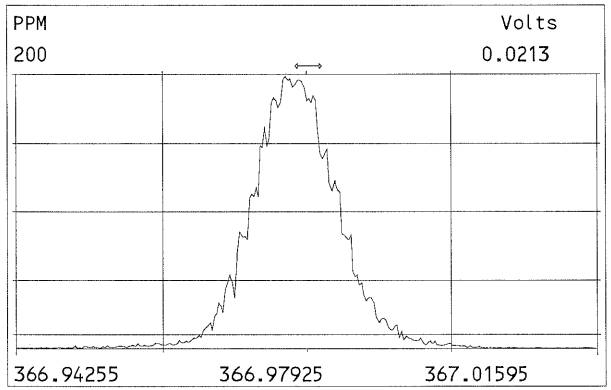
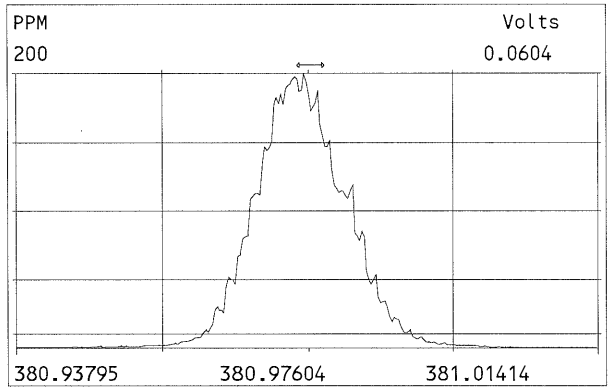
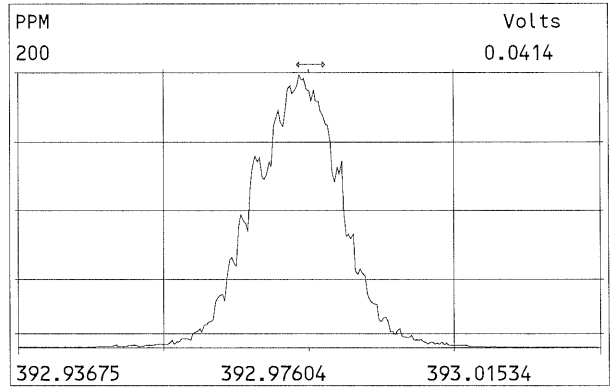
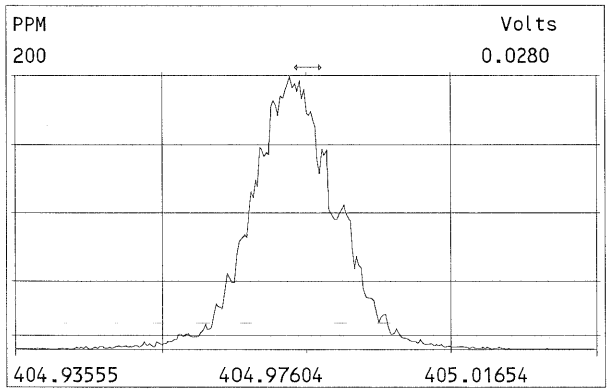
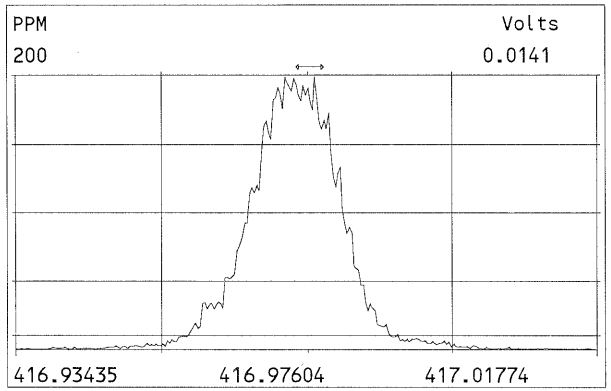
Peak Locate Examination: 9-APR-2011:08:32 File:08APR11M_RES_CHECK
Experiment:OCDD Function:3 Reference:PFK

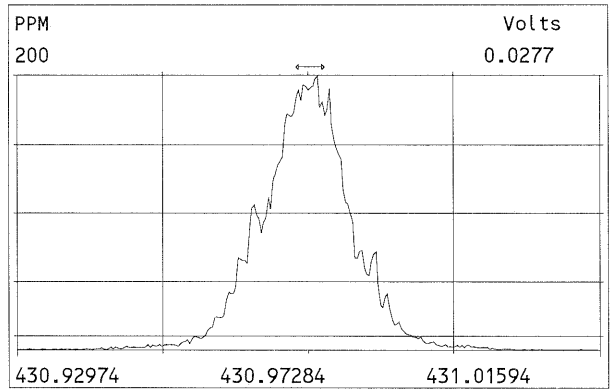


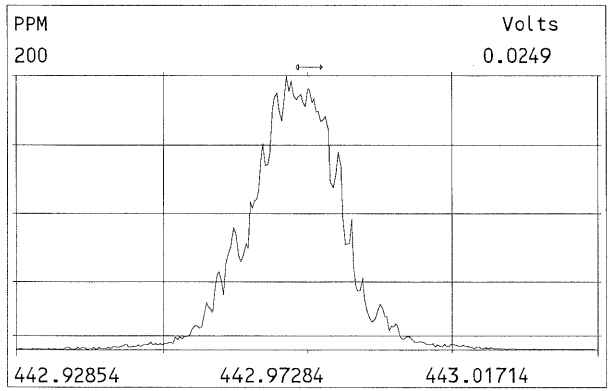


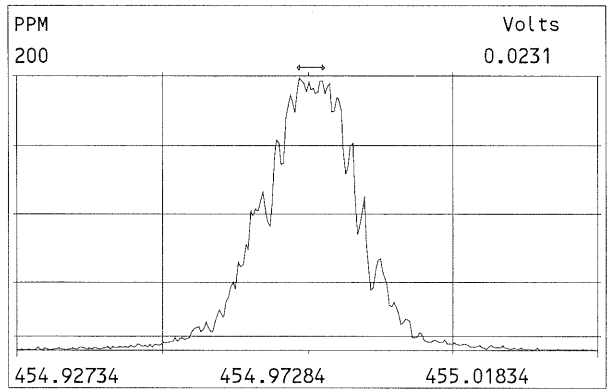




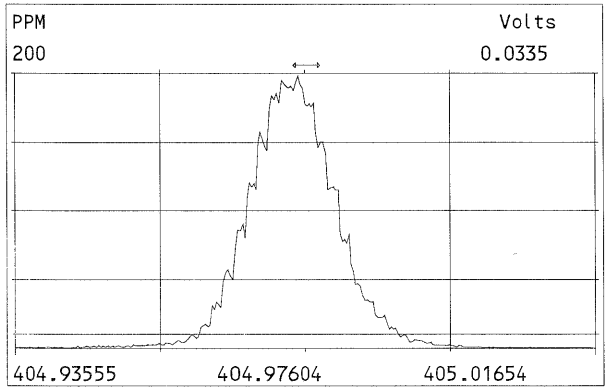


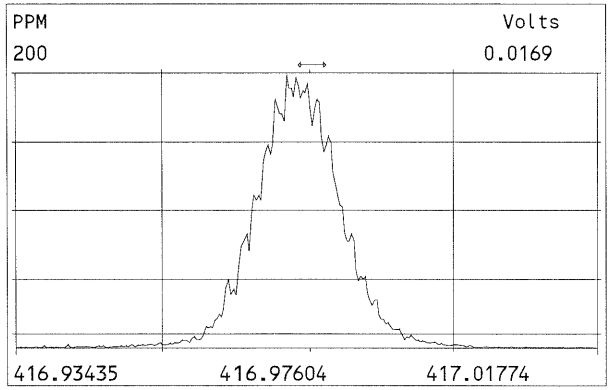


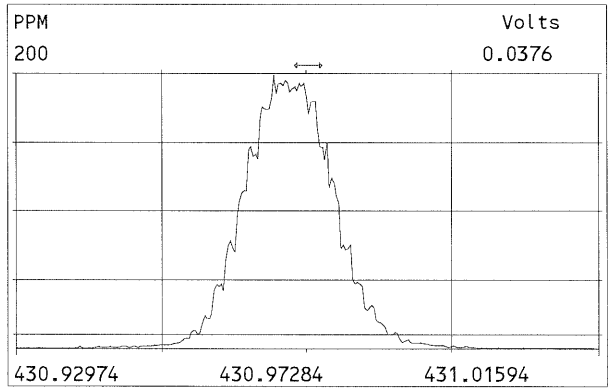


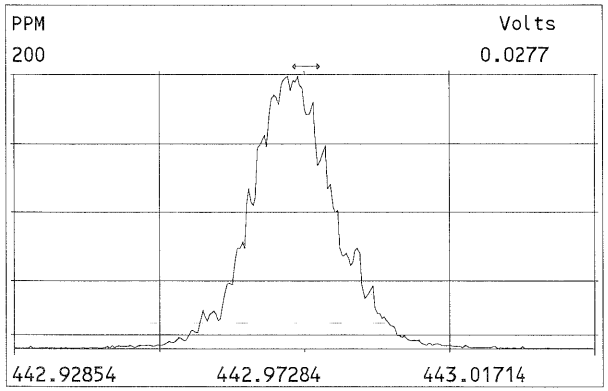


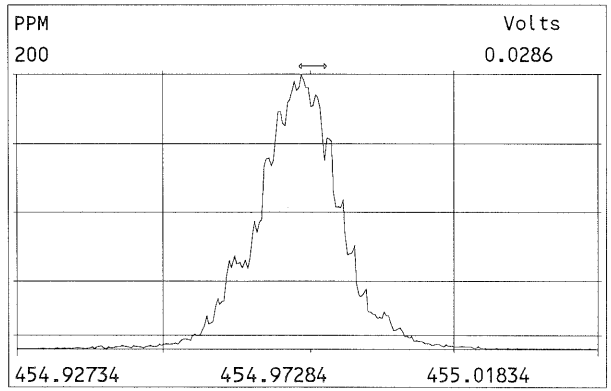
Peak Locate Examination: 9-APR-2011:08:32 File:08APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

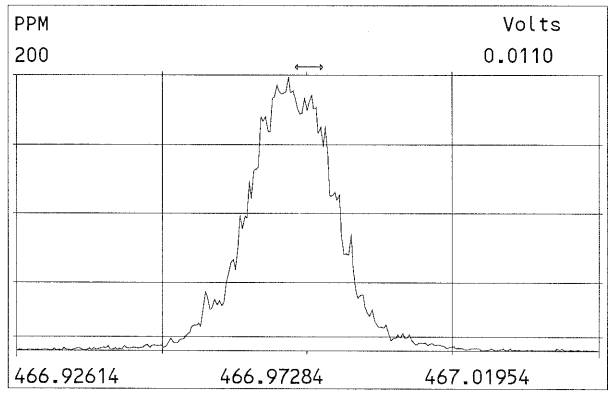


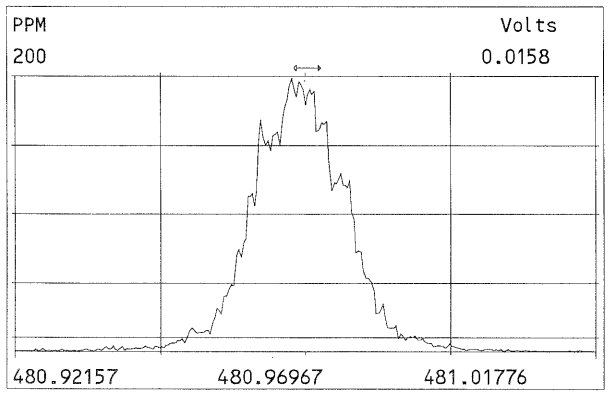




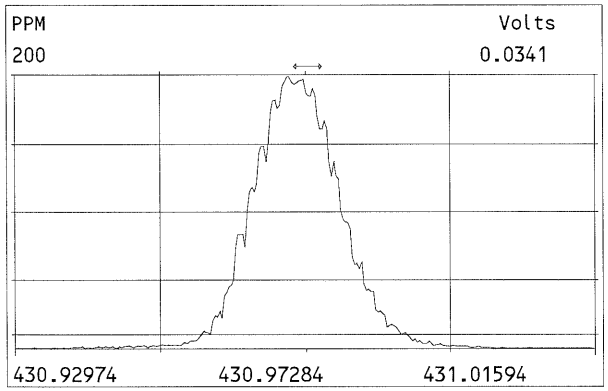


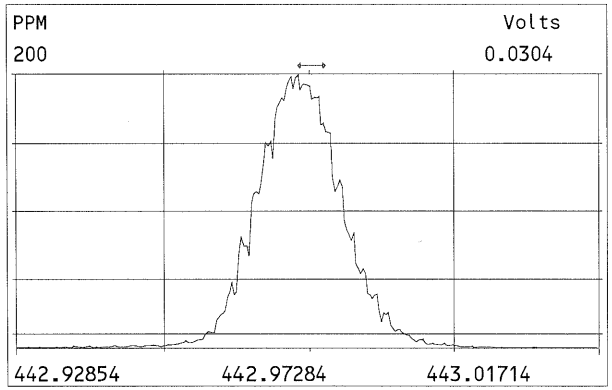


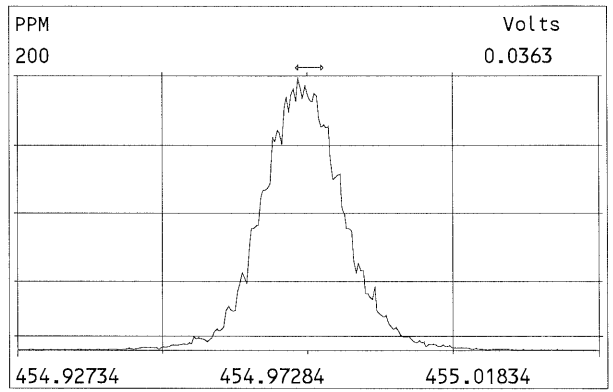


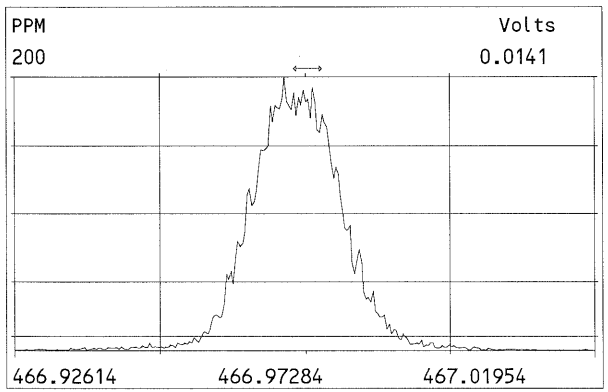


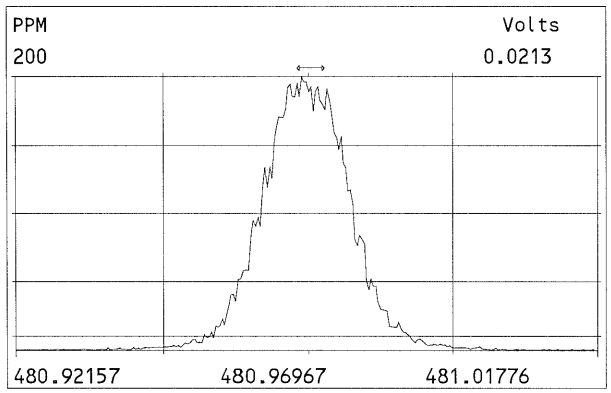
Peak Locate Examination: 9-APR-2011:08:33 File:08APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

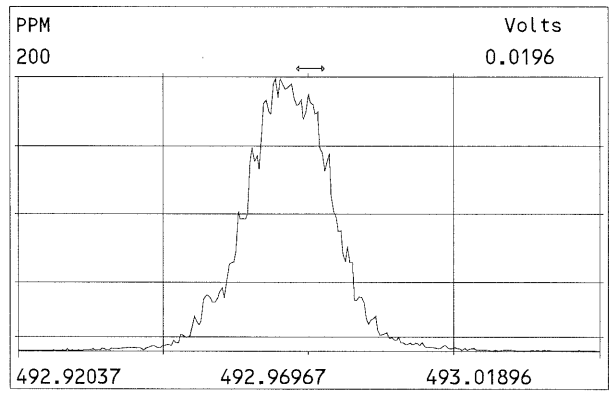


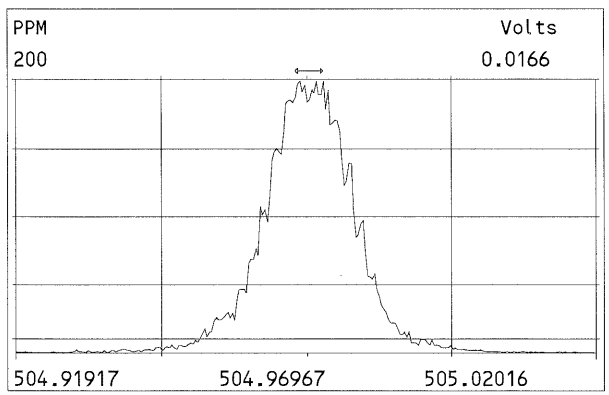


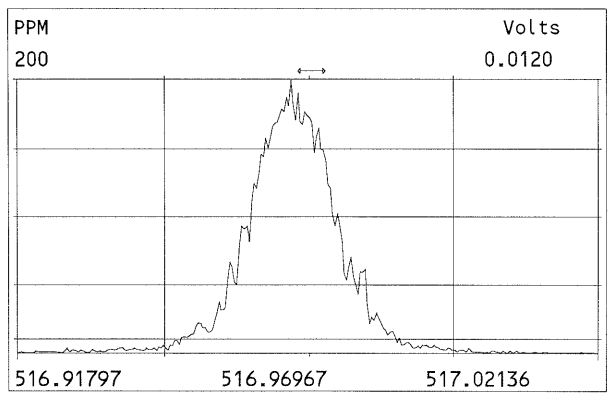












USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 08APR11M Sam:16 Analysis Date: 9-APR-11 04:06:14

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
NATIVE ANALYTES						
2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	y	10.8	7.80 - 12.9
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	y	52.3	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	y	48.7	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	y	51.0	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.30	1.05-1.43	y	52.6	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	0.92	0.88-1.20	y	49.4	43.0 - 58.0
OCDD	M+2/M+4	0.87	0.76-1.02	y	100	79.0 - 126
2,3,7,8-TCDF	M/M+2	0.67	0.65-0.89	y	11.4	8.40 - 12.0
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	y	52.8	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	51.4	41.0 - 60.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	y	49.8	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	y	50.5	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	y	49.4	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	y	50.7	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	y	49.2	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	y	51.2	43.0 - 58.0
OCDF	M+2/M+4	0.88	0.76-1.02	y	96.2	63.0 - 159

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

Analyst: _____ Date: 4/11/11

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 08APR11M Sam:16 Analysis Date: 9-APR-11 04:06:14

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	y	93.1	82.0 - 121
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.77	1.32-1.78	y	89.8	62.0 - 160
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	y	87.8	85.0 - 117
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	y	102	85.0 - 118
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	y	116	72.0 - 138
13C-OCDD	M+2/M+4	0.90	0.76-1.02	y	203	96.0 - 415
13C-2,3,7,8-TCDF	M/M+2	0.85	0.65-0.89	y	101	71.0 - 140
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.67	1.32-1.78	y	107	76.0 - 130
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.71	1.32-1.78	y	109	77.0 - 130
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.49	0.43-0.59	y	91.5	76.0 - 131
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.47	0.43-0.59	y	99.5	70.0 - 143
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	98.7	73.0 - 137
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.47	0.43-0.59	y	99.1	74.0 - 135
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	y	112	78.0 - 129
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.48	0.37-0.51	y	114	77.0 - 129
13C-OCDF	M+2/M+4	0.93	0.76-1.02	y	209	96.0 - 415
CLEANUP STANDARD (4)						
37Cl-2,3,7,8-TCDD					8.36	7.80 - 12.8

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) No ion abundance ratio; report concentration found.

Analyst: _____ Date: 4/11/11

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: FAL3 Initial Calibration Date: 3/7/11

RT Window Data Filename: 08APR11M Sam:16 Analysis Date: 9-APR-11 Time: 04:06:14

DB-5 IS Data Filename: 08APR11M Sam:16 Analysis Date: 9-APR-11 Time: 04:06:14

DB-225 IS Date Filename: Analysis Date: Time:

DB-5 RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	24:35	1,3,6,8-TCDF (F)	23:13
1,2,8,9-TCDD (L)	28:33	1,2,8,9-TCDF (L)	28:46
1,2,4,7,9-PeCDD (F)	30:28	1,3,4,6,8-PeCDF (F)	28:38
1,2,3,8,9-PeCDD (L)	34:02	1,2,3,8,9-PeCDF (L)	34:29
1,2,4,6,7,9-HxCDD (F)	36:23	1,2,3,4,6,8-HxCDF (F)	35:30
1,2,3,7,8,9-HxCDD (L)	39:27	1,2,3,7,8,9-HxCDF (L)	40:02
1,2,3,4,6,7,9-HpCDD (F)	43:04	1,2,3,4,6,7,8-HpCDF (F)	42:33
1,2,3,4,6,7,8-HpCDD (L)	44:28	1,2,3,4,7,8,9-HpCDF (L)	45:23

(F) = First eluting iosmer (DB-5); (L) = Last eluting isomer (DB-5)

==========

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

COMPARED PEAKS (1)	% VALLEY HEIGHT BETWEEN
	<25%

(1) To meet contract requirement, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: _____ Date: 4/11/11

USEPA - ITD

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 9-APR-11 04:06:14 CS3 or VER Data Filename: 08APR11M Sam:16

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	0.999-1.002
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.001	0.999-1.002
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.000	0.999-1.002
LABELED COMPOUNDS			
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.023	0.989-1.052
13C-2,3,7,8-TCDD		1.022	0.976-1.043
13C-2,3,7,8-TCDF		0.994	0.923-1.103
13C-1,2,3,7,8-PeCDD		1.239	1.000-1.567
13C-1,2,3,7,8-PeCDF		1.175	0.923-1.203
13C-2,3,4,7,8-PeCDF		1.224	0.923-1.303

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/11/11

USEPA - ITD

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 9-APR-11 04:06:14 CS3 or VER Data Filename: 08APR11M Sam:16

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.000	0.999-1.001
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.001	0.998-1.004
1,2,3,7,8,9-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.012	1.000-1.019
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.001	0.999-1.001
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.000	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.001	0.999-1.001
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.001	0.999-1.001
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.001	0.999-1.001
OCDD	13C-OCDD	1.001	0.999-1.001
OCDF	13C-OCDF	1.000	0.999-1.001
LABELED COMPOUNDS			
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,7,8,9-HxCDD	0.984	0.977-1.000
13C-1,2,3,6,7,8-HxCDD		0.989	0.981-1.003
13C-1,2,3,4,7,8-HxCDF		0.949	0.944-0.970
13C-1,2,3,6,7,8-HxCDF		0.954	0.949-0.975
13C-2,3,4,6,7,8-HxCDF		0.978	0.959-1.021
13C-1,2,3,7,8,9-HxCDF		1.015	0.977-1.047
13C-1,2,3,4,6,7,8-HpCDD		1.127	1.086-1.130
13C-1,2,3,4,6,7,8-HpCDF		1.079	1.043-1.085
13C-1,2,3,4,7,8,9-HpCDF		1.150	1.057-1.154
13C-OCDD		1.270	1.032-1.311
13C-OCDF		1.279	1.000-1.311

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/11/11

FAL ID: ST040811M2 Filename: 08APR11M Sam:16 Acquired: 9-APR-11 04:06:14 ICal: PCDDFAL3-3-7-11
Client ID: 1613 CS3 100511J ConCal: ST040811M1 EndCal: ST040811M2
Results: GC Column: DB5 Amount: 1.000 NATO 1989 Tox: 103
WHO 1998 Tox: 129 WHO 2005 Tox: 118

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise-1	Noise-2	DL
2,3,7,8-TCDD	3.18e+06	0.79 y	27:37	1.13	10.8		2.50	-	-	*
1,2,3,7,8-PeCDD	1.30e+07	1.56 y	33:27	1.02	52.3		2.50	-	-	*
1,2,3,4,7,8-HxCDD	1.39e+07	1.29 y	38:50	1.45	48.7		2.50	-	-	*
1,2,3,6,7,8-HxCDD	1.34e+07	1.29 y	39:01	1.45	51.0		2.50	-	-	*
1,2,3,7,8,9-HxCDD	1.46e+07	1.30 y	39:27	1.47	52.6		2.50	-	-	*
1,2,3,4,6,7,8-HpCDD	1.16e+07	0.92 y	44:28	1.30	49.4		2.50	-	-	*
OCDD	1.69e+07	0.87 y	50:05	1.45	100		2.50	-	-	*
2,3,7,8-TCDF	5.61e+06	0.67 y	26:50	1.15	11.4		2.50	-	-	*
1,2,3,7,8-PeCDF	1.79e+07	1.60 y	31:44	0.89	52.8		2.50	-	-	*
2,3,4,7,8-PeCDF	1.73e+07	1.61 y	33:03	0.89	51.4		2.50	-	-	*
1,2,3,4,7,8-HxCDF	1.60e+07	1.26 y	37:27	1.01	49.8		2.50	-	-	*
1,2,3,6,7,8-HxCDF	1.94e+07	1.26 y	37:38	0.89	50.5		2.50	-	-	*
2,3,4,6,7,8-HxCDF	1.74e+07	1.28 y	38:35	1.02	49.4		2.50	-	-	*
1,2,3,7,8,9-HxCDF	2.07e+07	1.24 y	40:02	1.10	50.7		2.50	-	-	*
1,2,3,4,6,7,8-HpCDF	1.52e+07	1.06 y	42:33	1.48	49.2		2.50	-	-	*
1,2,3,4,7,8,9-HpCDF	1.20e+07	1.05 y	45:23	1.43	51.2		2.50	-	-	*
OCDF	1.87e+07	0.88 y	50:28	0.84	96.2		2.50	-	-	*
										Rec
13C-2,3,7,8-TCDD	2.59e+07	0.81 y	27:35	1.03	93.1					93.1
13C-1,2,3,7,8-PeCDD	2.45e+07	1.77 y	33:26	1.01	89.8					89.8
13C-1,2,3,4,7,8-HxCDD	1.97e+07	1.26 y	38:49	1.19	87.8					87.8
13C-1,2,3,6,7,8-HxCDD	1.80e+07	1.26 y	38:59	0.94	102					102
13C-1,2,3,4,6,7,8-HpCDD	1.81e+07	1.05 y	44:26	0.83	116					116
13C-OCDD	2.33e+07	0.90 y	50:04	0.61	203					102
13C-2,3,7,8-TCDF	4.28e+07	0.85 y	26:49	0.98	101					101
13C-1,2,3,7,8-PeCDF	3.83e+07	1.67 y	31:42	0.83	107					107
13C-2,3,4,7,8-PeCDF	3.77e+07	1.71 y	33:02	0.80	109					109
13C-1,2,3,4,7,8-HxCDF	3.18e+07	0.49 y	37:25	1.84	91.5					91.5
13C-1,2,3,6,7,8-HxCDF	4.30e+07	0.47 y	37:38	2.29	99.5					99.5
13C-2,3,4,6,7,8-HxCDF	3.47e+07	0.48 y	38:33	1.86	98.7					98.7
13C-1,2,3,7,8,9-HxCDF	3.71e+07	0.47 y	40:01	1.98	99.1					99.1
13C-1,2,3,4,6,7,8-HpCDF	2.09e+07	0.46 y	42:32	0.99	112					112
13C-1,2,3,4,7,8,9-HpCDF	1.65e+07	0.48 y	45:22	0.77	114					114
13C-OCDF	4.60e+07	0.93 y	50:27	1.17	209					105
37Cl-2,3,7,8-TCDD	1.65e+06		27:36	0.73	8.36					83.6
13C-1,2,3,4-TCDD	2.71e+07	0.82 y	26:59	-	71.2					
13C-1,2,3,4-TCDF	4.30e+07	0.87 y	25:44	-	59.7					
13C-1,2,3,7,8,9-HxCDD	1.89e+07	1.26 y	39:26	-	76.1					

						Fac	Noise-1	Noise-2	DL		#Hom
Total Tetra-Dioxins	1.53e+07		24:05	1.13	52.2	2.50	-	-	*		20
Total Penta-Dioxins	2.78e+07		30:28	1.02	112	2.50	-	-	*		4
Total Hexa-Dioxins	4.70e+07		36:23	1.46	171	2.50	-	-	*		10
Total Hepta-Dioxins	2.48e+07		43:04	1.30	106	2.50	-	-	*		21
Total Tetra-Furans	2.61e+07		23:13	1.15	53.2	2.50	-	-	*		21
1st Fn. Tot Penta-Furans	1.91e+07		28:38	0.89	56.5	2.50	-	-	*	PeCDF	1
Total Penta-Furans	5.08e+07		30:24	0.89	150	2.50	-	-	*	207	14
Total Hexa-Furans	8.44e+07		35:30	1.00	230	2.50	-	-	*		11
Total Hepta-Furans	2.77e+07		42:33	1.46	102	2.50	-	-	*		22

Analyst: _____ Date: 4/14/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:08APR11M Instrument: FAL3 GC: DB5 Experiment:OCDD

Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
08APR11M	1	ST040811M1	1613 CS3 100511J	8-APR-11 14:15:31	ST040811M1	ST040811M2	TC
08APR11M	2	2265-001-0001-OPR	OPR	8-APR-11 15:10:54	ST040811M1	ST040811M2	TC
08APR11M	3	2265-001-0001-MB	Method Blank	8-APR-11 16:06:13	ST040811M1	ST040811M2	TC
08APR11M	4	6684-001-0001-SA	OM-4	8-APR-11 17:01:39	ST040811M1	ST040811M2	TC
08APR11M	5	6684-003-0001-SA	OM-8	8-APR-11 17:57:01	ST040811M1	ST040811M2	TC
08APR11M	6	6684-004-0001-SA	OM-9	8-APR-11 18:52:25	ST040811M1	ST040811M2	TC
08APR11M	7	6684-005-0001-SA	OM-10	8-APR-11 19:47:48	ST040811M1	ST040811M2	TC
08APR11M	8	6691-003-0001-SA	OM-6	8-APR-11 20:43:11	ST040811M1	ST040811M2	TC
08APR11M	9	6692-003-0001-SA	SB-2	8-APR-11 21:38:39	ST040811M1	ST040811M2	TC
08APR11M	10	6693-001-0001-SA	001-002 24HC	8-APR-11 22:34:06	ST040811M1	ST040811M2	TC
08APR11M	11	6697-001-0001-SA	1031033-01	8-APR-11 23:29:25	ST040811M1	ST040811M2	TC
08APR11M	12	6697-002-0001-SA	1031033-02	9-APR-11 00:24:44	ST040811M1	ST040811M2	TC
08APR11M	13	6701-010-0001-SA	LL-SED1-0-15-032911-ER	9-APR-11 01:20:06	ST040811M1	ST040811M2	TC
08APR11M	14	6684-002-0001-SA	OM-7	9-APR-11 02:15:29	ST040811M1	ST040811M2	TC
08APR11M	15	SB040811M1	Solvent Blank	9-APR-11 03:10:48	ST040811M1	ST040811M2	TC
08APR11M	16	ST040811M2	1613 CS3 100511J	9-APR-11 04:06:14	ST040811M1	ST040811M2	TC

8/11/11

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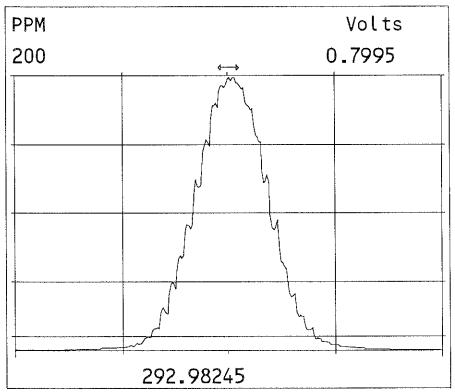
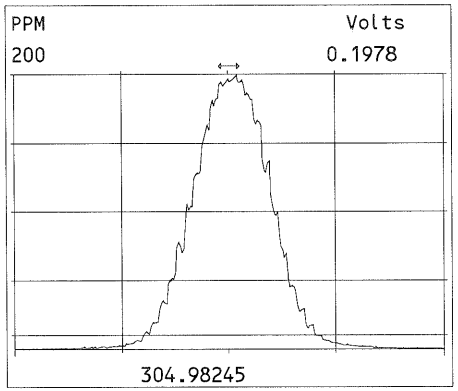
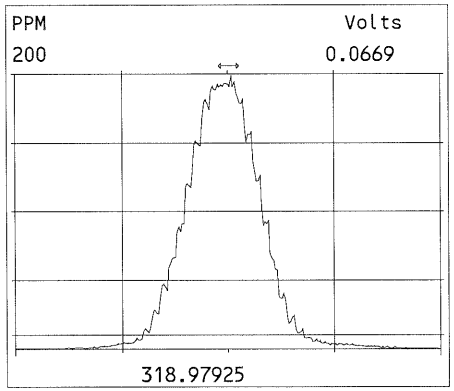
Data Backed Up:_____

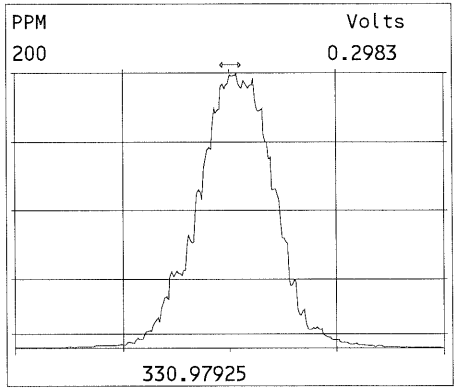
Date:_____

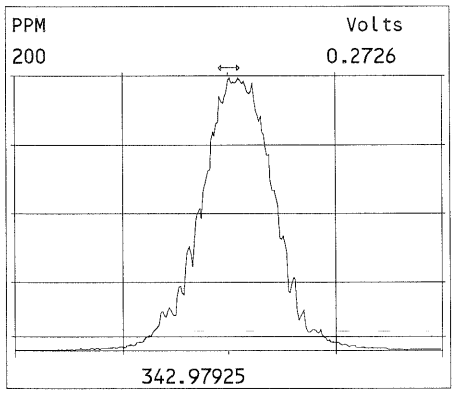
Peak Locate Examination: 8-APR-2011:14:13 File:08APR11M
Experiment:OCDD Function:1 Reference:PFK

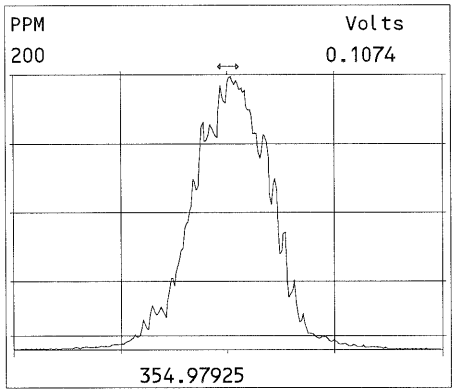


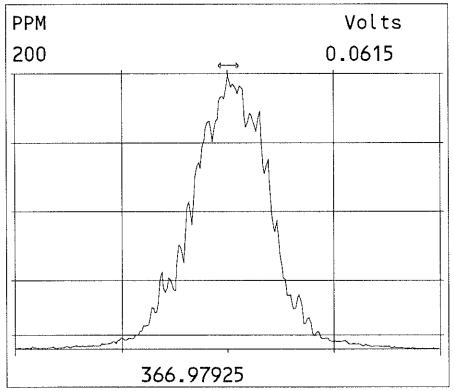


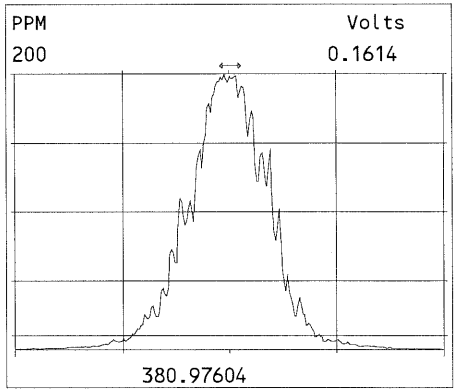


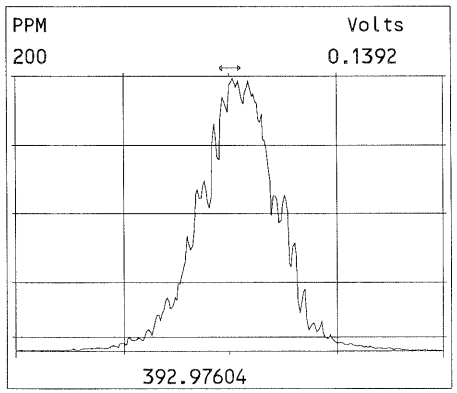


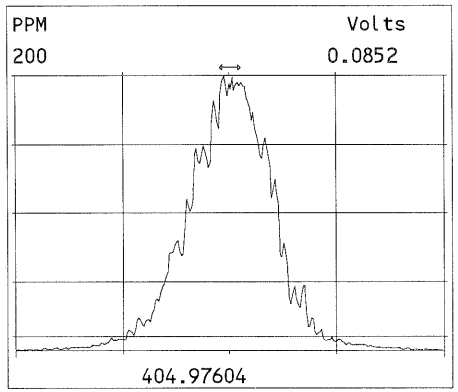


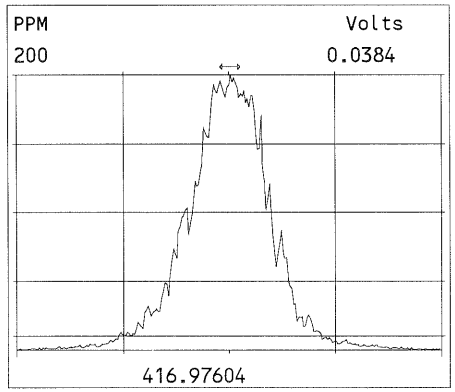




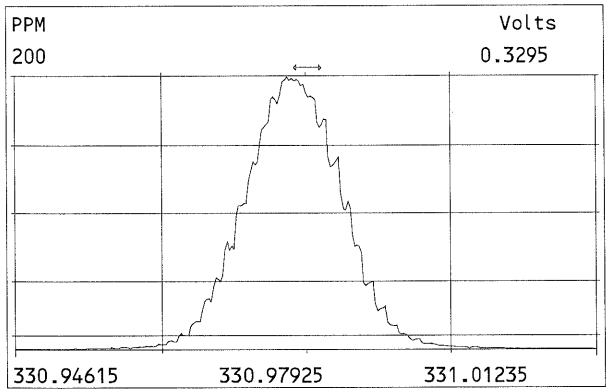


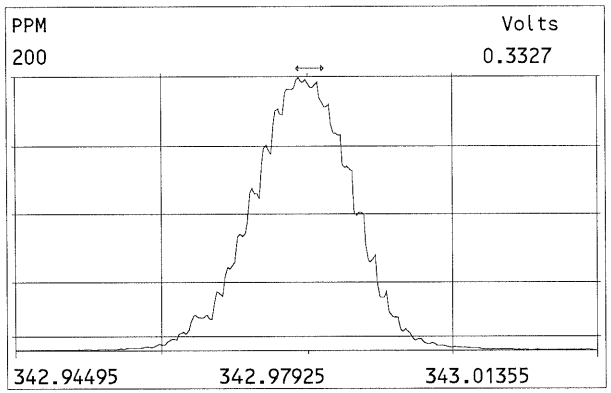


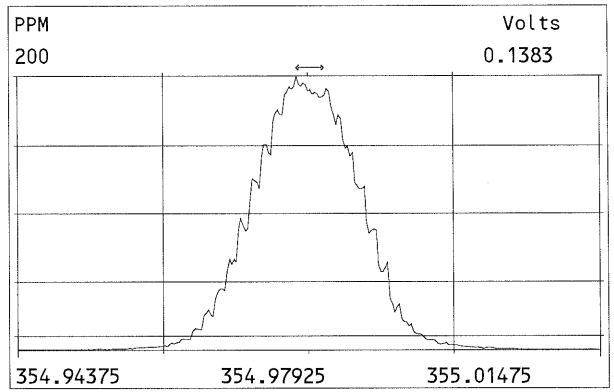


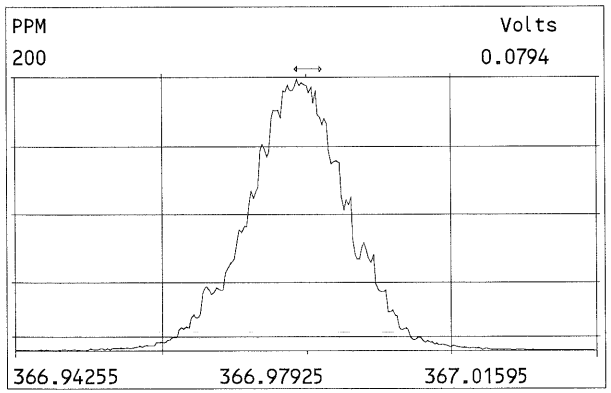


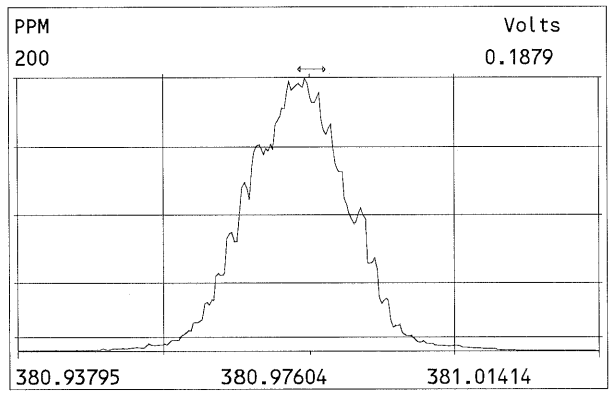
Peak Locate Examination: 8-APR-2011:14:14 File:08APR11M
Experiment:OCDD Function:2 Reference:PFK

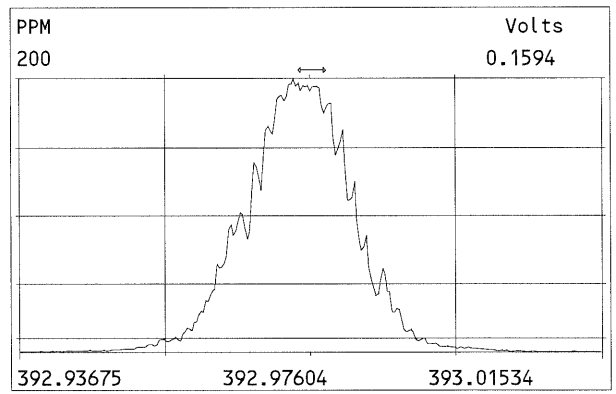


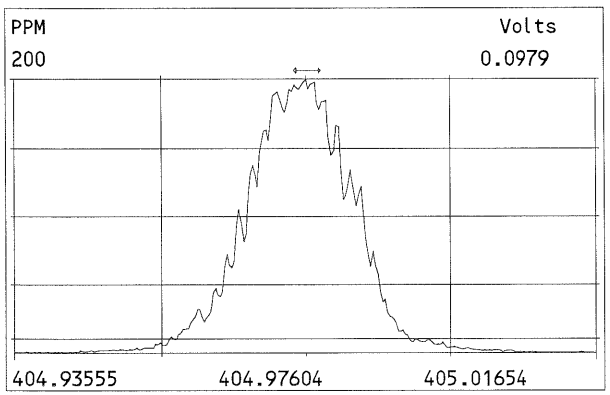


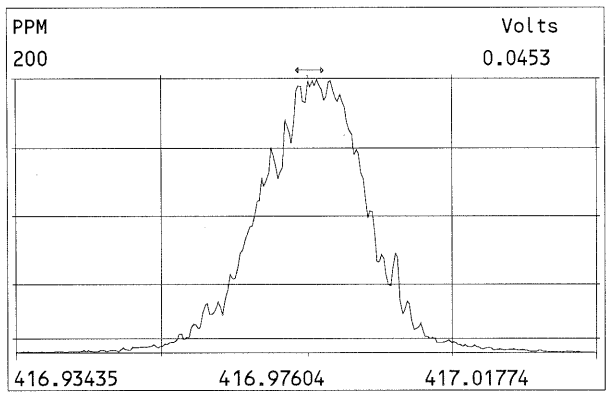




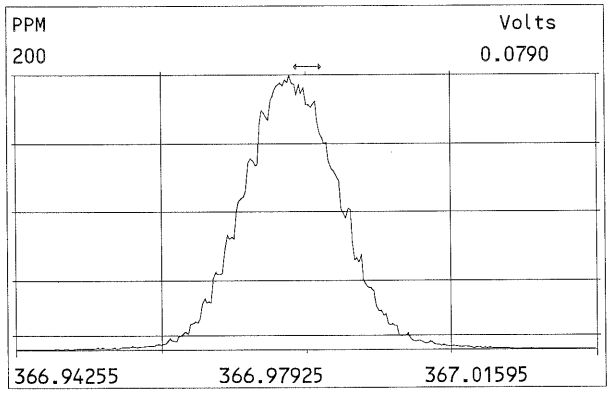


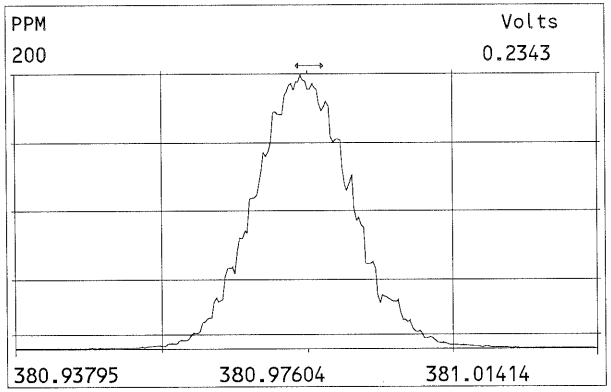


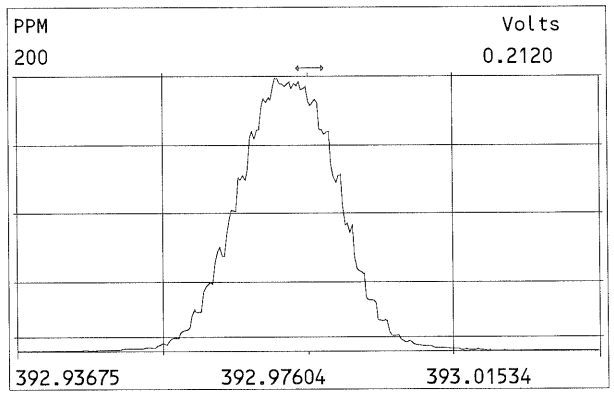


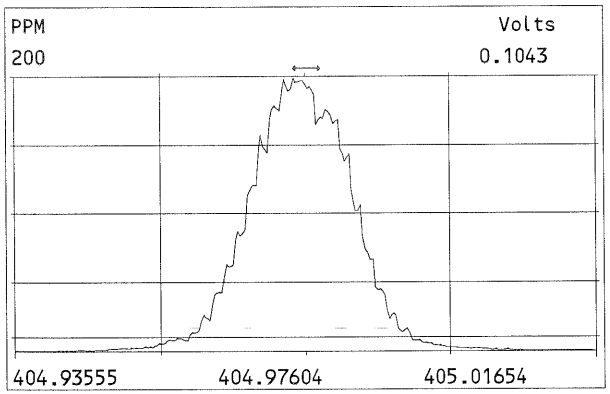


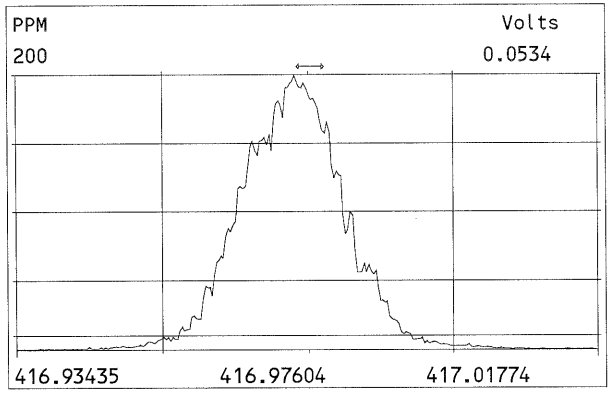
Peak Locate Examination: 8-APR-2011:14:14 File:08APR11M
Experiment:OCDD Function:3 Reference:PFK

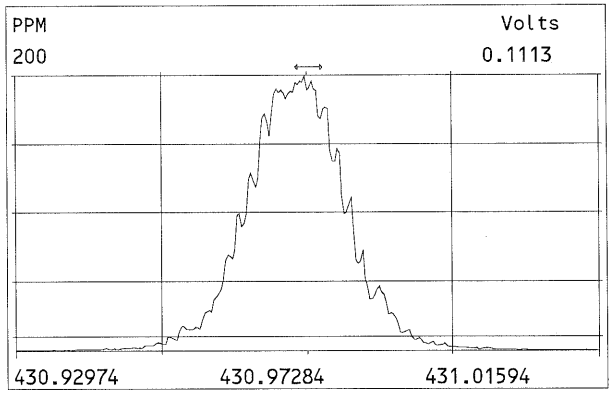


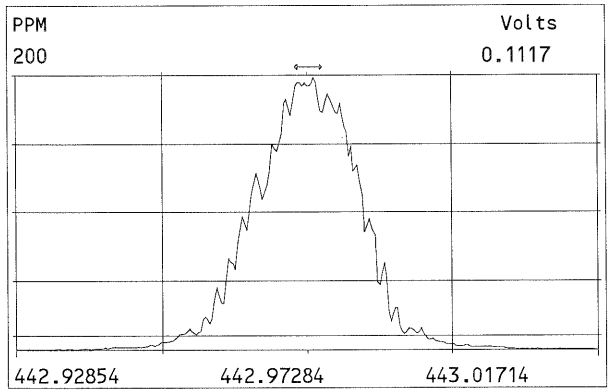


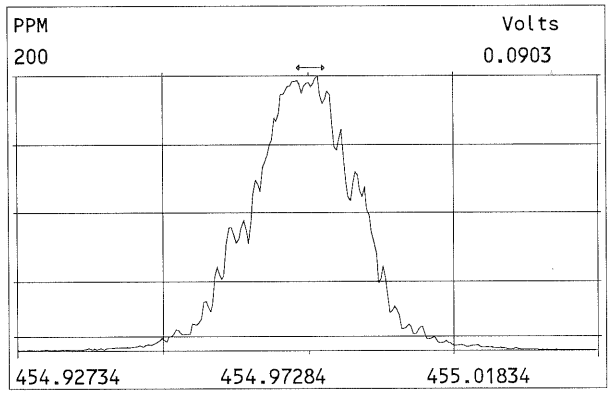




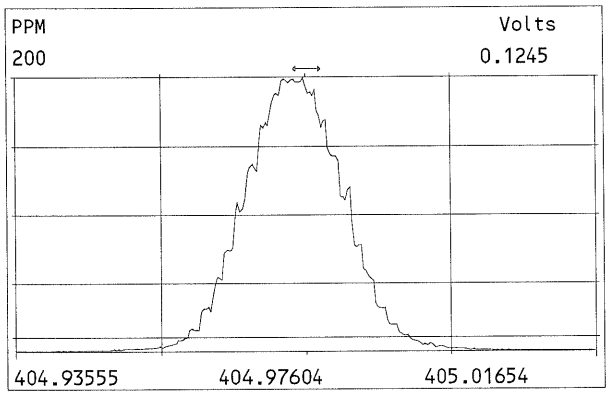


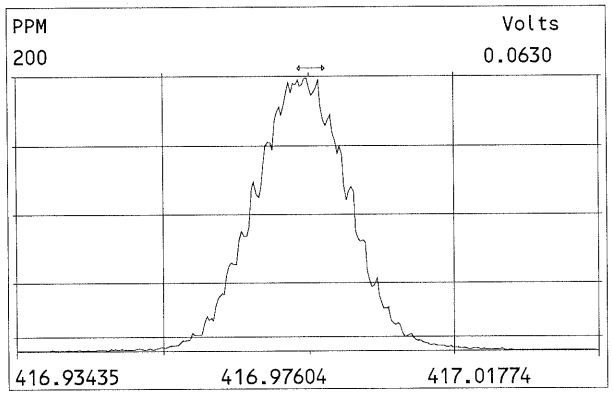


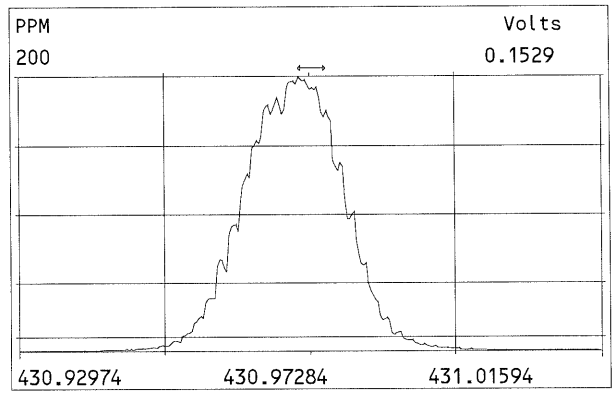


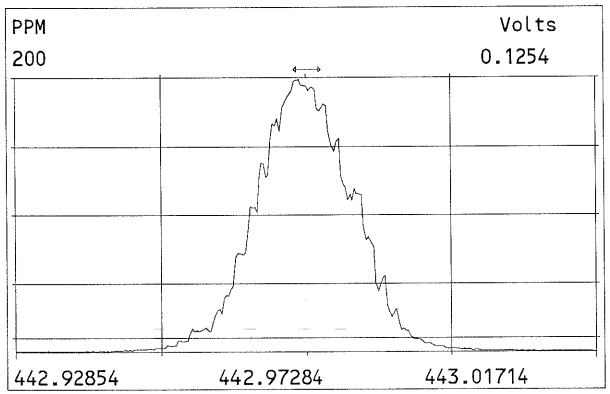


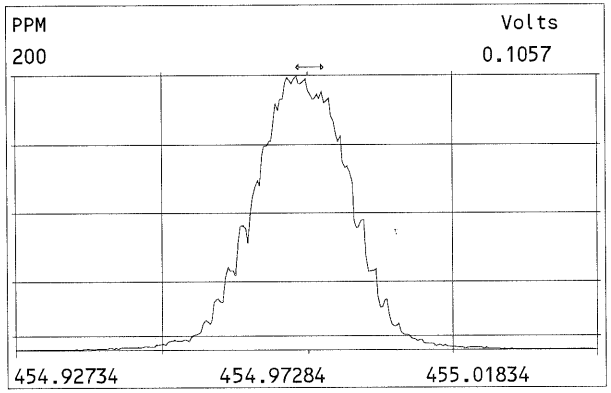
Peak Locate Examination: 8-APR-2011:14:14 File:08APR11M
Experiment:OCDD Function:4 Reference:PFK

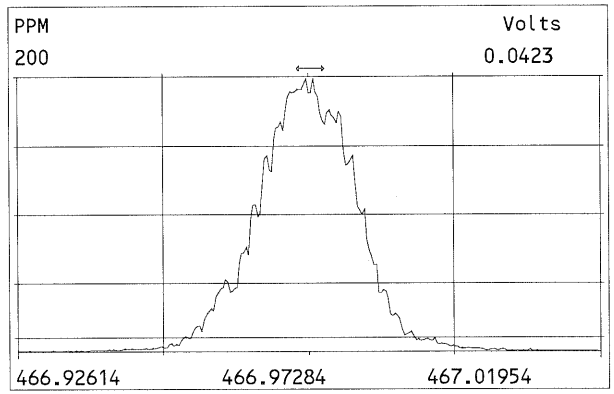


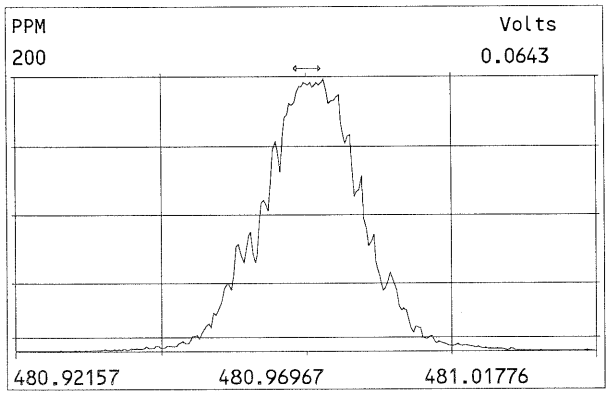




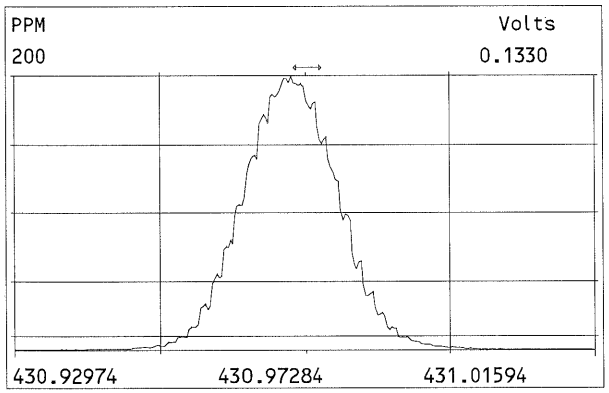


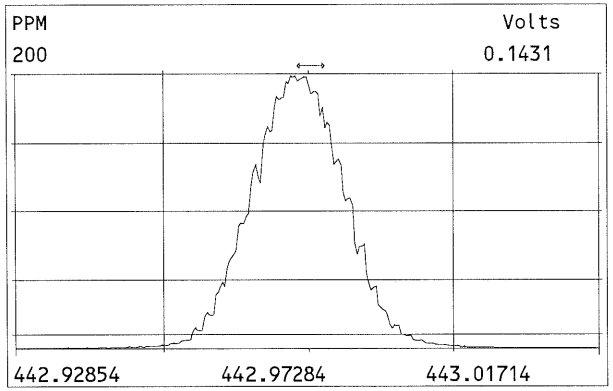


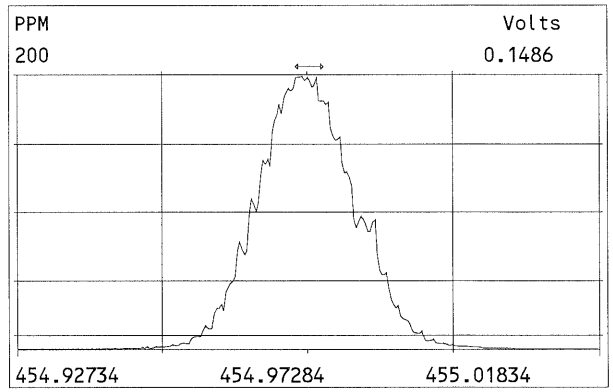


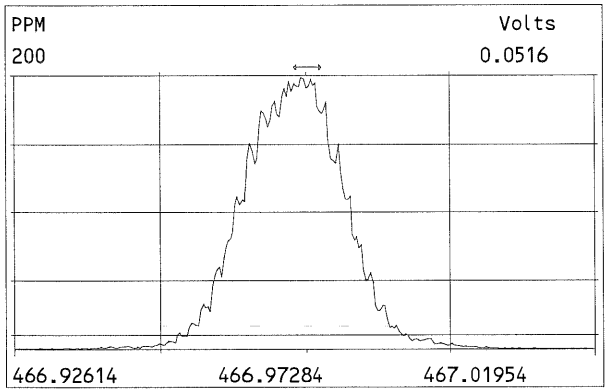


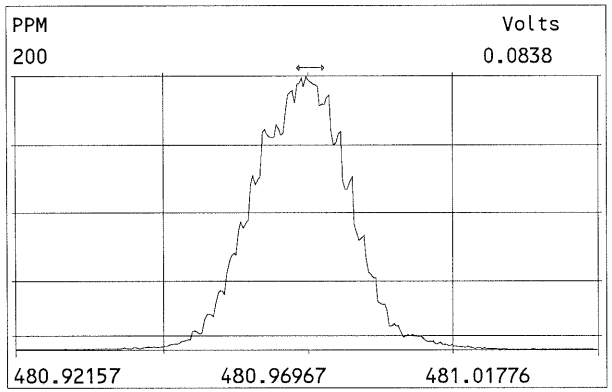
Peak Locate Examination: 8-APR-2011:14:15 File:08APR11M
Experiment:OCDD Function:5 Reference:PFK

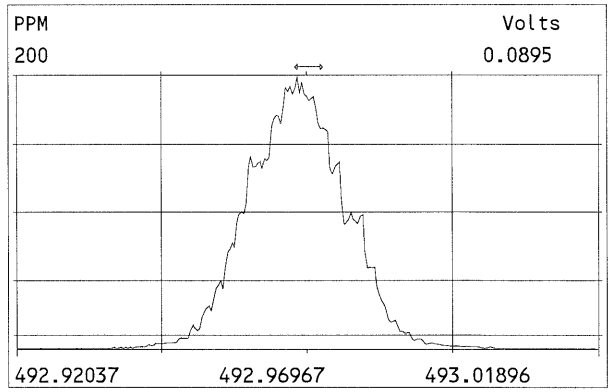


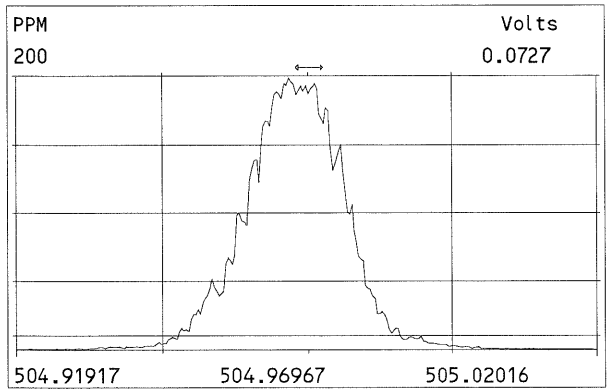


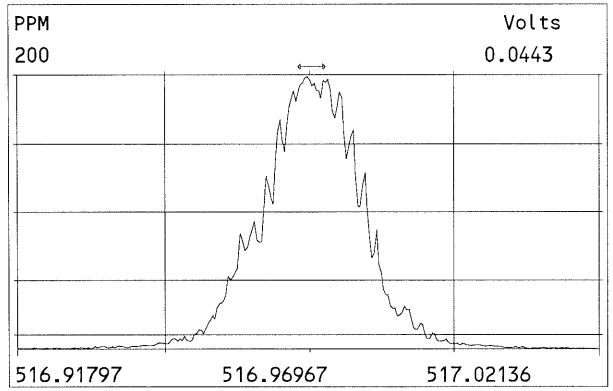




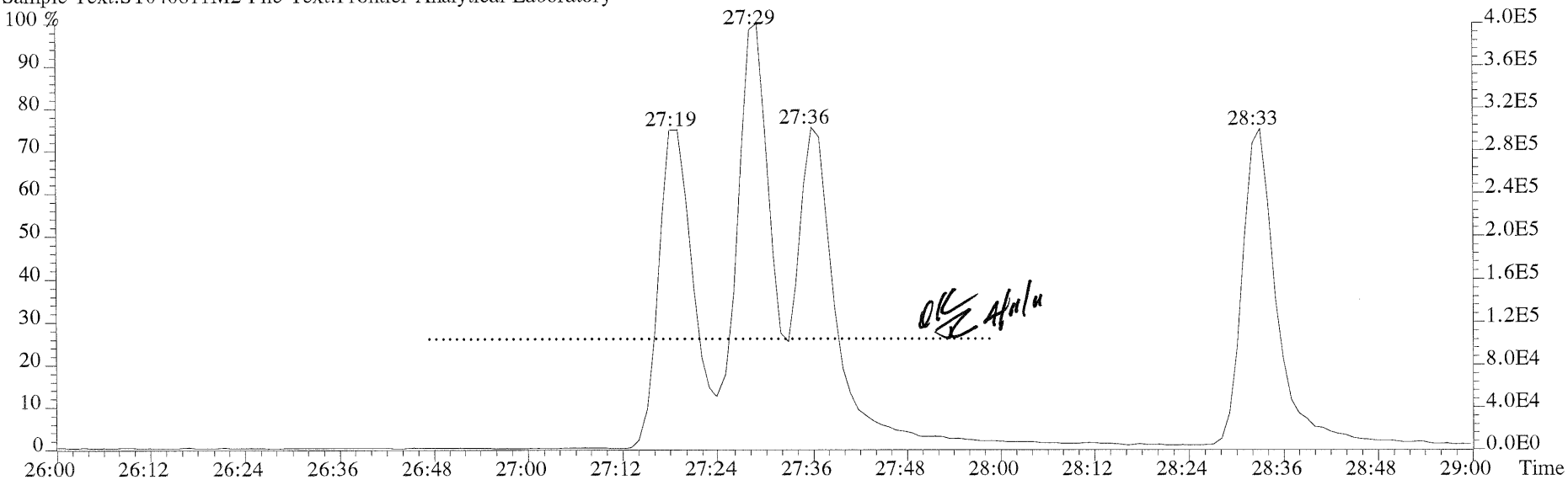




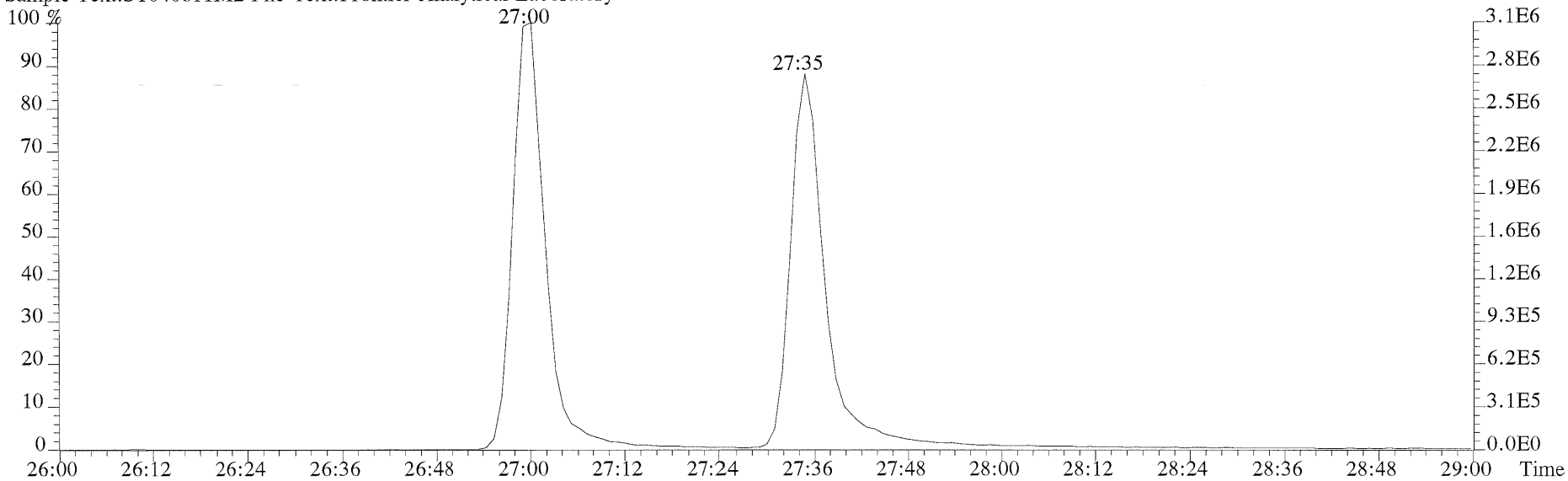




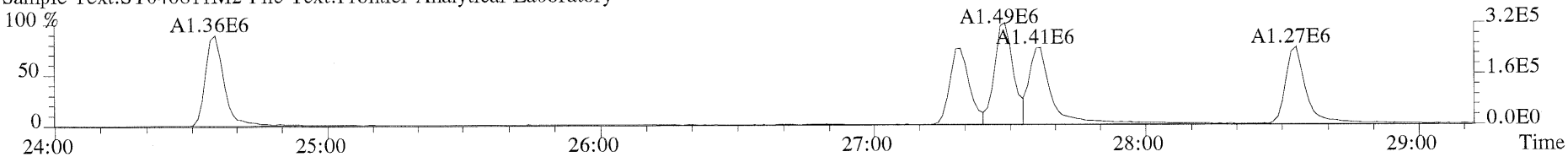
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
321.8936 S:16 Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



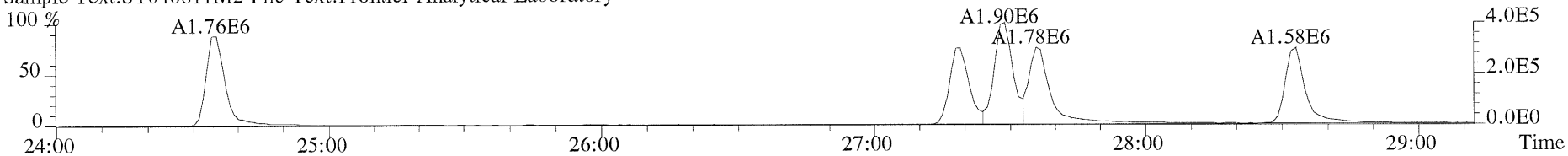
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:16 Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
319.8965 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
321.8936 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



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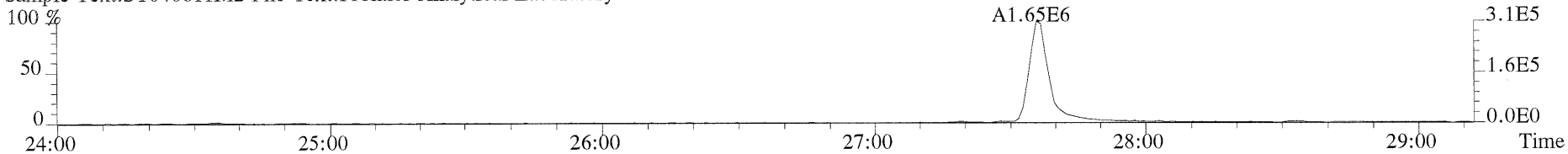
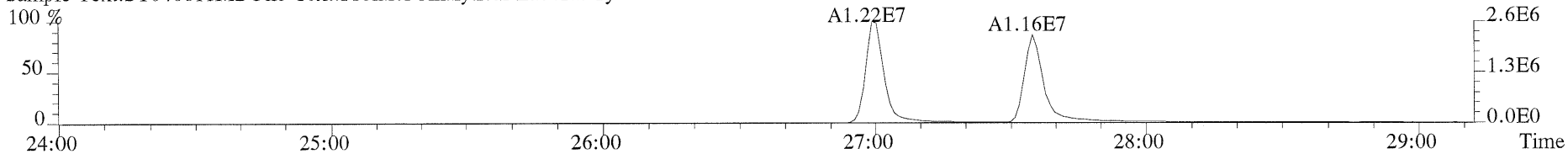
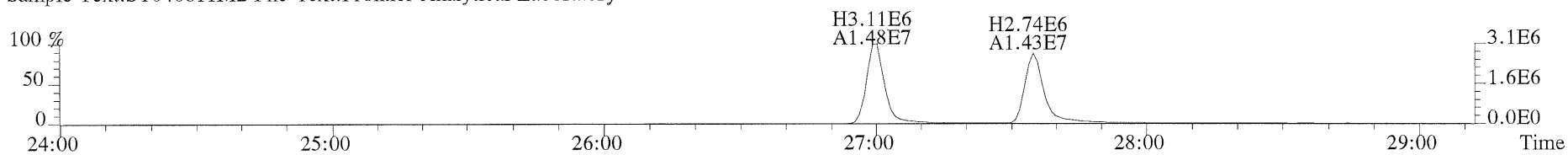
327.8847 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



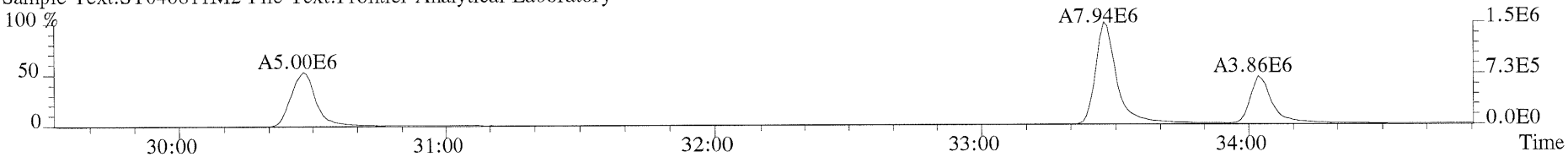
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
331.9368 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



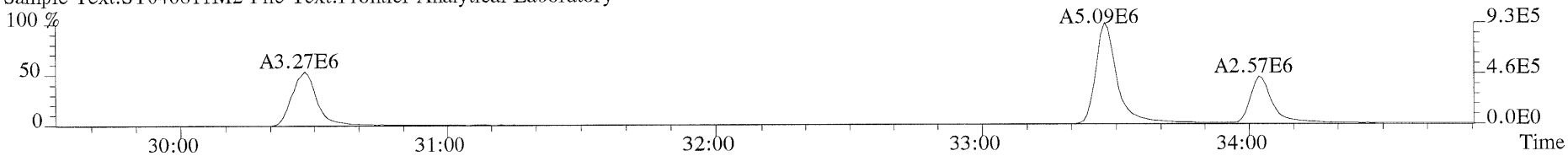
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



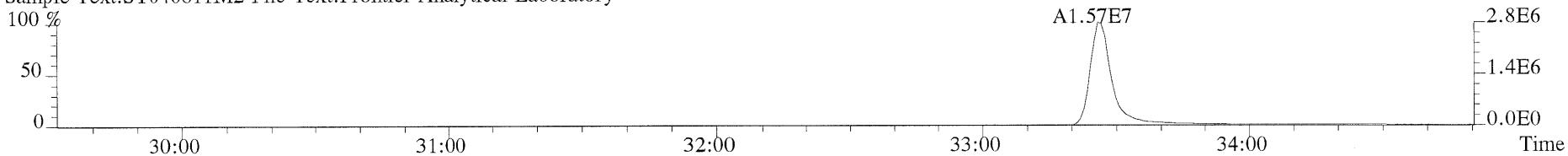
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
355.8546 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



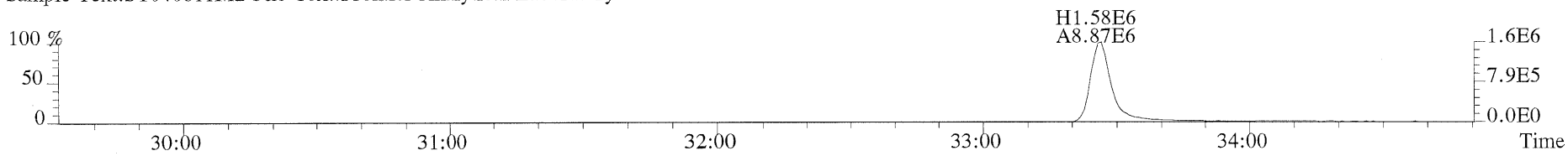
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
357.8517 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



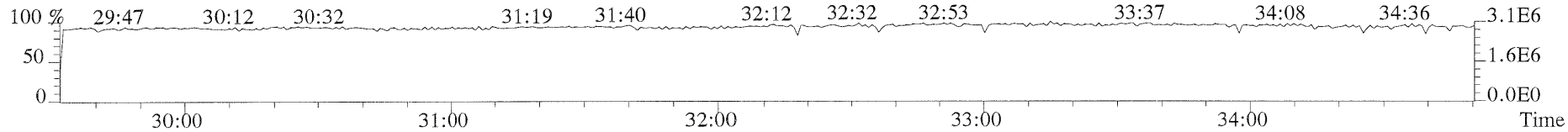
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
367.8949 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



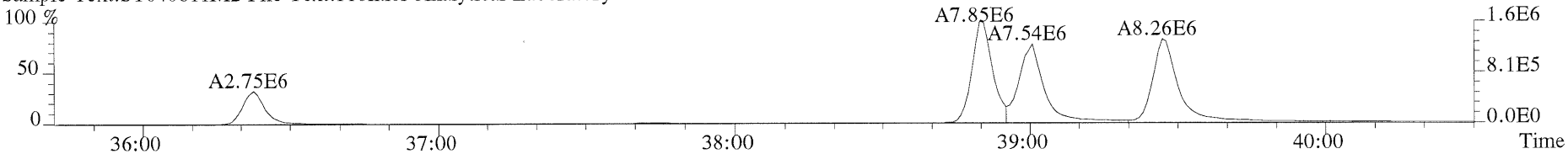
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
369.8919 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



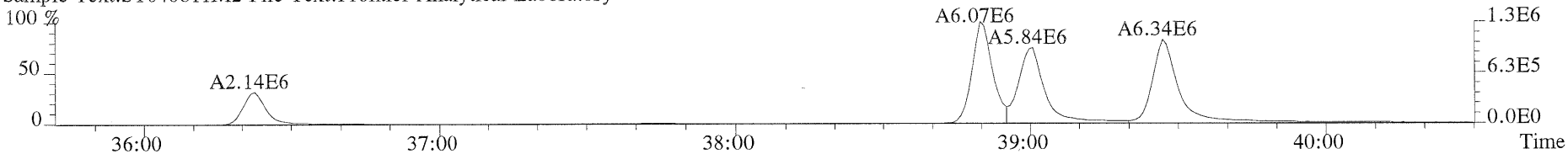
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
366.9792 S:16 F:2 Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



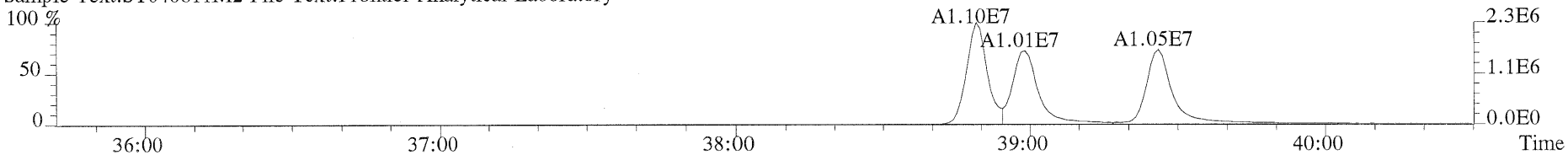
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
389.8156 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



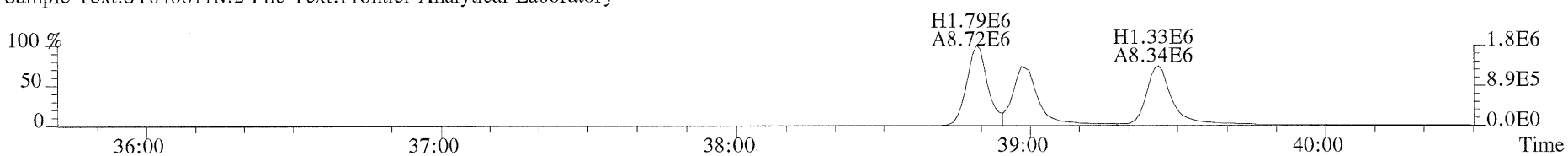
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
391.8127 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



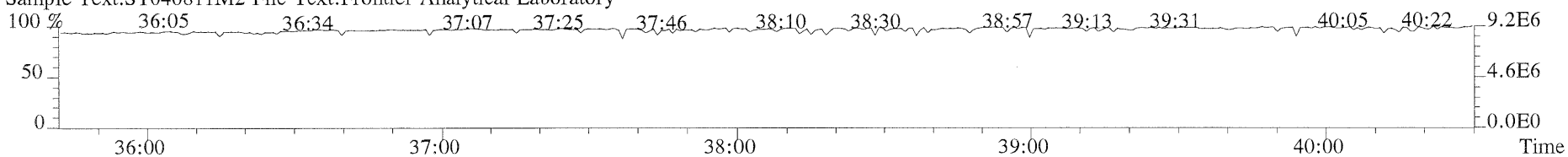
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
401.8559 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



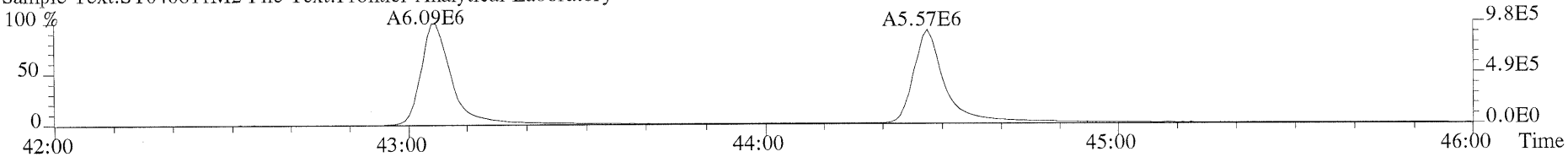
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
403.8530 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



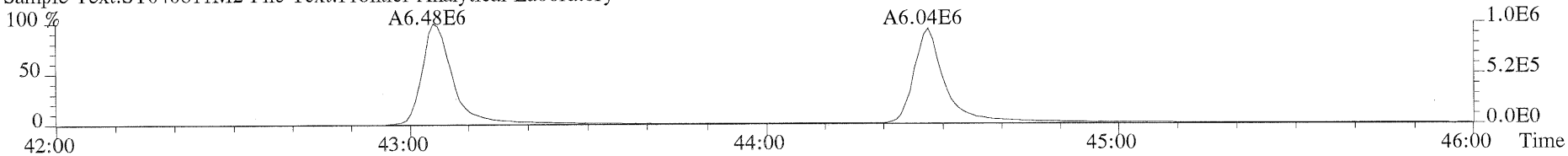
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
380.9760 S:16 F:3 Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



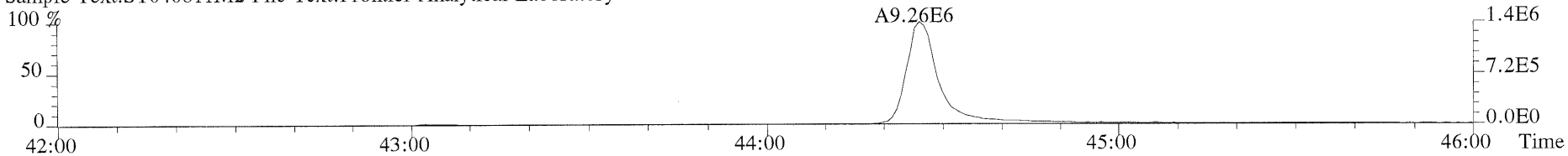
File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
423.7767 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
425.7737 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
435.8169 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



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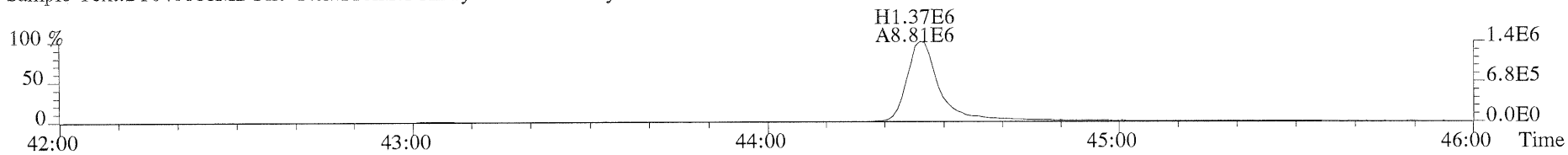
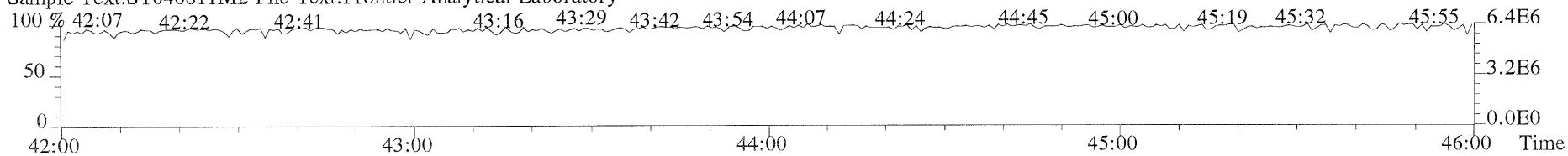
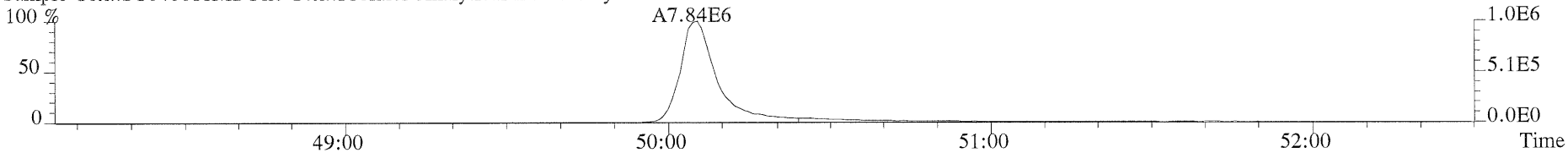
437.8140 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



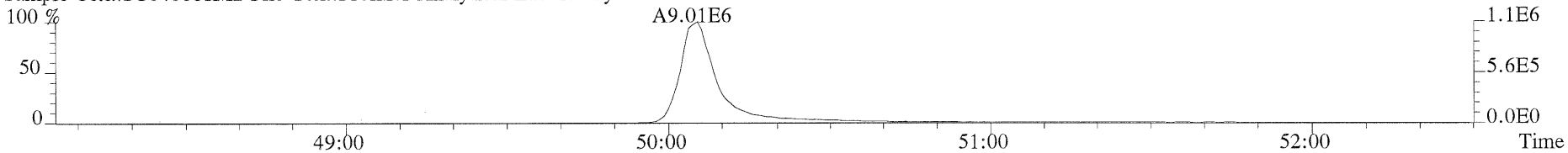
File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
430.9728 S:16 F:4 Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



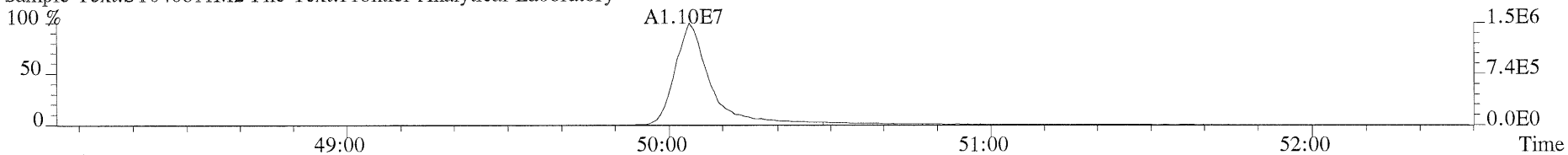
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
457.7377 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



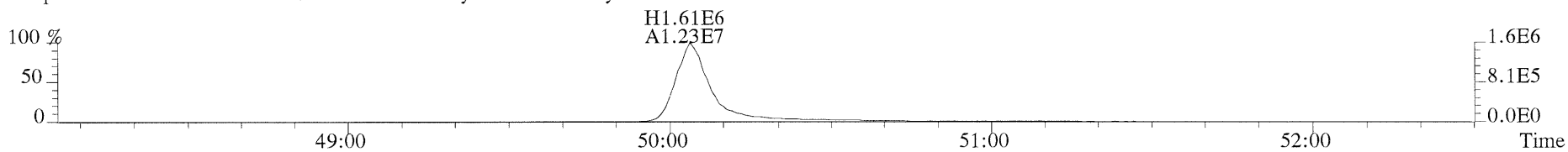
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
459.7348 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



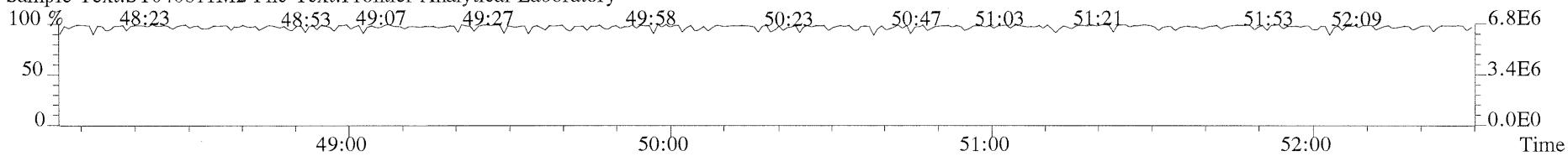
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
469.7780 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



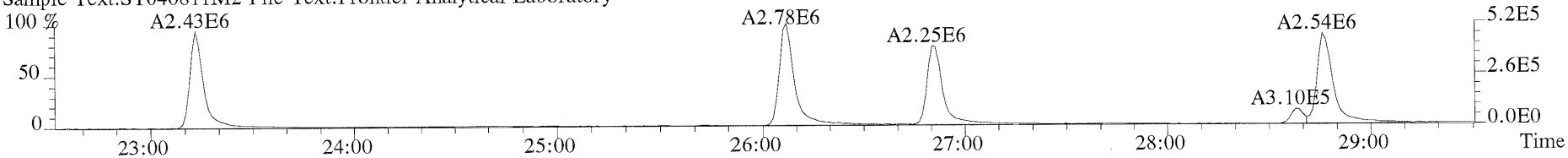
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
471.7750 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



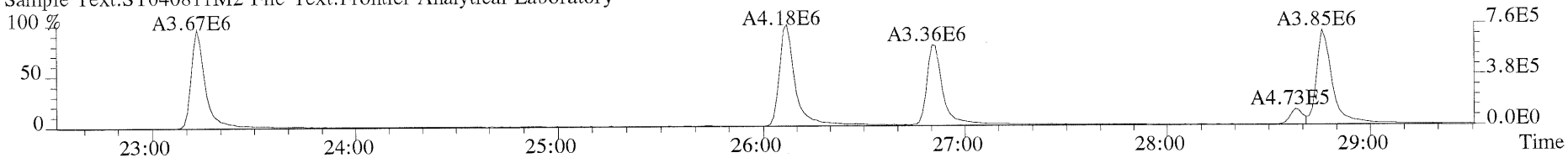
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
454.9728 S:16 F:5 Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



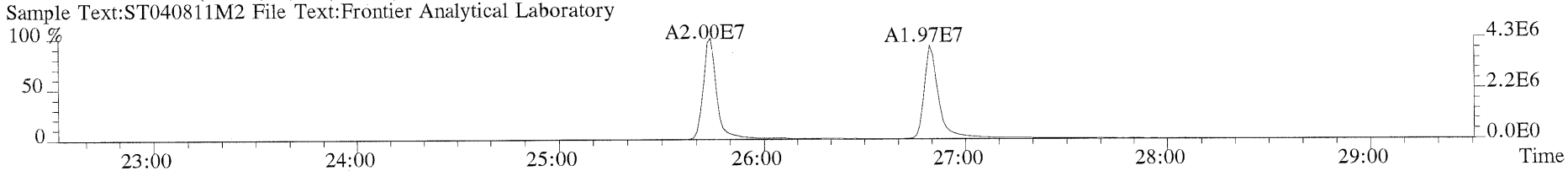
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
303.9016 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



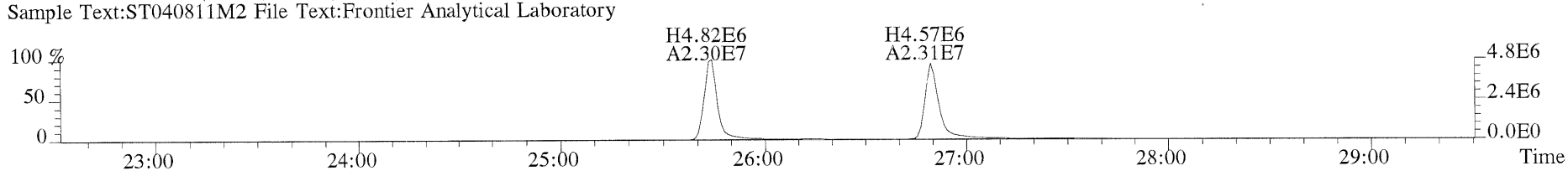
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
305.8987 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



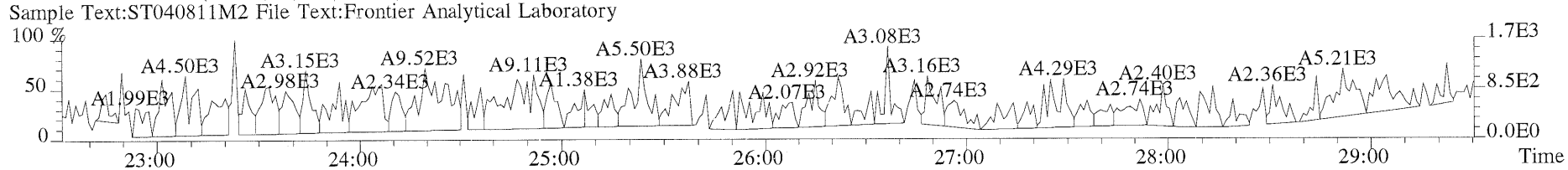
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
315.9419 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



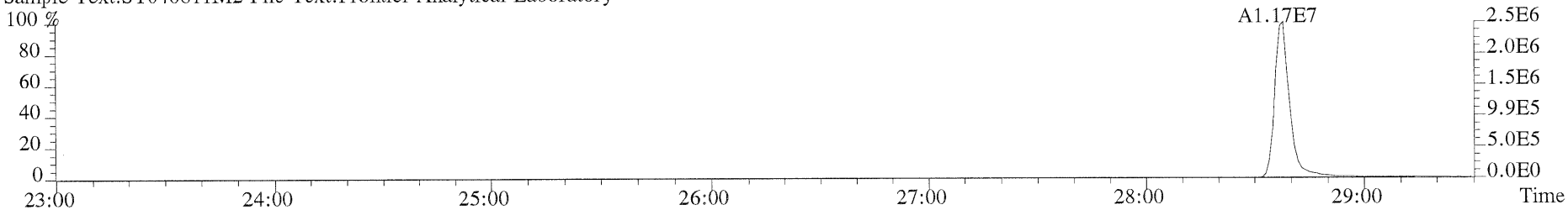
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
317.9389 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



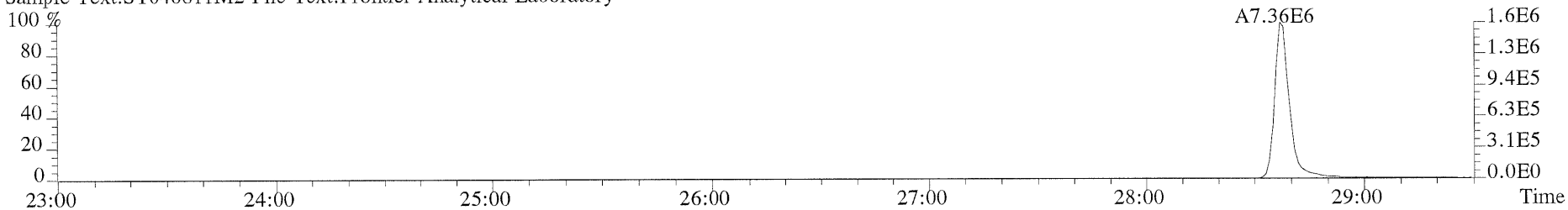
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
375.8364 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



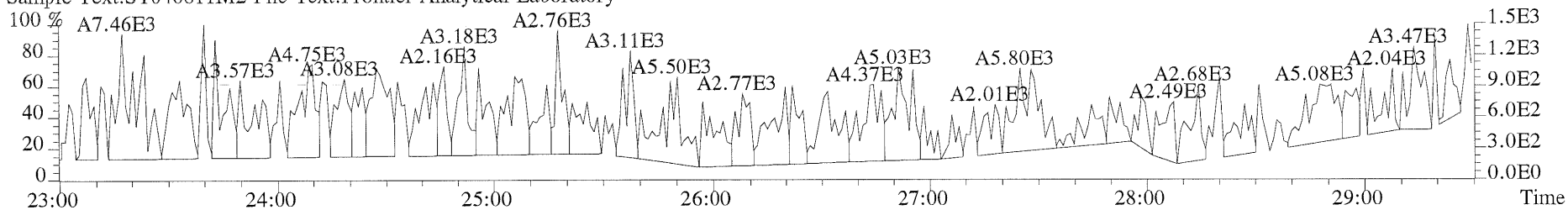
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



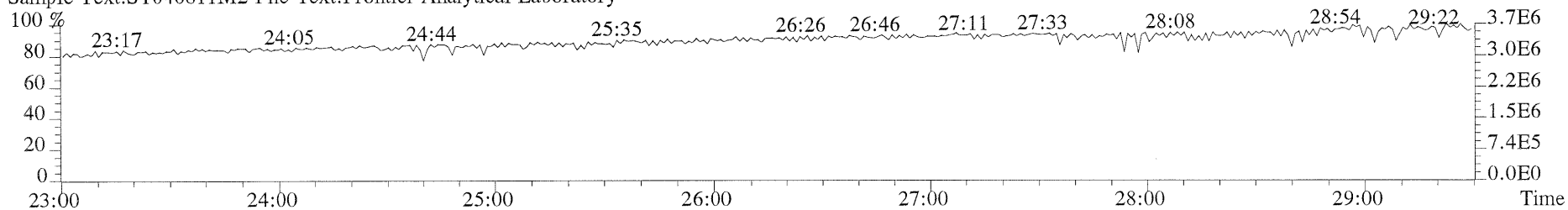
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



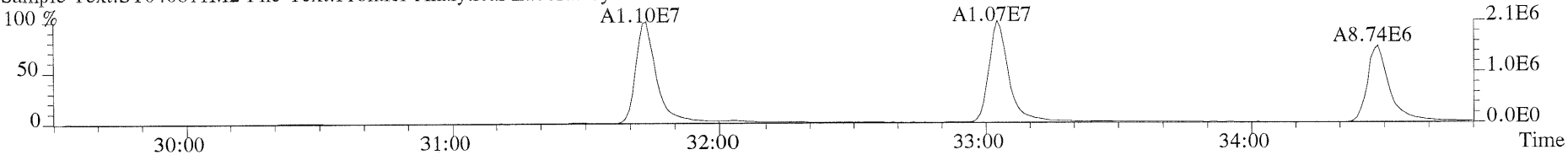
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:16 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



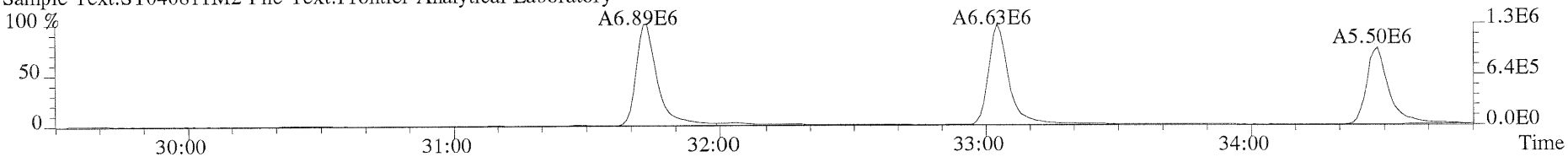
File:08APR11M #1-425 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
316.9824 S:16 Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



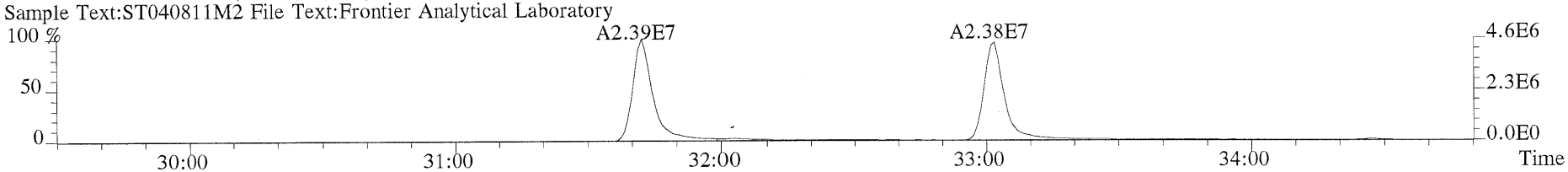
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



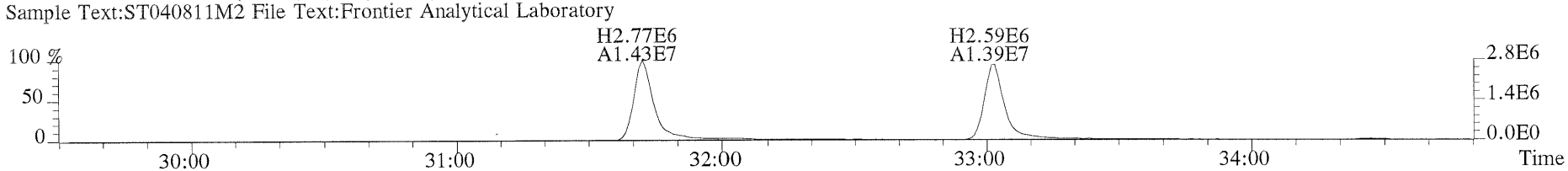
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



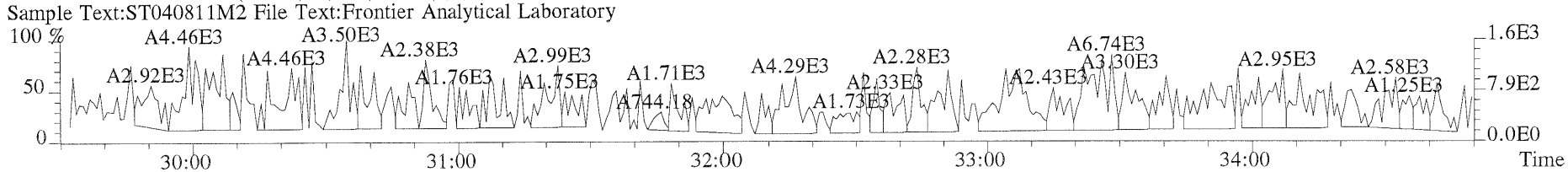
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
351.9000 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



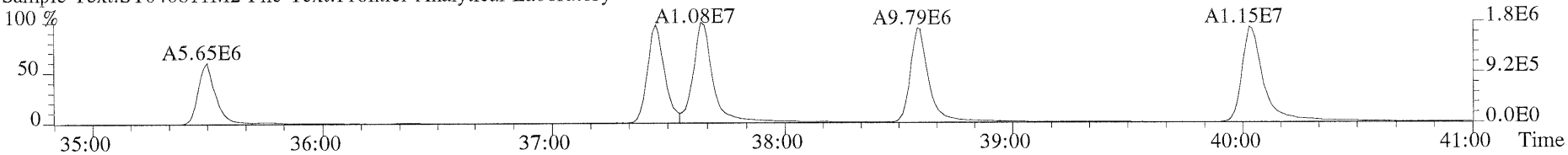
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
353.8970 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



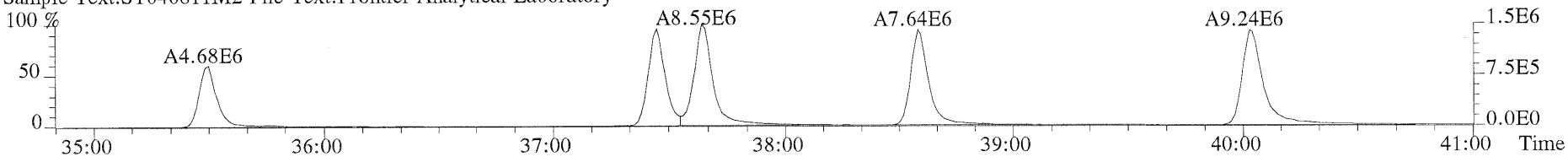
File:08APR11M #1-412 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:16 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



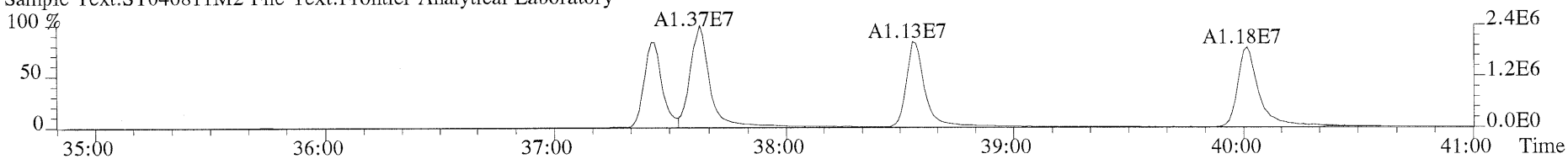
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
373.8207 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



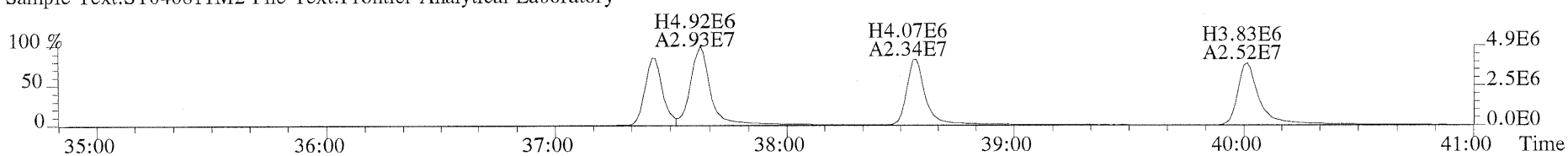
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
375.8178 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



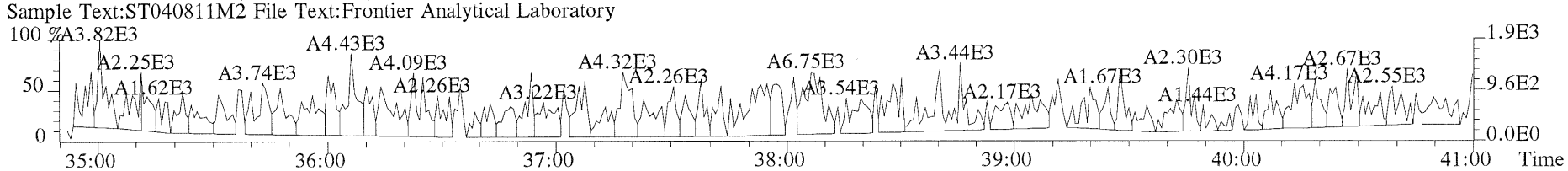
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
383.8639 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



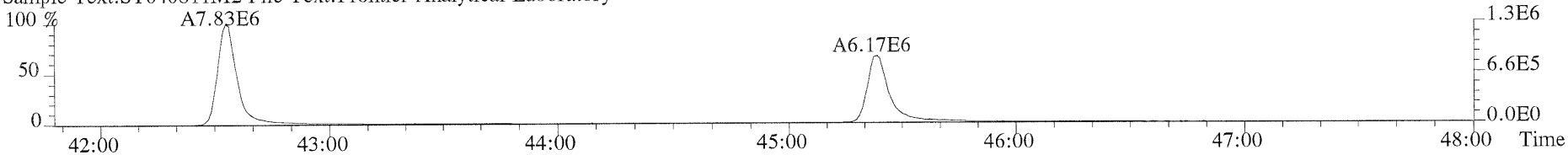
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
385.8610 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



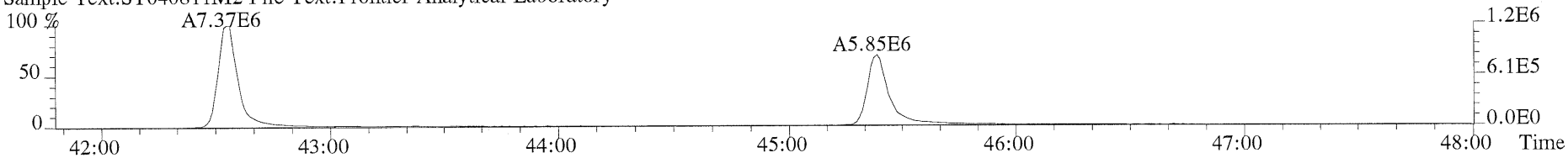
File:08APR11M #1-477 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
445.7555 S:16 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



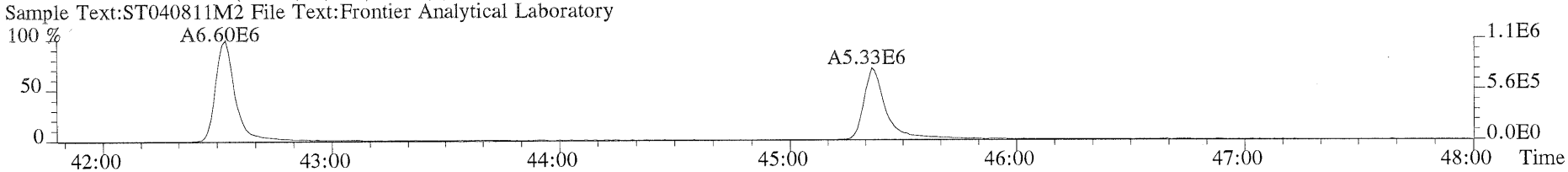
File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
407.7818 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



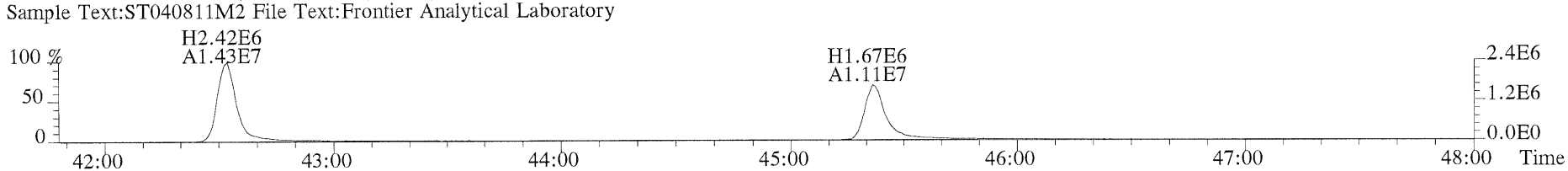
File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
409.7788 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



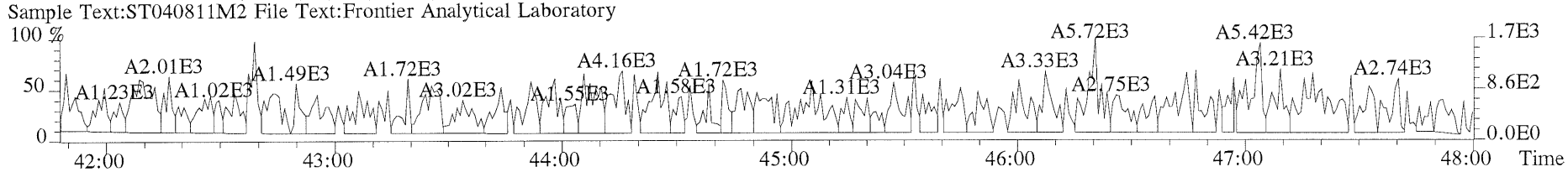
File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
417.8253 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



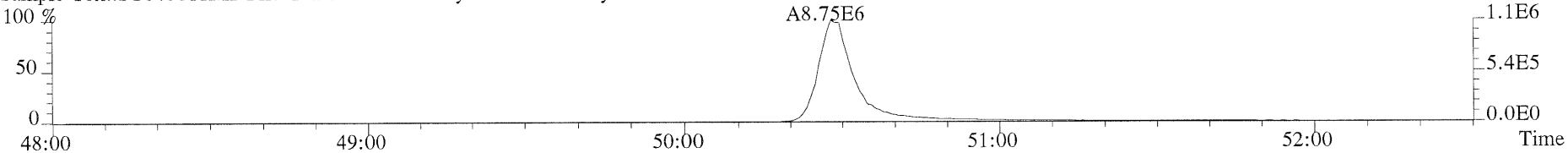
File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
419.8220 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



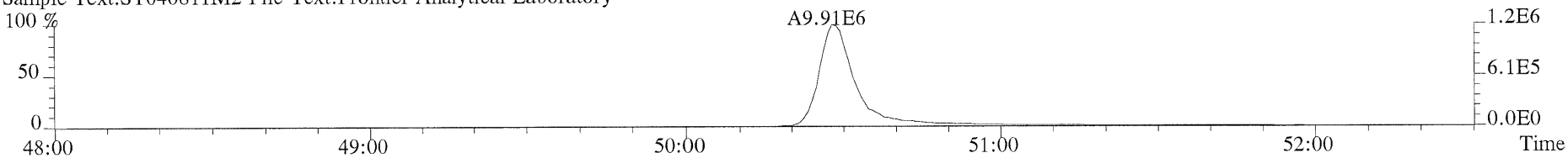
File:08APR11M #1-541 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
479.7165 S:16 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



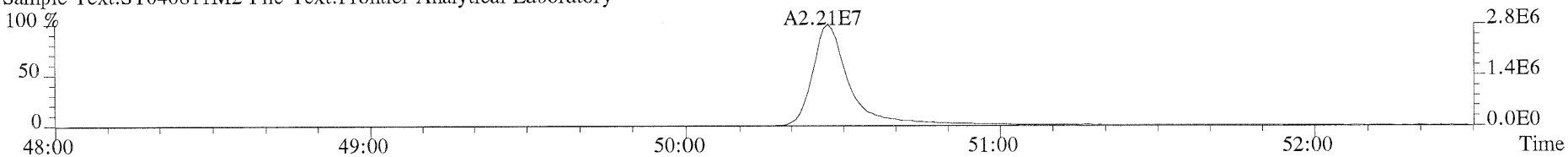
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
441.7428 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



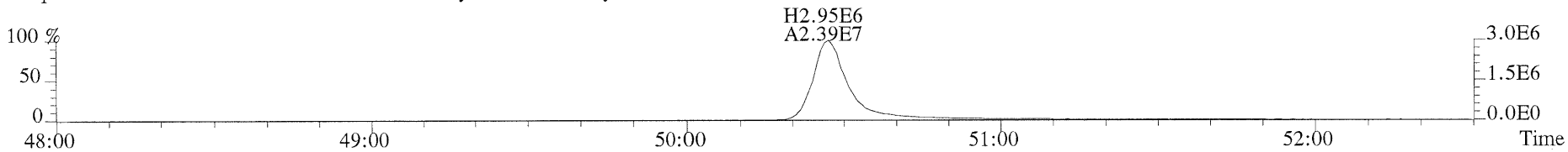
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
443.7398 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



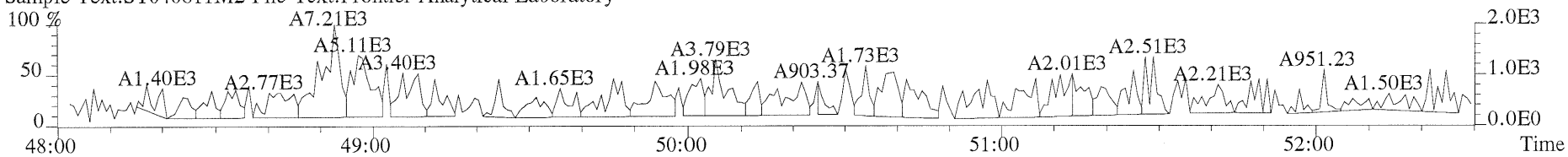
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
453.7831 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory



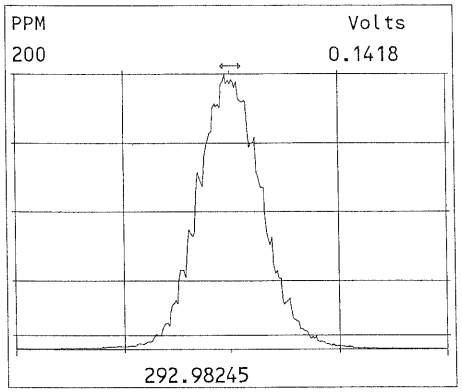
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
455.7801 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory

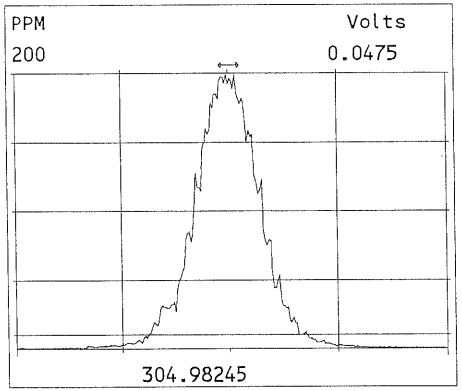


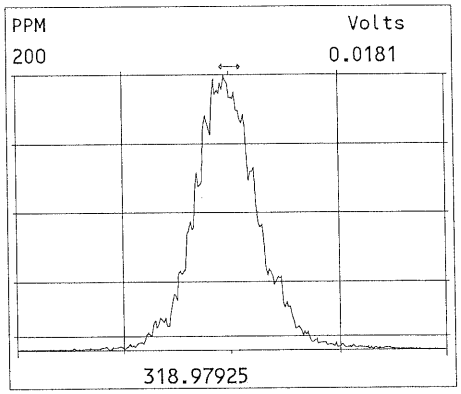
File:08APR11M #1-347 Acq: 9-APR-2011 04:06:14 GC EI+ Voltage SIR Autospec-Ultima
513.6775 S:16 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST040811M2 File Text:Frontier Analytical Laboratory

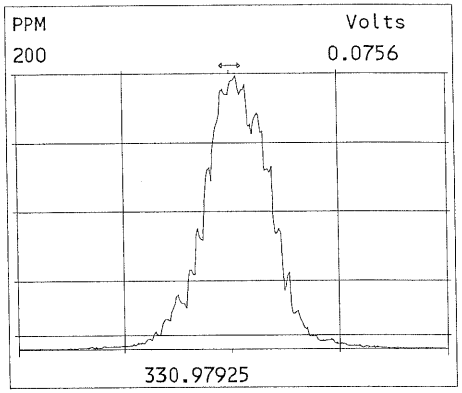


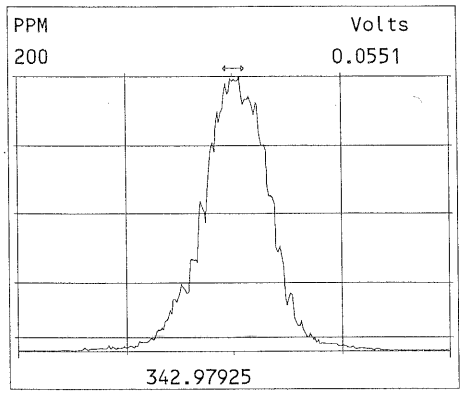
Peak Locate Examination: 9-APR-2011:08:31 File:08APR11M_RES_CHECK
Experiment:OCDD Function:1 Reference:PFK

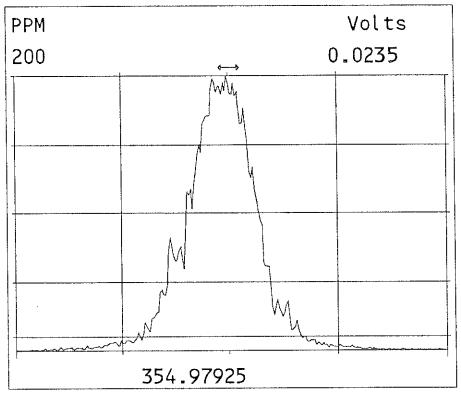


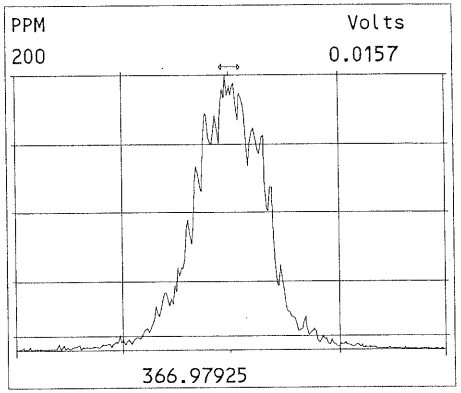


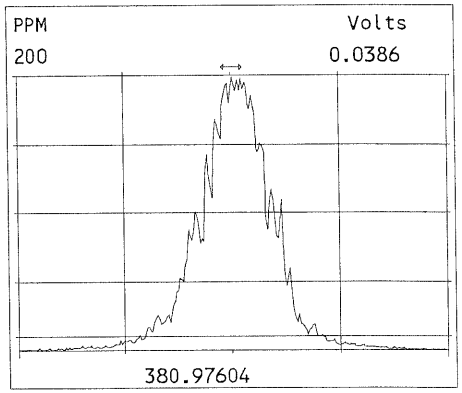


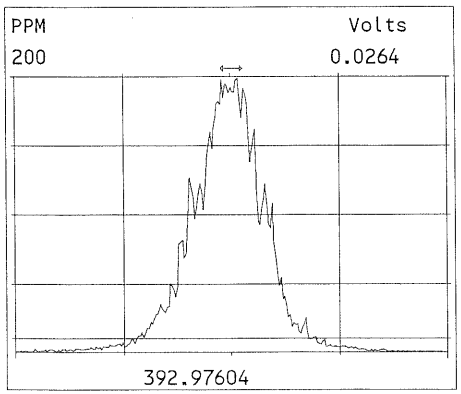


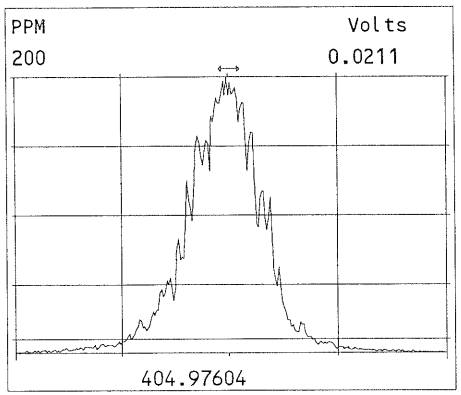


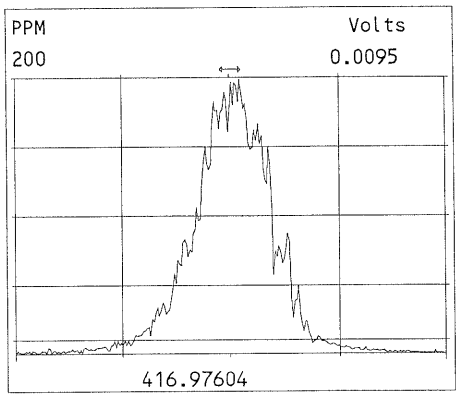




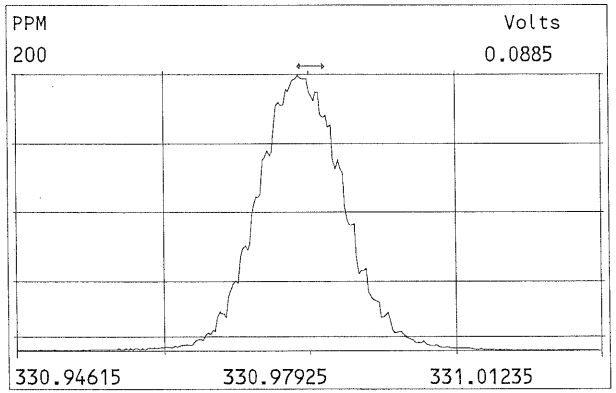


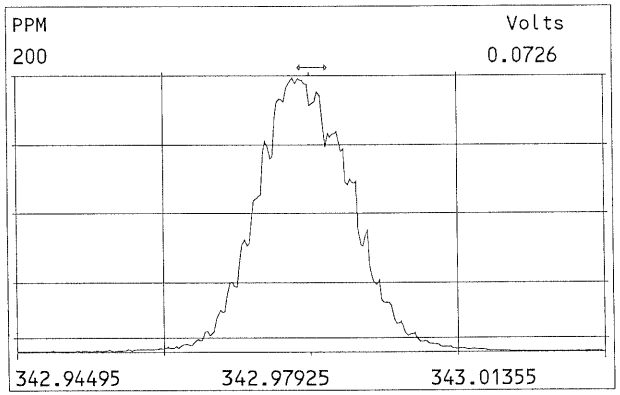


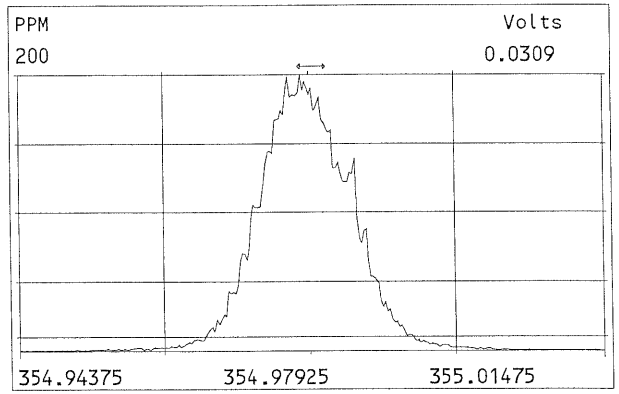


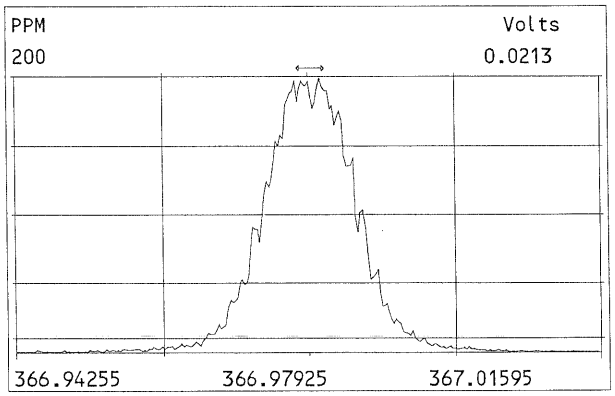


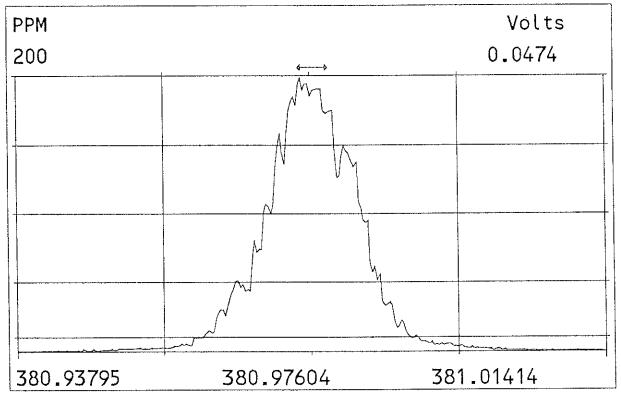
Peak Locate Examination: 9-APR-2011:08:32 File:08APR11M_RES_CHECK
Experiment:OCDD Function:2 Reference:PFK

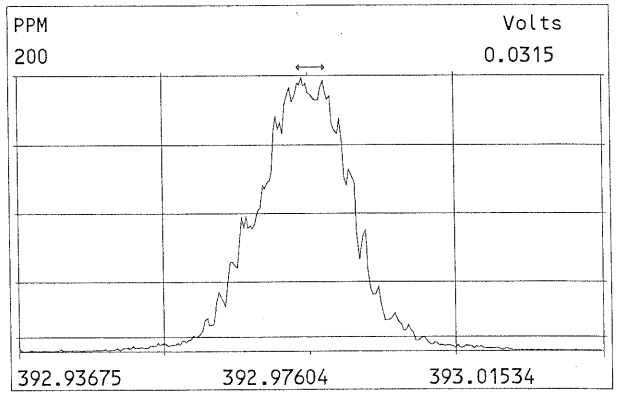


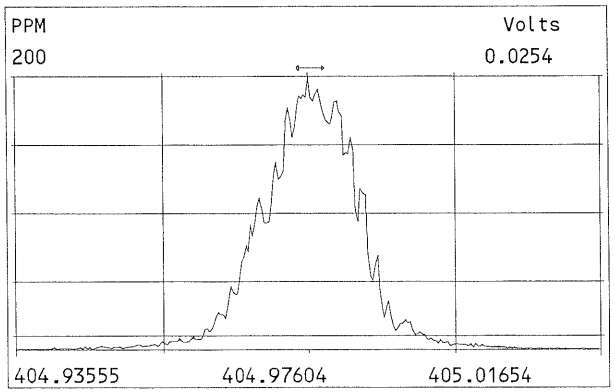


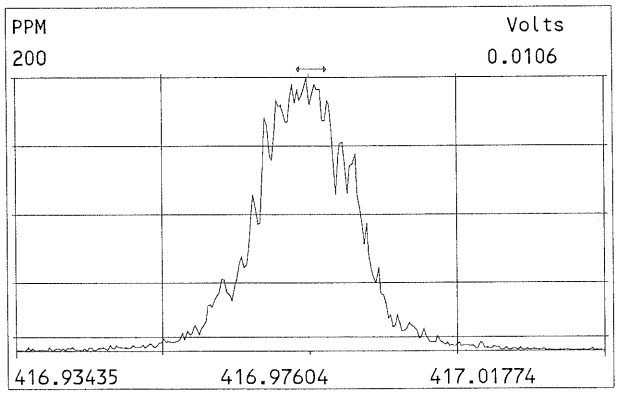




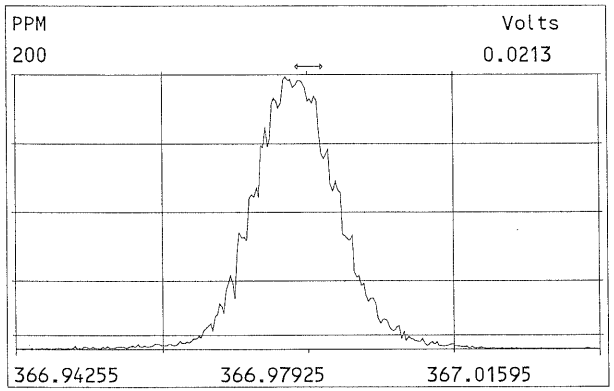


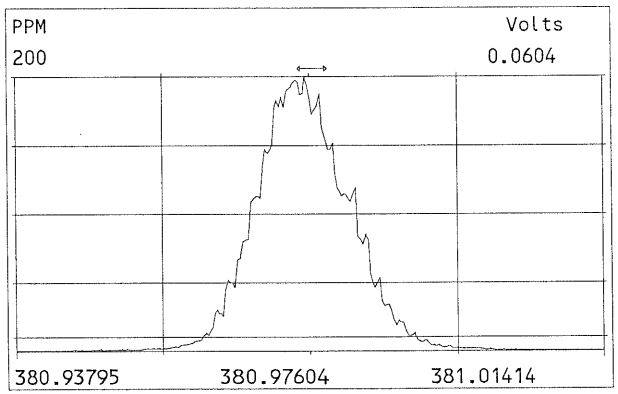


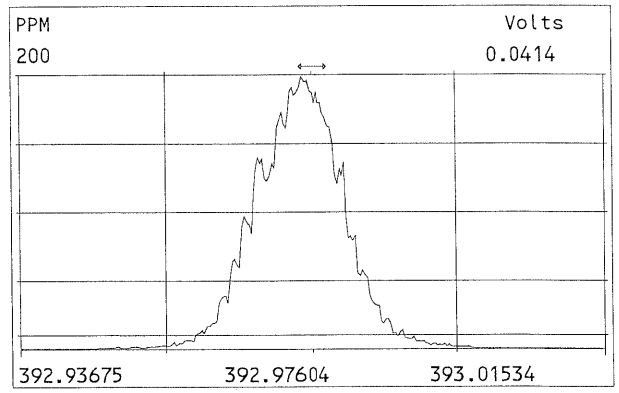


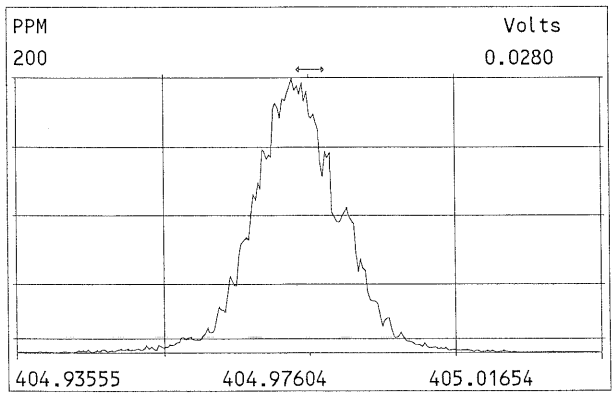


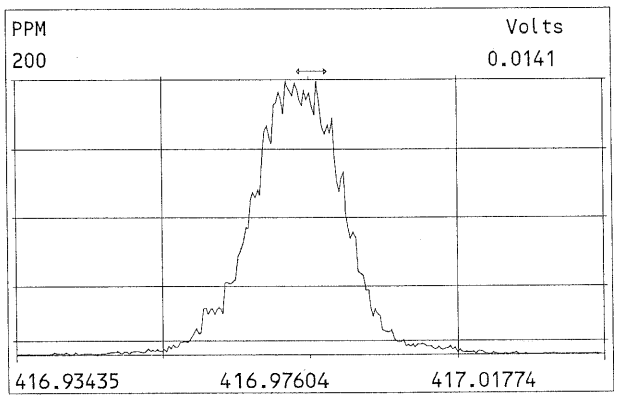
Peak Locate Examination: 9-APR-2011:08:32 File:08APR11M_RES_CHECK
Experiment:OCDD Function:3 Reference:PFK

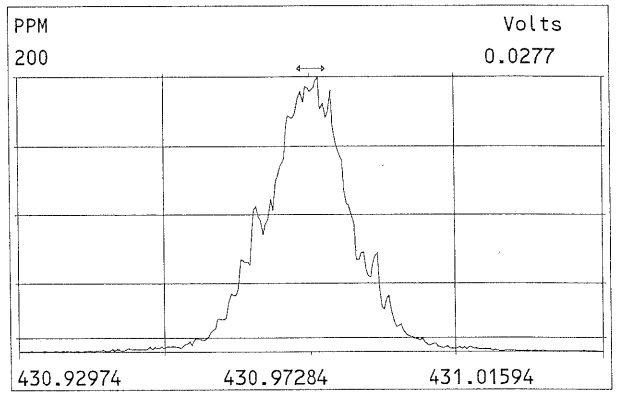


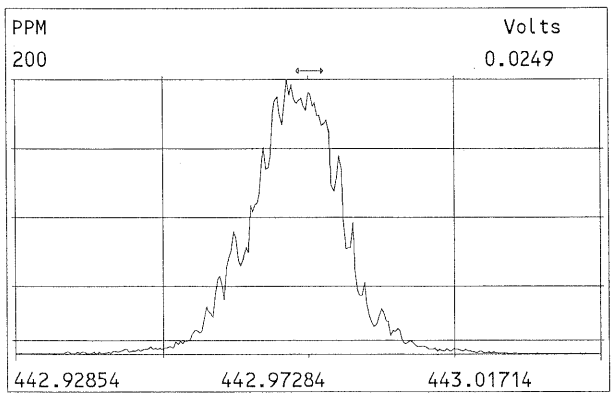


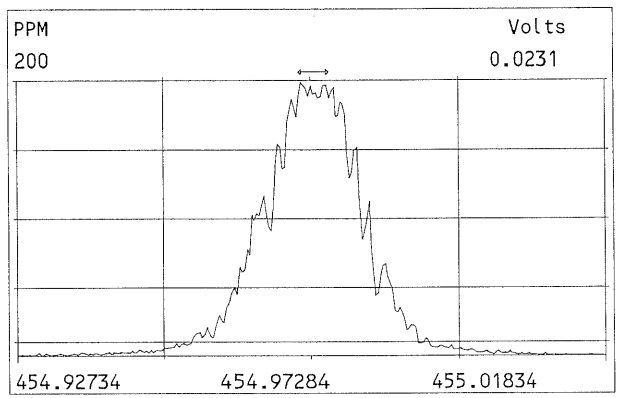




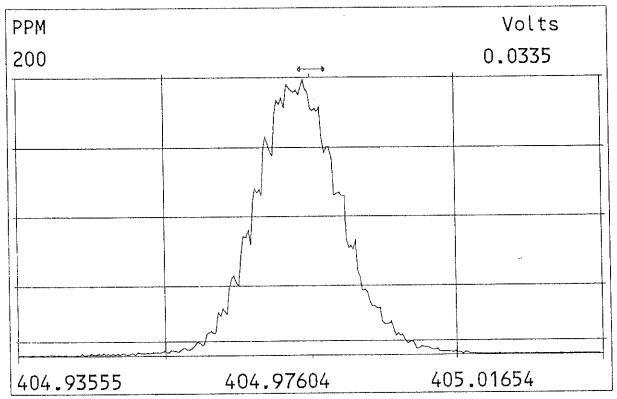


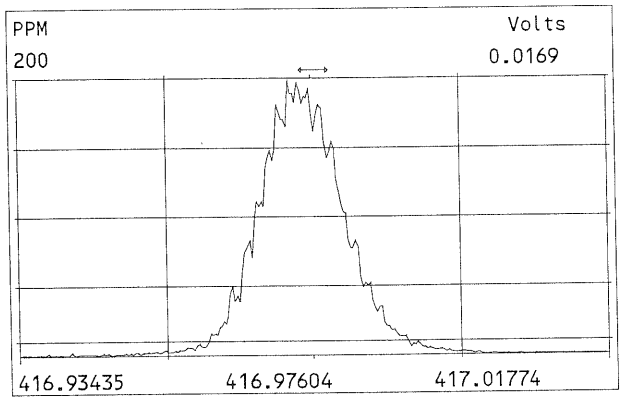


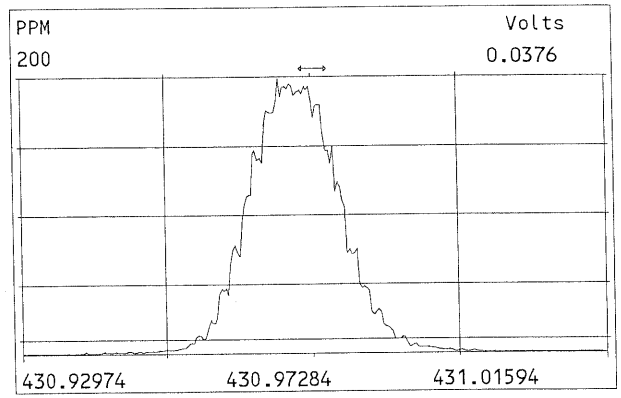


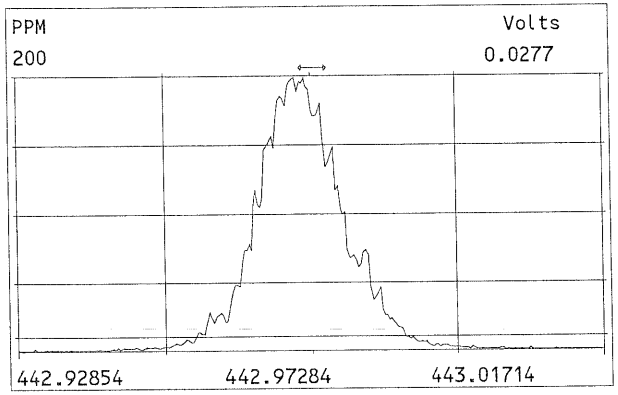


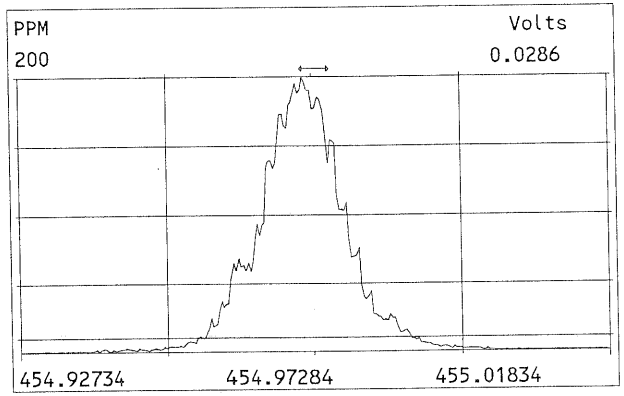
Peak Locate Examination: 9-APR-2011:08:32 File:08APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

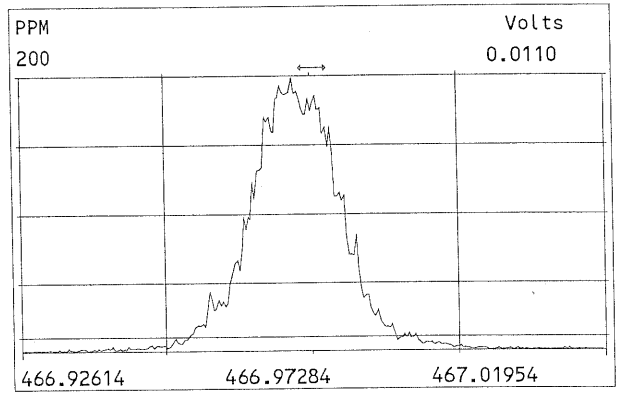


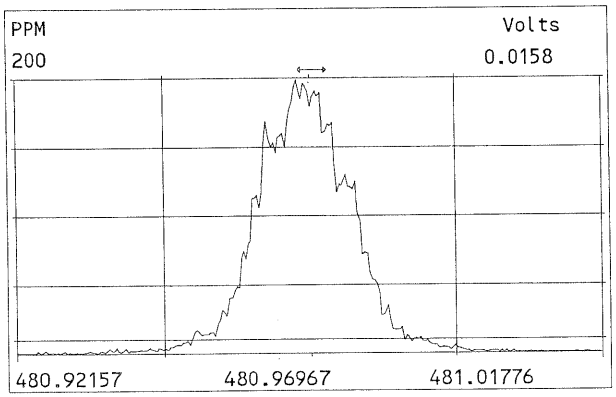




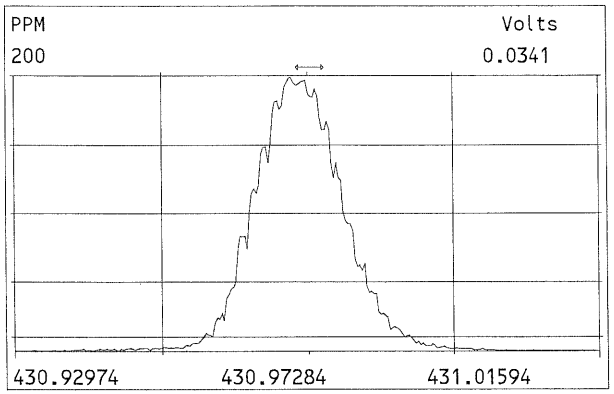


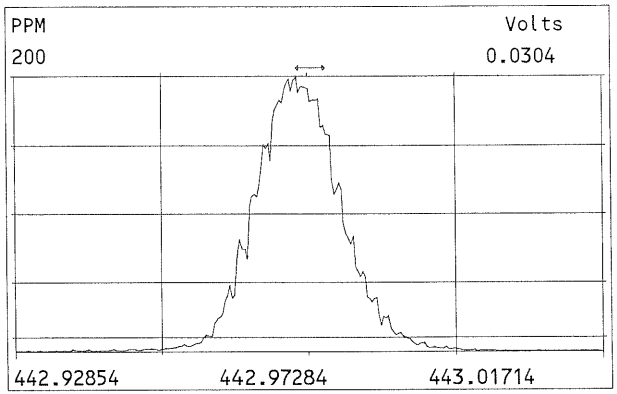


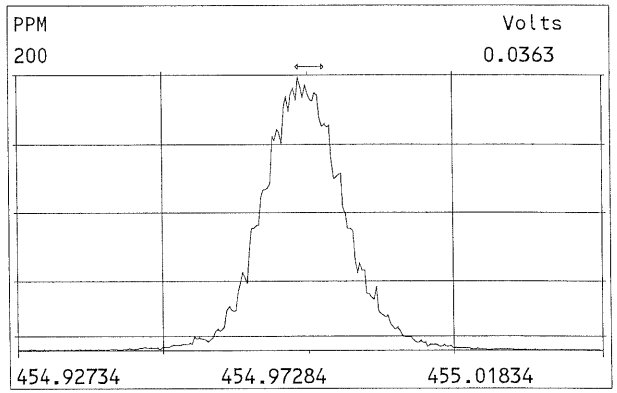


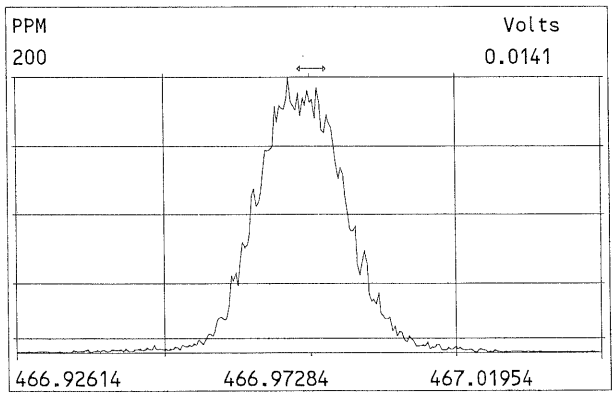


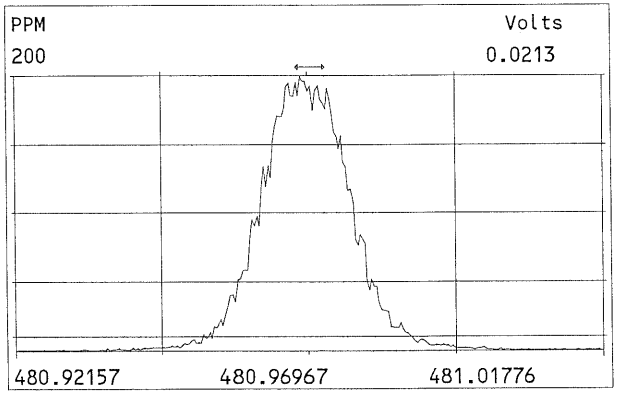
Peak Locate Examination: 9-APR-2011:08:33 File:08APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

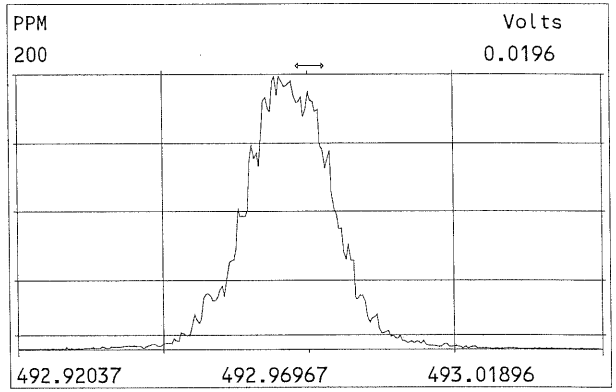


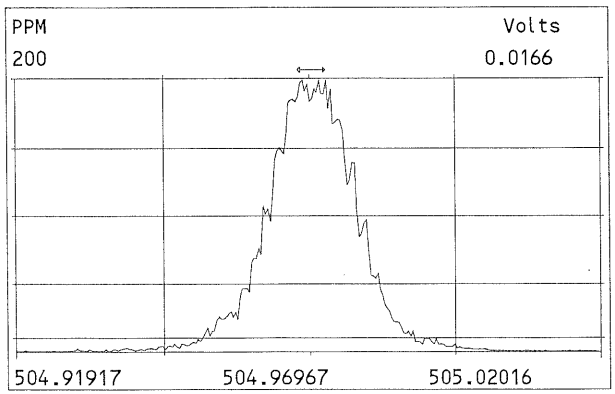


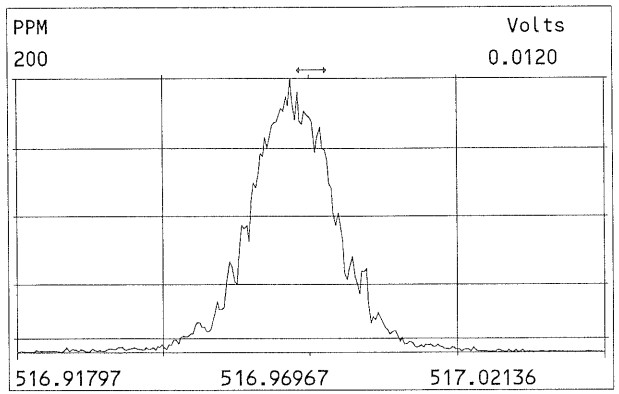












USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 20APR11M Sam:1 Analysis Date: 20-APR-11 10:16:17

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	y	9.22	7.80 - 12.9
1,2,3,7,8-PeCDD	M+2/M+4	1.64	1.32-1.78	y	51.1	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.33	1.05-1.43	y	50.6	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05-1.43	y	49.1	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.33	1.05-1.43	y	51.7	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	0.94	0.88-1.20	y	47.7	43.0 - 58.0
OCDD	M+2/M+4	0.93	0.76-1.02	y	98.0	79.0 - 126
2,3,7,8-TCDF	M/M+2	0.67	0.65-0.89	y	10.7	8.40 - 12.0
1,2,3,7,8-PeCDF	M+2/M+4	1.66	1.32-1.78	y	52.4	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	y	51.0	41.0 - 60.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	y	48.9	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	y	49.5	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	y	49.1	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05-1.43	y	49.5	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	y	47.6	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88-1.20	y	48.6	43.0 - 58.0
OCDF	M+2/M+4	0.87	0.76-1.02	y	90.0	63.0 - 159

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 20APR11M Sam:1 Analysis Date: 20-APR-11 10:16:17

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	y	94.3	82.0 - 121
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.77	1.32-1.78	y	80.3	62.0 - 160
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	y	96.0	85.0 - 117
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	104	85.0 - 118
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	y	123	72.0 - 138
13C-OCDD	M+2/M+4	0.96	0.76-1.02	y	230	96.0 - 415
13C-2,3,7,8-TCDF	M/M+2	0.88	0.65-0.89	y	98.2	71.0 - 140
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.73	1.32-1.78	y	94.7	76.0 - 130
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.71	1.32-1.78	y	95.2	77.0 - 130
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.47	0.43-0.59	y	99.5	76.0 - 131
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.49	0.43-0.59	y	102	70.0 - 143
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.49	0.43-0.59	y	103	73.0 - 137
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.48	0.43-0.59	y	107	74.0 - 135
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	y	116	78.0 - 129
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	y	116	77.0 - 129
13C-OCDF	M+2/M+4	0.93	0.76-1.02	y	227	96.0 - 415
CLEANUP STANDARD (4)						
37Cl-2,3,7,8-TCDD					7.92	7.80 - 12.8

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) No ion abundance ratio; report concentration found.

Analyst: _____ Date: 4/21/11

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: FAL3 Initial Calibration Date: 3/7/11

RT Window Data Filename: 20APR11M Sam:1 Analysis Date: 20-APR-11 Time: 10:16:17

DB-5 IS Data Filename: 20APR11M Sam:1 Analysis Date: 20-APR-11 Time: 10:16:17

DB-225 IS Date Filename: Analysis Date: Time:

DB-5 RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	24:22	1,3,6,8-TCDF (F)	23:01
1,2,8,9-TCDD (L)	28:17	1,2,8,9-TCDF (L)	28:29
1,2,4,7,9-PeCDD (F)	30:12	1,3,4,6,8-PeCDF (F)	28:22
1,2,3,8,9-PeCDD (L)	33:45	1,2,3,8,9-PeCDF (L)	34:09
1,2,4,6,7,9-HxCDD (F)	36:04	1,2,3,4,6,8-HxCDF (F)	35:11
1,2,3,7,8,9-HxCDD (L)	39:08	1,2,3,7,8,9-HxCDF (L)	39:42
1,2,3,4,6,7,9-HpCDD (F)	42:45	1,2,3,4,6,7,8-HpCDF (F)	42:13
1,2,3,4,6,7,8-HpCDD (L)	44:07	1,2,3,4,7,8,9-HpCDF (L)	45:01

(F) = First eluting iosmer (DB-5); (L) = Last eluting isomer (DB-5)

==========

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

COMPARED PEAKS (1)	% VALLEY HEIGHT BETWEEN
	<25%

(1) To meet contract requirement, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 20-APR-11 10:16:17 CS3 or VER Data Filename: 20APR11M Sam:1

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.001	0.999-1.002
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.001	0.999-1.002
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.000	0.999-1.002
LABELED COMPOUNDS			
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052
13C-2,3,7,8-TCDD		1.022	0.976-1.043
13C-2,3,7,8-TCDF		0.993	0.923-1.103
13C-1,2,3,7,8-PeCDD		1.239	1.000-1.567
13C-1,2,3,7,8-PeCDF		1.174	0.923-1.203
13C-2,3,4,7,8-PeCDF		1.224	0.923-1.303

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 20-APR-11 10:16:17 CS3 or VER Data Filename: 20APR11M Sam:1

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.001	0.999-1.001
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.000	0.998-1.004
1,2,3,7,8,9-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.012	1.000-1.019
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.000	0.999-1.001
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.001	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.001	0.999-1.001
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.001	0.999-1.001
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.000	0.999-1.001
OCDD	13C-OCDD	1.001	0.999-1.001
OCDF	13C-OCDF	1.001	0.999-1.001
LABELED COMPOUNDS			
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,7,8,9-HxCDD	0.984	0.977-1.000
13C-1,2,3,6,7,8-HxCDD		0.989	0.981-1.003
13C-1,2,3,4,7,8-HxCDF		0.949	0.944-0.970
13C-1,2,3,6,7,8-HxCDF		0.954	0.949-0.975
13C-2,3,4,6,7,8-HxCDF		0.978	0.959-1.021
13C-1,2,3,7,8,9-HxCDF		1.015	0.977-1.047
13C-1,2,3,4,6,7,8-HpCDD		1.128	1.086-1.130
13C-1,2,3,4,6,7,8-HpCDF		1.079	1.043-1.085
13C-1,2,3,4,7,8,9-HpCDF		1.151	1.057-1.154
13C-OCDD		1.269	1.032-1.311
13C-OCDF		1.279	1.000-1.311

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/21/11

FAL ID: ST042011M1 Filename: 20APR11M Sam:1 Acquired: 20-APR-11 10:16:17 ICal: PCDDFAL3-3-7-11
Client ID: 1613 CS3 100511J ConCal: ST042011M1 EndCal: ST042011M2
Results: GC Column: DB5 Amount: 1.000 NATO 1989 Tox: 100
WHO 1998 Tox: 126 WHO 2005 Tox: 115

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise-1	Noise-2	DL
2,3,7,8-TCDD	1.94e+06	0.77 y	27:20	1.13	9.22		2.50	-	-	*
1,2,3,7,8-PeCDD	8.04e+06	1.64 y	33:10	1.02	51.1		2.50	-	-	*
1,2,3,4,7,8-HxCDD	9.25e+06	1.33 y	38:31	1.45	50.6		2.50	-	-	*
1,2,3,6,7,8-HxCDD	7.70e+06	1.32 y	38:41	1.45	49.1		2.50	-	-	*
1,2,3,7,8,9-HxCDD	8.89e+06	1.33 y	39:08	1.47	51.7		2.50	-	-	*
1,2,3,4,6,7,8-HpCDD	6.97e+06	0.94 y	44:07	1.30	47.7		2.50	-	-	*
OCDD	1.10e+07	0.93 y	49:39	1.45	98.0		2.50	-	-	*
2,3,7,8-TCDF	3.78e+06	0.67 y	26:35	1.15	10.7		2.50	-	-	*
1,2,3,7,8-PeCDF	1.17e+07	1.66 y	31:26	0.89	52.4		2.50	-	-	*
2,3,4,7,8-PeCDF	1.12e+07	1.62 y	32:44	0.89	51.0		2.50	-	-	*
1,2,3,4,7,8-HxCDF	9.97e+06	1.24 y	37:08	1.01	48.9		2.50	-	-	*
1,2,3,6,7,8-HxCDF	1.14e+07	1.27 y	37:20	0.89	49.5		2.50	-	-	*
2,3,4,6,7,8-HxCDF	1.06e+07	1.24 y	38:16	1.02	49.1		2.50	-	-	*
1,2,3,7,8,9-HxCDF	1.27e+07	1.28 y	39:42	1.10	49.5		2.50	-	-	*
1,2,3,4,6,7,8-HpCDF	8.90e+06	1.05 y	42:13	1.48	47.6		2.50	-	-	*
1,2,3,4,7,8,9-HpCDF	6.77e+06	1.06 y	45:01	1.43	48.6		2.50	-	-	*
OCDF	1.11e+07	0.87 y	50:02	0.84	90.0		2.50	-	-	*
										Rec
13C-2,3,7,8-TCDD	1.85e+07	0.80 y	27:19	1.03	94.3					94.3
13C-1,2,3,7,8-PeCDD	1.55e+07	1.77 y	33:08	1.01	80.3					80.3
13C-1,2,3,4,7,8-HxCDD	1.26e+07	1.28 y	38:30	1.19	96.0					96.0
13C-1,2,3,6,7,8-HxCDD	1.08e+07	1.27 y	38:40	0.94	104					104
13C-1,2,3,4,6,7,8-HpCDD	1.12e+07	1.04 y	44:06	0.83	123					123
13C-OCDD	1.54e+07	0.96 y	49:38	0.61	230					115
13C-2,3,7,8-TCDF	3.09e+07	0.88 y	26:34	0.98	98.2					98.2
13C-1,2,3,7,8-PeCDF	2.53e+07	1.73 y	31:24	0.83	94.7					94.7
13C-2,3,4,7,8-PeCDF	2.46e+07	1.71 y	32:43	0.80	95.2					95.2
13C-1,2,3,4,7,8-HxCDF	2.02e+07	0.47 y	37:07	1.84	99.5					99.5
13C-1,2,3,6,7,8-HxCDF	2.59e+07	0.49 y	37:18	2.29	102					102
13C-2,3,4,6,7,8-HxCDF	2.12e+07	0.49 y	38:14	1.86	103					103
13C-1,2,3,7,8,9-HxCDF	2.33e+07	0.48 y	39:40	1.98	107					107
13C-1,2,3,4,6,7,8-HpCDF	1.26e+07	0.44 y	42:11	0.99	116					116
13C-1,2,3,4,7,8,9-HpCDF	9.77e+06	0.46 y	45:00	0.77	116					116
13C-OCDF	2.91e+07	0.93 y	50:00	1.17	227					113
37Cl-2,3,7,8-TCDD	1.10e+06		27:20	0.73	7.92					79.2
13C-1,2,3,4-TCDD	1.91e+07	0.81 y	26:45	-	50.2					
13C-1,2,3,4-TCDF	3.22e+07	0.87 y	25:30	-	44.7					
13C-1,2,3,7,8,9-HxCDD	1.10e+07	1.30 y	39:06	-	44.5					
							Fac	Noise-1	Noise-2	DL	#Hom
Total Tetra-Dioxins	1.00e+07		22:47	1.13	47.8		2.50	-	-	*	19
Total Penta-Dioxins	1.71e+07		30:12	1.02	108		2.50	-	-	*	10
Total Hexa-Dioxins	2.88e+07		36:04	1.46	169		2.50	-	-	*	6
Total Hepta-Dioxins	1.48e+07		42:45	1.30	101		2.50	-	-	*	6
Total Tetra-Furans	1.81e+07		23:01	1.15	51.1		2.50	-	-	*	20
1st Fn. Tot Penta-Furans	1.31e+07		28:22	0.89	59.2		2.50	-	-	* PeCDF	2
Total Penta-Furans	3.29e+07		30:08	0.89	148		2.50	-	-	* 208	9
Total Hexa-Furans	5.11e+07		35:11	1.00	225		2.50	-	-	*	10
Total Hepta-Furans	1.58e+07		42:13	1.46	97.2		2.50	-	-	*	13

Analyst: _____ Date: 4/21/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:20APR11M Instrument: FAL3 GC: DB5 Experiment:OCDD

Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
20APR11M	1	ST042011M1	1613 CS3 100511J	20-APR-11 10:16:17	ST042011M1	ST042011M2	TC
20APR11M	2	2272-001-0001-OPR	OPR	20-APR-11 11:11:39	ST042011M1	ST042011M2	TC
20APR11M	3	2272-001-0001-MB	Method Blank	20-APR-11 12:07:02	ST042011M1	ST042011M2	TC
20APR11M	4	6701-007-0001-SA	MC-SED1-0-10-032911	20-APR-11 13:02:21	ST042011M1	ST042011M2	TC
20APR11M	5	6701-008-0001-SA	MC-SED2-0-10-032911	20-APR-11 13:57:44	ST042011M1	ST042011M2	TC
20APR11M	6	6701-009-0001-SA	MC-SED3-0-10-032911	20-APR-11 14:53:07	ST042011M1	ST042011M2	TC
20APR11M	7	6701-006-0001-SA	LL-SED5-0-15-032911	20-APR-11 15:48:26	ST042011M1	ST042011M2	TC
20APR11M	8	6701-004-0001-SA	LL-SED4-0-15-032911(1:5)	20-APR-11 16:43:49	ST042011M1	ST042011M2	TC
20APR11M	9	6701-003-0001-SA	LL-SED3-0-15-032911(1:5)	20-APR-11 17:39:13	ST042011M1	ST042011M2	TC
20APR11M	10	6701-005-0001-SA	LL-SED1-0-15-032911-D (1	20-APR-11 18:34:31	ST042011M1	ST042011M2	TC
20APR11M	11	6701-001-0001-SA	LL-SED1-0-15-032911(1:5)	20-APR-11 19:29:50	ST042011M1	ST042011M2	TC
20APR11M	12	6701-002-0001-SA	LL-SED2-0-15-032911(1:5)	20-APR-11 20:25:13	ST042011M1	ST042011M2	TC
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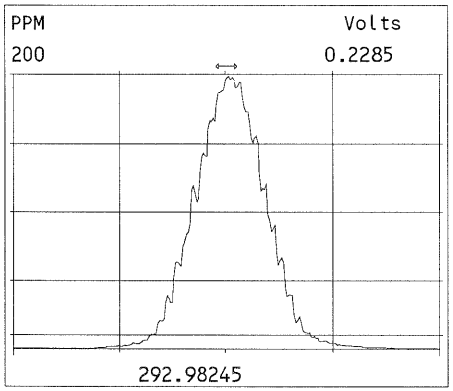
20APR11M	16	SB042011M2	Solvent Blank	21-APR-11 00:06:50	ST042011M1	ST042011M2	TC
20APR11M	17	ST042011M2	1613 CS3 100511J	21-APR-11 01:02:13	ST042011M2	ST042011M3	TC
20APR11M	18	6701-004-0001-SA	LL-SED4-0-15-032911	21-APR-11 01:57:36	ST042011M2	ST042011M3	TC
20APR11M	19	6701-003-0001-SA	LL-SED3-0-15-032911	21-APR-11 02:52:59	ST042011M2	ST042011M3	TC
20APR11M	20	6701-005-0001-SA	LL-SED1-0-15-032911-D	21-APR-11 03:48:22	ST042011M2	ST042011M3	TC
20APR11M	21	6701-001-0001-SA	LL-SED1-0-15-032911	21-APR-11 04:43:45	ST042011M2	ST042011M3	TC
20APR11M	22	6701-002-0001-SA	LL-SED2-0-15-032911	21-APR-11 05:39:08	ST042011M2	ST042011M3	TC
20APR11M	23	SB042011M3	Solvent Blank	21-APR-11 06:34:31	ST042011M2	ST042011M3	TC
20APR11M	24	ST042011M3	1613 CS3 100511J	21-APR-11 07:29:49	ST042011M2	ST042011M3	TC

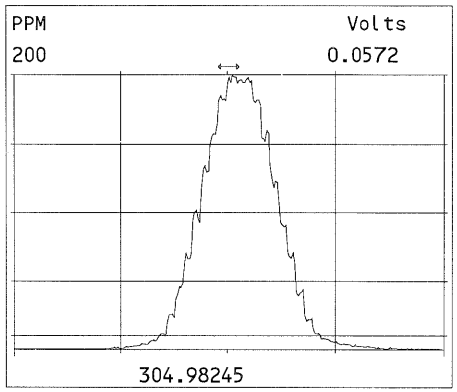
4/21/11

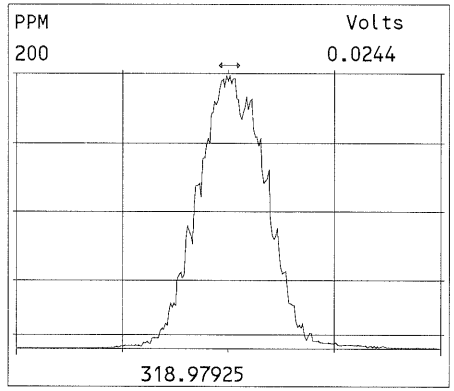
Data Backed Up:_____

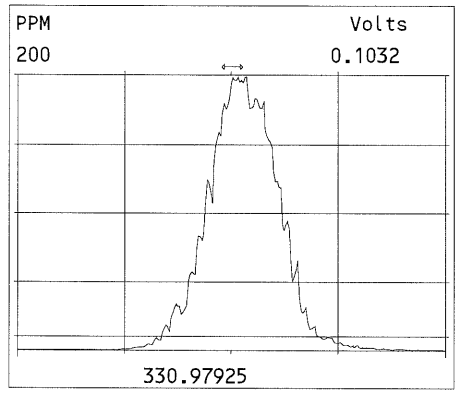
Date:_____

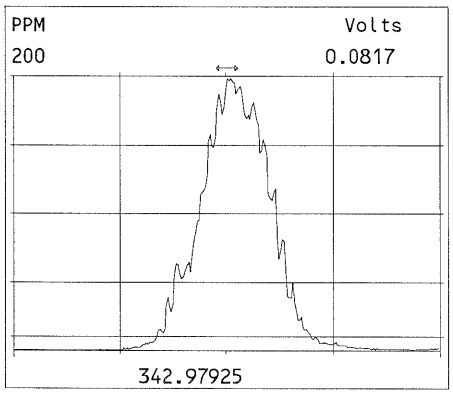
Peak Locate Examination:20-APR-2011:10:14 File:20APR11M
Experiment:OCDD Function:1 Reference:PFK

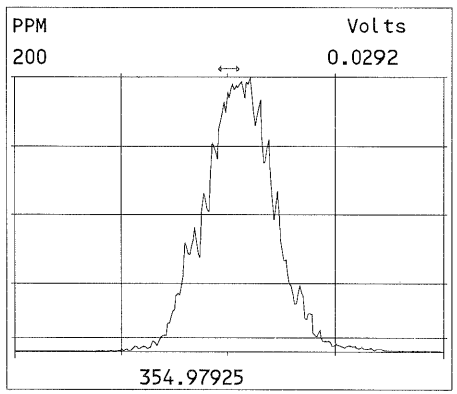


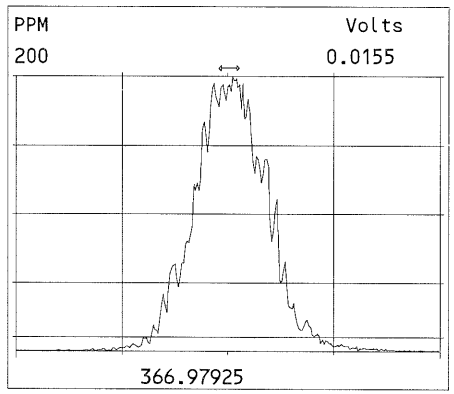


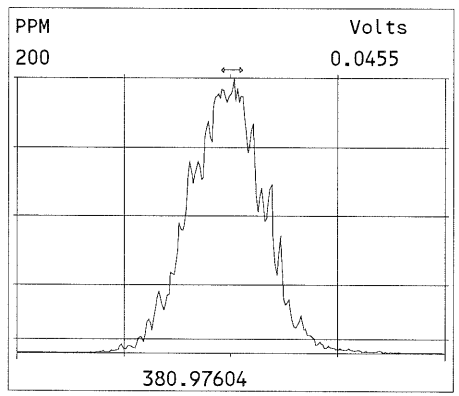


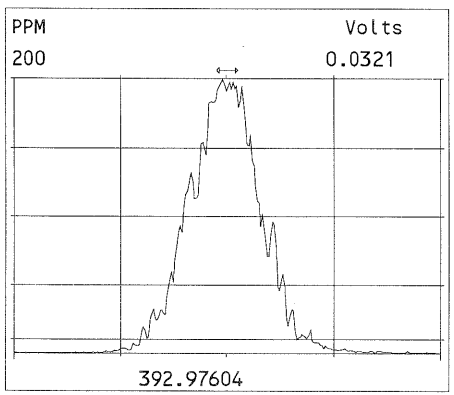


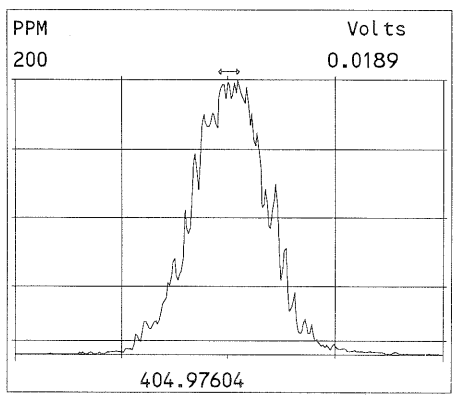


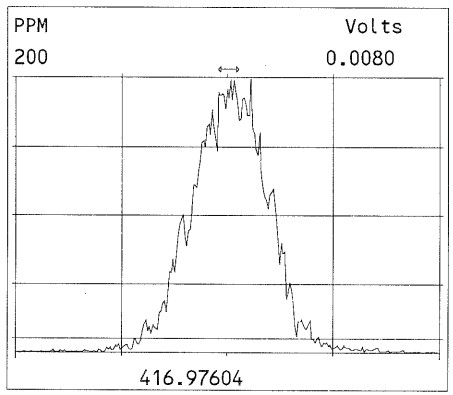




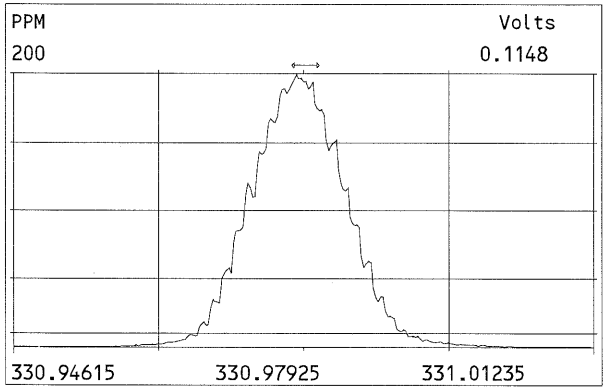


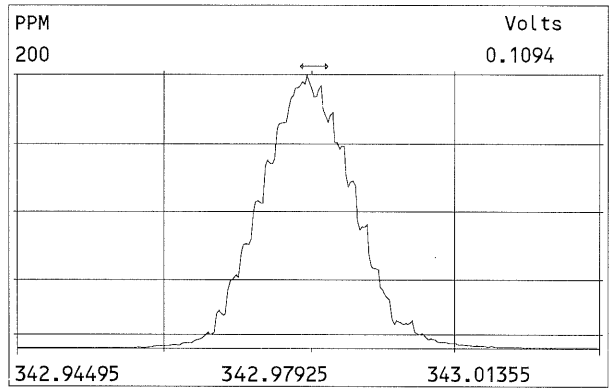


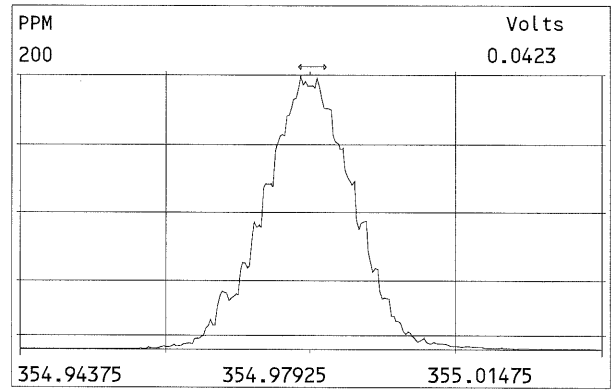


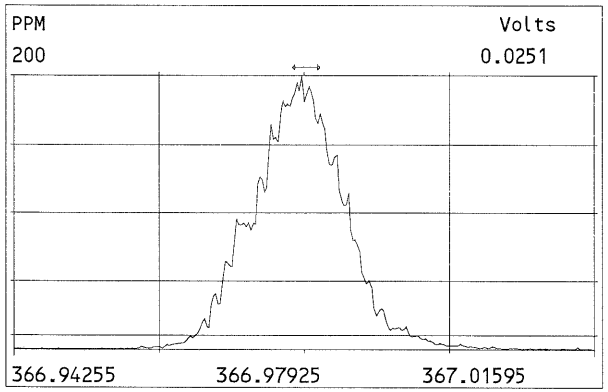


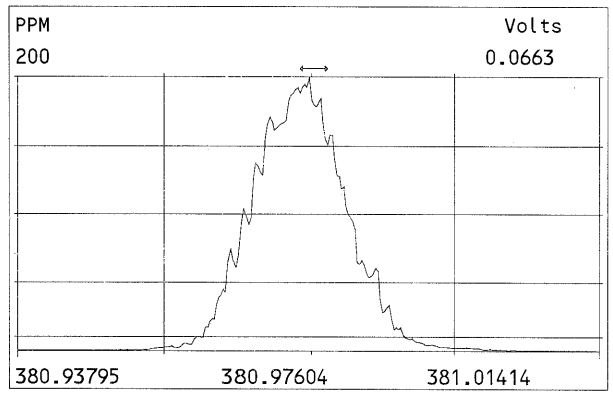
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:2 Reference:PFK

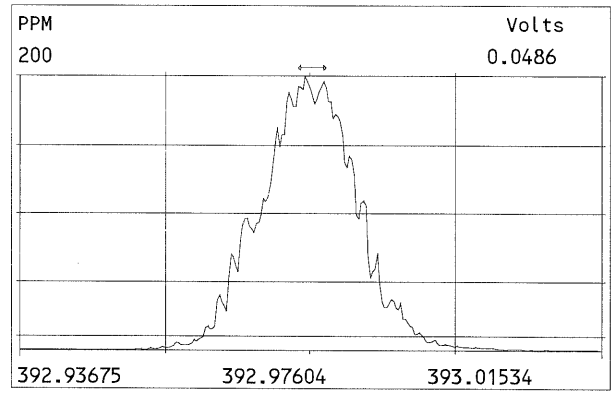


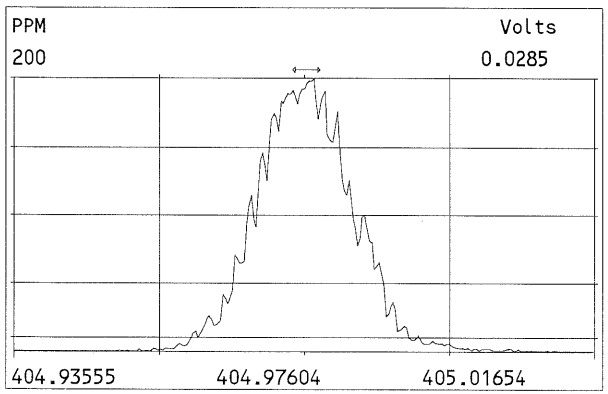


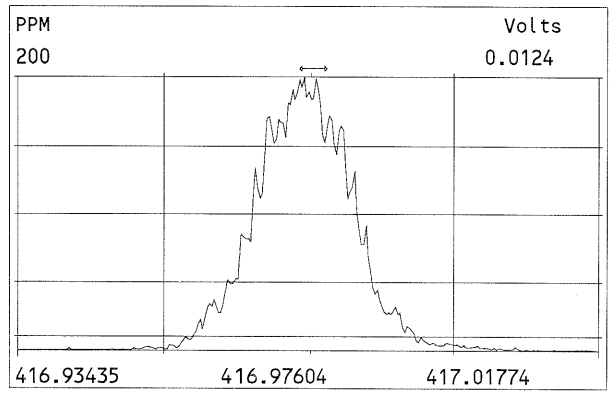




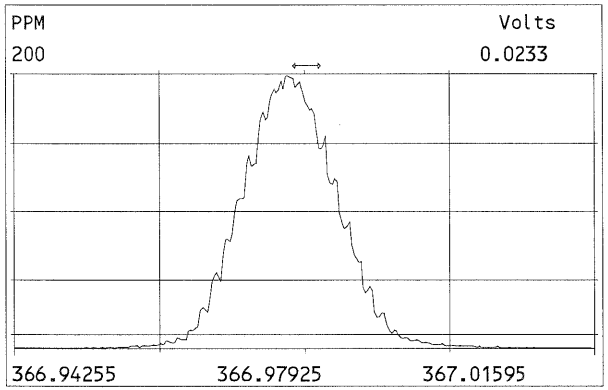


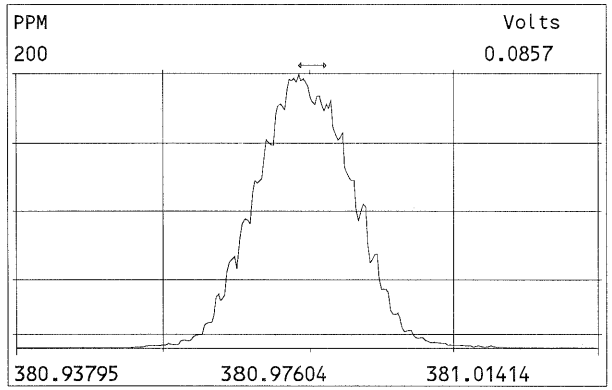


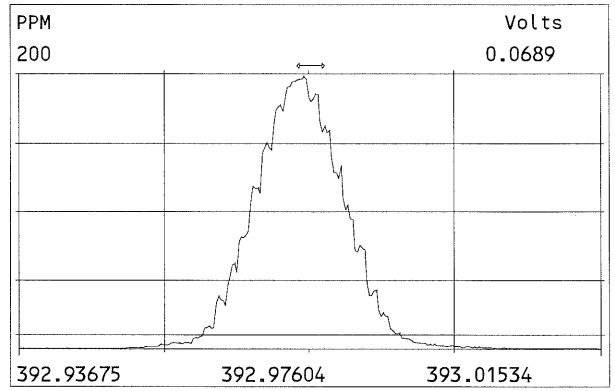


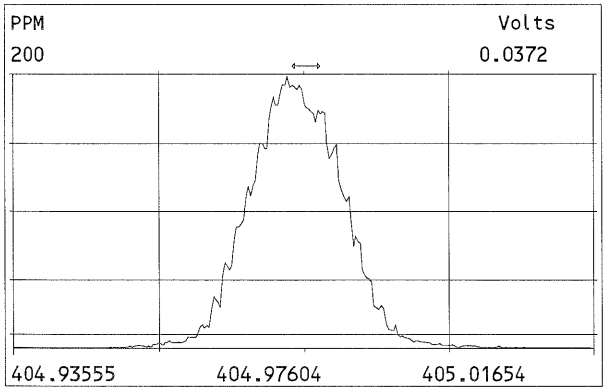


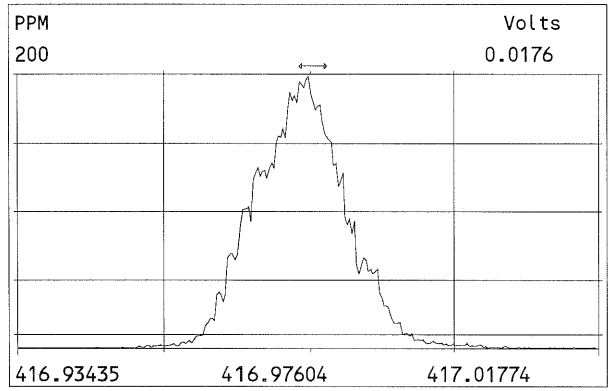
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:3 Reference:PFK

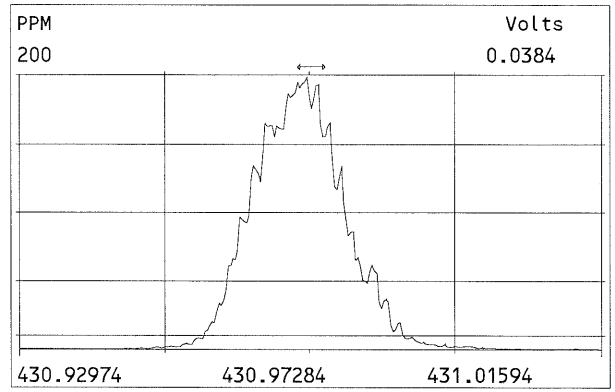


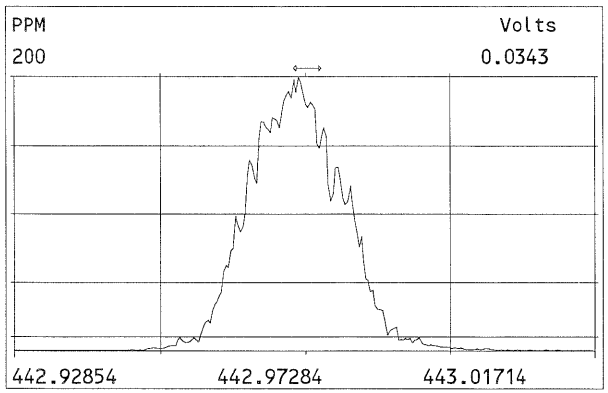


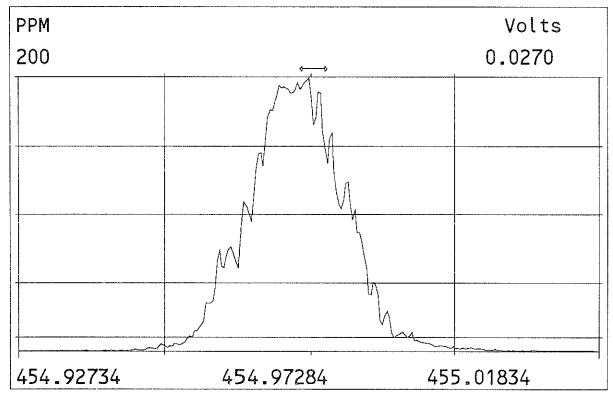




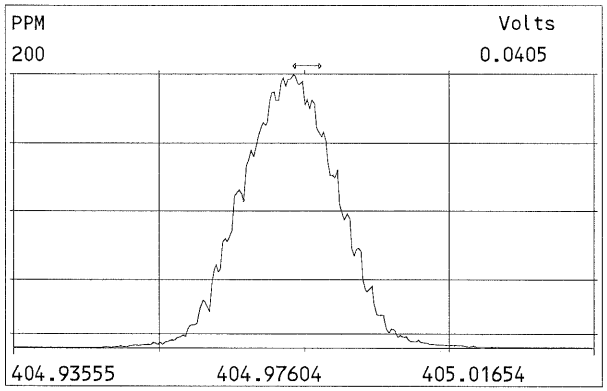


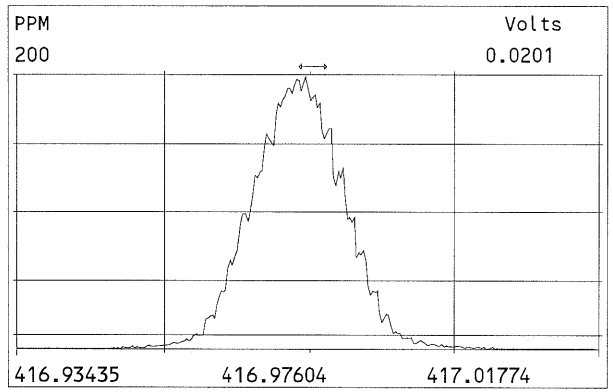


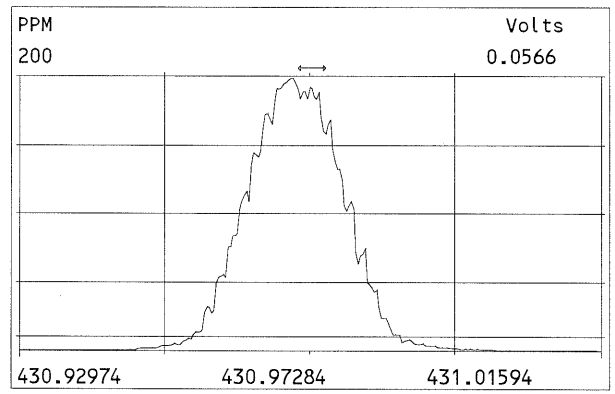


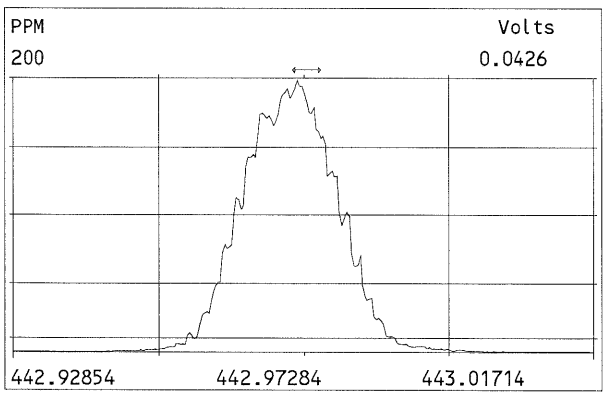


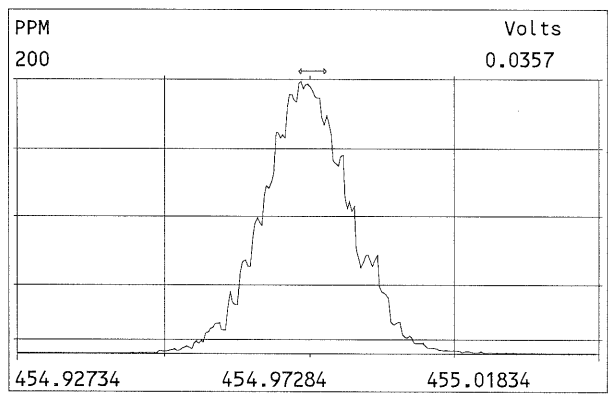
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:4 Reference:PFK

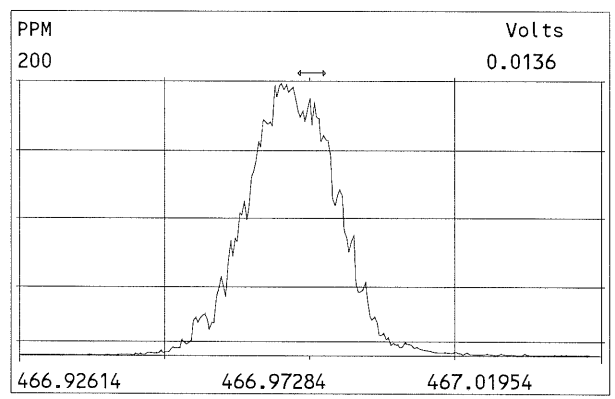


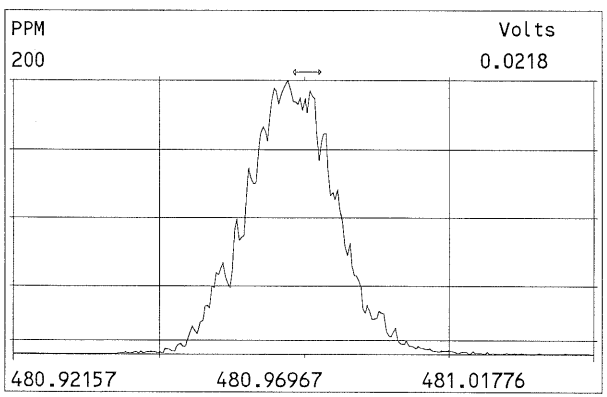




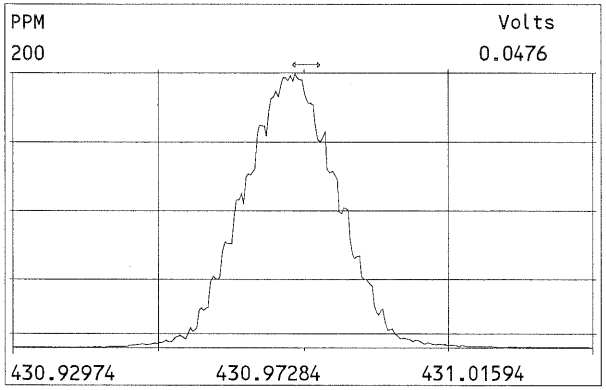


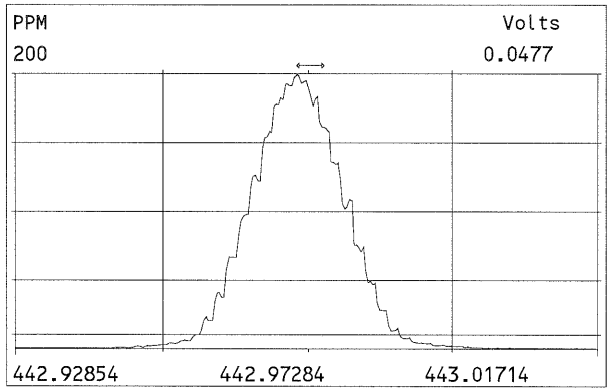


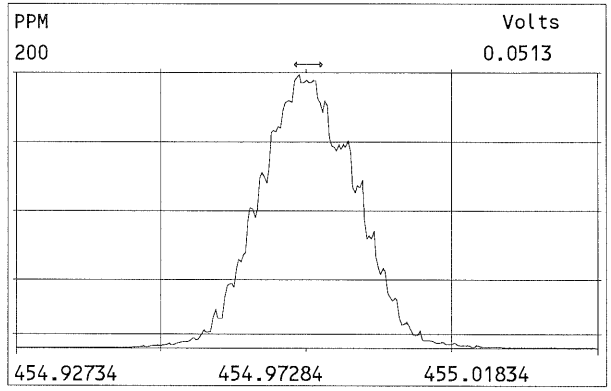


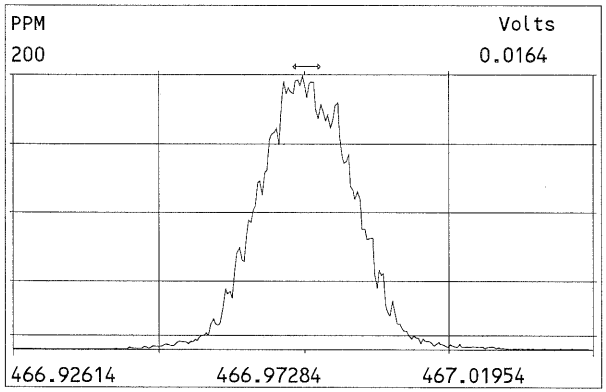


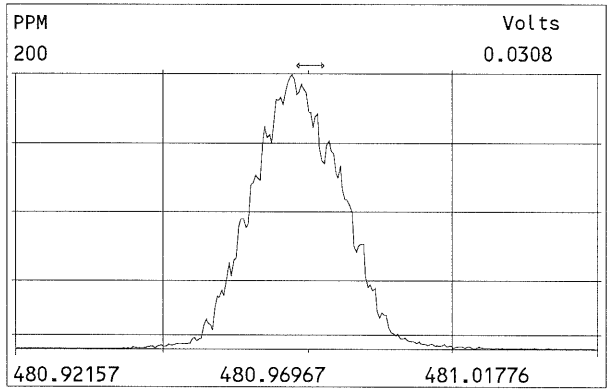
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:5 Reference:PFK

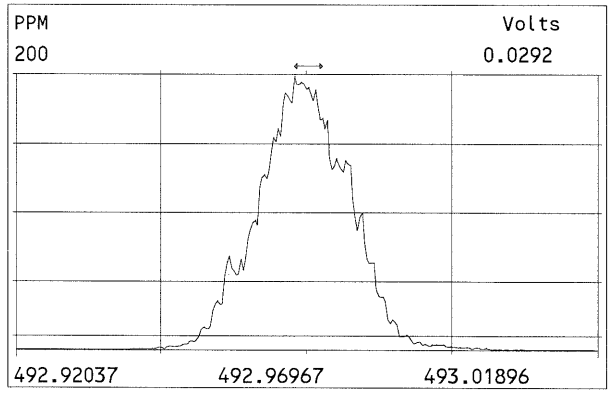


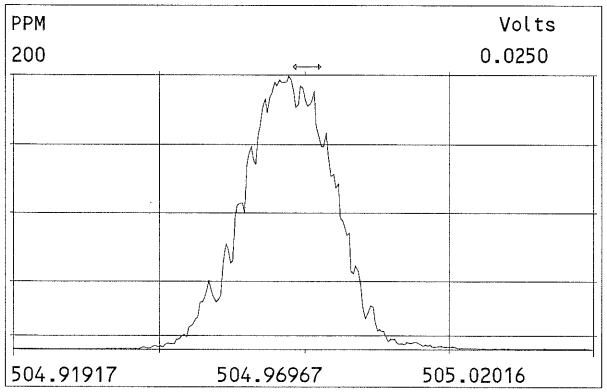


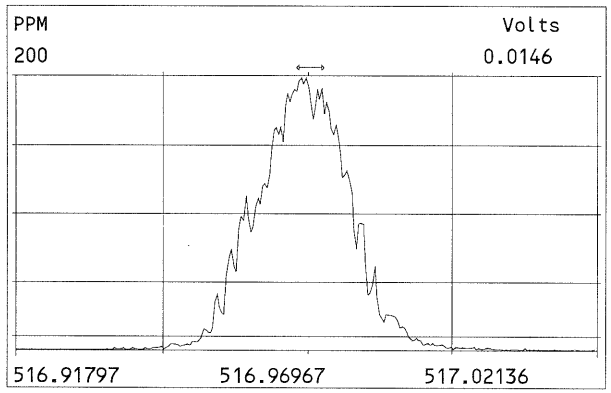




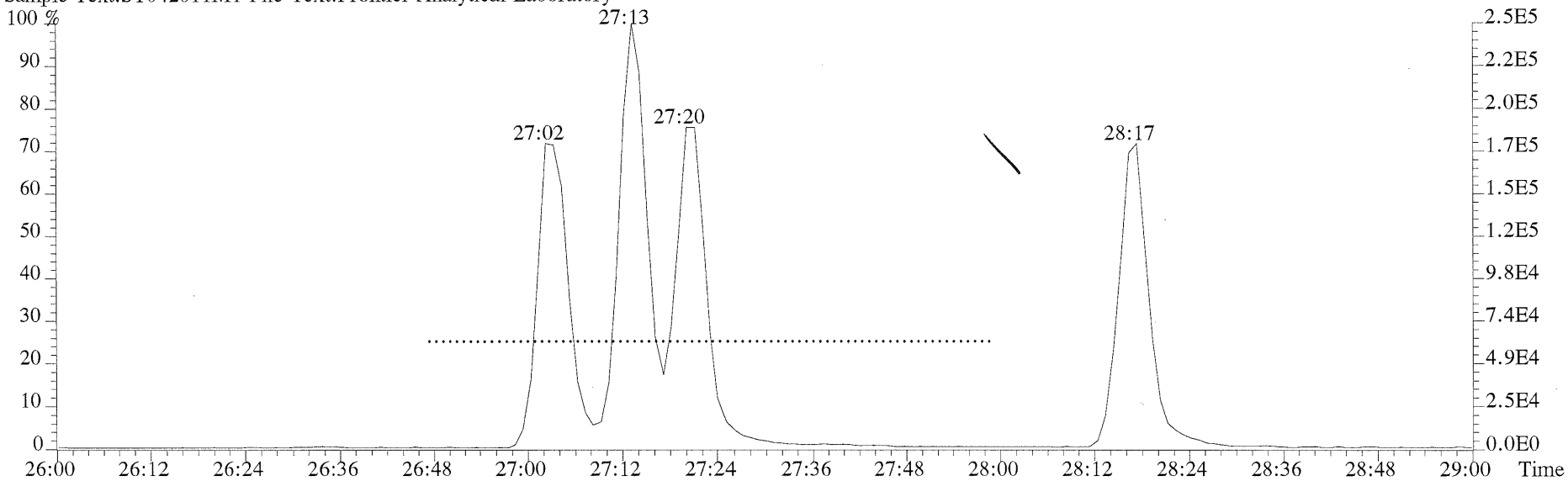




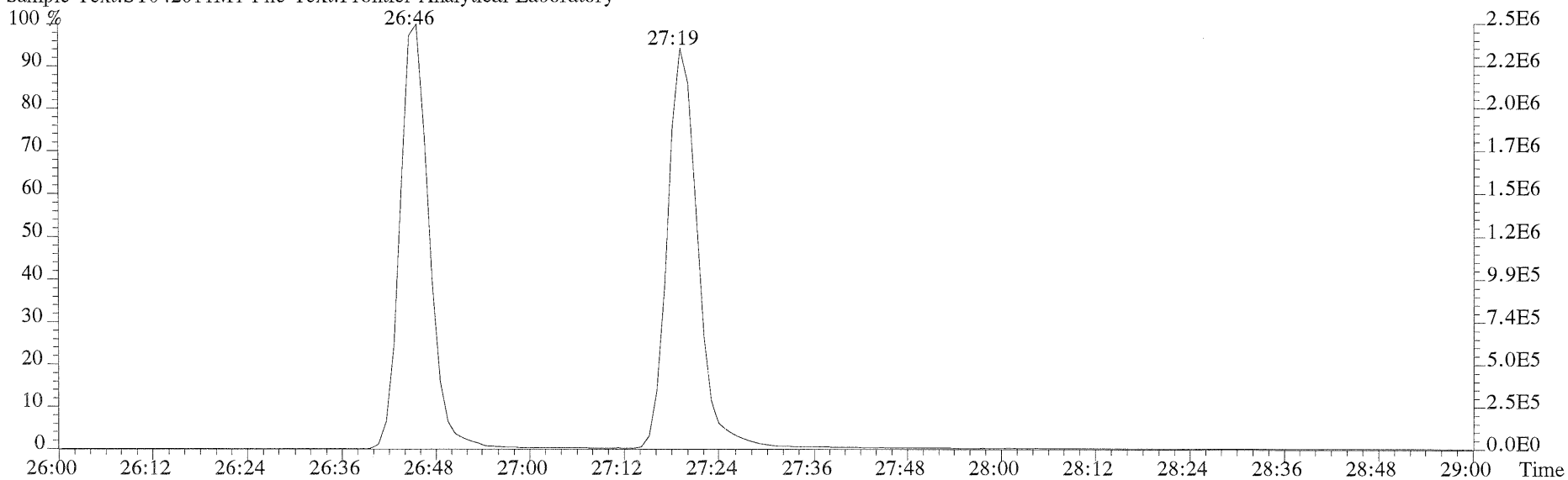




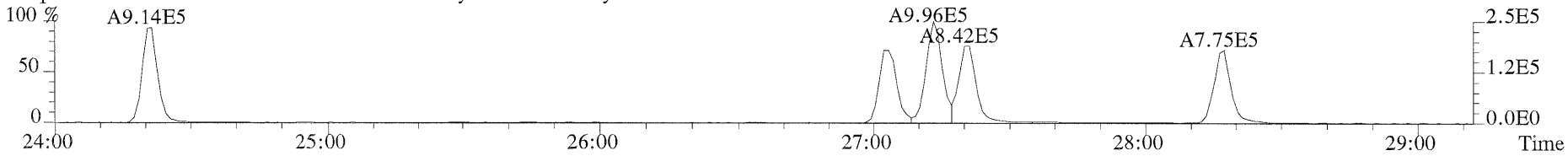
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
319.8965 Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



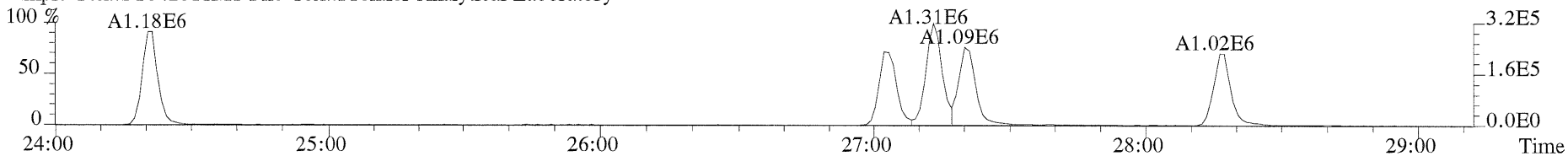
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
333.9339 Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



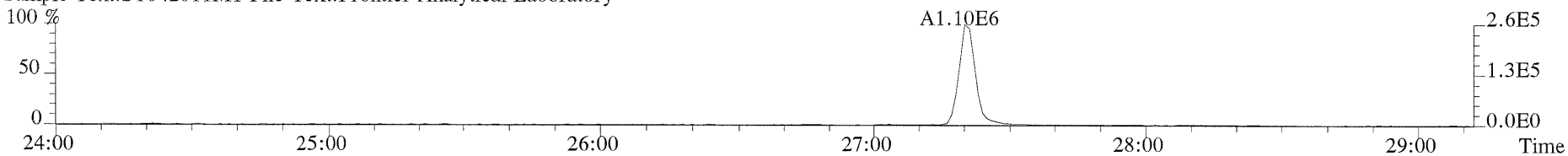
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



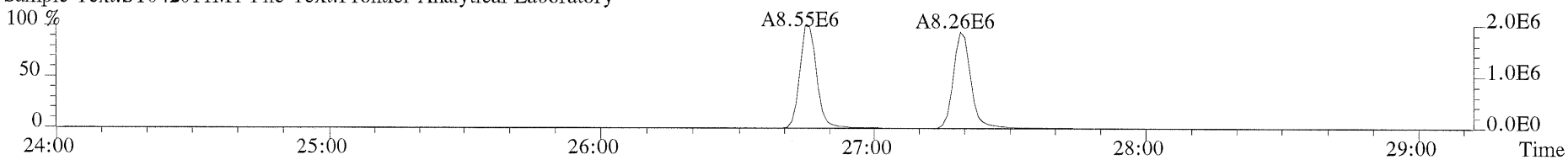
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



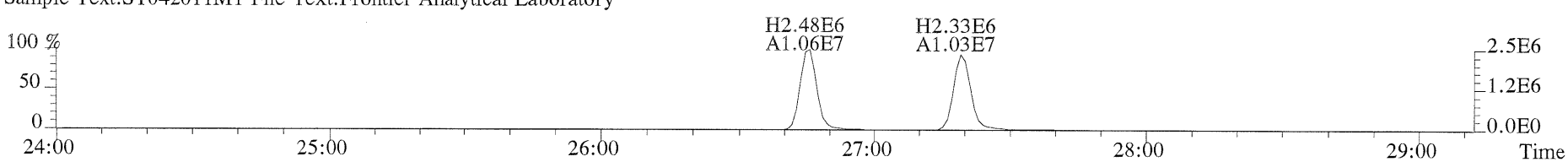
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



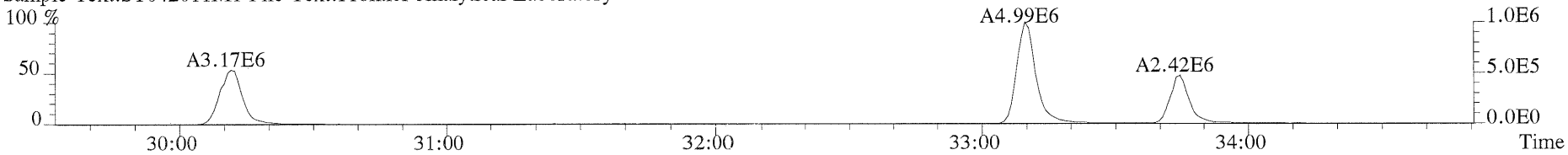
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



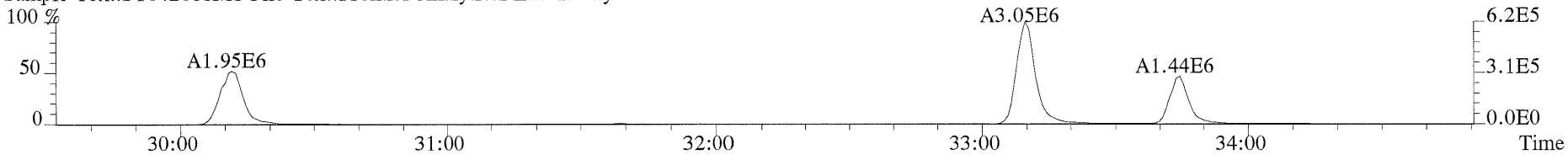
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
333.9339 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



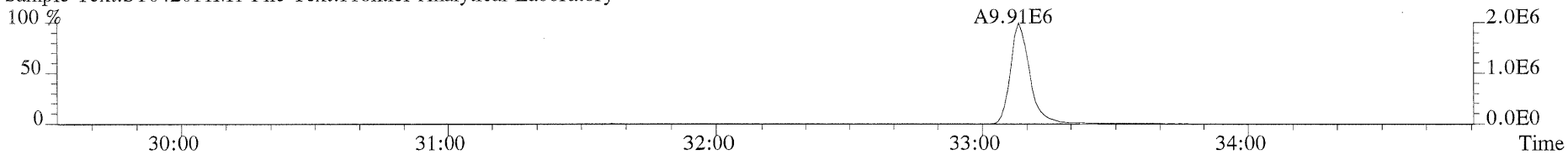
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



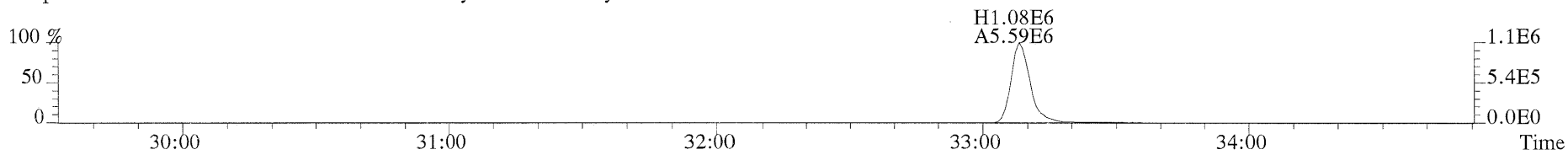
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
357.8517 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



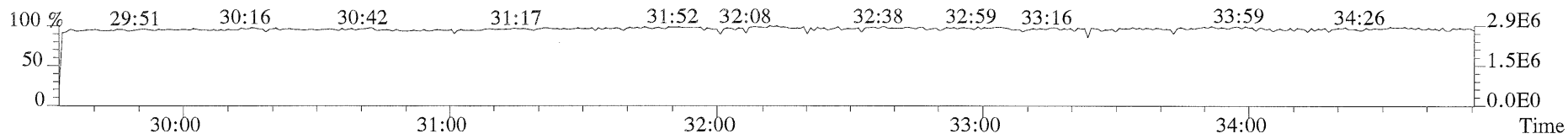
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
367.8949 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



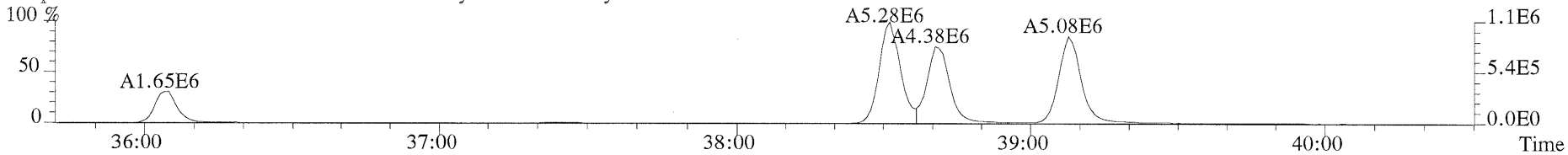
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
369.8919 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



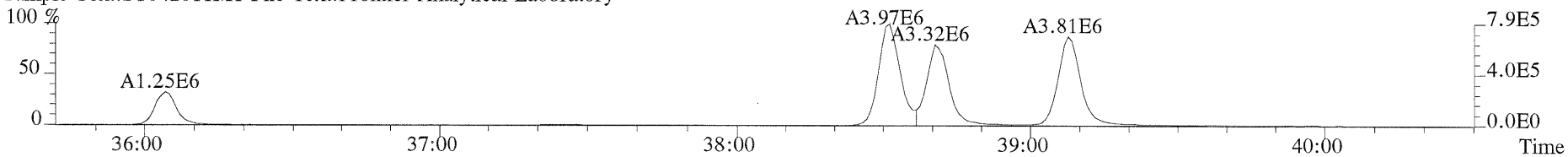
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
366.9792 F:2 Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



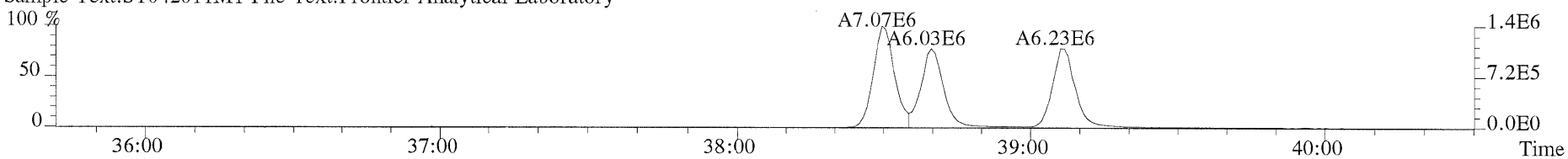
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



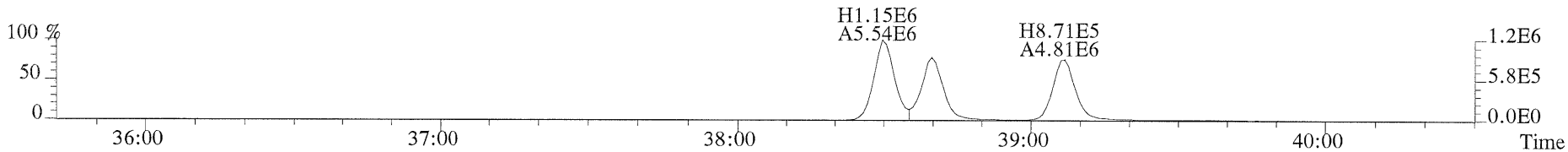
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



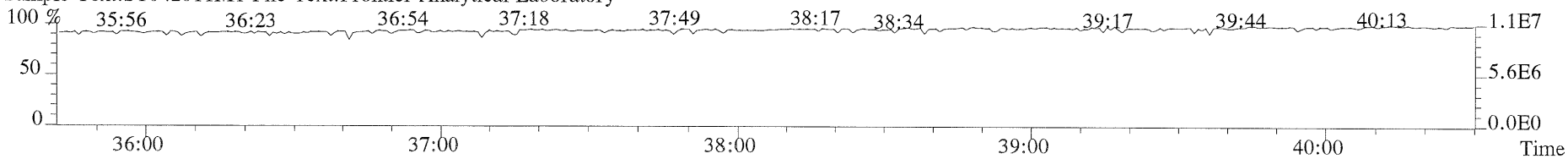
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



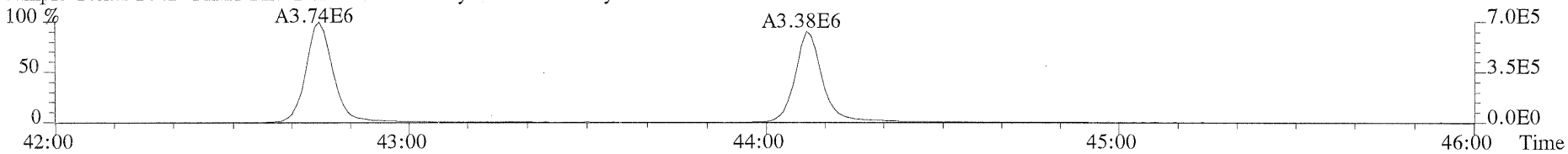
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
403.8530 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



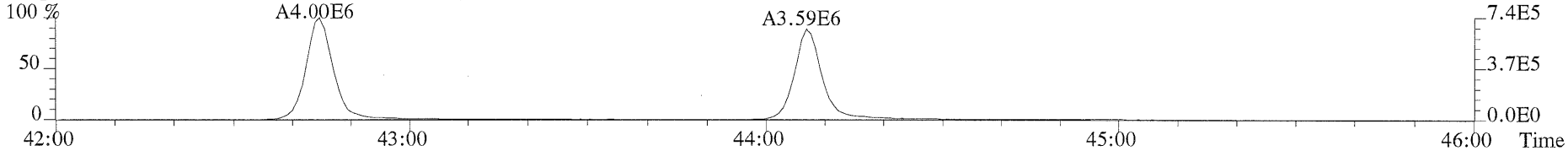
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
380.9760 F:3 Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



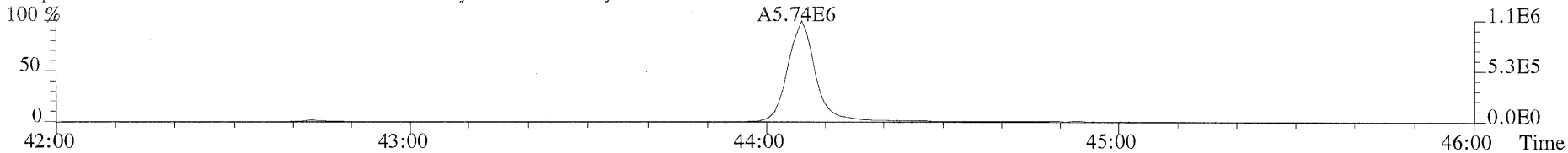
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



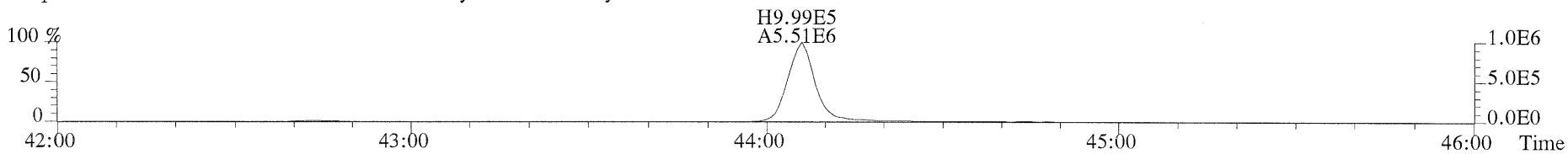
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



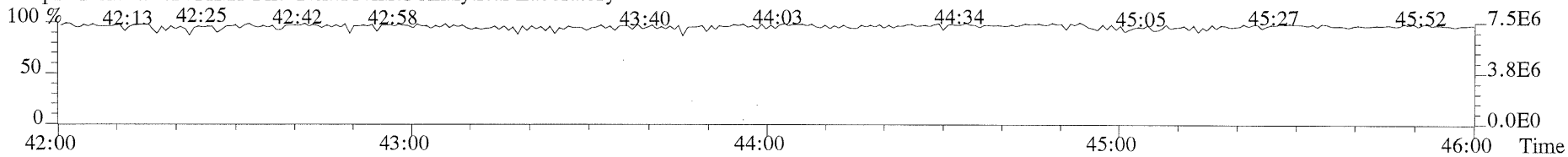
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



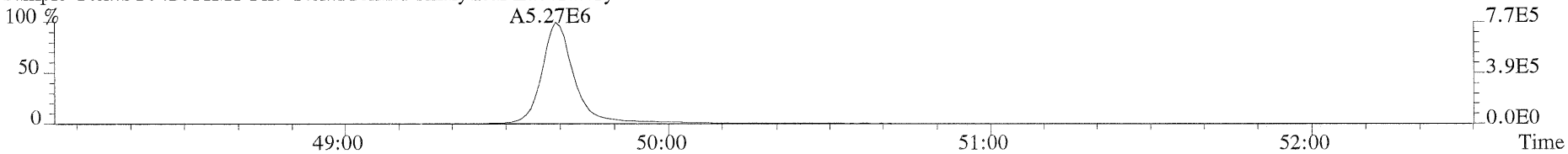
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



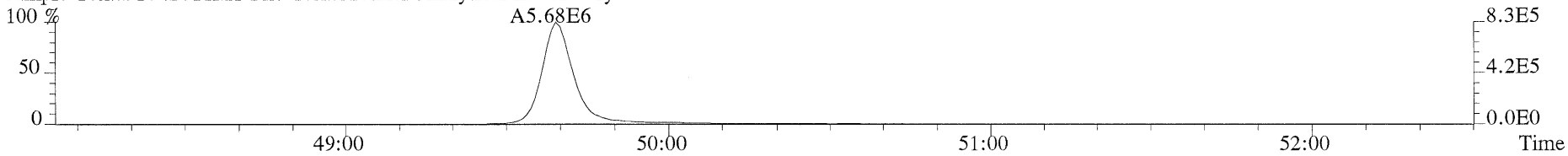
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
430.9728 F:4 Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



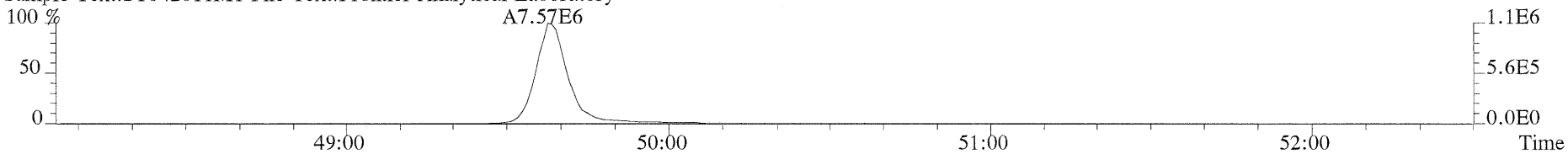
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



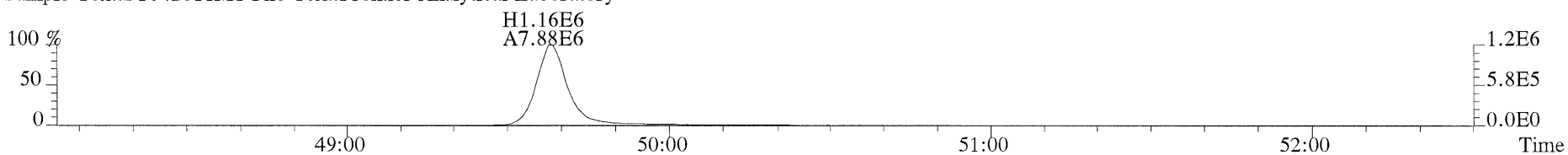
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
459.7348 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



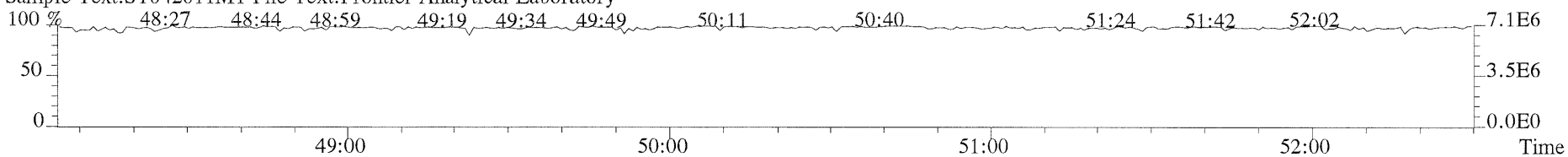
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
469.7780 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



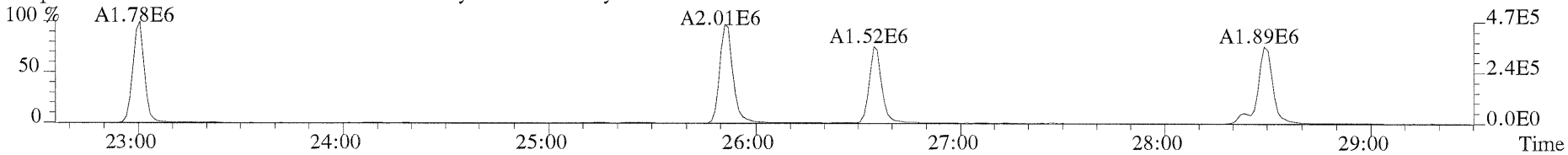
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
471.7750 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



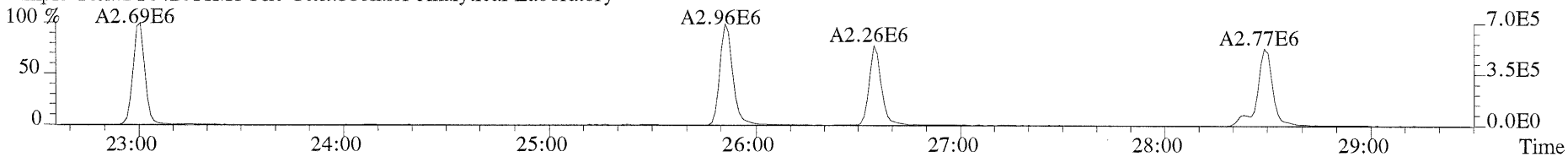
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
454.9728 F:5 Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



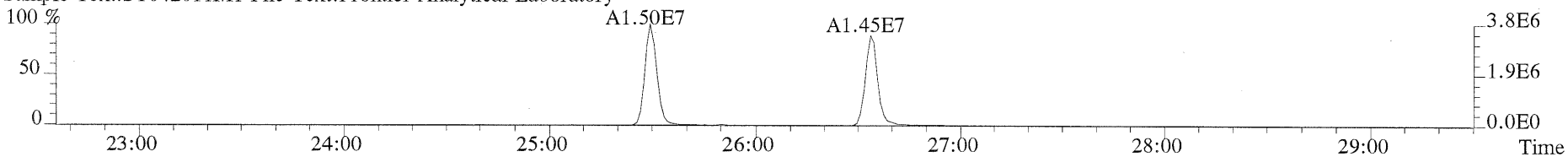
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



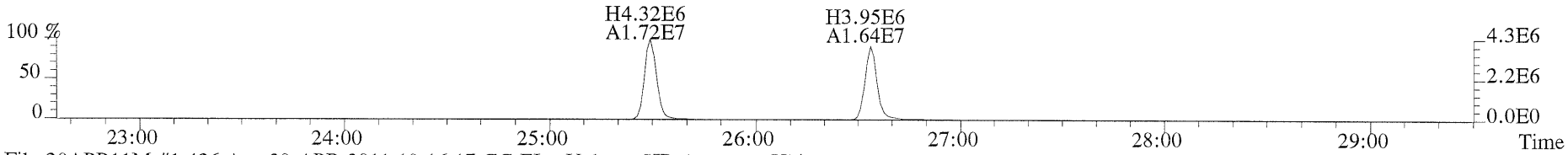
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
305.8987 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



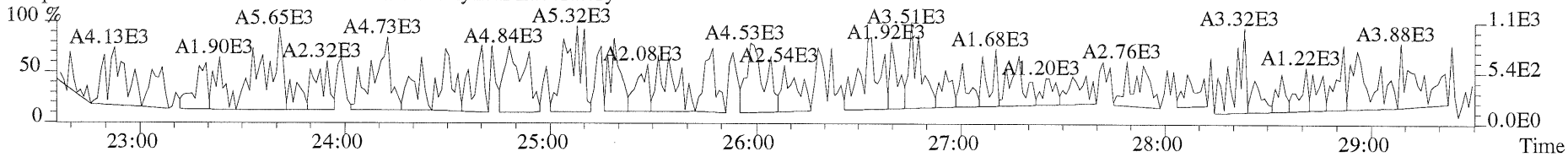
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
315.9419 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



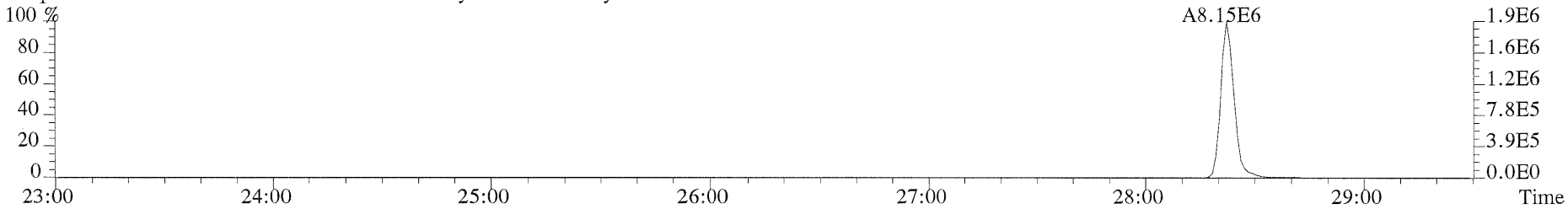
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
317.9389 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



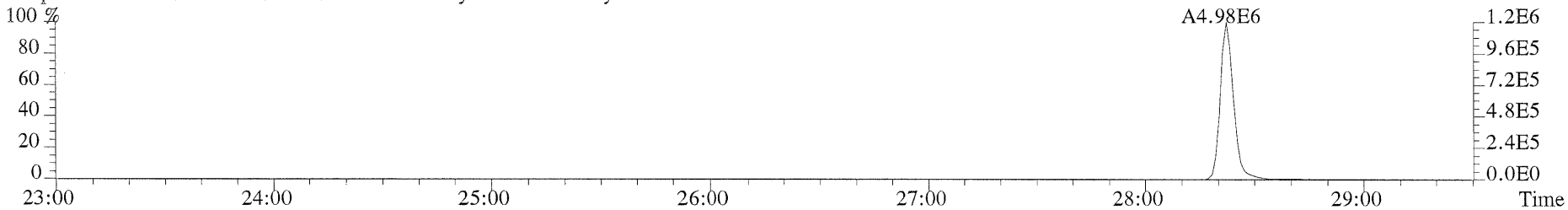
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
375.8364 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



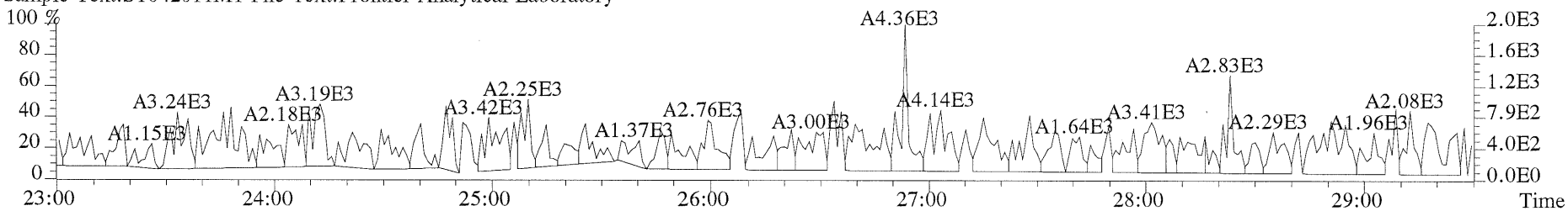
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



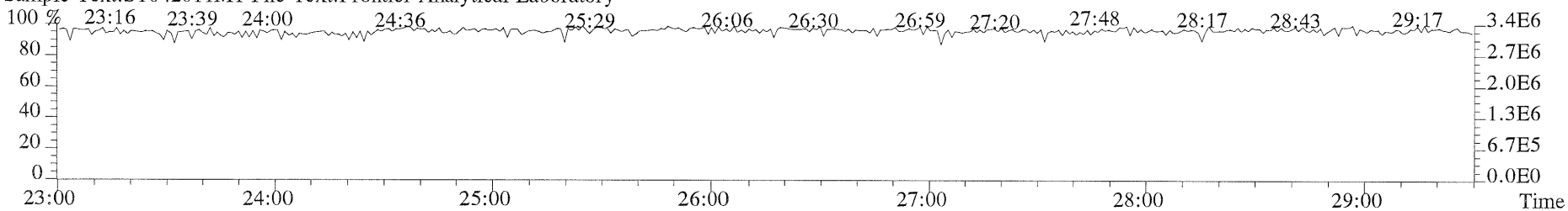
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
341.8568 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



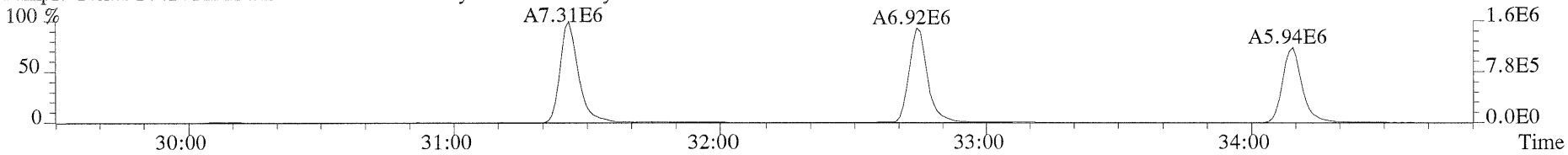
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
409.7974 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



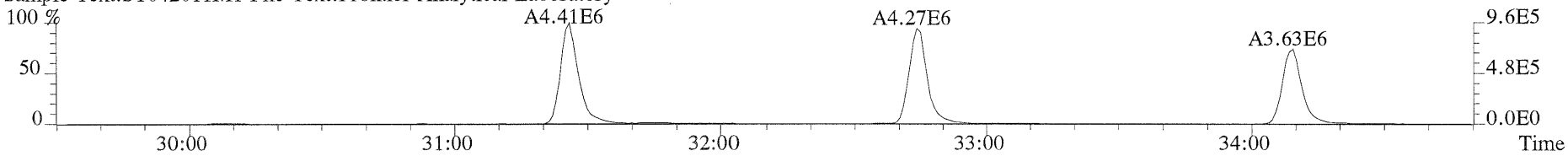
File:20APR11M #1-426 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
316.9824 Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



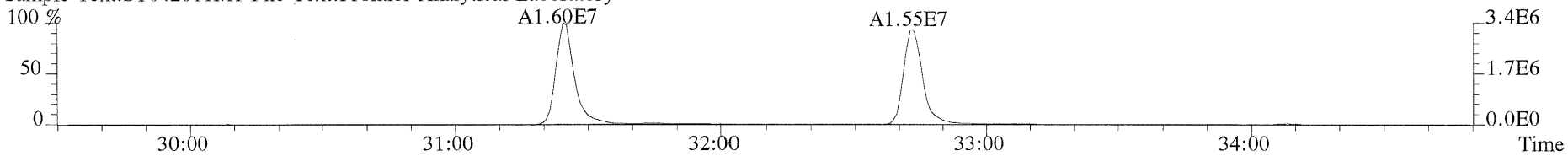
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



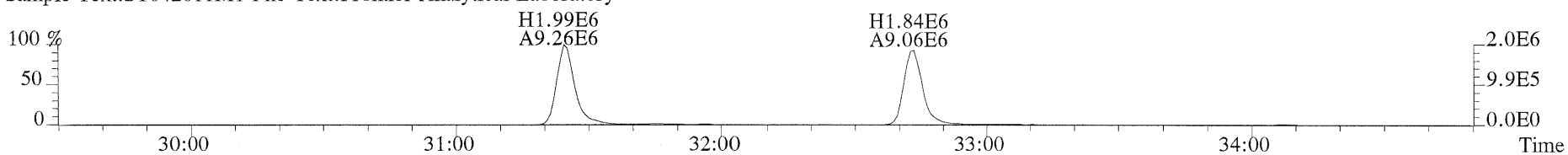
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
341.8568 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



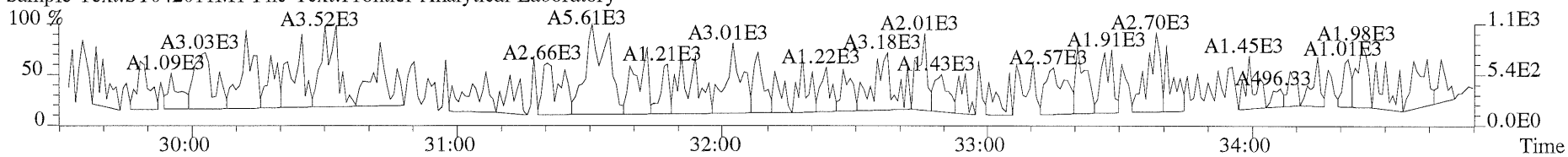
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
351.9000 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



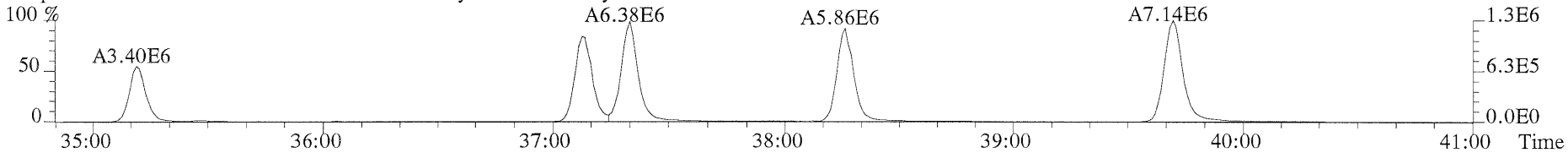
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
353.8970 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



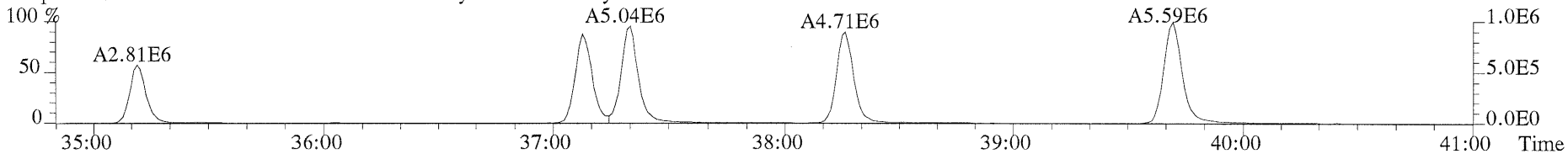
File:20APR11M #1-412 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
409.7974 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



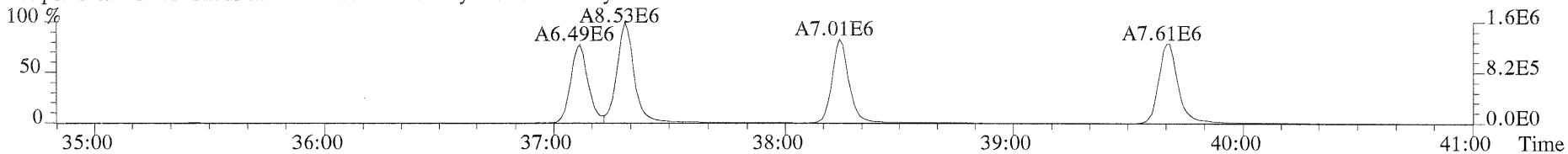
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



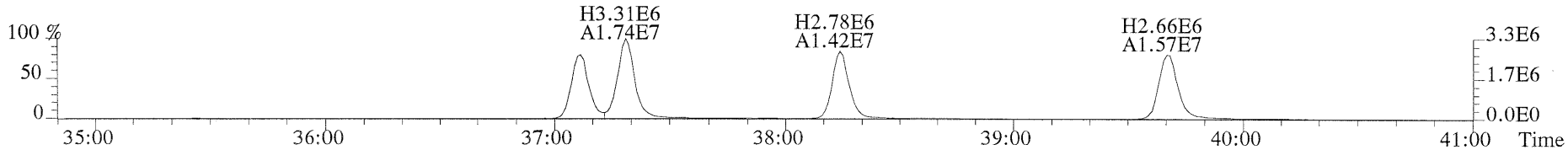
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



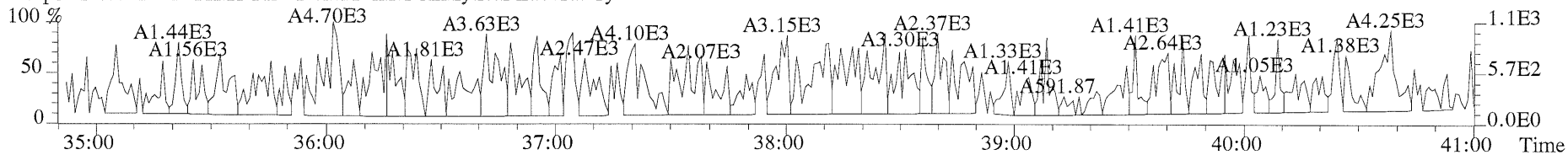
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



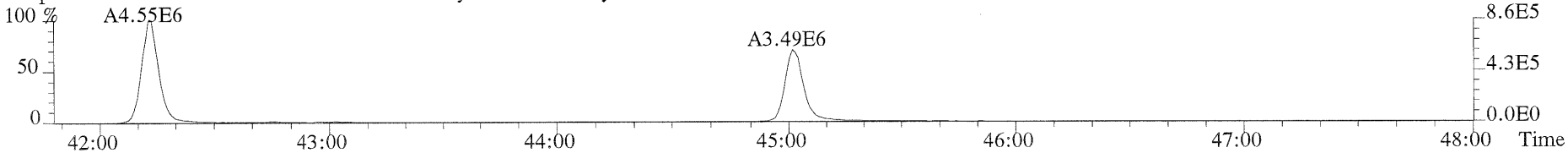
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



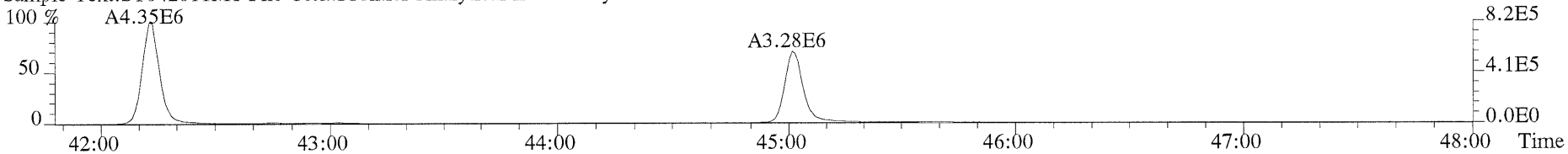
File:20APR11M #1-477 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



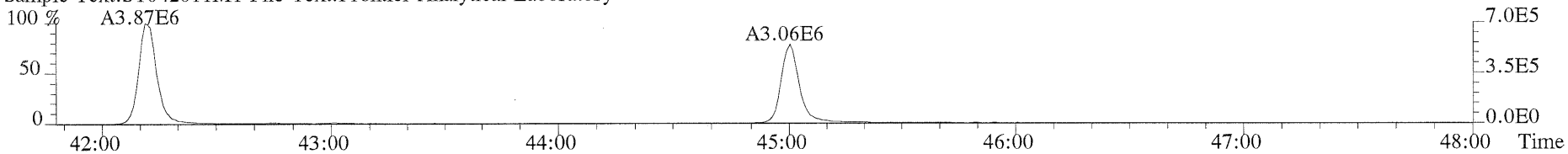
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



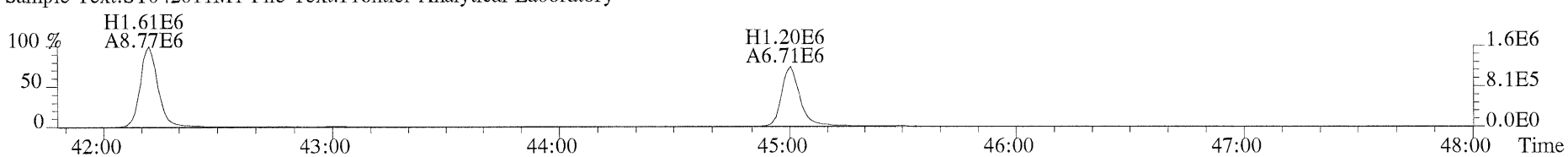
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
409.7788 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



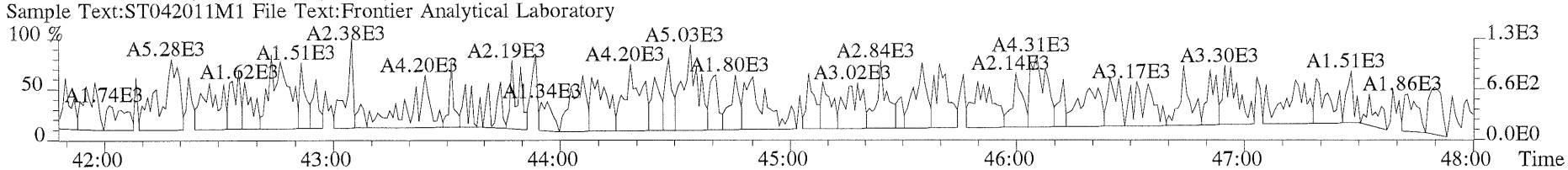
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
417.8253 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



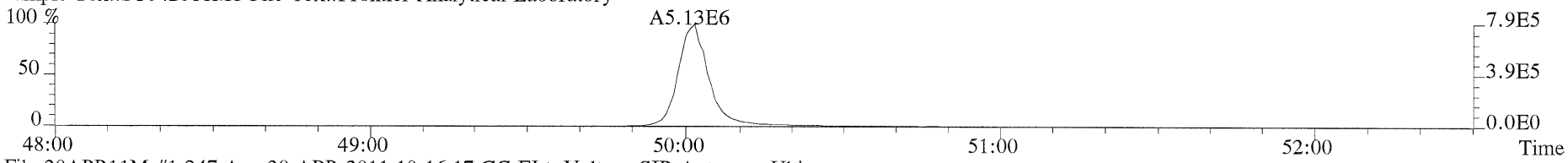
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
419.8220 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



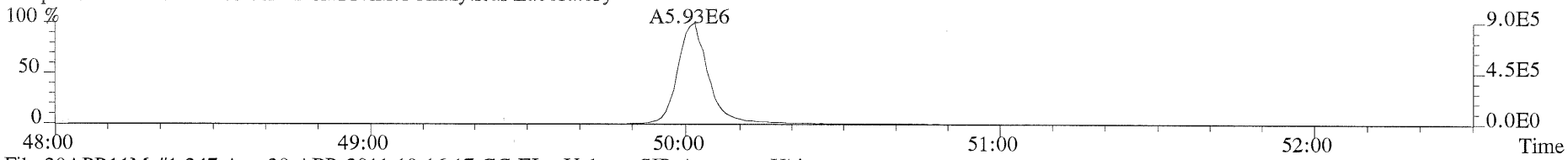
File:20APR11M #1-541 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
479.7165 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



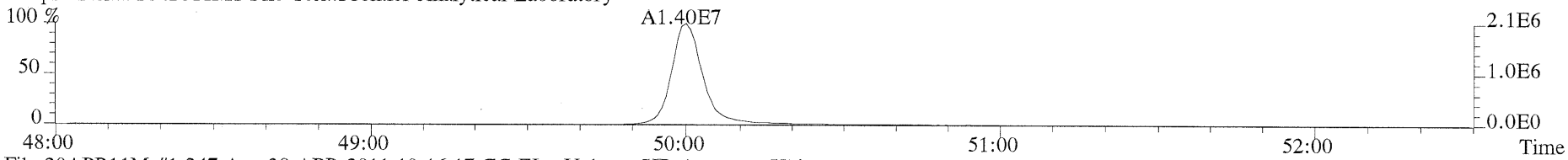
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



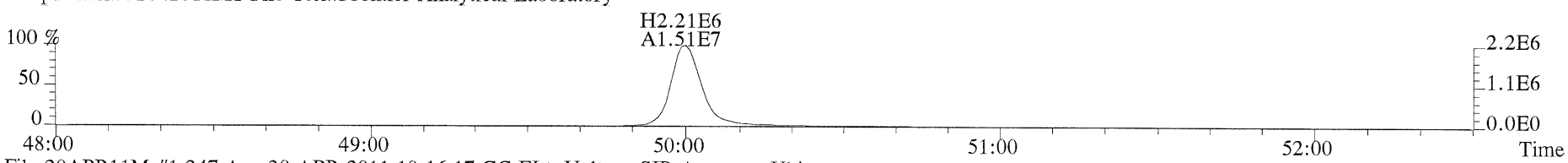
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
443.7398 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



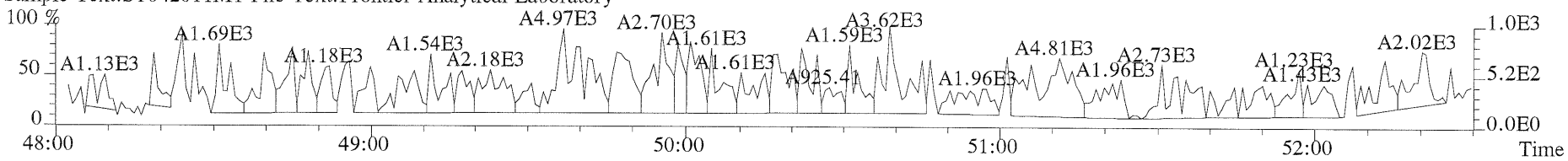
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
453.7831 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory



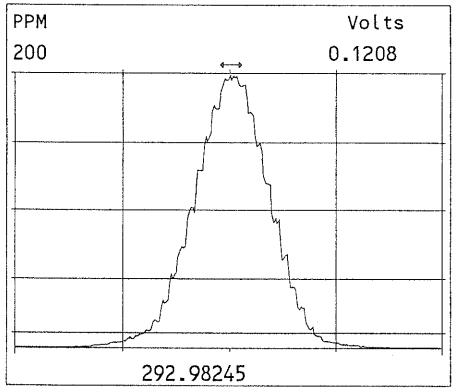
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
455.7801 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory

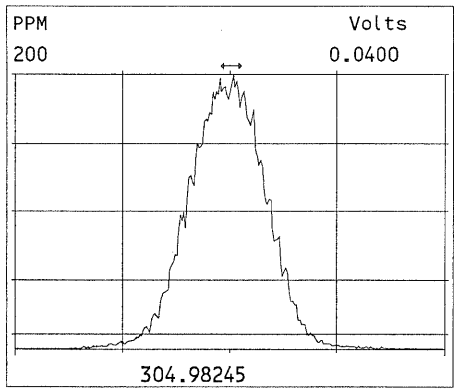


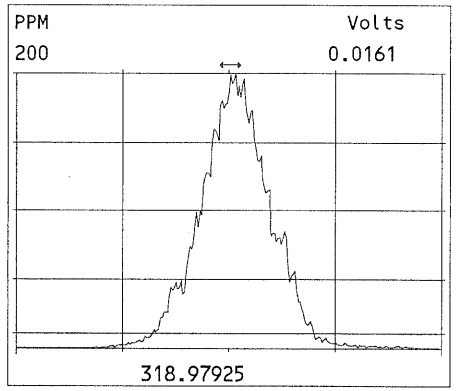
File:20APR11M #1-347 Acq:20-APR-2011 10:16:17 GC EI+ Voltage SIR Autospec-Ultima
513.6775 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M1 File Text:Frontier Analytical Laboratory

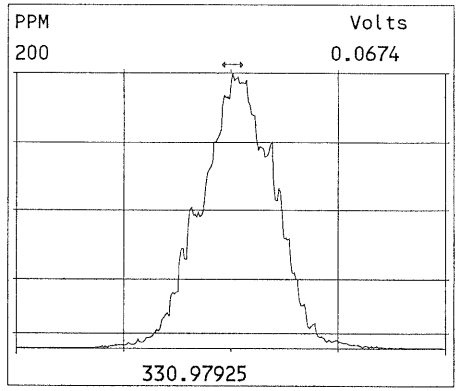


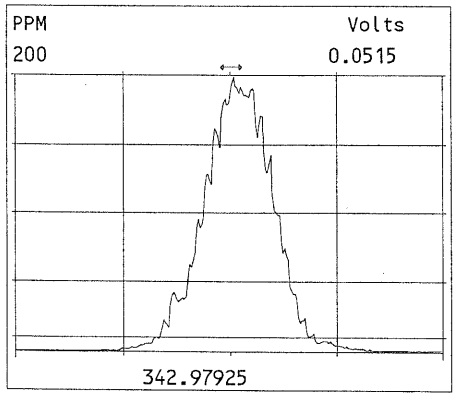
Peak Locate Examination:21-APR-2011:08:29 File:20APR11M_RES_CHECK
Experiment:OCDD Function:1 Reference:PFK

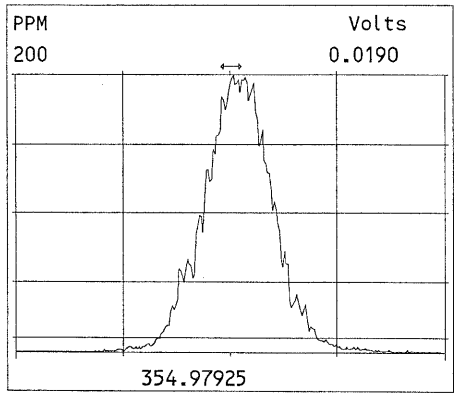


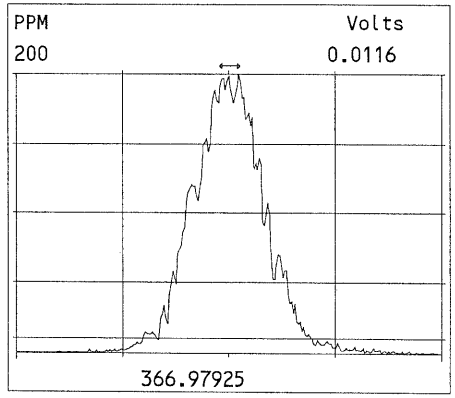


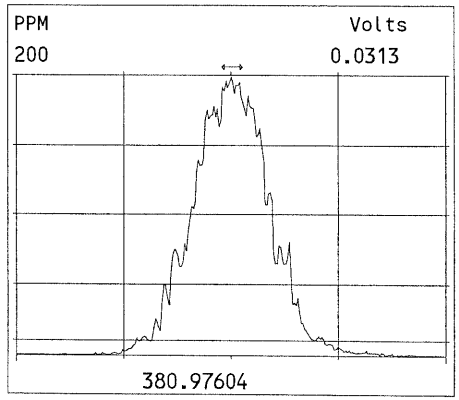


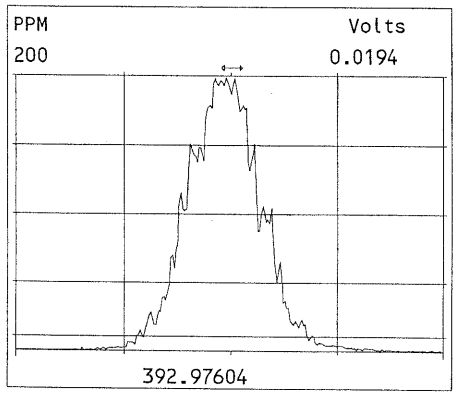


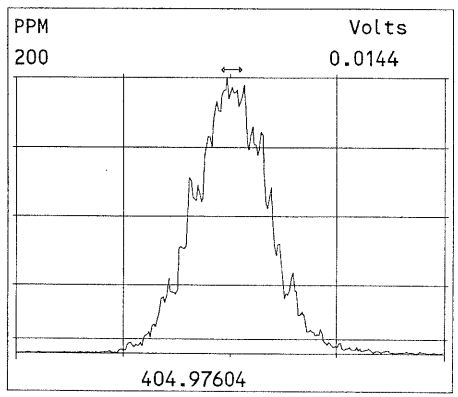


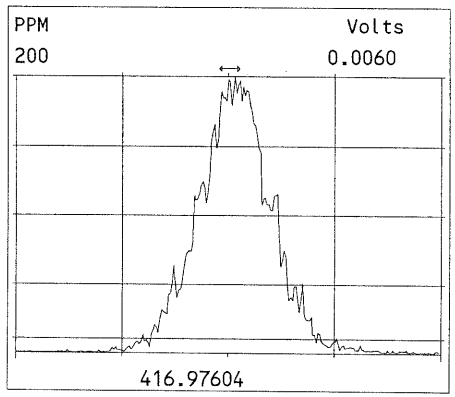




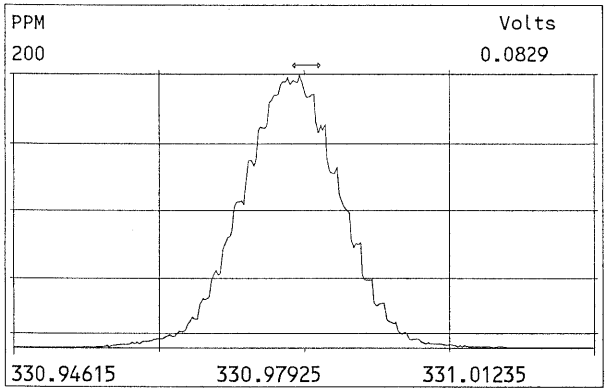


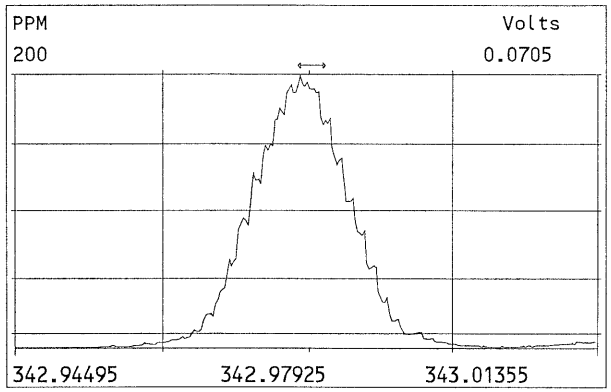


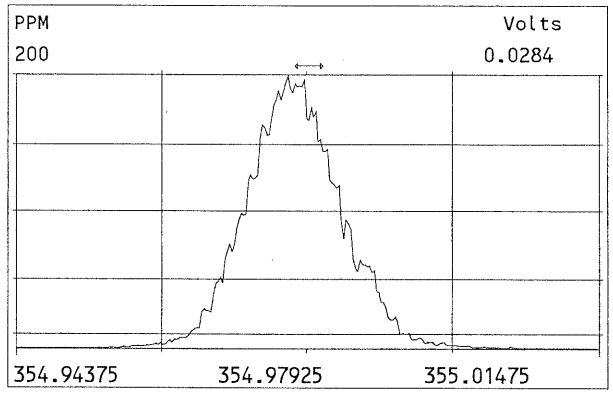


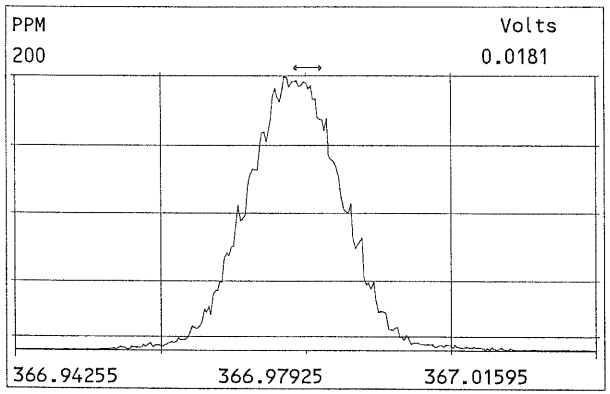


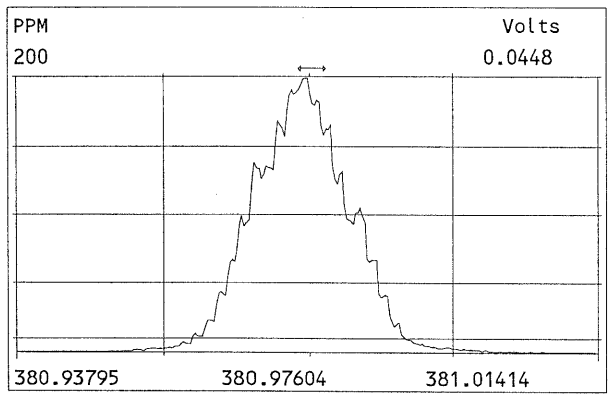
Peak Locate Examination:21-APR-2011:08:30 File:20APR11M_RES_CHECK
Experiment:OCDD Function:2 Reference:PFK

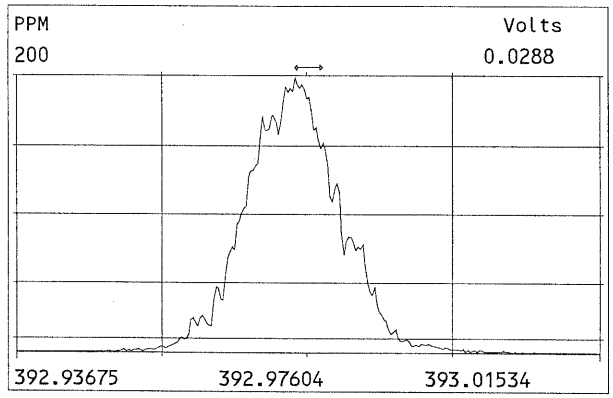


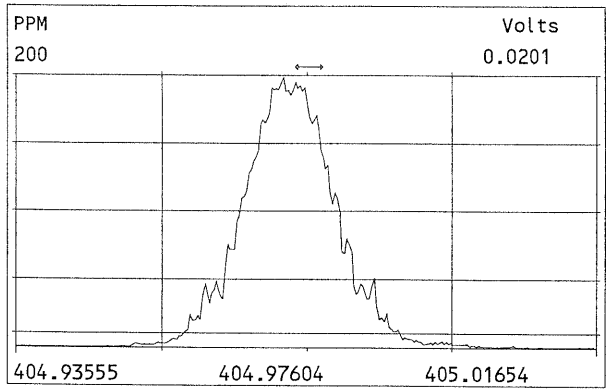


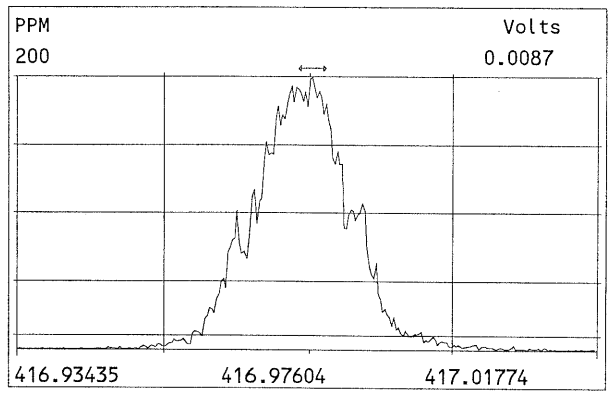




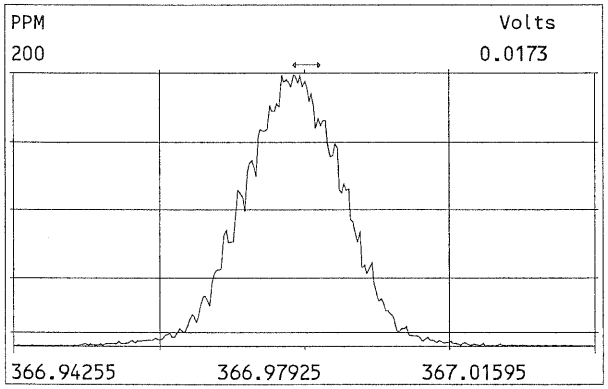


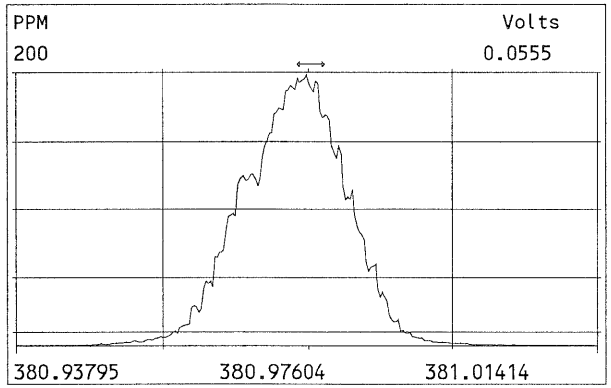


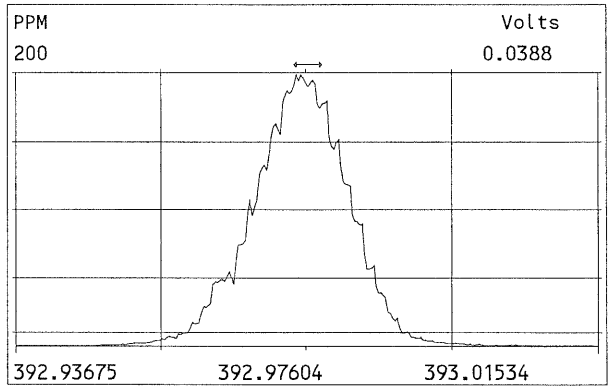


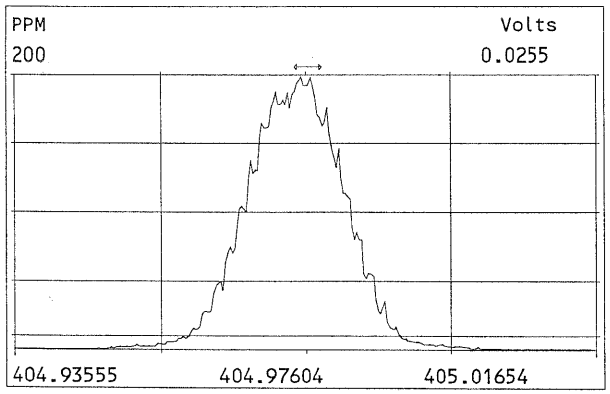


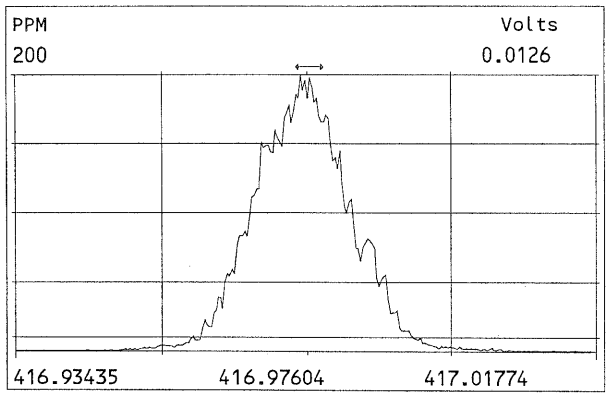
Peak Locate Examination:21-APR-2011:08:30 File:20APR11M_RES_CHECK
Experiment:OCDD Function:3 Reference:PFK

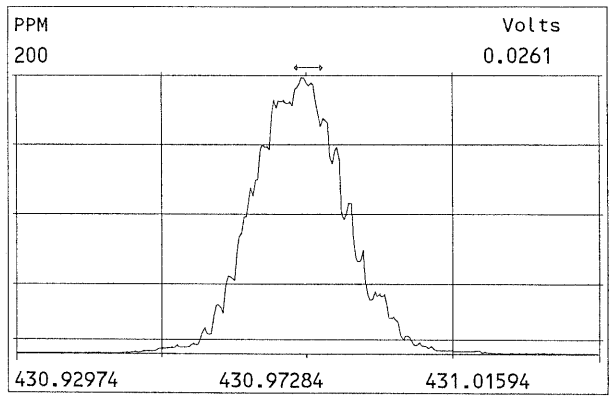


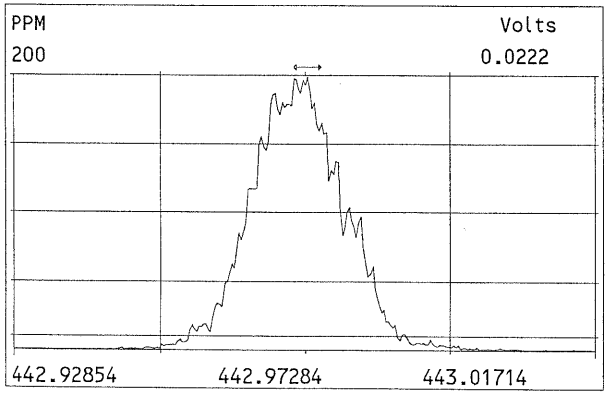


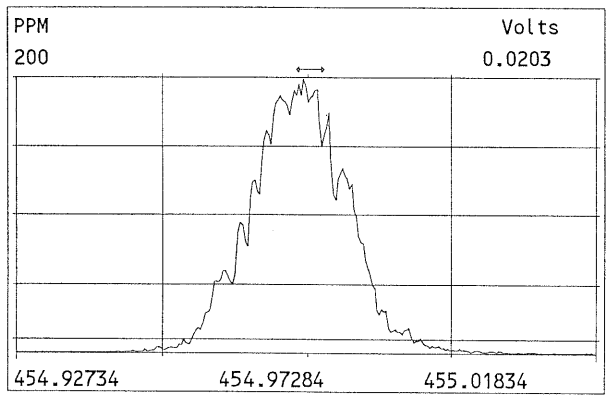




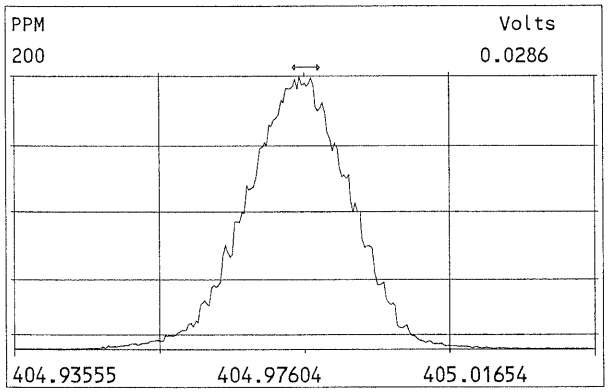


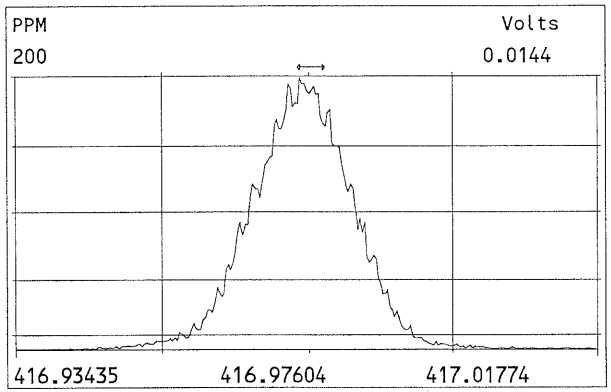


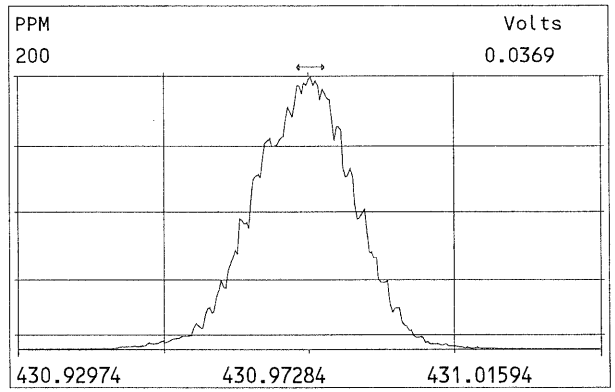


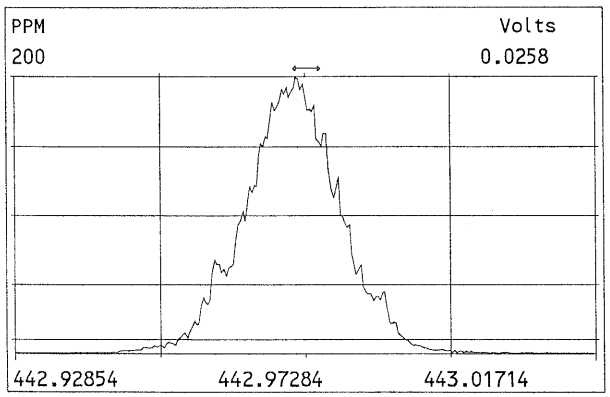


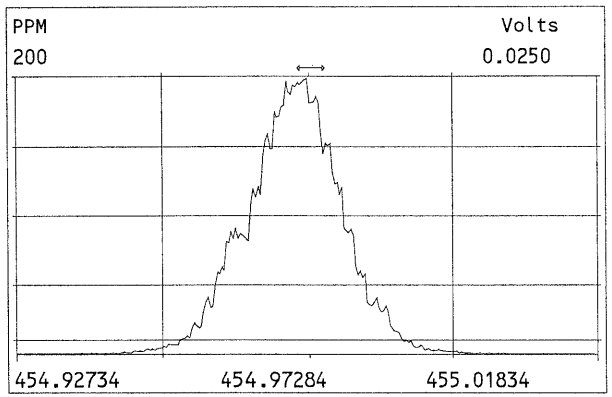
Peak Locate Examination:21-APR-2011:08:31 File:20APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

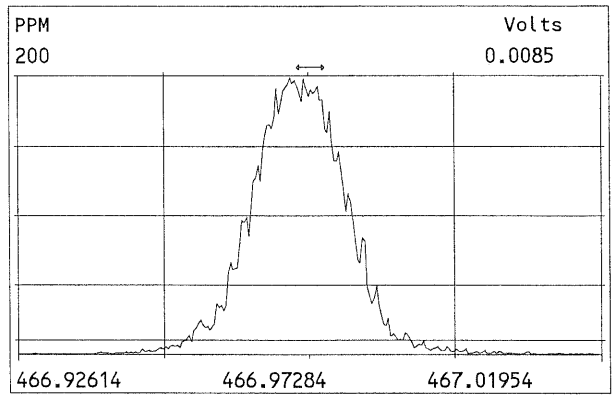


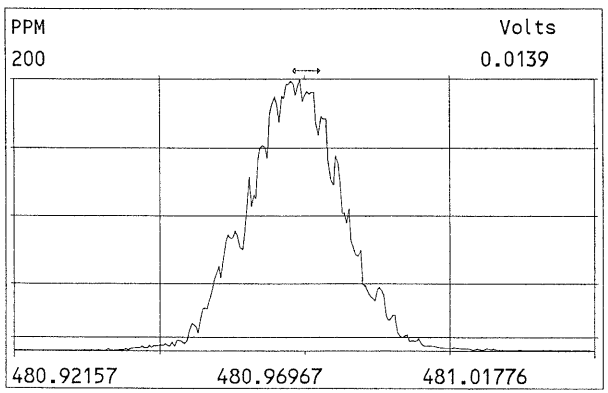




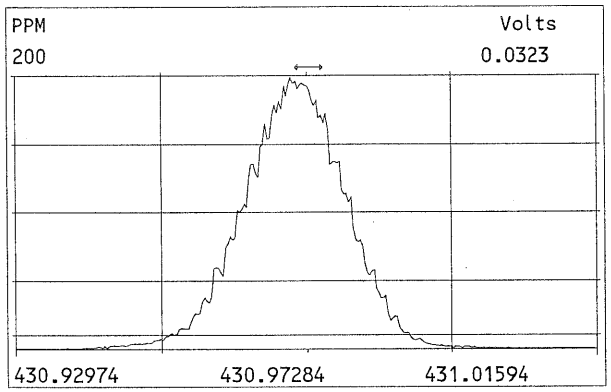


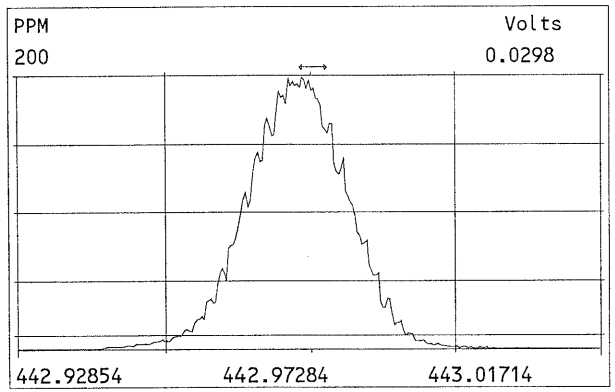


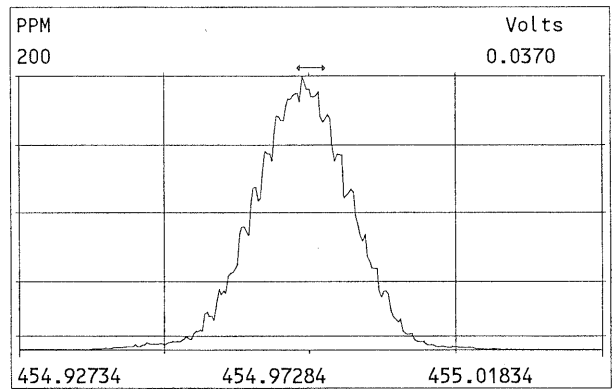


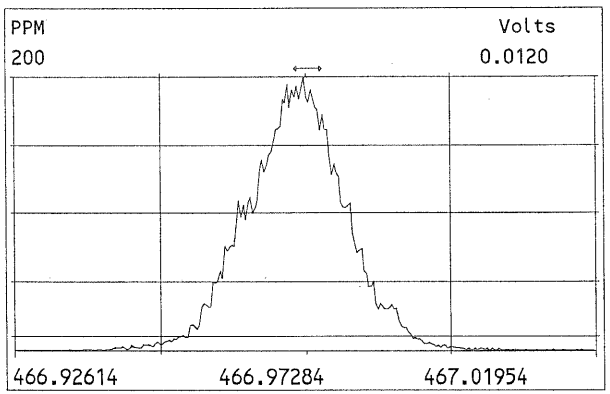


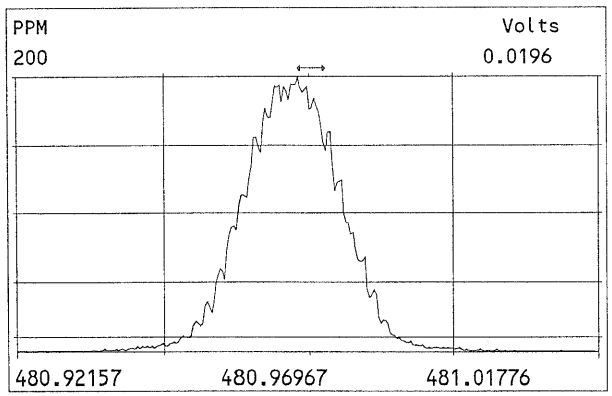
Peak Locate Examination:21-APR-2011:08:31 File:20APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

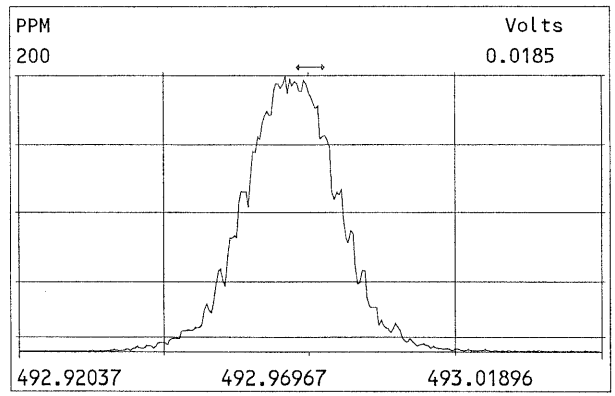


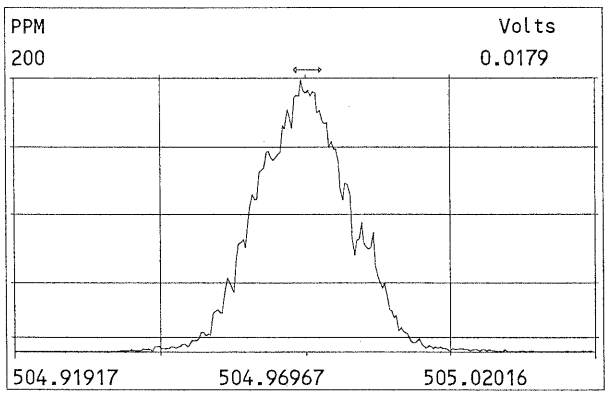


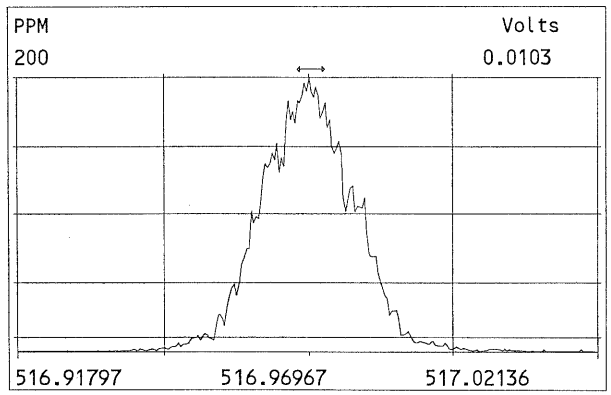












USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 20APR11M Sam:17 Analysis Date: 21-APR-11 01:02:13

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	y	8.99	7.80 - 12.9
1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32-1.78	y	53.0	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.33	1.05-1.43	y	51.3	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05-1.43	y	50.9	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.32	1.05-1.43	y	52.9	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	0.96	0.88-1.20	y	48.9	43.0 - 58.0
OCDD	M+2/M+4	0.93	0.76-1.02	y	98.2	79.0 - 126
2,3,7,8-TCDF	M/M+2	0.66	0.65-0.89	y	10.7	8.40 - 12.0
1,2,3,7,8-PeCDF	M+2/M+4	1.68	1.32-1.78	y	53.8	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.65	1.32-1.78	y	52.1	41.0 - 60.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	y	49.5	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	y	50.2	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	y	49.3	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	y	50.3	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88-1.20	y	48.9	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	y	48.9	43.0 - 58.0
OCDF	M+2/M+4	0.89	0.76-1.02	y	96.4	63.0 - 159

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 20APR11M Sam:17 Analysis Date: 21-APR-11 01:02:13

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65-0.89	y	95.8	82.0 - 121
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.76	1.32-1.78	y	86.0	62.0 - 160
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	y	94.6	85.0 - 117
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	98.4	85.0 - 118
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	y	122	72.0 - 138
13C-OCDD	M+2/M+4	0.97	0.76-1.02	y	226	96.0 - 415
13C-2,3,7,8-TCDF	M/M+2	0.87	0.65-0.89	y	102	71.0 - 140
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.73	1.32-1.78	y	99.6	76.0 - 130
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.71	1.32-1.78	y	101	77.0 - 130
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	102	76.0 - 131
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	102	70.0 - 143
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	104	73.0 - 137
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.49	0.43-0.59	y	109	74.0 - 135
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	y	118	78.0 - 129
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	y	128	77.0 - 129
13C-OCDF	M+2/M+4	0.95	0.76-1.02	y	224	96.0 - 415
CLEANUP STANDARD (4)						
37Cl-2,3,7,8-TCDD					7.97	7.80 - 12.8

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) No ion abundance ratio; report concentration found.

Analyst: _____ Date: 4/21/11

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: FAL3 Initial Calibration Date: 3/7/11

RT Window Data Filename: 20APR11M Sam:17 Analysis Date: 21-APR-11 Time: 01:02:13

DB-5 IS Data Filename: 20APR11M Sam:17 Analysis Date: 21-APR-11 Time: 01:02:13

DB-225 IS Date Filename: Analysis Date: Time:

DB-5 RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	24:22	1,3,6,8-TCDF (F)	23:01
1,2,8,9-TCDD (L)	28:17	1,2,8,9-TCDF (L)	28:30
1,2,4,7,9-PeCDD (F)	30:12	1,3,4,6,8-PeCDF (F)	28:23
1,2,3,8,9-PeCDD (L)	33:45	1,2,3,8,9-PeCDF (L)	34:10
1,2,4,6,7,9-HxCDD (F)	36:06	1,2,3,4,6,8-HxCDF (F)	35:13
1,2,3,7,8,9-HxCDD (L)	39:10	1,2,3,7,8,9-HxCDF (L)	39:43
1,2,3,4,6,7,9-HpCDD (F)	42:46	1,2,3,4,6,7,8-HpCDF (F)	42:15
1,2,3,4,6,7,8-HpCDD (L)	44:09	1,2,3,4,7,8,9-HpCDF (L)	45:03

(F) = First eluting iosmer (DB-5); (L) = Last eluting isomer (DB-5)

==========

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

COMPARED PEAKS (1)	% VALLEY HEIGHT BETWEEN
	<25%

(1) To meet contract requirement, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 21-APR-11 01:02:13 CS3 or VER Data Filename: 20APR11M Sam:17

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.001	0.999-1.002
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.000	0.999-1.002
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.001	0.999-1.002
LABELED COMPOUNDS			
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.021	0.989-1.052
13C-2,3,7,8-TCDD		1.021	0.976-1.043
13C-2,3,7,8-TCDF		0.993	0.923-1.103
13C-1,2,3,7,8-PeCDD		1.239	1.000-1.567
13C-1,2,3,7,8-PeCDF		1.174	0.923-1.203
13C-2,3,4,7,8-PeCDF		1.223	0.923-1.303

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 21-APR-11 01:02:13 CS3 or VER Data Filename: 20APR11M Sam:17

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.001	0.999-1.001
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.001	0.998-1.004
1,2,3,7,8,9-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.012	1.000-1.019
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.000	0.999-1.001
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.001	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.001	0.999-1.001
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.001	0.999-1.001
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.001	0.999-1.001
OCDD	13C-OCDD	1.001	0.999-1.001
OCDF	13C-OCDF	1.001	0.999-1.001
LABELED COMPOUNDS			
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,7,8,9-HxCDD	0.984	0.977-1.000
13C-1,2,3,6,7,8-HxCDD		0.989	0.981-1.003
13C-1,2,3,4,7,8-HxCDF		0.949	0.944-0.970
13C-1,2,3,6,7,8-HxCDF		0.954	0.949-0.975
13C-2,3,4,6,7,8-HxCDF		0.978	0.959-1.021
13C-1,2,3,7,8,9-HxCDF		1.015	0.977-1.047
13C-1,2,3,4,6,7,8-HpCDD		1.128	1.086-1.130
13C-1,2,3,4,6,7,8-HpCDF		1.080	1.043-1.085
13C-1,2,3,4,7,8,9-HpCDF		1.151	1.057-1.154
13C-OCDD		1.269	1.032-1.311
13C-OCDF		1.279	1.000-1.311

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/21/11

FAL ID: ST042011M2 Filename: 20APR11M Sam:17 Acquired: 21-APR-11 01:02:13 ICal: PCDDFAL3-3-7-11
Client ID: 1613 CS3 100511J ConCal: ST042011M2 EndCal: ST042011M3
Results: GC Column: DB5 Amount: 1.000 NATO 1989 Tox: 102
WHO 1998 Tox: 129 WHO 2005 Tox: 117

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise-1	Noise-2	DL
2,3,7,8-TCDD	1.97e+06	0.77 y	27:21	1.13	8.99		2.50	-	-	*
1,2,3,7,8-PeCDD	9.18e+06	1.62 y	33:11	1.02	53.0		2.50	-	-	*
1,2,3,4,7,8-HxCDD	1.14e+07	1.33 y	38:33	1.45	51.3		2.50	-	-	*
1,2,3,6,7,8-HxCDD	9.27e+06	1.32 y	38:43	1.45	50.9		2.50	-	-	*
1,2,3,7,8,9-HxCDD	1.08e+07	1.32 y	39:10	1.47	52.9		2.50	-	-	*
1,2,3,4,6,7,8-HpCDD	8.73e+06	0.96 y	44:09	1.30	48.9		2.50	-	-	*
OCDD	1.33e+07	0.93 y	49:42	1.45	98.2		2.50	-	-	*
2,3,7,8-TCDF	4.14e+06	0.66 y	26:36	1.15	10.7		2.50	-	-	*
1,2,3,7,8-PeCDF	1.33e+07	1.68 y	31:27	0.89	53.8		2.50	-	-	*
2,3,4,7,8-PeCDF	1.27e+07	1.65 y	32:46	0.89	52.1		2.50	-	-	*
1,2,3,4,7,8-HxCDF	1.27e+07	1.27 y	37:09	1.01	49.5		2.50	-	-	*
1,2,3,6,7,8-HxCDF	1.42e+07	1.26 y	37:21	0.89	50.2		2.50	-	-	*
2,3,4,6,7,8-HxCDF	1.32e+07	1.26 y	38:17	1.02	49.3		2.50	-	-	*
1,2,3,7,8,9-HxCDF	1.63e+07	1.27 y	39:43	1.10	50.3		2.50	-	-	*
1,2,3,4,6,7,8-HpCDF	1.14e+07	1.04 y	42:15	1.48	48.9		2.50	-	-	*
1,2,3,4,7,8,9-HpCDF	9.28e+06	1.05 y	45:03	1.43	48.9		2.50	-	-	*
OCDF	1.45e+07	0.89 y	50:04	0.84	96.4		2.50	-	-	*
										Rec
13C-2,3,7,8-TCDD	1.93e+07	0.82 y	27:20	1.03	95.8					95.8
13C-1,2,3,7,8-PeCDD	1.71e+07	1.76 y	33:10	1.01	86.0					86.0
13C-1,2,3,4,7,8-HxCDD	1.53e+07	1.29 y	38:31	1.19	94.6					94.6
13C-1,2,3,6,7,8-HxCDD	1.25e+07	1.27 y	38:41	0.94	98.4					98.4
13C-1,2,3,4,6,7,8-HpCDD	1.37e+07	1.06 y	44:07	0.83	122					122
13C-OCDD	1.87e+07	0.97 y	49:40	0.61	226					113
13C-2,3,7,8-TCDF	3.36e+07	0.87 y	26:35	0.98	102					102
13C-1,2,3,7,8-PeCDF	2.78e+07	1.73 y	31:26	0.83	99.6					99.6
13C-2,3,4,7,8-PeCDF	2.73e+07	1.71 y	32:44	0.80	101					101
13C-1,2,3,4,7,8-HxCDF	2.55e+07	0.48 y	37:08	1.84	102					102
13C-1,2,3,6,7,8-HxCDF	3.16e+07	0.48 y	37:20	2.29	102					102
13C-2,3,4,6,7,8-HxCDF	2.62e+07	0.48 y	38:16	1.86	104					104
13C-1,2,3,7,8,9-HxCDF	2.93e+07	0.49 y	39:42	1.98	109					109
13C-1,2,3,4,6,7,8-HpCDF	1.58e+07	0.45 y	42:14	0.99	118					118
13C-1,2,3,4,7,8,9-HpCDF	1.33e+07	0.44 y	45:02	0.77	128					128
13C-OCDF	3.56e+07	0.95 y	50:02	1.17	224					112
37Cl-2,3,7,8-TCDD	1.14e+06		27:21	0.73	7.97					79.7
13C-1,2,3,4-TCDD	1.96e+07	0.82 y	26:46	-	51.6					
13C-1,2,3,4-TCDF	3.37e+07	0.88 y	25:30	-	46.8					
13C-1,2,3,7,8,9-HxCDD	1.36e+07	1.28 y	39:08	-	54.8					

						Fac	Noise-1	Noise-2	DL		#Hom
Total Tetra-Dioxins	1.06e+07		23:44	1.13	48.4	2.50	576	-	0.0276		22
Total Penta-Dioxins	1.93e+07		30:12	1.02	112	2.50	1510	-	0.103		8
Total Hexa-Dioxins	3.51e+07		36:06	1.46	173	2.50	1910	-	0.119		6
Total Hepta-Dioxins	1.83e+07		42:46	1.30	103	2.50	608	-	0.0455		3
Total Tetra-Furans	1.89e+07		23:01	1.15	49.0	2.50	884	-	0.0241		9
1st Fn. Tot Penta-Furans	1.36e+07		28:23	0.89	55.5	2.50	432	-	0.0207	PeCDF	4
Total Penta-Furans	3.78e+07		30:08	0.89	154	2.50	1990	-	0.0957	210	9
Total Hexa-Furans	6.44e+07		35:13	1.00	228	2.50	1520	-	0.0701		11
Total Hepta-Furans	2.09e+07		42:15	1.46	98.6	2.50	-	-	*		6

Analyst: _____ Date: 4/21/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:20APR11M Instrument: FAL3 GC: DB5 Experiment:OCDD

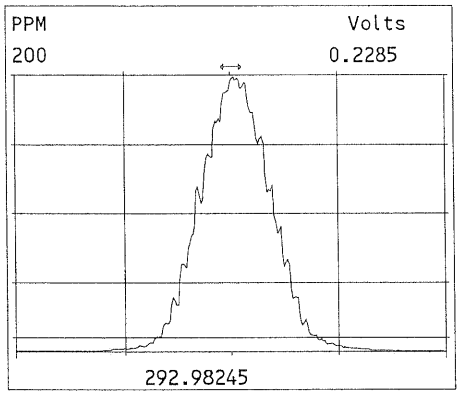
Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
20APR11M	1	ST042011M1	1613 CS3 100511J	20-APR-11 10:16:17	ST042011M1	ST042011M2	TC
20APR11M	2	2272-001-0001-OPR	OPR	20-APR-11 11:11:39	ST042011M1	ST042011M2	TC
20APR11M	3	2272-001-0001-MB	Method Blank	20-APR-11 12:07:02	ST042011M1	ST042011M2	TC
20APR11M	4	6701-007-0001-SA	MC-SED1-0-10-032911	20-APR-11 13:02:21	ST042011M1	ST042011M2	TC
20APR11M	5	6701-008-0001-SA	MC-SED2-0-10-032911	20-APR-11 13:57:44	ST042011M1	ST042011M2	TC
20APR11M	6	6701-009-0001-SA	MC-SED3-0-10-032911	20-APR-11 14:53:07	ST042011M1	ST042011M2	TC
20APR11M	7	6701-006-0001-SA	LL-SED5-0-15-032911	20-APR-11 15:48:26	ST042011M1	ST042011M2	TC
20APR11M	8	6701-004-0001-SA	LL-SED4-0-15-032911(1:5)	20-APR-11 16:43:49	ST042011M1	ST042011M2	TC
20APR11M	9	6701-003-0001-SA	LL-SED3-0-15-032911(1:5)	20-APR-11 17:39:13	ST042011M1	ST042011M2	TC
20APR11M	10	6701-005-0001-SA	LL-SED1-0-15-032911-D (¶	20-APR-11 18:34:31	ST042011M1	ST042011M2	TC
20APR11M	11	6701-001-0001-SA	LL-SED1-0-15-032911(1:5)	20-APR-11 19:29:50	ST042011M1	ST042011M2	TC
20APR11M	12	6701-002-0001-SA	LL-SED2-0-15-032911(1:5)	20-APR-11 20:25:13	ST042011M1	ST042011M2	TC
20APR11M	13	6701-002-0001-MS	LL-SED2-0-15-032911	20-APR-11 21:20:35	ST042011M1	ST042011M2	TC
20APR11M	14	6701-002-0001-MSD	LL-SED2-0-15-032911	20-APR-11 22:15:58	ST042011M1	ST042011M2	TC
20APR11M	15	SB042011M1	Solvent Blank	20-APR-11 23:11:21	ST042011M1	ST042011M2	TC
20APR11M	16	SB042011M2	Solvent Blank	21-APR-11 00:06:50	ST042011M1	ST042011M2	TC
20APR11M	17	ST042011M2	1613 CS3 100511J	21-APR-11 01:02:13	ST042011M2	ST042011M3	TC
20APR11M	18	6701-004-0001-SA	LL-SED4-0-15-032911	21-APR-11 01:57:36	ST042011M2	ST042011M3	TC
20APR11M	19	6701-003-0001-SA	LL-SED3-0-15-032911	21-APR-11 02:52:59	ST042011M2	ST042011M3	TC
20APR11M	20	6701-005-0001-SA	LL-SED1-0-15-032911-D	21-APR-11 03:48:22	ST042011M2	ST042011M3	TC
20APR11M	21	6701-001-0001-SA	LL-SED1-0-15-032911	21-APR-11 04:43:45	ST042011M2	ST042011M3	TC
20APR11M	22	6701-002-0001-SA	LL-SED2-0-15-032911	21-APR-11 05:39:08	ST042011M2	ST042011M3	TC
20APR11M	23	SB042011M3	Solvent Blank	21-APR-11 06:34:31	ST042011M2	ST042011M3	TC
20APR11M	24	ST042011M3	1613 CS3 100511J	21-APR-11 07:29:49	ST042011M2	ST042011M3	TC

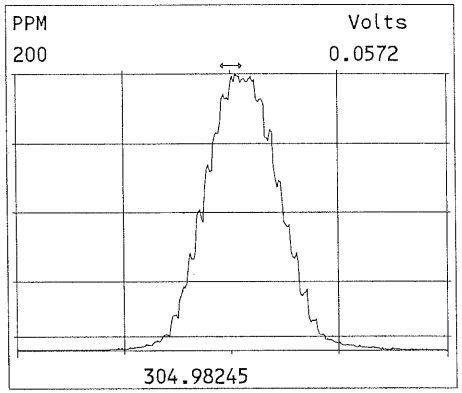
4/21/11

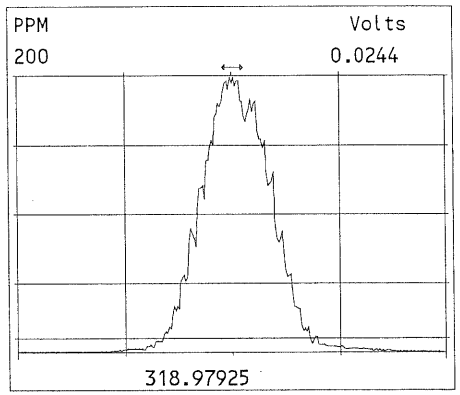
Data Backed Up:_____

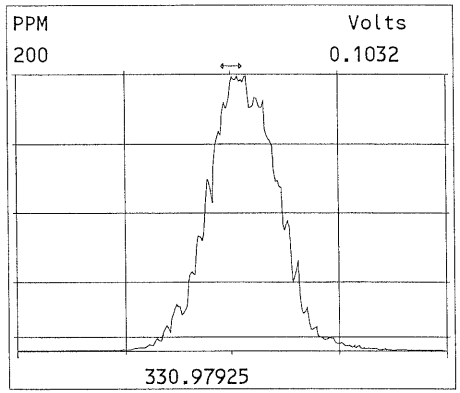
Date:_____

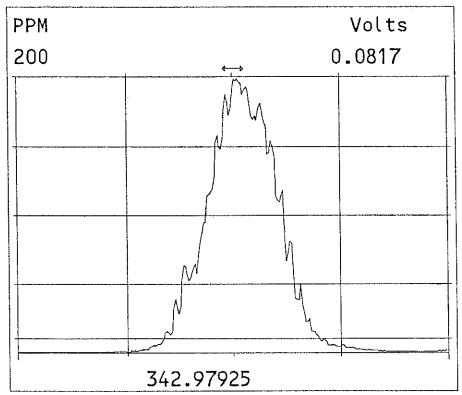
Peak Locate Examination:20-APR-2011:10:14 File:20APR11M
Experiment:OCDD Function:1 Reference:PFK

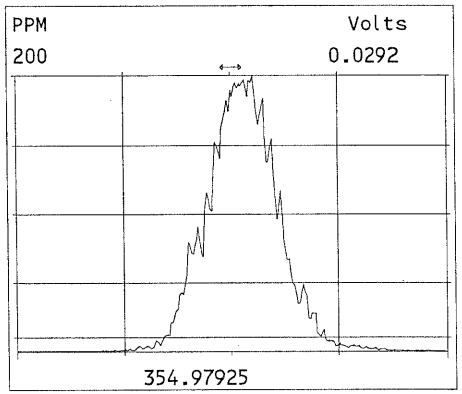


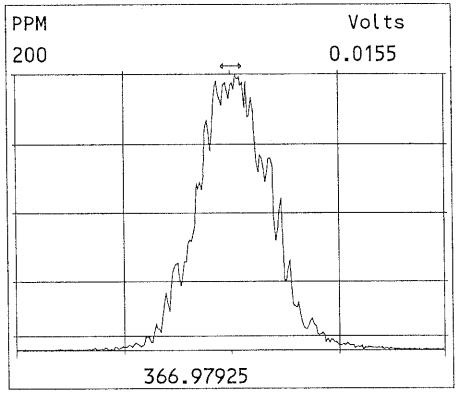


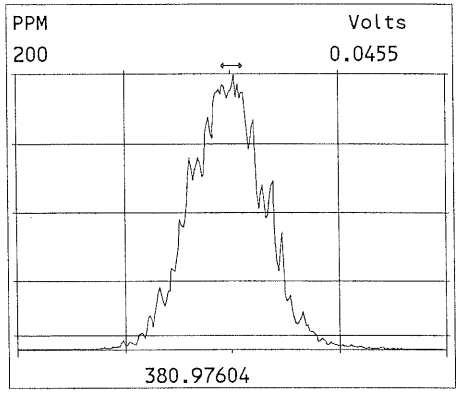


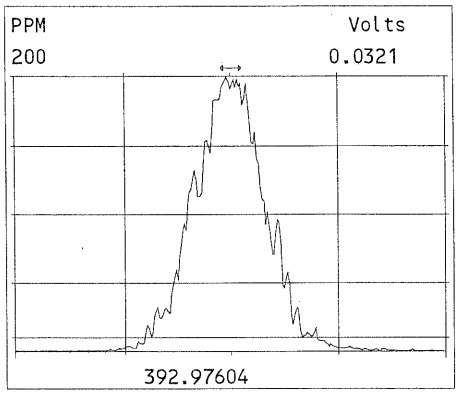


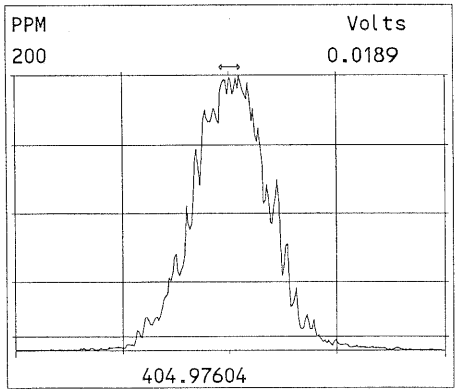


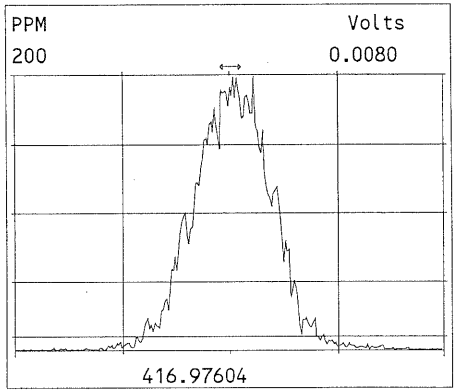




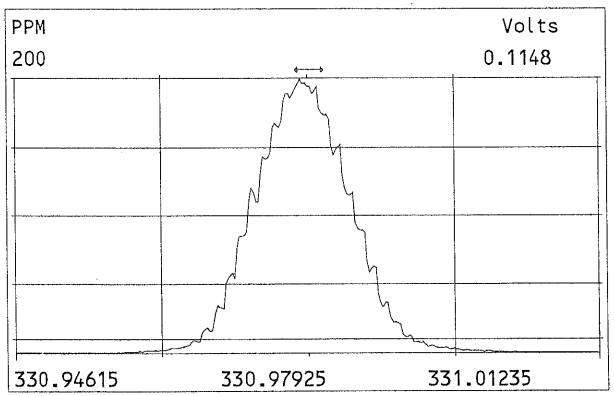


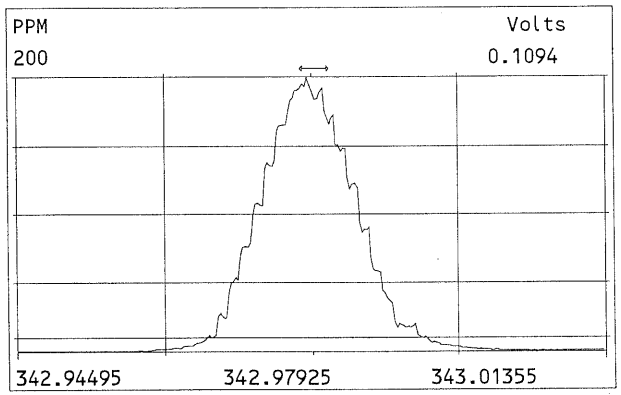


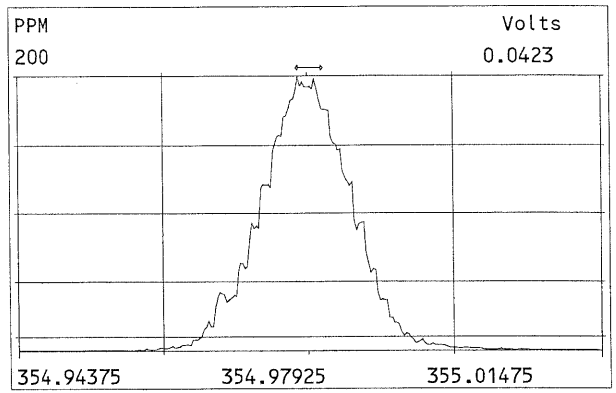


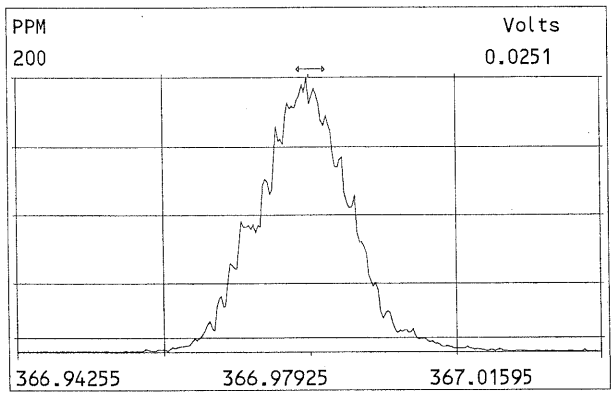


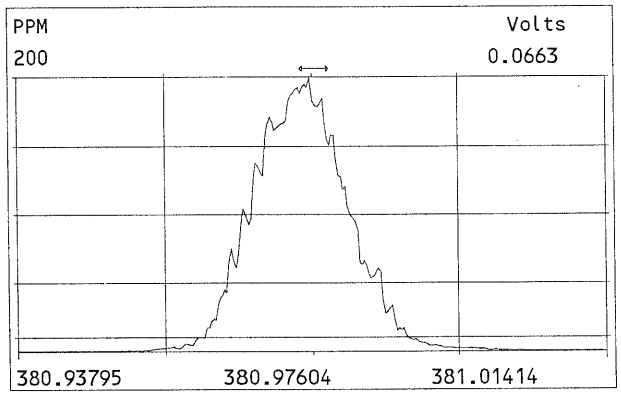
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:2 Reference:PFK

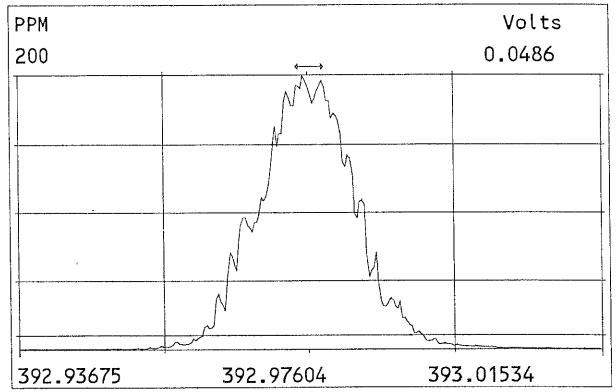


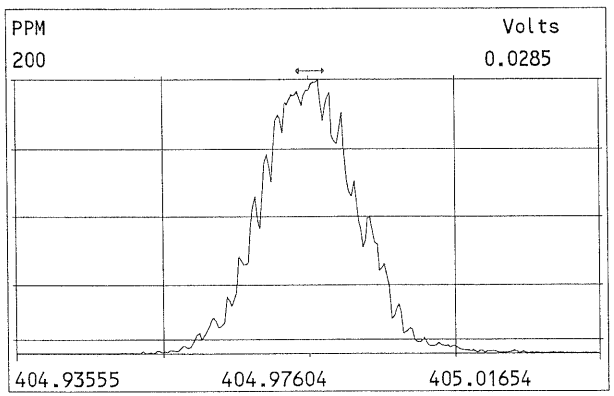


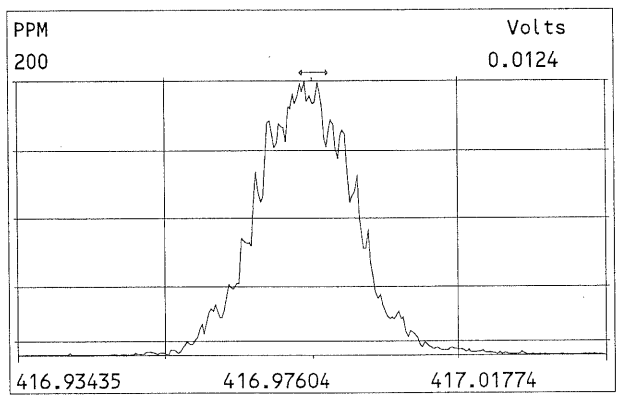






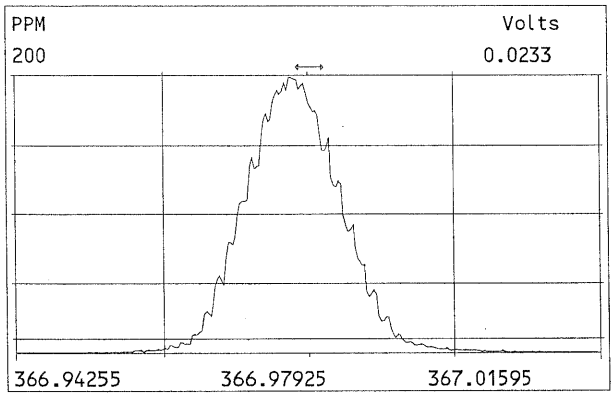


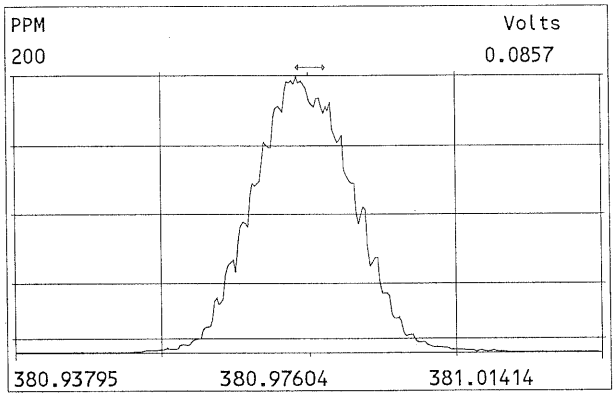


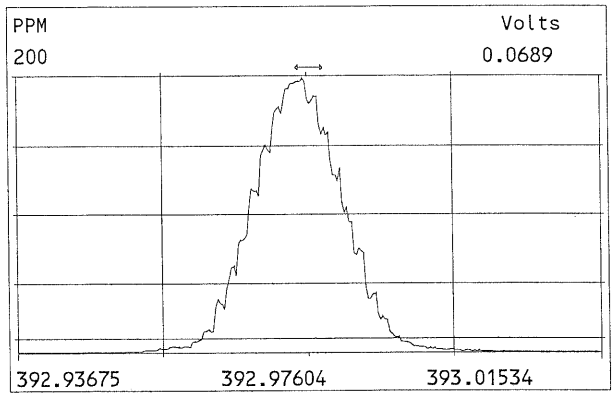


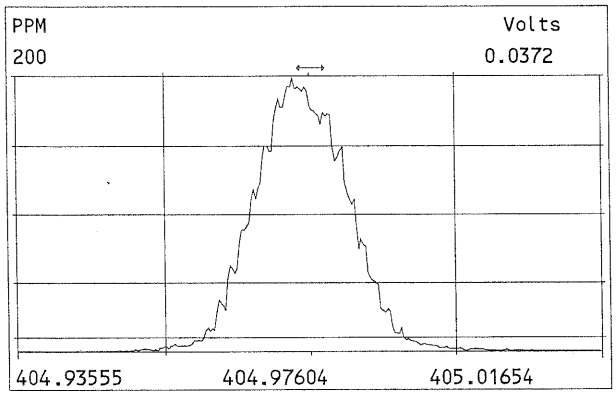
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M

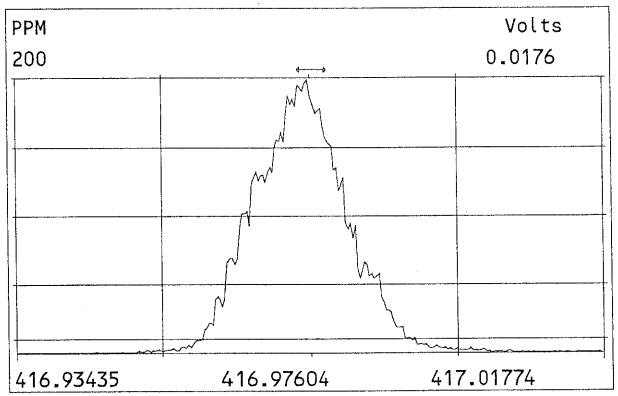
Experiment:OCDD Function:3 Reference:PFK

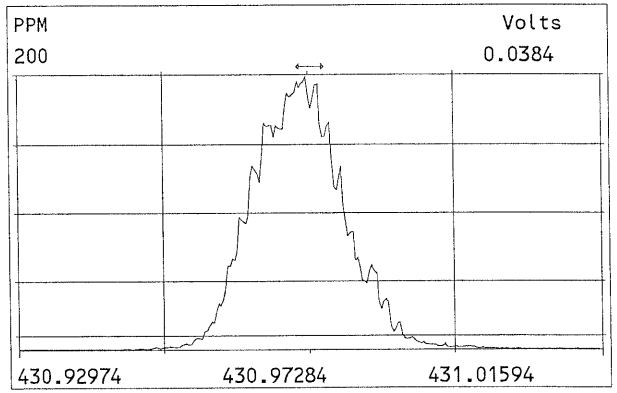


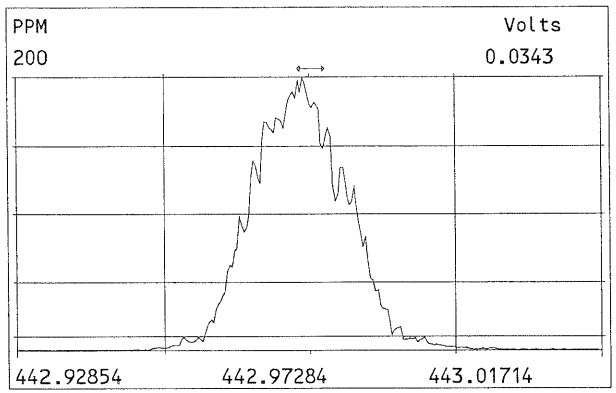


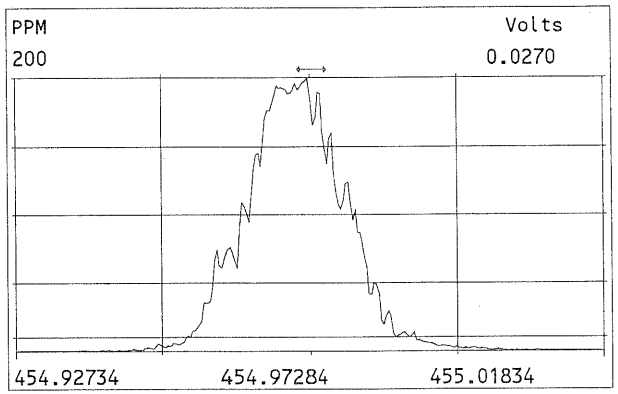




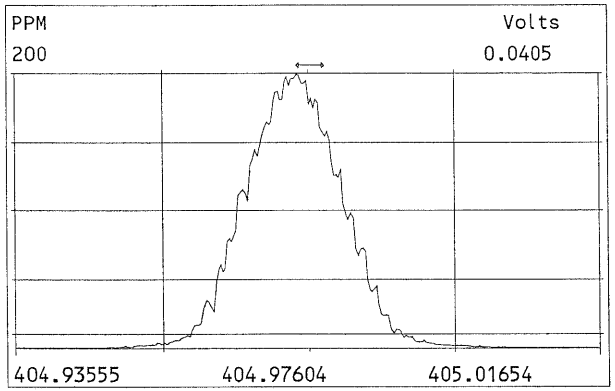


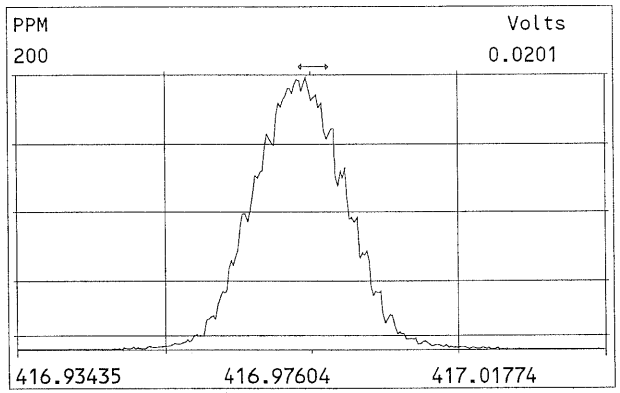


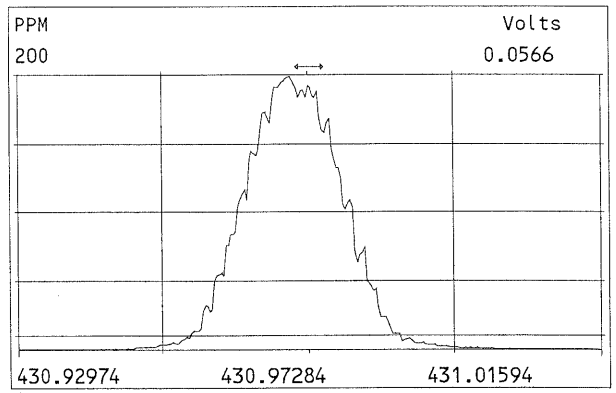


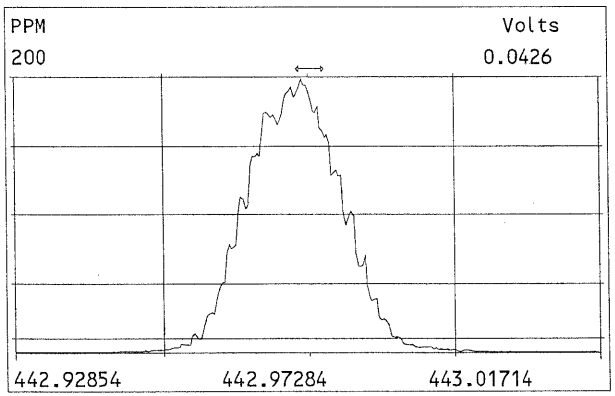


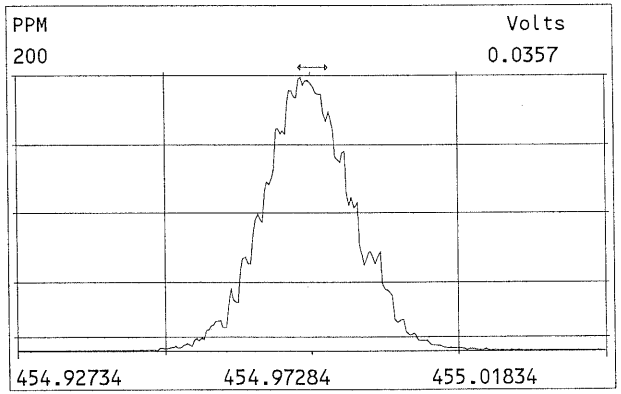
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:4 Reference:PFK

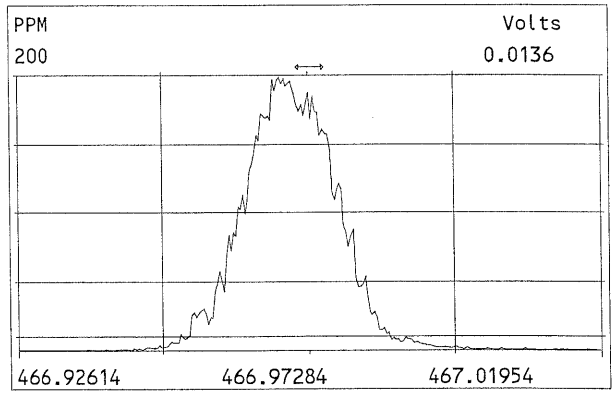


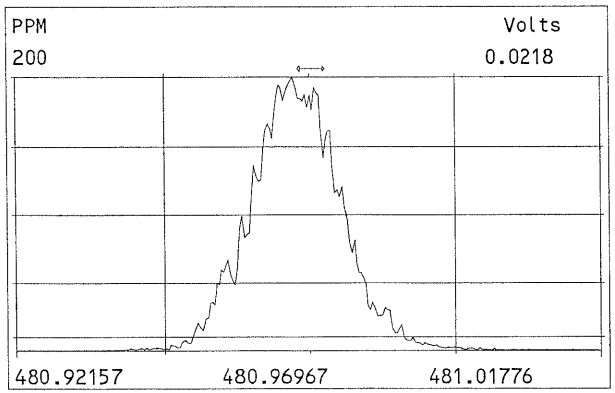






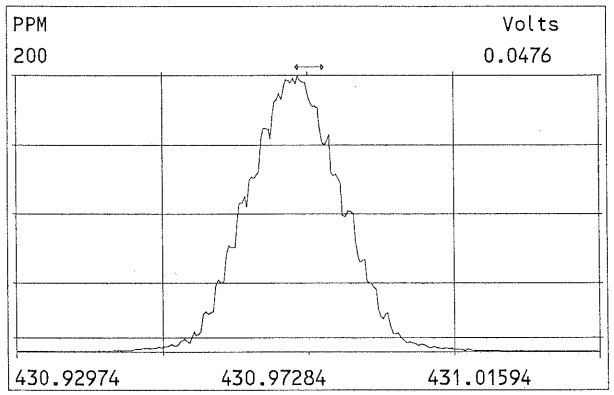


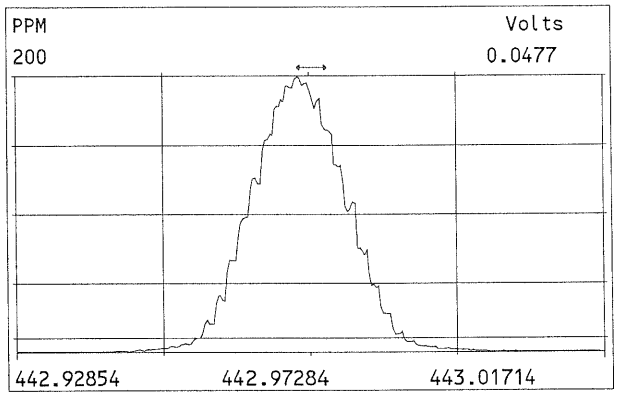


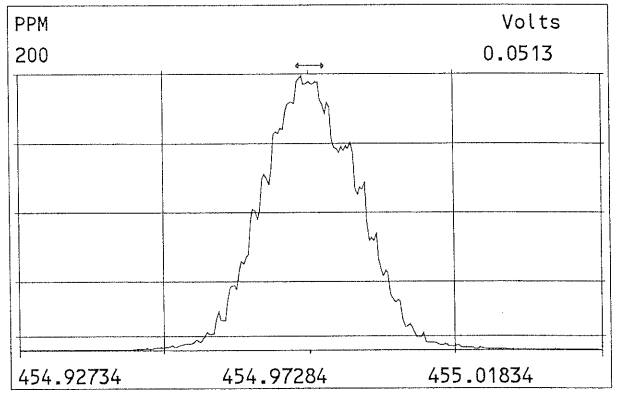


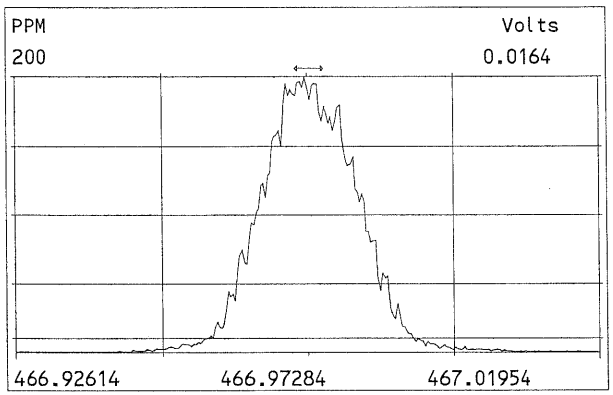
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M

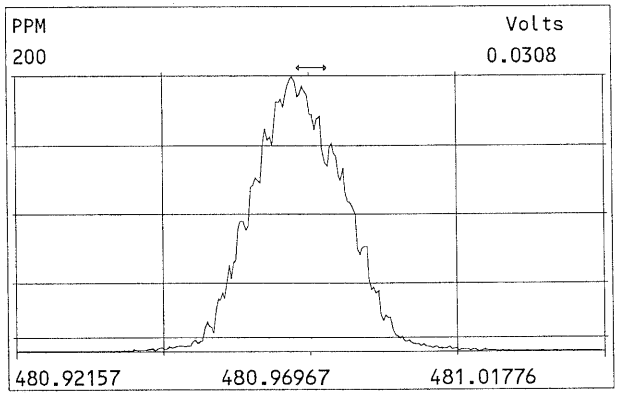
Experiment:OCDD Function:5 Reference:PFK

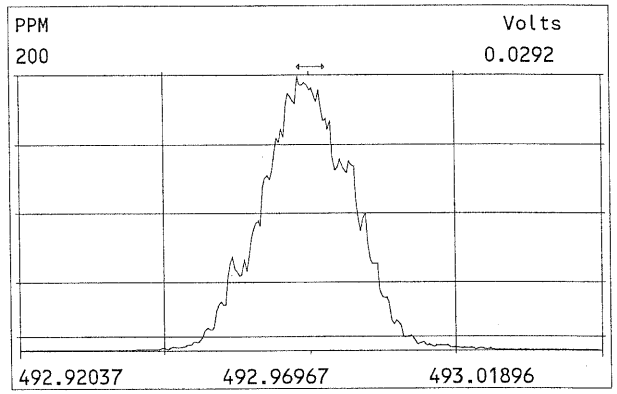


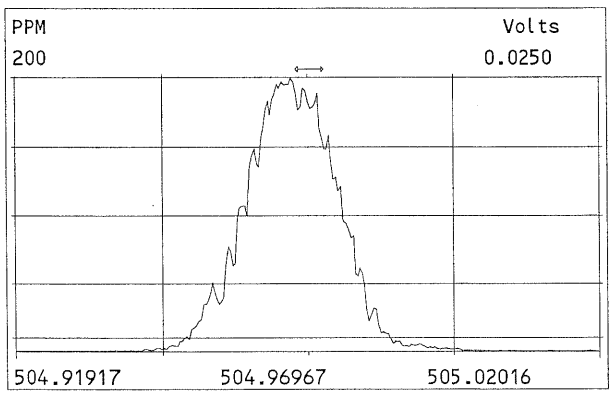


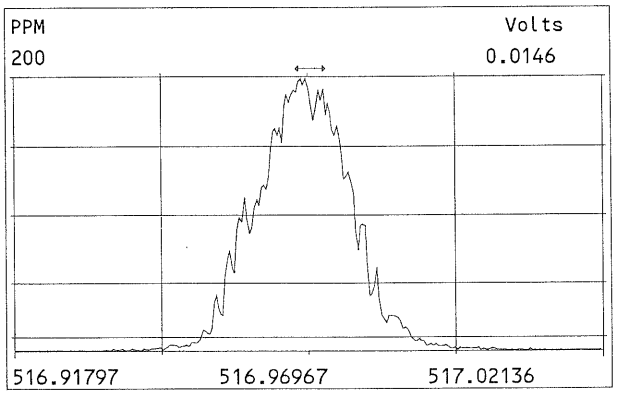




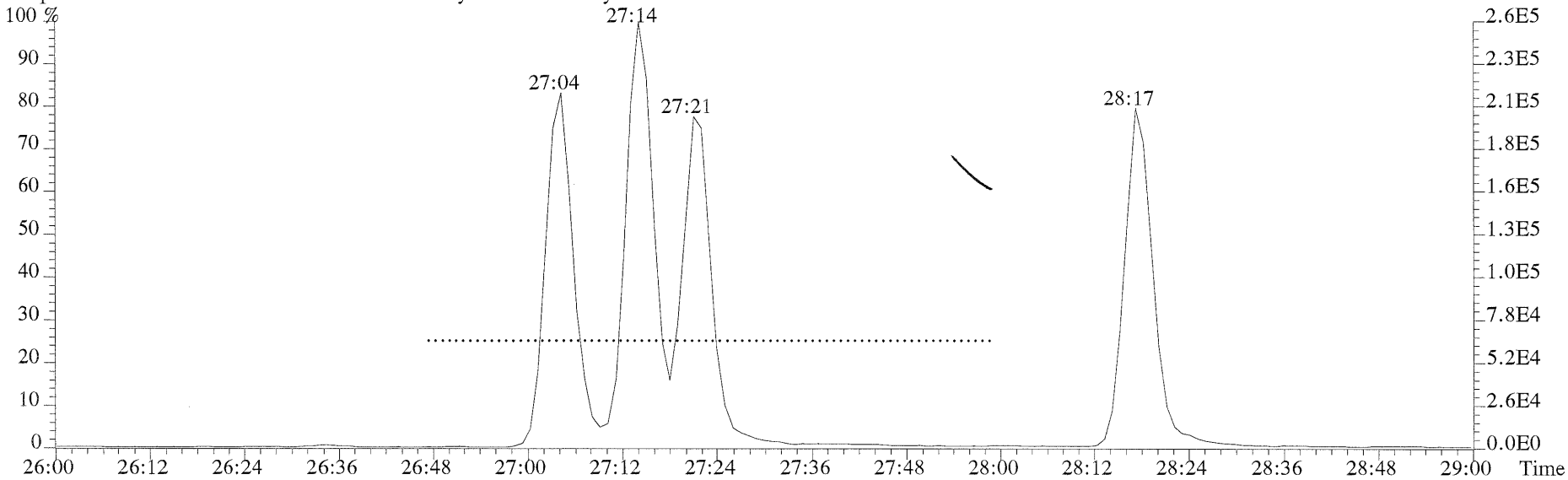




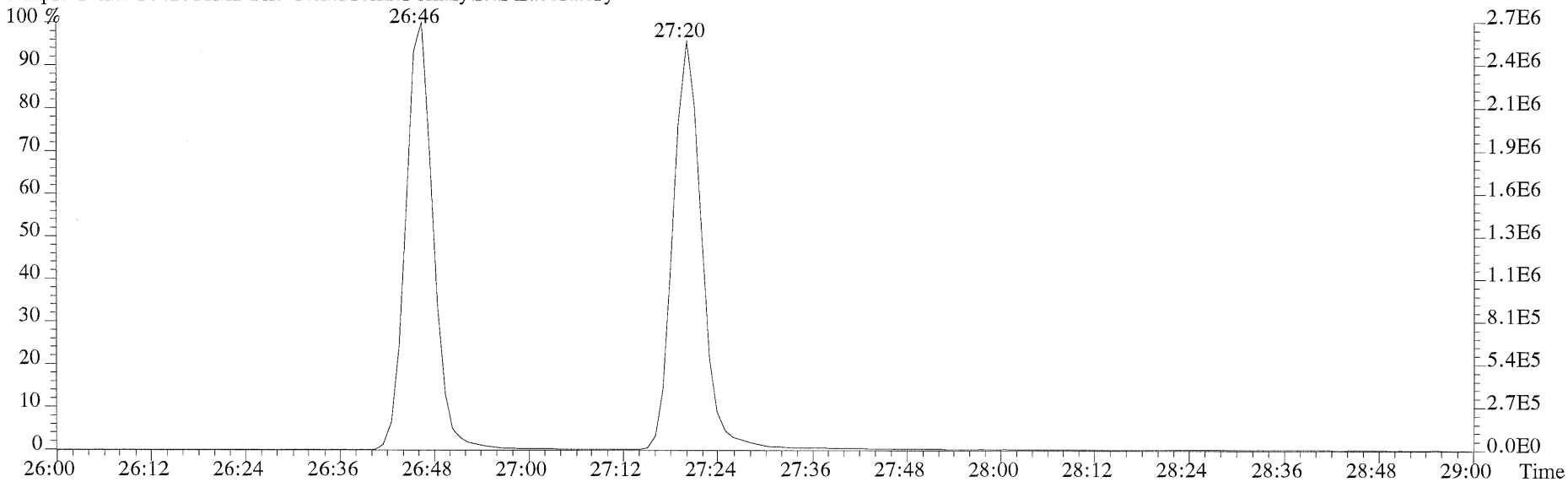




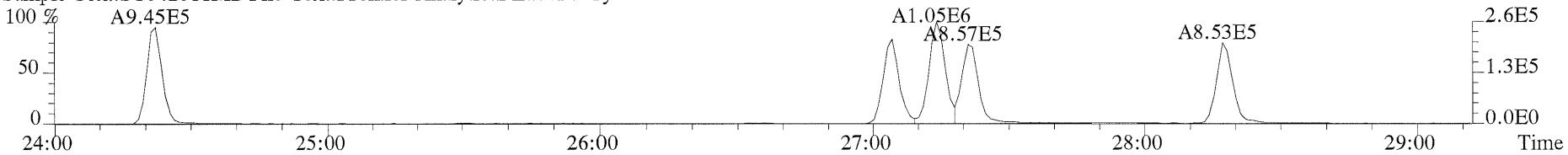
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
319.8965 S:17 Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



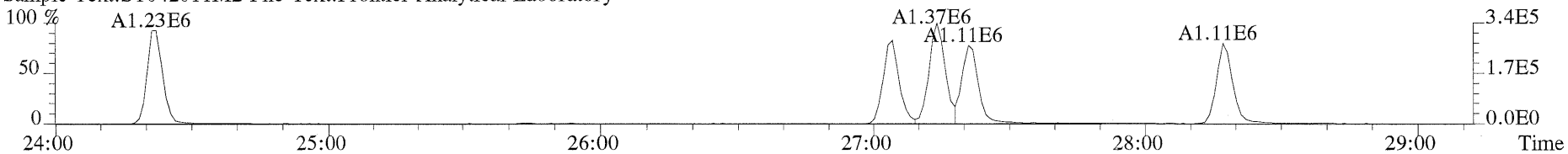
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:17 Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



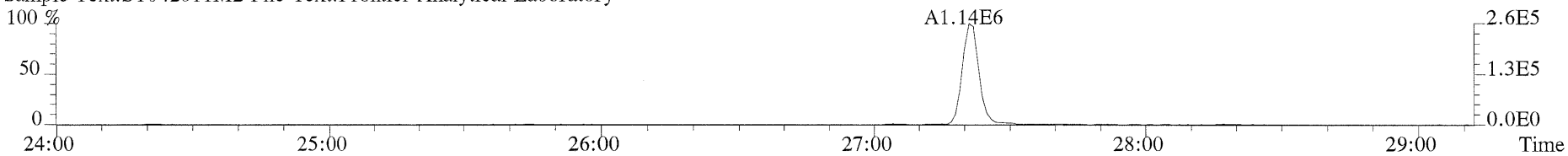
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
319.8965 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



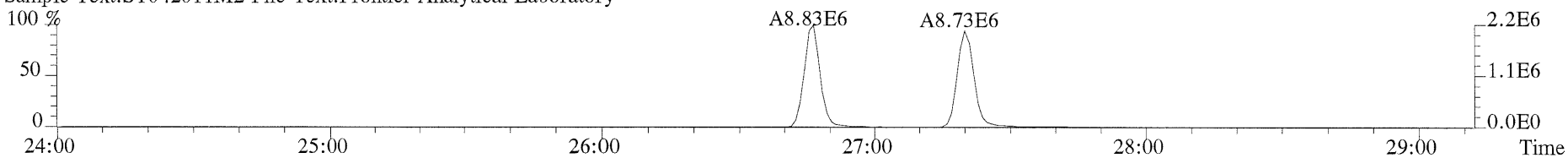
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
321.8936 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



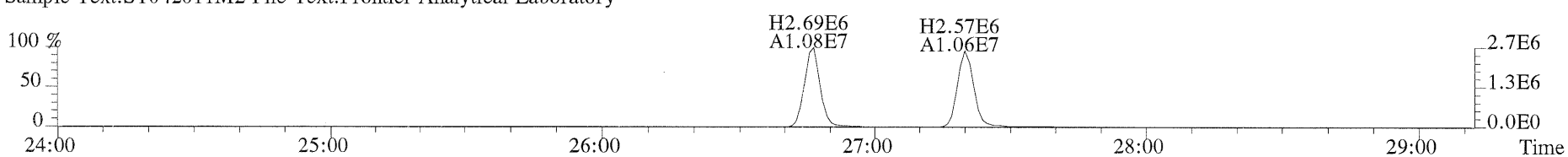
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
327.8847 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



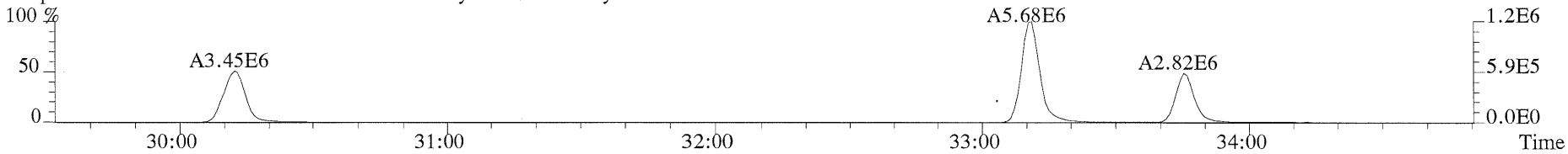
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
331.9368 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



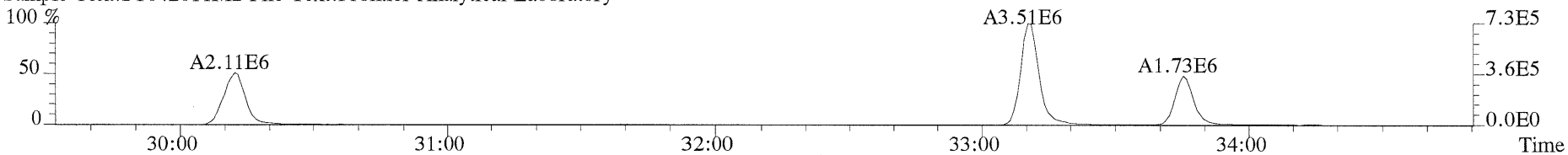
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



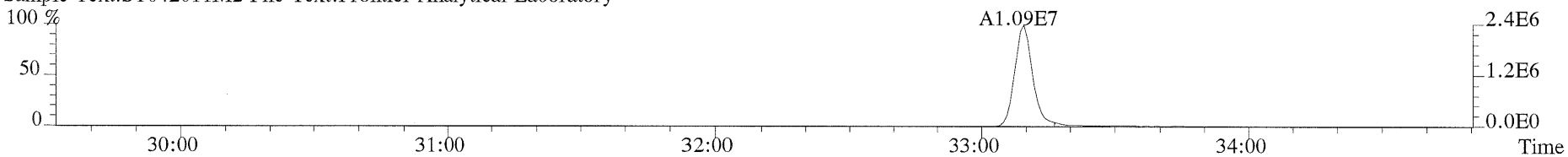
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
355.8546 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



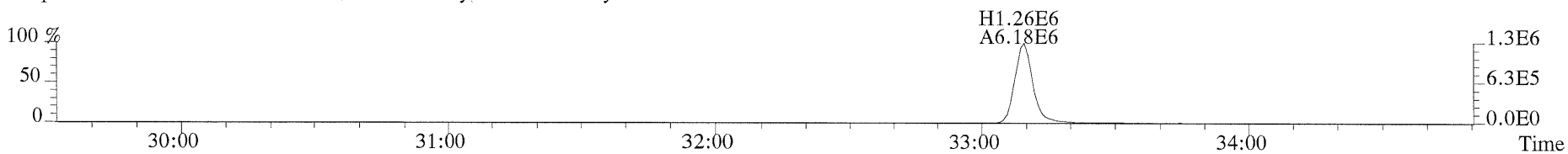
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
357.8517 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



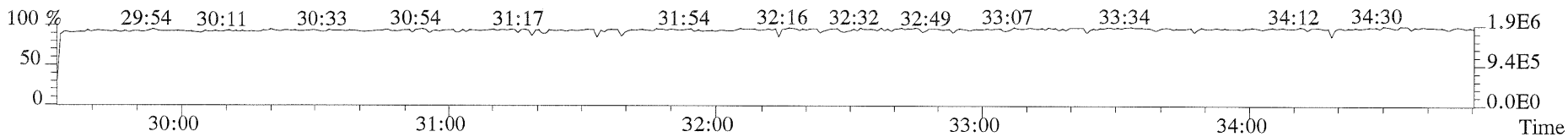
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
367.8949 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



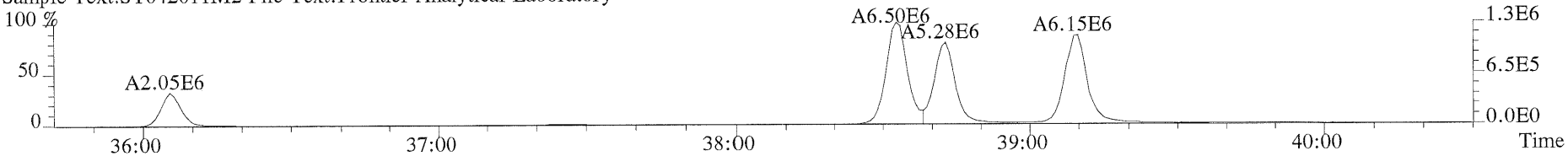
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
369.8919 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



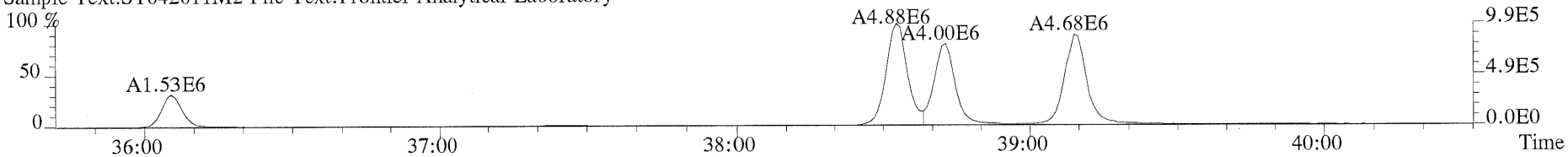
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
366.9792 S:17 F:2 Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



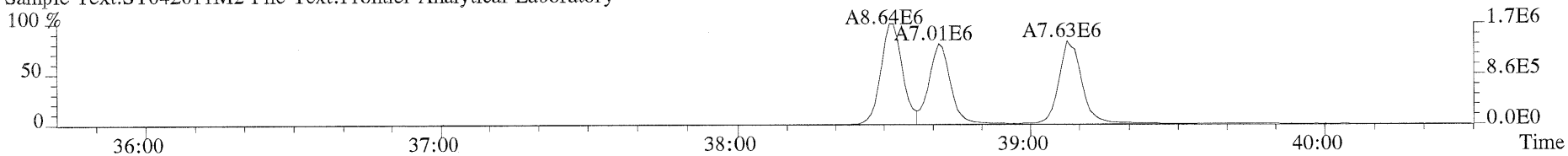
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
389.8156 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



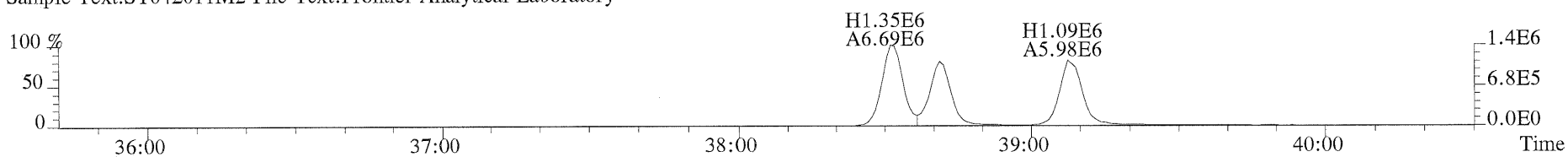
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
391.8127 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



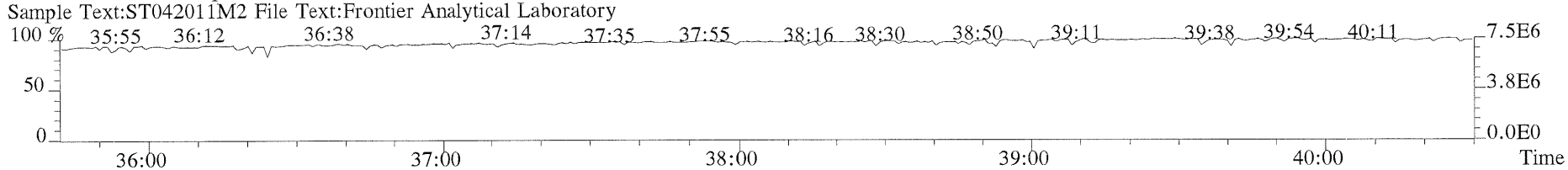
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
401.8559 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



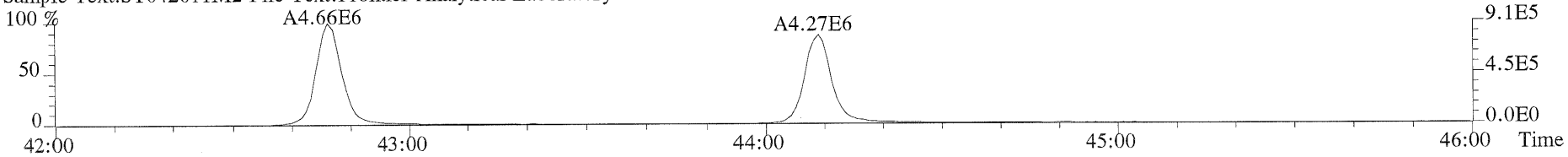
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
403.8530 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



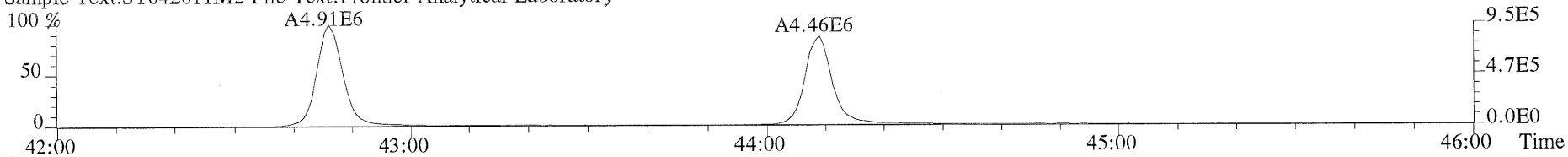
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
380.9760 S:17 F:3 Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



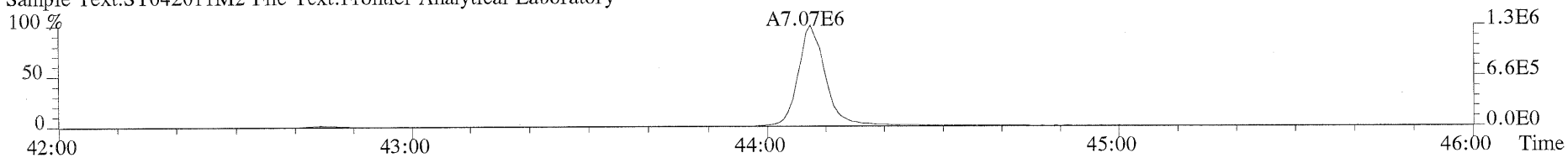
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
423.7767 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



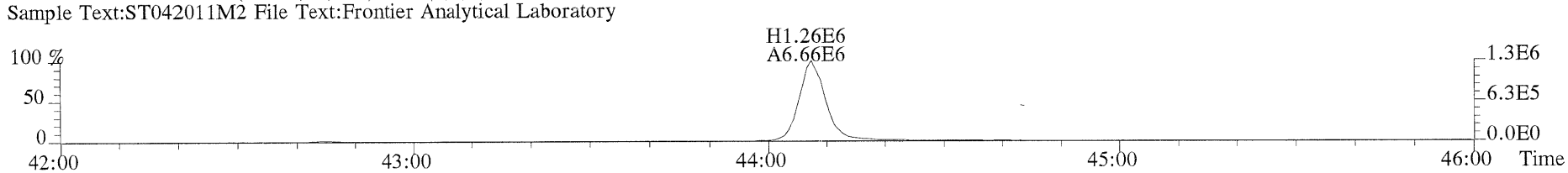
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
425.7737 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



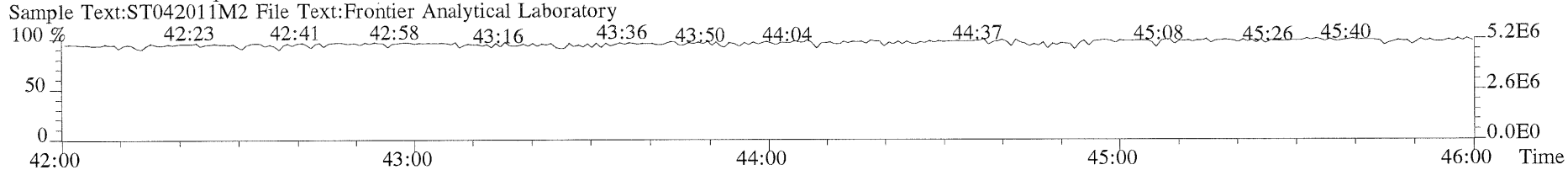
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
435.8169 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



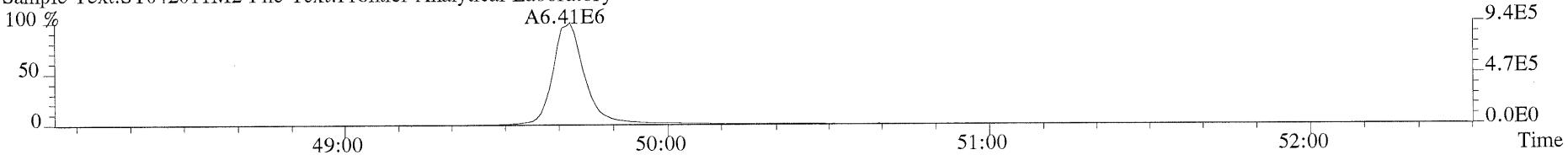
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
437.8140 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



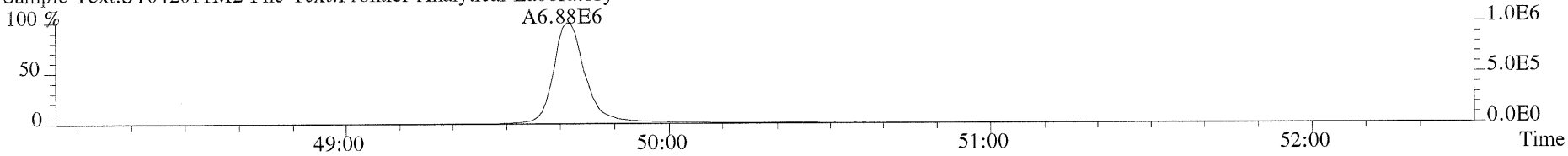
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
430.9728 S:17 F:4 Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



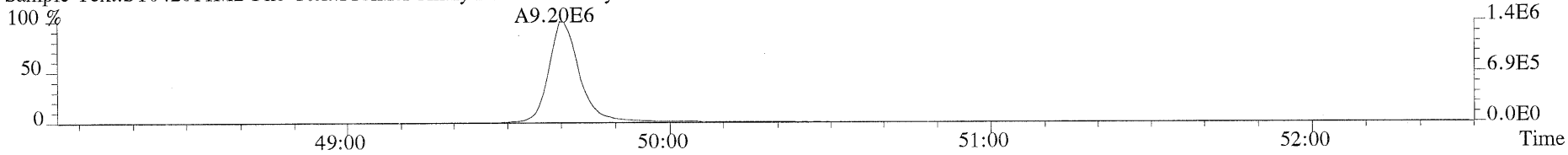
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
457.7377 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



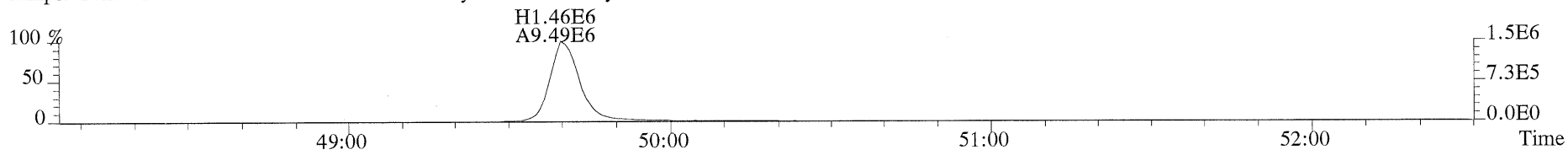
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
459.7348 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



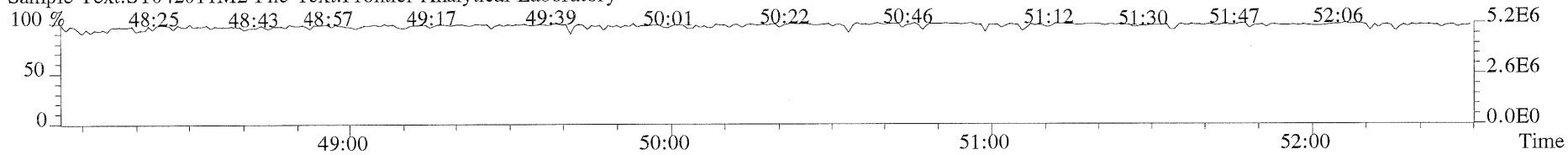
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
469.7780 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



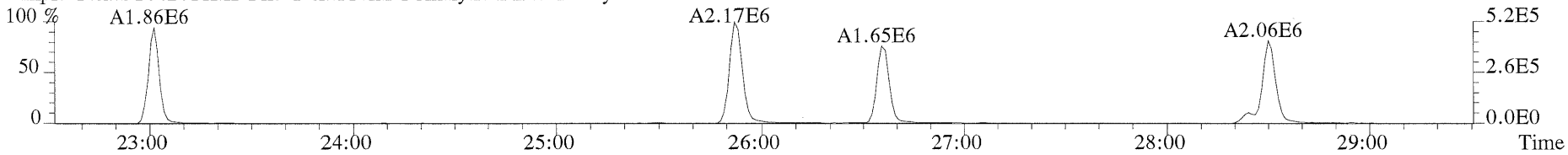
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
471.7750 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



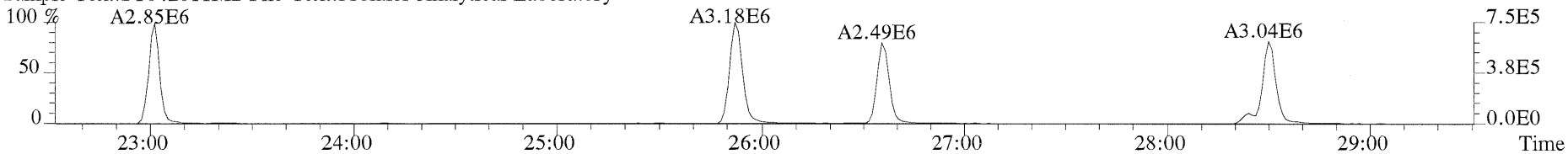
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
454.9728 S:17 F:5 Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



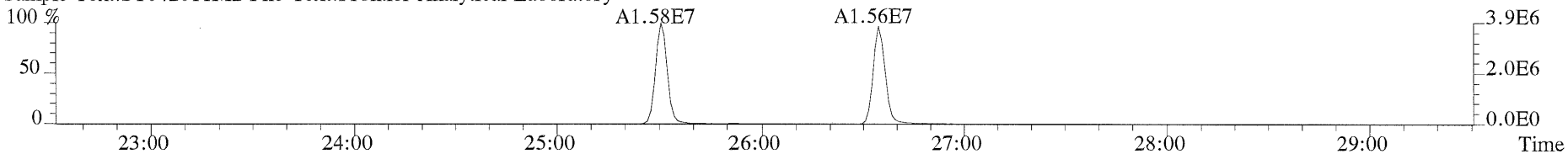
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
303.9016 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



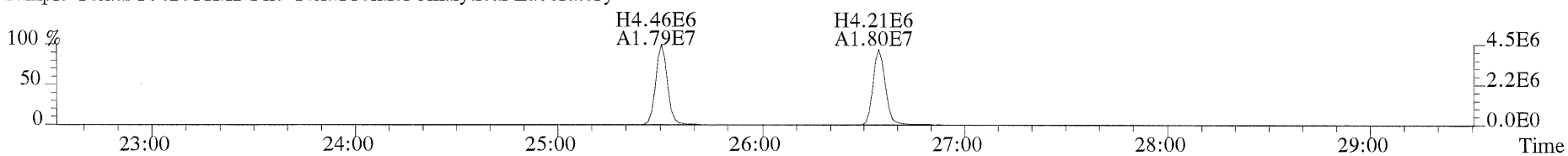
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
305.8987 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



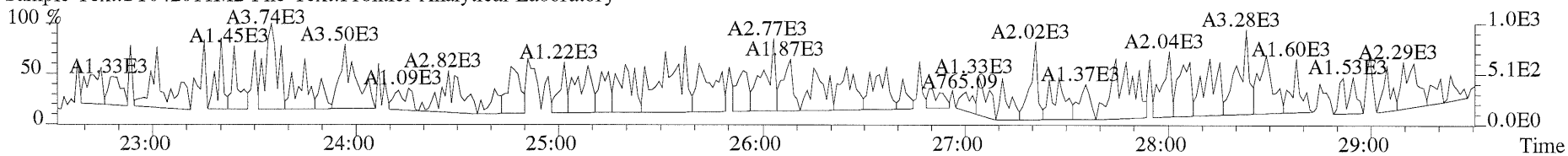
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
315.9419 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



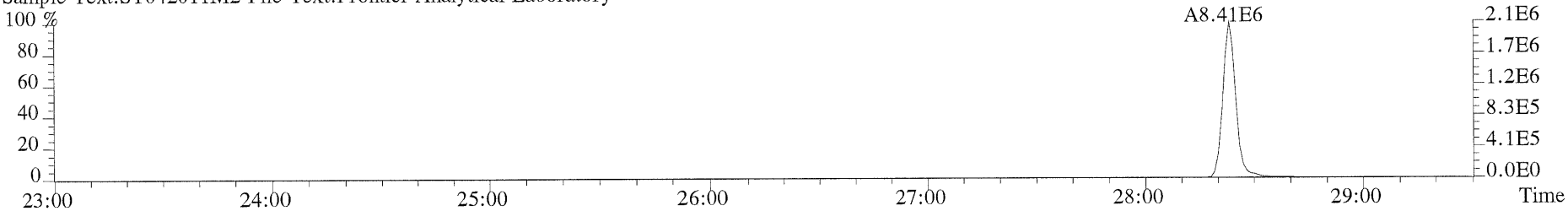
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
317.9389 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



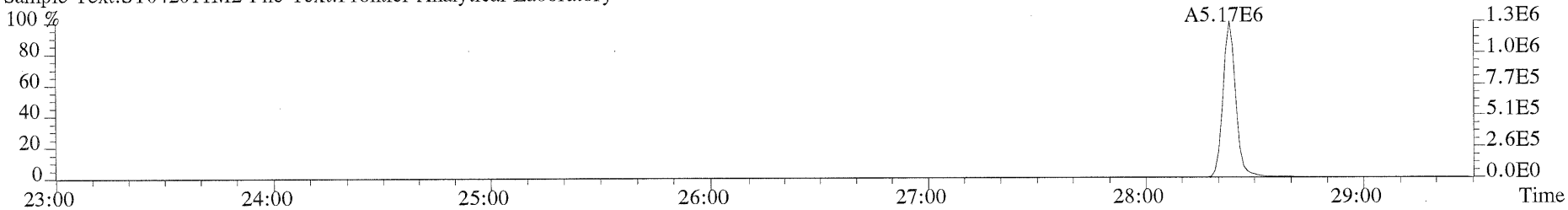
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
375.8364 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



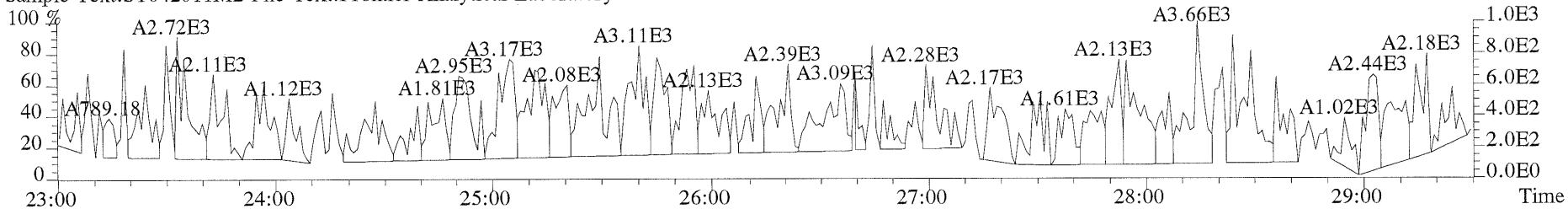
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



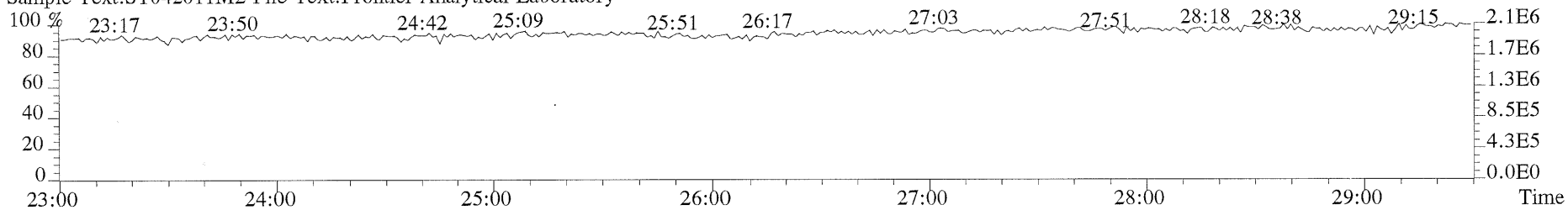
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



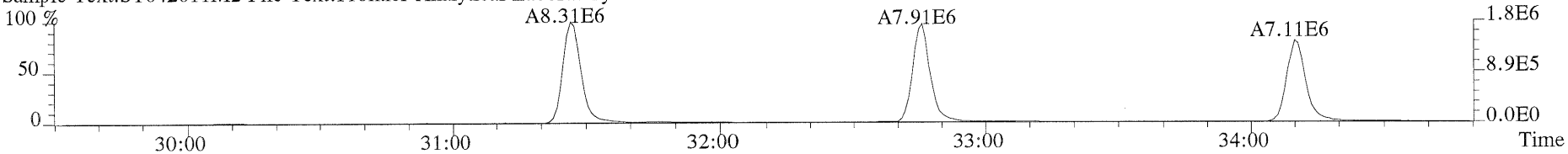
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:17 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



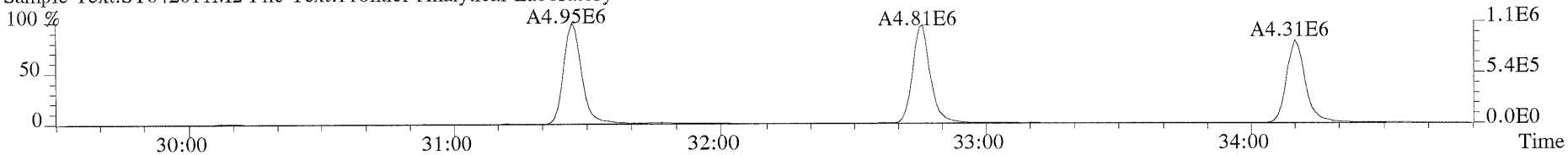
File:20APR11M #1-425 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
316.9824 S:17 Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



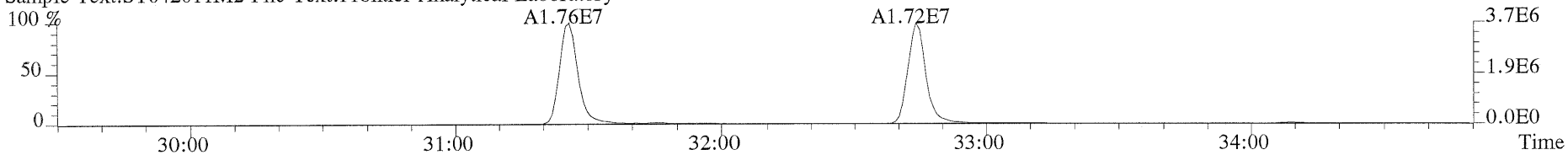
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



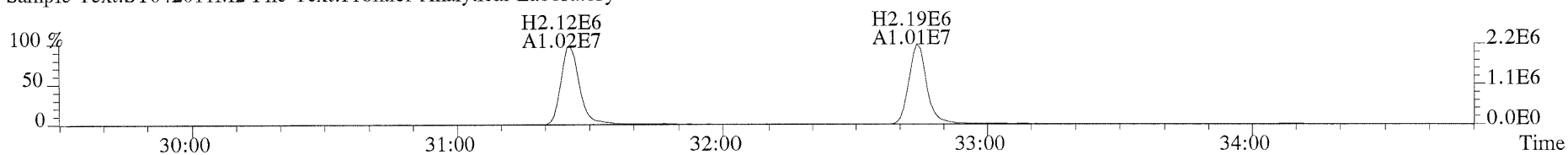
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



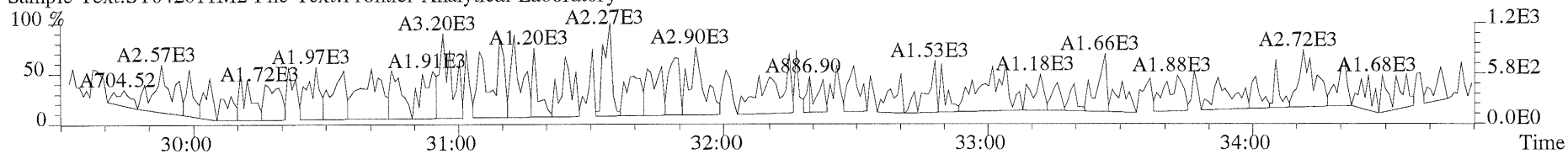
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
351.9000 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



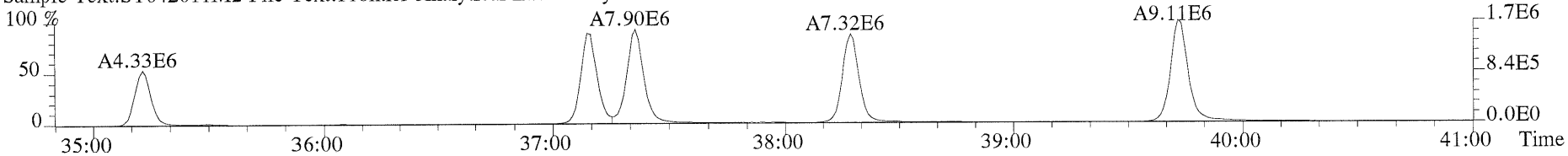
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
353.8970 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



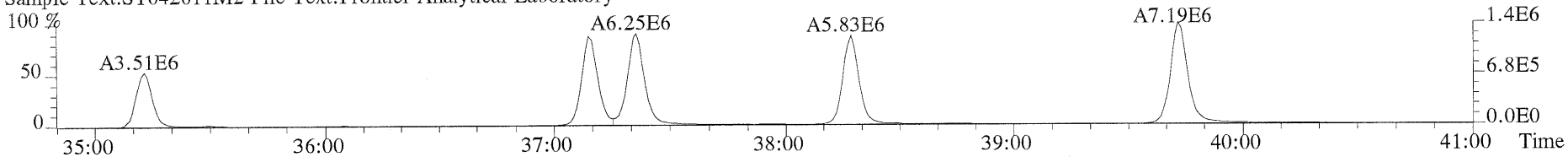
File:20APR11M #1-412 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:17 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



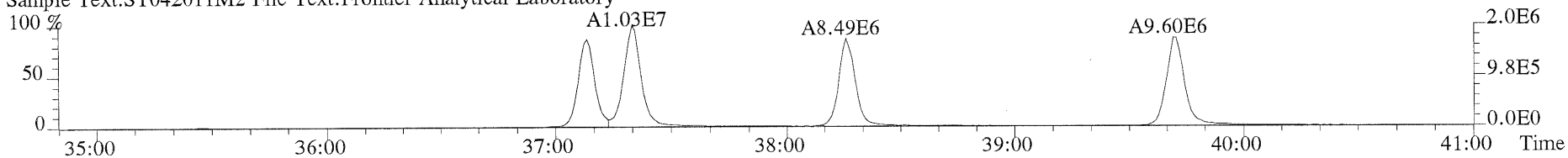
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
373.8207 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



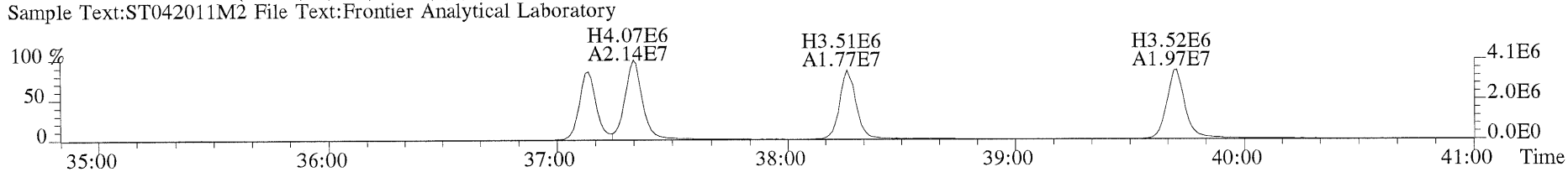
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
375.8178 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



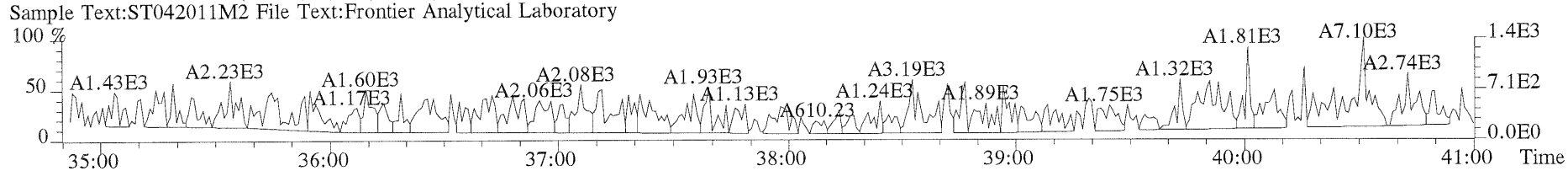
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
383.8639 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



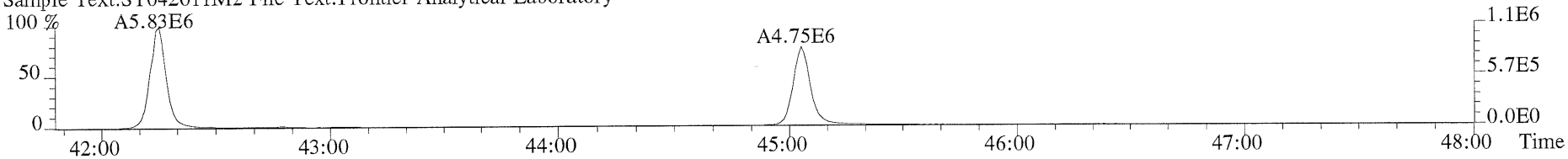
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
385.8610 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



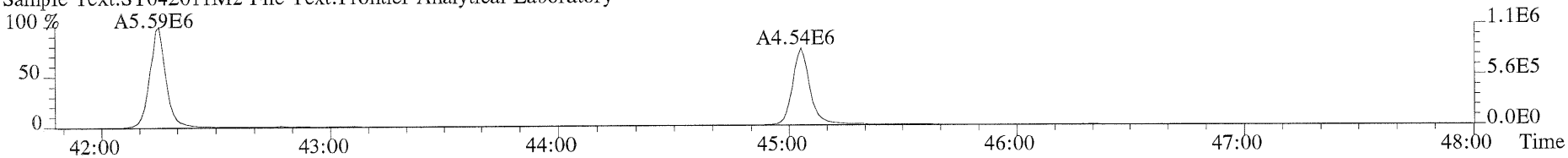
File:20APR11M #1-477 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
445.7555 S:17 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



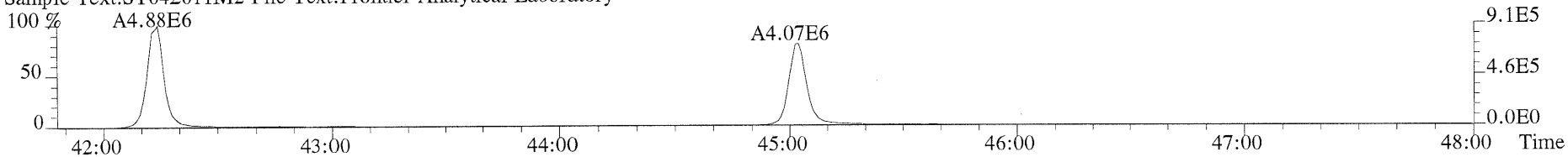
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
407.7818 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



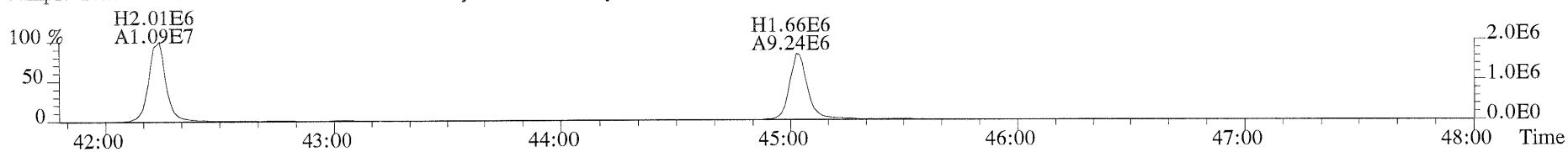
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
409.7788 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



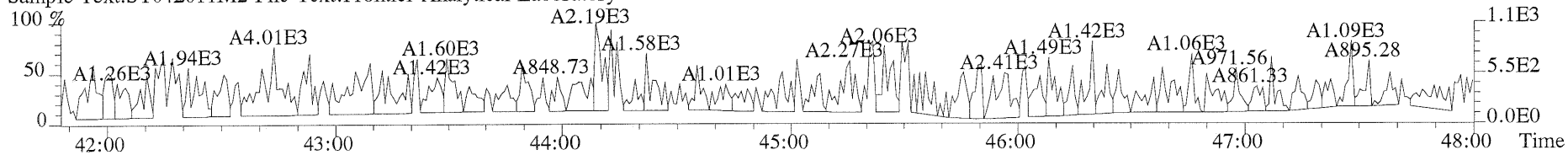
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
417.8253 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



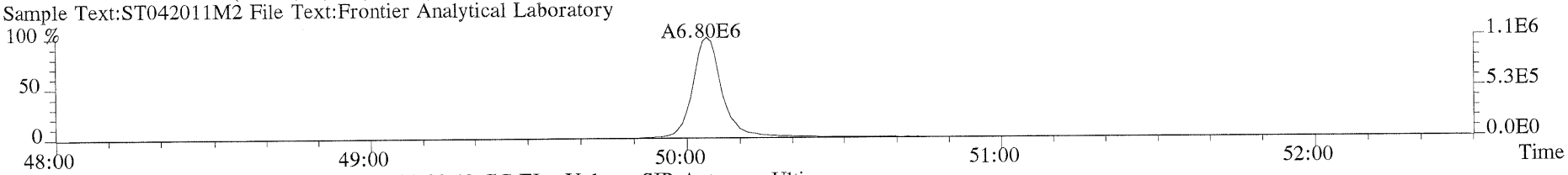
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
419.8220 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



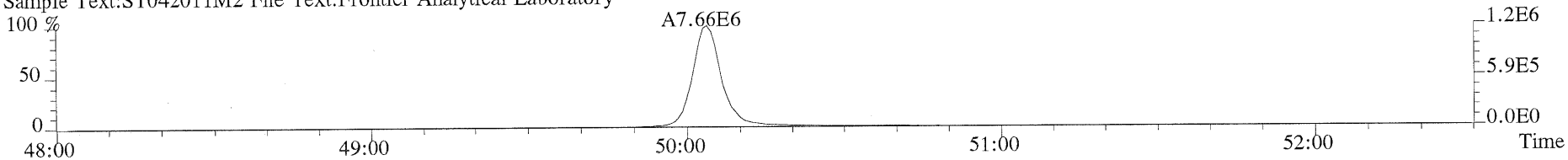
File:20APR11M #1-541 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
479.7165 S:17 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



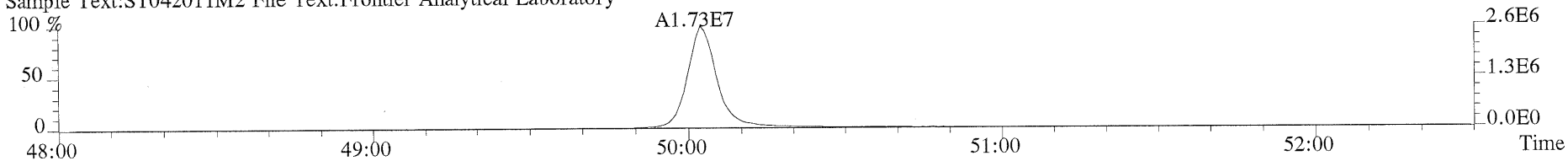
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
441.7428 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



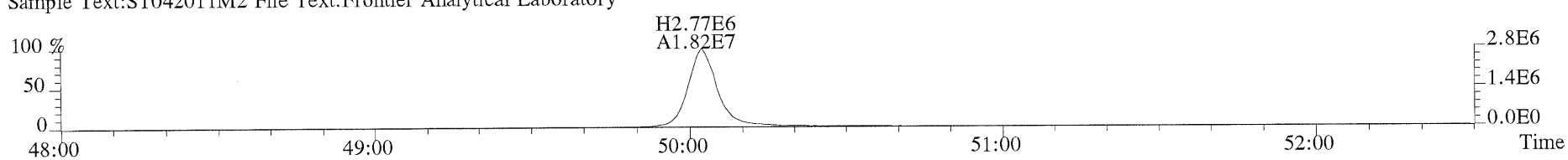
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
443.7398 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



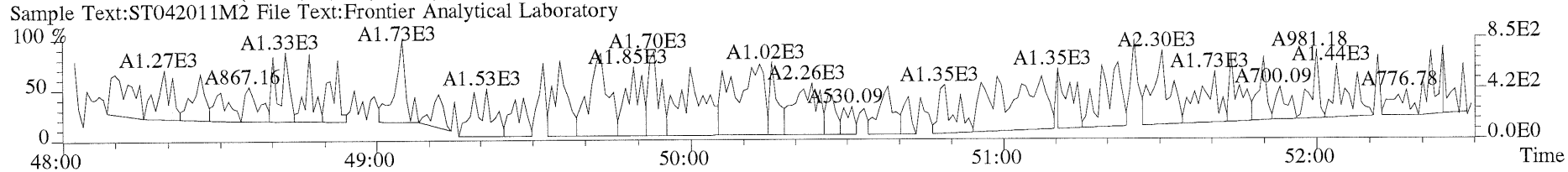
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
453.7831 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory



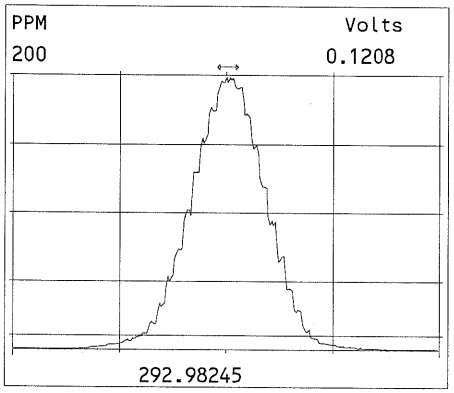
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
455.7801 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory

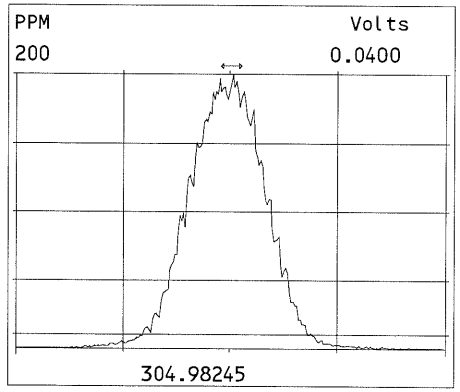


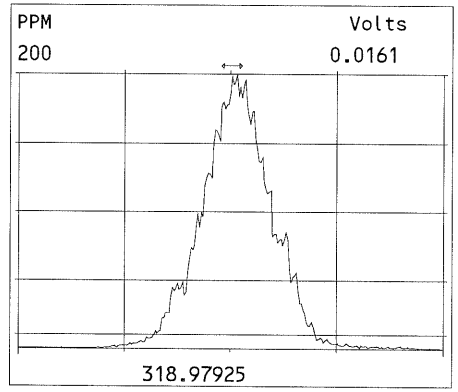
File:20APR11M #1-347 Acq:21-APR-2011 01:02:13 GC EI+ Voltage SIR Autospec-Ultima
513.6775 S:17 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M2 File Text:Frontier Analytical Laboratory

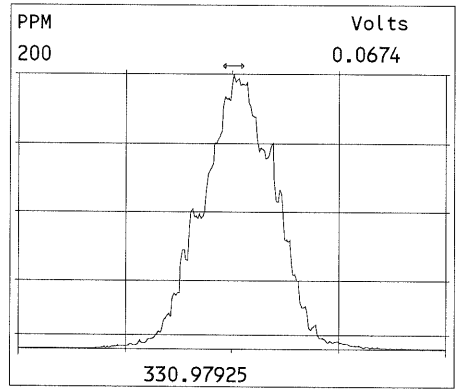


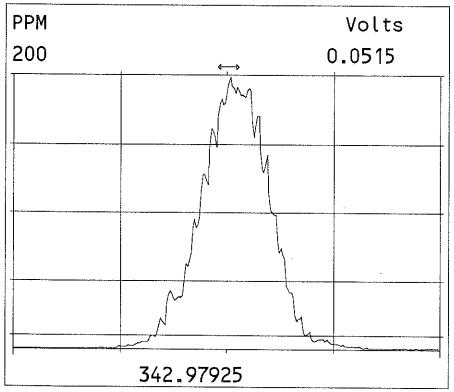
Peak Locate Examination:21-APR-2011:08:29 File:20APR11M_RES_CHECK
Experiment:OCDD Function:1 Reference:PFK

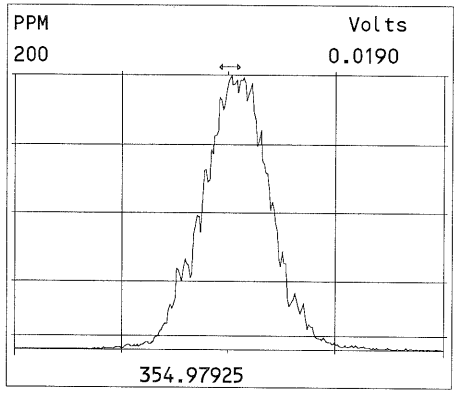


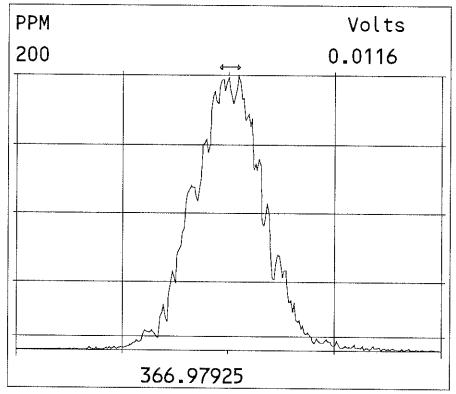


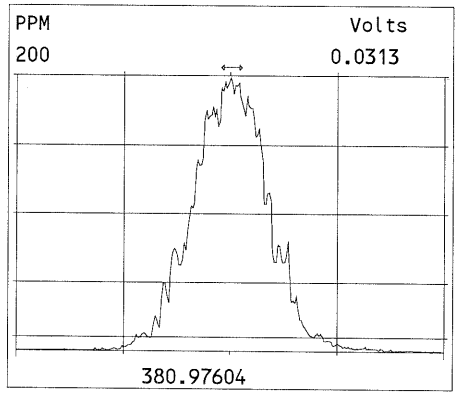


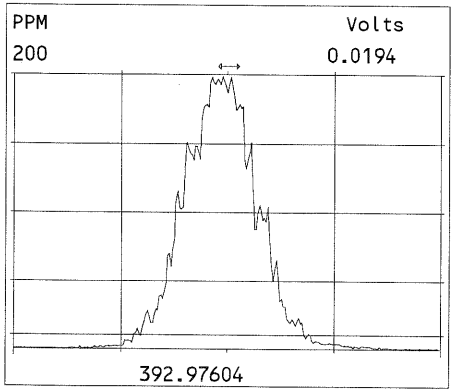


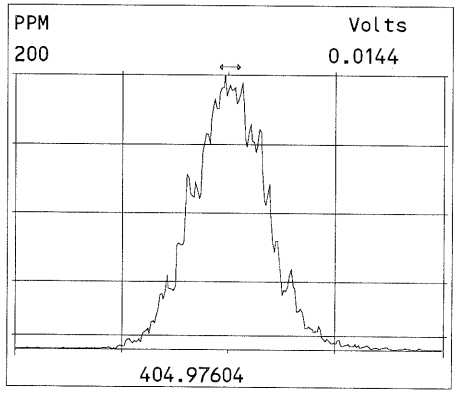


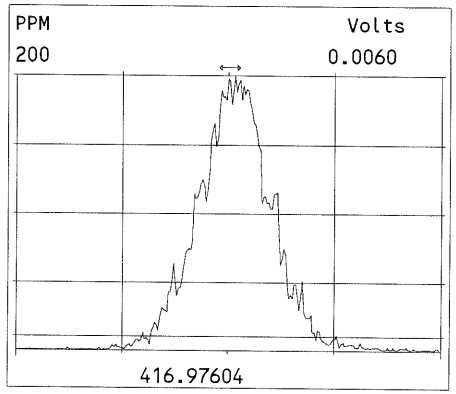




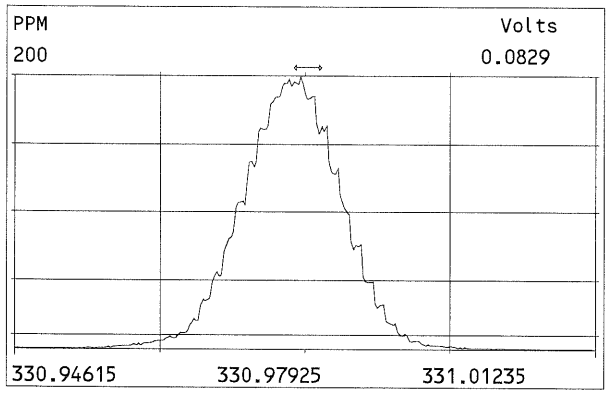


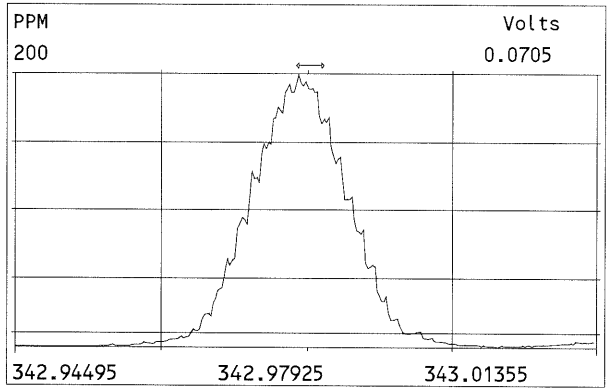


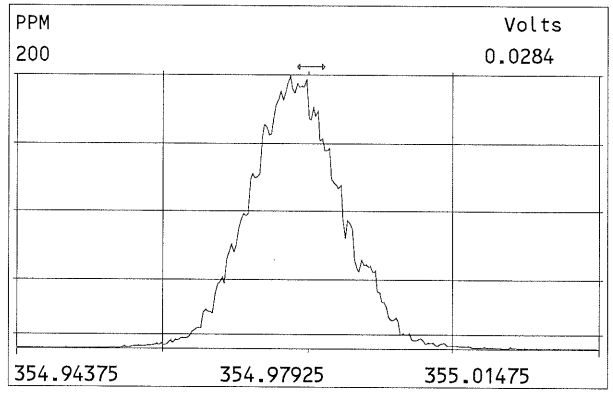


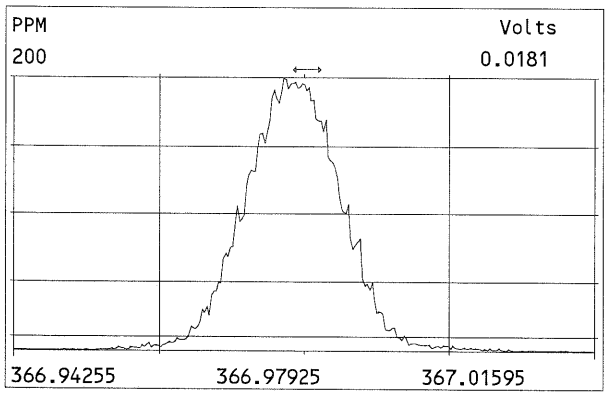


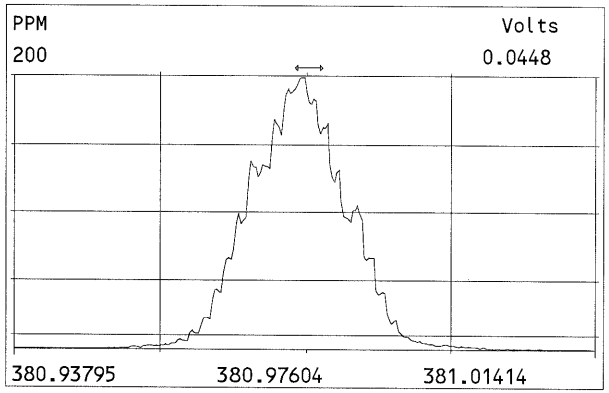
Peak Locate Examination:21-APR-2011:08:30 File:20APR11M_RES_CHECK
Experiment:OCDD Function:2 Reference:PFK

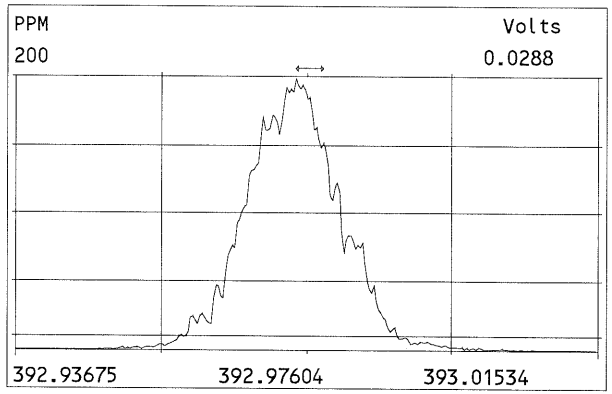


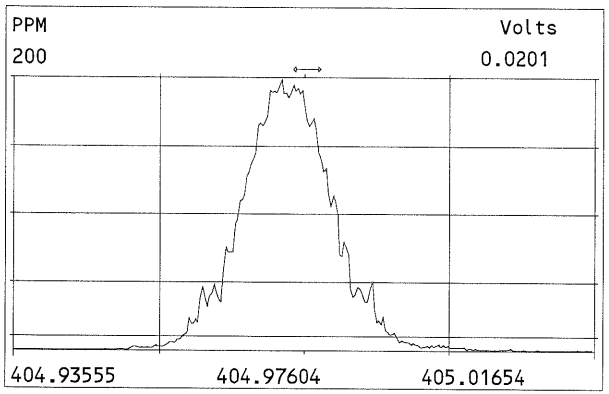


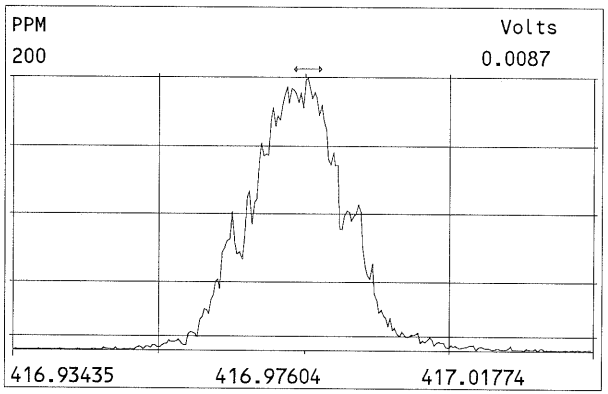




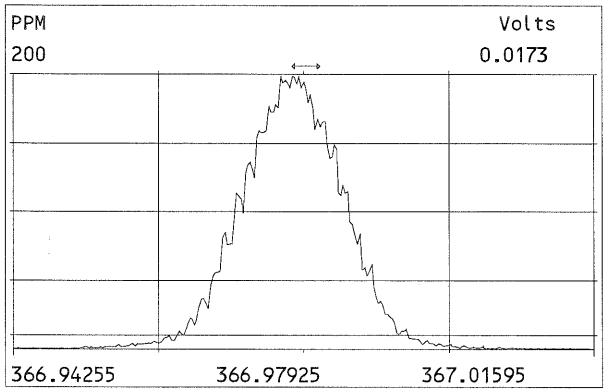


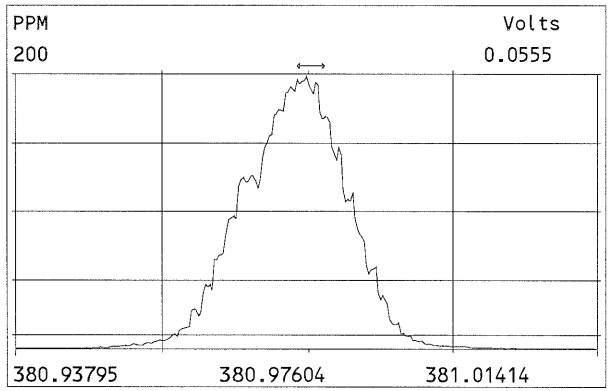


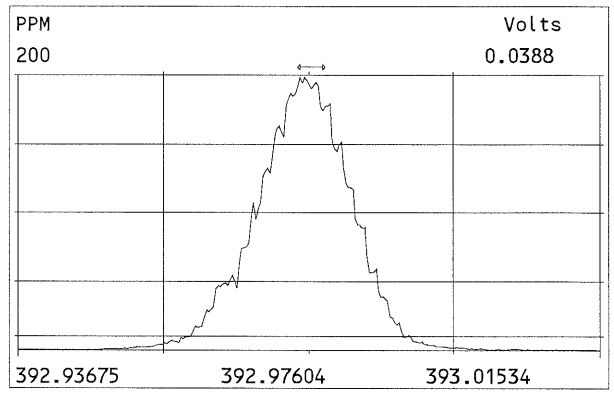


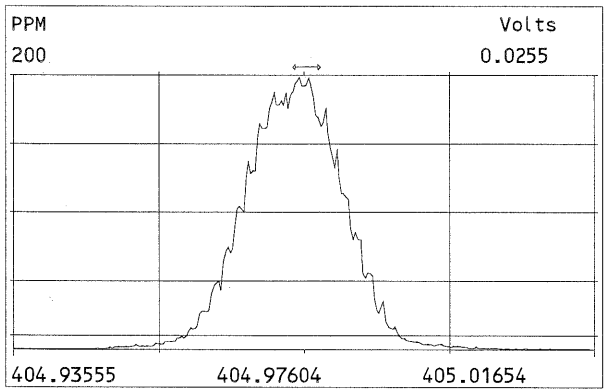


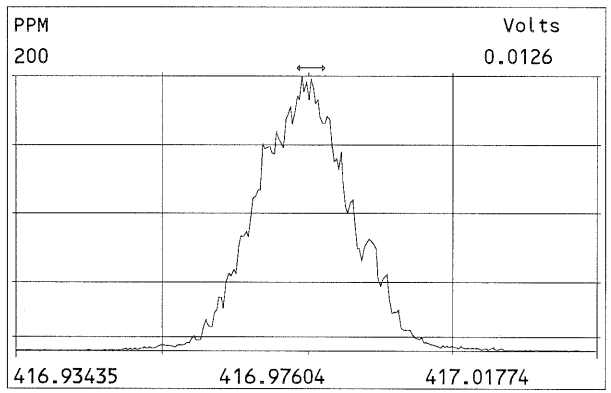
Peak Locate Examination:21-APR-2011:08:30 File:20APR11M_RES_CHECK
Experiment:OCDD Function:3 Reference:PFK

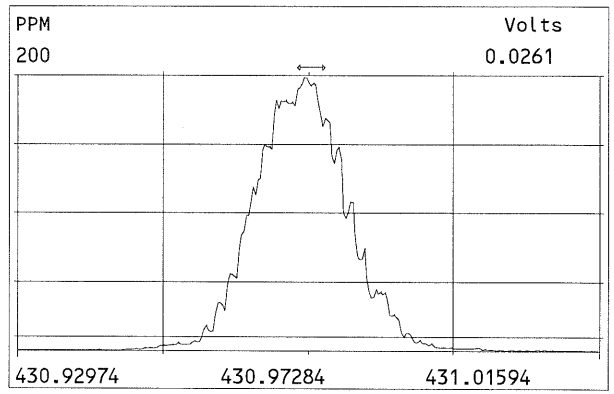


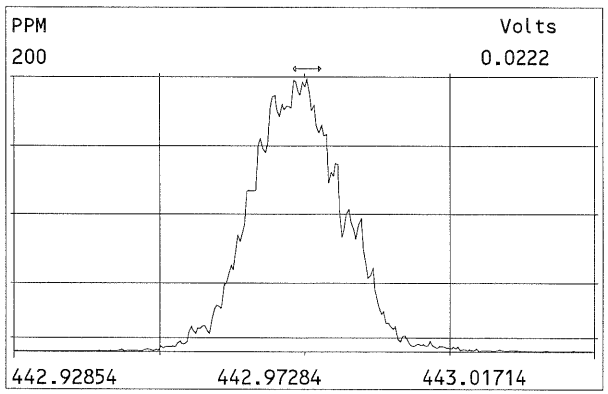


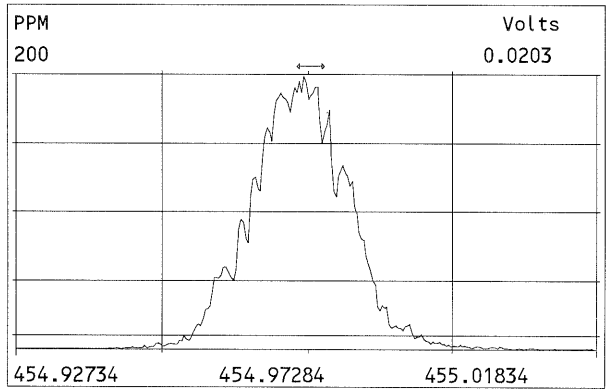




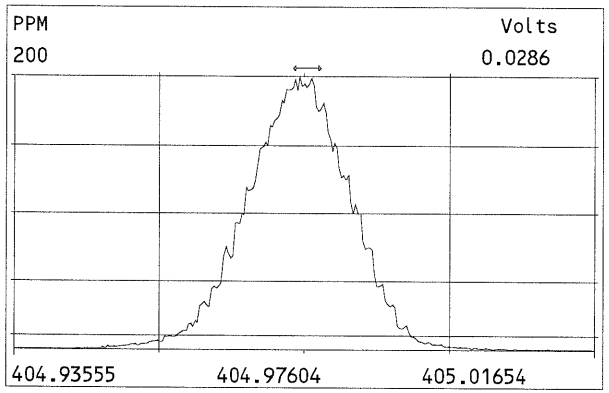


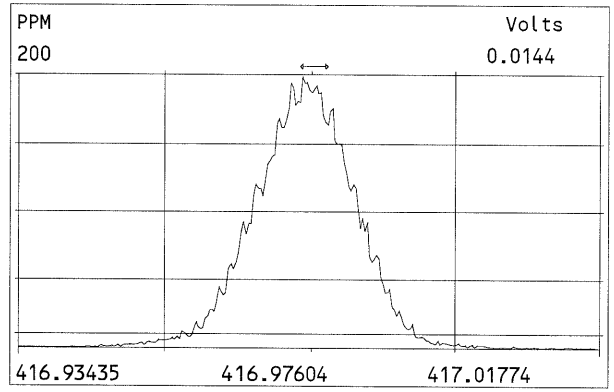


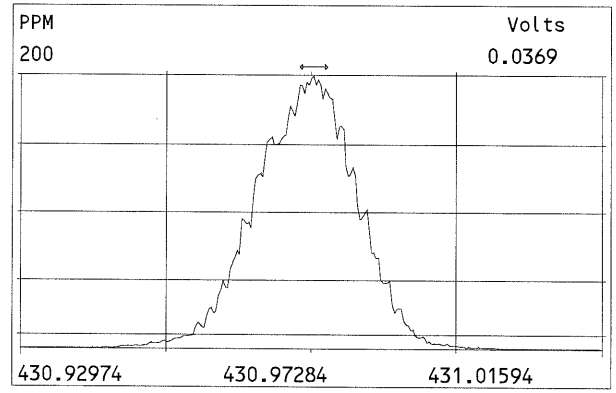


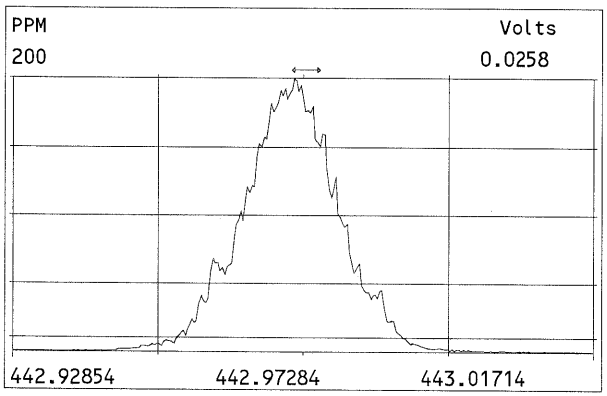


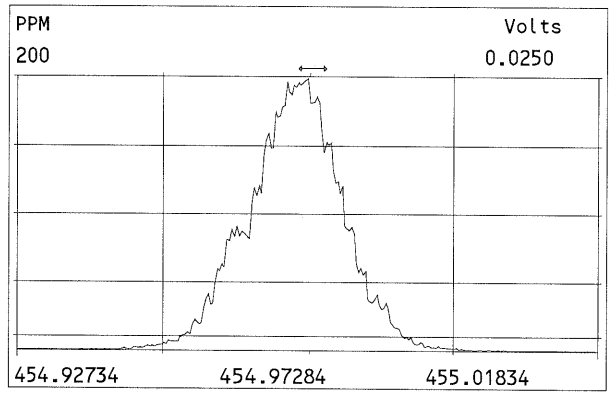
Peak Locate Examination:21-APR-2011:08:31 File:20APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

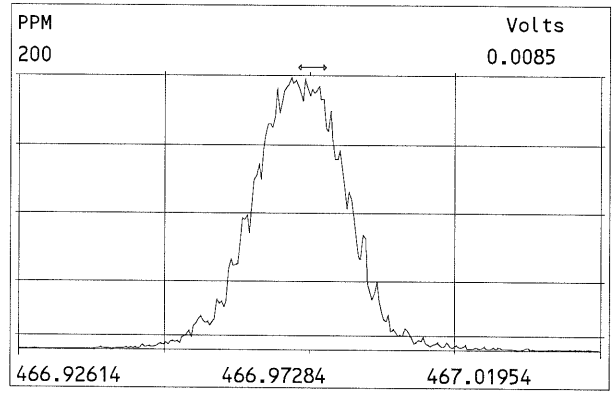


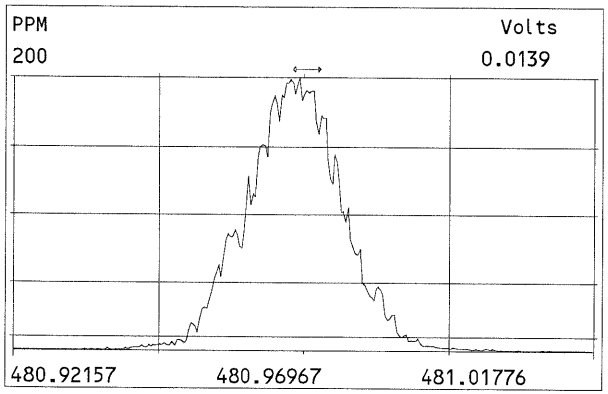




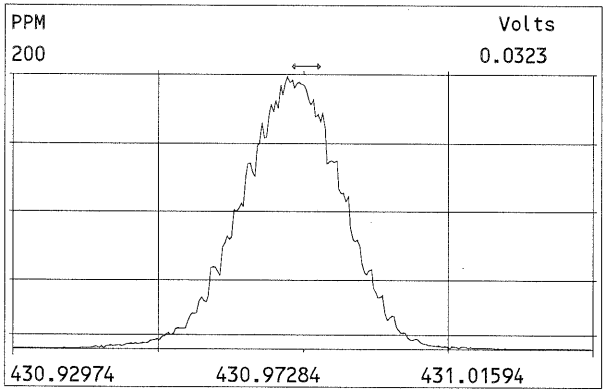


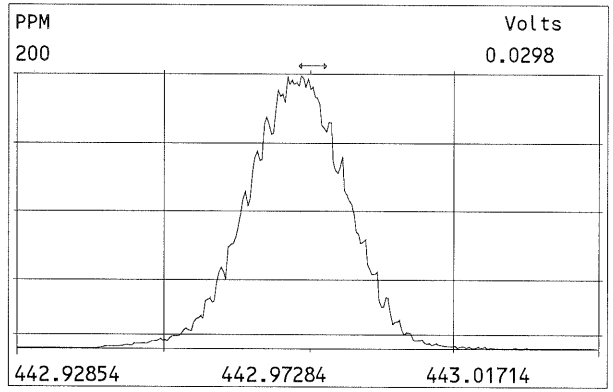


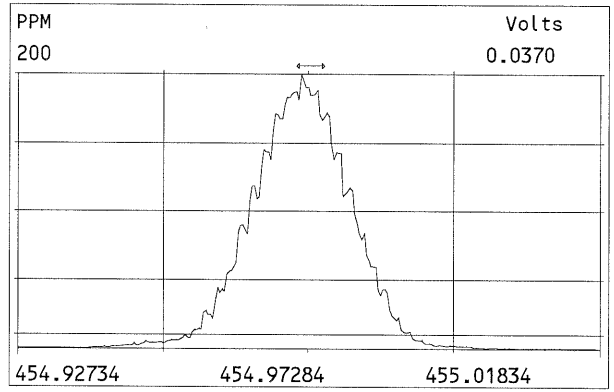


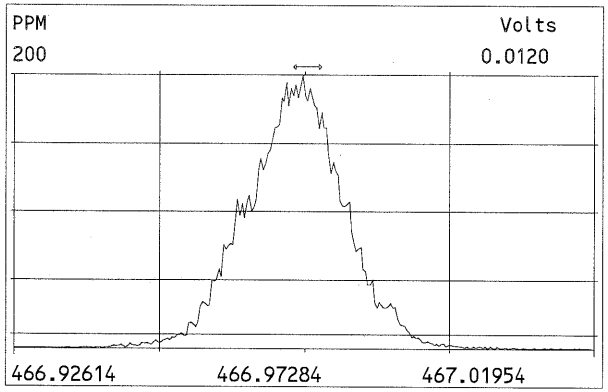


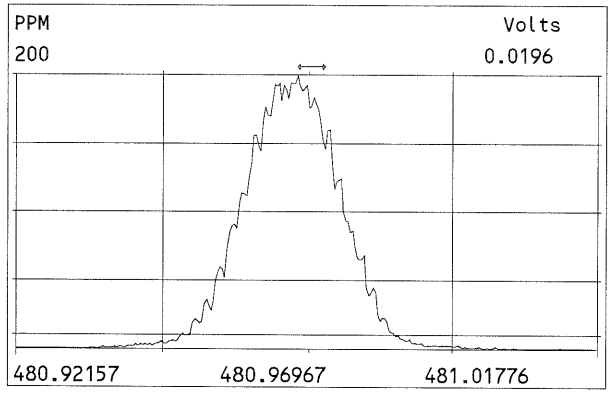
Peak Locate Examination:21-APR-2011:08:31 File:20APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

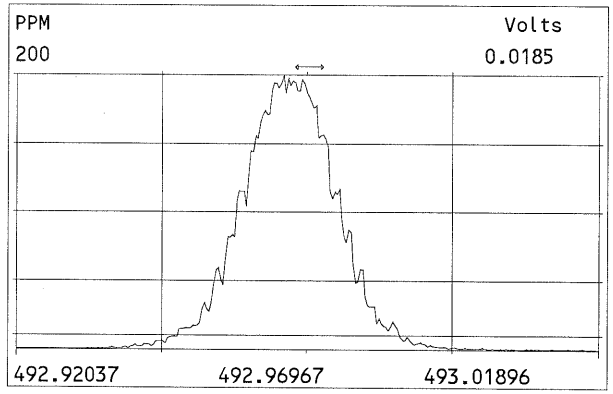


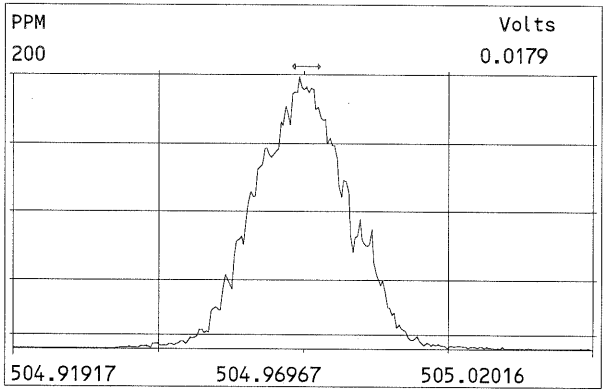


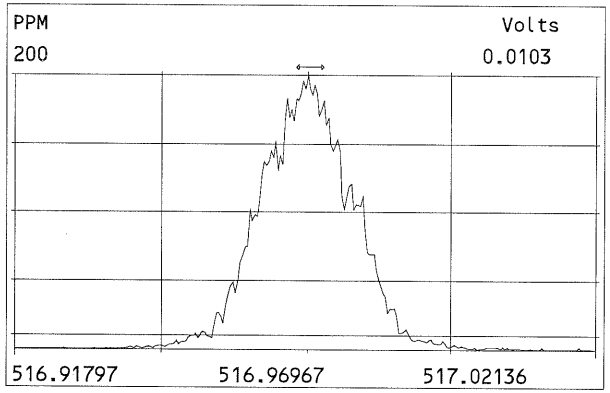












USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 20APR11M Sam:24 Analysis Date: 21-APR-11 07:29:49

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
2,3,7,8-TCDD	M/M+2	0.75	0.65-0.89	y	9.43	7.80 - 12.9
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	y	53.4	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.37	1.05-1.43	y	50.7	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05-1.43	y	50.8	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.32	1.05-1.43	y	53.5	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	0.95	0.88-1.20	y	48.7	43.0 - 58.0
OCDD	M+2/M+4	0.93	0.76-1.02	y	99.5	79.0 - 126
2,3,7,8-TCDF	M/M+2	0.66	0.65-0.89	y	10.8	8.40 - 12.0
1,2,3,7,8-PeCDF	M+2/M+4	1.67	1.32-1.78	y	54.0	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.65	1.32-1.78	y	52.8	41.0 - 60.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	y	50.3	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	y	50.5	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	y	49.5	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	y	50.6	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88-1.20	y	48.6	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	y	48.4	43.0 - 58.0
OCDF	M+2/M+4	0.90	0.76-1.02	y	95.6	63.0 - 159

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

VER Data Filename: 20APR11M Sam:24 Analysis Date: 21-APR-11 07:29:49

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65-0.89	y	96.6	82.0 - 121
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.78	1.32-1.78	y	88.7	62.0 - 160
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	y	92.6	85.0 - 117
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	y	96.7	85.0 - 118
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	y	125	72.0 - 138
13C-OCDD	M+2/M+4	0.96	0.76-1.02	y	214	96.0 - 415
13C-2,3,7,8-TCDF	M/M+2	0.88	0.65-0.89	y	101	71.0 - 140
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.72	1.32-1.78	y	105	76.0 - 130
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.73	1.32-1.78	y	105	77.0 - 130
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	96.4	76.0 - 131
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	96.2	70.0 - 143
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.48	0.43-0.59	y	102	73.0 - 137
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.47	0.43-0.59	y	105	74.0 - 135
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	y	116	78.0 - 129
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.43	0.37-0.51	y	128	77.0 - 129
13C-OCDF	M+2/M+4	0.94	0.76-1.02	y	211	96.0 - 415
CLEANUP STANDARD (4)						
37Cl-2,3,7,8-TCDD					8.11	7.80 - 12.8

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) No ion abundance ratio; report concentration found.

Analyst: _____ Date: 4/21/11

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: FAL3 Initial Calibration Date: 3/7/11

RT Window Data Filename: 20APR11M Sam:24 Analysis Date: 21-APR-11 Time: 07:29:49

DB-5 IS Data Filename: 20APR11M Sam:24 Analysis Date: 21-APR-11 Time: 07:29:49

DB-225 IS Date Filename: Analysis Date: Time:

DB-5 RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	24:23	1,3,6,8-TCDF (F)	23:03
1,2,8,9-TCDD (L)	28:17	1,2,8,9-TCDF (L)	28:30
1,2,4,7,9-PeCDD (F)	30:12	1,3,4,6,8-PeCDF (F)	28:23
1,2,3,8,9-PeCDD (L)	33:45	1,2,3,8,9-PeCDF (L)	34:10
1,2,4,6,7,9-HxCDD (F)	36:05	1,2,3,4,6,8-HxCDF (F)	35:13
1,2,3,7,8,9-HxCDD (L)	39:09	1,2,3,7,8,9-HxCDF (L)	39:43
1,2,3,4,6,7,9-HpCDD (F)	42:46	1,2,3,4,6,7,8-HpCDF (F)	42:14
1,2,3,4,6,7,8-HpCDD (L)	44:09	1,2,3,4,7,8,9-HpCDF (L)	45:03

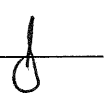
(F) = First eluting iosmer (DB-5); (L) = Last eluting isomer (DB-5)

==========

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

COMPARED PEAKS (1)	% VALLEY HEIGHT BETWEEN
	<25%

(1) To meet contract requirement, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst:  Date: 4/21/11

USEPA - ITD

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 21-APR-11 07:29:49 CS3 or VER Data Filename: 20APR11M Sam:24

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.001	0.999-1.002
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.001	0.999-1.002
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.000	0.999-1.002
LABELED COMPOUNDS			
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052
13C-2,3,7,8-TCDD		1.021	0.976-1.043
13C-2,3,7,8-TCDF		0.993	0.923-1.103
13C-1,2,3,7,8-PeCDD		1.238	1.000-1.567
13C-1,2,3,7,8-PeCDF		1.173	0.923-1.203
13C-2,3,4,7,8-PeCDF		1.223	0.923-1.303

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/21/11

USEPA - ITD

FORM 6B

PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.: Init. Cal. Date: 3/7/11

Instrument ID: FAL3 GC Column ID: DB5

Analysis Date: 21-APR-11 07:29:49 CS3 or VER Data Filename: 20APR11M Sam:24

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.000	0.999-1.001
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.000	0.998-1.004
1,2,3,7,8,9-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.012	1.000-1.019
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.000	0.999-1.001
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.001	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.001	0.999-1.001
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.001	0.999-1.001
OCDD	13C-OCDD	1.000	0.999-1.001
OCDF	13C-OCDF	1.001	0.999-1.001
LABELED COMPOUNDS			
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,7,8,9-HxCDD	0.985	0.977-1.000
13C-1,2,3,6,7,8-HxCDD		0.989	0.981-1.003
13C-1,2,3,4,7,8-HxCDF		0.949	0.944-0.970
13C-1,2,3,6,7,8-HxCDF		0.954	0.949-0.975
13C-2,3,4,6,7,8-HxCDF		0.978	0.959-1.021
13C-1,2,3,7,8,9-HxCDF		1.015	0.977-1.047
13C-1,2,3,4,6,7,8-HpCDD		1.128	1.086-1.130
13C-1,2,3,4,6,7,8-HpCDF		1.079	1.043-1.085
13C-1,2,3,4,7,8,9-HpCDF		1.151	1.057-1.154
13C-OCDD		1.270	1.032-1.311
13C-OCDF		1.279	1.000-1.311

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613.

Analyst: _____ Date: 4/21/11

FAL ID: ST042011M3 Filename: 20APR11M Sam:24 Acquired: 21-APR-11 07:29:49 ICal: PCDDFAL3-3-7-11
Client ID: 1613 CS3 100511J ConCal: ST042011M2 EndCal: ST042011M3
Results: 6701 GC Column: DB5 Amount: 1.000 NATO 1989 Tox: 104
WHO 1998 Tox: 130 WHO 2005 Tox: 118

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise-1	Noise-2	DL
2,3,7,8-TCDD	2.03e+06	0.75 y	27:22	1.13	9.43		2.50	-	-	*
1,2,3,7,8-PeCDD	9.28e+06	1.61 y	33:10	1.02	53.4		2.50	-	-	*
1,2,3,4,7,8-HxCDD	1.17e+07	1.37 y	38:32	1.45	50.7		2.50	-	-	*
1,2,3,6,7,8-HxCDD	9.65e+06	1.32 y	38:42	1.45	50.8		2.50	-	-	*
1,2,3,7,8,9-HxCDD	1.14e+07	1.32 y	39:09	1.47	53.5		2.50	-	-	*
1,2,3,4,6,7,8-HpCDD	9.49e+06	0.95 y	44:09	1.30	48.7		2.50	-	-	*
OCDD	1.35e+07	0.93 y	49:41	1.45	99.5		2.50	-	-	*
2,3,7,8-TCDF	4.07e+06	0.66 y	26:36	1.15	10.8		2.50	-	-	*
1,2,3,7,8-PeCDF	1.38e+07	1.67 y	31:26	0.89	54.0		2.50	-	-	*
2,3,4,7,8-PeCDF	1.32e+07	1.65 y	32:45	0.89	52.8		2.50	-	-	*
1,2,3,4,7,8-HxCDF	1.30e+07	1.26 y	37:09	1.01	50.3		2.50	-	-	*
1,2,3,6,7,8-HxCDF	1.43e+07	1.28 y	37:21	0.89	50.5		2.50	-	-	*
2,3,4,6,7,8-HxCDF	1.38e+07	1.26 y	38:17	1.02	49.5		2.50	-	-	*
1,2,3,7,8,9-HxCDF	1.67e+07	1.27 y	39:43	1.10	50.6		2.50	-	-	*
1,2,3,4,6,7,8-HpCDF	1.19e+07	1.04 y	42:14	1.48	48.6		2.50	-	-	*
1,2,3,4,7,8,9-HpCDF	9.74e+06	1.05 y	45:03	1.43	48.4		2.50	-	-	*
OCDF	1.43e+07	0.90 y	50:04	0.84	95.6		2.50	-	-	*

						Rec
13C-2,3,7,8-TCDD	1.90e+07	0.82 y	27:20	1.03	96.6	96.6
13C-1,2,3,7,8-PeCDD	1.71e+07	1.78 y	33:09	1.01	88.7	88.7
13C-1,2,3,4,7,8-HxCDD	1.59e+07	1.30 y	38:31	1.19	92.6	92.6
13C-1,2,3,6,7,8-HxCDD	1.31e+07	1.29 y	38:41	0.94	96.7	96.7
13C-1,2,3,4,6,7,8-HpCDD	1.50e+07	1.05 y	44:08	0.83	125	125
13C-OCDD	1.87e+07	0.96 y	49:40	0.61	214	107
13C-2,3,7,8-TCDF	3.28e+07	0.88 y	26:35	0.98	101	101
13C-1,2,3,7,8-PeCDF	2.89e+07	1.72 y	31:25	0.83	105	105
13C-2,3,4,7,8-PeCDF	2.79e+07	1.73 y	32:44	0.80	105	105
13C-1,2,3,4,7,8-HxCDF	2.56e+07	0.48 y	37:08	1.84	96.4	96.4
13C-1,2,3,6,7,8-HxCDF	3.18e+07	0.48 y	37:20	2.29	96.2	96.2
13C-2,3,4,6,7,8-HxCDF	2.73e+07	0.48 y	38:15	1.86	102	102
13C-1,2,3,7,8,9-HxCDF	3.00e+07	0.47 y	39:41	1.98	105	105
13C-1,2,3,4,6,7,8-HpCDF	1.65e+07	0.45 y	42:13	0.99	116	116
13C-1,2,3,4,7,8,9-HpCDF	1.41e+07	0.43 y	45:01	0.77	128	128
13C-OCDF	3.55e+07	0.94 y	50:02	1.17	211	105
37Cl-2,3,7,8-TCDD	1.13e+06		27:22	0.73	8.11	81.1
13C-1,2,3,4-TCDD	1.91e+07	0.83 y	26:46	-	50.2	
13C-1,2,3,4-TCDF	3.31e+07	0.88 y	25:31	-	46.0	
13C-1,2,3,7,8,9-HxCDD	1.44e+07	1.29 y	39:07	-	58.2	

						Fac	Noise-1	Noise-2	DL		#Hom
Total Tetra-Dioxins	1.07e+07		22:38	1.13	49.9	2.50	-	-	*		25
Total Penta-Dioxins	1.96e+07		30:12	1.02	113	2.50	-	-	*		4
Total Hexa-Dioxins	3.65e+07		36:05	1.46	173	2.50	-	-	*		7
Total Hepta-Dioxins	1.94e+07		42:46	1.30	99.4	2.50	-	-	*		11
Total Tetra-Furans	1.88e+07		23:03	1.15	49.8	2.50	-	-	*		18
1st Fn. Tot Penta-Furans	1.36e+07		28:23	0.89	54.0	2.50	-	-	*	PeCDF	1
Total Penta-Furans	3.89e+07		30:07	0.89	154	2.50	-	-	*	208	8
Total Hexa-Furans	6.61e+07		35:13	1.00	230	2.50	-	-	*		15
Total Hepta-Furans	2.16e+07		42:14	1.46	97.1	2.50	-	-	*		3

Analyst: _____ Date: 4/21/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:20APR11M Instrument: FAL3 GC: DB5 Experiment:OCDD

Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
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20APR11M	2	2272-001-0001-OPR	OPR	20-APR-11 11:11:39	ST042011M1	ST042011M2	TC
20APR11M	3	2272-001-0001-MB	Method Blank	20-APR-11 12:07:02	ST042011M1	ST042011M2	TC
20APR11M	4	6701-007-0001-SA	MC-SED1-0-10-032911	20-APR-11 13:02:21	ST042011M1	ST042011M2	TC
20APR11M	5	6701-008-0001-SA	MC-SED2-0-10-032911	20-APR-11 13:57:44	ST042011M1	ST042011M2	TC
20APR11M	6	6701-009-0001-SA	MC-SED3-0-10-032911	20-APR-11 14:53:07	ST042011M1	ST042011M2	TC
20APR11M	7	6701-006-0001-SA	LL-SED5-0-15-032911	20-APR-11 15:48:26	ST042011M1	ST042011M2	TC
20APR11M	8	6701-004-0001-SA	LL-SED4-0-15-032911(1:5)	20-APR-11 16:43:49	ST042011M1	ST042011M2	TC
20APR11M	9	6701-003-0001-SA	LL-SED3-0-15-032911(1:5)	20-APR-11 17:39:13	ST042011M1	ST042011M2	TC
20APR11M	10	6701-005-0001-SA	LL-SED1-0-15-032911-D (¶	20-APR-11 18:34:31	ST042011M1	ST042011M2	TC
20APR11M	11	6701-001-0001-SA	LL-SED1-0-15-032911(1:5)	20-APR-11 19:29:50	ST042011M1	ST042011M2	TC
20APR11M	12	6701-002-0001-SA	LL-SED2-0-15-032911(1:5)	20-APR-11 20:25:13	ST042011M1	ST042011M2	TC
20APR11M	13	6701-002-0001-MS	LL-SED2-0-15-032911	20-APR-11 21:20:35	ST042011M1	ST042011M2	TC
20APR11M	14	6701-002-0001-MSD	LL-SED2-0-15-032911	20-APR-11 22:15:58	ST042011M1	ST042011M2	TC
20APR11M	15	SB042011M1	Solvent Blank	20-APR-11 23:11:21	ST042011M1	ST042011M2	TC
20APR11M	16	SB042011M2	Solvent Blank	21-APR-11 00:06:50	ST042011M1	ST042011M2	TC
20APR11M	17	ST042011M2	1613 CS3 100511J	21-APR-11 01:02:13	ST042011M2	ST042011M3	TC
20APR11M	18	6701-004-0001-SA	LL-SED4-0-15-032911	21-APR-11 01:57:36	ST042011M2	ST042011M3	TC
20APR11M	19	6701-003-0001-SA	LL-SED3-0-15-032911	21-APR-11 02:52:59	ST042011M2	ST042011M3	TC
20APR11M	20	6701-005-0001-SA	LL-SED1-0-15-032911-D	21-APR-11 03:48:22	ST042011M2	ST042011M3	TC
20APR11M	21	6701-001-0001-SA	LL-SED1-0-15-032911	21-APR-11 04:43:45	ST042011M2	ST042011M3	TC
20APR11M	22	6701-002-0001-SA	LL-SED2-0-15-032911	21-APR-11 05:39:08	ST042011M2	ST042011M3	TC
20APR11M	23	SB042011M3	Solvent Blank	21-APR-11 06:34:31	ST042011M2	ST042011M3	TC
20APR11M	24	ST042011M3	1613 CS3 100511J	21-APR-11 07:29:49	ST042011M2	ST042011M3	TC

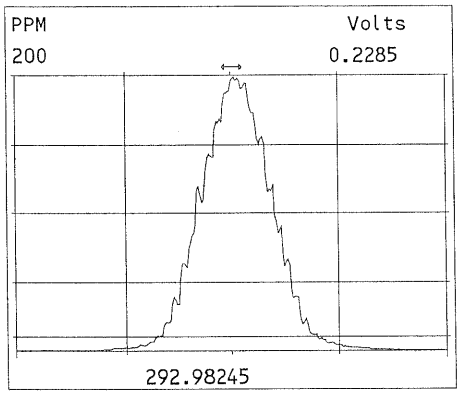
4/21/11

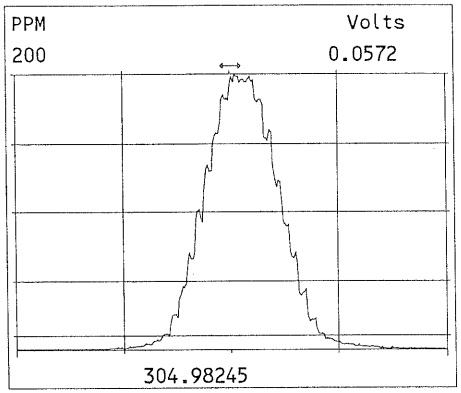
/

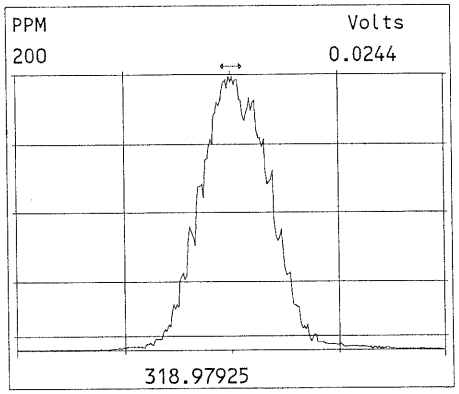
Data Backed Up:_____

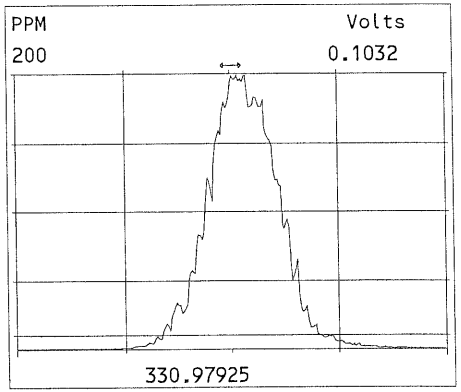
Date:_____

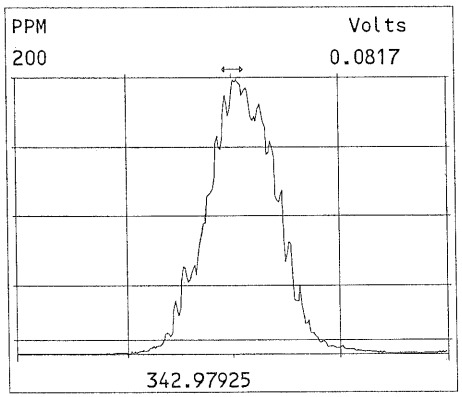
Peak Locate Examination:20-APR-2011:10:14 File:20APR11M
Experiment:OCDD Function:1 Reference:PFK

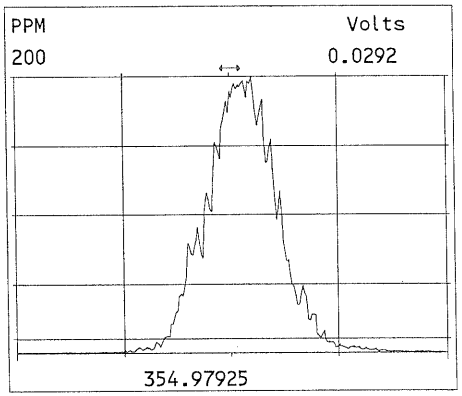


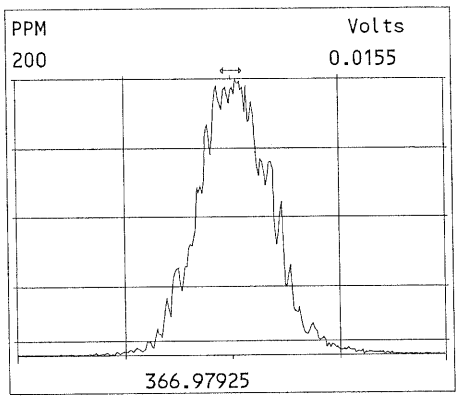


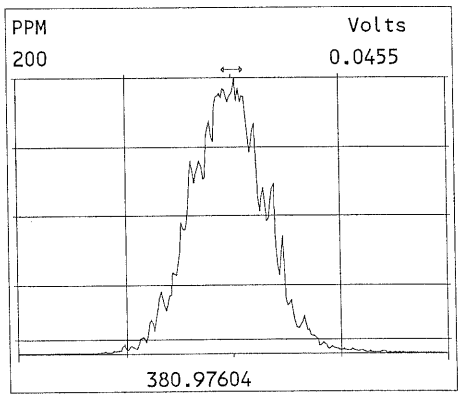


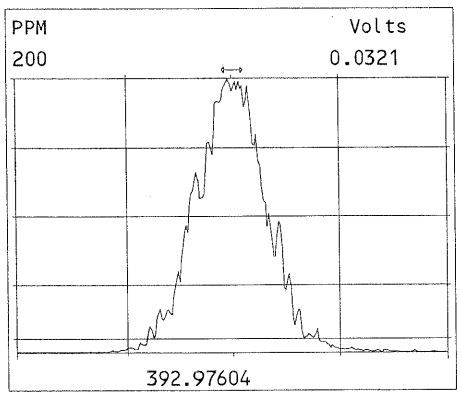


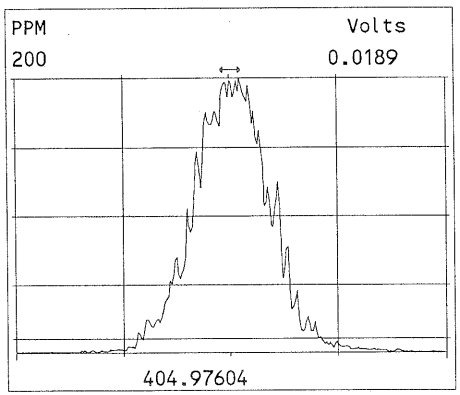


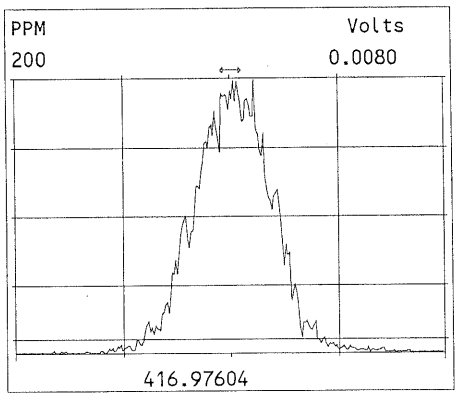




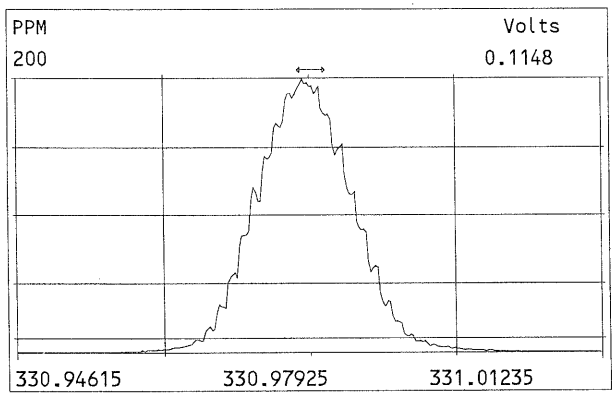


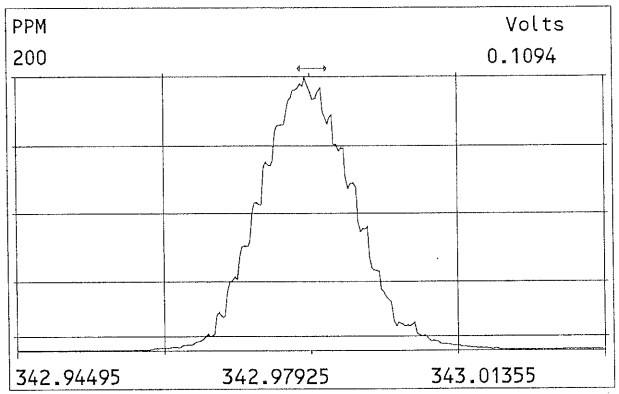


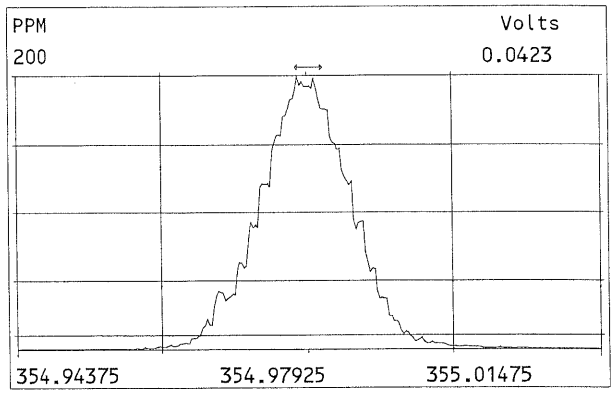


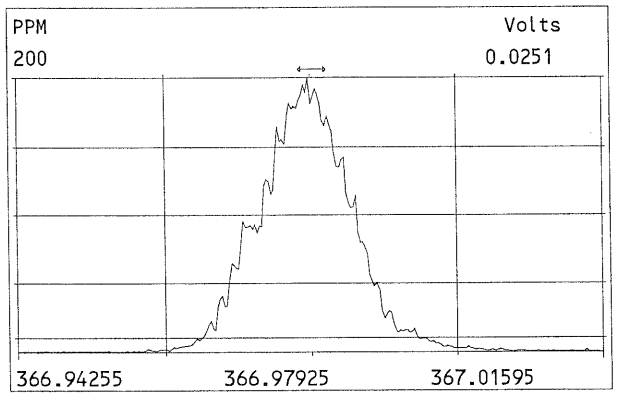


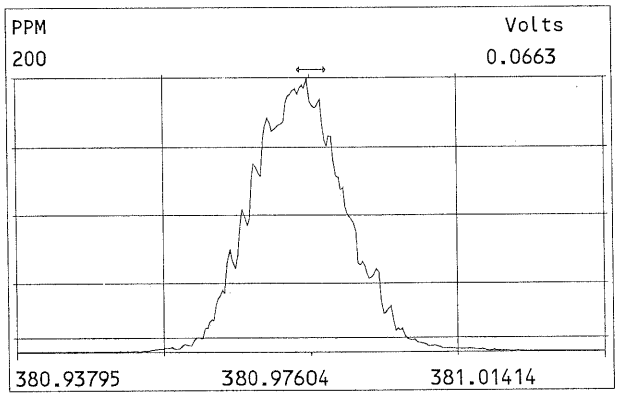
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:2 Reference:PFK

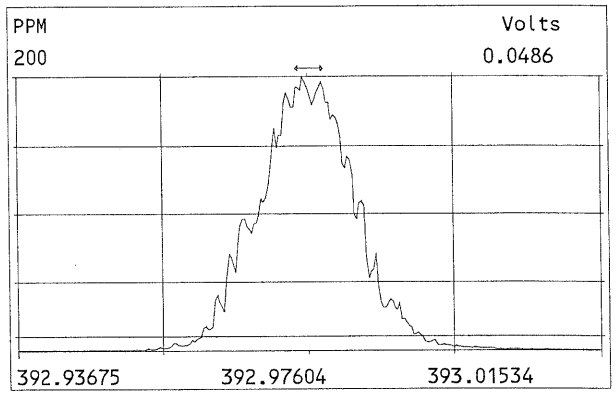


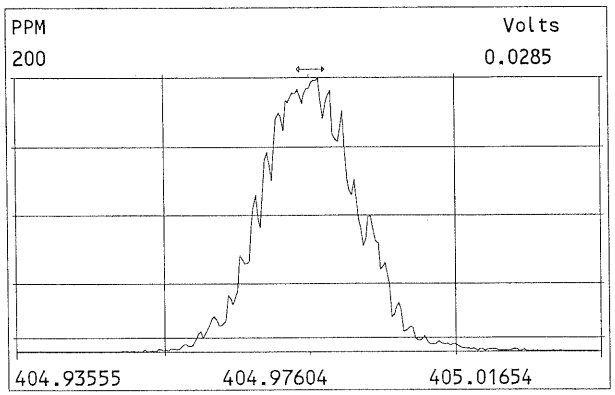


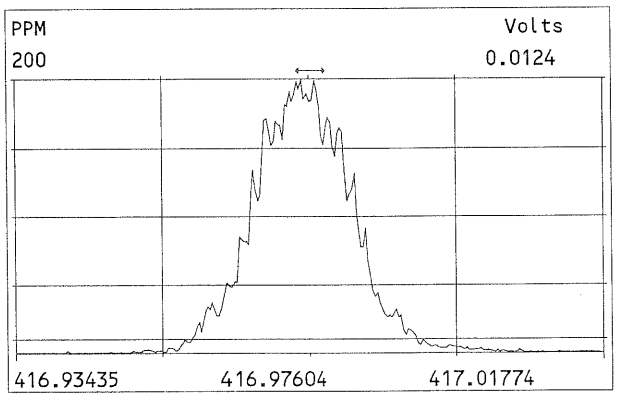






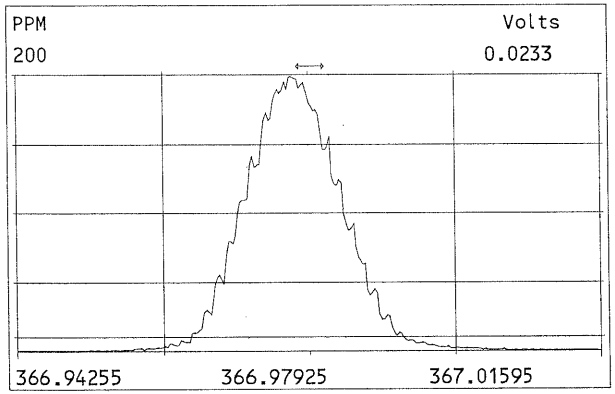


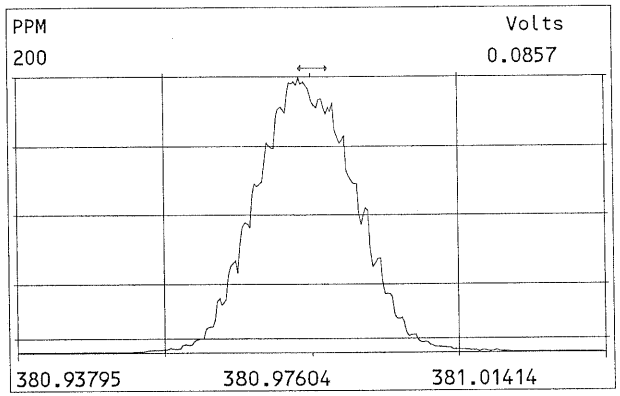


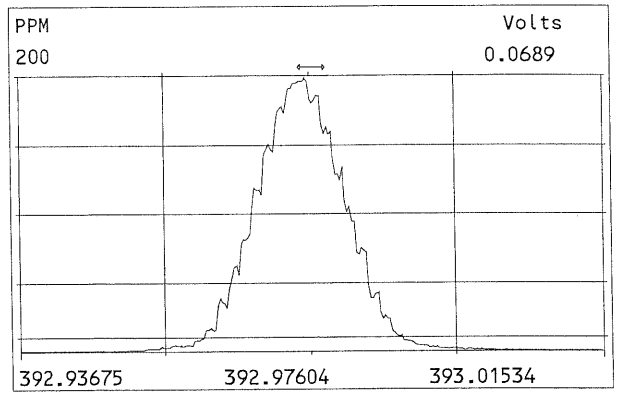


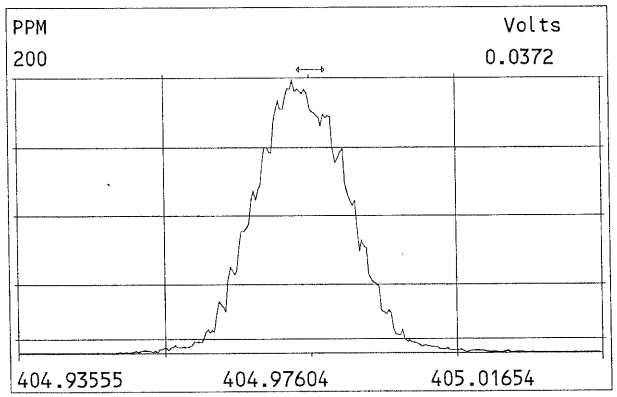
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M

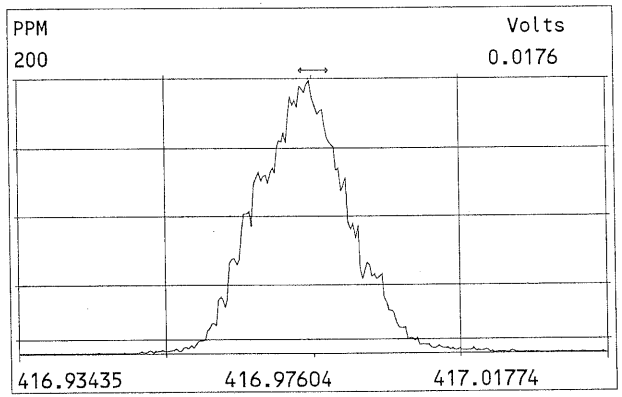
Experiment:OCDD Function:3 Reference:PFK

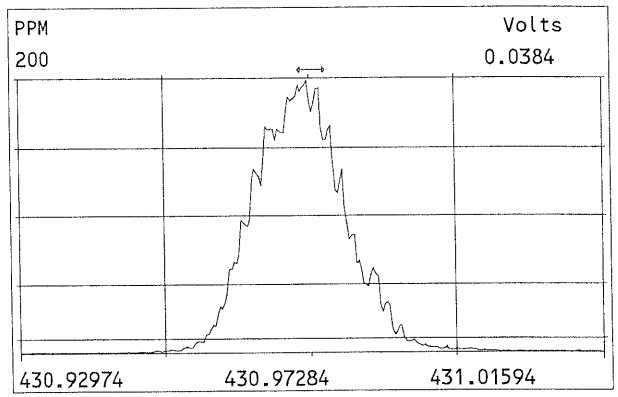


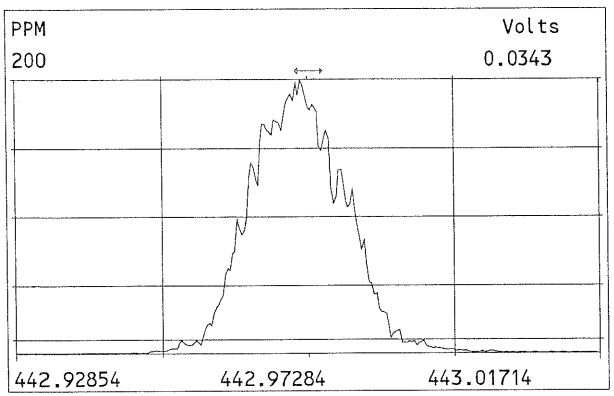


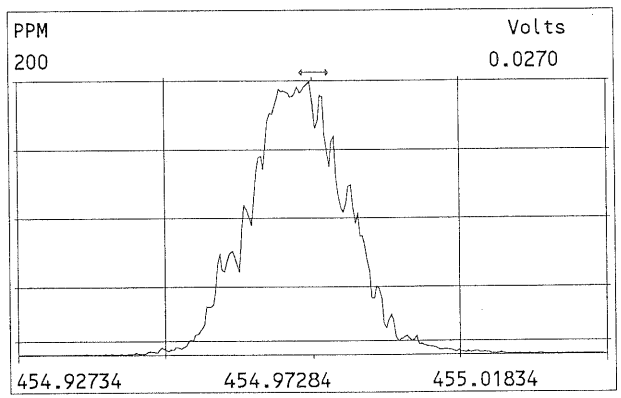




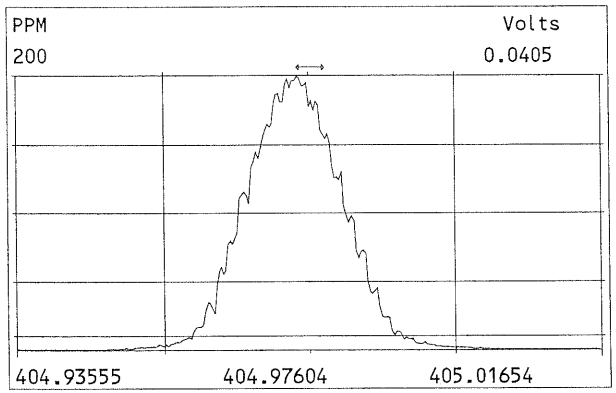


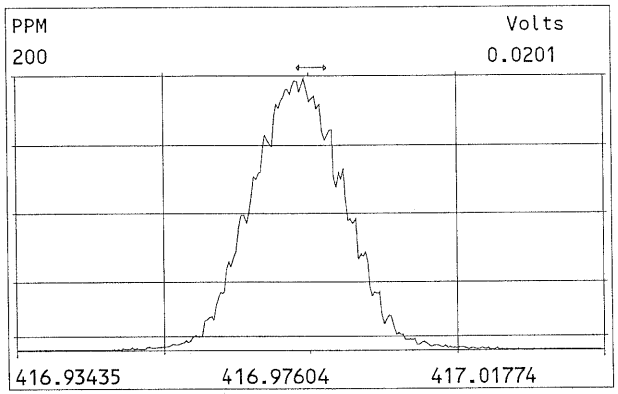


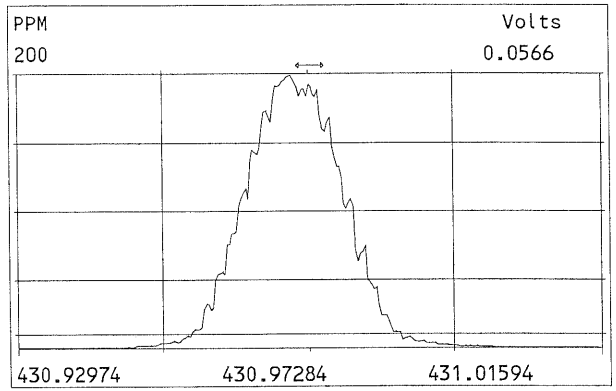


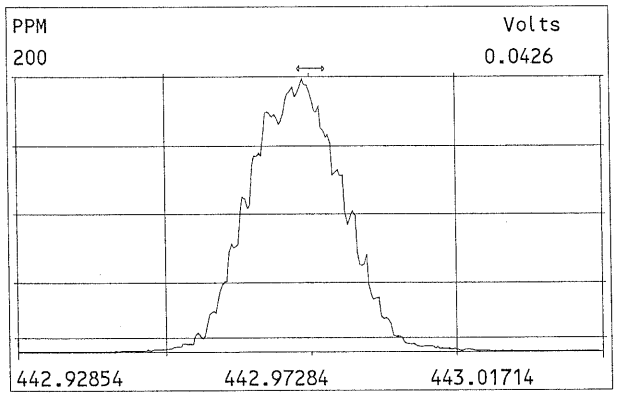


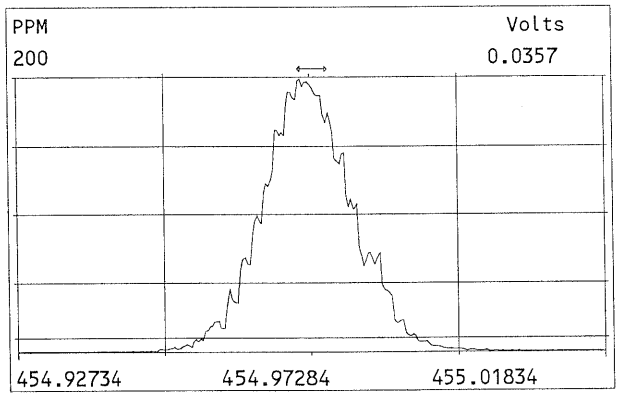
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M
Experiment:OCDD Function:4 Reference:PFK

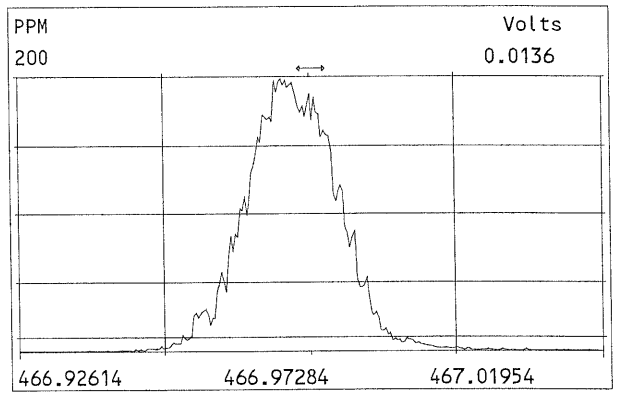


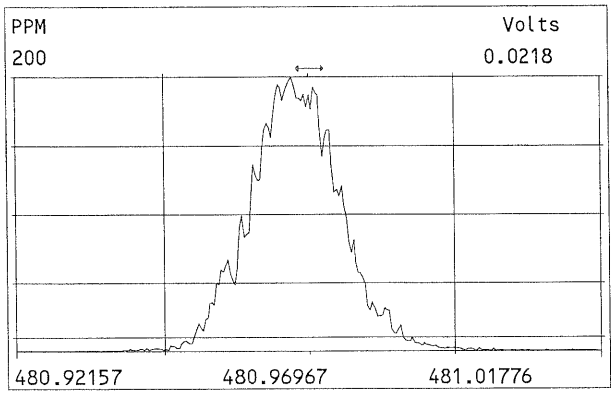






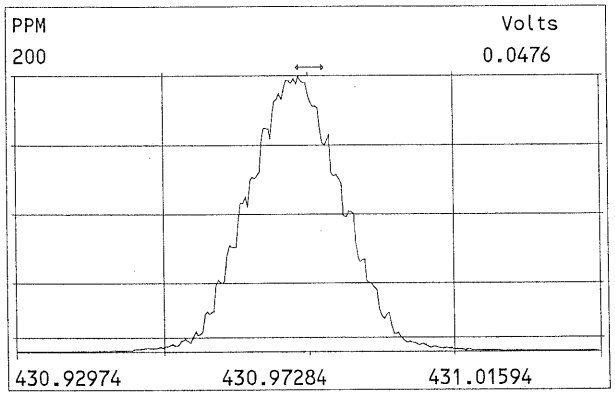


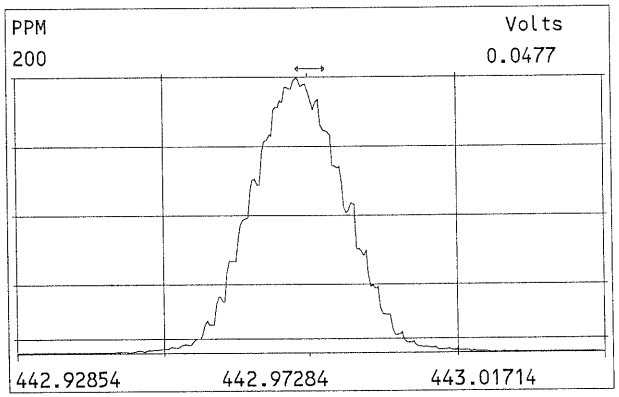


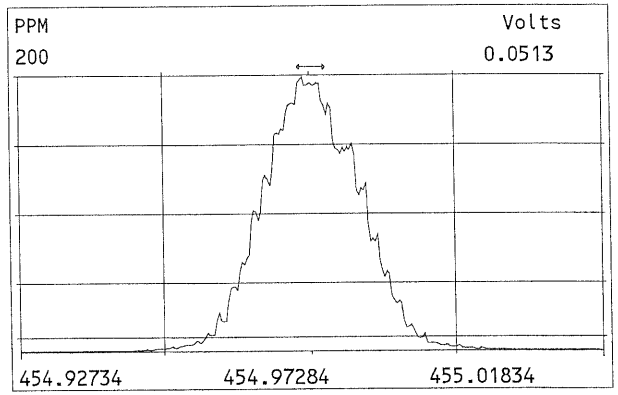


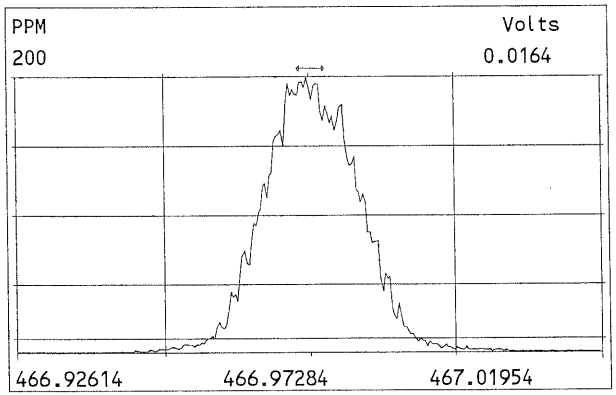
Peak Locate Examination:20-APR-2011:10:15 File:20APR11M

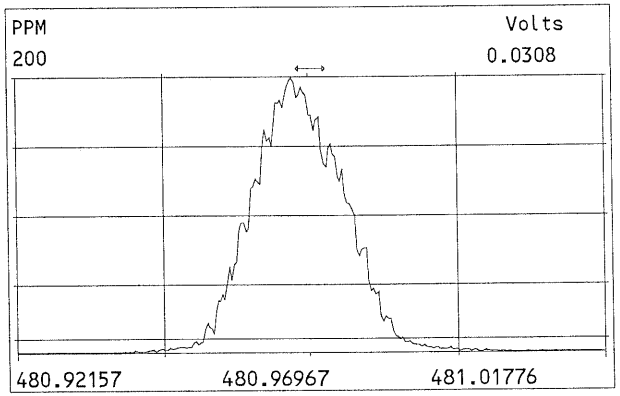
Experiment:OCDD Function:5 Reference:PFK

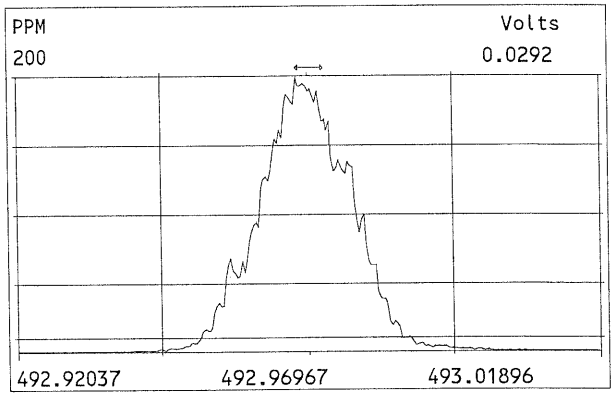


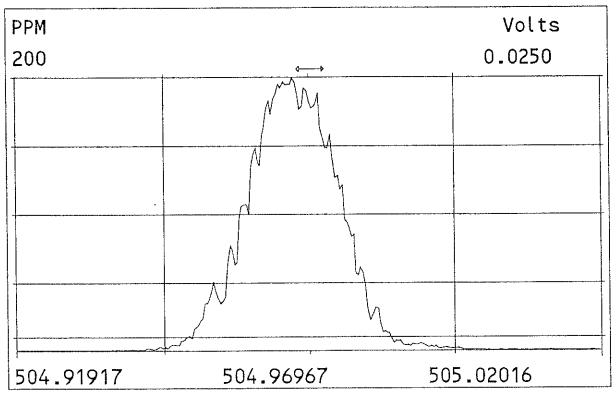


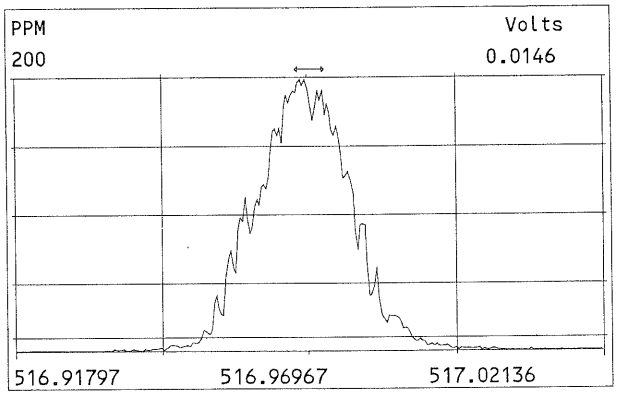




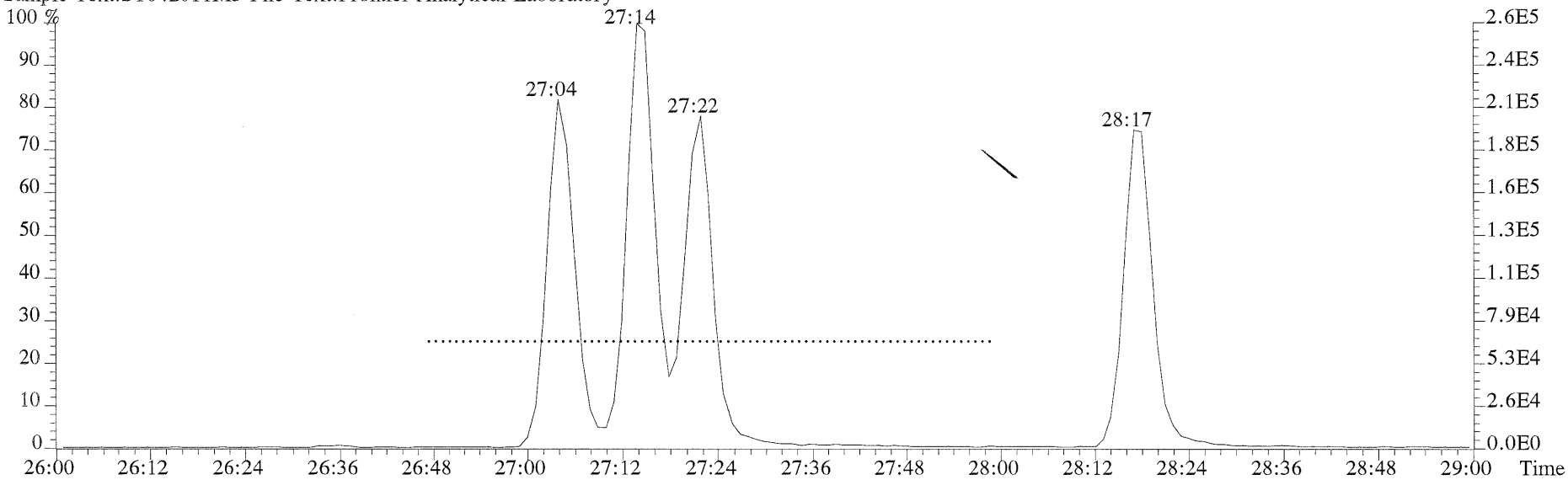




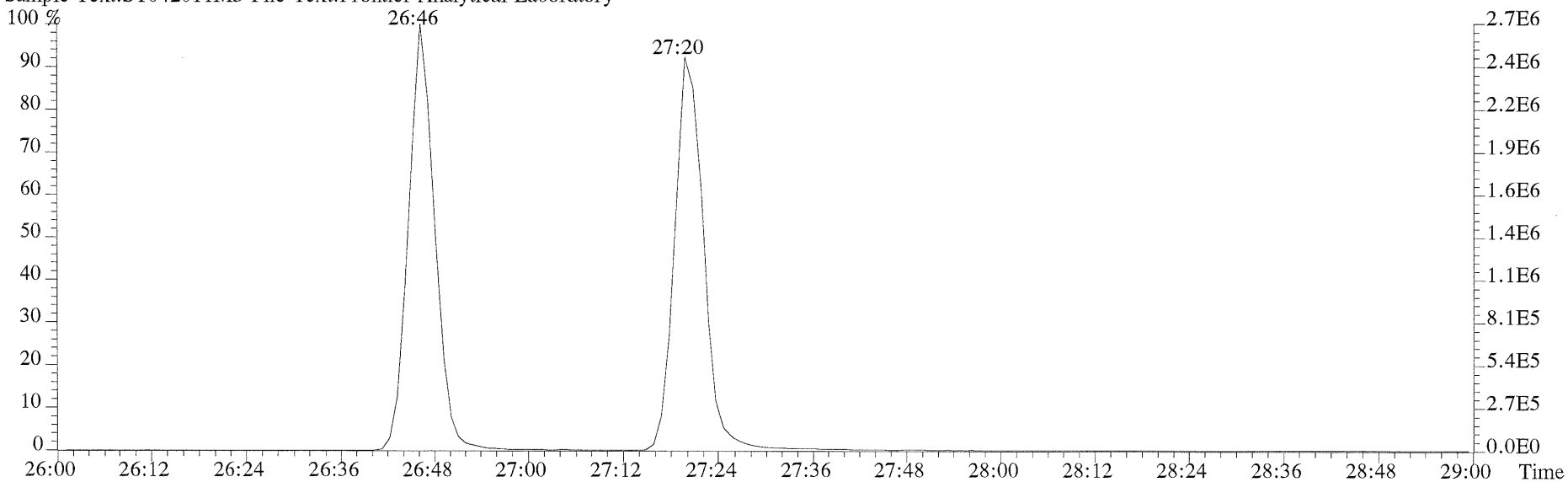




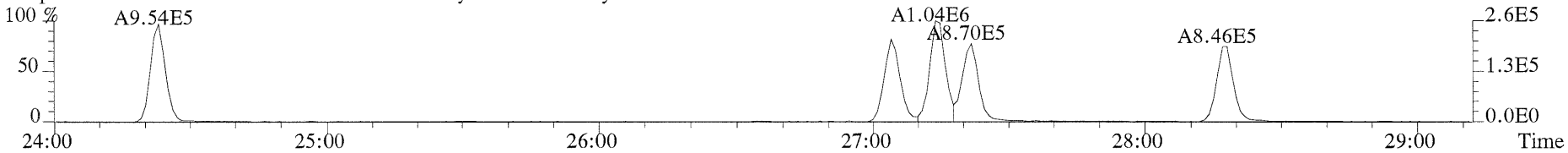
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
319.8965 S:24 Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



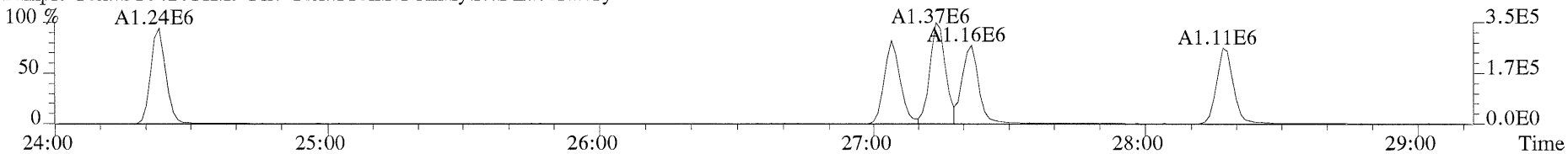
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:24 Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



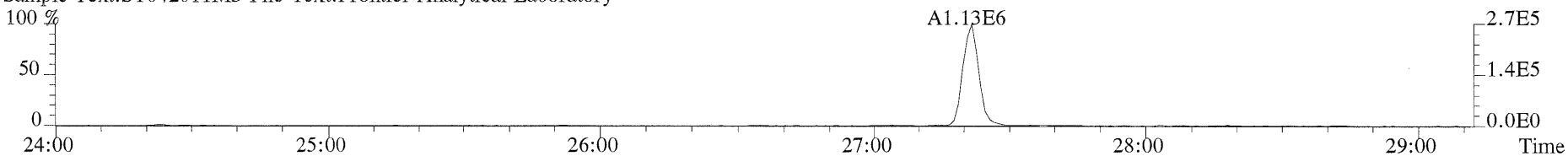
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
319.8965 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



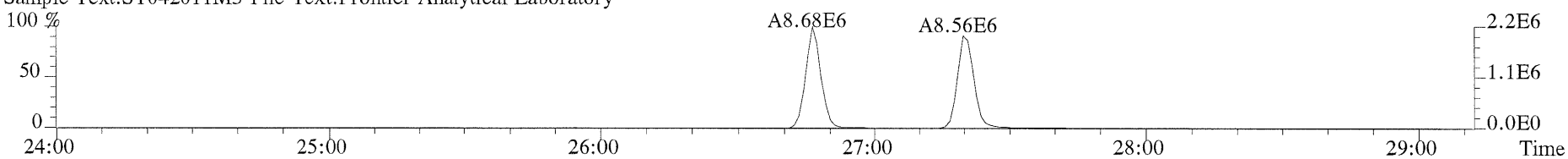
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
321.8936 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



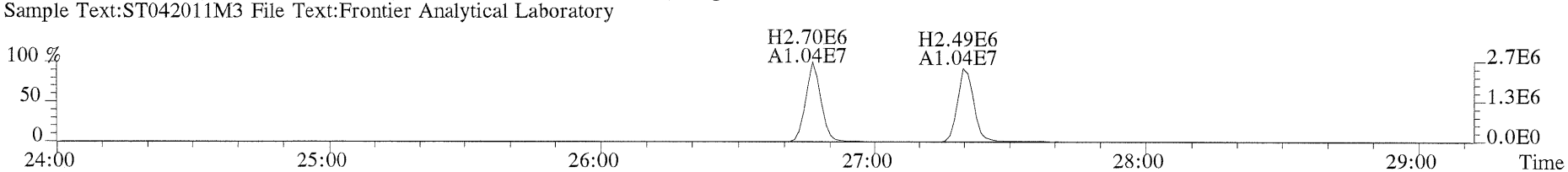
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
327.8847 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



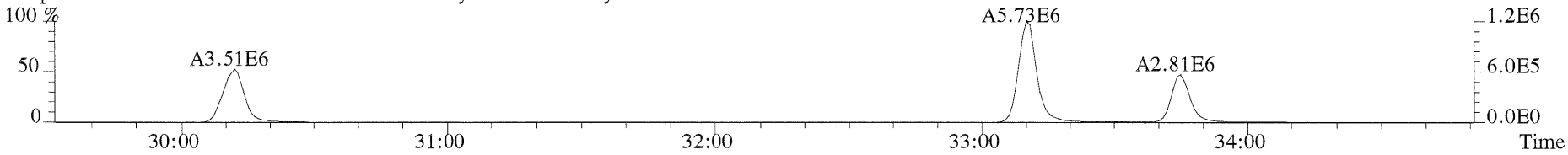
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
331.9368 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



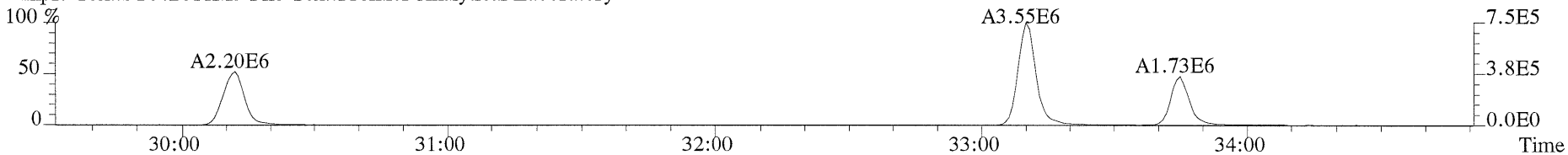
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
333.9339 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



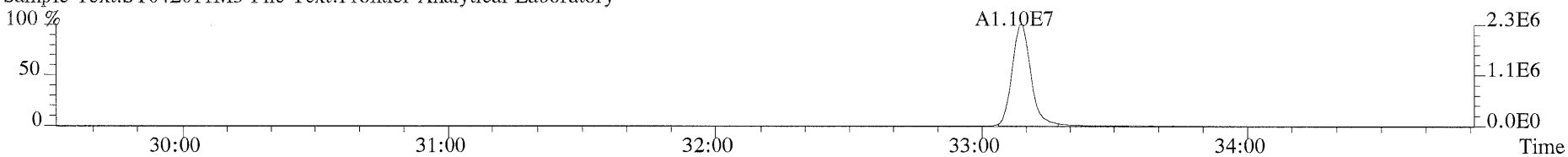
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
355.8546 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



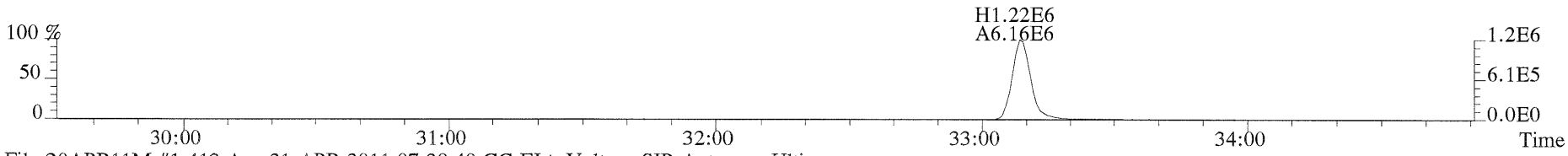
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
357.8517 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



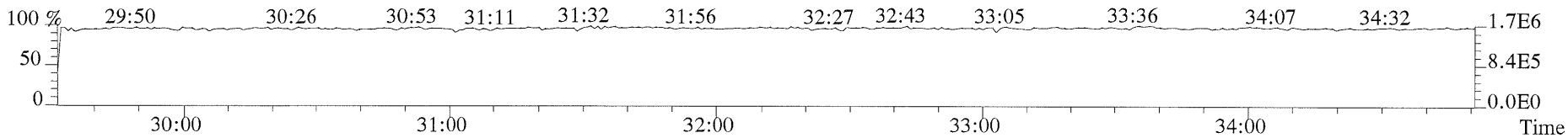
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
367.8949 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



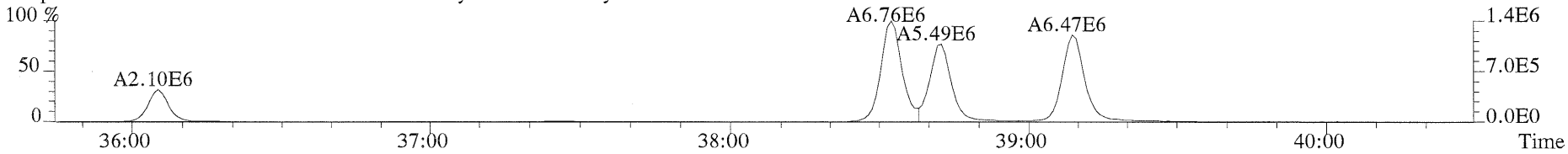
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
369.8919 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



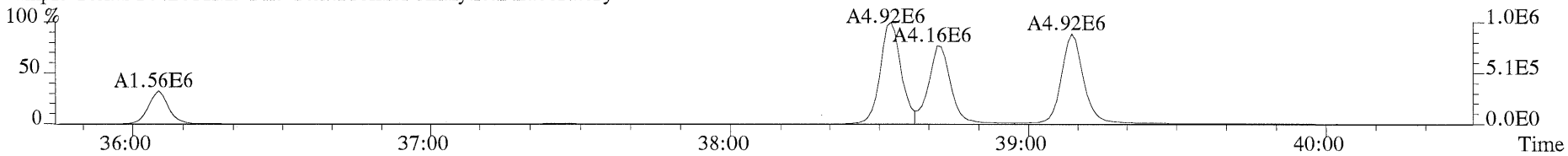
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
366.9792 S:24 F:2 Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



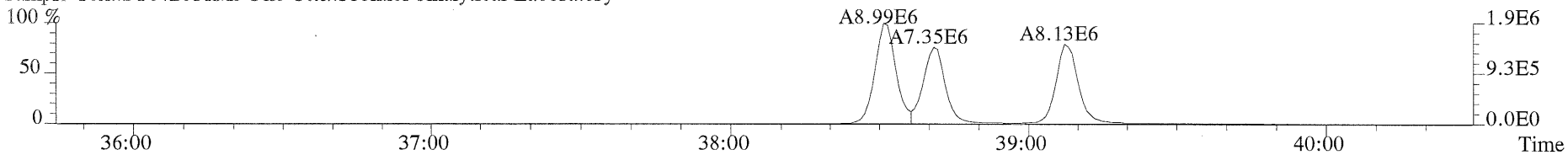
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
389.8156 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



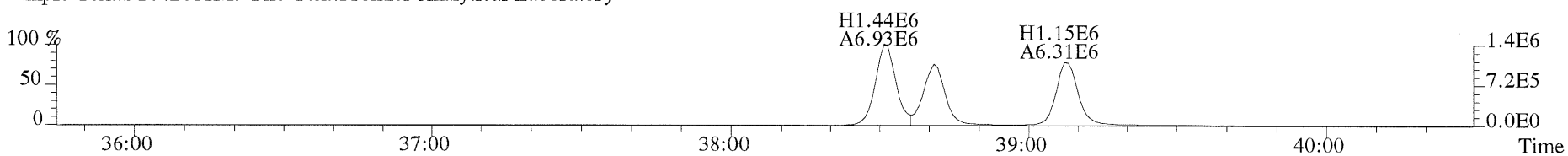
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
391.8127 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



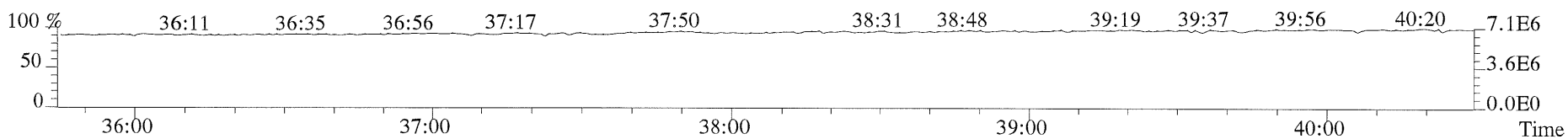
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
401.8559 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



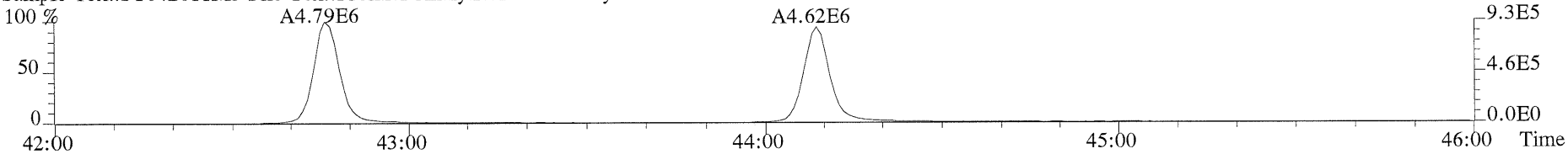
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
403.8530 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



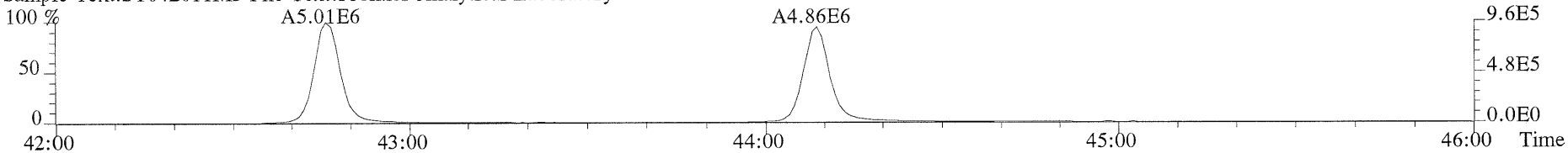
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
380.9760 S:24 F:3 Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



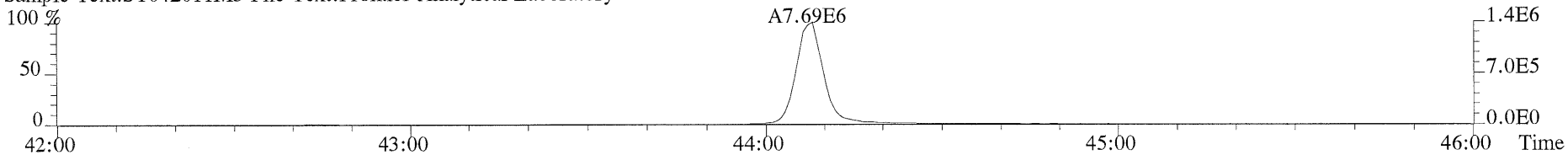
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
423.7767 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



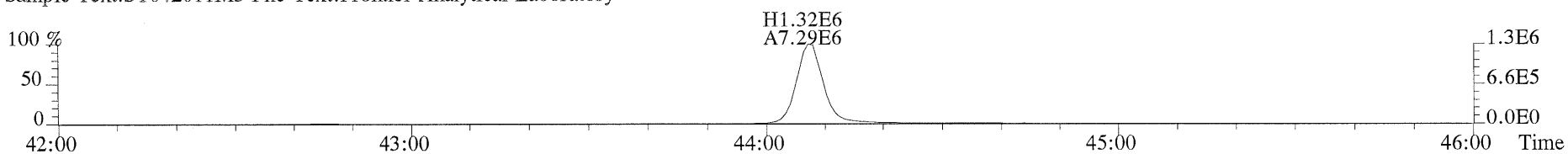
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
425.7737 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



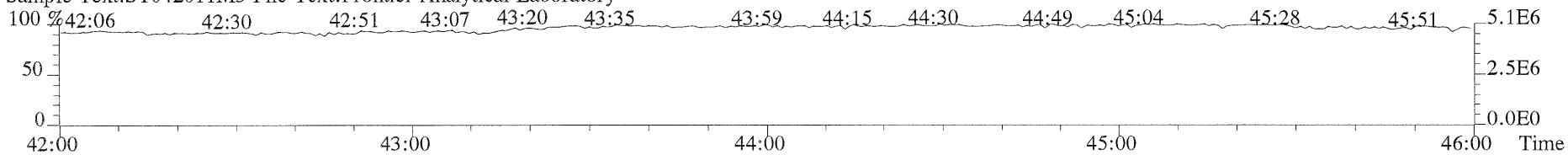
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
435.8169 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



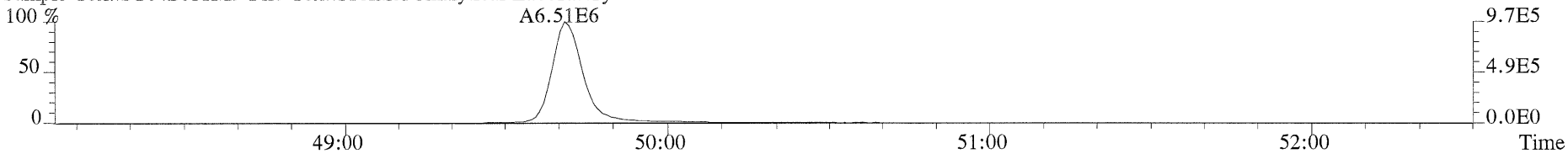
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
437.8140 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



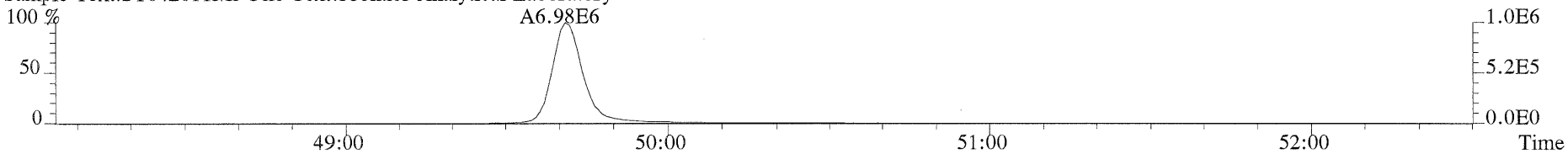
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
430.9728 S:24 F:4 Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



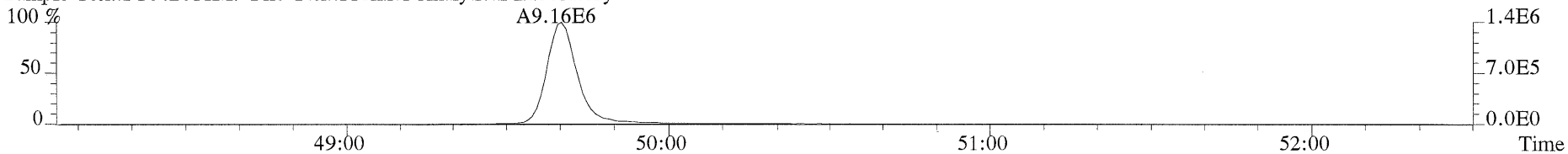
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
457.7377 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



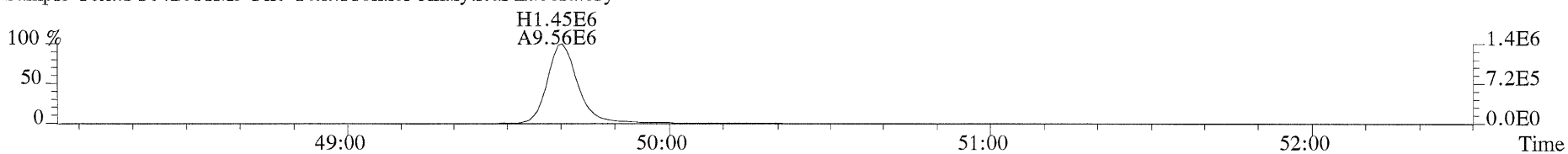
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
459.7348 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



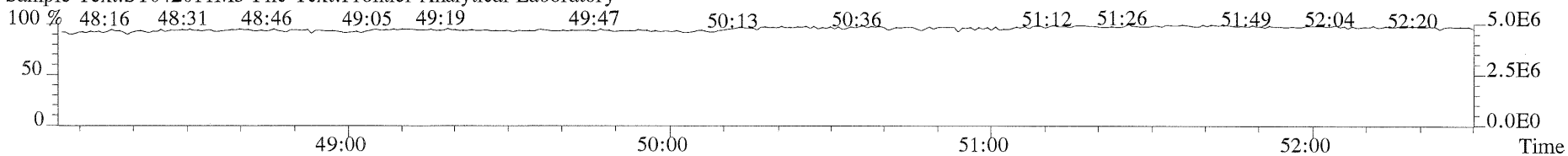
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
469.7780 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



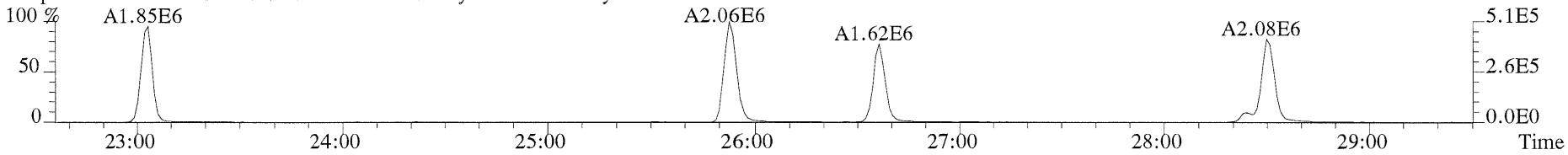
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
471.7750 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



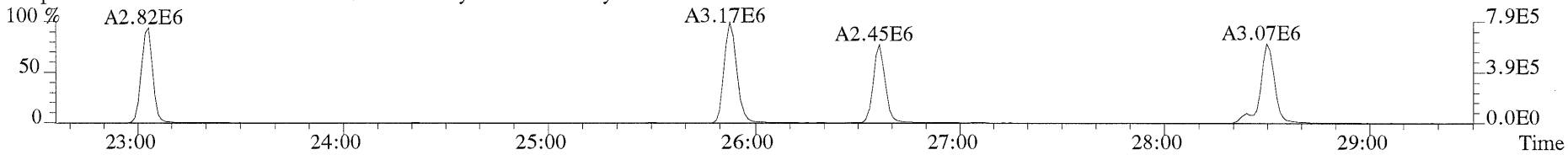
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
454.9728 S:24 F:5 Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



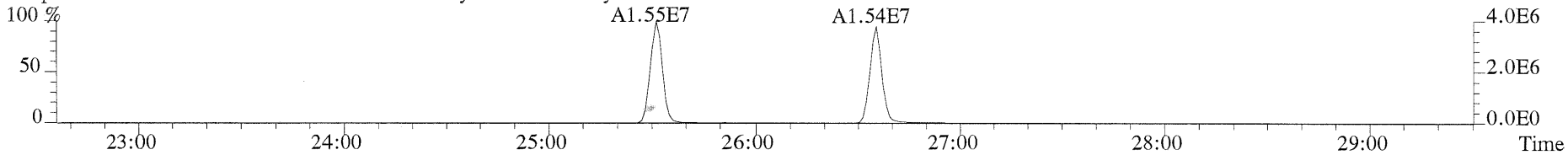
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
303.9016 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



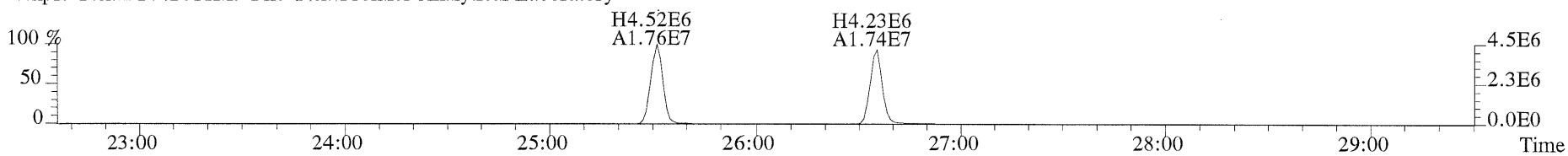
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
305.8987 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



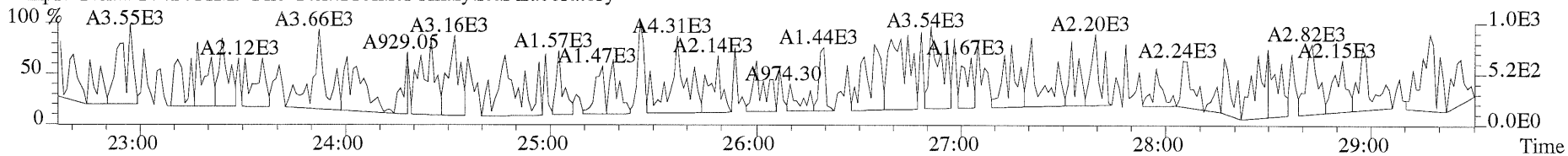
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
315.9419 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



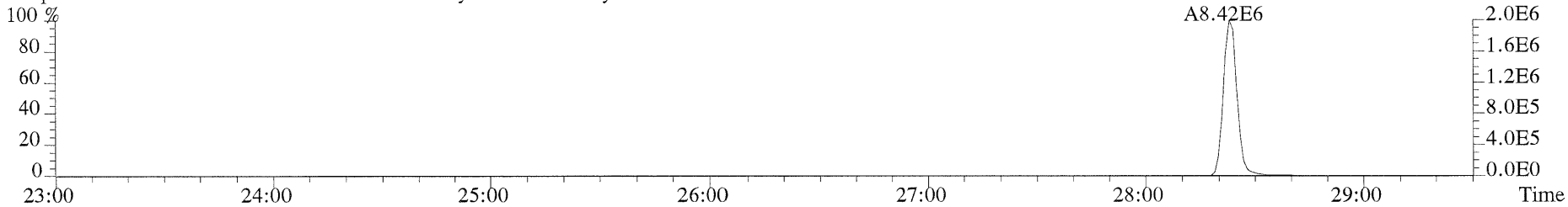
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
317.9389 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



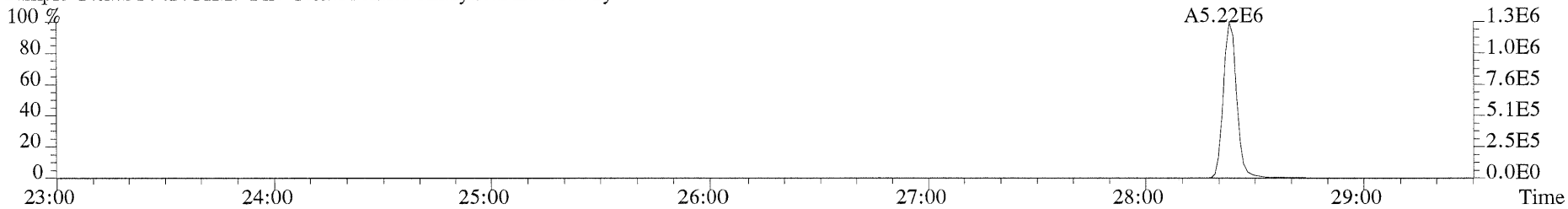
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
375.8364 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



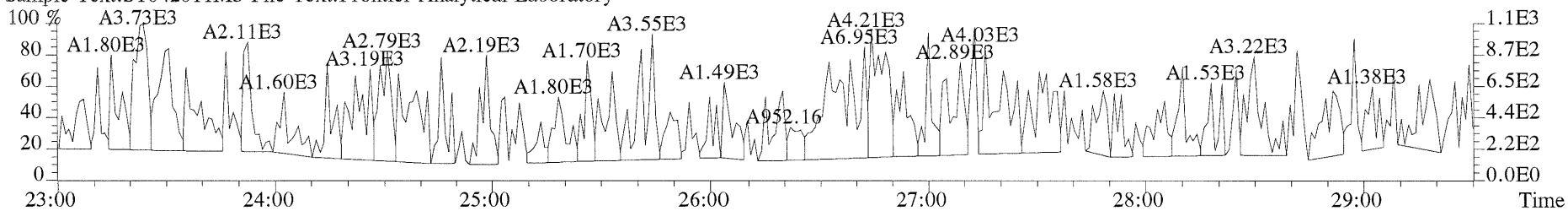
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



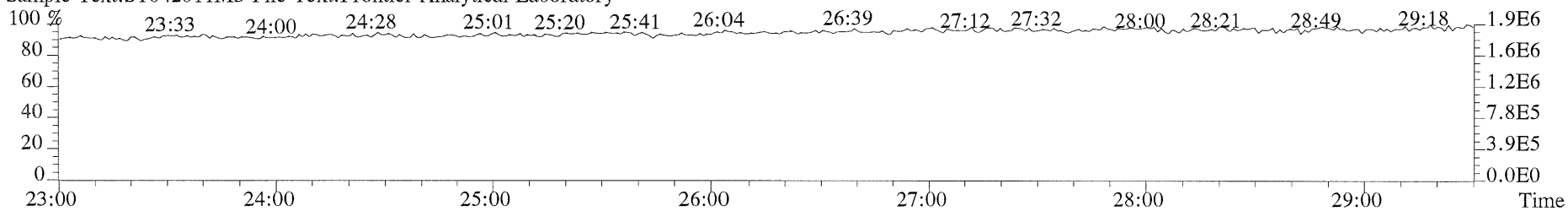
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



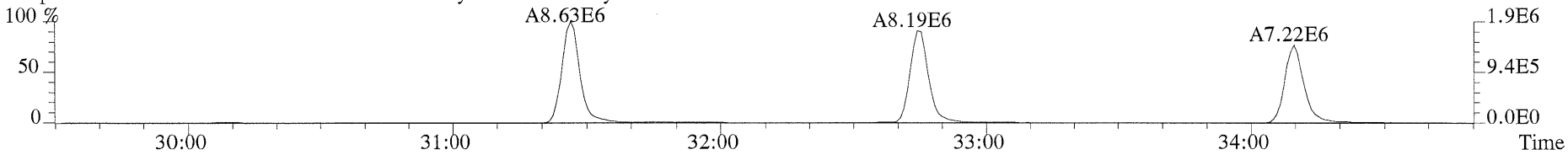
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:24 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



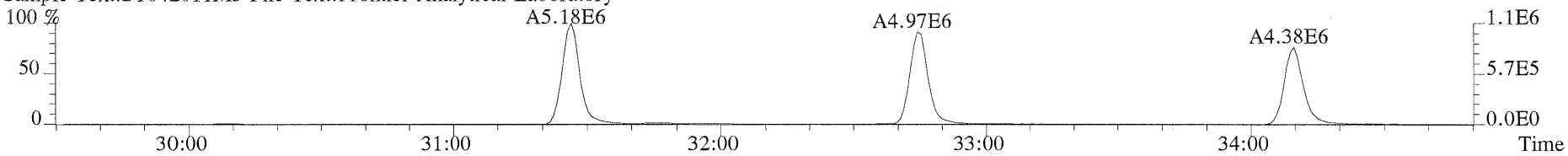
File:20APR11M #1-425 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
316.9824 S:24 Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



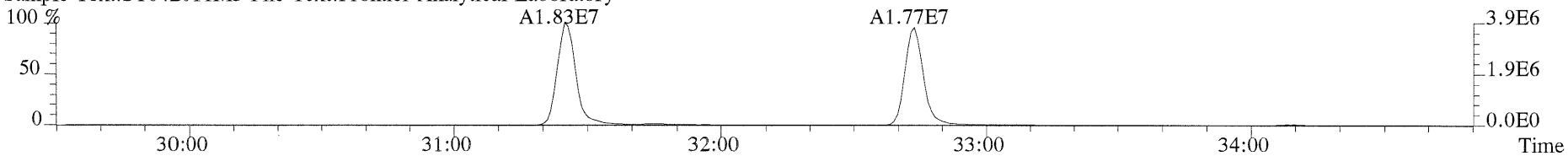
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
339.8597 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



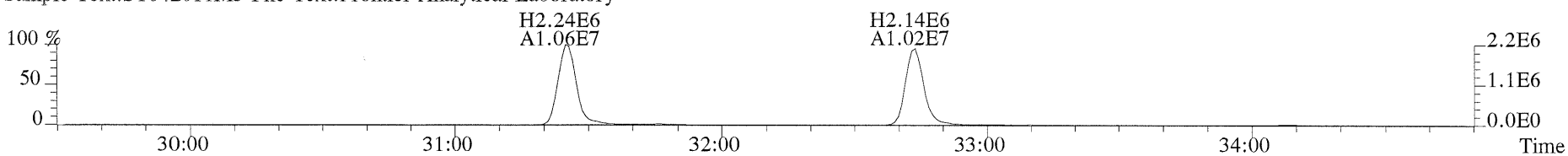
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
341.8568 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



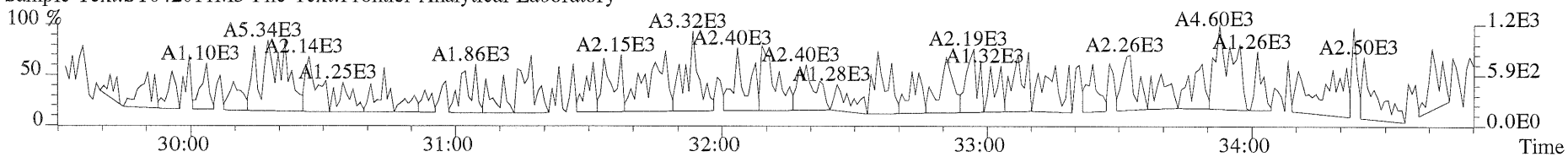
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
351.9000 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



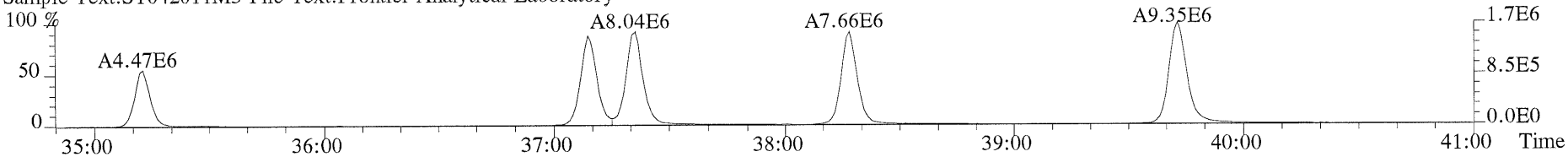
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
353.8970 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



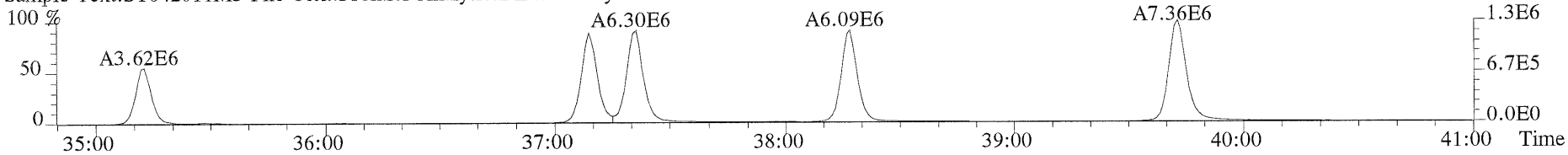
File:20APR11M #1-413 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
409.7974 S:24 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



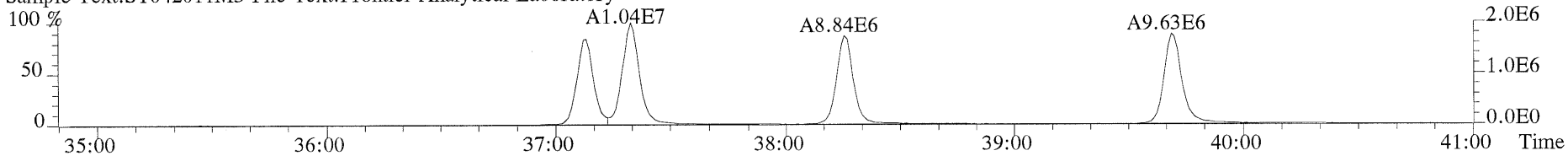
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
373.8207 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



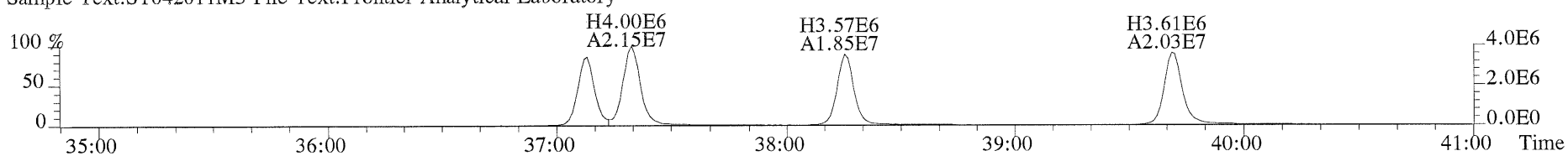
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
375.8178 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



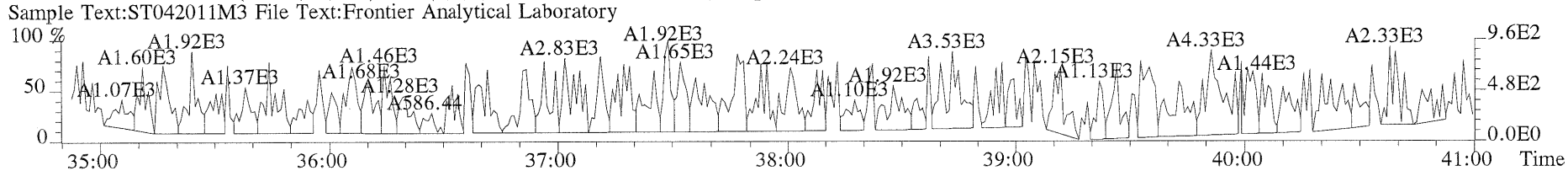
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
383.8639 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



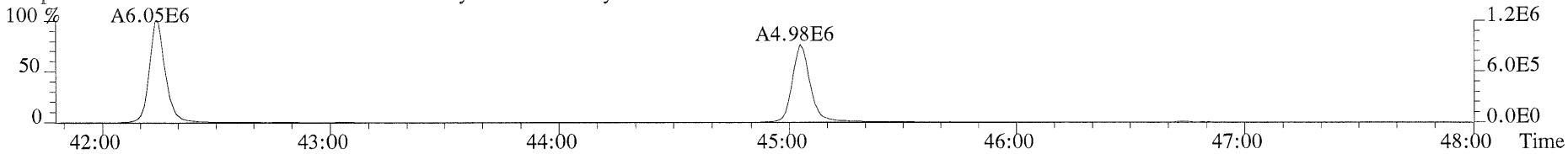
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
385.8610 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



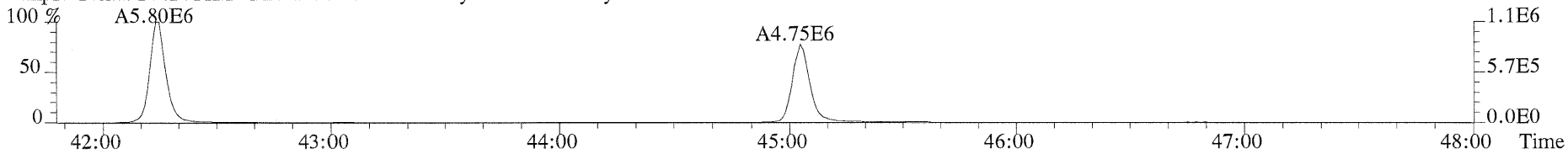
File:20APR11M #1-476 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
445.7555 S:24 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



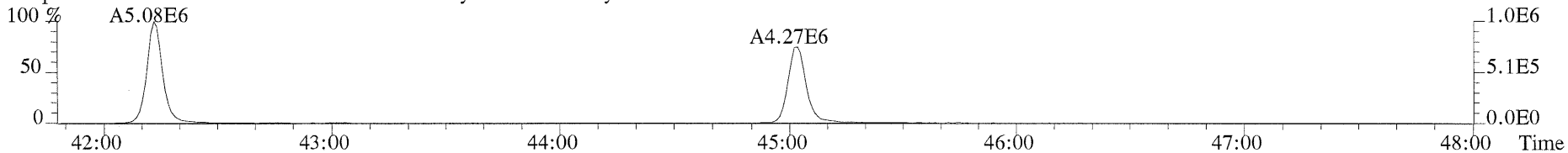
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
407.7818 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



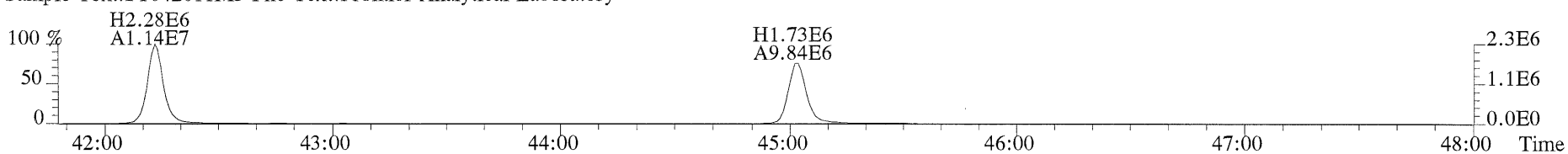
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
409.7788 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



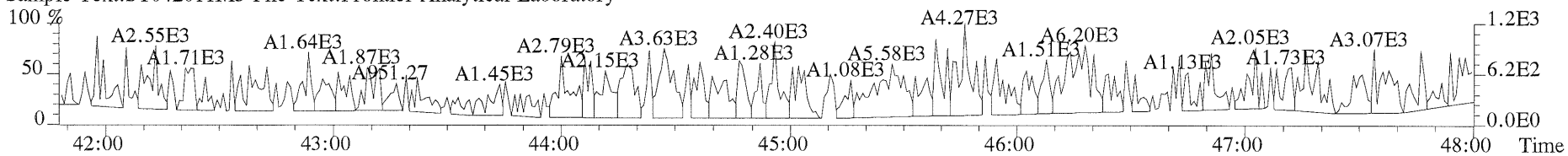
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
417.8253 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



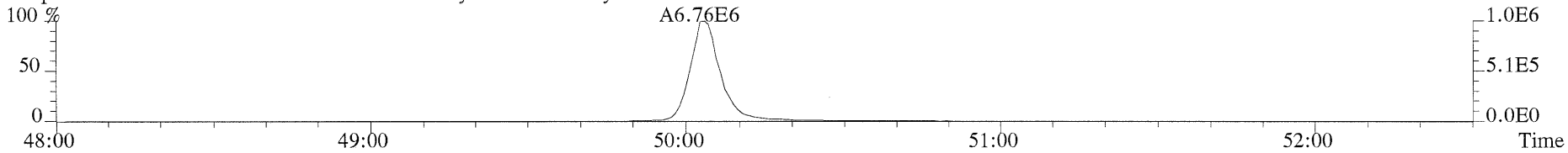
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
419.8220 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



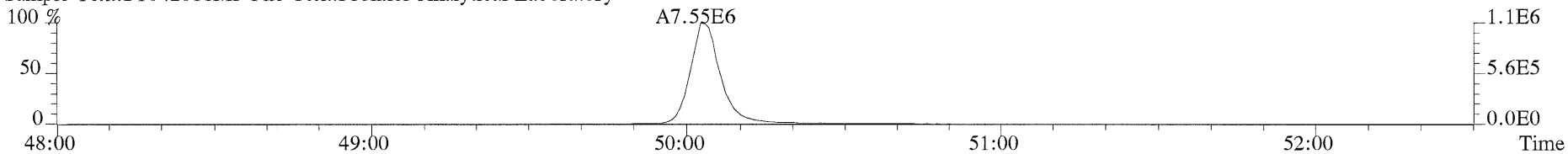
File:20APR11M #1-541 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
479.7165 S:24 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



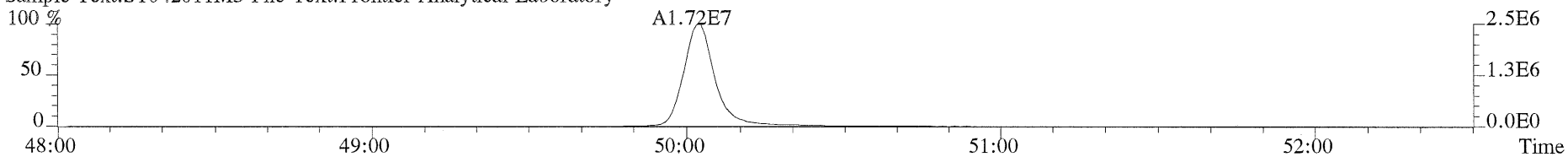
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
441.7428 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



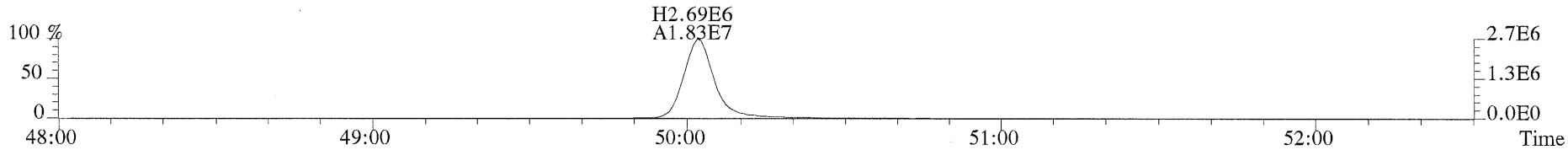
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
443.7398 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



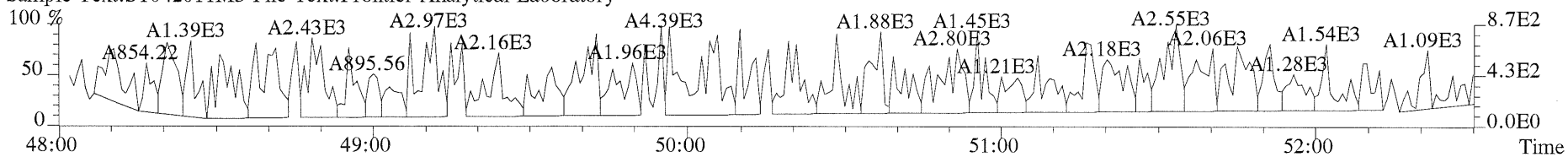
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
453.7831 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory



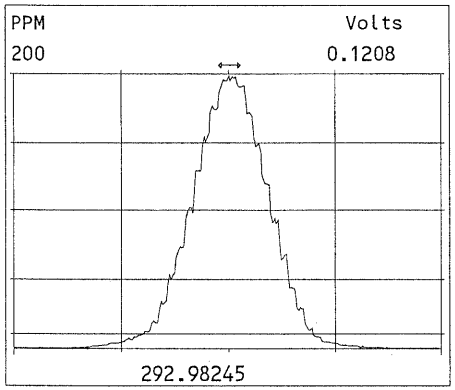
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
455.7801 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory

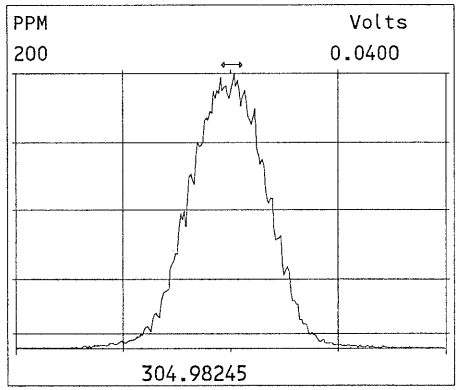


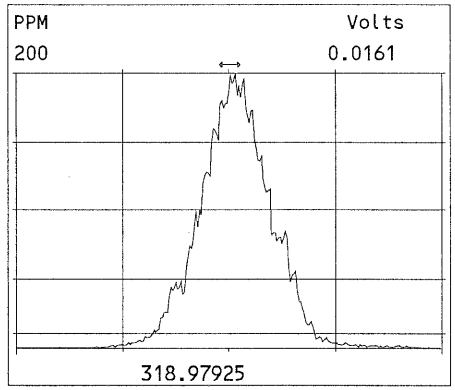
File:20APR11M #1-348 Acq:21-APR-2011 07:29:49 GC EI+ Voltage SIR Autospec-Ultima
513.6775 S:24 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:OCDD
Sample Text:ST042011M3 File Text:Frontier Analytical Laboratory

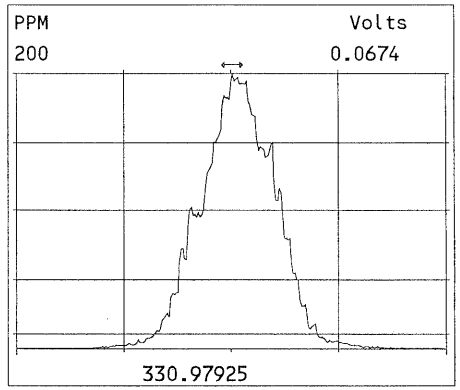


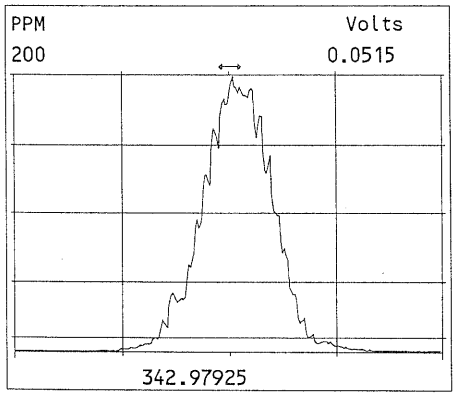
Peak Locate Examination:21-APR-2011:08:29 File:20APR11M_RES_CHECK
Experiment:OCDD Function:1 Reference:PFK

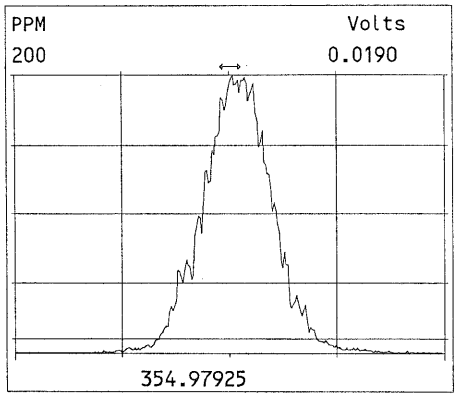


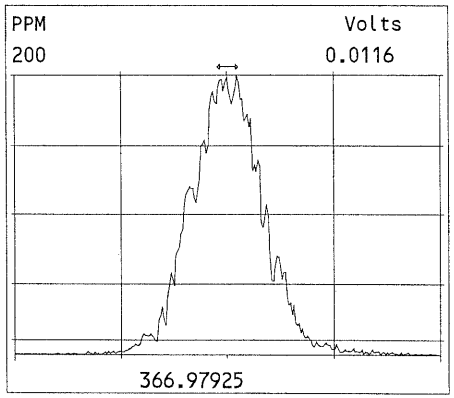


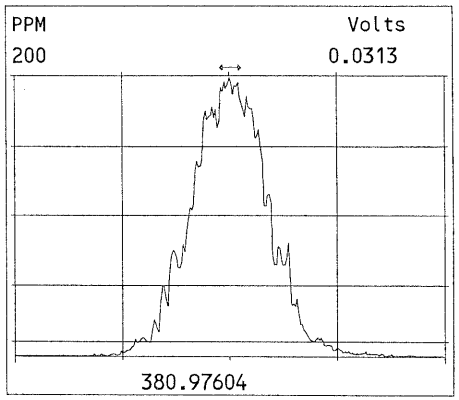


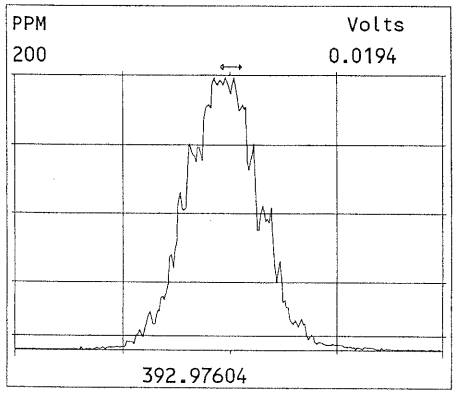


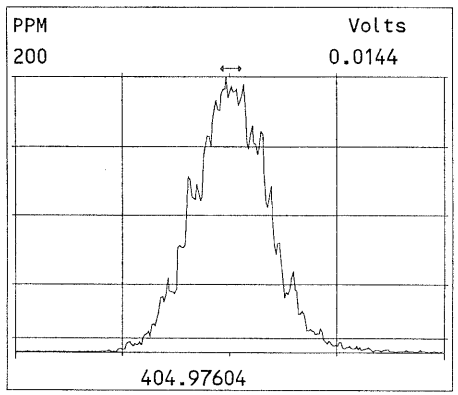


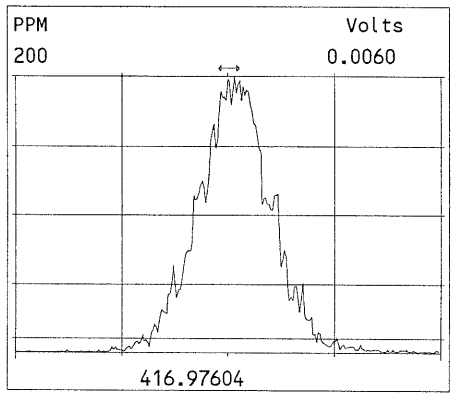




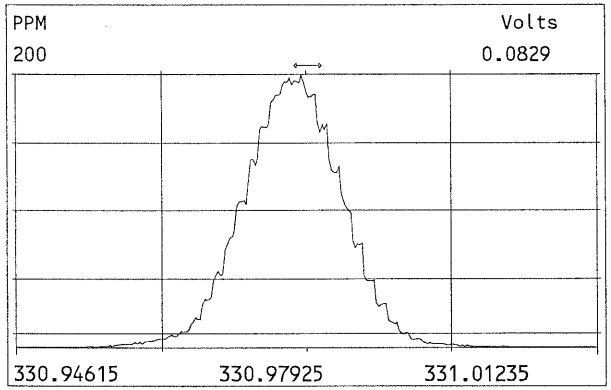


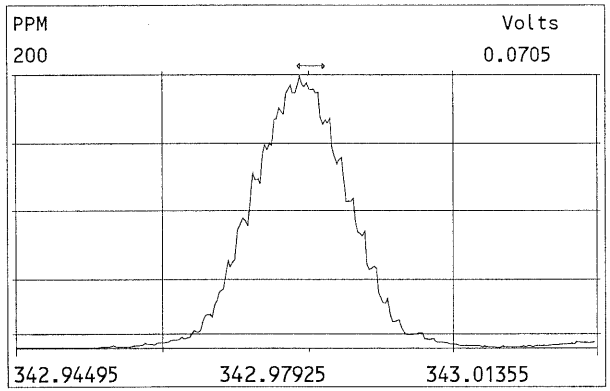


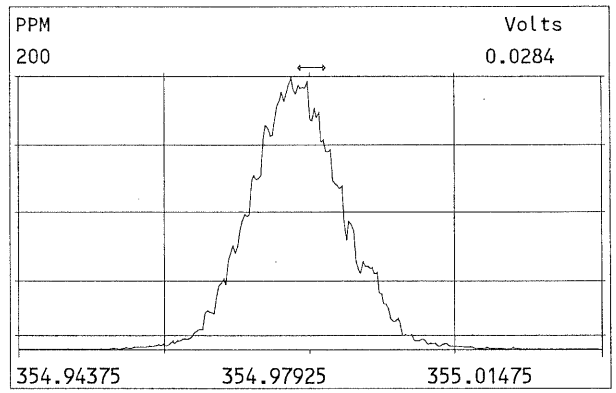


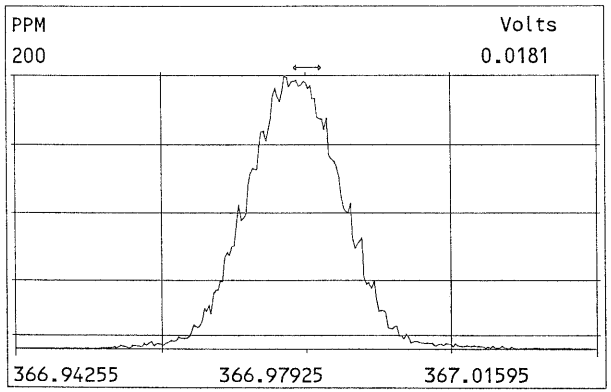


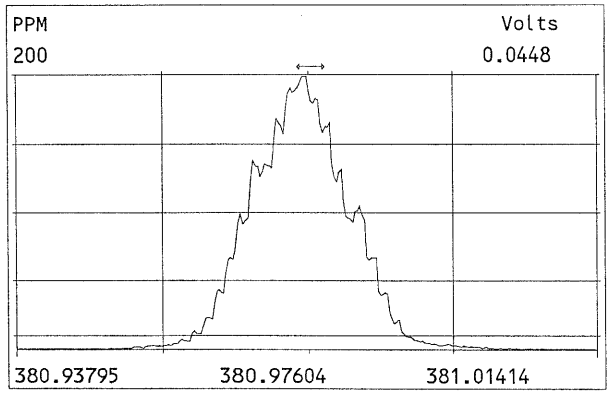
Peak Locate Examination:21-APR-2011:08:30 File:20APR11M_RES_CHECK
Experiment:OCDD Function:2 Reference:PFK

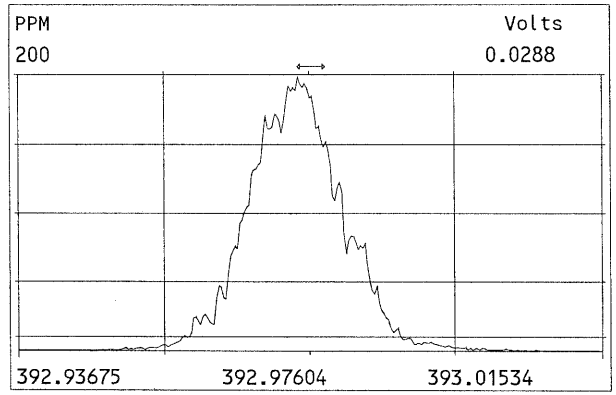


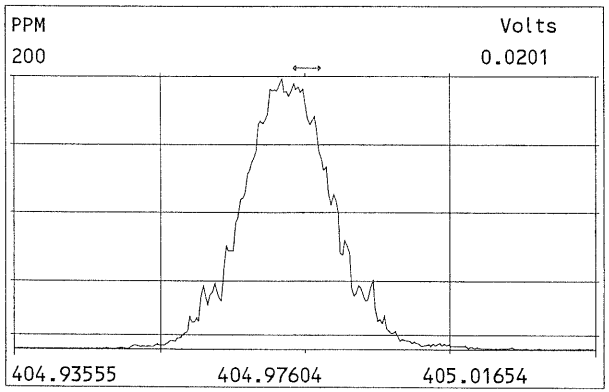


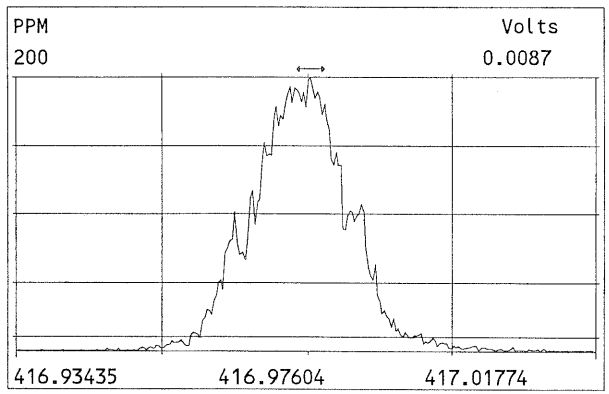




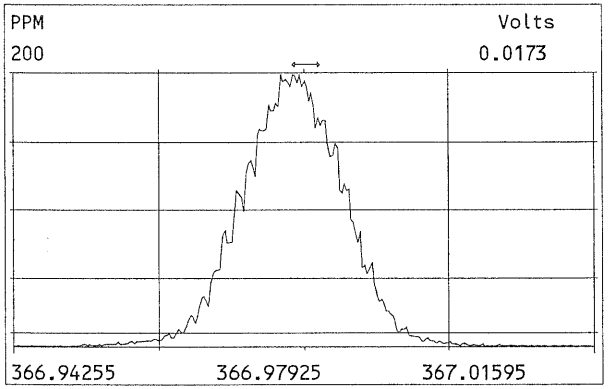


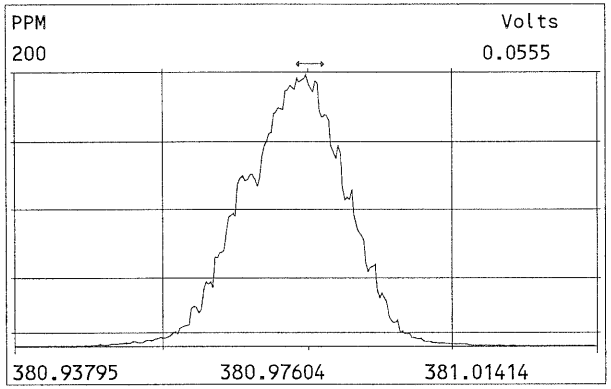


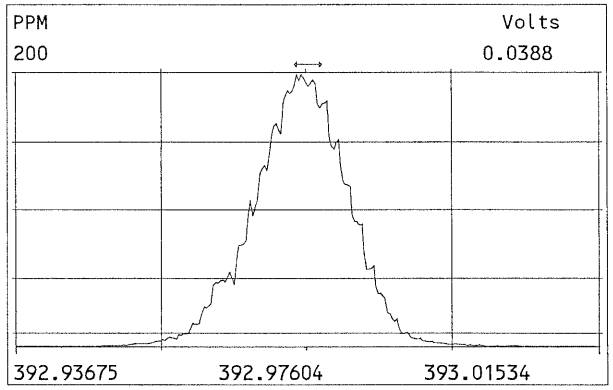


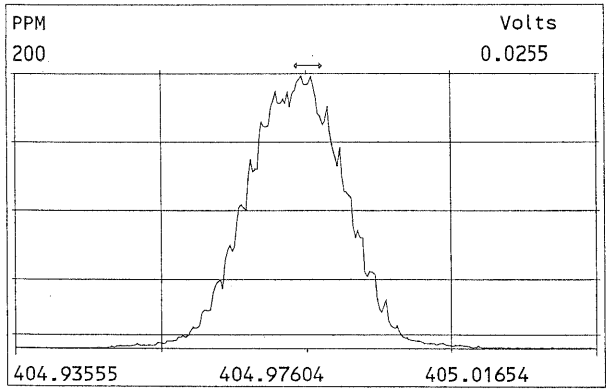


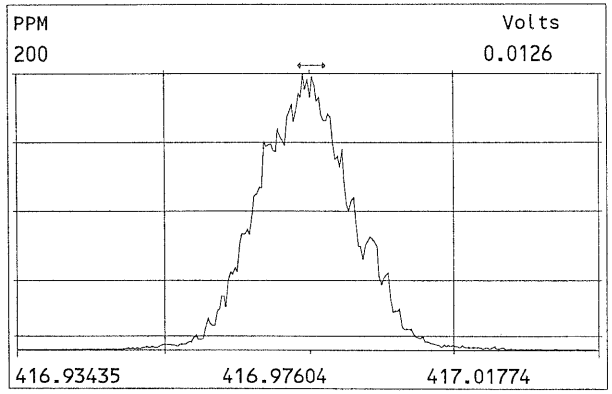
Peak Locate Examination:21-APR-2011:08:30 File:20APR11M_RES_CHECK
Experiment:OCDD Function:3 Reference:PFK

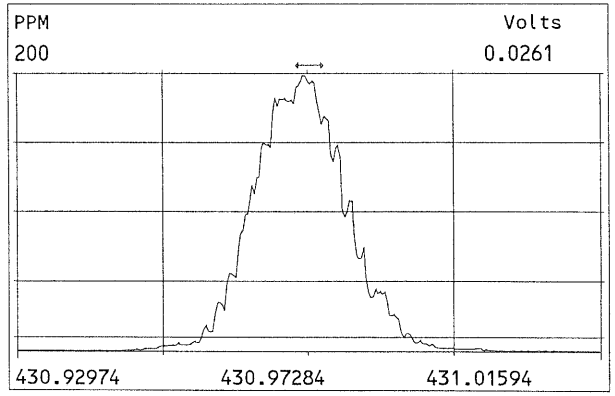


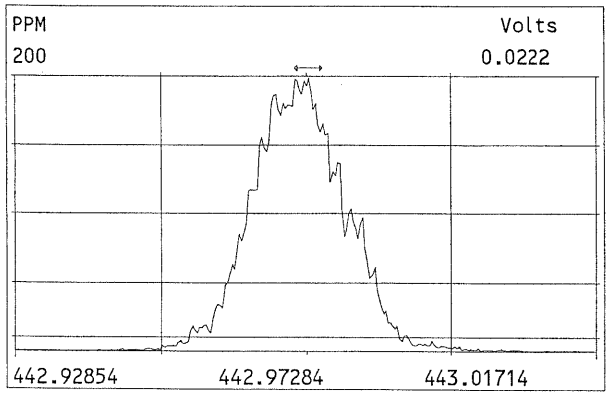


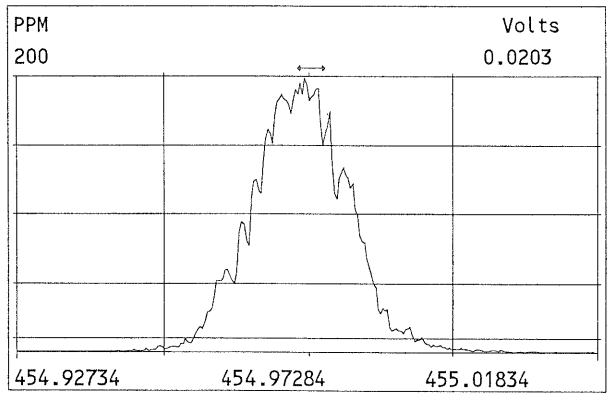




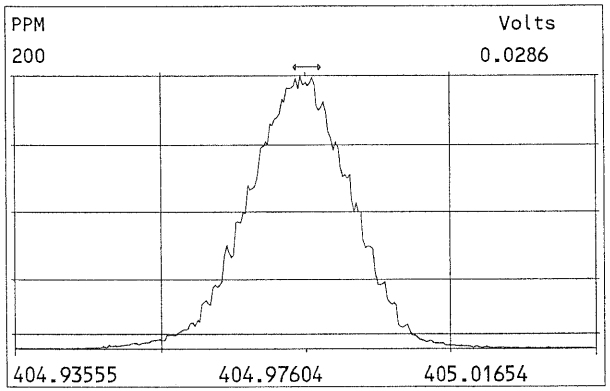


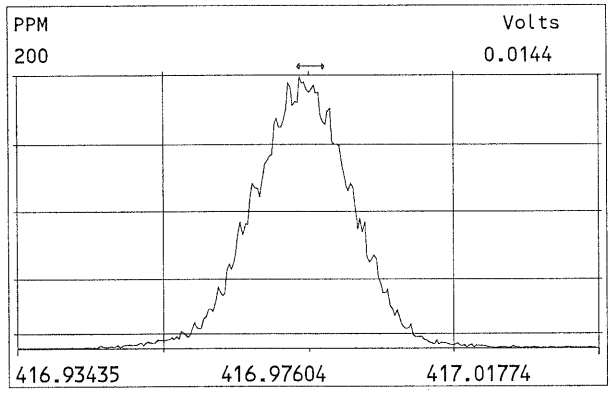


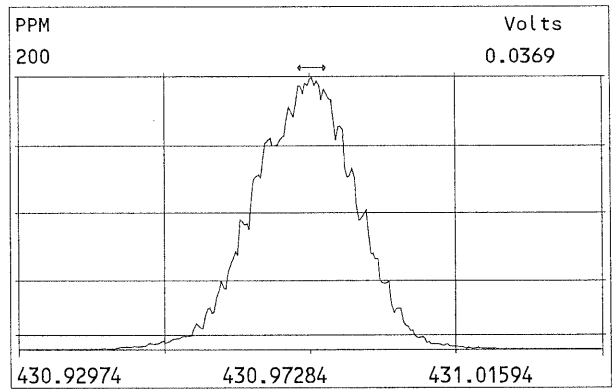


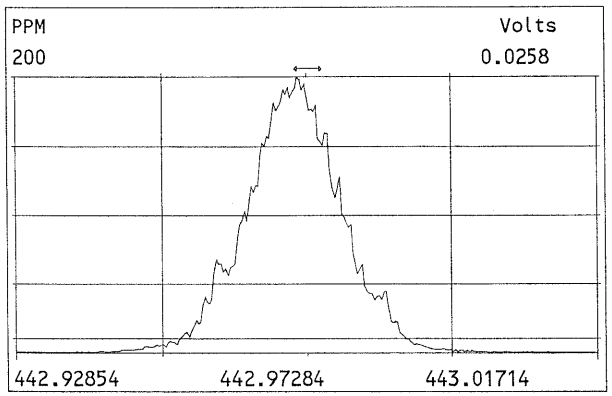


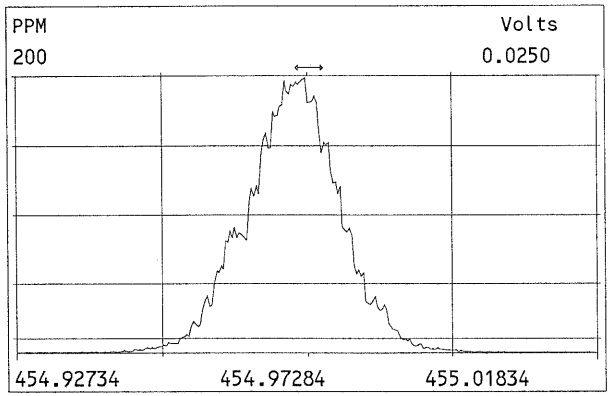
Peak Locate Examination:21-APR-2011:08:31 File:20APR11M_RES_CHECK
Experiment:OCDD Function:4 Reference:PFK

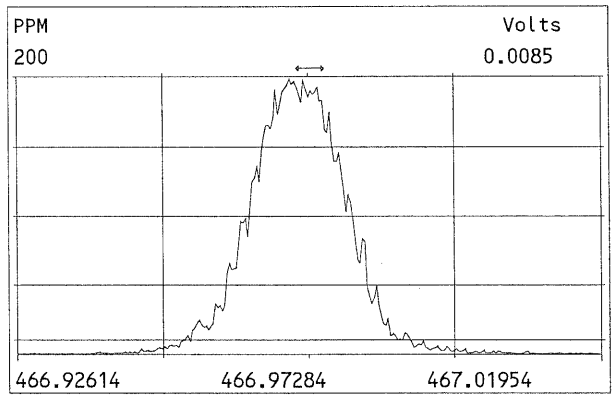


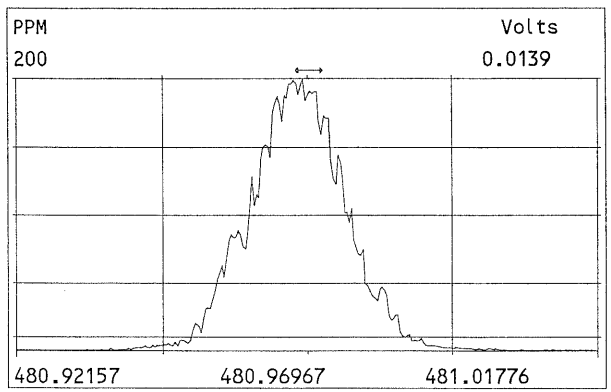




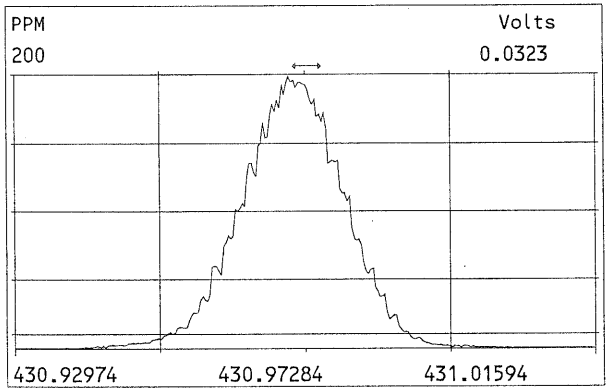


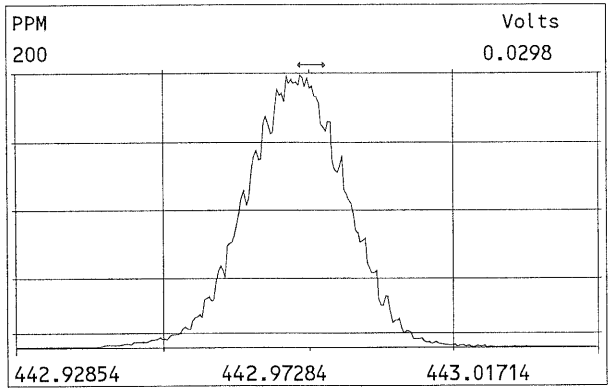


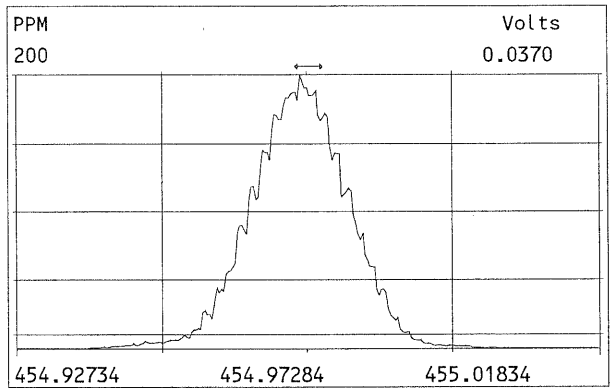


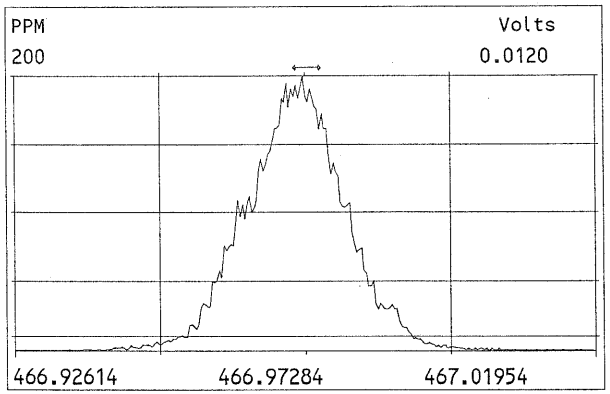


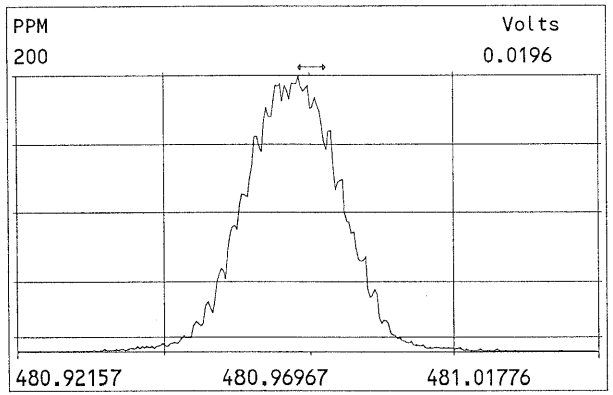
Peak Locate Examination:21-APR-2011:08:31 File:20APR11M_RES_CHECK
Experiment:OCDD Function:5 Reference:PFK

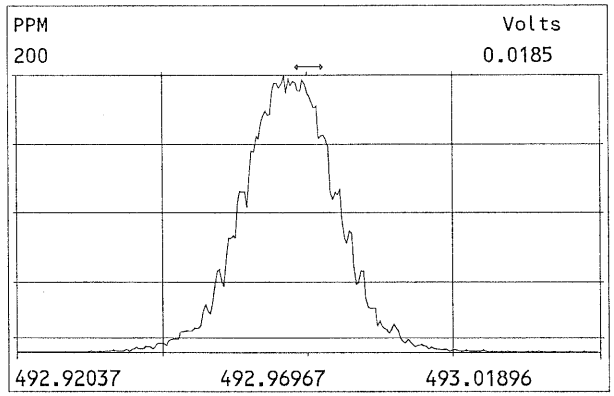


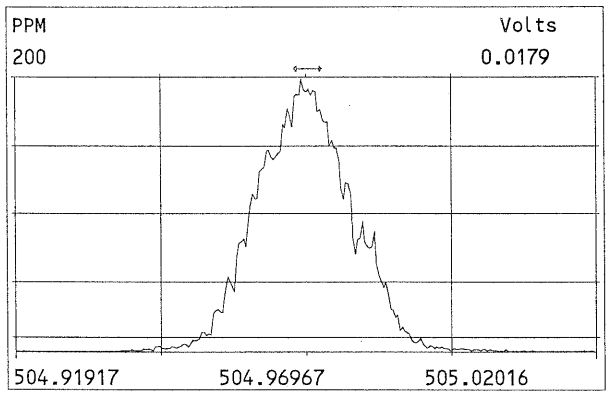


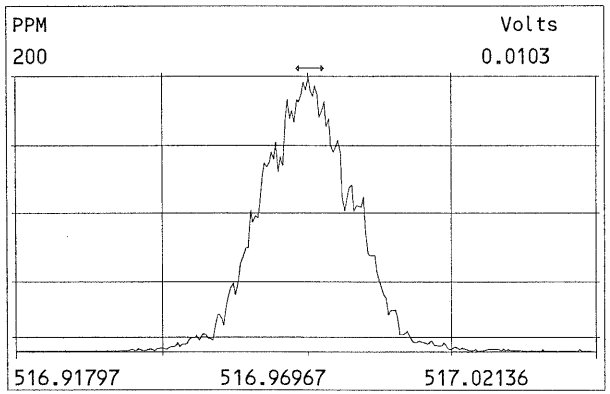












USEPA - ITD

FORM 4A
TCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 2/18/11

Instrument ID: FAL1 GC Column ID: DB225

VER Data Filename: 20APR11A Sam:1 Analysis Date: 20-APR-11 Time: 09:25:20

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
NATIVE ANALYTES						
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	y	8.59	8.40 - 12.0 ✓
LABELED COMPOUNDS						
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	y	73.1	71.0 - 140 ✓

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6A, Method 1613

Analyst: _____ Date: 4/20/11

FAL ID: ST042011A1 Filename: 20APR11A Sam:1 Acquired: 20-APR-11 09:25:20 ICal: TCDFFAL1-2-18-11
Client ID: 1613 CS3 100511J ConCal: ST042011A1 EndCal: ST042011A2
Results: 6701TCDF GC Column: DB225 Amount: 1.000

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise	DL	#Hom	Rec
2,3,7,8-TCDF	1.18e+07	0.75 y	19:19	1.16	8.59		2.50	-	-	1	
13C-2,3,7,8-TCDF	1.19e+08	0.79 y	19:18	1.05	73.1						73.1
13C-1,2,3,4-TCDF	1.55e+08	0.78 y	16:45	-	87.5						

Analyst: _____ Date: 4/20/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:20APR11A Instrument: FAL1 GC: DB225 Experiment:TCDF

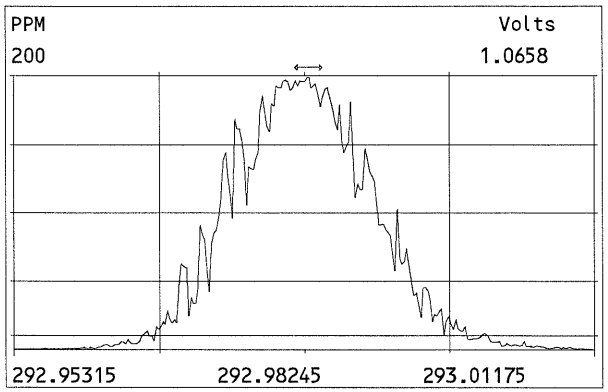
Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
20APR11A	1	ST042011A1	1613 CS3 100511J	20-APR-11 09:25:20	ST042011A1	ST042011A2	TC
20APR11A	2	6701-001-0001-SA	LL-SED1-0-15-032911	20-APR-11 10:00:23	ST042011A1	ST042011A2	TC
20APR11A	3	6701-002-0001-SA	LL-SED2-0-15-032911	20-APR-11 10:35:28	ST042011A1	ST042011A2	TC
20APR11A	4	6701-003-0001-SA	LL-SED3-0-15-032911	20-APR-11 11:10:31	ST042011A1	ST042011A2	TC
20APR11A	5	6701-004-0001-SA	LL-SED4-0-15-032911	20-APR-11 11:45:36	ST042011A1	ST042011A2	TC
20APR11A	6	6701-005-0001-SA	LL-SED1-0-15-032911-D	20-APR-11 12:20:39	ST042011A1	ST042011A2	TC
20APR11A	7	SB042011A1	Solvent Blank	20-APR-11 12:55:44	ST042011A1	ST042011A2	TC
20APR11A	8	SB042011A2	Solvent Blank	20-APR-11 13:30:47	ST042011A1	ST042011A2	TC
20APR11A	9	ST042011A2	1613 CS3 100511J	20-APR-11 14:06:38	ST042011A1	ST042011A2	TC

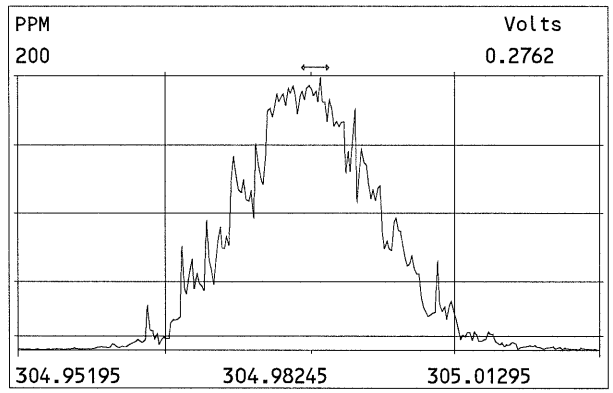
4/20/11

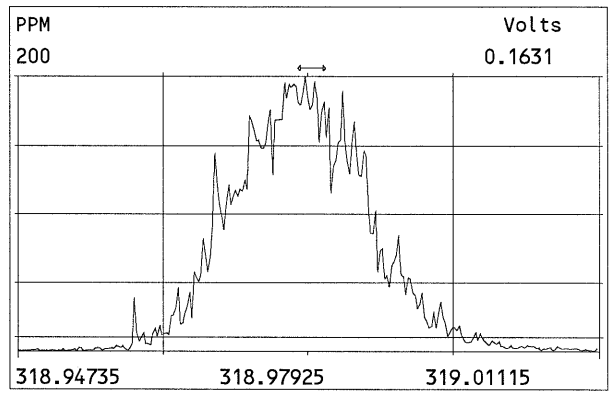
Data Backed Up:_____

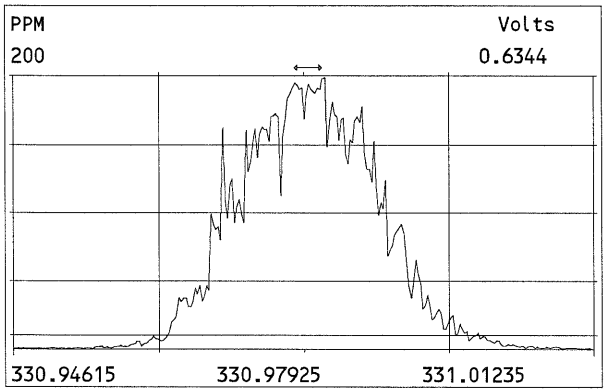
Date:_____

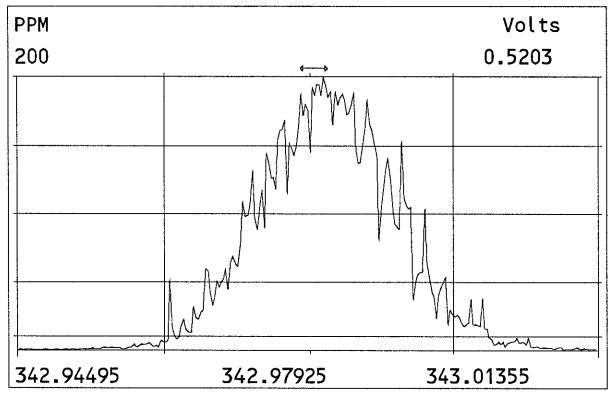
Peak Locate Examination:20-APR-2011:09:24 File:20APR11A
Experiment:TCDF Function:1 Reference:PFK

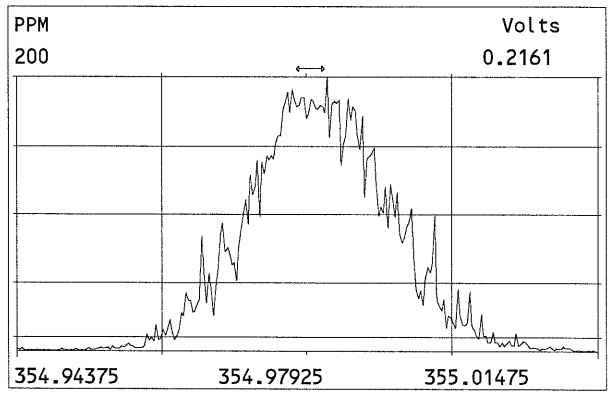


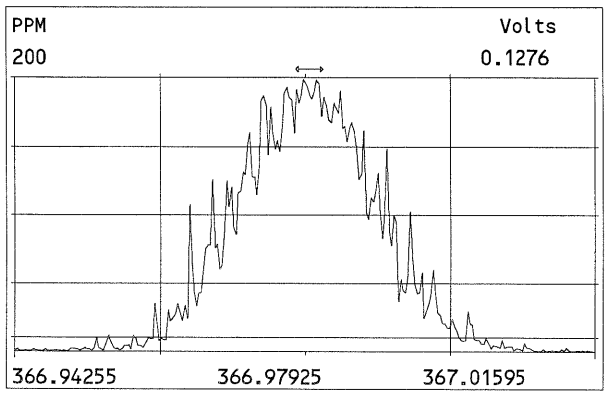


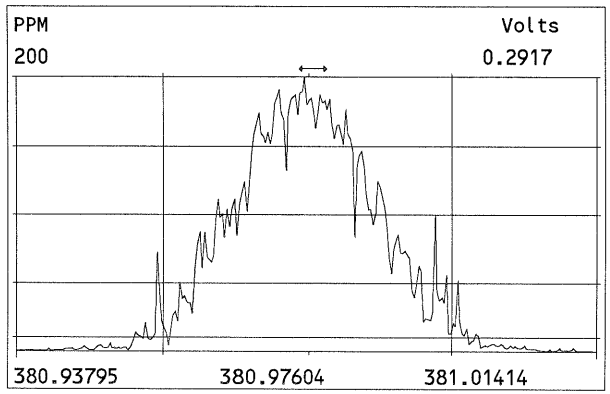












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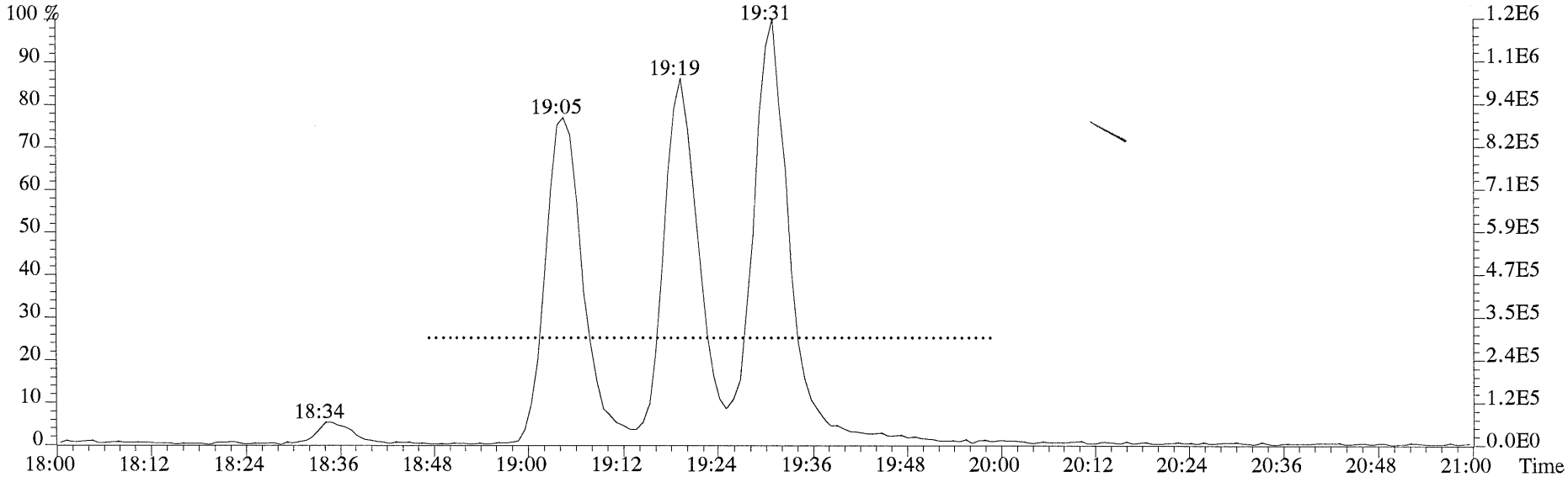
FAL ID:ST042011A1



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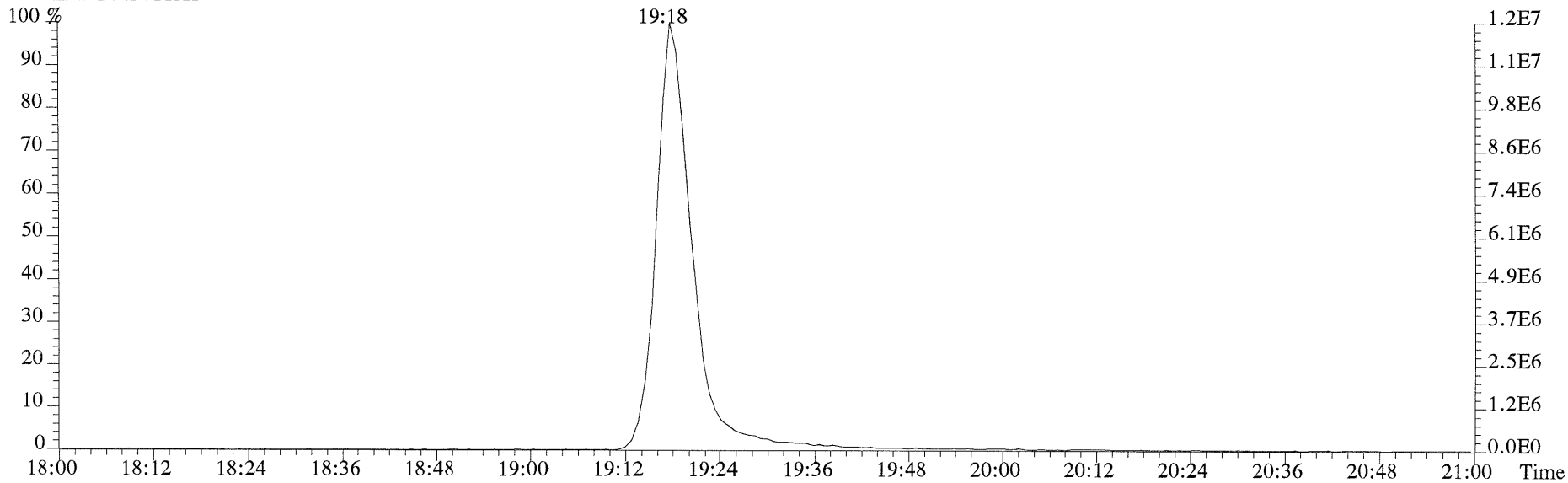

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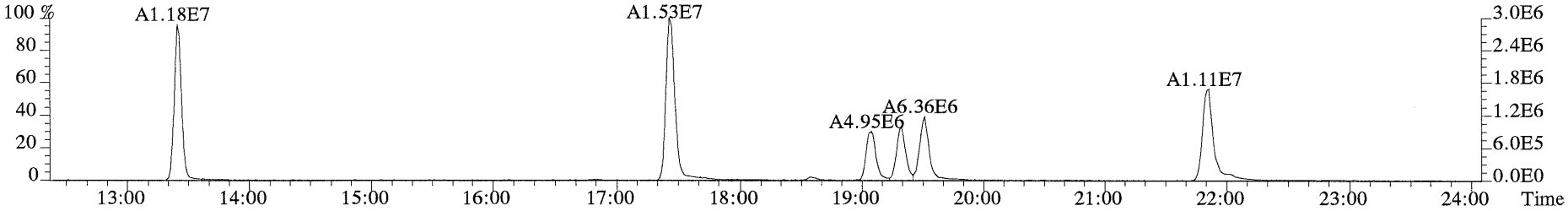
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) Exp:TCDF
FAL ID:ST042011A1



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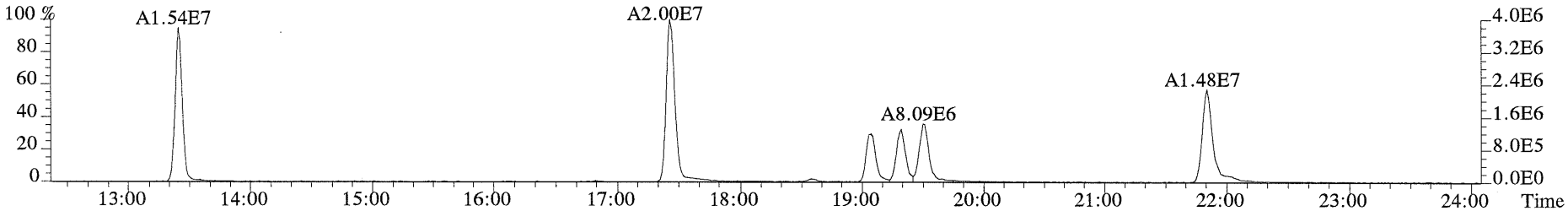
FAL ID:ST042011A1



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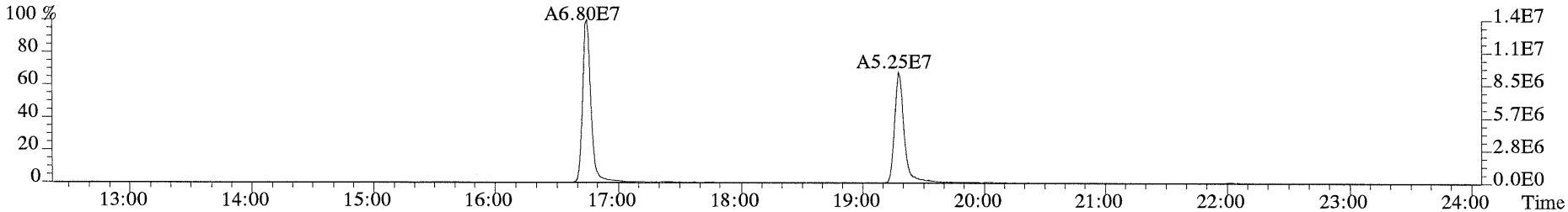
FAL ID:ST042011A1



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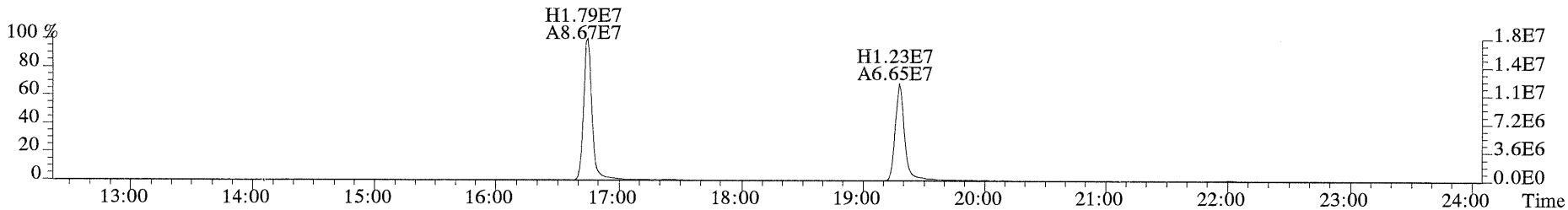
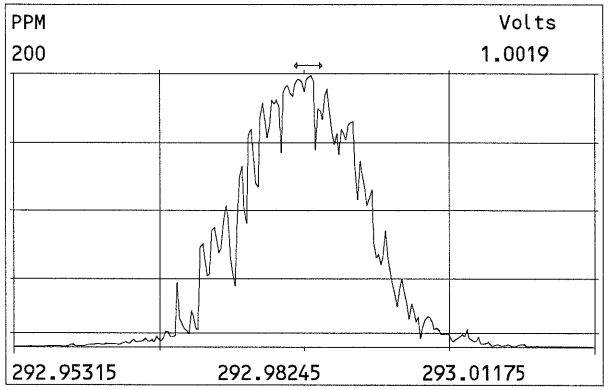
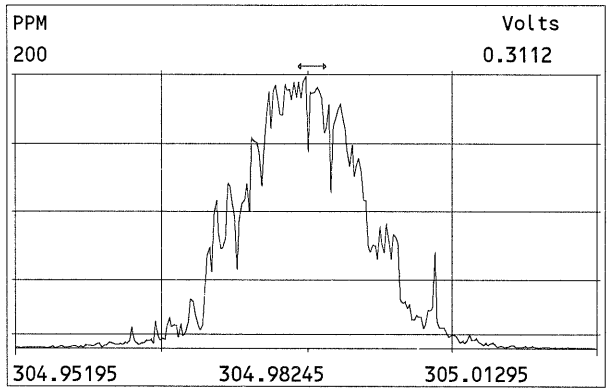
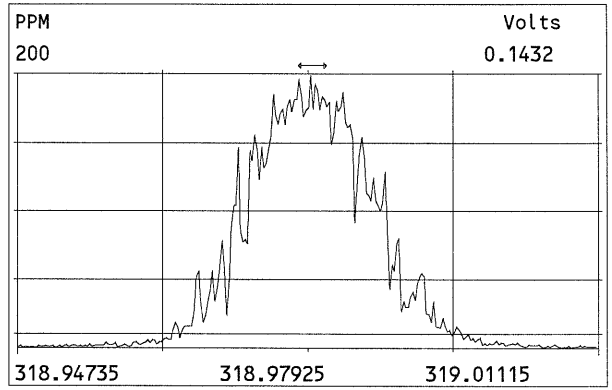
FAL ID:ST042011A1

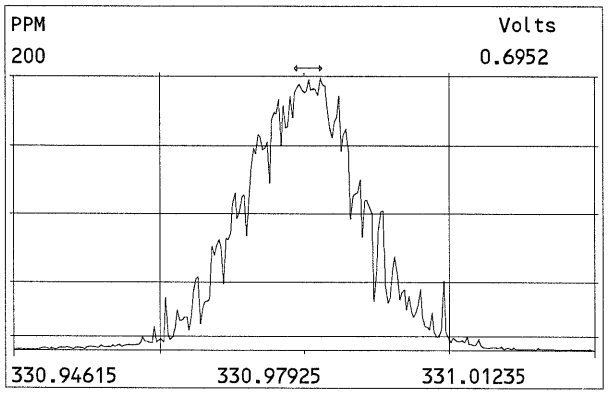


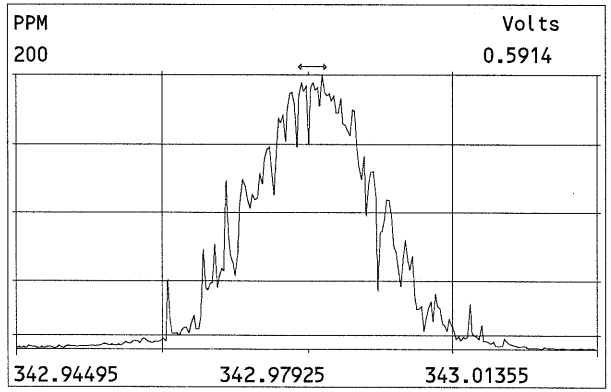
Peak Locate Examination:20-APR-2011:14:43 File:20APR11A_RES_CHECK
Experiment:TCDF Function:1 Reference:PFK

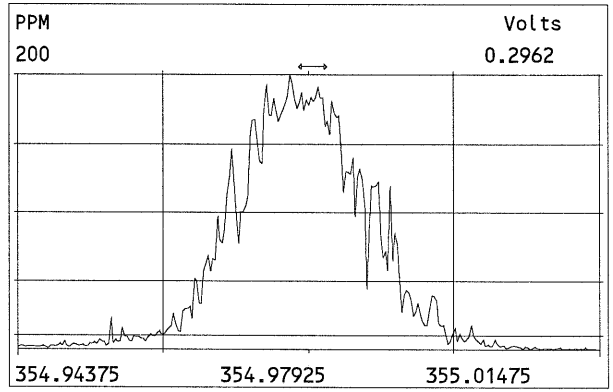


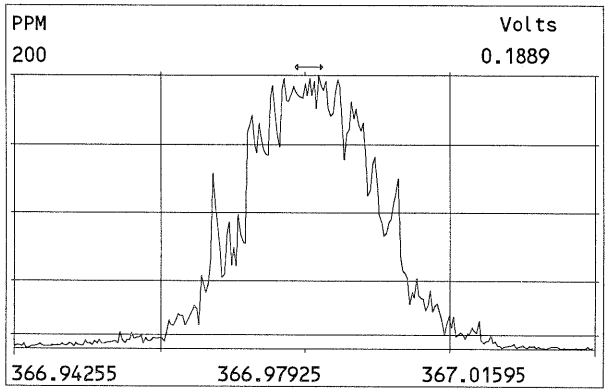


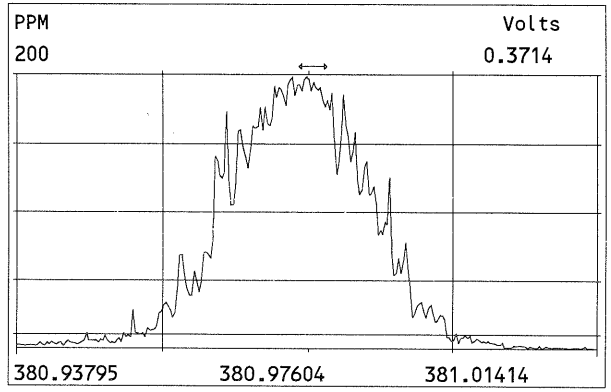












USEPA - ITD

FORM 4A
TCDF CALIBRATION VERIFICATION

Lab Name: Frontier Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 2/18/11

Instrument ID: FAL1 GC Column ID: DB225

VER Data Filename: 20APR11A Sam:9 Analysis Date: 20-APR-11 Time: 14:06:38

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	ACCEPT	CONC. FOUND	CONC. RANGE (ng/mL) (3)
NATIVE ANALYTES						
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	y	8.94	8.40 - 12.0
LABELED COMPOUNDS						
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	y	95.1	71.0 - 140

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6A, Method 1613

Analyst: _____ Date: 4/20/11

FAL ID: ST042011A2 Filename: 20APR11A Sam:9 Acquired: 20-APR-11 14:06:38 ICal: TCDFFAL1-2-18-11
Client ID: 1613 CS3 100511J ConCal: ST042011A1 EndCal: ST042011A2
Results: 6701tcdf GC Column: DB225 Amount: 1.000

Name	Resp	RA	RT	RRF	Conc	Qual	Fac	Noise	DL	#Hom	Rec
2,3,7,8-TCDF	1.45e+07	0.76 y	19:18	1.16	8.94		2.50	-	-	1	
13C-2,3,7,8-TCDF	1.40e+08	0.78 y	19:17	1.05	95.1						95.1
13C-1,2,3,4-TCDF	1.40e+08	0.79 y	16:43	-	79.3						

Analyst: _____ Date: 4/20/11

Frontier Analytical Laboratory - Acquisition Log

Run Name:20APR11A Instrument: FAL1 GC: DB225 Experiment:TCDF

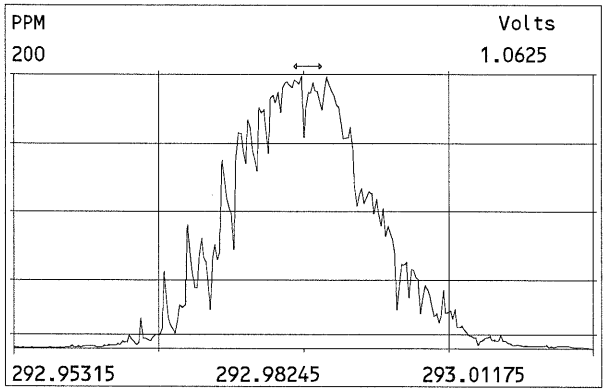
Data File	S	FAL ID	Client ID	Acquired	ConCal	EndCal	Analyst
20APR11A	1	ST042011A1	1613 CS3 100511J	20-APR-11 09:25:20	ST042011A1	ST042011A2	TC
20APR11A	2	6701-001-0001-SA	LL-SED1-0-15-032911	20-APR-11 10:00:23	ST042011A1	ST042011A2	TC
20APR11A	3	6701-002-0001-SA	LL-SED2-0-15-032911	20-APR-11 10:35:28	ST042011A1	ST042011A2	TC
20APR11A	4	6701-003-0001-SA	LL-SED3-0-15-032911	20-APR-11 11:10:31	ST042011A1	ST042011A2	TC
20APR11A	5	6701-004-0001-SA	LL-SED4-0-15-032911	20-APR-11 11:45:36	ST042011A1	ST042011A2	TC
20APR11A	6	6701-005-0001-SA	LL-SED1-0-15-032911-D	20-APR-11 12:20:39	ST042011A1	ST042011A2	TC
20APR11A	7	SB042011A1	Solvent Blank	20-APR-11 12:55:44	ST042011A1	ST042011A2	TC
20APR11A	8	SB042011A2	Solvent Blank	20-APR-11 13:30:47	ST042011A1	ST042011A2	TC
20APR11A	9	ST042011A2	1613 CS3 100511J	20-APR-11 14:06:38	ST042011A1	ST042011A2	TC

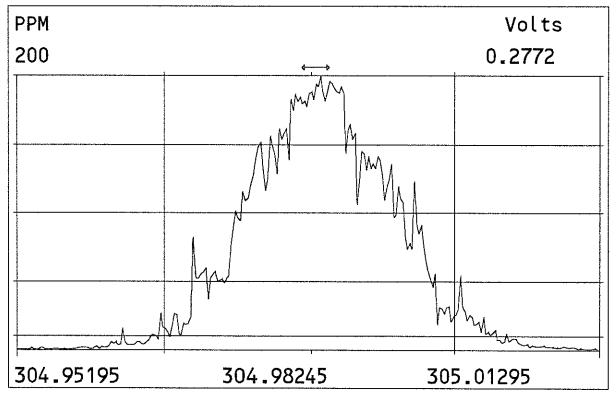
4/20/11

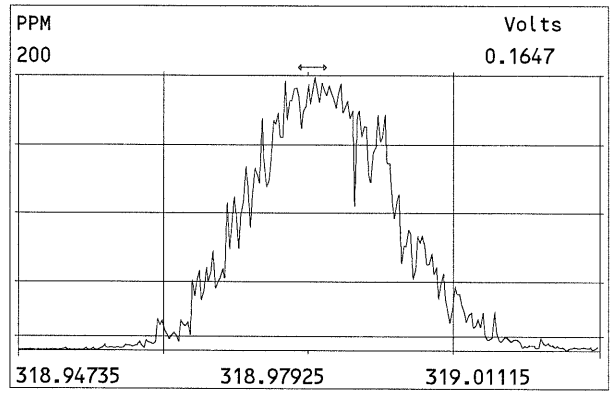
Data Backed Up:_____

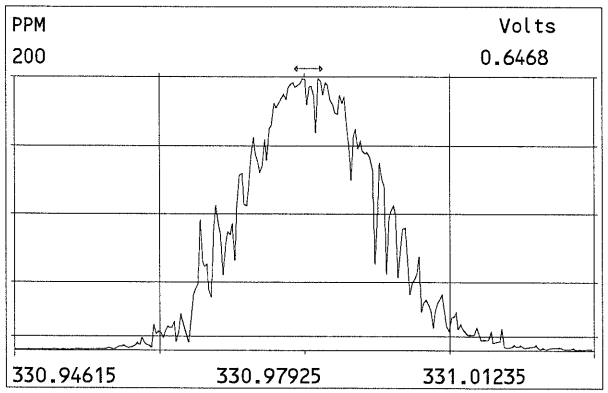
Date:_____

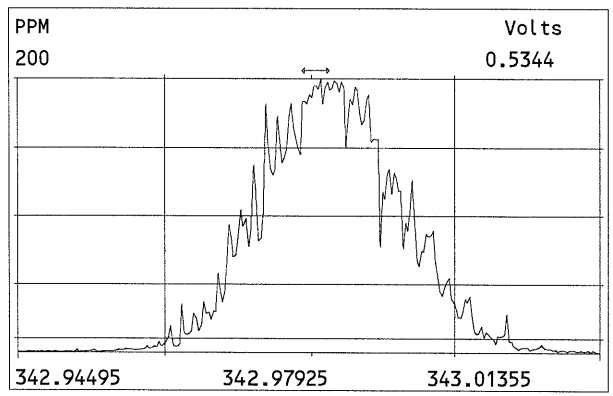
Peak Locate Examination:20-APR-2011:09:24 File:20APR11A
Experiment:TCDF Function:1 Reference:PFK

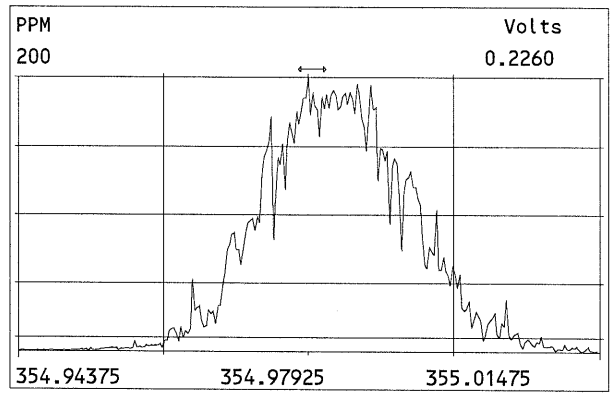


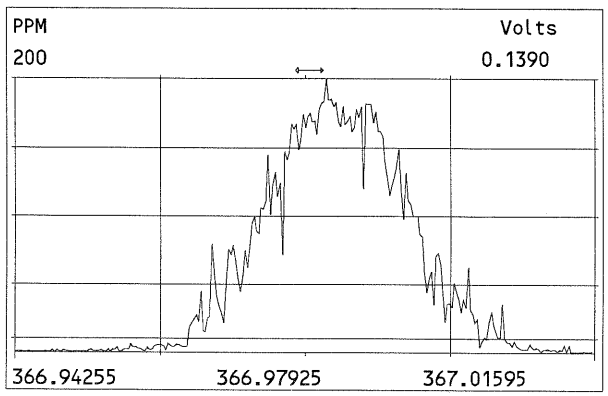


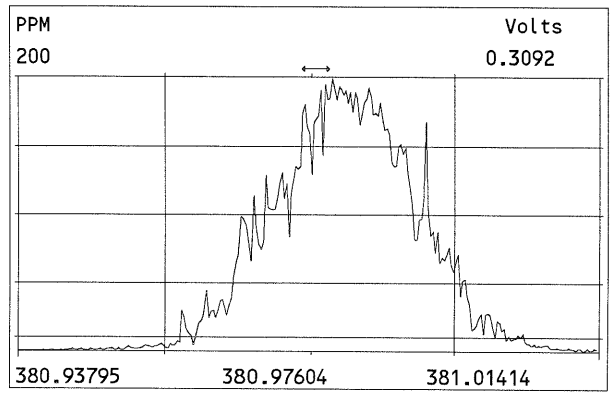












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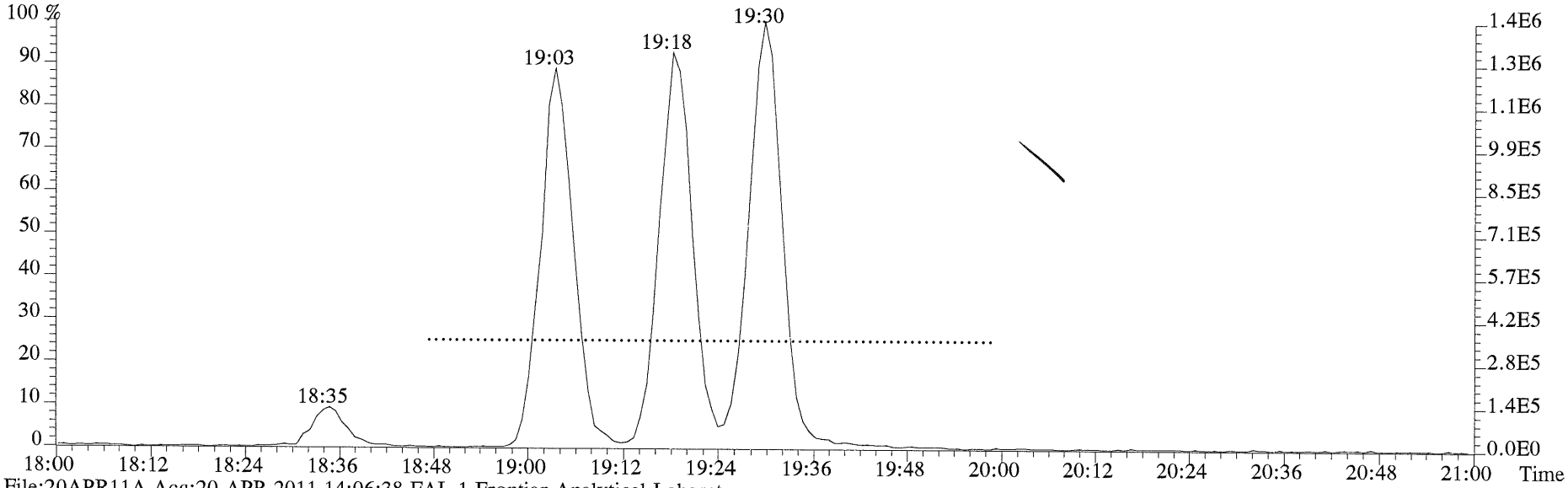
FAL ID:ST042011A2



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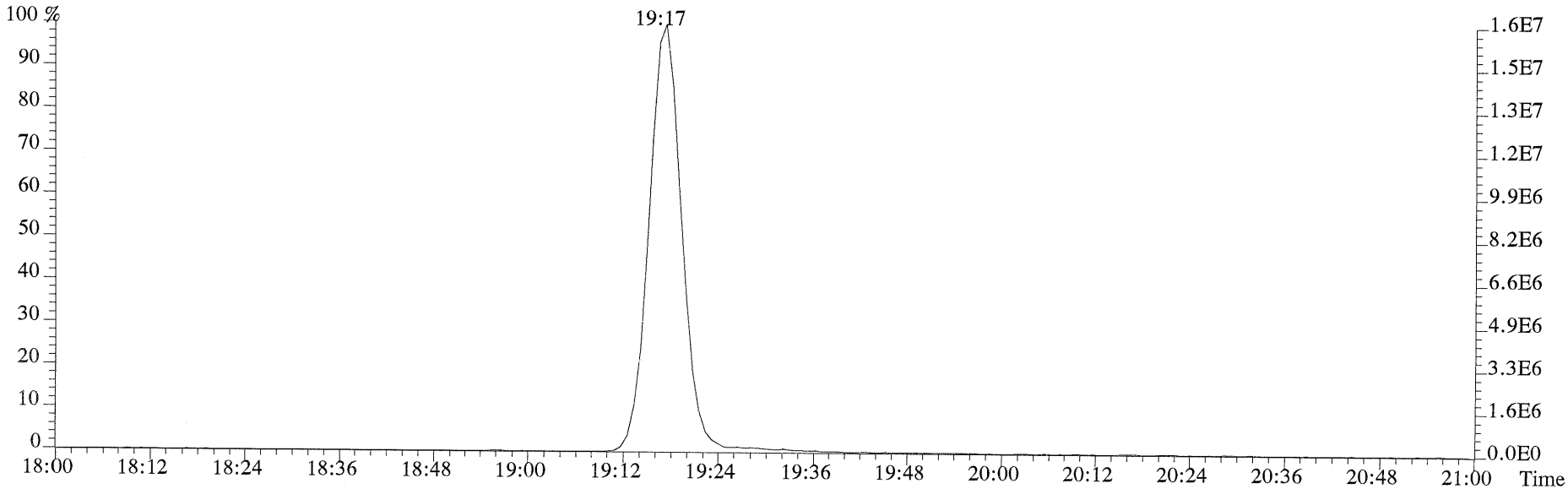
FAL ID:ST042011A2



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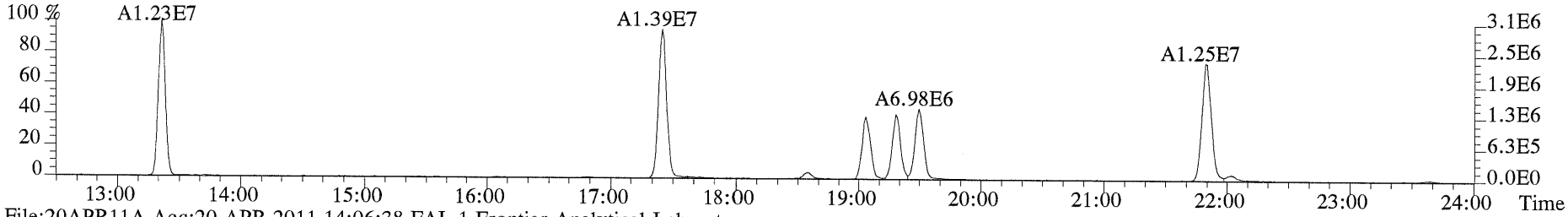
FAL ID:ST042011A2



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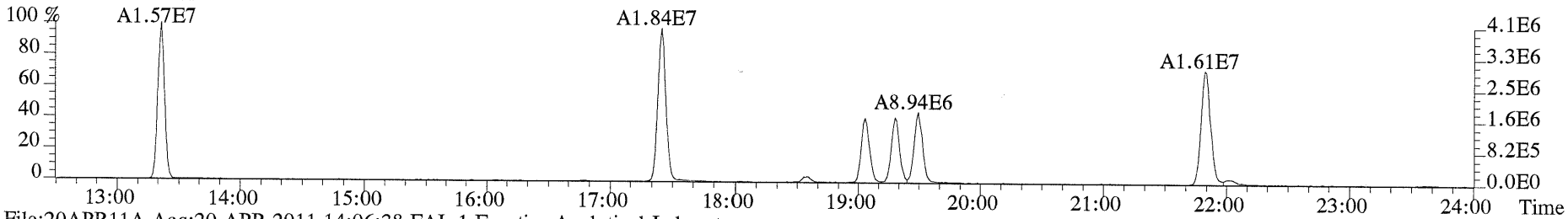

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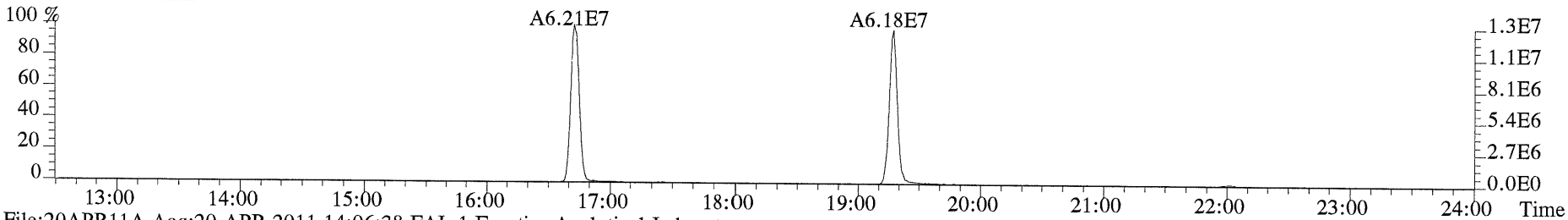

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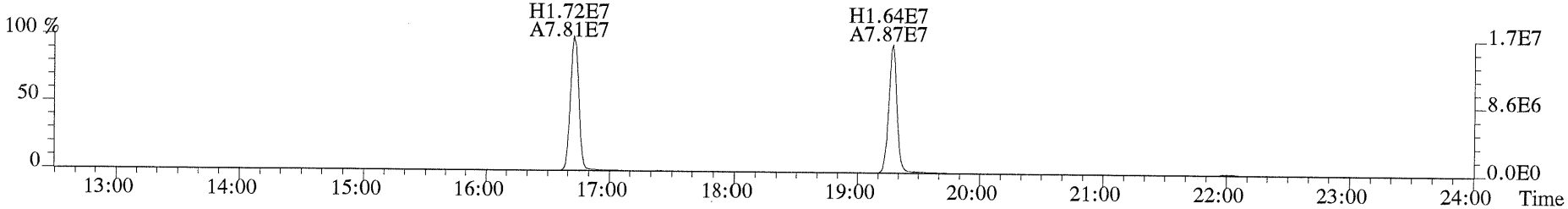
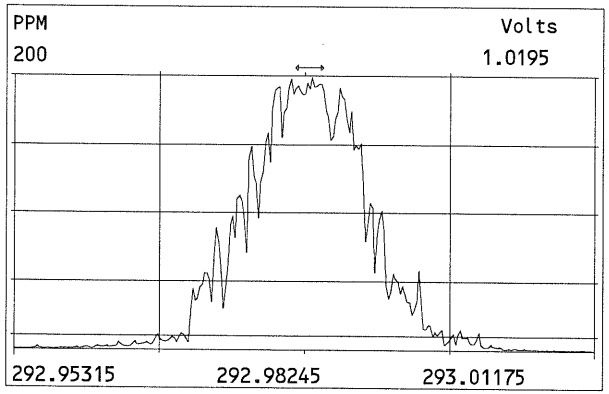
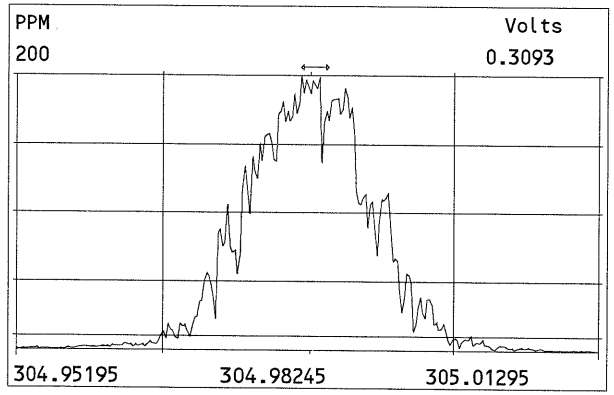
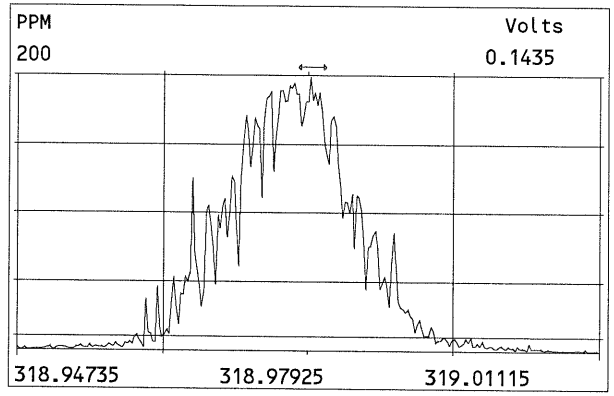
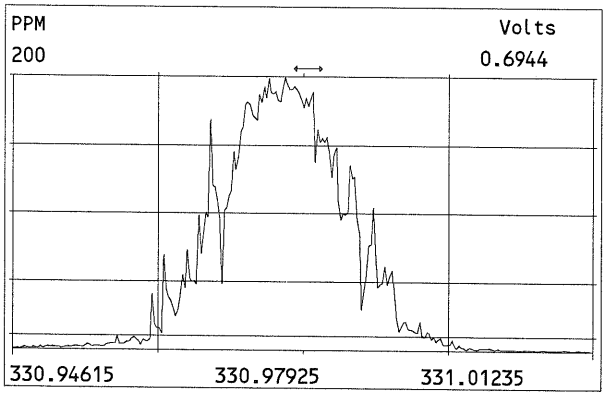


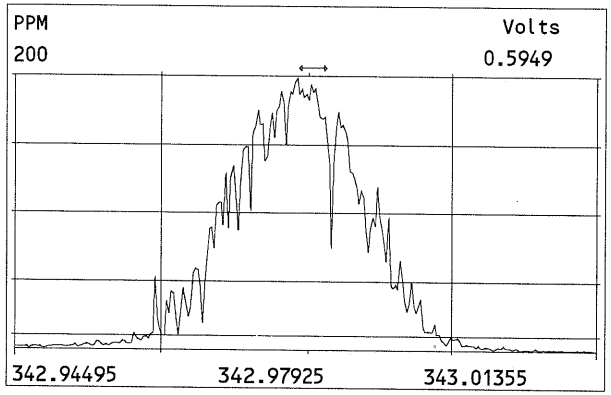
Peak Locate Examination:20-APR-2011:14:43 File:20APR11A_RES_CHECK
Experiment:TCDF Function:1 Reference:PFK

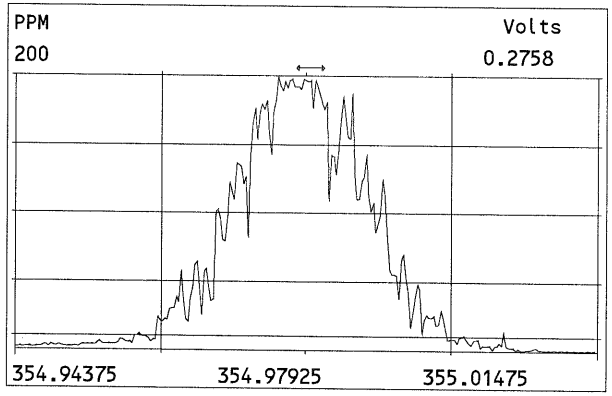


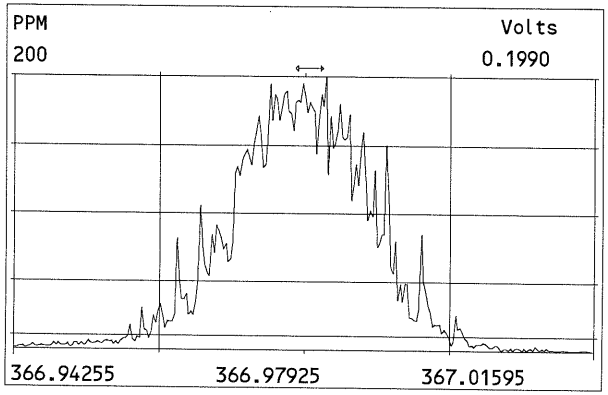


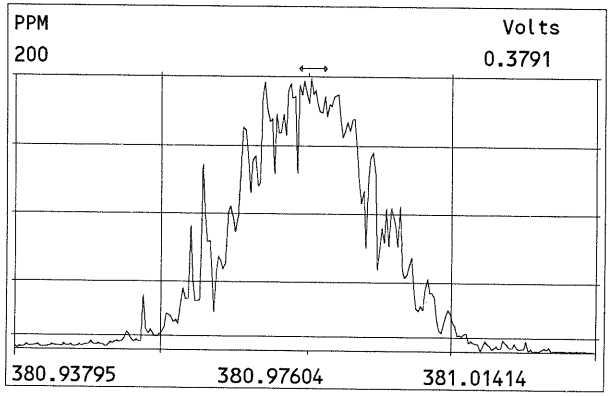












PCP/Chlorophenols Analysis
Report and Summary QC Forms

ARI Job ID: SP34, SQ22

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED1-0-15-032911-ER
SAMPLE

Lab Sample ID: SP34J
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/01/11
Date Analyzed: 04/15/11 07:31
Instrument/Analyst: ECD1/AAR

Sample Amount: 500 mL
Final Extract Volume: 50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.25	< 0.25 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	90.0%

ANALYTICAL RESOURCES INCORPORATED

SW8041 CHLOROPHENOLICS SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL

Client ID	TBP	TOT OUT
MB-040111	82.4%	0
LCS-040111	85.6%	0
LCSD-040111	87.6%	0
LL-SED1-0-15-032911-ER	90.0%	0

	LCS/MB LIMITS	QC LIMITS
(TBP) = 2,4,6-Tribromophenol	(40-130)	(11-156)

Prep Method: SW3510C
Log Number Range: 11-6959 to 11-6959

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LCS-040111
LCS/LCSD

Lab Sample ID: LCS-040111
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted LCS/LCSD: 04/01/11

Date Analyzed LCS: 04/15/11 05:43
LCSD: 04/15/11 06:19
Instrument/Analyst LCS: ECD1/AAR
LCSD: ECD1/AAR

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 50 mL
LCSD: 50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Pentachlorophenol	2.30	2.50	92.0%	2.40	2.50	96.0%	4.3%

Chlorophenols Surrogate Recovery

	LCS	LCSD
2,4,6-Tribromophenol	85.6%	87.6%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

CHLOROPHENOL METHOD BLANK SUMMARY

SAMPLE NO.

SP34MBW1

Lab Name: ANALYTICAL RESOURCES, INC
Client: FLOYD SNIDER

ARI Job No.: SP34
Project: LORA LAKE SURFACE SEDIMENT

Lab Sample ID: SP34MBW1
Lab File ID: 0414A025

Matrix (soil/water) LIQUID
Extraction:(SepF/Cont/Sonc) SW3510C

Sulfur Cleanup (Y/N) Y
Date Extracted: 04/01/11

Date Analyzed (1): 04/15/11
Date Analyzed (2): 04/15/11

Time Analyzed (1): 0506
Time Analyzed (2): 0506

Instrument ID (1): ECD1
Instrument ID (2): ECD1

GC Column (1): ZB5 ID: 0.53(mm)
GC Column (2): ZB35 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SP34LCSW1	SP34LCSW1	04/15/11	04/15/11
02	SP34LCSDW1	SP34LCSDW1	04/15/11	04/15/11
03	LL-SED1-0-15	SP34J	04/15/11	04/15/11

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: MB-040111
METHOD BLANK

Lab Sample ID: MB-040111
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

Date Extracted: 04/01/11
Date Analyzed: 04/15/11 05:06
Instrument/Analyst: ECD1/AAR

Sample Amount: 500 mL
Final Extract Volume: 50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	0.25	< 0.25 U

Reported in µg/L (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	82.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: MC-SED1-0-10-032911
SAMPLE

Lab Sample ID: SP34G
LIMS ID: 11-6956
Matrix: Sediment
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 16:36
Instrument/Analyst: ECD1/AAR

Sample Amount: 8.34 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 17.2%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	7.5	< 7.5 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	82.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: MC-SED2-0-10-032911
SAMPLE

Lab Sample ID: SP34H
LIMS ID: 11-6957
Matrix: Sediment
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 17:12
Instrument/Analyst: ECD1/AAR

Sample Amount: 8.61 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 14.8%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	7.3	< 7.3 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	65.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: MC-SED3-0-10-032911
SAMPLE

Lab Sample ID: SP34I
LIMS ID: 11-6958
Matrix: Sediment
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 17:48
Instrument/Analyst: ECD1/AAR

Sample Amount: 9.62 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 8.1%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	6.5	< 6.5 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	62.8%

ANALYTICAL RESOURCES INCORPORATED

SW8041 CHLOROPHENOLICS SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL

Client ID	TBP	TOT OUT
MB-040711	80.0%	0
LCS-040711	84.4%	0
MC-SED1-0-10-032911	82.4%	0
MC-SED2-0-10-032911	65.2%	0
MC-SED3-0-10-032911	62.8%	0

	LCS/MB LIMITS	QC LIMITS
(TBP) = 2,4,6-Tribromophenol	(50-115)	(10-146)

Prep Method: SW3550B
Log Number Range: 11-6956 to 11-6958

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LCS-040711
LAB CONTROL

Lab Sample ID: LCS-040711
LIMS ID: 11-6956
Matrix: Sediment
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 15:23
Instrument/Analyst: ECD1/AAR

Sample Amount: 10.0 g
Final Extract Volume: 25 mL
Dilution Factor: 1.00

Analyte	Lab Control	Spike Added	Recovery
Pentachlorophenol	58.6	62.5	93.8%

Chlorophenols Surrogate Recovery

2,4,6-Tribromophenol	84.4%

Results reported in µg/kg

CHLOROPHENOL METHOD BLANK SUMMARY

SAMPLE NO.

SP34MBS1

Lab Name: ANALYTICAL RESOURCES, INC
Client: FLOYD SNIDER

ARI Job No.: SP34
Project: LORA LAKE SURFACE SEDIMENT

Lab Sample ID: SP34MBS1
Lab File ID: 0414A041

Matrix (soil/water) SOLID
Extraction:(SepF/Cont/Sonc) SW3550C

Sulfur Cleanup (Y/N) Y
Date Extracted: 04/07/11

Date Analyzed (1): 04/15/11
Date Analyzed (2): 04/15/11

Time Analyzed (1): 1447
Time Analyzed (2): 1447

Instrument ID (1): ECD1
Instrument ID (2): ECD1

GC Column (1): STX CLP1 ID: 0.53(mm)
GC Column (2): STX CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SP34LCSS1	SP34LCSS1	04/15/11	04/15/11
02	MC-SED1-0-10	SP34G	04/15/11	04/15/11
03	MC-SED2-0-10	SP34H	04/15/11	04/15/11
04	MC-SED3-0-10	SP34I	04/15/11	04/15/11

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: MB-040711
METHOD BLANK

Lab Sample ID: MB-040711
LIMS ID: 11-6956
Matrix: Sediment
Data Release Authorized:
Reported: 04/18/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 14:47
Instrument/Analyst: ECD1/AAR

Sample Amount: 10.0 g
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	6.2	< 6.2 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	80.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED1-0-15-032911
SAMPLE

Lab Sample ID: SQ22A
LIMS ID: 11-7355
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/18/11 22:14
Instrument/Analyst: ECD1/AAR

Sample Amount: 3.13 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 69.4%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**20**	**50 P**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	105%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
SAMPLE

Lab Sample ID: SQ22B
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/18/11 22:50
Instrument/Analyst: ECD1/AAR

Sample Amount: 1.90 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 81.3%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	33	< 33 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	86.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
REEXTRACT

Lab Sample ID: SQ22B
LIMS ID: 11-8696
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface sediment
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 20:14
Instrument/Analyst: ECD1/AAR

Sample Amount: 1.90 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 81.3%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	330	< 330 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	83.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED3-0-15-032911
SAMPLE

Lab Sample ID: SQ22C
LIMS ID: 11-7357
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/19/11 00:39
Instrument/Analyst: ECD1/AAR

Sample Amount: 2.63 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 73.8%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	24	< 24 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	88.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED4-0-15-032911
SAMPLE

Lab Sample ID: SQ22D
LIMS ID: 11-7358
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/19/11 01:15
Instrument/Analyst: ECD1/AAR

Sample Amount: 2.52 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 75.0%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	25	< 25 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	79.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED1-0-15-032911-D
SAMPLE

Lab Sample ID: SQ22E
LIMS ID: 11-7359
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/19/11 01:51
Instrument/Analyst: ECD1/AAR

Sample Amount: 3.13 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 69.0%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	20	< 20 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	84.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED5-0-15-032911
SAMPLE

Lab Sample ID: SQ22F
LIMS ID: 11-7360
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/19/11 02:27
Instrument/Analyst: ECD1/AAR

Sample Amount: 8.60 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 17.3%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**7.3**	**33**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	76.4%

ANALYTICAL RESOURCES INCORPORATED

SW8041 CHLOROPHENOLICS SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL

Client ID	TBP	TOT OUT
LL-SED1-0-15-032911	105%	0
MB-040711	80.0%	0
LCS-040711	84.4%	0
LL-SED2-0-15-032911	86.4%	0
LL-SED2-0-15-032911 MS	46.8%	0
LL-SED2-0-15-032911 MSD	90.0%	0
LL-SED3-0-15-032911	88.0%	0
LL-SED4-0-15-032911	79.2%	0
LL-SED1-0-15-032911-D	84.8%	0
LL-SED5-0-15-032911	76.4%	0
LL-SED2-0-15-032911-RE	83.6%	0
LL-SED2-0-15-032911-RE MS	68.6%	0
LL-SED2-0-15-032911-RE MSD	122%	0

	LCS/MB LIMITS	QC LIMITS
(TBP) = 2,4,6-Tribromophenol	(50-115)	(10-146)

Prep Method: SW3550B
Log Number Range: 11-7355 to 11-8696

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED2-0-15-032911
MS/MSD

Lab Sample ID: SQ22B
LIMS ID: 11-8696
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface sediment
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted MS/MSD: 04/07/11

Date Analyzed MS: 04/15/11 20:50
MSD: 04/15/11 21:26
Instrument/Analyst MS: ECD1/AAR
MSD: ECD1/AAR
Percent Moisture: 81.3%

Sample Amount MS: 1.90 g-dry-wt
MSD: 1.90 g-dry-wt
Final Extract Volume MS: 25 mL
MSD: 25 mL
Dilution Factor MS: 10.0
MSD: 10.0

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Pentachlorophenol	< 329	272	329	82.7%	455	329	138%	50.3%

Results reported in µg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LL-SED2-0-15-032911
MATRIX SPIKE

Lab Sample ID: SQ22B
LIMS ID: 11-8696
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface sediment
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 20:50
Instrument/Analyst: ECD1/AAR

Sample Amount: 1.90 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 81.3%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	330	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	68.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
MATRIX SPIKE DUP

Lab Sample ID: SQ22B
LIMS ID: 11-8696
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface sediment POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 21:26
Instrument/Analyst: ECD1/AAR

Sample Amount: 1.90 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 81.3%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	330	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	122%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
MS/MSD

Lab Sample ID: SQ22B
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted MS/MSD: 04/07/11

Sample Amount MS: 1.90 g-dry-wt
MSD: 1.90 g-dry-wt

Date Analyzed MS: 04/18/11 23:27
MSD: 04/19/11 00:03

Final Extract Volume MS: 25 mL
MSD: 25 mL

Instrument/Analyst MS: ECD1/AAR
MSD: ECD1/AAR

Dilution Factor MS: 1.00
MSD: 1.00

Percent Moisture: 81.3%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Pentachlorophenol	< 32.9	134	329	40.7%	281	329	85.4%	70.8%

Results reported in µg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
MATRIX SPIKE

Lab Sample ID: SQ22B
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/18/11 23:27
Instrument/Analyst: ECD1/AAR

Sample Amount: 1.90 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 81.3%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	33	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	46.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
MATRIX SPIKE DUP

Lab Sample ID: SQ22B
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/19/11 00:03
Instrument/Analyst: ECD1/AAR

Sample Amount: 1.90 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 81.3%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	33	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	90.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Page 1 of 1

Sample ID: LCS-040711
LAB CONTROL

Lab Sample ID: LCS-040711
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 15:23
Instrument/Analyst: ECD1/AAR

Sample Amount: 10.0 g
Final Extract Volume: 25 mL
Dilution Factor: 1.00

Analyte	Lab Control	Spike Added	Recovery
Pentachlorophenol	58.6	62.5	93.8%

Chlorophenols Surrogate Recovery

2,4,6-Tribromophenol	84.4%

Results reported in µg/kg

4

CHLOROPHENOL METHOD BLANK SUMMARY

SAMPLE NO.

SP34MBS1

Lab Name: ANALYTICAL RESOURCES, INC — Client: FLOYD SNIDER

ARI Job No.: SQ22 — Project: LORA LAKE SURFACE SEDIMENT

Lab Sample ID: SP34MBS1 — Lab File ID: 0414A041

Matrix (soil/water) SOLID — Extraction:(SepF/Cont/Sonc) SW3550C

Sulfur Cleanup (Y/N) Y — Date Extracted: 04/07/11

Date Analyzed (1): 04/15/11 — Date Analyzed (2): 04/15/11

Time Analyzed (1): 1447 — Time Analyzed (2): 1447

Instrument ID (1): ECD1 — Instrument ID (2): ECD1

GC Column (1): STX CLP1 ID: 0.53(mm) — GC Column (2): STX CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SP34LCSS1	SP34LCSS1	04/15/11	04/15/11
02	LL-SED1-0-15	SQ22A	04/18/11	04/19/11
03	LL-SED2-0-15	SQ22B	04/18/11	04/18/11
04	LL-SED2-0-15	SQ22BMS	04/18/11	04/18/11
05	LL-SED2-0-15	SQ22BMSD	04/19/11	04/19/11
06	LL-SED3-0-15	SQ22C	04/19/11	04/19/11
07	LL-SED4-0-15	SQ22D	04/19/11	04/19/11
08	LL-SED1-0-15	SQ22A	04/18/11	04/19/11
09	LL-SED[illegible]-0-15	SQ22F	04/19/11	04/19/11

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: MB-040711
METHOD BLANK

Lab Sample ID: MB-040711
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/20/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

Date Extracted: 04/07/11
Date Analyzed: 04/15/11 14:47
Instrument/Analyst: ECD1/AAR

Sample Amount: 10.0 g
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	6.2	< 6.2 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	80.0%

6D
CHLOROPHENOL INITIAL CALIBRATION
RETENTION TIME WINDOWS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB5 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/14/11

	RT OF STANDARDS						MEAN	RT WINDOW	
COMPOUND	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	RT	FROM	TO
Pentachlorophenol___	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.92	21.06
2,4,6-Trichloropheno	13.10	13.10	13.10	13.09	13.09	13.09	13.10	13.02	13.16
2,3,6-Trichloropheno	14.09	14.09	14.09	14.09	14.09	14.09	14.09	14.02	14.16
2,4,5-Trichloropheno	15.84	15.84	15.84	15.84	15.84	15.84	15.84	15.77	15.91
2,3,4-Trichloropheno	17.35	17.35	17.35	17.35	17.35	17.34	17.35	17.28	17.42
2,3,5,6-Tetrachlorop	17.15	17.15	17.15	17.15	17.15	17.15	17.15	17.08	17.22
2,3,4,5-Tetrachlorop	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.08	20.22
2,4-Dichlorophenol__	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.48	12.62
2,4,6-Tribromophenol	18.59	18.59	18.59	18.59	18.59	18.59	18.59	18.52	18.66

6D
CHLOROPHENOL INITIAL CALIBRATION
RETENTION TIME WINDOWS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB35 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/14/11

	RT OF STANDARDS						MEAN	RT WINDOW	
COMPOUND	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	RT	FROM	TO
Pentachlorophenol___	22.96	22.96	22.96	22.96	22.96	22.96	22.96	22.89	23.03
2,4,6-Trichloropheno	14.31	14.31	14.31	14.30	14.30	14.30	14.30	14.23	14.37
2,3,6-Trichloropheno	15.55	15.55	15.55	15.55	15.55	15.55	15.55	15.48	15.62
2,4,5-Trichloropheno	17.47	17.47	17.47	17.47	17.47	17.47	17.47	17.40	17.54
2,3,4-Trichloropheno	19.02	19.02	19.02	19.02	19.02	19.02	19.02	18.95	19.09
2,3,5,6-Tetrachlorop	18.81	18.81	18.81	18.81	18.81	18.81	18.81	18.74	18.88
2,3,4,5-Tetrachlorop	22.07	22.08	22.08	22.07	22.08	22.07	22.08	22.00	22.14
2,4-Dichlorophenol__	13.81	13.82	13.82	13.81	13.81	13.81	13.81	13.74	13.88
2,4,6-Tribromophenol	20.93	20.93	20.93	20.93	20.93	20.93	20.93	20.86	21.00

6E
CHLOROPHENOL INITIAL CALIBRATION
CALIBRATION FACTORS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB5 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/14/11

COMPOUND	CALIBRATION FACTORS LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	R^2/ %RSD	CT
Pentachlorophenol____	18330	17330	16468	15138	14544	13342	11.7	A
2,4,6-Trichlorophenol	11745	11226	10426	9411	8773	7987	14.7	A
2,3,6-Trichlorophenol	11524	10670	9838	8910	8304	7526	15.8	A
2,4,5-Trichlorophenol	6896	6582	6014	5318	4751	4147	19.0	A
2,3,4-Trichlorophenol	8312	7672	7053	6262	5821	5184	17.5	A
2,3,5,6-Tetrachloroph	15657	14796	14050	13099	12511	11466	11.3	A
2,3,4,5-Tetrachloroph	12930	11414	10586	9492	8889	8103	17.3	A
2,4-Dichlorophenol___	890	791	692	575	492	419	0.9994	Q
2,4,6-Tribromophenol	13828	13279	12729	11921	11832	11073	8.2	A
						AVE RSD	16.0	

CT stands for Curve Types:
- A Indicates an Average Response Factor Curve
- L Indicates a Linear Curve
- Q Indicates a Quadratic Curve

CALIBRATION FILES

LVL 1: /chem2/ecd1.i/PCP20110414.b/ical-1.b/0414A010.d
LVL 2: /chem2/ecd1.i/PCP20110414.b/ical-1.b/0414A011.d
LVL 3: /chem2/ecd1.i/PCP20110414.b/ical-1.b/0414A012.d
LVL 4: /chem2/ecd1.i/PCP20110414.b/ical-1.b/0414A009.d
LVL 5: /chem2/ecd1.i/PCP20110414.b/ical-1.b/0414A013.d
LVL 6: /chem2/ecd1.i/PCP20110414.b/ical-1.b/0414A014.d

6E
CHLOROPHENOL INITIAL CALIBRATION
CALIBRATION FACTORS

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB35 ID: 0.53 (mm) Instrument ID: ECD1

Calibration Date: 04/14/11

COMPOUND	CALIBRATION FACTORS LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	R^2/ %RSD	CT
Pentachlorophenol____	34545	28057	26029	23780	22068	19893	0.9999	Q
2,4,6-Trichlorophenol	16228	14895	13845	12744	11452	10173	16.9	A
2,3,6-Trichlorophenol	16178	14843	13791	12572	11496	10026	17.1	A
2,4,5-Trichlorophenol	9097	8460	7618	6667	6237	5207	0.9996	Q
2,3,4-Trichlorophenol	11335	10280	9322	8303	7534	6539	0.9999	Q
2,3,5,6-Tetrachloroph	23914	22454	20497	18869	17642	15789	15.3	A
2,3,4,5-Tetrachloroph	21489	17304	15765	13972	12707	11236	0.9998	Q
2,4-Dichlorophenol___	1085	896	764	644	548	460	0.9996	Q
2,4,6-Tribromophenol	21999	20210	19161	17970	17054	15618	12.2	A
						AVE RSD	19.7	

CT stands for Curve Types:
- A Indicates an Average Response Factor Curve
- L Indicates a Linear Curve
- Q Indicates a Quadratic Curve

CALIBRATION FILES

LVL 1: /chem2/ecd1.i/PCP20110414.b/ical-2.b/0414A010.d
LVL 2: /chem2/ecd1.i/PCP20110414.b/ical-2.b/0414A011.d
LVL 3: /chem2/ecd1.i/PCP20110414.b/ical-2.b/0414A012.d
LVL 4: /chem2/ecd1.i/PCP20110414.b/ical-2.b/0414A009.d
LVL 5: /chem2/ecd1.i/PCP20110414.b/ical-2.b/0414A013.d
LVL 6: /chem2/ecd1.i/PCP20110414.b/ical-2.b/0414A014.d

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB5 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0430

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	20.99	20.92	21.06	26.2	25.0	4.8
2,4,6-Trichlorophenol	13.10	13.02	13.16	26.0	25.0	4.0
2,3,6-Trichlorophenol	14.09	14.02	14.16	25.8	25.0	3.2
2,4,5-Trichlorophenol	15.84	15.77	15.91	25.8	25.0	3.2
2,3,4-Trichlorophenol	17.35	17.28	17.42	25.7	25.0	2.8
2,3,5,6-Tetrachlorophenol	17.15	17.08	17.22	26.4	25.0	5.6
2,3,4,5-Tetrachlorophenol	20.15	20.08	20.22	25.3	25.0	1.2
2,4-Dichlorophenol	12.55	12.48	12.62	277	250	10.8
2,4,6-Tribromophenol (surr	18.59	18.52	18.66	26.5	25.0	6.0

AVERAGE %D = 4.6

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB35 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :0430

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.96	22.89	23.03	26.4	25.0	5.6
2,4,6-Trichlorophenol	14.31	14.23	14.37	25.3	25.0	1.2
2,3,6-Trichlorophenol	15.55	15.48	15.62	25.0	25.0	0.0
2,4,5-Trichlorophenol	17.47	17.40	17.54	25.3	25.0	1.2
2,3,4-Trichlorophenol	19.02	18.95	19.09	26.1	25.0	4.4
2,3,5,6-Tetrachlorophenol	18.81	18.74	18.88	24.9	25.0	-0.4
2,3,4,5-Tetrachlorophenol	22.08	22.00	22.14	26.1	25.0	4.4
2,4-Dichlorophenol	13.82	13.74	13.88	264	250	5.6
2,4,6-Tribromophenol (surr	20.93	20.86	21.00	25.2	25.0	0.8

AVERAGE %D = 2.6

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB5 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1032

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	20.99	20.92	21.06	28.4	25.0	13.6
2,4,6-Trichlorophenol	13.09	13.02	13.16	27.9	25.0	11.6
2,3,6-Trichlorophenol	14.09	14.02	14.16	27.6	25.0	10.4
2,4,5-Trichlorophenol	15.83	15.77	15.91	27.4	25.0	9.6
2,3,4-Trichlorophenol	17.34	17.28	17.42	27.4	25.0	9.6
2,3,5,6-Tetrachlorophenol	17.14	17.08	17.22	28.4	25.0	13.6
2,3,4,5-Tetrachlorophenol	20.14	20.08	20.22	27.3	25.0	9.2
2,4-Dichlorophenol	12.55	12.48	12.62	304	250	21.6
2,4,6-Tribromophenol (surr	18.58	18.52	18.66	28.4	25.0	13.6

AVERAGE %D = 12.5

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB35 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1032

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.96	22.89	23.03	27.7	25.0	10.8
2,4,6-Trichlorophenol	14.30	14.23	14.37	26.3	25.0	5.2
2,3,6-Trichlorophenol	15.55	15.48	15.62	25.7	25.0	2.8
2,4,5-Trichlorophenol	17.46	17.40	17.54	27.8	25.0	11.2
2,3,4-Trichlorophenol	19.01	18.95	19.09	27.5	25.0	10.0
2,3,5,6-Tetrachlorophenol	18.80	18.74	18.88	25.8	25.0	3.2
2,3,4,5-Tetrachlorophenol	22.07	22.00	22.14	27.5	25.0	10.0
2,4-Dichlorophenol	13.81	13.74	13.88	278	250	11.2
2,4,6-Tribromophenol (surr	20.92	20.86	21.00	26.7	25.0	6.8

AVERAGE %D = 7.9

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP1 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1410

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	20.99	20.92	21.06	23.6	25.0	-5.6
2,4,6-Trichlorophenol	13.09	13.02	13.16	23.5	25.0	-6.0
2,3,6-Trichlorophenol	14.08	14.02	14.16	23.1	25.0	-7.6
2,4,5-Trichlorophenol	15.83	15.77	15.91	23.0	25.0	-8.0
2,3,4-Trichlorophenol	17.34	17.28	17.42	23.2	25.0	-7.2
2,3,5,6-Tetrachlorophenol	17.14	17.08	17.22	23.8	25.0	-4.8
2,3,4,5-Tetrachlorophenol	20.14	20.08	20.22	23.0	25.0	-8.0
2,4-Dichlorophenol	12.55	12.48	12.62	259	250	3.6
2,4,6-Tribromophenol (surr	18.58	18.52	18.66	23.7	25.0	-5.2

AVERAGE %D = 6.2

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP2 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1410

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.95	22.89	23.03	22.6	25.0	-9.6
2,4,6-Trichlorophenol	14.30	14.23	14.37	21.7	25.0	-13.2
2,3,6-Trichlorophenol	15.55	15.48	15.62	21.1	25.0	-15.6
2,4,5-Trichlorophenol	17.46	17.40	17.54	22.1	25.0	-11.6
2,3,4-Trichlorophenol	19.01	18.95	19.09	22.8	25.0	-8.8
2,3,5,6-Tetrachlorophenol	18.80	18.74	18.88	21.9	25.0	-12.4
2,3,4,5-Tetrachlorophenol	22.07	22.00	22.14	22.5	25.0	-10.0
2,4-Dichlorophenol	13.81	13.74	13.88	228	250	-8.8
2,4,6-Tribromophenol (surr	20.92	20.86	21.00	22.2	25.0	-11.2

AVERAGE %D = 11.2

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP1 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1901

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	20.98	20.92	21.06	24.9	25.0	-0.4
2,4,6-Trichlorophenol	13.09	13.02	13.16	24.5	25.0	-2.0
2,3,6-Trichlorophenol	14.08	14.02	14.16	24.0	25.0	-4.0
2,4,5-Trichlorophenol	15.83	15.77	15.91	24.1	25.0	-3.6
2,3,4-Trichlorophenol	17.34	17.28	17.42	24.6	25.0	-1.6
2,3,5,6-Tetrachlorophenol	17.14	17.08	17.22	25.1	25.0	0.4
2,3,4,5-Tetrachlorophenol	20.14	20.08	20.22	24.1	25.0	-3.6
2,4-Dichlorophenol	12.54	12.48	12.62	274	250	9.6
2,4,6-Tribromophenol (surr	18.58	18.52	18.66	25.0	25.0	0.0

AVERAGE %D = 2.8

CHLOROPHENOL CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP2 ID: 0.53 (mm)

Init. Calib. Date(s): 04/14/11 04/14/11

Client Sample No.(PCP): Date Analyzed :04/15/11

Lab Sample ID (PCP): PCP CCAL Time Analyzed :1901

PCP MIX COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
Pentachlorophenol	22.95	22.89	23.03	23.7	25.0	-5.2
2,4,6-Trichlorophenol	14.30	14.23	14.37	22.6	25.0	-9.6
2,3,6-Trichlorophenol	15.54	15.48	15.62	22.0	25.0	-12.0
2,4,5-Trichlorophenol	17.46	17.40	17.54	24.5	25.0	-2.0
2,3,4-Trichlorophenol	19.01	18.95	19.09	23.6	25.0	-5.6
2,3,5,6-Tetrachlorophenol	18.80	18.74	18.88	22.6	25.0	-9.6
2,3,4,5-Tetrachlorophenol	22.07	22.00	22.14	24.2	25.0	-3.2
2,4-Dichlorophenol	13.81	13.74	13.88	237	250	-5.2
2,4,6-Tribromophenol (surr	20.92	20.86	21.00	23.3	25.0	-6.8

AVERAGE %D = 6.6

7E

CHLOROPH[illegible] CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL R[illegible] Client: FLOYD SNIDER

ARI Job No.: SQ22 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP1 ID: [illegible]

Init. Calib. Date(s): [illegible] 4/14/11

Client Sample No.(PCP): Date Analyzed :04/18/11

Lab Sample ID (PCP): P[illegible] Time Analyzed :2138

PCP (TIX Compound)		RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
P[illegible]	[illegible]	20.92	21.06	28.0	25.0	12.0
2,[illegible]	[illegible]	13.02	13.16	27.4	25.0	9.6
2,[illegible]	[illegible]	14.02	14.16	27.2	25.0	8.8
2,4,5-T[illegible]	[illegible]	15.77	15.91	27.6	25.0	10.4
2,3,4-T[illegible]	[illegible]	17.28	17.42	27.3	25.0	9.2
2,3,5,6-Tetrachlorop[illegible]	[illegible]	17.08	17.22	28.1	25.0	12.4
2,[illegible]	[illegible]	20.08	20.22	27.2	25.0	8.8
2,4-Dich[illegible]enol	[illegible]	12.48	12.62	295	250	18.0
[illegible]	[illegible]	18.52	18.66	28.1	25.0	12.4

AVERAGE %D = 11.3

7E

CHLOROPH[illegible] CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL R[illegible] [illegible]S, INC Client: **FLOYD SNIDER**

ART Job No.: SQ22 Project: **LORA LAKE SURFACE SEDIMENT**

GC Column: STX CLP2 I[illegible] [illegible] mm

Init. Cal. Date(s): [illegible]1 [illegible]/14/11

Client Sample No.(PCP): **Date Analyzed :04/18/11**

Lab Sample ID (PCP): P[illegible] **Time Analyzed :2138**

PCP ITEM Compound	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
P[illegible]henol	2[illegible]	22.89	23.03	25.6	25.0	2.4
2,[illegible]-[illegible]chlorophenol	[illegible]	14.23	14.37	25.0	25.0	0.0
[illegible],[illegible]-[illegible]ophenol	[illegible]	15.48	15.62	24.9	25.0	-0.4
2,[illegible]-[illegible]chlorophenol	[illegible]	17.40	17.54	25.3	25.0	1.2
2,3,6-Trichlorophenol	[illegible]	18.95	19.09	26.0	25.0	4.0
2,3,5,[illegible]-Tetrachlorophenol	[illegible]	18.74	18.88	24.7	25.0	-1.2
[illegible],[illegible],[illegible]-[illegible]	[illegible]	22.00	22.14	25.2	25.0	0.8
2,4-Dichlorophenol	[illegible]	13.74	13.88	265	250	6.0
[illegible]-[illegible]-[illegible]	[illegible]	20.86	21.00	25.4	25.0	1.6

AVERAGE %D = 2.0

7E

CHLOROPH[illegible] CALIBRATION VERIFICATION SUMMARY

Lab Name: [illegible]ALYTICAL [illegible]S, INC Client: FLOYD SNIDER

AR[illegible]: SQ22 Project: LORA LAKE SURFACE SEDIMENT

GC Col[illegible] [illegible] CLP1 [illegible]

Init. Calib. Date(s): [illegible]1 [illegible]4/11

Client Sample No.(PCP): Date Analyzed :04/19/11

Lab Sample ID (PCP): [illegible] Time Analyzed :0340

	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
[illegible]	[illegible]	20.9[illegible]	21.06	24.6	25.0	-1.6
[illegible]	[illegible]	13.0[illegible]	13.16	27.4	25.0	9.6
[illegible]	[illegible]	14.02	14.16	27.2	25.0	8.8
2,4,6-[illegible]chlorophenol	[illegible]e5	15.7[illegible]	15.91	27.2	25.0	8.8
2,3,4-[illegible]chlorophenol	17.35	17.28	17.42	26.2	25.0	4.8
2,3,5,6-[illegible]trachlorop[illegible]	[illegible]	17.08	17.22	27.3	25.0	9.2
[illegible]	[illegible]	20.08	20.22	24.0	25.0	-4.0
2,4-[illegible]	[illegible]	12.48	12.62	293	250	17.2
[illegible]	[illegible]	18.52	18.66	26.1	25.0	4.4

AVERAGE %D = 7.6

CHLOROPH[illegible] CALIBRATION VERIFICATION SUMMARY

Lab Name: [illegible]ANALYTICAL P[illegible]NG, [illegible] Client: FLOYD SNIDER

ARI Job No: SQ22 Project: LORA LAKE SURFACE SEDIMENT

GC Column: [illegible]TX CLP2 [illegible]3 [illegible]

Init. Cal. Date(s): [illegible]11 [illegible]/14/11

Client Sample No.(PCP): Date Analyzed :04/19/11

Lab Sample ID (PCP): P[illegible]L Time Analyzed :0340

[illegible]	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT	NOM AMOUNT	%D
[illegible]	[illegible]	22.83	23.03	23.1	25.0	-7.6
2,4,[illegible]chlorophenol	[illegible]	14.23	14.37	24.6	25.0	-1.6
[illegible]chlorophenol	[illegible]	15.46	15.62	24.7	25.0	-1.2
2,4,6-[illegible]chlorophenol	[illegible]	17.40	17.54	24.6	25.0	-1.6
2,3,4-[illegible]chlorophenol	[illegible]	18.95	19.09	23.9	25.0	-4.4
[illegible]tetrachlorophenol	[illegible]	18.74	18.88	23.8	25.0	-4.8
[illegible]chlorophenol	[illegible]	22.0[illegible]	22.14	22.1	25.0	-11.6
2,4-[illegible]nitrophenol	[illegible]	13.7	13.88	257	250	2.8
[illegible]nitrophenol	[illegible]	20.8	21.00	23.5	25.0	-6.0

AVERAGE %D = 4.6

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB5 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/14/11 04/14/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 18.59

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01		PCPD	04/14/11	1927	18.59
02		PCPA	04/14/11	2003	18.59
03		PCPB	04/14/11	2040	18.59
04		PCPC	04/14/11	2116	18.59
05		PCPE	04/14/11	2152	18.59
06		PCPF	04/14/11	2228	18.59
07	ZZZZZ	ZZZZZ	04/14/11	2304	18.59
08		PCP CCAL	04/15/11	0430	18.59
09	SP34MBW1	SP34MBW1	04/15/11	0506	18.59
10	SP34LCSW1	SP34LCSW1	04/15/11	0543	18.59
11	SP34LCSDW1	SP34LCSDW1	04/15/11	0619	18.59
12	ZZZZZ	ZZZZZ	04/15/11	0655	18.59
13	LL-SED1-0-15	SP34J	04/15/11	0731	18.59
14		PCP CCAL	04/15/11	1032	18.58

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: ZB35 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/14/11 04/14/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 20.93

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01		PCPD	04/14/11	1927	20.93
02		PCPA	04/14/11	2003	20.93
03		PCPB	04/14/11	2040	20.93
04		PCPC	04/14/11	2116	20.93
05		PCPE	04/14/11	2152	20.93
06		PCPF	04/14/11	2228	20.93
07	ZZZZZ	ZZZZZ	04/14/11	2304	20.93
08		PCP CCAL	04/15/11	0430	20.93
09	SP34MBW1	SP34MBW1	04/15/11	0506	20.93
10	SP34LCSW1	SP34LCSW1	04/15/11	0543	20.93
11	SP34LCSDW1	SP34LCSDW1	04/15/11	0619	20.93
12	ZZZZZ	ZZZZZ	04/15/11	0655	20.93
13	LL-SED1-0-15	SP34J	04/15/11	0731	20.93
14		PCP CCAL	04/15/11	1032	20.92

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP1 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/14/11 04/14/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 18.59

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01		PCPD	04/14/11	1927	18.59
02		PCPA	04/14/11	2003	18.59
03		PCPB	04/14/11	2040	18.59
04		PCPC	04/14/11	2116	18.59
05		PCPE	04/14/11	2152	18.59
06		PCPF	04/14/11	2228	18.59
07	ZZZZZ	ZZZZZ	04/14/11	2304	18.59
08		PCP CCAL	04/15/11	1410	18.58
09	SP34MBS1	SP34MBS1	04/15/11	1447	18.58
10	SP34LCSS1	SP34LCSS1	04/15/11	1523	18.58
11	ZZZZZ	ZZZZZ	04/15/11	1559	18.58
12	MC-SED1-0-10	SP34G	04/15/11	1636	18.58
13	MC-SED2-0-10	SP34H	04/15/11	1712	18.58
14	MC-SED3-0-10	SP34I	04/15/11	1748	18.58
15	ZZZZZ	ZZZZZ	04/15/11	1825	18.58
16		PCP CCAL	04/15/11	1901	18.58

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SP34 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP2 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/14/11 04/14/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 20.93

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01		PCPD	04/14/11	1927	20.93
02		PCPA	04/14/11	2003	20.93
03		PCPB	04/14/11	2040	20.93
04		PCPC	04/14/11	2116	20.93
05		PCPE	04/14/11	2152	20.93
06		PCPF	04/14/11	2228	20.93
07	ZZZZZ	ZZZZZ	04/14/11	2304	20.93
08		PCP CCAL	04/15/11	1410	20.92
09	SP34MBS1	SP34MBS1	04/15/11	1447	20.92
10	SP34LCSS1	SP34LCSS1	04/15/11	1523	20.92
11	ZZZZZ	ZZZZZ	04/15/11	1559	20.92
12	MC-SED1-0-10	SP34G	04/15/11	1636	20.92
13	MC-SED2-0-10	SP34H	04/15/11	1712	20.92
14	MC-SED3-0-10	SP34I	04/15/11	1748	20.92
15	ZZZZZ	ZZZZZ	04/15/11	1825	20.92
16		PCP CCAL	04/15/11	1901	20.92

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

CHLORINATED PHENOLIC ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: **FLOYD SNIDER**

ARI Job No.: SQ22 Project: **LORA LAKE SURFACE SEDIMENT**

GC Column: STX CLP1 ID: 0.53 (mm) Instrument ID: **ECD1**

Init. Calib. Date(s): 04/14/11 04/14/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN **BELOW:**

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 18.59

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01			04/14/11	1927	18.59
02			04/14/11	2003	18.59
03			04/14/11	2040	18.59
04			04/14/11	2116	18.59
05			04/14/11	2152	18.59
06			04/14/11	2228	18.59
07	ZZZZZ		04/14/11	2304	18.59
08			04/15/11	1410	18.58
09	[illegible]MBS1		04/15/11	1447	18.58
10	[illegible]34LCSS1		04/15/11	1523	18.58
11			04/15/11	1901	18.58
12	[illegible]ZZ		04/18/11	2025	18.59
13	[illegible]ZZZ		04/18/11	2102	18.59
14			04/18/11	2138	18.59
15	LL-SED1-0-15		04/18/11	2214	18.59
16	LL-SED2-0-15		04/18/11	2250	18.60
17	LL-SED2-0-15		04/18/11	2327	18.60
18	LL-SED2-0-15		04/19/11	0003	18.60
19	LL-SED3-0-15		04/19/11	0039	18.60
20	LL-SED4-0-15		04/19/11	0115	18.60
21	LL-SED1-0-15		04/19/11	0151	18.60
22	[illegible]-0-15		04/19/11	0227	18.60
23	[illegible]		04/19/11	0304	18.60
24			04/19/11	0340	18.60

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 **MINUTES**)

Values outside QC limits.

CHL ·(HENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RE · CES, INC Client: **FLOYD SNIDER**

ARI Job No.: SQ22 Project: **LORA LAKE SURFACE SEDIMENT**

GC Column: STX CLP2 II .53 (mm) Instrument ID: **ECD1**

Init. Calib. Date(s): 0 /11 04/14/11

THE ANALYTICAL SEQUEN OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, STANDARDS IS GIVEN BELOW:

MEAN SURROGA T FROM INITIAL CALIBRATION
.1 : 20.93

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01		P	04/14 11	1927	20.93
02		I	04/14 11	2003	20.93
03		P	04/14 11	2040	20.93
04		I	04/14 11	2116	20.93
05		P	04/14 11	2152	20.93
06		P	04/14 11	2228	20.93
07	ZZZZZ	Z	04/14 11	2304	20.93
08		I CAL	04 11	1410	20.92
09	SB4MBS1	S S1	04/15 11	1447	20.92
10	SB41GSS1	S GS1	04/15 11	1523	20.92
11		P AL	04/15 11	1901	20.92
12	ZZZZZ	Z	04/16 11	2025	20.93
13	ZZZZZ	Z	04/16 11	2102	20.93
14		I CAL	04/16 11	2138	20.93
15	LL-SED1-0-15	S	04/16 11	2214	20.93
16	LL-SED2-0-15	S	04/16 11	2250	20.94
17	LL-SED3-0-15	S MS	04/16 11	2327	20.94
18	LL-SED2-0-15	S MSD	04/16 11	0003	20.94
19	LL-SED3-0-15	S	04/16 11	0039	20.94
20	LL-SED4-0-15	S	04 11	0115	20.94
21	LL-SED1-0-15	S	04 11	0151	20.94
22	LL-SED5-0-15	S	04/16 11	0227	20.94
23	ZZZZZ	Z	04/16 11	0304	20.94
24		I CAL	04/16 11	0340	20.94

LIMITS
= 2,4,6-Tri phenol (4 - 07 MINUTES)

Values outsi QC limits

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SQ22 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP1 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/14/11 04/14/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 18.59

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01	LL-SED2-0-15	SQ22B	04/15/11	2014	18.58
02	LL-SED2-0-15	SQ22BMS	04/15/11	2050	18.58
03	LL-SED2-0-15	SQ22BMSD	04/15/11	2126	18.58
04		PCP CCAL	04/16/11	0104	18.59

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

CHLOROPHENOL ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES, INC Client: FLOYD SNIDER

ARI Job No.: SQ22 Project: LORA LAKE SURFACE SEDIMENT

GC Column: STX CLP2 ID: 0.53 (mm) Instrument ID: ECD1

Init. Calib. Date(s): 04/14/11 04/14/11

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 20.93

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #
01	LL-SED2-0-15	SQ22B	04/15/11	2014	20.92
02	LL-SED2-0-15	SQ22BMS	04/15/11	2050	20.92
03	LL-SED2-0-15	SQ22BMSD	04/15/11	2126	20.92
04		PCP CCAL	04/16/11	0104	20.93

QC LIMITS

S1 = 2,4,6-Tribromophenol (+/- 0.07 MINUTES)

* Values outside of QC limits.

Metals Analysis
Report and Summary QC Forms

ARI Job ID: SP34, SQ22

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SP34

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
MC-SED1-0-10-03291	SP34G	11-6956	
MC-SED1-0-10-03291D	SP34GDUP	11-6956	
MC-SED1-0-10-03291S	SP34GSPK	11-6956	
MC-SED2-0-10-03291	SP34H	11-6957	
PBS	SP34MB1	11-6957	
LCSS	SP34MB1SPK	11-6957	
MC-SED3-0-10-03291	SP34I	11-6958	
LL-SED1-0-15-03291	SP34J	11-6959	
LL-SED1-0-15-03291D	SP34JDUP	11-6959	
LL-SED1-0-15-03291S	SP34JSPK	11-6959	
PBW	SP34MB2	11-6959	
LCSW	SP34MB2SPK	11-6959	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 4/8/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MC-SED1-0-10-032911
SAMPLE

Lab Sample ID: SP34G
LIMS ID: 11-6956
Matrix: Sediment
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 79.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/01/11	6010B	04/07/11	**7440-38-2**	**Arsenic**	6	**8**	
3050B	04/01/11	6010B	04/07/11	**7439-92-1**	**Lead**	2	**12**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MC-SED2-0-10-032911
SAMPLE

Lab Sample ID: SP34H
LIMS ID: 11-6957
Matrix: Sediment
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 74.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/01/11	6010B	04/07/11	7440-38-2	Arsenic	6	6	U
3050B	04/01/11	6010B	04/07/11	**7439-92-1**	**Lead**	3	**11**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MC-SED3-0-10-032911
SAMPLE

Lab Sample ID: SP34I
LIMS ID: 11-6958
Matrix: Sediment
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 79.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/01/11	6010B	04/07/11	7440-38-2	Arsenic	6	6	U
3050B	04/01/11	6010B	04/07/11	**7439-92-1**	**Lead**	2	**4**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MC-SED1-0-10-032911
MATRIX SPIKE

Lab Sample ID: SP34G
LIMS ID: 11-6956
Matrix: Sediment
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	8	235	246	92.3%	
Lead	6010B	12	235	246	90.7%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MC-SED1-0-10-032911
DUPLICATE

Lab Sample ID: SP34G
LIMS ID: 11-6956
Matrix: Sediment
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	8	7	13.3%	+/- 6	L
Lead	6010B	12	9	28.6%	+/- 2	L*

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: SP34LCS
LIMS ID: 11-6957
Matrix: Sediment
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	190	200	95.0%	
Lead	6010B	185	200	92.5%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: SP34MB
LIMS ID: 11-6957
Matrix: Sediment
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/01/11	6010B	04/07/11	7440-38-2	Arsenic	5	5	U
3050B	04/01/11	6010B	04/07/11	7439-92-1	Lead	2	2	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED1-0-15-032911-ER
SAMPLE

Lab Sample ID: SP34J
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	04/01/11	6010B	04/07/11	7440-38-2	Arsenic	0.05	0.05	U
3010A	04/01/11	6010B	04/07/11	7439-92-1	Lead	0.02	0.02	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED1-0-15-032911-ER
MATRIX SPIKE

Lab Sample ID: SP34J
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	0.05 U	2.06	2.00	103%	
Lead	6010B	0.02 U	2.00	2.00	100%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED1-0-15-032911-ER DUPLICATE

Lab Sample ID: SP34J
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	0.05 U	0.05 U	0.0%	+/- 0.05	L
Lead	6010B	0.02 U	0.02 U	0.0%	+/- 0.02	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: SP34LCS
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	2.02	2.00	101%	
Lead	6010B	1.96	2.00	98.0%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: SP34MB
LIMS ID: 11-6959
Matrix: Water
Data Release Authorized:
Reported: 04/08/11

QC Report No: SP34-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	04/01/11	6010B	04/07/11	7440-38-2	Arsenic	0.05	0.05	U
3010A	04/01/11	6010B	04/07/11	7439-92-1	Lead	0.02	0.02	U

U-Analyte undetected at given RL
RL-Reporting Limit

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

UNITS: ug/L

SDG: SP34

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	ICP	IP040771	2000.0	1925.04	96.3	2000.0	1953.46	97.7	1910.15	95.5	1909.68	95.5	1897.18	94.9	1876.94	93.8
Lead	PB	ICP	IP040771	2000.0	1930.51	96.5	2000.0	1938.85	96.9	1917.58	95.9	1915.58	95.8	1899.83	95.0	1887.03	94.4

Control Limits: Mercury 80-120; Other Metals 90-110

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SP34

UNITS:ug/L

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Arsenic	AS	ICP	IP040771	50.0	50.13	**100.3**	52.32	**104.6**								
Lead	PB	ICP	IP040771	20.0	20.14	**100.7**	20.19	**101.0**								

Control Limits: no control limits have been established by the EPA at this time.

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SP34

UNITS: ug/L

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	ICP	IP040771	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Lead	PB	ICP	IP040771	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

ICS SOURCE: I.V.

PROJECT: Lora Lake Surface Se

RUNID: IP040771

SDG: SP34

INSTRUMENT ID: OPTIMA ICP 2

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Aluminum	200000	200000	198664.3	198922.0	**99.5**	196129.7	196390.6	**98.2**			
Antimony		1000	3.2	1011.1	**101.1**	4.2	990.6	**99.1**			
Arsenic		1000	15.9	988.4	**98.8**	17.3	969.9	**97.0**			
Barium		1000	-0.5	975.5	**97.6**	-0.5	959.6	**96.0**			
Beryllium		1000	0.0	969.0	**96.9**	-0.1	951.0	**95.1**			
Boron			-12.2	-9.2		-8.4	-12.2				
Cadmium		1000	1.3	988.3	**98.8**	1.2	978.5	**97.9**			
Calcium	100000	100000	98936.4	98630.9	**98.6**	97565.3	97876.7	**97.9**			
Chromium		1000	0.8	996.9	**99.7**	-0.9	991.0	**99.1**			
Cobalt		1000	1.0	949.3	**94.9**	1.0	933.3	**93.3**			
Copper		1000	-0.7	1024.4	**102.4**	-0.7	1019.4	**101.9**			
Iron	200000	200000	195500.2	195209.8	**97.6**	191329.5	191635.2	**95.8**			
Lead		1000	-4.1	928.9	**92.9**	-3.3	908.5	**90.9**			
Magnesium	100000	100000	102960.4	98140.2	**98.1**	100895.9	97209.1	**97.2**			
Manganese		1000	0.3	932.1	**93.2**	0.4	911.1	**91.1**			
Molybdenum			4.5	3.7		3.5	3.1				
Nickel		1000	0.3	962.8	**96.3**	2.2	946.7	**94.7**			
Potassium			44.2	585.7		50.4	578.6				
Selenium		1000	20.6	994.4	**99.4**	22.3	960.8	**96.1**			
Silicon			-5.4	-13.0		-8.7	-10.8				
Silver		1000	0.1	1013.3	**101.3**	0.5	996.6	**99.7**			
Sodium			-1.9	-4.8		-12.2	-14.4				
Strontium			3.7	3.7		3.6	3.6				
Thallium		1000	4.7	920.3	**92.0**	5.1	898.3	**89.8**			
Tin			1.6	1.8		0.8	1.2				
Titanium			-3.7	-2.9		-3.9	-3.1				
Vanadium		1000	-0.3	960.1	**96.0**	-0.2	955.4	**95.5**			
Zinc		1000	2.3	956.0	**95.6**	1.5	953.1	**95.3**			

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SP34 UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Arsenic	AS	ICP	OPTIMA ICP 2	197.20		10	50.0	4/1/2011	30000.0	2/3/2011
Lead	PB	ICP	OPTIMA ICP 2	220.35		3	20.0	4/1/2011	300000.0	2/3/2011

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

IEC DATE: 3/14/2011

SDG: SP34

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	9.9066900	0.0000000	0.0000000
Arsenic	188.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0893242	0.0000000	-1.0280600	0.9896930	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1423420	0.0000000	0.0000000	0.0649797
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	3.6086500	0.0000000	0.0000000	0.0000000	0.0000000	0.1351930	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0148832	0.0000000	0.0000000	0.0000000	0.0000000	-0.0451581
Cobalt	228.62	0.0000000	0.0000000	0.0227510	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1969920	-0.0283867	0.0000000	-0.0499474
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	-0.1952990	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.9460200	1.1789000	0.0588763
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.3945700	-0.8349460	0.0000000	0.4579600
Manganese	257.61	0.0056707	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0082982
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0185703	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.1513640	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.7058000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	2.4468400	0.3572340	0.0000000	-0.1350510
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.2650000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.1735400	0.0000000	0.0000000	0.1546720	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-4.7348500	0.0000000	0.0820500
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0805698	0.0000000	0.0000000

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

IEC DATE: 3/14/2011

SDG: SP34

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.0000000	1.8788800	12.1307000	0.0000000	0.0000000	0.0000000	2.3503300	0.0000000	18.0364000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	-0.3855180	0.0000000	0.0000000	-1.5147100	0.0000000	-3.2063100	0.0000000
Arsenic	188.98	0.0000000	0.0000000	1.3620000	0.0000000	0.0000000	0.0000000	-8.1444600	0.0000000	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0759003	0.0000000	0.0000000	0.0000000	0.0000000	0.4900780	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.5371850	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	-0.6212080	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0685552	0.0000000	0.2199000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2689540	0.0000000
Cobalt	228.62	0.0000000	0.0000000	-0.2536290	0.1584550	0.0000000	0.0000000	1.6159400	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0040015	0.0000000	0.1558430	0.0000000	0.0000000	0.0000000	0.3031690	0.0000000	0.0000000	0.0000000
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	5.2755600	0.0000000
Lead	220.35	0.0000000	0.0000000	-0.3729230	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	-2.6953000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0058832	0.0000000	0.0000000	0.0000000	-0.2659040	0.0000000	0.0000000	0.0000000	-0.0245885	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5897980	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0859101	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1197900	0.0000000	-1.8474100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.1773070	0.1067270	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.2224750	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	37.7400000	0.0000000	0.0000000	62.9290000
Thallium	190.80	0.0000000	0.0000000	-3.9138800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.6225600	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.6365040	-0.3516110	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	1.2363700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1619680	-0.9516330	0.0000000	0.0000000	0.0000000	0.6209970	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2547300	0.0000000	-0.0673589	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SP34

ANALYSIS METHOD: ICP

ARI PREP CODE: SWC

PREPDATE: 4/1/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
MC-SED1-0-10-03291	SP34G	1.028	0.0	50.0
MC-SED1-0-10-03291D	SP34GDUP	1.027	0.0	50.0
MC-SED1-0-10-03291S	SP34GSPK	1.025	0.0	50.0
MC-SED2-0-10-03291	SP34H	1.061	0.0	50.0
MC-SED3-0-10-03291	SP34I	1.043	0.0	50.0
PBS	SP34MB1	1.000	0.0	50.0
LCSS	SP34MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SP34

ANALYSIS METHOD: ICP

ARI PREP CODE: TWC

PREPDATE: 4/1/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
LL-SED1-0-15-03291	SP34J	0.000	50.0	50.0
LL-SED1-0-15-03291D	SP34JDUP	0.000	50.0	50.0
LL-SED1-0-15-03291S	SP34JSPK	0.000	50.0	50.0
PBW	SP34MB2	0.000	50.0	50.0
LCSW	SP34MB2SPK	0.000	50.0	50.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 4/7/2011

SDG: SP34 | RUNID: IP040771 | METHOD: ICP | END DATE: 4/7/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	11151				X																	X									
S2	S2	1.00	11191																														
S3	S3	1.00	11205				X																	X									
S4	S4	1.00	11232																														
S5	S5	1.00	11253																														
ICV	ICV	1.00	11375				X																	X									
ICB	ICB	1.00	11405				X																	X									
CRI	CRII	1.00	11450				X																	X									
ICSA	ICSAI	1.00	11491				X																	X									
ICSAB	ICSABI	1.00	11532				X																	X									
CCV	CCV1	1.00	11570				X																	X									
CCB	CCB1	1.00	12002				X																	X									
ZZZZZZ	SP69MB1	2.00	12043																														
ZZZZZZ	SP69A-L	10.00	12084																														
ZZZZZZ	SP69A	2.00	12123																														
ZZZZZZ	SP69ADUP	2.00	12165																														
ZZZZZZ	SP69ASPK	2.00	12210																														
ZZZZZZ	ZZZZZZ	2.00	12244																														
ZZZZZZ	SP69B	2.00	12283																														
ZZZZZZ	SP69C	2.00	12324																														
ZZZZZZ	SP69D	2.00	12365																														
ZZZZZZ	SP69MB1SPK	2.00	12410																														
CCV	CCV2	1.00	12445				X																	X									
CCB	CCB2	1.00	12475				X																	X									
CRI	CRIF	1.00	12520				X																	X									
ICSA	ICSAF	1.00	12562				X																	X									
ICSAB	ICSABF	1.00	13003				X																	X									
CCV	CCV3	1.00	13041				X																	X									
CCB	CCB3	1.00	13071				X																	X									
PBS	SP34MB1	2.00	13112				X																	X									
PBW	SP34MB2	1.00	13153				X																	X									
LL-SED1-0-15-03291D	SP34JDUP	1.00	13194				X																	X									
LL-SED1-0-15-03291	SP34J	1.00	13234				X																	X									
LL-SED1-0-15-03291S	SP34JSPK	1.00	13275				X																	X									
MC-SED2-0-10-03291	SP34H	2.00	13314				X																	X									

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 4/7/2011

SDG: SP34 | RUNID: IP040771 | METHOD: ICP | END DATE: 4/7/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
MC-SED1-0-10-03291D	SP34GDUP	2.00	13354				X																	X									
MC-SED1-0-10-03291	SP34G	2.00	13393				X																	X									
MC-SED1-0-10-03291S	SP34GSPK	2.00	13433				X																	X									
LCSW	SP34MB2SPK	1.00	13463				X																	X									
CCV	CCV4	1.00	13502				X																	X									
CCB	CCB4	1.00	13532				X																	X									
ZZZZZZ	SP50MB	1.00	13573																														
ZZZZZZ	SP50A	1.00	14014																														
ZZZZZZ	SP50B	1.00	14055																														
ZZZZZZ	SP50C	1.00	14095																														
ZZZZZZ	SP50D	1.00	14134																														
ZZZZZZ	SP50E	1.00	14174																														
ZZZZZZ	SP50F	1.00	14213																														
MC-SED3-0-10-03291	SP34I	2.00	14253				X																	X									
LCSS	SP34MB1SPK	2.00	14292				X																	X									
ZZZZZZ	SP50MBSPK	1.00	14332																														
CCV	CCV5	1.00	14371				X																	X									
CCB	CCB5	1.00	14401				X																	X									

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SQ22

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
LL-SED1-0-15-03291	SQ22A	11-7355	
PBS	SQ22MB1	11-7355	
LCSS	SQ22MB1SPK	11-7355	
LL-SED2-0-15-03291	SQ22B	11-7356	
LL-SED2-0-15-03291D	SQ22BDUP	11-7356	
LL-SED2-0-15-03291S	SQ22BSPK	11-7356	
LL-SED3-0-15-03291	SQ22C	11-7357	
LL-SED4-0-15-03291	SQ22D	11-7358	
LL-SED1-0-15-03291	SQ22E	11-7359	
LL-SED5-0-15-03291	SQ22F	11-7360	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 4/12/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED1-0-15-032911
SAMPLE

Lab Sample ID: SQ22A
LIMS ID: 11-7355
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 31.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/06/11	6010B	04/11/11	**7440-38-2**	**Arsenic**	20	**20**	
3050B	04/06/11	6010B	04/11/11	**7439-92-1**	**Lead**	6	**319**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
SAMPLE

Lab Sample ID: SQ22B
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 19.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/06/11	6010B	04/11/11	**7440-38-2**	**Arsenic**	20	**50**	
3050B	04/06/11	6010B	04/11/11	**7439-92-1**	**Lead**	10	**390**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED3-0-15-032911
SAMPLE

Lab Sample ID: SQ22C
LIMS ID: 11-7357
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 27.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/06/11	6010B	04/11/11	**7440-38-2**	**Arsenic**	20	**70**	
3050B	04/06/11	6010B	04/11/11	**7439-92-1**	**Lead**	7	**361**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED4-0-15-032911
SAMPLE

Lab Sample ID: SQ22D
LIMS ID: 11-7358
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 24.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/06/11	6010B	04/11/11	**7440-38-2**	**Arsenic**	20	**40**	
3050B	04/06/11	6010B	04/11/11	**7439-92-1**	**Lead**	8	**492**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED1-0-15-032911-D
SAMPLE

Lab Sample ID: SQ22E
LIMS ID: 11-7359
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 31.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/06/11	6010B	04/11/11	**7440-38-2**	**Arsenic**	20	**20**	
3050B	04/06/11	6010B	04/11/11	**7439-92-1**	**Lead**	6	**281**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED5-0-15-032911
SAMPLE

Lab Sample ID: SQ22F
LIMS ID: 11-7360
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

Percent Total Solids: 80.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/06/11	6010B	04/11/11	**7440-38-2**	**Arsenic**	6	**7**	
3050B	04/06/11	6010B	04/11/11	**7439-92-1**	**Lead**	2	**48**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
MATRIX SPIKE

Lab Sample ID: SQ22B
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	50	1,030	982	99.8%	
Lead	6010B	390	1,370	982	99.8%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LL-SED2-0-15-032911
DUPLICATE

Lab Sample ID: SQ22B
LIMS ID: 11-7356
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling
POS-LL
Date Sampled: 03/29/11
Date Received: 03/30/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	50	40	22.2%	+/- 20	L
Lead	6010B	390	370	5.3%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: SQ22LCS
LIMS ID: 11-7355
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	165	200	82.5%	
Lead	6010B	161	200	80.5%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: SQ22MB
LIMS ID: 11-7355
Matrix: Sediment
Data Release Authorized:
Reported: 04/12/11

QC Report No: SQ22-Floyd Snider
Project: Lora Lake Surface Sediment Sampling POS-LL
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	04/06/11	6010B	04/11/11	7440-38-2	Arsenic	5	5	U
3050B	04/06/11	6010B	04/11/11	7439-92-1	Lead	2	2	U

U-Analyte undetected at given RL
RL-Reporting Limit

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SQ22

UNITS:ug/L

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	ICP	IP041171	2000.0	1965.34	98.3	2000.0	1955.49	97.8	1940.91	97.0	1925.89	96.3	1951.19	97.6		
Lead	PB	ICP	IP041171	2000.0	1976.21	98.8	2000.0	1959.94	98.0	1945.07	97.3	1930.41	96.5	1957.40	97.9		

Control Limits: Mercury 80-120; Other Metals 90-110

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SQ22

UNITS: ug/L

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Arsenic	AS	ICP	IP041171	50.0	48.42	**96.8**	48.25	**96.5**								
Lead	PB	ICP	IP041171	20.0	20.39	**102.0**	19.66	**98.3**								

Control Limits: no control limits have been established by the EPA at this time.

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SQ22

UNITS:ug/L

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	ICP	IP041171	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U		
Lead	PB	ICP	IP041171	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U		

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SQ22

ICS SOURCE: I.V.

RUNID: IP041171

INSTRUMENT ID: OPTIMA ICP 2

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Aluminum	200000	200000	198769.6	199716.4	**99.9**	194155.7	196828.1	**98.4**			
Antimony		1000	4.7	1044.4	**104.4**	1.7	1020.3	**102.0**			
Arsenic		1000	12.4	1012.7	**101.3**	12.5	991.8	**99.2**			
Barium		1000	0.2	1006.0	**100.6**	0.8	982.0	**98.2**			
Beryllium		1000	0.0	997.1	**99.7**	0.0	970.0	**97.0**			
Boron			-6.3	-9.0		-10.3	-10.7				
Cadmium		1000	1.3	1013.4	**101.3**	1.2	995.3	**99.5**			
Calcium	100000	100000	100429.9	100857.2	**100.9**	98712.6	99904.6	**99.9**			
Chromium		1000	-1.5	1026.6	**102.7**	-1.0	1014.0	**101.4**			
Cobalt		1000	0.9	975.4	**97.5**	1.3	938.5	**93.9**			
Copper		1000	0.5	1046.5	**104.7**	0.6	1036.8	**103.7**			
Iron	200000	200000	197988.3	200347.0	**100.2**	189498.7	193000.8	**96.5**			
Lead		1000	-7.1	948.2	**94.8**	-5.8	926.9	**92.7**			
Magnesium	100000	100000	103448.7	100137.4	**100.1**	102443.1	98914.3	**98.9**			
Manganese		1000	0.1	954.6	**95.5**	0.3	920.5	**92.1**			
Molybdenum			3.8	3.5		3.0	3.5				
Nickel		1000	3.1	982.8	**98.3**	3.5	949.5	**95.0**			
Potassium			43.1	547.8		68.1	552.1				
Selenium		1000	19.9	1021.2	**102.1**	32.4	995.7	**99.6**			
Silicon			-12.3	-13.4		-15.2	-10.5				
Silver		1000	0.3	1025.0	**102.5**	0.5	988.1	**98.8**			
Sodium			11.7	8.8		13.6	18.8				
Strontium			3.8	3.7		3.7	3.7				
Thallium		1000	6.7	955.8	**95.6**	7.4	919.4	**91.9**			
Tin			-2.0	-0.6		-3.6	-3.0				
Titanium			-3.4	-2.5		-4.7	-2.9				
Vanadium		1000	-4.0	973.3	**97.3**	-4.3	965.7	**96.6**			
Zinc		1000	3.6	982.6	**98.3**	3.3	973.3	**97.3**			

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SQ22 UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Arsenic	AS	ICP	OPTIMA ICP 2	197.20		10	50.0	4/1/2011	30000.0	8/19/2010
Lead	PB	ICP	OPTIMA ICP 2	220.35		3	20.0	4/1/2011	300000.0	8/19/2010

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

IEC DATE: 3/14/2011

SDG: SQ22

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	9.9066900	0.0000000	0.0000000
Arsenic	188.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0893242	0.0000000	-1.0280600	0.9896930	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1423420	0.0000000	0.0000000	0.0649797
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	3.6086500	0.0000000	0.0000000	0.0000000	0.0000000	0.1351930	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0148832	0.0000000	0.0000000	0.0000000	0.0000000	-0.0451581
Cobalt	228.62	0.0000000	0.0000000	0.0227510	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1969920	-0.0283867	0.0000000	-0.0499474
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	-0.1952990	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.9460200	1.1789000	0.0588763
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.3945700	-0.8349460	0.0000000	0.4579600
Manganese	257.61	0.0056707	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0082982
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0185703	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.1513640	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.7058000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	2.4468400	0.3572340	0.0000000	-0.1350510
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.2650000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.1735400	0.0000000	0.0000000	0.1546720	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-4.7348500	0.0000000	0.0820500
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0805698	0.0000000	0.0000000

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

IEC DATE: 3/14/2011

SDG: SQ22

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.0000000	1.8788800	12.1307000	0.0000000	0.0000000	0.0000000	2.3503300	0.0000000	18.0364000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	-0.3855180	0.0000000	0.0000000	-1.5147100	0.0000000	-3.2063100	0.0000000
Arsenic	188.98	0.0000000	0.0000000	1.3620000	0.0000000	0.0000000	0.0000000	-8.1444600	0.0000000	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0759003	0.0000000	0.0000000	0.0000000	0.0000000	0.4900780	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.5371850	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	-0.6212080	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0685552	0.0000000	0.2199000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2689540	0.0000000
Cobalt	228.62	0.0000000	0.0000000	-0.2536290	0.1584550	0.0000000	0.0000000	1.6159400	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0040015	0.0000000	0.1558430	0.0000000	0.0000000	0.0000000	0.3031690	0.0000000	0.0000000	0.0000000
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	5.2755600	0.0000000
Lead	220.35	0.0000000	0.0000000	-0.3729230	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	-2.6953000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0058832	0.0000000	0.0000000	0.0000000	-0.2659040	0.0000000	0.0000000	0.0000000	-0.0245885	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5897980	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0859101	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1197900	0.0000000	-1.8474100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.1773070	0.1067270	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.2224750	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	337.7400000	0.0000000	0.0000000	262.9290000
Thallium	190.80	0.0000000	0.0000000	-3.9138800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.6225600	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.6365040	-0.3516110	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	1.2363700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1619680	-0.9516330	0.0000000	0.0000000	0.0000000	0.6209970	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2547300	0.0000000	-0.0673589	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Floyd Snider

PROJECT: Lora Lake Surface Se

SDG: SQ22

ANALYSIS METHOD: ICP

ARI PREP CODE: SWC

PREPDATE: 4/6/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
LL-SED1-0-15-03291	SQ22A	1.056	0.0	50.0
LL-SED2-0-15-03291	SQ22B	1.041	0.0	50.0
LL-SED2-0-15-03291D	SQ22BDUP	1.045	0.0	50.0
LL-SED2-0-15-03291S	SQ22BSPK	1.039	0.0	50.0
LL-SED3-0-15-03291	SQ22C	1.066	0.0	50.0
LL-SED4-0-15-03291	SQ22D	1.078	0.0	50.0
LL-SED1-0-15-03291	SQ22E	1.024	0.0	50.0
LL-SED5-0-15-03291	SQ22F	1.059	0.0	50.0
PBS	SQ22MB1	1.000	0.0	50.0
LCSS	SQ22MB1SPK	1.000	0.0	50.0