:00	3.9402	8:00	3.9407			
14232-18	e114-12	952	4.2450	2:00	4.6348	8:00	4.6346			
14232-19	e114-04	801	3.4989	2:00	3.8792	8:00	3.8795			
Client Blk HERE	e114-15	1996	3.8150	2:00	4.1998	8:00	4.2000			
E1 Blank										

Acetone Rinses

Sample ID #	Sample Volume, ml	Bag ID	C	D		D		D		
			Bag Tare, g	Date - 4-1-10 Initials - RDT		Date - 4-2-10 Initials - RDT		Date Initials		Catch Description and Loading
				Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	Time	Bag & Sample Weight, g	
14232-16	108	2376	3.8618	2:00	3.8626	8:00	3.8629			
14232-17	82	2367	3.9285	2:00	3.9308	8:00	3.9310			
14232-18	84	764	3.9964	2:00	3.9981	8:00	3.9984			
14232-19	74	A44	3.4574	2:00	3.4586	8:00	3.4583			
Client Ace Blk HERE	146	210	4.0569	2:00	4.0583	8:00	4.0564			
E1 Acetone Blank	100	269	3.7436	2:00	3.7435	8:00	3.7434			

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
14232-16	e115-33	0.3541	4.4886	2.9	2376	3.8618	3.8628	0.0	1.0	3.9
14232-17	e115-34	0.3618	3.9402	1.1	2367	3.9285	3.9308	0.0	2.3	3.4
14232-18	e114-12	0.3880	4.6346	1.8	764	3.9964	3.9981	0.0	1.7	3.3
Client Ace Blk HERE	e114-15	0.3840	4.1998	0.8	210	4.0569	4.0583	0.0	< 0.1	0.8
E1 Acetone					269	3.7436	3.7434	0.0	< 0.1	< 0.1

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\x1.sam
Report Date/Time: Tuesday, April 06, 2010 10:31:10

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					
28		14232-4	CAE	Sample					
29		14232-5	CAE	Sample					
30	d	14232-5	CAE	Duplicate of 3					
31		14232-6	CAE	Sample					
32	s	14232-6	CAE	Spike - 1 of 5					
33		14232-10	CAE	Sample					
34		14232-11	CAE	Sample					
35	d	14232-11	CAE	Duplicate of 8					
36		14232-12	CAE	Sample					
37	s	14232-12	CAE	Spike - 1 of 10					
38		14232-16	CAE	Sample					
39		14232-17	CAE	Sample					
40	d	14232-17	CAE	Duplicate of 13					
41		14232-18	CAE	Sample					
42	s	14232-18	CAE	Spike - 1 of 15					
43		14232-19	CAE	Sample					
44		14232-20	CAE	Sample					
45	x5	14232-23	CAE	Sample					
46	x20	14232-23	CAE	Sample					
47	x50	14232-23	CAE	Sample					
48		14232-24	CAE	Sample					
11		QC Std 8	CAE	Sample					

Dataset Report

User Name: icp
Computer Name: D8D4DWD1
Dataset File Path: C:\elandata_icp\DataSet\040210-4\
Report Date/Time: Tuesday, April 06, 2010 10:30:51

Autosampler Position: 11

The Dataset

Time	Sample ID	Batch ID	Read Type	Description	Init. Quant	Prep. Vol.	Aliquot. Vol.	Diluted V
19:03:29 Fri 02-Apr-10	Blank		Blank					
19:05:26 Fri 02-Apr-10	Standard 1		Standard #1					
19:07:23 Fri 02-Apr-10	Standard 2		Standard #2					
19:09:21 Fri 02-Apr-10	Standard 3		Standard #3					
19:11:18 Fri 02-Apr-10	QC Std 1		QC Std #1					
19:13:15 Fri 02-Apr-10	QC Std 2		QC Std #2					
19:15:13 Fri 02-Apr-10	QC Std 3		QC Std #3					
19:17:09 Fri 02-Apr-10	QC Std 4		QC Std #4					
19:19:06 Fri 02-Apr-10	QC Std 5		QC Std #5					
19:21:03 Fri 02-Apr-10	QC Std 6		QC Std #6					
19:23:01 Fri 02-Apr-10	QC Std 7		QC Std #7					
19:25:00 Fri 02-Apr-10	QC Std 8		QC Std #8					
19:26:57 Fri 02-Apr-10	QC Std 9		QC Std #9					
19:28:54 Fri 02-Apr-10	QC Std 10		QC Std #10					
19:30:52 Fri 02-Apr-10	QC Std 2		Sample	CAE				
19:32:50 Fri 02-Apr-10	14232-4		Sample	CAE				
19:34:47 Fri 02-Apr-10	14232-5		Sample	CAE				
19:36:43 Fri 02-Apr-10	14232-5	d	Duplicate of 17	CAE				
19:38:40 Fri 02-Apr-10	14232-6		Sample	CAE				
19:40:38 Fri 02-Apr-10	14232-6	s	Spike - 1 of 19	CAE				
19:42:35 Fri 02-Apr-10	14232-10		Sample	CAE				
19:44:33 Fri 02-Apr-10	14232-11		Sample	CAE				
19:46:31 Fri 02-Apr-10	14232-11	d	Duplicate of 22	CAE				
19:48:30 Fri 02-Apr-10	14232-12		Sample	CAE				
19:50:29 Fri 02-Apr-10	14232-12	s	Spike - 1 of 24	CAE				
19:52:27 Fri 02-Apr-10	QC Std 1		QC Std #1					
19:54:23 Fri 02-Apr-10	QC Std 4		QC Std #4					
19:56:21 Fri 02-Apr-10	14232-16		Sample	CAE				
19:58:18 Fri 02-Apr-10	14232-17		Sample	CAE				
20:00:16 Fri 02-Apr-10	14232-17	d	Duplicate of 29	CAE				
20:02:13 Fri 02-Apr-10	14232-18		Sample	CAE				
20:04:11 Fri 02-Apr-10	14232-18	s	Spike - 1 of 31	CAE				
20:06:08 Fri 02-Apr-10	14232-19		Sample	CAE				
20:08:06 Fri 02-Apr-10	14232-20		Sample	CAE				
20:10:03 Fri 02-Apr-10	14232-23	x5	Sample	CAE				
20:12:01 Fri 02-Apr-10	14232-23	x20	Sample	CAE				
20:13:59 Fri 02-Apr-10	14232-23	x50	Sample	CAE				
20:15:56 Fri 02-Apr-10	QC Std 1		QC Std #1					
20:17:53 Fri 02-Apr-10	QC Std 4		QC Std #4					
20:19:51 Fri 02-Apr-10	14232-24		Sample	CAE				
20:21:49 Fri 02-Apr-10	QC Std 1		QC Std #1					
20:23:46 Fri 02-Apr-10	QC Std 4		QC Std #4					
21:33:38 Fri 02-Apr-10	Blank		Blank					

Use Rh for Be IS.

21:35:10 Fri 02-Apr-10	Standard 1		Standard #1	
21:36:42 Fri 02-Apr-10	Standard 2		Standard #2	
21:38:15 Fri 02-Apr-10	Standard 3		Standard #3	
21:39:48 Fri 02-Apr-10	QC Std 1		QC Std #1	
21:41:21 Fri 02-Apr-10	QC Std 2		QC Std #2	
21:42:53 Fri 02-Apr-10	QC Std 3		QC Std #3	
21:44:25 Fri 02-Apr-10	QC Std 4		QC Std #4	
21:45:57 Fri 02-Apr-10	QC Std 5		QC Std #5	
21:47:30 Fri 02-Apr-10	QC Std 8		QC Std #8	
21:49:03 Fri 02-Apr-10	QC Std 9		QC Std #9	
21:50:35 Fri 02-Apr-10	QC Std 10		QC Std #10	
21:52:08 Fri 02-Apr-10	QC Std 2		Sample	CAE
21:53:41 Fri 02-Apr-10	14232-4		Sample	CAE
21:55:13 Fri 02-Apr-10	14232-5		Sample	CAE
21:56:45 Fri 02-Apr-10	14232-5	d	Duplicate of 57	CAE
21:58:18 Fri 02-Apr-10	14232-6		Sample	CAE
21:59:50 Fri 02-Apr-10	14232-6	s	Spike - 1 of 59	CAE
22:01:23 Fri 02-Apr-10	14232-10		Sample	CAE
22:02:56 Fri 02-Apr-10	14232-11		Sample	CAE
22:04:30 Fri 02-Apr-10	14232-11	d	Duplicate of 62	CAE
22:06:04 Fri 02-Apr-10	14232-12		Sample	CAE
22:07:38 Fri 02-Apr-10	14232-12	s	Spike - 1 of 64	CAE
22:09:11 Fri 02-Apr-10	QC Std 1		QC Std #1	
22:10:43 Fri 02-Apr-10	QC Std 4		QC Std #4	
22:12:15 Fri 02-Apr-10	14232-16		Sample	CAE
22:13:48 Fri 02-Apr-10	14232-17		Sample	CAE
22:15:21 Fri 02-Apr-10	14232-17	d	Duplicate of 69	CAE
22:16:53 Fri 02-Apr-10	14232-18		Sample	CAE
22:18:26 Fri 02-Apr-10	14232-18	s	Spike - 1 of 71	CAE
22:19:59 Fri 02-Apr-10	14232-19		Sample	CAE
22:21:33 Fri 02-Apr-10	14232-20		Sample	CAE
22:23:06 Fri 02-Apr-10	14232-23	x5	Sample	CAE
22:24:39 Fri 02-Apr-10	14232-23	x20	Sample	CAE
22:26:12 Fri 02-Apr-10	14232-23	x50	Sample	CAE
22:27:45 Fri 02-Apr-10	QC Std 1		QC Std #1	
22:29:17 Fri 02-Apr-10	QC Std 4		QC Std #4	
22:30:50 Fri 02-Apr-10	14232-24		Sample	CAE
22:32:23 Fri 02-Apr-10	QC Std 1		QC Std #1	
22:33:55 Fri 02-Apr-10	QC Std 4		QC Std #4	
22:37:08 Fri 02-Apr-10	QC Std 8		Sample	CAE

Be only ↓

elementOne
Analyst:--KMS--

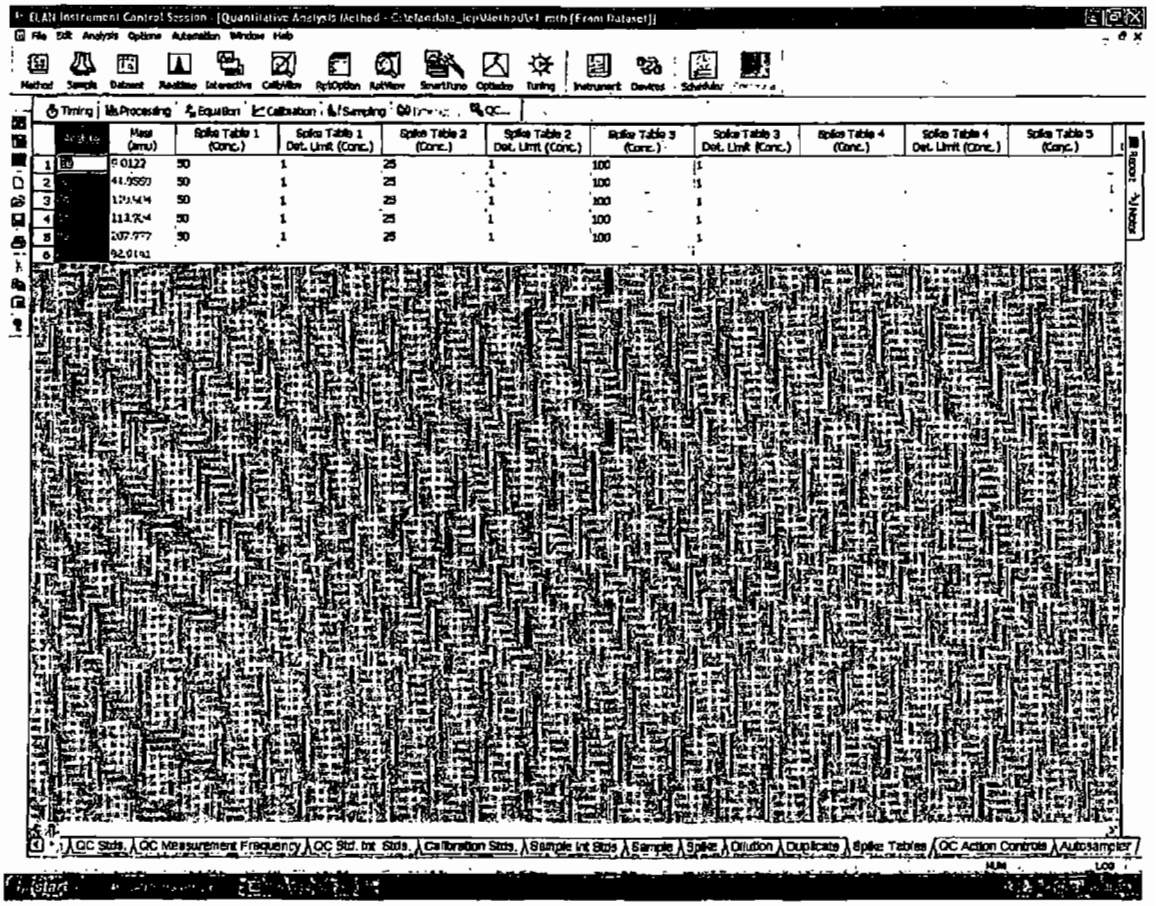
ICP-MS RUN SHEET
4/6/2010

Job Number:

A/S Loc.	Dilution	Sample ID	Client	Type	Weight (g)	Prep Vol (ml)
5		QC Std 2	CAE	Sample		
28		14232-4	CAE	Sample		100x2
29		14232-5	CAE	Sample		100x2
30	d	14232-5	CAE	Duplicate of 3		100x2
31		14232-6	CAE	Sample		100x2
32	s	14232-6	CAE	Spike - 1 of 5		100x2
33		14232-10	CAE	Sample		100x2
34		14232-11	CAE	Sample		100x2
35	d	14232-11	CAE	Duplicate of 8		100x2
36		14232-12	CAE	Sample		100x2
37	s	14232-12	CAE	Spike - 1 of 10		100x2
38		14232-16	CAE	Sample		100x2
39		14232-17	CAE	Sample		100x2
40	d	14232-17	CAE	Duplicate of 13		100x2
41		14232-18	CAE	Sample		100x2
42	s	14232-18	CAE	Spike - 1 of 15		100x2
43		14232-19	CAE	Sample		100x2
44		14232-20	CAE	Sample		100x2
45	x5	14232-23	CAE	Sample		100x2
46	x20	14232-23	CAE	Sample		100x2
47	x50	14232-23	CAE	Sample		100x2
48		14232-24	CAE	Sample		100x2
11		QC Std 8	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	4/6/10 10:37		DBL	4/8/10	1834
Re-Test Required:	No: ✓	Yes:	Comments:		
Resubmitted for QC by:	Date/Time:		QC Review:	By:	Date/Time:



Tuesday, Apr 06, 2010 10:31 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														

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: Blank
Sample Da Friday, April 02, 2010 19:03:29
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	86500.9		ppb
|	Be	9	17		ppb
|	Sc	45	127384.8		ppb
|>	Rh	103	248214.8		ppb
|	Cd	111	45.6		ppb
|-	Cd	114	88.5		ppb
|>	Ho	165	537840.7		ppb
|-	Pb	208	3207.2		ppb
	Kr	83	92.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 1
Sample Da Friday, April 02, 2010 19:05:26
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	87875.4		ppb
|	Be	9	643.7	1.08137	ppb
|	Sc	45	127701.8		ppb
|>	Rh	103	248231.6		ppb
|	Cd	111	1583.1	1.07325	ppb
|-	Cd	114	3765.5	1.08332	ppb
|>	Ho	165	543186.7		ppb
|-	Pb	208	26755.8	0.98995	ppb
	Kr	83	-16.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 2
Sample Da Friday, April 02, 2010 19:07:23
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	87077.9		ppb
|	Be	9	57180	100.04101	ppb
|	Sc	45	126338.8		ppb
|>	Rh	103	244725.4		ppb
|	Cd	111	142430.3	100.82559	ppb
|-	Cd	114	335942.5	100.38347	ppb
|>	Ho	165	536636.4		ppb
|-	Pb	208	2315616.1	98.53796	ppb
	Kr	83	-8081.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 3
Sample Da Friday, April 02, 2010 19:09:21
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	78705.9		ppb
|	Be	9	258703.4	499.99164	ppb
|	Sc	45	115844.1		ppb
|>	Rh	103	221602.3		ppb
|	Cd	111	639125	499.83474	ppb
|-	Cd	114	1514440.9	499.92314	ppb
|>	Ho	165	491088.2		ppb
|-	Pb	208	10746932	500.29243	ppb
	Kr	83	-38208.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std t
Sample Da Friday, April 02, 2010 19:11:18
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	80991.1		ppb
|	Be	9	137.7	0.22446	ppb
|	Sc	45	120051.8		ppb
|>	Rh	103	234412.9		ppb
|	Cd	111	304.6	0.19555	ppb
|-	Cd	114	774.1	0.21785	ppb
|>	Ho	165	512263.8		ppb
|-	Pb	208	10182.4	0.32023	ppb
	Kr	83	85.8		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Da Friday, April 02, 2010 19:13:t5
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	82461.7		ppb
|	Be	9	550.3	0.97691	ppb
|	Sc	45	119940.3		ppb
|>	Rh	103	234245.9		ppb
|	Cd	111	1392.3	0.99816	ppb
|-	Cd	114	3245.3	0.9877	ppb
|>	Ho	165	512301.6		ppb
|-	Pb	208	23580.3	0.91632	ppb
	Kr	83	10.4		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Da Friday, April 02, 2010 19:15:13
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	80382.7		ppb
|	Be	9	126054.6	236.69296	ppb
|	Sc	45	117706.6		ppb
|>	Rh	103	228051.4		ppb
|	Cd	111	310676.6	235.99555	ppb
|-	Cd	114	737408.4	236.42558	ppb
|>	Ho	165	500851.1		ppb
|-	Pb	208	5227180.8	238.51281	ppb
	Kr	83	-18926.2		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Friday, April 02, 2010 19:17:09
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	82725.3		ppb
|	Be	9	54643.8	99.25911	ppb
|	Sc	45	120859.9		ppb
|>	Rh	103	235704.5		ppb
|	Cd	111	136308	100.17626	ppb
|-	Cd	114	324682.8	100.73421	ppb
|>	Ho	165	519490.3		ppb
|-	Pb	208	2251817.5	98.9791	ppb
	Kr	83	-7726.8		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 5
Sample Da Friday, April 02, 2010 19:19:06
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	83502.5		ppb
|	Be	9	26875	48.54824	ppb
|	Sc	45	120859.2		ppb
|>	Rh	103	236957.5		ppb
|	Cd	111	65621.4	47.96811	ppb
|-	Cd	114	156343.6	48.24399	ppb
|>	Ho	165	520667.6		ppb
|-	Pb	208	1091145.5	47.79287	ppb
	Kr	83	86.5		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 6
Sample Da Friday, April 02, 2010 19:21:03
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	85705.4		ppb
|	Be	9	30	0.03054	ppb
|	Sc	45	118090.6		ppb
|>	Rh	103	215806.1		ppb
|	Cd	111	431.3	0.31398	ppb
|-	Cd	114	3849.6	1.27911	ppb
|>	Ho	165	502630		ppb
|-	Pb	208	9137.1	0.28017	ppb
	Kr	83	43.2		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 7
Sample Da Friday, April 02, 2010 19:23:01
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	91427.1		ppb
|	Be	9	34.3	0.03614	ppb
|	Sc	45	122938.9		ppb
|>	Rh	103	224336.4		ppb
|	Cd	111	6793.9	5.21595	ppb
|-	Cd	114	18990.7	6.16534	ppb
|>	Ho	165	528623.1		ppb
|-	Pb	208	5808.1	0.11495	ppb
	Kr	83	94.8		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 8
Sample Da Friday, April 02, 2010 19:25:00
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	89952.8		ppb
|	Be	9	193.7	0.31092	ppb
|	Sc	45	122578.9		ppb
|>	Rh	103	243870.4		ppb
|	Cd	111	443.3	0.28333	ppb
|-	Cd	114	1072.6	0.29571	ppb
|>	Ho	165	542170.1		ppb
|-	Pb	208	8639.9	0.22802	ppb
	Kr	83	59.3		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 9
Sample Da Friday, April 02, 2010 19:26:57
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	79350.5		ppb
|	Be	9	9.7	-0.01112	ppb
|	Sc	45	112939.2		ppb
|>	Rh	103	228581.2		ppb
|	Cd	111	45.8	0.00293	ppb
|-	Cd	114	78.6	-0.00092	ppb
|>	Ho	165	520428.4		ppb
|-	Pb	208	9336.5	0.27399	ppb
	Kr	83	65.8		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 10
Sample Da Friday, April 02, 2010 19:28:54
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	89708.7		ppb
|	Be	9	25632.1	43.64447	ppb
|	Sc	45	120975.3		ppb
|>	Rh	103	251408.8		ppb
|	Cd	111	64039.7	44.11841	ppb
|-	Cd	114	152213.1	44.2726	ppb
|>	Ho	165	555533.3		ppb
|-	Pb	208	1052246.5	43.17712	ppb
	Kr	83	81.4		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Da Friday, April 02, 2010 19:30:52
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	94476.8		ppb
|	Be	9	617.7	1.00406	ppb
|	Sc	45	131535.1		ppb
|>	Rh	103	256149.9		ppb
|	Cd	111	1522.2	0.99882	ppb
|-	Cd	114	3517.9	0.97855	ppb
|>	Ho	165	569348.9		ppb
|-	Pb	208	26157.1	0.9144	ppb
	Kr	83	-9.3		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-4
Sample Da Friday, April 02, 2010 19:32:50
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	76507.5		ppb
|	Be	9	20.7	0.01485	ppb
|	Sc	45	971827.2		ppb
|>	Rh	103	200248.2		ppb
|	Cd	111	463.6	0.36929	ppb
|-	Cd	114	192.1	0.0439	ppb
|>	Ho	165	525123.3		ppb
|-	Pb	208	70679.6	2.94097	ppb
	Kr	83	127.1		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-5
Sample Da Friday, April 02, 2010 19:34:47
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	76336		ppb
|	Be	9	21	0.01579	ppb
|	Sc	45	738905.2		ppb
|>	Rh	103	200535		ppb
|	Cd	111	564.7	0.45631	ppb
|-	Cd	114	399.2	0.12304	ppb
|>	Ho	165	532945.7		ppb
|-	Pb	208	109764.1	4.57656	ppb
	Kr	83	44.8		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-5
Sample Da Friday, April 02, 2010 19:36:43
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	75392.4		ppb
|	Be	9	13.3	-0.00081	ppb
|	Sc	45	698028.7		ppb
|>	Rh	103	201444.2		ppb
|	Cd	111	589	0.47523	ppb
|-	Cd	114	91.3	0.00733	ppb
|>	Ho	165	538984.5		ppb
|-	Pb	208	111660.1	4.60121	ppb
	Kr	83	89.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-6
Sample Da Friday, April 02, 2010 19:38:40
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	84600.3		ppb
|	Be	9	18.3	0.00579	ppb
|	Sc	45	1041774.4		ppb
|>	Rh	103	224446.7		ppb
|	Cd	111	806.7	0.59059	ppb
|-	Cd	114	1027.4	0.30831	ppb
|>	Ho	165	575344		ppb
|-	Pb	208	97601.1	3.74271	ppb
	Kr	83	198.5		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-6
Sample Da Friday, April 02, 2010 19:40:38
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	82258.8		ppb
|	Be	9	22331.7	43.09596	ppb
|	Sc	45	970557.7		ppb
|>	Rh	103	221859.6		ppb
|	Cd	111	58169.1	45.40751	ppb
|-	Cd	114	136538.1	44.99768	ppb
|>	Ho	165	565858.8		ppb
|-	Pb	208	1305696.1	52.62619	ppb
	Kr	83	236		mg/L

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-10
Sample Da Friday, April 02, 2010 19:42:35
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	77871.1		ppb
|	Be	9	19.7	0.0106	ppb
|	Sc	45	391340.2		ppb
|>	Rh	103	213155.9		ppb
|	Cd	111	3182.1	2.55652	ppb
|-	Cd	114	6077.2	2.05574	ppb
|>	Ho	165	547176.1		ppb
|-	Pb	208	665180.6	27.66878	ppb
	Kr	83	45.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-11
Sample Da Friday, April 02, 2010 19:44:33
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	75488.6		ppb
|	Be	9	20	0.01281	ppb
|	Sc	45	788166.9		ppb
|>	Rh	103	203288.7		ppb
|	Cd	111	5688.7	4.81917	ppb
|-	Cd	114	12543.9	4.49146	ppb
|>	Ho	165	530917.2		ppb
|-	Pb	208	682274.9	29.25585	ppb
	Kr	83	112.1		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-11
Sample Da Friday, April 02, 2010 19:46:31
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	76010.8		ppb
|	Be	9	20.7	0.01431	ppb
|	Sc	45	758967.5		ppb
|>	Rh	103	203204.6		ppb
|	Cd	111	5781.6	4.89813	ppb
|-	Cd	114	12701.1	4.54521	ppb
|>	Ho	165	526726.8		ppb
|-	Pb	208	679166.9	29.35142	ppb
	Kr	83	105.3		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-12
Sample Da Friday, April 02, 2010 19:48:30
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	85363.2		ppb
|	Be	9	16.3	0.00277	ppb
|	Sc	45	797583.9		ppb
|>	Rh	103	218464.1		ppb
|	Cd	111	6044.7	4.76261	ppb
|-	Cd	114	13264.4	4.41647	ppb
|>	Ho	165	549543		ppb
|-	Pb	208	787351.3	32.62789	ppb
	Kr	83	98.2		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-12
Sample Da Friday, April 02, 2010 19:50:29
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	86800.2		ppb
|	Be	9	22618.5	44.23665	ppb
|	Sc	45	790387.1		ppb
|>	Rh	103	218890.6		ppb
|	Cd	111	62379.9	49.37277	ppb
|-	Cd	114	147498.7	49.27606	ppb
|>	Ho	165	552521.7		ppb
|-	Pb	208	1961076.9	81.05008	ppb
	Kr	83	124.5		mg/L

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Friday, April 02, 2010 19:52:27
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	104456		ppb
|	Be	9	42.3	0.04133	ppb
|	Sc	45	134511.2		ppb
|>	Rh	103	258225.5		ppb
|	Cd	111	98.1	0.03444	ppb
|-	Cd	114	217.2	0.03576	ppb
|>	Ho	165	614718.2		ppb
|-	Pb	208	5704	0.07636	ppb
	Kr	83	70.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Friday, April 02, 2010 19:54:23
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	104831.7		ppb
|	Be	9	64400.6	105.66121	ppb
|	Sc	45	136301.4		ppb
|>	Rh	103	261092		ppb
|	Cd	111	159343.7	105.75932	ppb
|-	Cd	114	378467.4	106.01476	ppb
|>	Ho	165	621992.4		ppb
|-	Pb	208	2707533.3	99.40478	ppb
	Kr	83	-8745		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-16
Sample Da Friday, April 02, 2010 19:56:21
Sample Da CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	87338.3		ppb
|	Be	9	46.7	0.0615	ppb
|	Sc	45	828383.2		ppb
|>	Rh	103	222629.4		ppb
|	Cd	111	5005.6	3.86671	ppb
|-	Cd	114	11270.4	3.67815	ppb
|>	Ho	165	561735.9		ppb
|-	Pb	208	872824.1	35.39131	ppb
	Kr	83	27		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-17
Sample Da Friday, April 02, 2010 19:58:18
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	86824.9		ppb
|	Be	9	23.3	0.01658	ppb
|	Sc	45	699533.9		ppb
|>	Rh	103	218777.7		ppb
|	Cd	111	4574.9	3.59207	ppb
|-	Cd	114	9934.2	3.29712	ppb
|>	Ho	165	559252.1		ppb
|-	Pb	208	661692.1	26.92634	ppb
	Kr	83	13.2		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-17
Sample Da Friday, April 02, 2010 20:00:16
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	77529.1		ppb
|	Be	9	17.7	0.01003	ppb
|	Sc	45	680534.3		ppb
|>	Rh	103	191578.6		ppb
|	Cd	111	4580.8	4.11176	ppb
|-	Cd	114	9555.7	3.62162	ppb
|>	Ho	165	486131		ppb
|-	Pb	208	651206.8	30.50067	ppb
	Kr	83	39.1		mg/L

PerkinElmer ELAN 6100 ICP-MS

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-18
Sample Da Friday, April 02, 2010 20:02:13
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	89873.5		ppb
|	Be	9	18.7	0.0069	ppb
|	Sc	45	798010.5		ppb
|>	Rh	103	219333.3		ppb
|	Cd	111	4680	3.66556	ppb
|-	Cd	114	10083.6	3.33464	ppb
|>	Ho	165	557725		ppb
|-	Pb	208	756092.5	30.86875	ppb
	Kr	83	95.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-18
Sample Da Friday, April 02, 2010 20:04:11
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	90824.4		ppb
|	Be	9	22370.2	43.61239	ppb
|	Sc	45	777317.1		ppb
|>	Rh	103	219557.6		ppb
|	Cd	111	58725.5	46.31917	ppb
|-	Cd	114	138273.5	46.03748	ppb
|>	Ho	165	555083.8		ppb
|-	Pb	208	1932966.4	79.48944	ppb
	Kr	83	108.2		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-19
Sample Da Friday, April 02, 2010 20:06:08
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	107773.1		ppb
|	Be	9	28	0.01832	ppb
|	Sc	45	673889.7		ppb
|>	Rh	103	252434.4		ppb
|	Cd	111	421.9	0.25799	ppb
|-	Cd	114	696.6	0.17595	ppb
|>	Ho	165	630963.1		ppb
|-	Pb	208	46305.9	1.54184	ppb
	Kr	83	168.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-20
Sample Da Friday, April 02, 2010 20:08:06
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	102865		ppb
|	Be	9	15.7	-0.00198	ppb
|	Sc	45	730010.6		ppb
|>	Rh	103	245120.9		ppb
|	Cd	111	174.6	0.09128	ppb
|-	Cd	114	201.7	0.03429	ppb
|>	Ho	165	602609.3		ppb
|-	Pb	208	30822.6	1.03337	ppb
	Kr	83	190.7		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-23
Sample Da Friday, April 02, 2010 20:10:03
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	105212.3		ppb
|	Be	9	83732.9	146.21745	ppb
|	Sc	45	493391.6		ppb
|>	Rh	103	245227.9		ppb
|	Cd	111	214046.7	151.22635	ppb
|-	Cd	114	508638.6	151.68217	ppb
|>	Ho	165	593004.4		ppb
|-	Pb	208	4487356	172.90326	ppb
	Kr	83	163		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-23
Sample Da Friday, April 02, 2010 20:13:59
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	107875		ppb
|	Be	9	8953.7	15.43962	ppb
|	Sc	45	164051.1		ppb
|>	Rh	103	247893.6		ppb
|	Cd	111	22603	15.76927	ppb
|-	Cd	114	53079.1	15.63574	ppb
|>	Ho	165	592137.2		ppb
|-	Pb	208	434141	16.63136	ppb
	Kr	83	129		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Friday, April 02, 2010 20:15:56
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	114994.6		ppb
|	Be	9	31.7	0.02213	ppb
|	Sc	45	136555.7		ppb
|>	Rh	103	263876.4		ppb
|	Cd	111	75.9	0.01827	ppb
|-	Cd	114	164.6	0.01964	ppb
|>	Ho	165	612618.8		ppb
|-	Pb	208	5013.2	0.05088	ppb
	Kr	83	91		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Friday, April 02, 2010 20:17:53
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	116154.5		ppb
|	Be	9	68695.3	110.67904	ppb
|	Sc	45	138633.8		ppb
|>	Rh	103	265749		ppb
|	Cd	111	161939.5	105.56409	ppb
|-	Cd	114	382328.7	105.20017	ppb
|>	Ho	165	625304.2		ppb
|-	Pb	208	2669167.3	97.47215	ppb
	Kr	83	-9076.4		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: 14232-24
Sample Da Friday, April 02, 2010 20:19:51
Sample De CAE
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	101572.1		ppb
|	Be	9	61	0.08047	ppb
|	Sc	45	1268735.7		ppb
|>	Rh	103	239411.1		ppb
|	Cd	111	856.9	0.58929	ppb
|-	Cd	114	329.9	0.07516	ppb
|>	Ho	165	585381.7		ppb
|-	Pb	208	41105	1.47056	ppb
	Kr	83	78.6		mg/L

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Friday, April 02, 2010 20:21:49
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	118776.4		ppb
|	Be	9	30.7	0.01898	ppb
|	Sc	45	140589.6		ppb
|>	Rh	103	273053.3		ppb
|	Cd	111	58.5	0.00536	ppb
|-	Cd	114	131.8	0.00931	ppb
|>	Ho	165	634391.1		ppb
|-	Pb	208	4191.4	0.01485	ppb
	Kr	83	68.3		mg/L

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Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Friday, April 02, 2010 20:23:46
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mear	Report Unit
|-	Li	6	120792.1		ppb
|	Be	9	70691.8	108.81476	ppb
|	Sc	45	145167.6		ppb
|>	Rh	103	278154.7		ppb
|	Cd	111	167902.5	104.56348	ppb
|-	Cd	114	397855.1	104.5873	ppb
|>	Ho	165	646852		ppb
|-	Pb	208	2772339.1	97.86046	ppb
	Kr	83	-9548.7		mg/L

PerkinElmer FIMS-100 CVAA Mercury Analyzer

Sample_ID	Date	Time	Mean_Sig	Mean_Rd	Mean_Rt	Units	Aliq.	Vol.	Sig 1	Reading-1	Result-1	Sig 2	Reading-2	Result-2
Calib Blank	3/30/2010	12:53:57	0.0002503			µg			0.0002503					
STD1=.004ug	3/30/2010	12:55:12	0.0010066			µg			0.0010066					
STD2=.04ug	3/30/2010	12:56:28	0.0111514			µg			0.0111514					
STD3=.08ug	3/30/2010	12:57:45	0.0201605			µg			0.0201605					
STD4=.16ug	3/30/2010	12:59:02	0.040185			µg			0.040185					
STD5=.2ug	3/30/2010	13:00:21	0.0494992			µg			0.0494992					
0.004ug = DL	3/30/2010	13:03:24	0.001006	0.0040252	0.0040252	µg			0.001006	0.0040252	0.0040252			
0.080ug = STD.2	3/30/2010	13:04:41	0.0183279	0.0733317	0.0733317	µg			0.0183279	0.0733317	0.0733317			
0.080ug = QC STD 2	3/30/2010	13:06:01	0.0197646	0.0790803	0.0790803	µg			0.0197646	0.0790803	0.0790803			
14232-1a	3/30/2010	13:24:14	0.0004935	0.0019745	0.0987247	µg	4	200	0.0004846	0.0019391	0.0969551	0.0005023	0.0020099	0.1004944
14232-2a	3/30/2010	13:26:00	8.915E-05	0.0003567	0.0178369	µg	4	200	9.084E-05	0.0003635	0.0181742	8.747E-05	0.00035	0.0174996
0.004ug = DL	3/30/2010	13:27:14	0.0009372	0.0037498	0.0037498	µg	4	200	0.0009372	0.0037498	0.0037498			
0.080ug = STD.2	3/30/2010	13:28:31	0.0188739	0.0755166	0.0755166	µg	4	200	0.0188739	0.0755166	0.0755166			
REAGENT BLANK	3/30/2010	13:29:47	-0.0000195	-0.0000781	-0.0000781	µg	4	200	-0.0000195	-0.0000781	-0.0000781			
14232-2a dup	3/30/2010	13:31:33	0.000116	0.000464	0.0231997	µg	4	200	0.0001182	0.0004731	0.0236556	0.0001137	0.0004549	0.0227439
14232-4a	3/30/2010	13:37:55	9.56E-06	3.827E-05	0.0019136	µg	4	200	1.671E-05	8.688E-05	0.0033432	2.41E-06	9.67E-06	0.0004839
14232-5a	3/30/2010	13:39:43	2.127E-05	8.511E-05	0.0042556	µg	4	200	2.092E-05	8.372E-05	0.0041865	2.161E-05	8.649E-05	0.0043247
14232-5a dup	3/30/2010	13:41:31	9.198E-05	0.000368	0.0183977	µg	4	200	8.514E-05	0.0002806	0.0130322	0.0001188	0.0004753	0.0237632
14232-6a	3/30/2010	13:43:21	-0.0000054	-0.0000218	-0.0010916	µg	4	200	8E-08	3.3E-07	1.659E-05	-0.0000109	-0.0000439	-0.0021999
14232-6a spk	3/30/2010	13:45:11	0.0164537	0.0658331	3.2916526	µg	4	200	0.0162889	0.0651738	3.2586784	0.0166185	0.0664925	3.3246269
14232-7a	3/30/2010	13:47:01	0.0005283	0.0021137	0.1056828	µg	4	200	0.0005046	0.0020192	0.1009578	0.0005519	0.0022082	0.1104078
14232-8a	3/30/2010	13:48:51	0.000424	0.0016964	0.0848207	µg	4	200	0.0004407	0.0017635	0.0881736	0.0004072	0.0016294	0.0814677
0.004ug = DL	3/30/2010	13:50:07	0.0009717	0.0038878	0.0038878	µg	4	200	0.0009717	0.0038878	0.0038878			
0.080ug = STD.2	3/30/2010	13:52:44	0.0179	0.0716197	0.0716197	µg	4	200	0.0179	0.0716197	0.0716197			
0.080ug = STD.2	3/30/2010	13:54:04	0.0198871	0.0795704	0.0795704	µg	4	200	0.0198871	0.0795704	0.0795704			
REAGENT BLANK	3/30/2010	13:55:21	1.996E-05	7.987E-05	7.987E-05	µg	4	200	1.996E-05	7.987E-05	7.987E-05			
14232-8a dup	3/30/2010	13:57:10	0.0001756	0.0007028	0.0351391	µg	4	200	0.0001659	0.0006638	0.033189	0.0001854	0.0007418	0.0370892
14232-10a	3/30/2010	14:02:41	0.0002099	0.00084	0.0419997	µg	4	200	0.0002046	0.0008184	0.0409221	0.0002153	0.0008615	0.0430774
14232-11a	3/30/2010	14:04:25	0.0001537	0.0006152	0.0307575	µg	4	200	0.0001401	0.0005605	0.0280253	0.0001674	0.0006698	0.0334898
14232-11a dup	3/30/2010	14:06:10	0.0002378	0.0009516	0.0475814	µg	4	200	0.000233	0.0009323	0.0466137	0.0002427	0.000971	0.0485491
14232-12a	3/30/2010	14:07:56	0.0001143	0.0004574	0.0228681	µg	4	200	0.0001297	0.0005188	0.0259389	9.895E-05	0.0003959	0.0197972
14232-12a spk	3/30/2010	14:09:42	0.0201228	0.0805135	4.0256751	µg	4	200	0.020474	0.0819186	4.0959305	0.0197716	0.0791084	3.9554198
14232-13a	3/30/2010	14:15:31	-0.00003	-0.0001202	-0.0060125	µg	4	200	-0.0000312	-0.0001248	-0.0062426	-0.0000289	-0.0001156	-0.0057823
14232-14a	3/30/2010	14:18:06	-0.0000272	-0.0001091	-0.0054593	µg	4	200	-0.0000339	-0.0001357	-0.0067865	-0.0000208	-0.0000826	-0.0041322
0.004ug = DL	3/30/2010	14:19:21	0.0009876	0.0039518	0.0039516	µg	4	200	0.0009876	0.0039518	0.0039516			
0.080ug = STD.2	3/30/2010	14:20:38	0.0198713	0.0795072	0.0795072	µg	4	200	0.0198713	0.0795072	0.0795072			
REAGENT BLANK	3/30/2010	14:21:55	0.0000275	0.00011	0.00011	µg	4	200	0.0000275	0.00011	0.00011			
14232-14a dup	3/30/2010	14:23:42	4.658E-05	0.0001864	0.0093203	µg	4	200	3.153E-05	0.0001262	0.0063095	6.163E-05	0.0002466	0.0123312
14232-15a	3/30/2010	14:25:30	0.0002081	0.0008247	0.0412356	µg	4	200	0.0001848	0.0007392	0.0369623	0.0002275	0.0009102	0.0455089
14232-15a spk	3/30/2010	14:27:18	0.0173717	0.0695061	3.4753046	µg	4	200	0.0174018	0.0696263	3.4813154	0.0173417	0.0693859	3.4692939
14232-16a	3/30/2010	14:29:07	9.542E-05	0.0003818	0.0190912	µg	4	200	0.0001063	0.0004252	0.0212616	8.458E-05	0.0003384	0.0169208
14232-17a	3/30/2010	14:30:57	0.0001904	0.000762	0.0380979	µg	4	200	0.0001732	0.0006932	0.0346579	0.0002076	0.0008308	0.0415379
14232-17a dup	3/30/2010	14:32:47	0.0003409	0.0013639	0.068193	µg	4	200	0.000348	0.0013925	0.0696256	0.0003337	0.0013352	0.0667604
14232-18a	3/30/2010	14:34:37	1.635E-05	6.545E-05	0.0032728	µg	4	200	6.88E-06	2.753E-05	0.0013769	2.583E-05	0.0001034	0.0051682
14232-18a spk	3/30/2010	14:36:28	0.0201299	0.0805421	4.0271025	µg	4	200	0.0199304	0.0797435	3.987177	0.0203295	0.0813406	4.067028
14232-19a	3/30/2010	14:38:20	0.0001801	0.0007206	0.0360319	µg	4	200	0.0002168	0.0008865	0.0433236	0.0001437	0.0005748	0.0287402
14232-20a	3/30/2010	14:40:08	0.0001768	0.0007073	0.0353664	µg	4	200	0.000173	0.0006921	0.0346032	0.0001806	0.0007226	0.0361295
0.004ug = DL	3/30/2010	14:41:21	0.0010121	0.0040493	0.0040493	µg	4	200	0.0010121	0.0040493	0.0040493			
0.080ug = STD.2	3/30/2010	14:42:38	0.0191361	0.0765658	0.0765658	µg	4	200	0.0191361	0.0765658	0.0765658			
REAGENT BLANK	3/30/2010	14:43:55	2.305E-05	9.224E-05	9.224E-05	µg	4	200	2.305E-05	9.224E-05	9.224E-05			
14232-1b	3/30/2010	14:45:40	0.0007406	0.0029632	0.3703979	µg	4	500	0.0007426	0.0029713	0.3714167	0.0007386	0.002955	0.3693791
14232-2b	3/30/2010	14:47:25	0.0002921	0.0011687	0.146093	µg	4	500	0.0002976	0.0011907	0.148837	0.0002866	0.0011466	0.143349
14232-2b dup	3/30/2010	14:49:11	0.0002813	0.0011254	0.1406708	µg	4	500	0.0002953	0.0011815	0.1476817	0.0002672	0.0010693	0.1336598
14232-4b	3/30/2010	14:54:29	-0.0000418	-0.0001673	-0.0209201	µg	4	500	-0.0000273	-0.0001095	-0.0136915	-0.0000562	-0.0002251	-0.0281487
14232-5b	3/30/2010	14:58:16	0.0000159	6.365E-05	0.0079564	µg	4	500	2.276E-05	9.107E-05	0.0113841	9.05E-06	3.622E-05	0.0045287
14232-5b dup	3/30/2010	14:58:04	-0.0000442	-0.0001771	-0.0221391	µg	4	500	-0.000014	-0.0000561	-0.0070238	-0.0000744	-0.000298	-0.0372543
14232-6b	3/30/2010	15:00:33	2.566E-05	0.0001027	0.0128365	µg	4	500	0.000017	6.802E-05	0.0085037	3.432E-05	0.0001374	0.0171692
14232-6b spk	3/30/2010	15:02:21	0.016551	0.0662222	8.2777727	µg	4	500	0.0163829	0.0655496	8.1937027	0.0167191	0.0668947	8.3618427
0.004ug = DL	3/30/2010	15:03:36	0.0010482	0.0041942	0.0041942	µg	4	500	0.0010482	0.0041942	0.0041942			
0.080ug = STD.2	3/30/2010	15:04:53	0.0205623	0.0822718	0.0822718	µg	4	500	0.0205623	0.0822718	0.0822718			
REAGENT BLANK	3/30/2010	15:06:10	-0.0000222	-0.0000889	-0.0000889	µg	4	500	-0.0000222	-0.0000889	-0.0000889			
14232-7b	3/30/2010	15:07:58	0.0005026	0.0020109	0.2513616	µg	4	500	0.0005282	0.0021132	0.2841533	0.000477	0.0018086	0.2385699
14232-8b	3/30/2010	15:09:48	3.666E-05	0.0001467	0.0183388	µg	4	500	8.064E-05	0.0002426	0.0303294	1.269E-05	5.078E-05	0.0063482
14232-8b dup	3/30/2010	15:11:38	1.159E-05	4.637E-05	0.0057968	µg	4	500	-0.0000025	-0.00001	-0.0012578	2.569E-05	0.0001028	0.0128514
14232-9b	3/30/2010	15:13:28	0.0006128	0.0024518	0.3064749	µg	4	500	0.0006297	0.0025195	0.314936	0.0005959	0.0023841	0.2980138
14232-9b spk	3/30/2010	15:15:15	0.0173331	0.0693515	8.6689382	µg	4	500	0.0176142	0.0704762	8.8095287	0.017052	0.0682268	8.5283478
14232-10b	3/30/2010	15:16:59	-0.0000556	-0.0002224	-0.0278088	µg	4	500	-0.0000386	-0.0001544	-0.0193074	-0.0000726	-0.0002904	-0.0363103
14232-11b	3/30/2010	15:18:43	-0.0000721	-0.0002887	-0.0360972	µg	4	500	-0.0000866	-0.0003465	-0.0433127	-0.0000577	-0.000231	-0.0288817
14232-11b dup	3/30/2010	15:20:28	6.058E-05	0.0002424	0.0302989	µg	4	500	4.333E-05	0.0001734	0.0216726	7.782E-05	0.0003114	0.0389252
14232-12b	3/30/2010	15:22:13	-0.0000834	-0.0002539	-0.0317496	µg	4	500	-0.0000536	-0.0002146	-0.0268333	-0.0000733	-0.0002933	-0.036686
14232-12b spk	3/30/2010	15:23:59	0.01567	0.0626973	7.8371593	µg	4	500	0.016178	0.0647301	8.0912577	0.0151619	0.0606845	7.5830609
0.004ug = DL	3/30/2010	15:25:13	0.0010852	0.0042618	0.0042618	µg	4	500	0.0010852	0.0042618	0.0042618			
0.080ug = STD.2	3/30/2010	15:26:30	0.0193401	0.077382	0.077382	µg	4	500	0.0193401	0.077382	0.077382			
REAGENT BLANK	3/30/2010	15:27:47	2.463E-05	9.858E-05	9.858E-05	µg	4	500	2.463E-05	9.858E-05	9.858E-05			
14232-13b	3/30/2010	15:29:33	0.0002985	0.0011943	0.1492825	µg	4	500	0.0002909	0.0011641	0.1455063	0.000306	0.0012245	0.1530587
14232-14b	3/30/2010	15:31:19	0.0002977	0.0011913	0.1489137	µg	4	500	0.000295	0.0011803	0.147536	0.0003005	0.0012023	0.1502915
14232-14b dup	3/30/2010	15:33:07	0.000432	0.0017286	0.2160709	µg	4	500	0.0004338	0.0017356	0.2169476	0.0004303	0.0017216	0.2151942
14232-16b	3/30/2010	15:39:14	-0.0001071	-0.0004286	-0.0535823	µg	4	500	-0.0000853	-0.0003416	-0.0427034	-0.0001288	-0.0005156	-0.0644612

PerkinElmer FIMS-100 CVAA Mercury Analyzer

Sample_ID	Date	Time	Mean_Sig	Mean_Rd	Mean_Rt	Units	Alq.	Vol.	Sig 1	Reading-1	Result-1	Sig 2	Reading-2	Result-2
14232-17b	3/30/2010	15:41:03	-0.00006	-0.0002402	-0.0300384	µg	4	500	-0.0000729	-0.0002919	-0.0364955	-0.0000471	-0.0001886	-0.0235772
14232-17b dup	3/30/2010	15:42:53	-0.0000499	-0.0002	-0.0250001	µg	4	500	-0.0000738	-0.0002947	-0.0368468	-0.0000262	-0.0001052	-0.0131534
0.004ug = DL	3/30/2010	15:47:43	0.0010664	0.0042668	0.0042668	µg	4	500	0.0010664	0.0042668	0.0042668			
0.080ug = STD.2	3/30/2010	15:49:00	0.0195278	0.0781328	0.0781328	µg	4	500	0.0195278	0.0781328	0.0781328			
REAGENT BLANK	3/30/2010	15:50:17	1.548E-05	6.197E-05	6.197E-05	µg	4	500	1.548E-05	6.197E-05	6.197E-05			
14232-19b	3/30/2010	15:52:02	4.031E-05	0.0001613	0.020163	µg	4	500	4.387E-05	0.0001755	0.021942	3.675E-05	0.0001471	0.018384
14232-20b	3/30/2010	15:53:46	1.84E-06	7.36E-06	0.0009206	µg	4	500	6.39E-06	2.557E-05	0.0031974	-0.0000027	-0.0000108	-0.0013561
14232-21b	3/30/2010	15:55:31	-0.0000293	-0.0001172	-0.0146564	µg	4	500	-0.000013	-0.0000523	-0.0065457	-0.0000455	-0.0001821	-0.0227671
0.004ug = DL	3/30/2010	15:56:45	0.0010862	0.0043458	0.0043458	µg	4	500	0.0010862	0.0043458	0.0043458			
0.080ug = QC STD 3	3/30/2010	15:58:02	0.0182714	0.0731057	0.0731057	µg	4	500	0.0182714	0.0731057	0.0731057			
REAGENT BLANK	3/30/2010	15:59:19	-0.0000092	-0.000037	-0.000037	µg	4	500	-0.0000092	-0.000037	-0.000037			
0.004ug = DL	3/30/2010	16:03:07	0.001086	0.0043452	0.0043452	µg	4	500	0.001086	0.0043452	0.0043452			
0.080ug = STD.2	3/30/2010	16:04:24	0.0202974	0.0812121	0.0812121	µg	4	500	0.0202974	0.0812121	0.0812121			
0.080ug = QC STD 3	3/30/2010	16:05:44	0.0187497	0.0750195	0.0750195	µg	4	500	0.0187497	0.0750195	0.0750195			
REAGENT BLANK	3/30/2010	16:07:01	-0.0001825	-0.0007304	-0.0007304	µg	4	500	-0.0001825	-0.0007304	-0.0007304			
14232-3a	3/30/2010	16:08:47	6.737E-05	0.0002696	0.0134782	µg	4	200	7.567E-05	0.0003028	0.0151387	5.907E-05	0.0002364	0.0118176
14232-3a spk	3/30/2010	16:10:33	0.0200301	0.0801428	4.0071395	µg	4	200	0.0199498	0.0798214	3.991069	0.0201105	0.0804642	4.02321
14232-9a	3/30/2010	16:12:23	0.0001085	0.0004341	0.0217054	µg	4	200	0.0001032	0.0004131	0.0206538	0.0001138	0.0004551	0.022757
14232-9a spk	3/30/2010	16:14:15	0.0196337	0.0785566	3.9278294	µg	4	200	0.0198795	0.0795401	3.977007	0.0193879	0.077573	3.8786518
14232-3b	3/30/2010	16:16:04	0.0015737	0.0062964	0.7870474	µg	4	500	0.0016004	0.0064033	0.8004087	0.0015469	0.0061895	0.7736861
14232-3b spk	3/30/2010	16:17:50	0.0185765	0.0743267	9.2908354	µg	4	500	0.0188145	0.0752788	9.4098546	0.0183386	0.0733745	9.1718162
14232-15b	3/30/2010	16:19:37	0.0003018	0.0012076	0.1509528	µg	4	500	0.0003221	0.0012887	0.1610824	0.0002816	0.0011266	0.1408232
14232-15b spk	3/30/2010	16:21:25	0.0202573	0.0810516	10.131452	µg	4	500	0.0200275	0.0801323	10.016533	0.0204871	0.081971	10.24637
0.004ug = DL	3/30/2010	16:27:38	0.0010728	0.0042925	0.0042925	µg	4	500	0.0010728	0.0042925	0.0042925			
0.080ug = QC STD 3	3/30/2010	16:28:53	0.0190898	0.0763803	0.0763803	µg	4	500	0.0190898	0.0763803	0.0763803			
REAGENT BLANK	3/30/2010	16:32:09	0.0004143	0.0016576	0.0016576	µg	4	500	0.0004143	0.0016576	0.0016576			
Calib Blank	3/30/2010	12:45:02	0.000178			µg			0.000176					
STD1=.004ug	3/30/2010	12:46:16	0.0007868			µg			0.0007868					
STD2=.04ug	3/30/2010	12:47:31	0.0094692			µg			0.0094692					
STD3=.08ug	3/30/2010	12:48:46	0.0173804			µg			0.0173804					
STD4=.16ug	3/30/2010	12:50:03	0.0343572			µg			0.0343572					
STD5=.2ug	3/30/2010	12:51:22	0.0434181			µg			0.0434181					
0.004ug = DL	3/30/2010	12:54:21	0.0008184	0.0037757	0.0037757	µg			0.0008184	0.0037757	0.0037757			
0.080ug = STD.2	3/30/2010	12:55:38	0.0172228	0.0794576	0.0794578	µg			0.0172228	0.0794576	0.0794576			
0.080ug = QC STD 3	3/30/2010	12:56:57	0.017119	0.0789786	0.0789788	µg			0.017119	0.0789788	0.0789788			
14232-1bh	3/30/2010	12:59:57	0.0157538	0.0726802	50.876117	µg	1	700	0.0158609	0.0731745	51.222116	0.0156466	0.0721859	50.530118
14232-2bh	3/30/2010	13:01:41	0.0085645	0.0395124	28.053769	µg	1	710	0.0086201	0.0397689	28.235907	0.0085089	0.0392558	27.871631
14232-2bh dup	3/30/2010	13:03:26	0.0075415	0.0347929	24.702935	µg	1	710	0.007593	0.0350303	24.871529	0.00749	0.0345554	24.534341
14232-3bh	3/30/2010	13:05:12	0.0086122	0.0397327	27.018226	µg	1	680	0.0086618	0.0399613	27.173711	0.0085627	0.039504	26.862742
14232-3bh spk	3/30/2010	13:06:59	0.0268587	0.123913	84.260819	µg	1	680	0.026701	0.1231855	83.766187	0.0270164	0.1246404	84.755471
14232-7bh	3/30/2010	13:08:48	0.0075287	0.0347336	26.744836	µg	1	770	0.0078916	0.0364079	28.034114	0.0071657	0.0330592	25.455558
14232-8bh	3/30/2010	13:10:37	0.0138731	0.0640037	48.002741	µg	1	750	0.0143655	0.0662754	49.70652	0.0133807	0.0617319	46.298962
14232-8bh dup	3/30/2010	13:12:27	0.0144678	0.0667471	50.060339	µg	1	750	0.0145783	0.067257	50.442761	0.0143572	0.0662372	49.677917
14232-9bh	3/30/2010	13:14:13	0.0062736	0.0289432	21.128506	µg	1	730	0.006095	0.0281191	20.528979	0.0064522	0.0297672	21.730033
14232-9bh spk	3/30/2010	13:15:57	0.0248429	0.1146128	83.66731	µg	1	730	0.0249119	0.1149315	83.900006	0.0247738	0.114294	83.434615
0.004ug = DL	3/30/2010	13:17:10	0.0008171	0.0037698	0.0037698	µg	1	730	0.0008171	0.0037698	0.0037698			
0.080ug = STD.2	3/30/2010	13:18:26	0.0176889	0.0816078	0.0816078	µg	1	730	0.0176889	0.0816078	0.0816078			
REAGENT BLANK	3/30/2010	13:19:42	-0.0000797	-0.0003677	-0.0003677	µg	1	730	-0.0000797	-0.0003677	-0.0003677			
14232-13bh	3/30/2010	13:21:26	0.0064578	0.0297931	21.153124	µg	1	710	0.006485	0.0299185	21.24216	0.0064306	0.0296677	21.064089
14232-14bh	3/30/2010	13:23:10	0.0071363	0.0329236	22.058819	µg	1	670	0.007252	0.033457	22.416199	0.0070207	0.0323902	21.701439
14232-14bh dup	3/30/2010	13:24:54	0.0081236	0.0374782	25.110418	µg	1	670	0.0081919	0.0377935	25.321613	0.0080553	0.037163	24.899223
14232-15bh	3/30/2010	13:26:40	0.0091695	0.0423036	29.189472	µg	1	690	0.0091833	0.0423674	29.233476	0.0091557	0.0422398	29.145469
14232-15bh spk	3/30/2010	13:28:28	0.0288336	0.1330243	91.786769	µg	1	690	0.0293386	0.1353539	93.394158	0.0283287	0.1306948	90.17938
14232-1c	3/30/2010	13:30:12	0.0100137	0.0461984	4.6198384	µg	4	400	0.010058	0.0464026	4.640263	0.0099694	0.0459941	4.5994138
14232-2c	3/30/2010	13:31:58	0.002352	0.010851	1.0850957	µg	4	400	0.0023328	0.0107825	1.0782502	0.0023712	0.0109394	1.0939413
14232-2c dup	3/30/2010	13:33:45	0.0023464	0.0108251	1.0825074	µg	4	400	0.0023774	0.0109684	1.0968366	0.0023153	0.0106818	1.0681783
14232-3c	3/30/2010	13:35:33	0.006309	0.0291065	2.9106471	µg	4	400	0.0063665	0.0293719	2.9371946	0.0062514	0.028841	2.8840998
14232-3c spk	3/30/2010	13:37:21	0.0232799	0.1074023	10.740227	µg	4	400	0.0234209	0.1080526	10.805258	0.023139	0.106752	10.675196
0.004ug = DL	3/30/2010	13:38:37	0.0008322	0.0038395	0.0038395	µg	4	400	0.0008322	0.0038395	0.0038395			
0.080ug = STD.2	3/30/2010	13:39:54	0.0177466	0.0818743	0.0818743	µg	4	400	0.0177466	0.0818743	0.0818743			
REAGENT BLANK	3/30/2010	13:41:10	-0.0000165	-0.0000763	-0.0000763	µg	4	400	-0.0000165	-0.0000763	-0.0000763			
14232-4c	3/30/2010	13:42:56	-0.0001081	-0.000499	-0.0499075	µg	4	400	-0.0000645	-0.0002976	-0.0297647	-0.0001518	-0.0007005	-0.0700504
14232-5c	3/30/2010	13:44:45	0.0001047	0.0004831	0.0483084	µg	4	400	0.0000977	0.0004508	0.045076	0.0001117	0.0005154	0.0515388
14232-5c dup	3/30/2010	13:46:34	8.903E-05	0.0004108	0.0410767	µg	4	400	7.161E-05	0.0003304	0.0330383	0.0001065	0.0004912	0.0491151
14232-6c	3/30/2010	13:48:20	4.082E-05	0.0001884	0.0188359	µg	4	400	1.842E-05	0.000085	0.0085001	6.323E-05	0.0002917	0.0291718
14232-6c spk	3/30/2010	13:50:02	0.0171638	0.0791854	7.918544	µg	4	400	0.0173566	0.080075	8.0075001	0.016971	0.0782959	7.829588
14232-8c	3/30/2010	13:53:30	0.0011423	0.0052699	0.5269903	µg	4	400	0.0011529	0.0053188	0.5318757	0.0011317	0.005221	0.5221049
14232-8c dup	3/30/2010	13:55:13	0.0012094	0.0055798	0.5579758	µg	4	400	0.001195	0.0055131	0.5513103	0.0012239	0.0056464	0.5646414
14232-9c	3/30/2010	13:56:57	0.0044418	0.0204921	2.049214	µg	4	400	0.0044825	0.0206801	2.0680111	0.004401	0.0203042	2.0304169
14232-9c spk	3/30/2010	13:58:43	0.0221901	0.1023742	10.237416	µg	4	400	0.0223347	0.1030414	10.304145	0.0220454	0.1017069	10.170688
0.004ug = DL	3/30/2010	13:59:58	0.0008966	0.0041364	0.0041364	µg	4	400	0.0008966	0.0041364	0.0041364			
0.080ug = STD.2	3/30/2010	14:01:14	0.0182658	0.0842696	0.0842696	µg	4	400	0.0182658	0.0842696	0.0842696			
REAGENT BLANK	3/30/2010	14:02:30	8.42E-06	2.964E-05	2.964E-05	µg	4	400	8.42E-06	2.964E-05	2.964E-05			
14232-10c	3/30/2010	14:04:15	6.391E-05	0.0002949	0.0294866	µg	4	400	5.827E-05	0.0002689	0.0268859	6.955E-05	0.0003209	0.0320873
14232-11c	3/30/2010	14:06:01	0.0001028	0.000474	0.0474046	µg	4	400	0.0001214	0.00056	0.0560004	8.411E-05	0.0003881	0.0388088
14232-11c dup	3/30/2010	14:07:47	3.783E-05	0.0001745	0.0174542	µg	4	400	4.939E-05	0.0002279	0.0227883	2.627E-05	0.0001212	0.01212
14232-12c	3/30/2010	14:09:34	-0.0000674	-0.0003112	-0.0311202	µg	4	400	-0.0000581	-0.0002683	-0.0268386	-0.0000767	-0.000354	-0.0354018
14232-12c spk	3/30/2010	14:11:22	0.0179682	0.0828966	8.2896621	µg	4	400	0.0180943	0.0834784	8.347839	0.0178421	0.0823149	8.2314853

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Sample_ID	Date	Time	Mean_Sig	Mean_Rd	Mean_Rt	Units	Alq.	Vol.	Sig 1	Reading-1	Result-1	Sig 2	Reading-2	Result-2
14232-13c	3/30/2010	14:13:10	0.0039851	0.0182931	1.8293134	µg	4	400	0.0039668	0.0183008	1.8300789	0.0039635	0.0182855	1.828548
14232-14c	3/30/2010	14:14:58	0.0037379	0.017245	1.7244984	µg	4	400	0.0037436	0.017271	1.7271018	0.0037323	0.017219	1.7218951
14232-14c dup	3/30/2010	14:16:47	0.0039434	0.0181929	1.8192903	µg	4	400	0.0039327	0.0181436	1.814383	0.0039541	0.0182422	1.8242178
14232-15c	3/30/2010	14:18:37	0.0020409	0.0094157	0.9415687	µg	4	400	0.0020273	0.0093529	0.9352916	0.0020545	0.0094785	0.9478458
14232-15c spk	3/30/2010	14:20:23	0.0195537	0.090211	9.0210991	µg	4	400	0.0198352	0.0905871	9.0587138	0.0194721	0.0898348	8.9834843
0.004ug = DL	3/30/2010	14:21:35	0.0008308	0.0038328	0.0038328	µg	4	400	0.0008308	0.0038328	0.0038328			
0.080ug = STD.2	3/30/2010	14:22:51	0.0180258	0.0831621	0.0831621	µg	4	400	0.0180258	0.0831621	0.0831621			
REAGENT BLANK	3/30/2010	14:24:07	-0.0000207	-0.0000955	-0.0000955	µg	4	400	-0.0000207	-0.0000955	-0.0000955			
Calib Blank	3/30/2010	15:31:16	0.0001329			µg	0.1	100	0.0001329					
STD1=.004ug	3/30/2010	15:32:30	0.0008553			µg	0.1	100	0.0008553					
STD2=.04ug	3/30/2010	15:37:21	0.0102677			µg	0.1	100	0.0102677					
STD3=.08ug	3/30/2010	15:38:38	0.0180052			µg	0.1	100	0.0180052					
STD4=.16ug	3/30/2010	15:39:54	0.0333178			µg	0.1	100	0.0333178					
STD5=.2ug	3/30/2010	15:41:12	0.0447186			µg	0.1	100	0.0447186					
Reagent Blank	3/30/2010	15:42:58	8.19E-06	3.733E-05	3.733E-05	µg	0.1	100	-0.0000058	-0.0000267	-0.0000267	2.225E-05	0.0001014	0.0001014
0.004ug = DL	3/30/2010	15:44:11	0.0009558	0.0043548	0.0043548	µg	0.1	100	0.0009558	0.0043548	0.0043548			
0.080ug = STD.2	3/30/2010	15:45:27	0.0175888	0.0801349	0.0801349	µg	0.1	100	0.0175888	0.0801349	0.0801349			
0.080ug = QC STD 3	3/30/2010	15:46:46	0.0176871	0.080583	0.080583	µg	0.1	100	0.0176871	0.080583	0.080583			
REAGENT BLANK	3/30/2010	15:48:02	6.559E-05	0.0002988	0.0002988	µg	0.1	100	6.559E-05	0.0002988	0.0002988			
14232-16c	3/30/2010	15:49:45	0.0000884	0.0004028	0.0402772	µg	4	400	0.0001373	0.0006255	0.0625451	3.952E-05	0.0001801	0.0180092
14232-17c	3/30/2010	15:51:27	0.0001927	0.0008778	0.0877832	µg	4	400	0.0001934	0.0008812	0.0881223	0.0001919	0.0008744	0.087444
14232-17c dup	3/30/2010	15:53:10	3.108E-05	0.0001416	0.0141614	µg	4	400	1.911E-05	0.0000871	0.00871	4.304E-05	0.0001961	0.0196127
14232-18c	3/30/2010	15:54:54	1.125E-05	5.128E-05	0.0051261	µg	4	400	1.821E-05	8.298E-05	0.0082986	4.28E-06	1.953E-05	0.0019536
14232-18c spk	3/30/2010	15:56:38	0.0171566	0.0781656	7.8165626	µg	4	400	0.0171964	0.078347	7.8347036	0.0171167	0.0779842	7.7984215
14232-19c	3/30/2010	15:58:22	-0.0000971	-0.0004424	-0.0442474	µg	4	400	-0.0001354	-0.000617	-0.0617085	-0.0000587	-0.0002678	-0.0267862
14232-20c	3/30/2010	16:00:07	0.000136	0.0006194	0.0619434	µg	4	400	0.0001341	0.0006111	0.061111	0.0001378	0.0006278	0.0627758
14232-1FH	3/30/2010	16:05:25	0.0049559	0.0225792	22.579199	µg	0.1	100	0.0049586	0.0225914	22.591407	0.0049532	0.022567	22.566992
0.004ug = DL	3/30/2010	16:09:05	0.0008695	0.0040527	0.0040527	µg	0.1	100	0.0008695	0.0040527	0.0040527			
0.080ug = STD.2	3/30/2010	16:10:21	0.0181226	0.0825672	0.0825672	µg	0.1	100	0.0181226	0.0825672	0.0825672			
REAGENT BLANK	3/30/2010	16:11:37	-0.000012	-0.0000547	-0.0000547	µg	0.1	100	-0.000012	-0.0000547	-0.0000547			
14232-3FH	3/30/2010	16:16:58	0.0121668	0.0554324	55.432358	µg	0.1	100	0.0122657	0.0558827	55.882681	0.012068	0.054982	54.982036
14232-3FH SPK	3/30/2010	16:18:46	0.0332528	0.1514996	151.49955	µg	0.1	100	0.0336755	0.1534263	153.42629	0.0328297	0.1495728	149.57281
14232-7FH	3/30/2010	16:20:31	0.0070726	0.0322231	32.223127	µg	0.1	100	0.0070967	0.0323326	32.332605	0.0070486	0.0321136	32.113649
14232-9FH	3/30/2010	16:25:39	0.0063214	0.0288006	28.800586	µg	0.1	100	0.0062885	0.0286504	28.650366	0.0063544	0.0289508	28.950805
14232-9FH SPK	3/30/2010	16:27:23	0.0245829	0.1120002	112.00019	µg	0.1	100	0.024936	0.1136091	113.60908	0.0242298	0.1103913	110.39129
14232-13FH	3/30/2010	16:29:07	0.0102717	0.0467982	46.798242	µg	0.1	100	0.0103307	0.0470669	47.066894	0.0102128	0.0465296	46.529591
0.004ug = DL	3/30/2010	16:30:20	0.000866	0.0039456	0.0039456	µg	0.1	100	0.000866	0.0039456	0.0039456			
0.080ug = STD.2	3/30/2010	16:31:36	0.0181083	0.0825017	0.0825017	µg	0.1	100	0.0181083	0.0825017	0.0825017			
REAGENT BLANK	3/30/2010	16:32:52	2.544E-05	0.000116	0.000116	µg	0.1	100	2.544E-05	0.000116	0.000116			
14232-15FH	3/30/2010	16:38:07	0.0162963	0.0742463	74.246297	µg	0.1	100	0.0163897	0.0746718	74.671615	0.016203	0.073821	73.820979
14232-15FH SPK	3/30/2010	16:39:53	0.0378223	0.172319	172.31896	µg	0.1	100	0.0379994	0.173126	173.12602	0.0376451	0.1715119	171.5119
0.004ug = DL	3/30/2010	16:41:07	0.0008252	0.0037594	0.0037594	µg	0.1	100	0.0008252	0.0037594	0.0037594			
0.080ug = QC STD 3	3/30/2010	16:42:24	0.0182448	0.0831237	0.0831237	µg	0.1	100	0.0182448	0.0831237	0.0831237			
REAGENT BLANK	3/30/2010	16:43:40	0.0000456	0.0002078	0.0002078	µg	0.1	100	0.0000456	0.0002078	0.0002078			
Calib Blank	3/31/2010	13:14:52	0.0001121			µg			0.0001121					
STD1=.004ug	3/31/2010	13:16:07	0.0009143			µg			0.0009143					
STD2=.04ug	3/31/2010	13:17:22	0.0094575			µg			0.0094575					
STD3=.08ug	3/31/2010	13:18:39	0.0186354			µg			0.0186354					
STD4=.16ug	3/31/2010	13:19:56	0.0338802			µg			0.0338802					
STD5=.2ug	3/31/2010	13:21:16	0.041983			µg			0.041983					
0.004ug = DL	3/31/2010	13:24:18	0.0009287	0.0044006	0.0044006	µg			0.0009287	0.0044006	0.0044006			
0.080ug = STD.2	3/31/2010	13:25:35	0.0162452	0.0769779	0.0769779	µg			0.0162452	0.0769779	0.0769779			
0.080ug = QC STD 3	3/31/2010	13:26:55	0.0167763	0.0794947	0.0794947	µg			0.0167763	0.0794947	0.0794947			
14232-1Bb	3/31/2010	13:29:58	-0.0000743	-0.0003522	-0.0440285	µg	4	500	-0.0000874	-0.0004145	-0.0518143	-0.0000811	-0.0002699	-0.0362427
14232-18b spk	3/31/2010	13:31:44	0.0152636	0.0723267	9.040833	µg	4	500	0.015383	0.0728923	9.1115329	0.0151443	0.0717611	8.9701332
14232-7c	3/31/2010	13:33:31	0.0009408	0.0044578	0.4457807	µg	4	400	0.0009486	0.0044948	0.449481	0.000933	0.0044208	0.4420804
14232-2fh	3/31/2010	13:35:19	0.0146995	0.0696536	69.653634	µg	0.1	100	0.0148	0.0701296	70.129627	0.0145991	0.0691776	69.17764
14232-2fh dup	3/31/2010	13:37:08	0.01504	0.0712672	71.267224	µg	0.1	100	0.0148101	0.0701776	70.177624	0.01527	0.0723568	72.356824
14232-8fh	3/31/2010	13:38:58	0.0134725	0.0638393	63.839339	µg	0.1	100	0.0133936	0.0634654	63.485407	0.0135514	0.0642133	64.213272
14232-8fh dup	3/31/2010	13:40:49	0.0135246	0.0640863	64.086286	µg	0.1	100	0.0138063	0.0654212	65.421213	0.0132429	0.0627514	62.751359
14232-14fh	3/31/2010	13:42:41	0.0199434	0.0945017	94.501727	µg	0.1	100	0.0200629	0.0950679	95.067928	0.0198239	0.0939355	93.935525
14232-14fh dup	3/31/2010	13:44:30	0.0209251	0.0991533	99.153332	µg	0.1	100	0.020982	0.0994231	99.423098	0.0208681	0.0988836	98.883565
0.004ug = DL	3/31/2010	13:47:30	0.0009036	0.0042816	0.0042816	µg	20	1	0.0009036	0.0042816	0.0042816			
0.080ug = STD.2	3/31/2010	13:48:47	0.0169167	0.0801595	0.0801595	µg	20	1	0.0169167	0.0801595	0.0801595			
REAGENT BLANK	3/31/2010	13:50:04	4.117E-05	0.0001951	0.0001951	µg	20	1	4.117E-05	0.0001951	0.0001951			
0.004ug = DL	3/31/2010	14:56:27	0.0008785	0.0041627	0.0041627	µg	20	100	0.0008785	0.0041627	0.0041627			
0.080ug = STD.2	3/31/2010	14:57:44	0.0159031	0.0753567	0.0753567	µg	20	100	0.0159031	0.0753567	0.0753567			
REAGENT BLANK	3/31/2010	14:59:01	0.0000396	0.0001876	0.0001876	µg	20	100	0.0000396	0.0001876	0.0001876			
14232-4bh	3/31/2010	15:14:56	0.0055952	0.0265131	4.838634	µg	4	730	0.0056235	0.026647	4.8830859	0.005567	0.0263791	4.8141821
14232-5bh	3/31/2010	15:16:44	0.0050412	0.0238876	4.5386471	µg	4	760	0.0050751	0.0240484	4.569202	0.0050072	0.0237268	4.5080921
0.004ug = DL	3/31/2010	15:19:13	0.0009288	0.0044009	0.0044009	µg	4	760	0.0009288	0.0044009	0.0044009			
0.080ug = STD.2	3/31/2010	15:20:30	0.0160919	0.0762513	0.0762513	µg	4	760	0.0160919	0.0762513	0.0762513			
REAGENT BLANK	3/31/2010	15:21:47	5.548E-05	0.0002628	0.0002628	µg	4	760	5.548E-05	0.0002628	0.0002628			
14232-5bh dup	3/31/2010	15:23:35	0.005523	0.0261709	4.9724802	µg	4	760	0.0055669	0.0263788	5.0119728	0.0054792	0.0259631	4.9329876
14232-6bh	3/31/2010	15:25:25	0.0057119	0.027066	5.0072064	µg	4	740	0.00568	0.0269149	4.979256	0.0057438	0.0272171	5.0351569
14232-6bh spk	3/31/2010	15:27:15	0.0231725	0.1098027	20.313498	µg	4	740	0.0232565	0.110201	20.387181	0.0230884	0.1094044	20.23981
14232-10bh	3/31/2010	15:29:06	0.0034732	0.0164578	2.8801146	µg	4	700	0.0034887	0.0165312	2.892959	0.0034577	0.0163844	2.8672701
14232-11bh	3/31/2010	15:30:53	0.0037589	0.0178019	3.2488406	µg	4	730	0.0037529	0.0177829	3.2453774	0.0037609	0.0178208	3.2523038

PerkinElmer FIMS-100 CVAA Mercury Analyzer

Sample_ID	Date	Time	Mean_Sig	Mean_Rd	Mean_R1	Units	Alq.	Vol.	Sig 1	Reading-1	Result-1	Sig 2	Reading-2	Result-2
14232-11bh dup	3/31/2010	15:32:37	0.0036591	0.0173384	3.1642649	µg	4	730	0.003683	0.0174518	3.1849484	0.0036351	0.0172251	3.1435814
14232-12bh	3/31/2010	15:34:21	0.0039869	0.018892	3.4005515	µg	4	720	0.0039879	0.0188969	3.4014374	0.0039859	0.018887	3.3996656
14232-12bh spk	3/31/2010	15:36:06	0.0201996	0.0957158	17.228849	µg	4	720	0.0202756	0.0960759	17.293667	0.0201236	0.0953557	17.16403
14232-16bh	3/31/2010	15:37:51	0.0042864	0.020311	3.6559788	µg	4	720	0.0044072	0.0208838	3.759045	0.0041655	0.0197384	3.5529125
14232-17bh	3/31/2010	15:39:37	0.0044512	0.0210922	3.5329456	µg	4	670	0.0044229	0.0209579	3.5104467	0.0044796	0.0212265	3.5554445
0.004ug = DL	3/31/2010	15:40:51	0.0008401	0.003981	0.003981	µg	4	670	0.0008401	0.003981	0.003981			
0.080ug = STD.2	3/31/2010	15:42:08	0.0153708	0.0728347	0.0728347	µg	4	670	0.0153708	0.0728347	0.0728347			
REAGENT BLANK	3/31/2010	15:43:25	4.46E-06	2.114E-05	2.114E-05	µg	4	670	4.46E-06	2.114E-05	2.114E-05			
14232-17bh dup	3/31/2010	15:45:12	0.0044847	0.021251	3.5595344	µg	4	670	0.0045474	0.0215478	3.6092645	0.0044221	0.0209541	3.5098043
14232-18bh	3/31/2010	15:46:59	0.004082	0.0193427	3.2882634	µg	4	680	0.0041367	0.0196016	3.3322716	0.0040274	0.0190839	3.2442552
14232-18bh spk	3/31/2010	15:48:47	0.0209259	0.0991576	16.856785	µg	4	680	0.0207413	0.0982828	16.708079	0.0211108	0.1000323	17.005491
14232-19bh	3/31/2010	15:50:35	-0.0000097	-0.0000462	-0.0034875	µg	4	300	7.9E-07	3.78E-06	0.0002842	-0.0000203	-0.0000962	-0.0072191
14232-20bh	3/31/2010	15:52:23	-0.000102	-0.0004834	-0.0290052	µg	4	240	-0.0001371	-0.0006498	-0.0389893	-0.0000669	-0.000317	-0.0190211
0.004ug = DL	3/31/2010	15:58:32	0.0008593	0.0040719	0.0040719	µg	1	1	0.0008593	0.0040719	0.0040719			
0.080ug = QC STD 3	3/31/2010	15:59:48	0.0161314	0.0764385	0.0764385	µg	1	1	0.0161314	0.0764385	0.0764385			
REAGENT BLANK	3/31/2010	16:01:04	2.094E-05	9.923E-05	9.923E-05	µg	1	1	2.094E-05	9.923E-05	9.923E-05			
Calib Blank	4/6/2010	12:59:19	0.0005455			µg			0.0005455					
STD1=.004ug	4/6/2010	13:00:35	0.0010158			µg			0.0010158					
STD2=.04ug	4/6/2010	13:01:51	0.0124353			µg			0.0124353					
STD3=.08ug	4/6/2010	13:03:08	0.0211385			µg			0.0211385					
STD4=.16ug	4/6/2010	13:04:25	0.0427631			µg			0.0427631					
STD5=.2ug	4/6/2010	13:05:44	0.0551655			µg			0.0551655					
0.004ug = DL	4/6/2010	13:08:46	0.0010312	0.0037801	0.0037801	µg			0.0010312	0.0037801	0.0037801			
0.080ug = STD.2	4/6/2010	13:10:03	0.0201425	0.0738369	0.0738369	µg			0.0201425	0.0738369	0.0738369			
0.080ug = QC STD 2	4/6/2010	13:13:57	0.0207368	0.0760157	0.0760157	µg			0.0207368	0.0760157	0.0760157			
14232-22	4/6/2010	13:18:50	0.0160177	0.0587165	58.716536	µg	0.2	200	0.0160965	0.0590054	59.005386	0.0159389	0.0584277	58.427686
14232-4fh	4/6/2010	13:26:05	-0.0002751	-0.0010087	-0.0252189	µg	4	100	-0.0002707	-0.0009924	-0.0248102	-0.0002796	-0.0010251	-0.0256295
14232-5fh	4/6/2010	13:27:56	-0.000252	-0.0009238	-0.0230966	µg	4	100	-0.0002443	-0.0008956	-0.0223918	-0.0002597	-0.000952	-0.0238013
14232-5fh dup	4/6/2010	13:29:48	0.0002573	0.0009433	0.0235823	µg	4	100	0.0002649	0.0009711	0.0242785	0.0002497	0.0009154	0.0228862
0.004ug = DL	4/6/2010	13:34:37	0.0009781	0.0035854	0.0035854	µg	4	100	0.0009781	0.0035854	0.0035854			
0.080ug = STD.2	4/6/2010	13:35:54	0.0207123	0.0759257	0.0759257	µg	4	100	0.0207123	0.0759257	0.0759257			
REAGENT BLANK	4/6/2010	13:37:11	-0.0000135	-0.0000498	-0.0000498	µg	4	100	-0.0000135	-0.0000498	-0.0000498			
14232-10fh	4/6/2010	13:38:57	-0.0001101	-0.0004037	-0.0100933	µg	4	100	-0.0001013	-0.0003716	-0.0092919	-0.0001188	-0.0004357	-0.0108948
14232-11fh	4/6/2010	13:40:43	-0.000128	-0.0004693	-0.0117336	µg	4	100	-0.0001315	-0.0004822	-0.0120554	-0.0001245	-0.0004564	-0.0114118
14232-11fh dup	4/6/2010	13:50:44	-0.0001915	-0.0007022	-0.0175551	µg	4	100	-0.0001834	-0.0006724	-0.0168124	-0.0001996	-0.0007319	-0.0182977
14232-12fh	4/6/2010	13:52:31	-0.0001211	-0.0004442	-0.0111071	µg	4	100	-0.0001172	-0.0004298	-0.0107451	-0.0001251	-0.0004587	-0.011469
14232-12fh spk	4/6/2010	13:54:19	0.026787	0.0981938	2.4548458	µg	4	100	0.0268996	0.0986087	2.4651674	0.0266743	0.097781	2.4445243
14232-16fh	4/6/2010	13:56:08	0.0001176	0.000431	0.010776	µg	4	100	0.0001224	0.0004485	0.0112137	0.0001128	0.0004135	0.0103382
14232-17fh	4/6/2010	13:57:57	-0.0000608	-0.000223	-0.0055751	µg	4	100	-0.0000857	-0.0003142	-0.0078554	-0.0000359	-0.0001317	-0.0032948
14232-17fh dup	4/6/2010	13:59:46	0.0001241	0.0004548	0.0113712	µg	4	100	0.0001234	0.0004522	0.0113057	0.0001248	0.0004575	0.0114368
0.004ug = DL	4/6/2010	14:04:41	0.0010055	0.0036857	0.0036857	µg	4	100	0.0010055	0.0036857	0.0036857			
0.080ug = STD.2	4/6/2010	14:05:58	0.0201877	0.0740025	0.0740025	µg	4	100	0.0201877	0.0740025	0.0740025			
REAGENT BLANK	4/6/2010	14:07:15	3.393E-05	0.0001244	0.0001244	µg	4	100	3.393E-05	0.0001244	0.0001244			
14232-19fh	4/6/2010	14:09:03	-0.0002867	-0.0010876	-0.0271919	µg	4	100	-0.0002868	-0.0010516	-0.0262908	-0.0003065	-0.0011237	-0.028093
14232-20fh	4/6/2010	14:10:54	-0.000232	-0.0008507	-0.0212693	µg	4	100	-0.0002213	-0.0008113	-0.0202838	-0.0002428	-0.0008901	-0.0222547
0.004ug = DL	4/6/2010	14:27:37	0.0009815	0.0035979	0.0035979	µg	0	100	0.0009815	0.0035979	0.0035979			
0.080ug = STD.2	4/6/2010	14:28:54	0.0201863	0.0739975	0.0739975	µg	0	100	0.0201863	0.0739975	0.0739975			
REAGENT BLANK	4/6/2010	14:30:11	1.618E-05	5.931E-05	5.931E-05	µg	0	100	1.618E-05	5.931E-05	5.931E-05			
0.004ug = DL	4/6/2010	15:28:21	0.0010003	0.0036667	0.0036667	µg	4	200	0.0010003	0.0036667	0.0036667			
0.080ug = STD.2	4/6/2010	15:29:38	0.0198323	0.0726998	0.0726998	µg	4	200	0.0198323	0.0726998	0.0726998			
0.080ug = QC STD 3	4/6/2010	15:30:58	0.0203178	0.0744796	0.0744796	µg	4	200	0.0203178	0.0744796	0.0744796			
REAGENT BLANK	4/6/2010	15:32:15	-0.0001011	-0.0003706	-0.0003706	µg	4	200	-0.0001011	-0.0003706	-0.0003706			
14232-6fh	4/6/2010	15:34:01	-0.0000393	-0.0001442	-0.003606	µg	4	100	-0.0000563	-0.0002065	-0.0051639	-0.0000223	-0.0000819	-0.0020481
14232-6fh spk	4/6/2010	15:35:47	0.0250626	0.0918729	2.2968224	µg	4	100	0.0253879	0.0930652	2.3266295	0.0247374	0.0906806	2.2670154
14232-18fh	4/6/2010	15:37:35	-0.0000825	-0.0003025	-0.0075626	µg	4	100	-0.0000744	-0.0002729	-0.0066228	-0.0000905	-0.000332	-0.0083023
14232-18fh spk	4/6/2010	15:39:25	0.0199602	0.0731687	1.8292178	µg	4	100	0.0197148	0.0722693	1.8067328	0.0202055	0.0740681	1.8517028
0.004ug = DL	4/6/2010	15:54:45	0.001181	0.0043293	0.0043293	µg	2	620	0.001181	0.0043293	0.0043293			
0.080ug = STD.2	4/6/2010	15:56:08	0.0218633	0.080145	0.080145	µg	2	620	0.0218633	0.080145	0.080145			
REAGENT BLANK	4/6/2010	15:57:25	-0.0000701	-0.000257	-0.000257	µg	2	620	-0.0000701	-0.000257	-0.000257			

Wheelabrator South 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 22	Mar 22	Mar 22
Start Time (approx.)			13:19	15:07	16:30
Stop Time (approx.)			14:34	16:21	17:41

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg F⁻/liter)	0.0080
	HF as Total Fluoride	
B_F	Blank concentration (mg F⁻/liter)	<0.0400

S_{F-1}	Fraction 1 concentration (mg F⁻/liter)		<0.0400	<0.0400	<0.0400
S_{F-2}	Fraction 2 concentration (mg F⁻/liter)				
v_1	Fraction 1 sample volume (ml)		924.0	889.0	898.0
v_2	Fraction 2 sample volume (ml)				
m_{HF}	HF collected before blank subtraction (mg)		<0.0389	<0.0374	<0.0378
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HF collected after blank subtraction (mg)		<0.0389	<0.0374	<0.0378
m_{MDL}	Minimum detectable HF (mg)		0.0078	0.0075	0.0076
m_n	*Total HF used in emission calculations (mg)*		<0.0389	<0.0374	<0.0378

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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (F)

QA/QC _____
Date _____

Wheelabrator South 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 24	Mar 24	Mar 24
Start Time (approx.)		07:53	09:37	11:24
Stop Time (approx.)		09:11	10:54	12:46

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg F⁻/liter)	0.0080
	HF as Total Fluoride	
B_F	Blank concentration (mg F⁻/liter)	<0.0400

S_{F-1}	Fraction 1 concentration (mg F⁻/liter)	<0.0400	<0.0400	<0.0400	
S_{F-2}	Fraction 2 concentration (mg F⁻/liter)				
v_1	Fraction 1 sample volume (ml)	777.0	860.0	931.0	
v_2	Fraction 2 sample volume (ml)				
m_{HF}	HF collected before blank subtraction (mg)	<0.0327	<0.0362	<0.0392	
m_b	Allowable blank subtraction (mg)	0.0000	0.0000	0.0000	
m_{nb}	HF collected after blank subtraction (mg)	<0.0327	<0.0362	<0.0392	
m_{MDL}	Minimum detectable HF (mg)	0.0065	0.0072	0.0078	
m_n	*Total HF used in emission calculations (mg)*	<0.0327	<0.0362	<0.0392	

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Prepared by Clean Air Engineering Proprietary Software
SS EPA26-1 Version 2006-10a (F)

QA/QC _____
Date _____

Wheelabrator South 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 23	Mar 23	Mar 23
Start Time (approx.)			12:41	14:31	15:54
Stop Time (approx.)			13:54	15:39	17:02

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg F^-/liter)	0.0080
	HF as Total Fluoride	
B_F	Blank concentration (mg F^-/liter)	<0.0400

S_{F-1}	Fraction 1 concentration (mg F^-/liter)	<0.0400	<0.0400	<0.0400
S_{F-2}	Fraction 2 concentration (mg F^-/liter)			
v_1	Fraction 1 sample volume (ml)	943.0	946.0	897.0
v_2	Fraction 2 sample volume (ml)			
m_{HF}	HF collected before blank subtraction (mg)	<0.0397	<0.0398	<0.0378
m_b	Allowable blank subtraction (mg)	0.0000	0.0000	0.0000
m_{nb}	HF collected after blank subtraction (mg)	<0.0397	<0.0398	<0.0378
m_{MDL}	Minimum detectable HF (mg)	0.0079	0.0080	0.0076
m_n	*Total HF used in emission calculations (mg)*	<0.0397	<0.0398	<0.0378

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QA/QC _____
Date _____

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CleanAir®

CleanAir Engineering, Inc.

500 West Wood Street
Palatine, IL 60067

Laboratory Report

Customer Reference No: 10955
Laboratory Project No: 28558

Analytes

Fluoride

Customer

Palatine Engineering Group
500 W Wood St
Palatine, IL 60067

Revision 0 - Dated: 04/12/2010

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CleanAir.

Analysis Case Narrative

Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	**Date Received:**	3/29/2010
Plant/Facility:	Wheelabrator South Broward	**Date Reported:**	4/12/2010
Laboratory Project No:	28558	**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.

Analysis Case Narrative

Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	**Date Received:**	3/29/2010
Plant/Facility:	Wheelabrator South Broward	**Date Reported:**	4/12/2010
Laboratory Project No:	28558	**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.

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CERTIFICATE OF ANALYSIS

Client Name: Palatine Engineering Group
Plant/Facility: Wheelabrator South Broward
Lab Project No: 28558
Sample Numbers: 23-32

Date Received: 3/29/2010
Date Reported: 4/12/2010
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					
28558-23	DI H2O Blank	305	<	0.008	0.040
Unit 1					
28558-24	U1 FF Outlet R1	924	<	0.008	0.040
28558-25	U1 FF Outlet R2	889	<	0.008	0.040
28558-26	U1 FF Outlet R3	898	<	0.008	0.040
Unit 2					
28558-27	U2 FF Outlet R1	777	<	0.008	0.040
28558-28	U2 FF Outlet R2	860	<	0.008	0.040
28558-29	U2 FF Outlet R3	931	<	0.008	0.040
Unit 3					
28558-30	U3 FF Outlet R1	943	<	0.008	0.040
28558-31	U3 FF Outlet R2	946	<	0.008	0.040
28558-32	U3 FF Outlet R3	897	<	0.008	0.040

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.

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Team Leader, Lab Services: _____
Douglas D. Rhoades
email: drhoades@cleanair.com
Ph: 847-654-4504

ACCREDITED IN ACCORDANCE WITH nelac

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28558
Analyte	Fluoride
Date	4/12/2010
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	Date of	1	2	3	4	5	6	7
Conc. (mg/l)	Injection	0.0000	0.0754	0.2010	0.2513	0.6283	0.8042	1.2566
Cal 1 Trial 1	04/05/2010	0.0000	0.0558	0.1598	0.2270	0.5658	0.7039	1.1563
Cal 1 Trial 2		0.0000	0.0560	0.1609	0.2207	0.5792	0.7084	1.1651
Cal 2 Trial 1	04/08/2010		0.0559					1.1321
Cal 2 Trial 2			0.0583					1.1625
Cal 3 Trial 1	04/09/2010		0.0608					
Cal 3 Trial 2			0.0611					
Cal 4 Trial 1	04/10/2010						0.7254	
Cal 4 Trial 2							0.7205	
Cal 5 Trial 1	04/11/2010		0.0613	0.1657	0.2316	0.5782	0.7472	1.1136
Cal 5 Trial 2			0.0599	0.1640	0.2208	0.5768	0.7443	1.1478
Cal 6 Trial 1	01/00/1900							
Cal 6 Trial 2								
Cal 7 Trial 1	01/00/1900							
Cal 7 Trial 2								
Cal 8 Trial 1	01/00/1900							
Cal 8 Trial 2								
Cal 9 Trial 1	01/00/1900							
Cal 9 Trial 2								
n		2	8	4	4	4	6	6
Average		0.0000	0.0586	0.1626	0.2250	0.5750	0.7250	1.1462
Standard Deviation		0.0000	0.0025	0.0027	0.0053	0.0062	0.0179	0.0199
%RSD		0.00	4.18	1.68	2.35	1.08	2.47	1.74

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	0.010	-0.77%	Yes	0.00%	Yes
0.0586	0.075	0.074	0.15%	Yes	2.51%	Yes
0.1626	0.201	0.187	1.14%	Yes	7.14%	Yes
0.2250	0.251	0.255	-0.27%	Yes	-1.33%	Yes
0.5750	0.628	0.636	-0.59%	Yes	-1.18%	Yes
0.7250	0.804	0.799	0.42%	Yes	0.65%	Yes
1.1462	1.257	1.258	-0.09%	Yes	-0.09%	Yes

Regression Constants			Is Coefficient of Regression > 0.995?
Slope	m =	1.0888	
Intercept	b =	0.0097	
Coeff.	R^2 =	0.9997	Yes

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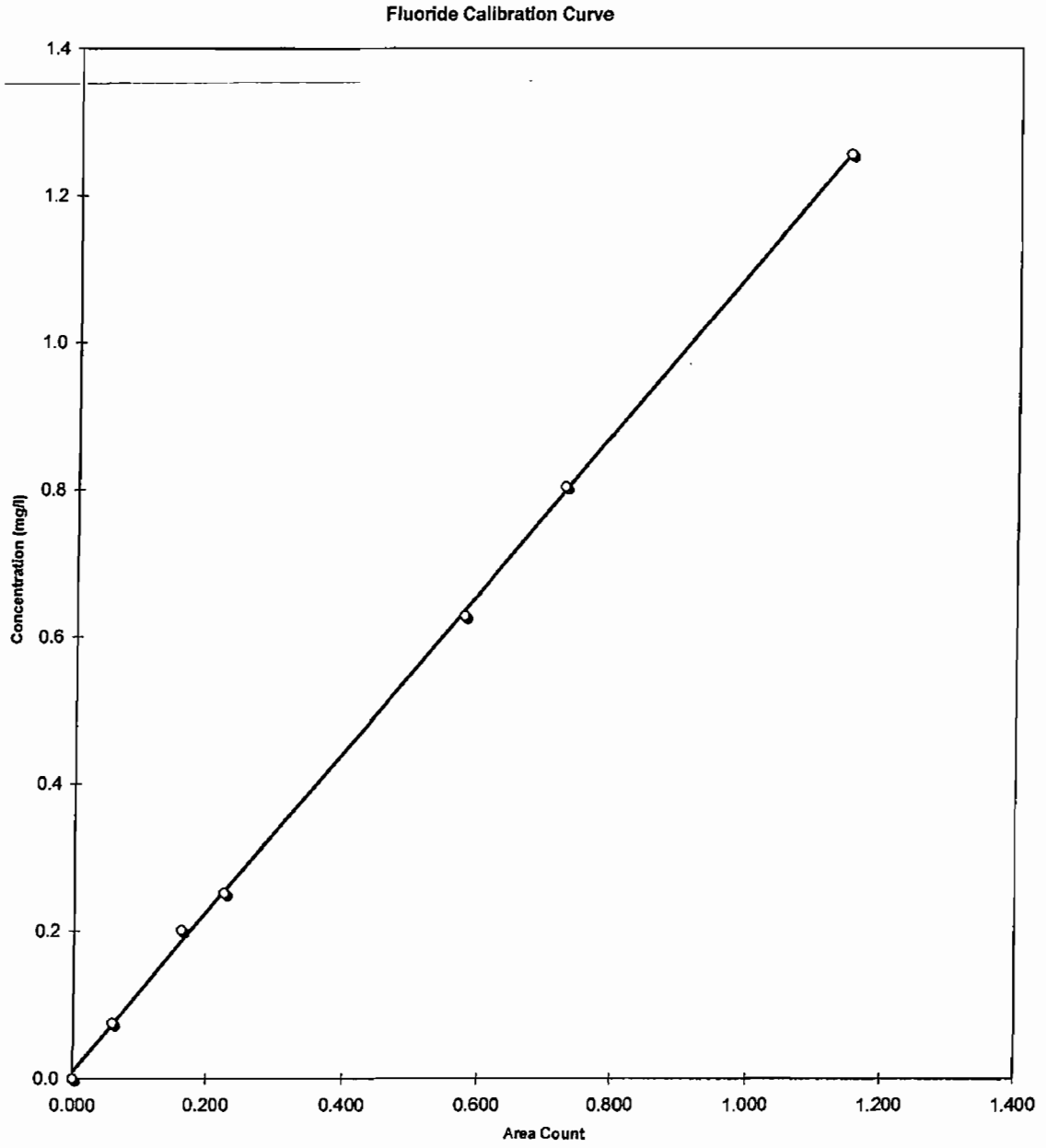
CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28558
Analyte	Fluoride
Date	4/12/2010



CHROMATOGRAPHIC DATA REDUCTION

Client: Palatine Engineering Group
Lab Project No: 28558
Analyte: Fluoride
Date: 4/12/2010

MDL= 0.008 mg/L
MRL= 0.040 mg/L

Average Flow Rate: 0.80 mL/min

Sample Location	Sample Identification Number	Sample Identification	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	28558-23	DI H2O Blank	04/09/10	0.0000	0.0000	0.0000	1	305.0	<		<0.012
U1 FF Outlet	28558-24	U1 FF Outlet R1	04/10/10	0.0000	0.0000	0.0000	1	923.6	<		<0.037
U1 FF Outlet	28558-25	U1 FF Outlet R2	04/10/10	0.0000	0.0000	0.0000	1	888.8	<		<0.036
U1 FF Outlet	28558-26	U1 FF Outlet R3	04/10/10	0.0000	0.0000	0.0000	1	898.2	<		<0.036
U2 FF Outlet	28558-27	U2 FF Outlet R1	04/10/10	0.0000	0.0000	0.0000	1	777.2	<		<0.031
U2 FF Outlet	28558-28	U2 FF Outlet R2	04/10/10	0.0000	0.0000	0.0000	1	860.4	<		<0.034
U2 FF Outlet	28558-29	U2 FF Outlet R3	04/10/10	0.0000	0.0000	0.0000	1	931.3	<		<0.037
U3 FF Outlet	28558-30	U3 FF Outlet R1	04/10/10	0.0000	0.0000	0.0000	1	943.4	<		<0.038
U3 FF Outlet	28558-31	U3 FF Outlet R2	04/10/10	0.0000	0.0000	0.0000	1	946.4	<		<0.038
U3 FF Outlet	28558-32	U3 FF Outlet R3	04/10/10	0.0000	0.0000	0.0000	1	897.0	<		<0.036

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CHROMATOGRAPHIC DATA REDUCTION

Client Palatine Engineering Group
Lab Project No: 28558
Analyte Fluoride
Date 4/12/2010

QUALITY CONTROL CHECKS

Sample Location	Sample Identification Number	Sample Identification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	Area Count Duplicate Difference	Duplicate Relative Difference (%)
Reagent Blank	28558-23	DI H2O Blank	04/09/10	0.0000	0.0000	0.0000	na	na
U1 FF Outlet	28558-24	U1 FF Outlet R1	04/10/10	0.0000	0.0000	0.0000	na	na
U1 FF Outlet	28558-25	U1 FF Outlet R2	04/10/10	0.0000	0.0000	0.0000	na	na
U1 FF Outlet	28558-26	U1 FF Outlet R3	04/10/10	0.0000	0.0000	0.0000	na	na
U2 FF Outlet	28558-27	U2 FF Outlet R1	04/10/10	0.0000	0.0000	0.0000	na	na
U2 FF Outlet	28558-28	U2 FF Outlet R2	04/10/10	0.0000	0.0000	0.0000	na	na
U2 FF Outlet	28558-29	U2 FF Outlet R3	04/10/10	0.0000	0.0000	0.0000	na	na
U3 FF Outlet	28558-30	U3 FF Outlet R1	04/10/10	0.0000	0.0000	0.0000	na	na
U3 FF Outlet	28558-31	U3 FF Outlet R2	04/10/10	0.0000	0.0000	0.0000	na	na
U3 FF Outlet	28558-32	U3 FF Outlet R3	04/10/10	0.0000	0.0000	0.0000	na	na

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group				
Lab Project No:	28558				
Analyte	Fluoride	MDL=	0.008 mg/L	Average Flow Rate	QC Dilution Factor
Date	4/12/2010	MRL=	0.040 mg/L	0.80 mL/min	200

QUALITY CONTROL CHECKS (CONT)

Sample Location	Sample Identification Number	Sample Identification	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	28558-00	CCB	04/08/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-990	CCV	04/08/10	0.4344	0.4189	0.4267	0.0155	3.6%	0.47	5.86%
CleanAir	28558-99 t	QC	04/09/10	0.5984	0.6133	0.6059	0.0149	2.5%	133.86	4.08%
CleanAir	28558-00	CCB	04/09/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-992	CCV	04/09/10	0.4229	0.4323	0.4276	0.0094	2.2%	0.48	5.45%
CleanAir	28558-993	QC	04/10/10	0.5727	0.5815	0.5771	0.0088	1.5%	127.60	8.57%
CleanAir	28558-00	CCB	04/10/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-994	CCV	04/10/10	0.4378	0.4478	0.4428	0.0100	2.3%	0.49	2.16%
CleanAir	28558-995	QC	04/10/10	0.653 t	0.6563	0.6547	0.0032	0.5%	144.49	3.54%
CleanAir	28558-00	CCB	04/10/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-996	CCV	04/10/10	0.4238	0.4443	0.4341	0.0205	4.7%	0.48	4.06%
				Matrix Spike Recoveries						
									Precision	Spike Recovery
Matrix Spike	28558-28	U2 FF Outlet R2	04/11/10	0.5661	0.5651	0.5656	0.0010	0.2%		98.7%
Matrix Spike	28558-28	U2 FF Outlet R2	04/11/10	0.5894	0.5966	0.5930	0.0072	1.2%	4.7%	103.5%

CHROMATOGRAPHIC DATA REDUCTION

Client: Palatine Engineering Group
Lab Project No: 28558
Analyte: Fluoride
Date: 4/12/2010

Determination of Detection Limit

(in accordance with 40 CFR 136, Appendix B)

Analyte	Fluoride
Area Count	
Trial 1	0.0558
Trial 2	0.0560
Trial 3	0.0559
Trial 4	0.0583
Trial 5	0.0608
Trial 6	0.0611
Trial 7	0.0613
Trial 8	0.0599
Average	**0.0586**
Std Dev	0.0025
RMS Dev	4.18%

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	97.49%
Measured Concentration (mg/l)	
Trial 1	0.070
Trial 2	0.071
Trial 3	0.071
Trial 4	0.073
Trial 5	0.076
Trial 6	0.076
Trial 7	0.076
Trial 8	0.075
Average	**0.074**
Std Dev	0.0027
RMS Dev	3.63%
$t_{(n-1,0.99)}$	2.998
Det Lim (mg/l)	**0.008**
Rep Lim (mg/L)	**0.040**

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	0.0097
Coeff of Corr	0.9997

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
Sample Location: U1 FF Outlet

1. Difference between duplicate injections for pre-test calibration (Pre Cal 1).

$$\Delta_{Injection} = \left| Area_{Trial\ 2} - Area_{Trial\ 1} \right|$$

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

$\Delta_{Injection}$ = 0.0011
$Area_{Trial2}$ = 0.1609
$Area_{Trial1}$ = 0.1598

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} = 0.1604
$Area_{Trial2}$ = 0.1609
$Area_{Trial1}$ = 0.1598

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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)

$\Delta_{PreMean\%}$	=	0.3418
Avg_{PreInj}	=	0.1604
$Area_{Trial2}$	=	0.1609

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.

$\overline{X}$	=	0.1626
x_1	=	0.1598
x_2	=	0.1609
n	=	4.0000

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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.

$\overline{X}_{All}$	=	0.4573
x_1	=	0.1598
x_2	=	0.1609
n	=	34.0000

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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	=	1.08876
x_1	=	0.1598
x_2	=	0.1609
$\bar{x}$	=	0.4573
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	=	0.00966
m	=	1.08876
$\bar{x}$	=	0.4573
$\bar{y}$	=	0.4595

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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	=	0.99968
r	=	0.99984
x_1	=	0.1598
x_2	=	0.1609
$\bar{x}$	=	0.4573
y_1	=	0.0000
y_2	=	0.0754
$\bar{y}$	=	0.4595
n	=	34.0000

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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.

$$\Delta_{Injection} = |Area_{Trial\ 2} - Area_{Trial\ 1}|$$

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

$\Delta_{Injection}$	=	0.0000
$Area_{Trial2}$	=	0.0000
$Area_{Trial1}$	=	0.0000

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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).

$$C_{Reg} = DF\left[m\left(Avg_{Inj}\right) + b\right]$$

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} = <
DF = 1
Avg_{Inj} = 0.0000
m = 1.0888
b = 0.0097

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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)

$M_{Analyte}$	=	<0.036
C_{Reg}	=	<
V_{Soln}	=	888.8000

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.

$AvgM_{f\_i}$	=	0.074			
M_{f_1}	=	0.070	M_{f_5}	=	0.076
M_{f_2}	=	0.071	M_{f_6}	=	0.076
M_{f_3}	=	0.071	M_{f_7}	=	0.076
M_{f_4}	=	0.073	M_{f_8}	=	0.075
n	=	8			

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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}	=	0.0027			
$AvgM_{f\_i}$	=	0.074			
M_{f_1}	=	0.070	M_{f_5}	=	0.076
M_{f_2}	=	0.071	M_{f_6}	=	0.076
M_{f_3}	=	0.071	M_{f_7}	=	0.076
M_{f_4}	=	0.073	M_{f_8}	=	0.075
n	=	8			

15c. Determination of variance of spike result.

$$V_{f\_i} = \left(\sigma_{f\_i}\right)^2$$

Where:

V_{f_i}	=	Variance of spike result.
σ_{f_i}	=	Standard deviation of spike result.

V_{f_i}	=	7.12E-06
σ_{f_i}	=	0.0027

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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} = 0.0363
σ_{f_i} = 0.0027
$AvgM_{f\_i}$ = 0.0735

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 = 97.5%
$AvgM_{f\_i}$ = 0.07350
RA = 0.07539

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
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} = 0.0027

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-25
Sample Location: U1 FF Outlet

15h. Determination of Method Reporting Limit (MRL).

$$MRL = 5(MDL)$$

Where:

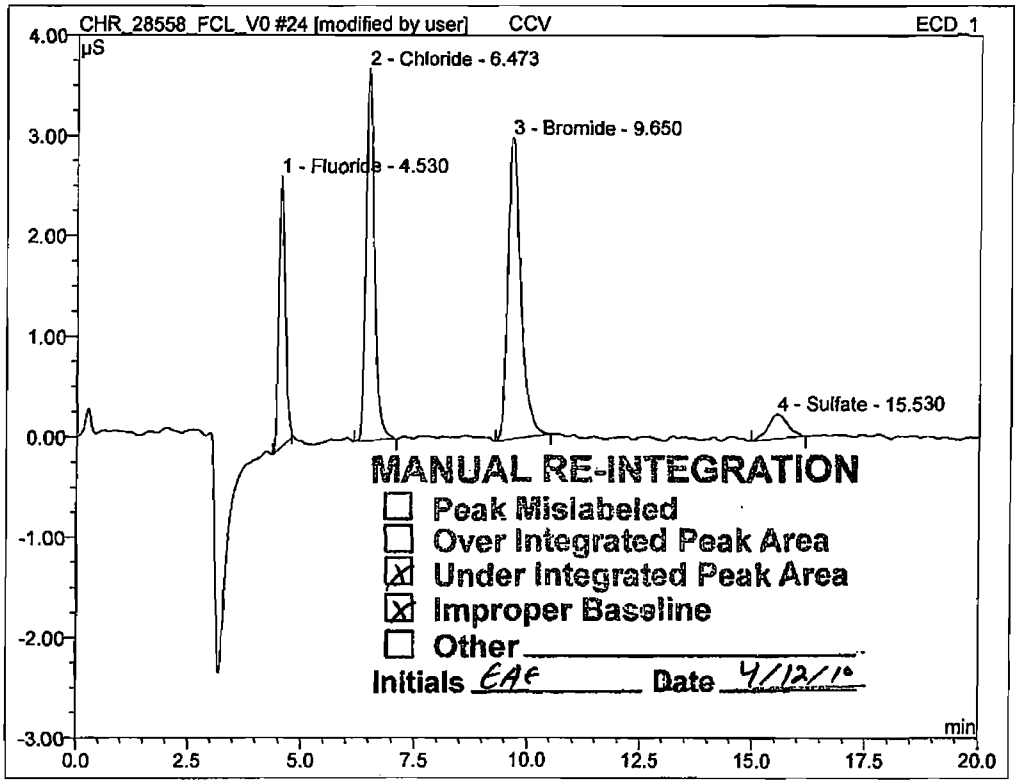
MRL = Method reporting limit (mg/L)
MDL = Method detection Limit (mg/L)
5 = Constant

MRL = 0.040
MDL = 0.008

24 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**46.045**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1368.28**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/8/2010 20:46**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

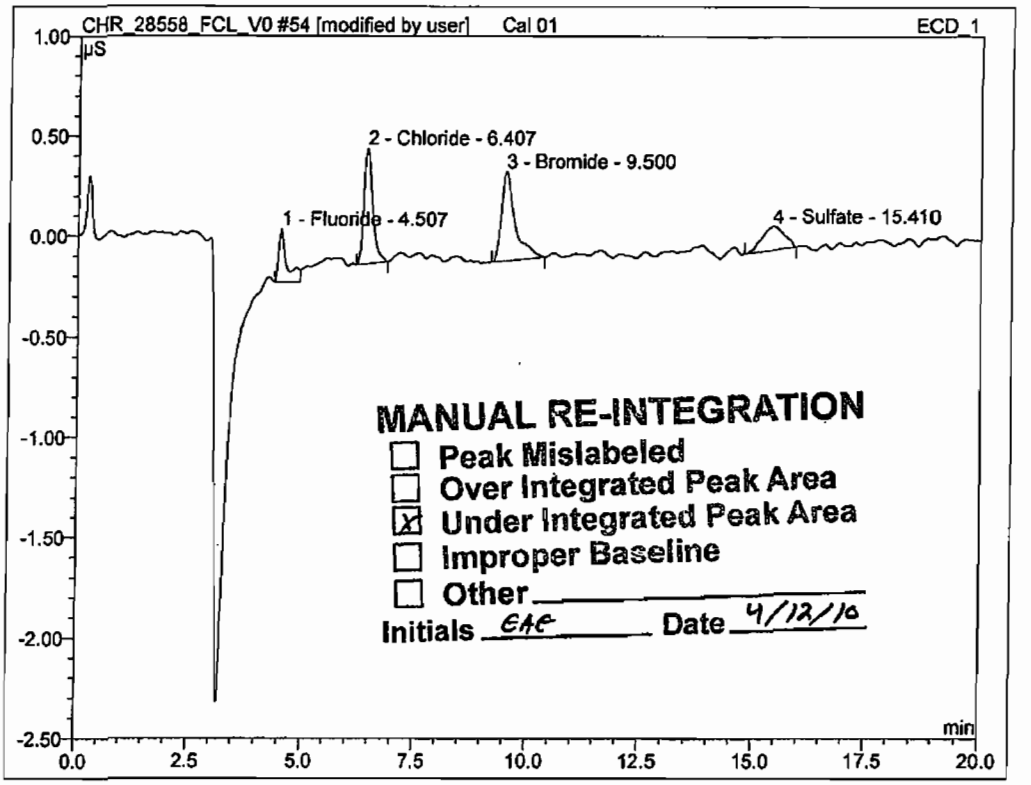


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.53	Fluoride	0.4344	18.52	BM *	0.94
2	6.47	Chloride	0.7992	34.07	BMB	0.92
3	9.65	Bromide	0.9884	42.13	BMB	0.89
4	15.53	Sulfate	0.1240	5.29	BMB	0.88
Total:			2.346	100.000	0.00	

54 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**45.957**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1375.27**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/9/2010 7:20**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

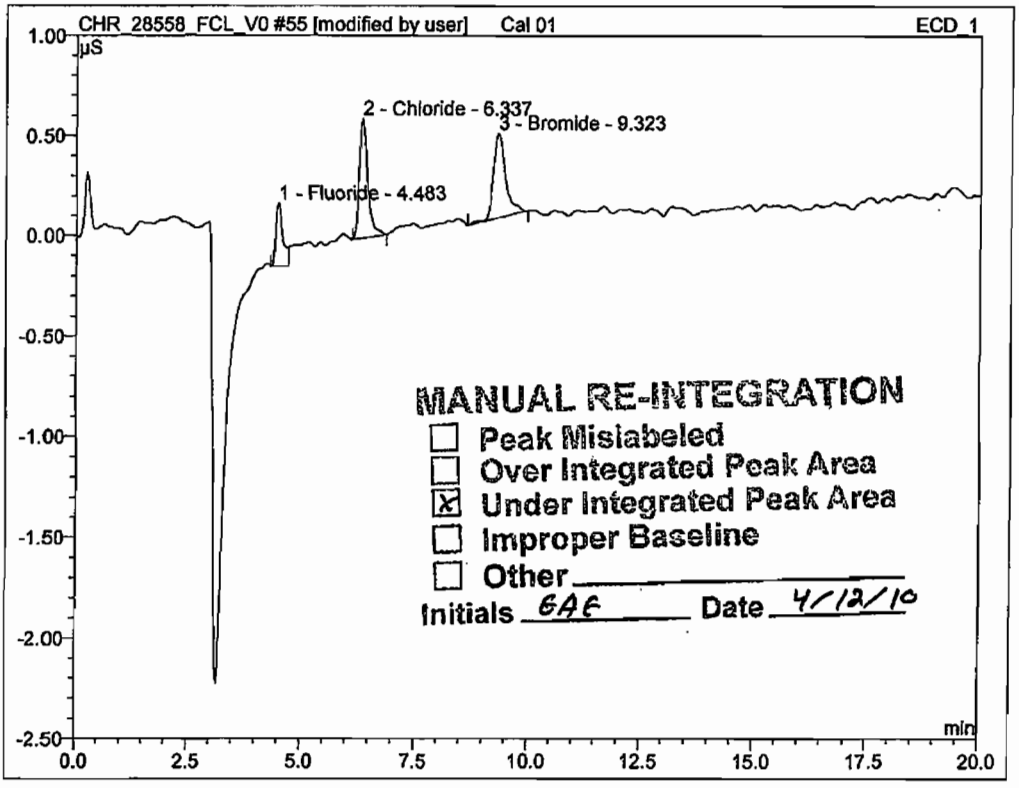


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.51	Fluoride	0.0559	13.72	BM *	n.a.
2	6.41	Chloride	0.1268	31.11	BMB	0.91
3	9.50	Bromide	0.1574	38.62	BMB	0.65
4	15.41	Sulfate	0.0675	16.56	BMB	1.10
Total:			0.408	100.000	0.00	

55 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**45.926**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1351.84**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/9/2010 7:42**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

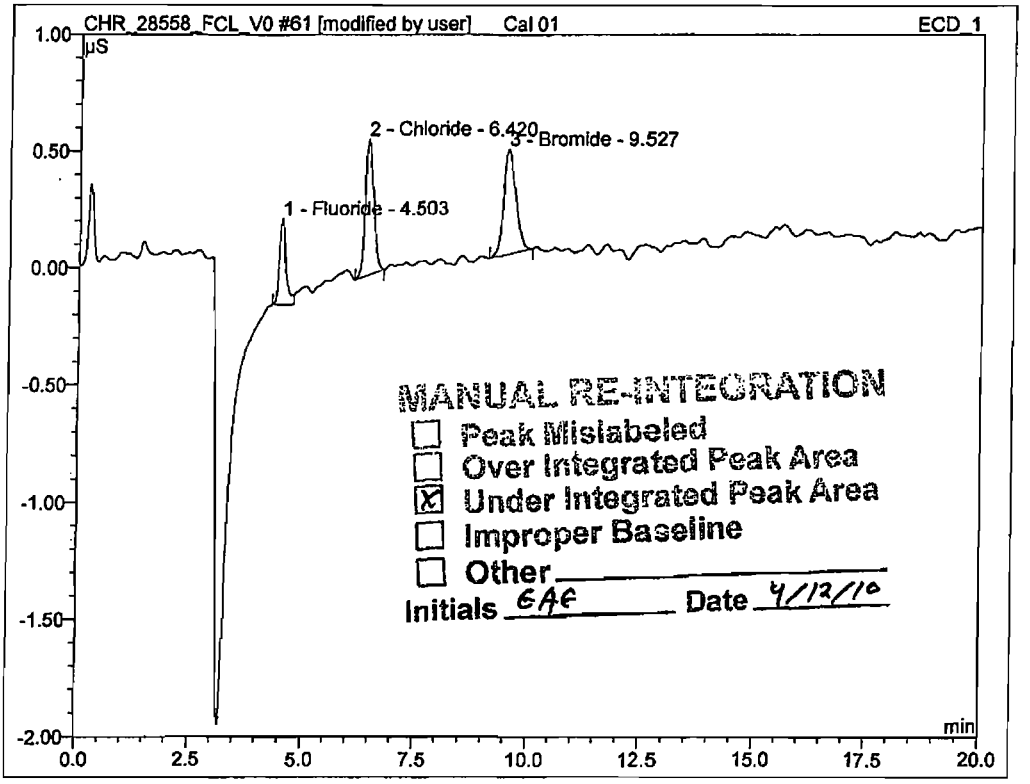


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.48	Fluoride	0.0583	18.14	BM *	n.a.
2	6.34	Chloride	0.1260	39.20	BMB	0.92
3	9.32	Bromide	0.1372	42.66	BMB	0.79
Total:			0.322	100.000	0.00	

61 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.529**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1354.91**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/9/2010 10:12**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

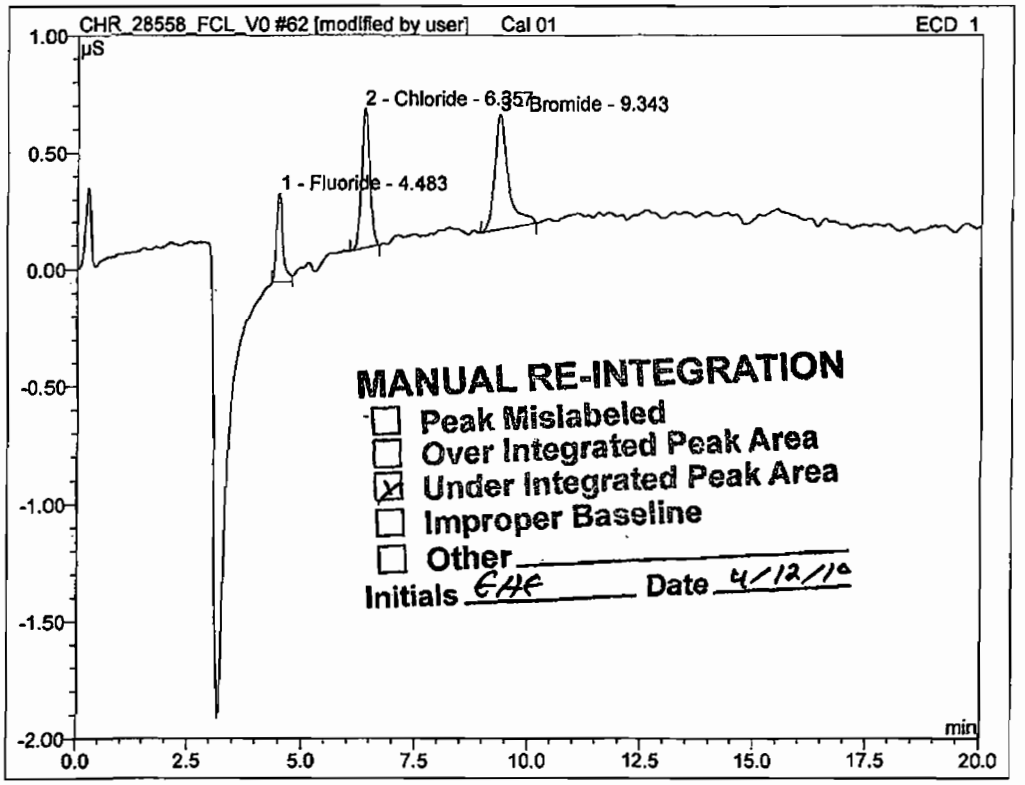


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.50	Fluoride	0.0608	18.76	BM *	n.a.
2	6.42	Chloride	0.1230	37.95	BMB	0.98
3	9.53	Bromide	0.1403	43.29	BMB	0.94
Total:			0.324	100.000	0.00	

62 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**47.739**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1350.73**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/9/2010 10:33**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

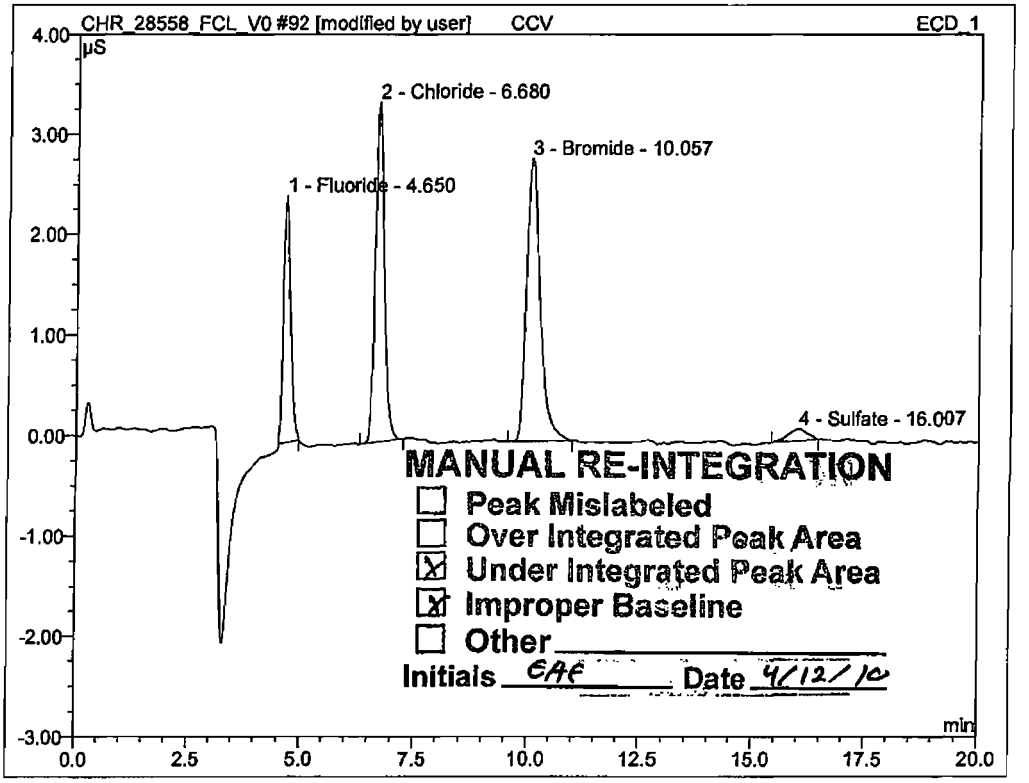


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.48	Fluoride	0.0611	16.97	BM *	0.81
2	6.36	Chloride	0.1252	34.80	BMB	0.95
3	9.34	Bromide	0.1735	48.23	BMB	0.70
Total:			0.360	100.000	0.00	

92 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**46.333**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1403.37**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/9/2010 21:07**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

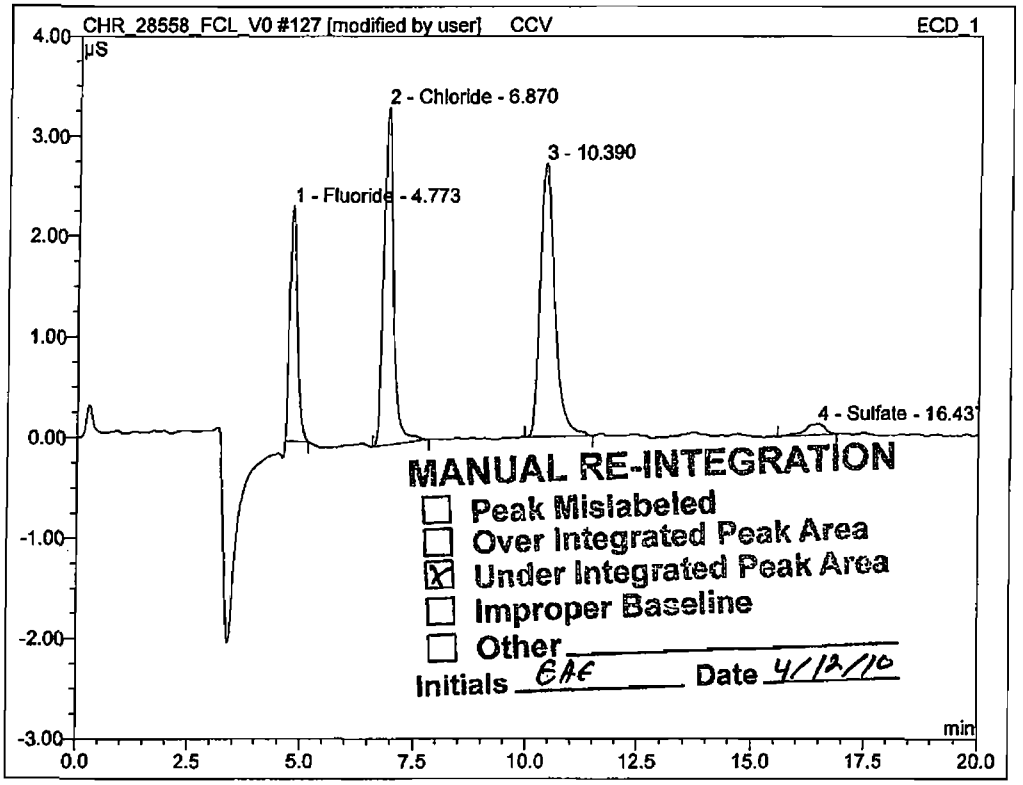


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.65	Fluoride	0.4323	19.15	BMB*	0.96
2	6.68	Chloride	0.7714	34.18	BMB	0.95
3	10.06	Bromide	0.9948	44.07	BMB	0.92
4	16.01	Sulfate	0.0587	2.60	BMB	1.03
Total:			2.257	100.000	0.00	

127 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**45.695**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1405.70**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/10/2010 9:26**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

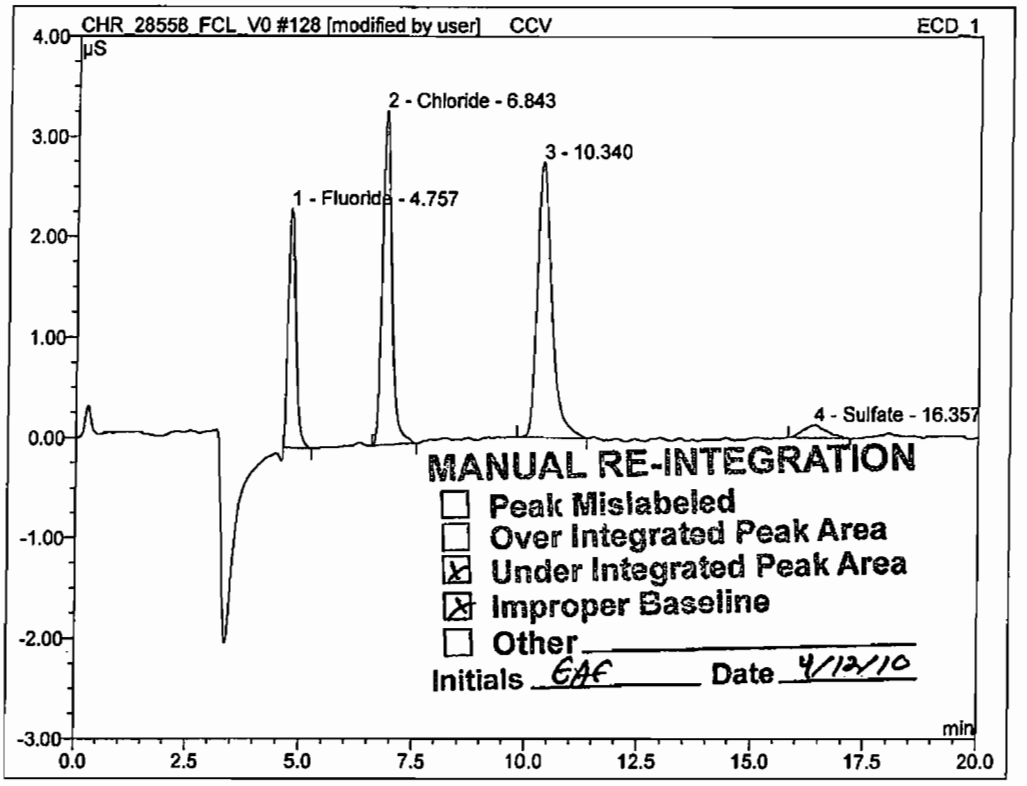


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.77	Fluoride	0.4378	18.58	BMB*	0.95
2	6.87	Chloride	0.8330	35.36	BMB	0.93
3	10.39	n.a.	1.0280	43.64	BMB	0.92
4	16.44	Sulfate	0.0570	2.42	BMB	0.81
Total:			2.356	100.000	0.00	

128 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**45.710**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1401.54**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/10/2010 9:48**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

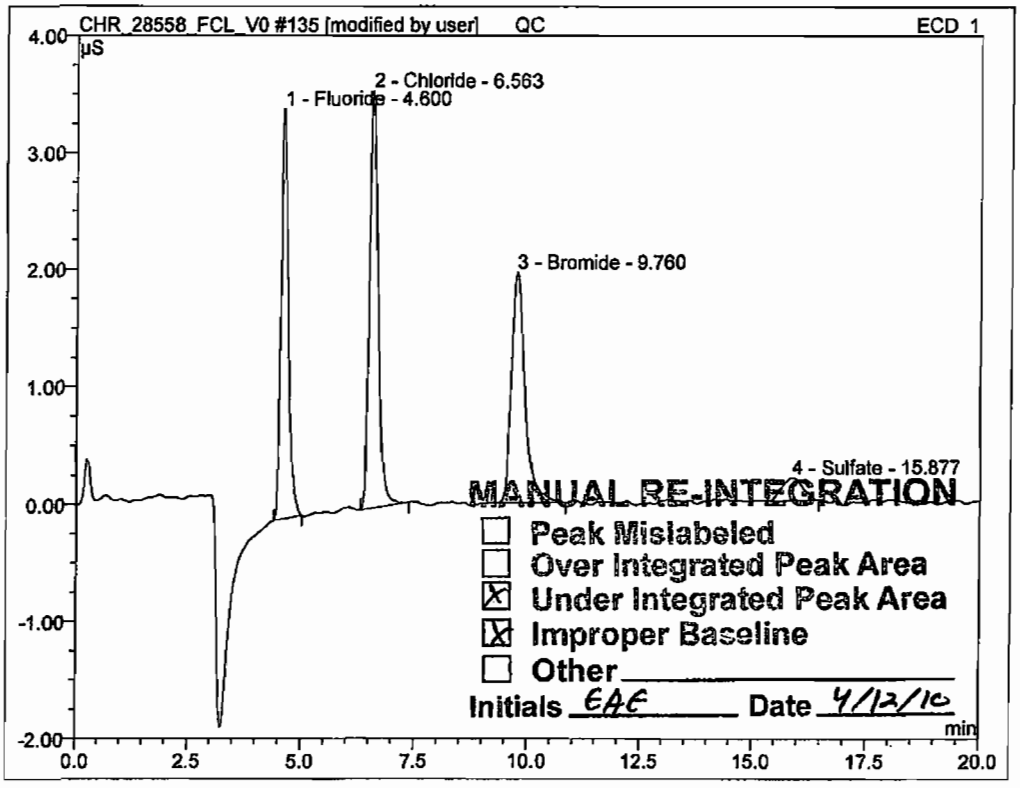


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.76	Fluoride	0.4478	18.93	BMB*	0.94
2	6.84	Chloride	0.8097	34.22	BMB	0.93
3	10.34	n.a.	1.0311	43.58	BMB	0.90
4	16.36	Sulfate	0.0772	3.26	BMB	0.98
Total:			2.366	100.000	0.00	

135 QC

CleanAir

Sample Name:	**QC**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**48.422**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1367.82**
Quantif. Method:	**default**	*Dilution Fa*	**200.0X**
Recording Time:	**4/10/2010 16:26**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

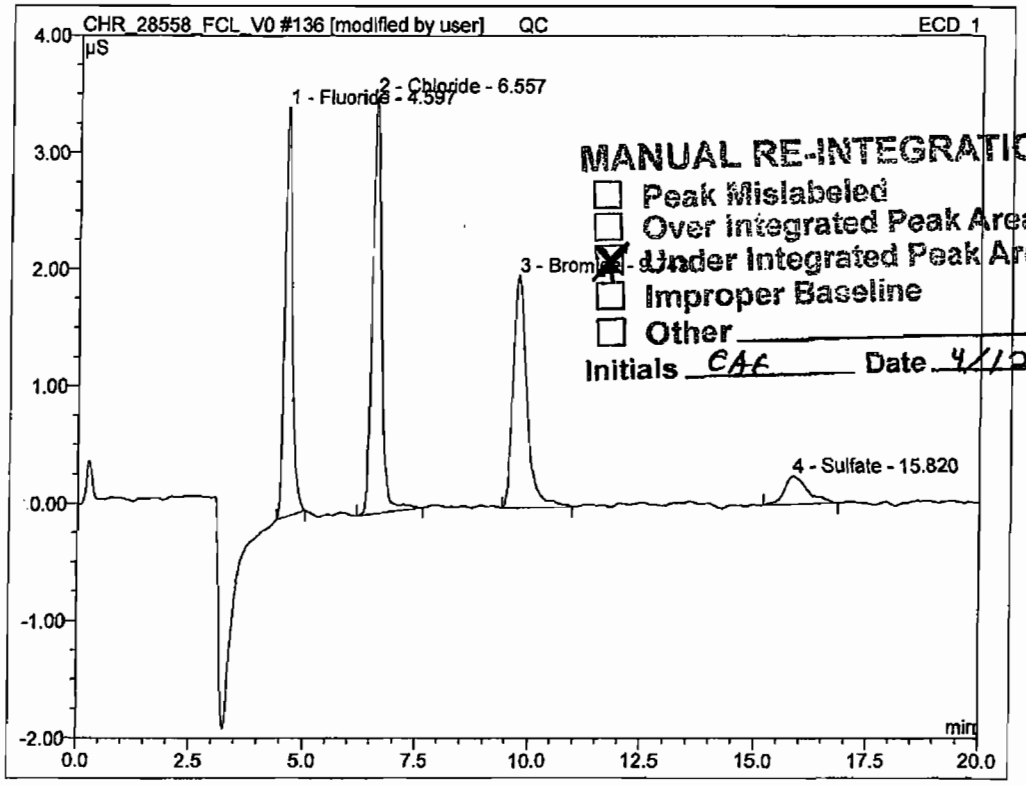


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.60	Fluoride	0.6531	28.91	BMB*	0.92
2	6.56	Chloride	0.8159	36.12	BMB	0.95
3	9.76	Bromide	0.6866	30.40	BMB	0.93
4	15.88	Sulfate	0.1033	4.57	BMB	1.09
Total:			2.259	100.000	0.00	

136 QC

CleanAir

Sample Name:	**QC**	*Sample Vo*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**48.415**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1364.85**
Quantif. Method:	**default**	*Dilution Fa*	**200.0X**
Recording Time:	**4/10/2010 16:48**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

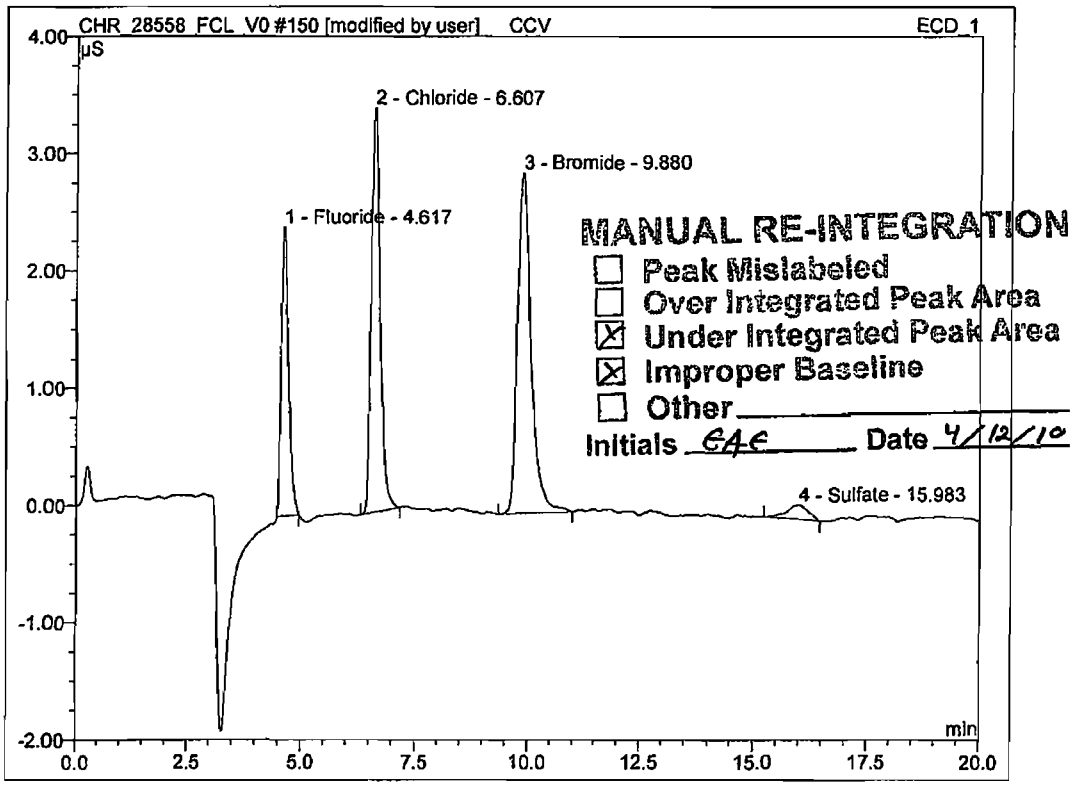


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.60	Fluoride	0.6563	28.00	BMB*	0.92
2	6.56	Chloride	0.8365	35.69	BMB	0.95
3	9.74	Bromide	0.7062	30.13	BMB	0.92
4	15.82	Sulfate	0.1448	6.18	BMB	0.79
Total:			2.344	100.000	0.00	

150 CCV

CleanAir

Sample Name:	**CCV**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**validate**	*ICS Condu*	**47.903**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1383.68**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/10/2010 21:44**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

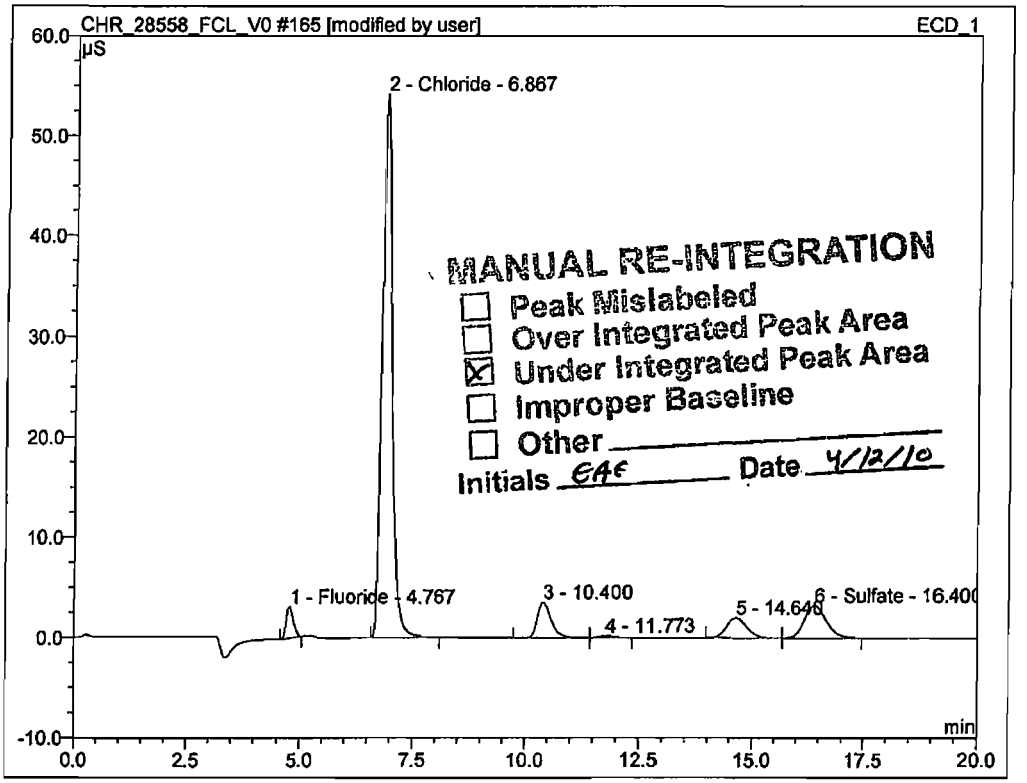


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.62	Fluoride	0.4443	19.11	BMB*	0.94
2	6.61	Chloride	0.7831	33.67	BMB	0.95
3	9.88	Bromide	1.0292	44.26	BMB	0.91
4	15.98	Sulfate	0.0689	2.96	BMB	0.94
Total:			2.325	100.000	0.00	

165 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo.*	**860.4 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**46.749**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1410.90**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 3:00**	*Sample ID:*	**28558-028**
Run Time (min):	**20.00**	*Replicate II*	

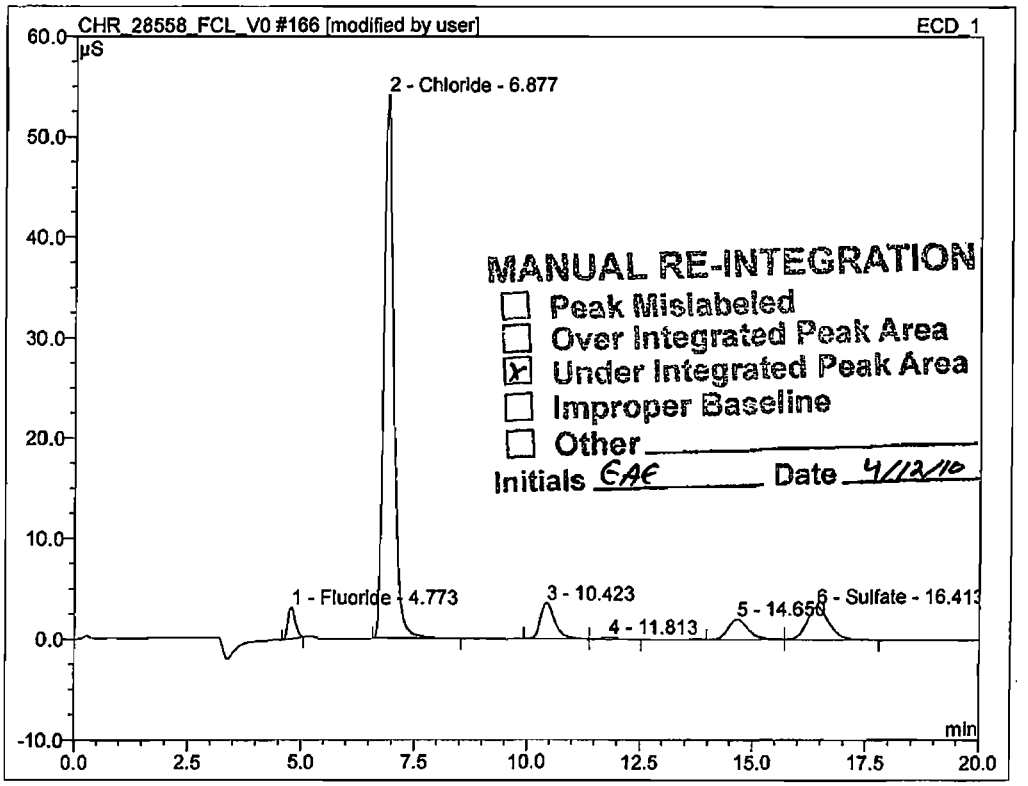


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.77	Fluoride	0.5661	3.07	BMB*	0.97
2	6.87	Chloride	13.5945	73.66	BMB	0.94
3	10.40	n.a.	1.2856	6.97	BM	0.93
4	11.77	n.a.	0.0786	0.43	MB	1.00
5	14.64	n.a.	1.0718	5.81	BM	0.97
6	16.40	Sulfate	1.8587	10.07	MB	0.96
Total:			18.455	100.000	0.00	

166 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo*	**860.4 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**46.681**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1414.86**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/11/2010 3:22**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	**28558-028**

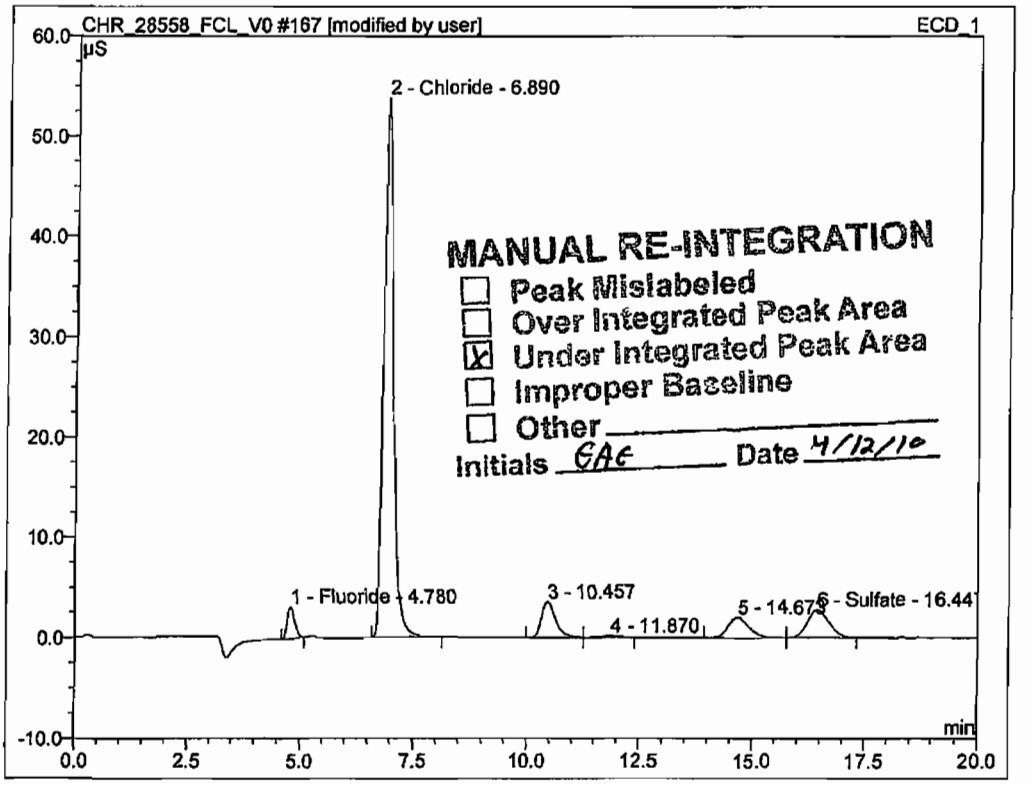


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.77	Fluoride	0.5651	3.03	BMB*	0.97
2	6.88	Chloride	13.7012	73.50	BMB	0.94
3	10.42	n.a.	1.3085	7.02	BM	0.92
4	11.81	n.a.	0.1118	0.60	MB	n.a.
5	14.65	n.a.	1.0922	5.86	BM	0.94
6	16.41	Sulfate	1.8626	9.99	MB	0.95
Total:			18.641	100.000	0.00	

167 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo.*	**860.4 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**46.573**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1421.25**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 3:42**	*Sample ID:*	**28558-028**
Run Time (min):	**20.00**	*Replicate II*	

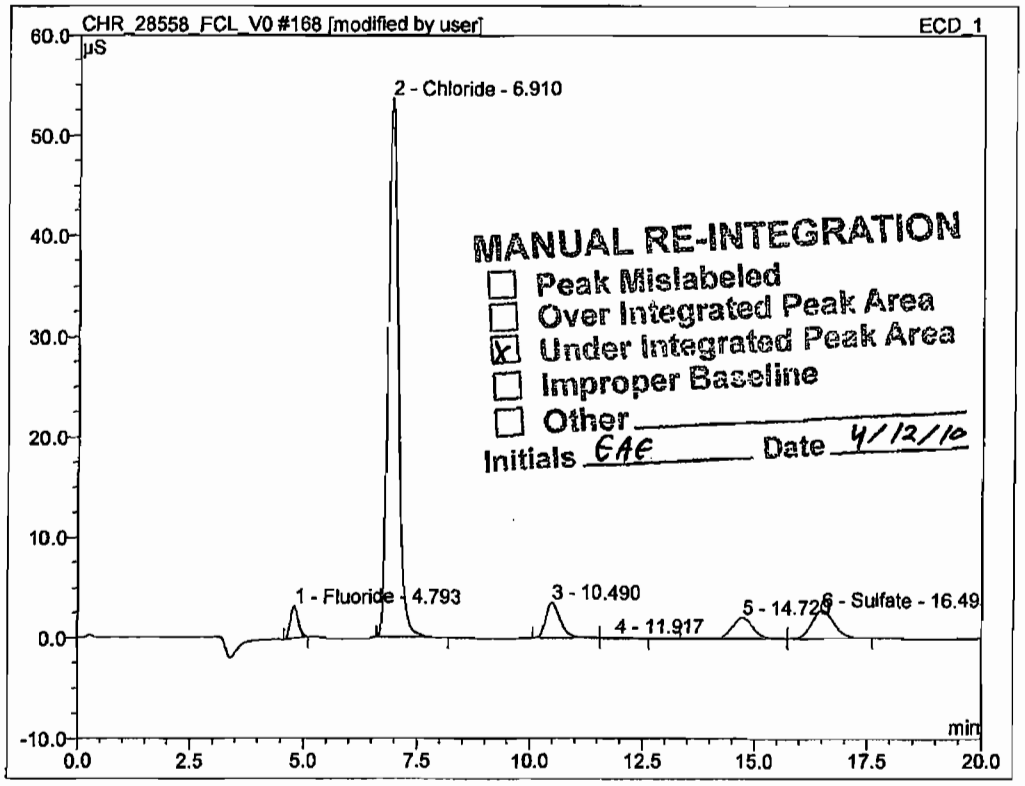


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.78	Fluoride	0.5894	3.22	BMB*	0.96
2	6.89	Chloride	13.6242	74.49	BMB	0.94
3	10.46	n.a.	1.3249	7.24	BM	0.90
4	11.87	n.a.	0.0951	0.52	MB	n.a.
5	14.67	n.a.	1.1024	6.03	BM	0.95
6	16.45	Sulfate	1.5549	8.50	MB	0.96
Total:			18.291	100.000	0.00	

168 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo.*	**860.4 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**46.550**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1421.41**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/11/2010 4:04**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	**28558-028**

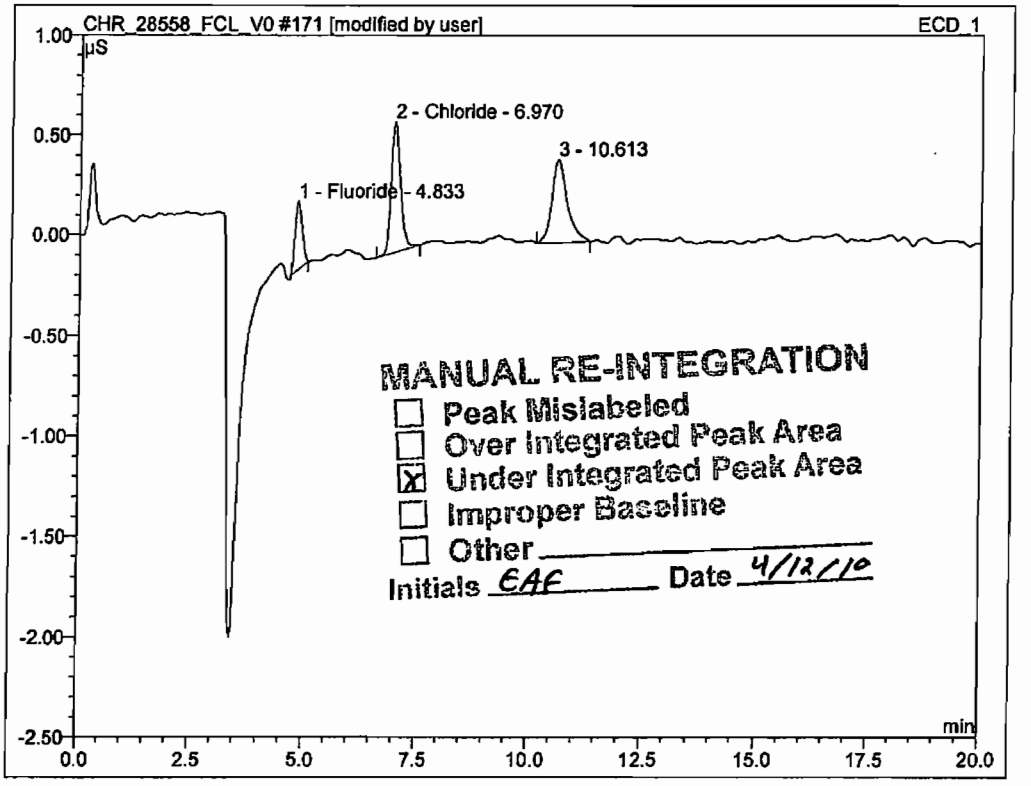


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.79	Fluoride	0.5966	3.25	BMB*	0.95
2	6.91	Chloride	13.6597	74.43	BMB	0.94
3	10.49	n.a.	1.3078	7.13	BM	0.91
4	11.92	n.a.	0.0875	0.48	MB	n.a.
5	14.72	n.a.	1.1333	6.18	BM	0.97
6	16.49	Sulfate	1.5665	8.54	MB	0.96
Total:			18.351	100.000	0.00	

171 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.485**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1417.49**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 5:07**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

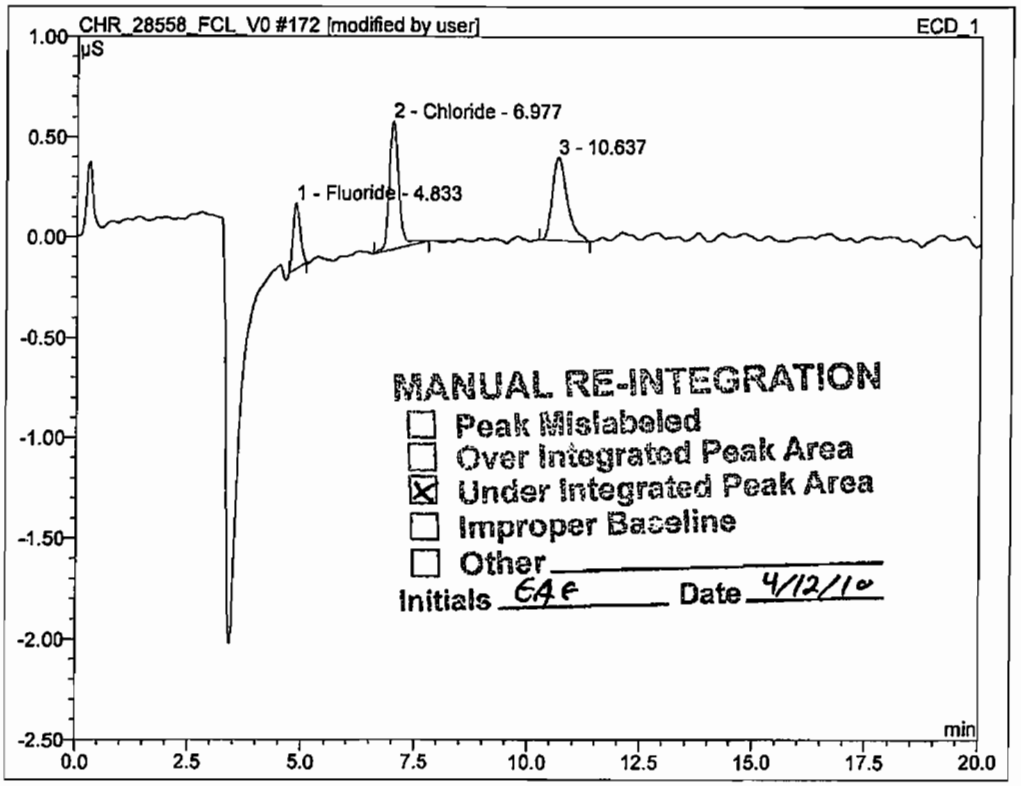


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.83	Fluoride	0.0613	15.92	BMB*	1.04
2	6.97	Chloride	0.1570	40.74	BMB	0.95
3	10.61	n.a.	0.1670	43.34	BMB	0.80
Total:			0.385	100.000	0.00	

172 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.454**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1419.06**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 5:29**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

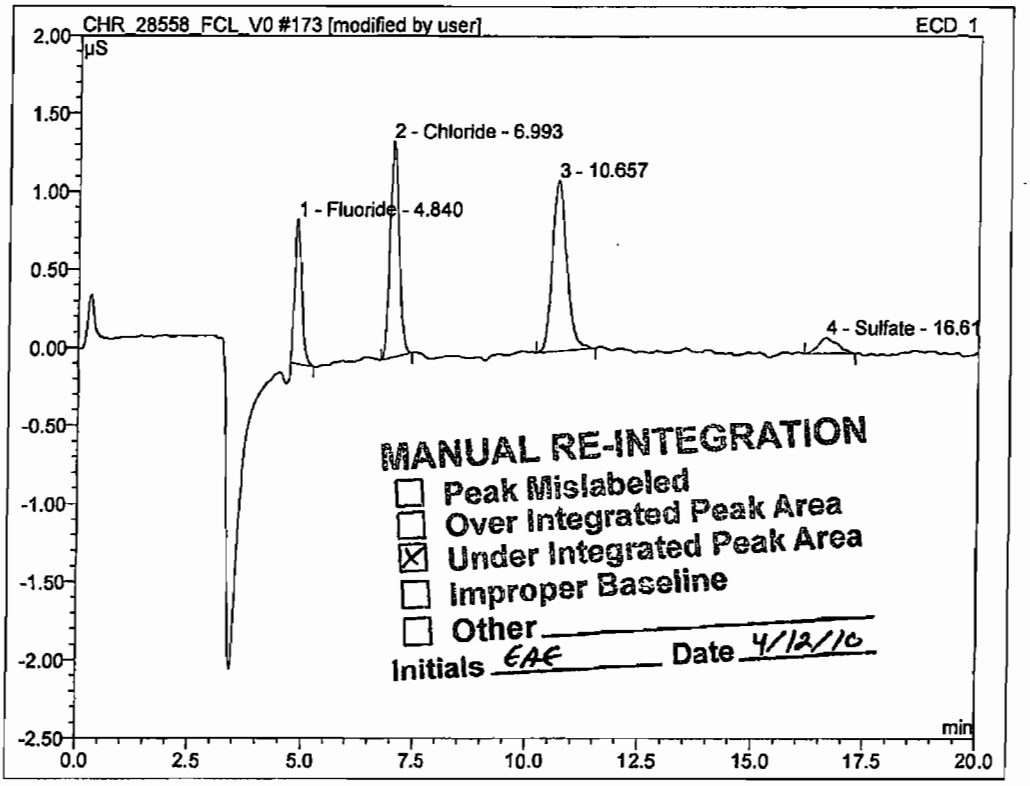


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.83	Fluoride	0.0599	15.93	BMB*	0.99
2	6.98	Chloride	0.1554	41.34	BMB	0.96
3	10.64	n.a.	0.1607	42.73	BMB	0.90
Total:			0.376	100.000	0.00	

173 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.402**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1423.99**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 5:49**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

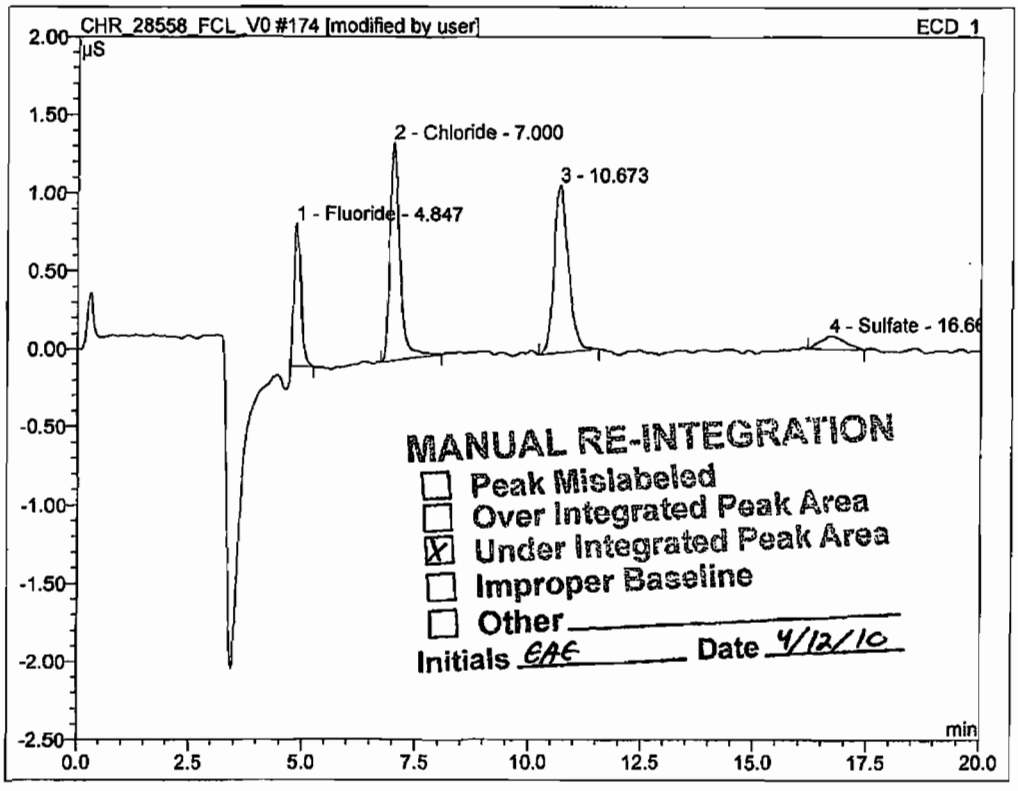


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.84	Fluoride	0.1657	17.68	BMB*	0.97
2	6.99	Chloride	0.3197	34.12	BMB	0.97
3	10.66	n.a.	0.4032	43.03	BMB	0.95
4	16.61	Sulfate	0.0484	5.17	BMB	0.98
Total:			0.937	100.000	0.00	

174 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.374**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1425.00**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 6:11**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

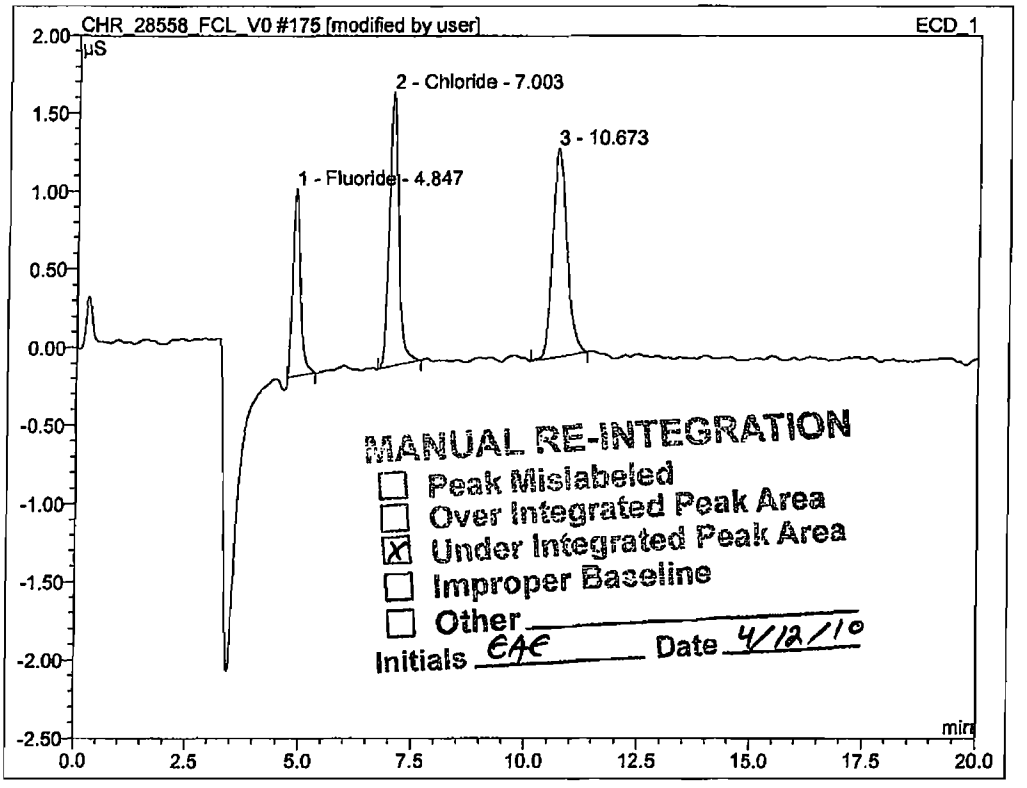


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.85	Fluoride	0.1640	16.87	BMB*	0.97
2	7.00	Chloride	0.3527	36.28	BMB	0.91
3	10.67	n.a.	0.4008	41.23	BMB	0.92
4	16.66	Sulfate	0.0546	5.62	BMB	1.08
Total:			0.972	100.000	0.00	

175 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample-Type:	**standard**	*ICS Condu*	**46.361**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1424.51**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 6:31**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

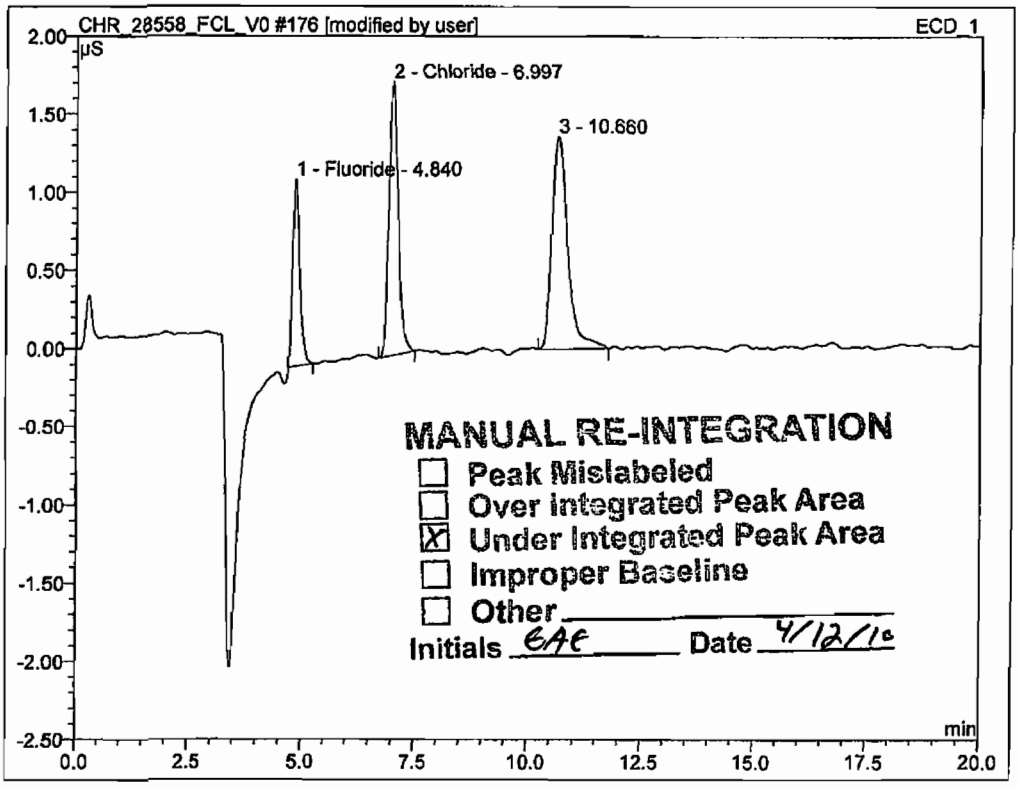


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.85	Fluoride	0.2316	20.09	BMB*	0.92
2	7.00	Chloride	0.4234	36.73	BMB	0.94
3	10.67	n.a.	0.4978	43.18	BMB	0.95
Total:			1.153	100.000	0.00	

176 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.282**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1422.70**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/11/2010 6:53**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

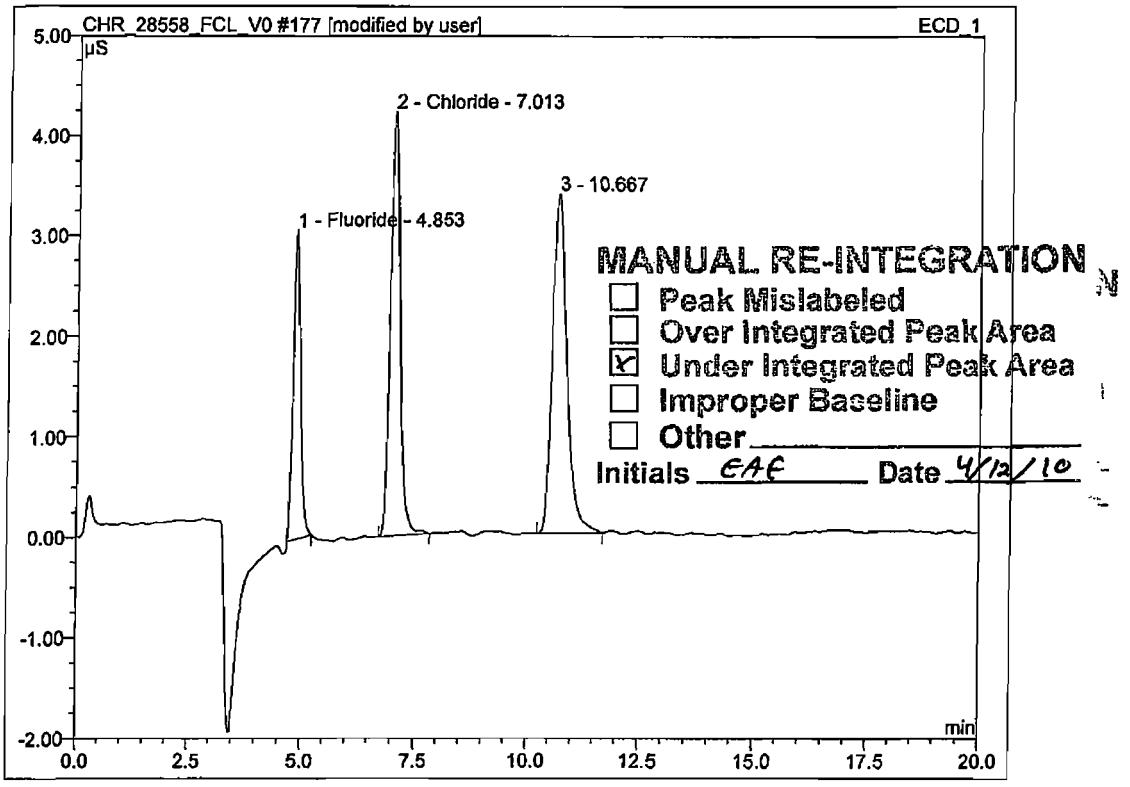


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.84	Fluoride	0.2208	18.83	BMB*	0.95
2	7.00	Chloride	0.4156	35.45	BMB	0.94
3	10.66	n.a.	0.5360	45.72	BMB	0.91
Total:			1.172	100.000	0.00	

177 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.277**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1427.07**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 7:14**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

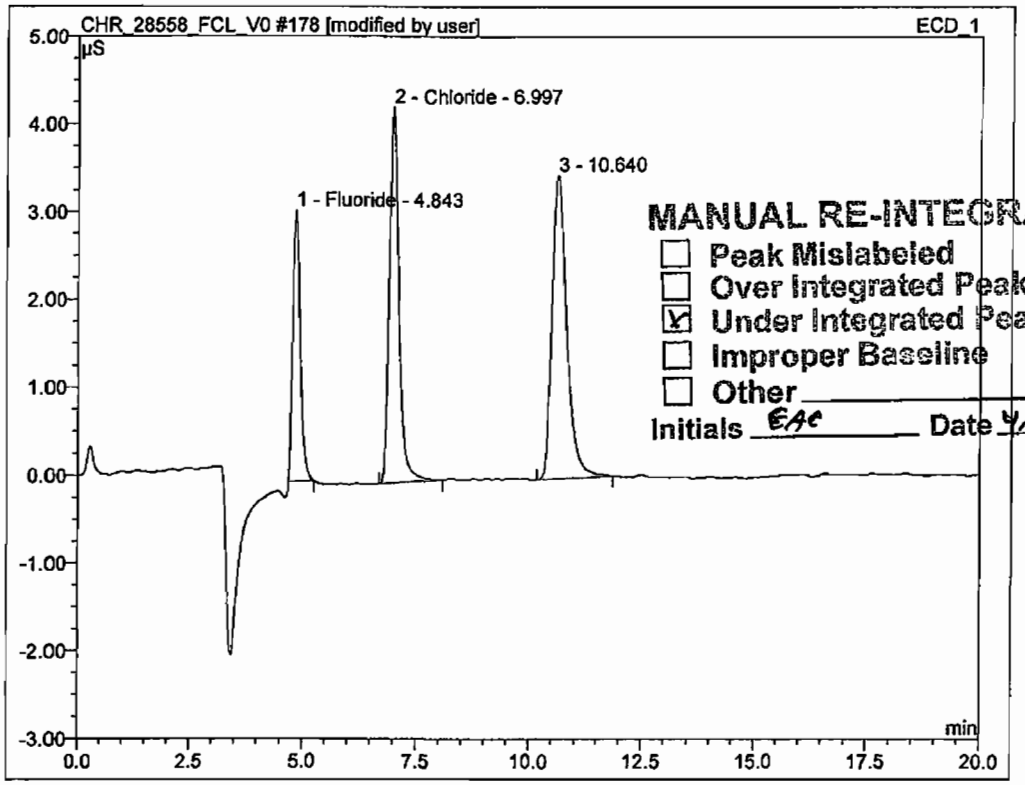


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.85	Fluoride	0.5782	20.09	BMB*	0.93
2	7.01	Chloride	1.0220	35.50	BMB	0.93
3	10.67	n.a.	1.2786	44.41	BMB	0.92
Total:			2.879	100.000	0.00	

178 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.349**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1426.65**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 7:35**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

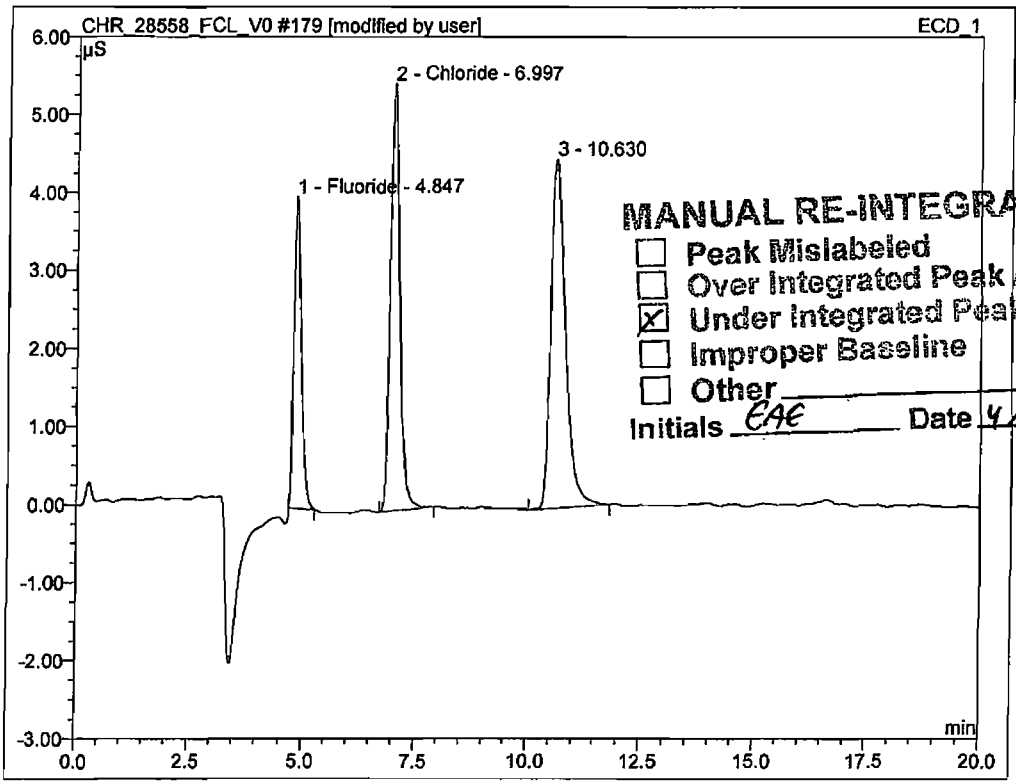


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.84	Fluoride	0.5768	19.66	BMB*	0.93
2	7.00	Chloride	1.0474	35.70	BMB	0.93
3	10.64	n.a.	1.3096	44.64	BMB	0.92
Total:			2.934	100.000	0.00	

179 Cal 05

CleanAir

Sample Name:	**Cal 05**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.357**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1426.28**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 7:56**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

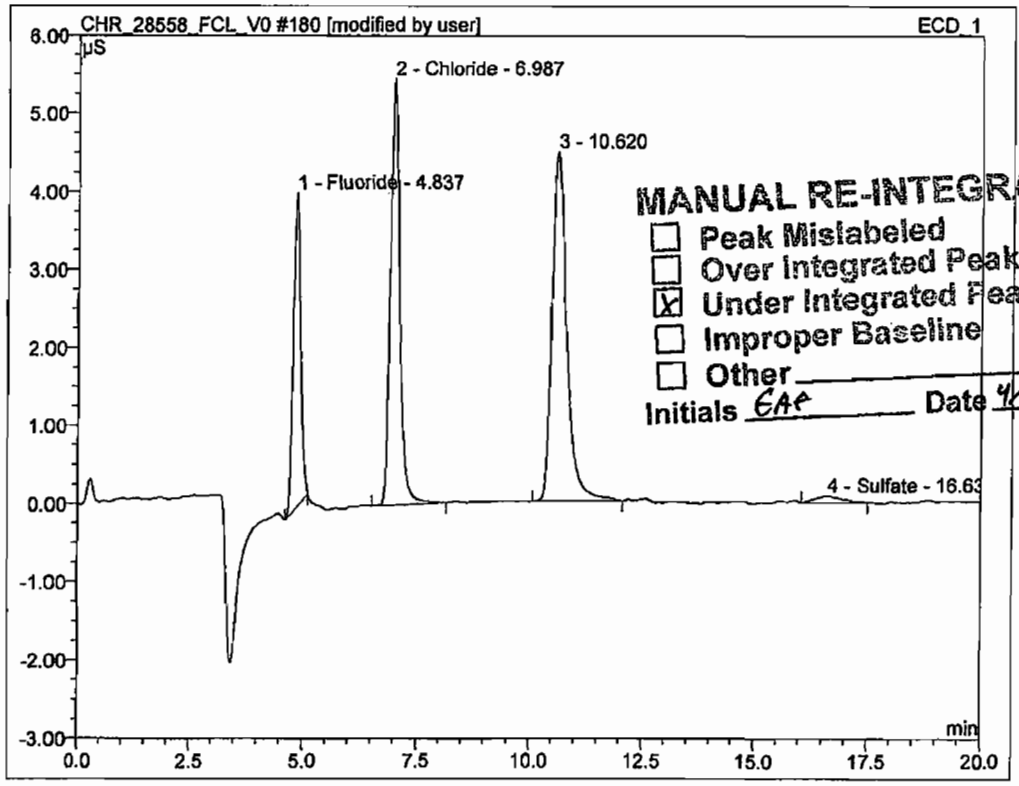


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.85	Fluoride	0.7472	19.94	BMB*	0.93
2	7.00	Chloride	1.3188	35.19	BMB	0.93
3	10.63	n.a.	1.6814	44.87	BMB	0.92
Total:			3.747	100.000	0.00	

180 Cal 05

CleanAir

Sample Name:	**Cal 05**	*Sample Vo.*	**1.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.352**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1422.99**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 8:18**	*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 4/12/10

No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.84	Fluoride	0.7443	19.41	BMB*	0.95
2	6.99	Chloride	1.3266	34.60	BMB	0.93
3	10.62	n.a.	1.7071	44.52	BMB	0.92
4	16.63	Sulfate	0.0566	1.48	BMB	0.87
Total:			3.835	100.000	0.00	

ANALYTICAL PERSPECTIVES

14 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

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.	P2107
Analytical Protocol	Method 23
No. Samples Submitted	5 & 1 audit
No. Samples Analyzed	4 & 1 audit (reagent blank archived)
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	none
Date Received	25-Mar-2010
Condition Received	good
Temperature upon Receipt (C)	-1 (XAD, filters), 21-22 (solvents)
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	see below
Analytical Difficulties	see below

ANALYTICAL PERSPECTIVES

QC Annotations:

See Appendix A&B for data qualifier, data attributes, and lab identifier information.

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 304 pages.
(add one page in count for the NELAC compliance statement) (+1)

P2107

ANALYTICAL PERSPECTIVES

Part 1 Narrative

22 pgs

- ✓Letter
- ✓QC Annotations
- ✓Project Information

ANALYTICAL PERSPECTIVES

Part 2 Path

20 pgs

- ✓Overview
- ✓Protocol
- ✓Extraction
- ✓Analysis
- ✓Spike Profile
- ✓SOPs
- ✓QC
- ✓Reporting
- ✓Special Requirements

Extraction Tracking Sheets

Fractionation Tracking Sheets

Injection Tracking Sheets

ANALYTICAL PERSPECTIVES

Part 3 Results

85 pgs

- ✓Summary Topsheets
- ✓Raw Data
- ✓SICPs
- ✓Areas
- ✓Retention Times
- ✓S/N
- ✓Ion Abundance Ratios

ANALYTICAL PERSPECTIVES

Part 4 Performance

45 pgs

System Checks

- ✓Mass Spectrometry
- ✓Gas Chromatography
- ✓Initial Calibration
- ✓Continuing Calibration
- ✓BCS_3, OPR

Part 4D ICAL 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 20 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

P2107 - TEQ

Project ID: General Analytical AIR

Sample Summary Part 1

ANALYTICAL PERSPECTIVES

Method 23

Analyte	0_7660_MB001	Field Blank	Unit 2 FF Outlet Run 1	Unit 2 FF Outlet Run 2	Unit 2 FF Outlet Run 3
	pg	pg	pg	pg	pg
2,3,7,8-TCDD	(1.86)	(1.51)	[4.93]	[6.97]	[8.03]
1,2,3,7,8-PeCDD	(2.24)	(1.54)	23.9	[28.4]	26.9
1,2,3,4,7,8-HxCDD	(2.75)	(1.56)	44.4	47.8	52.5
1,2,3,6,7,8-HxCDD	(2.74)	(1.51)	125	137	148
1,2,3,7,8,9-HxCDD	(3.25)	(1.74)	47.6	72.7	71.9
1,2,3,4,6,7,8-HpCDD	[3.76]	4.94	849	910	1020
OCDD	[7.89]	[16.8]	1180	1260	1450
2,3,7,8-TCDF	(1.24)	(0.878)	14.3	19.1	20.5
1,2,3,7,8-PeCDF	(1.5)	(0.912)	22.7	24.5	[29.2]
2,3,4,7,8-PeCDF	(1.35)	(0.833)	57	61	71.7
1,2,3,4,7,8-HxCDF	(1.85)	1.14	33.6	40.7	45.3
1,2,3,6,7,8-HxCDF	(1.63)	1.22	39.3	50.6	55.1
2,3,4,6,7,8-HxCDF	(1.63)	[0.934]	76.2	77.8	92.7
1,2,3,7,8,9-HxCDF	(2.28)	(1.32)	(3.79)	(3.57)	(2.61)
1,2,3,4,6,7,8-HpCDF	(1.85)	2.35	98.3	100	124
1,2,3,4,7,8,9-HpCDF	(2.66)	(1.58)	35.5	28.8	41.5
OCDF	(4.13)	(2.91)	64.8	55	68.4
ITEF TEQ (ND=0; EMPC=0)	**0.00**	**0.309**	**90.7**	**88.0**	**111**
ITEF TEQ (ND=0; EMPC=EMPC)	**0.0455**	**0.419**	**95.6**	**109**	**121**
ITEF TEQ (ND=DL/2; EMPC=0)	**2.77**	**2.09**	**92.0**	**90.1**	**112**
ITEF TEQ (ND=DL/2; EMPC=EMPC)	**2.80**	**2.15**	**95.8**	**109**	**121**
ITEF TEQ (ND=DL; EMPC=EMPC)	**5.56**	**3.88**	**96.0**	**110**	**121**
Checkcode	777-448	115-583	189-309	024-135	715-575
Lab ID	MB1_7660_DF_SDS	P2107_7660_001	P2107_7660_002	P2107_7660_003	P2107_7660_004

( ) = DL
[ ] = EMPC

P2107 - Totals

Project ID: General Analytical AIR

Sample Summary Part 2 — ANALYTICAL PERSPECTIVES — **Method 23**

Analyte	0_7660_MB001	Field Blank	Unit 2 FF Outlet Run 1	Unit 2 FF Outlet Run 2	Unit 2 FF Outlet Run 3
	pg	pg	pg	pg	pg
Totals					
TCDDs	2.27	3.98	1510	1630	1780
PeCDDs	0	0	1860	2080	2140
HxCDDs	0	7.15	3360	3800	4150
HpCDDs	3.61	4.94	1740	1900	2090
OCDD	7.89	16.8	1180	1260	1450
TCDFs	0	0	830	921	926
PeCDFs	0	0	698	742	818
HxCDFs	0	4.2	534	598	673
HpCDFs	0	4.27	284	259	323
OCDF	0	0	64.8	55	68.4
Total PCDD/Fs (ND=0; EMPC=0)	**5.88**	**24.5**	**12,100**	**13,300**	**14,400**
Total PCDD/Fs (ND=0; EMPC=EMPC)	**17.5**	**48.1**	**12,100**	**13,400**	**14,600**
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	**50.5**	**64.4**	**12,100**	**13,400**	**14,600**
Total 2378s (ND=0; EMPC=0)	0.00	9.65	2,720	2,890	3,300
Total 2378s (ND=0.5; EMPC=0)	20.4	20.2	2,720	2,890	3,300
Total 2378s (ND=1; EMPC=0)	40.7	30.7	2,720	2,890	3,300
Total 2378s (ND=0; EMPC=1)	11.6	37.1	5,440	5,810	6,630
Total 2378s (ND=0.5; EMPC=1)	28.1	35.6	2,720	2,920	3,330
Total 2378s (ND=1; EMPC=1)	44.6	43.7	2,720	2,920	3,330
Checkcode	777-448	115-583	189-309	024-135	715-575
Lab ID	MB1_7660_DF_SDS	P2107_7660_001	P2107_7660_002	P2107_7660_003	P2107_7660_004

( ) = DL
[ ] = EMPC

P2107 - Others

Project ID: General Analytical AIR

Sample Summary Part 3

ANALYTICAL PERSPECTIVES

Method 23

Analyte	0_7660_MB001	Field Blank	Unit 2 FF Outlet Run 1	Unit 2 FF Outlet Run 2	Unit 2 FF Outlet Run 3
	pg	pg	pg	pg	pg
Other PCDD/Fs (ND=0, EMPC=0)					
Other TCDD	2.27	3.98	1510	1630	1780
Other PeCDD	0	0	1840	2080	2110
Other HxCDD	0	7.15	3140	3540	3880
Other HpCDD	3.61	0	890	995	1070
Other TCDF	0	0	816	902	905
Other PeCDF	0	0	618	656	747
Other HxCDF	0	1.84	365	409	456
Other HpCDF	0	1.92	150	130	158
Other PCDD/Fs (ND=0, EMPC=EMPC)					
Other TCDD	2.27	3.98	1520	1650	1800
Other PeCDD	0	0	1840	2100	2110
Other HxCDD	0	7.15	3140	3600	3880
Other HpCDD	3.61	3.94	890	995	1070
Other TCDF	0	0.965	842	902	971
Other PeCDF	0	0	618	699	756
Other HxCDF	0	2.71	372	409	463
Other HpCDF	0	1.92	150	130	158
Checkcode	777-448	115-583	189-309	024-135	715-575
Lab ID	MB1_7660_DF_SDS	P2107_7660_001	P2107_7660_002	P2107_7660_003	P2107_7660_004

( ) = DL
[ ] = EMPC

P2107 - DLs

Project ID: General Analytical AIR

Sample Summary Part 5

ANALYTICAL PERSPECTIVES

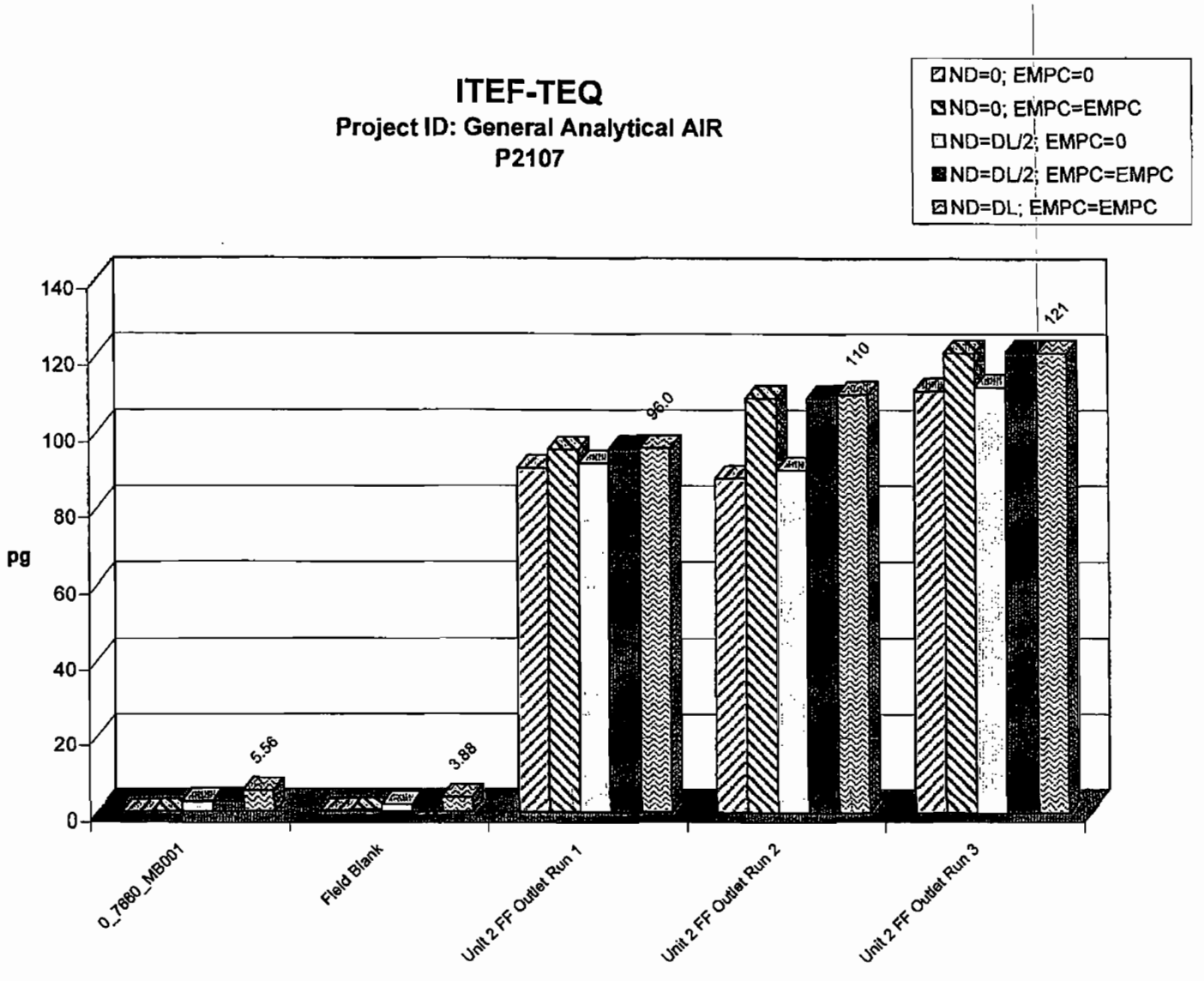
Method 23

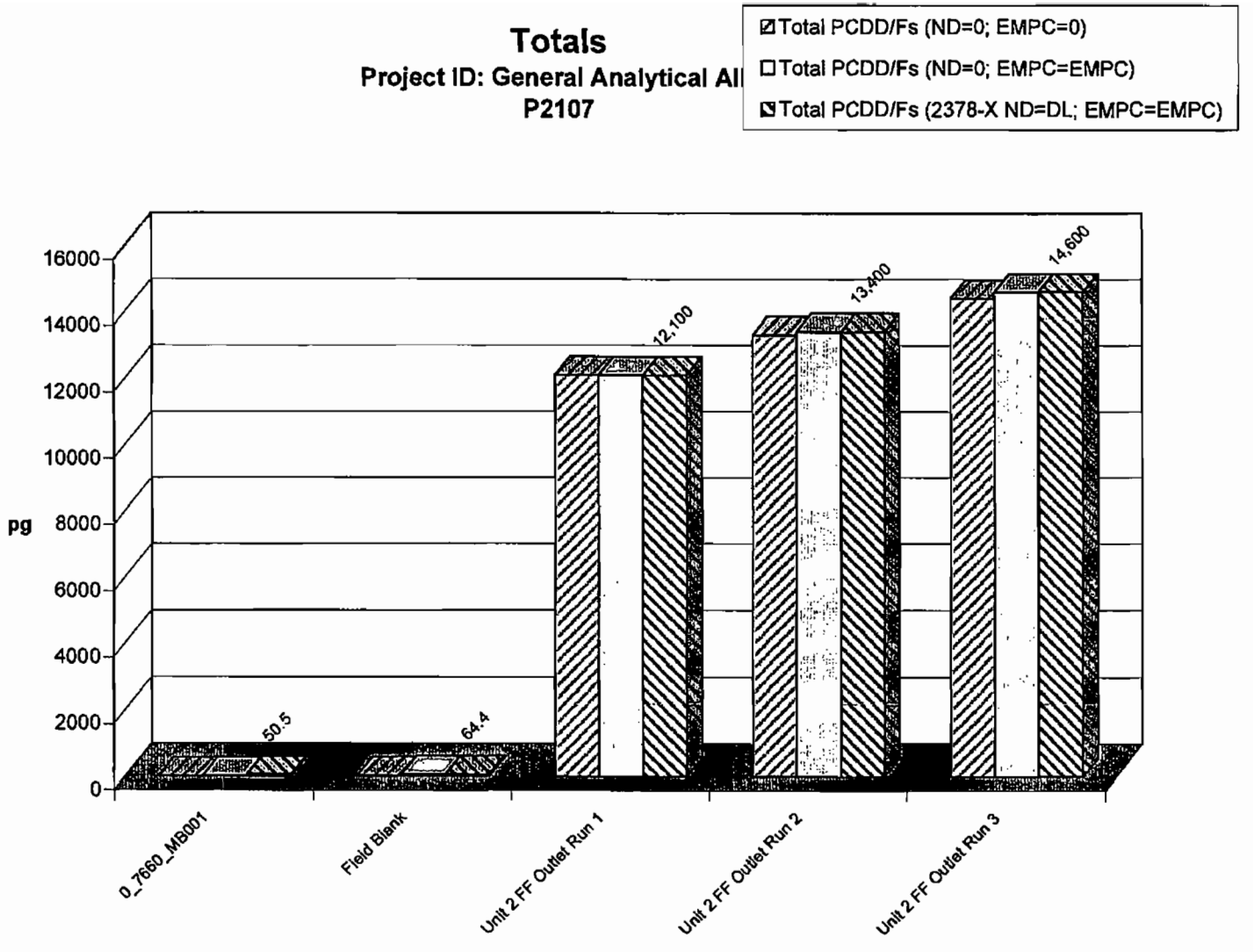
Analyte	0_7660_MB001	Field Blank	Unit 2 FF Outlet Run 1	Unit 2 FF Outlet Run 2	Unit 2 FF Outlet Run 3
	pg	pg	pg	pg	pg
2,3,7,8-TCDD	1.86	1.51	2.27	2.72	1.55
1,2,3,7,8-PeCDD	2.24	1.54	2.86	2.49	1.55
1,2,3,4,7,8-HxCDD	2.75	1.56	2.76	2.82	1.56
1,2,3,6,7,8-HxCDD	2.74	1.51	2.89	2.6	1.43
1,2,3,7,8,9-HxCDD	3.25	1.74	3.22	3.19	1.74
1,2,3,4,6,7,8-HpCDD	3.02	1.93	4.03	3.88	2.08
OCDD	4.73	3.78	7.88	6.26	3.15
2,3,7,8-TCDF	1.24	0.878	1.45	1.54	1.08
1,2,3,7,8-PeCDF	1.5	0.912	2.84	2.61	1.94
2,3,4,7,8-PeCDF	1.35	0.833	2.75	2.65	1.73
1,2,3,4,7,8-HxCDF	1.85	1.04	2.96	2.58	2.01
1,2,3,6,7,8-HxCDF	1.63	0.965	2.66	2.32	1.84
2,3,4,6,7,8-HxCDF	1.63	0.989	2.84	2.55	1.73
1,2,3,7,8,9-HxCDF	2.28	1.32	3.79	3.57	2.61
1,2,3,4,6,7,8-HpCDF	1.85	1.16	2.28	2.48	1.18
1,2,3,4,7,8,9-HpCDF	2.66	1.58	3.23	3.26	1.56
OCDF	4.13	2.91	5.38	4.67	2.9
Total TCDD	1.86	1.51	2.27	2.72	1.55
Total PeCDD	2.24	1.54	2.86	2.49	1.55
Total HxCDD	2.9	1.6	2.94	2.86	1.57
Total HpCDD	3.02	1.93	4.03	3.88	2.08
Total TCDF	1.24	0.878	1.45	1.54	1.08
Total PeCDF	1.42	0.872	2.79	2.63	1.83
Total HxCDF	1.82	1.07	3.02	2.71	2.01
Total HpCDF	2.22	1.36	2.71	2.83	1.35
Checkcode	777-448	115-583	189-309	024-135	715-575
Lab ID	MB1_7660_DF_SDS	P2107_7660_001	P2107_7660_002	P2107_7660_003	P2107_7660_004

ITEF-TEQ

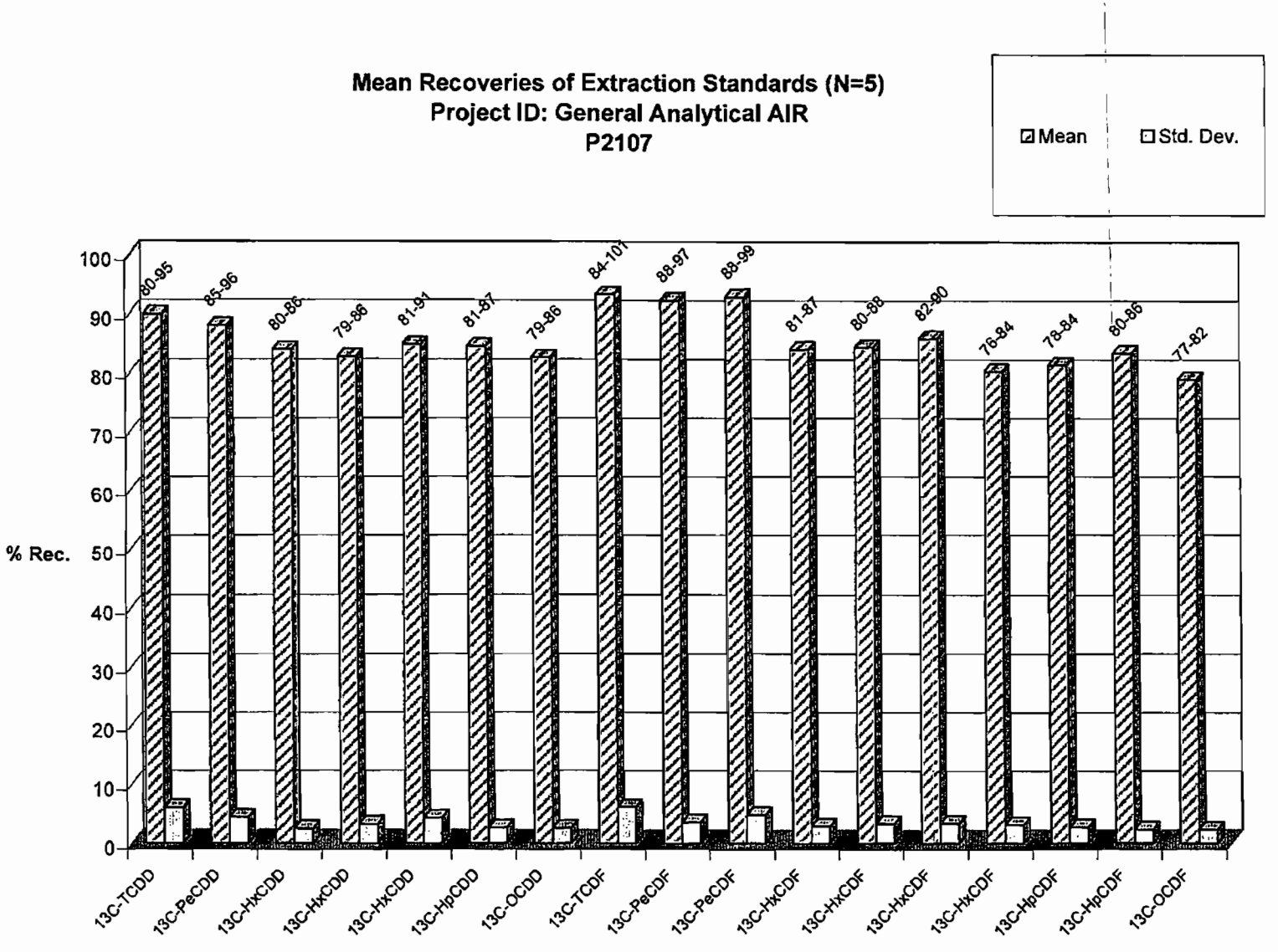
Project ID: General Analytical AIR

P2107



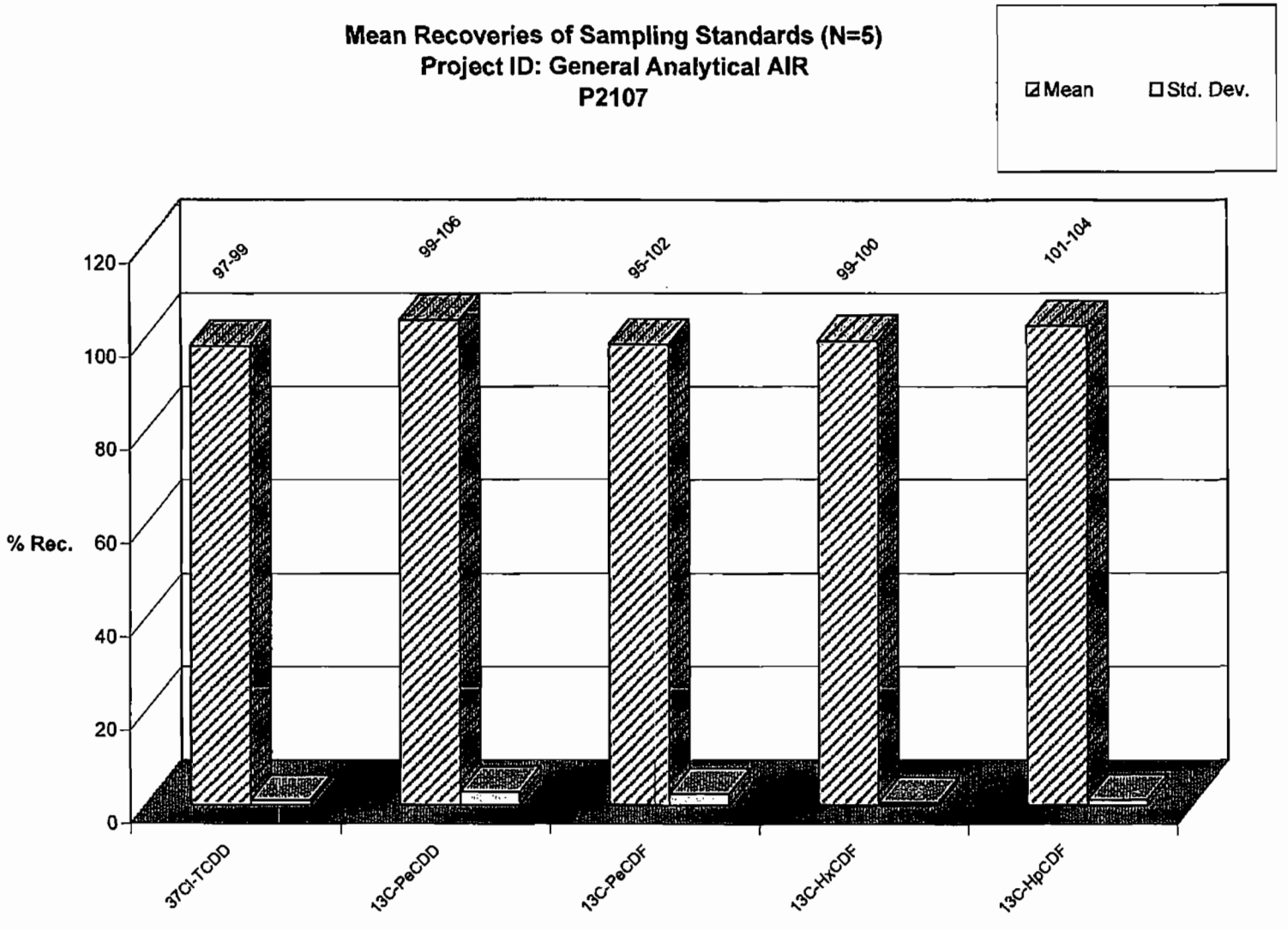

Totals
Project ID: General Analytical All
P2107
Total PCDD/Fs (ND=0; EMPC=0)
Total PCDD/Fs (ND=0; EMPC=EMPC)
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)
pg
16000
14000
12000
10000
8000
6000
4000
2000
0
50.5
64.4
12,100
13,400
14,600
0_7660_MB001
Field Blank
Unit 2 FF Outlet Run 1
Unit 2 FF Outlet Run 2
Unit 2 FF Outlet Run 3

Mean Recoveries of Extraction Standards (N=5)
Project ID: General Analytical AIR
P2107

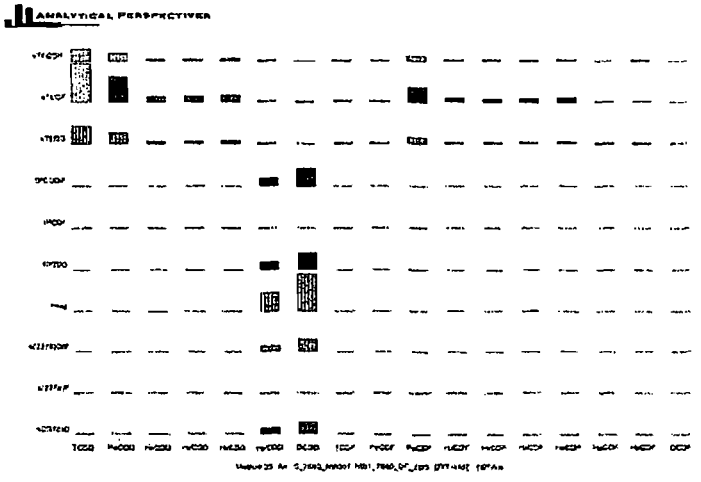


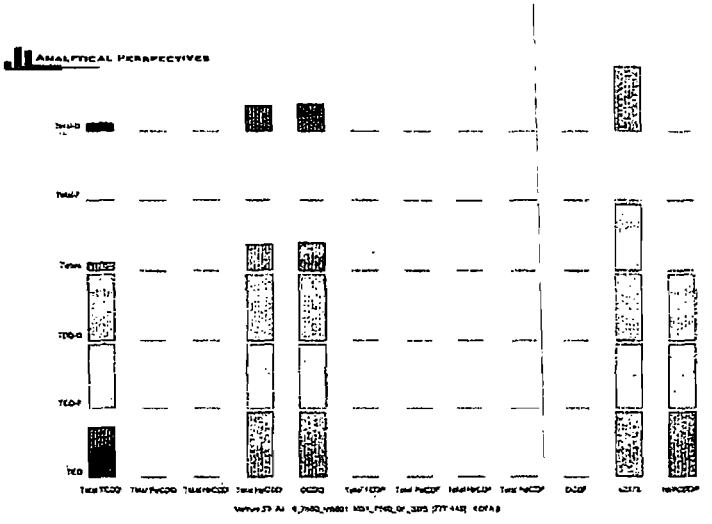
Method Specification Limits: Tetra-Hexa ES: 40-130%, Hepta-Octa ES: 25-130% (F = fail)

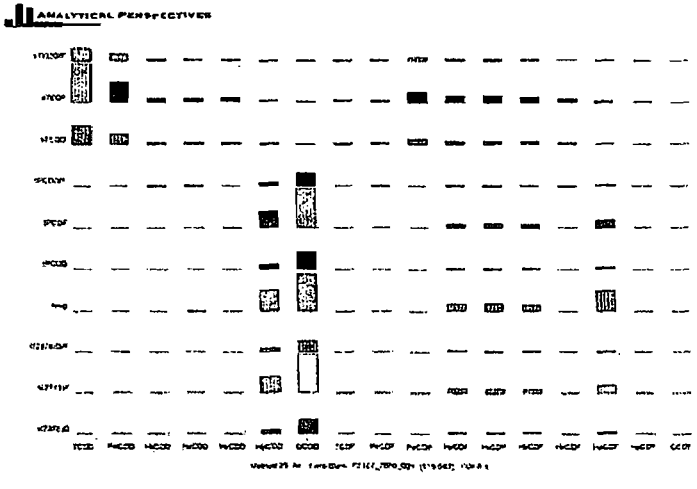
Mean Recoveries of Sampling Standards (N=5)
Project ID: General Analytical AIR
P2107



Method Specification Limits: Tetra-Octa SS: 70-130% (F = fail)


ANALYTICAL PERSPECTIVES


ANALYTICAL PERSPECTIVES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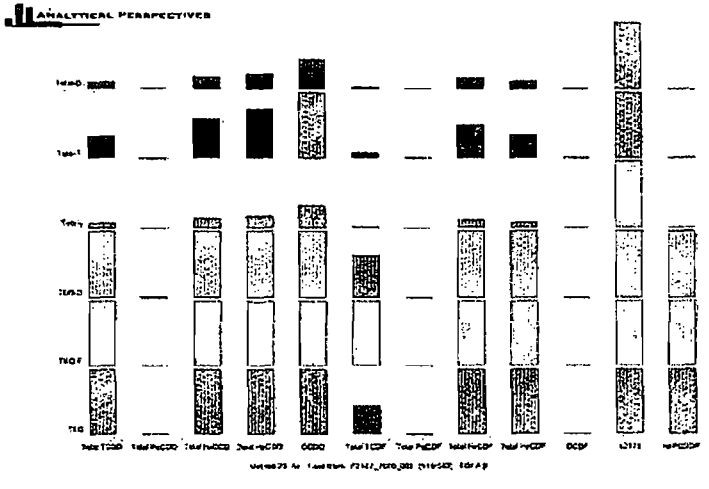
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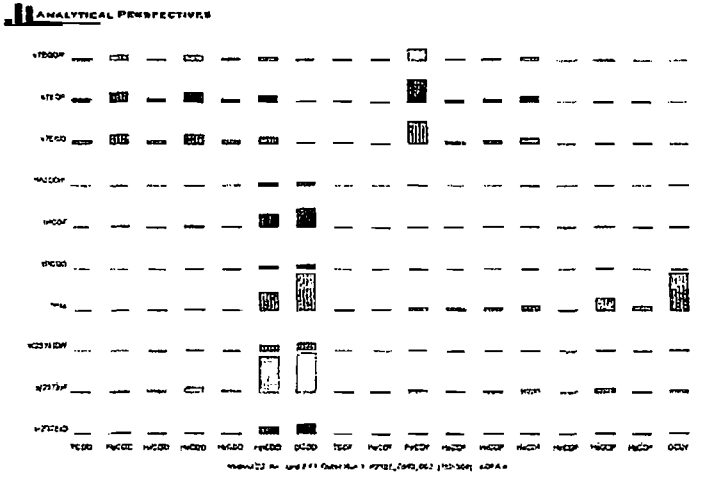
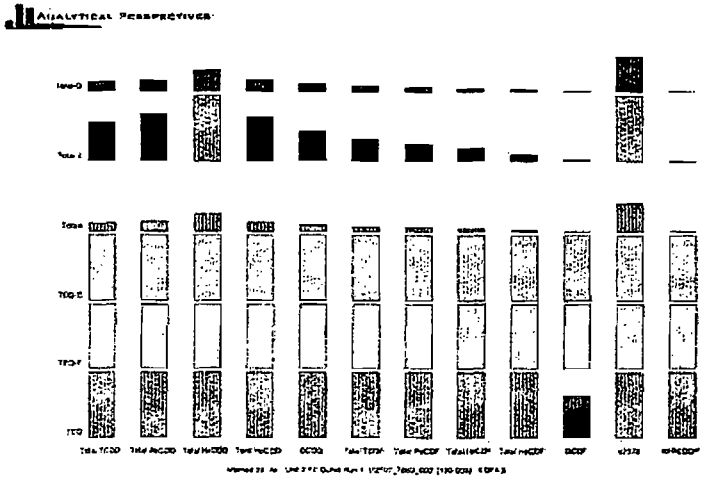
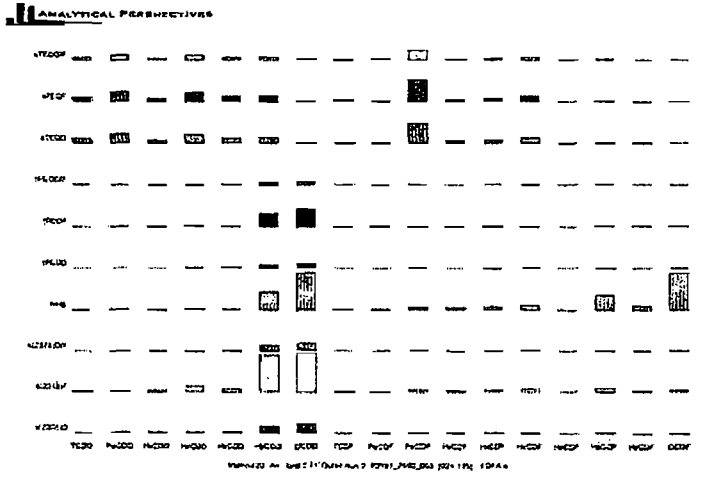

Analytical Perspectives


Analytical Perspectives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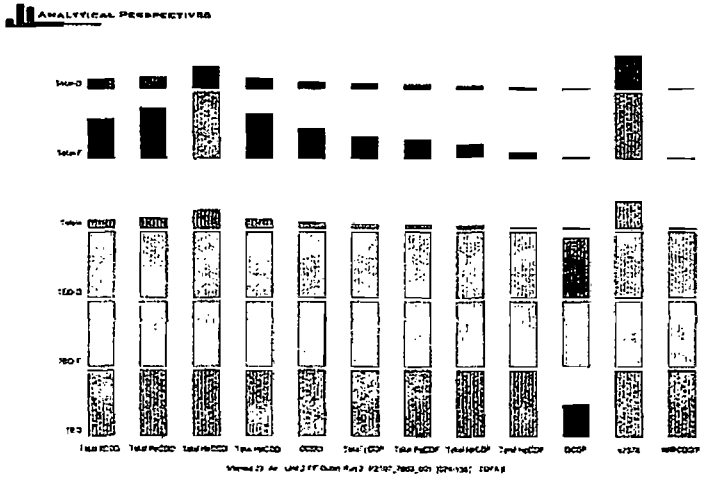
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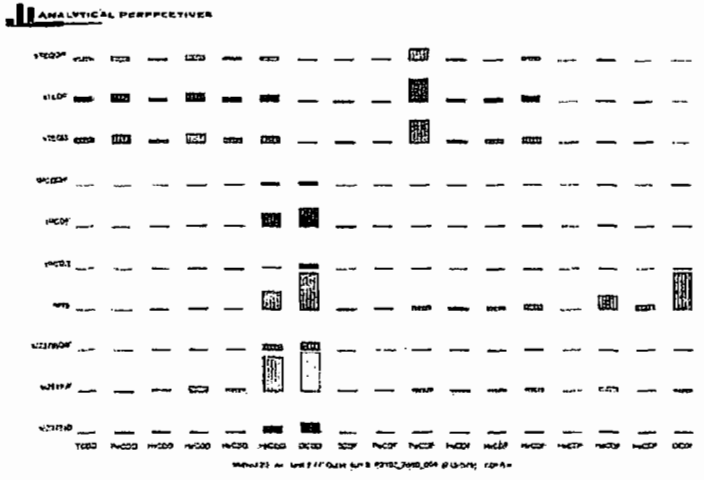
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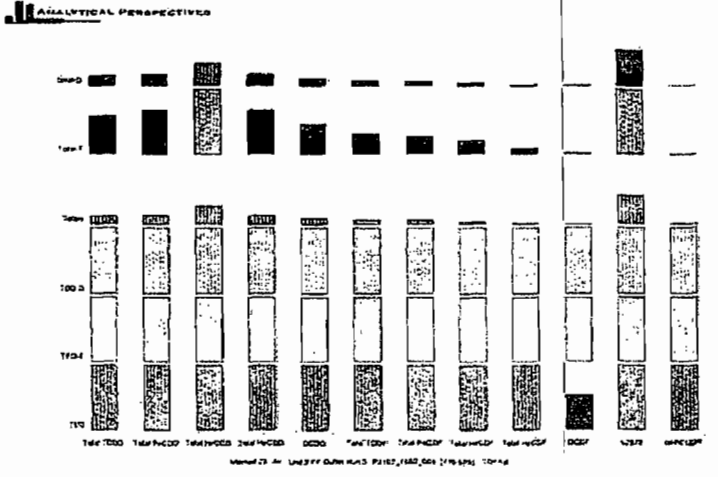
ANALYTICAL PERSPECTIVE

Sample ID: 0_7660_MB001

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2107	Date Received:	n/a
Project ID:	General Analytical AIR	Weight/Volume:	1	Lab Sample ID	MB1_7660_DF_SDS	Date Extracted:	29 Mar 2010
Date Collected:	n/a			QC Batch No:	7660	Date Analyzed:	05 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	11:35:43

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.86			ES 2378-TCDD	94.3	
12378-PeCDD	ND	2.24			ES 12378-PeCDD	87.2	
123478-HxCDD	ND	2.75			ES 123478-HxCDD	86.2	
123678-HxCDD	ND	2.74			ES 123678-HxCDD	86.2	
123789-HxCDD	ND	3.25			ES 123789-HxCDD	87.9	
1234678-HpCDD	EMPC		3.76	J	ES 1234678-HpCDD	86.9	
OCDD	EMPC		7.89	J	ES OCDD	85.9	
2378-TCDF	ND	1.24			ES 2378-TCDF	101	
12378-PeCDF	ND	1.5			ES 12378-PeCDF	93.7	
23478-PeCDF	ND	1.35			ES 23478-PeCDF	97.5	
123478-HxCDF	ND	1.85			ES 123478-HxCDF	85.1	
123678-HxCDF	ND	1.63			ES 123678-HxCDF	86.7	
234678-HxCDF	ND	1.63			ES 234678-HxCDF	90.1	
123789-HxCDF	ND	2.28			ES 123789-HxCDF	83.5	
1234678-HpCDF	ND	1.85			ES 1234678-HpCDF	83.8	
1234789-HpCDF	ND	2.66			ES 1234789-HpCDF	86.1	
OCDF	ND	4.13			ES OCDF	82	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	99.1	
Total TCDD	2.27		2.27		SS 12347-PeCDD	104	
Total PeCDD	ND	2.24	ND		SS 12346-PeCDF	102	
Total HxCDD	ND	2.9	ND		SS 123469-HxCDF	100	
Total HpCDD	3.61		7.36		SS 1234689-HpCDF	103	
					AS 1368-TCDD	82.4	
Total TCDF	ND	1.24	ND		AS 1368-TCDF	90.7	
Total PeCDF	ND	1.42	ND				
Total HxCDF	ND	1.82	ND				
Total HpCDF	ND	2.22	ND				
Total PCDD/Fs	5.88		17.5				
ITEF TEQs							
TEQ: ND=0	0		0.0455				
TEQ: ND=DL/2	2.77		2.8				
TEQ: ND=DL	5.55		5.56				

ANALYTICAL PERSPECTIVES 2714 Exchange Drive Wilmington, NC 28405 , USA
Info@ultratrace.com
Tel: +1 910 794-1613 (Fax: -3919); Toll-Free 866 846-8296 www.ultratrace.com

Sample ID: Field Blank

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2107	Date Received:	25 Mar 2010
Project ID:	General Analytical AIR	Weight/Volume:	1	Lab Sample ID	P2107_7660_001	Date Extracted:	29 Mar 2010
Date Collected:	24 Mar 2010			QC Batch No:	7660	Date Analyzed:	05 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	14:07:14

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.51			ES 2378-TCDD	91.6	
12378-PeCDD	ND	1.54			ES 12378-PeCDD	96	
123478-HxCDD	ND	1.56			ES 123478-HxCDD	84.8	
123678-HxCDD	ND	1.51			ES 123678-HxCDD	79.7	
123789-HxCDD	ND	1.74			ES 123789-HxCDD	81.2	
1234678-HpCDD	4.94			J B	ES 1234678-HpCDD	80.7	
OCDD	EMPC		16.8	J B	ES OCDD	79.1	
2378-TCDF	ND	0.878			ES 2378-TCDF	95.2	
12378-PeCDF	ND	0.912			ES 12378-PeCDF	97.4	
23478-PeCDF	ND	0.833			ES 23478-PeCDF	98.6	
123478-HxCDF	1.14			J	ES 123478-HxCDF	81.4	
123678-HxCDF	1.22			J	ES 123678-HxCDF	82.3	
234678-HxCDF	EMPC		0.934	J	ES 234678-HxCDF	83.5	
123789-HxCDF	ND	1.32			ES 123789-HxCDF	78.4	
1234678-HpCDF	2.35			J	ES 1234678-HpCDF	78.6	
1234789-HpCDF	ND	1.58			ES 1234789-HpCDF	82.6	
OCDF	ND	2.91			ES OCDF	77	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	97.5	
Total TCDD	3.98		3.98		SS 12347-PeCDD	99.1	
Total PeCDD	ND	1.54	ND		SS 12346-PeCDF	98.3	
Total HxCDD	7.15		7.15		SS 123469-HxCDF	98.7	
Total HpCDD	4.94		8.87		SS 1234689-HpCDF	102	
					AS 1368-TCDD	83.2	
Total TCDF	ND		0.965		AS 1368-TCDF	87.9	
Total PeCDF	ND	0.872	ND				
Total HxCDF	4.2		6				
Total HpCDF	4.27		4.27				
Total PCDD/Fs	**24.5**		**48.1**				
ITEF TEQs							
TEQ: ND=0	0.309		0.419				
TEQ: ND=DL/2	2.09		2.15				
TEQ: ND=DL	3.87		3.88				

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Sample ID: Unit 2 FF Outlet Run 1

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2107	Date Received:	25 Mar 2010
Project ID:	General Analytical AIR	Weight/Volume:	1	Lab Sample ID	P2107_7660_002	Date Extracted:	29 Mar 2010
Date Collected:	22 Mar 2010			QC Batch No:	7660	Date Analyzed:	05 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	14:57:49

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC	[Ra=1.07]	4.93	J	ES 2378-TCDD	88.9	
12378-PeCDD	23.9			J	ES 12378-PeCDD	85.6	
123478-HxCDD	44.4			J	ES 123478-HxCDD	85.3	
123678-HxCDD	125				ES 123678-HxCDD	85.7	
123789-HxCDD	47.6			J	ES 123789-HxCDD	90.8	
1234678-HpCDD	849				ES 1234678-HpCDD	87.2	
OCDD	1180				ES OCDD	84.6	
2378-TCDF	14.3				ES 2378-TCDF	90.9	
12378-PeCDF	22.7			J	ES 12378-PeCDF	90.1	
23478-PeCDF	57				ES 23478-PeCDF	89.4	
123478-HxCDF	33.6			J	ES 123478-HxCDF	87.3	
123678-HxCDF	39.3			J	ES 123678-HxCDF	87.7	
234678-HxCDF	76.2				ES 234678-HxCDF	88.5	
123789-HxCDF	ND	3.79			ES 123789-HxCDF	82.9	
1234678-HpCDF	98.3				ES 1234678-HpCDF	84.4	
1234789-HpCDF	35.5			J	ES 1234789-HpCDF	85.7	
OCDF	64.8			J	ES OCDF	80.9	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	99	
Total TCDD	1510		1520		SS 12347-PeCDD	104	
Total PeCDD	1860		1860		SS 12346-PeCDF	99.3	
Total HxCDD	3360		3360		SS 123469-HxCDF	99.6	
Total HpCDD	1740		1740		SS 1234689-HpCDF	101	
					AS 1368-TCDD	92	
Total TCDF	830		856		AS 1368-TCDF	92.6	
Total PeCDF	698		698				
Total HxCDF	534		541				
Total HpCDF	284		284				
Total PCDD/Fs	12100		12100				
ITEF TEQs							
TEQ: ND=0	90.7		95.6				
TEQ: ND=DL/2	92		95.8				
TEQ: ND=DL	93.3		96				

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Sample ID: Unit 2 FF Outlet Run 2

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2107	Date Received:	25 Mar 2010
Project ID:	General Analytical AIR	Weight/Volume:	1	Lab Sample ID	P2107_7660_003	Date Extracted:	29 Mar 2010
Date Collected:	23 Mar 2010			QC Batch No:	7660	Date Analyzed:	05 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	15:49:50

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers
2378-TCDD	EMPC	[Ra=1.00]	6.97	J
12378-PeCDD	EMPC		28.4	J
123478-HxCDD	47.8			J
123678-HxCDD	137			
123789-HxCDD	72.7			
1234678-HpCDD	910			
OCDD	1260			
2378-TCDF	19.1			
12378-PeCDF	24.5			J
23478-PeCDF	61			
123478-HxCDF	40.7			J
123678-HxCDF	50.6			
234678-HxCDF	77.8			
123789-HxCDF	ND	3.57		
1234678-HpCDF	100			
1234789-HpCDF	28.8			J
OCDF	55			J

Totals			
Total TCDD	1630		1660
Total PeCDD	2080		2130
Total HxCDD	3800		3850
Total HpCDD	1900		1900
Total TCDF	921		921
Total PeCDF	742		784
Total HxCDF	598		598
Total HpCDF	259		259
Total PCDD/Fs	**13300**		**13400**
ITEF TEQs			
TEQ: ND=0	88		109
TEQ: ND=DL/2	90.1		109
TEQ: ND=DL	92.3		110

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	94.9	
ES 12378-PeCDD	86.5	
ES 123478-HxCDD	84.3	
ES 123678-HxCDD	83.6	
ES 123789-HxCDD	83.9	
ES 1234678-HpCDD	85.1	
ES OCDD	81.7	
ES 2378-TCDF	95.5	
ES 12378-PeCDF	92.7	
ES 23478-PeCDF	91.4	
ES 123478-HxCDF	85.9	
ES 123678-HxCDF	85.8	
ES 234678-HxCDF	85.7	
ES 123789-HxCDF	80.6	
ES 1234678-HpCDF	81.7	
ES 1234789-HpCDF	82.4	
ES OCDF	77.7	

Standard	SS/AS Recoveries	
SS 37Cl-2378-TCDD	97.2	
SS 12347-PeCDD	106	
SS 12346-PeCDF	98.6	
SS 123469-HxCDF	99.9	
SS 1234689-HpCDF	104	
AS 1368-TCDD	94.2	
AS 1388-TCDF	92.1	

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Sample ID: Unit 2 FF Outlet Run 3

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2107	Date Received:	25 Mar 2010
Project ID:	General Analytical AIR	Weight/Volume:	1	Lab Sample ID	P2107_7660_004	Date Extracted:	29 Mar 2010
Date Collected:	23 Mar 2010			QC Batch No:	7660	Date Analyzed:	05 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	16:41:47

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC	[Ra=0.96]	8.03	J	ES 2378-TCDD	79.8	
12378-PeCDD	26.9			J	ES 12378-PeCDD	84.9	
123478-HxCDD	52.5				ES 123478-HxCDD	79.6	
123678-HxCDD	148				ES 123678-HxCDD	79	
123789-HxCDD	71.9				ES 123789-HxCDD	80.7	
1234678-HpCDD	1020				ES 1234678-HpCDD	83	
OCDD	1450				ES OCDD	82.4	
2378-TCDF	20.5				ES 2378-TCDF	84.1	
12378-PeCDF	EMPC		29.2	J	ES 12378-PeCDF	87.8	
23478-PeCDF	71.7				ES 23478-PeCDF	87.8	
123478-HxCDF	45.3			J	ES 123478-HxCDF	80.6	
123678-HxCDF	55.1				ES 123678-HxCDF	79.6	
234678-HxCDF	92.7				ES 234678-HxCDF	81.9	
123789-HxCDF	ND	2.61			ES 123789-HxCDF	75.8	
1234678-HpCDF	124				ES 1234678-HpCDF	78.5	
1234789-HpCDF	41.5			J	ES 1234789-HpCDF	80.4	
OCDF	68.4			J	ES OCDF	77	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	99.1	
Total TCDD	1780		1810		SS 12347-PeCDD	106	
Total PeCDD	2140		2140		SS 12346-PeCDF	95.3	
Total HxCDD	4150		4150		SS 123469-HxCDF	98.9	
Total HpCDD	2090		2090		SS 1234689-HpCDF	103	
					AS 1368-TCDD	84.3	
Total TCDF	926		991		AS 1388-TCDF	80.9	
Total PeCDF	818		857				
Total HxCDF	673		680				
Total HpCDF	323		323				
Total PCDD/Fs	**14400**		**14600**				
ITEF TEQs							
TEQ: ND=0	111		121				
TEQ: ND=DL/2	112		121				
TEQ: ND=DL	113		121				

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Sample ID: M23-4438-01 Audit

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	Clean Air Engineering	Matrix:	Air	Lab Project ID:	P2107	Date Received:	25 Mar 2010
Project ID:	General Analytical AIR	Weight/Volume:	1	Lab Sample ID	P2107_7660_006	Date Extracted:	29 Mar 2010
Date Collected:	24 Mar 2010			QC Batch No:	7660	Date Analyzed:	05 Apr 2010
		Split:	2	Dilution:	-	Time Analyzed:	17:33:49

Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	404	[Ra=0.82]			ES 2378-TCDD	89	
12378-PeCDD	303				ES 12378-PeCDD	88.2	
123478-HxCDD	317				ES 123478-HxCDD	80.4	
123678-HxCDD	269				ES 123678-HxCDD	84.5	
123789-HxCDD	316				ES 123789-HxCDD	84.9	
1234678-HpCDD	308				ES 1234678-HpCDD	80.9	
OCDD	1360				ES OCDD	82.3	
2378-TCDF	351				ES 2378-TCDF	92.7	
12378-PeCDF	301				ES 12378-PeCDF	88.6	
23478-PeCDF	296				ES 23478-PeCDF	88.6	
123478-HxCDF	404				ES 123478-HxCDF	84.7	
123678-HxCDF	385				ES 123678-HxCDF	85.5	
234678-HxCDF	370				ES 234678-HxCDF	85	
123789-HxCDF	683				ES 123789-HxCDF	79.9	
1234678-HpCDF	284				ES 1234678-HpCDF	81.5	
1234789-HpCDF	306				ES 1234789-HpCDF	84.3	
OCDF	1370				ES OCDF	78.9	
Totals					**Standard**	**SS/AS Recoveries**	
					SS 37Cl-2378-TCDD	na	
Total TCDD	1040		1040		SS 12347-PeCDD	na	
Total PeCDD	948		948		SS 12346-PeCDF	na	
Total HxCDD	1600		1600		SS 123469-HxCDF	na	
Total HpCDD	645		645		SS 1234889-HpCDF	na	
					AS 1368-TCDD	94.7	
Total TCDF	922		922		AS 1368-TCDF	90.6	
Total PeCDF	1090		1090				
Total HxCDF	2180		2180				
Total HpCDF	855		855				
Total PCDD/Fs	**12000**		**12000**				
ITEF TEQs							
TEQ: ND=0	1040		1040				
TEQ: ND=DL/2	1040		1040				
TEQ: ND=DL	1040		1040				

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USEPA Stationary Compliance Audit Program
Dioxin/Furan Audit Form

Auditor:	
Agency:	
Agency Address:	
Agency Phone #:	
Date Analyzed:	05 Apr 2010
Auditee Company:	Analytical Perspectives (Ph. 910 794-1613)
Auditee Address:	2714 Exchange Drive, Wilmington, NC 28405
Date Audit Sam Rec'd:	25 Mar 2010
Audit Sample #:	M23-4438-01 Audit P2107_7660_006
Confirmation Analysis Used:	Yes ____ No X
Auditee's Name:	Dr. Yves Tondeur
Signature:	Dr. Kimberly Mace for Dr. Tondeur

Compound	Auditee Result (ng/sample)	Compound	Auditee Result (ng/sample)
2378-TCDD	0.404	2378-TCDF	0.351
Other TCDD	0.631	Other TCDF	0.571
12378-PeCDD	0.303	12378-PeCDF	0.301
Other PeCDD	0.646	23478-PeCDF	0.296
123478-HxCDD	0.317	Other PeCDF	0.493
123678-HxCDD	0.269	123478-HxCDF	0.404
123789-HxCDD	0.316	123678-HxCDF	0.385
Other HxCDD	0.694	123789-HxCDF	0.683
1234678-HpCDD	0.308	234678-HxCDF	0.370
Other HpCDD	0.336	Other-HxCDF	0.340
OCDD	1.358	1234678-HpCDF	0.284
		1234789-HpCDF	0.306
		Other HpCDF	0.265
		OCDF	1.365

*** 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.**

P2107

ANALYTICAL PERSPECTIVES

PART 2

SAMPLE PATH

DOCUMENTATION FOR THE ANALYSIS
OF
HAPS

ANALYTICAL PERSPECTIVES

SAMPLE PATH

Version B

AP PROJECT NO.: P2107

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 ~~C~~ 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)

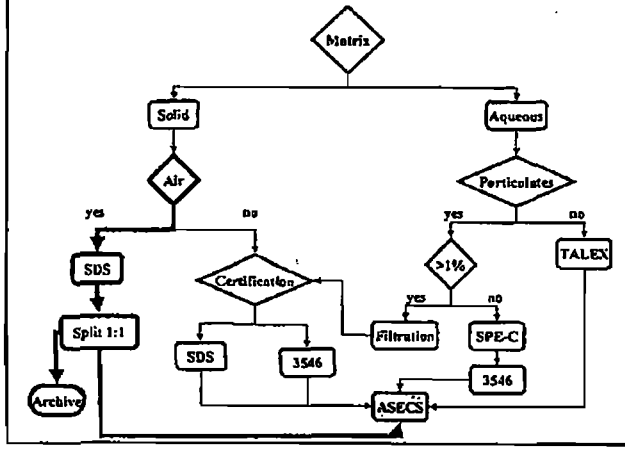
SOPS

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

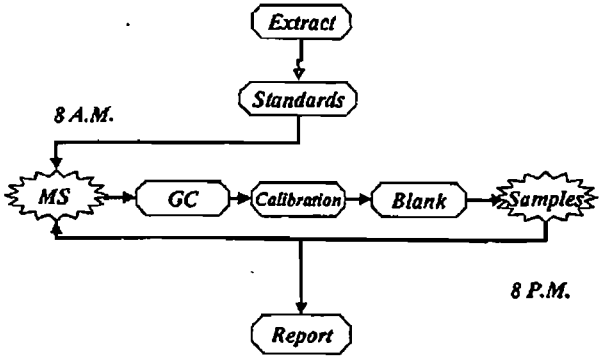
QC PROFILE

LMB:	ALWAYS REQUIRED
BCS$_3$:	ALWAYS REQUIRED

SAMPLE EXTRACTION



SAMPLE ANALYSIS



SPECIAL REQUIREMENTS

MONO-OCTA: YES (NO)

SUPPLIES IDS

SAND	
TOLUENE	04090
ACID SILICA	03252010
BASE SILICA	03252010
SILICA	02192010
FLORISIL	08172010
HEXANE	DA525
CH_2Cl_2	CZ1045
TETRADECANE	10292008
$AgNO_3$	03252010

09NOV08

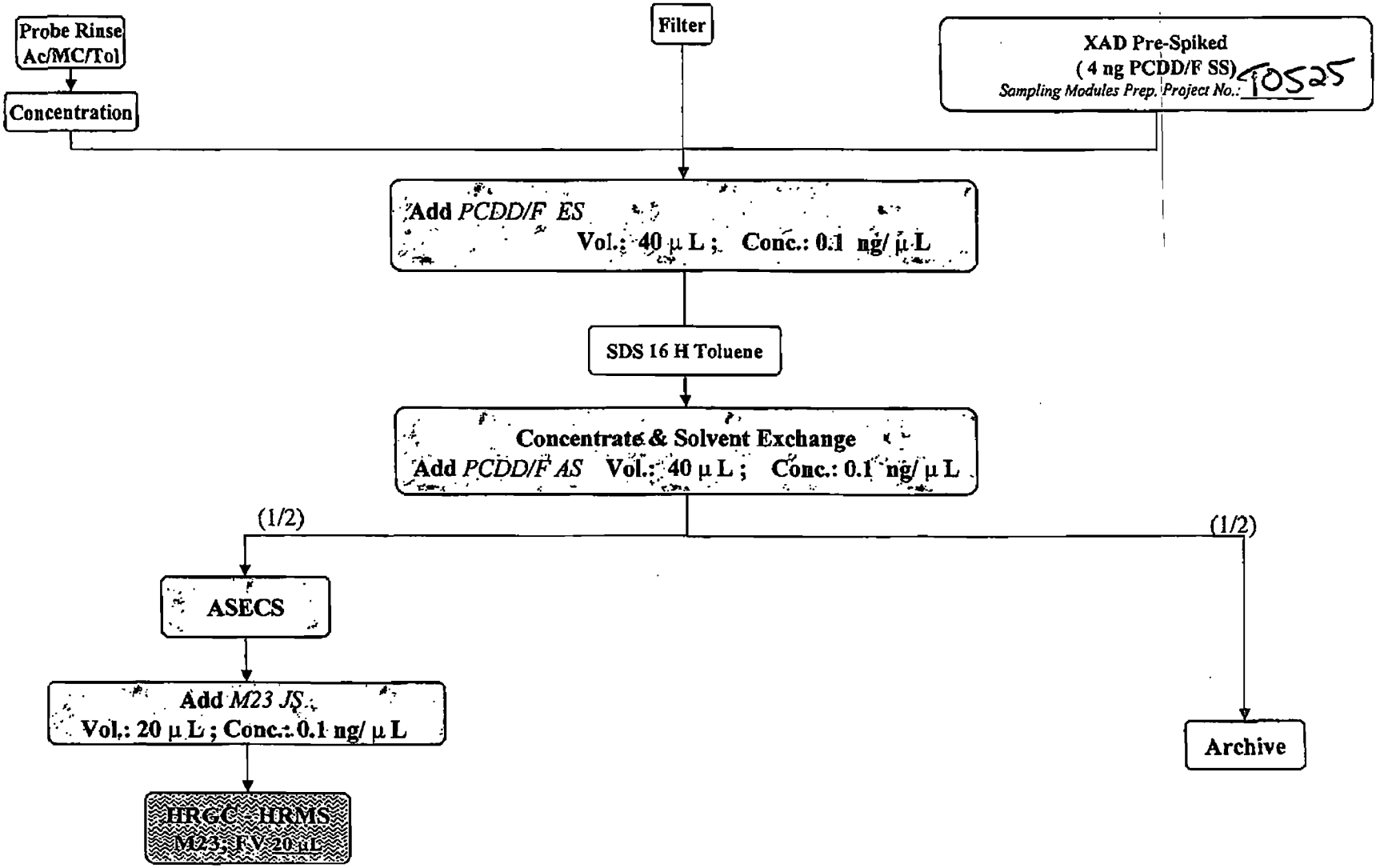
ANALYTICAL PERSPECTIVES

SAMPLE PATH

Version 0

AP PROJECT NO: P2107

PROTOCOL: 23 PCDD/F



ANALYTICAL PERSPECTIVES

PCDD/PCDFs

Air

Project: P2107

Extraction Group: EPA Method 23

Extraction Batch: 7660

SDS Number	AP Sample ID	Client Sample ID	Observations	ES 400µl	Ax 400µl 40µl	SDS Tol	AS 400µl	SPLIT 1/2 1/4	ASECS (Td) 40µl	JS 200µl
—	0_7660_BCS3	———	Stds	KJ	KJ / KJ	—	KJ	—	KJ	KJ
1	0_7660_MB001	———	Precipitated Hydroxides	KJ	—	9	KJ	KJ	KJ / KJ	KJ
2	P2107_7660_001	Field Blank	See obs. sheet	KJ	—	9	KJ	KJ	KJ / KJ	KJ
3	P2107_7660_002	Unit 2 FF Outlet Run 1		KJ	—	9	KJ	KJ	KJ / KJ	KJ
4	P2107_7660_003	Unit 2 FF Outlet Run 2		KJ	—	9	KJ	KJ	KJ / KJ	KJ
5	P2107_7660_004	Unit 2 FF Outlet Run 3		KJ	—	9	KJ	KJ	KJ / KJ	KJ
6	P2107_7660_006	M23-4438-01 Audit		KJ	—	9	KJ	KJ	KJ / KJ	KJ

3/29/10 3/29/10 3/30/10 3/30/10 3/30/10 3/31/10

TRANSFER: 3/31/10

RECEIVED: 3/31/10

AxA: 07012007L
1 pg/µl
12/30/10
SIL9-82-1

T0525_MB000_1
CLEAN AIR ENGINEER@ANALYTICAL PERSPECTIVES
PREP: 12 MAR 2010
ADV. EXP: 26 MAR 2010
4 NG Sampling Standard PCDD/F
AL KVK
2107

3/29/10

ES ID: CIL D/F ES ES(conc.): 10 pg/µl ES (exp.): 3/2015 Vial #: SIL4-30-2 ES: 23 20µl @ 0.2ng/µl	B Ax ID: 01262009 Ax (conc.): 10 pg/µl Ax (exp.): 1/28/2011 Vial #: SIL9-2-2 Ax: 23 20µl @ 0.01ng/µl	AS ID: 07012007E-AS AS(conc.): 10 pg/µl AS (exp.): 3/9/11 Vial #: SIL10-3-1 400 0.01 AS: 23 20µl @ 0.2ng/µl	JS ID: 07012007N JS (conc.): 10 pg/µl JS (exp.): 3/5/11 Vial #: SIL10-4-2 JS: 23 10µl @ 0.2ng/µl	Cycle Time: 3/29/10 Start: 3:00 pm 3/30/10 Stop: 10:00am	Check Out: Chemist: 3/29/10 Check-In: Chemist: 3/31/10

prepair.rpt

ANALYTICAL PERSPECTIVES

SAMPLE PATH

AP PROJECT NO.: P2107

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			
eeAo 4/15/10	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	Glassware Others
001	Clean, C, Sm. amt PM	C, WH, D	WH, DF	C, WH
002	See 001	See 003	See 004	See 004
003	See 001	Very faint BE Pdkdots, C	See 004	See 004
004	See 001	BE, Pdkdot, C, D	M, C, WH, S	M, C, WH
005	—	—	—	—
006	Audit; NO Rinse	—	C, WH, D, F	—
007				
008				
009				
010			✓ eeAo 3/29/10	
011				
012				
013				
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.: P2107

COMMUNICATIONS

eeAo
4/15/10

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

01 JUL 04

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.: P2107 **Date Rec.:** 25-Mar-10 **Project Name:** General Analytical AIR

Lab. Sample ID	Collection Date	Client Sample ID	Component ID
001	24-Mar-10	Field Blank	Acetone
	24-Mar-10		Filter
	24-Mar-10		T0525-012
	24-Mar-10		Toluene
	24-Mar-10		XAD
002	22-Mar-10	Unit 2 FF Outlet Run 1	Acetone
	22-Mar-10		Filter
	22-Mar-10		T0525-010
	22-Mar-10		Toluene
	22-Mar-10		XAD
003	23-Mar-10	Unit 2 FF Outlet Run 2	Acetone
	23-Mar-10		Filter
	23-Mar-10		T0525-008
	23-Mar-10		Toluene
	23-Mar-10		XAD
004	23-Mar-10	Unit 2 FF Outlet Run 3	Acetone
	23-Mar-10		Filter
	23-Mar-10		T0525-009
	23-Mar-10		Toluene
	23-Mar-10		XAD
005	22-Mar-10	Reagent Blank	
	22-Mar-10		Acetone
	22-Mar-10		Filter
	22-Mar-10		Toluene
006	24-Mar-10	M23-4438-01 Audit	
	24-Mar-10		XAD

25 Mar 10

Smplnvmgrmm5.rpt

CHAIN OF CUSTODY FORM

M23-SB-10955-01

P2107 1/2

CLIENT Wheelabrator South 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: PCDD/PCDF				ADDITIONAL INFORMATION
	1	Unit 2 FF Outlet	3/22/2010	Filter	1		X				
	1	"	3/22/2010	Acetone Rinse	1		X				
	1	"	3/22/2010	Toluene Rinse	1		X				
	1	V	3/22/2010	Trap # T025_010	1		X				
	2	Unit 2 FF Outlet	3/23/2010	Filter	1		X				
	2	"	3/23/2010	Acetone Rinse	1		X				
	2	"	3/23/2010	Toluene Rinse	1		X				
	2	V	3/23/2010	Trap # T025_008	1		X				
		Audit Sample	3/24/10	44378-01	1		X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	3/24/10 17:00				
	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: Scott Brown Date: 3/24/10

CleanAir ENGINEERING
500 West Wood Street
Palatine, IL 60067
(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

P2107
2/2

CHAIN OF CUSTODY FORM

M23-SB-10955-02

CLIENT Wheelabrator South 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: PCDD/PCDF	Archive			ADDITIONAL INFORMATION
	3	Unit 2 FF Outlet	3/23/2010	Filter	1		X				
	3	"	3/23/2010	Acetone Rinse	1		X				
	3	"	3/23/2010	Toluene Rinse	1		X				
	NA	V	3/23/2010	Trap # T025_009			X				
	NA	Field Blank	3/24/2010	Filter			X				
	NA	"	3/24/2010	Acetone Rinse			X				
	NA	"	3/24/2010	Toluene Rinse			X				
	NA	V	3/24/2010	Trap # T0			X				
	RB	NA	3/22/2010	Filter Reagent Blank				X			
	RB	NA	3/22/2010	Acetone Reagent Blank				X			
	RB	NA	3/22/2010	Toluene Reagent Blank				X			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 1200				
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: Scott Brown Date: 3/24/10

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

		Run #1	Run #2	P2107 Run #3
CLIENT SAMPLE ID	Field Blank	Unit 2 FF Outlet	Unit 2 FF outlet	Unit 2 FF Outlet
LAB SAMPLE #	P2107-001	-002	-003	-004
DATE SAMPLED	3/24/10	3/22/10	3/23/10	3/23/10
OBSERVATIONS				
COMPONENTS	QUANTITY	QUANTITY	QUANTITY	QUANTITY
FILTER	1	1	1	1
XAD	1	1	1	1
TRAP PREP#	T0525-012	T0525-010	T0525-008	T0525-009
ACETONE / ~~CH_2Cl_2~~ FH/BH RINSE	1	1	1	1
TOLUENE FH/BH RINSE	1	1	1	1
OTHER (IMPING ERS, ETC...)				
TRAP SOURCE	☐AP ☑CLIENT	☐AP ☑CLIENT	☐AP ☑CLIENT	☐AP ☑CLIENT
CLIENT SAMPLE ID	Reagent Blank	M23-4438-01 Audit		
LAB SAMPLE #	P2107-005	-006		
DATE SAMPLED	3/22/10	3/24/10		
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: T0525-011, 007

METHOD 23
PCDD/PCDFs

P2107

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.

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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,** and not as total, 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.

P2107

Dioxin/Furan Audit Reporting Form

Auditor:			
Agency:			
Agency Address:			
Agency Phone #:			
Date Analyzed:			
Auditee Company:			
Auditee Address:			
Date Audit Sam Rec'd:			
Audit Sample #:	**M23-4438-01**		
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	

ANALYTICAL PERSPECTIVES

SAMPLE LOG-IN FORM Box #1

Date Samples Arrived: 25 Mar 10 Initials: NM

Time / Date logged in: 9:50 Ans 25 Mar 10 Refrigerator: F6 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 21°VAP

Shipping Documentation Present? (circle one) Shipping Label (or) Airbill

# of boxes: 1 # of coolers: 0 Tracking #s: 8653 4771 0896

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: 0 or Seal #: 0

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? 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 #:

AP Project ID: P2107

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

ANALYTICAL PERSPECTIVES

SAMPLE LOG-IN FORM Box 2

Client Project / Job ID: 10955

PO #:

AP Project ID: P2107

Date Samples Arrived: 25 Mar 10 Initials: NM ee NM

Time / Date logged in: 9:50 25 Mar 10 Refrigerator: FRG 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 22°VAO

Shipping Documentation Present? (circle one) Shipping Label or (Airbill)

# of boxes: 1 # of coolers: (1) Tracking #s: 8653 4771 0885

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: 0 or Seal #: 0

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

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:

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. ☺

COMMENTS

ANALYTICAL PERSPECTIVES

SAMPLE LOG-IN FORM Cooler #1

Client Project / Job ID: 10955

PO #:

AP Project ID: P2107

Date Samples Arrived: 25 Mar 10 Initials: NM

Time / Date logged in: 9:50 25 Mar 10 Refrigerator: F 6 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 -1° 1k 0k 25 Mar 10

Solvents: Ice / Blue Ice / Dry Ice / None Temp °C_____

Shipping Documentation Present? (circle one) Shipping Label or Airbill

# of boxes: 10 # of coolers: 1 Tracking #s: 8653 4771 0900

Shipping Container(s) intact? yes If no, describe condition:

Container Custody Seals Present & Intact? N/A If not intact, describe condition:

Sample Cutody Seals Present & Intact? N/A 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. ☺

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

Sample ID's do not match COC

Field Blank Date doesn't match COC

Analytical Perspectives — Injection Log

Created: 06-Apr-2010 09:45 User: MC S/W: AP UltraTrace-Pro V4.21

Expt: DF_CL4-8A GC: DB5MS_60M Project: P2107_7660_DF

#	Datafile	Vial#	Lab ID	Client ID	Analyst	Acq Date	Acq Time
2	100405P1-02	80	BCS3_7660_DF_PA	BCS3_7660_DF_PA	MC	5-APR-2010	09:54:43
4	100405P1-04	81	MB1_7660_DF_SDS	0_7660_MB001	MC	5-APR-2010	11:35:43
7	100405P1-07	82	P2107_7660_001	Field Blank	MC	5-APR-2010	14:07:14
8	100405P1-08	83	P2107_7660_002	Unit 2 FF Outlet Run 1	MC	5-APR-2010	14:57:49
9	100405P1-09	84	P2107_7660_003	Unit 2 FF Outlet Run 2	MC	5-APR-2010	15:49:50
10	100405P1-10	85	P2107_7660_004	Unit 2 FF Outlet Run 3	MC	5-APR-2010	16:41:47
11	100405P1-11	86	P2107_7660_006	M23-4438-01 Audit	MC	5-APR-2010	17:33:49
13	100405P1-13	80	BCS3_7660_DF_PB	BCS3_7660_DF_PB	MC	5-APR-2010	19:16:22

REVIEWED
By Michael D.H. Chu at 9:45 am, Apr 06, 2010

REVIEWED
By Kimberly Mace at 3:25 pm, Apr 14, 2010

Analytical Perspectives — Injection Log

Created: 06-Apr-2010 09:45 User: MC S/W: AP UltraTrace-Pro V4.21

Expt: DF_CL4-8A GC: DB5MS_60M Project: P2107_7660_DF

#	Datafile	Vial#	Lab ID	Client ID	Analyst	Acq Date	Acq Time
2	100405P1-02	80	BCS3_7660_DF_PA	BCS3_7660_DF_PA	MC	5-APR-2010	09:54:43
4	100405P1-04	81	MB1_7660_DF_SDS	0_7660_MB001	MC	5-APR-2010	11:35:43
7	100405P1-07	82	P2107_7660_001	Field Blank	MC	5-APR-2010	14:07:14
8	100405P1-08	83	P2107_7660_002	Unit 2 FF Outlet Run 1	MC	5-APR-2010	14:57:49
9	100405P1-09	84	P2107_7660_003	Unit 2 FF Outlet Run 2	MC	5-APR-2010	15:49:50
10	100405P1-10	85	P2107_7660_004	Unit 2 FF Outlet Run 3	MC	5-APR-2010	16:41:47
11	100405P1-11	86	P2107_7660_006	M23-4438-01 Audit	MC	5-APR-2010	17:33:49
13	100405P1-13	80	BCS3_7660_DF_PB	BCS3_7660_DF_PB	MC	5-APR-2010	19:16:22

REVIEWED
By Michael D.H. Chu at 9:45 am, Apr 06, 2010

REVIEWED
By Kimberly Mace at 3:37 pm, Apr 14, 2010

P2107

ANALYTICAL PERSPECTIVES

PART 3

ANALYTICAL RESULTS

DOCUMENTATION FOR THE ANALYSIS
OF
POLYCHLORINATED DIBENZO-*P*-DIOXINS & DIBENZOFURANS

Samples processed against BCS3. KAM 14 Apr 10

Lab ID: MB1_7660_DF_SDS | Acq'd: 05 Apr 2010 11:35 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: 0_7660_MB001 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 777-448

Datafile: 100405P1-04 | Report: 06 Apr 2010 09:14 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	-		-	-	-	1.09	-	2106	1.86
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.02	-	2166	2.24
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.11	-	2554	2.75
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.02	-	2554	2.74
123789-HxCDD	NotFnd		1.0116	-		-	-	-	0.95	-	2554	3.25
1234678-HpCDD	40.07		1.0003	1.0001	-0.5	2.54E+04	0.75	N	1.00	3.76	2265	3.02
OCDD	43.61		1.0004	1.0004	0	4.46E+04	1.81	N	1.06	7.89	2304	4.73
2378-TCDF	NotFnd		1.0009	-		-	-	-	1.20	-	2316	1.24
12378-PeCDF	NotFnd		1.0006	-		-	-	-	1.04	-	2391	1.5
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.10	-	2391	1.35
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.18	-	2380	1.85
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.18	-	2380	1.63
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.18	-	2380	1.63
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.16	-	2380	2.28
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.41	-	2279	1.85
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2279	2.66
OCDF	NotFnd		1.0004	-		-	-	-	0.97	-	2435	4.13

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.85	1.0259	1.0260	+0.2	4.39E+07	0.81	Y	1.01	94.3
ES 12378-PeCDD	32.48	1.2404	1.2410	+0.9	3.47E+07	1.60	Y	0.86	87.2
ES 123478-HxCDD	36.45	0.9917	0.9917	0	2.92E+07	1.25	Y	0.99	86.2
ES 123678-HxCDD	36.56	0.9947	0.9947	0	3.32E+07	1.27	Y	1.13	86.2
ES 123789-HxCDD	36.86	1.0028	1.0029	+0.2	3.40E+07	1.28	Y	1.13	87.9
ES 1234678-HpCDD	40.06	1.0902	1.0900	-0.4	2.70E+07	1.04	Y	0.91	86.9
ES OCDD	43.59	1.1862	1.1860	-0.4	4.28E+07	0.92	Y	0.73	85.9
ES 2378-TCDF	25.91	1.0585	1.0589	+0.6	7.02E+07	0.80	Y	0.99	101
ES 12378-PeCDF	30.97	1.2646	1.2656	+1.5	5.70E+07	1.53	Y	0.87	93.7
ES 23478-PeCDF	32.11	1.3113	1.3123	+1.5	5.73E+07	1.57	Y	0.84	97.5
ES 123478-HxCDF	35.47	0.9651	0.9650	-0.2	3.95E+07	0.52	Y	1.36	85.1
ES 123678-HxCDF	35.61	0.9689	0.9688	-0.2	4.59E+07	0.54	Y	1.56	86.7
ES 234678-HxCDF	36.27	0.9867	0.9867	0	4.52E+07	0.52	Y	1.47	90.1
ES 123789-HxCDF	37.23	1.0129	1.0129	0	3.61E+07	0.52	Y	1.27	83.5
ES 1234678-HpCDF	38.91	1.0589	1.0588	-0.2	3.02E+07	0.46	Y	1.06	83.8
ES 1234789-HpCDF	40.63	1.1057	1.1054	-0.7	2.58E+07	0.43	Y	0.88	86.1
ES OCDF	43.83	1.1926	1.1924	-0.4	5.74E+07	0.91	Y	1.03	82

Lab ID: MB1_7660_DF_SDS | Acq'd: 05 Apr 2010 11:35 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: 0_7660_MB001 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 777-448

Datafile: 100405P1-04 | Report: 06 Apr 2010 09:14 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.17		-	-	-	4.64E+07	0.82	Y	-	-	
JS 1234-TCDF	24.47		-	-	-	7.01E+07	0.81	Y	-	-	
JS 123467-HxCDD	36.75		-	-	-	1.70E+07	1.27	Y	-	-	
CS 37Cl-2378-TCDD	26.87		1.0268	1.0269	+0.2	1.99E+07	n/a	-	1.15	93.4	
CS 12347-PeCDD	31.96		1.2209	1.2214	+0.8	3.49E+07	1.67	Y	0.83	90.8	
CS 12346-PeCDF	30.43		1.2424	1.2434	+1.5	5.82E+07	1.56	Y	0.87	95.2	
CS 123469-HxCDF	35.92		0.9773	0.9773	0	4.02E+07	0.53	Y	1.36	86.7	
CS 1234689-HpCDF	39.40		1.0720	1.0720	0	2.76E+07	0.45	Y	0.94	86.2	
SS 37Cl-2378-TCDD	26.87		1.0268	1.0269	+0.2	1.99E+07	n/a	-	1.14	99.1	
SS 12347-PeCDD	31.96		1.2209	1.2214	+0.8	3.49E+07	1.67	Y	0.97	104	
SS 12346-PeCDF	30.43		1.2424	1.2434	+1.5	5.82E+07	1.56	Y	1.00	102	
SS 123469-HxCDF	35.92		0.9773	0.9773	0	4.02E+07	0.53	Y	0.88	100	
SS 1234689-HpCDF	39.40		1.0720	1.0720	0	2.76E+07	0.45	Y	0.89	103	
AS 1368-TCDD	22.88		0.8731	0.8743	+1.9	4.14E+07	0.82	Y	1.08	82.4	
AS 1368-TCDF	20.71		0.8447	0.8463	+2.3	8.10E+07	0.81	Y	1.27	90.7	
FS 1278-TCDD	NotFnd		1.0131								
FS 12478-PeCDD	NotFnd		0.9617								
FS 123468-HxCDD	NotFnd		0.9713								
FS 1234679-HpCDD	39.24		0.9794	0.9794	0	2.37E+05	1.04	Y	0.01	93.3	FS na KAM 14 Apr 10
TS 1378-TCDD	NotFnd		0.9345								

Totals	Conc	EMPC
Total TCDD	2.27	2.27
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	3.61	7.36
Total Tetra-Octa Dioxins	5.88	17.5
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	5.88	17.5

Lab ID: MB1_7660_DF_SDS
Client ID: 0_7660_MB001
Datafile: 100405P1-04

Acq'd: 05 Apr 2010 11:35 MC
UTP: 06-Apr-2010 09:12 MC
Report: 06 Apr 2010 09:14 MC

Wt/Vol: 1
J-level: 10 pg
ES spike: 4000 pg

Cal: BCS3_7660_DF_PAB
Checkcode: 777-448
Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	22.92		0.8539	0.8538	-0.2	2.72E+04	0.73	Y	1.09	2.27	2106	1.86
1379-TCDD	NotFnd		0.8685						1.09		2106	1.86
1369-TCDD	NotFnd		0.8863						1.09		2106	1.86
1469-TCDD	NotFnd		0.9189						1.09		2106	1.86
1247/1246/1248/1249-TCDD	NotFnd		0.9276						1.09		2106	1.86
1378-TCDD	NotFnd		0.9351						1.09		2106	1.86
1268-TCDD	NotFnd		0.9430						1.09		2106	1.86
1478-TCDD	NotFnd		0.9517						1.09		2106	1.86
1279-TCDD	NotFnd		0.9598						1.09		2106	1.86
1234/1269-TCDD	NotFnd		0.9740						1.09		2106	1.86
1236-TCDD	NotFnd		0.9801						1.09		2106	1.86
1237/1238-TCDD	NotFnd		0.9895						1.09		2106	1.86
1239-TCDD	NotFnd		0.9952						1.09		2106	1.86
2378-TCDD	**NotFnd**		**1.0008**						**1.09**		**2106**	**1.86**
1278-TCDD	NotFnd		1.0138						1.09		2106	1.86
1267-TCDD	NotFnd		1.0194						1.09		2106	1.86
1289-TCDD	NotFnd		1.0396						1.09		2106	1.86
12479/12468-PeCDD	NotFnd		0.9210						1.02		2166	2.24
12469-PeCDD	NotFnd		0.9382						1.02		2166	2.24
12368-PeCDD	NotFnd		0.9556						1.02		2166	2.24
12478-PeCDD	NotFnd		0.9614						1.02		2166	2.24
12379-PeCDD	NotFnd		0.9649						1.02		2166	2.24
12369/12467/12489-PeCDD	NotFnd		0.9732						1.02		2166	2.24
12346/12347-PeCDD	NotFnd		0.9850						1.02		2166	2.24
12378-PeCDD	**NotFnd**		**1.0006**						**1.02**		**2166**	**2.24**
12367-PeCDD	NotFnd		1.0037						1.02		2166	2.24
12389-PeCDD	NotFnd		1.0146						1.02		2166	2.24
124679/124689-HxCDD	NotFnd		0.9534						1.03		2554	2.9
123468-HxCDD	NotFnd		0.9717						1.03		2554	2.9
123679/123689-HxCDD	NotFnd		0.9793						1.03		2554	2.9
123469-HxCDD	NotFnd		0.9833						1.03		2554	2.9
123478-HxCDD	**NotFnd**		**1.0004**						**1.11**		**2554**	**2.75**
123678-HxCDD	**NotFnd**		**1.0034**						**1.02**		**2554**	**2.74**
123467-HxCDD	NotFnd		1.0088						1.03		2554	2.9
123789-HxCDD	**NotFnd**		**1.0116**						**0.95**		**2554**	**3.25**

Lab ID: MB1_7660_DF_SDS | Acq'd: 05 Apr 2010 11:35 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: 0_7660_MB001 | UTP: 08-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 777-448

Datafile: 100405P1-04 | Report: 06 Apr 2010 09:14 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	39.24		0.9794	0.9795	+0.2	2.44E+04	1.15	Y	1.00	3.61	2265	3.02
1234678-HpCDD	40.07		1.0003	1.0001	-0.5	2.54E+04	0.75	N	1.00	3.76	2265	3.02
OCDD	43.61		1.0004	1.0004	0	4.46E+04	1.81	N	1.06	7.89	2304	4.73
OCDD-a	NotFnd		1.0003						0.06		3174	107
1368-TCDF	NotFnd		0.8012						1.20		2316	1.24
1468-TCDF	NotFnd		0.8216						1.20		2316	1.24
2468-TCDF	NotFnd		0.8461						1.20		2316	1.24
1346/1246-TCDF	NotFnd		0.8607						1.20		2316	1.24
1347/1378/1247-TCDF	NotFnd		0.8672						1.20		2316	1.24
1348-TCDF	NotFnd		0.8792						1.20		2316	1.24
1248/1367/1379-TCDF	NotFnd		0.8846						1.20		2316	1.24
1268-TCDF	NotFnd		0.9011						1.20		2316	1.24
1467-TCDF	NotFnd		0.9067						1.20		2316	1.24
1478-TCDF	NotFnd		0.9137						1.20		2316	1.24
1369/1237-TCDF	NotFnd		0.9293						1.20		2316	1.24
2467-TCDF	NotFnd		0.9348						1.20		2316	1.24
2368-TCDF	NotFnd		0.9408						1.20		2316	1.24
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9445						1.20		2316	1.24
1278-TCDF	NotFnd		0.9641						1.20		2316	1.24
1349-TCDF	NotFnd		0.9693						1.20		2316	1.24
1267-TCDF	NotFnd		0.9755						1.20		2316	1.24
2346/1249-TCDF	NotFnd		0.9834						1.20		2316	1.24
2347/1279-TCDF	NotFnd		0.9922						1.20		2316	1.24
2348-TCDF	NotFnd		0.9966						1.20		2316	1.24
2378-TCDF	NotFnd		1.0009						1.20		2316	1.24
2367/3467-TCDF	NotFnd		1.0164						1.20		2316	1.24
1269-TCDF	NotFnd		1.0260						1.20		2316	1.24
1239-TCDF	NotFnd		1.0375						1.20		2316	1.24
1289-TCDF	NotFnd		1.0834						1.20		2316	1.24
13468/12468-PeCDF	NotFnd		0.9057						1.07		2488	1.48
13678/13467/12467-PeCDF	NotFnd		0.9581						1.07		2391	1.42
12368/13478/12478-PeCDF	NotFnd		0.9620						1.07		2391	1.42
14678-PeCDF	NotFnd		0.9667						1.07		2391	1.42
13479-PeCDF	NotFnd		0.9702						1.07		2391	1.42
13469/12479-PeCDF	NotFnd		0.9781						1.07		2391	1.42
12346-PeCDF	NotFnd		0.9829						1.07		2391	1.42

Lab ID: MB1_7660_DF_SDS
Client ID: 0_7660_MB001
Datafile: 100405P1-04

Acq'd: 05 Apr 2010 11:35 MC
UTP: 06-Apr-2010 09:12 MC
Report: 06 Apr 2010 09:14 MC

Wt/Vol: 1
J-level: 10 pg
ES spike: 4000 pg

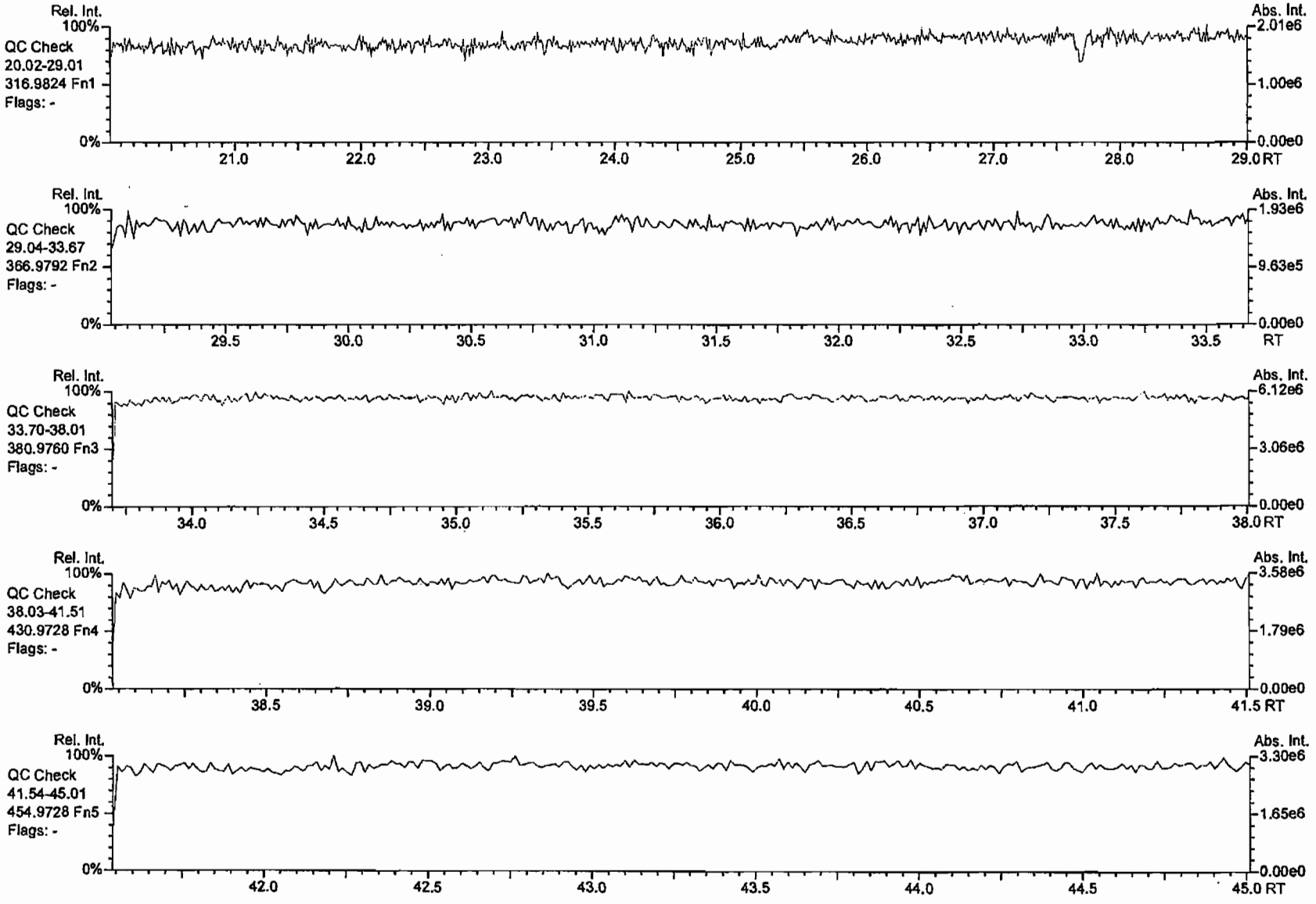
Cal: BCS3_7660_DF_PAB
Checkcode: 777-448
Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9858						1.07		2391	1.42
12347-PeCDF	NotFnd		0.9881						1.07		2391	1.42
12348-PeCDF	NotFnd		0.9936						1.07		2391	1.42
12378-PeCDF	NotFnd		1.0006						1.04		2391	1.5
12678/12367-PeCDF	NotFnd		1.0104						1.07		2391	1.42
12379-PeCDF	NotFnd		1.0151						1.07		2391	1.42
12679-PeCDF	NotFnd		0.9925						1.07		2391	1.42
23467/12369-PeCDF	NotFnd		0.9981						1.07		2391	1.42
23478-PeCDF	NotFnd		1.0005						1.10		2391	1.35
23478/12489-PeCDF	NotFnd		1.0006						1.10		2391	1.35
12489-PeCDF	NotFnd		1.0023						1.07		2391	1.42
12349-PeCDF	NotFnd		1.0110						1.07		2391	1.42
12389-PeCDF	NotFnd		1.0350						1.07		2391	1.42
123468-HxCDF	NotFnd		0.9609						1.17		2380	1.82
124678/134678-HxCDF	NotFnd		0.9668						1.17		2380	1.82
134679-HxCDF	NotFnd		0.9733						1.17		2380	1.82
124679-HxCDF	NotFnd		0.9788						1.17		2380	1.82
124689-HxCDF	NotFnd		0.9851						1.17		2380	1.82
123467-HxCDF	NotFnd		0.9968						1.17		2380	1.82
123478-HxCDF	NotFnd		1.0004						1.18		2380	1.85
123678-HxCDF	NotFnd		1.0005						1.18		2380	1.63
123479-HxCDF	NotFnd		1.0048						1.17		2380	1.82
123469-HxCDF	NotFnd		1.0090						1.17		2380	1.82
123679-HxCDF	NotFnd		0.9943						1.17		2380	1.82
234678-HxCDF	NotFnd		1.0005						1.18		2380	1.63
234678/123689-HxCDF	NotFnd		1.0004						1.18		2380	1.63
123689-HxCDF	NotFnd		1.0009						1.17		2380	1.82
123789-HxCDF	NotFnd		1.0005						1.16		2380	2.28
123789/123489-HxCDF	NotFnd		1.0012						1.16		2380	2.28
123489-HxCDF	NotFnd		1.0017						1.17		2380	1.82
1234678-HpCDF	NotFnd		1.0003						1.41		2279	1.85
1234679-HpCDF	NotFnd		1.0083						1.39		2279	2.22
1234689-HpCDF	NotFnd		1.0132						1.39		2279	2.22
1234789-HpCDF	NotFnd		1.0003						1.37		2279	2.66
OCDF	NotFnd		1.0004						0.97		2435	4.13
OCDF-a	NotFnd		1.0002						0.06		2860	82.1

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



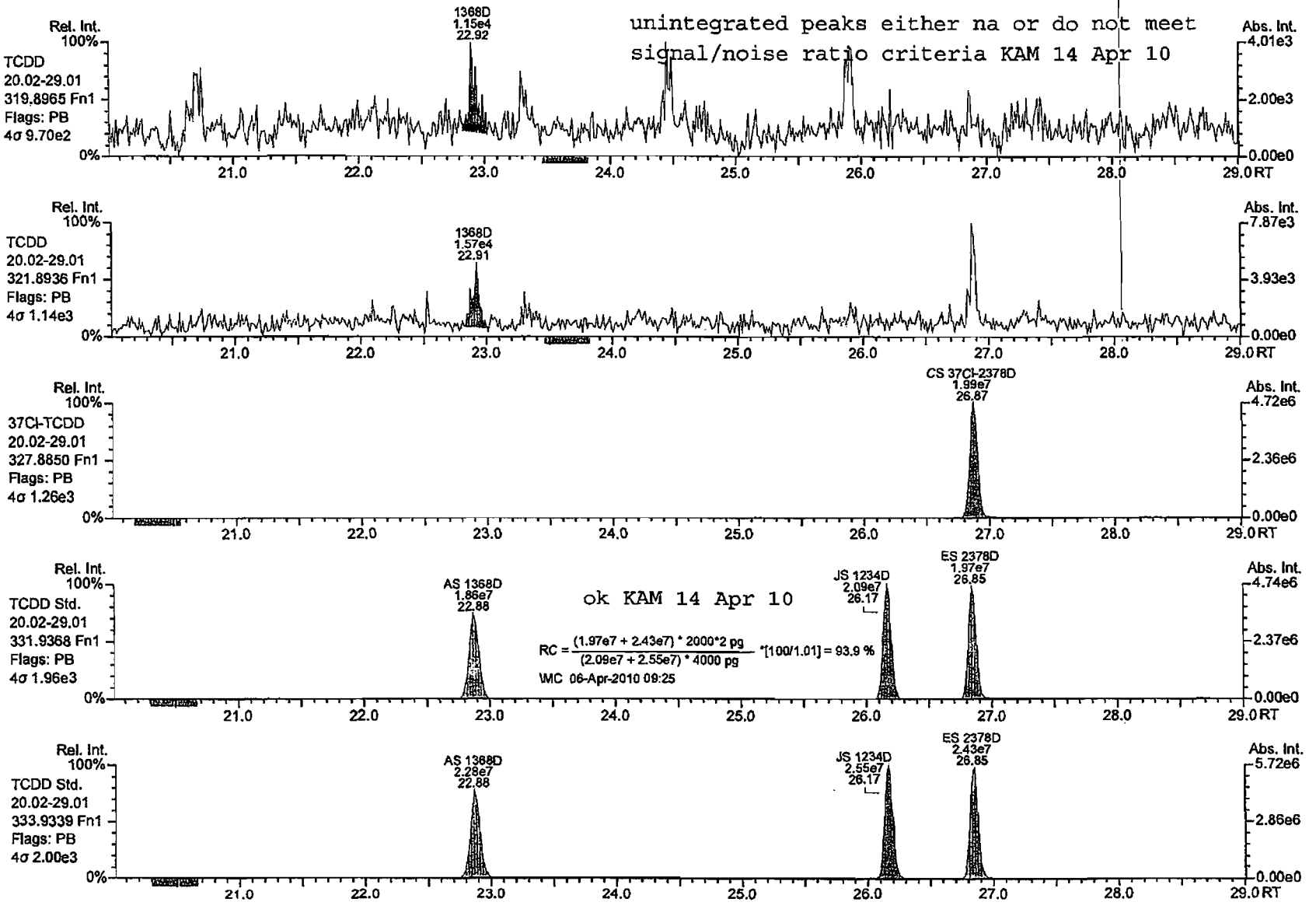
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 777-448

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:29:53 Page 1 of 12

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC | Datafile: 100405P1-04



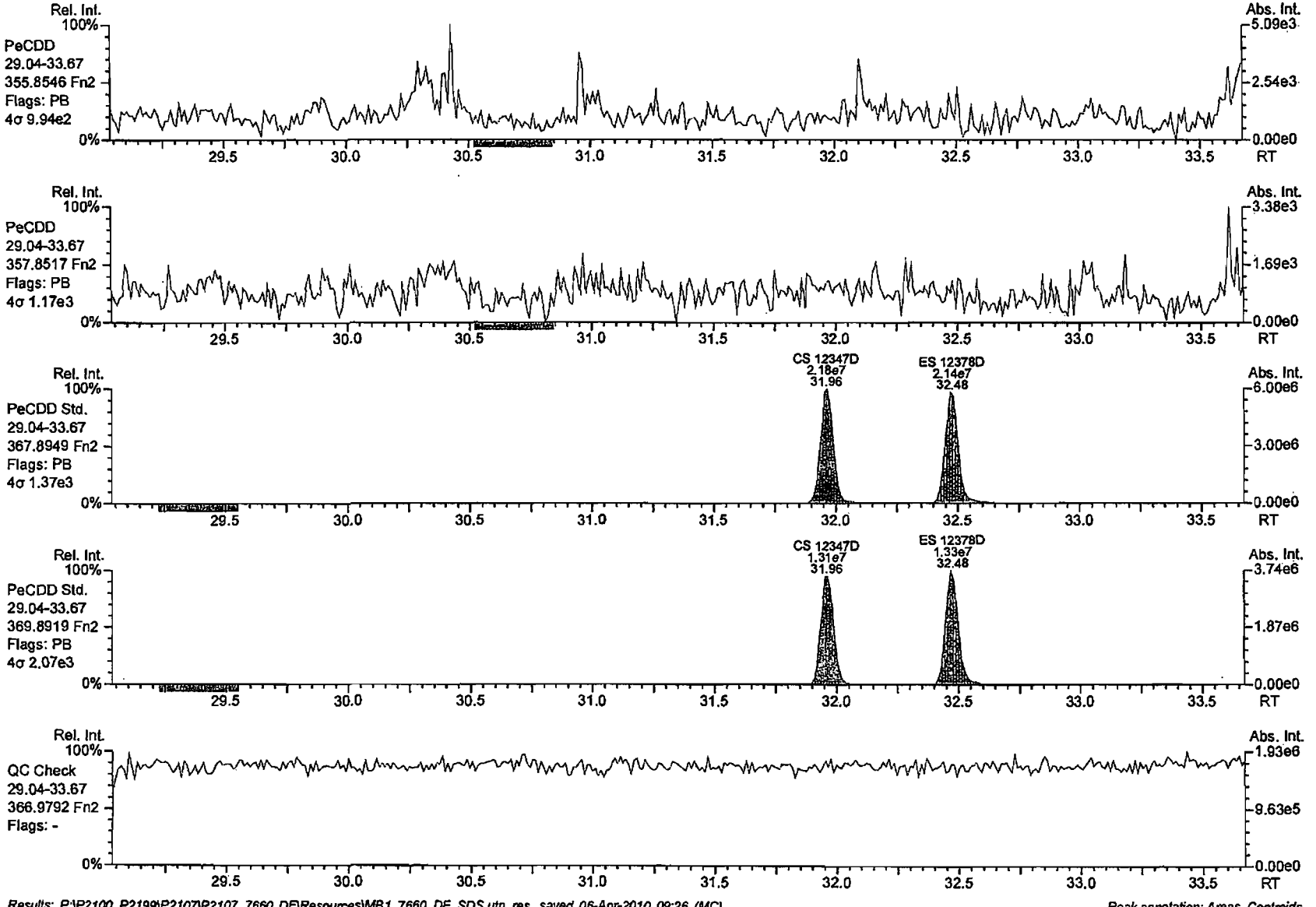
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3370, 6634, 1580 scc: 777-448

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:36:26 (MC) Printed: 06-Apr-2010 09:30:04 Page 2 of 12

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

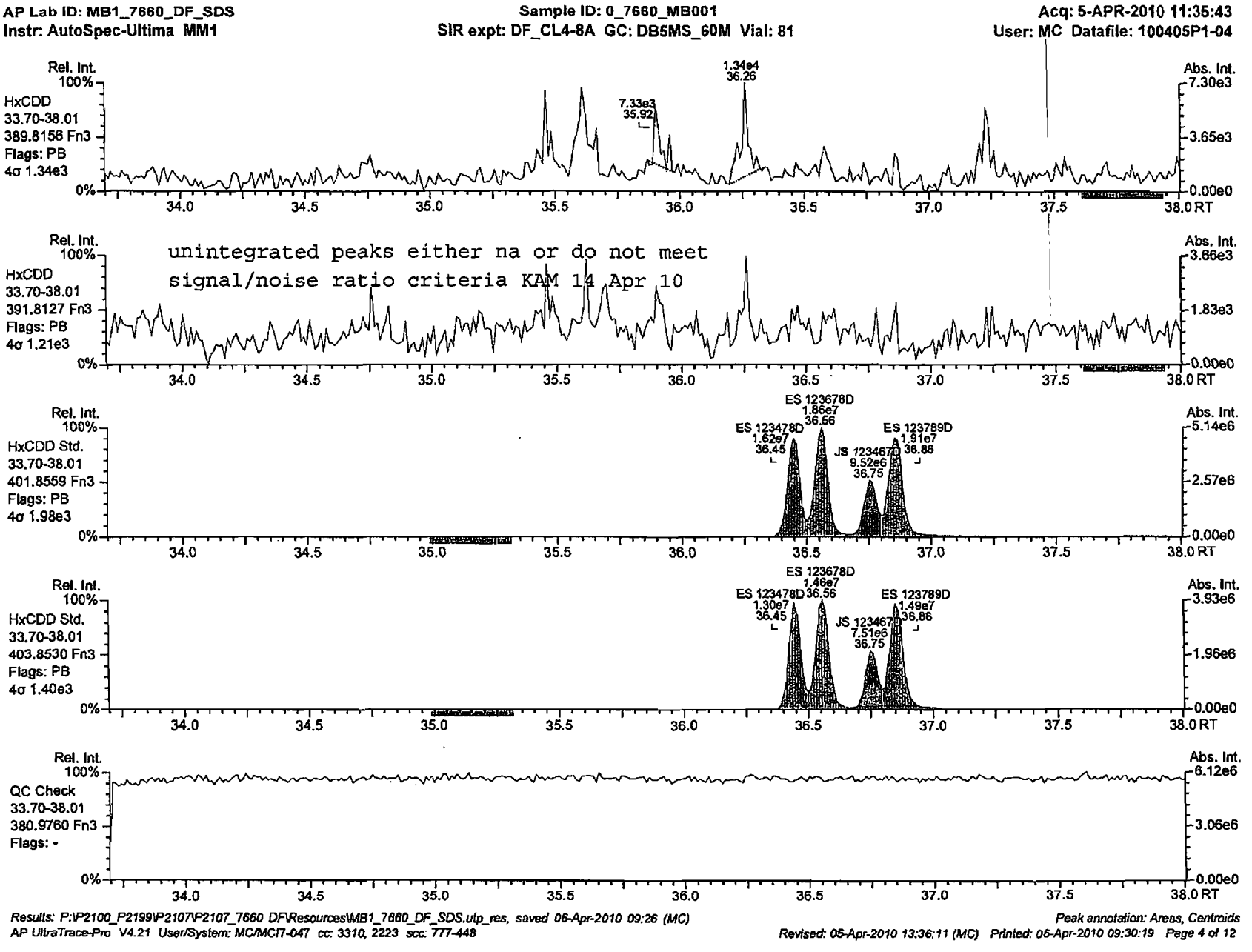
Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0003, 7318 scc: 777-448

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:36:11 (MC) Printed: 06-Apr-2010 09:30:12 Page 3 of 12



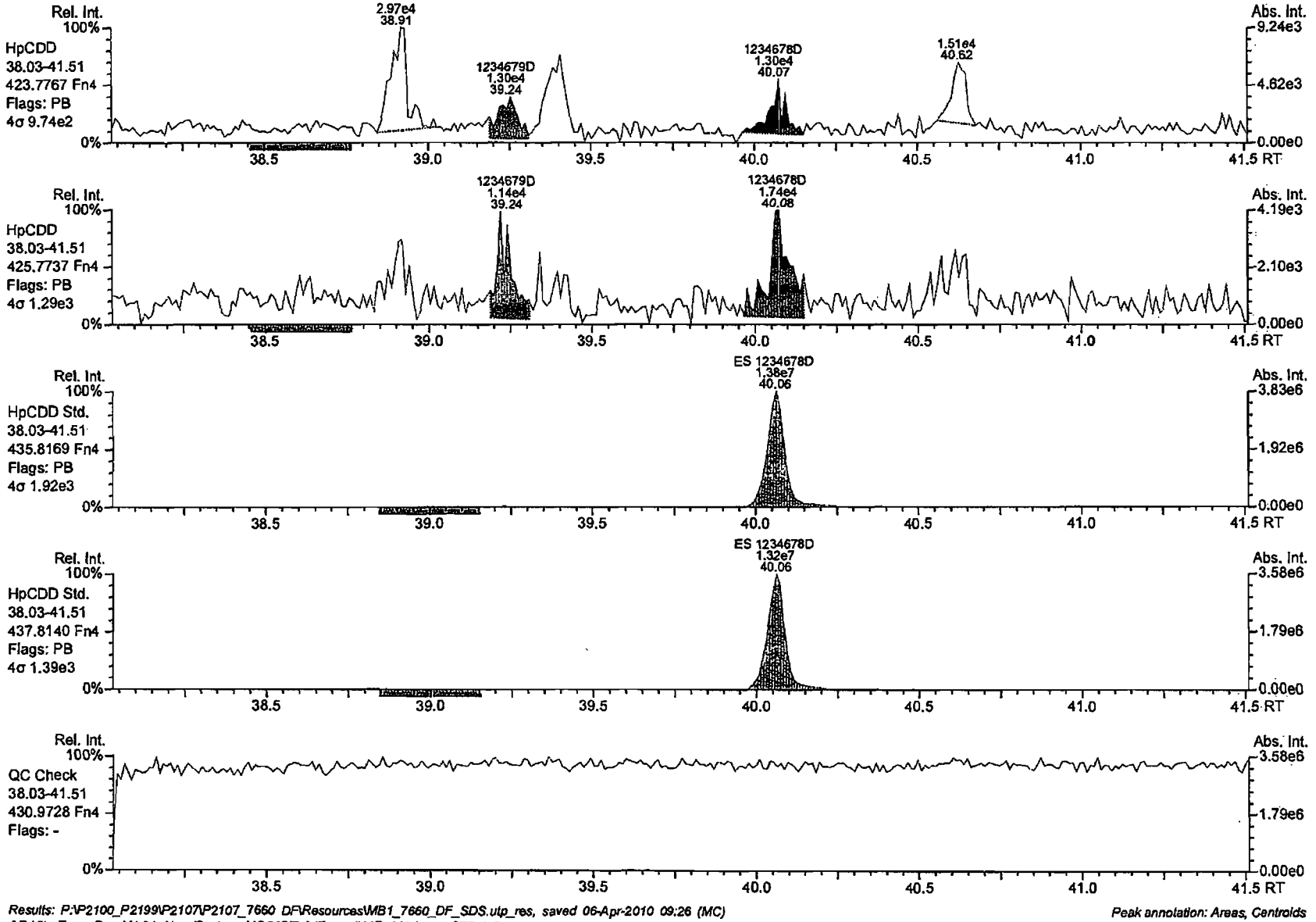
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
Peak annotation: Areas, Centroids

unintegrated peaks either na or do not meet
signal/noise ratio criteria KAM 14 Apr 10

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

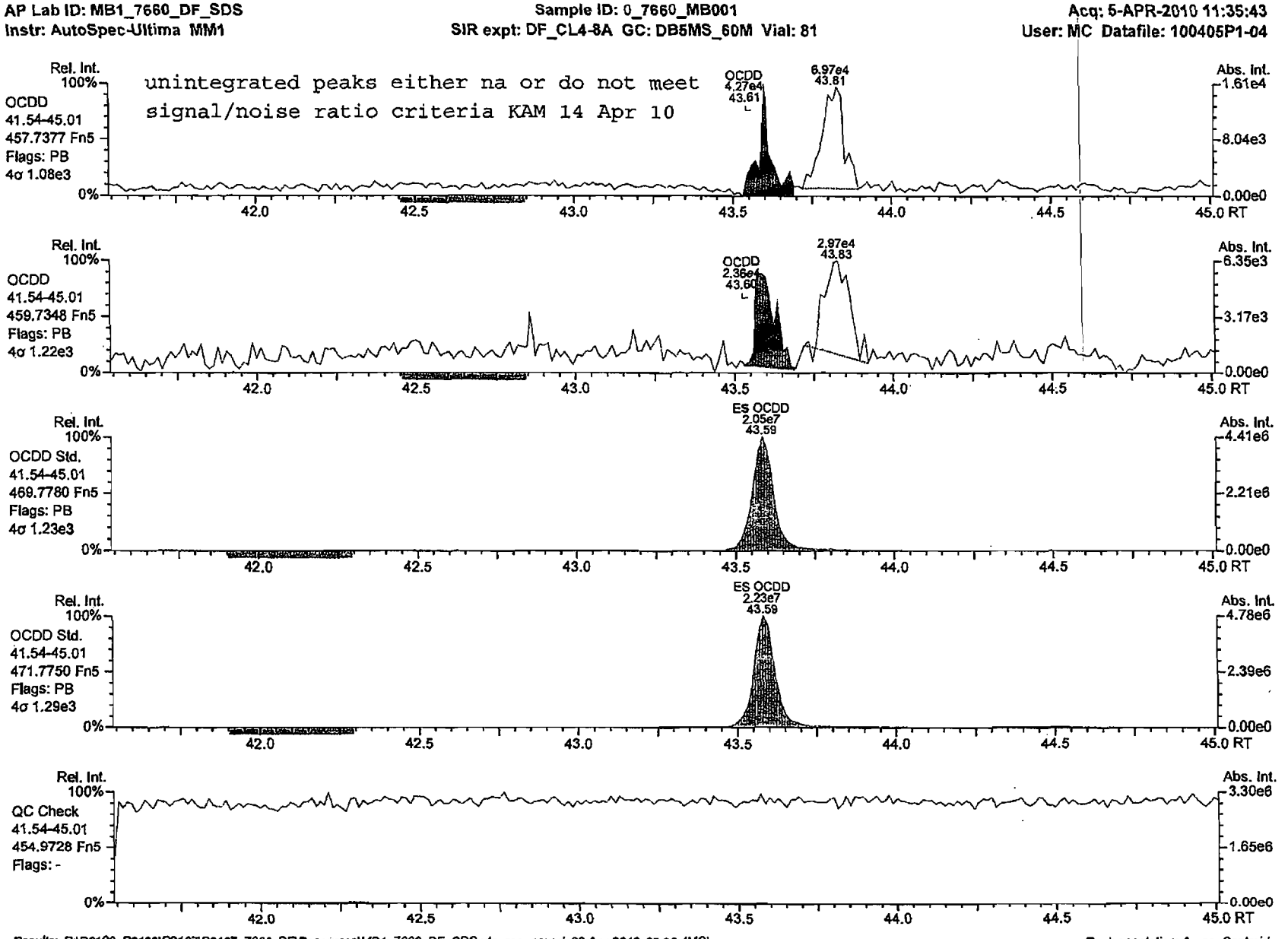
Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



Results: P:\P2100_P2199\P2107\P2107_7660 DF\ResourcesMB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5927, 8624 scc: 777-448

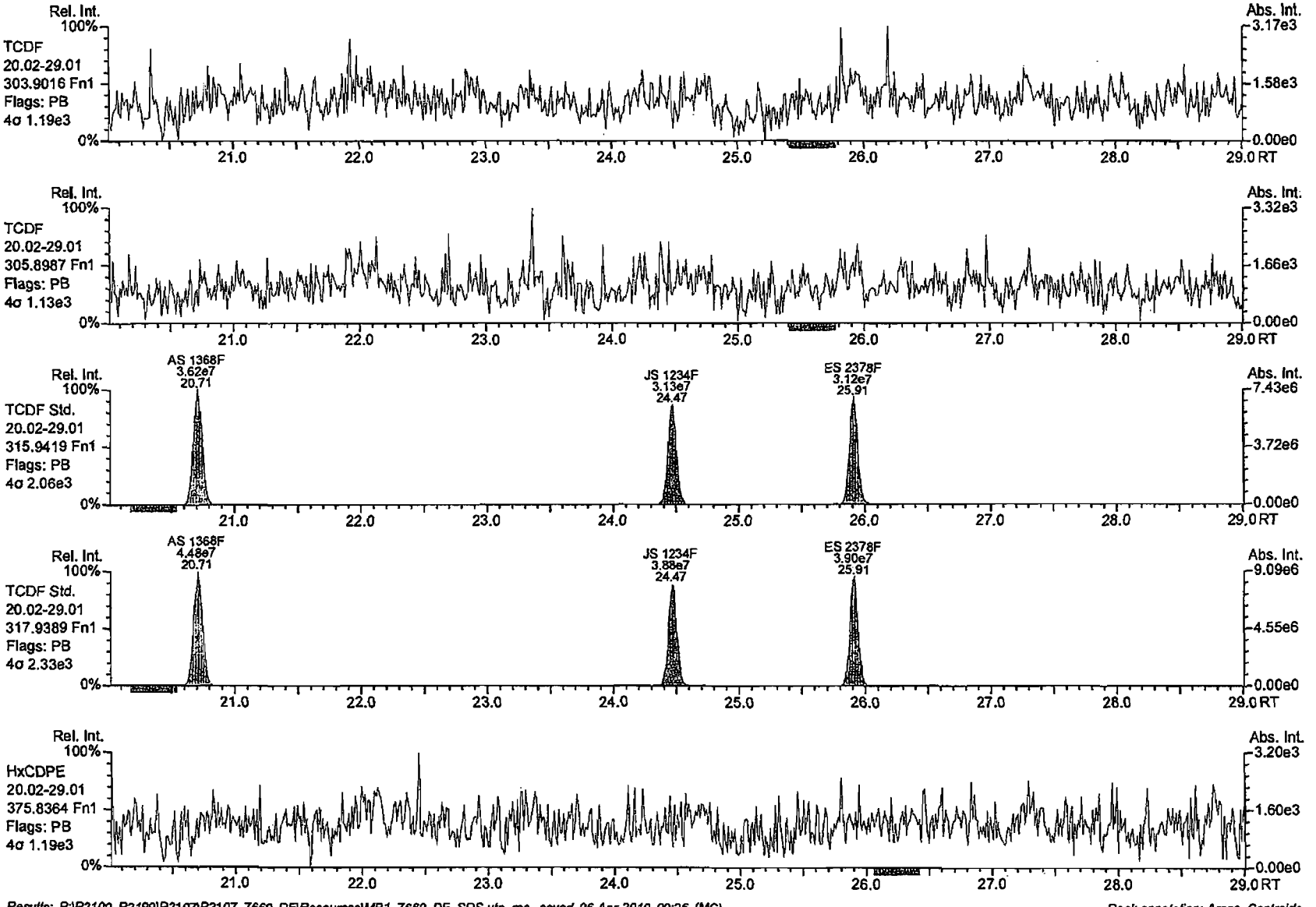
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:36:44 (MC) Printed: 06-Apr-2010 09:30:25 Page 5 of 12


AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1
Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81
Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04
unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 14 Apr 10
Rel. Int.
100%
OCDD
41.54-45.01
457.7377 Fn5
Flags: PB
4σ 1.08e3
0%
OCDD
4.27e4
43.61
6.97e4
43.81
Abs. Int.
1.61e4
8.04e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.54-45.01
459.7348 Fn5
Flags: PB
4σ 1.22e3
0%
OCDD
2.36e4
43.60
2.97e4
43.83
Abs. Int.
6.35e3
3.17e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.54-45.01
469.7780 Fn5
Flags: PB
4σ 1.23e3
0%
ES OCDD
2.05e7
43.59
Abs. Int.
4.41e6
2.21e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.54-45.01
471.7750 Fn5
Flags: PB
4σ 1.29e3
0%
ES OCDD
2.23e7
43.59
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.54-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.30e6
1.65e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5687, 9543 scc: 777-448
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:37:00 (MC) Printed: 06-Apr-2010 09:30:30 Page 6 of 12

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



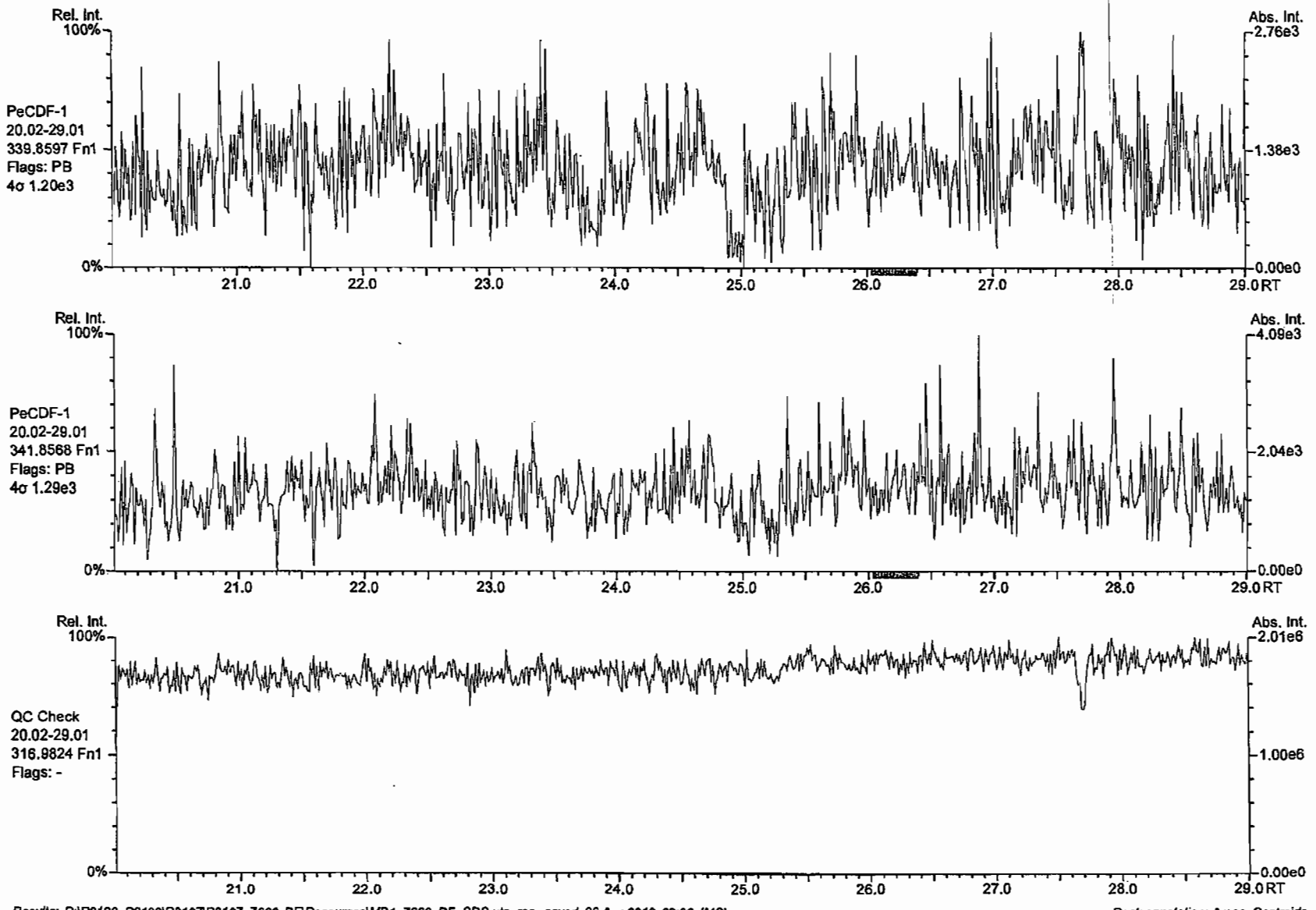
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3500, 3743, 7221 scc: 777-448

Peak annotation: Areas, Centroids
PKD: 05-Apr-2010 13:36:11 Printed: 06-Apr-2010 09:30:41 Page 7 of 12

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



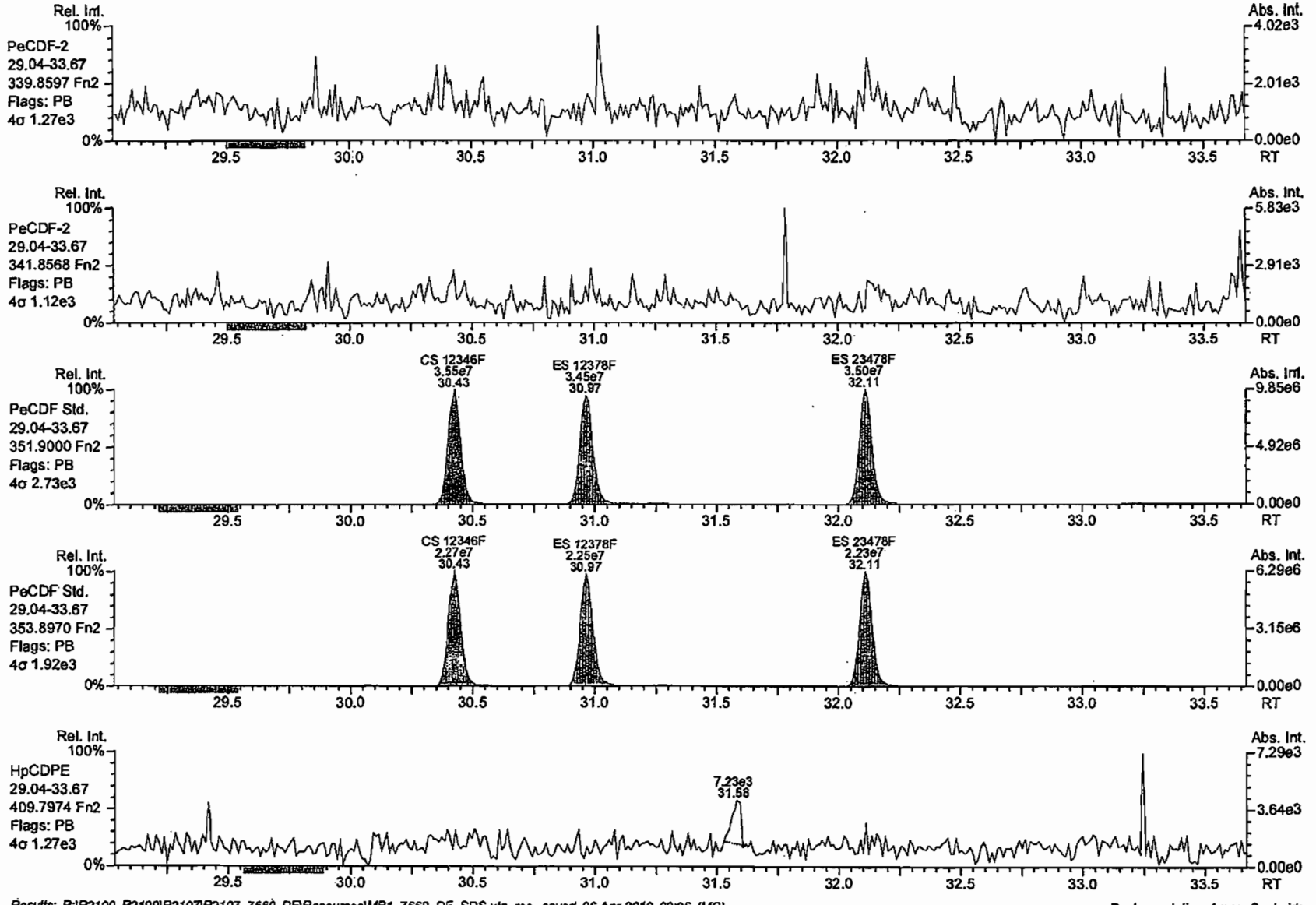
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5372 scc: 777-448

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:36:11 (MC) Printed: 06-Apr-2010 09:30:48 Page 8 of 12

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

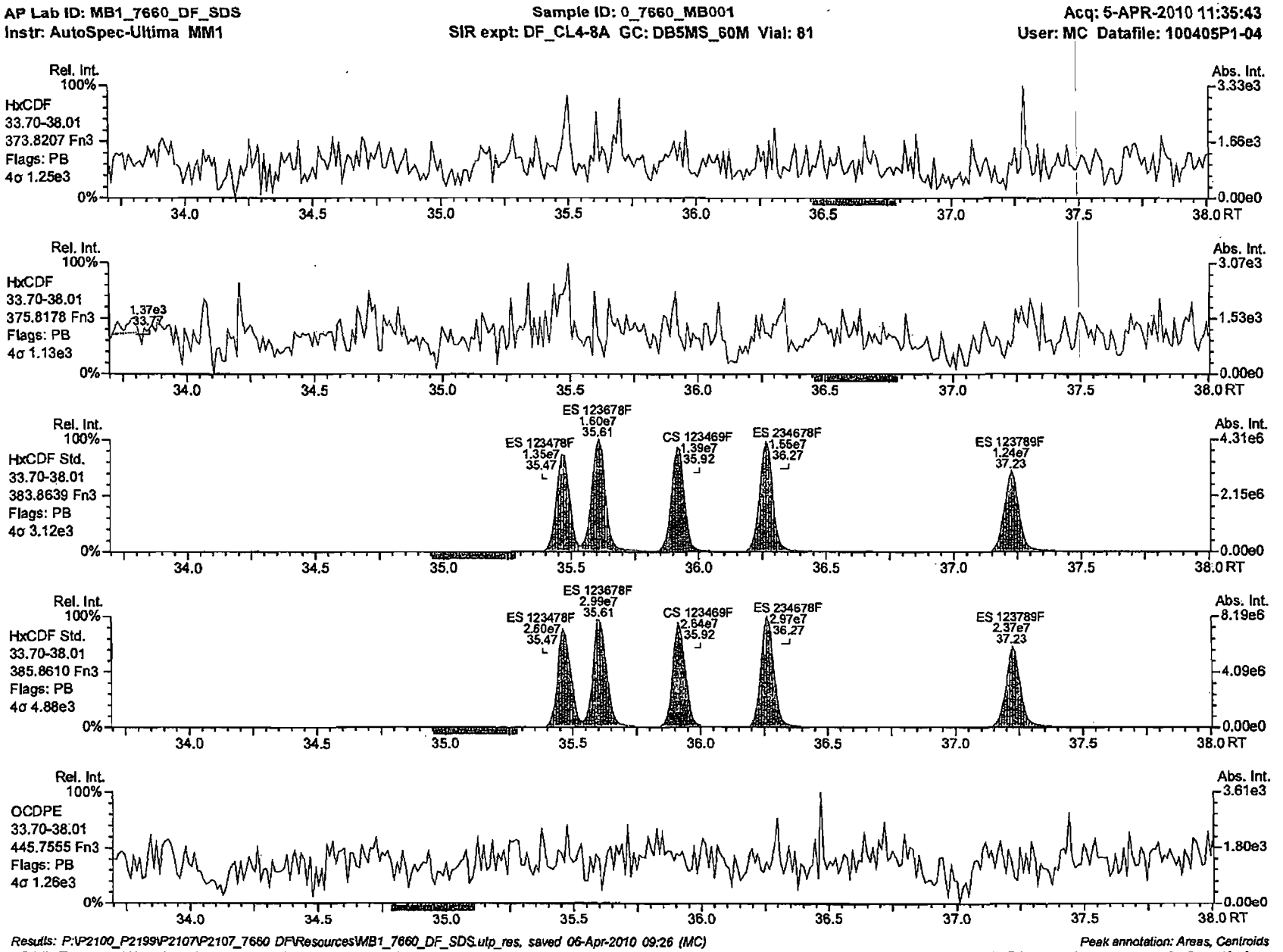
Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.uip_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4487, 2416, 5507 scc: 777-448

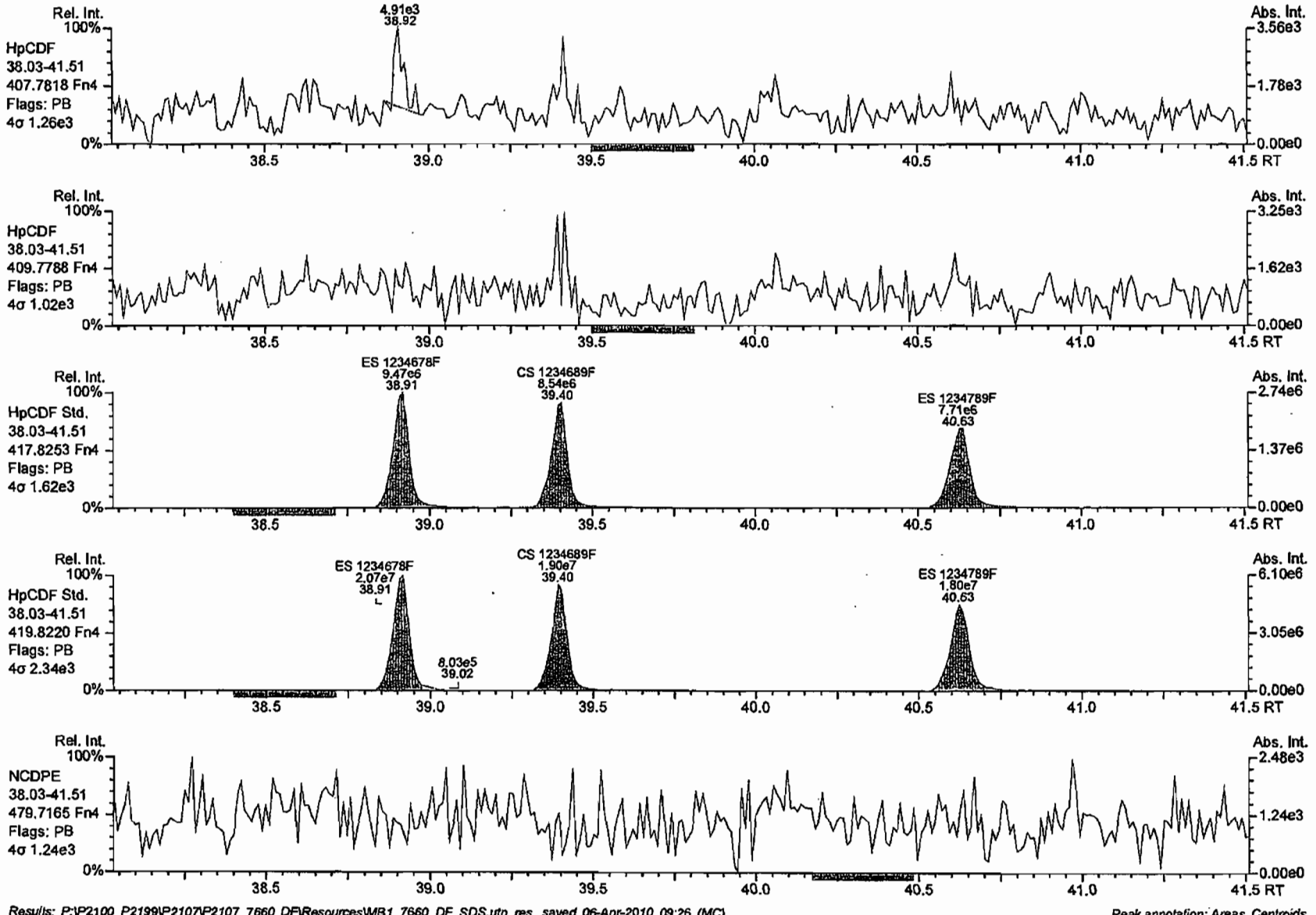
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:37:05 (MC) Printed: 06-Apr-2010 09:30:56 Page 9 of 12


AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1
Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81
Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04
Rel. Int.
100%
HxCDF
33.70-38.01
373.8207 Fn3
Flags: PB
4σ 1.25e3
0%
Abs. Int.
3.33e3
1.66e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0 RT
HxCDF
33.70-38.01
375.8178 Fn3
Flags: PB
4σ 1.13e3
1.37e3
33.77
3.07e3
1.53e3
HxCDF Std.
33.70-38.01
383.8639 Fn3
Flags: PB
4σ 3.12e3
ES 123678F
1.60e7
35.61
ES 123478F
1.35e7
35.47
CS 123469F
1.39e7
35.92
ES 234678F
1.55e7
36.27
ES 123789F
1.24e7
37.23
4.31e6
2.15e6
HxCDF Std.
33.70-38.01
385.8610 Fn3
Flags: PB
4σ 4.88e3
ES 123678F
2.99e7
35.61
ES 123478F
2.60e7
35.47
CS 123469F
2.64e7
35.92
ES 234678F
2.97e7
36.27
ES 123789F
2.37e7
37.23
8.19e6
4.09e6
OCDPE
33.70-38.01
445.7555 Fn3
Flags: PB
4σ 1.26e3
3.61e3
1.80e3
0.00e0
Results: P:\P2100_P2199\P2107\P2107_7660 DF\ResourcesMB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0936, 5585, 1959 scc: 777-448
Revised: 05-Apr-2010 13:37:18 (MC) Printed: 06-Apr-2010 09:31:03 Page 10 of 12

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



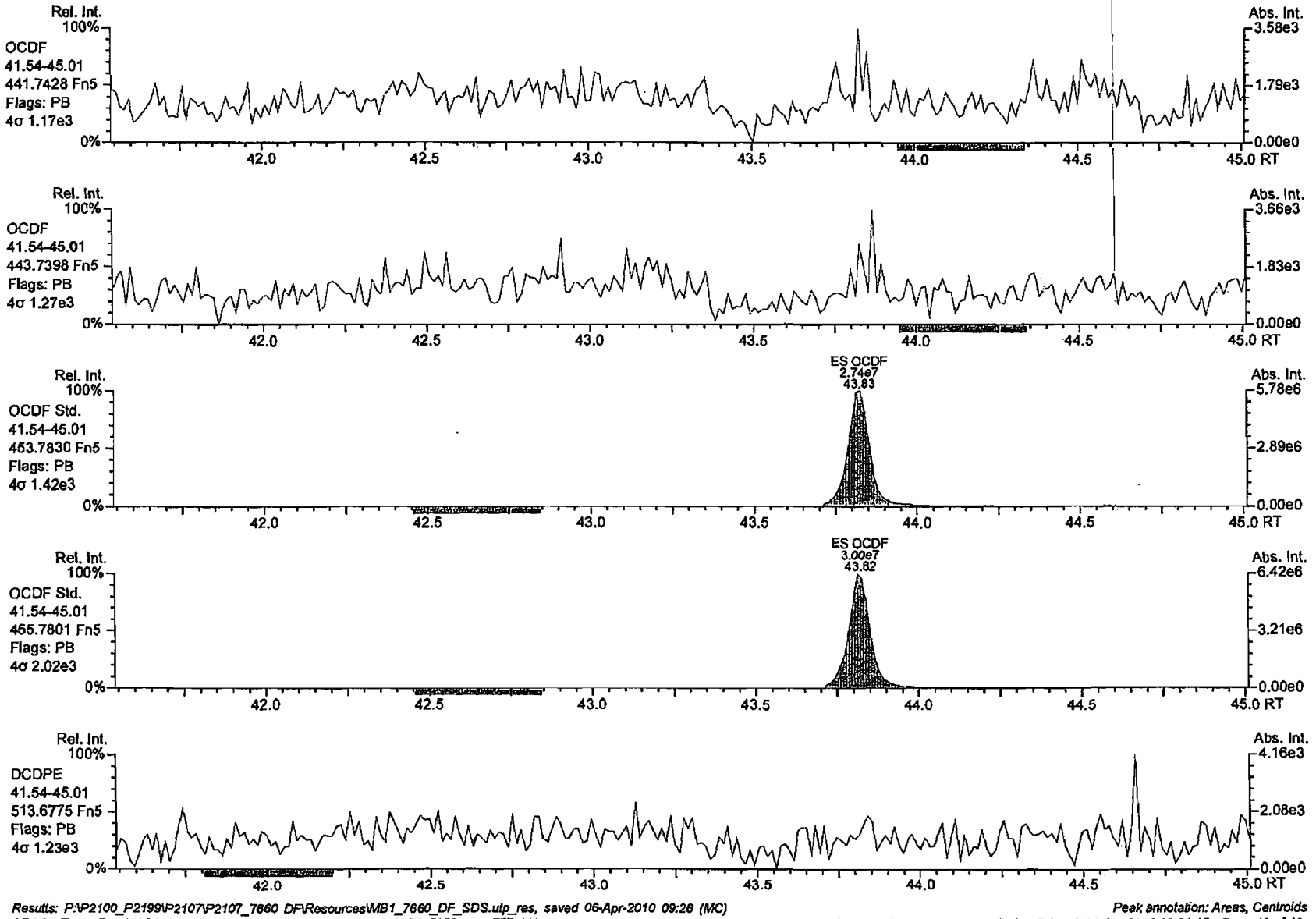
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2491, 0728, 9586 scc: 777-448

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:36:11 (MC) Printed: 06-Apr-2010 09:31:10 Page 11 of 12

AP Lab ID: MB1_7660_DF_SDS
Instr: AutoSpec-Ultima MM1

Sample ID: 0_7660_MB001
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 81

Acq: 5-APR-2010 11:35:43
User: MC Datafile: 100405P1-04



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\MB1_7660_DF_SDS.utp_res, saved 06-Apr-2010 09:26 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9271, 2257, 5055 scc: 777-448

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 13:36:11 (MC) Printed: 06-Apr-2010 09:31:15 Page 12 of 12

Lab ID: P2107_7660_001 | Acq'd: 05 Apr 2010 14:07 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Field Blank | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 115-583

Datafile: 100405P1-07 | Report: 06 Apr 2010 09:14 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	-		-	-	-	1.09	-	2337	1.51
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.02	-	2396	1.54
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.11	-	2052	1.56
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.02	-	2052	1.51
123789-HxCDD	NotFnd		1.0116	-		-	-	-	0.95	-	2052	1.74
1234678-HpCDD	40.07		1.0003	1.0002	-0.2	4.80E+04	0.92	Y	1.00	4.94	2047	1.93
OCDD	43.60		1.0004	1.0003	-0.3	1.36E+05	1.11	N	1.06	16.8	2723	3.78
2378-TCDF	NotFnd		1.0009	-		-	-	-	1.20	-	2344	0.878
12378-PeCDF	NotFnd		1.0006	-		-	-	-	1.04	-	2210	0.912
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.10	-	2210	0.833
123478-HxCDF	35.48		1.0004	1.0005	+0.2	1.96E+04	1.40	Y	1.18	1.14	2090	1.04
123678-HxCDF	35.62		1.0005	1.0005	0	2.43E+04	1.09	Y	1.18	1.22	2090	0.965
234678-HxCDF	36.27		1.0005	1.0004	-0.2	1.79E+04	0.85	N	1.18	0.934	2090	0.989
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.16	-	2090	1.32
1234678-HpCDF	38.92		1.0003	1.0002	-0.2	3.63E+04	1.10	Y	1.41	2.35	2078	1.16
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2078	1.58
OCDF	NotFnd		1.0004	-		-	-	-	0.97	-	2529	2.91

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.85	1.0259	1.0259	0	6.10E+07	0.80	Y	1.01	91.6
ES 12378-PeCDD	32.47	1.2404	1.2406	+0.3	5.46E+07	1.62	Y	0.86	96
ES 123478-HxCDD	36.44	0.9917	0.9917	0	4.44E+07	1.28	Y	0.99	84.8
ES 123678-HxCDD	36.55	0.9947	0.9947	0	4.75E+07	1.28	Y	1.13	79.7
ES 123789-HxCDD	36.85	1.0028	1.0029	+0.2	4.85E+07	1.25	Y	1.13	81.2
ES 1234678-HpCDD	40.06	1.0902	1.0901	-0.2	3.88E+07	1.06	Y	0.91	80.7
ES OCDD	43.59	1.1862	1.1862	0	6.09E+07	0.91	Y	0.73	79.1
ES 2378-TCDF	25.91	1.0585	1.0587	+0.3	9.70E+07	0.80	Y	0.99	95.2
ES 12378-PeCDF	30.96	1.2646	1.2649	+0.4	8.67E+07	1.61	Y	0.87	97.4
ES 23478-PeCDF	32.11	1.3113	1.3116	+0.4	8.47E+07	1.54	Y	0.84	98.6
ES 123478-HxCDF	35.46	0.9651	0.9650	-0.2	5.84E+07	0.53	Y	1.36	81.4
ES 123678-HxCDF	35.60	0.9689	0.9689	0	6.74E+07	0.52	Y	1.56	82.3
ES 234678-HxCDF	36.26	0.9867	0.9866	-0.2	6.48E+07	0.53	Y	1.47	83.5
ES 123789-HxCDF	37.22	1.0129	1.0129	0	5.25E+07	0.52	Y	1.27	78.4
ES 1234678-HpCDF	38.91	1.0589	1.0588	-0.2	4.38E+07	0.46	Y	1.06	78.6
ES 1234789-HpCDF	40.63	1.1057	1.1056	-0.2	3.82E+07	0.45	Y	0.88	82.6
ES OCDF	43.83	1.1926	1.1926	0	8.34E+07	0.92	Y	1.03	77

Lab ID: P2107_7660_001 | Acq'd: 05 Apr 2010 14:07 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Field Blank | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 115-583

Datafile: 100405P1-07 | Report: 06 Apr 2010 09:14 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	26.17		-	-	-	6.62E+07	0.83	Y	-	-
JS 1234-TCDF	24.48		-	-	-	1.03E+08	0.79	Y	-	-
JS 123467-HxCDD	36.75		-	-	-	2.63E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	26.87		1.0268	1.0268	0	2.71E+07	n/a	-	1.15	89.4
CS 12347-PeCDD	31.96		1.2209	1.2210	+0.2	5.23E+07	1.60	Y	0.83	95.2
CS 12346-PeCDF	30.43		1.2424	1.2430	+0.9	8.56E+07	1.60	Y	0.87	95.8
CS 123469-HxCDF	35.91		0.9773	0.9773	0	5.83E+07	0.53	Y	1.36	81.2
CS 1234689-HpCDF	39.39		1.0720	1.0719	-0.2	3.98E+07	0.45	Y	0.94	80.4
SS 37Cl-2378-TCDD	26.87		1.0268	1.0268	0	2.71E+07	n/a	-	1.14	97.5
SS 12347-PeCDD	31.96		1.2209	1.2210	+0.2	5.23E+07	1.60	Y	0.97	99.1
SS 12346-PeCDF	30.43		1.2424	1.2430	+0.9	8.56E+07	1.60	Y	1.00	98.3
SS 123469-HxCDF	35.91		0.9773	0.9773	0	5.83E+07	0.53	Y	0.88	98.7
SS 1234689-HpCDF	39.39		1.0720	1.0719	-0.2	3.98E+07	0.45	Y	0.89	102
AS 1368-TCDD	22.89		0.8731	0.8748	+2.7	5.97E+07	0.81	Y	1.08	83.2
AS 1368-TCDF	20.76		0.8447	0.8480	+4.8	1.15E+08	0.79	Y	1.27	87.9
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	31.31		0.9617	0.9643	+5.1	5.88E+04	+1.4	Y	1.00	0.108
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.23		0.9794	0.9792	-0.5	3.09E+05	1.10	Y	0.01	84.9
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 14 Apr 10

Totals	Conc	EMPC
Total TCDD	3.98	3.98
Total PeCDD	0	0
Total HxCDD	7.15	7.15
Total HpCDD	4.94	8.87
Total Tetra-Octa Dioxins	16.1	36.9
Total TCDF	0	0.965
Total PeCDF	0	0
Total HxCDF	4.2	6
Total HpCDF	4.27	4.27
Total Tetra-Octa Furans	8.46	11.2
Total Tetra-Octa Dioxins & Furans	24.5	48.1

Lab ID: P2107_7660_001 | Acq'd: 05 Apr 2010 14:07 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Field Blank | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 115-583

Datafile: 100405P1-07 | Report: 06 Apr 2010 09:14 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	22.94		0.8539	0.8543	+0.6	6.63E+04	0.83	Y	1.09	3.98	2337	1.51
1379-TCDD	NotFnd		0.8685						1.09		2337	1.51
1369-TCDD	NotFnd		0.8863						1.09		2337	1.51
1469-TCDD	NotFnd		0.9189						1.09		2337	1.51
1247/1246/1248/1249-TCDD	NotFnd		0.9276						1.09		2337	1.51
1378-TCDD	NotFnd		0.9351						1.09		2337	1.51
1268-TCDD	NotFnd		0.9430						1.09		2337	1.51
1478-TCDD	NotFnd		0.9517						1.09		2337	1.51
1279-TCDD	NotFnd		0.9598						1.09		2337	1.51
1234/1269-TCDD	NotFnd		0.9740						1.09		2337	1.51
1236-TCDD	NotFnd		0.9801						1.09		2337	1.51
1237/1238-TCDD	NotFnd		0.9895						1.09		2337	1.51
1239-TCDD	NotFnd		0.9952						1.09		2337	1.51
2378-TCDD	NotFnd		1.0008						1.09		2337	1.51
1278-TCDD	NotFnd		1.0138						1.09		2337	1.51
1267-TCDD	NotFnd		1.0194						1.09		2337	1.51
1289-TCDD	NotFnd		1.0396						1.09		2337	1.51
12479/12468-PeCDD	NotFnd		0.9210						1.02		2396	1.54
12469-PeCDD	NotFnd		0.9382						1.02		2396	1.54
12368-PeCDD	NotFnd		0.9556						1.02		2396	1.54
12478-PeCDD	NotFnd		0.9614						1.02		2396	1.54
12379-PeCDD	NotFnd		0.9649						1.02		2396	1.54
12369/12467/12489-PeCDD	NotFnd		0.9732						1.02		2396	1.54
12346/12347-PeCDD	NotFnd		0.9850						1.02		2396	1.54
12378-PeCDD	NotFnd		1.0006						1.02		2396	1.54
12367-PeCDD	NotFnd		1.0037						1.02		2396	1.54
12389-PeCDD	NotFnd		1.0146						1.02		2396	1.54
124679/124689-HxCDD	NotFnd		0.9534						1.03		2052	1.6
123468-HxCDD	35.43		0.9717	0.9721	+0.9	8.59E+04	1.30	Y	1.03	7.15	2052	1.6
123679/123689-HxCDD	NotFnd		0.9793						1.03		2052	1.6
123469-HxCDD	NotFnd		0.9833						1.03		2052	1.6
123478-HxCDD	NotFnd		1.0004						1.11		2052	1.56
123678-HxCDD	NotFnd		1.0034						1.02		2052	1.51
123467-HxCDD	NotFnd		1.0088						1.03		2052	1.6
123789-HxCDD	NotFnd		1.0116						0.95		2052	1.74

Lab ID: P2107_7660_001
Client ID: Field Blank
Datafile: 100405P1-07

Acq'd: 05 Apr 2010 14:07 MC
UTP: 06-Apr-2010 09:12 MC
Report: 06 Apr 2010 09:14 MC

Wt/Vol: 1
J-level: 10 pg
ES spike: 4000 pg

Cal: BCS3_7660_DF_PAB
Checkcode: 115-583
Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.23		0.9794	0.9793	-0.2	3.83E+04	0.84	N	1.00	3.94	2047	1.93
1234678-HpCDD	40.07		1.0003	1.0002	-0.2	4.80E+04	0.92	Y	1.00	4.94	2047	1.93
OCDD	43.60		1.0004	1.0003	-0.3	1.36E+05	1.11	N	1.06	16.8	2723	3.78
OCDD-a	NotFnd		1.0003						0.06		2884	65.4
1368-TCDF	NotFnd		0.8012						1.20		2344	0.878
1468-TCDF	NotFnd		0.8216						1.20		2344	0.878
2468-TCDF	NotFnd		0.8461						1.20		2344	0.878
1346/1246-TCDF	NotFnd		0.8607						1.20		2344	0.878
1347/1378/1247-TCDF	NotFnd		0.8672						1.20		2344	0.878
1348-TCDF	NotFnd		0.8792						1.20		2344	0.878
1248/1367/1379-TCDF	NotFnd		0.8846						1.20		2344	0.878
1268-TCDF	NotFnd		0.9011						1.20		2344	0.878
1467-TCDF	NotFnd		0.9067						1.20		2344	0.878
1478-TCDF	NotFnd		0.9137						1.20		2344	0.878
1369/1237-TCDF	NotFnd		0.9293						1.20		2344	0.878
2467-TCDF	NotFnd		0.9348						1.20		2344	0.878
2368-TCDF	NotFnd		0.9408						1.20		2344	0.878
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9445						1.20		2344	0.878
1278-TCDF	24.99		0.9641	0.9643	+0.3	2.81E+04	0.96	N	1.20	0.965	2344	0.878
1349-TCDF	NotFnd		0.9693						1.20		2344	0.878
1267-TCDF	NotFnd		0.9755						1.20		2344	0.878
2346/1249-TCDF	NotFnd		0.9834						1.20		2344	0.878
2347/1279-TCDF	NotFnd		0.9922						1.20		2344	0.878
2348-TCDF	NotFnd		0.9966						1.20		2344	0.878
2378-TCDF	NotFnd		1.0009						1.20		2344	0.878
2367/3467-TCDF	NotFnd		1.0164						1.20		2344	0.878
1269-TCDF	NotFnd		1.0260						1.20		2344	0.878
1239-TCDF	NotFnd		1.0375						1.20		2344	0.878
1289-TCDF	NotFnd		1.0834						1.20		2344	0.878
13468/12468-PeCDF	NotFnd		0.9057						1.07		2705	1.07
13678/13467/12467-PeCDF	NotFnd		0.9581						1.07		2210	0.872
12368/13478/12478-PeCDF	NotFnd		0.9620						1.07		2210	0.872
14678-PeCDF	NotFnd		0.9667						1.07		2210	0.872
13479-PeCDF	NotFnd		0.9702						1.07		2210	0.872
13469/12479-PeCDF	NotFnd		0.9781						1.07		2210	0.872
12346-PeCDF	NotFnd		0.9829						1.07		2210	0.872

Lab ID: P2107_7660_001 | Acq'd: 05 Apr 2010 14:07 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Field Blank | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 115-583

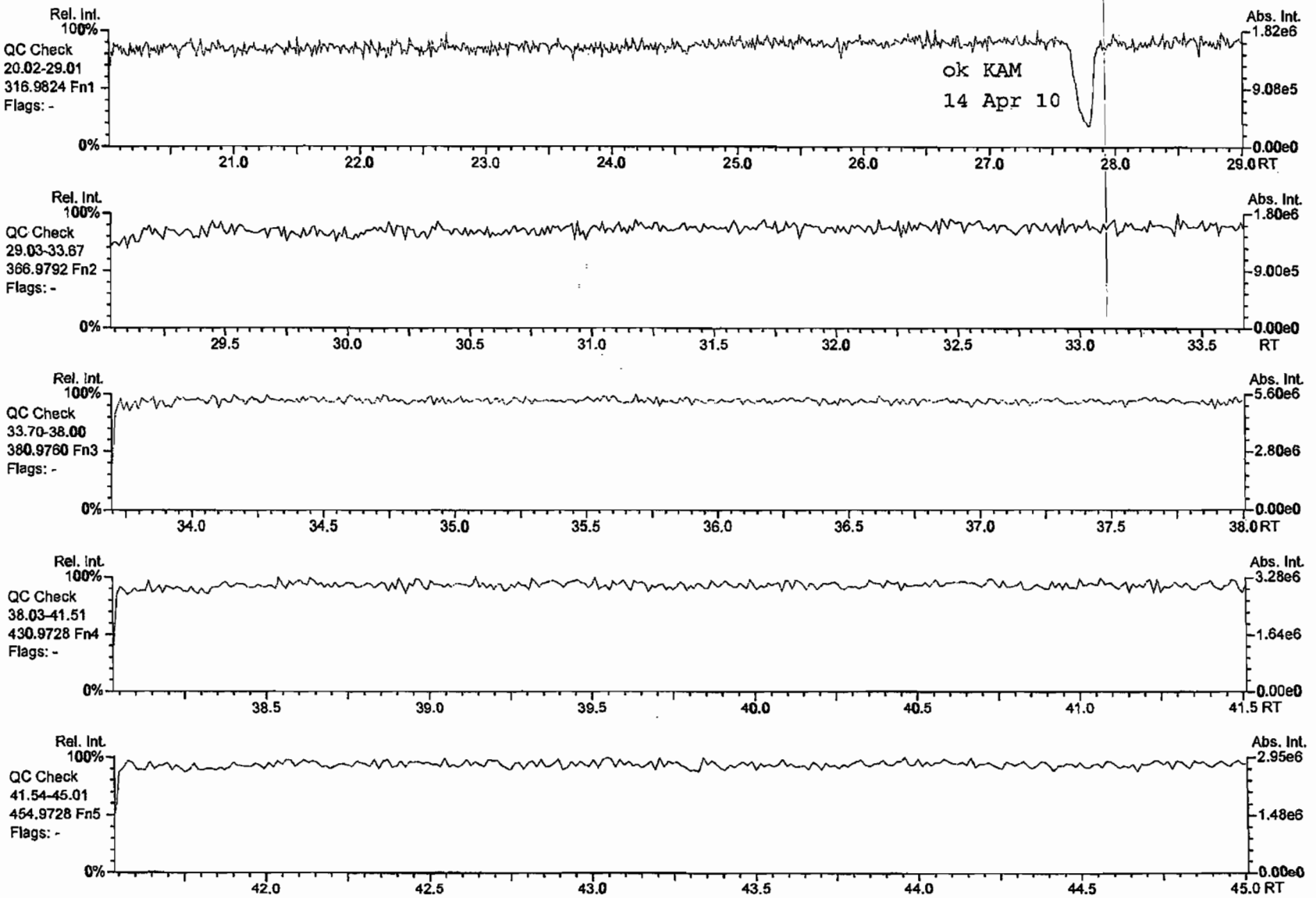
Datafile: 100405P1-07 | Report: 06 Apr 2010 09:14 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9858						1.07		2210	0.872
12347-PeCDF	NotFnd		0.9881						1.07		2210	0.872
12348-PeCDF	NotFnd		0.9936						1.07		2210	0.872
12378-PeCDF	NotFnd		1.0006						1.04		2210	0.912
12678/12367-PeCDF	NotFnd		1.0104						1.07		2210	0.872
12379-PeCDF	NotFnd		1.0151						1.07		2210	0.872
12679-PeCDF	NotFnd		0.9925						1.07		2210	0.872
23467/12369-PeCDF	NotFnd		0.9981						1.07		2210	0.872
23478-PeCDF	NotFnd		1.0005						1.10		2210	0.833
23478/12489-PeCDF	NotFnd		1.0006						1.10		2210	0.833
12489-PeCDF	NotFnd		1.0023						1.07		2210	0.872
12349-PeCDF	NotFnd		1.0110						1.07		2210	0.872
12389-PeCDF	NotFnd		1.0350						1.07		2210	0.872
123468-HxCDF	NotFnd		0.9609						1.17		2090	1.07
124678/134678-HxCDF	34.27		0.9668	0.9664	-0.9	3.28E+04	1.30	Y	1.17	1.84	2090	1.07
134679-HxCDF	NotFnd		0.9733						1.17		2090	1.07
124679-HxCDF	NotFnd		0.9788						1.17		2090	1.07
124689-HxCDF	NotFnd		0.9851						1.17		2090	1.07
123467-HxCDF	35.36		0.9968	0.9970	+0.4	1.55E+04	1.76	N	1.17	0.87	2090	1.07
123478-HxCDF	35.48		1.0004	1.0005	+0.2	1.96E+04	1.40	Y	1.18	1.14	2090	1.04
123678-HxCDF	35.62		1.0005	1.0005	0	2.43E+04	1.09	Y	1.18	1.22	2090	0.965
123479-HxCDF	NotFnd		1.0048						1.17		2090	1.07
123469-HxCDF	NotFnd		1.0090						1.17		2090	1.07
123679-HxCDF	NotFnd		0.9943						1.17		2090	1.07
234678-HxCDF	36.27		1.0005	1.0004	-0.2	1.79E+04	0.85	N	1.18	0.934	2090	0.989
234678/123689-HxCDF	NotFnd		1.0004						1.18		2090	0.989
123689-HxCDF	NotFnd		1.0009						1.17		2090	1.07
123789-HxCDF	NotFnd		1.0005						1.16		2090	1.32
123789/123489-HxCDF	NotFnd		1.0012						1.16		2090	1.32
123489-HxCDF	NotFnd		1.0017						1.17		2090	1.07
1234678-HpCDF	38.92		1.0003	1.0002	-0.2	3.63E+04	1.10	Y	1.41	2.35	2078	1.16
1234679-HpCDF	NotFnd		1.0083						1.39		2078	1.36
1234689-HpCDF	39.40		1.0132	1.0127	-1.2	2.73E+04	1.13	Y	1.39	1.92	2078	1.36
1234789-HpCDF	NotFnd		1.0003						1.37		2078	1.58
OCDF	NotFnd		1.0004						0.97		2529	2.91
OCDF-a	NotFnd		1.0002						0.06		3075	59.8

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07



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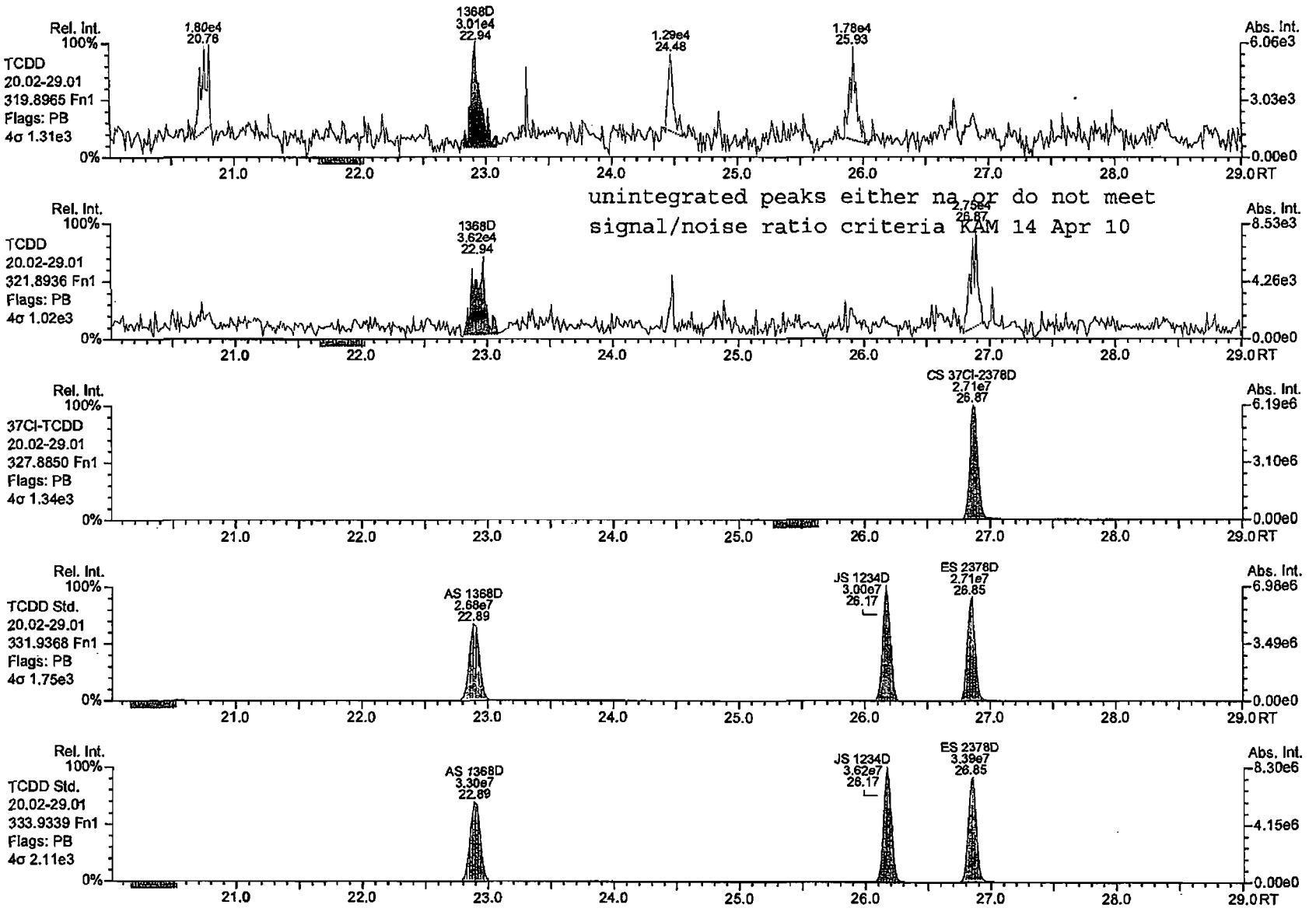
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 115-583

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:31:23 Page 1 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07



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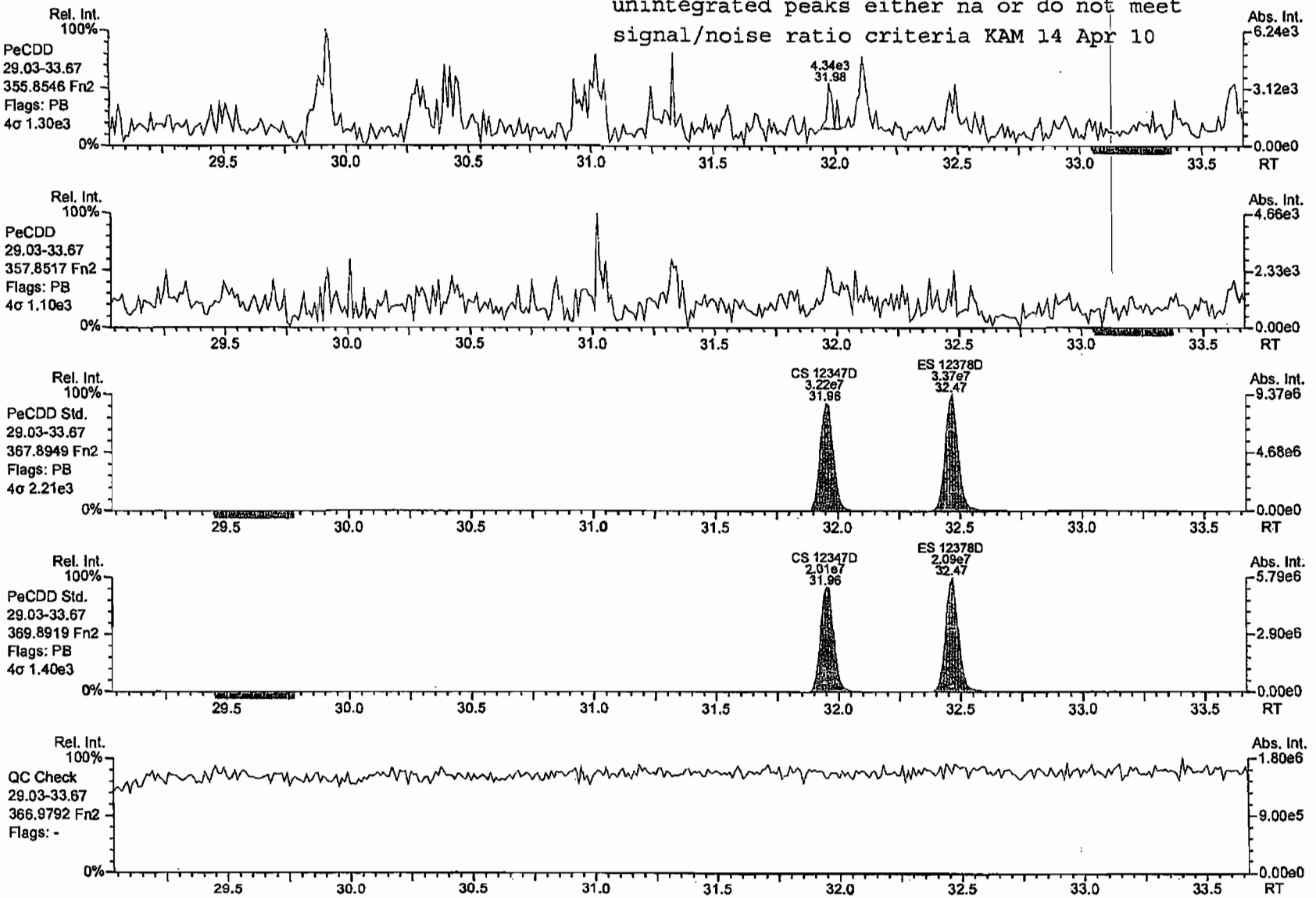
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2903, 0244, 7974 scc: 115-583

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:09:00 (MC) Printed: 06-Apr-2010 09:31:34 Page 2 of 12

AP Lab ID: P2107_7660_001 | Sample ID: Field Blank | Acq: 5-APR-2010 14:07:14
Instr: AutoSpec-Ultima MM1 | SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82 | User: MC Datafile: 100405P1-07

unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 14 Apr 10

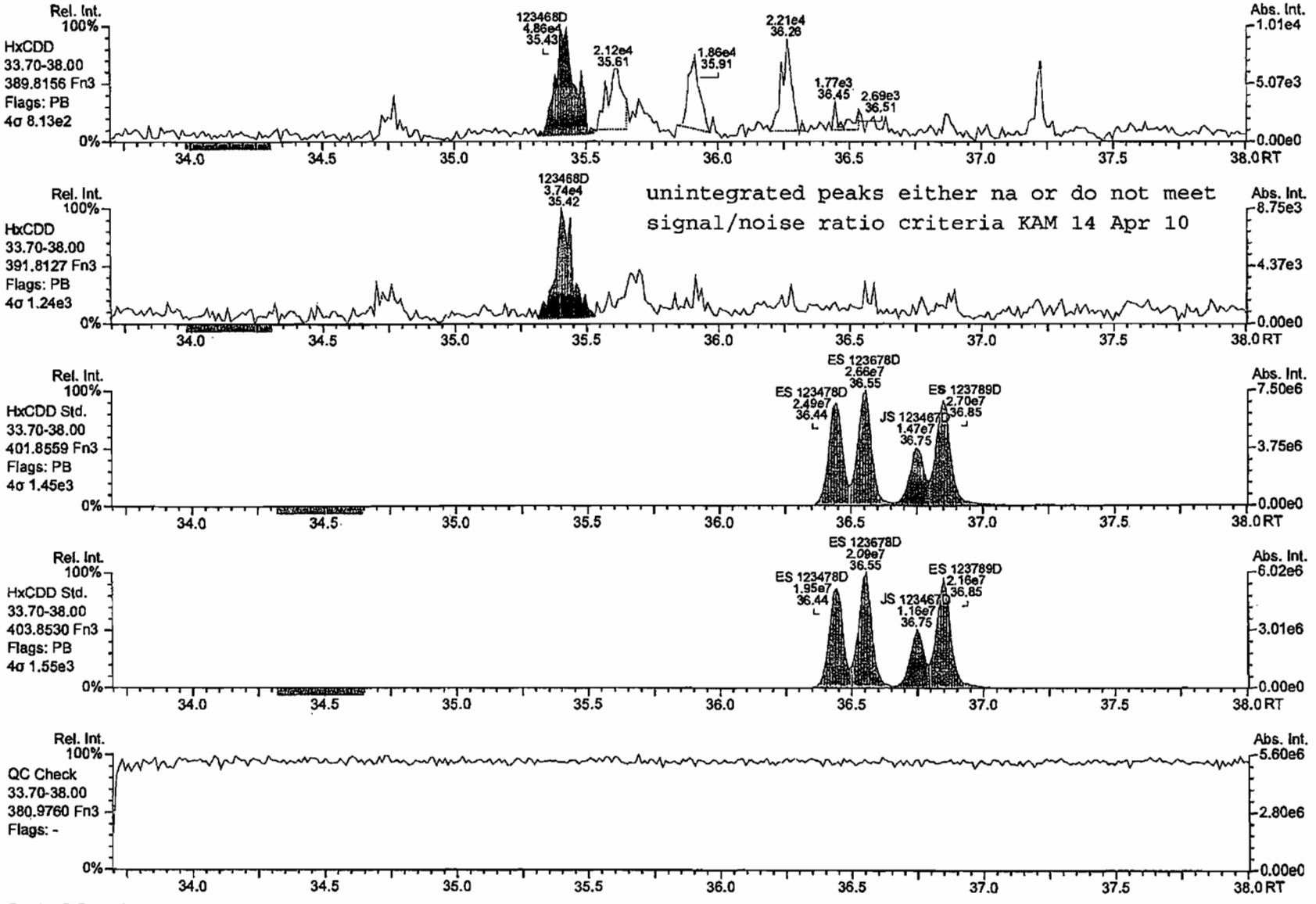


Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8218, 7617 scc: 115-583
Revised: 05-Apr-2010 16:10:41 (MC) Printed: 06-Apr-2010 09:31:41 Page 3 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC. Datafile: 100405P1-07



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AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7197, 2037 scc: 115-583

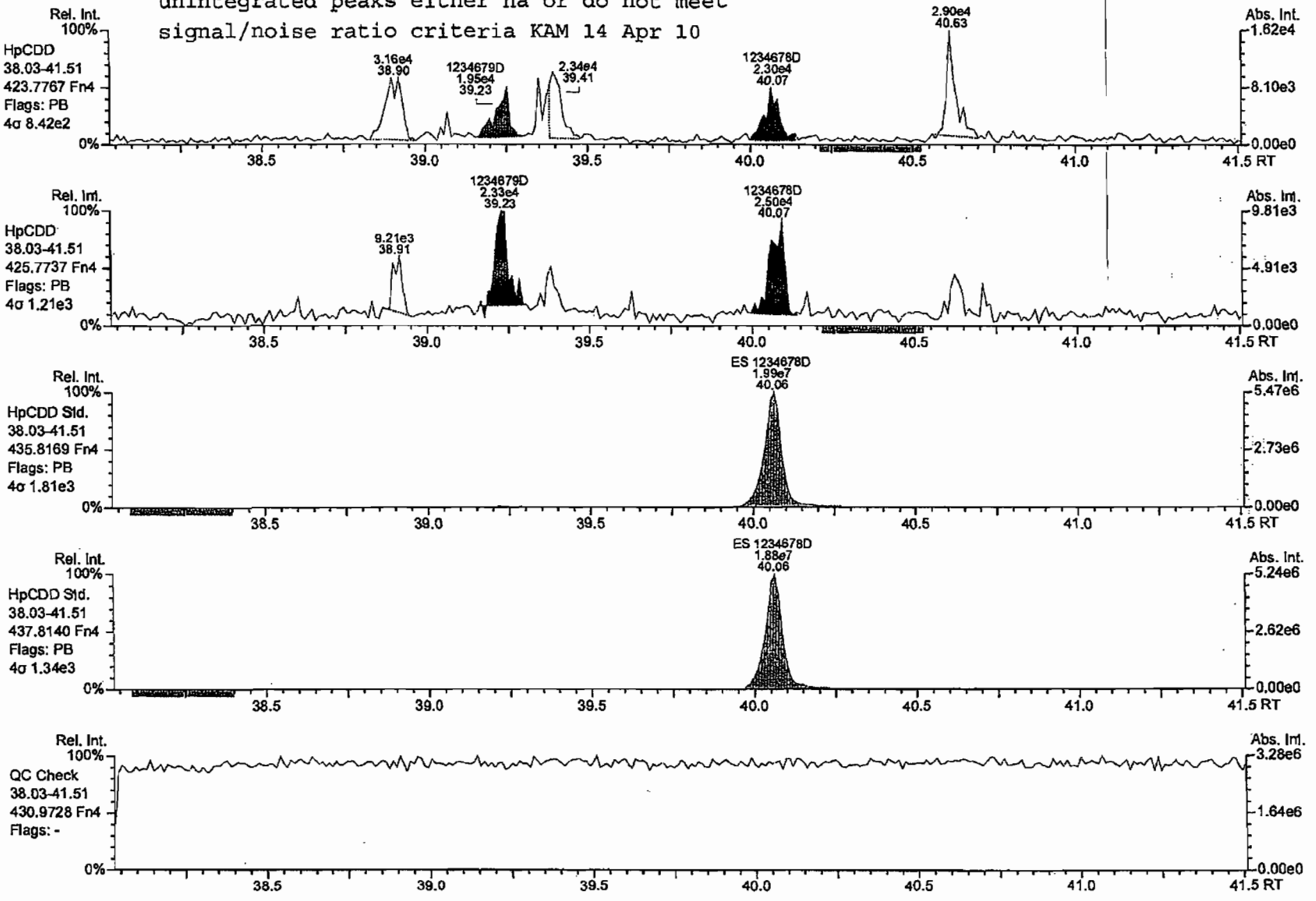
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:09:10 (MC) Printed: 06-Apr-2010 09:31:49 Page 4 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07

unintegrated peaks either na or do not meet
signal/noise ratio criteria KAM 14 Apr 10



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4080, 1053 scc: 115-583

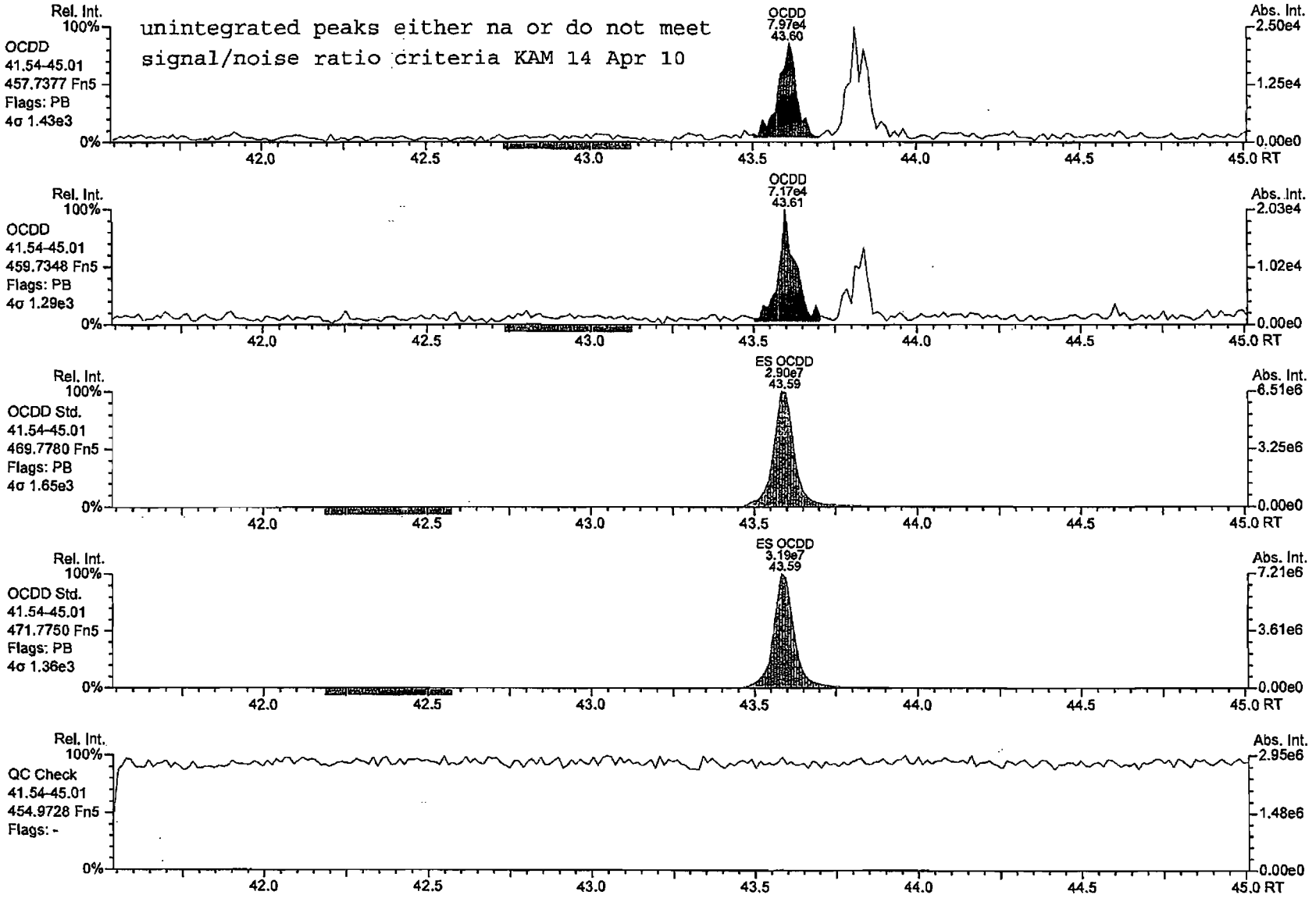
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:09:37 (MC) Printed: 06-Apr-2010 09:31:55 Page 5 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

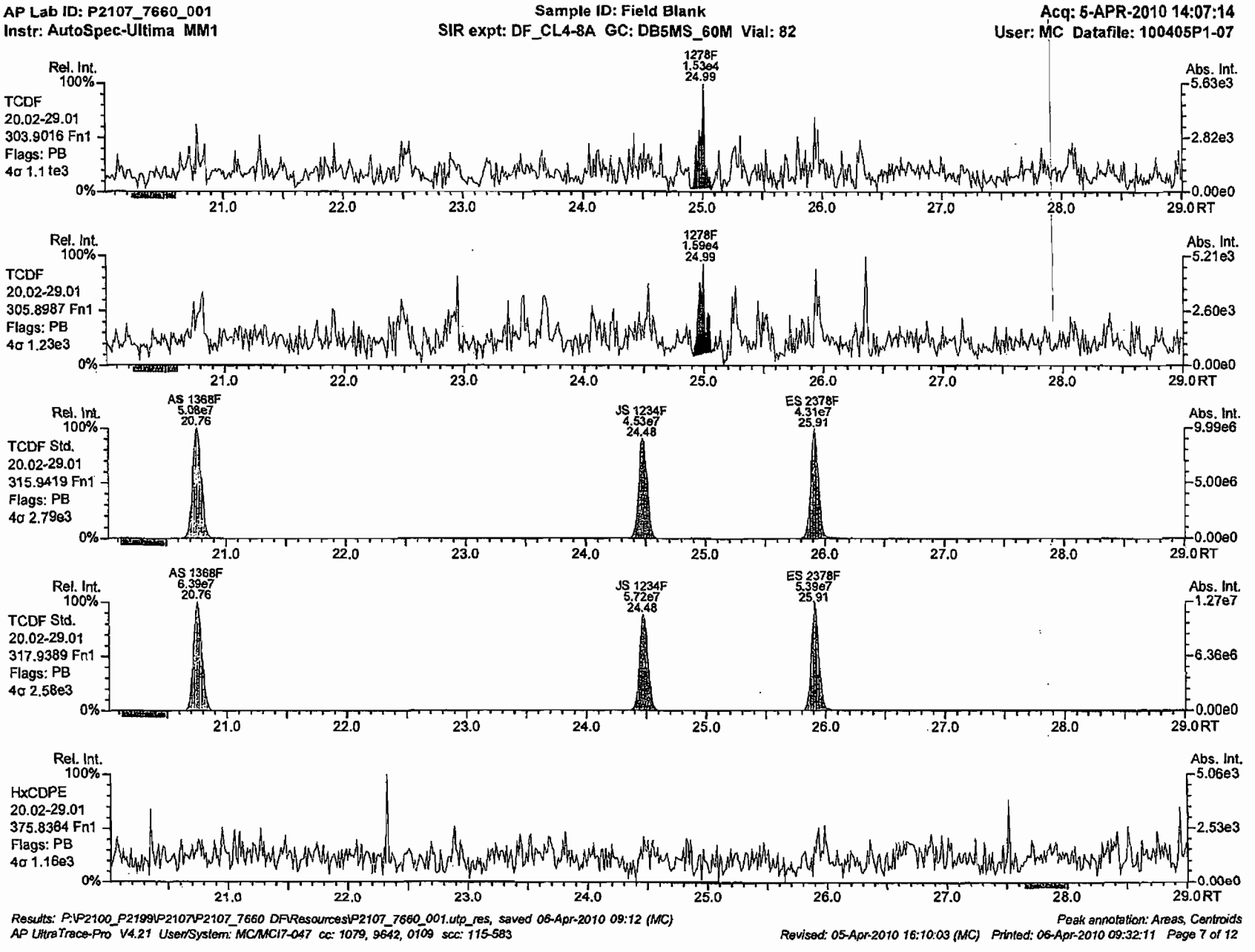
Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07

unintegrated peaks either na or do not meet signal/noise ratio criteria KAM 14 Apr 10



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5836, 9364 scc: 115-583

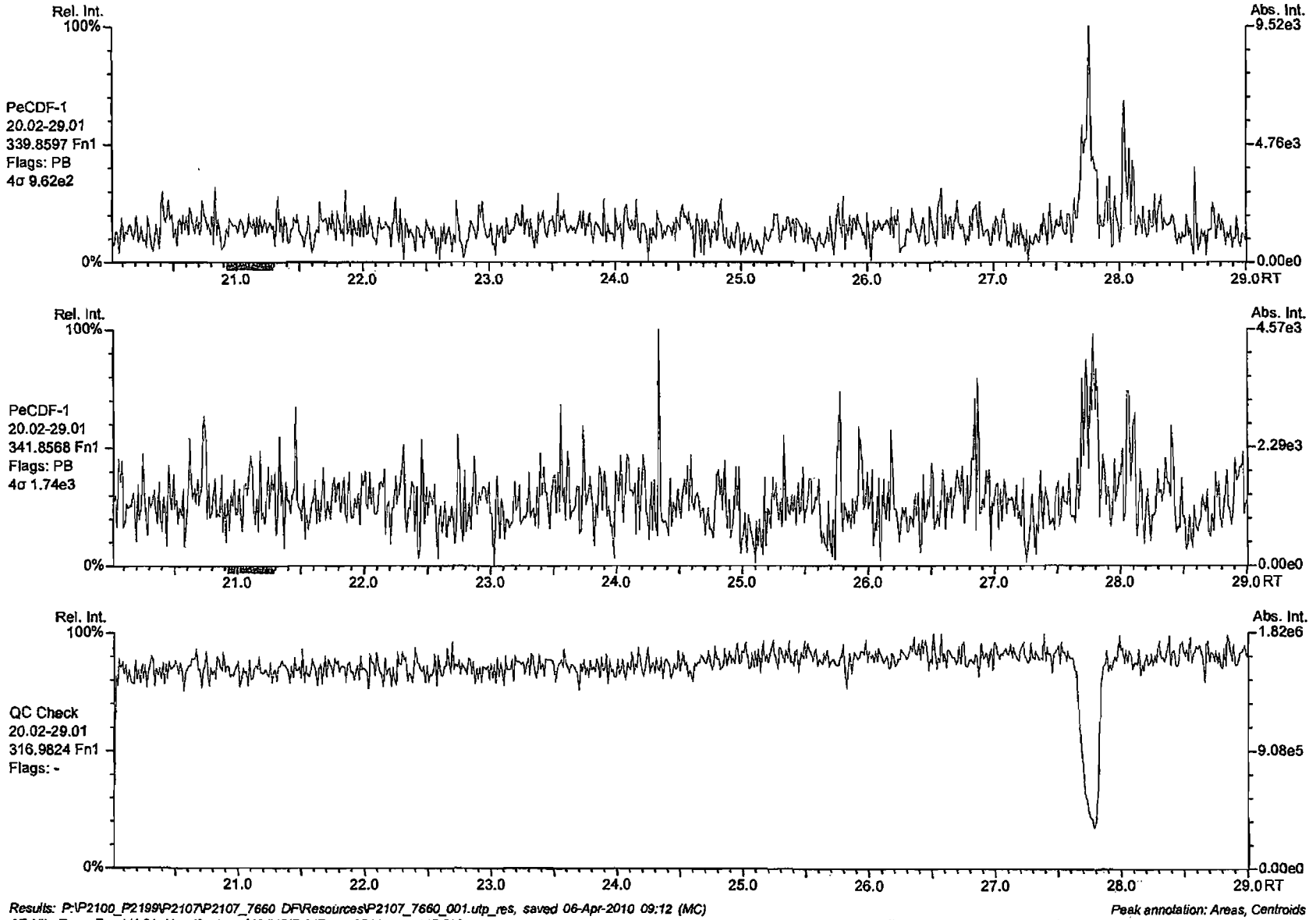
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:10:46 (MC) Printed: 06-Apr-2010 09:32:00 Page 6 of 12


AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1
Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82
Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07
Rel. Int.
Abs. Int.
TCDF
20.02-29.01
303.9016 Fn1
Flags: PB
4σ 1.1 te3
1278F
1.53e4
24.99
5.63e3
2.82e3
0.00e0
TCDF
20.02-29.01
305.8987 Fn1
Flags: PB
4σ 1.23e3
1278F
1.59e4
24.99
5.21e3
2.60e3
TCDF Std.
20.02-29.01
315.9419 Fn1
Flags: PB
4σ 2.79e3
AS 1368F
5.08e7
20.76
JS 1234F
4.53e7
24.48
ES 2378F
4.31e7
25.91
9.99e6
5.00e6
TCDF Std.
20.02-29.01
317.9389 Fn1
Flags: PB
4σ 2.58e3
AS 1368F
6.39e7
20.76
JS 1234F
5.72e7
24.48
ES 2378F
5.39e7
25.91
1.27e7
6.36e6
HxCDPE
20.02-29.01
375.8364 Fn1
Flags: PB
4σ 1.16e3
5.06e3
2.53e3
0%
100%
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1079, 9642, 0109 scc: 115-583
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:10:03 (MC) Printed: 06-Apr-2010 09:32:11 Page 7 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07



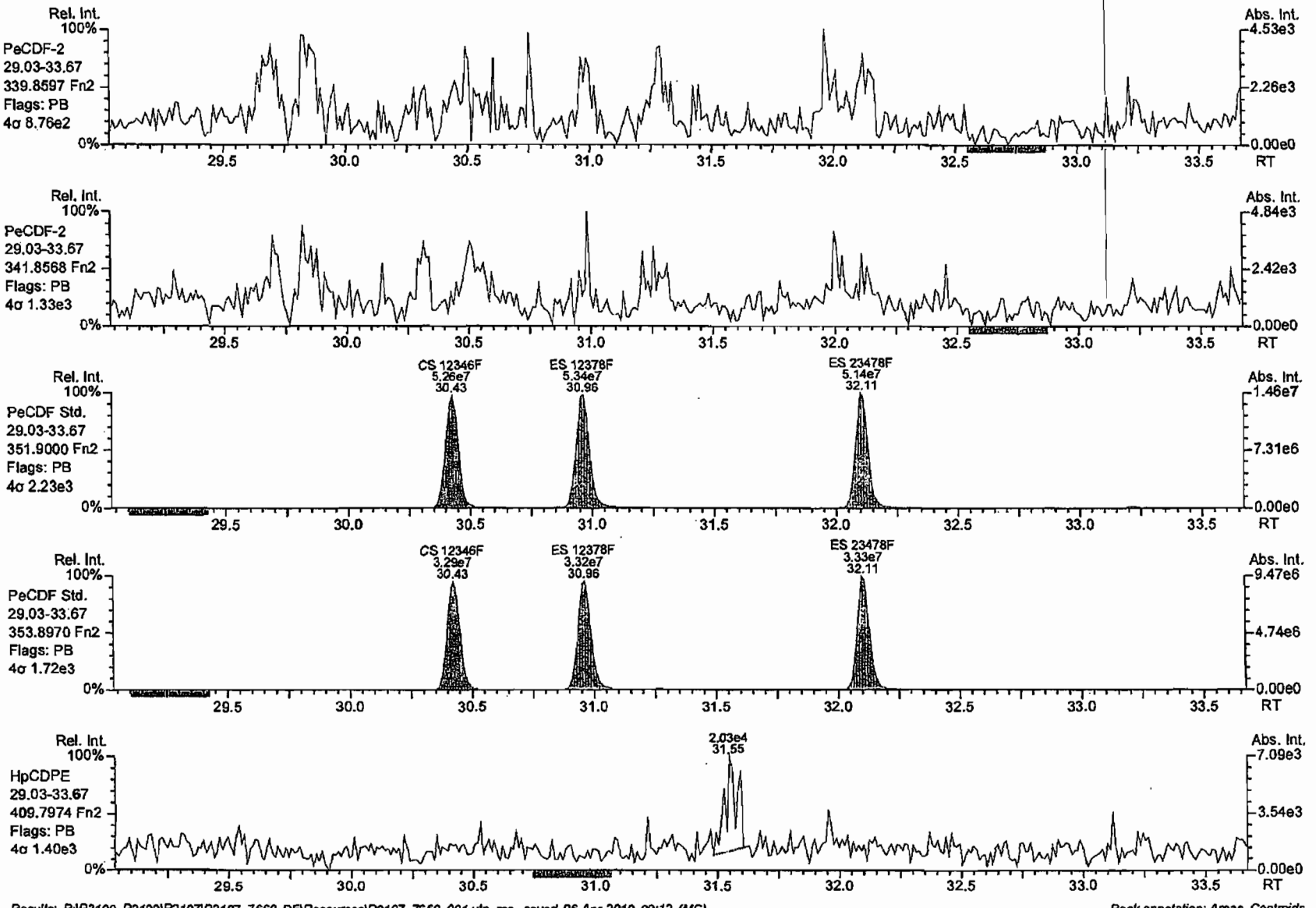
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8544 scc: 115-583

Peak annotation: Areas, Centroids
PKD: 05-Apr-2010 16:08:45 Printed: 06-Apr-2010 09:32:18 Page 8 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07



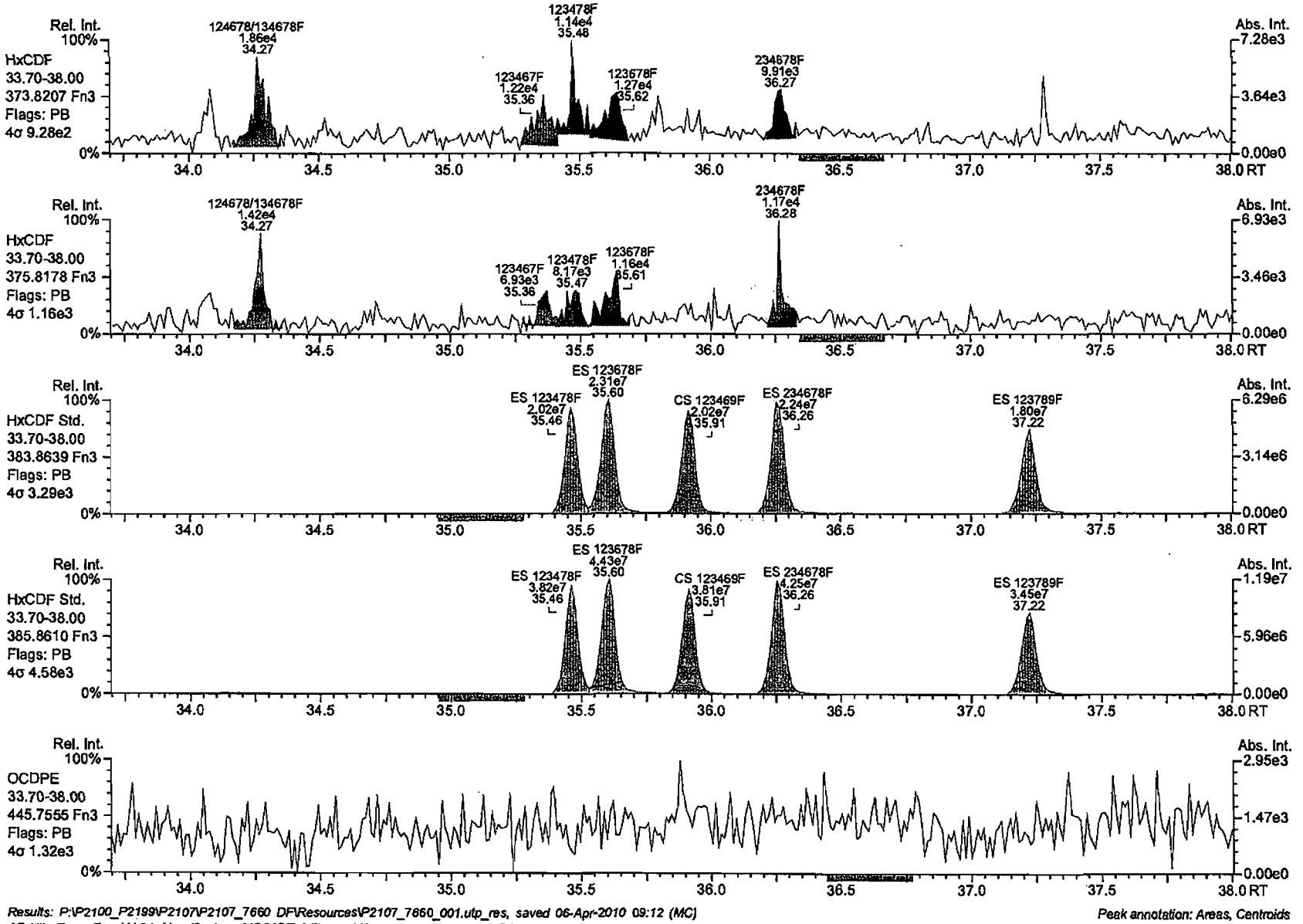
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1463, 6032, 4812 scc: 115-583

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:10:51 (MC) Printed: 06-Apr-2010 09:32:26 Page 9 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07



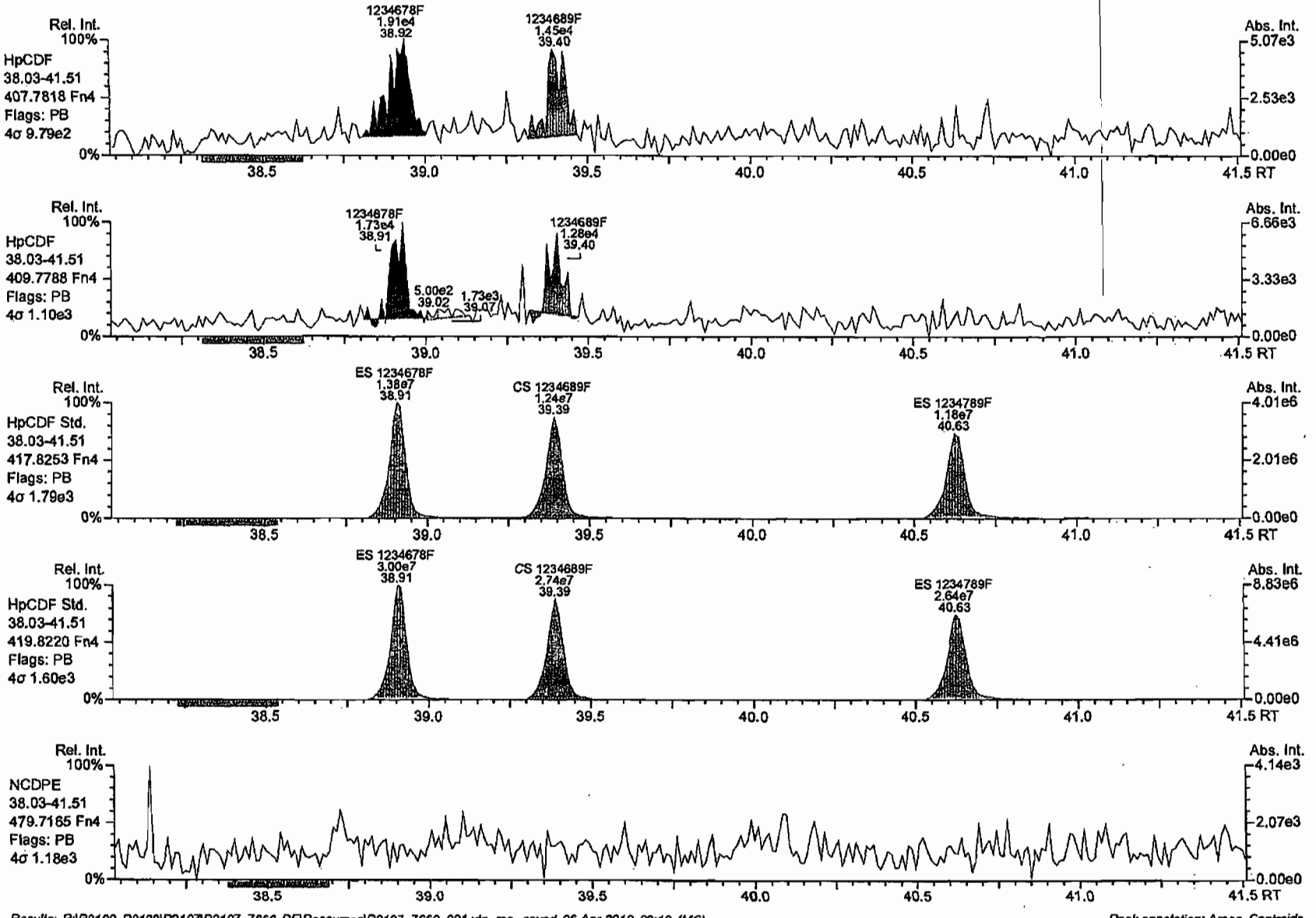
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4491, 2292, 4688 scc: 115-583

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:10:56 (MC) Printed: 06-Apr-2010 09:32:33 Page 10 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07



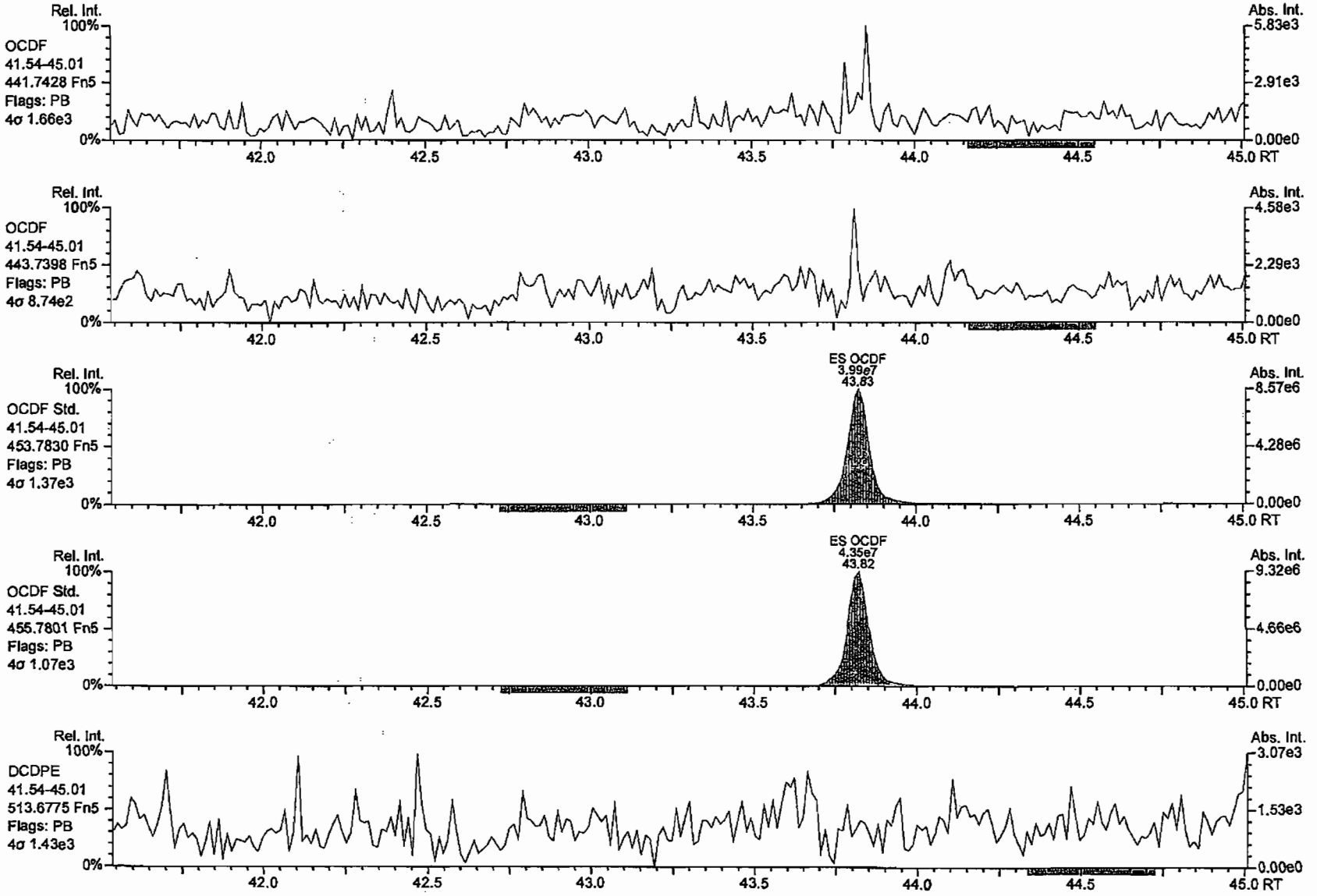
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCIT-047 cc: 4792, 3244, 7123 scc: 115-583

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:10:35 (MC) Printed: 06-Apr-2010 09:32:39 Page 11 of 12

AP Lab ID: P2107_7660_001
Instr: AutoSpec-Ultima MM1

Sample ID: Field Blank
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 82

Acq: 5-APR-2010 14:07:14
User: MC Datafile: 100405P1-07



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_001.ulp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6663, 3097, 1187 scc: 115-583

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 16:08:45 (MC) Printed: 06-Apr-2010 09:32:45 Page 12 of 12

Lab ID: P2107_7660_002 | Acq'd: 05 Apr 2010 14:57 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 1 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 189-309

Datafile: 100405P1-08 | Report: 06 Apr 2010 09:14 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	1.0007	-0.2	4.89E+04	1.07	N	1.09	4.93	2114	2.27
12378-PeCDD	32.50		1.0006	1.0005	-0.2	1.83E+05	1.55	Y	1.02	23.9	2474	2.86
123478-HxCDD	36.47		1.0004	1.0004	0	3.02E+05	1.16	Y	1.11	44.4	2156	2.76
123678-HxCDD	36.58		1.0034	1.0034	0	8.91E+05	1.27	Y	1.02	125	2156	2.89
123789-HxCDD	36.88		1.0116	1.0115	-0.2	3.37E+05	1.27	Y	0.95	47.6	2156	3.22
1234678-HpCDD	40.09		1.0003	1.0004	+0.2	4.90E+06	1.05	Y	1.00	849	2473	4.03
OCDD	43.63		1.0004	1.0004	0	5.60E+06	0.89	Y	1.06	1,180	2974	7.88
2378-TCDF	25.95		1.0009	1.0008	-0.2	2.53E+05	0.77	Y	1.20	14.3	2175	1.45
12378-PeCDF	31.00		1.0006	1.0006	0	3.01E+05	1.45	Y	1.04	22.7	4016	2.84
23478-PeCDF	32.15		1.0005	1.0008	+0.6	7.63E+05	1.42	Y	1.10	57	4016	2.75
123478-HxCDF	35.49		1.0004	1.0004	0	3.40E+05	1.29	Y	1.18	33.6	3303	2.96
123678-HxCDF	35.63		1.0005	1.0004	-0.2	4.58E+05	1.27	Y	1.18	39.3	3303	2.66
234678-HxCDF	36.29		1.0005	1.0004	-0.2	8.51E+05	1.21	Y	1.18	76.2	3303	2.84
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.16	-	3303	3.79
1234678-HpCDF	38.94		1.0003	1.0003	0	8.95E+05	1.15	Y	1.41	98.3	2232	2.28
1234789-HpCDF	40.66		1.0003	1.0004	+0.2	2.64E+05	1.17	Y	1.37	35.5	2232	3.23
OCDF	43.86		1.0004	1.0004	0	3.79E+05	1.00	Y	0.97	64.8	2537	5.38

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.87	1.0259	1.0259	0	3.64E+07	0.81	Y	1.01	88.9
ES 12378-PeCDD	32.49	1.2404	1.2404	0	2.99E+07	1.62	Y	0.86	85.6
ES 123478-HxCDD	36.46	0.9917	0.9917	0	2.45E+07	1.27	Y	0.99	85.3
ES 123678-HxCDD	36.57	0.9947	0.9947	0	2.80E+07	1.29	Y	1.13	85.7
ES 123789-HxCDD	36.87	1.0028	1.0028	0	2.98E+07	1.26	Y	1.13	90.8
ES 1234678-HpCDD	40.08	1.0902	1.0901	-0.2	2.30E+07	1.07	Y	0.91	87.2
ES OCDD	43.61	1.1862	1.1862	0	3.58E+07	0.91	Y	0.73	84.6
ES 2378-TCDF	25.93	1.0585	1.0586	+0.1	5.87E+07	0.80	Y	0.99	90.9
ES 12378-PeCDF	30.98	1.2646	1.2647	+0.1	5.08E+07	1.53	Y	0.87	90.1
ES 23478-PeCDF	32.12	1.3113	1.3114	+0.1	4.86E+07	1.55	Y	0.84	89.4
ES 123478-HxCDF	35.48	0.9651	0.9651	0	3.44E+07	0.53	Y	1.36	87.3
ES 123678-HxCDF	35.62	0.9689	0.9689	0	3.95E+07	0.53	Y	1.56	87.7
ES 234678-HxCDF	36.28	0.9867	0.9867	0	3.78E+07	0.53	Y	1.47	88.5
ES 123789-HxCDF	37.24	1.0129	1.0130	+0.2	3.05E+07	0.52	Y	1.27	82.9
ES 1234678-HpCDF	38.93	1.0589	1.0588	-0.2	2.59E+07	0.44	Y	1.06	84.4
ES 1234789-HpCDF	40.65	1.1057	1.1056	-0.2	2.18E+07	0.45	Y	0.88	85.7
ES OCDF	43.85	1.1926	1.1926	0	4.82E+07	0.90	Y	1.03	80.9

Lab ID: P2107_7660_002 | Acq'd: 05 Apr 2010 14:57 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 1 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 189-309

Datafile: 100405P1-08 | Report: 06 Apr 2010 09:14 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		-	-	-	4.07E+07	0.82	Y	-	-
JS 1234-TCDF	24.50		-	-	-	6.49E+07	0.79	Y	-	-
JS 123467-HxCDD	36.76		-	-	-	1.45E+07	1.25	Y	-	-
CS 37C1-2378-TCDD	26.89		1.0268	1.0268	0	1.64E+07	n/a	-	1.15	88.1
CS 12347-PeCDD	31.98		1.2209	1.2209	0	3.00E+07	1.59	Y	0.83	89
CS 12346-PeCDF	30.44		1.2424	1.2428	+0.6	5.06E+07	1.57	Y	0.87	89.5
CS 123469-HxCDF	35.93		0.9773	0.9773	0	3.45E+07	0.53	Y	1.36	87.4
CS 1234689-HpCDF	39.41		1.0720	1.0720	0	2.33E+07	0.44	Y	0.94	85.6
SS 37C1-2378-TCDD	26.89		1.0268	1.0268	0	1.64E+07	n/a	-	1.14	99
SS 12347-PeCDD	31.98		1.2209	1.2209	0	3.00E+07	1.59	Y	0.97	104
SS 12346-PeCDF	30.44		1.2424	1.2428	+0.6	5.06E+07	1.57	Y	1.00	99.3
SS 123469-HxCDF	35.93		0.9773	0.9773	0	3.45E+07	0.53	Y	0.88	99.6
SS 1234689-HpCDF	39.41		1.0720	1.0720	0	2.33E+07	0.44	Y	0.89	101
AS 1368-TCDD	22.91		0.8731	0.8748	+2.7	4.06E+07	0.81	Y	1.08	92
AS 1368-TCDF	20.78		0.8447	0.8482	+5.1	7.66E+07	0.78	Y	1.27	92.6
FS 1278-TCDD	NotFnd		1.0131							
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.25		0.9794	0.9793	-0.2	1.61E+05	0.97	Y	0.01	74.2
TS 1378-TCDD	NotFnd		0.9345							

FS & TS na
KAM 14 Apr 10

Totals	Conc	EMPC
Total TCDD	1510	1520
Total PeCDD	1860	1860
Total HxCDD	3360	3360
Total HpCDD	1740	1740
Total Tetra-Octa Dioxins	9660	9670
Total TCDF	830	856
Total PeCDF	698	698
Total HxCDF	534	541
Total HpCDF	284	284
Total Tetra-Octa Furans	2410	2440
Total Tetra-Octa Dioxins & Furans	12100	12100

Lab ID: P2107_7660_002 | Acq'd: 05 Apr 2010 14:57 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 1 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 189-309

Datafile: 100405P1-08 | Report: 06 Apr 2010 09:14 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	22.94		0.8539	0.8539	0	1.24E+07	0.78	Y	1.09	1250	2114	2.27
1379-TCDD	23.34		0.8685	0.8688	+0.5	9.96E+05	0.87	Y	1.09	100	2114	2.27
1369-TCDD	23.81		0.8863	0.8861	-0.3	1.77E+05	0.82	Y	1.09	17.8	2114	2.27
1469-TCDD	NotFnd		0.9189						1.09		2114	2.27
1247/1246/1248/1249-TCDD	24.93		0.9276	0.9277	+0.2	3.45E+05	0.74	Y	1.09	34.7	2114	2.27
1378-TCDD	25.13		0.9351	0.9353	+0.3	3.12E+05	0.87	Y	1.09	31.4	2114	2.27
1268-TCDD	25.33		0.9430	0.9429	-0.2	1.20E+05	0.71	Y	1.09	12.1	2114	2.27
1478-TCDD	NotFnd		0.9517						1.09		2114	2.27
1279-TCDD	25.79		0.9598	0.9600	+0.3	1.01E+05	0.76	Y	1.09	10.1	2114	2.27
1234/1269-TCDD	26.21		0.9740	0.9755	+2.4	3.33E+05	0.83	Y	1.09	33.6	2114	2.27
1236-TCDD	NotFnd		0.9801						1.09		2114	2.27
1237/1238-TCDD	26.58		0.9895	0.9895	0	2.44E+05	0.76	Y	1.09	24.6	2114	2.27
1239-TCDD	NotFnd		0.9952						1.09		2114	2.27
2378-TCDD	**26.89**		**1.0008**	**1.0007**	**-0.2**	**4.89E+04**	**1.07**	**N**	**1.09**	**4.93**	**2114**	**2.27**
1278-TCDD	27.24		1.0138	1.0138	0	3.54E+04	0.90	N	1.09	3.57	2114	2.27
1267-TCDD	NotFnd		1.0194						1.09		2114	2.27
1289-TCDD	NotFnd		1.0396						1.09		2114	2.27
12479/12468-PeCDD	29.94		0.9210	0.9215	+1.0	6.20E+06	1.57	Y	1.02	810	2474	2.86
12469-PeCDD	30.48		0.9382	0.9382	0	9.60E+04	1.57	Y	1.02	12.5	2474	2.86
12368-PeCDD	31.05		0.9556	0.9556	0	5.08E+06	1.58	Y	1.02	664	2474	2.86
12478-PeCDD	31.24		0.9614	0.9615	+0.2	1.82E+05	1.34	Y	1.02	23.8	2474	2.86
12379-PeCDD	31.35		0.9649	0.9650	+0.2	1.54E+06	1.51	Y	1.02	201	2474	2.86
12369/12467/12489-PeCDD	31.61		0.9732	0.9729	-0.6	2.14E+05	1.53	Y	1.02	28	2474	2.86
12346/12347-PeCDD	32.00		0.9850	0.9849	-0.2	6.44E+05	1.73	Y	1.02	84.1	2474	2.86
12378-PeCDD	**32.50**		**1.0006**	**1.0005**	**-0.2**	**1.83E+05**	**1.55**	**Y**	**1.02**	**23.9**	**2474**	**2.86**
12367-PeCDD	32.60		1.0037	1.0035	-0.4	6.79E+04	1.45	Y	1.02	8.87	2474	2.86
12389-PeCDD	32.96		1.0146	1.0146	0	6.38E+04	1.45	Y	1.02	8.34	2474	2.86
124679/124689-HxCDD	34.77		0.9534	0.9535	+0.2	1.26E+06	1.18	Y	1.03	178	2156	2.94
123468-HxCDD	35.42		0.9717	0.9716	-0.2	1.82E+07	1.25	Y	1.03	2,580	2156	2.94
123679/123689-HxCDD	35.72		0.9793	0.9797	+0.9	2.55E+06	1.27	Y	1.03	362	2156	2.94
123469-HxCDD	NotFnd		0.9833						1.03		2156	2.94
123478-HxCDD	**36.47**		**1.0004**	**1.0004**	**0**	**3.02E+05**	**1.16**	**Y**	**1.11**	**44.4**	**2156**	**2.76**
123678-HxCDD	**36.58**		**1.0034**	**1.0034**	**0**	**8.91E+05**	**1.27**	**Y**	**1.02**	**125**	**2156**	**2.89**
123467-HxCDD	36.78		1.0088	1.0088	0	1.63E+05	1.11	Y	1.03	23.1	2156	2.94
123789-HxCDD	**36.88**		**1.0116**	**1.0115**	**-0.2**	**3.37E+05**	**1.27**	**Y**	**0.95**	**47.6**	**2156**	**3.22**

Lab ID: P2107_7660_002 | Acq'd: 05 Apr 2010 14:57 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 1 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 189-309

Datafile: 100405P1-08 | Report: 06 Apr 2010 09:14 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	39.25		0.9794	0.9795	+0.2	5.14E+06	1.06	Y	1.00	890	2473	4.03
1234678-HpCDD	40.09		1.0003	1.0004	+0.2	4.90E+06	1.05	Y	1.00	849	2473	4.03
OCDD	43.63		1.0004	1.0004	0	5.60E+06	0.89	Y	1.06	1,180	2974	7.88
OCDD-a	43.62		1.0003	1.0003	0	3.21E+05	1.90	N	0.06	1,110	2922	127
1368-TCDF	20.81		0.8012	0.8023	+1.7	8.42E+05	0.83	Y	1.20	47.8	2175	1.45
1468-TCDF	21.34		0.8216	0.8228	+1.9	3.07E+05	0.76	Y	1.20	17.4	2175	1.45
2468-TCDF	21.95		0.8461	0.8464	+0.5	9.31E+05	0.75	Y	1.20	52.8	2175	1.45
1346/1246-TCDF	22.37		0.8607	0.8628	+3.3	3.84E+05	0.88	Y	1.20	21.8	2175	1.45
1347/1378/1247-TCDF	22.52		0.8672	0.8685	+2.0	1.30E+06	0.78	Y	1.20	73.5	2175	1.45
1348-TCDF	22.81		0.8792	0.8797	+0.8	3.11E+05	0.72	Y	1.20	17.6	2175	1.45
1248/1367/1379-TCDF	22.94		0.8846	0.8848	+0.3	7.84E+05	0.81	Y	1.20	44.4	2175	1.45
1268-TCDF	23.38		0.9011	0.9014	+0.5	3.96E+05	0.84	Y	1.20	22.4	2175	1.45
1467-TCDF	23.53		0.9067	0.9073	+0.9	1.79E+05	0.94	N	1.20	10.1	2175	1.45
1478-TCDF	23.70		0.9137	0.9138	+0.2	3.31E+05	0.72	Y	1.20	18.8	2175	1.45
1369/1237-TCDF	24.10		0.9293	0.9295	+0.3	2.88E+05	0.94	N	1.20	16.3	2175	1.45
2467-TCDF	24.25		0.9348	0.9352	+0.6	1.10E+06	0.82	Y	1.20	62.1	2175	1.45
2368-TCDF	24.40		0.9408	0.9408	0	7.80E+05	0.81	Y	1.20	44.3	2175	1.45
1238/1234/1678/1469/1236-TCDF	24.52		0.9445	0.9455	+1.6	3.22E+06	0.76	Y	1.20	183	2175	1.45
1278-TCDF	25.01		0.9641	0.9644	+0.5	3.76E+05	0.83	Y	1.20	21.3	2175	1.45
1349-TCDF	25.12		0.9693	0.9687	-0.9	1.40E+05	0.72	Y	1.20	7.96	2175	1.45
1267-TCDF	25.30		0.9755	0.9756	+0.2	2.54E+05	0.82	Y	1.20	14.4	2175	1.45
2346/1249-TCDF	25.52		0.9834	0.9840	+0.9	6.37E+05	0.75	Y	1.20	36.1	2175	1.45
2347/1279-TCDF	25.73		0.9922	0.9921	-0.2	7.51E+05	0.80	Y	1.20	42.6	2175	1.45
2348-TCDF	25.84		0.9966	0.9964	-0.3	4.31E+05	0.71	Y	1.20	24.5	2175	1.45
2378-TCDF	25.95		1.0009	1.0008	-0.2	2.53E+05	0.77	Y	1.20	14.3	2175	1.45
2367/3467-TCDF	26.35		1.0164	1.0162	-0.3	7.34E+05	0.76	Y	1.20	41.6	2175	1.45
1269-TCDF	26.62		1.0260	1.0266	+0.9	8.28E+04	0.71	Y	1.20	4.69	2175	1.45
1239-TCDF	26.90		1.0375	1.0372	-0.5	1.25E+05	0.72	Y	1.20	7.11	2175	1.45
1289-TCDF	28.11		1.0834	1.0840	+0.9	1.74E+05	0.82	Y	1.20	9.89	2175	1.45
13468/12468-PeCDF	28.10		0.9057	0.9069	+2.2	1.25E+06	1.73	Y	1.07	94.1	2614	1.82
13678/13467/12467-PeCDF	29.70		0.9581	0.9588	+1.3	1.03E+06	1.56	Y	1.07	76.9	4016	2.79
12368/13478/12478-PeCDF	29.85		0.9620	0.9634	+2.6	1.34E+06	1.57	Y	1.07	100	4016	2.79
14678-PeCDF	29.96		0.9667	0.9669	+0.4	2.33E+05	1.66	Y	1.07	17.5	4016	2.79
13479-PeCDF	30.06		0.9702	0.9702	0	1.55E+05	1.43	Y	1.07	11.7	4016	2.79
13469/12479-PeCDF	30.32		0.9781	0.9785	+0.7	3.16E+05	1.35	Y	1.07	23.8	4016	2.79
12346-PeCDF	30.46		0.9829	0.9832	+0.6	2.52E+05	1.63	Y	1.07	18.9	4016	2.79

Lab ID: P2107_7660_002 | Acq'd: 06 Apr 2010 14:57 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 1 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 189-309

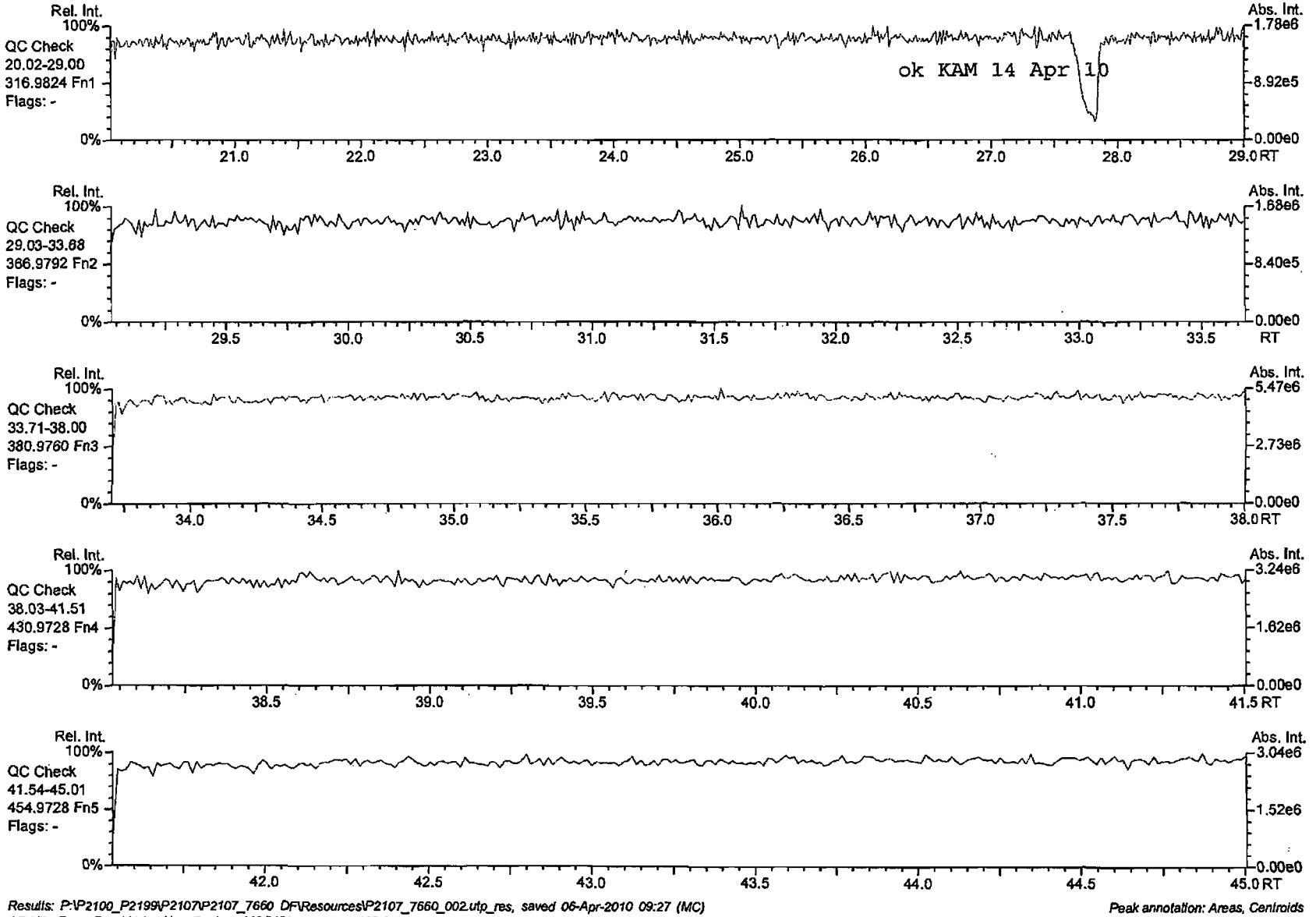
Datafile: 100405P1-08 | Report: 06 Apr 2010 09:14 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.54		0.9858	0.9857	-0.2	1.35E+06	1.44	Y	1.07	101	4016	2.79
12347-PeCDF	30.62		0.9881	0.9884	+0.6	3.93E+05	1.46	Y	1.07	29.5	4016	2.79
12348-PeCDF	30.79		0.9936	0.9936	0	2.93E+05	1.46	Y	1.07	22	4016	2.79
12378-PeCDF	31.00		1.0006	1.0006	0	3.01E+05	1.45	Y	1.04	22.7	4016	2.84
12678/12367-PeCDF	31.30		1.0104	1.0103	-0.2	5.26E+05	1.40	Y	1.07	39.5	4016	2.79
12379-PeCDF	NotFnd		1.0151						1.07		4016	2.79
12679-PeCDF	31.89		0.9925	0.9926	+0.2	1.10E+05	1.56	Y	1.07	8.25	4016	2.79
23467/12369-PeCDF	32.02		0.9981	0.9968	-2.5	7.60E+05	1.51	Y	1.07	57.1	4016	2.79
23478-PeCDF	32.15		1.0005	1.0008	+0.6	7.63E+05	1.42	Y	1.10	57	4016	2.75
23478/12489-PeCDF	NotFnd		1.0006						1.10		4016	2.75
12489-PeCDF	NotFnd		1.0023						1.07		4016	2.79
12349-PeCDF	32.48		1.0110	1.0111	+0.2	1.31E+05	1.72	Y	1.07	9.84	4016	2.79
12389-PeCDF	33.25		1.0350	1.0351	+0.2	1.03E+05	1.33	Y	1.07	7.74	4016	2.79
123468-HxCDF	34.09		0.9609	0.9609	0	7.34E+05	1.29	Y	1.17	70.3	3303	3.02
124678/134678-HxCDF	34.30		0.9668	0.9667	-0.2	1.33E+06	1.23	Y	1.17	128	3303	3.02
134679-HxCDF	34.53		0.9733	0.9733	0	1.79E+05	1.20	Y	1.17	17.2	3303	3.02
124679-HxCDF	34.73		0.9788	0.9788	0	4.76E+05	1.23	Y	1.17	45.6	3303	3.02
124689-HxCDF	34.95		0.9851	0.9851	0	3.27E+05	1.16	Y	1.17	31.3	3303	3.02
123467-HxCDF	35.38		0.9968	0.9971	+0.6	3.68E+05	1.16	Y	1.17	35.3	3303	3.02
123478-HxCDF	35.49		1.0004	1.0004	0	3.40E+05	1.29	Y	1.18	33.6	3303	2.96
123678-HxCDF	35.63		1.0005	1.0004	-0.2	4.58E+05	1.27	Y	1.18	39.3	3303	2.66
123479-HxCDF	35.79		1.0048	1.0047	-0.2	2.06E+05	1.30	Y	1.17	19.7	3303	3.02
123469-HxCDF	35.95		1.0090	1.0091	+0.2	7.12E+04	0.94	N	1.17	6.82	3303	3.02
123679-HxCDF	36.07		0.9943	0.9942	-0.2	1.89E+05	1.18	Y	1.17	18.1	3303	3.02
234678-HxCDF	36.29		1.0005	1.0004	-0.2	8.51E+05	1.21	Y	1.18	76.2	3303	2.84
234678/123689-HxCDF	NotFnd		1.0004						1.18		3303	2.84
123689-HxCDF	NotFnd		1.0009						1.17		3303	3.02
123789-HxCDF	NotFnd		1.0005						1.16		3303	3.79
123789/123489-HxCDF	37.29		1.0012	1.0013	+0.2	1.78E+05	1.26	Y	1.16	20.1	3303	3.79
123489-HxCDF	NotFnd		1.0017						1.17		3303	3.02
1234678-HpCDF	38.94		1.0003	1.0003	0	8.95E+05	1.15	Y	1.41	98.3	2232	2.28
1234679-HpCDF	39.25		1.0083	1.0084	+0.2	5.60E+05	1.11	Y	1.39	67.7	2232	2.71
1234689-HpCDF	39.42		1.0132	1.0127	-1.2	6.80E+05	1.15	Y	1.39	82.3	2232	2.71
1234789-HpCDF	40.66		1.0003	1.0004	+0.2	2.64E+05	1.17	Y	1.37	35.5	2232	3.23
OCDF	43.86		1.0004	1.0004	0	3.79E+05	1.00	Y	0.97	64.8	2537	5.38
OCDF-a	NotFnd		1.0002						0.06		2963	106

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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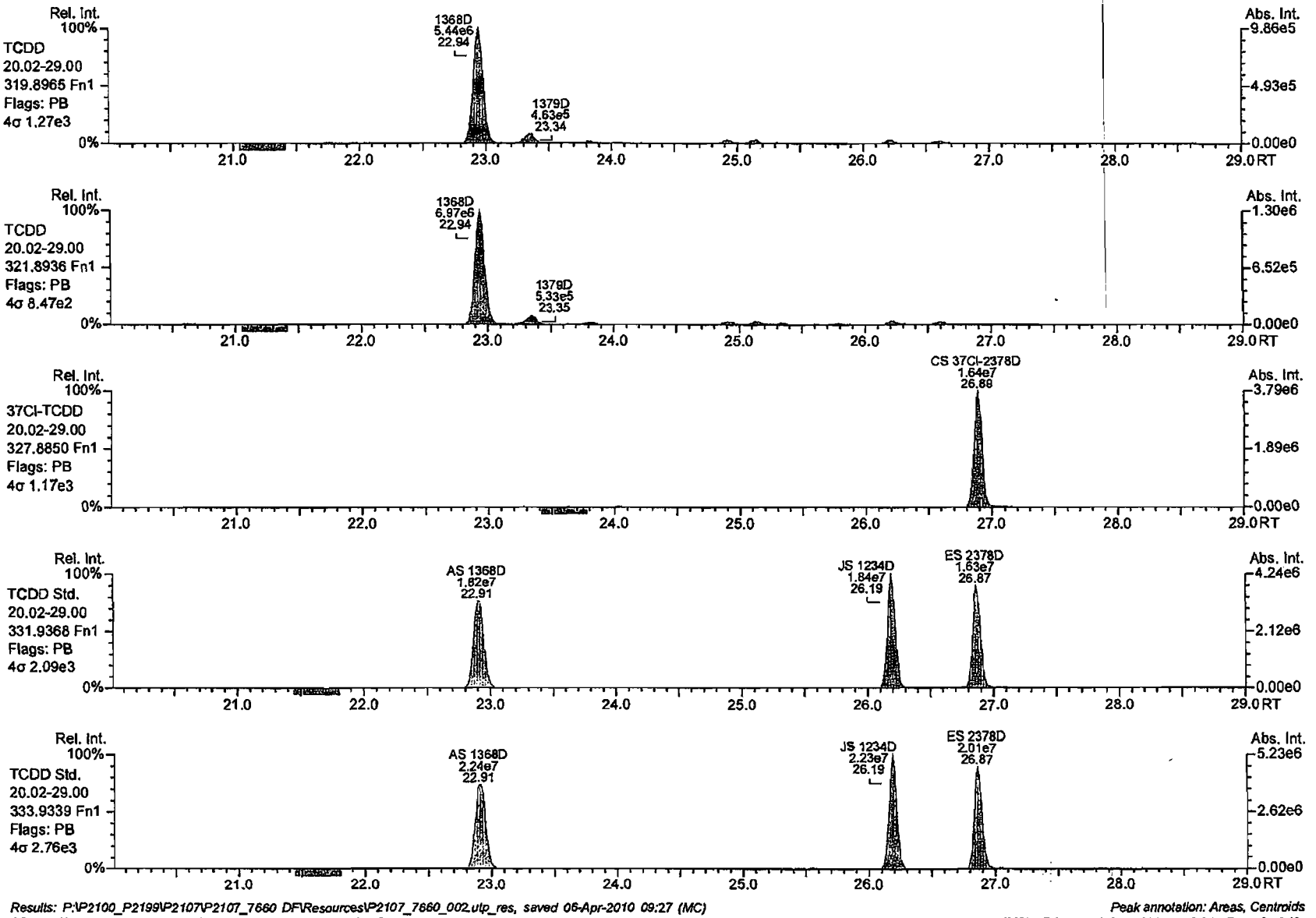
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 189-309

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:32:52 Page 1 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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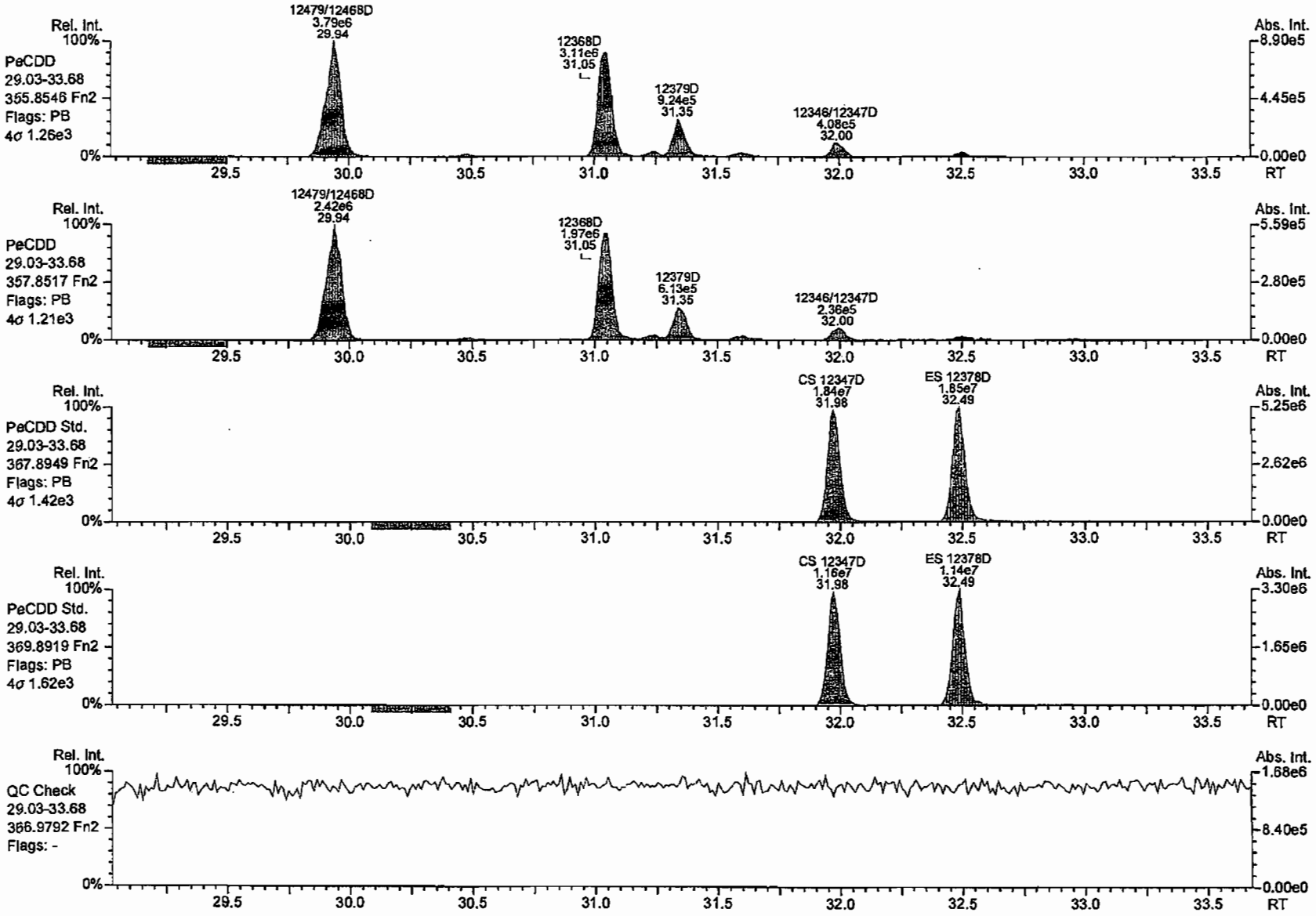
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8295, 1455, 1714 scc: 189-309

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:00:04 (MC) Printed: 06-Apr-2010 09:33:04 Page 2 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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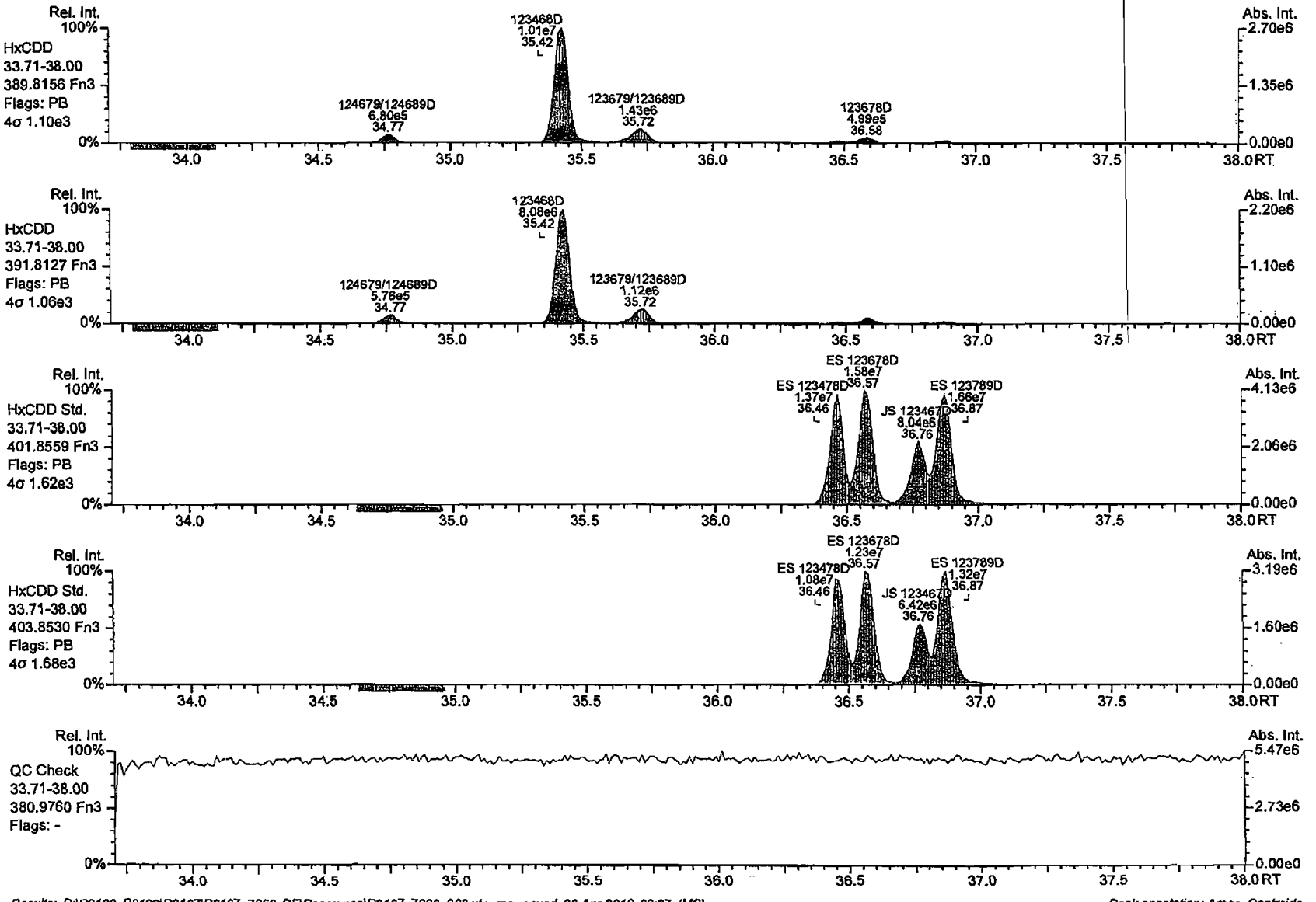
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4399, 9432 scc: 189-309

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:00:25 (MC) Printed: 06-Apr-2010 09:33:12 Page 3 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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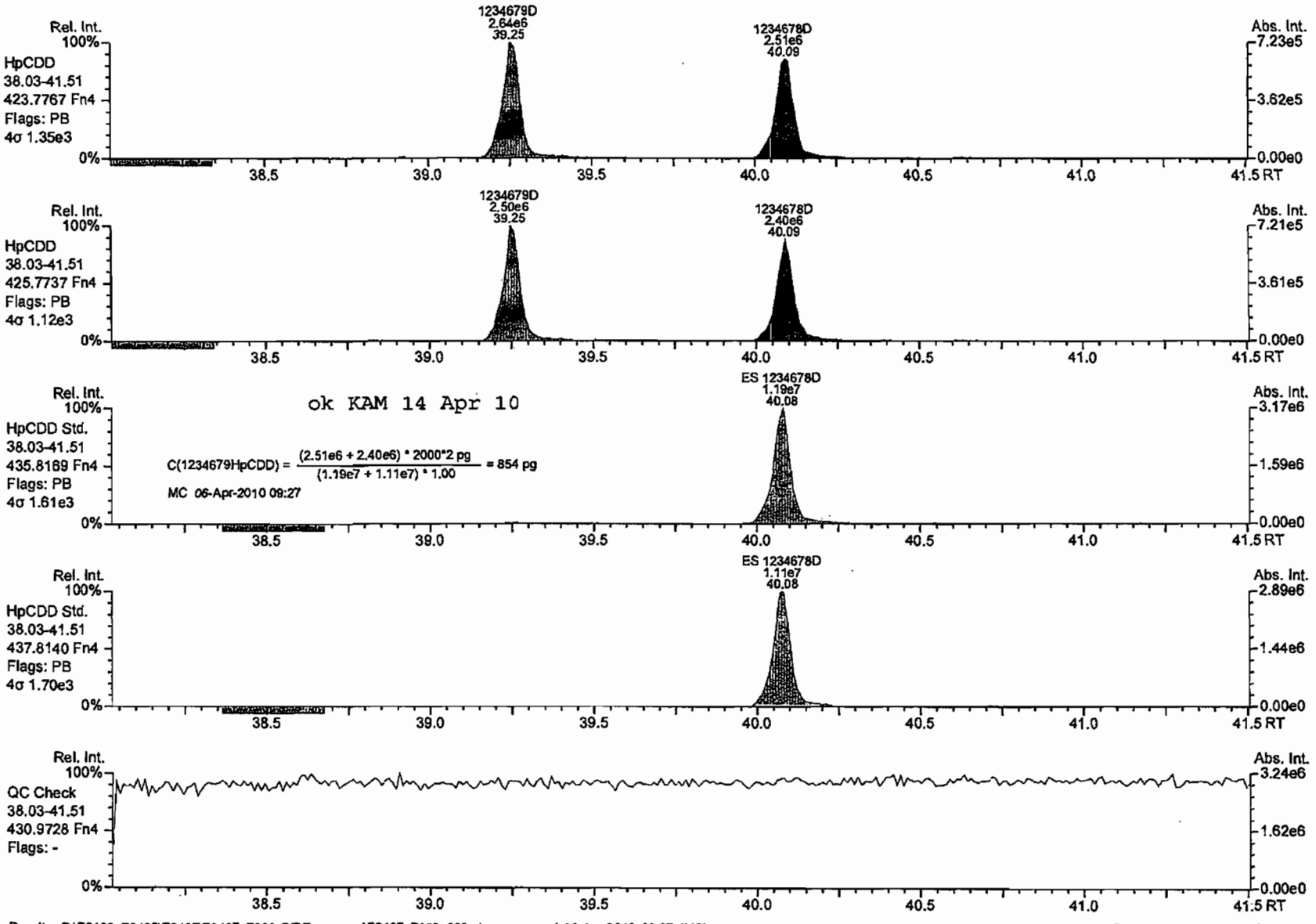
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:00:38 (MC) Printed: 06-Apr-2010 09:33:19 Page 4 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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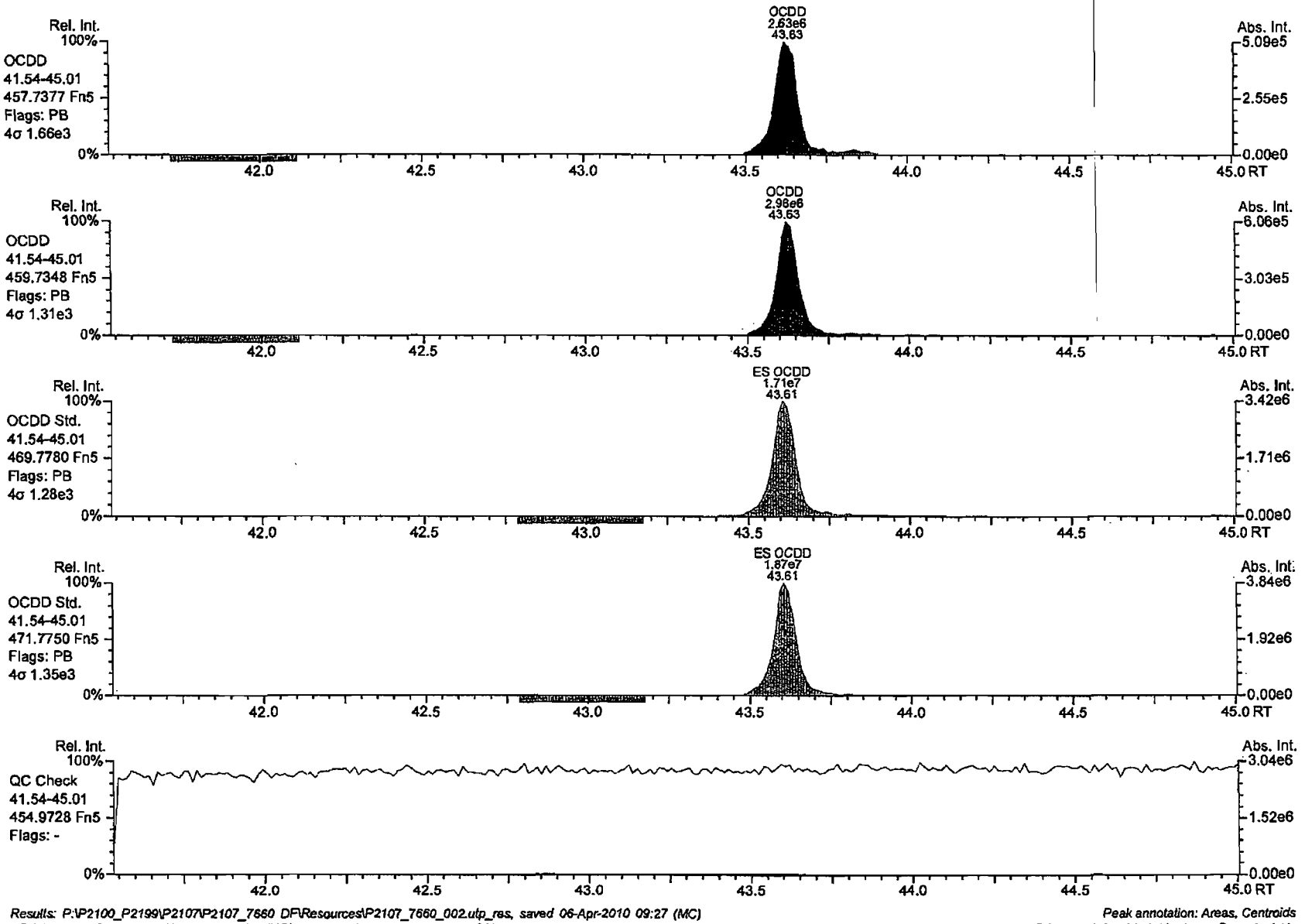
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5370, 6126 scc: 189-309

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 08:59:21 (MC) Printed: 06-Apr-2010 09:33:25 Page 5 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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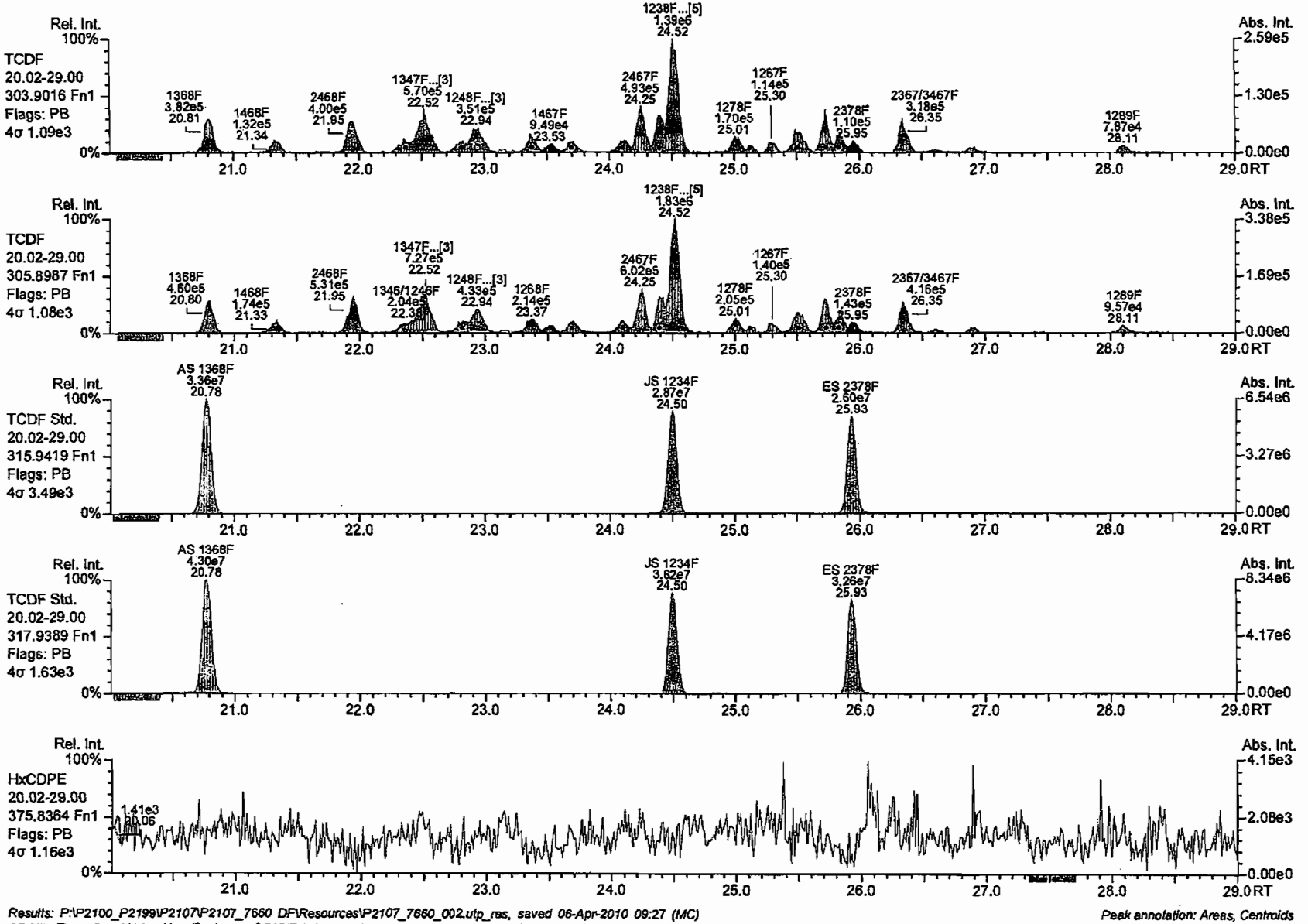
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6858, 9582 scc: 189-309

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 08:59:21 (MC) Printed: 06-Apr-2010 09:33:30 Page 6 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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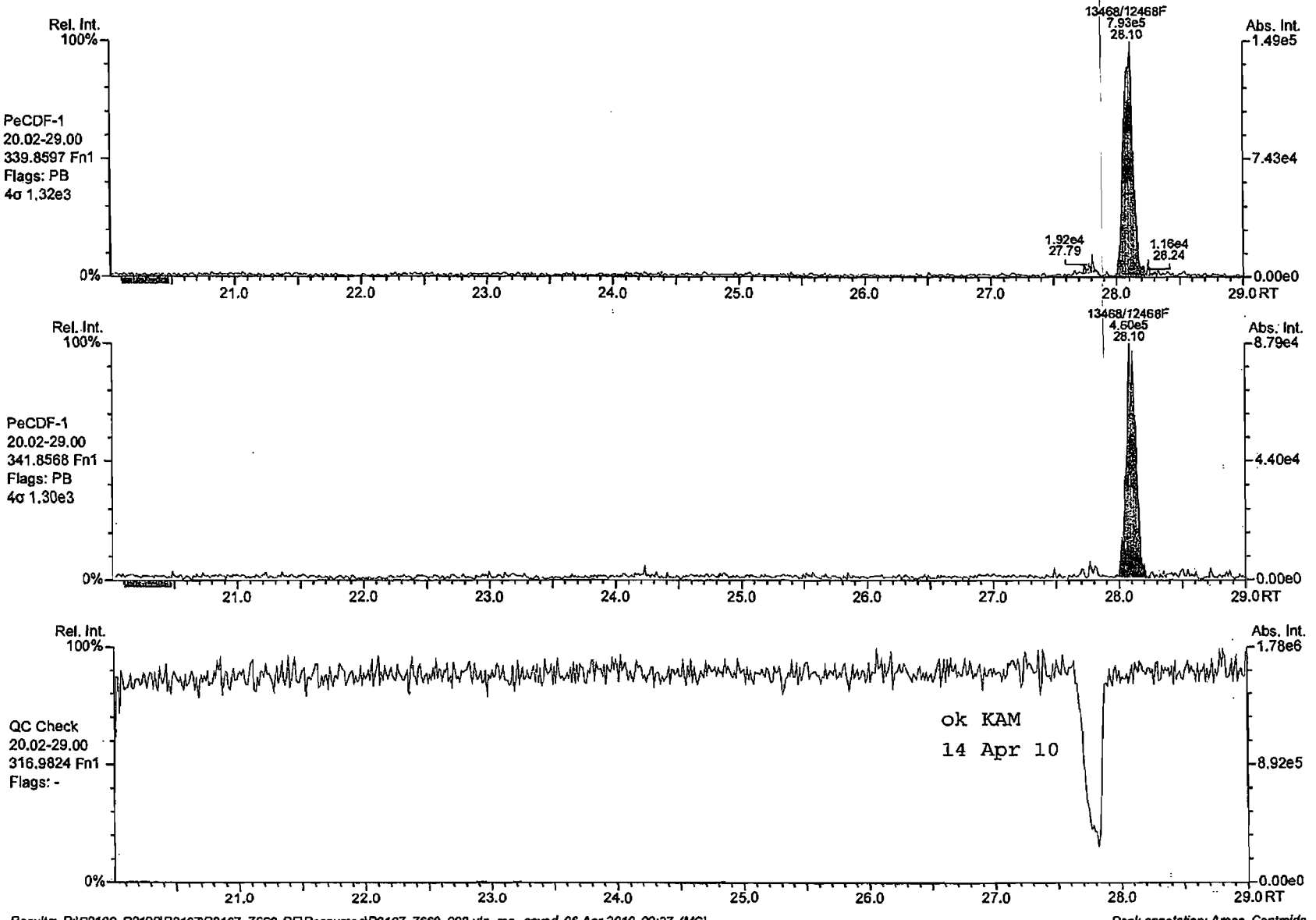
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6117, 6634, 9117 scc: 189-309

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:01:19 (MC) Printed: 06-Apr-2010 09:33:42 Page 7 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



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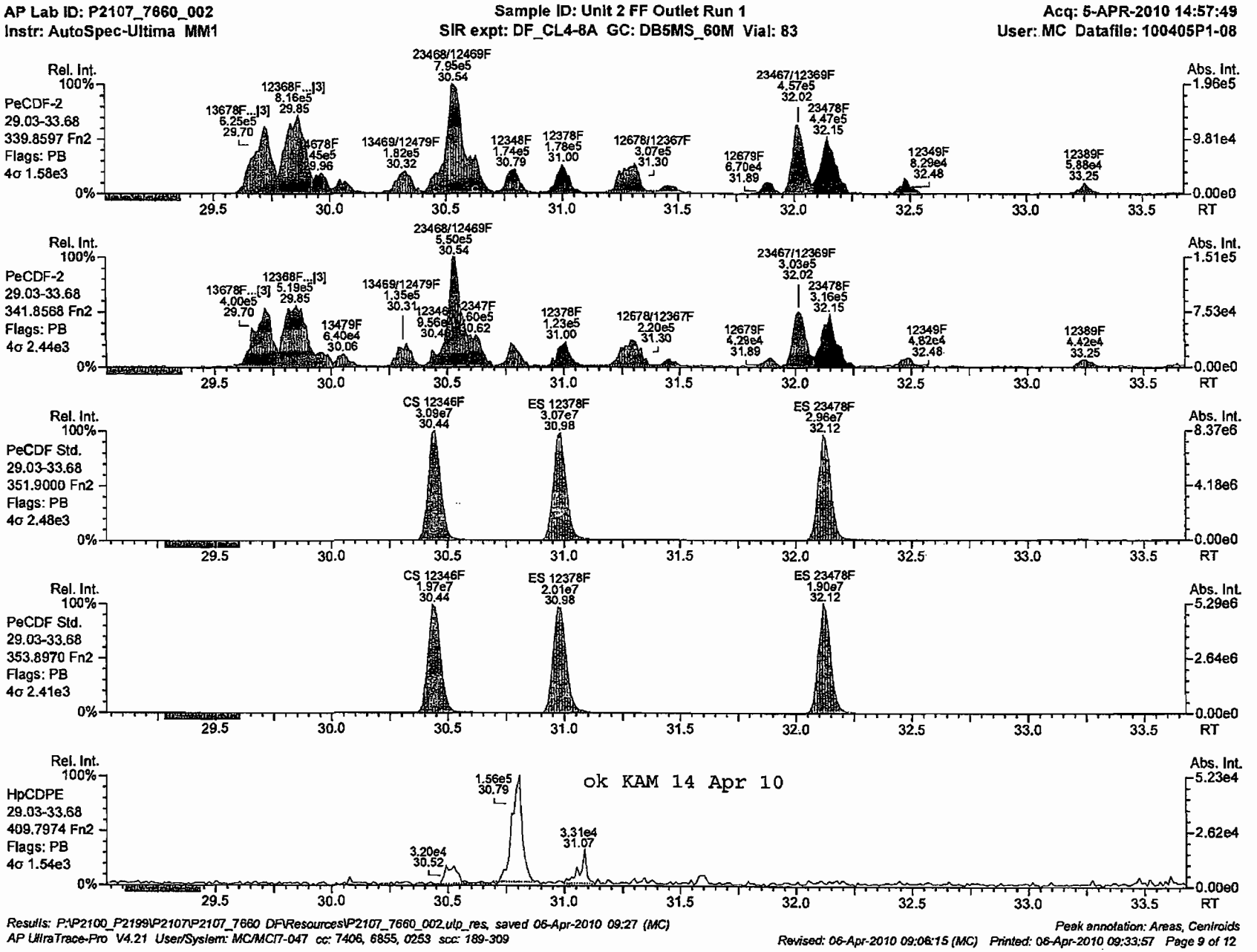
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 08:59:21 (MC) Printed: 06-Apr-2010 09:33:49 Page 8 of 12


AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1
Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83
Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08
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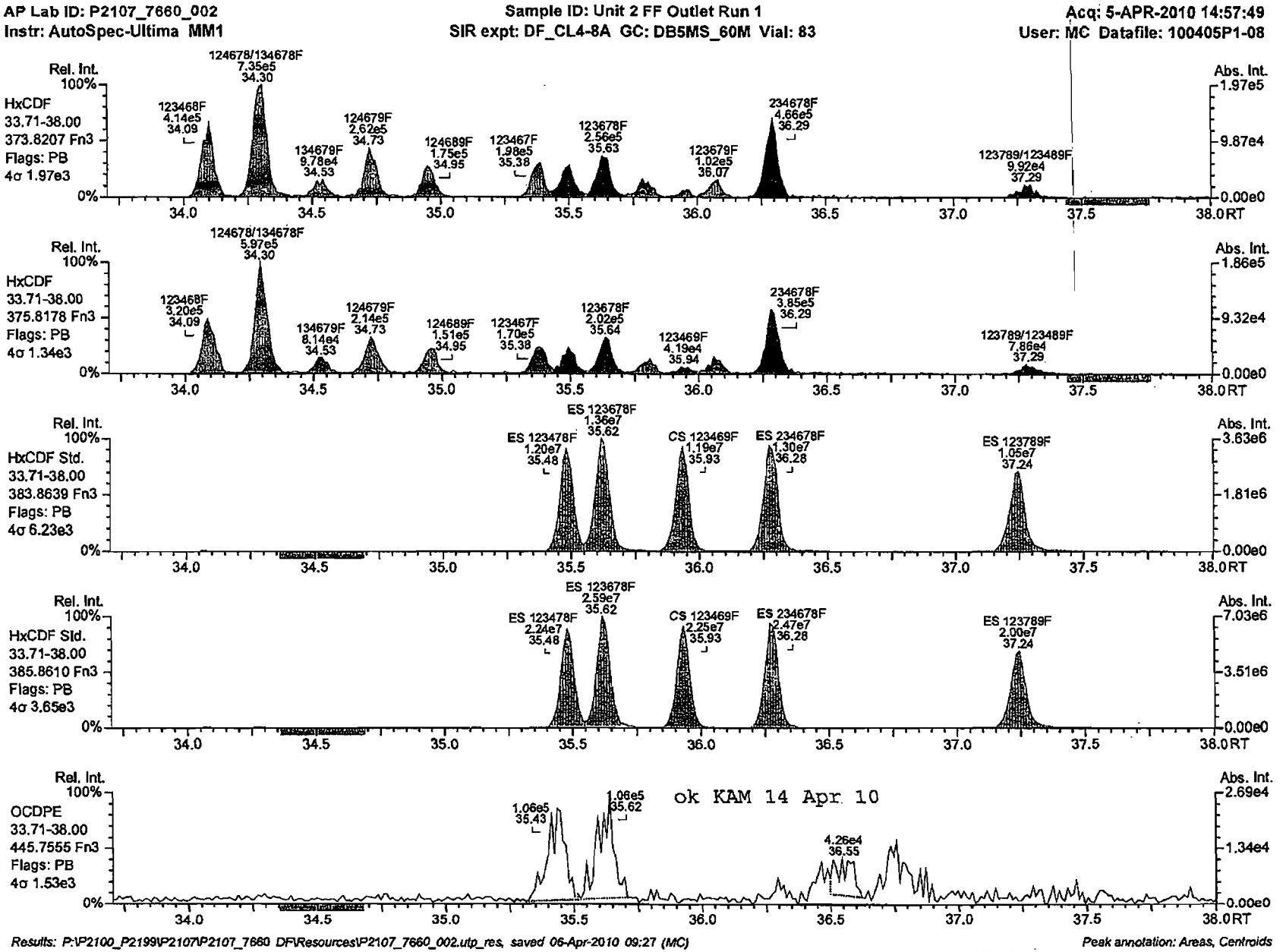
339.8597 Fn2
Flags: PB
4σ 1.58e3
PeCDF-2
29.03-33.68
341.8568 Fn2
Flags: PB
4σ 2.44e3
PeCDF Std.
29.03-33.68
351.9000 Fn2
Flags: PB
4σ 2.48e3
PeCDF Std.
29.03-33.68
353.8970 Fn2
Flags: PB
4σ 2.41e3
HpCDPE
29.03-33.68
409.7974 Fn2
Flags: PB
4σ 1.54e3
Rel. Int.
Abs. Int.
RT
ok KAM 14 Apr 10
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_002.ulp_res, saved 06-Apr-2010 09:27 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7406, 6855, 0253 scc: 189-309
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:08:15 (MC) Printed: 06-Apr-2010 09:33:57 Page 9 of 12



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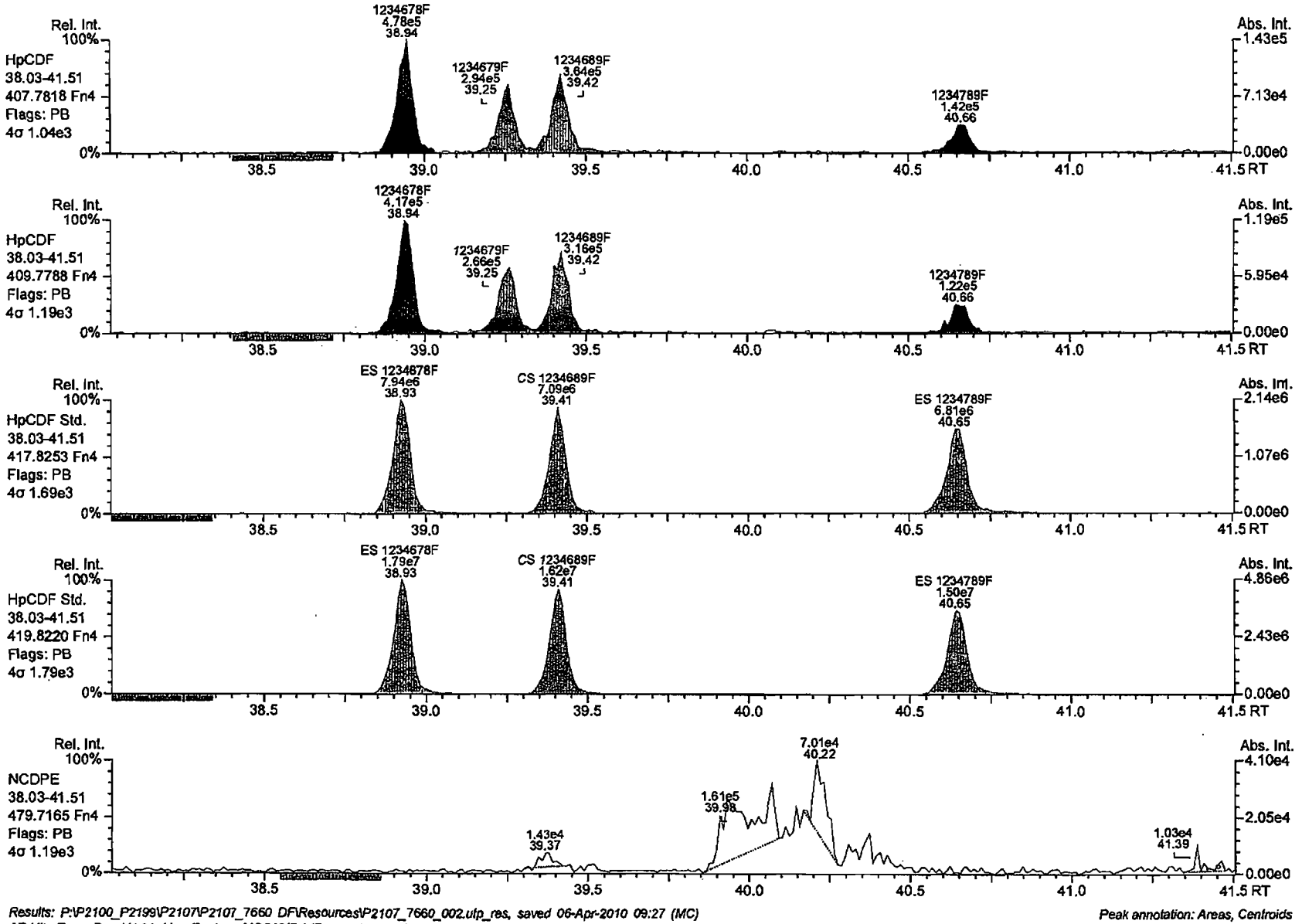
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4688, 8896, 1013 scc: 189-309
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:02:19 (MC) Printed: 06-Apr-2010 09:34:05 Page 10 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



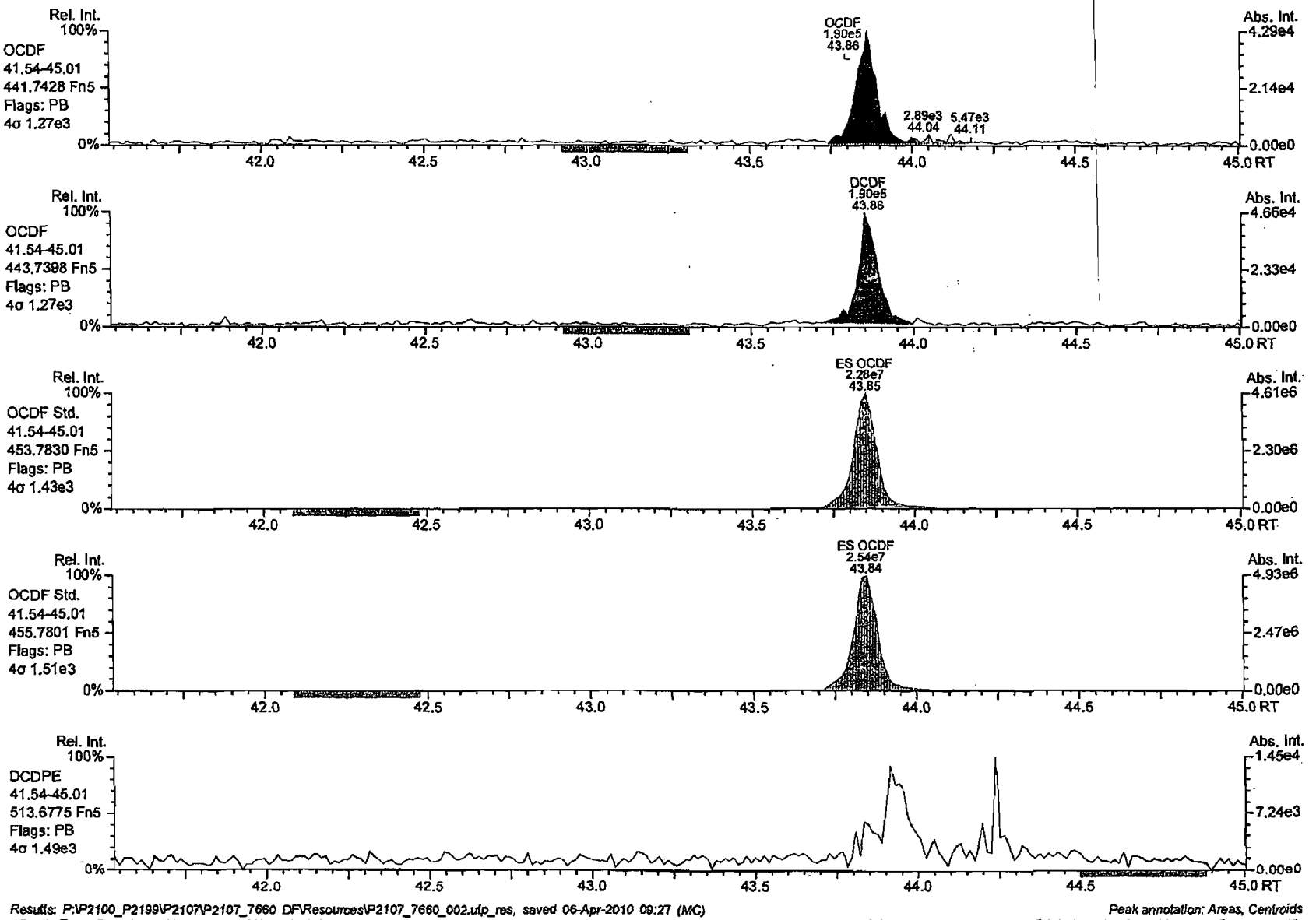
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_002.utp_res, saved 06-Apr-2010 09:27 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6097, 3346, 1929 scc: 189-309

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:02:26 (MC) Printed: 06-Apr-2010 09:34:11 Page 11 of 12

AP Lab ID: P2107_7660_002
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 1
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 83

Acq: 5-APR-2010 14:57:49
User: MC Datafile: 100405P1-08



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_002.ulp_res, saved 06-Apr-2010 09:27 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3842, 2756, 6940 scc: 189-309

Peak annotation: Areas, Centroids
PKD: 06-Apr-2010 08:59:21 Printed: 06-Apr-2010 09:34:16 Page 12 of 12

Lab ID: P2107_7660_003 | Acq'd: 05 Apr 2010 15:49 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 2 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 024-135

Datafile: 100405P1-09 | Report: 06 Apr 2010 09:14 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	1.0007	-0.2	7.81E+04	1.00	N	1.09	6.97	2719	2.72
12378-PeCDD	32.50		1.0006	1.0004	-0.4	2.32E+05	1.31	N	1.02	28.4	2208	2.49
123478-HxCDD	36.47		1.0004	1.0003	-0.2	3.53E+05	1.29	Y	1.11	47.8	2234	2.82
123678-HxCDD	36.58		1.0034	1.0034	0	1.04E+06	1.30	Y	1.02	137	2234	2.6
123789-HxCDD	36.88		1.0116	1.0116	0	5.22E+05	1.19	Y	0.95	72.7	2234	3.19
1234678-HpCDD	40.09		1.0003	1.0004	+0.2	5.62E+06	1.04	Y	1.00	910	2475	3.88
OCDD	43.62		1.0004	1.0003	-0.3	6.31E+06	0.90	Y	1.06	1,260	2782	6.26
2378-TCDF	25.95		1.0009	1.0009	0	3.71E+05	0.77	Y	1.20	19.1	2544	1.54
12378-PeCDF	31.00		1.0006	1.0006	0	3.50E+05	1.56	Y	1.04	24.5	4047	2.61
23478-PeCDF	32.15		1.0005	1.0006	+0.2	8.76E+05	1.48	Y	1.10	61	4047	2.65
123478-HxCDF	35.49		1.0004	1.0003	-0.2	4.45E+05	1.20	Y	1.18	40.7	3226	2.58
123678-HxCDF	35.63		1.0005	1.0003	-0.4	6.33E+05	1.24	Y	1.18	50.6	3226	2.32
234678-HxCDF	36.29		1.0005	1.0005	0	9.23E+05	1.19	Y	1.18	77.8	3226	2.55
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.16	-	3226	3.57
1234678-HpCDF	38.94		1.0003	1.0003	0	9.71E+05	1.03	Y	1.41	100	2684	2.48
1234789-HpCDF	40.66		1.0003	1.0002	-0.2	2.26E+05	0.96	Y	1.37	28.8	2684	3.26
OCDF	43.86		1.0004	1.0003	-0.3	3.39E+05	0.98	Y	0.97	55	2389	4.67

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.86	1.0259	1.0259	0	4.10E+07	0.82	Y	1.01	94.9
ES 12378-PeCDD	32.49	1.2404	1.2408	+0.6	3.19E+07	1.67	Y	0.86	86.5
ES 123478-HxCDD	36.46	0.9917	0.9917	0	2.66E+07	1.30	Y	0.99	84.3
ES 123678-HxCDD	36.57	0.9947	0.9947	0	3.00E+07	1.25	Y	1.13	83.6
ES 123789-HxCDD	36.87	1.0028	1.0028	0	3.02E+07	1.27	Y	1.13	83.9
ES 1234678-HpCDD	40.08	1.0902	1.0901	-0.2	2.46E+07	1.09	Y	0.91	85.1
ES OCDD	43.61	1.1862	1.1862	0	3.79E+07	0.91	Y	0.73	81.7
ES 2378-TCDF	25.93	1.0585	1.0588	+0.4	6.47E+07	0.79	Y	0.99	95.5
ES 12378-PeCDF	30.98	1.2646	1.2653	+1.0	5.48E+07	1.57	Y	0.87	92.7
ES 23478-PeCDF	32.13	1.3113	1.3120	+1.0	5.21E+07	1.57	Y	0.84	91.4
ES 123478-HxCDF	35.48	0.9651	0.9651	0	3.71E+07	0.53	Y	1.36	85.9
ES 123678-HxCDF	35.62	0.9689	0.9689	0	4.23E+07	0.53	Y	1.56	85.8
ES 234678-HxCDF	36.28	0.9867	0.9867	0	4.01E+07	0.52	Y	1.47	85.7
ES 123789-HxCDF	37.24	1.0129	1.0130	+0.2	3.25E+07	0.54	Y	1.27	80.6
ES 1234678-HpCDF	38.92	1.0589	1.0588	-0.2	2.75E+07	0.45	Y	1.06	81.7
ES 1234789-HpCDF	40.65	1.1057	1.1056	-0.2	2.30E+07	0.43	Y	0.88	82.4
ES OCDF	43.85	1.1926	1.1927	+0.2	5.08E+07	0.92	Y	1.03	77.7

Lab ID: P2107_7660_003 | Acq'd: 05 Apr 2010 15:49 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 2 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 024-135

Datafile: 100405P1-09 | Report: 06 Apr 2010 09:14 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		-	-	-	4.30E+07	0.81	Y	-	-
JS 1234-TCDF	24.49		-	-	-	6.81E+07	0.79	Y	-	-
JS 123467-HxCDD	36.76		-	-	-	1.59E+07	1.29	Y	-	-
CS 37Cl-2378-TCDD	26.89		1.0268	1.0269	+0.2	1.82E+07	n/a	-	1.15	92.2
CS 12347-PeCDD	31.98		1.2209	1.2212	+0.5	3.26E+07	1.64	Y	0.83	91.3
CS 12346-PeCDF	30.44		1.2424	1.2431	+1.0	5.42E+07	1.58	Y	0.87	91.4
CS 123469-HxCDF	35.93		0.9773	0.9773	0	3.71E+07	0.52	Y	1.36	85.7
CS 1234689-HpCDF	39.41		1.0720	1.0719	-0.2	2.54E+07	0.45	Y	0.94	85.1
SS 37Cl-2378-TCDD	26.89		1.0268	1.0269	+0.2	1.82E+07	n/a	-	1.14	97.2
SS 12347-PeCDD	31.98		1.2209	1.2212	+0.5	3.26E+07	1.64	Y	0.97	106
SS 12346-PeCDF	30.44		1.2424	1.2431	+1.0	5.42E+07	1.58	Y	1.00	98.6
SS 123469-HxCDF	35.93		0.9773	0.9773	0	3.71E+07	0.52	Y	0.88	99.9
SS 1234689-HpCDF	39.41		1.0720	1.0719	-0.2	2.54E+07	0.45	Y	0.89	104
AS 1368-TCDD	22.90		0.8731	0.8745	+2.2	4.40E+07	0.81	Y	1.08	94.2
AS 1368-TCDF	20.73		0.8447	0.8467	+2.9	7.99E+07	0.80	Y	1.27	92.1
FS 1278-TCDD	27.12		1.0131	1.0096	-5.6	1.09E+05	0.64	N	1.00	0.265
FS 12478-PeCDD	NotFnd		0.9617							
FS 123468-HxCDD	NotFnd		0.9713							
FS 1234679-HpCDD	39.25		0.9794	0.9793	-0.2	2.10E+05	0.98	Y	0.01	90.6
TS 1378-TCDD	NotFnd		0.9345							

FS na
KAM 14 Apr 10

Totals	Conc	EMPC
Total TCDD	1630	1660
Total PeCDD	2080	2130
Total HxCDD	3800	3850
Total HpCDD	1900	1900
Total Tetra-Octa Dioxins	10700	10800
Total TCDF	921	921
Total PeCDF	742	784
Total HxCDF	598	598
Total HpCDF	259	259
Total Tetra-Octa Furans	2570	2620
Total Tetra-Octa Dioxins & Furans	13300	13400

Lab ID: P2107_7660_003 | Acq'd: 05 Apr 2010 15:49 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 2 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 024-135

Datafile: 100405P1-09 | Report: 06 Apr 2010 09:14 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	0.8535	-0.6	1.49E+07	0.80	Y	1.09	1330	2719	2.72
1379-TCDD	23.33		0.8685	0.8685	0	1.16E+06	0.83	Y	1.09	103	2719	2.72
1369-TCDD	23.81		0.8863	0.8863	0	1.88E+05	0.86	Y	1.09	16.8	2719	2.72
1469-TCDD	NotFnd		0.9189						1.09		2719	2.72
1247/1246/1248/1249-TCDD	24.91		0.9276	0.9275	-0.2	4.45E+05	0.76	Y	1.09	39.7	2719	2.72
1378-TCDD	25.12		0.9351	0.9351	0	4.65E+05	0.77	Y	1.09	41.5	2719	2.72
1268-TCDD	25.34		0.9430	0.9432	+0.3	1.35E+05	0.93	N	1.09	12.1	2719	2.72
1478-TCDD	25.56		0.9517	0.9514	-0.5	4.08E+04	0.81	Y	1.09	3.64	2719	2.72
1279-TCDD	25.78		0.9598	0.9598	0	1.68E+05	0.88	Y	1.09	15	2719	2.72
1234/1269-TCDD	26.20		0.9740	0.9755	+2.4	3.90E+05	0.72	Y	1.09	34.8	2719	2.72
1236-TCDD	26.33		0.9801	0.9802	+0.2	5.99E+04	0.70	Y	1.09	5.35	2719	2.72
1237/1238-TCDD	26.58		0.9895	0.9896	+0.2	3.97E+05	0.84	Y	1.09	35.5	2719	2.72
1239-TCDD	26.74		0.9952	0.9954	+0.3	5.31E+04	0.81	Y	1.09	4.74	2719	2.72
2378-TCDD	26.88		1.0008	1.0007	-0.2	7.81E+04	1.00	N	1.09	6.97	2719	2.72
1278-TCDD	27.23		1.0138	1.0137	-0.2	3.53E+04	1.10	N	1.09	3.15	2719	2.72
1267-TCDD	NotFnd		1.0194						1.09		2719	2.72
1289-TCDD	NotFnd		1.0396						1.09		2719	2.72
12479/12468-PeCDD	29.93		0.9210	0.9212	+0.4	7.61E+06	1.57	Y	1.02	930	2208	2.49
12469-PeCDD	30.47		0.9382	0.9380	-0.4	1.10E+05	1.76	Y	1.02	13.4	2208	2.49
12368-PeCDD	31.05		0.9556	0.9556	0	5.91E+06	1.57	Y	1.02	723	2208	2.49
12478-PeCDD	31.24		0.9614	0.9615	+0.2	2.72E+05	1.56	Y	1.02	33.3	2208	2.49
12379-PeCDD	31.35		0.9649	0.9649	0	2.02E+06	1.47	Y	1.02	247	2208	2.49
12369/12467/12489-PeCDD	31.61		0.9732	0.9729	-0.6	3.19E+05	1.54	Y	1.02	39.1	2208	2.49
12346/12347-PeCDD	32.00		0.9850	0.9849	-0.2	7.18E+05	1.52	Y	1.02	87.8	2208	2.49
12378-PeCDD	32.50		1.0006	1.0004	-0.4	2.32E+05	1.31	N	1.02	28.4	2208	2.49
12367-PeCDD	32.60		1.0037	1.0036	-0.2	1.08E+05	1.26	N	1.02	13.2	2208	2.49
12389-PeCDD	32.96		1.0146	1.0145	-0.2	7.13E+04	1.46	Y	1.02	8.72	2208	2.49
124679/124689-HxCDD	34.76		0.9534	0.9535	+0.2	1.50E+06	1.25	Y	1.03	201	2234	2.86
123468-HxCDD	35.43		0.9717	0.9716	-0.2	2.13E+07	1.26	Y	1.03	2,860	2234	2.86
123679/123689-HxCDD	35.72		0.9793	0.9796	+0.7	3.53E+06	1.24	Y	1.03	475	2234	2.86
123469-HxCDD	35.85		0.9833	0.9834	+0.2	2.37E+05	1.60	N	1.03	31.9	2234	2.86
123478-HxCDD	36.47		1.0004	1.0003	-0.2	3.53E+05	1.29	Y	1.11	47.8	2234	2.82
123678-HxCDD	36.58		1.0034	1.0034	0	1.04E+06	1.30	Y	1.02	137	2234	2.6
123467-HxCDD	36.77		1.0088	1.0086	-0.4	1.69E+05	1.05	N	1.03	22.8	2234	2.86
123789-HxCDD	36.88		1.0116	1.0116	0	5.22E+05	1.19	Y	0.95	72.7	2234	3.19

Lab ID: P2107_7660_003 | Acq'd: 05 Apr 2010 15:49 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 2 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 024-135

Datafile: 100405P1-09 | Report: 06 Apr 2010 09:14 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	39.25		0.9794	0.9794	0	6.15E+06	1.04	Y	1.00	995	2475	3.88
1234678-HpCDD	40.09		1.0003	1.0004	+0.2	5.62E+06	1.04	Y	1.00	910	2475	3.88
OCDD	43.62		1.0004	1.0003	-0.3	6.31E+06	0.90	Y	1.06	1,260	2782	6.26
OCDD-a	43.62		1.0003	1.0002	-0.3	3.71E+05	1.90	N	0.06	1,210	3406	125
1368-TCDF	20.76		0.8012	0.8006	-0.9	1.12E+06	0.77	Y	1.20	57.8	2544	1.54
1468-TCDF	21.31		0.8216	0.8218	+0.3	3.77E+05	0.84	Y	1.20	19.4	2544	1.54
2468-TCDF	21.93		0.8461	0.8457	-0.6	1.22E+06	0.80	Y	1.20	62.6	2544	1.54
1346/1246-TCDF	22.35		0.8607	0.8622	+2.3	4.43E+05	0.77	Y	1.20	22.8	2544	1.54
1347/1378/1247-TCDF	22.50		0.8672	0.8679	+1.1	1.57E+06	0.73	Y	1.20	80.8	2544	1.54
1348-TCDF	22.81		0.8792	0.8798	+0.9	4.57E+05	0.83	Y	1.20	23.5	2544	1.54
1248/1367/1379-TCDF	22.94		0.8846	0.8846	0	9.07E+05	0.86	Y	1.20	46.7	2544	1.54
1268-TCDF	23.35		0.9011	0.9007	-0.6	5.14E+05	0.80	Y	1.20	26.4	2544	1.54
1467-TCDF	23.50		0.9067	0.9066	-0.2	2.57E+05	0.81	Y	1.20	13.2	2544	1.54
1478-TCDF	23.68		0.9137	0.9135	-0.3	3.61E+05	0.72	Y	1.20	18.6	2544	1.54
1369/1237-TCDF	24.09		0.9293	0.9291	-0.3	3.86E+05	0.73	Y	1.20	19.9	2544	1.54
2467-TCDF	24.24		0.9348	0.9348	0	1.13E+06	0.83	Y	1.20	58	2544	1.54
2368-TCDF	24.39		0.9408	0.9406	-0.3	9.28E+05	0.72	Y	1.20	47.8	2544	1.54
1238/1234/1678/1469/1236-TCDF	24.51		0.9445	0.9452	+1.1	3.58E+06	0.77	Y	1.20	184	2544	1.54
1278-TCDF	25.00		0.9641	0.9643	+0.3	4.99E+05	0.76	Y	1.20	25.7	2544	1.54
1349-TCDF	25.13		0.9693	0.9691	-0.3	1.25E+05	0.74	Y	1.20	6.43	2544	1.54
1267-TCDF	25.30		0.9755	0.9756	+0.2	3.04E+05	0.75	Y	1.20	15.7	2544	1.54
2346/1249-TCDF	25.51		0.9834	0.9839	+0.8	7.31E+05	0.74	Y	1.20	37.6	2544	1.54
2347/1279-TCDF	25.72		0.9922	0.9919	-0.5	9.60E+05	0.76	Y	1.20	49.4	2544	1.54
2348-TCDF	25.83		0.9966	0.9963	-0.5	5.38E+05	0.83	Y	1.20	27.7	2544	1.54
2378-TCDF	25.95		1.0009	1.0009	0	3.71E+05	0.77	Y	1.20	19.1	2544	1.54
2367/3467-TCDF	26.35		1.0164	1.0163	-0.2	8.03E+05	0.73	Y	1.20	41.3	2544	1.54
1269-TCDF	NotFnd		1.0260						1.20		2544	1.54
1239-TCDF	26.89		1.0375	1.0371	-0.6	1.14E+05	0.79	Y	1.20	5.89	2544	1.54
1289-TCDF	28.10		1.0834	1.0837	+0.5	2.10E+05	0.75	Y	1.20	10.8	2544	1.54
13468/12468-PeCDF	28.08		0.9057	0.9064	+1.3	1.50E+06	1.59	Y	1.07	104	2891	1.88
13678/13467/12467-PeCDF	29.68		0.9581	0.9581	0	1.32E+06	1.45	Y	1.07	91.8	4047	2.63
12368/13478/12478-PeCDF	29.83		0.9620	0.9629	+1.7	1.75E+06	1.53	Y	1.07	122	4047	2.63
14678-PeCDF	29.95		0.9667	0.9668	+0.2	3.26E+05	1.53	Y	1.07	22.7	4047	2.63
13479-PeCDF	30.04		0.9702	0.9697	-0.9	1.96E+05	1.45	Y	1.07	13.7	4047	2.63
13469/12479-PeCDF	30.31		0.9781	0.9782	+0.2	3.39E+05	1.61	Y	1.07	23.7	4047	2.63
12346-PeCDF	30.46		0.9829	0.9833	+0.7	3.19E+05	1.67	Y	1.07	22.3	4047	2.63

Lab ID: P2107_7660_003 | Acq'd: 05 Apr 2010 15:49 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 2 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 024-135

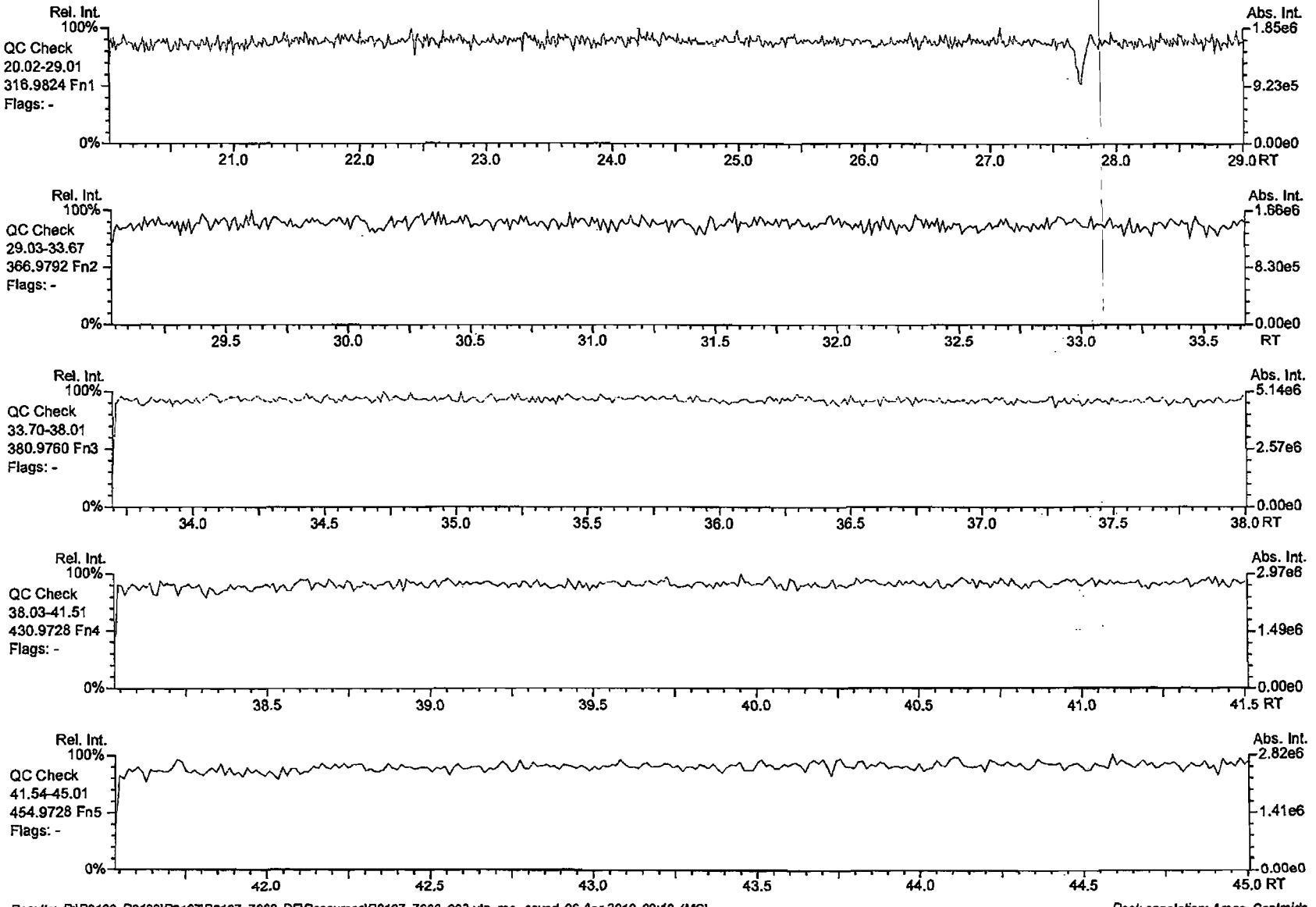
Datafile: 100405P1-09 | Report: 06 Apr 2010 09:14 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.54		0.9858	0.9856	-0.4	1.65E+06	1.47	Y	1.07	115	4047	2.63
12347-PeCDF	30.62		0.9881	0.9882	+0.2	4.03E+05	1.92	N	1.07	28.1	4047	2.63
12348-PeCDF	30.78		0.9936	0.9937	+0.2	2.90E+05	1.69	Y	1.07	20.3	4047	2.63
12378-PeCDF	31.00		1.0006	1.0006	0	3.50E+05	1.56	Y	1.04	24.5	4047	2.61
12678/12367-PeCDF	31.29		1.0104	1.0099	-0.9	6.23E+05	1.60	Y	1.07	43.5	4047	2.63
12379-PeCDF	31.46		1.0151	1.0154	+0.6	1.20E+05	1.30	N	1.07	8.4	4047	2.63
12679-PeCDF	31.89		0.9925	0.9925	0	1.33E+05	1.52	Y	1.07	9.3	4047	2.63
23467/12369-PeCDF	32.02		0.9981	0.9967	-2.7	8.04E+05	1.64	Y	1.07	56.1	4047	2.63
23478-PeCDF	32.15		1.0005	1.0006	+0.2	8.76E+05	1.48	Y	1.10	61	4047	2.65
23478/12489-PeCDF	NotFnd		1.0006						1.10		4047	2.65
12489-PeCDF	NotFnd		1.0023						1.07		4047	2.63
12349-PeCDF	32.48		1.0110	1.0111	+0.2	1.58E+05	1.38	Y	1.07	11	4047	2.63
12389-PeCDF	33.26		1.0350	1.0353	+0.6	8.95E+04	2.01	N	1.07	6.25	4047	2.63
123468-HxCDF	34.10		0.9609	0.9609	0	9.11E+05	1.26	Y	1.17	81.6	3226	2.71
124678/134678-HxCDF	34.30		0.9668	0.9667	-0.2	1.72E+06	1.33	Y	1.17	154	3226	2.71
134679-HxCDF	34.53		0.9733	0.9733	0	2.19E+05	1.13	Y	1.17	19.6	3226	2.71
124679-HxCDF	34.73		0.9788	0.9787	-0.2	4.65E+05	1.19	Y	1.17	41.7	3226	2.71
124689-HxCDF	34.95		0.9851	0.9851	0	2.99E+05	1.07	Y	1.17	26.8	3226	2.71
123467-HxCDF	35.38		0.9968	0.9970	+0.4	4.10E+05	1.15	Y	1.17	36.7	3226	2.71
123478-HxCDF	35.49		1.0004	1.0003	-0.2	4.45E+05	1.20	Y	1.18	40.7	3226	2.58
123678-HxCDF	35.63		1.0005	1.0003	-0.4	6.33E+05	1.24	Y	1.18	50.6	3226	2.32
123479-HxCDF	35.79		1.0048	1.0047	-0.2	2.50E+05	1.15	Y	1.17	22.4	3226	2.71
123469-HxCDF	35.94		1.0090	1.0089	-0.2	1.03E+05	1.20	Y	1.17	9.25	3226	2.71
123679-HxCDF	36.07		0.9943	0.9943	0	1.89E+05	1.29	Y	1.17	16.9	3226	2.71
234678-HxCDF	36.29		1.0005	1.0005	0	9.23E+05	1.19	Y	1.18	77.8	3226	2.55
234678/123689-HxCDF	NotFnd		1.0004						1.18		3226	2.55
123689-HxCDF	NotFnd		1.0009						1.17		3226	2.71
123789-HxCDF	NotFnd		1.0005						1.16		3226	3.57
123789/123489-HxCDF	37.28		1.0012	1.0010	-0.4	1.84E+05	1.25	Y	1.16	19.5	3226	3.57
123489-HxCDF	NotFnd		1.0017						1.17		3226	2.71
1234678-HpCDF	38.94		1.0003	1.0003	0	9.71E+05	1.03	Y	1.41	100	2684	2.48
1234679-HpCDF	39.25		1.0083	1.0084	+0.2	5.34E+05	0.97	Y	1.39	61	2684	2.83
1234689-HpCDF	39.42		1.0132	1.0127	-1.2	6.00E+05	0.95	Y	1.39	68.6	2684	2.83
1234789-HpCDF	40.66		1.0003	1.0002	-0.2	2.26E+05	0.96	Y	1.37	28.8	2684	3.26
OCDF	43.86		1.0004	1.0003	-0.3	3.39E+05	0.98	Y	0.97	55	2389	4.67
OCDF-a	NotFnd		1.0002						0.06		3354	111

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



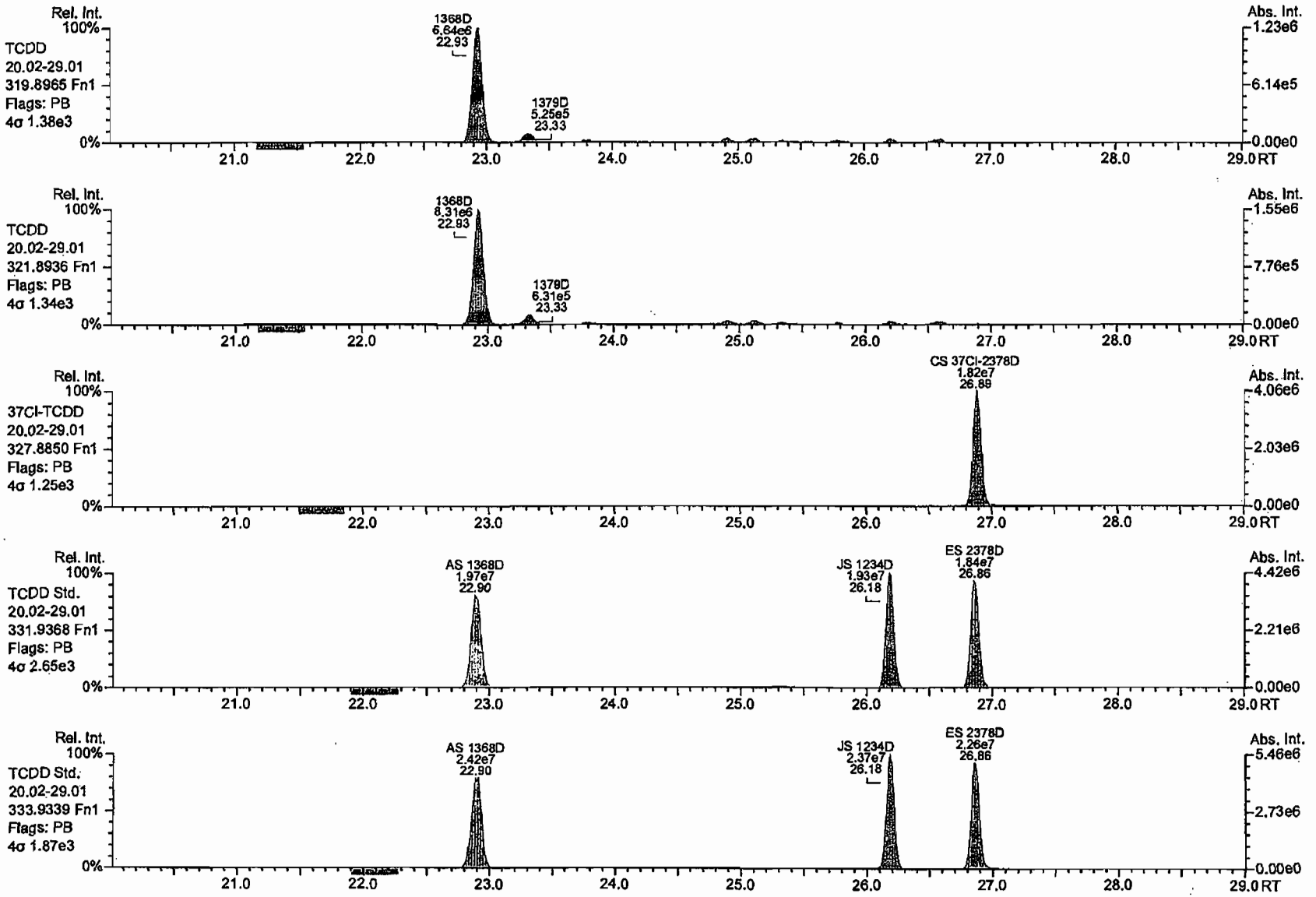
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 024-135

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:34:24 Page 1 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

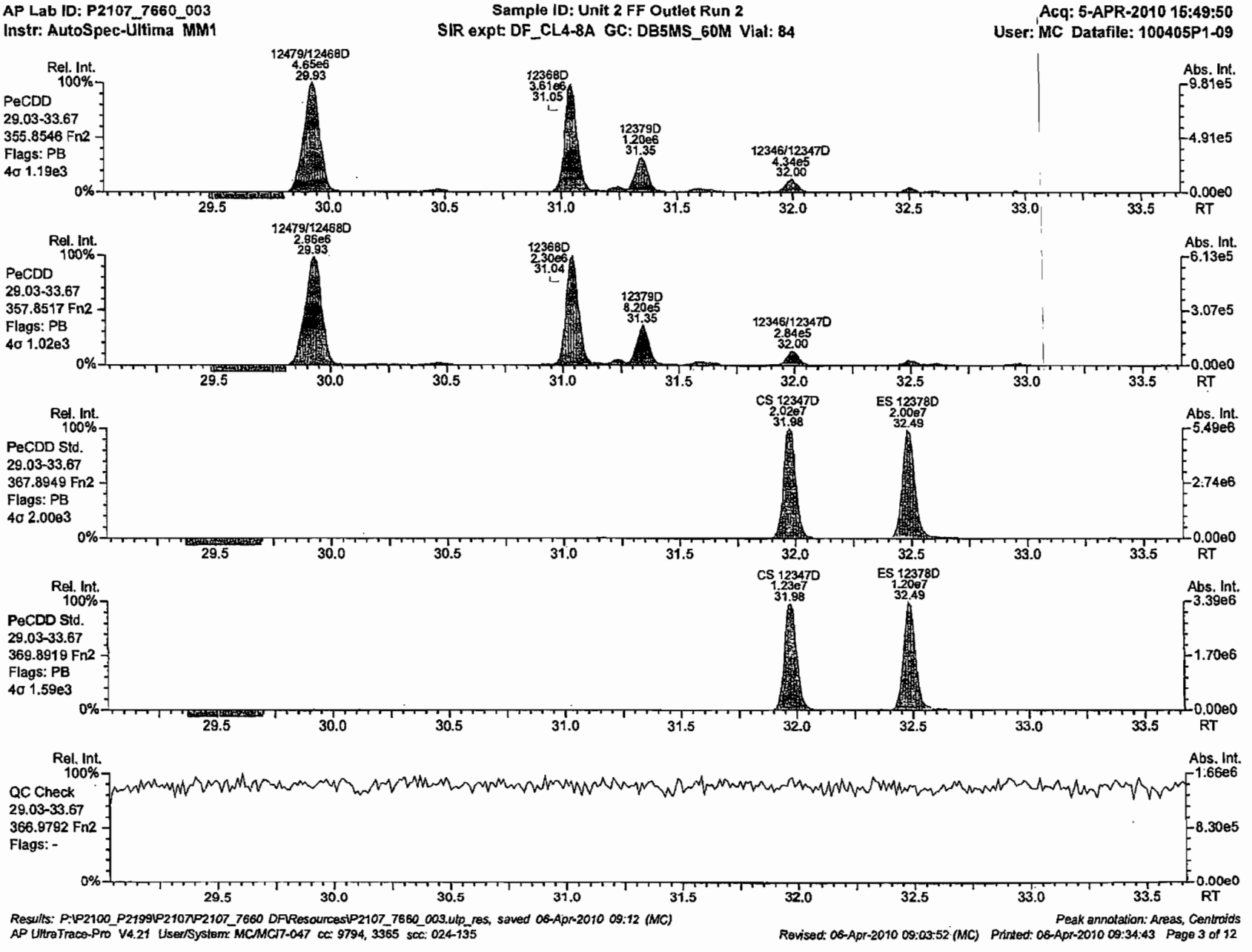
Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1478, 8355, 4430 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:03:36 (MC) Printed: 06-Apr-2010 09:34:35 Page 2 of 12



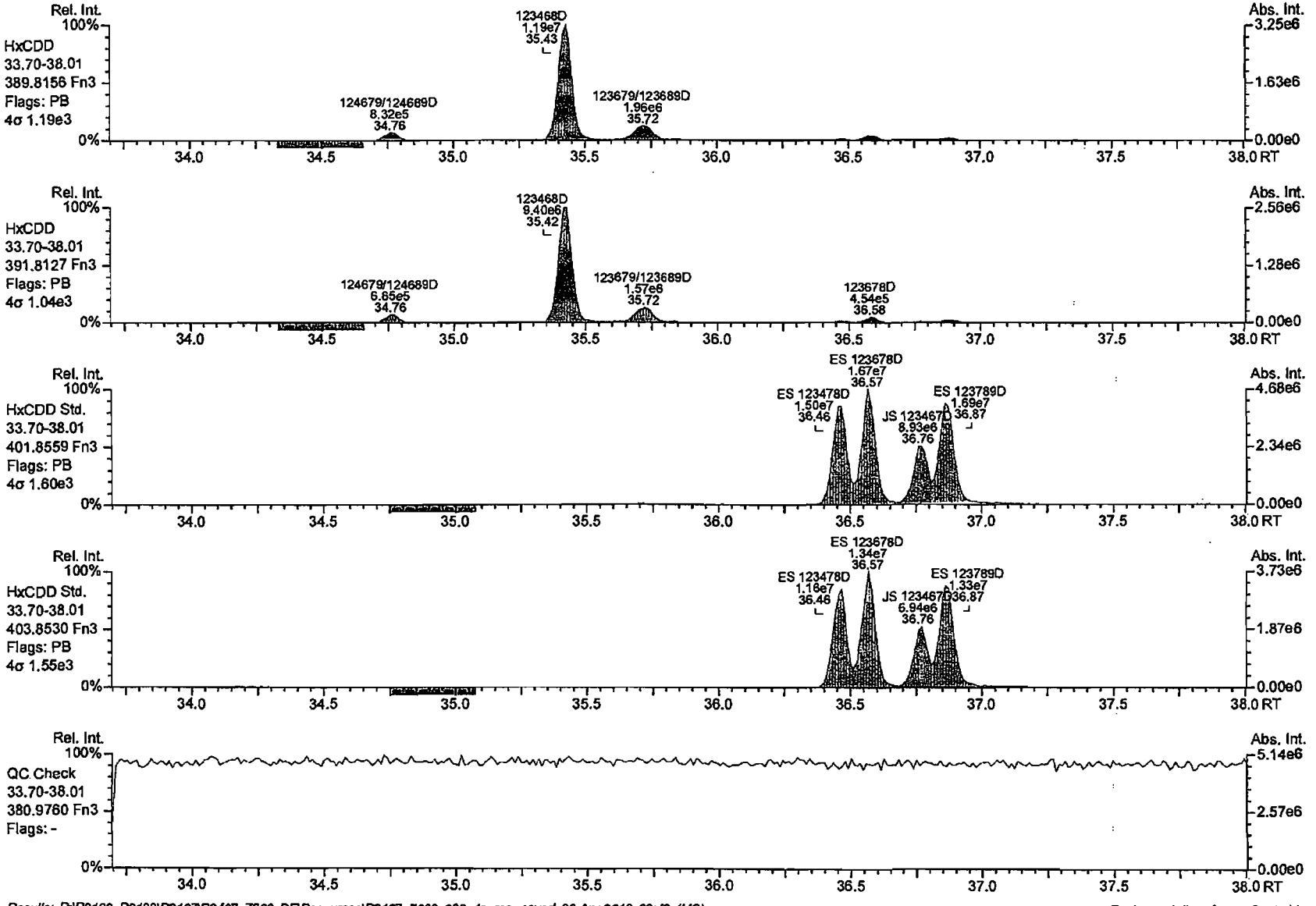
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9794, 3365 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:03:52 (MC) Printed: 06-Apr-2010 09:34:43 Page 3 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



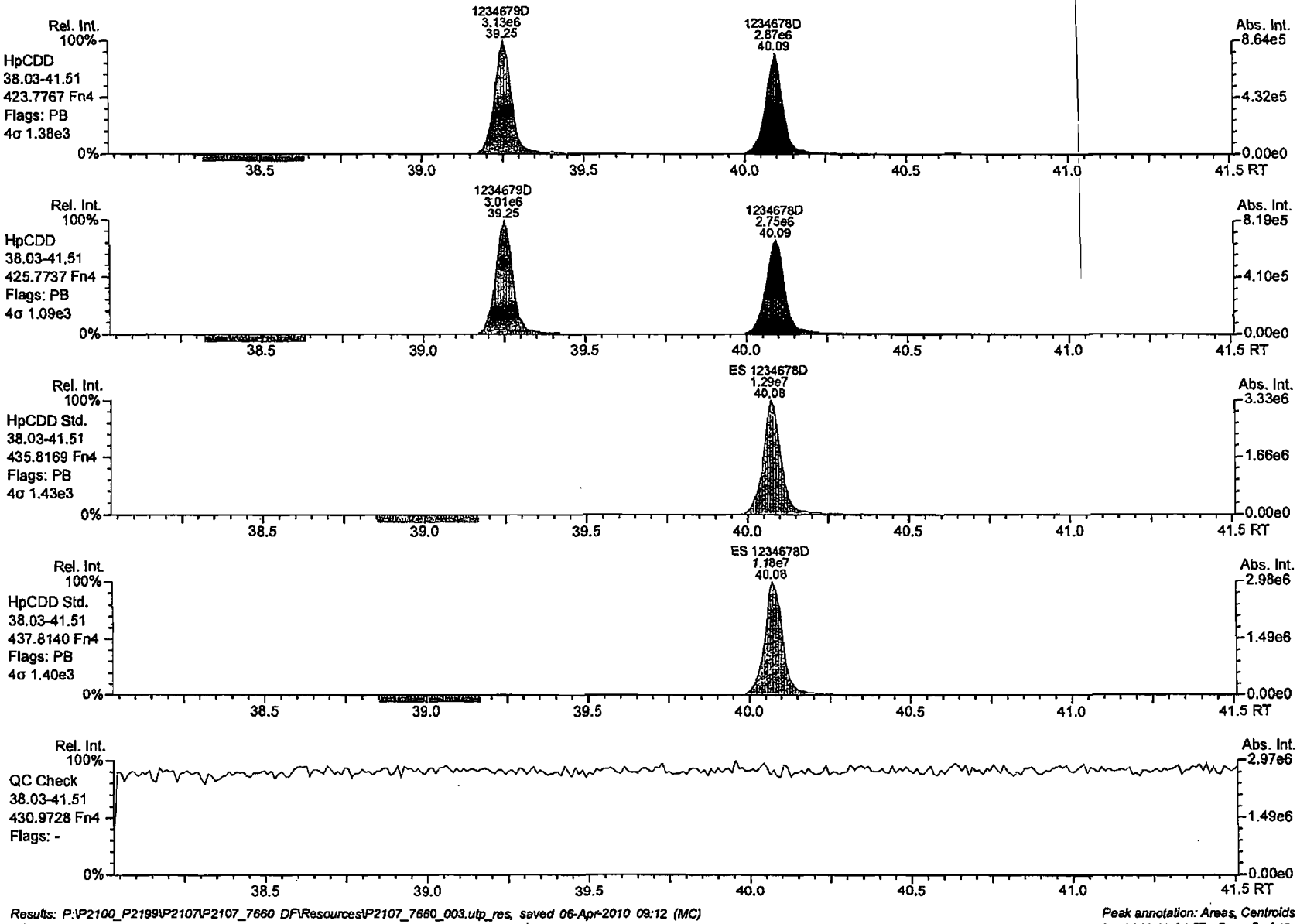
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5771, 8378 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:04:10 (MC) Printed: 06-Apr-2010 09:34:51 Page 4 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



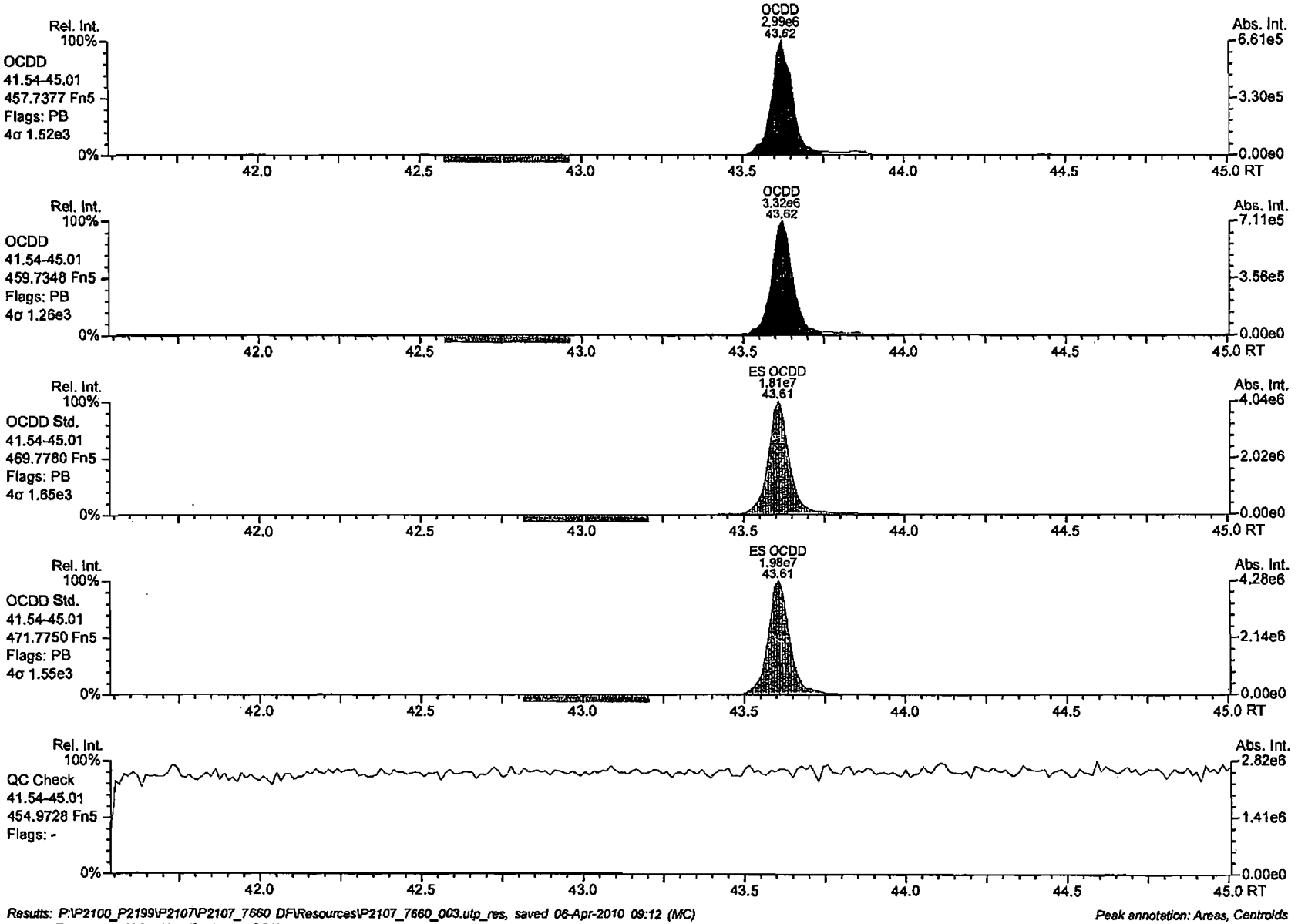
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3629, 5217 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:04:17 (MC) Printed: 06-Apr-2010 09:34:57 Page 5 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



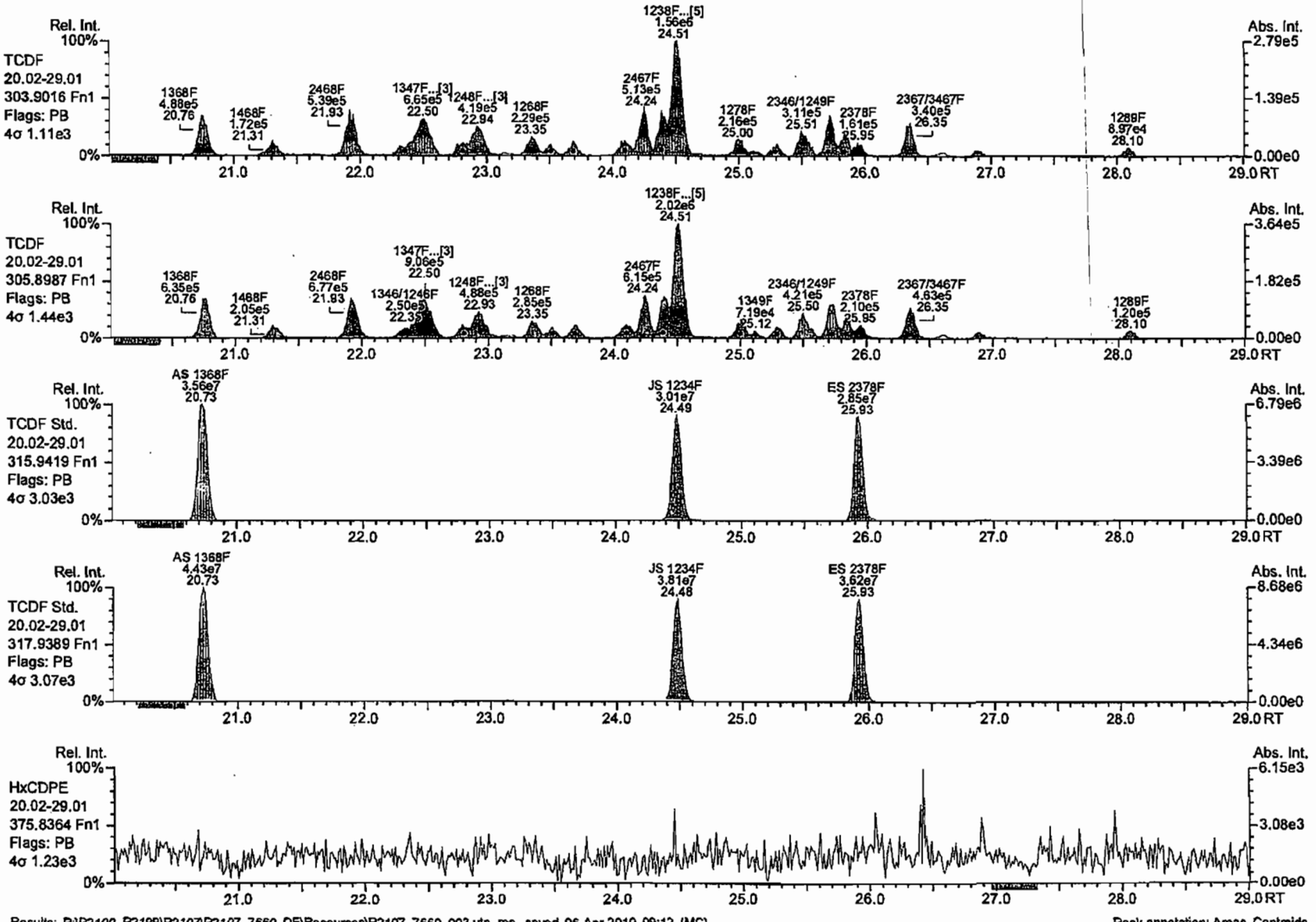
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1957, 7989 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:04:24 (MC) Printed: 06-Apr-2010 09:35:02 Page 6 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



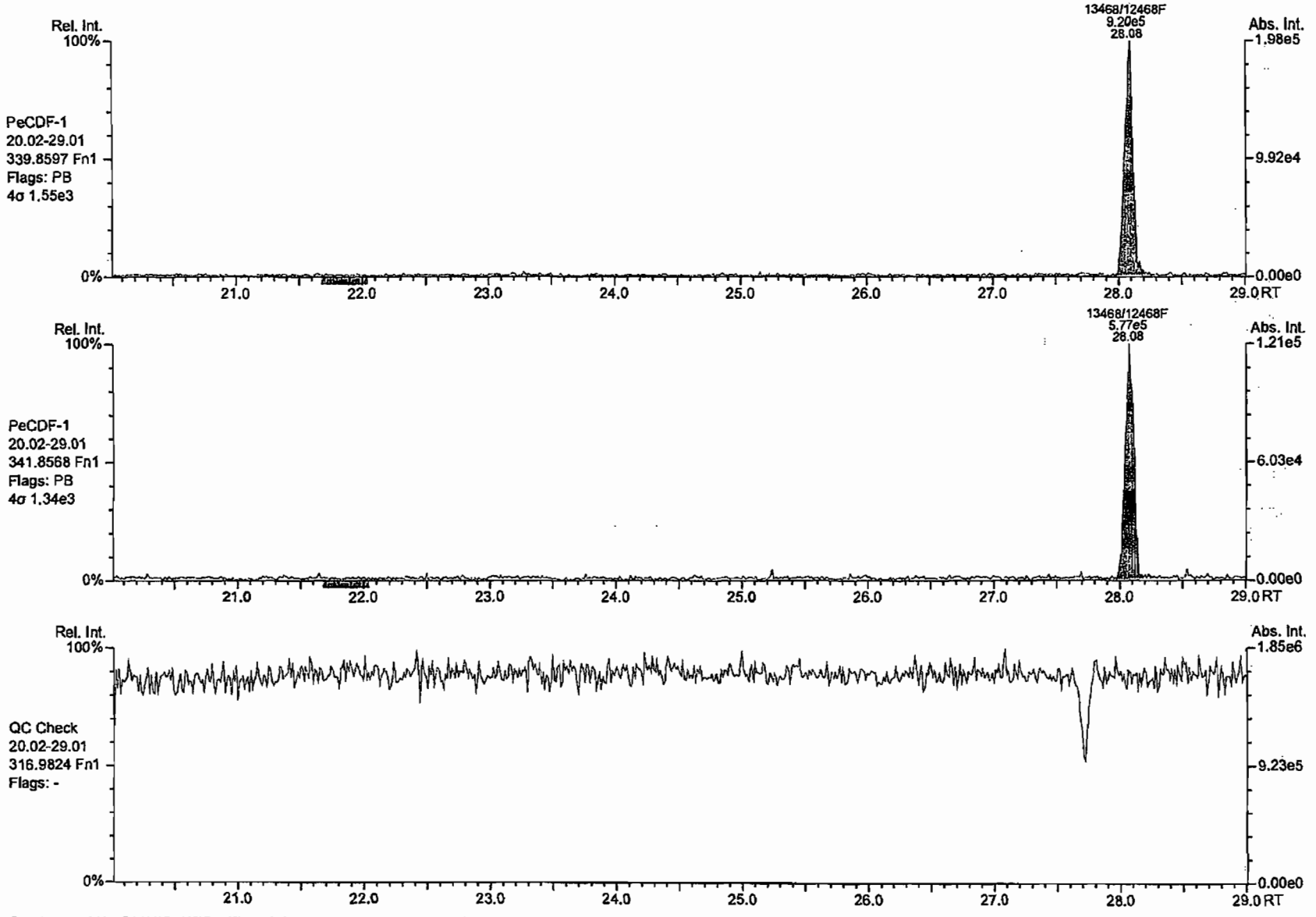
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1538, 5466, 5964 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:04:53 (MC) Printed: 06-Apr-2010 09:35:14 Page 7 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

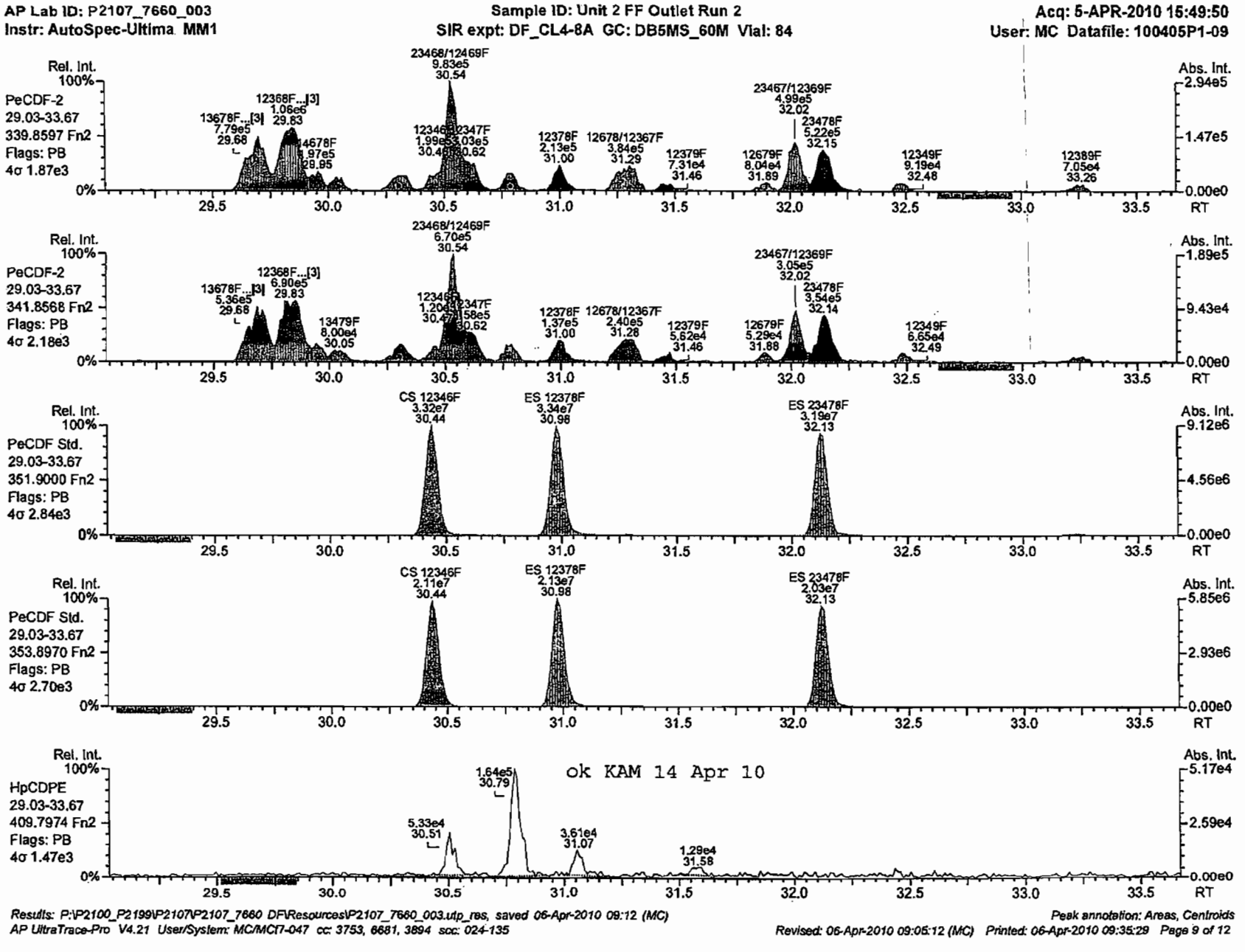
Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5384 scc: 024-135

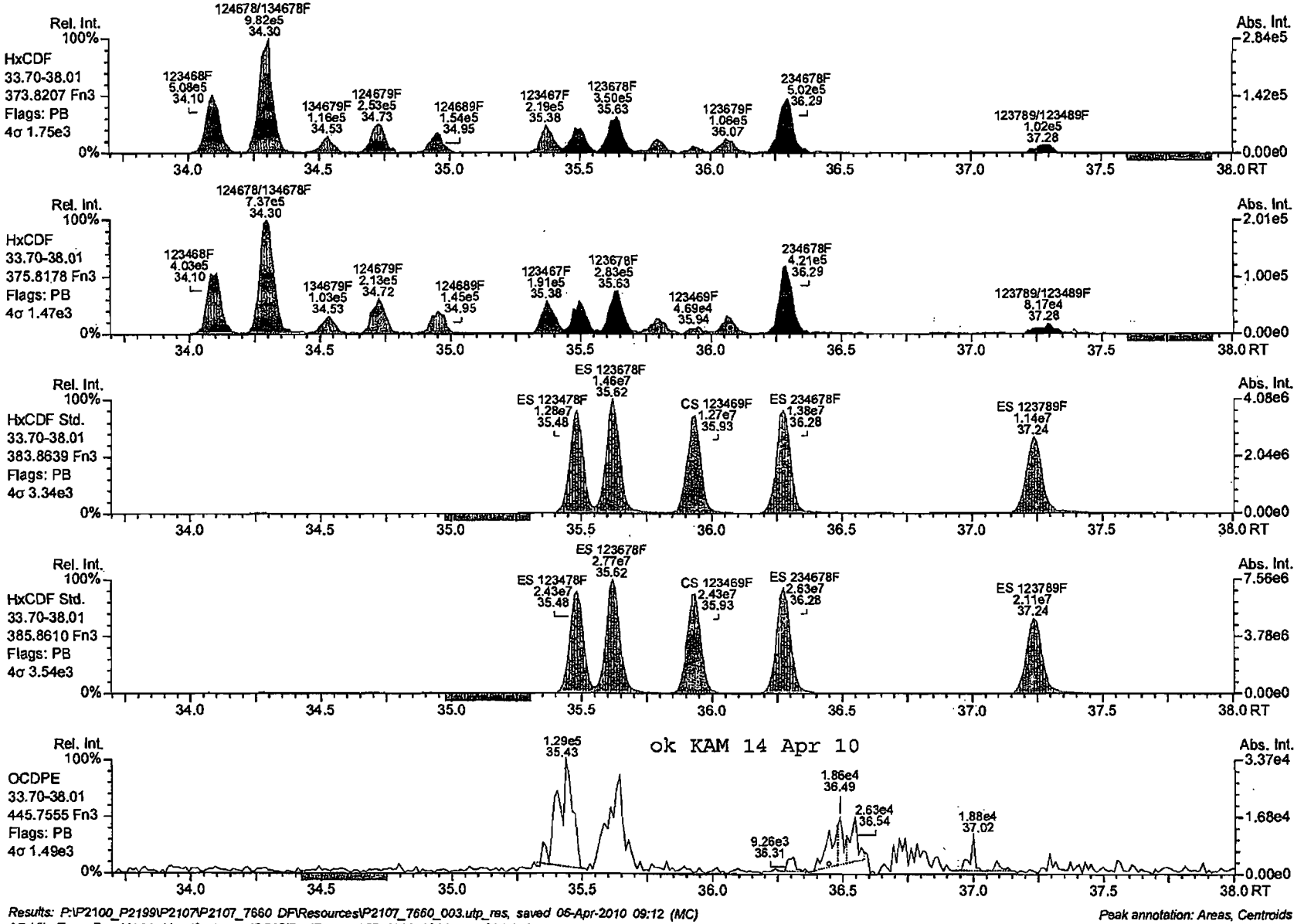
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:02:49 (MC) Printed: 06-Apr-2010 09:35:21 Page 8 of 12


AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1
Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84
Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09
PeCDF-2
29.03-33.67
339.8597 Fn2
Flags: PB
4σ 1.87e3
PeCDF-2
29.03-33.67
341.8568 Fn2
Flags: PB
4σ 2.18e3
PeCDF Std.
29.03-33.67
351.9000 Fn2
Flags: PB
4σ 2.84e3
PeCDF Std.
29.03-33.67
353.8970 Fn2
Flags: PB
4σ 2.70e3
HpCDPE
29.03-33.67
409.7974 Fn2
Flags: PB
4σ 1.47e3
Rel. Int.
Abs. Int.
RT
ok KAM 14 Apr 10
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCT-047 cc: 3753, 6681, 3894 scc: 024-135
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:05:12 (MC) Printed: 06-Apr-2010 09:35:29 Page 9 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 6-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



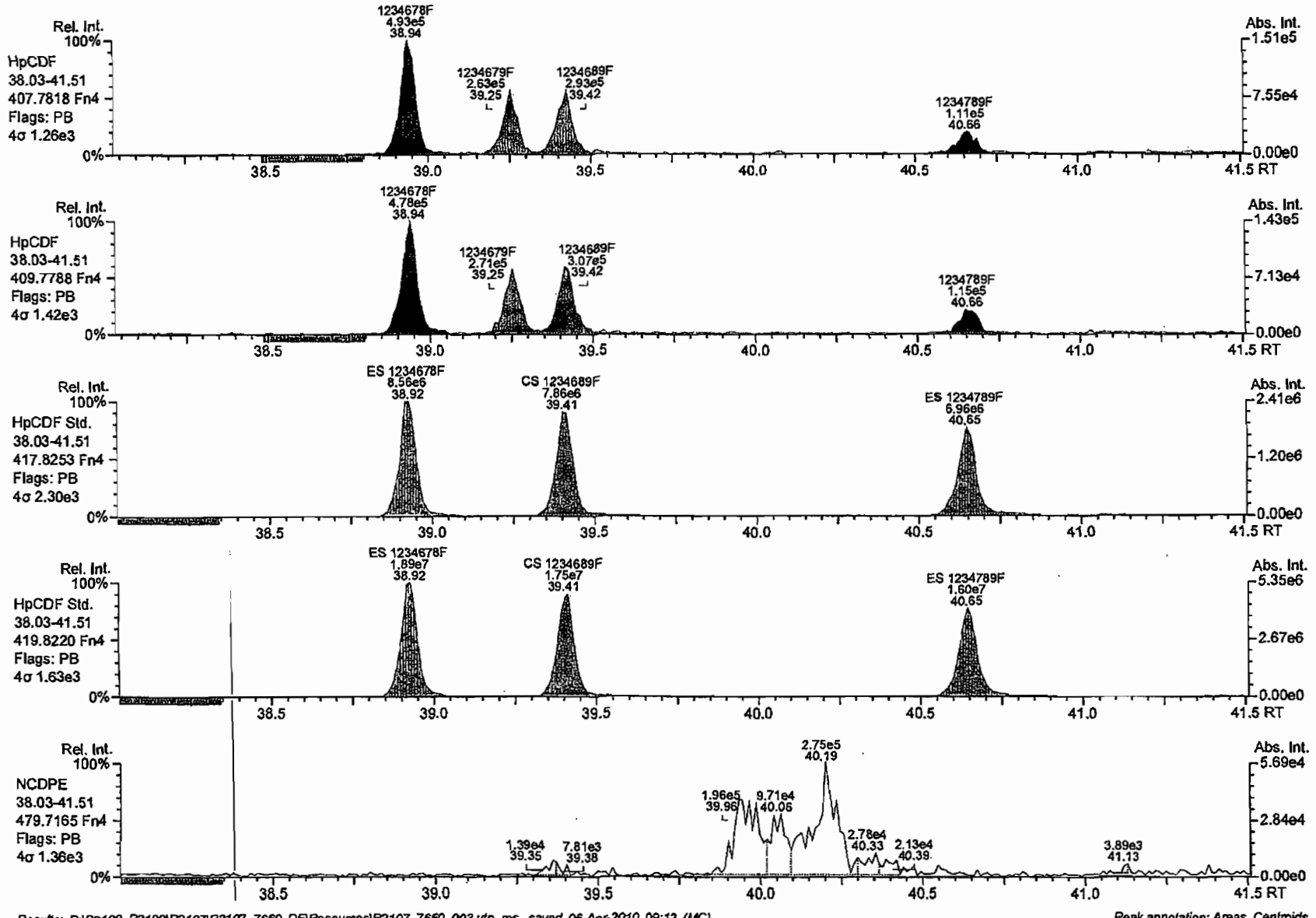
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2355, 0903, 8661 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:05:51 (MC) Printed: 06-Apr-2010 09:35:37 Page 10 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



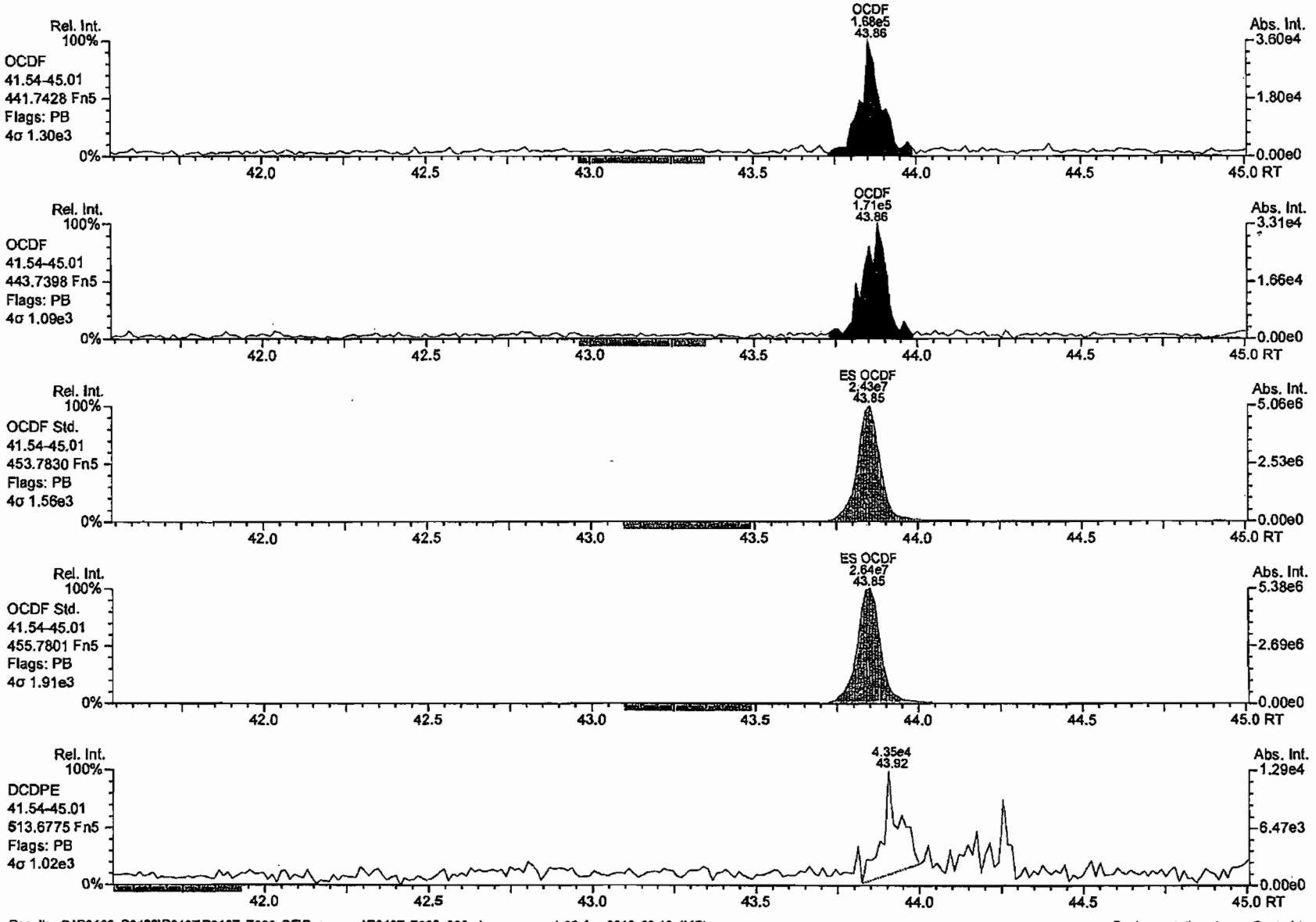
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0990, 2327, 1636 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:05:37 (MC) Printed: 06-Apr-2010 09:35:43 Page 11 of 12

AP Lab ID: P2107_7660_003
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 2
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 84

Acq: 5-APR-2010 15:49:50
User: MC Datafile: 100405P1-09



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_003.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9121, 3697, 3295 scc: 024-135

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:05:42 (MC) Printed: 06-Apr-2010 09:35:48 Page 12 of 12

Lab ID: P2107_7660_004 | Acq'd: 05 Apr 2010 16:41 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 3 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 715-575

Datafile: 100405P1-10 | Report: 06 Apr 2010 09:18 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	1.38E+05	0.96	N	1.09	8.03	2482	1.55
12378-PeCDD	32.50		1.0006	1.0005	-0.2	3.94E+05	1.54	Y	1.02	26.9	2481	1.55
123478-HxCDD	36.47		1.0004	1.0003	-0.2	6.95E+05	1.31	Y	1.11	52.5	2212	1.56
123678-HxCDD	36.58		1.0034	1.0034	0	2.04E+06	1.30	Y	1.02	148	2212	1.43
123789-HxCDD	36.88		1.0116	1.0115	-0.2	9.42E+05	1.28	Y	0.95	71.9	2212	1.74
1234678-HpCDD	40.09		1.0003	1.0003	0	1.17E+07	1.04	Y	1.00	1,020	2432	2.08
OCDD	43.63		1.0004	1.0004	0	1.39E+07	0.87	Y	1.06	1,450	2628	3.15
2378-TCDF	25.95		1.0009	1.0009	0	6.37E+05	0.75	Y	1.20	20.5	2893	1.08
12378-PeCDF	30.99		1.0006	1.0005	-0.2	7.17E+05	1.81	N	1.04	29.2	5066	1.94
23478-PeCDF	32.14		1.0005	1.0007	+0.4	1.79E+06	1.59	Y	1.10	71.7	5066	1.73
123478-HxCDF	35.49		1.0004	1.0004	0	8.82E+05	1.23	Y	1.18	45.3	4279	2.01
123678-HxCDF	35.63		1.0005	1.0003	-0.4	1.22E+06	1.19	Y	1.18	55.1	4279	1.84
234678-HxCDF	36.29		1.0005	1.0004	-0.2	1.99E+06	1.21	Y	1.18	92.7	4279	1.73
123789-HxCDF	NotFnd		1.0005	-	-	-	-	-	1.16	-	4279	2.61
1234678-HpCDF	38.93		1.0003	1.0003	0	2.19E+06	1.05	Y	1.41	124	2342	1.18
1234789-HpCDF	40.65		1.0003	1.0003	0	6.03E+05	1.04	Y	1.37	41.5	2342	1.56
OCDF	43.86		1.0004	1.0003	-0.3	7.95E+05	0.84	Y	0.97	68.4	2953	2.9

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.86	1.0259	1.0259	0	6.30E+07	0.81	Y	1.01	79.8
ES 12378-PeCDD	32.48	1.2404	1.2407	+0.5	5.73E+07	1.63	Y	0.86	84.9
ES 123478-HxCDD	36.46	0.9917	0.9917	0	4.77E+07	1.26	Y	0.99	79.6
ES 123678-HxCDD	36.57	0.9947	0.9947	0	5.39E+07	1.24	Y	1.13	79
ES 123789-HxCDD	36.87	1.0028	1.0029	+0.2	5.52E+07	1.27	Y	1.13	80.7
ES 1234678-HpCDD	40.07	1.0902	1.0902	0	4.56E+07	1.06	Y	0.91	83
ES OCDD	43.61	1.1862	1.1863	+0.2	7.26E+07	0.89	Y	0.73	82.4
ES 2378-TCDF	25.92	1.0585	1.0587	+0.3	1.03E+08	0.80	Y	0.99	84.1
ES 12378-PeCDF	30.98	1.2646	1.2652	+0.9	9.41E+07	1.59	Y	0.87	87.8
ES 23478-PeCDF	32.12	1.3113	1.3118	+0.7	9.09E+07	1.56	Y	0.84	87.8
ES 123478-HxCDF	35.48	0.9651	0.9651	0	6.62E+07	0.53	Y	1.36	80.6
ES 123678-HxCDF	35.62	0.9689	0.9690	+0.2	7.47E+07	0.53	Y	1.56	79.6
ES 234678-HxCDF	36.27	0.9867	0.9867	0	7.28E+07	0.52	Y	1.47	81.9
ES 123789-HxCDF	37.24	1.0129	1.0129	0	5.80E+07	0.52	Y	1.27	75.8
ES 1234678-HpCDF	38.92	1.0589	1.0588	-0.2	5.01E+07	0.45	Y	1.06	78.5
ES 1234789-HpCDF	40.64	1.1057	1.1056	-0.2	4.26E+07	0.44	Y	0.88	80.4
ES OCDF	43.85	1.1926	1.1928	+0.4	9.55E+07	0.93	Y	1.03	77

Lab ID: P2107_7660_004 | Acq'd: 05 Apr 2010 16:41 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 3 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 715-575

Datafile: 100405P1-10 | Report: 06 Apr 2010 09:18 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		-	-	-	7.85E+07	0.82	Y	-	-	
JS 1234-TCDF	24.49		-	-	-	1.24E+08	0.80	Y	-	-	
JS 123467-HxCDD	36.76		-	-	-	3.01E+07	1.24	Y	-	-	
CS 37Cl-2378-TCDD	26.88		1.0268	1.0268	0	2.85E+07	n/a	-	1.15	79.1	
CS 12347-PeCDD	31.97		1.2209	1.2211	+0.3	5.85E+07	1.61	Y	0.83	89.8	
CS 12346-PeCDF	30.43		1.2424	1.2429	+0.7	9.01E+07	1.54	Y	0.87	83.7	
CS 123469-HxCDF	35.93		0.9773	0.9773	0	6.47E+07	0.52	Y	1.36	78.7	
CS 1234689-HpCDF	39.40		1.0720	1.0719	-0.2	4.56E+07	0.44	Y	0.94	80.6	
SS 37Cl-2378-TCDD	26.88		1.0268	1.0268	0	2.85E+07	n/a	-	1.14	99.1	
SS 12347-PeCDD	31.97		1.2209	1.2211	+0.3	5.85E+07	1.61	Y	0.97	106	
SS 12346-PeCDF	30.43		1.2424	1.2429	+0.7	9.01E+07	1.54	Y	1.00	95.3	
SS 123469-HxCDF	35.93		0.9773	0.9773	0	6.47E+07	0.52	Y	0.88	98.9	
SS 1234689-HpCDF	39.40		1.0720	1.0719	-0.2	4.56E+07	0.44	Y	0.89	103	
AS 1368-TCDD	22.90		0.8731	0.8745	+2.2	7.18E+07	0.80	Y	1.08	84.3	
AS 1368-TCDF	20.74		0.8447	0.8471	+3.5	1.27E+08	0.79	Y	1.27	80.9	
FS 1278-TCDD	NotFnd		1.0131								
FS 12478-PeCDD	NotFnd		0.9617								
FS 123468-HxCDD	35.42		0.9713	0.9715	+0.4	5.65E+04	1.72	N	1.00	0.119	FS & TS na
FS 1234679-HpCDD	39.24		0.9794	0.9791	-0.7	3.56E+05	1.03	Y	0.01	83.1	KAM 14 Apr 10
TS 1378-TCDD	NotFnd		0.9345								

Totals	Conc	EMPC
Total TCDD	1780	1810
Total PeCDD	2140	2140
Total HxCDD	4150	4150
Total HpCDD	2090	2090
Total Tetra-Octa Dioxins	11600	11600
Total TCDF	926	991
Total PeCDF	818	857
Total HxCDF	673	680
Total HpCDF	323	323
Total Tetra-Octa Furans	2810	2920
Total Tetra-Octa Dioxins & Furans	14400	14600

Lab ID: P2107_7660_004 | Acq'd: 05 Apr 2010 16:41 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 3 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 715-575

Datafile: 100405P1-10 | Report: 06 Apr 2010 09:18 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	0.8536	-0.5	2.51E+07	0.80	Y	1.09	1460	2482	1.55
1379-TCDD	23.33		0.8685	0.8685	0	1.98E+06	0.73	Y	1.09	115	2482	1.55
1369-TCDD	23.80		0.8863	0.8862	-0.2	3.01E+05	0.74	Y	1.09	17.5	2482	1.55
1469-TCDD	NotFnd		0.9189						1.09		2482	1.55
1247/1246/1248/1249-TCDD	24.91		0.9276	0.9275	-0.2	7.41E+05	0.83	Y	1.09	43.1	2482	1.55
1378-TCDD	25.12		0.9351	0.9353	+0.3	7.22E+05	0.86	Y	1.09	42	2482	1.55
1268-TCDD	25.33		0.9430	0.9432	+0.3	2.32E+05	0.88	Y	1.09	13.5	2482	1.55
1478-TCDD	25.60		0.9517	0.9530	+2.1	5.99E+04	0.71	Y	1.09	3.48	2482	1.55
1279-TCDD	25.79		0.9598	0.9600	+0.3	2.51E+05	0.89	N	1.09	14.6	2482	1.55
1234/1269-TCDD	26.20		0.9740	0.9755	+2.4	6.24E+05	0.80	Y	1.09	36.3	2482	1.55
1236-TCDD	26.31		0.9801	0.9796	-0.8	9.52E+04	0.97	N	1.09	5.53	2482	1.55
1237/1238-TCDD	26.59		0.9895	0.9898	+0.5	6.95E+05	0.83	Y	1.09	40.4	2482	1.55
1239-TCDD	26.74		0.9952	0.9955	+0.5	8.42E+04	0.83	Y	1.09	4.89	2482	1.55
2378-TCDD	26.88		1.0008	1.0009	+0.2	1.38E+05	0.96	N	1.09	8.03	2482	1.55
1278-TCDD	27.24		1.0138	1.0141	+0.5	8.44E+04	1.01	N	1.09	4.91	2482	1.55
1267-TCDD	NotFnd		1.0194						1.09		2482	1.55
1289-TCDD	NotFnd		1.0396						1.09		2482	1.55
12479/12468-PeCDD	29.93		0.9210	0.9213	+0.6	1.35E+07	1.55	Y	1.02	922	2481	1.55
12469-PeCDD	30.47		0.9382	0.9380	-0.4	2.29E+05	1.41	Y	1.02	15.6	2481	1.55
12368-PeCDD	31.04		0.9556	0.9556	0	1.10E+07	1.59	Y	1.02	751	2481	1.55
12478-PeCDD	31.23		0.9614	0.9613	-0.2	4.40E+05	1.54	Y	1.02	30	2481	1.55
12379-PeCDD	31.34		0.9649	0.9648	-0.2	3.57E+06	1.61	Y	1.02	243	2481	1.55
12369/12467/12489-PeCDD	31.61		0.9732	0.9730	-0.4	5.08E+05	1.51	Y	1.02	34.6	2481	1.55
12346/12347-PeCDD	32.00		0.9850	0.9850	0	1.41E+06	1.59	Y	1.02	96.5	2481	1.55
12378-PeCDD	32.50		1.0006	1.0005	-0.2	3.94E+05	1.54	Y	1.02	26.9	2481	1.55
12367-PeCDD	32.60		1.0037	1.0035	-0.4	1.41E+05	1.34	Y	1.02	9.63	2481	1.55
12389-PeCDD	32.96		1.0146	1.0145	-0.2	1.20E+05	1.69	Y	1.02	8.17	2481	1.55
124679/124689-HxCDD	34.76		0.9534	0.9535	+0.2	2.82E+06	1.25	Y	1.03	211	2212	1.57
123468-HxCDD	35.42		0.9717	0.9716	-0.2	4.18E+07	1.26	Y	1.03	3,120	2212	1.57
123679/123689-HxCDD	35.71		0.9793	0.9796	+0.7	6.54E+06	1.27	Y	1.03	488	2212	1.57
123469-HxCDD	35.83		0.9833	0.9830	-0.7	4.56E+05	1.25	Y	1.03	34	2212	1.57
123478-HxCDD	36.47		1.0004	1.0003	-0.2	6.95E+05	1.31	Y	1.11	52.5	2212	1.56
123678-HxCDD	36.58		1.0034	1.0034	0	2.04E+06	1.30	Y	1.02	148	2212	1.43
123467-HxCDD	36.77		1.0088	1.0087	-0.2	3.71E+05	1.27	Y	1.03	27.7	2212	1.57
123789-HxCDD	36.88		1.0116	1.0115	-0.2	9.42E+05	1.28	Y	0.95	71.9	2212	1.74

Lab ID: P2107_7660_004 | Acq'd: 06 Apr 2010 16:41 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 3 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 716-675

Datafile: 100405P1-10 | Report: 06 Apr 2010 09:18 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	39.25		0.9794	0.9793	-0.2	1.22E+07	1.04	Y	1.00	1,070	2432	2.08
1234678-HpCDD	40.09		1.0003	1.0003	0	1.17E+07	1.04	Y	1.00	1,020	2432	2.08
OCDD	43.63		1.0004	1.0004	0	1.39E+07	0.87	Y	1.06	1,450	2628	3.15
OCDD-a	43.62		1.0003	1.0003	0	7.99E+05	2.36	Y	0.06	1,360	3629	71
1368-TCDF	20.77		0.8012	0.8011	-0.2	1.79E+06	0.77	Y	1.20	57.8	2893	1.08
1468-TCDF	21.31		0.8216	0.8219	+0.5	5.82E+05	0.76	Y	1.20	18.7	2893	1.08
2468-TCDF	21.93		0.8461	0.8459	-0.3	1.87E+06	0.79	Y	1.20	60.4	2893	1.08
1346/1246-TCDF	22.35		0.8607	0.8623	+2.5	6.94E+05	0.76	Y	1.20	22.4	2893	1.08
1347/1378/1247-TCDF	22.50		0.8672	0.8679	+1.1	2.72E+06	0.78	Y	1.20	87.5	2893	1.08
1348-TCDF	22.79		0.8792	0.8792	0	4.74E+05	0.95	N	1.20	15.3	2893	1.08
1248/1367/1379-TCDF	22.93		0.8846	0.8844	-0.3	1.63E+06	0.79	Y	1.20	52.5	2893	1.08
1268-TCDF	23.36		0.9011	0.9012	+0.2	8.17E+05	0.84	Y	1.20	26.3	2893	1.08
1467-TCDF	23.51		0.9067	0.9069	+0.3	3.75E+05	0.86	Y	1.20	12.1	2893	1.08
1478-TCDF	23.69		0.9137	0.9138	+0.2	5.47E+05	0.95	N	1.20	17.6	2893	1.08
1369/1237-TCDF	24.09		0.9293	0.9294	+0.2	7.24E+05	0.78	Y	1.20	23.3	2893	1.08
2467-TCDF	24.24		0.9348	0.9350	+0.3	2.05E+06	0.81	Y	1.20	65.9	2893	1.08
2368-TCDF	24.39		0.9408	0.9409	+0.2	1.79E+06	0.82	Y	1.20	57.7	2893	1.08
1238/1234/1678/1469/1236-TCDF	24.51		0.9445	0.9455	+1.6	6.32E+06	0.73	Y	1.20	203	2893	1.08
1278-TCDF	25.00		0.9641	0.9644	+0.5	8.70E+05	0.83	Y	1.20	28	2893	1.08
1349-TCDF	25.11		0.9693	0.9686	-1.1	2.67E+05	0.74	Y	1.20	8.59	2893	1.08
1267-TCDF	25.29		0.9755	0.9755	0	5.26E+05	0.89	N	1.20	17	2893	1.08
2346/1249-TCDF	25.51		0.9834	0.9839	+0.8	1.24E+06	0.73	Y	1.20	40.1	2893	1.08
2347/1279-TCDF	25.72		0.9922	0.9921	-0.2	1.68E+06	0.79	Y	1.20	54.2	2893	1.08
2348-TCDF	25.84		0.9966	0.9966	0	8.96E+05	0.79	Y	1.20	28.9	2893	1.08
2378-TCDF	25.95		1.0009	1.0009	0	6.37E+05	0.75	Y	1.20	20.5	2893	1.08
2367/3467-TCDF	26.35		1.0164	1.0164	0	1.57E+06	0.76	Y	1.20	50.4	2893	1.08
1269-TCDF	26.61		1.0260	1.0265	+0.8	1.41E+05	1.01	N	1.20	4.55	2893	1.08
1239-TCDF	26.89		1.0375	1.0374	-0.2	2.06E+05	0.76	Y	1.20	6.64	2893	1.08
1289-TCDF	28.09		1.0834	1.0837	+0.5	3.48E+05	0.94	N	1.20	11.2	2893	1.08
13468/12468-PeCDF	28.08		0.9057	0.9064	+1.3	2.50E+06	1.49	Y	1.07	101	3031	1.1
13678/13467/12467-PeCDF	29.68		0.9581	0.9582	+0.2	2.53E+06	1.54	Y	1.07	102	5066	1.83
12368/13478/12478-PeCDF	29.83		0.9620	0.9631	+2.0	3.43E+06	1.51	Y	1.07	138	5066	1.83
14678-PeCDF	29.95		0.9667	0.9668	+0.2	4.83E+05	1.52	Y	1.07	19.5	5066	1.83
13479-PeCDF	30.04		0.9702	0.9696	-1.1	4.37E+05	1.56	Y	1.07	17.6	5066	1.83
13469/12479-PeCDF	30.30		0.9781	0.9782	+0.2	6.57E+05	1.53	Y	1.07	26.5	5066	1.83
12346-PeCDF	30.44		0.9829	0.9828	-0.2	3.81E+05	1.54	Y	1.07	15.4	5066	1.83

Lab ID: P2107_7660_004 | Acq'd: 05 Apr 2010 16:41 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: Unit 2 FF Outlet Run 3 | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 715-575

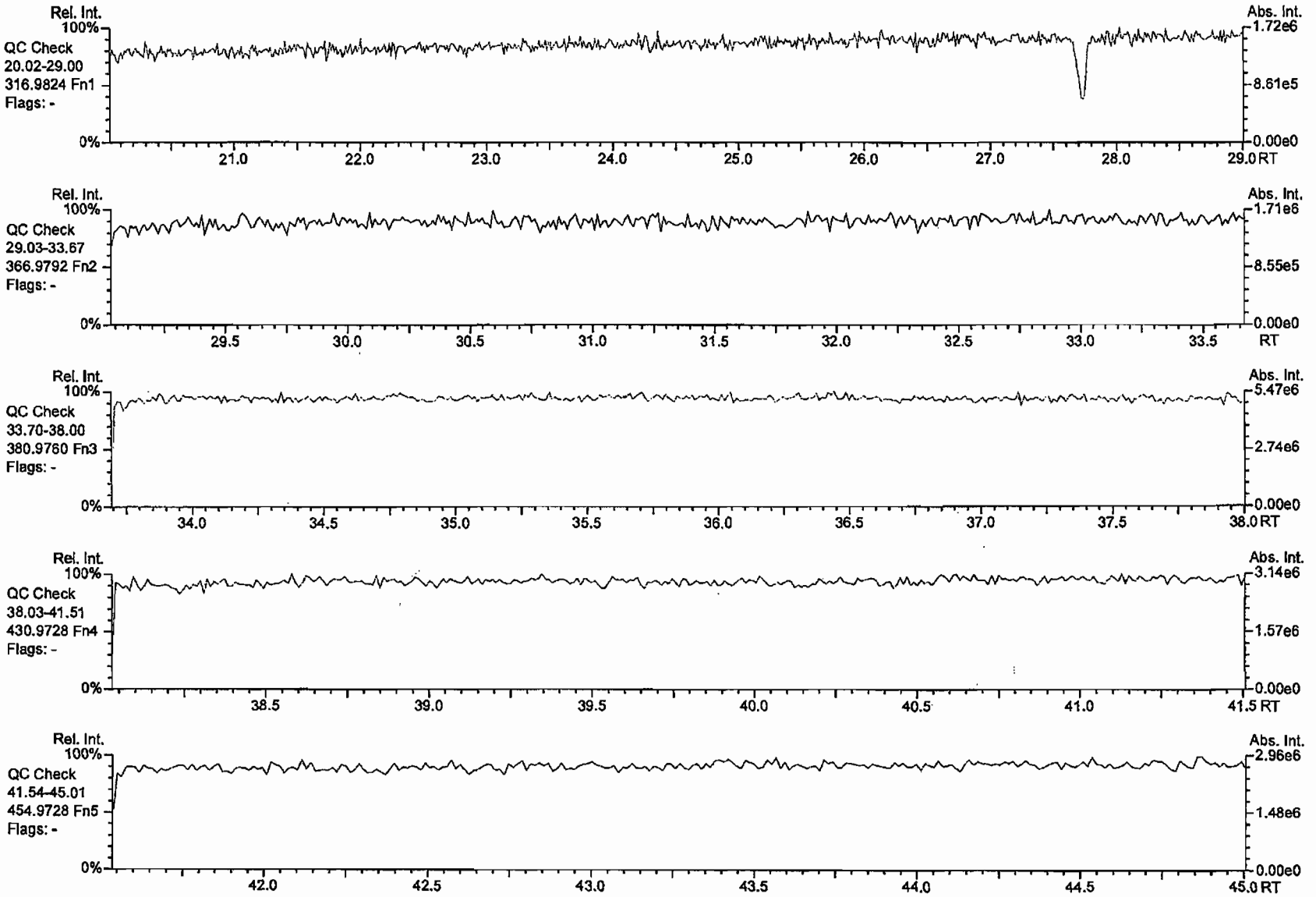
Datafile: 100405P1-10 | Report: 06 Apr 2010 09:18 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.53		0.9858	0.9854	-0.7	3.00E+06	1.66	Y	1.07	121	5066	1.83
12347-PeCDF	30.60		0.9881	0.9879	-0.4	9.37E+05	1.63	Y	1.07	37.8	5066	1.83
12348-PeCDF	30.78		0.9936	0.9937	+0.2	5.59E+05	1.55	Y	1.07	22.5	5066	1.83
12378-PeCDF	30.99		1.0006	1.0005	-0.2	7.17E+05	1.81	N	1.04	29.2	5066	1.94
12678/12367-PeCDF	31.28		1.0104	1.0098	-1.1	1.23E+06	1.58	Y	1.07	49.4	5066	1.83
12379-PeCDF	31.45		1.0151	1.0154	+0.6	2.59E+05	1.48	Y	1.07	10.4	5066	1.83
12679-PeCDF	31.88		0.9925	0.9926	+0.2	2.69E+05	1.49	Y	1.07	10.8	5066	1.83
23467/12369-PeCDF	32.02		0.9981	0.9967	-2.7	1.66E+06	1.55	Y	1.07	66.7	5066	1.83
23478-PeCDF	32.14		1.0005	1.0007	+0.4	1.79E+06	1.59	Y	1.10	71.7	5066	1.73
23478/12489-PeCDF	NotFnd		1.0006						1.10		5066	1.73
12489-PeCDF	NotFnd		1.0023						1.07		5066	1.83
12349-PeCDF	32.48		1.0110	1.0111	+0.2	2.34E+05	2.03	N	1.07	9.43	5066	1.83
12389-PeCDF	33.24		1.0350	1.0350	0	1.87E+05	1.39	Y	1.07	7.55	5066	1.83
123468-HxCDF	34.09		0.9609	0.9609	0	1.76E+06	1.25	Y	1.17	88	4279	2.01
124678/134678-HxCDF	34.29		0.9668	0.9666	-0.4	3.33E+06	1.20	Y	1.17	167	4279	2.01
134679-HxCDF	34.53		0.9733	0.9733	0	4.21E+05	1.33	Y	1.17	21.1	4279	2.01
124679-HxCDF	34.72		0.9788	0.9787	-0.2	1.08E+06	1.24	Y	1.17	54.2	4279	2.01
124689-HxCDF	34.95		0.9851	0.9851	0	7.49E+05	1.26	Y	1.17	37.5	4279	2.01
123467-HxCDF	35.37		0.9968	0.9971	+0.6	8.71E+05	1.27	Y	1.17	43.7	4279	2.01
123478-HxCDF	35.49		1.0004	1.0004	0	8.82E+05	1.23	Y	1.18	45.3	4279	2.01
123678-HxCDF	35.63		1.0005	1.0003	-0.4	1.22E+06	1.19	Y	1.18	55.1	4279	1.84
123679-HxCDF	35.79		1.0048	1.0048	0	4.20E+05	1.17	Y	1.17	21.1	4279	2.01
123469-HxCDF	35.94		1.0090	1.0090	0	1.41E+05	1.57	N	1.17	7.06	4279	2.01
123679-HxCDF	36.06		0.9943	0.9942	-0.2	4.72E+05	1.22	Y	1.17	23.6	4279	2.01
234678-HxCDF	36.29		1.0005	1.0004	-0.2	1.99E+06	1.21	Y	1.18	92.7	4279	1.73
234678/123689-HxCDF	NotFnd		1.0004						1.18		4279	1.73
123689-HxCDF	NotFnd		1.0009						1.17		4279	2.01
123789-HxCDF	NotFnd		1.0005						1.16		4279	2.61
123789/123489-HxCDF	37.28		1.0012	1.0012	0	4.04E+05	1.41	Y	1.16	24	4279	2.61
123489-HxCDF	NotFnd		1.0017						1.17		4279	2.01
1234678-HpCDF	38.93		1.0003	1.0003	0	2.19E+06	1.05	Y	1.41	124	2342	1.18
1234679-HpCDF	39.24		1.0083	1.0083	0	1.20E+06	1.10	Y	1.39	74.5	2342	1.35
1234689-HpCDF	39.41		1.0132	1.0127	-1.2	1.34E+06	1.18	Y	1.39	83.1	2342	1.35
1234789-HpCDF	40.65		1.0003	1.0003	0	6.03E+05	1.04	Y	1.37	41.5	2342	1.56
OCDF	43.86		1.0004	1.0003	-0.3	7.95E+05	0.84	Y	0.97	68.4	2953	2.9
OCDF-a	NotFnd		1.0002						0.06		3071	51

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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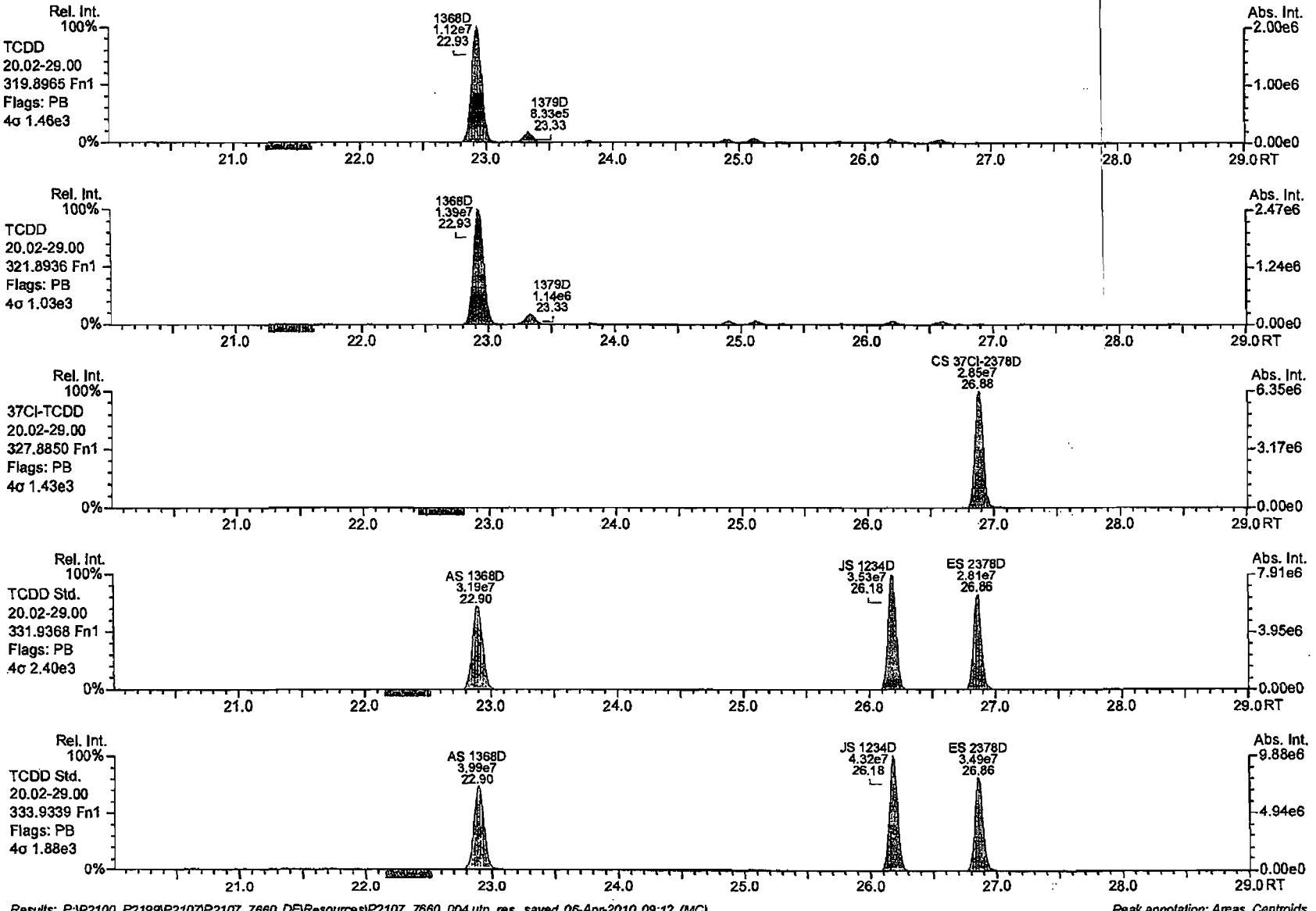
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 715-575

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:35:56 Page 1 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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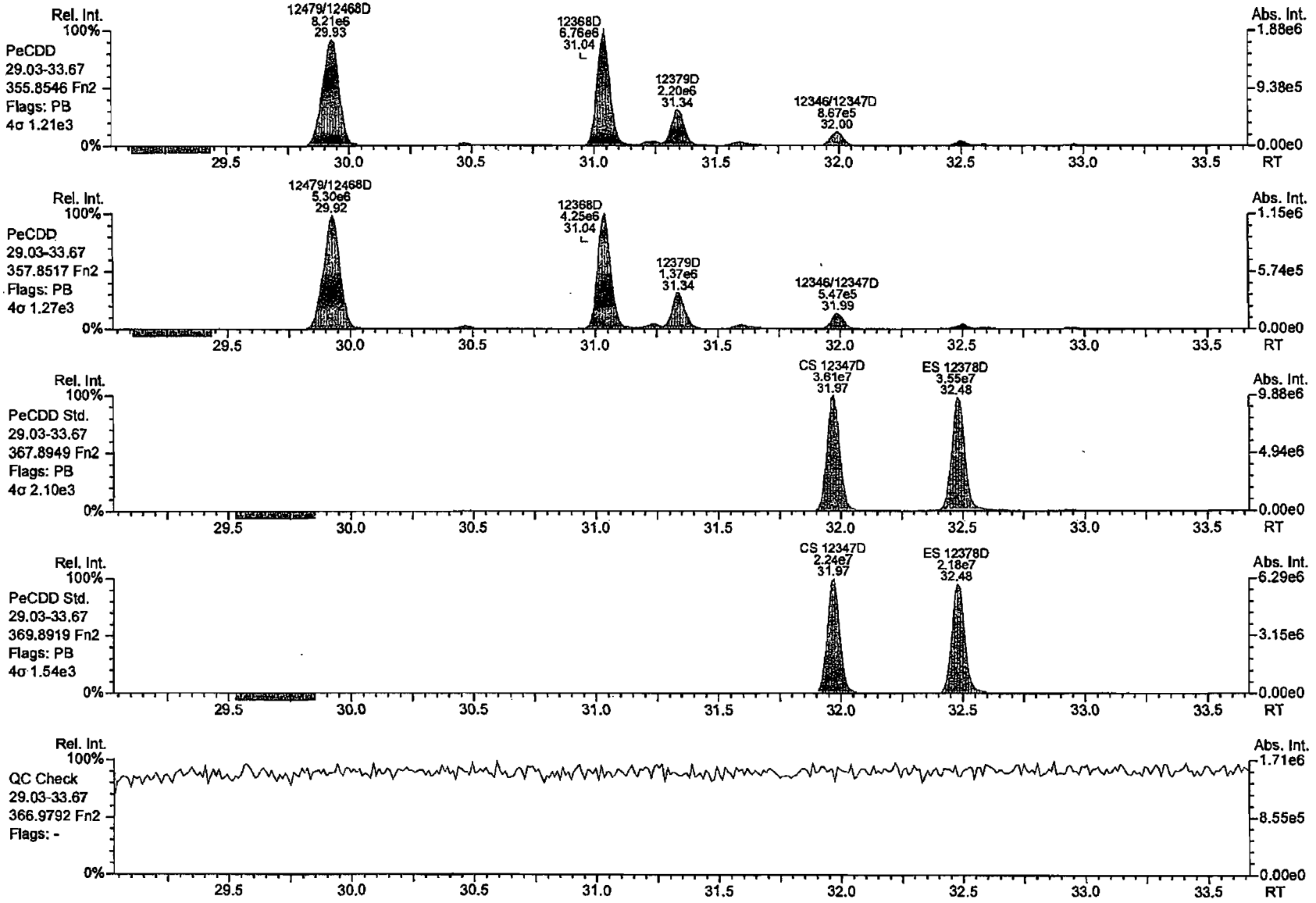
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3603, 5594, 3484 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:07:31 (MC) Printed: 06-Apr-2010 09:36:07 Page 2 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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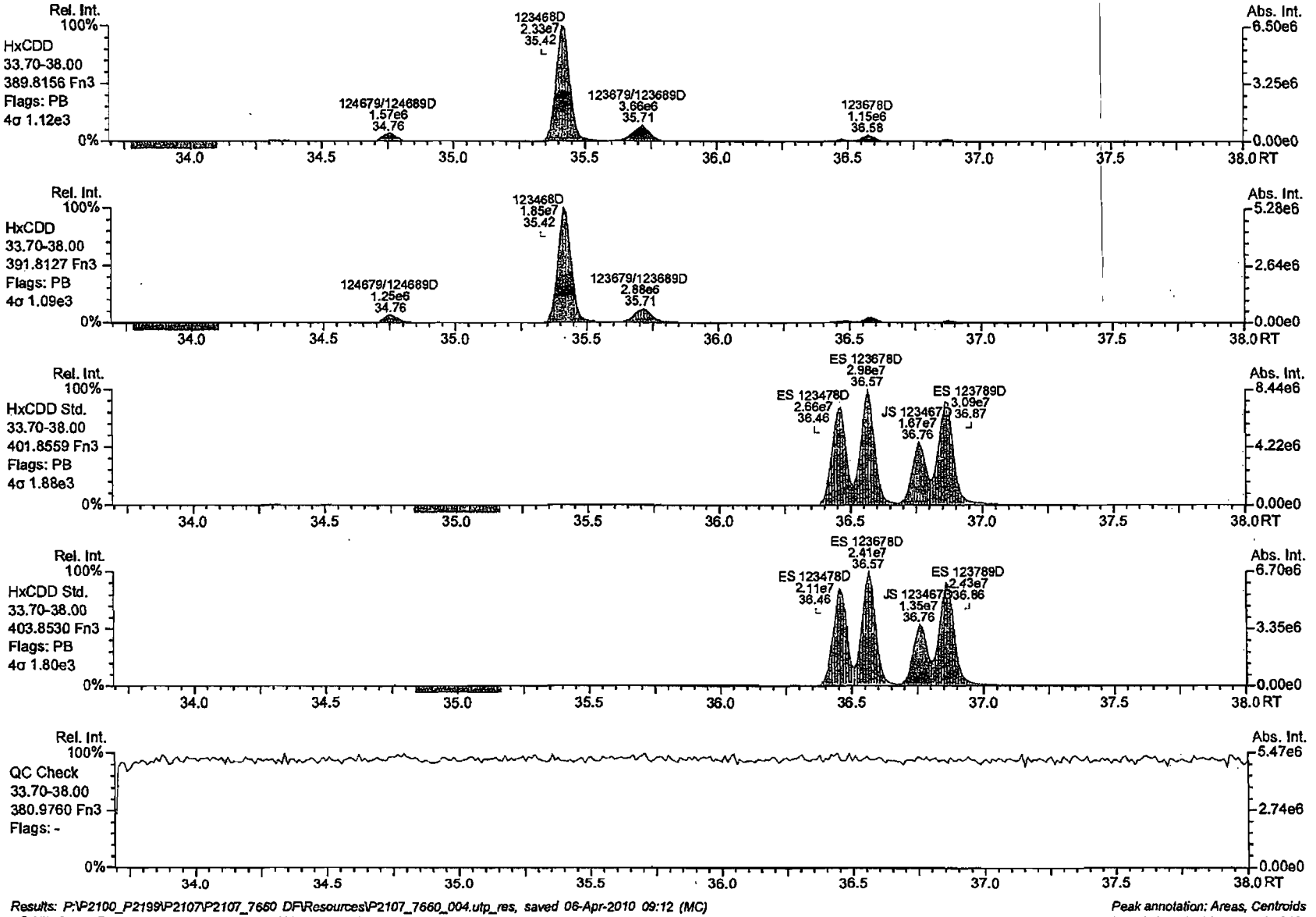
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7377, 6915 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:06:27 (MC) Printed: 06-Apr-2010 09:36:15 Page 3 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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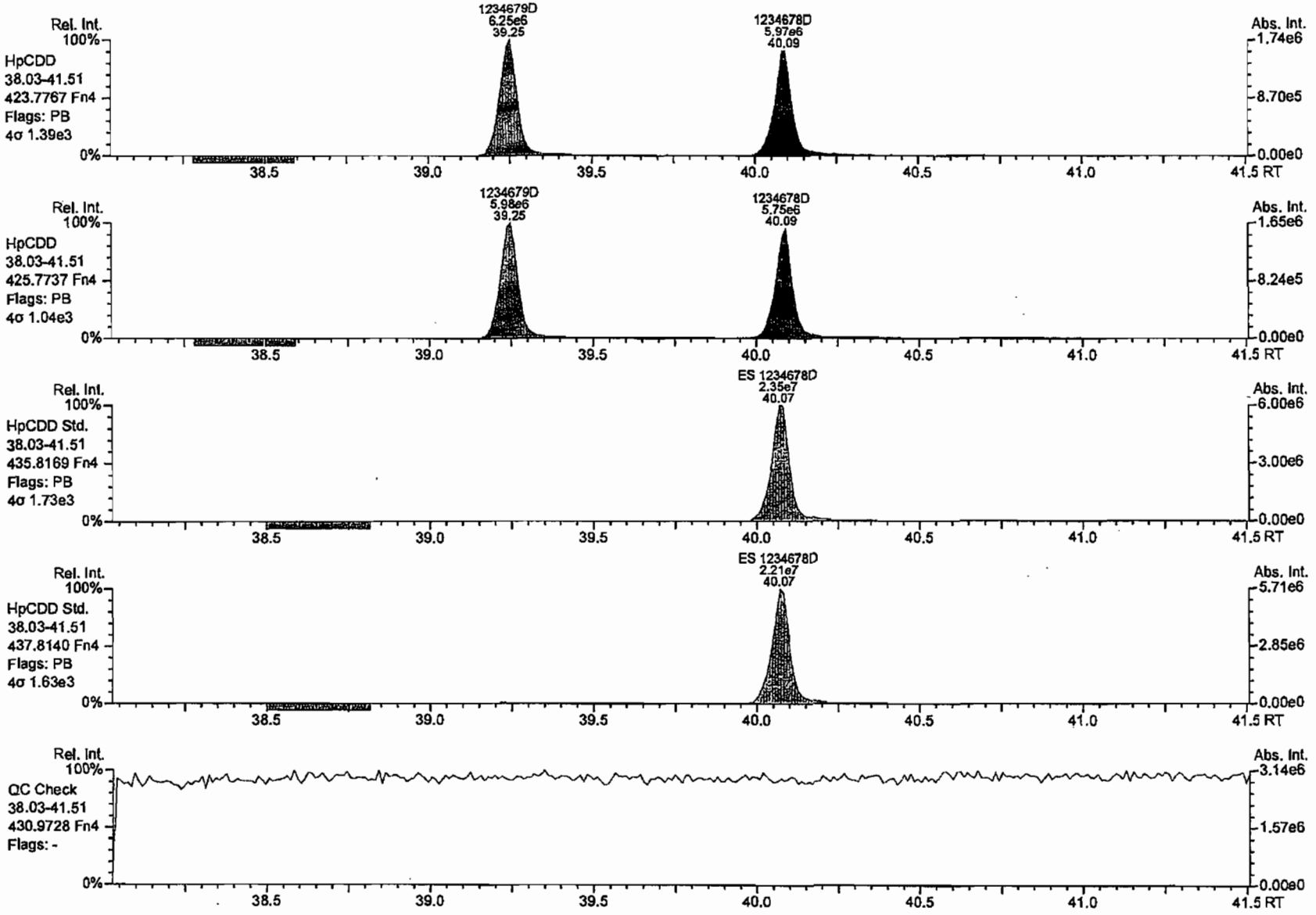
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3263, 7539 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:07:49 (MC) Printed: 06-Apr-2010 09:36:22 Page 4 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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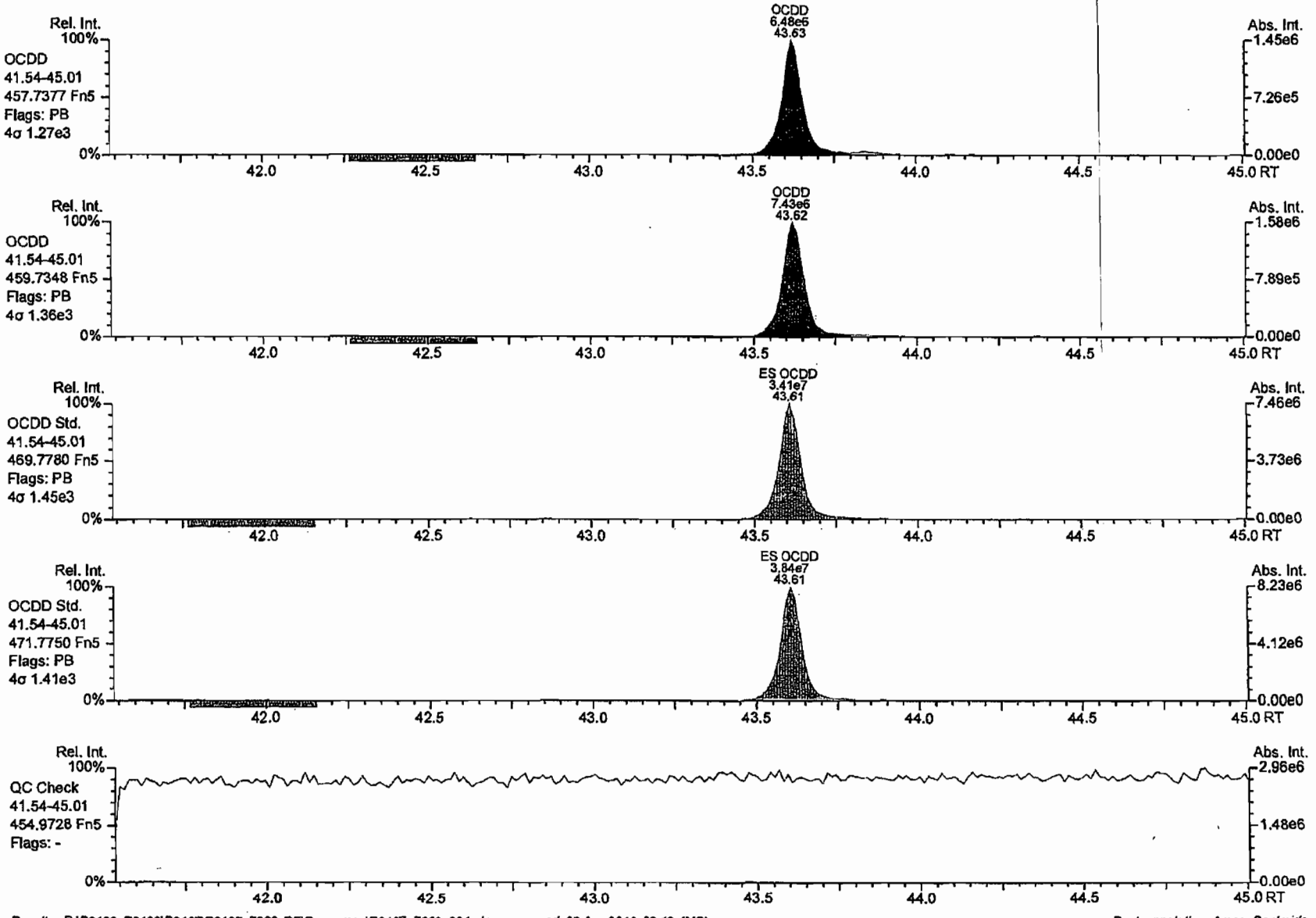
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5292, 5967 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:06:27 (MC) Printed: 06-Apr-2010 09:35:29 Page 5 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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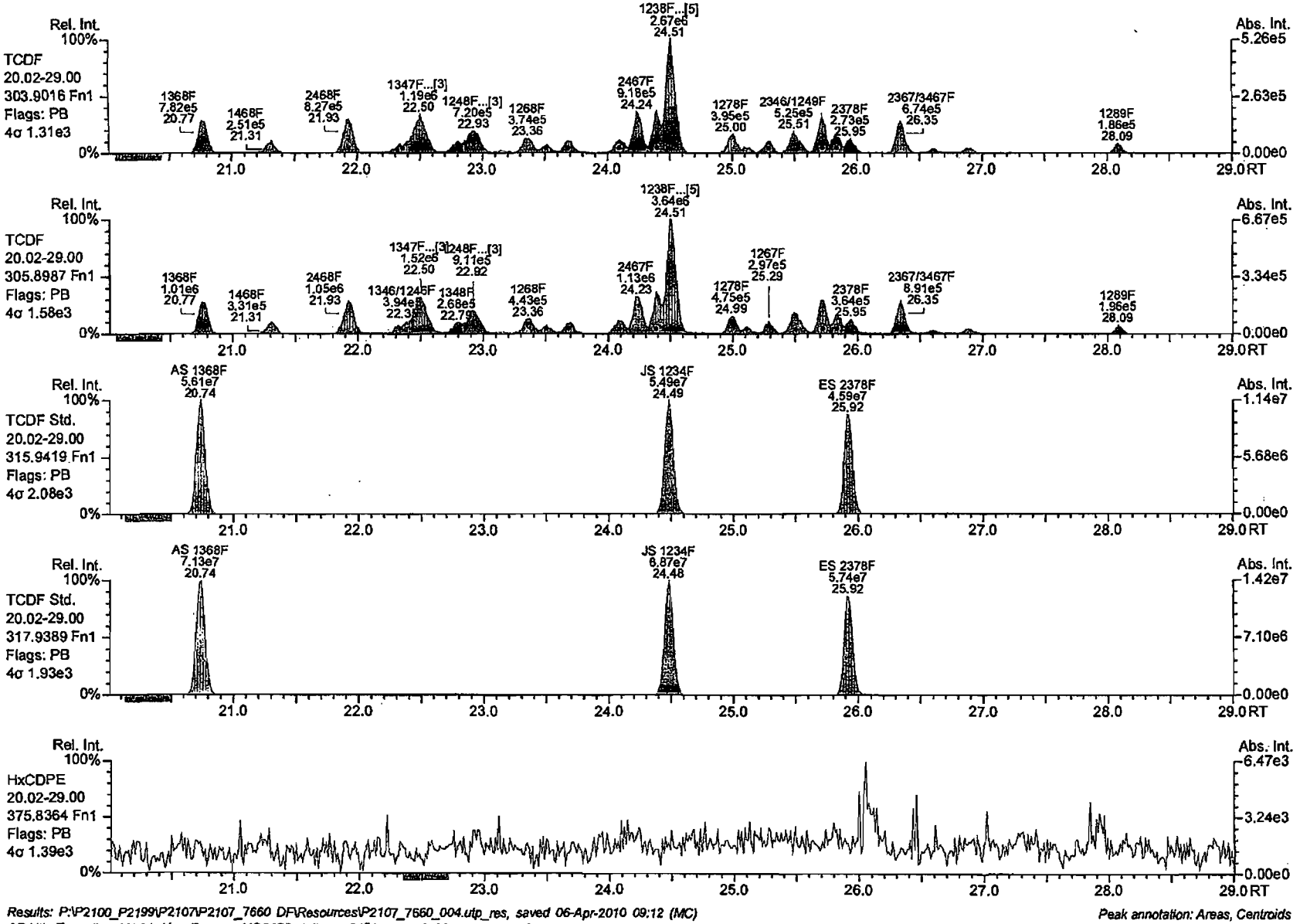
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0839, 8275 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:07:55 (MC) Printed: 06-Apr-2010 09:36:34 Page 6 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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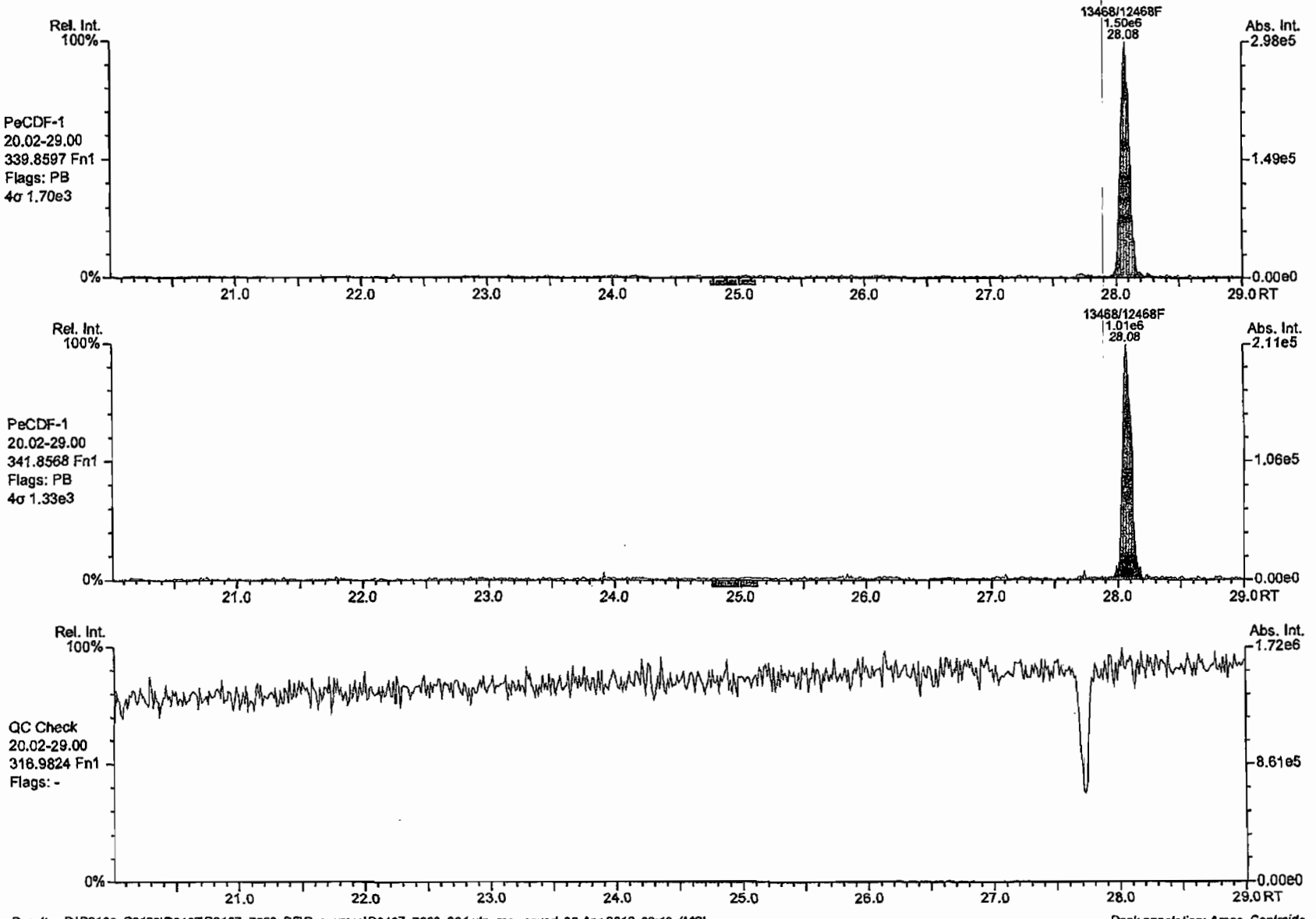
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:08:27 (MC) Printed: 06-Apr-2010 09:36:46 Page 7 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



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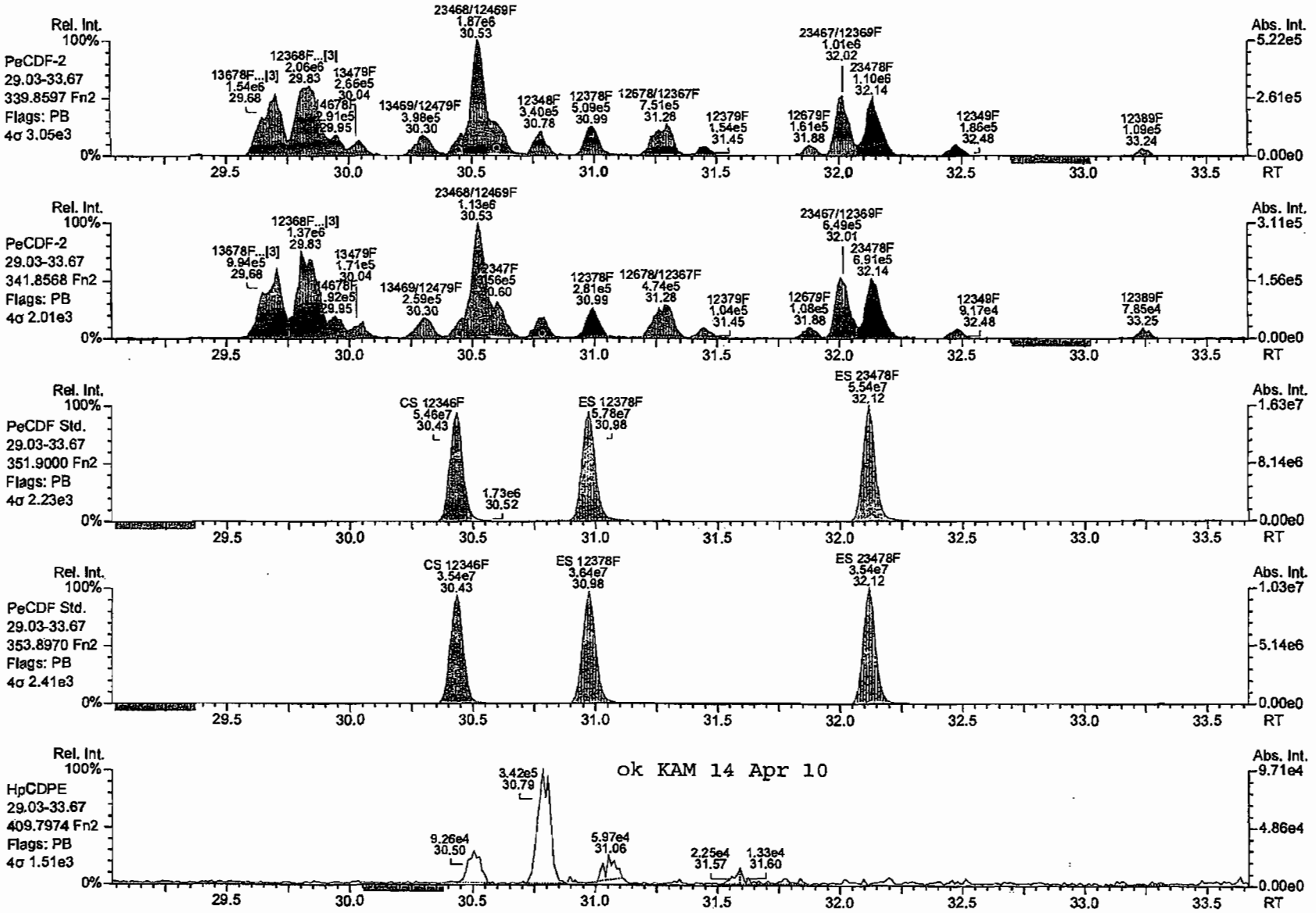
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1199 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:06:27 (MC) Printed: 06-Apr-2010 09:36:53 Page 8 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

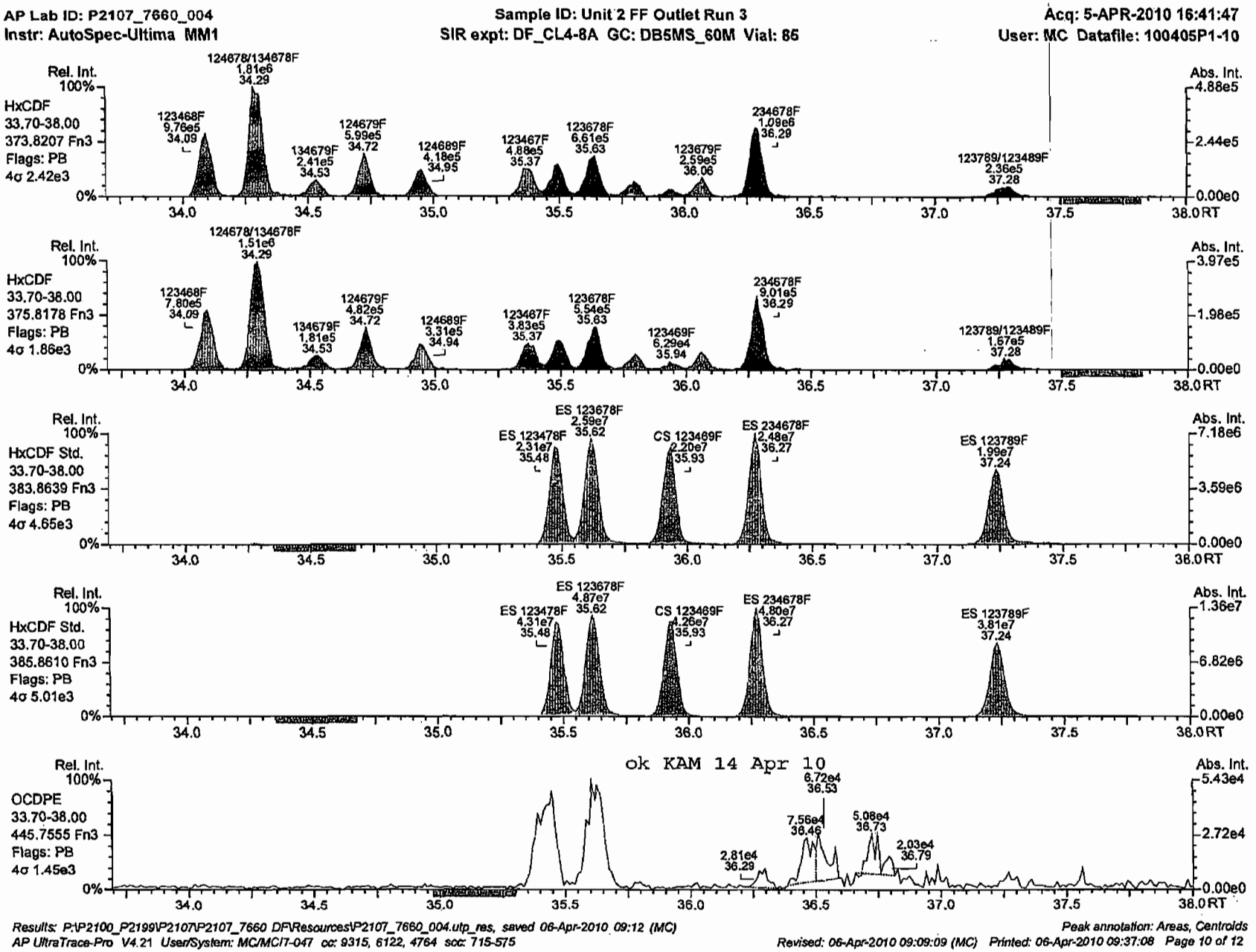
Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_004.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8153, 0635, 4732 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:08:55 (MC) Printed: 06-Apr-2010 09:37:01 Page 9 of 12

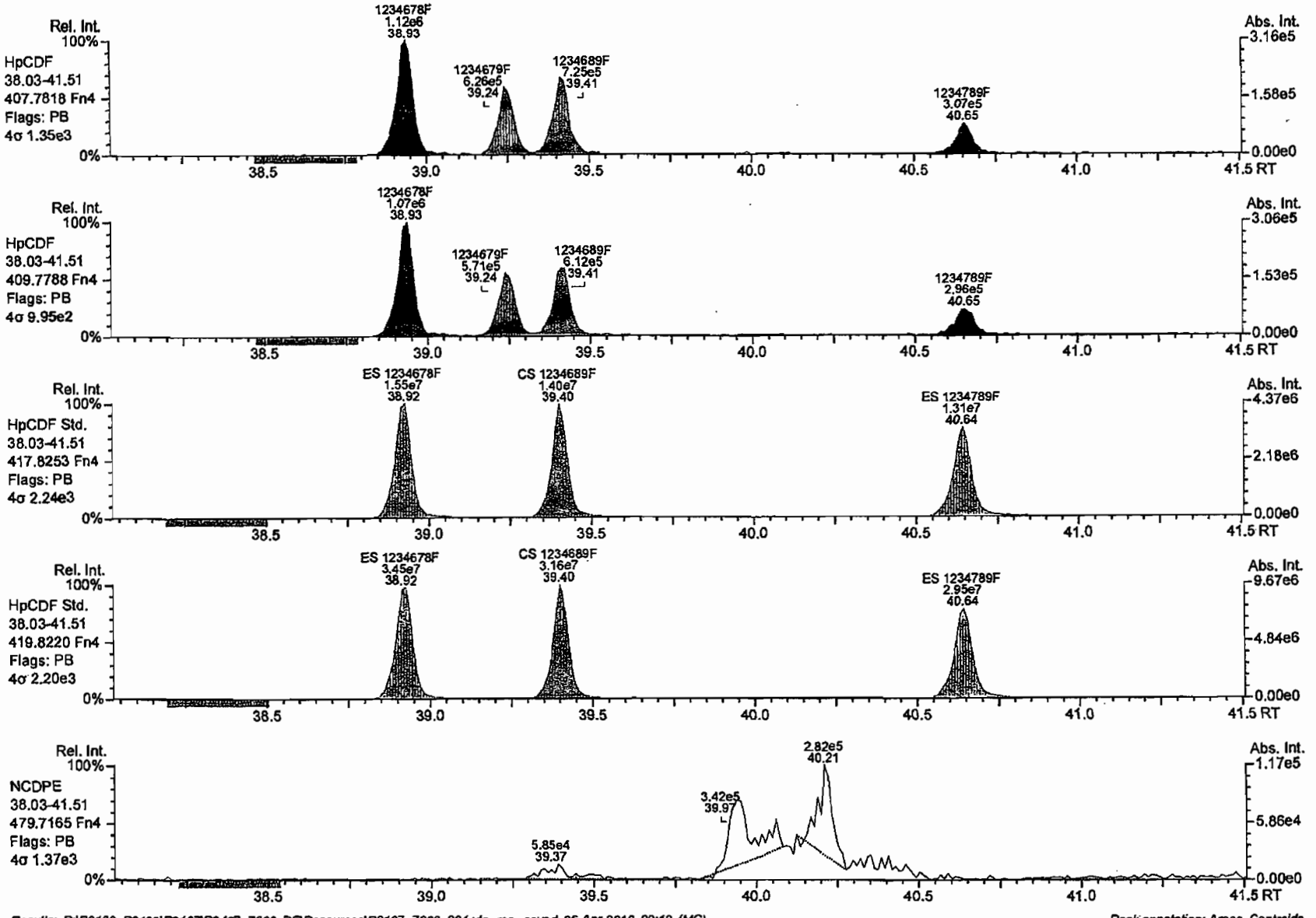


Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_004.utp_res, saved 06-Apr-2010 09:12 (MC)
Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9315, 6122, 4764 scc: 715-575
Revised: 06-Apr-2010 09:09:09 (MC) Printed: 06-Apr-2010 09:37:08 Page 10 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



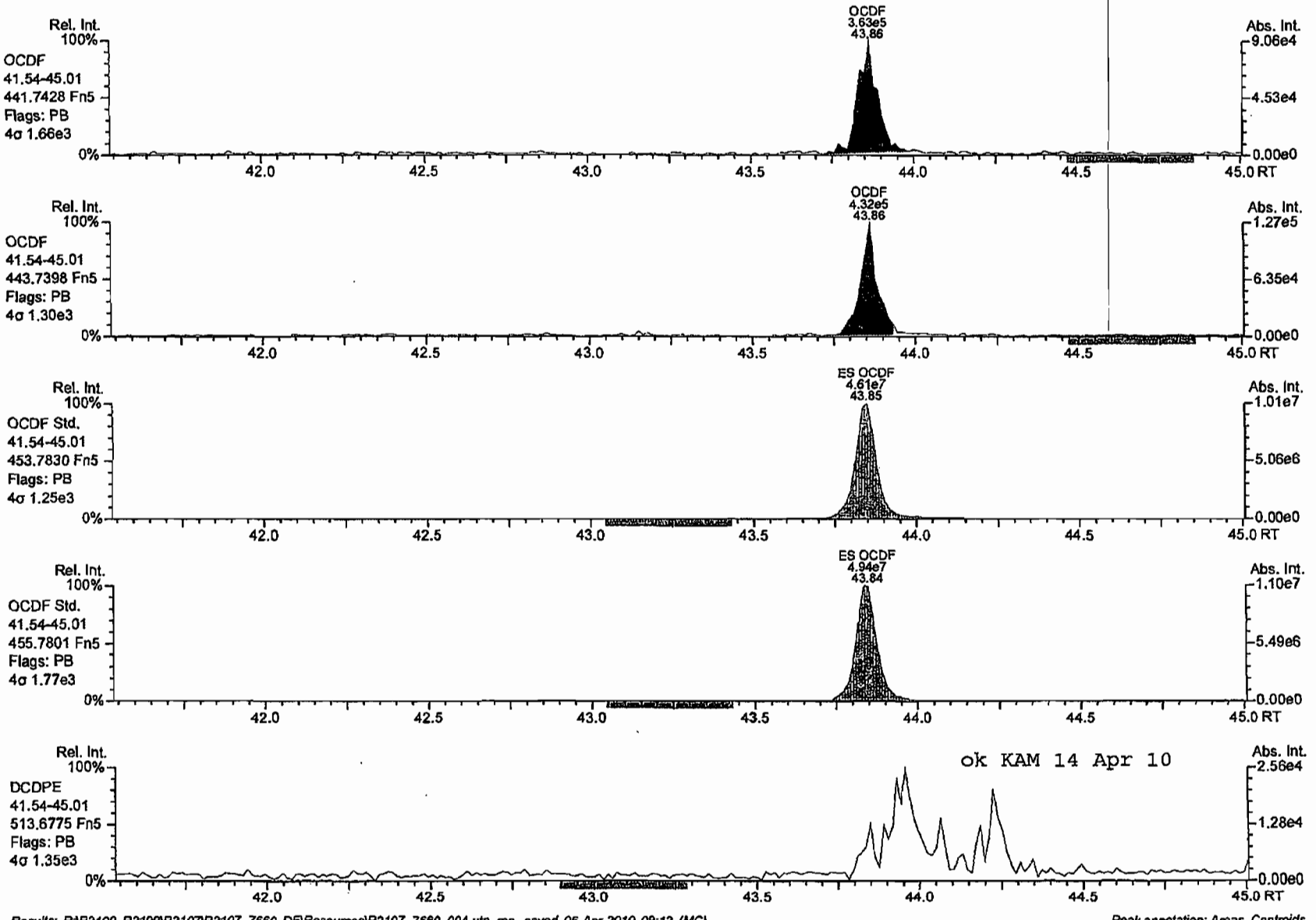
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_004.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5165, 1746, 6956 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:06:27 (MC) Printed: 06-Apr-2010 09:37:14 Page 11 of 12

AP Lab ID: P2107_7660_004
Instr: AutoSpec-Ultima MM1

Sample ID: Unit 2 FF Outlet Run 3
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 85

Acq: 5-APR-2010 16:41:47
User: MC Datafile: 100405P1-10



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_004.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7190, 1361, 1406 scc: 715-575

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:06:27 (MC) Printed: 06-Apr-2010 09:37:20 Page 12 of 12

ANALYTICAL PERSPECTIVES

PART 4

SYSTEM PERFORMANCE

"MS, GC, CONCAL BATCH CS_3"

DOCUMENTATION FOR THE ANALYSIS
OF
POLYCHLORINATED DIBENZO-*P*-DIOXINS & DIBENZOFURANS

Dioxin/Furan BCS3 Summary — ANALYTICAL PERSPECTIVES — **Report Created: 06-Apr-2010 09:13 MC**

	BCS3_7660_DF_PA 05-APR-2010 09:54 100405P1-02			BCS3_7660_DF_PB 05-APR-2010 19:16 100405P1-13			BCS3_7660_DF_PAB ICAL: MM1_DF_122609						
Name	RT	Response	Ra	RT	Response	Ra	ICAL	RRF(A)	RRF(B)	AB Avg	A-I	B-I	AB RPD
2378-TCDD	26.88	4.78E+06	0.78 Y	26.88	5.08E+06	0.84 Y	1.23	1.08	1.11	1.09	-12%	-10%	3%
12378-PeCDD	32.49	1.93E+07	1.57 Y	32.49	2.02E+07	1.59 Y	1.14	1.03	1.02	1.02	-10%	-10%	0%
123478-HxCDD	36.46	1.75E+07	1.26 Y	36.46	1.80E+07	1.27 Y	1.19	1.11	1.11	1.11	-7%	-7%	1%
123678-HxCDD	36.57	1.78E+07	1.26 Y	36.57	1.92E+07	1.26 Y	1.09	1.00	1.03	1.02	-8%	-5%	3%
123789-HxCDD	36.87	1.70E+07	1.24 Y	36.87	1.76E+07	1.25 Y	1.08	0.95	0.95	0.95	-12%	-13%	1%
1234678-HpCDD	40.08	1.48E+07	1.03 Y	40.07	1.46E+07	1.04 Y	1.04	1.02	0.98	1.00	-1%	-5%	4%
OCDD	43.61	2.52E+07	0.91 Y	43.61	2.44E+07	0.90 Y	1.10	1.05	1.06	1.06	-4%	-3%	1%
2378-TCDF	25.93	8.42E+06	0.79 Y	25.94	8.71E+06	0.78 Y	1.13	1.20	1.20	1.20	7%	7%	0%
12378-PeCDF	30.99	3.16E+07	1.58 Y	30.99	3.33E+07	1.53 Y	1.16	1.04	1.05	1.04	-10%	-10%	0%
23478-PeCDF	32.13	3.16E+07	1.54 Y	32.13	3.46E+07	1.56 Y	1.13	1.09	1.11	1.10	-4%	-2%	2%
123478-HxCDF	35.48	2.51E+07	1.24 Y	35.48	2.64E+07	1.26 Y	1.26	1.17	1.18	1.18	-7%	-6%	1%
123678-HxCDF	35.62	2.86E+07	1.24 Y	35.62	3.04E+07	1.28 Y	1.25	1.18	1.18	1.18	-6%	-6%	0%
234678-HxCDF	36.28	2.79E+07	1.27 Y	36.28	2.81E+07	1.26 Y	1.18	1.19	1.18	1.18	1%	0%	1%
123789-HxCDF	37.24	2.29E+07	1.21 Y	37.24	2.44E+07	1.29 Y	1.20	1.17	1.15	1.16	-3%	-4%	1%
1234678-HpCDF	38.92	2.35E+07	1.03 Y	38.92	2.45E+07	1.04 Y	1.39	1.41	1.41	1.41	1%	1%	0%
1234789-HpCDF	40.64	1.91E+07	1.04 Y	40.64	1.94E+07	1.05 Y	1.42	1.33	1.40	1.37	-7%	-2%	5%
OCDF	43.84	3.25E+07	0.92 Y	43.84	3.18E+07	0.90 Y	1.01	0.98	0.97	0.97	-4%	-4%	1%
ES 2378-TCDD	26.85	4.44E+07	0.81 Y	26.85	4.58E+07	0.81 Y	1.04	1.01	1.00	1.01	-4%	-4%	0%
ES 12378-PeCDD	32.47	3.76E+07	1.62 Y	32.47	3.95E+07	1.62 Y	0.96	0.85	0.86	0.86	-11%	-10%	1%
ES 123478-HxCDD	36.45	3.15E+07	1.27 Y	36.44	3.23E+07	1.26 Y	1.01	1.00	0.99	0.99	-1%	-2%	1%
ES 123678-HxCDD	36.56	3.55E+07	1.24 Y	36.56	3.72E+07	1.25 Y	1.14	1.12	1.14	1.13	-1%	0%	1%
ES 123789-HxCDD	36.85	3.56E+07	1.27 Y	36.85	3.73E+07	1.27 Y	1.14	1.13	1.14	1.13	-1%	0%	1%
ES 1234678-HpCDD	40.06	2.88E+07	1.06 Y	40.06	2.97E+07	1.07 Y	0.98	0.91	0.91	0.91	-7%	-7%	0%
ES OCDD	43.59	4.79E+07	0.91 Y	43.60	4.59E+07	0.90 Y	0.76	0.76	0.70	0.73	-1%	-8%	8%
ES 2378-TCDF	25.91	7.00E+07	0.79 Y	25.92	7.25E+07	0.81 Y	0.94	0.99	1.00	0.99	6%	7%	1%
ES 12378-PeCDF	30.97	6.06E+07	1.57 Y	30.97	6.37E+07	1.58 Y	0.95	0.86	0.88	0.87	-9%	-7%	2%
ES 23478-PeCDF	32.11	5.78E+07	1.55 Y	32.11	6.23E+07	1.59 Y	0.90	0.82	0.86	0.84	-9%	-4%	5%
ES 123478-HxCDF	35.47	4.29E+07	0.52 Y	35.47	4.46E+07	0.52 Y	1.50	1.36	1.36	1.36	-9%	-9%	0%
ES 123678-HxCDF	35.61	4.83E+07	0.53 Y	35.61	5.16E+07	0.53 Y	1.63	1.53	1.58	1.56	-6%	-3%	3%
ES 234678-HxCDF	36.26	4.70E+07	0.52 Y	36.26	4.77E+07	0.53 Y	1.50	1.49	1.46	1.47	-1%	-3%	2%
ES 123789-HxCDF	37.22	3.93E+07	0.53 Y	37.23	4.23E+07	0.51 Y	1.32	1.25	1.29	1.27	-6%	-2%	4%
ES 1234678-HpCDF	38.91	3.33E+07	0.44 Y	38.91	3.47E+07	0.45 Y	1.11	1.06	1.06	1.06	-5%	-5%	1%
ES 1234789-HpCDF	40.63	2.87E+07	0.44 Y	40.63	2.77E+07	0.44 Y	0.92	0.91	0.85	0.88	-1%	-8%	7%
ES OCDF	43.82	6.66E+07	0.91 Y	43.83	6.55E+07	0.90 Y	1.07	1.05	1.00	1.03	-2%	-6%	5%

Dioxin/Furan BCS3 Summary

ANALYTICAL PERSPECTIVES

Report Created: 06-Apr-2010 09:13 MC

	BCS3_7660_DF_PA 05-APR-2010 09:54 100405P1-02			BCS3_7660_DF_PB 05-APR-2010 19:16 100405P1-13			BCS3_7660_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	26.17	2.21E+07	0.81 Y	26.17	2.28E+07	0.81 Y	-						
JS 1234-TCDF	24.47	3.54E+07	0.79 Y	24.47	3.63E+07	0.79 Y	-						
JS 123467-HxCDD	36.75	7.89E+06	1.27 Y	36.75	8.17E+06	1.25 Y	-						
CS 37Cl-2378-TCDD	26.87	2.03E+07	-	26.87	2.09E+07	-	1.11	1.15	1.14	1.15	3%	3%	0%
CS 12347-PeCDD	31.96	3.54E+07	1.64 Y	31.96	3.90E+07	1.60 Y	1.03	0.80	0.86	0.83	-22%	-17%	6%
CS 12346-PeCDF	30.43	6.12E+07	1.59 Y	30.43	6.37E+07	1.57 Y	0.92	0.86	0.88	0.87	-6%	-4%	1%
CS 123469-HxCDF	35.92	4.27E+07	0.52 Y	35.92	4.49E+07	0.53 Y	1.31	1.35	1.37	1.36	3%	5%	2%
CS 1234689-HpCDF	39.39	2.95E+07	0.44 Y	39.39	3.09E+07	0.45 Y	0.91	0.93	0.94	0.94	3%	4%	1%
SS 37Cl-2378-TCDD	26.87	2.03E+07	-	26.87	2.09E+07	-	1.07	1.14	1.14	1.14	7%	6%	0%
SS 12347-PeCDD	31.96	3.54E+07	1.64 Y	31.96	3.90E+07	1.60 Y	1.08	0.94	0.99	0.97	-13%	-9%	5%
SS 12346-PeCDF	30.43	6.12E+07	1.59 Y	30.43	6.37E+07	1.57 Y	0.97	1.01	1.00	1.00	4%	3%	1%
SS 123469-HxCDF	35.92	4.27E+07	0.52 Y	35.92	4.49E+07	0.53 Y	0.81	0.88	0.87	0.88	10%	8%	2%
SS 1234689-HpCDF	39.39	2.95E+07	0.44 Y	39.39	3.09E+07	0.45 Y	0.81	0.89	0.89	0.89	9%	9%	0%
AS 1368-TCDD	22.88	4.81E+07	0.80 Y	22.88	4.92E+07	0.81 Y	1.09	1.09	1.08	1.08	0%	-1%	1%
AS 1368-TCDF	20.71	8.82E+07	0.80 Y	20.71	9.44E+07	0.80 Y	1.12	1.25	1.30	1.27	11%	16%	4%
FS 1278-TCDD	NotFnd	-	-	NotFnd	-	-	-						
FS 12478-PeCDD	NotFnd	-	-	NotFnd	-	-	-						
FS 123468-HxCDD	NotFnd	-	-	NotFnd	-	-	-						
FS 1234679-HpCDD	39.23	2.71E+05	0.99 Y	NotFnd	-	-	-	0.01		0.01			-
TS 1378-TCDD	NotFnd	-	-	NotFnd	-	-	-						
OCDD-a	43.60	1.50E+06	2.42 Y	43.61	1.53E+06	2.71 Y	0.07	0.06	0.07	0.06	-7%	0%	7%
OCDF-a	43.83	1.91E+06	2.72 Y	43.84	1.89E+06	2.43 Y	0.06	0.06	0.06	0.06	-4%	-3%	1%
Total TCDD	-	-	-	-	-	-	1.23	1.08	1.11	1.09	-12%	-10%	3%
Total PeCDD	-	-	-	-	-	-	1.14	1.03	1.02	1.02	-10%	-10%	0%
Total HxCDD	-	-	-	-	-	-	1.12	1.02	1.03	1.03	-9%	-8%	1%
Total HpCDD	-	-	-	-	-	-	1.04	1.02	0.98	1.00	-1%	-5%	4%
Total TCDF	-	-	-	-	-	-	1.13	1.20	1.20	1.20	7%	7%	0%
Total PeCDF	-	-	-	-	-	-	1.15	1.07	1.08	1.07	-7%	-6%	1%
Total HxCDF	-	-	-	-	-	-	1.22	1.18	1.17	1.17	-4%	-4%	0%
Total HpCDF	-	-	-	-	-	-	1.41	1.37	1.41	1.39	-3%	0%	3%

PCDD/PCDF RT Window & Isomer Specificity Standards

ANALYTICAL PERSPECTIVES

Report Created: 06-Apr-2010 09:13 MC

	BCS3_7660_DF_PA 05-APR-2010 09:54 100405P1-02	BCS3_7660_DF_PB 05-APR-2010 19:16 100405P1-13	BCS3_7660_DF_PAB ICAL: MM1_DF_122509
Name	**RT**	**RT**	
Window Defining Standards Results			
First Eluting Isomer			
1368-TCDD	22.91	22.91	
12479/12468-PeCDD	29.91	29.91	
124679/124689-HxCDD	34.75	34.75	
1234679-HpCDD	39.24	39.24	
1368-TCDF	20.74	20.74	
13468/12468-PeCDF	28.04	28.05	
123468-HxCDF	34.08	34.08	
1234678-HpCDF	38.92	38.92	
Last Eluting Isomer			
1289-TCDD	27.91	27.92	
12389-PeCDD	32.95	32.95	
123789-HxCDD	36.87	36.87	
1234678-HpCDD	40.08	40.07	
1289-TCDF	28.08	28.08	
12389-PeCDF	33.24	33.24	
123789-HxCDF	37.24	37.24	
1234789-HpCDF	40.64	40.64	
Isomer Specificity Test Standard Results			
1239-TCDD	26.72	26.72	
2378-TCDD	26.88	26.88	
2348-TCDF	25.82	25.82	
2378-TCDF	25.93	25.94	

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: 100405P1-02 Analysis Date: 05-APR-2010 09:54:43

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	0.78	0.65 - 0.89	Y	9.85	8 - 12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32 - 1.78	Y	50.1	40 - 60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	49.9	40 - 60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	40 - 60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	50.2	40 - 60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	51	40 - 60	Y
OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	99.4	80 - 120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	10	8 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	49.9	40 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32 - 1.78	Y	49.6	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	1.24	1.05 - 1.43	Y	50.1	40 - 60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.2	40 - 60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.21	1.05 - 1.43	Y	50.2	40 - 60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	50	40 - 60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	48.7	40 - 60	Y
OCDF	M+2/M+4	0.92	0.76 - 1.02	Y	100	80 - 120	Y

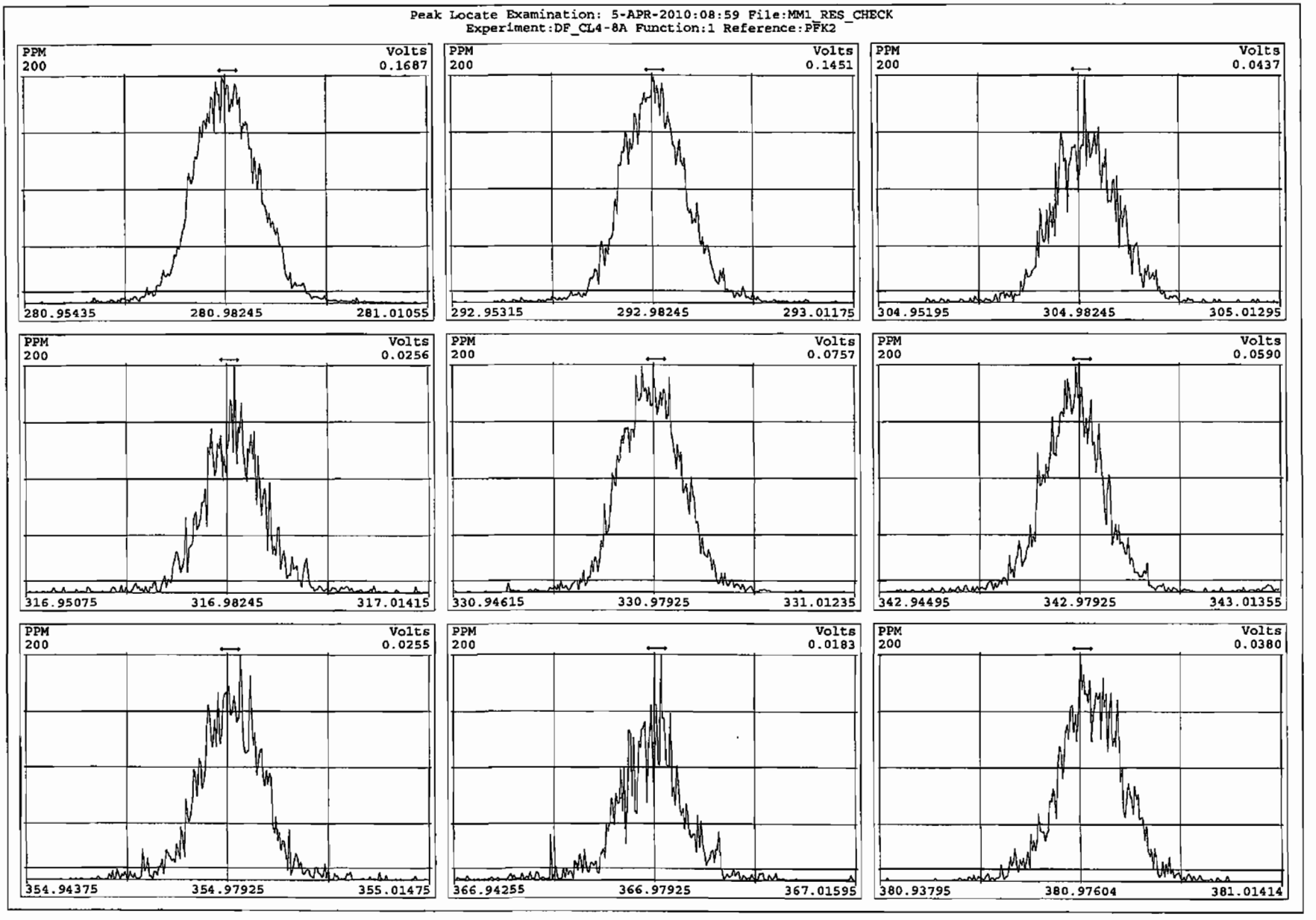
Processed: 06 Apr 2010 09:13 Analyst: MC

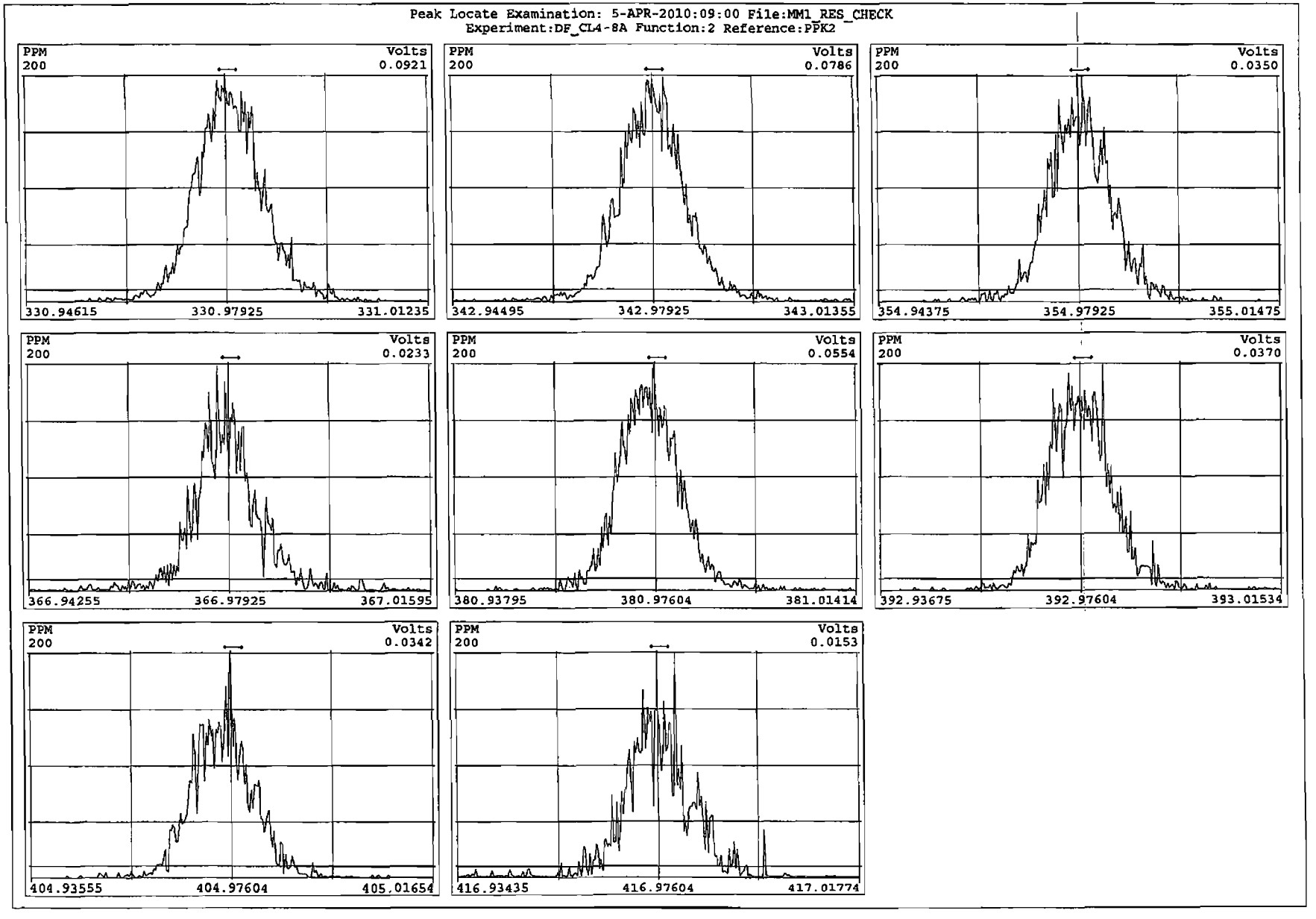
METHOD 23 **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

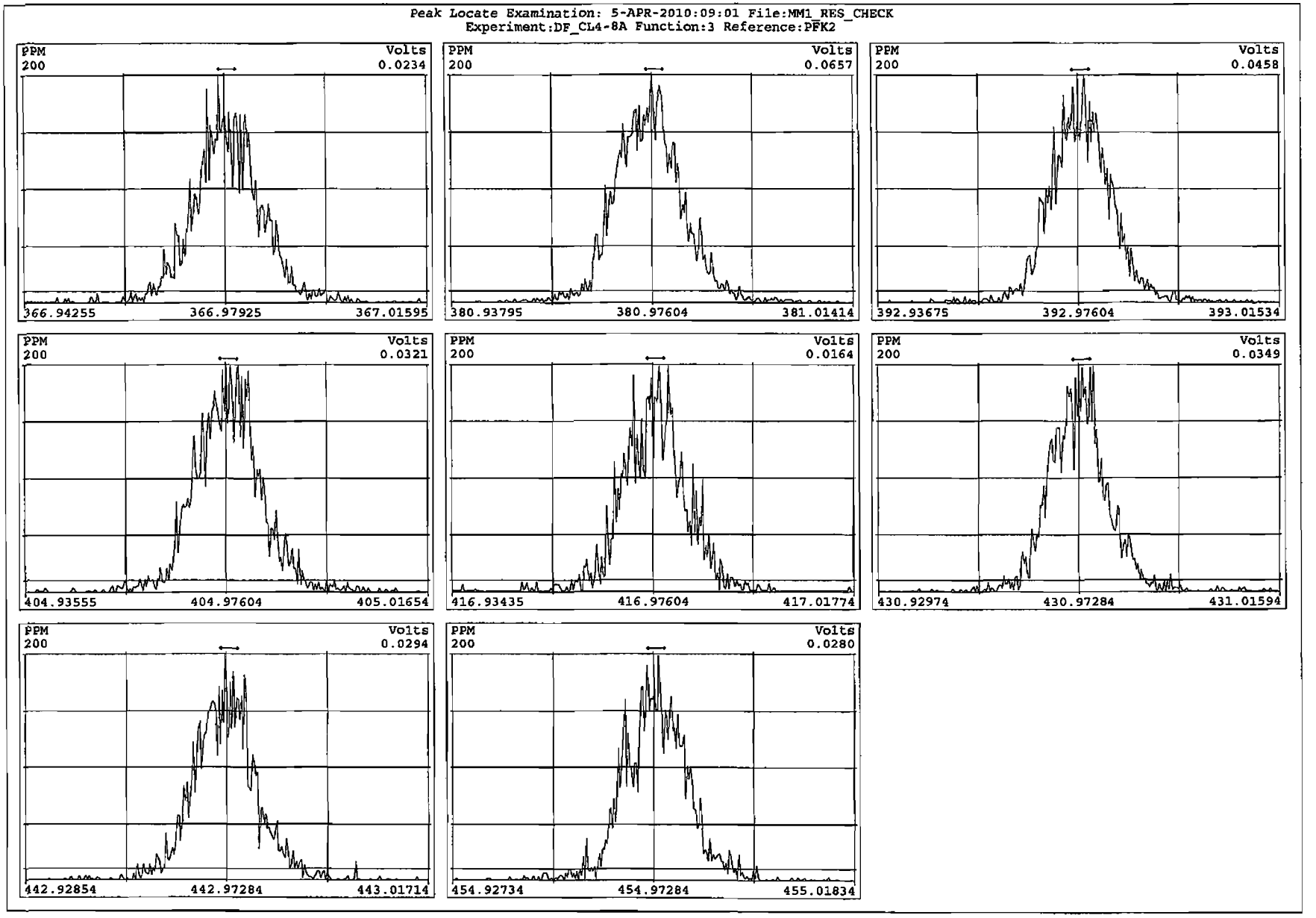
Lab Name: Analytical Perspectives
Initial Calibration: ICAL: MM1_DF_122509
Instrument ID: MM1 GC Column ID: ZB-5ms
VER Data Filename: 100405P1-02 Analysis Date: 05-APR-2010 09:54:43

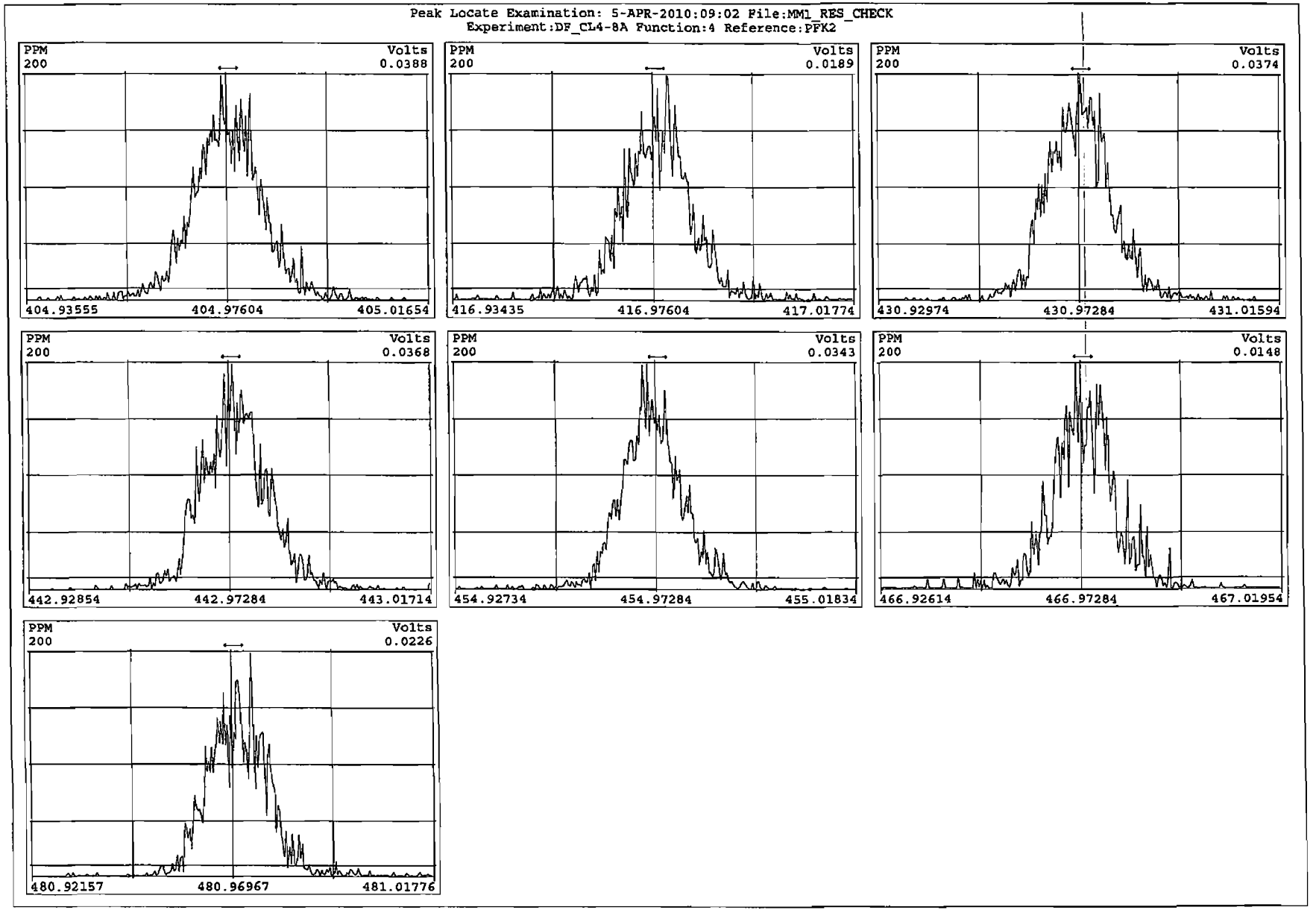
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	100	70 - 130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32 - 1.78	Y	99.3	70 - 130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	100	70 - 130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	99.4	70 - 130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	99.3	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88 - 1.20	Y	100	70 - 130	Y
13C-OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	208	140 - 260	Y
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	99.5	70 - 130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	98.8	70 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	97.5	70 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	99.8	70 - 130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	98.4	70 - 130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	101	70 - 130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	98.1	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37 - 0.51	Y	99.7	70 - 130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37 - 0.51	Y	103	70 - 130	Y
13C-OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	205	140 - 260	Y
SURROGATE STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				40	28 - 52	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.64	1.32 - 1.78	Y	97.5	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.59	1.32 - 1.78	Y	100	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	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	99.8	70 - 130	Y

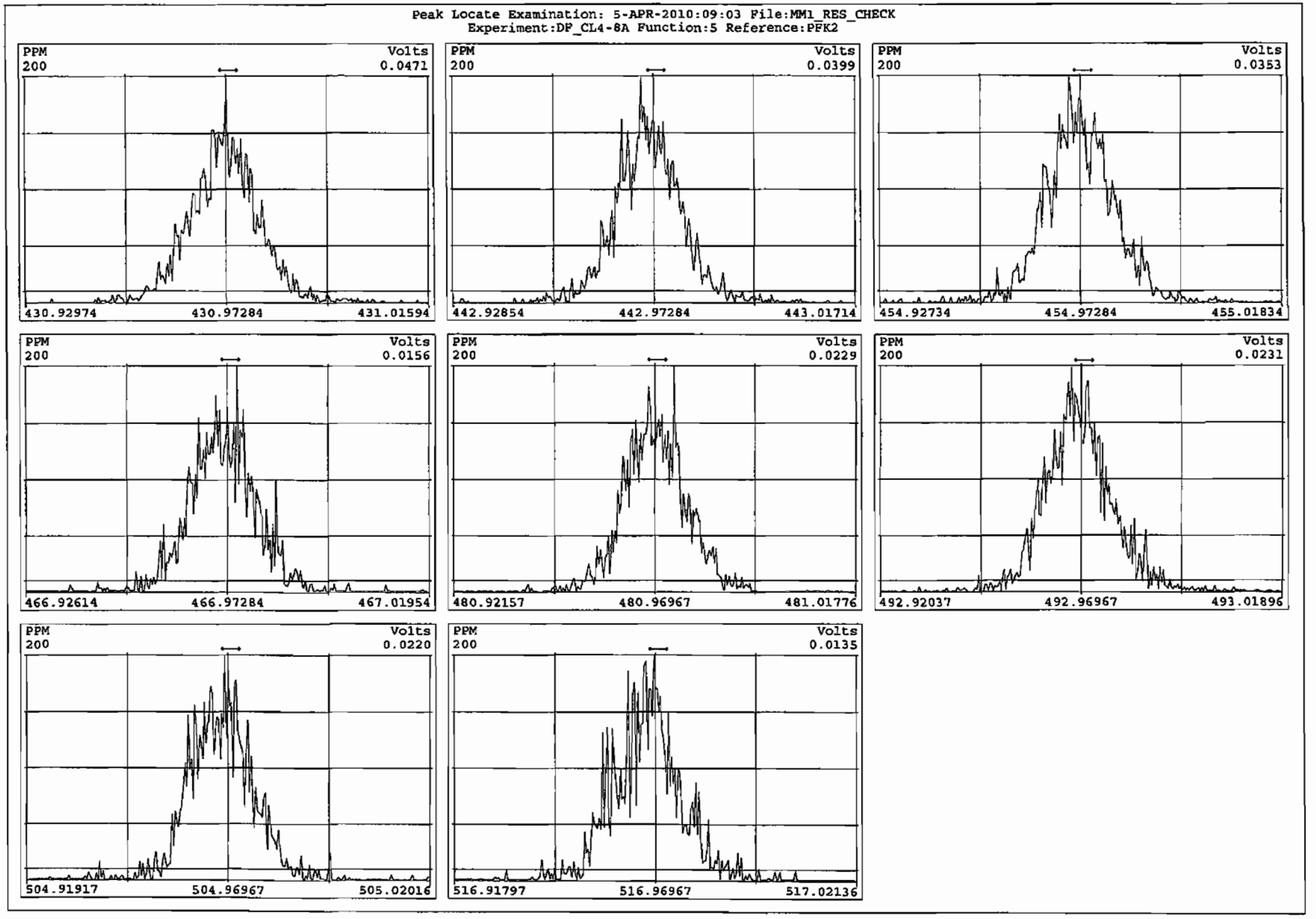
Processed: 06 Apr 2010 09:13 Analyst: MC

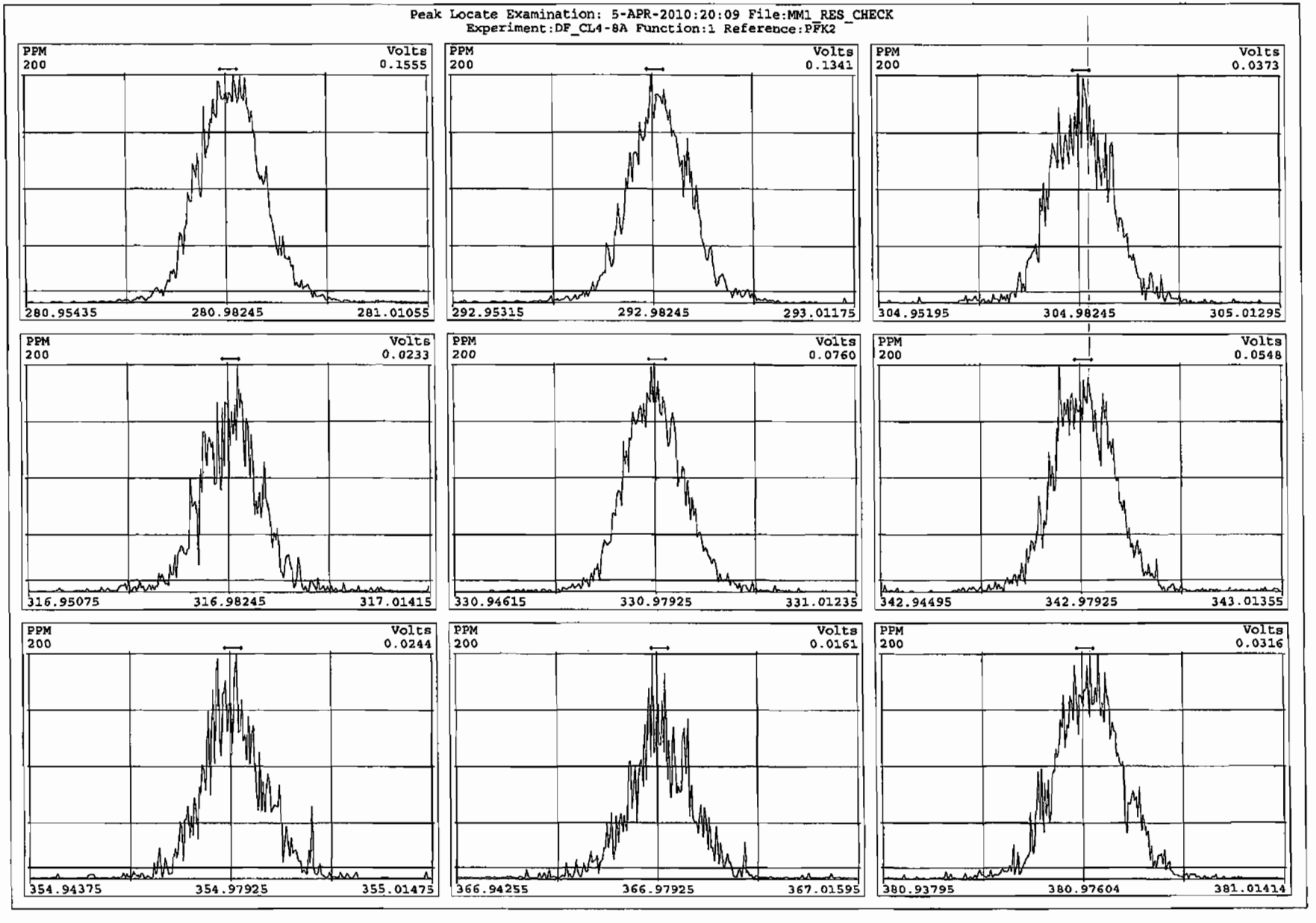

Peak Locate Examination: 5-APR-2010:08:59 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:1 Reference:PFK2
PPM
200
Volts
0.1687
280.95435
280.98245
281.01055
PPM
200
Volts
0.1451
292.95315
292.98245
293.01175
PPM
200
Volts
0.0437
304.95195
304.98245
305.01295
PPM
200
Volts
0.0256
316.95075
316.98245
317.01415
PPM
200
Volts
0.0757
330.94615
330.97925
331.01235
PPM
200
Volts
0.0590
342.94495
342.97925
343.01355
PPM
200
Volts
0.0255
354.94375
354.97925
355.01475
PPM
200
Volts
0.0183
366.94255
366.97925
367.01595
PPM
200
Volts
0.0380
380.93795
380.97604
381.01414

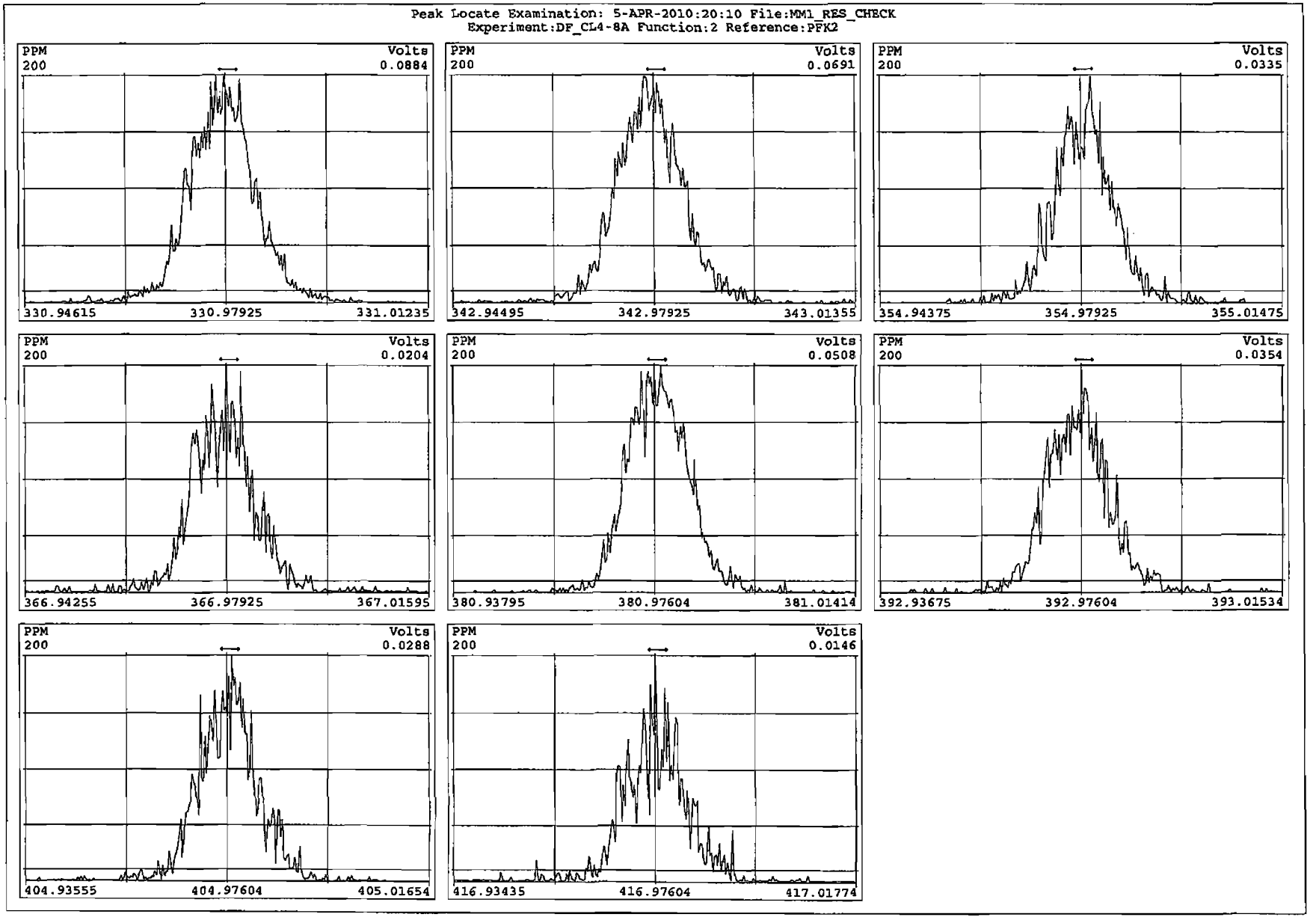

Peak Locate Examination: 5-APR-2010:09:00 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:2 Reference:PPK2
PPM
200
Volts
0.0921
330.94615
330.97925
331.01235
PPM
200
Volts
0.0786
342.94495
342.97925
343.01355
PPM
200
Volts
0.0350
354.94375
354.97925
355.01475
PPM
200
Volts
0.0233
366.94255
366.97925
367.01595
PPM
200
Volts
0.0554
380.93795
380.97604
381.01414
PPM
200
Volts
0.0370
392.93675
392.97604
393.01534
PPM
200
Volts
0.0342
404.93555
404.97604
405.01654
PPM
200
Volts
0.0153
416.93435
416.97604
417.01774

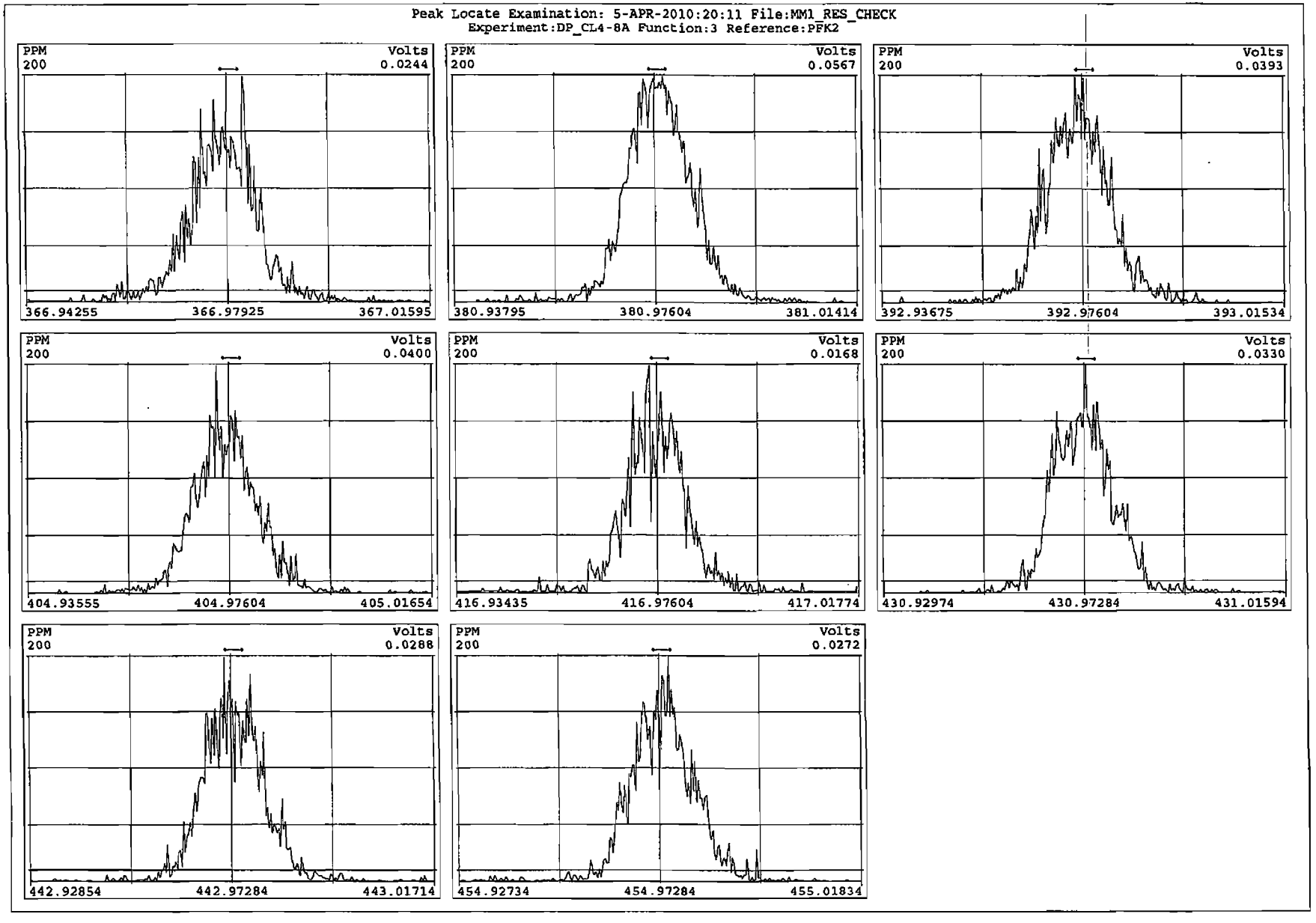

Peak Locate Examination: 5-APR-2010:09:01 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:3 Reference:PFK2
PPM
200
Volts
0.0234
366.94255
366.97925
367.01595
PPM
200
Volts
0.0657
380.93795
380.97604
381.01414
PPM
200
Volts
0.0458
392.93675
392.97604
393.01534
PPM
200
Volts
0.0321
404.93555
404.97604
405.01654
PPM
200
Volts
0.0164
416.93435
416.97604
417.01774
PPM
200
Volts
0.0349
430.92974
430.97284
431.01594
PPM
200
Volts
0.0294
442.92854
442.97284
443.01714
PPM
200
Volts
0.0280
454.92734
454.97284
455.01834

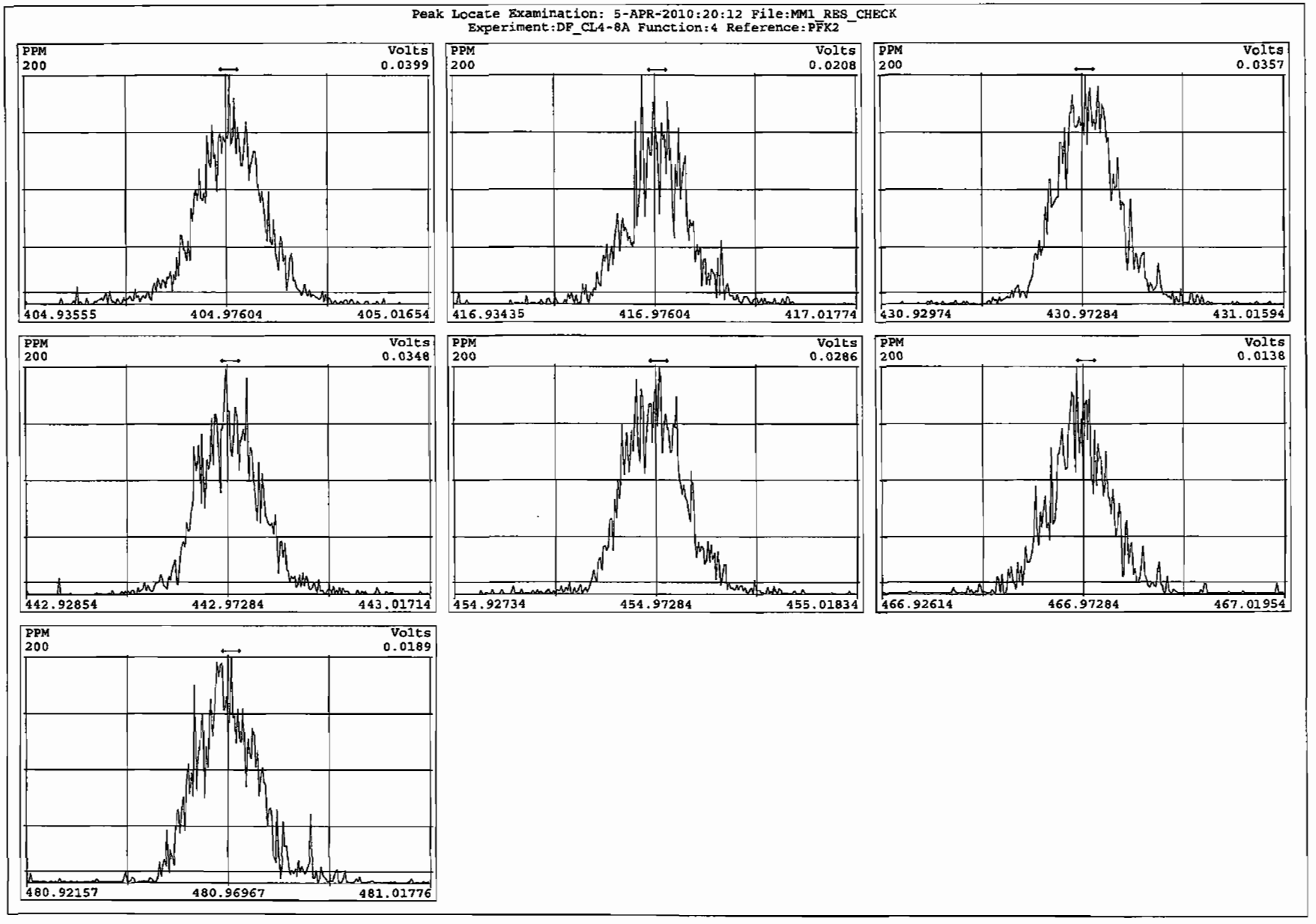

Peak Locate Examination: 5-APR-2010:09:02 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:4 Reference:PFK2
PPM
200
Volts
0.0388
404.93555
404.97604
405.01654
PPM
200
Volts
0.0189
416.93435
416.97604
417.01774
PPM
200
Volts
0.0374
430.92974
430.97284
431.01594
PPM
200
Volts
0.0368
442.92854
442.97284
443.01714
PPM
200
Volts
0.0343
454.92734
454.97284
455.01834
PPM
200
Volts
0.0148
466.92614
466.97284
467.01954
PPM
200
Volts
0.0226
480.92157
480.96967
481.01776

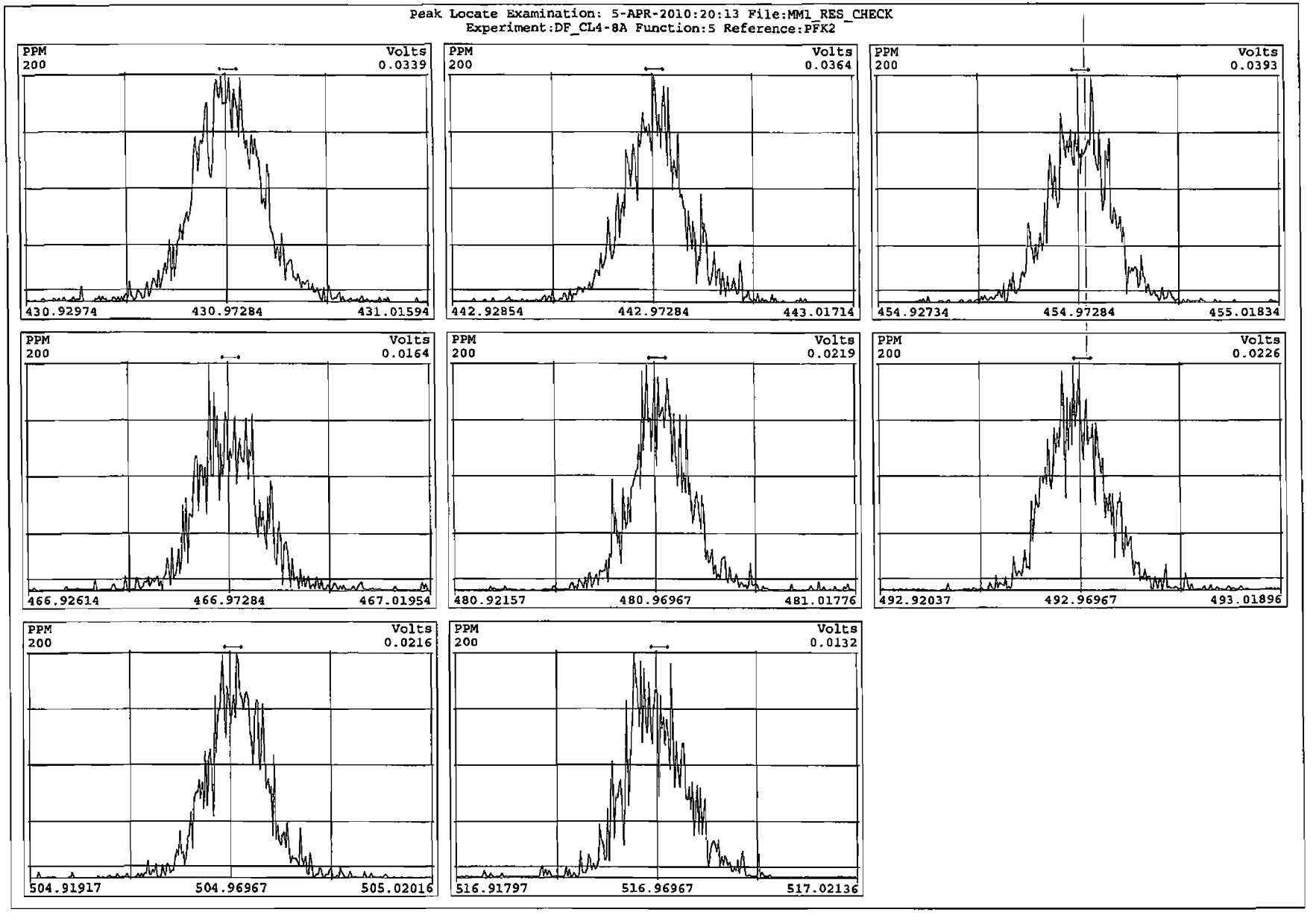

Peak Locate Examination: 5-APR-2010:09:03 File:MM1_RES_CHECK
Experiment:DP_CL4-8A Function:5 Reference:PFK2
PPM
200
Volts
0.0471
430.92974
430.97284
431.01594
PPM
200
Volts
0.0399
442.92854
442.97284
443.01714
PPM
200
Volts
0.0353
454.92734
454.97284
455.01834
PPM
200
Volts
0.0156
466.92614
466.97284
467.01954
PPM
200
Volts
0.0229
480.92157
480.96967
481.01776
PPM
200
Volts
0.0231
492.92037
492.96967
493.01896
PPM
200
Volts
0.0220
504.91917
504.96967
505.02016
PPM
200
Volts
0.0135
516.91797
516.96967
517.02136

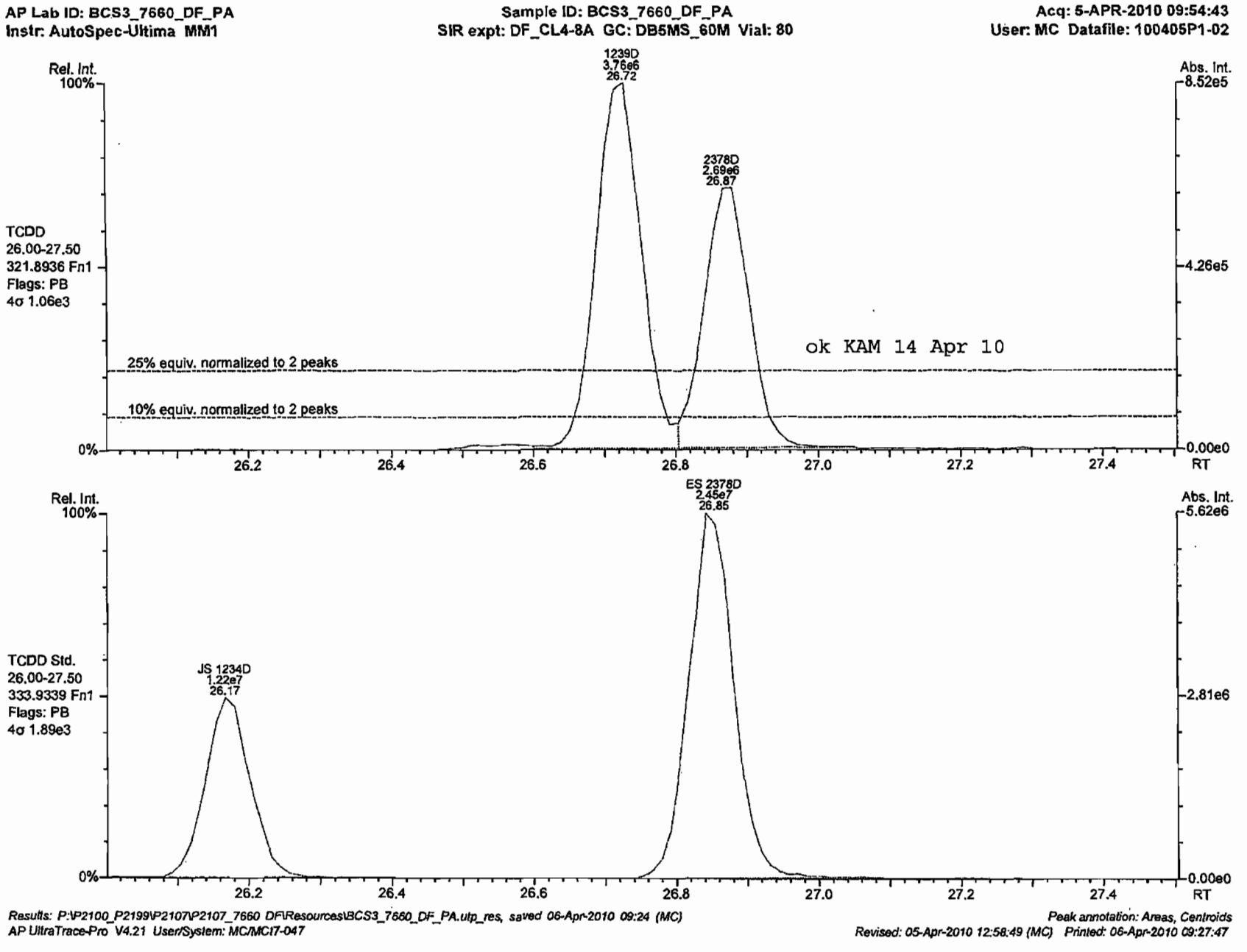

Peak Locate Examination: 5-APR-2010:20:09 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:1 Reference:PFK2
PPM
200
Volts
0.1555
280.95435
280.98245
281.01055
PPM
200
Volts
0.1341
292.95315
292.98245
293.01175
PPM
200
Volts
0.0373
304.95195
304.98245
305.01295
PPM
200
Volts
0.0233
316.95075
316.98245
317.01415
PPM
200
Volts
0.0760
330.94615
330.97925
331.01235
PPM
200
Volts
0.0548
342.94495
342.97925
343.01355
PPM
200
Volts
0.0244
354.94375
354.97925
355.01475
PPM
200
Volts
0.0161
366.94255
366.97925
367.01595
PPM
200
Volts
0.0316
380.93795
380.97604
381.01414

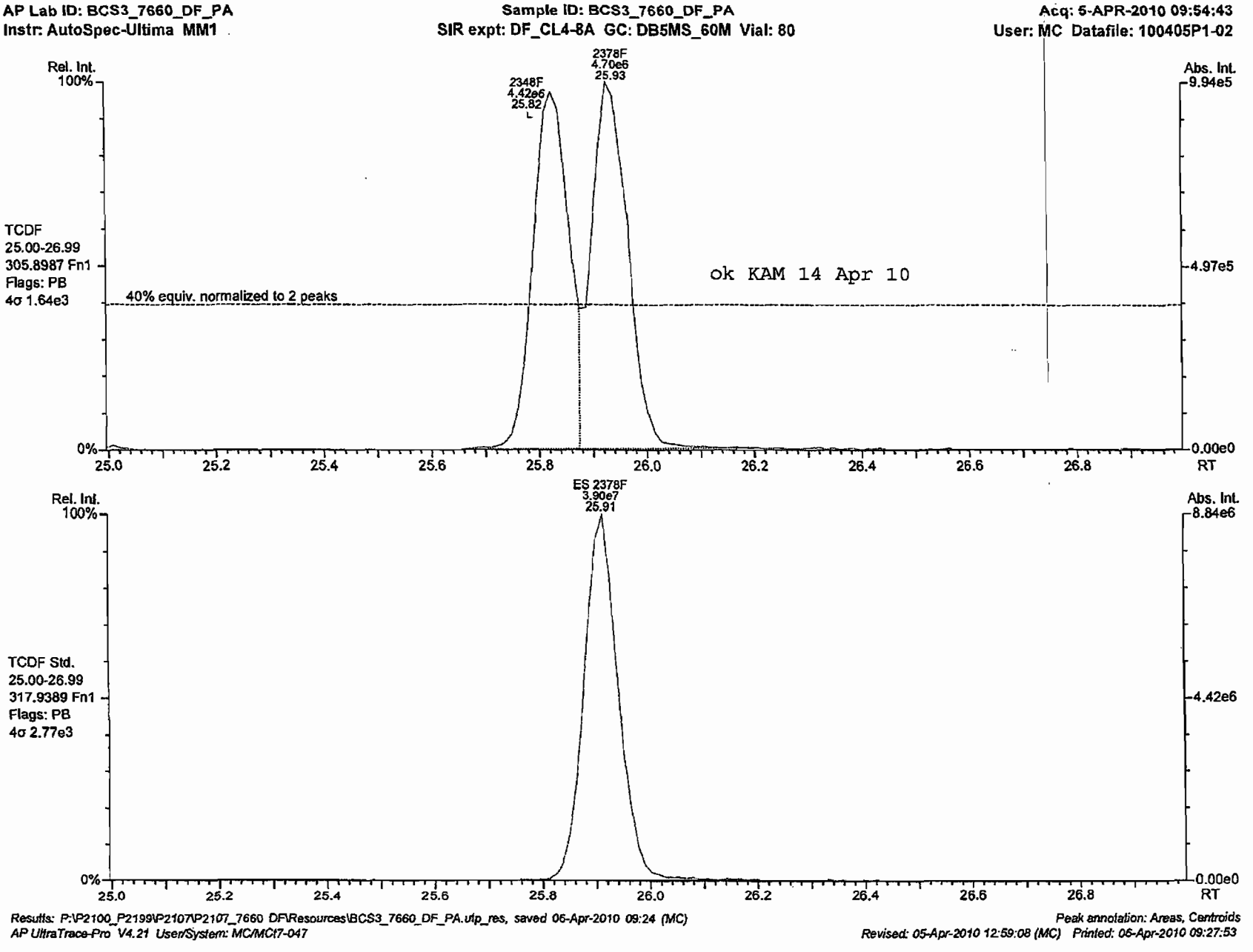

Peak Locate Examination: 5-APR-2010:20:10 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:2 Reference:PFK2
PPM
200
Volts
0.0884
330.94615
330.97925
331.01235
PPM
200
Volts
0.0691
342.94495
342.97925
343.01355
PPM
200
Volts
0.0335
354.94375
354.97925
355.01475
PPM
200
Volts
0.0204
366.94255
366.97925
367.01595
PPM
200
Volts
0.0508
380.93795
380.97604
381.01414
PPM
200
Volts
0.0354
392.93675
392.97604
393.01534
PPM
200
Volts
0.0288
404.93555
404.97604
405.01654
PPM
200
Volts
0.0146
416.93435
416.97604
417.01774


Peak Locate Examination: 5-APR-2010:20:11 File:MM1_RES_CHECK
Experiment:DP_CL4-8A Function:3 Reference:PFK2
PPM
200
Volts
0.0244
366.94255
366.97925
367.01595
PPM
200
Volts
0.0567
380.93795
380.97604
381.01414
PPM
200
Volts
0.0393
392.93675
392.97604
393.01534
PPM
200
Volts
0.0400
404.93555
404.97604
405.01654
PPM
200
Volts
0.0168
416.93435
416.97604
417.01774
PPM
200
Volts
0.0330
430.92974
430.97284
431.01594
PPM
200
Volts
0.0288
442.92854
442.97284
443.01714
PPM
200
Volts
0.0272
454.92734
454.97284
455.01834


Peak Locate Examination: 5-APR-2010:20:12 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:4 Reference:PFK2
PPM
200
Volts
0.0399
404.93555
404.97604
405.01654
PPM
200
Volts
0.0208
416.93435
416.97604
417.01774
PPM
200
Volts
0.0357
430.92974
430.97284
431.01594
PPM
200
Volts
0.0348
442.92854
442.97284
443.01714
PPM
200
Volts
0.0286
454.92734
454.97284
455.01834
PPM
200
Volts
0.0138
466.92614
466.97284
467.01954
PPM
200
Volts
0.0189
480.92157
480.96967
481.01776


Peak Locate Examination: 5-APR-2010:20:13 File:MM1_RES_CHECK
Experiment:DF_CL4-8A Function:5 Reference:PFK2
PPM
200
Volts
0.0339
430.92974
430.97284
431.01594
PPM
200
Volts
0.0364
442.92854
442.97284
443.01714
PPM
200
Volts
0.0393
454.92734
454.97284
455.01834
PPM
200
Volts
0.0164
466.92614
466.97284
467.01954
PPM
200
Volts
0.0219
480.92157
480.96967
481.01776
PPM
200
Volts
0.0226
492.92037
492.96967
493.01896
PPM
200
Volts
0.0216
504.91917
504.96967
505.02016
PPM
200
Volts
0.0132
516.91797
516.96967
517.02136

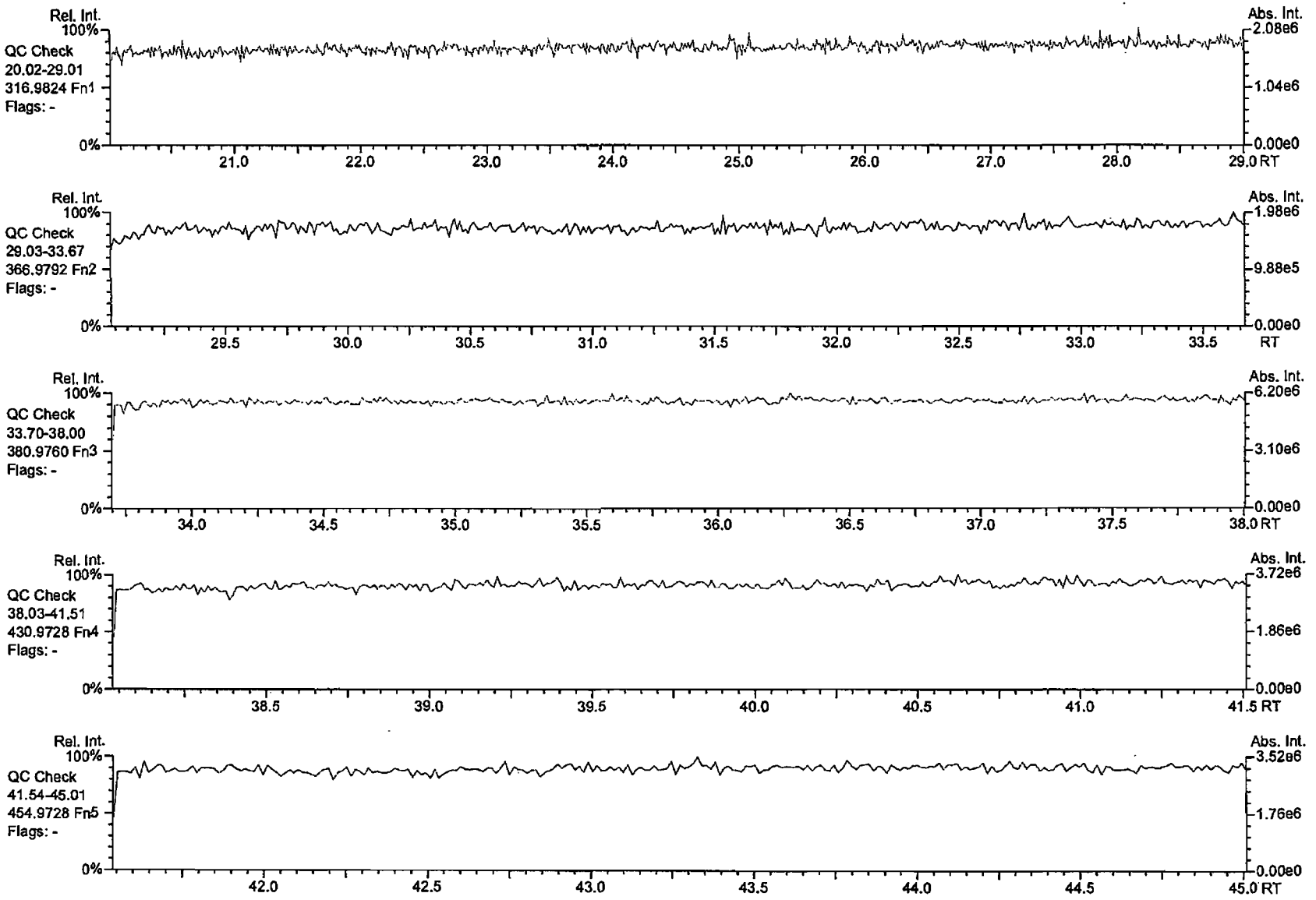

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02
Rel. Int.
100%
0%
Abs. Int.
8.52e5
4.26e5
0.00e0
RT
1239D
3.76e6
26.72
2378D
2.69e6
26.87
TCDD
26.00-27.50
321.8936 Fn1
Flags: PB
4σ 1.06e3
25% equiv. normalized to 2 peaks
10% equiv. normalized to 2 peaks
ok KAM 14 Apr 10
26.2
26.4
26.6
26.8
27.0
27.2
27.4
ES 2378D
2.45e7
26.85
JS 1234D
1.22e7
26.17
TCDD Std.
26.00-27.50
333.9339 Fn1
Flags: PB
4σ 1.89e3
5.62e6
2.81e6
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:58:49 (MC) Printed: 06-Apr-2010 09:27:47


AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02
Rel. Int.
100%
0%
Abs. Int.
9.94e5
4.97e5
0.00e0
2348F
4.42e6
25.82
2378F
4.70e6
25.93
TCDF
25.00-26.99
305.8987 Fn1
Flags: PB
4σ 1.64e3
40% equiv. normalized to 2 peaks
ok KAM 14 Apr 10
25.0
25.2
25.4
25.6
25.8
26.0
26.2
26.4
26.6
26.8
RT
Rel. Int.
100%
0%
Abs. Int.
8.84e6
4.42e6
0.00e0
ES 2378F
3.90e7
25.91
TCDF Std.
25.00-26.99
317.9389 Fn1
Flags: PB
4σ 2.77e3
25.0
25.2
25.4
25.6
25.8
26.0
26.2
26.4
26.6
26.8
RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.rlp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCt7-047
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:59:08 (MC) Printed: 06-Apr-2010 09:27:53

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02



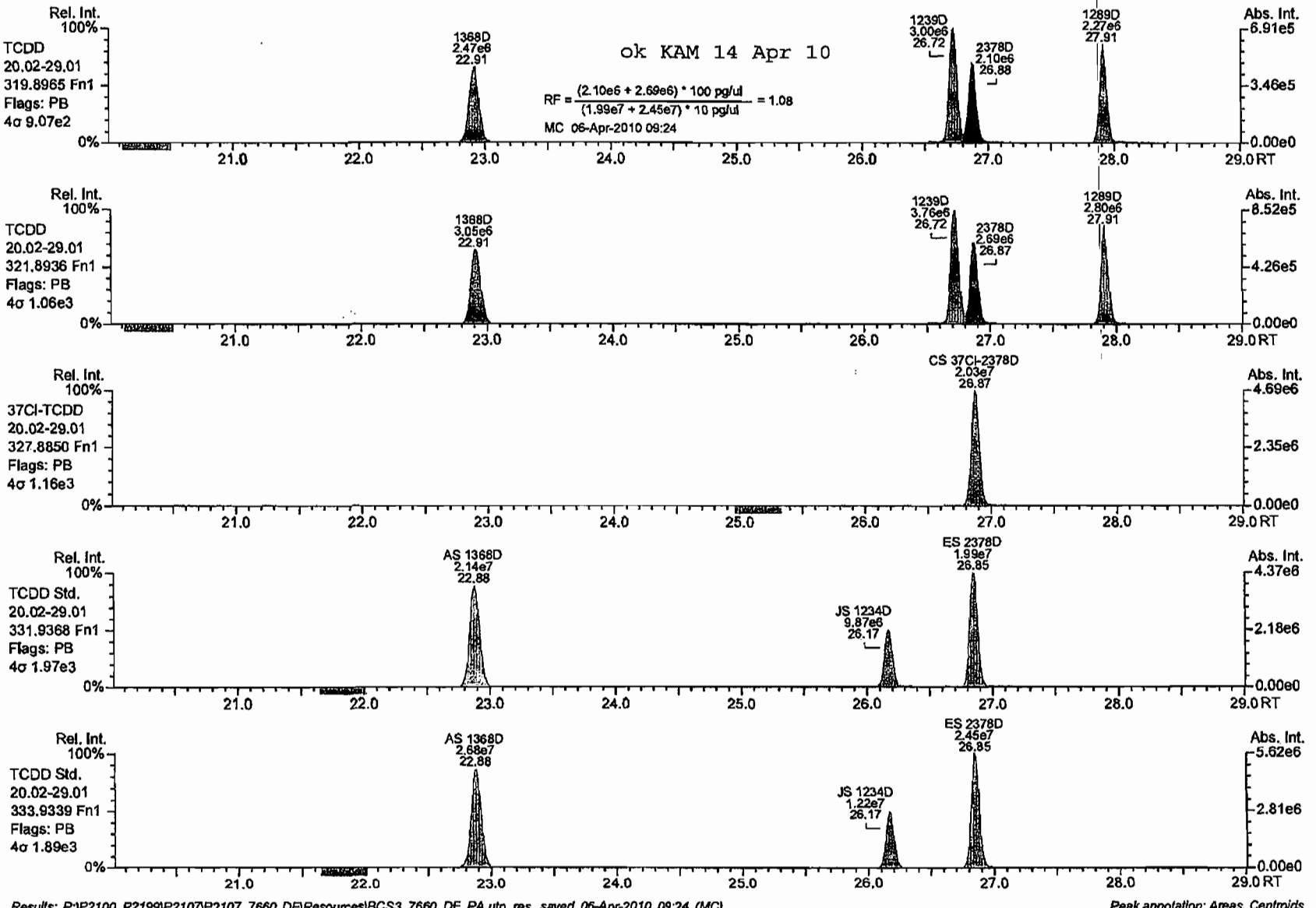
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 915-642

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:28:23 Page 1 of 12

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02



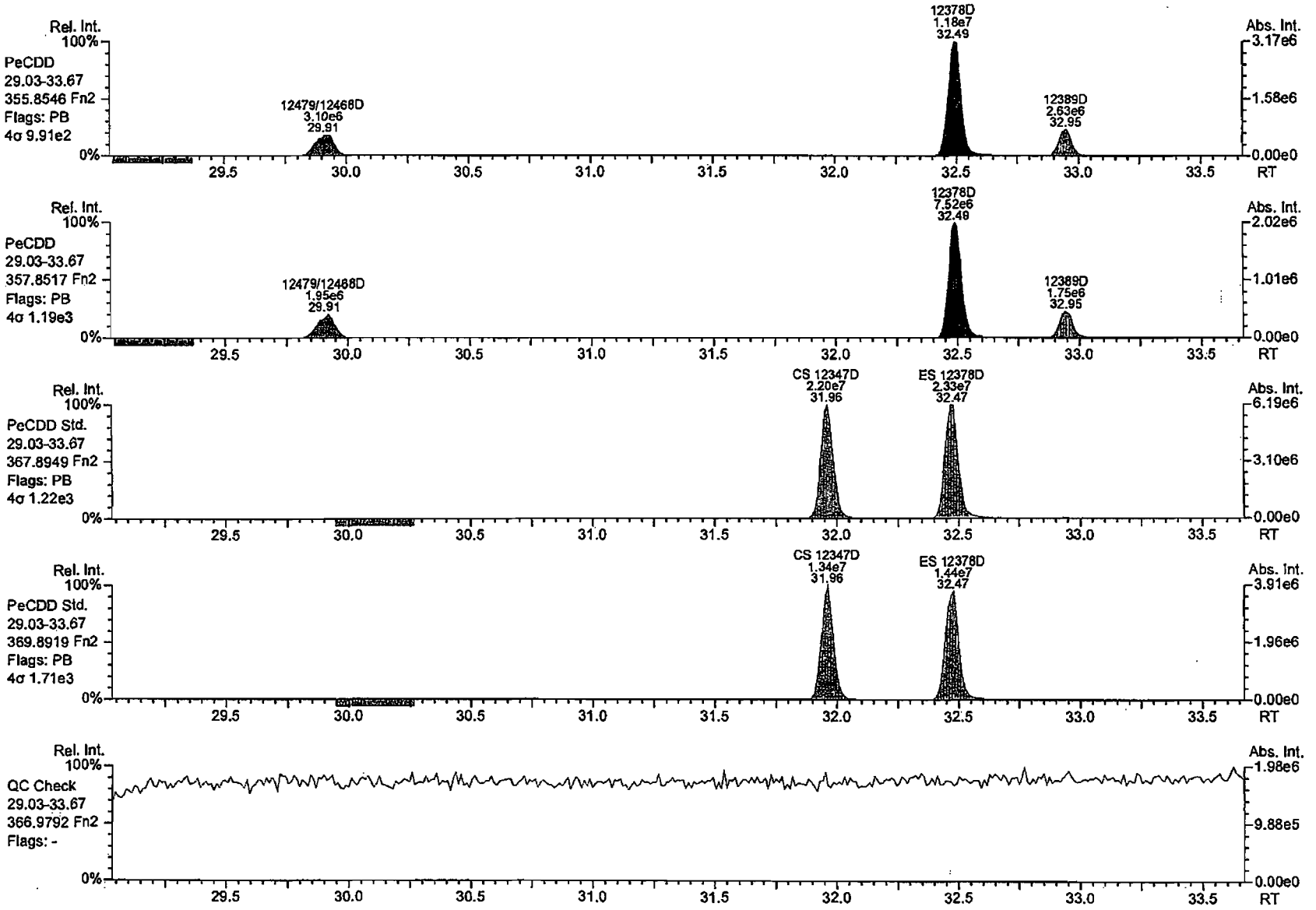
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6299, 8169, 1707 scc: 915-642

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:58:49 (MC) Printed: 06-Apr-2010 09:28:34 Page 2 of 12

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1

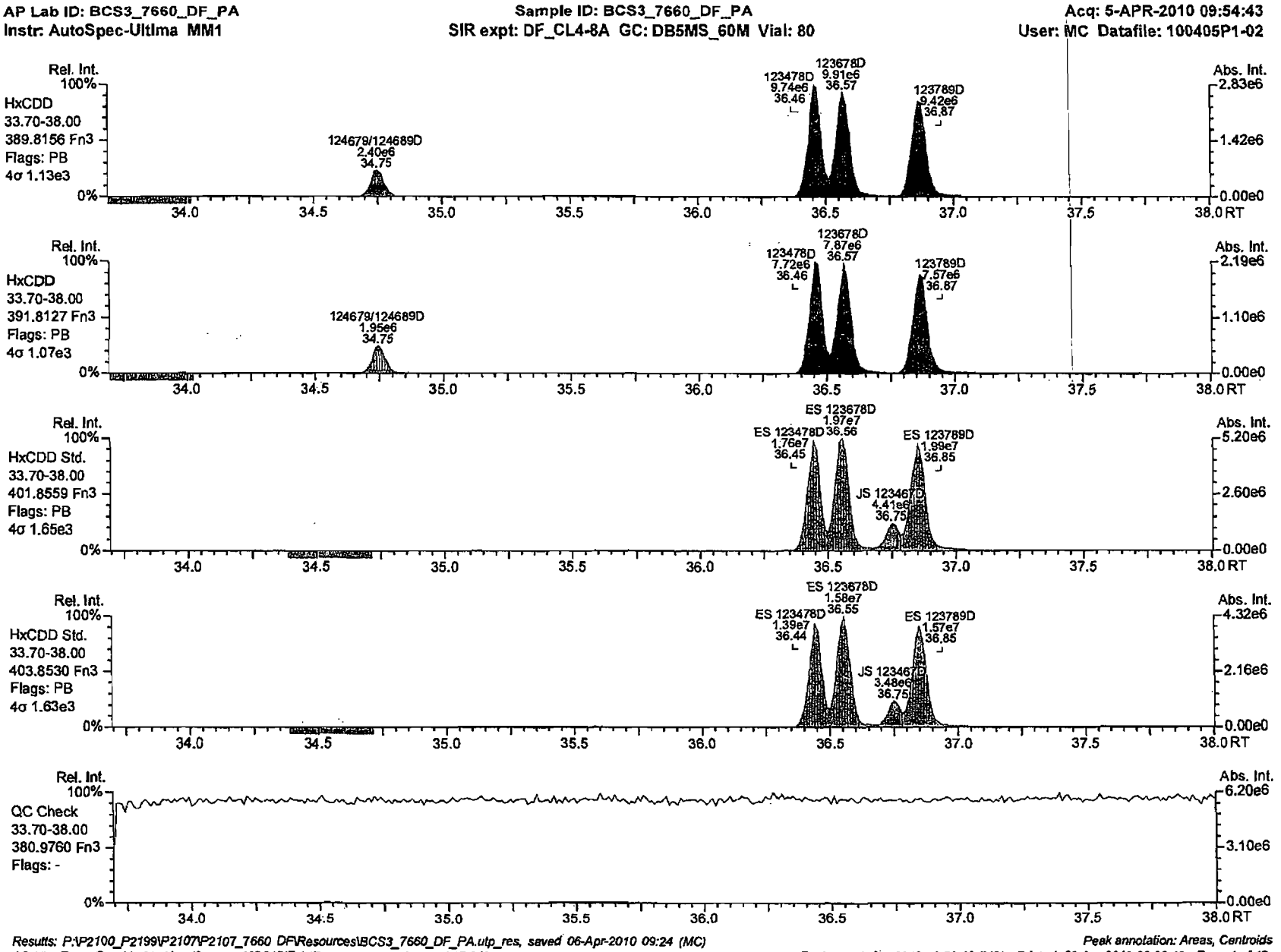
Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCf7-047 cc: 6680, 2456 scc: 915-642

Peak annotation: Areas, Centroids
PKD: 05-Apr-2010 12:57:47 Printed: 06-Apr-2010 09:28:41 Page 3 of 12



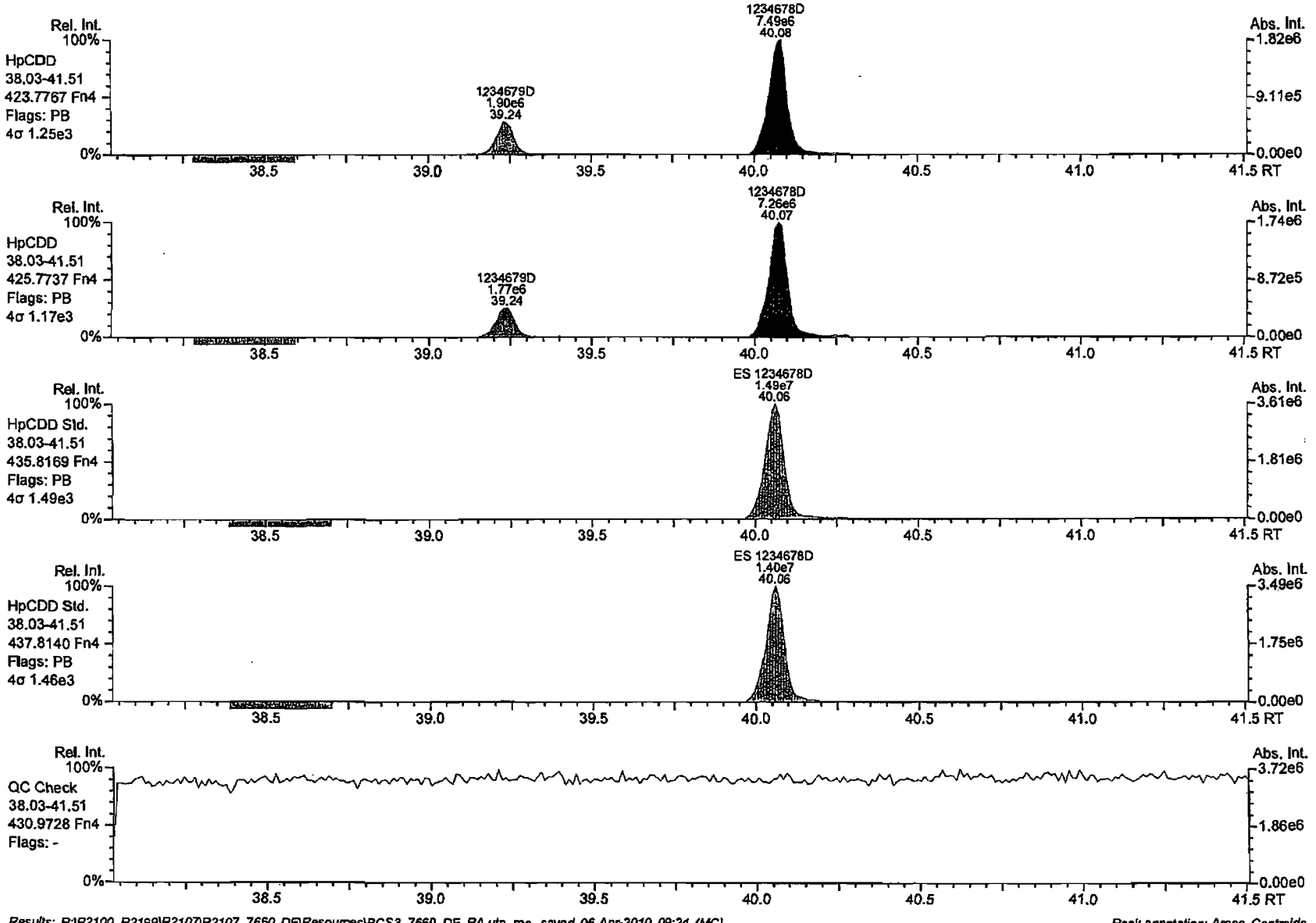
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8794, 6533 scc: 915-642

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:58:40 (MC) Printed: 06-Apr-2010 09:28:49 Page 4 of 12

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02



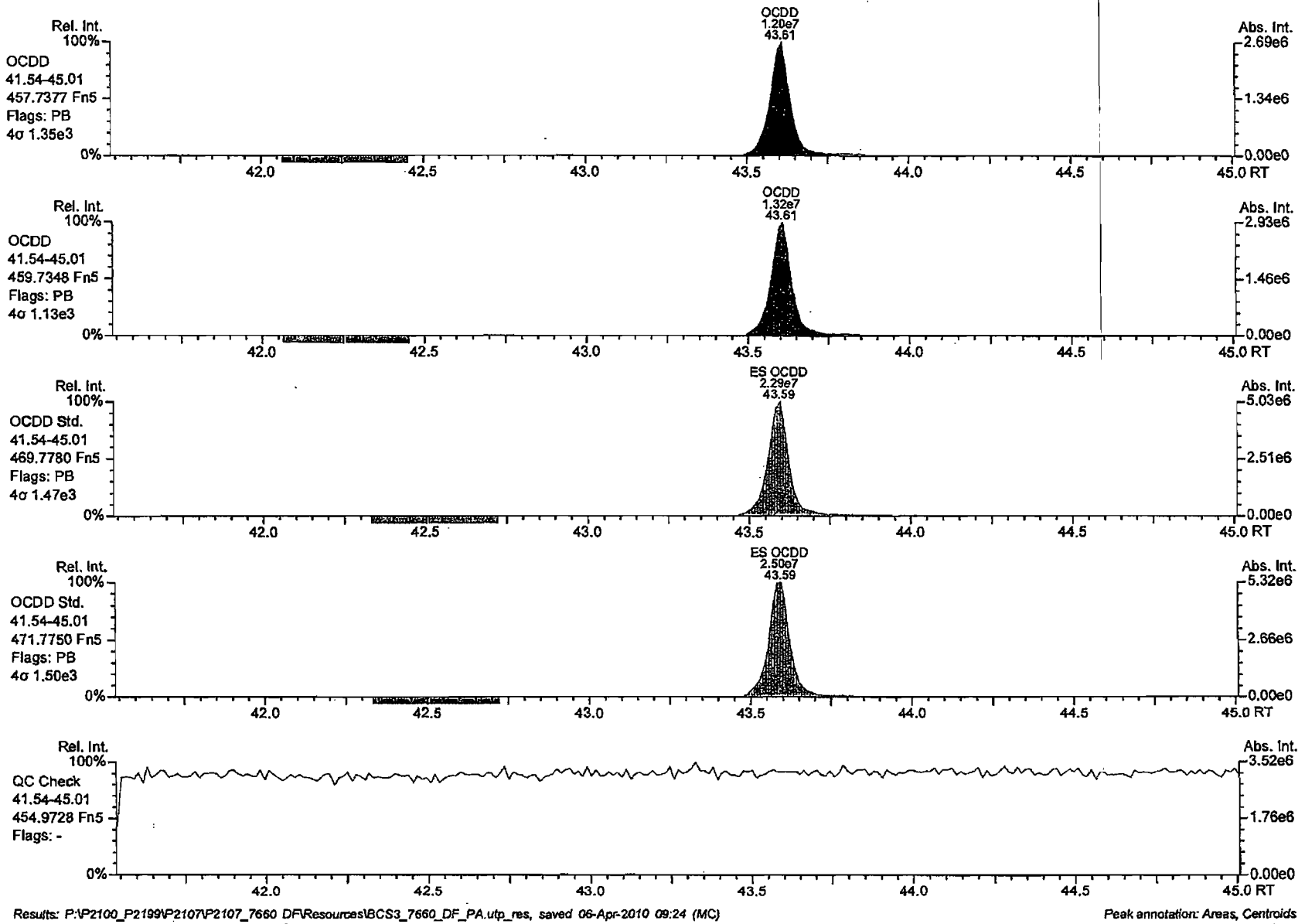
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8889, 6559 scc: 915-642

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:59:39 (MC) Printed: 06-Apr-2010 09:28:55 Page 5 of 12

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1

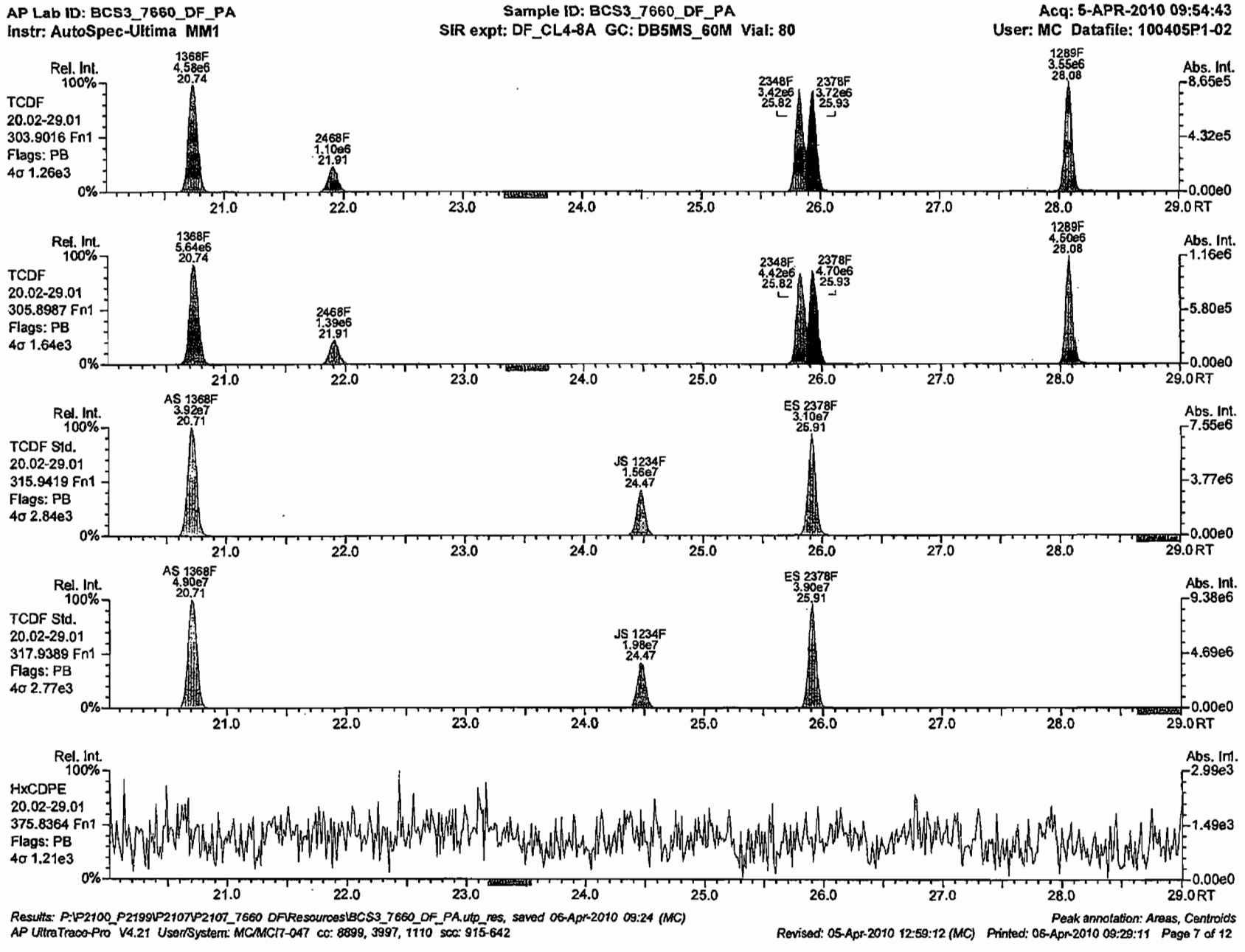
Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3577, 5344 scc: 915-642

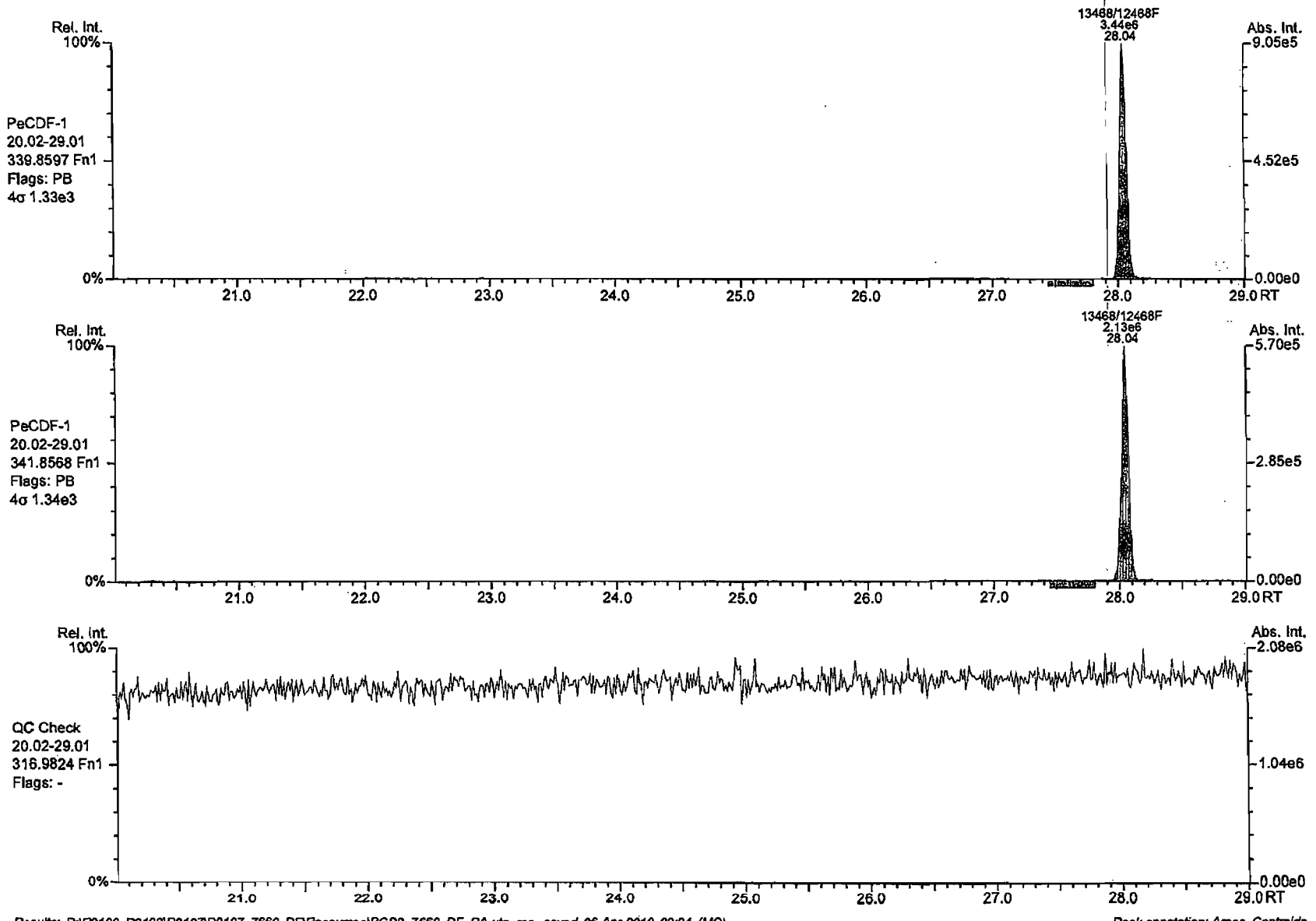
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:59:43 (MC) Printed: 06-Apr-2010 09:29:00 Page 6 of 12


AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02
Rel. Int.
Abs. Int.
TCDF
20.02-29.01
303.9016 Fn1
Flags: PB
4σ 1.26e3
1368F 4.58e6 20.74
2468F 1.10e6 21.91
2348F 3.42e6 25.82
2378F 3.72e6 25.93
1289F 3.55e6 28.08
TCDF
20.02-29.01
305.8987 Fn1
Flags: PB
4σ 1.64e3
1368F 5.64e6 20.74
2468F 1.39e6 21.91
2348F 4.42e6 25.82
2378F 4.70e6 25.93
1289F 4.50e6 28.08
TCDF Std.
20.02-29.01
315.9419 Fn1
Flags: PB
4σ 2.84e3
AS 1368F 3.92e7 20.71
JS 1234F 1.56e7 24.47
ES 2378F 3.10e7 25.91
TCDF Std.
20.02-29.01
317.9389 Fn1
Flags: PB
4σ 2.77e3
AS 1368F 4.90e7 20.71
JS 1234F 1.98e7 24.47
ES 2378F 3.90e7 25.91
HxCDPE
20.02-29.01
375.8364 Fn1
Flags: PB
4σ 1.21e3
RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8899, 3997, 1110 scc: 915-642
Revised: 05-Apr-2010 12:59:12 (MC) Printed: 06-Apr-2010 09:29:11 Page 7 of 12

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1

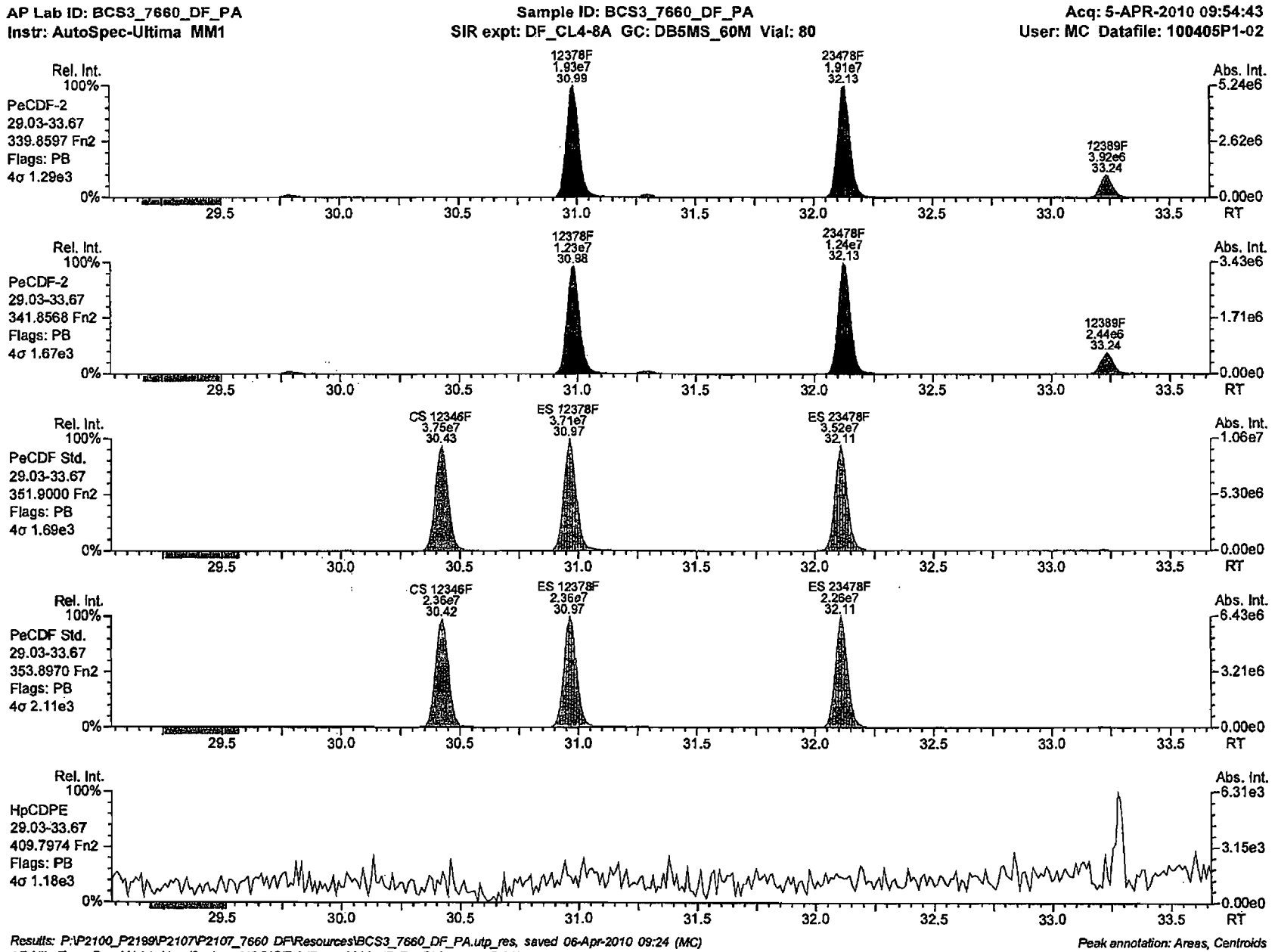
Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6352 scc: 915-642

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:57:47 (MC) Printed: 06-Apr-2010 09:29:18 Page 8 of 12



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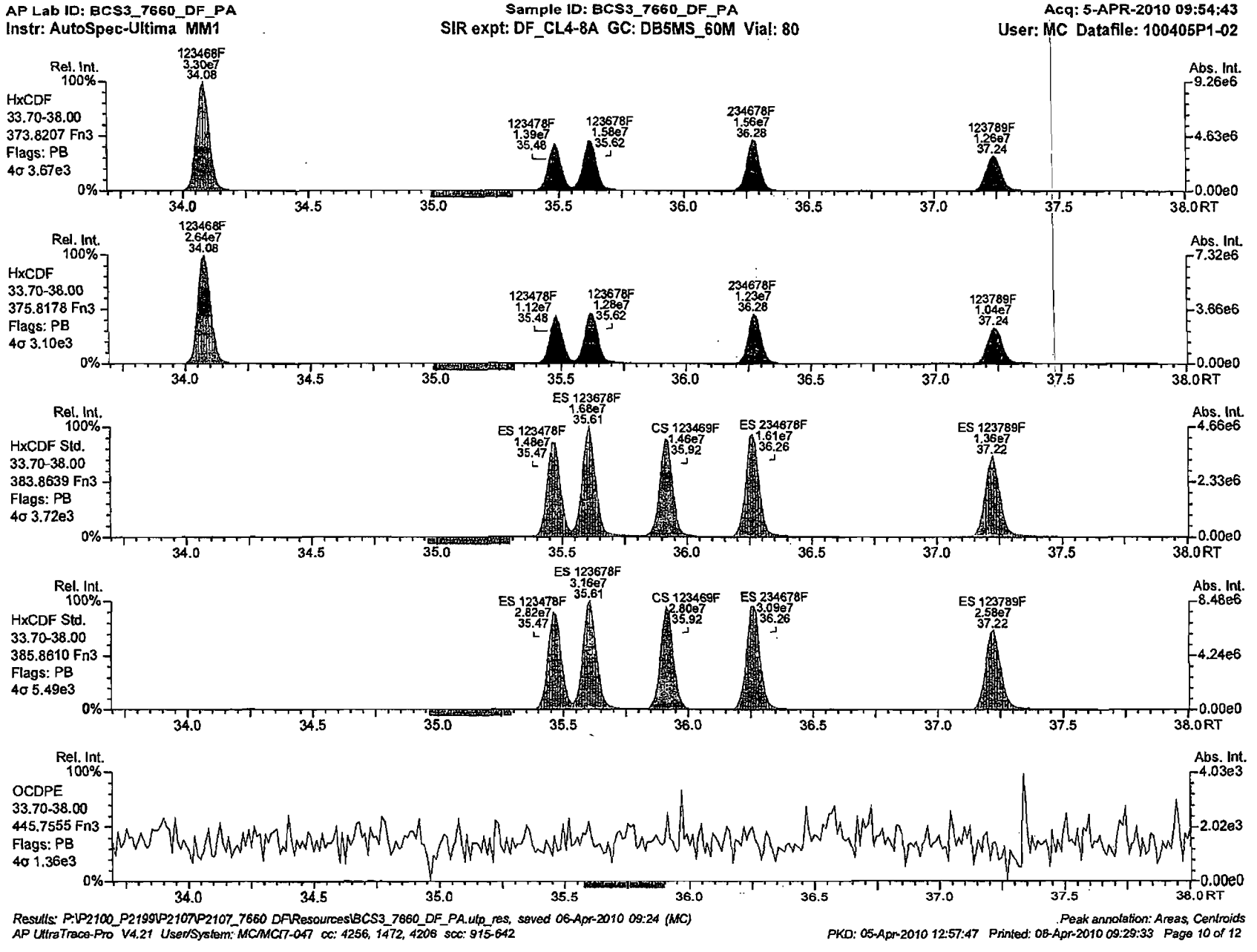
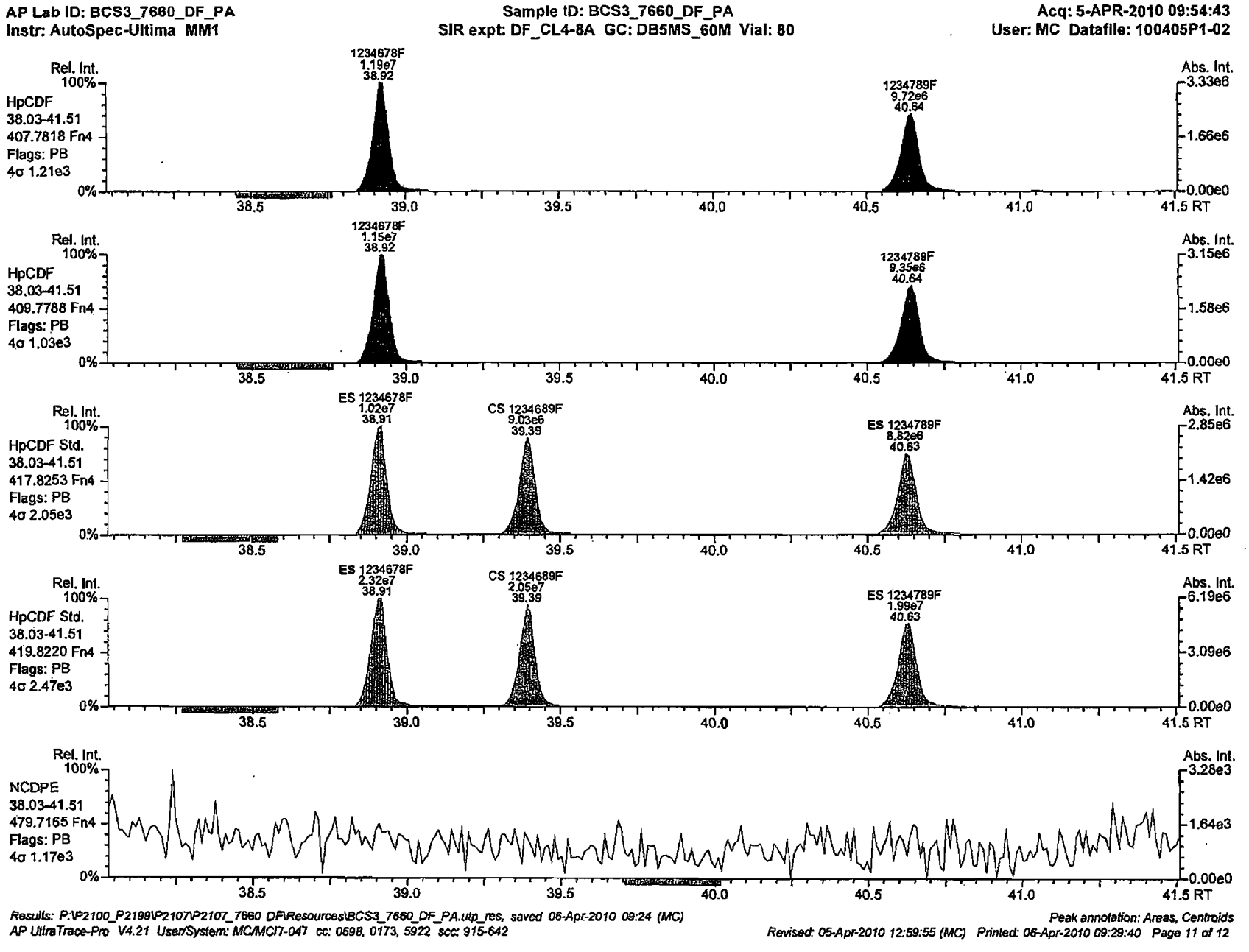
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 2922, 1747, 8514 scc: 915-642
Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:59:48 (MC) Printed: 06-Apr-2010 09:29:26 Page 9 of 12



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC) *.Peak annotation: Areas, Centroids*

AP UltraTrace-Pro V4.21 User/System: MC/MCT-047 cc: 4256, 1472, 4206 scc: 915-642 *PKD: 05-Apr-2010 12:57:47 Printed: 08-Apr-2010 09:29:33 Page 10 of 12*

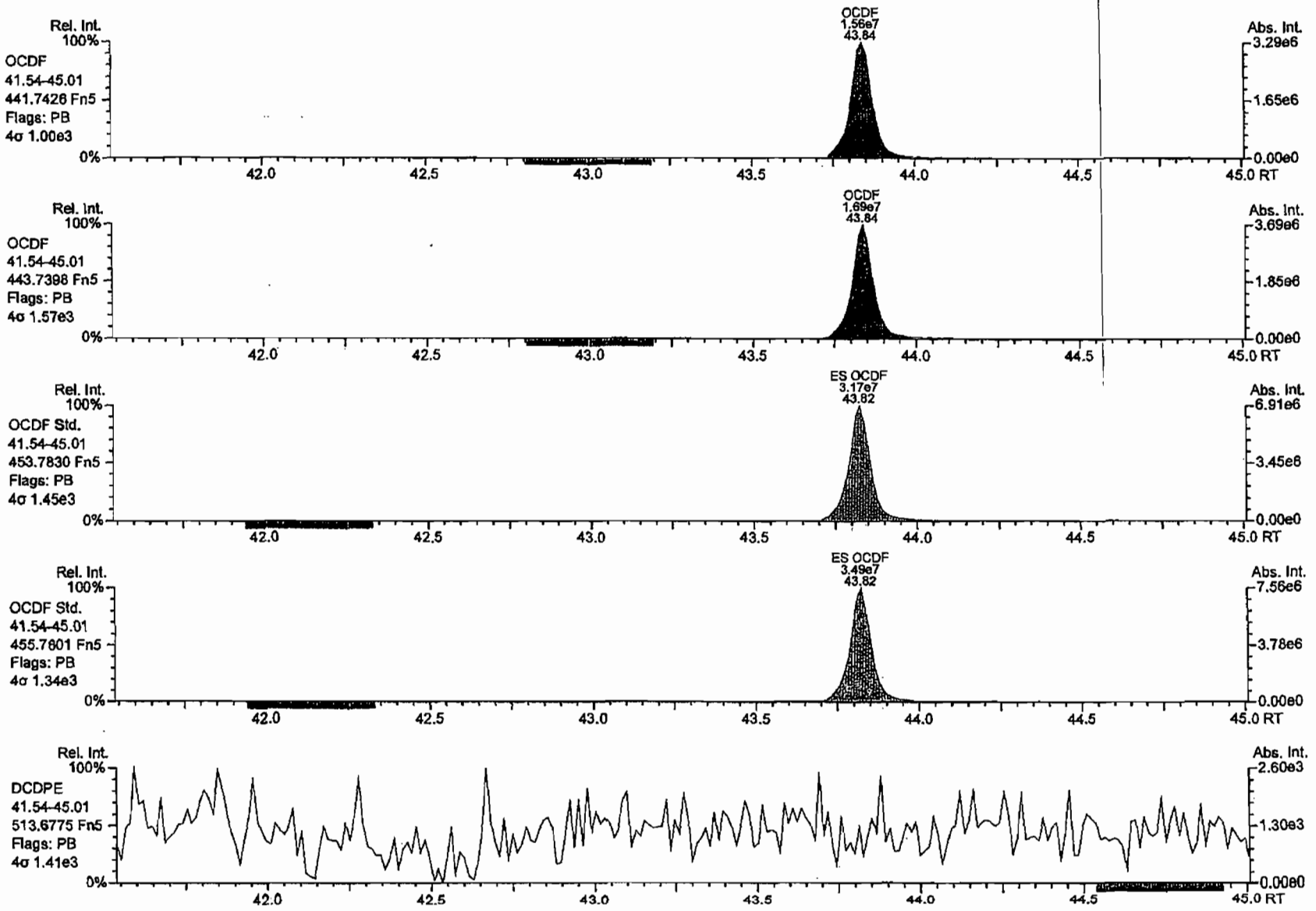


Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PA.utp_res, saved 06-Apr-2010 09:24 (MC)
Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 0598, 0173, 5922 scc: 915-642
Revised: 05-Apr-2010 12:59:55 (MC) Printed: 06-Apr-2010 09:29:40 Page 11 of 12

AP Lab ID: BCS3_7660_DF_PA
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7660_DF_PA
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 09:54:43
User: MC Datafile: 100405P1-02



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AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4332, 3564, 3583 scc: 915-642

Peak annotation: Areas, Centroids
Revised: 05-Apr-2010 12:59:59 (MC) Printed: 06-Apr-2010 09:29:45 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: 100405P1-13 Analysis Date: 05-APR-2010 19:16:22

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	0.84	0.65 - 0.89	Y	10.2	8 - 12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32 - 1.78	Y	49.9	40 - 60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	50.1	40 - 60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.8	40 - 60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.8	40 - 60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	49	40 - 60	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	101	80 - 120	Y
2,3,7,8-TCDF	M/M+2	0.78	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	50.1	40 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	50.4	40 - 60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.3	40 - 60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	49.9	40 - 60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	40 - 60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.29	1.05 - 1.43	Y	49.8	40 - 60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	50	40 - 60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	51.3	40 - 60	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.7	80 - 120	Y

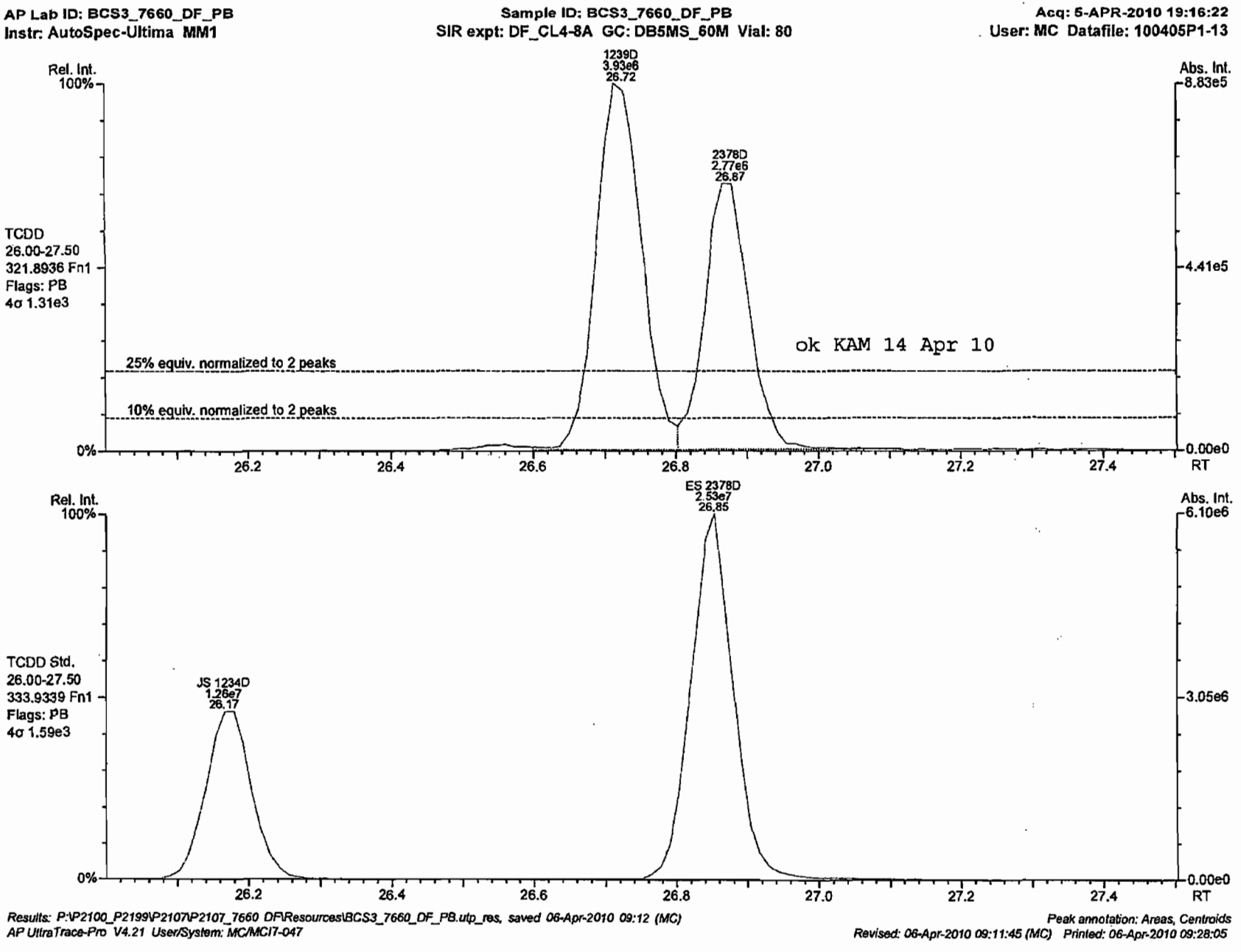
Processed: 06 Apr 2010 09:13 Analyst: MC

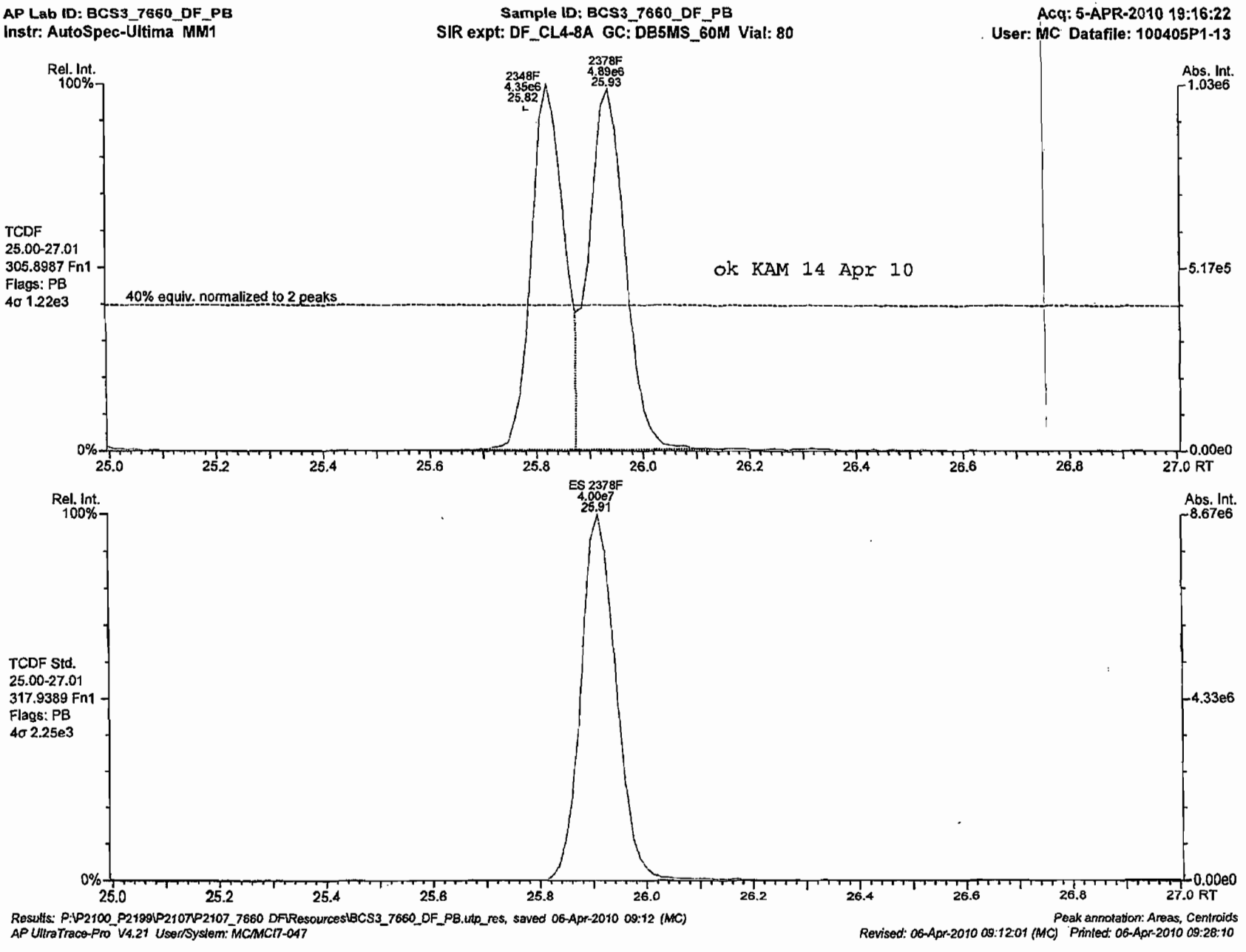
METHOD 23 **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: Analytical Perspectives
Initial Calibration: ICAL: MM1_DF_122509
Instrument ID: MM1 GC Column ID: ZB-5ms
VER Data Filename: 100405P1-13 Analysis Date: 05-APR-2010 19:16:22

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	99.9	70 - 130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	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	99.6	70 - 130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	101	70 - 130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	101	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88 - 1.20	Y	99.8	70 - 130	Y
13C-OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	192	140 - 260	Y
13C-2,3,7,8-TCDF	M/M+2	0.81	0.65 - 0.89	Y	101	70 - 130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	101	70 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	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	100	70 - 130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	102	70 - 130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	99	70 - 130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43 - 0.59	Y	102	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37 - 0.51	Y	100	70 - 130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37 - 0.51	Y	96.6	70 - 130	Y
13C-OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	195	140 - 260	Y
SURROGATE STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				40	28 - 52	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.60	1.32 - 1.78	Y	102	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	99.6	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	99.2	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.45	0.37 - 0.51	Y	100	70 - 130	Y

Processed: 06 Apr 2010 09:13 Analyst: MC

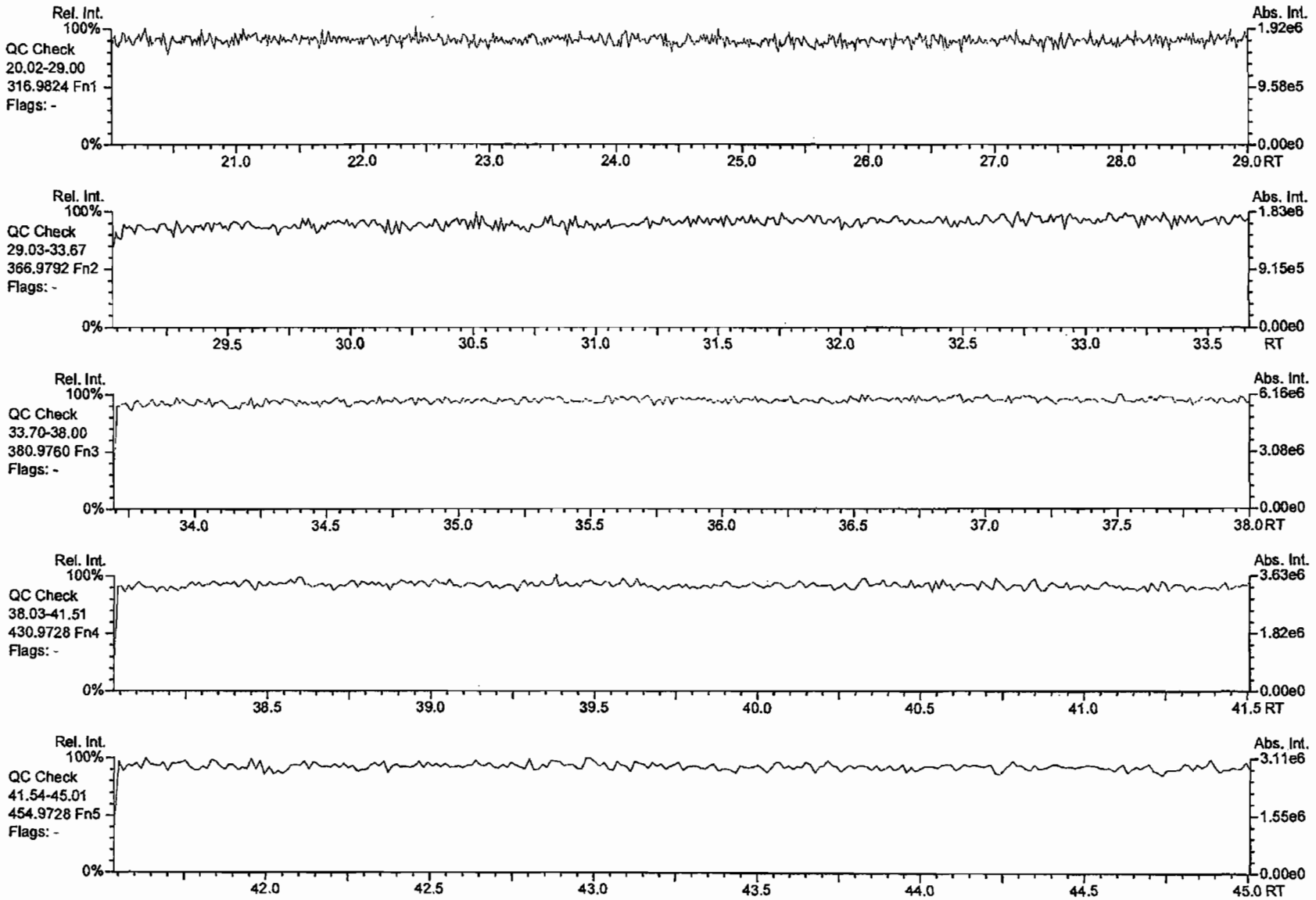

AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13
Rel. Int.
100%
0%
Abs. Int.
8.83e5
4.41e5
0.00e0
RT
1239D
3.93e6
26.72
2378D
2.77e6
26.87
TCDD
26.00-27.50
321.8936 Fn1
Flags: PB
4σ 1.31e3
ok KAM 14 Apr 10
25% equiv. normalized to 2 peaks
10% equiv. normalized to 2 peaks
26.2
26.4
26.6
26.8
27.0
27.2
27.4
ES 2378D
2.53e7
26.85
6.10e6
3.05e6
TCDD Std.
26.00-27.50
333.9339 Fn1
Flags: PB
4σ 1.59e3
JS 1234D
1.26e7
26.17
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:11:45 (MC) Printed: 06-Apr-2010 09:28:05


AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13
Rel. Int.
100%
2348F
4.35e6
25.82
2378F
4.89e6
25.93
Abs. Int.
1.03e6
TCDF
25.00-27.01
305.8987 Fn1
Flags: PB
4σ 1.22e3
40% equiv. normalized to 2 peaks
ok KAM 14 Apr 10
5.17e5
0%
0.00e0
25.0
25.2
25.4
25.6
25.8
26.0
26.2
26.4
26.6
26.8
27.0 RT
Rel. Int.
100%
ES 2378F
4.00e7
25.91
Abs. Int.
8.67e6
TCDF Std.
25.00-27.01
317.9389 Fn1
Flags: PB
4σ 2.25e3
4.33e6
0%
0.00e0
25.0
25.2
25.4
25.6
25.8
26.0
26.2
26.4
26.6
26.8
27.0 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:12:01 (MC) Printed: 06-Apr-2010 09:28:10

AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13



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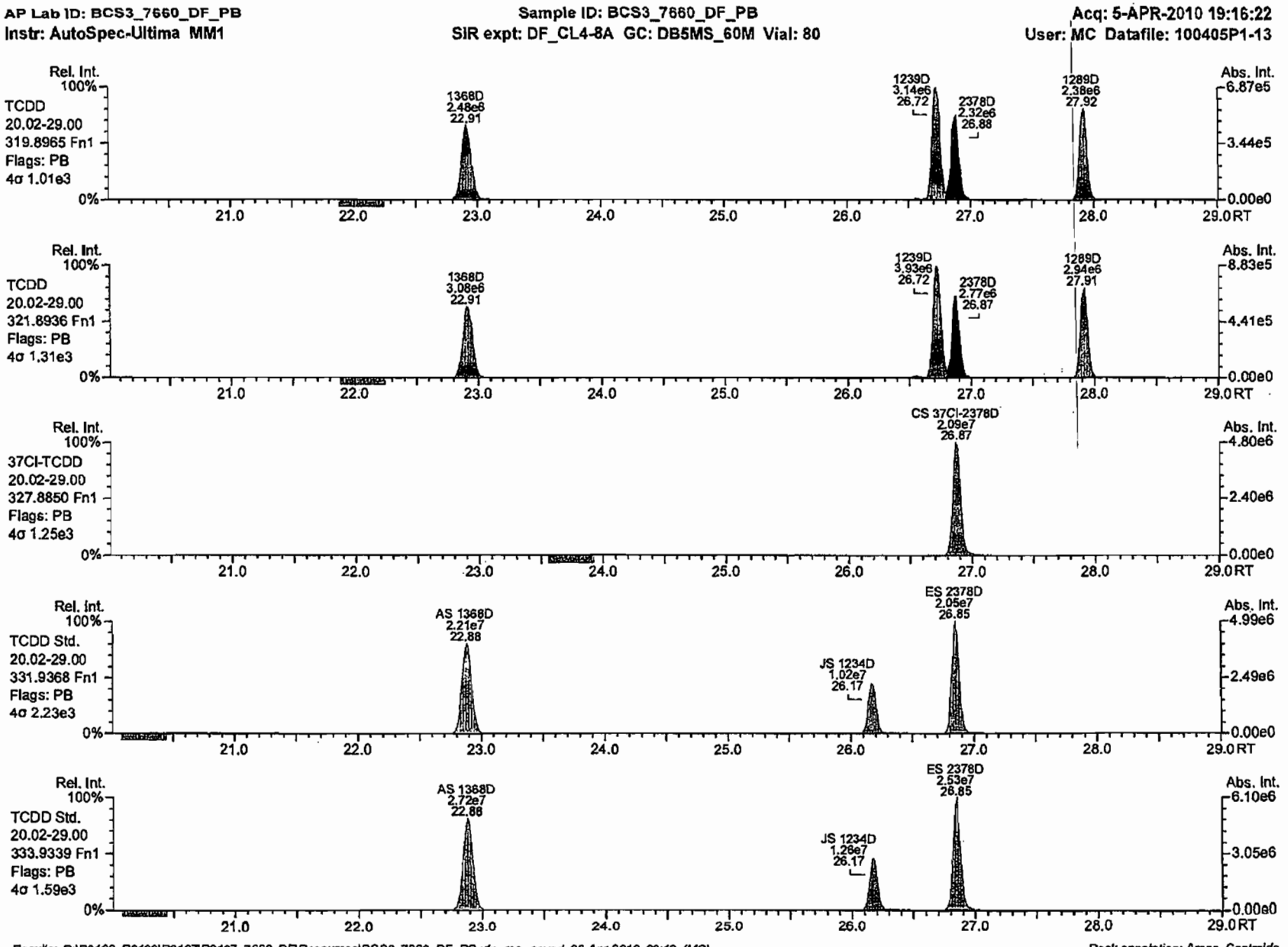
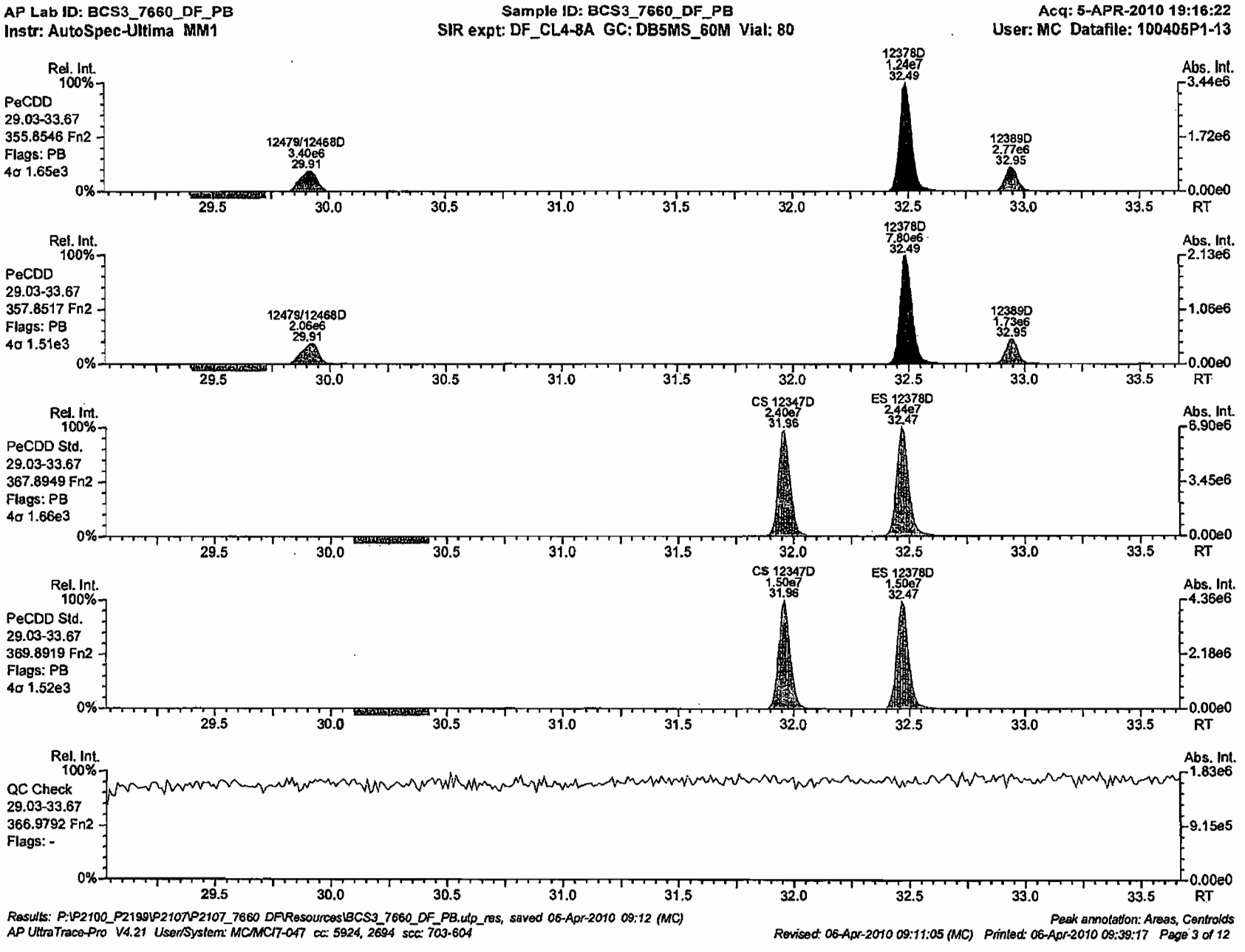
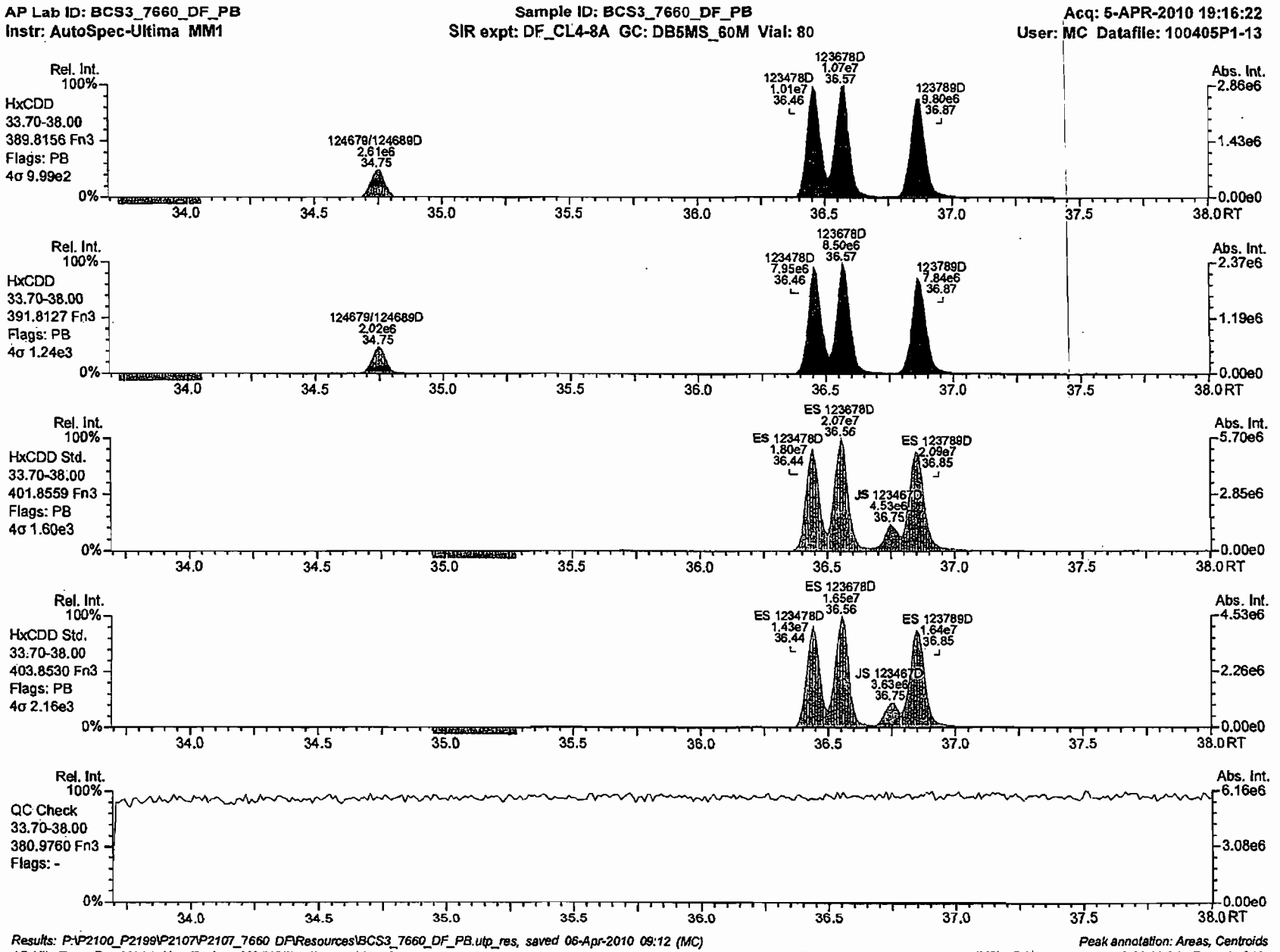
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 703-604

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:36:58 Page 1 of 12

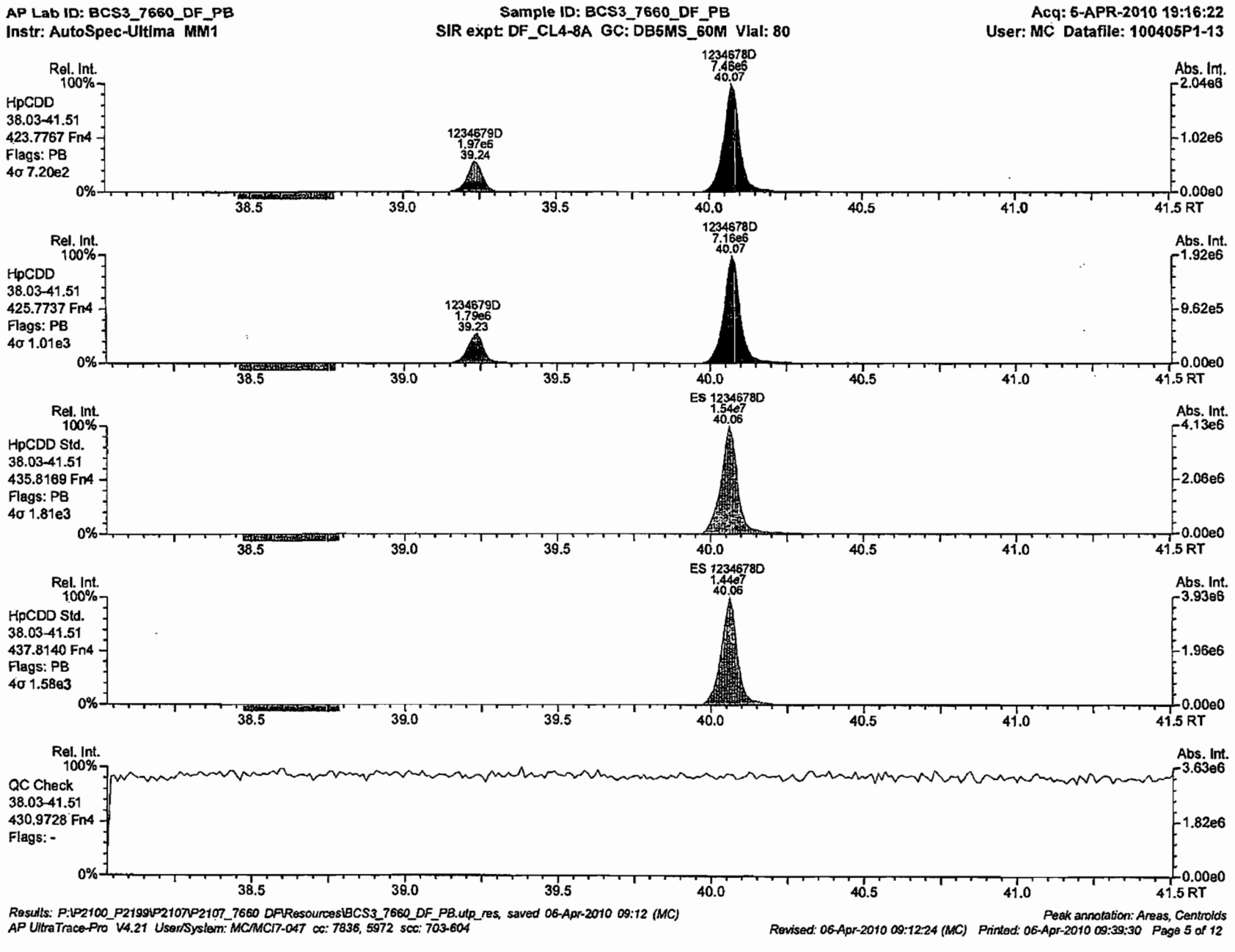


Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3509, 4654, 9828 scc: 703-604
Revised: 06-Apr-2010 09:11:45 (MC) Printed: 06-Apr-2010 09:39:09 Page 2 of 12


AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13
Rel. Int.
100%
PeCDD
29.03-33.67
355.8546 Fn2
Flags: PB
4σ 1.65e3
12479/12468D
3.40e6
29.91
12378D
1.24e7
32.49
12389D
2.77e6
32.95
Abs. Int.
3.44e6
1.72e6
0.00e0
0%
29.5
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
RT
Rel. Int.
100%
PeCDD
29.03-33.67
357.8517 Fn2
Flags: PB
4σ 1.51e3
12479/12468D
2.06e6
29.91
12378D
7.80e6
32.49
12389D
1.73e6
32.95
Abs. Int.
2.13e6
1.06e6
0.00e0
0%
29.5
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
RT
Rel. Int.
100%
PeCDD Std.
29.03-33.67
367.8949 Fn2
Flags: PB
4σ 1.66e3
CS 12347D
2.40e7
31.96
ES 12378D
2.44e7
32.47
Abs. Int.
6.90e6
3.45e6
0.00e0
0%
29.5
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
RT
Rel. Int.
100%
PeCDD Std.
29.03-33.67
369.8919 Fn2
Flags: PB
4σ 1.52e3
CS 12347D
1.50e7
31.96
ES 12378D
1.50e7
32.47
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
29.5
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
RT
Rel. Int.
100%
QC Check
29.03-33.67
366.9792 Fn2
Flags: -
Abs. Int.
1.83e6
9.15e5
0.00e0
0%
29.5
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5924, 2694 scc: 703-604
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:11:05 (MC) Printed: 06-Apr-2010 09:39:17 Page 3 of 12



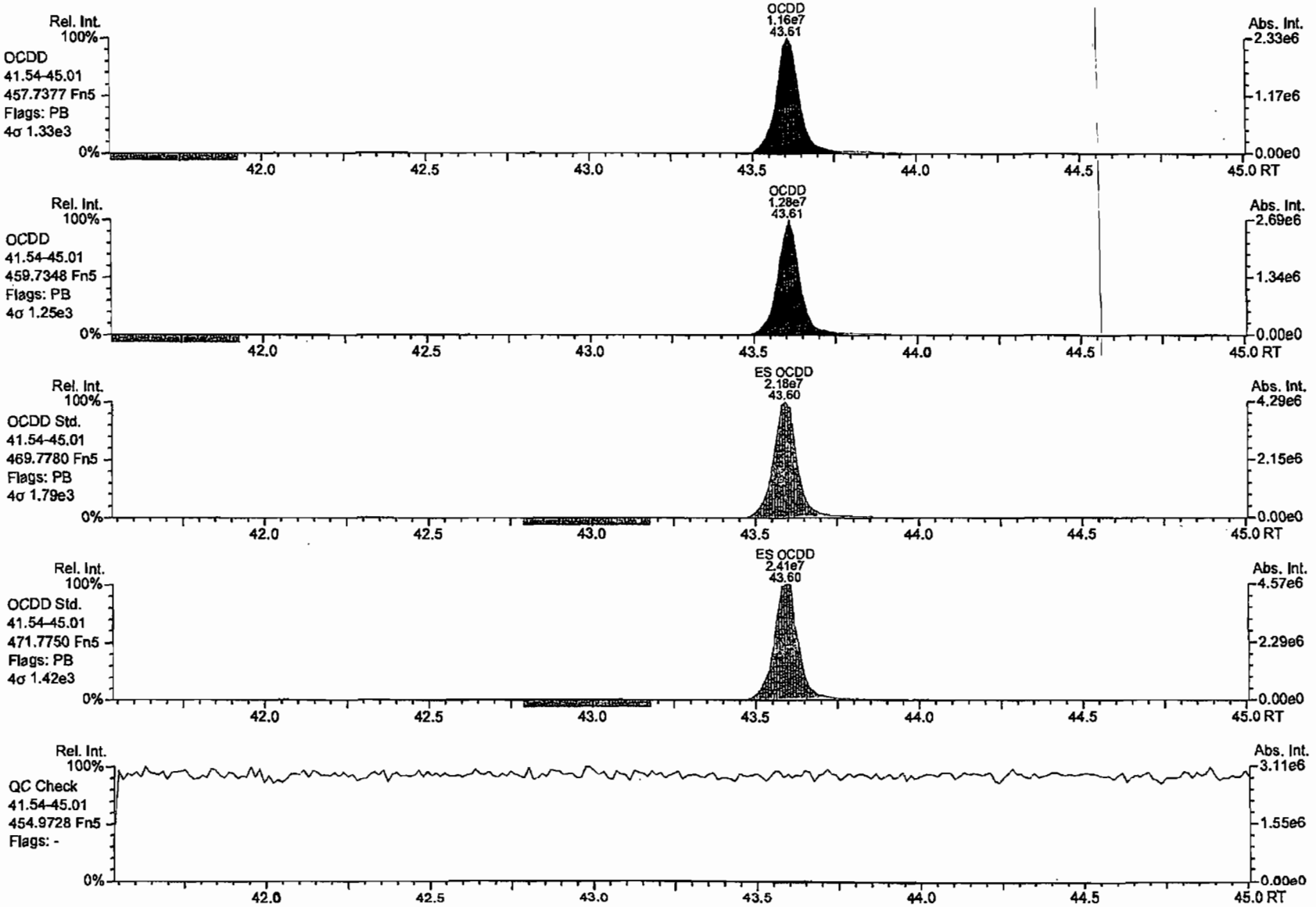
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
Peak annotation: Areas, Centroids
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8142, 7659 scc: 703-604
Revised: 06-Apr-2010 09:11:29 (MC) Printed: 06-Apr-2010 09:39:24 Page 4 of 12


AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13
Rel. Int.
Abs. Int.
HpCDD
38.03-41.51
423.7767 Fn4
Flags: PB
4σ 7.20e2
1234678D
7.46e6
40.07
1234679D
1.97e6
39.24
2.04e6
1.02e6
0.00e0
HpCDD
38.03-41.51
425.7737 Fn4
Flags: PB
4σ 1.01e3
1234678D
7.16e6
40.07
1234679D
1.79e6
39.23
1.92e6
9.62e5
0.00e0
HpCDD Std.
38.03-41.51
435.8169 Fn4
Flags: PB
4σ 1.81e3
ES 1234678D
1.54e7
40.06
4.13e6
2.06e6
0.00e0
HpCDD Std.
38.03-41.51
437.8140 Fn4
Flags: PB
4σ 1.58e3
ES 1234678D
1.44e7
40.06
3.93e6
1.96e6
0.00e0
QC Check
38.03-41.51
430.9728 Fn4
Flags: -
3.63e6
1.82e6
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7836, 5972 scc: 703-604
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:12:24 (MC) Printed: 06-Apr-2010 09:39:30 Page 5 of 12

AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1

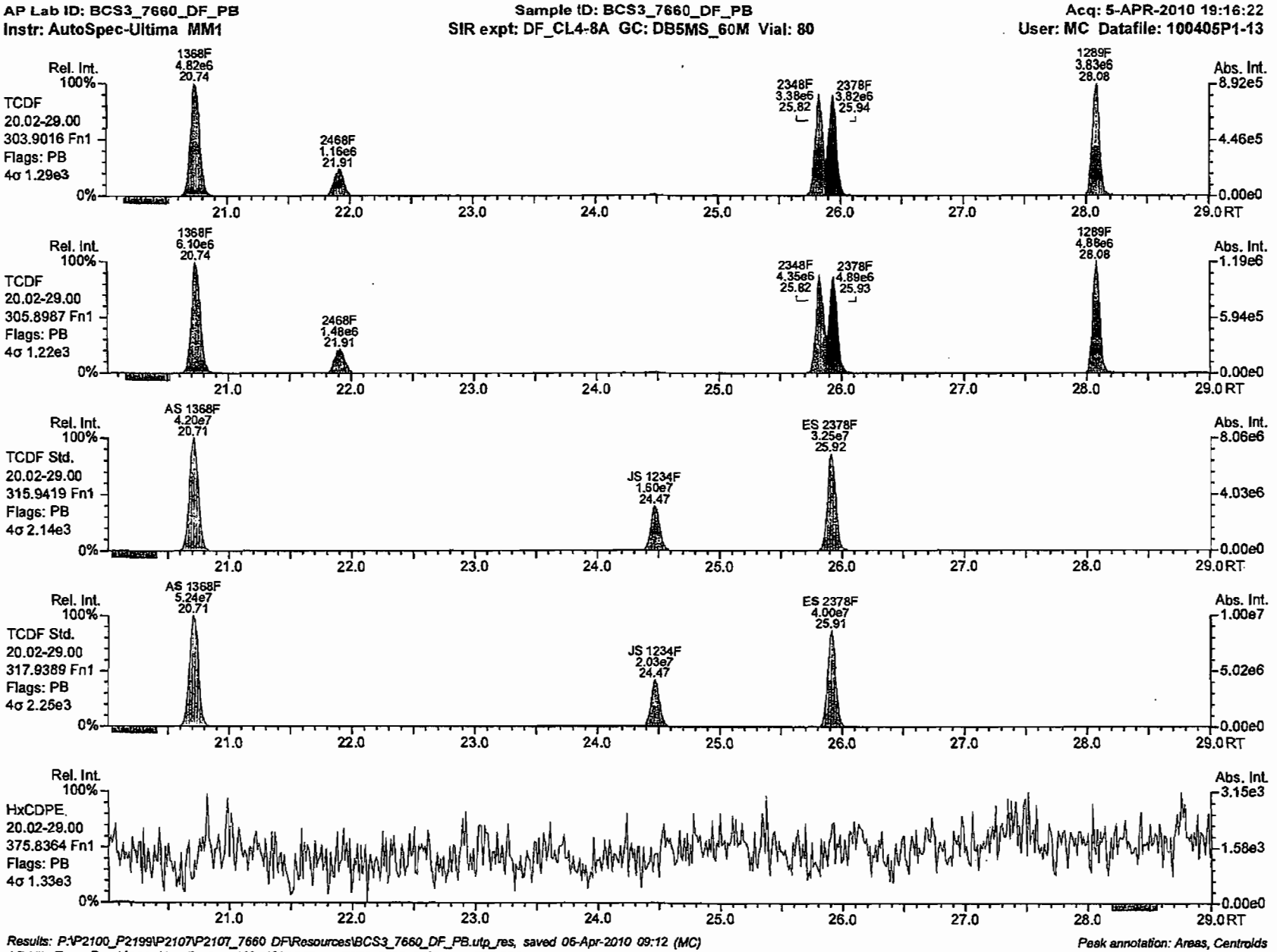
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 1611, 1193 scc: 703-604

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:12:30 (MC) Printed: 06-Apr-2010 09:39:36 Page 6 of 12



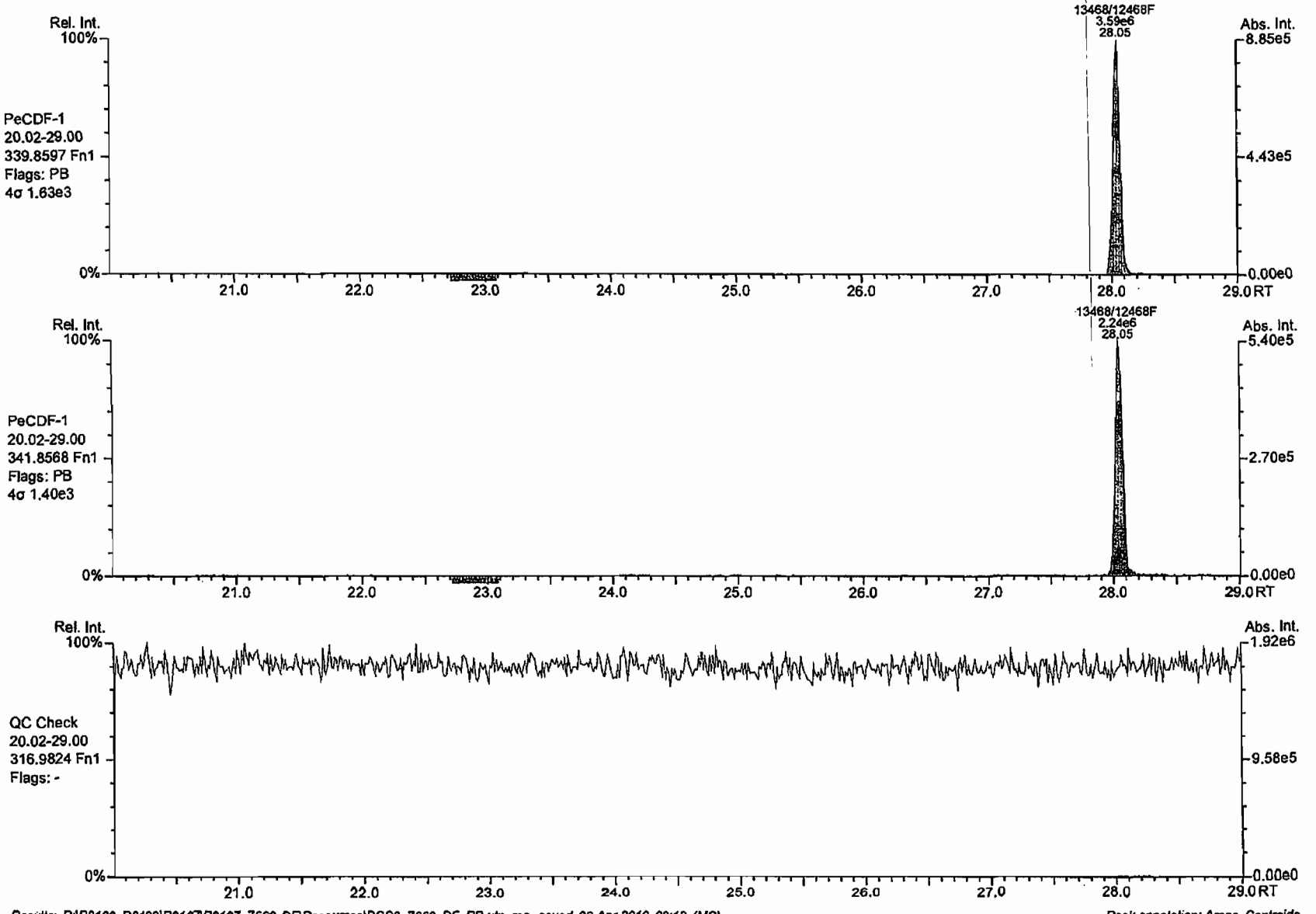
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7674, 0093, 3733 scc: 703-604

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:12:01 (MC) Printed: 06-Apr-2010 09:39:47 Page 7 of 12

AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13



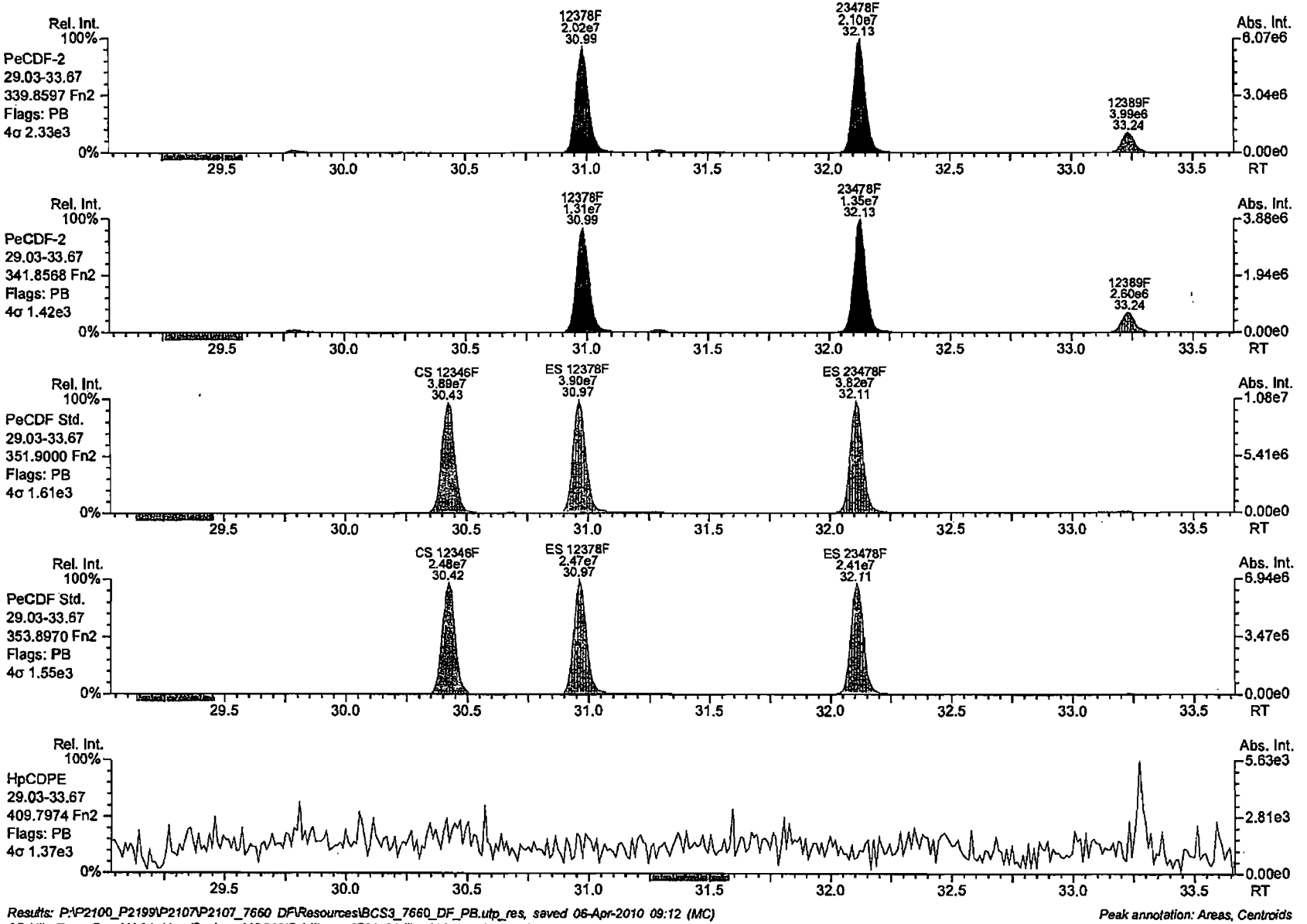
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MC/7-047 cc: 3376 scc: 703-604

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:11:05 (MC) Printed: 06-Apr-2010 09:39:54 Page 8 of 12

AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1

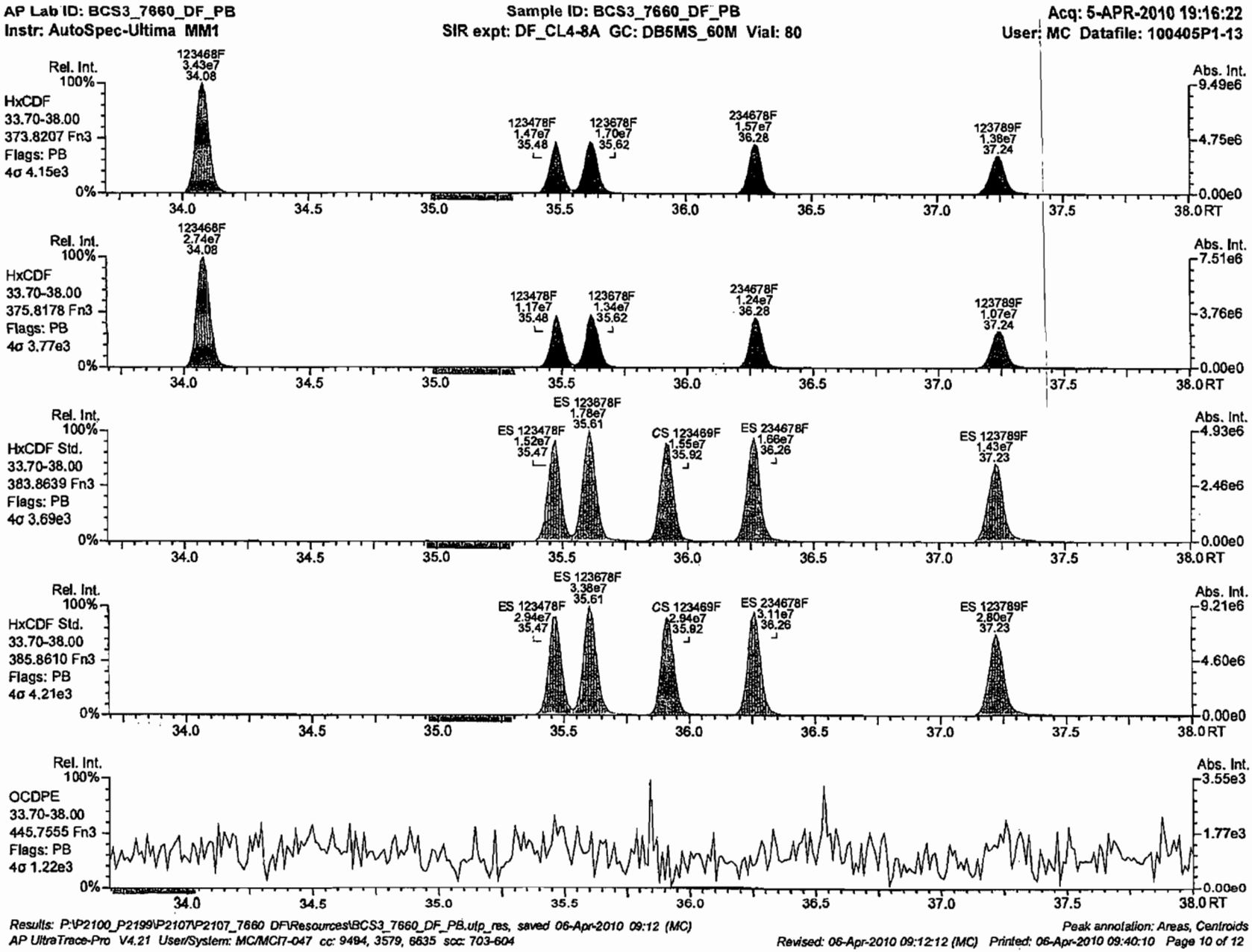
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

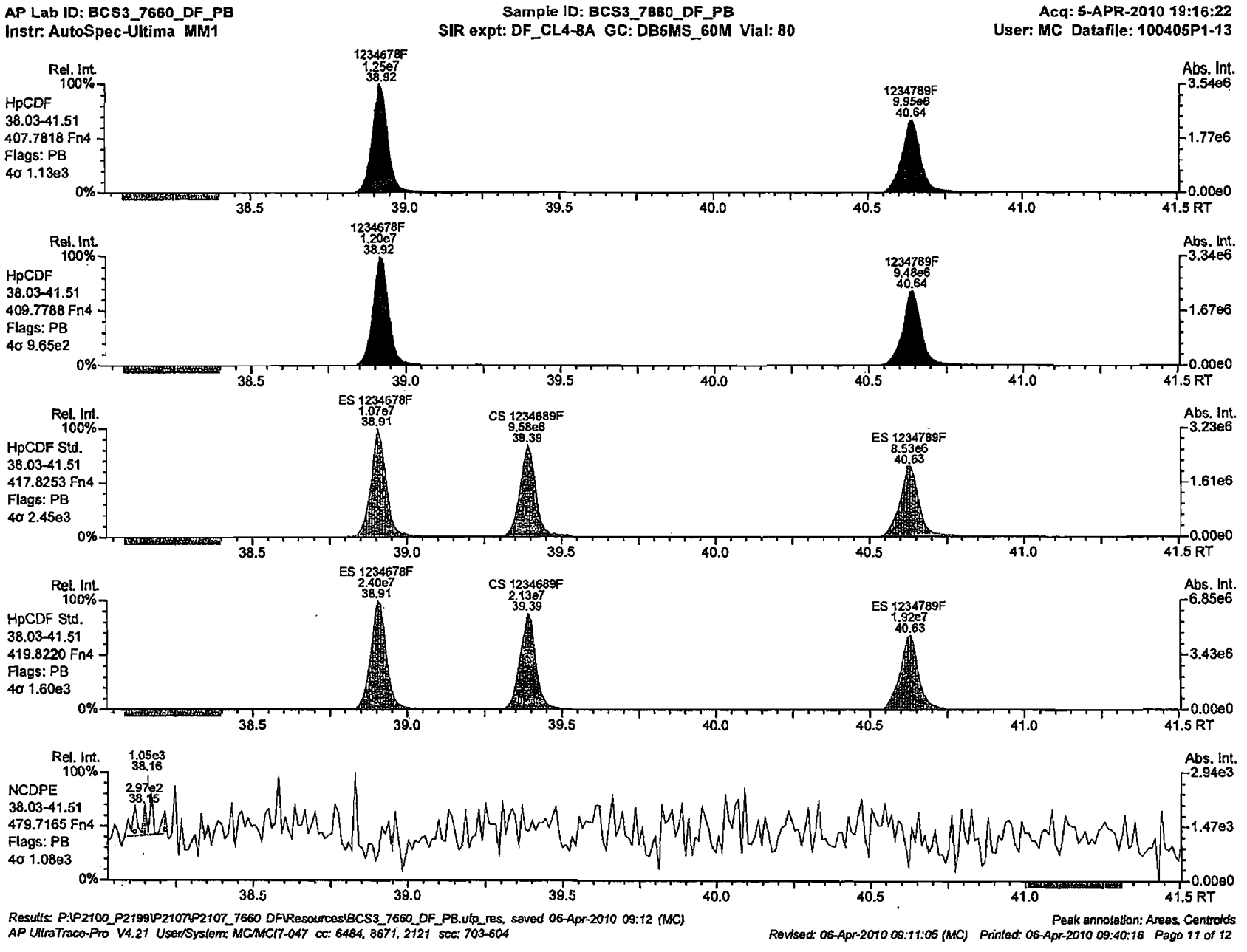
Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6761, 2357, 7820 scc: 703-604

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:11:05 (MC) Printed: 06-Apr-2010 09:40:02 Page 9 of 12

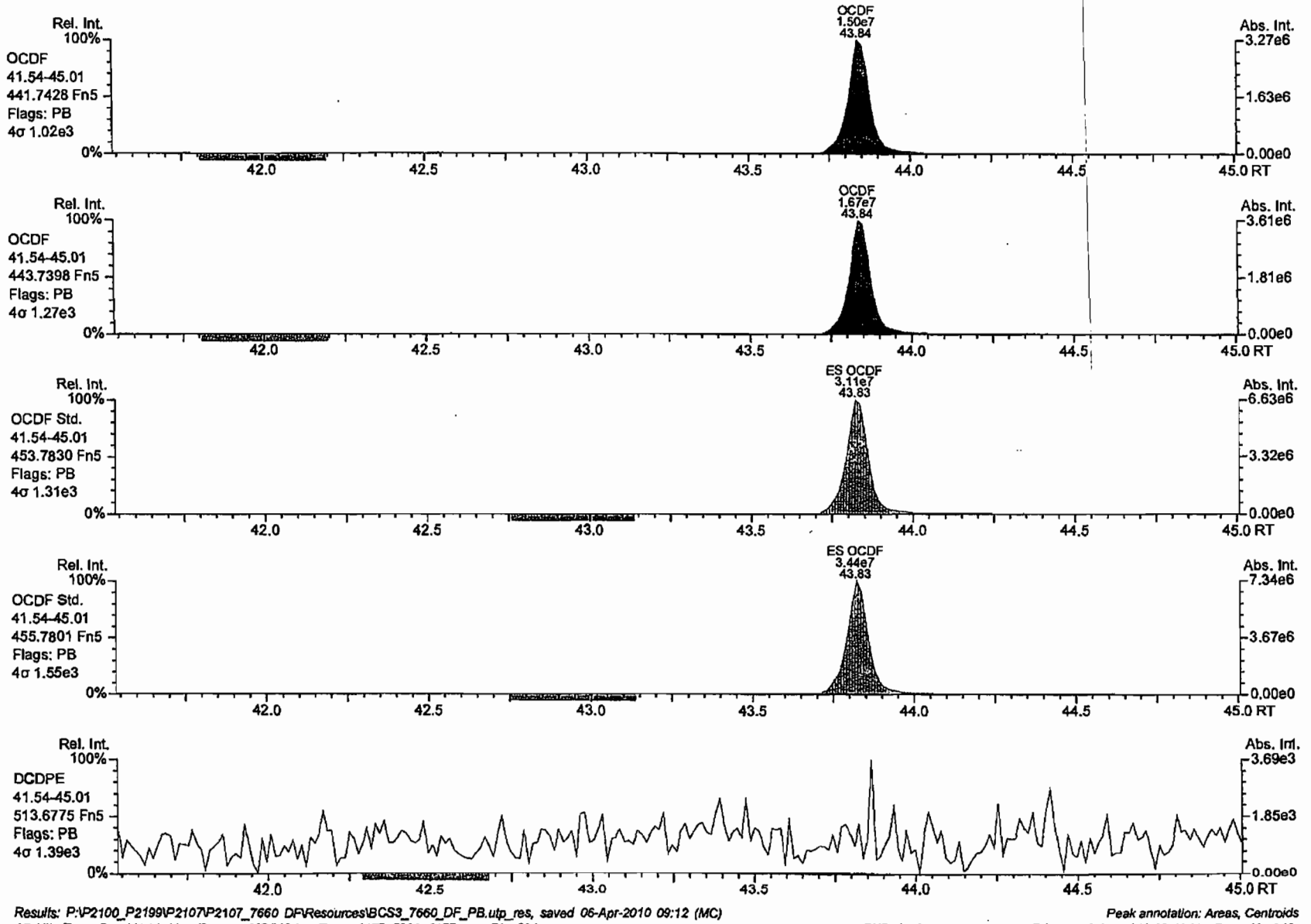

AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13
Rel. Int.
Abs. Int.
HxCDF
33.70-38.00
373.8207 Fn3
Flags: PB
4σ 4.15e3
123468F 3.43e7 34.08
123478F 1.47e7 35.48
123678F 1.70e7 35.62
234678F 1.57e7 36.28
123789F 1.38e7 37.24
9.49e6
4.75e6
0.00e0
HxCDF
33.70-38.00
375.8178 Fn3
Flags: PB
4σ 3.77e3
123468F 2.74e7 34.08
123478F 1.17e7 35.48
123678F 1.34e7 35.62
234678F 1.24e7 36.28
123789F 1.07e7 37.24
7.51e6
3.76e6
0.00e0
HxCDF Std.
33.70-38.00
383.8639 Fn3
Flags: PB
4σ 3.69e3
ES 123678F 1.78e7 35.61
ES 123478F 1.52e7 35.47
CS 123469F 1.55e7 35.92
ES 234678F 1.66e7 36.26
ES 123789F 1.43e7 37.23
4.93e6
2.46e6
0.00e0
HxCDF Std.
33.70-38.00
385.8610 Fn3
Flags: PB
4σ 4.21e3
ES 123678F 3.38e7 35.61
ES 123478F 2.94e7 35.47
CS 123469F 2.94e7 35.92
ES 234678F 3.11e7 36.26
ES 123789F 2.80e7 37.23
9.21e6
4.60e6
0.00e0
OCDPE
33.70-38.00
445.7555 Fn3
Flags: PB
4σ 1.22e3
3.55e3
1.77e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 9494, 3579, 6635 scc: 703-604
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:12:12 (MC) Printed: 06-Apr-2010 09:40:10 Page 10 of 12


AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1
Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80
Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13
Rel. Int.
Abs. Int.
HpCDF
38.03-41.51
407.7818 Fn4
Flags: PB
4σ 1.13e3
1234678F
1.25e7
38.92
1234789F
9.95e6
40.64
3.54e6
1.77e6
0.00e0
HpCDF
38.03-41.51
409.7788 Fn4
Flags: PB
4σ 9.65e2
1234678F
1.20e7
38.92
1234789F
9.48e6
40.64
3.34e6
1.67e6
0.00e0
HpCDF Std.
38.03-41.51
417.8253 Fn4
Flags: PB
4σ 2.45e3
ES 1234678F
1.07e7
38.91
CS 1234689F
9.58e6
39.39
ES 1234789F
8.53e6
40.63
3.23e6
1.61e6
0.00e0
HpCDF Std.
38.03-41.51
419.8220 Fn4
Flags: PB
4σ 1.60e3
ES 1234678F
2.40e7
38.91
CS 1234689F
2.13e7
39.39
ES 1234789F
1.92e7
40.63
6.85e6
3.43e6
0.00e0
NCDPE
38.03-41.51
479.7165 Fn4
Flags: PB
4σ 1.08e3
1.05e3
38.16
2.97e2
38.15
2.94e3
1.47e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.ulp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6484, 8671, 2121 scc: 703-604
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:11:05 (MC) Printed: 06-Apr-2010 09:40:16 Page 11 of 12

AP Lab ID: BCS3_7660_DF_PB
Instr: AutoSpec-Ultima MM1

Sample ID: BCS3_7660_DF_PB
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 80

Acq: 5-APR-2010 19:16:22
User: MC Datafile: 100405P1-13



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\BCS3_7660_DF_PB.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 4457, 5680, 6657 scc: 703-604

Peak annotation: Areas, Centroids
PKD: 06-Apr-2010 09:11:05 Printed: 06-Apr-2010 09:40:22 Page 12 of 12

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ANALYTICAL PERSPECTIVES

PART 4D

SYSTEM PERFORMANCE

"ICAL"

DOCUMENTATION FOR THE ANALYSIS
OF
POLYCHLORINATED DIBENZO-*P*-DIOXINS & DIBENZOFURANS

Dioxin/Furan ICAL Summary

Analytical Perspectives

Processed: 26 Dec 2009 09:12

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

Dioxin/Furan ICAL Summary			Analytical Perspectives					Processed: 26 Dec 2009 09:12	
ICAL: MM1_ical_122509									
Data Acquired: 18-Jun-2009									
			091225P1-01	091225P1-02	091225P1-03	091225P1-04	091225P1-05	091225P1-06	091225P1-07
			0.25	**0.5**	**2.0**	**10**	**40**	**200**	**500**
Name	**Mean**	**% RSD**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**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

P2107

ANALYTICAL PERSPECTIVES

PART 4E

SYSTEM PERFORMANCE

"AUDIT SAMPLE"

DOCUMENTATION FOR THE ANALYSIS
OF
POLYCHLORINATED DIBENZO-*p*-DIOXINS & DIBENZOFURANS

Lab ID: P2107_7660_006 | Acq'd: 05 Apr 2010 17:33 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: M23-4438-01 Audit | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 590-646

Datafile: 100405P1-11 | Report: 06 Apr 2010 09:15 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	3.41E+06	0.82	Y	1.09	404	2100	2.81
12378-PeCDD	32.50		1.0006	1.0006	0	2.03E+06	1.46	Y	1.02	303	2772	3.62
123478-HxCDD	36.47		1.0004	1.0004	0	1.78E+06	1.38	Y	1.11	317	2559	4.29
123678-HxCDD	36.58		1.0034	1.0035	+0.2	1.66E+06	1.29	Y	1.02	269	2559	3.9
123789-HxCDD	36.88		1.0116	1.0117	+0.2	1.84E+06	1.25	Y	0.95	316	2559	4.46
1234678-HpCDD	40.08		1.0003	1.0004	+0.2	1.45E+06	1.02	Y	1.00	308	2619	5.37
OCDD	43.61		1.0004	1.0003	-0.3	5.48E+06	0.90	Y	1.06	1,360	2635	7.93
2378-TCDF	25.95		1.0009	1.0009	0	5.40E+06	0.79	Y	1.20	351	2585	2.02
12378-PeCDF	31.00		1.0006	1.0006	0	3.35E+06	1.58	Y	1.04	301	3115	2.58
23478-PeCDF	32.14		1.0005	1.0006	+0.2	3.36E+06	1.56	Y	1.10	296	3115	2.43
123478-HxCDF	35.49		1.0004	1.0005	+0.2	3.48E+06	1.26	Y	1.18	404	3851	3.91
123678-HxCDF	35.63		1.0005	1.0004	-0.2	3.83E+06	1.24	Y	1.18	385	3851	3.6
234678-HxCDF	36.29		1.0005	1.0004	-0.2	3.48E+06	1.32	Y	1.18	370	3851	3.73
123789-HxCDF	37.27		1.0005	1.0009	+0.9	5.11E+06	1.23	Y	1.16	683	3851	5.32
1234678-HpCDF	38.93		1.0003	1.0003	0	2.19E+06	1.05	Y	1.41	284	2210	2.61
1234789-HpCDF	40.65		1.0003	1.0003	0	1.96E+06	0.98	Y	1.37	306	2210	3.8
OCDF	43.85		1.0004	1.0003	-0.3	6.84E+06	0.86	Y	0.97	1,370	2675	6.44

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	26.86	1.0259	1.0260	+0.2	3.09E+07	0.83	Y	1.01	89
ES 12378-PeCDD	32.49	1.2404	1.2407	+0.5	2.62E+07	1.61	Y	0.86	88.2
ES 123478-HxCDD	36.45	0.9917	0.9916	-0.2	2.03E+07	1.26	Y	0.99	80.4
ES 123678-HxCDD	36.56	0.9947	0.9946	-0.2	2.43E+07	1.25	Y	1.13	84.5
ES 123789-HxCDD	36.87	1.0028	1.0028	0	2.44E+07	1.21	Y	1.13	84.9
ES 1234678-HpCDD	40.07	1.0902	1.0899	-0.7	1.87E+07	1.06	Y	0.91	80.9
ES OCDD	43.60	1.1862	1.1861	-0.2	3.05E+07	0.91	Y	0.73	82.3
ES 2378-TCDF	25.93	1.0585	1.0588	+0.4	5.12E+07	0.81	Y	0.99	92.7
ES 12378-PeCDF	30.98	1.2646	1.2652	+0.9	4.26E+07	1.56	Y	0.87	88.6
ES 23478-PeCDF	32.12	1.3113	1.3119	+0.9	4.12E+07	1.57	Y	0.84	88.6
ES 123478-HxCDF	35.48	0.9651	0.9651	0	2.93E+07	0.51	Y	1.36	84.7
ES 123678-HxCDF	35.62	0.9689	0.9689	0	3.38E+07	0.52	Y	1.56	85.5
ES 234678-HxCDF	36.27	0.9867	0.9867	0	3.18E+07	0.53	Y	1.47	85
ES 123789-HxCDF	37.24	1.0129	1.0129	0	2.58E+07	0.53	Y	1.27	79.9
ES 1234678-HpCDF	38.92	1.0589	1.0586	-0.7	2.19E+07	0.43	Y	1.06	81.5
ES 1234789-HpCDF	40.64	1.1057	1.1054	-0.7	1.88E+07	0.44	Y	0.88	84.3
ES OCDF	43.83	1.1926	1.1924	-0.4	4.12E+07	0.88	Y	1.03	78.9

Lab ID: P2107_7660_006 | Acq'd: 05 Apr 2010 17:33 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: M23-4438-01 Audit | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 590-646

Datafile: 100405P1-11 | Report: 06 Apr 2010 09:15 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		-	-	-	3.45E+07	0.80	Y	-	-	
JS 1234-TCDF	24.49		-	-	-	5.55E+07	0.80	Y	-	-	
JS 123467-HxCDD	36.76		-	-	-	1.27E+07	1.37	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	0.8745	+2.2	3.55E+07	0.81	Y	1.08	94.7	
AS 1368-TCDF	20.74		0.8447	0.8469	+3.2	6.40E+07	0.79	Y	1.27	90.6	FS & TS na
FS 1278-TCDD	NotFnd		1.0131								KAM 14 Apr 10
FS 12478-PeCDD	31.3		0.9617	0.9635	+3.5	2.94E+04	+1.7	Y	1.00	0.112	
FS 123468-HxCDD	NotFnd		0.9713								
FS 1234679-HpCDD	39.23		0.9794	0.9792	-0.5	1.64E+05	0.90	Y	0.01	93.4	
TS 1378-TCDD	NotFnd		0.9345								

Totals	Conc	EMPC
Total TCDD	1040	1040
Total PeCDD	948	948
Total HxCDD	1600	1600
Total HpCDD	645	645
Total Tetra-Octa Dioxins	5580	5580
Total TCDF	922	922
Total PeCDF	1090	1090
Total HxCDF	2180	2180
Total HpCDF	855	855
Total Tetra-Octa Furans	6410	6420
Total Tetra-Octa Dioxins & Furans	12000	12000

Lab ID: P2107_7660_006 | Acq'd: 05 Apr 2010 17:33 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: M23-4438-01 Audit | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 590-646

Datafile: 100405P1-11 | Report: 06 Apr 2010 09:15 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	0.8535	-0.6	2.67E+06	0.81	Y	1.09	316	2100	2.81
1379-TCDD	NotFnd		0.8685						1.09		2100	2.81
1369-TCDD	NotFnd		0.8863						1.09		2100	2.81
1469-TCDD	NotFnd		0.9189						1.09		2100	2.81
1247/1246/1248/1249-TCDD	NotFnd		0.9276						1.09		2100	2.81
1378-TCDD	NotFnd		0.9351						1.09		2100	2.81
1268-TCDD	NotFnd		0.9430						1.09		2100	2.81
1478-TCDD	NotFnd		0.9517						1.09		2100	2.81
1279-TCDD	NotFnd		0.9598						1.09		2100	2.81
1234/1269-TCDD	NotFnd		0.9740						1.09		2100	2.81
1236-TCDD	NotFnd		0.9801						1.09		2100	2.81
1237/1238-TCDD	NotFnd		0.9895						1.09		2100	2.81
1239-TCDD	NotFnd		0.9952						1.09		2100	2.81
2378-TCDD	**26.89**		**1.0008**	**1.0009**	**+0.2**	**3.41E+06**	**0.82**	**Y**	**1.09**	**404**	**2100**	**2.81**
1278-TCDD	NotFnd		1.0138						1.09		2100	2.81
1267-TCDD	NotFnd		1.0194						1.09		2100	2.81
1289-TCDD	27.93		1.0396	1.0397	+0.2	2.65E+06	0.78	Y	1.09	315	2100	2.81
12479/12468-PeCDD	29.93		0.9210	0.9212	+0.4	2.23E+06	1.56	Y	1.02	333	2772	3.62
12469-PeCDD	NotFnd		0.9382						1.02		2772	3.62
12368-PeCDD	NotFnd		0.9556						1.02		2772	3.62
12478-PeCDD	NotFnd		0.9614						1.02		2772	3.62
12379-PeCDD	NotFnd		0.9649						1.02		2772	3.62
12369/12467/12489-PeCDD	NotFnd		0.9732						1.02		2772	3.62
12346/12347-PeCDD	NotFnd		0.9850						1.02		2772	3.62
12378-PeCDD	**32.50**		**1.0006**	**1.0006**	**0**	**2.03E+06**	**1.46**	**Y**	**1.02**	**303**	**2772**	**3.62**
12367-PeCDD	NotFnd		1.0037						1.02		2772	3.62
12389-PeCDD	32.96		1.0146	1.0146	0	2.09E+06	1.52	Y	1.02	312	2772	3.62
124679/124689-HxCDD	34.76		0.9534	0.9535	+0.2	2.26E+06	1.21	Y	1.03	383	2559	4.19
123468-HxCDD	NotFnd		0.9717						1.03		2559	4.19
123679/123689-HxCDD	NotFnd		0.9793						1.03		2559	4.19
123469-HxCDD	NotFnd		0.9833						1.03		2559	4.19
123478-HxCDD	**36.47**		**1.0004**	**1.0004**	**0**	**1.78E+06**	**1.38**	**Y**	**1.11**	**317**	**2559**	**4.29**
123678-HxCDD	**36.58**		**1.0034**	**1.0035**	**+0.2**	**1.66E+06**	**1.29**	**Y**	**1.02**	**269**	**2559**	**3.9**
123467-HxCDD	36.78		1.0088	1.0089	+0.2	1.84E+06	1.26	Y	1.03	311	2559	4.19
123789-HxCDD	**36.88**		**1.0116**	**1.0117**	**+0.2**	**1.84E+06**	**1.25**	**Y**	**0.95**	**316**	**2559**	**4.46**

Lab ID: P2107_7660_006 | Acq'd: 05 Apr 2010 17:33 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: M23-4438-01 Audit | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 590-646

Datafile: 100405P1-11 | Report: 06 Apr 2010 09:15 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	39.25		0.9794	0.9795	+0.2	1.58E+06	1.07	Y	1.00	336	2619	5.37
1234678-HpCDD	40.08		1.0003	1.0004	+0.2	1.45E+06	1.02	Y	1.00	308	2619	5.37
OCDD	43.61		1.0004	1.0003	-0.3	5.48E+06	0.90	Y	1.06	1,360	2635	7.93
OCDD-a	43.61		1.0003	1.0002	-0.3	3.50E+05	2.36	Y	0.06	1,420	2831	139
1368-TCDF	20.76		0.8012	0.8009	-0.5	4.60E+06	0.76	Y	1.20	299	2585	2.02
1468-TCDF	NotFnd		0.8216						1.20		2585	2.02
2468-TCDF	NotFnd		0.8461						1.20		2585	2.02
1346/1246-TCDF	NotFnd		0.8607						1.20		2585	2.02
1347/1378/1247-TCDF	NotFnd		0.8672						1.20		2585	2.02
1348-TCDF	NotFnd		0.8792						1.20		2585	2.02
1248/1367/1379-TCDF	NotFnd		0.8846						1.20		2585	2.02
1268-TCDF	NotFnd		0.9011						1.20		2585	2.02
1467-TCDF	NotFnd		0.9067						1.20		2585	2.02
1478-TCDF	NotFnd		0.9137						1.20		2585	2.02
1369/1237-TCDF	NotFnd		0.9293						1.20		2585	2.02
2467-TCDF	NotFnd		0.9348						1.20		2585	2.02
2368-TCDF	NotFnd		0.9408						1.20		2585	2.02
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9445						1.20		2585	2.02
1278-TCDF	25.00		0.9641	0.9644	+0.5	1.13E+05	0.73	Y	1.20	7.32	2585	2.02
1349-TCDF	NotFnd		0.9693						1.20		2585	2.02
1267-TCDF	NotFnd		0.9755						1.20		2585	2.02
2346/1249-TCDF	NotFnd		0.9834						1.20		2585	2.02
2347/1279-TCDF	NotFnd		0.9922						1.20		2585	2.02
2348-TCDF	NotFnd		0.9966						1.20		2585	2.02
2378-TCDF	25.95		1.0009	1.0009	0	5.40E+06	0.79	Y	1.20	351	2585	2.02
2367/3467-TCDF	NotFnd		1.0164						1.20		2585	2.02
1269-TCDF	NotFnd		1.0260						1.20		2585	2.02
1239-TCDF	NotFnd		1.0375						1.20		2585	2.02
1289-TCDF	28.10		1.0834	1.0839	+0.8	4.07E+06	0.79	Y	1.20	265	2585	2.02
13468/12468-PeCDF	28.06		0.9057	0.9059	+0.4	2.82E+06	1.64	Y	1.07	251	3072	2.46
13678/13467/12467-PeCDF	NotFnd		0.9581						1.07		3115	2.5
12368/13478/12478-PeCDF	29.81		0.9620	0.9623	+0.6	2.68E+04	1.08	N	1.07	2.39	3115	2.5
14678-PeCDF	NotFnd		0.9667						1.07		3115	2.5
13479-PeCDF	NotFnd		0.9702						1.07		3115	2.5
13469/12479-PeCDF	NotFnd		0.9781						1.07		3115	2.5
12346-PeCDF	NotFnd		0.9829						1.07		3115	2.5

Lab ID: P2107_7660_006 | Acq'd: 05 Apr 2010 17:33 MC | Wt/Vol: 1 | Cal: BCS3_7660_DF_PAB

Client ID: M23-4438-01 Audit | UTP: 06-Apr-2010 09:12 MC | J-level: 10 pg | Checkcode: 590-646

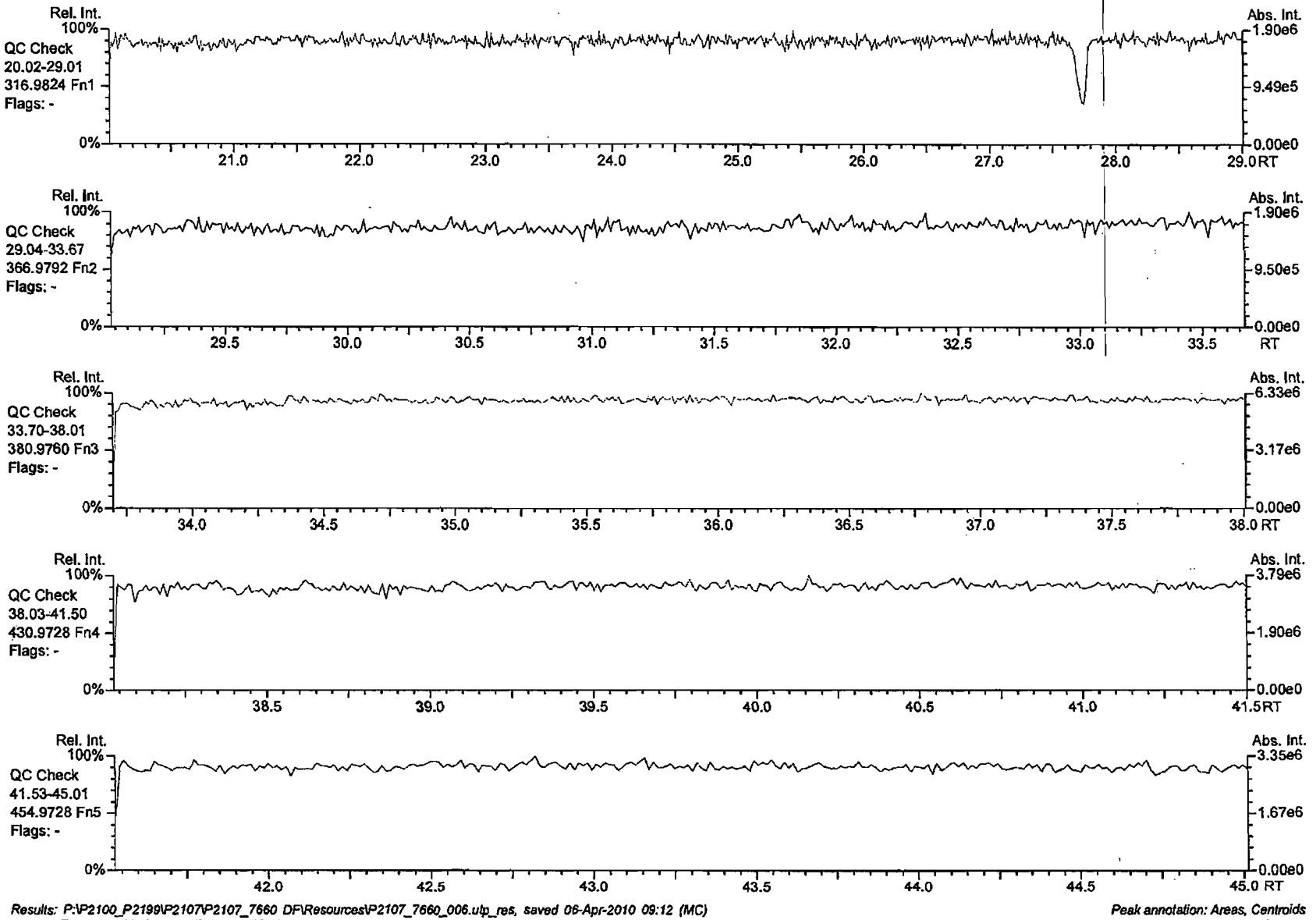
Datafile: 100405P1-11 | Report: 06 Apr 2010 09:15 MC | ES spike: 4000 pg | Split: 2

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9858						1.07		3115	2.5
12347-PeCDF	NotFnd		0.9881						1.07		3115	2.5
12348-PeCDF	NotFnd		0.9936						1.07		3115	2.5
12378-PeCDF	31.00		1.0006	1.0006	0	3.35E+06	1.58	Y	1.04	301	3115	2.58
12678/12367-PeCDF	NotFnd		1.0104						1.07		3115	2.5
12379-PeCDF	NotFnd		1.0151						1.07		3115	2.5
12679-PeCDF	NotFnd		0.9925						1.07		3115	2.5
23467/12369-PeCDF	NotFnd		0.9981						1.07		3115	2.5
23478-PeCDF	32.14		1.0005	1.0006	+0.2	3.36E+06	1.56	Y	1.10	296	3115	2.43
23478/12489-PeCDF	NotFnd		1.0006						1.10		3115	2.43
12489-PeCDF	NotFnd		1.0023						1.07		3115	2.5
12349-PeCDF	NotFnd		1.0110						1.07		3115	2.5
12389-PeCDF	33.25		1.0350	1.0350	0	2.72E+06	1.53	Y	1.07	242	3115	2.5
123468-HxCDF	34.09		0.9609	0.9610	+0.2	3.01E+06	1.23	Y	1.17	340	3851	4.08
124678/134678-HxCDF	NotFnd		0.9668						1.17		3851	4.08
134679-HxCDF	NotFnd		0.9733						1.17		3851	4.08
124679-HxCDF	NotFnd		0.9788						1.17		3851	4.08
124689-HxCDF	NotFnd		0.9851						1.17		3851	4.08
123467-HxCDF	NotFnd		0.9968						1.17		3851	4.08
123478-HxCDF	35.49		1.0004	1.0005	+0.2	3.48E+06	1.26	Y	1.18	404	3851	3.91
123678-HxCDF	35.63		1.0005	1.0004	-0.2	3.83E+06	1.24	Y	1.18	385	3851	3.6
123479-HxCDF	NotFnd		1.0048						1.17		3851	4.08
123469-HxCDF	NotFnd		1.0090						1.17		3851	4.08
123679-HxCDF	NotFnd		0.9943						1.17		3851	4.08
234678-HxCDF	36.29		1.0005	1.0004	-0.2	3.48E+06	1.32	Y	1.18	370	3851	3.73
234678/123689-HxCDF	NotFnd		1.0004						1.18		3851	3.73
123689-HxCDF	NotFnd		1.0009						1.17		3851	4.08
123789-HxCDF	37.27		1.0005	1.0009	+0.9	5.11E+06	1.23	Y	1.16	683	3851	5.32
123789/123489-HxCDF	NotFnd		1.0012						1.16		3851	5.32
123489-HxCDF	NotFnd		1.0017						1.17		3851	4.08
1234678-HpCDF	38.93		1.0003	1.0003	0	2.19E+06	1.05	Y	1.41	284	2210	2.61
1234679-HpCDF	NotFnd		1.0083						1.39		2210	3.15
1234689-HpCDF	39.41		1.0132	1.0128	-0.9	1.87E+06	1.04	Y	1.39	265	2210	3.15
1234789-HpCDF	40.65		1.0003	1.0003	0	1.96E+06	0.98	Y	1.37	306	2210	3.8
OCDF	43.85		1.0004	1.0003	-0.3	6.84E+06	0.86	Y	0.97	1,370	2675	6.44
OCDF-a	43.84		1.0002	1.0001	-0.3	3.62E+05	2.08	N	0.06	1,220	3036	124

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1

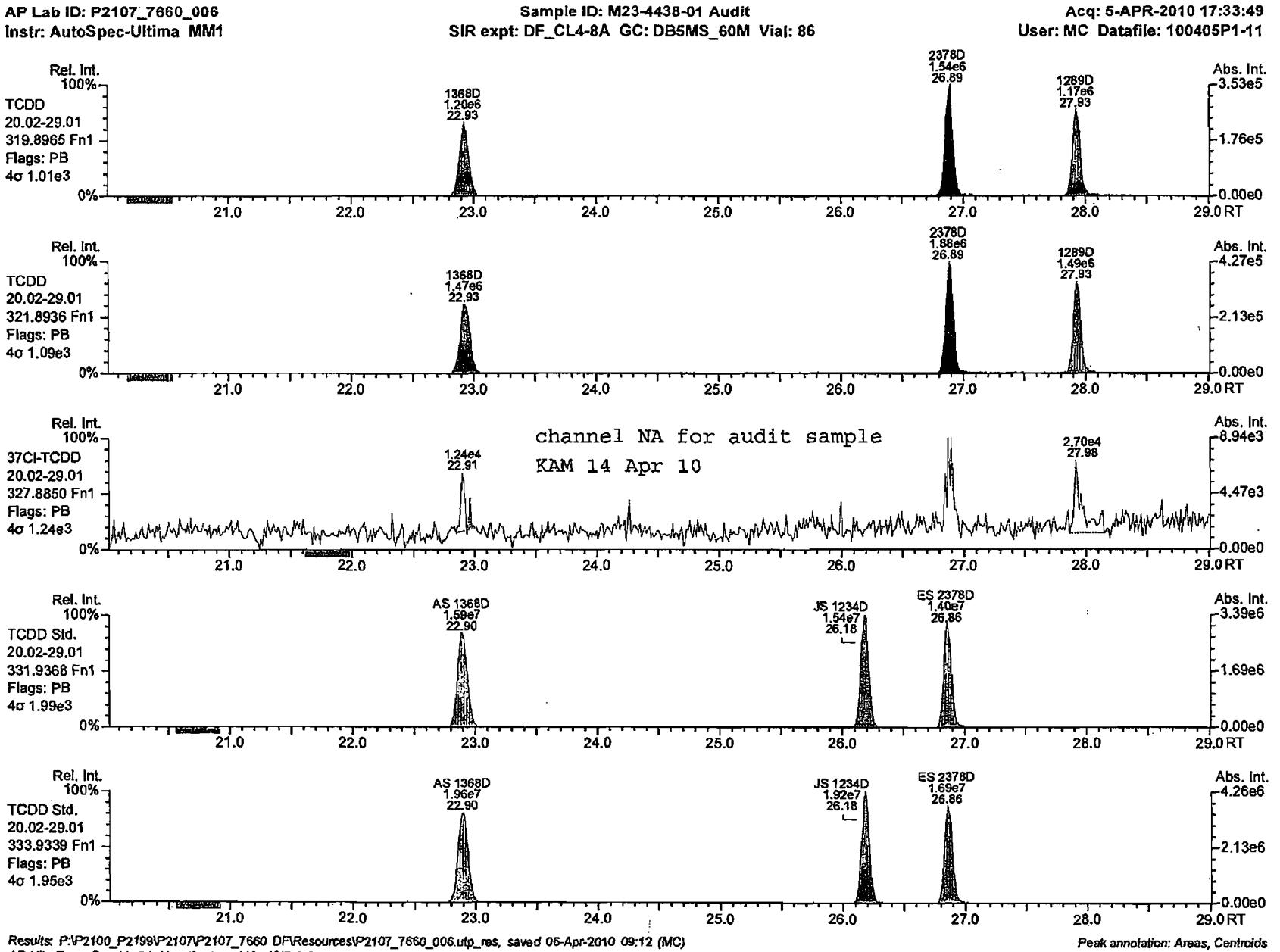
Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 scc: 590-646

Peak annotation: Areas, Centroids
PKD: n/a Printed: 06-Apr-2010 09:37:28 Page 1 of 12



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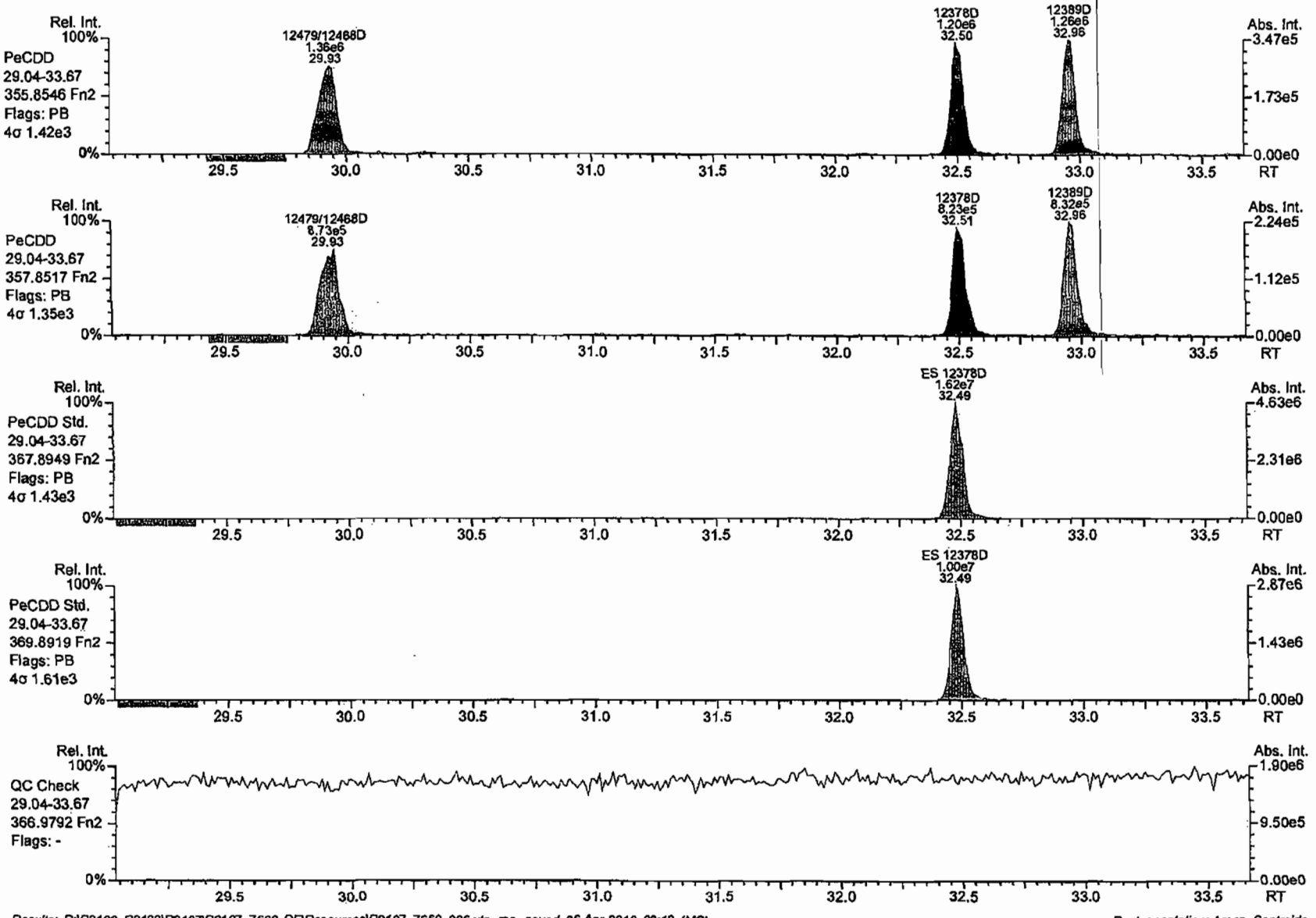
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 3435, 5834, 5804 scc: 590-646

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:50 (MC) Printed: 06-Apr-2010 09:37:39 Page 2 of 12

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



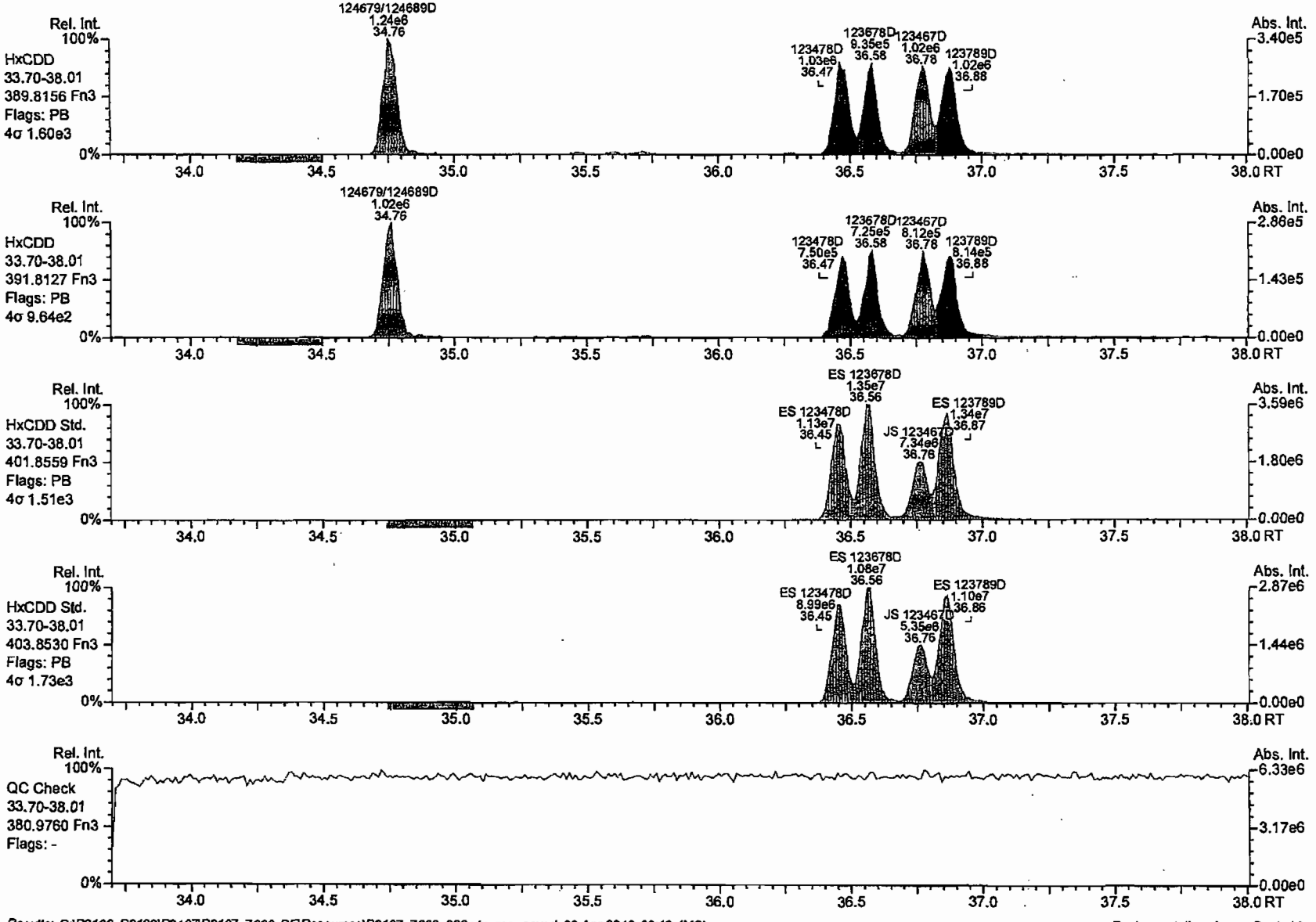
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8328, 9355 scc: 590-646

Peak annotation: Areas, Centroids
PKD: 06-Apr-2010 09:09:44 Printed: 06-Apr-2010 09:37:46 Page 3 of 12

AP Lab tD: P2107_7660_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



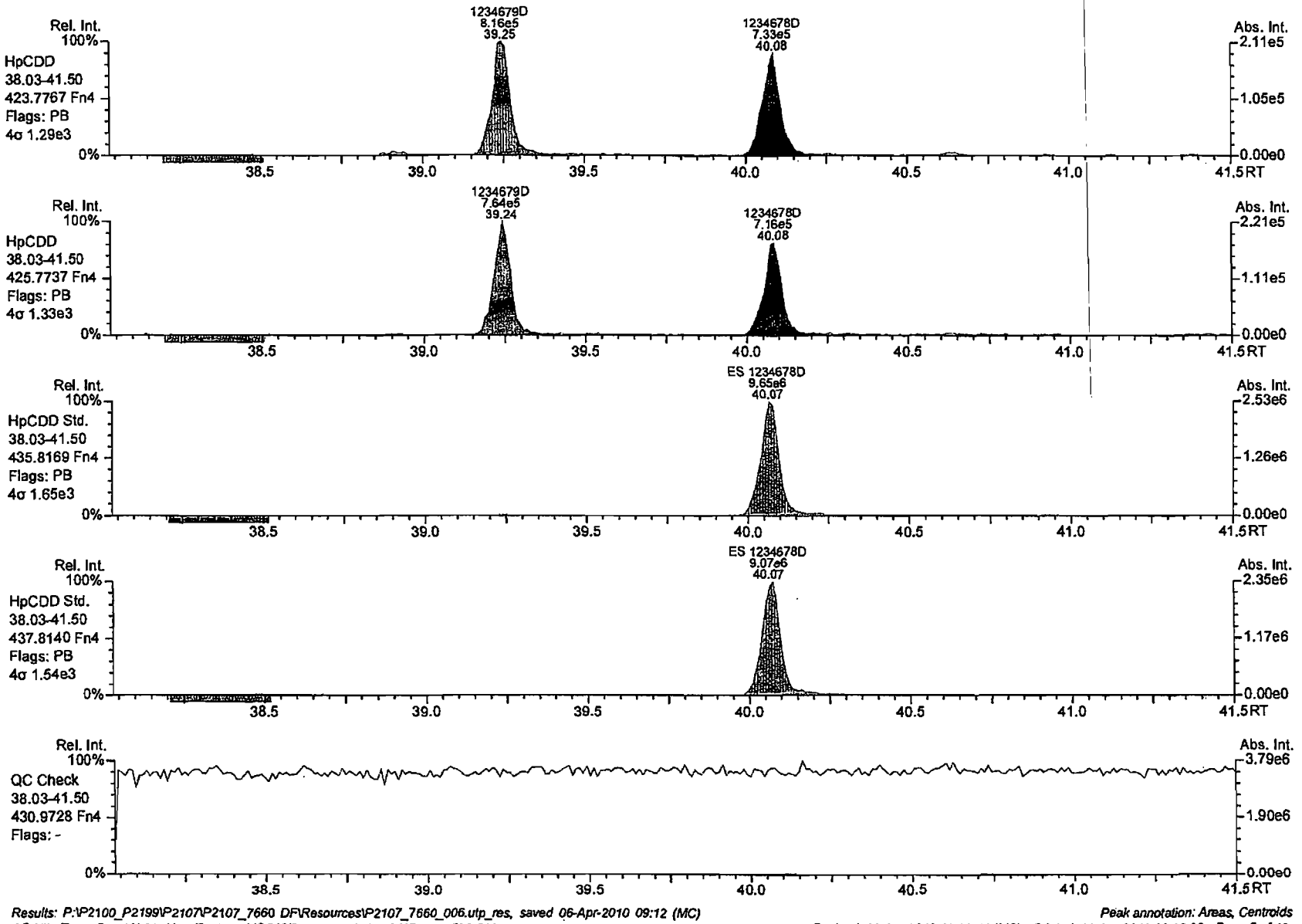
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7915, 8766 scc: 590-646

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:10:07 (MC) Printed: 06-Apr-2010 09:37:54 Page 4 of 12

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



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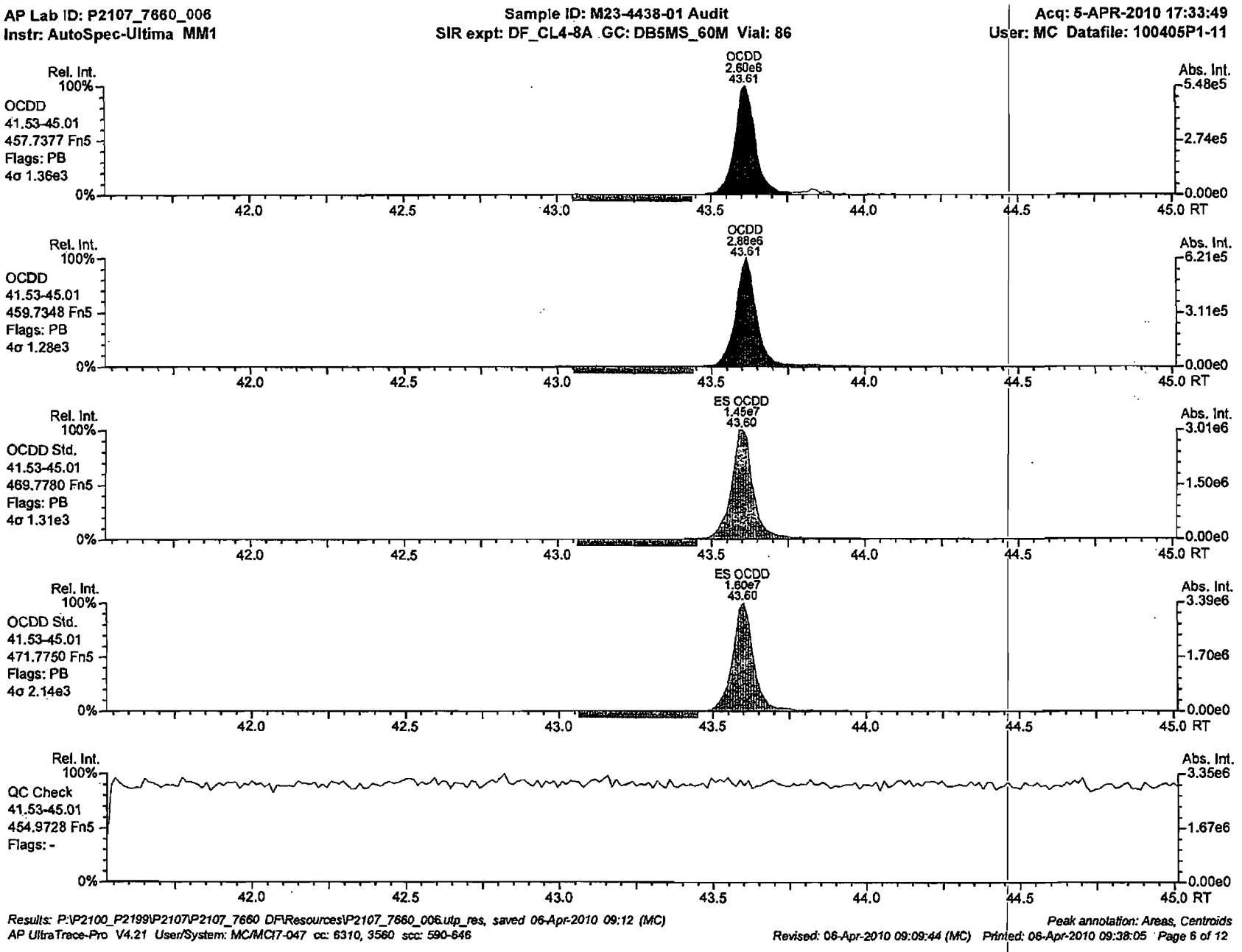
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 8129, 0487 scc: 590-646

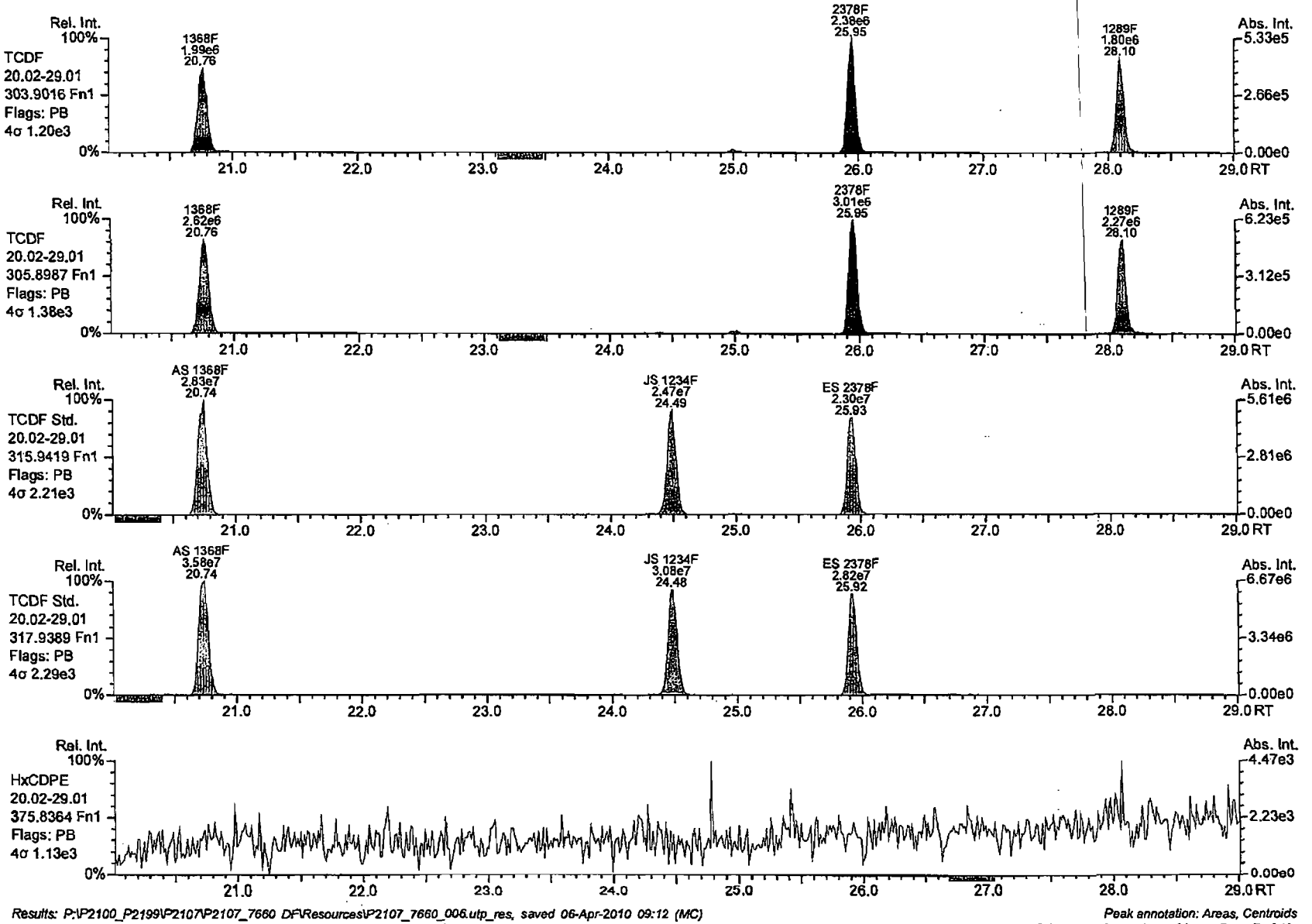
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:44 (MC) Printed: 06-Apr-2010 09:38:00 Page 5 of 12


AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1
Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86
Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11
Rel. Int.
100%
OCDD
41.53-45.01
457.7377 Fn5
Flags: PB
4σ 1.36e3
0%
OCDD
2.60e6
43.61
Abs. Int.
5.48e5
2.74e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.53-45.01
459.7348 Fn5
Flags: PB
4σ 1.28e3
0%
OCDD
2.88e6
43.61
Abs. Int.
6.21e5
3.11e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.53-45.01
469.7780 Fn5
Flags: PB
4σ 1.31e3
0%
ES OCDD
1.45e7
43.60
Abs. Int.
3.01e6
1.50e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.53-45.01
471.7750 Fn5
Flags: PB
4σ 2.14e3
0%
ES OCDD
1.60e7
43.60
Abs. Int.
3.39e6
1.70e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.53-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.35e6
1.67e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6310, 3560 scc: 590-646
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:44 (MC) Printed: 06-Apr-2010 09:38:05 Page 6 of 12

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



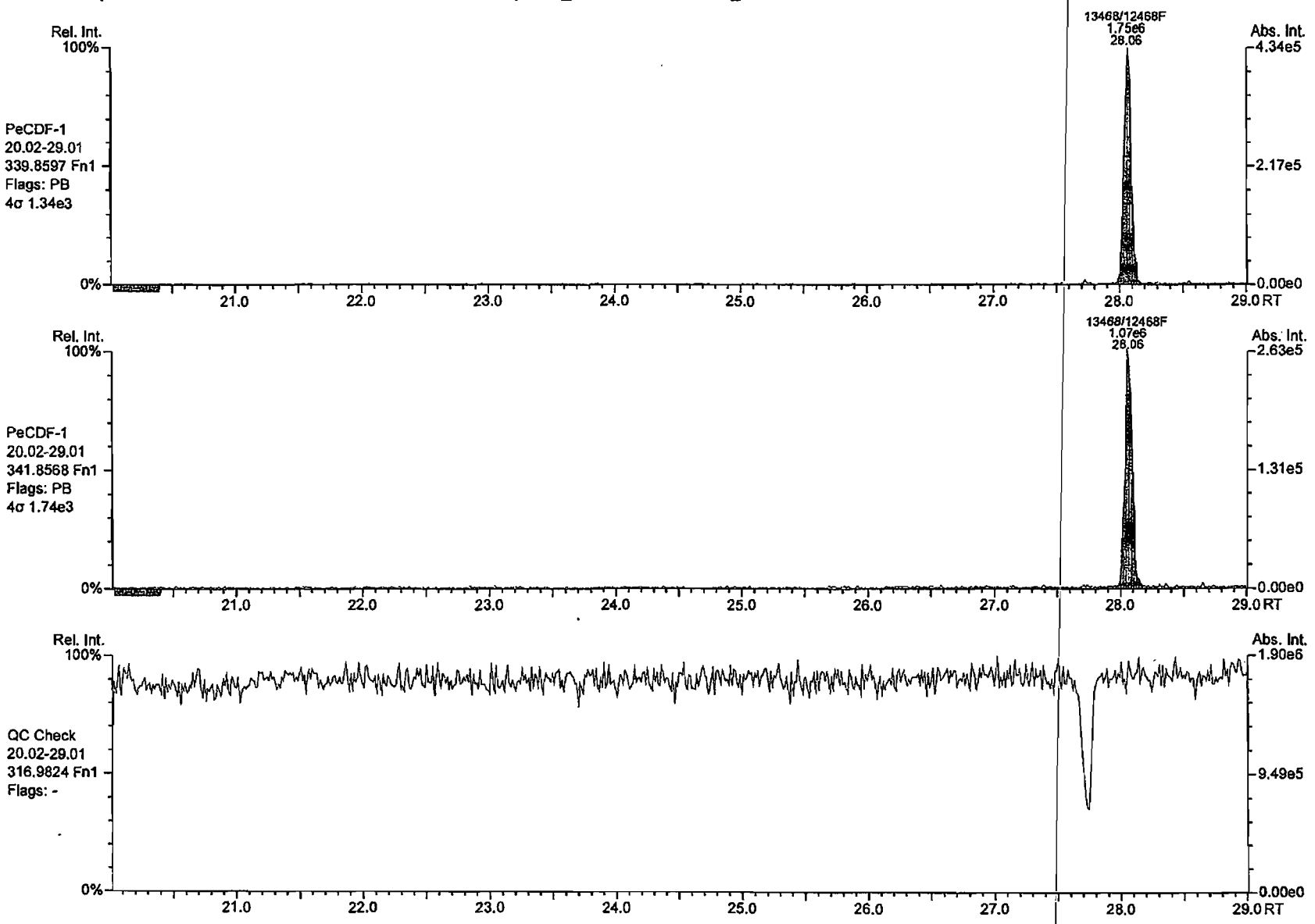
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6589, 1494, 4853 scc: 590-646

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:44 (MC) Printed: 06-Apr-2010 09:38:16 Page 7 of 12

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



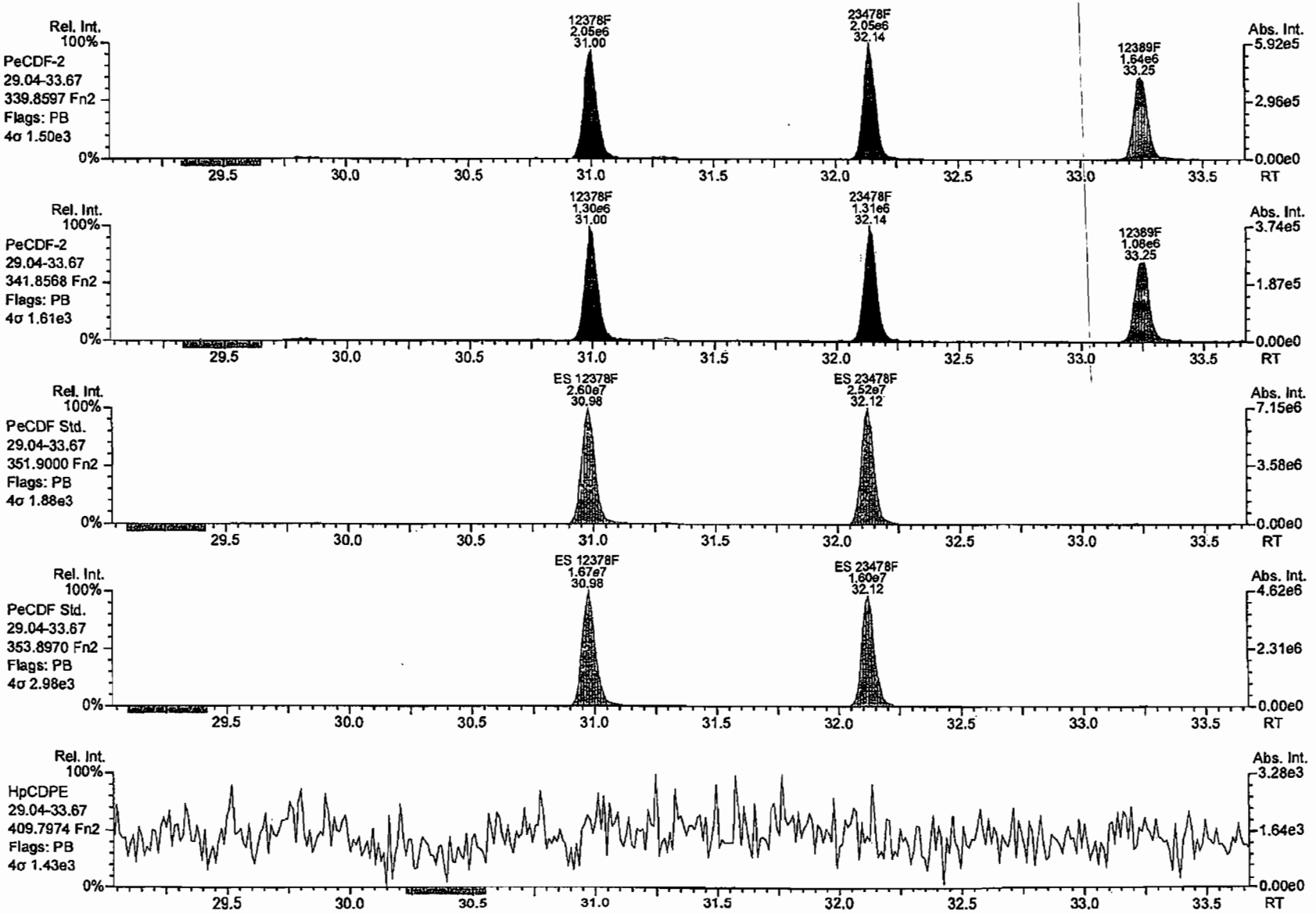
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 6043 scc: 590-646

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:44 (MC) Printed: 06-Apr-2010 09:38:23 Page 8 of 12

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1

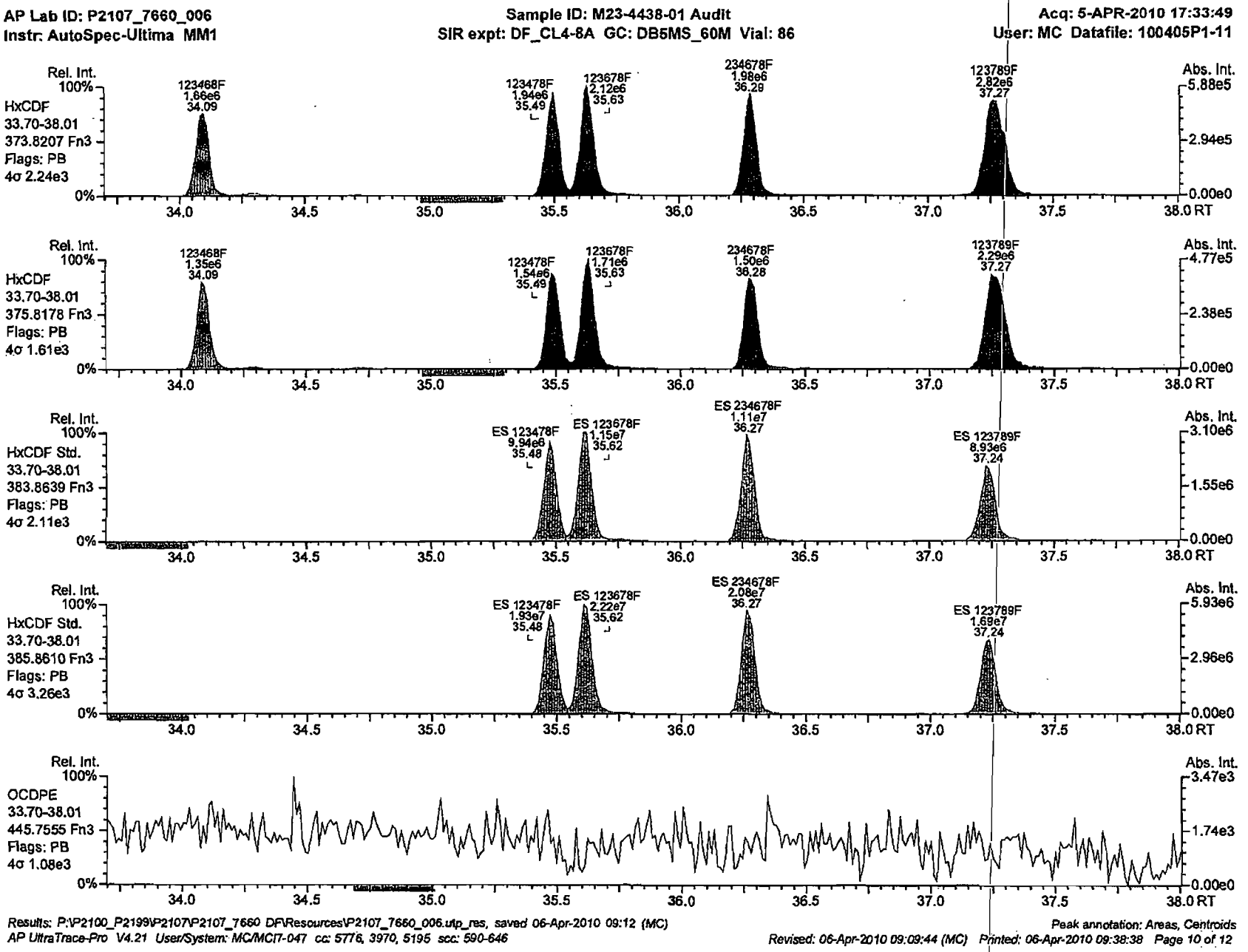
Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

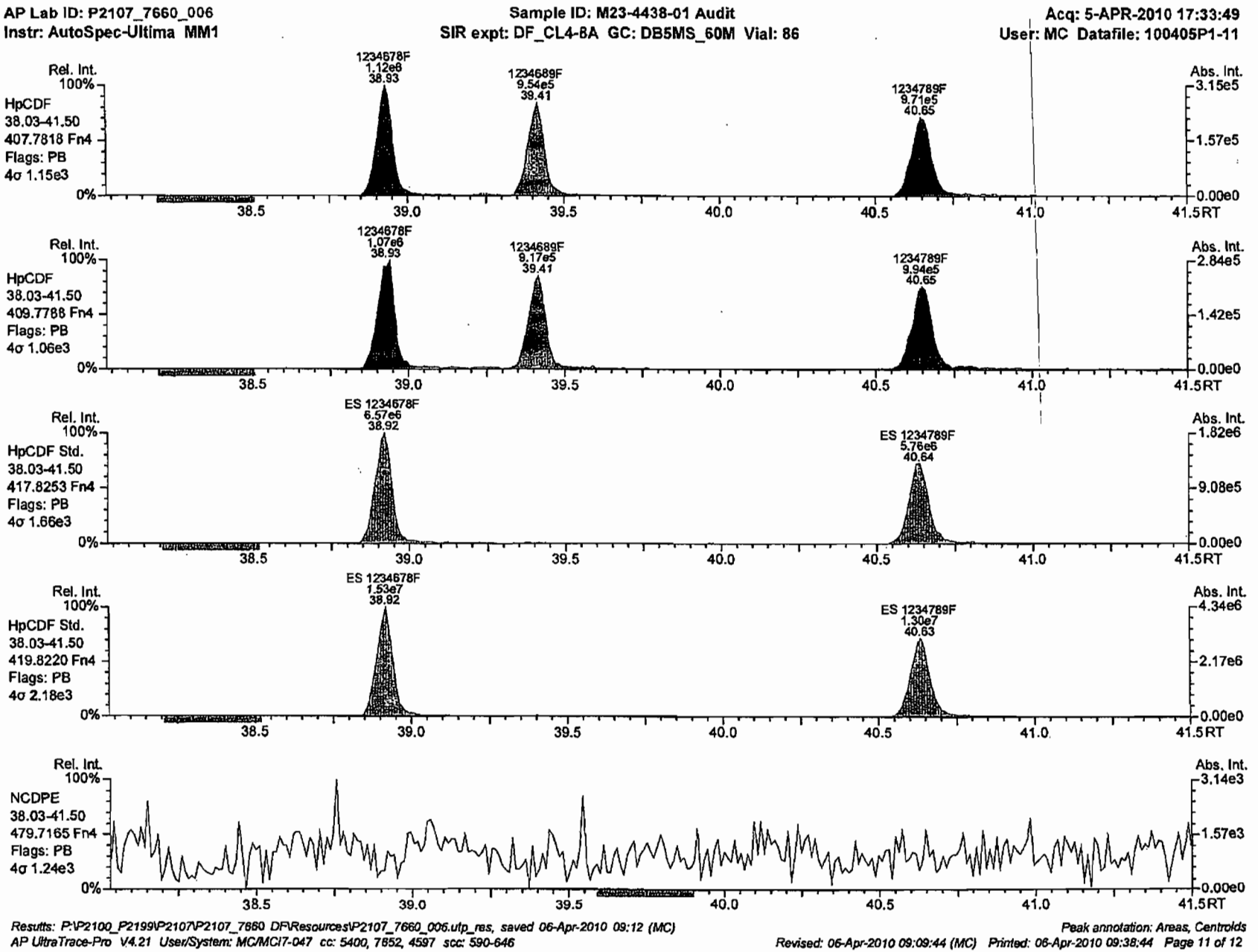
Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 7329, 3013, 5264 scc: 590-646

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:10:34 (MC) Printed: 06-Apr-2010 09:38:31 Page 9 of 12

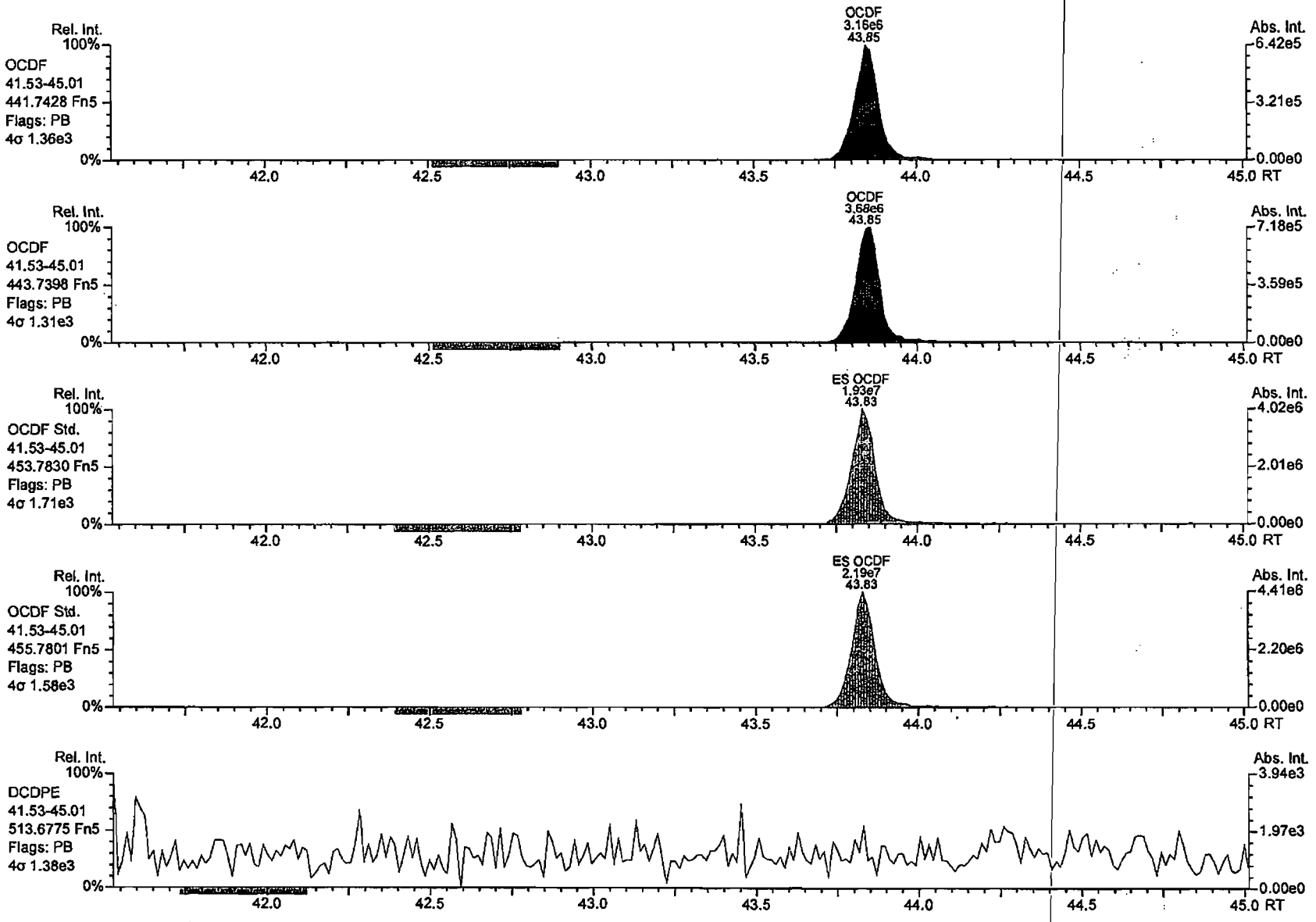

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1
Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86
Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11
Rel. Int.
Abs. Int.
HxCDF
33.70-38.01
373.8207 Fn3
Flags: PB
4σ 2.24e3
123468F 1.66e6 34.09
123478F 1.94e6 35.49
123678F 2.12e6 35.63
234678F 1.98e6 36.28
123789F 2.82e6 37.27
5.88e5
2.94e5
0.00e0
HxCDF
33.70-38.01
375.8178 Fn3
Flags: PB
4σ 1.61e3
123468F 1.35e6 34.09
123478F 1.54e6 35.49
123678F 1.71e6 35.63
234678F 1.50e6 36.28
123789F 2.29e6 37.27
4.77e5
2.38e5
0.00e0
HxCDF Std.
33.70-38.01
383.8639 Fn3
Flags: PB
4σ 2.11e3
ES 123478F 9.94e6 35.48
ES 123678F 1.15e7 35.62
ES 234678F 1.11e7 36.27
ES 123789F 8.93e6 37.24
3.10e6
1.55e6
0.00e0
HxCDF Std.
33.70-38.01
385.8610 Fn3
Flags: PB
4σ 3.26e3
ES 123478F 1.93e7 35.48
ES 123678F 2.22e7 35.62
ES 234678F 2.08e7 36.27
ES 123789F 1.69e7 37.24
5.93e6
2.96e6
0.00e0
OCDPE
33.70-38.01
445.7555 Fn3
Flags: PB
4σ 1.08e3
3.47e3
1.74e3
0.00e0
100%
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0 RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5776, 3970, 5195 scc: 590-646
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:44 (MC) Printed: 06-Apr-2010 09:38:38 Page 10 of 12


AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1
Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86
Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11
Rel. Int.
Abs. Int.
HpCDF
38.03-41.50
407.7818 Fn4
Flags: PB
4σ 1.15e3
1234678F
1.12e6
38.93
1234689F
9.54e5
39.41
1234789F
9.71e5
40.65
3.15e5
1.57e5
0.00e0
HpCDF
38.03-41.50
409.7788 Fn4
Flags: PB
4σ 1.06e3
1234678F
1.07e6
38.93
1234689F
9.17e5
39.41
1234789F
9.94e5
40.65
2.84e5
1.42e5
0.00e0
HpCDF Std.
38.03-41.50
417.8253 Fn4
Flags: PB
4σ 1.66e3
ES 1234678F
6.57e6
38.92
ES 1234789F
5.76e6
40.64
1.82e6
9.08e5
0.00e0
HpCDF Std.
38.03-41.50
419.8220 Fn4
Flags: PB
4σ 2.18e3
ES 1234678F
1.53e7
38.92
ES 1234789F
1.30e7
40.63
4.34e6
2.17e6
0.00e0
NCDPE
38.03-41.50
479.7165 Fn4
Flags: PB
4σ 1.24e3
3.14e3
1.57e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5RT
Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5400, 7652, 4597 scc: 590-646
Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:44 (MC) Printed: 06-Apr-2010 09:38:44 Page 11 of 12

AP Lab ID: P2107_7660_006
Instr: AutoSpec-Ultima MM1

Sample ID: M23-4438-01 Audit
SIR expt: DF_CL4-8A GC: DB5MS_60M Vial: 86

Acq: 5-APR-2010 17:33:49
User: MC Datafile: 100405P1-11



Results: P:\P2100_P2199\P2107\P2107_7660 DF\Resources\P2107_7660_006.utp_res, saved 06-Apr-2010 09:12 (MC)
AP UltraTrace-Pro V4.21 User/System: MC/MCI7-047 cc: 5555, 9915, 4245 scc: 590-646

Peak annotation: Areas, Centroids
Revised: 06-Apr-2010 09:09:44 (MC) Printed: 06-Apr-2010 09:38:50 Page 12 of 12

Wheelabrator South 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 22	Mar 22	Mar 22
Start Time (approx.)			08:31	09:58	11:30
Stop Time (approx.)			09:31	10:58	12:47

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0200

HCl as Total Chloride

B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0990

S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		13.0700	14.0100	18.6800
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		826.0	796.0	805.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		11.0981	11.4642	15.4584
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		11.0981	11.4642	15.4584
m_{MDL}	Minimum detectable HCl (mg)		0.0170	0.0164	0.0166
m_n	*Total HCl used in emission calculations (mg)*		11.0981	11.4642	15.4584

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SS EPA26-1 Version 2006-10a (CI)

QA/QC _____
Date _____

Wheelabrator South 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 22	Mar 22	Mar 22
Start Time (approx.)			08:31	09:58	11:30
Stop Time (approx.)			09:31	10:58	12:46

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0200

HCl as Total Chloride

B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0990

S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		686.9700	764.9100	1159.7200
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		839.0	854.0	876.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		592.5061	671.5237	1044.3603
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		592.5061	671.5237	1044.3603
m_{MDL}	Minimum detectable HCl (mg)		0.0172	0.0176	0.0180
m_n	*Total HCl used in emission calculations (mg)*		592.5061	671.5237	1044.3603

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SS EPA26-1 Version 2006-10a (Cl)

QA/QC _____
Date _____

Wheelabrator South 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 23	Mar 23	Mar 23
Start Time (approx.)		07:55	09:30	10:55
Stop Time (approx.)		08:55	10:31	12:06

☐ DRAFT LAB DATA

MDL Min. detectable limit (mg Cl^-/liter) 0.0200

HCl as Total Chloride

B_{Cl} Blank concentration (mg Cl^-/liter) <0.0990

S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)	28.4900	19.4000	20.2200	
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)	726.0	834.0	810.0	
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)	21.2629	16.6326	16.8368	
m_b	Allowable blank subtraction (mg)	0.0000	0.0000	0.0000	
m_{nb}	HCl collected after blank subtraction (mg)	21.2629	16.6326	16.8368	
m_{MDL}	Minimum detectable HCl (mg)	0.0149	0.0171	0.0167	
m_n	*Total HCl used in emission calculations (mg)*	21.2629	16.6326	16.8368	

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QA/QC _____
Date _____

Wheelabrator South 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 23	Mar 23	Mar 23
Start Time (approx.)			07:55	09:30	10:55
Stop Time (approx.)			08:55	10:30	12:06

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl^-/liter)	0.0200

HCl as Total Chloride

B_{Cl}	Blank concentration (mg Cl^-/liter)	<0.0990

S_{Cl-1}	Fraction 1 concentration (mg Cl^-/liter)		631.3800	659.1100	684.9800
S_{Cl-2}	Fraction 2 concentration (mg Cl^-/liter)				
v_1	Fraction 1 sample volume (ml)		836.0	754.0	861.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		542.6130	510.8841	606.2813
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		542.6130	510.8841	606.2813
m_{MDL}	Minimum detectable HCl (mg)		0.0172	0.0155	0.0177
m_n	*Total HCl used in emission calculations (mg)*		542.6130	510.8841	606.2813

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QA/QC _____
Date _____

Wheelabrator South 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 24	Mar 24	Mar 24
Start Time (approx.)			07:45	09:16	10:54
Stop Time (approx.)			08:45	10:16	11:54

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl⁻/liter)	0.0200
	HCl as Total Chloride	
B_{Cl}	Blank concentration (mg Cl⁻/liter)	<0.0990

S_{Cl-1}	Fraction 1 concentration (mg Cl⁻/liter)		37.6800	36.4200	32.7600
S_{Cl-2}	Fraction 2 concentration (mg Cl⁻/liter)				
v_1	Fraction 1 sample volume (ml)		778.0	770.0	871.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		30.1359	28.8286	29.3329
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		30.1359	28.8286	29.3329
m_{MDL}	Minimum detectable HCl (mg)		0.0160	0.0158	0.0179
m_n	*Total HCl used in emission calculations (mg)*		30.1359	28.8286	29.3329

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SS EPA26-1 Version 2006-10a (Cl)

QA/QC _____
Date _____

Wheelabrator South 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 24	Mar 24	Mar 24
Start Time (approx.)			07:45	09:16	10:54
Stop Time (approx.)			08:45	10:16	11:54

☐ DRAFT LAB DATA

MDL	Min. detectable limit (mg Cl⁻/liter)	0.0200

HCl as Total Chloride

B_{Cl}	Blank concentration (mg Cl⁻/liter)	<0.0990

S_{Cl-1}	Fraction 1 concentration (mg Cl⁻/liter)		785.5800	819.4100	849.3900
S_{Cl-2}	Fraction 2 concentration (mg Cl⁻/liter)				
v_1	Fraction 1 sample volume (ml)		752.0	848.0	803.0
v_2	Fraction 2 sample volume (ml)				
m_{HCl}	HCl collected before blank subtraction (mg)		607.2973	714.3158	701.1579
m_b	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000
m_{nb}	HCl collected after blank subtraction (mg)		607.2973	714.3158	701.1579
m_{MDL}	Minimum detectable HCl (mg)		0.0155	0.0174	0.0165
m_n	*Total HCl used in emission calculations (mg)*		607.2973	714.3158	701.1579

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SS EPA26-1 Version 2006-10a (Cl)

QA/QC _____
Date _____

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

CleanAir Engineering, Inc.

500 West Wood Street
Palatine, IL 60067

Laboratory Report

Customer Reference No: 10955
Laboratory Project No: 28558

Analytes

Chloride

Customer

Palatine Engineering Group
500 W Wood St
Palatine, IL 60067

Revision 0 - Dated: 04/12/2010

Analysis Case Narrative
Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	Date Received:	3/29/2010
Plant/Facility:	Wheelabrator South Broward	Date Reported:	4/12/2010
Laboratory Project No:	28558	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.

CleanAir.

Analysis Case Narrative

Ion Chromatography Analysis

Client Name:	Palatine Engineering Group	**Date Received:**	3/29/2010
Plant/Facility:	Wheelabrator South Broward	**Date Reported:**	4/12/2010
Laboratory Project No:	28558	**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.

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CERTIFICATE OF ANALYSIS

Client Name: Palatine Engineering Group
Plant/Facility: Wheelabrator South Broward
Lab Project No: 28558
Sample Numbers: 1-22

Date Received: 3/29/2010
Date Reported: 4/12/2010
Sample Type: Varied
Parameters: Chloride

Laboratory Number	Sample Identification	Sample Volume (ml)	Chloride Sample Conc. (mg/L)	Detection Limit (mg/L)	Reporting Limit (mg/L)
Reagent Blanks					
28558-01	DI H2O Blank	300	<	0.020	0.099
28558-02	0.1N H2SO4 Blank	300	<	0.020	0.099
Unit 1					
28558-03	U1 SDA Inlet R1	839	686.97	0.020	0.099
28558-04	U1 SDA Inlet R2	854	764.91	0.020	0.099
28558-05	U1 SDA Inlet R3	876	1,159.72	0.020	0.099
28558-06	U1 FF Outlet R1	826	13.07	0.020	0.099
28558-07	U1 FF Outlet R2	796	14.01	0.020	0.099
28558-08	U1 FF Outlet R3	805	18.68	0.020	0.099
Unit 2					
28558-09	U2 SDA Inlet R1	836	631.38	0.020	0.099
28558-10	U2 SDA Inlet R2	754	659.11	0.020	0.099
28558-11	U2 SDA Inlet R3	861	684.98	0.020	0.099
28558-12	U2 FF Outlet R1	726	28.49	0.020	0.099
28558-13	U2 FF Outlet R2	834	19.40	0.020	0.099
28558-14	U2 FF Outlet R3	810	20.22	0.020	0.099
Unit 3					
28558-15	U3 SDA Inlet R1	752	785.58	0.020	0.099
28558-16	U3 SDA Inlet R2	848	819.41	0.020	0.099
28558-17	U3 SDA Inlet R3	803	849.39	0.020	0.099
28558-18	U3 FF Outlet R1	778	37.68	0.020	0.099
28558-19	U3 FF Outlet R2	770	36.42	0.020	0.099
28558-20	U3 FF Outlet R3	871	32.76	0.020	0.099
Audit Samples					
28558-21	Audit Sample L3139	500	13.77	0.020	0.099
28558-22	Audit Sample L3682	500	137.91	0.020	0.099

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: _____ Team Leader, Lab Services: _____

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ACCREDITED IN ACCORDANCE WITH nelac

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CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28558
Analyte	Chloride
Date	4/12/2010
Stock Standard	1030.02 mg/l
Lot Number	03241002-64-00000-01
Working Stock Conc.	10.3002 mg/l
CCV	1.03 mg/l
QC	209.28 mg/l
Lot Number	03261002-64-00000-07

Analyte: Chloride

Standards Calibration Data

Calibration Point Conc. (mg/l)	Date of Injection	1 0.0000	2 0.1545	3 0.4120	4 0.5150	5 1.2875	6 1.6480	7 2.5750
Cal 1 Trial 1	04/05/2010	0.0000	0.1179	0.3030	0.3913	0.9592	1.2779	1.9867
Cal 1 Trial 2		0.0000	0.1136	0.3071	0.3733	0.9554	1.2709	1.9946
Cal 2 Trial 1	04/08/2010		0.1268					1.9248
Cal 2 Trial 2			0.1260					1.9454
Cal 3 Trial 1	04/09/2010		0.1230					
Cal 3 Trial 2			0.1252					
Cal 4 Trial 1	04/10/2010						1.2964	
Cal 4 Trial 2							1.2892	
Cal 5 Trial 1	04/11/2010		0.1270	0.3197	0.3967	1.0220	1.3188	2.0668
Cal 5 Trial 2			0.1283	0.3270	0.4067	1.0226	1.3266	2.0773
n		2	8	4	4	4	6	6
Average		0.0000	0.1235	0.3142	0.3920	0.9898	1.2966	1.9993
Standard Deviation		0.0000	0.0051	0.0111	0.0140	0.0376	0.0222	0.0621
%RSD		0.00	4.16	3.53	3.57	3.79	1.71	3.11

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	0.003	-0.13%	Yes	0.00%	Yes
0.1235	0.155	0.162	-0.29%	Yes	-4.85%	Yes
0.3142	0.412	0.407	0.20%	Yes	1.24%	Yes
0.3920	0.515	0.507	0.32%	Yes	1.60%	Yes
0.9898	1.288	1.274	0.51%	Yes	1.03%	Yes
1.2966	1.648	1.668	-0.79%	Yes	-1.23%	Yes
1.9993	2.575	2.570	0.18%	Yes	0.18%	Yes

Regression Constants			Is Coefficient of Regression > 0.995?
Slope	m =	1.2839	
Intercept	b =	0.0035	
Coeff.	R^2 =	0.9999	Yes

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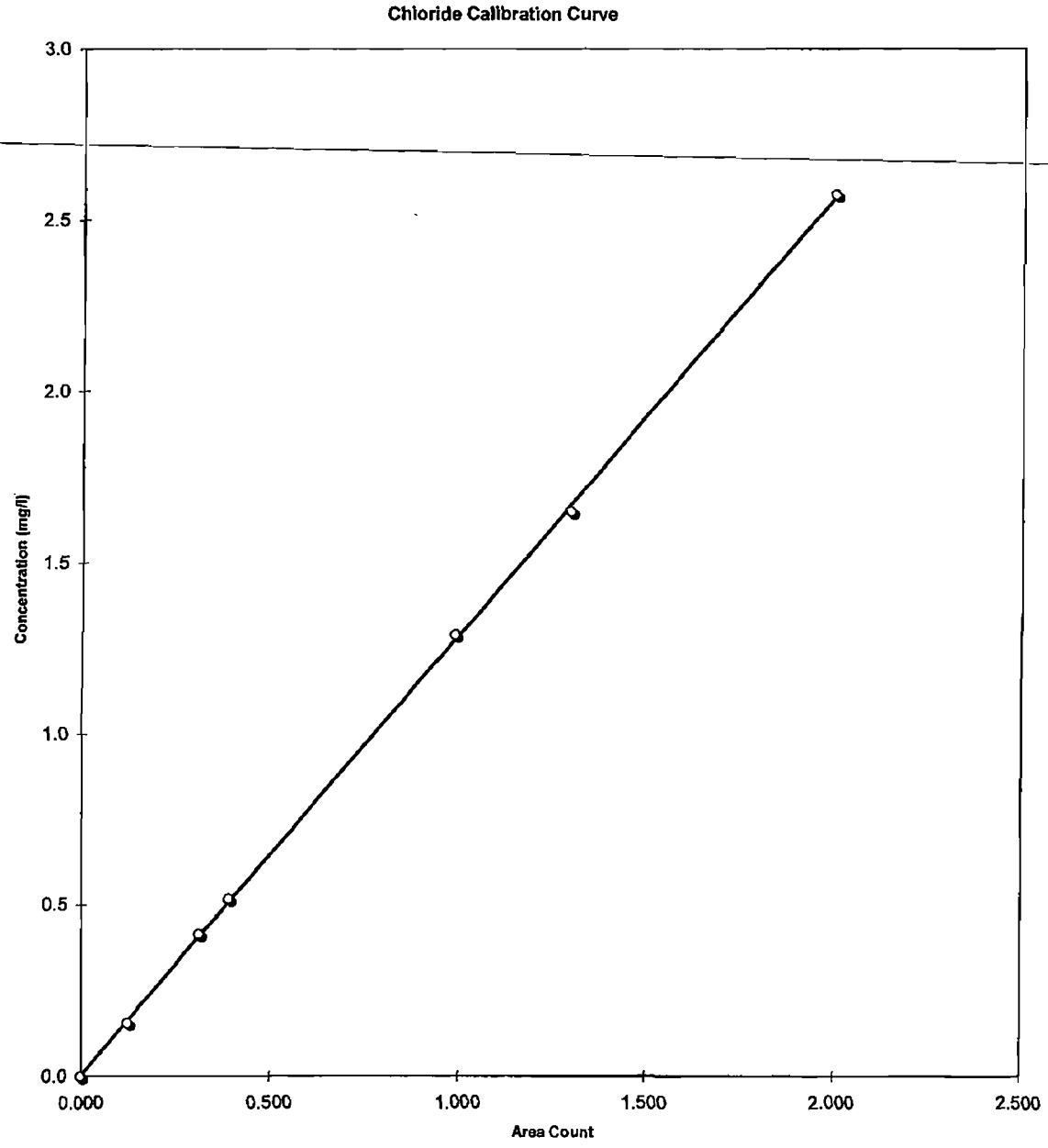
CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group
Lab Project No:	28558
Analyte	Chloride
Date	4/12/2010



CHROMATOGRAPHIC DATA REDUCTION

Client: Palatine Engineering Group
Lab Project No: 28558
Analyte: Chloride
Date: 4/12/2010

MDL=	0.020 mg/L
MRL=	0.099 mg/L

Average Flow Rate: 0.80 mL/min

Sample Location	Sample Identification Number	Sample Identification	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	28558-01	DI H2O Blank	04/08/10	0.0000	0.0000	0.0000	1	300.0	<	<0.030
Reagent Blank	28558-02	0.1N H2SO4 Blank	04/08/10	0.0000	0.0000	0.0000	1	300.0	<	<0.030
U1 SDA Inlet	28558-03	U1 SDA Inlet R1	04/08/10	0.5245	0.5402	0.5324	1000	838.7	686.97	576.16
U1 SDA Inlet	28558-04	U1 SDA Inlet R2	04/09/10	0.5807	0.6054	0.5931	1000	853.5	764.91	652.85
U1 SDA Inlet	28558-05	U t SDA Inlet R3	04/09/10	0.8919	0.9092	0.9006	1000	876.0	1,159.72	1,015.91
U1 FF Outlet	28558-06	U1 FF Outlet R1	04/09/10	0.4034	0.4054	0.4044	25	826.0	13.07	10.79
U1 FF Outlet	28558-07	U1 FF Outlet R2	04/09/10	0.4260	0.4415	0.4338	25	796.0	14.01	11.15
U1 FF Outlet	28558-08	U1 FF Outlet R3	04/09/10	0.5812	0.5773	0.5793	25	805.0	18.68	15.04
U2 SDA Inlet	28558-09	U2 SDA Inlet R1	04/09/10	0.4948	0.4833	0.4891	1000	836.0	631.38	527.83
U2 SDA Inlet	28558-10	U2 SDA Inlet R2	04/09/10	0.5104	0.5109	0.5107	1000	754.0	659.11	496.97
U2 SDA Inlet	28558-11	U2 SDA Inlet R3	04/09/10	0.5283	0.5353	0.5308	1000	860.6	684.98	589.49
U2 FF Outlet	28558-12	U2 FF Outlet R1	04/09/10	0.4443	0.4379	0.4411	50	726.0	28.49	20.68
U2 FF Outlet	28558-13	U2 FF Outlet R2	04/09/10	0.6138	0.5898	0.6018	25	833.6	19.40	16.17
U2 FF Outlet	28558-14	U2 FF Outlet R3	04/09/10	0.6291	0.6253	0.6272	25	810.0	20.22	16.38
U3 SDA Inlet	28558-15	U3 SDA Inlet R1	04/09/10	0.6021	0.6162	0.6092	1000	752.1	785.58	590.83
U3 SDA Inlet	28558-16	U3 SDA Inlet R2	04/09/10	0.6406	0.6304	0.6355	1000	848.1	819.41	694.94
U3 SDA Inlet	28558-17	U3 SDA Inlet R3	04/09/10	0.6714	0.6463	0.6589	1000	802.8	849.39	681.89
U3 FF Outlet	28558-18	U3 FF Outlet R1	04/09/10	0.5736	0.5949	0.5843	50	777.8	37.68	29.3 t
U3 FF Outlet	28558-19	U3 FF Outlet R2	04/09/10	0.5708	0.5585	0.5647	50	770.0	36.42	28.05
U3 FF Outlet	28558-20	U3 FF Outlet R3	04/09/10	0.4990	0.5161	0.5076	50	871.3	32.76	28.54
Audit Sample	28558-21	Audit Sample L3139	04/10/10	0.4334	0.4 t94	0.4264	25	500.0	13.77	6.89
Audit Sample	28558-22	Audit Sample L3682	04/09/10	0.5248	0.5439	0.5344	200	500.0	137.91	68.95

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CHROMATOGRAPHIC DATA REDUCTION

Client: Palatine Engineering Group
Lab Project No: 28558
Analyte: Chloride
Date: 4/12/2010

QUALITY CONTROL CHECKS

Sample Location	Sample Identification Number	Sample Identification	Date of Injection	Area Counts Trial 1	Area Counts Trial 2	Area Count Average	Area Count Duplicate Difference	Duplicate Relative Difference (%)
Reagent Blank	28558-01	DI H2O Blank	04/08/10	0.0000	0.0000	0.0000	na	na
Reagent Blank	28558-02	0.1N H2SO4 Blank	04/08/10	0.0000	0.0000	0.0000	na	na
U1 SDA Inlet	28558-03	U1 SDA Inlet R1	04/08/10	0.5245	0.5402	0.5324	0.0157	2.9%
U1 SDA Inlet	28558-04	U1 SDA Inlet R2	04/09/10	0.5807	0.6054	0.5931	0.0247	4.2%
U1 SDA Inlet	28558-05	U1 SDA Inlet R3	04/09/10	0.8919	0.9092	0.9006	0.0173	1.9%
U1 FF Outlet	28558-06	U1 FF Outlet R1	04/09/10	0.4034	0.4054	0.4044	0.0020	0.5%
U1 FF Outlet	28558-07	U1 FF Outlet R2	04/09/10	0.4260	0.4415	0.4338	0.0155	3.6%
U1 FF Outlet	28558-08	U1 FF Outlet R3	04/09/10	0.5812	0.5773	0.5793	0.0039	0.7%
U2 SDA Inlet	28558-09	U2 SDA Inlet R1	04/09/10	0.4948	0.4833	0.4891	0.0115	2.4%
U2 SDA Inlet	28558-10	U2 SDA Inlet R2	04/09/10	0.5104	0.5109	0.5107	0.0005	0.1%
U2 SDA Inlet	28558-11	U2 SDA Inlet R3	04/09/10	0.5263	0.5353	0.5308	0.0090	1.7%
U2 FF Outlet	28558-12	U2 FF Outlet R1	04/09/10	0.4443	0.4379	0.4411	0.0064	1.5%
U2 FF Outlet	28558-13	U2 FF Outlet R2	04/09/10	0.6138	0.5898	0.6018	0.0240	4.0%
U2 FF Outlet	28558-14	U2 FF Outlet R3	04/09/10	0.6291	0.6253	0.6272	0.0038	0.6%
U3 SDA Inlet	28558-15	U3 SDA Inlet R1	04/09/10	0.6021	0.6162	0.6092	0.0141	2.3%
U3 SDA Inlet	28558-16	U3 SDA Inlet R2	04/09/10	0.6406	0.6304	0.6355	0.0102	1.6%
U3 SDA Inlet	28558-17	U3 SDA Inlet R3	04/09/10	0.6714	0.6463	0.6589	0.0251	3.8%
U3 FF Outlet	28558-18	U3 FF Outlet R1	04/09/10	0.5736	0.5949	0.5843	0.0213	3.6%
U3 FF Outlet	28558-19	U3 FF Outlet R2	04/09/10	0.5708	0.5585	0.5647	0.0123	2.2%
U3 FF Outlet	28558-20	U3 FF Outlet R3	04/09/10	0.4990	0.5161	0.5076	0.0171	3.4%
Audit Sample	28558-21	Audit Sample L3139	04/10/10	0.4334	0.4194	0.4264	0.0140	3.3%
Audit Sample	28558-22	Audit Sample L3682	04/09/10	0.5248	0.5439	0.5344	0.0191	3.6%

CHROMATOGRAPHIC DATA REDUCTION

Client	Palatine Engineering Group				
Lab Project No:	28558				
Analyte	Chloride	MDL=	0.020 mg/L	Average Flow Rate	QC Dilution Factor
Date	4/12/2010	MRL=	0.099 mg/L	0.80 mL/min	200

QUALITY CONTROL CHECKS (CONT)

Sample Location	Sample Identification Number	Sample Identification	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	28558-00	CCB	04/08/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-990	CCV	04/08/10	0.7992	0.7772	0.7882	0.0220	2.8%	1.02	1.41%
CleanAir	28558-991	QC	04/09/10	0.7880	0.7847	0.7864	0.0033	0.4%	202.62	3.18%
CleanAir	28558-00	CCB	04/09/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-992	CCV	04/09/10	0.7870	0.7714	0.7792	0.0156	2.0%	1.00	2.53%
CleanAir	28558-993	QC	04/10/10	0.8355	0.8468	0.8412	0.0113	1.3%	216.69	3.54%
CleanAir	28558-00	CCB	04/10/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-994	CCV	04/10/10	0.8330	0.8097	0.8214	0.0233	2.8%	1.06	2.72%
CleanAir	28558-995	QC	04/10/10	0.8159	0.8365	0.8262	0.0206	2.5%	212.85	1.71%
CleanAir	28558-00	CCB	04/10/10	0.0000	0.0000	0.0000	na	na	<	
CleanAir	28558-996	CCV	04/10/10	0.8120	0.7831	0.7976	0.0289	3.6%	1.03	0.25%
			Matrix Spike Recoveries							
									Precision	Spike Recovery
Matrix Spike	28558-10	U2 SDA Inlet R2	04/10/10	1.2750	1.2471	1.2611	0.0279	2.2%		100.6%
Matrix Spike	28558-10	U2 SDA Inlet R2	04/10/10	1.3183	1.3101	1.3142	0.0082	0.6%	4.1%	105.9%
Matrix Spike	28558-12	U2 FF Outlet R1	04/11/10	1.2283	1.2174	1.2229	0.0109	0.9%		100.4%
Matrix Spike	28558-12	U2 FF Outlet R1	04/11/10	1.2691	1.2193	1.2442	0.0498	4.0%	1.7%	102.6%
Matrix Spike	28558-21	Audit Sample L3139	04/11/10	1.2085	1.2003	1.2044	0.0082	0.7%		99.5%
Matrix Spike	28558-22	Audit Sample L3682	04/11/10	1.2787	1.2848	1.2818	0.0061	0.5%		101.0%

CHROMATOGRAPHIC DATA REDUCTION

Client: Palatine Engineering Group
Lab Project No: 28558
Analyte: Chloride
Date: 4/12/2010

Determination of Detection Limit

(in accordance with 40 CFR 136, Appendix B)

Analyte	Chloride
Area Count	
Trial 1	0.1179
Trial 2	0.1136
Trial 3	0.1268
Trial 4	0.1260
Trial 5	0.1230
Trial 6	0.1252
Trial 7	0.1270
Trial 8	0.1283
Average	**0.1235**
Std Dev	0.0051
RMS Dev	4.16%

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	104.85%
Measured Concentration (mg/l)	
Trial 1	0.155
Trial 2	0.149
Trial 3	0.166
Trial 4	0.165
Trial 5	0.161
Trial 6	0.164
Trial 7	0.167
Trial 8	0.168
Average	**0.162**
Std Dev	0.0066
RMS Dev	4.07%
$t_{(n-1,0.99)}$	2.998
Det Lim (mg/l)	**0.020**
Rep Lim (mg/L)	**0.099**

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	0.1545
Slope	1.28E+00
Intercept	0.0035
Coeff of Corr	0.9999

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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

$\Delta_{Injection}$ = 0.0041
$Area_{Trial2}$ = 0.3071
$Area_{Trial1}$ = 0.3030

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} = 0.3051
$Area_{Trial2}$ = 0.3071
$Area_{Trial1}$ = 0.3030

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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)

$\Delta_{PreMean\%}$ = 0.6675
Avg_{PreInj} = 0.3051
$Area_{Trial2}$ = 0.3071

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.

$\overline{X}$ = 0.3142
x_1 = 0.3030
x_2 = 0.3071
n = 4.0000

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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.

$\overline{Y}_{All}$ = 0.9417
y_1 = 0.0000
y_2 = 0.1545
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.

$\overline{X}_{All}$ = 0.8102
x_1 = 0.3030
x_2 = 0.3071
n = 34.0000

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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	=	1.28394
x_1	=	0.3030
x_2	=	0.3071
$\bar{x}$	=	0.8102
y_1	=	0.0000
y_2	=	0.1545
$\bar{y}$	=	0.9417
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	=	0.00346
m	=	1.28394
$\bar{x}$	=	0.8102
$\bar{y}$	=	0.9417

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
Sample Location: U1 SDA Inlet

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	=	Paarson 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	=	0.99985
r	=	0.99993
x_1	=	0.3030
x_2	=	0.3071
$\bar{x}$	=	0.8102
y_1	=	0.0000
y_2	=	0.1545
$\bar{y}$	=	0.9417
n	=	34.0000

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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} = 0.5324
$Area_{Trial2}$ = 0.5402
$Area_{Trial1}$ = 0.5245

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

$\Delta_{Injection}$ = 0.0157
$Area_{Trial2}$ = 0.5402
$Area_{Trial1}$ = 0.5245

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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)

$\Delta_{Injection}$	=	1.5%
Avg_{Inj}	=	0.5324
$Area_{Trial2}$	=	0.5402

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}	=	686.97
DF	=	1000
Avg_{Inj}	=	0.5324
m	=	1.2839
b	=	0.0035

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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)

$M_{Analyte}$	=	576.16
C_{Reg}	=	686.9713
V_{Soln}	=	838.7000

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.

$AvgM_{f\_i}$	=	0.162			
M_{f_1}	=	0.155	M_{f_5}	=	0.161
M_{f_2}	=	0.149	M_{f_6}	=	0.164
M_{f_3}	=	0.166	M_{f_7}	=	0.167
M_{f_4}	=	0.165	M_{f_8}	=	0.168
n	=	8			

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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}	=	0.0066			
$AvgM_{f\_I}$	=	0.162			
M_{f_1}	=	0.155	M_{f_5}	=	0.161
M_{f_2}	=	0.149	M_{f_6}	=	0.164
M_{f_3}	=	0.166	M_{f_7}	=	0.167
M_{f_4}	=	0.165	M_{f_8}	=	0.168
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}	=	4.36E-05
σ_{f_I}	=	0.0066

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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}	=	0.0407
σ_{f_i}	=	0.0066
$AvgM_{f\_i}$	=	0.1620

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	=	104.9%
$AvgM_{f\_i}$	=	0.16200
RA	=	0.15450

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
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 = 0.020

$t_{(n-1, 0.99)}$ = 2.998

σ_{f_i} = 0.0066

Sample Calculations

Customer:	Palatine Engineering Group	Lab Project No:	28558	Analyst	Eric Ewing
Plant:	Wheelabrator South Broward	Customer Ref No:	10955	Method	U.S. EPA Method 26A

Calibration Point No: 3
Sample No: 28558-03
Sample Location: U1 SDA Inlet

15h. Determination of Method Reporting Limit (MRL).

$$MRL = 5(MDL)$$

Where:

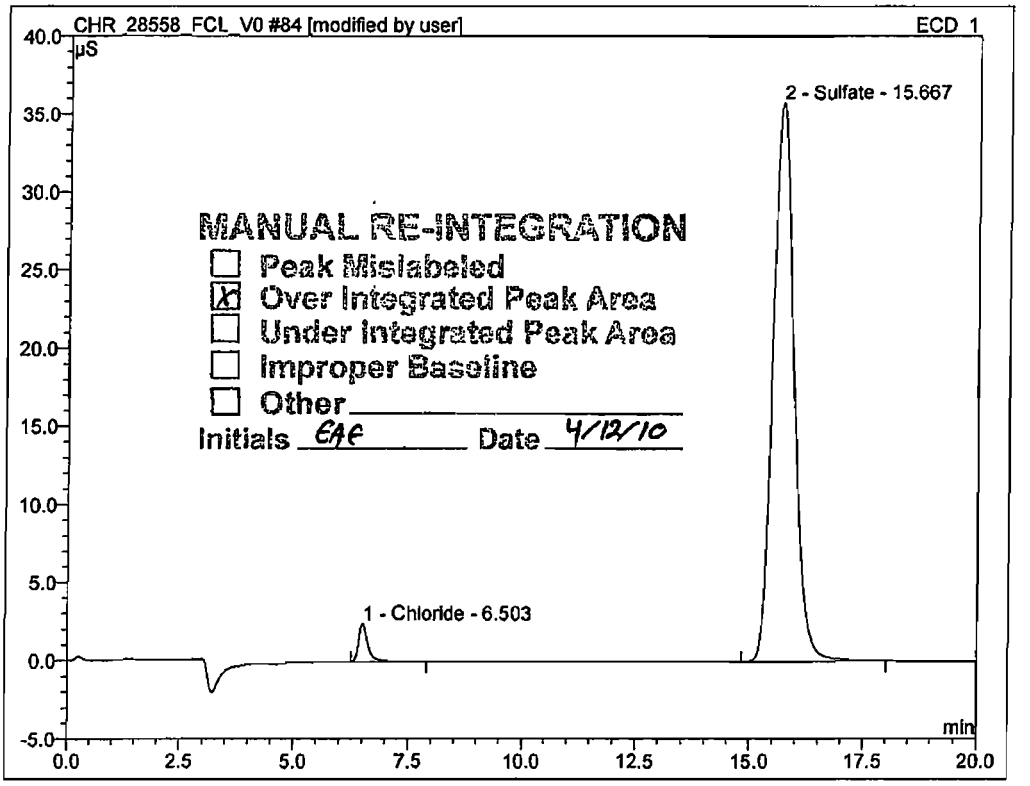
MRL = Method reporting limit (mg/L)
MDL = Method detection Limit (mg/L)
5 = Constant

MRL = 0.099
MDL = 0.020

84 U3 FF Outlet R1

U3 FF Outlet

Sample Name:	**U3 FF Outlet R1**	*Sample Vo.*	**777.8 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**47.100**
Control-Program:	**AS40Inj2**	*ICS Pressu*	**1376.91**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Recording Time:	**4/9/2010 18:18**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate Il*	**28558-018**

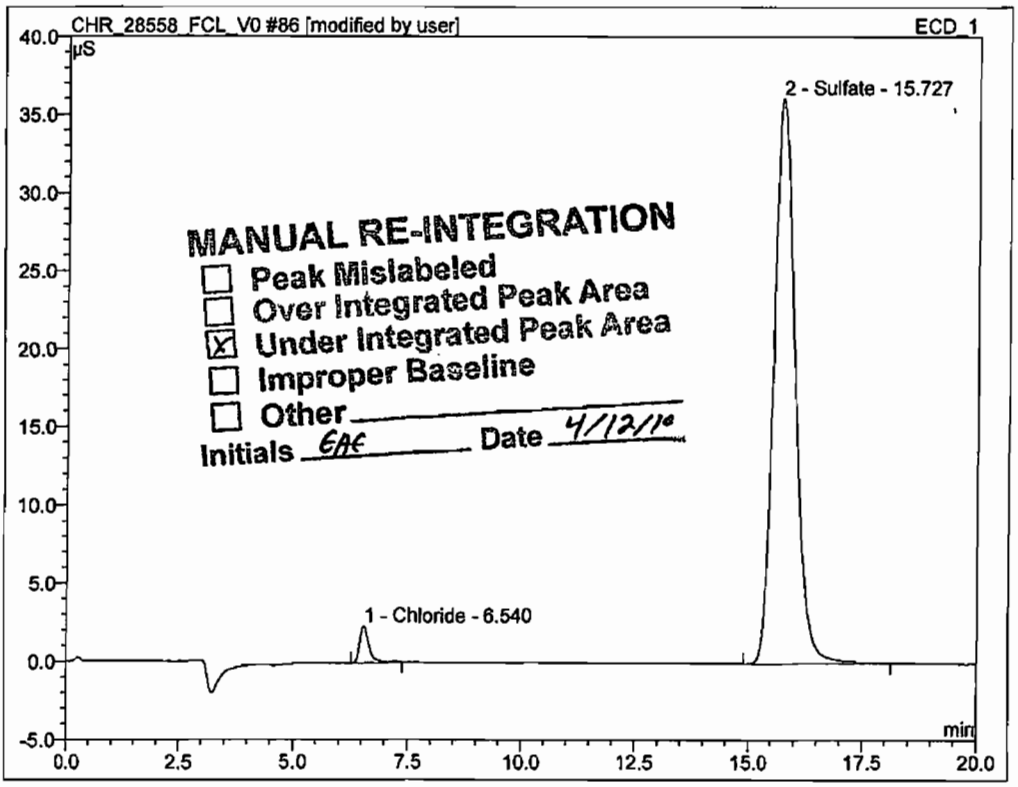


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.50	Chloride	0.5949	3.00	BMB*	0.87
2	15.67	Sulfate	19.2548	97.00	BMB	0.97
Total:			19.850	100.000	0.00	

86 U3 FF Outlet R2

U3 FF Outlet

Sample Name:	**U3 FF Outlet R2**	*Sample Vo.*	**770.0 mL**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*ICS Condu*	**46.925**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1384.26**
Quantif. Method:	**default**	*Dilution Fac*	**50.0X**
Recording Time:	**4/9/2010 19:00**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	**28558-019**

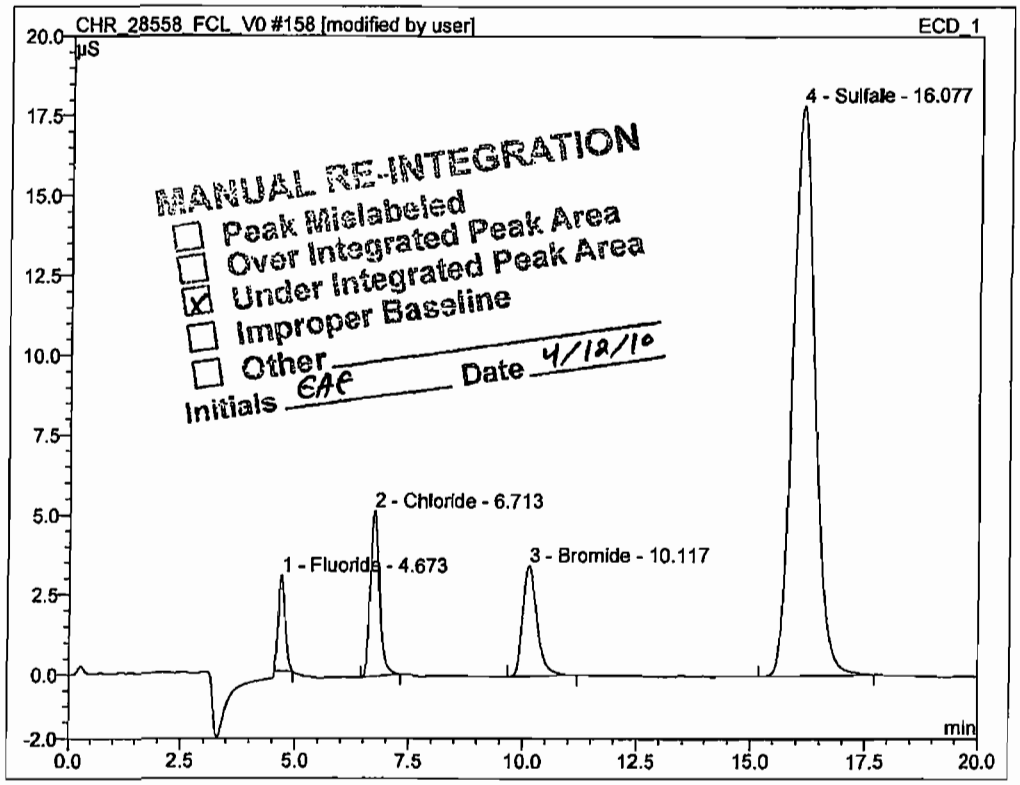


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	6.54	Chloride	0.5585	2.76	BMB*	0.90
2	15.73	Sulfate	19.7077	97.24	BMB	0.97
Total:			20.266	100.000	0.00	

158 Matrix Spike

U2 FF Outlet

Sample Name:	**Matrix Spike**	*Sample Vo.*	**726.0 mL**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**spiked**	*ICS Condu*	**46.930**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1417.73**
Quantif. Method:	**default**	*Dilution Fa*	**50.0X**
Recording Time:	**4/11/2010 0:33**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	**28558-012**

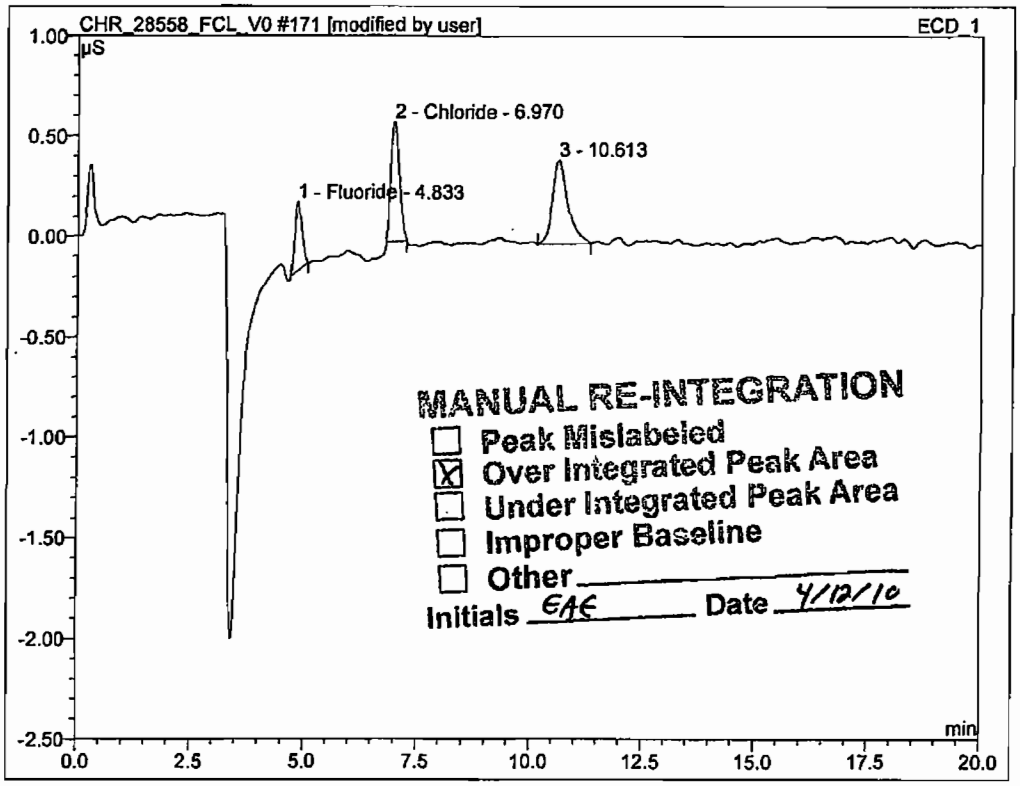


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.67	Fluoride	0.5134	3.95	BMB	0.99
2	6.71	Chloride	1.2174	9.37	BMB*	0.92
3	10.12	Bromide	1.2370	9.52	BMB	0.92
4	16.08	Sulfate	10.0312	77.17	BMB	0.96
Total:			12.999	100.000	0.00	

171 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.485**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1417.49**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/11/2010 5:07**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate Il*	

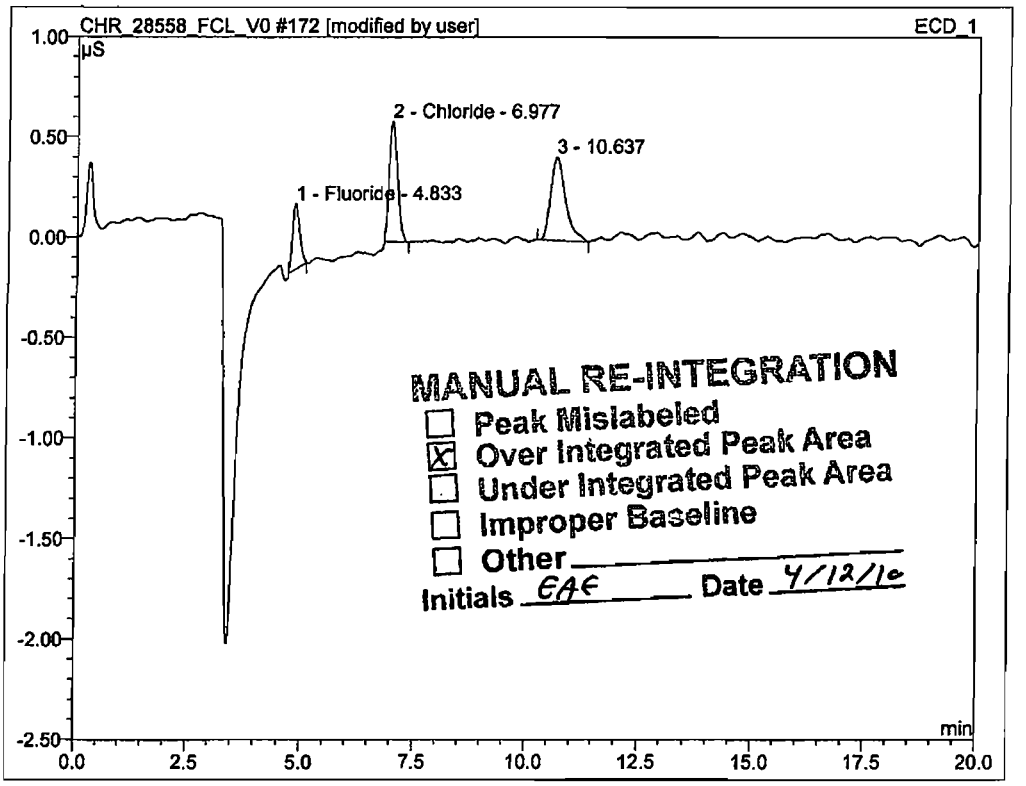


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.83	Fluoride	0.0613	17.26	BMB*	1.04
2	6.97	Chloride	0.1270	35.74	BMB*	1.03
3	10.61	n.a.	0.1670	47.00	BMB	0.80
Total:			0.355	100.000	0.00	

172 Cal 01

CleanAir

Sample Name:	**Cal 01**	*Sample Vo.*	**1.0 mL**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.454**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1419.06**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 5:29**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

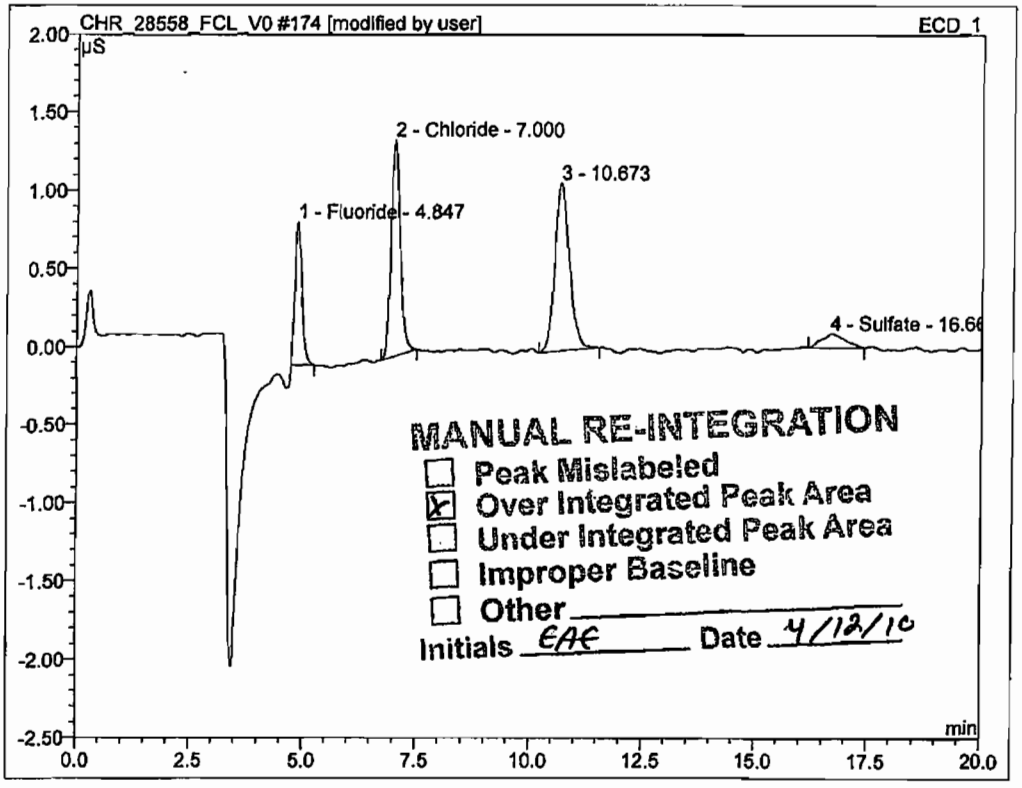


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.83	Fluoride	0.0599	17.17	BMB*	0.99
2	6.98	Chloride	0.1283	36.77	BMB*	1.03
3	10.64	n.a.	0.1607	46.05	BMB	0.90
Total:			0.349	100.000	0.00	

174 Cal 02

CleanAir

Sample Name:	**Cal 02**	*Sample Vo.*	**1.0 mL**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.374**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1425.00**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/11/2010 6:11**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

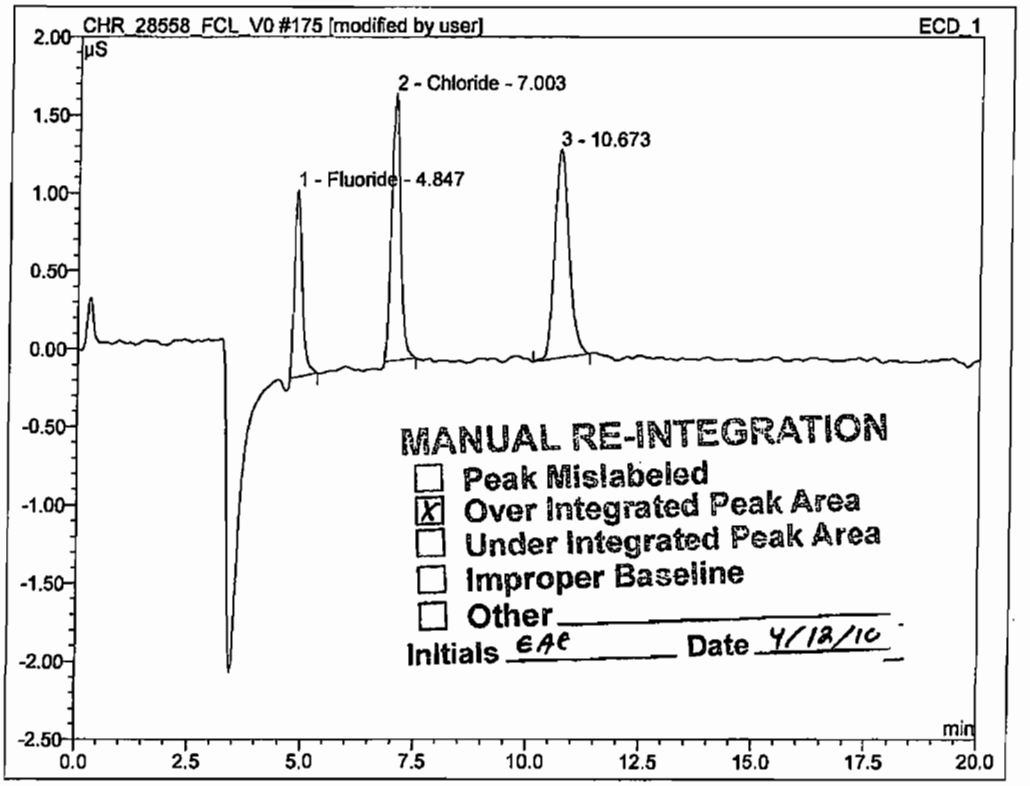


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.85	Fluoride	0.1640	17.33	BMB*	0.97
2	7.00	Chloride	0.3270	34.55	BMB*	0.94
3	10.67	n.a.	0.4008	42.35	BMB	0.92
4	16.66	Sulfate	0.0546	5.77	BMB	1.08
Total:			0.946	100.000	0.00	

175 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo.*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.361**
Control Program:	**AS40Inj1**	*ICS Pressu*	**1424.51**
Quantif. Method:	**default**	*Dilution Fac*	**1.0X**
Recording Time:	**4/11/2010 6:31**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

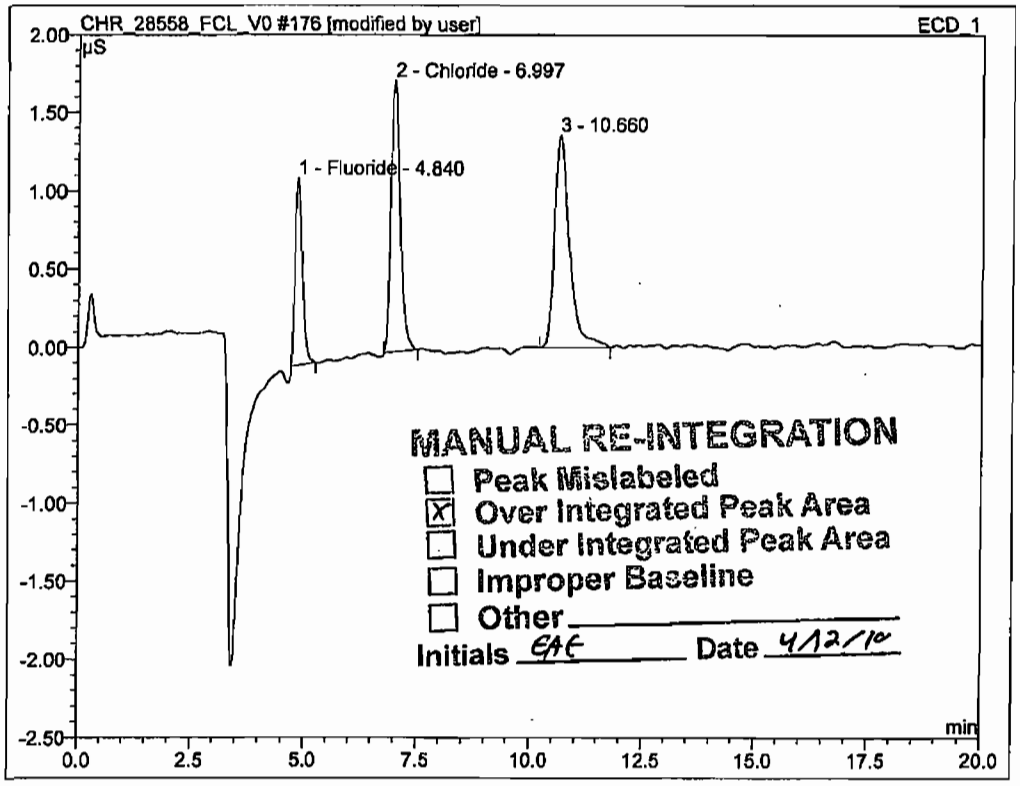


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.85	Fluoride	0.2316	20.56	BMB*	0.92
2	7.00	Chloride	0.3967	35.23	BMB*	0.97
3	10.67	n.a.	0.4978	44.21	BMB	0.95
Total:			1.126	100.000	0.00	

176 Cal 03

CleanAir

Sample Name:	**Cal 03**	*Sample Vo*	**1.0 mL**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.282**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1422.70**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 6:53**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	

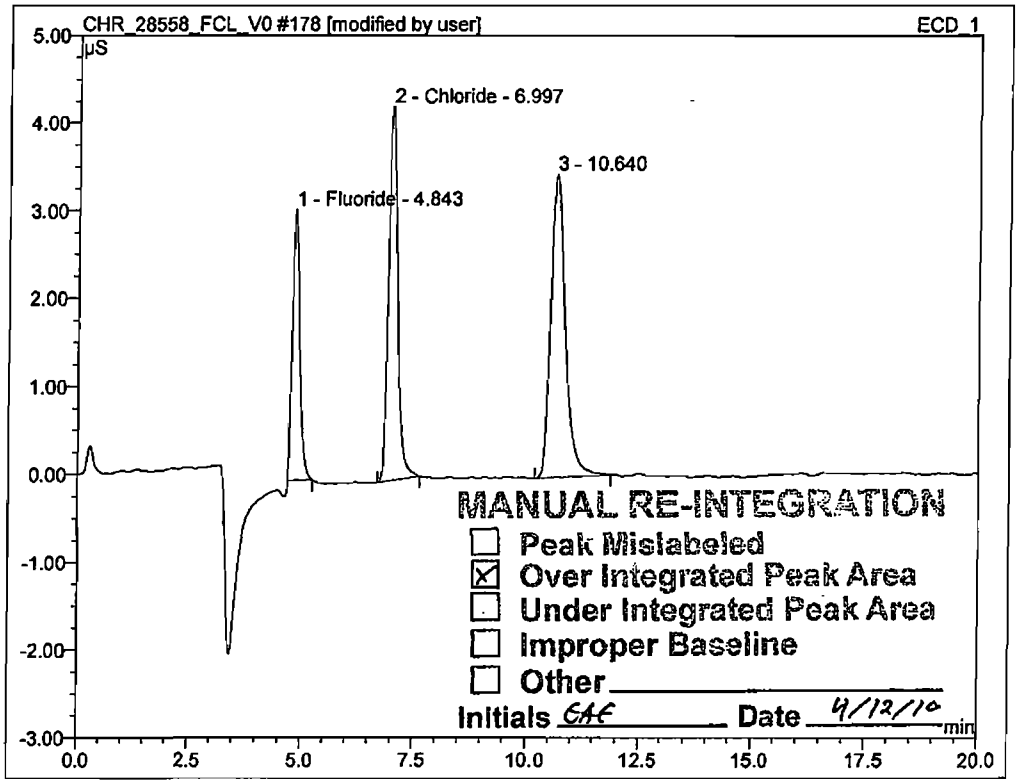


No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.84	Fluoride	0.2208	18.98	BMB*	0.95
2	7.00	Chloride	0.4067	34.96	BMB*	0.95
3	10.66	n.a.	0.5360	46.07	BMB	0.91
Total:			1.164	100.000	0.00	

178 Cal 04

CleanAir

Sample Name:	**Cal 04**	*Sample Vo.*	**1.0 mL**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*ICS Condu*	**46.349**
Control Program:	**AS40Inj2**	*ICS Pressu*	**1426.65**
Quantif. Method:	**default**	*Dilution Fa*	**1.0X**
Recording Time:	**4/11/2010 7:35**	*Sample ID:*	
Run Time (min):	**20.00**	*Replicate II*	



No.	Ret.Time min	Peak Name	Area µS*min	Rel.Area %	Type	PGF
1	4.84	Fluoride	0.5768	19.83	BMB*	0.93
2	7.00	Chloride	1.0226	35.15	BMB*	0.94
3	10.64	n.a.	1.3096	45.02	BMB	0.92
Total:			2.909	100.000	0.00	

M26A-4439-02 / L3139

INSTRUCTIONS FOR THE PREPARATION AND ANALYSIS OF METHOD 26A AUDIT SOLUTION

Note: This audit sample corresponds to the Method 26A Container No. 3 aqueous sample referred to as the acid sample or hydrogen halides fraction. There is no filter included with the audit solution, and there is no audit solution for the Container No. 4 alkaline sample or halogens sample fraction.

The ampule you received contains approximately 20 mL of an aqueous mixture of water that is spiked with a low concentration of chloride.

1) Wrap a paper towel around the ampule, and with the ampule in the upright position, break off the top at the pre-scored mark by carefully exerting pressure sideways.

2) Pipette exactly 10 mL of the audit sample from the ampule into a 500 mL volumetric flask. Dilute exactly to the 500 mL mark with DI water and mix well. (This is called the Diluted Sample.)

3) Analyze the Diluted Sample in accordance with the procedures in Section 11.1 of Method 26A. (**Note:** The Diluted Sample may require further dilution with DI water to bring it within the calibration range of the analytical instrument. This decision is left to the analyst.)

4) Calculate the concentration of chloride in the Diluted Sample in mg/L.

5) Record the chloride concentration in the Diluted Sample on the enclosed **Reporting Form** in units of mg/L.

6) Report the Method 26A chloride concentration, in the Diluted Sample on the **Reporting Form**, to the designated agent.

Revised 10/03

Method 26A Audit Material
(Cl- Spiked Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M26A-4439-02/L3139 Date Issued: 03/17/10

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 Hoefert Phone: 561-681-6626

Project Name: Wheelabrator South Broward

Audit Results (Results in mg/L)

Analyte	Result
Chloride concentration	13.77 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-4439-01/L3682 Date Issued: 03/17/10

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 Hoefert Phone: 561-681-6626

Project Name: Wheelabrator South Broward

Audit Results (Results in mg/L)

Analyte	Result
Chloride concentration	137.91 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-4439-02/L3139 Date Issued: 03/17/10

Auditee:

Company: _____

Address: _____

Attention of: _____ Phone: _____

Requestor:

Agency: Florida DEP-SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee Hoefert Phone: 561-681-6626

Project Name: Wheelabrator South Broward

Audit Results (Results in mg/L)

Analyte	Result
Chloride concentration	

Revised 10/03

Method 26A Audit Material
(Cl- Spiked Aqueous Solution)

REPORTING FORM: To be completed by laboratory

Request Number/Sample Number: M26A-4439-01/L3682 Date Issued: 03/17/10

Auditee:

Company: _____

Address: _____

Attention of: _____ Phone: _____

Requestor:

Agency: Florida DEP-SED

Address: 400 N. Congress Avenue, Suite 200, West Palm Beach, FL 33401

Attention of: Lee Hoefert Phone: 561-681-6626

Project Name: Wheelabrator South Broward

Audit Results (Results in mg/L)

Analyte	Result
Chloride concentration	

Revised 10/03

M26A-4439-01 / L3682

INSTRUCTIONS FOR THE PREPARATION AND ANALYSIS OF METHOD 26A AUDIT SOLUTION

Note: This audit sample corresponds to the Method 26A Container No. 3 aqueous sample referred to as the acid sample or hydrogen halides fraction. There is no filter included with the audit solution, and there is no audit solution for the Container No. 4 alkaline sample or halogens sample fraction.

The ampule you received contains approximately 20 mL of an aqueous mixture of water that is spiked with a low concentration of chloride.

1) Wrap a paper towel around the ampule, and with the ampule in the upright position, break off the top at the pre-scored mark by carefully exerting pressure sideways.

2) Pipette exactly 10 mL of the audit sample from the ampule into a 500 mL volumetric flask. Dilute exactly to the 500 mL mark with DI water and mix well. (This is called the Diluted Sample.)

3) Analyze the Diluted Sample in accordance with the procedures in Section 11.1 of Method 26A. (Note: The Diluted Sample may require further dilution with DI water to bring it within the calibration range of the analytical instrument. This decision is left to the analyst.)

4) Calculate the concentration of chloride in the Diluted Sample in mg/L.

5) Record the chloride concentration in the Diluted Sample on the enclosed **Reporting Form** in units of mg/L.

6) Report the Method 26A chloride concentration, in the Diluted Sample on the **Reporting Form**, to the designated agent.

Revised 10/03

CHAIN OF CUSTODY FORM

M26A-NB-10955-003

CLIENT Wheelabrator South 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: Fluorides					ADDITIONAL INFORMATION
R	1	Unit 1 FF Outlet	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	2	"	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	3	V	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	1	Unit 2 FF Outlet	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	2	"	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	3	V	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	1	Unit 3 FF Outlet	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	2	"	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	3	V	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X					
R	NA	Reagent Blank	22-Mar	DI H2O and filter	1		X					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 1800		3/25/10 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: Scott Brown Date: 3/24/10

CleanAir ENGINEERING

LDS001A-COC Palatine, Jul 2002

500 West Wood Street
Palatine, IL 60067

(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

CHAIN OF CUSTODY FORM

M26A-NB-10955-001

CLIENT Wheelabrator South 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: HCl				ADDITIONAL INFORMATION
R	1	Unit 1 Inlet	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				Expect range of 700-1300 mg/L
R	2	"	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 2 Inlet	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	"	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	1	Unit 3 Inlet	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	2	"	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	3	V	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X				
R	NA	Audit Sample	3/24/10	4439-01	1		X				1682
R	NA	Audit Sample	3/24/10	4439-02	1		X				1359

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Courier:	Date / Time	Relinquished by: (Signature)	Date / Time	Received for Analysis by:	Date / Time

3/24/10 1800
3/29/10 1200

Special Handling Instructions

Forwarding Lab: Palatine

PO Number:

This form was completed by:

Scott Brown

Signature: Scott Brown Date: 3/24/10

CleanAir ENGINEERING
500 West Wood Street
Palatine, IL 60067
(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

Box 2

CHAIN OF CUSTODY FORM

M26A-NB-10955-002

CLIENT Wheelabrator South 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: HCl	ADDITIONAL INFORMATION
R	1	Unit 1 FF Outlet	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	2	"	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	3	V	3/22/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	1	Unit 2 FF Outlet	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	2	"	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	3	V	3/23/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	1	Unit 3 FF Outlet	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	2	"	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	3	V	3/24/2010	Imp. 1,2 ,3 Catch + Rinse	1		X	
R	NA	Reagent Blank	22-Mar	0.1 N H2SO4			X	
R	NA	Reagent Blank	22-Mar	DI H2O			X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Brown	3/24/10 1800		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: Scott Brown Date: 3/24/10

CleanAir ENGINEERING

LDS001A-COC Palatine, Jul 2002

500 West Wood Street
Palatine, IL 60067

(800) 627-0033 ph
(847) 991-3385 fax
www.cleanair.com

PERTINENT CERTIFICATIONS

J

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Certification of Visible Opacity Reading

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

AeroMet Public School
GIFT CARD DRAWING

To see if you have won:
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2. Click on Smoke School
3. Click on Gift Card Drawing.
4. Look for your location on the list.

The winner from each public location will be announced within 7 days of the training event. You are automatically registered when you pass the certification test.

If your name is listed, you must contact AeroMet at 573.636.6393 to select your gift card. Good Luck!

FOR PUBLIC SCHOOLS ONLY

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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 L. 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