



November 15, 2019

Vista Work Order No. 1903431

Ms. Delaney Peterson
Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101

Dear Ms. Peterson,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on October 01, 2019 under your Project Name 'Gasco PDI'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 ph: 916-673-1520 fx: 916-673-0106 www.vista-analytical.com

Vista Work Order No. 1903431

Case Narrative

Sample Condition on Receipt:

Nine sediment samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613B

These samples were extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613B using a ZB-5MS GC column.

Holding Times

These samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

As requested, a Duplicate was performed on sample "PDI-064SC-B-04-06-190929". The Duplicate RPD was out of the acceptance criteria for OCDF.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	19
Certifications.....	20
Sample Receipt.....	23
Extraction Information.....	26
Sample Data - EPA Method 1613.....	32
Confirmation.....	320
Continuing Calibration.....	325
Initial Calibration.....	468

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1903431-01	PDI-030SC-A-11-11.8-190929	29-Sep-19 15:01	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-02	PDI-036SC-A-11-12-190929	29-Sep-19 13:09	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-03	PDI-036SC-A-12-13.4-190929	29-Sep-19 12:59	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-04	PDI-064SC-A-14-15-190929	29-Sep-19 08:18	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-05	PDI-064SC-A-15-15.8-190929	29-Sep-19 08:18	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-06	PDI-064SC-B-00-02-190929	29-Sep-19 08:19	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-07	PDI-064SC-B-02-04-190929	29-Sep-19 08:19	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-08	PDI-064SC-B-04-06-190929	29-Sep-19 08:19	01-Oct-19 09:18	Amber Glass, 120 mL
1903431-09	PDI-064SC-B-06-08-190929	29-Sep-19 08:19	01-Oct-19 09:18	Amber Glass, 120 mL

ANALYTICAL RESULTS

Sample ID: Method Blank					EPA Method 1613B			
Matrix: Solid Sample Size: 10.0 g		QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38		Lab Sample: B9J0144-BLK1 Date Analyzed: 04-Nov-19 17:18 Column: ZB-5MS				
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.133			IS 13C-2,3,7,8-TCDD	70.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.159			13C-1,2,3,7,8-PeCDD	70.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.268			13C-1,2,3,4,7,8-HxCDD	72.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.316			13C-1,2,3,6,7,8-HxCDD	63.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.288			13C-1,2,3,7,8,9-HxCDD	67.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.159			13C-1,2,3,4,6,7,8-HpCDD	71.1	23 - 140	
OCDD	ND	0.256			13C-OCDD	67.5	17 - 157	
2,3,7,8-TCDF	ND	0.0880			13C-2,3,7,8-TCDF	67.0	24 - 169	
1,2,3,7,8-PeCDF	ND	0.125			13C-1,2,3,7,8-PeCDF	75.2	24 - 185	
2,3,4,7,8-PeCDF	ND	0.124			13C-2,3,4,7,8-PeCDF	72.0	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.121			13C-1,2,3,4,7,8-HxCDF	77.2	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.125			13C-1,2,3,6,7,8-HxCDF	70.2	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.137			13C-2,3,4,6,7,8-HxCDF	72.2	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.176			13C-1,2,3,7,8,9-HxCDF	75.8	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.112			13C-1,2,3,4,6,7,8-HpCDF	72.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.100			13C-1,2,3,4,7,8,9-HpCDF	78.7	26 - 138	
OCDF	ND	0.178			13C-OCDF	76.6	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	61.1	35 - 197	
					Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)			
					TEQMinWHO2005Dioxin 0.00			
TOTALS								
Total TCDD	ND	0.133						
Total PeCDD	ND	0.159						
Total HxCDD	ND	0.292						
Total HpCDD	ND	0.159						
Total TCDF	ND	0.0880						
Total PeCDF	ND	0.124						
Total HxCDF	ND	0.139						
Total HpCDF	ND	0.106						

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: OPR					EPA Method 1613B		
Matrix: Solid	QC Batch: B9J0144	Lab Sample: B9J0144-BS1					
Sample Size: 10.0 g	Date Extracted: 15-Oct-2019 6:38	Date Analyzed: 04-Nov-19 14:54	Column: ZB-5MS				
Analyte	Amt Found (pg/g)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	22.0	20.0	110	67 - 158	IS 13C-2,3,7,8-TCDD	59.7	20 - 175
1,2,3,7,8-PeCDD	112	100	112	70 - 142	13C-1,2,3,7,8-PeCDD	60.9	21 - 227
1,2,3,4,7,8-HxCDD	99.2	100	99.2	70 - 164	13C-1,2,3,4,7,8-HxCDD	73.6	21 - 193
1,2,3,6,7,8-HxCDD	104	100	104	76 - 134	13C-1,2,3,6,7,8-HxCDD	62.9	25 - 163
1,2,3,7,8,9-HxCDD	102	100	102	64 - 162	13C-1,2,3,7,8,9-HxCDD	69.8	21 - 193
1,2,3,4,6,7,8-HpCDD	98.5	100	98.5	70 - 140	13C-1,2,3,4,6,7,8-HpCDD	75.5	26 - 166
OCDD	212	200	106	78 - 144	13C-OCDD	69.5	13 - 199
2,3,7,8-TCDF	19.5	20.0	97.6	75 - 158	13C-2,3,7,8-TCDF	56.7	22 - 152
1,2,3,7,8-PeCDF	98.9	100	98.9	80 - 134	13C-1,2,3,7,8-PeCDF	59.3	21 - 192
2,3,4,7,8-PeCDF	102	100	102	68 - 160	13C-2,3,4,7,8-PeCDF	63.5	13 - 328
1,2,3,4,7,8-HxCDF	103	100	103	72 - 134	13C-1,2,3,4,7,8-HxCDF	72.0	19 - 202
1,2,3,6,7,8-HxCDF	96.6	100	96.6	84 - 130	13C-1,2,3,6,7,8-HxCDF	68.6	21 - 159
2,3,4,6,7,8-HxCDF	102	100	102	70 - 156	13C-2,3,4,6,7,8-HxCDF	68.2	22 - 176
1,2,3,7,8,9-HxCDF	100	100	100	78 - 130	13C-1,2,3,7,8,9-HxCDF	71.5	17 - 205
1,2,3,4,6,7,8-HpCDF	102	100	102	82 - 122	13C-1,2,3,4,6,7,8-HpCDF	68.0	21 - 158
1,2,3,4,7,8,9-HpCDF	101	100	101	78 - 138	13C-1,2,3,4,7,8,9-HpCDF	76.6	20 - 186
OCDF	195	200	97.5	63 - 170	13C-OCDF	75.2	13 - 199
					CRS 37Cl-2,3,7,8-TCDD	54.2	31 - 191

LCL-UCL - Lower control limit - upper control limit

Sample ID: PDI-030SC-A-11-11.8-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-01 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 13.5 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 15:01	% Solids: 74.1	Date Analyzed : 06-Nov-19 22:03 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.158			IS 13C-2,3,7,8-TCDD	78.6	25 - 164	
1,2,3,7,8-PeCDD	ND	0.213			13C-1,2,3,7,8-PeCDD	90.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.281			13C-1,2,3,4,7,8-HxCDD	91.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.302			13C-1,2,3,6,7,8-HxCDD	76.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.300			13C-1,2,3,7,8,9-HxCDD	85.7	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.41			J	13C-1,2,3,4,6,7,8-HpCDD	84.2	23 - 140	
OCDD	12.3				13C-OCDD	87.4	17 - 157	
2,3,7,8-TCDF	ND	0.117			13C-2,3,7,8-TCDF	72.2	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0989			13C-1,2,3,7,8-PeCDF	81.9	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0905			13C-2,3,4,7,8-PeCDF	81.7	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0833			13C-1,2,3,4,7,8-HxCDF	102	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0935			13C-1,2,3,6,7,8-HxCDF	86.7	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0999			13C-2,3,4,6,7,8-HxCDF	85.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.142			13C-1,2,3,7,8,9-HxCDF	90.6	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.139			13C-1,2,3,4,6,7,8-HpCDF	85.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.125			13C-1,2,3,4,7,8,9-HpCDF	91.5	26 - 138	
OCDF	ND	0.190			13C-OCDF	93.3	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	71.3	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.0178

TOTALS			
Total TCDD	ND		0.154
Total PeCDD	ND	0.213	
Total HxCDD	0.825		
Total HpCDD	3.75		3.76
Total TCDF	ND	0.117	
Total PeCDF	ND	0.0989	
Total HxCDF	ND	0.142	
Total HpCDF	ND	0.139	

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-036SC-A-11-12-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-02 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 12.3 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 13:09	% Solids: 81.5	Date Analyzed: 06-Nov-19 22:51 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.140			IS 13C-2,3,7,8-TCDD	98.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.146			13C-1,2,3,7,8-PeCDD	102	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.299			13C-1,2,3,4,7,8-HxCDD	102	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.318			13C-1,2,3,6,7,8-HxCDD	80.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.308			13C-1,2,3,7,8,9-HxCDD	90.6	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.46			J	13C-1,2,3,4,6,7,8-HpCDD	92.4	23 - 140	
OCDD	11.6				13C-OCDD	93.5	17 - 157	
2,3,7,8-TCDF	ND	0.107			13C-2,3,7,8-TCDF	92.4	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0715			13C-1,2,3,7,8-PeCDF	106	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0730			13C-2,3,4,7,8-PeCDF	99.6	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0810			13C-1,2,3,4,7,8-HxCDF	109	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0836			13C-1,2,3,6,7,8-HxCDF	94.4	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0931			13C-2,3,4,6,7,8-HxCDF	94.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.115			13C-1,2,3,7,8,9-HxCDF	99.6	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.135			13C-1,2,3,4,6,7,8-HpCDF	93.5	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.106			13C-1,2,3,4,7,8,9-HpCDF	102	26 - 138	
OCDF	ND	0.172			13C-OCDF	103	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	88.8	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.0181

TOTALS			
Total TCDD	ND	0.140	
Total PeCDD	ND	0.146	
Total HxCDD	0.739		
Total HpCDD	3.82		
Total TCDF	ND	0.107	
Total PeCDF	ND	0.0730	
Total HxCDF	ND	0.115	
Total HpCDF	ND	0.135	

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-036SC-A-12-13.4-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-03 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 14.1 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 12:59	% Solids: 71.4	Date Analyzed : 07-Nov-19 01:29 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.164			IS 13C-2,3,7,8-TCDD	86.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.159			13C-1,2,3,7,8-PeCDD	94.9	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.278			13C-1,2,3,4,7,8-HxCDD	97.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.298			13C-1,2,3,6,7,8-HxCDD	79.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.276			13C-1,2,3,7,8,9-HxCDD	87.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.781			J	13C-1,2,3,4,6,7,8-HpCDD	88.2	23 - 140	
OCDD	6.16				13C-OCDD	75.5	17 - 157	
2,3,7,8-TCDF	ND	0.0992			13C-2,3,7,8-TCDF	78.0	24 - 169	
1,2,3,7,8-PeCDF	ND	0.102			13C-1,2,3,7,8-PeCDF	93.1	24 - 185	
2,3,4,7,8-PeCDF	ND	0.100			13C-2,3,4,7,8-PeCDF	90.1	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0826			13C-1,2,3,4,7,8-HxCDF	108	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0880			13C-1,2,3,6,7,8-HxCDF	92.2	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.105			13C-2,3,4,6,7,8-HxCDF	90.9	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.127			13C-1,2,3,7,8,9-HxCDF	98.8	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.148			13C-1,2,3,4,6,7,8-HpCDF	83.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.122			13C-1,2,3,4,7,8,9-HpCDF	91.8	26 - 138	
OCDF	ND	0.200			13C-OCDF	85.0	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	84.0	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)
 TEQMinWHO2005Dioxin 0.00966

TOTALS		DL	EMPC	Qualifiers
Total TCDD	ND	0.164		
Total PeCDD	ND	0.159		
Total HxCDD	0.865			
Total HpCDD	2.24			
Total TCDF	ND	0.0992		
Total PeCDF	ND	0.102		
Total HxCDF	ND	0.127		
Total HpCDF	ND	0.148		

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight. The sample size is reported in wet weight.
 Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-064SC-A-14-15-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-04 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 13.3 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 8:18	% Solids: 75.3	Date Analyzed : 07-Nov-19 02:16 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.222			IS 13C-2,3,7,8-TCDD	61.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.176			13C-1,2,3,7,8-PeCDD	72.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.331			13C-1,2,3,4,7,8-HxCDD	78.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.364			13C-1,2,3,6,7,8-HxCDD	65.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.339			13C-1,2,3,7,8,9-HxCDD	72.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.461			13C-1,2,3,4,6,7,8-HpCDD	73.9	23 - 140	
OCDD	5.32				13C-OCDD	73.1	17 - 157	
2,3,7,8-TCDF	ND	0.132			13C-2,3,7,8-TCDF	58.4	24 - 169	
1,2,3,7,8-PeCDF	ND	0.122			13C-1,2,3,7,8-PeCDF	69.1	24 - 185	
2,3,4,7,8-PeCDF	ND	0.109			13C-2,3,4,7,8-PeCDF	69.7	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.123			13C-1,2,3,4,7,8-HxCDF	84.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.120			13C-1,2,3,6,7,8-HxCDF	74.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.133			13C-2,3,4,6,7,8-HxCDF	74.9	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.176			13C-1,2,3,7,8,9-HxCDF	78.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.192			13C-1,2,3,4,6,7,8-HpCDF	71.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.157			13C-1,2,3,4,7,8,9-HpCDF	76.4	26 - 138	
OCDF	ND	0.231			13C-OCDF	76.1	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	61.3	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00160

TOTALS		
Total TCDD	0.329	
Total PeCDD	ND	0.176
Total HxCDD	ND	0.343
Total HpCDD	1.02	
Total TCDF	ND	0.132
Total PeCDF	ND	0.122
Total HxCDF	ND	0.176
Total HpCDF	ND	0.192

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-064SC-A-15-15.8-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-05 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 13.4 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 8:18	% Solids: 74.9	Date Analyzed: 07-Nov-19 03:04 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.154			IS 13C-2,3,7,8-TCDD	85.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.178			13C-1,2,3,7,8-PeCDD	92.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.249			13C-1,2,3,4,7,8-HxCDD	95.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.279			13C-1,2,3,6,7,8-HxCDD	81.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.259			13C-1,2,3,7,8,9-HxCDD	93.2	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.600			J	13C-1,2,3,4,6,7,8-HpCDD	92.4	23 - 140	
OCDD	ND		5.02		13C-OCDD	93.0	17 - 157	
2,3,7,8-TCDF	ND	0.135			13C-2,3,7,8-TCDF	74.8	24 - 169	
1,2,3,7,8-PeCDF	ND	0.107			13C-1,2,3,7,8-PeCDF	81.8	24 - 185	
2,3,4,7,8-PeCDF	ND	0.101			13C-2,3,4,7,8-PeCDF	79.1	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0976			13C-1,2,3,4,7,8-HxCDF	105	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.104			13C-1,2,3,6,7,8-HxCDF	93.8	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.110			13C-2,3,4,6,7,8-HxCDF	94.7	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.149			13C-1,2,3,7,8,9-HxCDF	97.6	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.169			13C-1,2,3,4,6,7,8-HpCDF	89.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.140			13C-1,2,3,4,7,8,9-HpCDF	97.1	26 - 138	
OCDF	ND	0.218			13C-OCDF	101	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	74.6	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00600

TOTALS		
Total TCDD	ND	0.154
Total PeCDD	ND	0.178
Total HxCDD	0.589	
Total HpCDD	1.82	
Total TCDF	ND	0.135
Total PeCDF	ND	0.107
Total HxCDF	ND	0.149
Total HpCDF	ND	0.169

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-064SC-B-00-02-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-06 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 18.4 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 8:19	% Solids: 54.4	Date Analyzed : 07-Nov-19 03:52 Column: ZB-5MS 07-Nov-19 14:01 Column: DB-225

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	1.26				IS 13C-2,3,7,8-TCDD	72.0	25 - 164	
1,2,3,7,8-PeCDD	ND		1.45		13C-1,2,3,7,8-PeCDD	72.5	25 - 181	
1,2,3,4,7,8-HxCDD	1.87			J	13C-1,2,3,4,7,8-HxCDD	81.2	32 - 141	
1,2,3,6,7,8-HxCDD	14.2				13C-1,2,3,6,7,8-HxCDD	70.4	28 - 130	
1,2,3,7,8,9-HxCDD	5.54				13C-1,2,3,7,8,9-HxCDD	81.2	32 - 141	
1,2,3,4,6,7,8-HpCDD	536				13C-1,2,3,4,6,7,8-HpCDD	83.0	23 - 140	
OCDD	5960				13C-OCDD	61.5	17 - 157	
2,3,7,8-TCDF	83.4				13C-2,3,7,8-TCDF	66.3	24 - 169	
1,2,3,7,8-PeCDF	150				13C-1,2,3,7,8-PeCDF	76.2	24 - 185	
2,3,4,7,8-PeCDF	62.6				13C-2,3,4,7,8-PeCDF	70.7	21 - 178	
1,2,3,4,7,8-HxCDF	248				13C-1,2,3,4,7,8-HxCDF	86.9	26 - 152	
1,2,3,6,7,8-HxCDF	58.7				13C-1,2,3,6,7,8-HxCDF	78.9	26 - 123	
2,3,4,6,7,8-HxCDF	16.9				13C-2,3,4,6,7,8-HxCDF	80.6	28 - 136	
1,2,3,7,8,9-HxCDF	9.65				13C-1,2,3,7,8,9-HxCDF	87.0	29 - 147	
1,2,3,4,6,7,8-HpCDF	163				13C-1,2,3,4,6,7,8-HpCDF	69.8	28 - 143	
1,2,3,4,7,8,9-HpCDF	46.8				13C-1,2,3,4,7,8,9-HpCDF	83.2	26 - 138	
OCDF	326				13C-OCDF	69.7	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	63.4	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 77.7

TOTALS			
Total TCDD	9.97		13.7
Total PeCDD	14.0		22.1
Total HxCDD	157		
Total HpCDD	1270		
Total TCDF	240		262
Total PeCDF	442		446
Total HxCDF	472		474
Total HpCDF	446		

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-064SC-B-02-04-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-07 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 18.0 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 8:19	% Solids: 57.0	Date Analyzed : 07-Nov-19 04:40 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.251			IS 13C-2,3,7,8-TCDD	76.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.186			13C-1,2,3,7,8-PeCDD	85.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.303			13C-1,2,3,4,7,8-HxCDD	83.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.313			13C-1,2,3,6,7,8-HxCDD	71.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.326			13C-1,2,3,7,8,9-HxCDD	73.7	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND		1.83		13C-1,2,3,4,6,7,8-HpCDD	83.5	23 - 140	
OCDD	13.5				13C-OCDD	72.2	17 - 157	
2,3,7,8-TCDF	ND		0.233		13C-2,3,7,8-TCDF	75.3	24 - 169	
1,2,3,7,8-PeCDF	ND	0.168			13C-1,2,3,7,8-PeCDF	83.1	24 - 185	
2,3,4,7,8-PeCDF	ND	0.161			13C-2,3,4,7,8-PeCDF	82.1	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.155			13C-1,2,3,4,7,8-HxCDF	86.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.160			13C-1,2,3,6,7,8-HxCDF	77.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.188			13C-2,3,4,6,7,8-HxCDF	74.9	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.227			13C-1,2,3,7,8,9-HxCDF	80.8	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.225			13C-1,2,3,4,6,7,8-HpCDF	74.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.188			13C-1,2,3,4,7,8,9-HpCDF	76.6	26 - 138	
OCDF	ND	0.287			13C-OCDF	62.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	70.9	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00405

TOTALS								
Total TCDD	0.484		1.14					
Total PeCDD	ND		0.362					
Total HxCDD	1.24							
Total HpCDD	2.77		4.60					
Total TCDF	1.73		2.63					
Total PeCDF	ND		0.537					
Total HxCDF	ND	0.227						
Total HpCDF	ND	0.225						

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-064SC-B-04-06-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-08 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 16.9 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 8:19	% Solids: 59.3	Date Analyzed : 07-Nov-19 05:28 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.739			IS 13C-2,3,7,8-TCDD	75.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.549			13C-1,2,3,7,8-PeCDD	69.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.423			13C-1,2,3,4,7,8-HxCDD	79.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.488			13C-1,2,3,6,7,8-HxCDD	65.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.449			13C-1,2,3,7,8,9-HxCDD	70.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.75			J	13C-1,2,3,4,6,7,8-HpCDD	76.2	23 - 140	
OCDD	11.6				13C-OCDD	63.5	17 - 157	
2,3,7,8-TCDF	ND		0.299		13C-2,3,7,8-TCDF	73.7	24 - 169	
1,2,3,7,8-PeCDF	ND		0.199		13C-1,2,3,7,8-PeCDF	77.9	24 - 185	
2,3,4,7,8-PeCDF	ND		0.175		13C-2,3,4,7,8-PeCDF	73.7	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.196			13C-1,2,3,4,7,8-HxCDF	84.0	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.204			13C-1,2,3,6,7,8-HxCDF	74.3	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.226			13C-2,3,4,6,7,8-HxCDF	74.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.262			13C-1,2,3,7,8,9-HxCDF	80.8	29 - 147	
1,2,3,4,6,7,8-HpCDF	1.08			J	13C-1,2,3,4,6,7,8-HpCDF	67.1	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.231			13C-1,2,3,4,7,8,9-HpCDF	80.9	26 - 138	
OCDF	3.81			J	13C-OCDF	72.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	68.3	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.0329

TOTALS			
Total TCDD	ND		0.637
Total PeCDD	ND	0.549	
Total HxCDD	1.26		
Total HpCDD	4.42		
Total TCDF	1.99		3.16
Total PeCDF	0.525		1.72
Total HxCDF	ND		0.418
Total HpCDF	1.08		

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: Duplicate **EPA Method 1613B**

Source Client ID: PDI-064SC-B-04-06-190929	QC Batch: B9J0144	Lab Sample: B9J0144-DUP1
Source LabNumber: 1903431-08	Date Extracted: 15-Oct-2019 6:38	Date Analyzed: 11-Nov-19 13:31 Column: ZB-5MS
Matrix: Solid		
Sample Size: 16.9 g		

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.148			IS 13C-2,3,7,8-TCDD	71.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.168			13C-1,2,3,7,8-PeCDD	75.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.217			13C-1,2,3,4,7,8-HxCDD	74.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.238			13C-1,2,3,6,7,8-HxCDD	63.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND		0.168		13C-1,2,3,7,8,9-HxCDD	66.7	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.93			J	13C-1,2,3,4,6,7,8-HpCDD	74.5	23 - 140	
OCDD	11.8				13C-OCDD	65.1	17 - 157	
2,3,7,8-TCDF	ND		0.110		13C-2,3,7,8-TCDF	67.7	24 - 169	
1,2,3,7,8-PeCDF	0.169			J	13C-1,2,3,7,8-PeCDF	72.7	24 - 185	
2,3,4,7,8-PeCDF	ND		0.222		13C-2,3,4,7,8-PeCDF	70.0	21 - 178	
1,2,3,4,7,8-HxCDF	0.373			J	13C-1,2,3,4,7,8-HxCDF	77.1	26 - 152	
1,2,3,6,7,8-HxCDF	ND		0.218		13C-1,2,3,6,7,8-HxCDF	68.7	26 - 123	
2,3,4,6,7,8-HxCDF	ND		0.261		13C-2,3,4,6,7,8-HxCDF	69.0	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.183			13C-1,2,3,7,8,9-HxCDF	75.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	1.34			J	13C-1,2,3,4,6,7,8-HpCDF	73.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	0.177			J	13C-1,2,3,4,7,8,9-HpCDF	79.0	26 - 138	
OCDF	1.83			J	13C-OCDF	68.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	67.2	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.0809

TOTALS		
Total TCDD	0.609	1.19
Total PeCDD	0.254	0.805
Total HxCDD	1.08	1.95
Total HpCDD	4.25	
Total TCDF	1.05	2.66
Total PeCDF	0.909	2.13
Total HxCDF	1.40	1.88
Total HpCDF	1.81	

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit

The results are reported in dry weight.

The sample size is reported in wet weight.

Sample ID: Duplicate					EPA Method 1613B				
Source Client ID: PDI-064SC-B-04-06-190929					Duplicate Lab Sample: B9J0144-DUP1				
Source LabNumber: 1903431-08									
Matrix: Solid									
Analyte	Dup Conc. (pg/g)	Source Conc.	RPD	RPD Limits	Labeled Standard	Dup %R	Source %R	LCL-UCL	
2,3,7,8-TCDD	ND	ND	NA	25	IS 13C-2,3,7,8-TCDD	71.8	75.8	25 - 164	
1,2,3,7,8-PeCDD	ND	ND	NA	25	13C-1,2,3,7,8-PeCDD	75.0	69.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	ND	NA	25	13C-1,2,3,4,7,8-HxCDD	74.6	79.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	ND	NA	25	13C-1,2,3,6,7,8-HxCDD	63.9	65.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	ND	NA	25	13C-1,2,3,7,8,9-HxCDD	66.7	70.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.93	1.75	9.85	25	13C-1,2,3,4,6,7,8-HpCDD	74.5	76.2	23 - 140	
OCDD	11.8	11.6	1.59	25	13C-OCDD	65.1	63.5	17 - 157	
2,3,7,8-TCDF	ND	ND	NA	25	13C-2,3,7,8-TCDF	67.7	73.7	24 - 169	
1,2,3,7,8-PeCDF	0.169	ND	#	25	13C-1,2,3,7,8-PeCDF	72.7	77.9	24 - 185	
2,3,4,7,8-PeCDF	ND	ND	NA	25	13C-2,3,4,7,8-PeCDF	70.0	73.7	21 - 178	
1,2,3,4,7,8-HxCDF	0.373	ND	#	25	13C-1,2,3,4,7,8-HxCDF	77.1	84.0	26 - 152	
1,2,3,6,7,8-HxCDF	ND	ND	NA	25	13C-1,2,3,6,7,8-HxCDF	68.7	74.3	26 - 123	
2,3,4,6,7,8-HxCDF	ND	ND	NA	25	13C-2,3,4,6,7,8-HxCDF	69.0	74.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	ND	NA	25	13C-1,2,3,7,8,9-HxCDF	75.3	80.8	29 - 147	
1,2,3,4,6,7,8-HpCDF	1.34	1.08	21.7	25	13C-1,2,3,4,6,7,8-HpCDF	73.0	67.1	28 - 143	
1,2,3,4,7,8,9-HpCDF	0.177	ND	#	25	13C-1,2,3,4,7,8,9-HpCDF	79.0	80.9	26 - 138	
OCDF	1.83	3.81	70.3	25	13C-OCDF	68.9	72.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	67.2	68.3	35 - 197	

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight. Results reported to the MDL

Sample ID: PDI-064SC-B-06-08-190929 **EPA Method 1613B**

Client Data	Sample Data	Laboratory Data
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903431-09 Date Received: 01-Oct-2019 9:18
Project: Gasco PDI	Sample Size: 16.8 g	QC Batch: B9J0144 Date Extracted: 15-Oct-2019 6:38
Date Collected: 29-Sep-2019 8:19	% Solids: 59.6	Date Analyzed : 11-Nov-19 14:19 Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND		0.118		IS 13C-2,3,7,8-TCDD	90.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.144			13C-1,2,3,7,8-PeCDD	91.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.196			13C-1,2,3,4,7,8-HxCDD	94.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.202			13C-1,2,3,6,7,8-HxCDD	81.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.209			13C-1,2,3,7,8,9-HxCDD	86.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.07			J	13C-1,2,3,4,6,7,8-HpCDD	95.4	23 - 140	
OCDD	7.40				13C-OCDD	91.7	17 - 157	
2,3,7,8-TCDF	ND		0.109		13C-2,3,7,8-TCDF	82.7	24 - 169	
1,2,3,7,8-PeCDF	ND	0.106			13C-1,2,3,7,8-PeCDF	87.4	24 - 185	
2,3,4,7,8-PeCDF	ND	0.101			13C-2,3,4,7,8-PeCDF	86.6	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0977			13C-1,2,3,4,7,8-HxCDF	97.8	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0998			13C-1,2,3,6,7,8-HxCDF	86.3	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.111			13C-2,3,4,6,7,8-HxCDF	88.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.133			13C-1,2,3,7,8,9-HxCDF	95.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.133			13C-1,2,3,4,6,7,8-HpCDF	92.9	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.125			13C-1,2,3,4,7,8,9-HpCDF	102	26 - 138	
OCDF	ND	0.150			13C-OCDF	97.3	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	92.1	35 - 197	

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.0129

TOTALS								
Total TCDD	0.898		1.02					
Total PeCDD	ND		0.300					
Total HxCDD	ND		0.630					
Total HpCDD	2.41							
Total TCDF	0.248		1.35					
Total PeCDF	0.110							
Total HxCDF	0.103		0.137					
Total HpCDF	ND	0.133						

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-23
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Vermont Department of Health	VT-4042
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

1903430¹
Apr 10/02/19
COC ID:

1.4°C

VISTA-20190929-181142

POC: # Delaney Peterson (360-715-2707)
1605 Cornwall Avenue, Bellingham, WA 98225

Project: Gasco PDI
Client: NW Natural

Sample Custodian: dep
Lab: VISTA

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected Date	Time	Containers #	Lab QC*	Test Request	Method	TAT**	Preservative
015	PDI-030SC-A-11-11.8-190929	N	SE	09/29/2019	15:01	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
016	PDI-036SC-A-11-12-190929	N	SE	09/29/2019	13:09	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
017	PDI-036SC-A-12-13.4-190929	N	SE	09/29/2019	12:59	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
018	PDI-064SC-A-14-15-190929	N	SE	09/29/2019	8:18	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
019	PDI-064SC-A-15-15.8-190929	N	SE	09/29/2019	8:18	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
020	PDI-064SC-B-00-02-190929	N	SE	09/29/2019	8:19	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
021	PDI-064SC-B-02-04-190929	N	SE	09/29/2019	8:19	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
022	PDI-064SC-B-04-06-190929	N	SE	09/29/2019	8:19	1	<input checked="" type="checkbox"/>				

Comment:

Relinquished By Signature <i>D. Peterson</i>	Received By Signature <i>Hayden Craven</i>	Relinquished By Signature	Received By Signature	Relinquished By Signature	Received By Signature
Print Name <i>D. Peterson</i>	Print Name <i>Hayden Craven</i>	Print Name	Print Name	Print Name	Print Name
Company <i>AQ</i>	Company <i>Vista</i>	Company	Company	Company	Company
Date/Time <i>9.30.19 1000</i>	Date/Time <i>10/1/19 09:18</i>	Date/Time	Date/Time	Date/Time	Date/Time

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

1903431

1.4°C

POC: # Delaney Peterson (360-715-2707)
1605 Cornwall Avenue, Bellingham, WA 98225

Project: Gasco PDI
Client: NW Natural

COC ID: VISTA-20190929-181142
Sample Custodian: dep
Lab: VISTA

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected		Containers #	Lab QC*	Test Request	Method	TAT**	Preservative
				Date	Time						
022	PDI-064SC-B-04-06-190929	N	SE	09/29/2019	8:19	1	<input checked="" type="checkbox"/>				
								Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
023	PDI-064SC-B-06-08-190929	N	SE	09/29/2019	8:19	1	<input type="checkbox"/>				
								Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C

Comment:					
Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Print Name	Print Name	Print Name	Print Name	Print Name	Print Name
Company	Company	Company	Company	Company	Company
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>				
<i>D. Peterson</i>	<i>Hayden Vander</i>				
<i>AO</i>	<i>Vista</i>				
<i>9.30.19 1000</i>	<i>10/1/19 09:18</i>				

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1903431 TAT 28 days

Samples Arrival:	Date/Time <u>10/1/19 09:18</u>	Initials: <u>HOG</u>	Location: <u>WR-2</u> Shelf/Rack: <u>NA</u>				
Logged In:	Date/Time <u>10/02/19 0841</u>	Initials: <u>ajw</u>	Location: <u>WR-2</u> Shelf/Rack: <u>A-1</u>				
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac	<input type="checkbox"/> GSO	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice	<input type="checkbox"/> None			
Temp °C:	<u>1.4</u> (uncorrected)	Probe used: Y / <input checked="" type="checkbox"/> N		Thermometer ID: <u>IR-3</u>			
Temp °C:	<u>1.4</u> (corrected)						

	YES	NO	NA
Adequate Sample Volume Received?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill	Trk # <u>7763 9061 6359</u>		
Sample Container Intact?	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			
Preservation Documented:	<input type="checkbox"/> Na ₂ S ₂ O ₃	<input type="checkbox"/> Trizma	<input checked="" type="checkbox"/> None
	<input type="checkbox"/> Other	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Shipping Container	<input type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain
	<input checked="" type="checkbox"/> Return	<input type="checkbox"/> Dispose	

ajw
10/02/19

Comments:

EXTRACTION INFORMATION

Process Sheet
Workorder: 1903431

Prep Expiration: 2020-09-28
 Client: Anchor QEA, LLC

Workorder Due: 29-Oct-19 00:00

TAT: 28

Method: **1613 Full List**
 Matrix: **Solid**
 Client Matrix: **Sediment**
 Also run: **Percent Solids**

Prep Batch: B9J0144

Prep Data Entered: AO 10/10/19
Date and Initials

Initial Sequence: S9K0005

LabSampleID	Recon	ClientSampleID	Date Received	Location	Comments
1903431-01	<input checked="" type="checkbox"/>	PDI-030SC-A-11-11.8-190929 ✓	01-Oct-19 09:18	WR-2 A-1	
1903431-02	<input checked="" type="checkbox"/>	PDI-036SC-A-11-12-190929 ✓	01-Oct-19 09:18	WR-2 A-1	
1903431-03	<input checked="" type="checkbox"/>	PDI-036SC-A-12-13.4-190929 ✓	01-Oct-19 09:18	WR-2 A-1	
1903431-04	<input checked="" type="checkbox"/>	PDI-064SC-A-14-15-190929 ✓	01-Oct-19 09:18	WR-2 A-1	
1903431-05	<input checked="" type="checkbox"/>	PDI-064SC-A-15-15.8-190929 ✓	01-Oct-19 09:18	WR-2 A-1	
1903431-06	<input checked="" type="checkbox"/>	PDI-064SC-B-00-02-190929 ✓	01-Oct-19 09:18	WR-2 A-1	
1903431-07	<input checked="" type="checkbox"/>	PDI-064SC-B-02-04-190929 ✓	01-Oct-19 09:18	WR-2 A-1	
1903431-08	<input checked="" type="checkbox"/>	PDI-064SC-B-04-06-190929 ✓	01-Oct-19 09:18	WR-2 A-1	Dup
1903431-09	<input checked="" type="checkbox"/>	PDI-064SC-B-06-08-190929 ✓	01-Oct-19 09:18	WR-2 A-1	

WO Comments: ~~Test - 1g extraction (dry weight)~~
Dioxin - 10g (dry weight)
~~POB - 5g extraction (dry weight)~~

Pre-Prep Check Out: AO 10/03/19
 Pre-Prep Check In: AO 10/03/19

Prep Check Out: RL 10/15/19
 Prep Check In: RL 10/15/19

Prep Reconciled Initials/Date: AO 10/03/19
 Spike Reconciled Initials/Date: RL 10/15/19
 VialBoxID: Test

Batch: B9J0144

Matrix: Solid

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1903431-01	13.52	74.08313	10.0160	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-02	12.29	81.49171	10.0153	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-03	14.13	71.39738	10.0884	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-04	13.28	75.33207	10.0041	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-05	13.44	74.88922	10.0651	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-06	18.39	54.4484	10.0131	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-07	17.97	56.99482	10.2420	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-08	16.91	59.30931	10.0292	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
1903431-09	16.84	59.62441	10.0408	20	15-Oct-19 06:38	JJC			Sediment	1613 Full List
B9J0144-BLK1	10			20	15-Oct-19 06:38	JJC				QC
B9J0144-BS1	10			20	15-Oct-19 06:38	JJC	18F1913	10		QC
B9J0144-DUP1	16.88	59.30931	10.0114	20	15-Oct-19 06:38	JJC				QC

All bolded data on report verified against written benchsheet by (initial/date) AO 10/16/19

Printed: 10/16/2019 3:04:41PM
Page 1 of 1

PREPARATION BENCH SHEET

Matrix: Solid

B9J0144

Chemist: KL

Method: 1613 Full List

Prepared using: HRMS - Soxhlet

Prep Date/Time: 15-Oct-19 06:38

C	VISTA Sample ID	G Eqv	Sample Amt. (g)	IS/NS CHEM/WIT DATE	CRS CHEM/WIT DATE	AP CHEM/ DATE	ABSG CHEM/ DATE	AA CHEM/ DATE	Florisil CHEM/ DATE	RS CHEM/WIT DATE
<input type="checkbox"/>	B9J0144-BLK1	NA	(10.00)	KL 10/15/19	AO AZ 10/16/19	AZ 10/16/19	AZ 10/16/19	AO 10/16/19	AO 10/16/19	AO 10/16/19
<input type="checkbox"/>	B9J0144-BS1	NA	(10.00)	T		↓		T	T	T
<input type="checkbox"/>	B9J0144-DUP1 1903431-08	16.86	16.88 ✓	T		↓		T	T	T
<input type="checkbox"/>	1903431-01	13.50	13.52 ✓	T		NA		T	T	T
<input type="checkbox"/>	1903431-02	12.27	12.29 ✓	T		↓		T	T	T
<input type="checkbox"/>	1903431-03	14.01	14.13 ✓	T		↓		T	T	T
<input type="checkbox"/>	1903431-04	13.27	13.28 ✓	T		↓		T	T	T
<input type="checkbox"/>	1903431-05	13.35	13.44 ✓	T		↓		T	T	T
<input type="checkbox"/>	1903431-06	16.37	18.39 ✓	T		AZ 10/16/19		T	T	T
<input type="checkbox"/>	1903431-07	17.55	17.97 ✓	T		↓		T	T	T
<input type="checkbox"/>	1903431-08	16.86	16.91 ✓	T		↓		T	T	T
<input type="checkbox"/>	1903431-09	16.77	16.84 ✓	T		NA		T	T	T

IS Name <u>14C1902, 10 mL</u>	NS Name <u>18F1913, 10 mL</u>	CRS Name <u>19J1602, 10 mL</u>	RS Name <u>17J1603, 10 mL</u>	Cycle Time	APP: SEFUN SOX <u>(SDS)</u>	Check Out: Chemist/Date: <u>KL 10/15/19</u>
PCDD/F <u>14C1902, 10/15/19</u>	PCDD/F <u>18F1913, 10/15/19</u>	PCDD/F <u>19J1602, 10/16/19</u>	PCDD/F <u>17J1603, 10/16/19</u>	Start Date/Time <u>10/15/19 13:41</u>	SOLV: <u>tol</u>	Check In: Chemist/Date: <u>KL 10/15/19</u>
PCB _____	PCB _____	PCB _____	PCB _____	Stop Date/Time <u>10/16/19 05:50</u>	Other <u>NA</u>	Balance ID: <u>HRMS-8</u>
PAH _____	PAH _____	PAH _____	PAH _____	Final Volume(s) <u>C14 20 mL</u>		

Comments:

- 1 = Sample approached dryness on rotovap
- 2 = Sample bumped on rotovap; lost < 5%
- 3 = Sample poured through Na2SO4 to remove water
- 4 = Precipitate present at Final Volume
- 5 = Sample homogenized in secondary container
- 6 = Sample clogged during extraction; pipetted and used Nitrogen to assist

Percent Moisture/ Percent Solids

D2216-90

BATCH ID B9J0027

Analyst: <u>AO</u>	Test Code: %Moist/%Solids	Data Entry Verified by: (Initial and Date) <u>NA</u>
Analyte:	Units: %	
Dried at 110°C +/- 5°C		
Oven ID: <u>01 02</u>		

Inst HRMS-10 Date/Time IN: 10/03/19 13:15 Date/Time OUT: 10/09/19 13:08

Particle Size	SampleID	SampType	Initial and Date: <u>AO 10/03/19</u>		Final and Date: <u>AO 10/09/19</u>		Dry Sample Weight (g)	%Solids Raw/Val	AO 10/03/19					AO 10/03/19
			Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Visual Inspection			Cl-	pH Before	pH After	Acid Added	Sample Homogenized*	
	1903431-01	A Sample	1.23	5.32	4.26			Sand						X
	1903431-02	T Sample	1.22	4.84	4.17			↓						X
	1903431-03	Sample	1.23	5.81	4.50			↓						X
	1903431-04	Sample	1.24	6.61	5.21			Mud						X
	1903431-05	Sample	1.22	7.99	6.79			↑						X
	1903431-06	Sample	1.24	6.86	4.30									X
	1903431-07	Sample	1.25	7.04	4.55									X
	1903431-08	Sample	1.22	7.88	5.17									X
	1903431-09	↓ Sample	1.24	5.50	3.79			↓						X

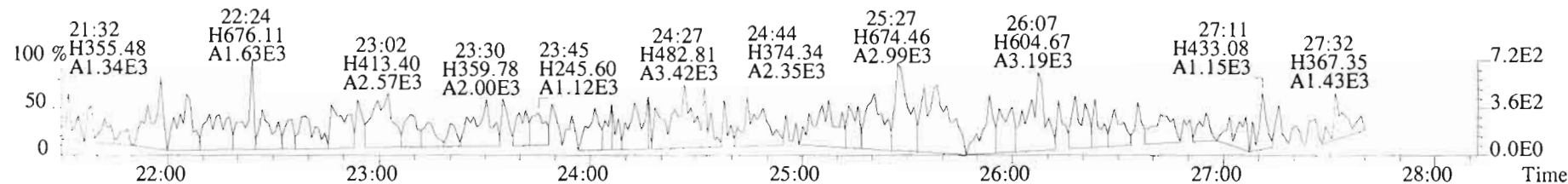
*Sample homogenized in sample container unless otherwise noted.

SAMPLE DATA – EPA METHOD 1613

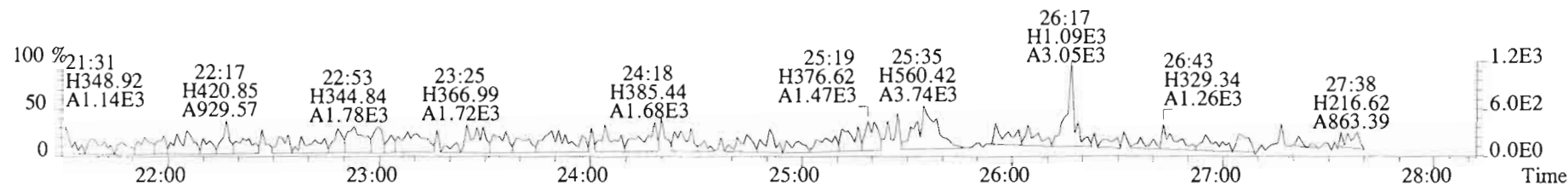
Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	*	* n	0.91	Not F ₇	*		152	2.5	0.133	Total Tetra-Dioxins	*	*		152	0.133
1,2,3,7,8-PeCDD	*	* n	0.90	Not F ₇	*		199	2.5	0.159	Total Penta-Dioxins	*	*		199	0.159
1,2,3,4,7,8-HxCDD	*	* n	1.10	Not F ₇	*		211	2.5	0.268	Total Hexa-Dioxins	*	*		211	0.292
1,2,3,6,7,8-HxCDD	*	* n	0.94	Not F ₇	*		211	2.5	0.316	Total Hepta-Dioxins	*	*		122	0.159
1,2,3,7,8,9-HxCDD	*	* n	0.96	Not F ₇	*		211	2.5	0.288	Total Tetra-Furans	*	*		148	0.0880
1,2,3,4,6,7,8-HpCDD	*	* n	0.98	Not F ₇	*		122	2.5	0.159	Total Penta-Furans	0.0000	0.0000		165	0.124
OCDD	*	* n	0.96	Not F ₇	*		143	2.5	0.256	Total Hexa-Furans	*	*		232	0.139
										Total Hepta-Furans	*	*		129	0.106
2,3,7,8-TCDF	*	* n	0.95	Not F ₇	*		148	2.5	0.0880						
1,2,3,7,8-PeCDF	*	* n	0.96	Not F ₇	*		165	2.5	0.125						
2,3,4,7,8-PeCDF	*	* n	1.01	Not F ₇	*		165	2.5	0.124						
1,2,3,4,7,8-HxCDF	*	* n	1.18	Not F ₇	*		232	2.5	0.121						
1,2,3,6,7,8-HxCDF	*	* n	1.07	Not F ₇	*		232	2.5	0.125						
2,3,4,6,7,8-HxCDF	*	* n	1.11	Not F ₇	*		232	2.5	0.137						
1,2,3,7,8,9-HxCDF	*	* n	1.06	Not F ₇	*		232	2.5	0.176						
1,2,3,4,6,7,8-HpCDF	*	* n	1.13	Not F ₇	*		129	2.5	0.112						
1,2,3,4,7,8,9-HpCDF	*	* n	1.28	Not F ₇	*		129	2.5	0.100						
OCDF	*	* n	0.95	Not F ₇	*		132	2.5	0.178						
IS										Rec	Qual				
13C-2,3,7,8-TCDD	4.05e+06	0.78 y	1.10	26:15	141.87					70.9					
13C-1,2,3,7,8-PeCDD	3.26e+06	0.62 y	0.88	30:44	141.80					70.9					
13C-1,2,3,4,7,8-HxCDD	2.79e+06	1.27 y	0.64	34:03	144.05					72.0					
13C-1,2,3,6,7,8-HxCDD	3.26e+06	1.32 y	0.86	34:10	126.06					63.0					
13C-1,2,3,7,8,9-HxCDD	3.31e+06	1.23 y	0.81	34:28	135.79					67.9					
13C-1,2,3,4,6,7,8-HpCDD	2.81e+06	1.06 y	0.65	37:54	142.14					71.1					
13C-OCDD	4.73e+06	0.92 y	0.58	41:12	269.84					67.5					
13C-2,3,7,8-TCDF	5.94e+06	0.82 y	1.03	25:29	134.05					67.0					
13C-1,2,3,7,8-PeCDF	5.50e+06	1.59 y	0.85	29:34	150.40					75.2					
13C-2,3,4,7,8-PeCDF	5.22e+06	1.62 y	0.85	30:28	143.98					72.0					
13C-1,2,3,4,7,8-HxCDF	3.88e+06	0.50 y	0.83	33:10	154.45					77.2					
13C-1,2,3,6,7,8-HxCDF	4.39e+06	0.51 y	1.03	33:17	140.42					70.2					
13C-2,3,4,6,7,8-HxCDF	4.16e+06	0.51 y	0.95	33:53	144.35					72.2					
13C-1,2,3,7,8,9-HxCDF	3.79e+06	0.51 y	0.83	34:51	151.69					75.8					
13C-1,2,3,4,6,7,8-HpCDF	3.31e+06	0.43 y	0.76	36:42	144.72					72.4					
13C-1,2,3,4,7,8,9-HpCDF	2.77e+06	0.42 y	0.58	38:27	157.47					78.7					
13C-OCDF	6.38e+06	0.89 y	0.69	41:25	306.37					76.6					
C/Up	37C1-2,3,7,8-TCDD	1.53e+06		1.20	26:16	48.848				61.1					
RS/RT	13C-1,2,3,4-TCDD	5.21e+06	0.80 y	1.00	25:42	200.00									
RS	13C-1,2,3,4-TCDF	8.56e+06	0.80 y	1.00	24:17	200.00									
RS/RT	13C-1,2,3,4,6,9-HxCDF	6.04e+06	0.52 y	1.00	33:35	200.00									

Integrations
 by DB
 Analyst: DB
 Date: 11/5/19
 Reviewed
 by CT
 Analyst: CT
 Date: 11/15/19

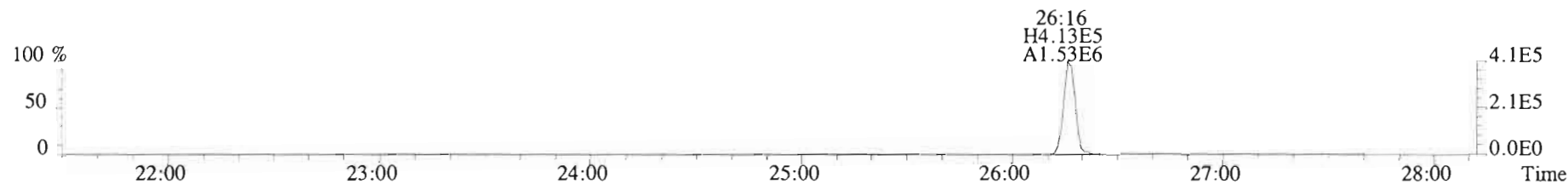
File:191104D1 #1-492 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
319.8965 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



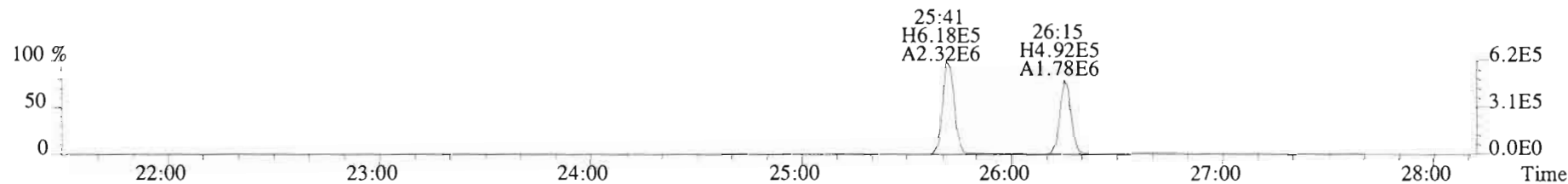
321.8936 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



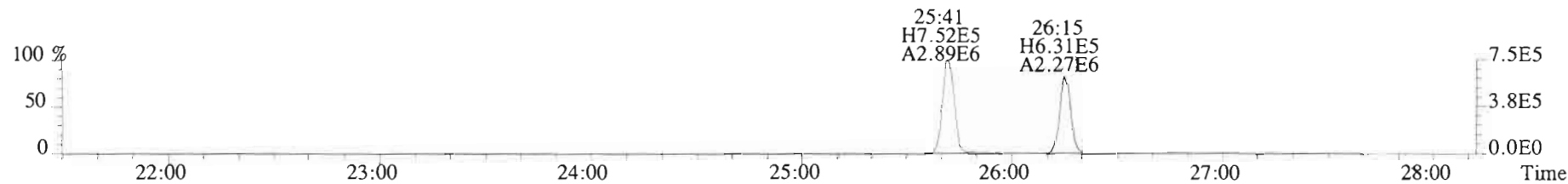
327.8847 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



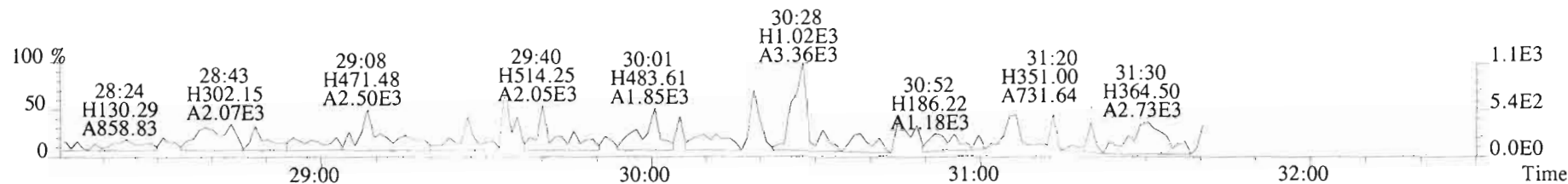
331.9368 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



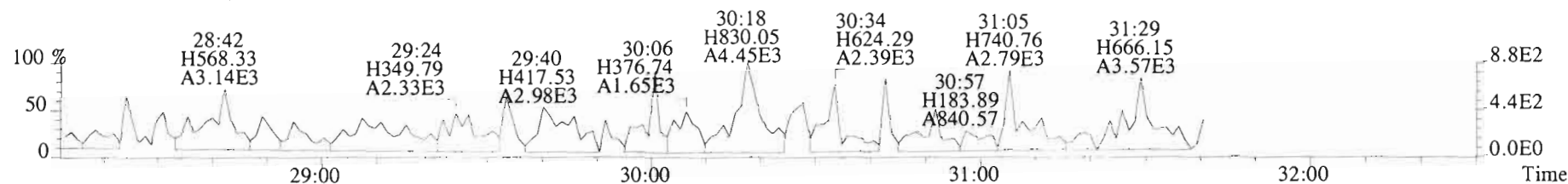
333.9339 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



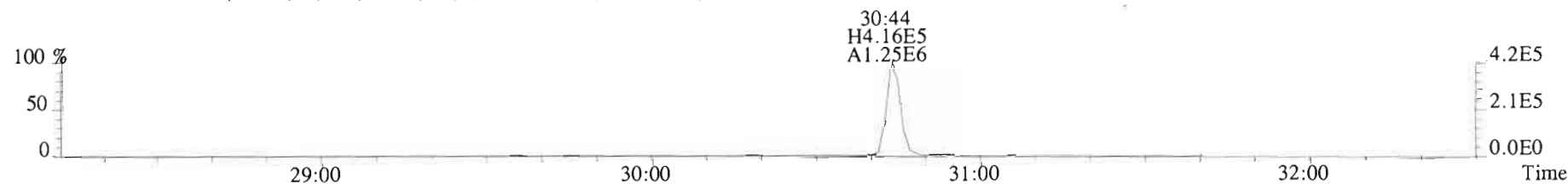
File:191104D1 #1-211 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
 353.8576 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



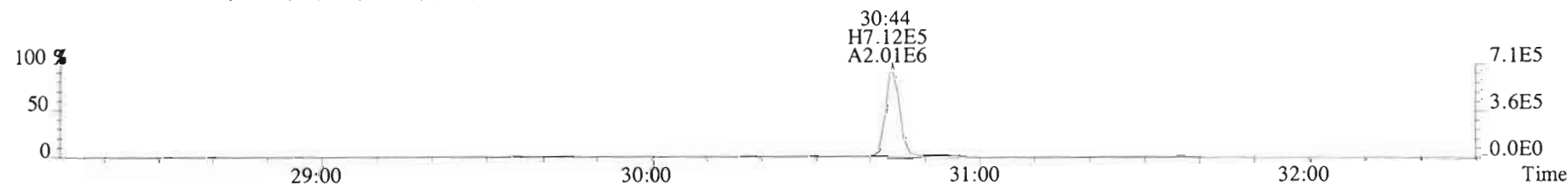
355.8546 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



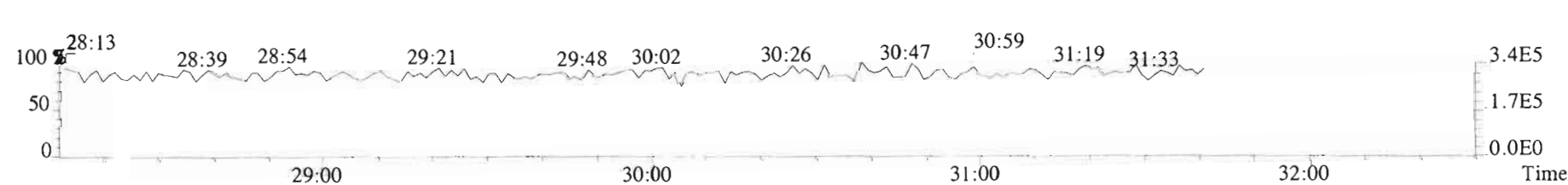
365.8978 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



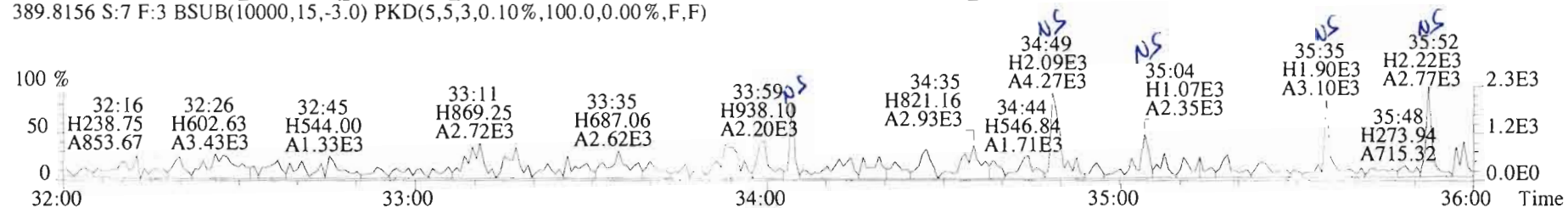
367.8949 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



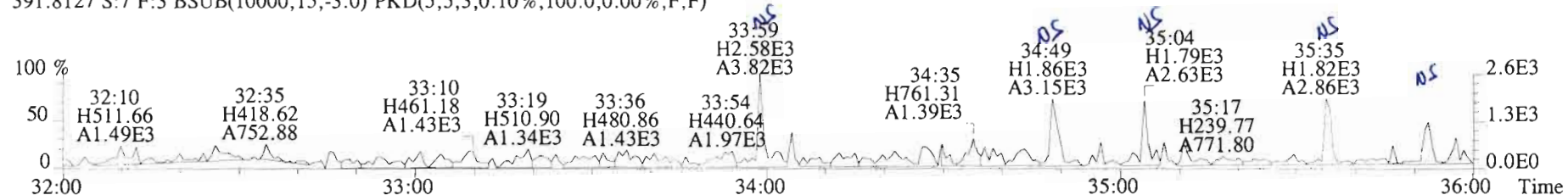
366.9792 S:7 F:2



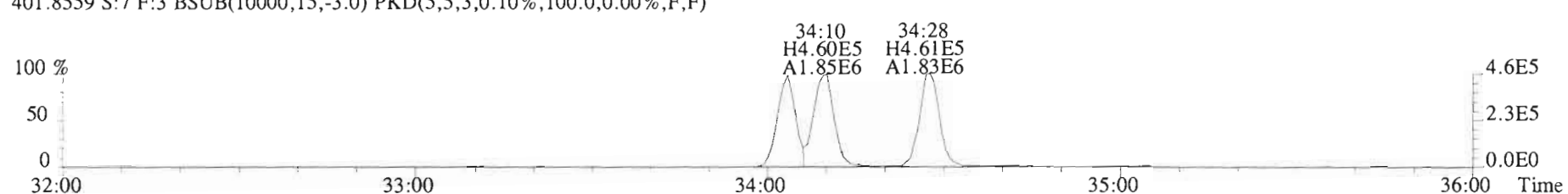
File:191104D1 #1-385 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
 389.8156 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



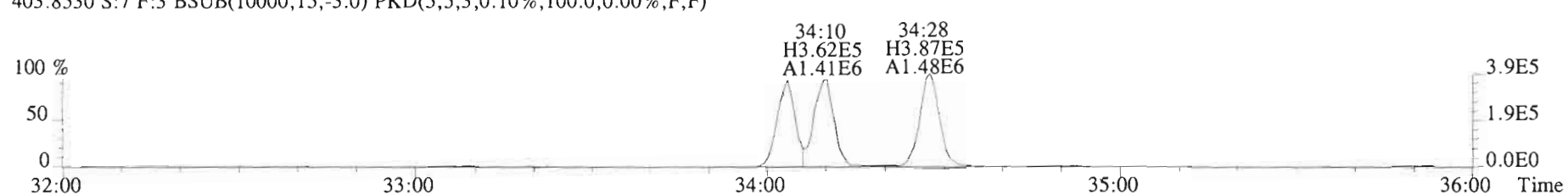
391.8127 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



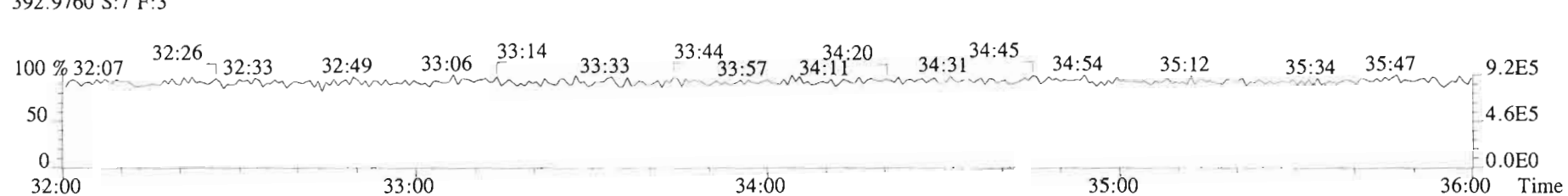
401.8559 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



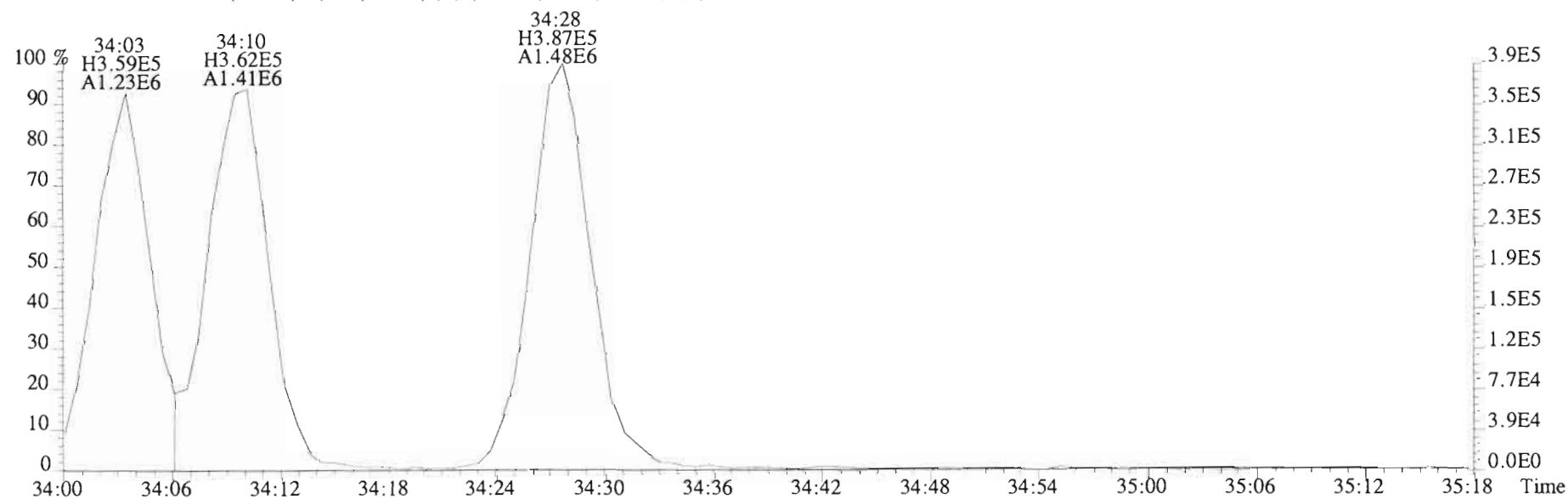
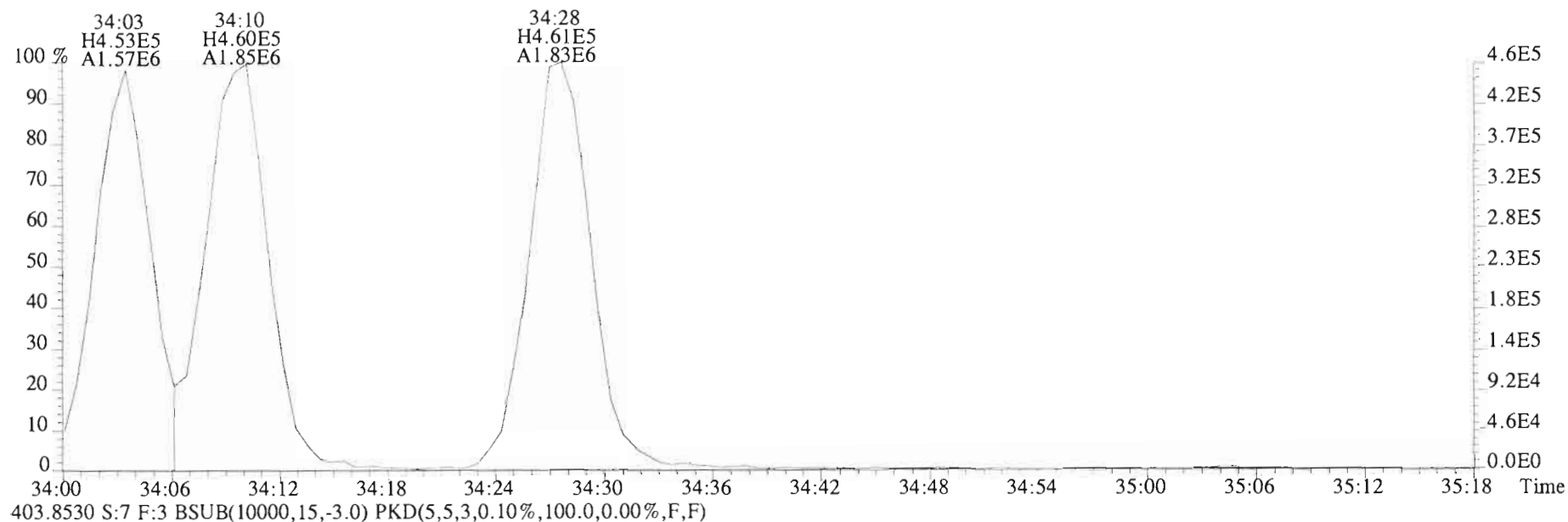
403.8530 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



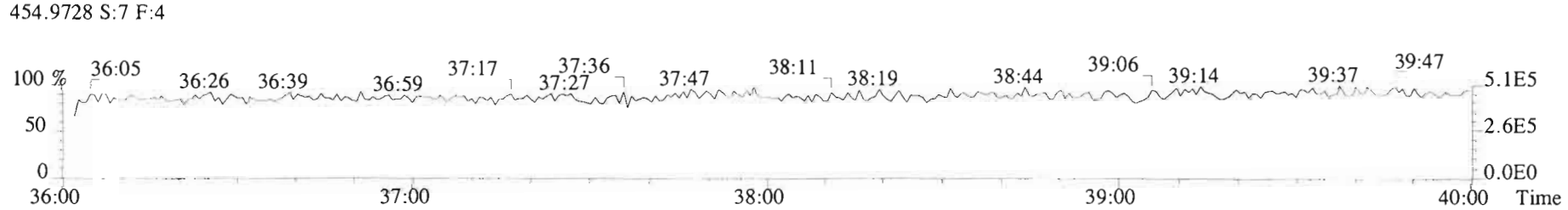
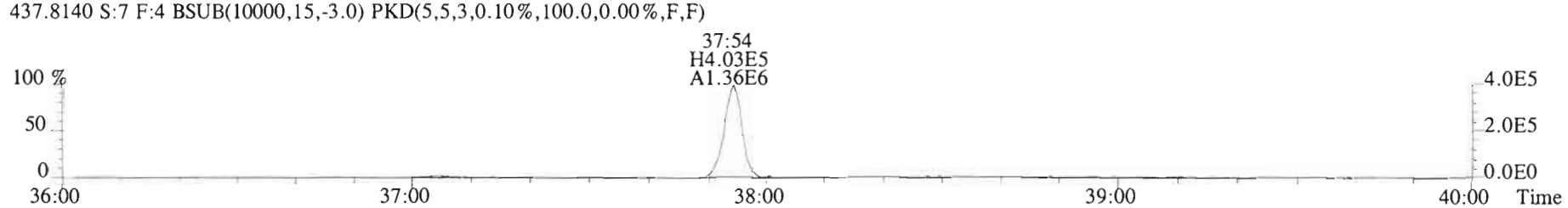
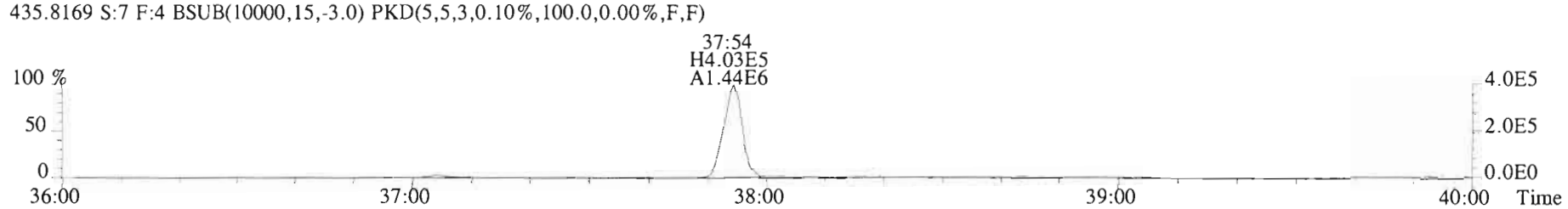
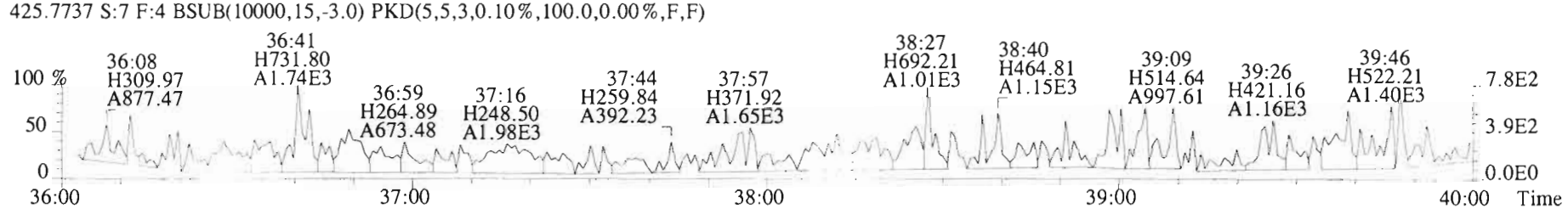
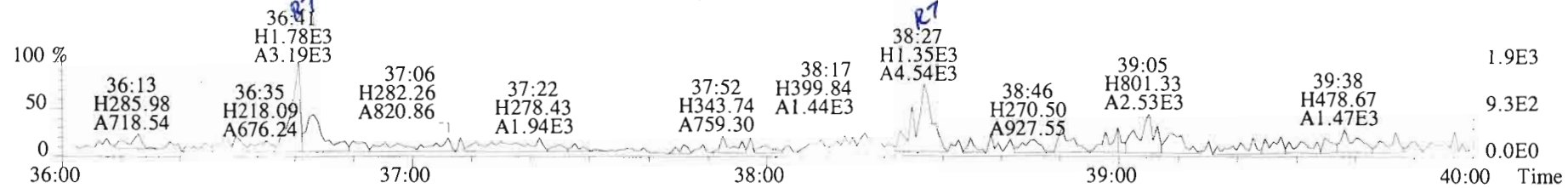
392.9760 S:7 F:3



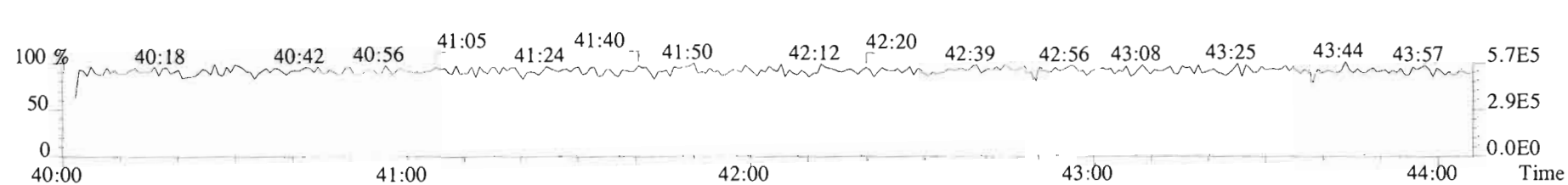
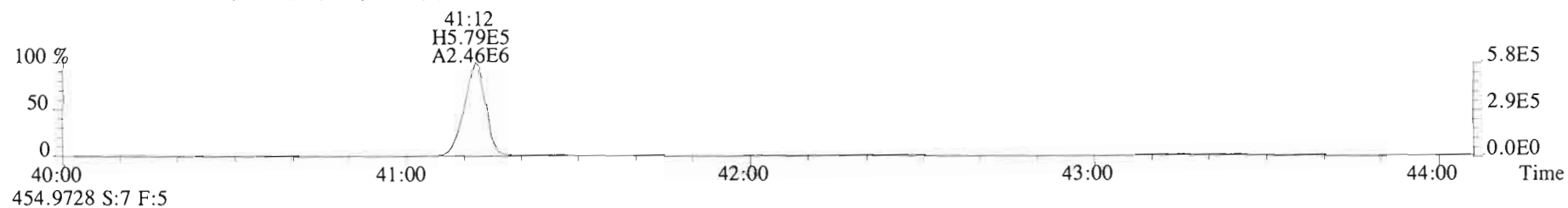
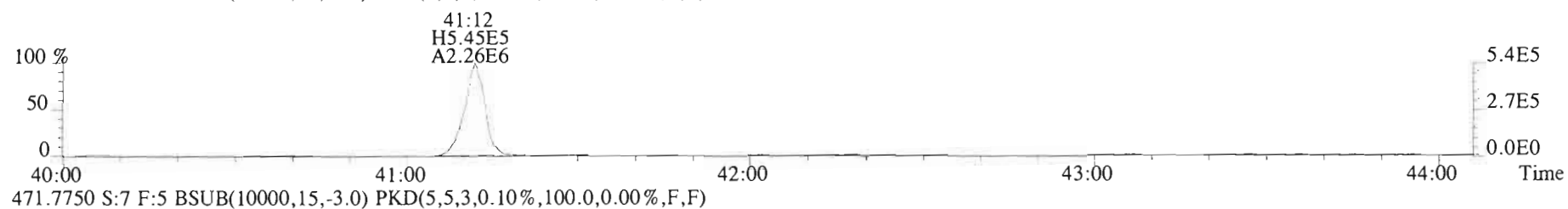
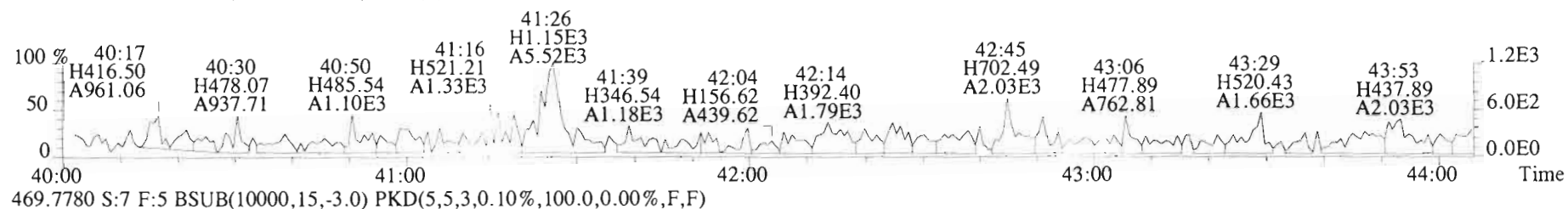
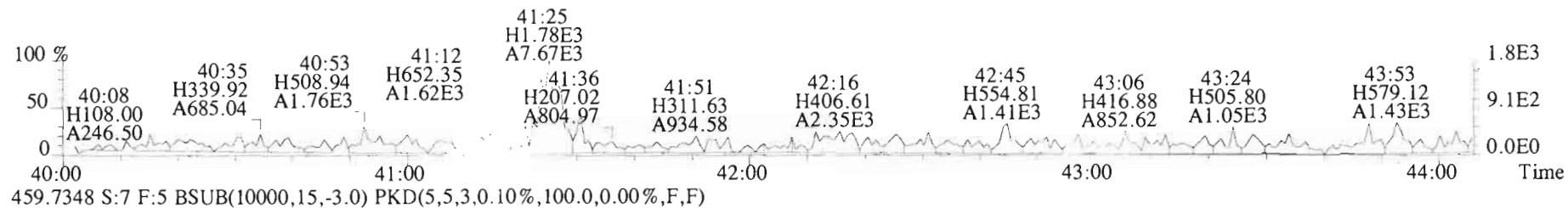
File:191104D1 #1-385 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata Analytical Laboratory VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
401.8559 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



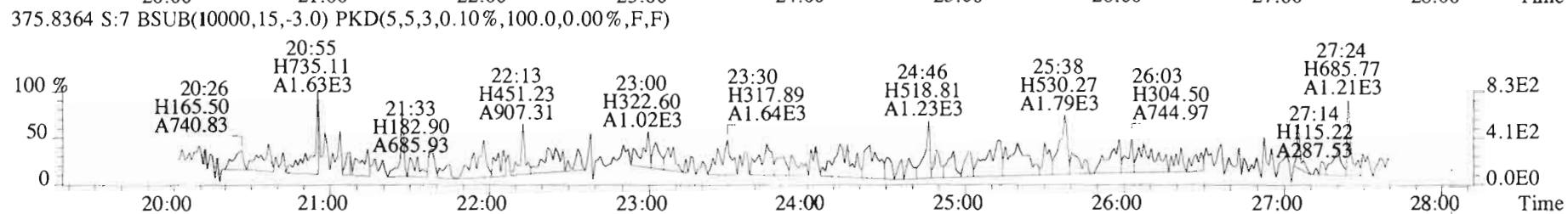
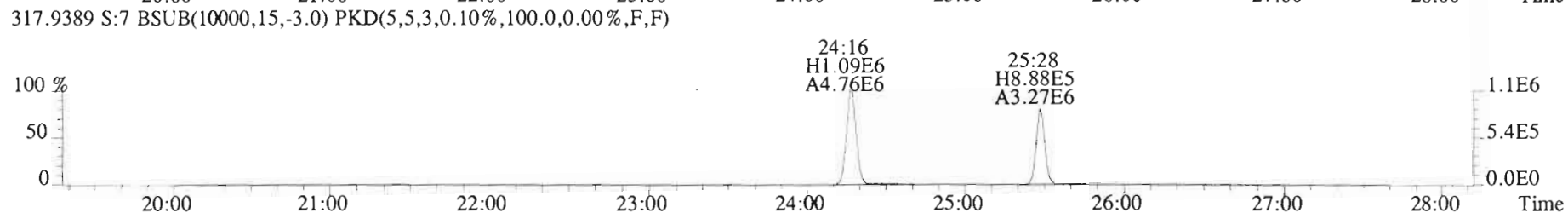
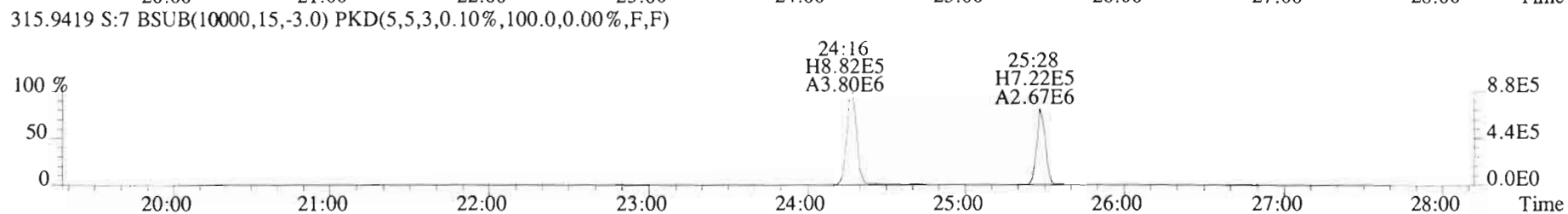
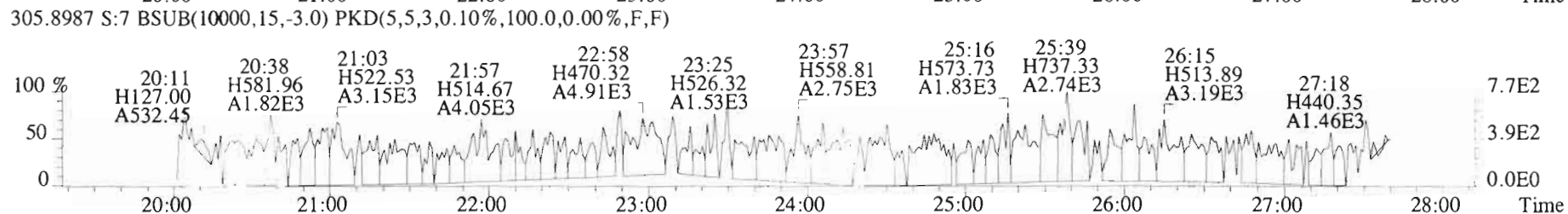
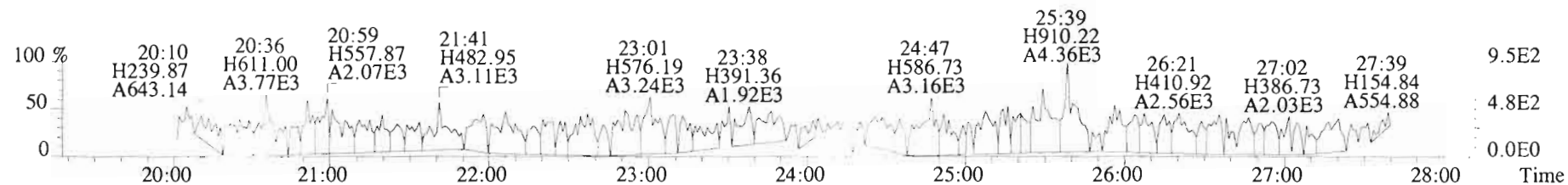
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 423.7767 S:7 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



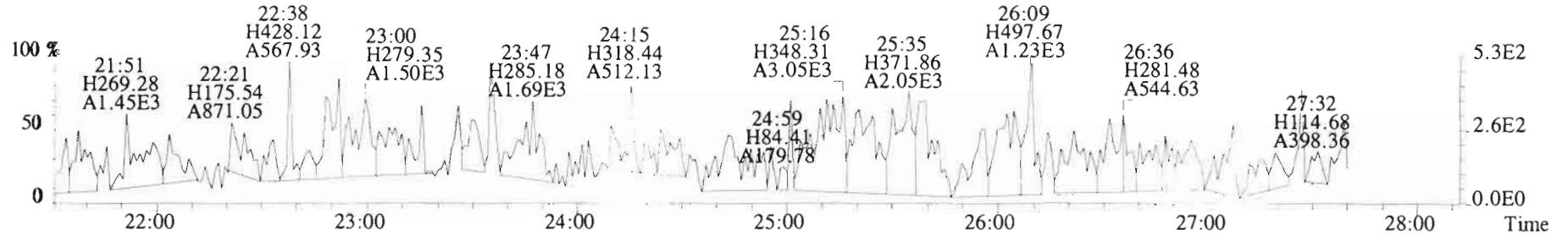
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Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
457.7377 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



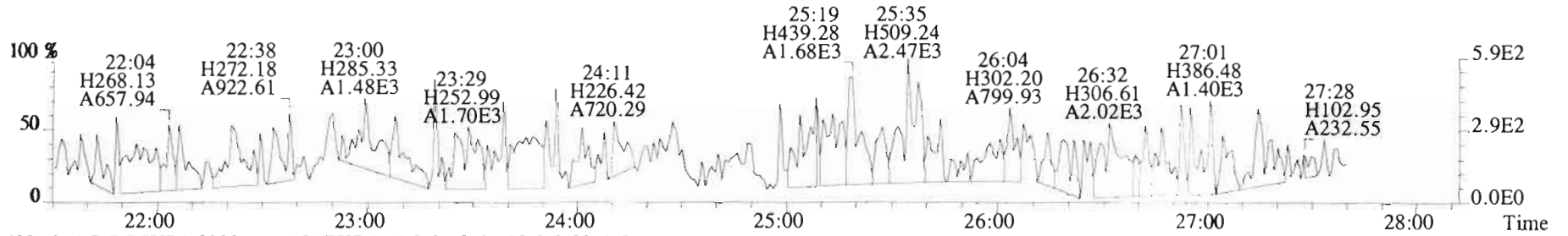
File:191104D1 #1-492 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
 303.9016 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



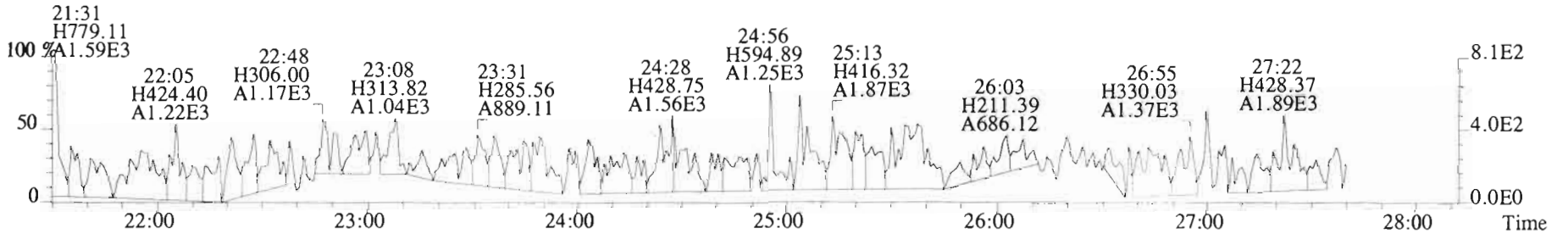
File:191104D1 #1-492 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata Analytical Laboratory VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
339.8597 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



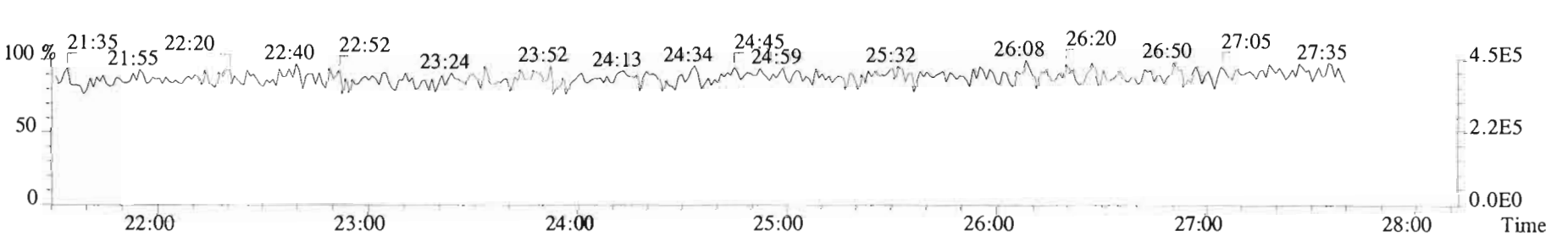
341.8568 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



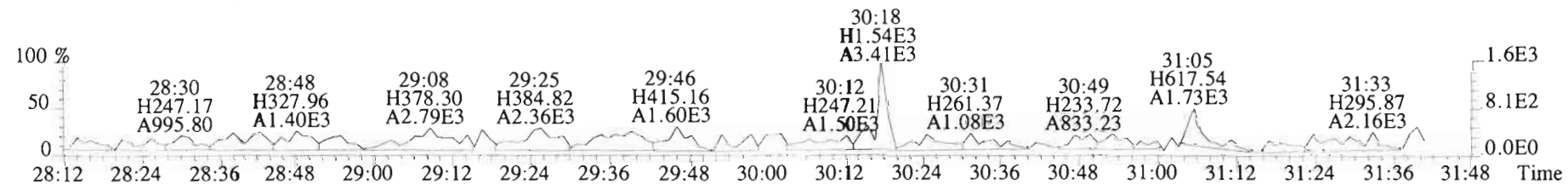
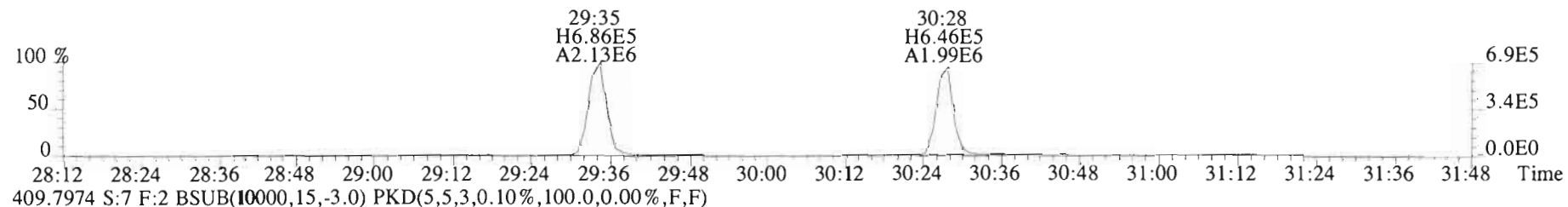
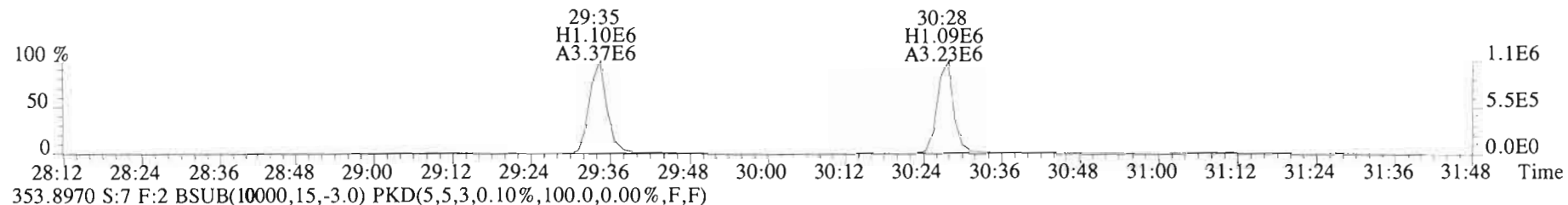
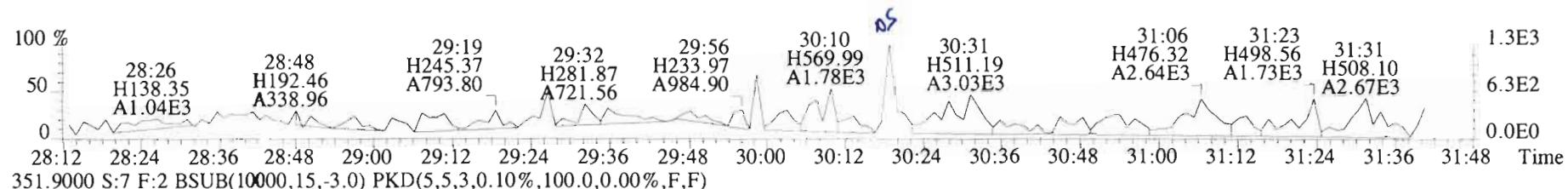
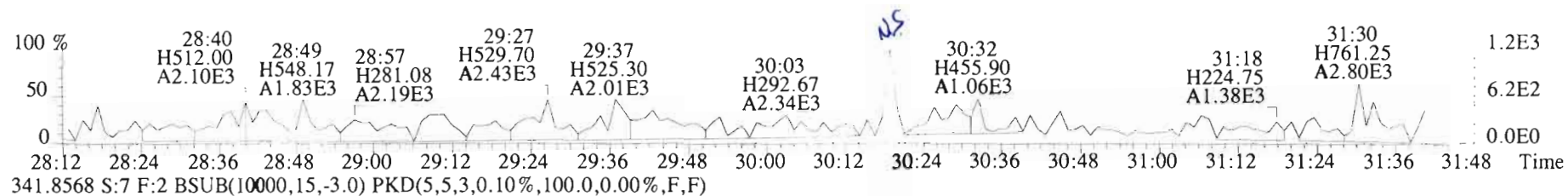
409.7974 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



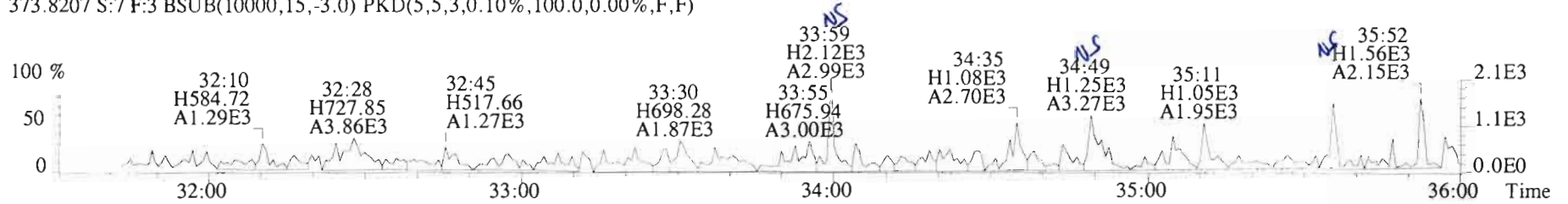
316.9824 S:7



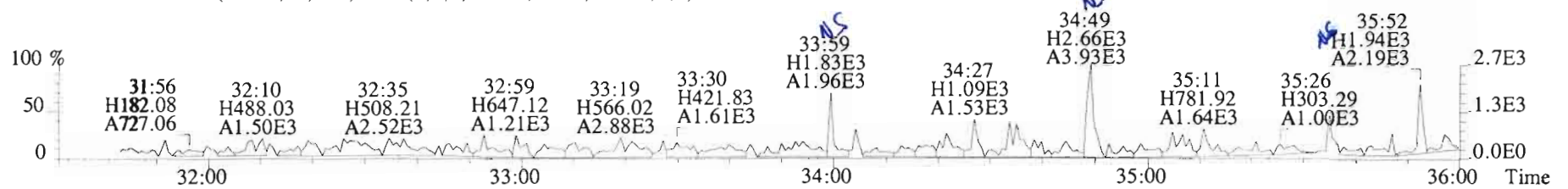
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 339.8597 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



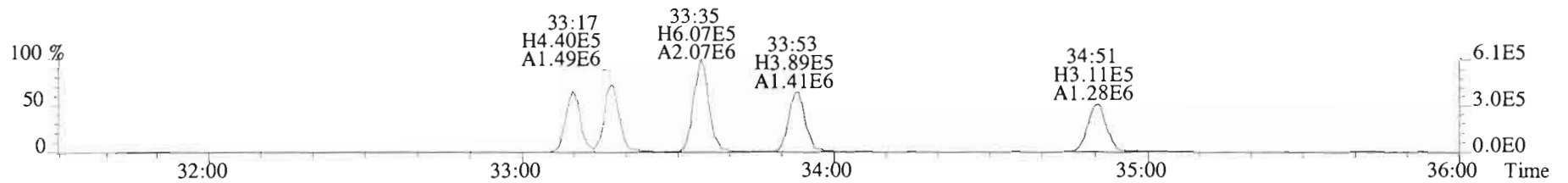
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Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
373.8207 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



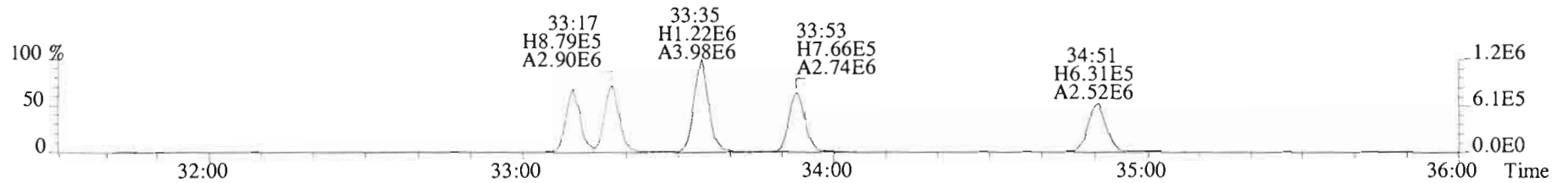
375.8178 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



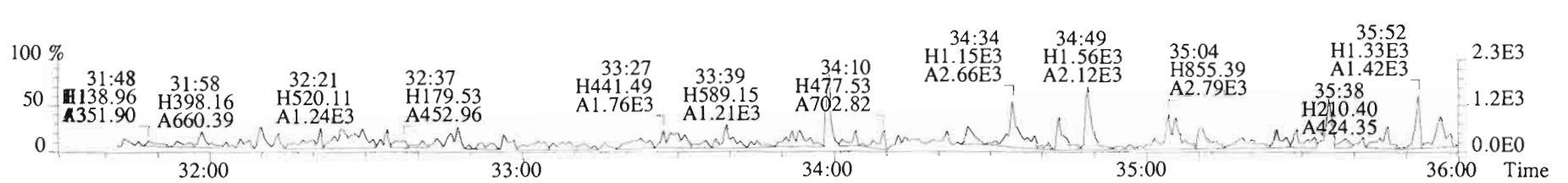
383.8639 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



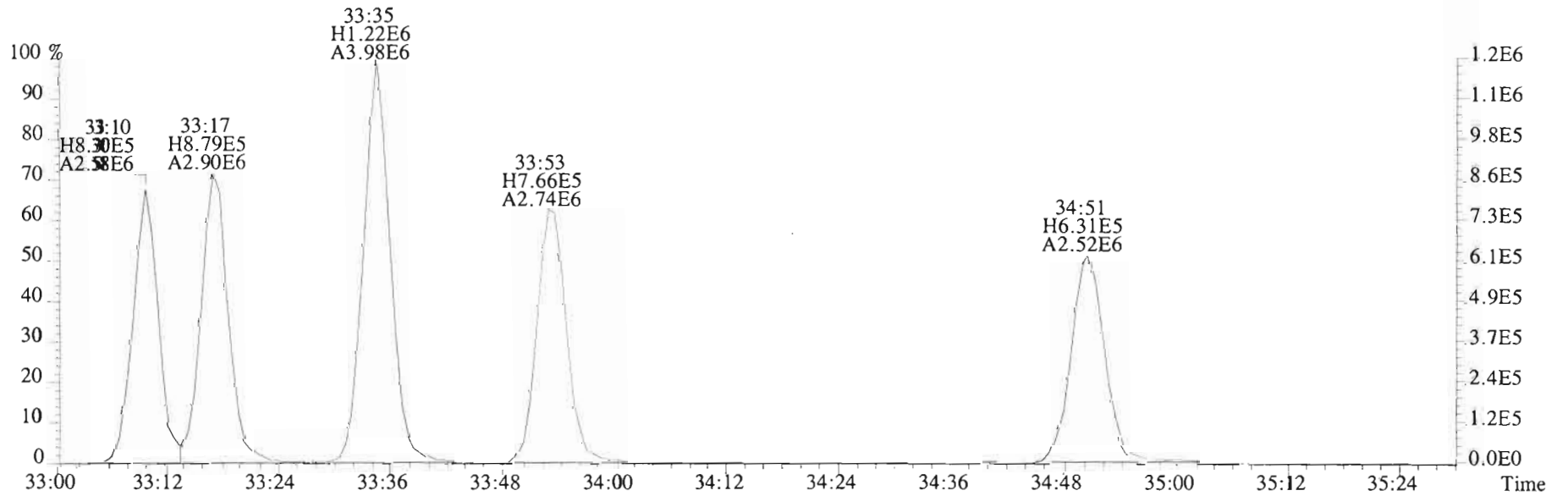
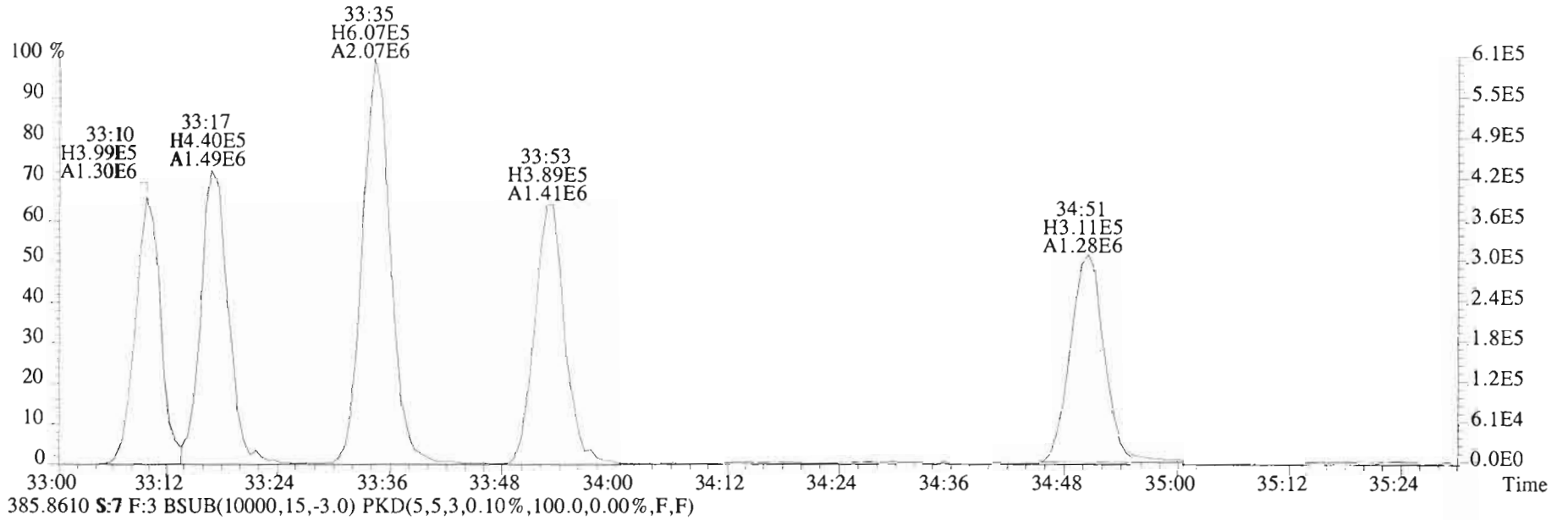
385.8610 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



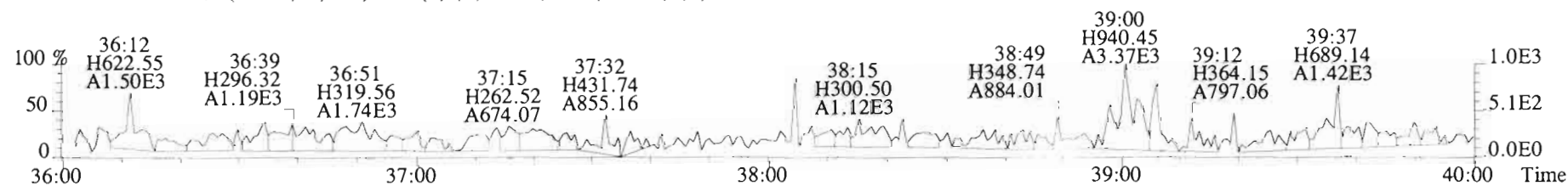
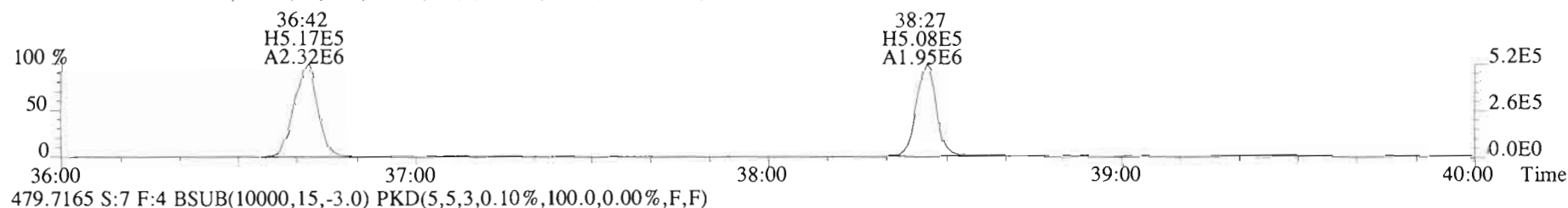
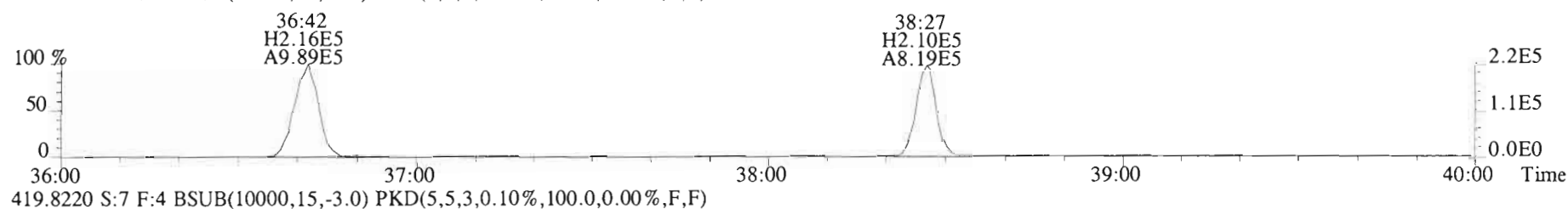
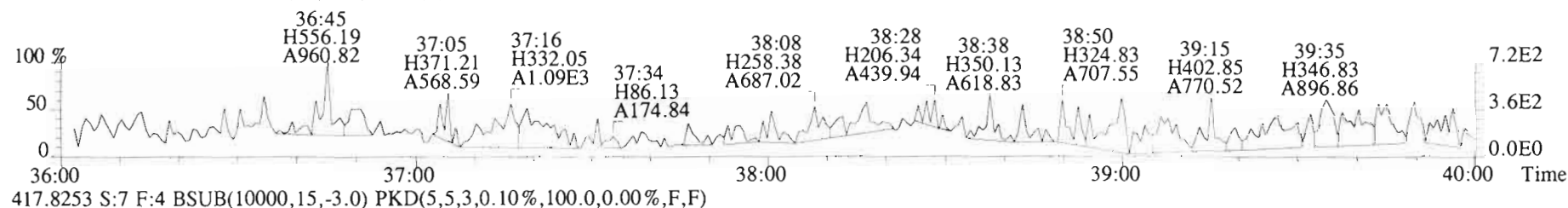
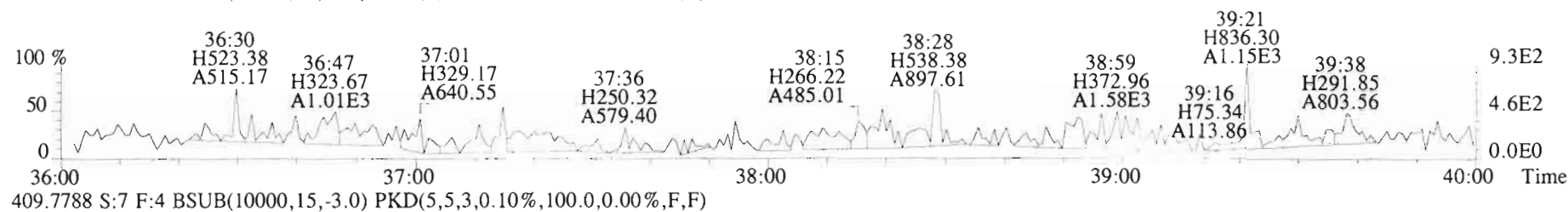
445.7555 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



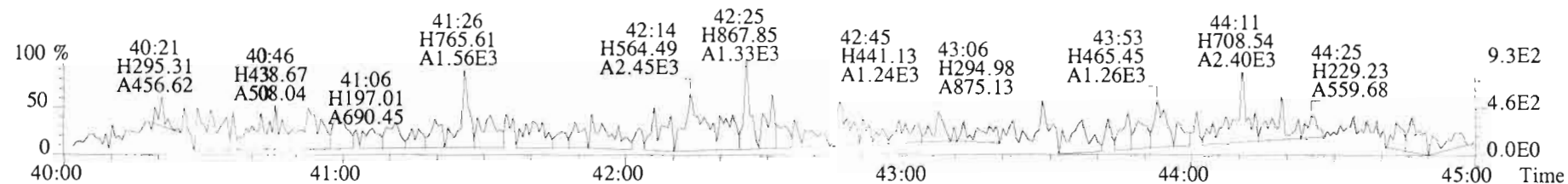
File:191104D1 #1-385 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata Analytical Laboratory VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
383.8639 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



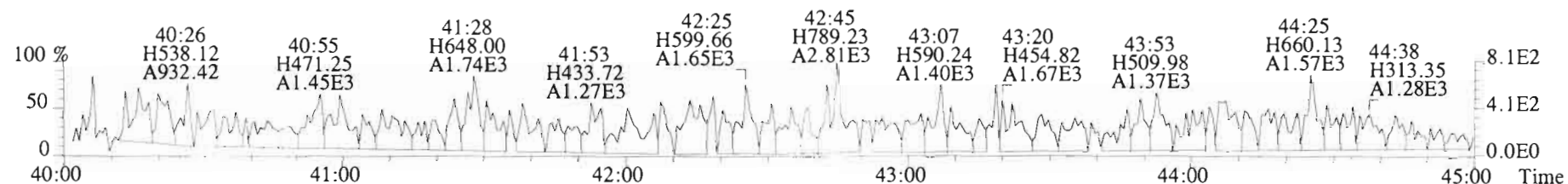
File:191104D1 #1-355 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
 407.7818 S:7 F:4 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



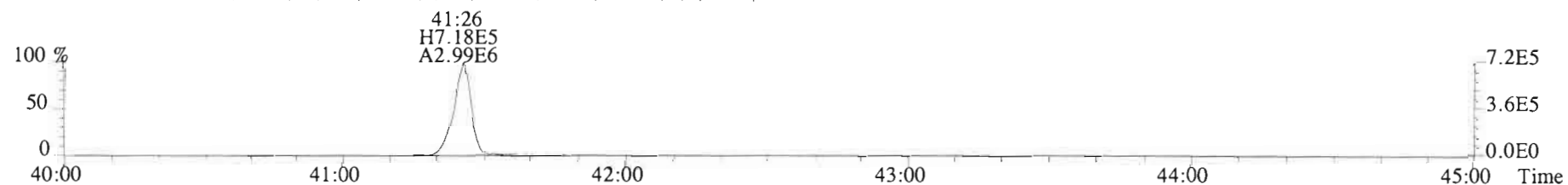
File:191104D1 #1-432 Acq: 4-NOV-2019 17:18:01 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata Analytical Laboratory VG7 Text:B9J0144-BLK1 Method Blank 10 Exp:OCDD_DB5
441.7428 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



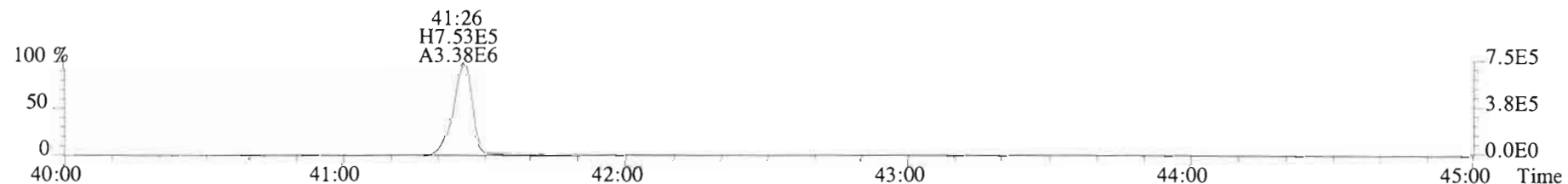
443.7398 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



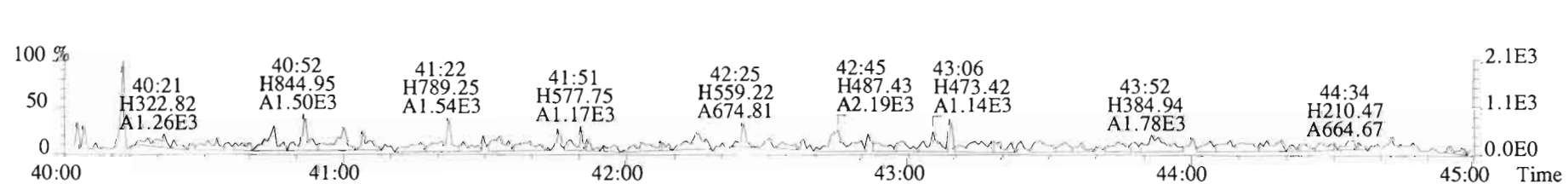
453.7831 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



455.7801 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



441.7428 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

FORM 8A
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B9J0144-BS1
 Contract No.: SAS No.:
 Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 191104D1-4
 Ext. Date: Shift: Day Analysis Date: 4-NOV-19 Time: 14:54:24

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

NATIVE ANALYTES	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (1) (ng/mL)
2,3,7,8-TCDD	10	11.0	6.7 - 15.8 7.3 - 14.6 (2)
1,2,3,7,8-PeCDD	50	55.9	35.0 - 71.0
1,2,3,4,7,8-HxCDD	50	49.6	35.0 - 82.0
1,2,3,6,7,8-HxCDD	50	52.1	38.0 - 67.0
1,2,3,7,8,9-HxCDD	50	50.9	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	50	49.3	35.0 - 70.0
OCDD	100	106	78.0 - 144.0
2,3,7,8-TCDF	10	9.76	7.5 - 15.8 8.0 - 14.7 (2)
1,2,3,7,8-PeCDF	50	49.5	40.0 - 67.0
2,3,4,7,8-PeCDF	50	51.1	34.0 - 80.0
1,2,3,4,7,8-HxCDF	50	51.7	36.0 - 67.0
1,2,3,6,7,8-HxCDF	50	48.3	42.0 - 65.0
2,3,4,6,7,8-HxCDF	50	51.1	35.0 - 78.0
1,2,3,7,8,9-HxCDF	50	50.2	39.0 - 65.0
1,2,3,4,6,7,8-HpCDF	50	51.2	41.0 - 61.0
1,2,3,4,7,8,9-HpCDF	50	50.4	39.0 - 69.0
OCDF	100	97.5	63.0 - 170.0

(1) Contract-required concentration limits for OPR
as specified in Table 6, Method 1613. 10/94

(2) Contract-required concentration limits for OPR
as specified in Table 6a, Method 1613. 10/94

Analyst: DB

Date: 11/5/19

FORM 8B
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B9J0144-BS1

Contract No.: SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 191104D1-4

Ext. Date: Shift: Day Analysis Date: 4-NOV-19 Time: 14:54:24

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

LABELED COMPOUNDS	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (1) (ng/mL)
13C-2,3,7,8-TCDD	100	59.7	20.0 - 175.0 25.0 - 141.0 (2)
13C-1,2,3,7,8-PeCDD	100	60.9	21.0 - 227.0
13C-1,2,3,4,7,8-HxCDD	100	73.6	21.0 - 193.0
13C-1,2,3,6,7,8-HxCDD	100	62.9	25.0 - 163.0
13C-1,2,3,7,8,9-HxCDD	100	69.8	21.0 - 193.0
13C-1,2,3,4,6,7,8-HpCDD	100	75.5	26.0 - 166.0
13C-OCDD	200	139	26.0 - 397.0
13C-2,3,7,8-TCDF	100	56.7	22.0 - 152.0 26.0 - 126.0 (2)
13C-1,2,3,7,8-PeCDF	100	59.3	21.0 - 192.0
13C-2,3,4,7,8-PeCDF	100	63.5	13.0 - 328.0
13C-1,2,3,4,7,8-HxCDF	100	72.0	19.0 - 202.0
13C-1,2,3,6,7,8-HxCDF	100	68.6	21.0 - 159.0
13C-2,3,4,6,7,8-HxCDF	100	68.2	22.0 - 176.0
13C-1,2,3,7,8,9-HxCDF	100	71.5	17.0 - 205.0
13C-1,2,3,4,6,7,8-HpCDF	100	68.0	21.0 - 158.0
13C-1,2,3,4,7,8,9-HpCDF	100	76.6	20.0 - 186.0
13C-OCDF	200	150	26.0 - 397.0
CLEANUP STANDARD			
37Cl-2,3,7,8-TCDD	40	21.7	12.4 - 76.4

(1) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

(2) Contract-required concentration limits for OPR as specified in Table 6a, Method 1613. 10/94

Analyst: DB

Date: 11/5/19

Client ID: QPR
Lab ID: B9J0144-ES1

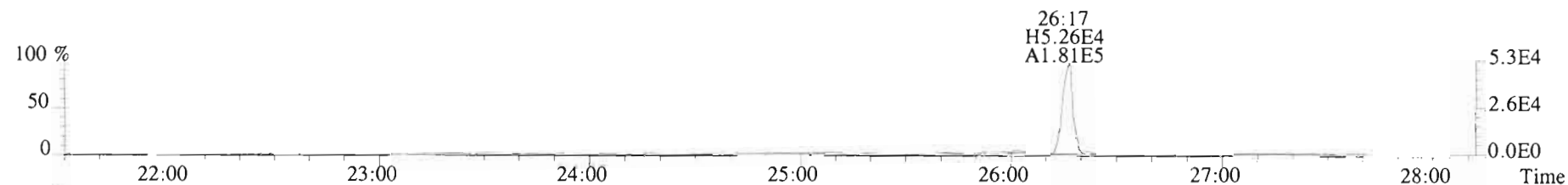
Filename: 191104D1 S:4 Acq: 4-NOV-19 14:54:24
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191104D1-1
EndCAL: NA

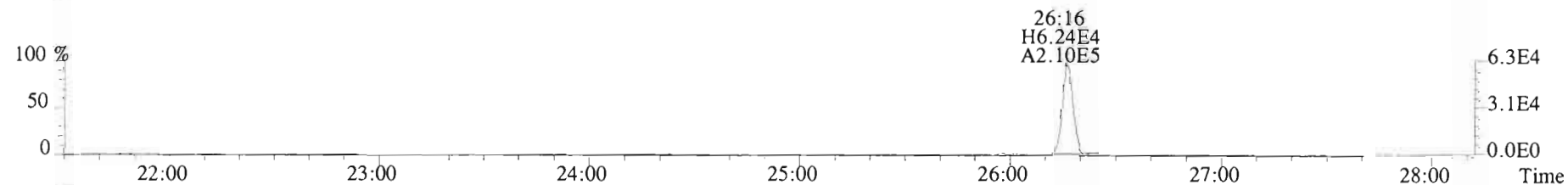
Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	3.91e+05	0.86 y	0.91	26:16	10.990			* 2.5	*	Total Tetra-Dioxins	12.2	14.5		*	*
1,2,3,7,8-PeCDD	1.63e+06	0.63 y	0.90	30:45	55.915			* 2.5	*	Total Penta-Dioxins	55.9	56.6		*	*
1,2,3,4,7,8-HxCDD	1.70e+06	1.23 y	1.10	34:04	49.596			* 2.5	*	Total Hexa-Dioxins	153	154		*	*
1,2,3,6,7,8-HxCDD	1.73e+06	1.25 y	0.94	34:10	52.144			* 2.5	*	Total Hepta-Dioxins	50.4	52.2		*	*
1,2,3,7,8,9-HxCDD	1.81e+06	1.22 y	0.96	34:28	50.872			* 2.5	*	Total Tetra-Furans	10.5	13.4		*	*
1,2,3,4,6,7,8-HpCDD	1.57e+06	1.04 y	0.98	37:55	49.262			* 2.5	*	Total Penta-Furans	101.50	103.72		*	*
OCDD	2.69e+06	0.87 y	0.96	41:13	106.12			* 2.5	*	Total Hexa-Furans	202	203		*	*
2,3,7,8-TCDF	5.23e+05	0.75 y	0.95	25:30	9.7598			* 2.5	*	Total Hepta-Furans	102	103		*	*
1,2,3,7,8-PeCDF	2.31e+06	1.77 y	0.96	29:35	49.455			* 2.5	*						
2,3,4,7,8-PeCDF	2.68e+06	1.65 y	1.01	30:28	51.103			* 2.5	*						
1,2,3,4,7,8-HxCDF	2.39e+06	1.22 y	1.18	33:10	51.721			* 2.5	*						
1,2,3,6,7,8-HxCDF	2.41e+06	1.23 y	1.07	33:18	48.321			* 2.5	*						
2,3,4,6,7,8-HxCDF	2.43e+06	1.22 y	1.11	33:54	51.149			* 2.5	*						
1,2,3,7,8,9-HxCDF	2.07e+06	1.19 y	1.06	34:51	50.208			* 2.5	*						
1,2,3,4,6,7,8-HpCDF	1.95e+06	0.99 y	1.13	36:42	51.186			* 2.5	*						
1,2,3,4,7,8,9-HpCDF	1.89e+06	1.03 y	1.28	38:28	50.376			* 2.5	*						
OCDF	3.15e+06	0.87 y	0.95	41:26	97.536			* 2.5	*						
IS	13C-2,3,7,8-TCDD	3.93e+06	0.78 y	1.10	26:15	59.710				Rec	Qual				
IS	13C-1,2,3,7,8-PeCDD	3.22e+06	0.63 y	0.88	30:44	60.922				59.7					
IS	13C-1,2,3,4,7,8-HxCDD	3.11e+06	1.28 y	0.64	34:03	73.592				60.9					
IS	13C-1,2,3,6,7,8-HxCDD	3.54e+06	1.29 y	0.86	34:09	62.918				73.6					
IS	13C-1,2,3,7,8,9-HxCDD	3.70e+06	1.26 y	0.81	34:27	69.768				62.9					
IS	13C-1,2,3,4,6,7,8-HpCDD	3.24e+06	1.07 y	0.65	37:54	75.475				69.8					
IS	13C-OCDD	5.30e+06	0.87 y	0.58	41:12	139.06				75.5					
IS	13C-2,3,7,8-TCDF	5.63e+06	0.79 y	1.03	25:28	56.732				69.5					
IS	13C-1,2,3,7,8-PeCDF	4.86e+06	1.56 y	0.85	29:34	59.312				56.7					
IS	13C-2,3,4,7,8-PeCDF	5.16e+06	1.61 y	0.85	30:27	63.474				59.3					
IS	13C-1,2,3,4,7,8-HxCDF	3.93e+06	0.51 y	0.83	33:09	71.965				63.5					
IS	13C-1,2,3,6,7,8-HxCDF	4.66e+06	0.53 y	1.03	33:17	68.580				72.0					
IS	13C-2,3,4,6,7,8-HxCDF	4.27e+06	0.51 y	0.95	33:53	68.186				68.6					
IS	13C-1,2,3,7,8,9-HxCDF	3.89e+06	0.51 y	0.83	34:50	71.457				68.2					
IS	13C-1,2,3,4,6,7,8-HpCDF	3.38e+06	0.42 y	0.76	36:41	67.987				71.5					
IS	13C-1,2,3,4,7,8,9-HpCDF	2.93e+06	0.43 y	0.58	38:27	76.583				68.0					
IS	13C-OCDF	6.81e+06	0.89 y	0.69	41:26	150.36				76.6					
C/Up	37C1-2,3,7,8-TCDD	1.56e+06		1.20	26:16	21.695				54.2					
RS/RT	13C-1,2,3,4-TCDD	6.00e+06	0.81 y	1.00	25:41	100.00									
RS	13C-1,2,3,4-TCDD	9.60e+06	0.81 y	1.00	24:16	100.00									
RS/RT	13C-1,2,3,4,6,9-HxCDF	6.57e+06	0.51 y	1.00	33:34	100.00									

Integrations
by DB
Analyst: DB
Date: 11/5/19
Reviewed
by CT
Analyst: CT
Date: 11/15/19

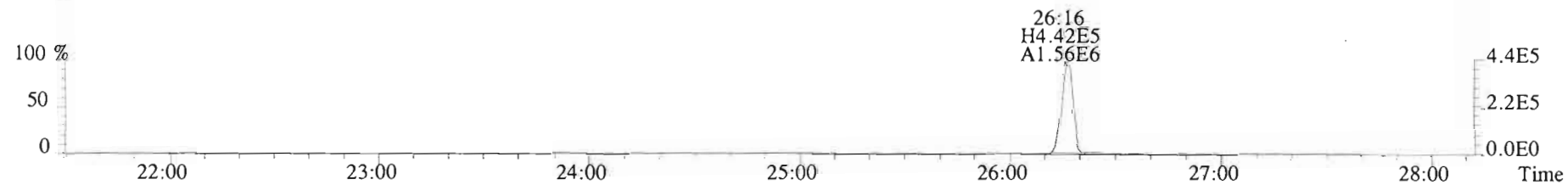
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Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:OCDD_DB5
319.8965 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



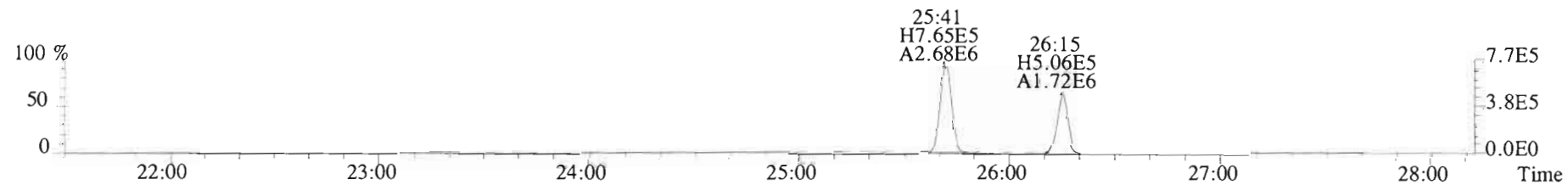
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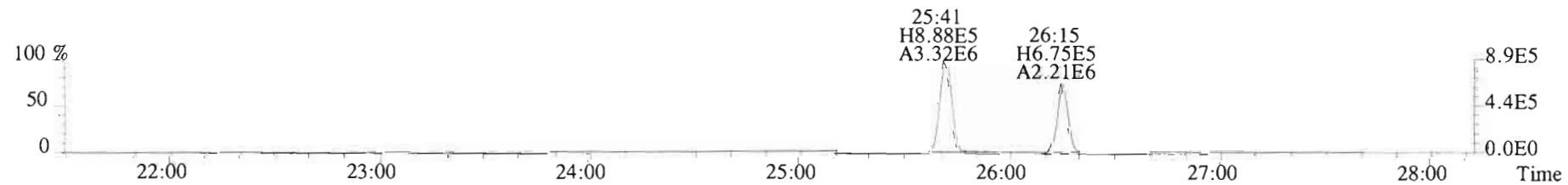
327.8847 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



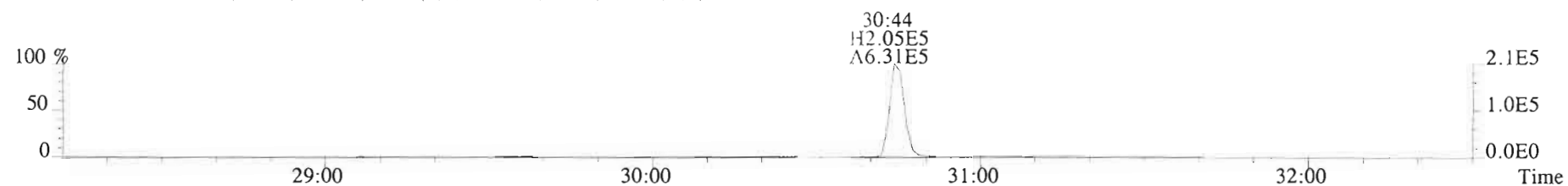
331.9368 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



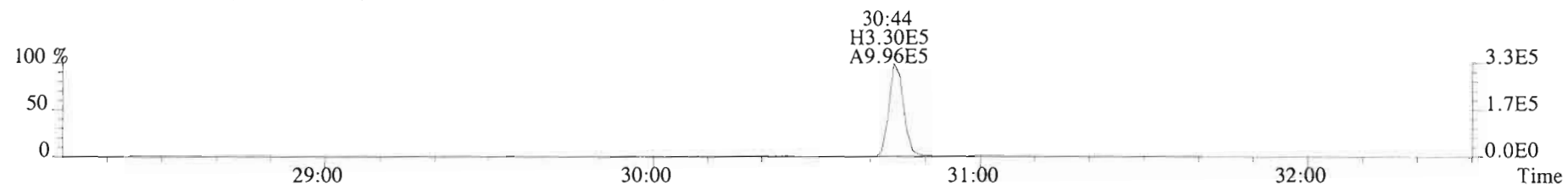
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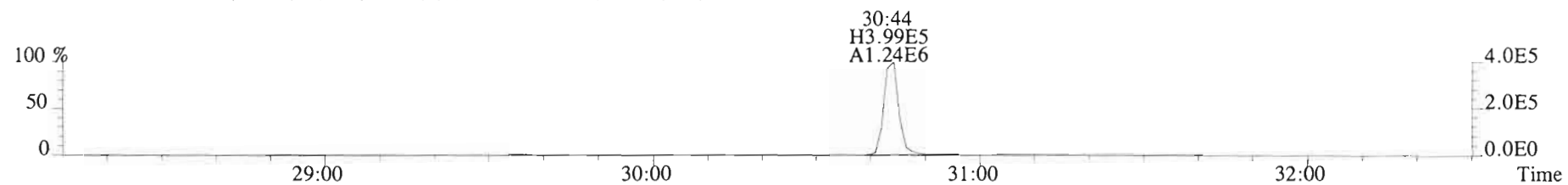
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Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:OCDD_DB5
353.8576 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



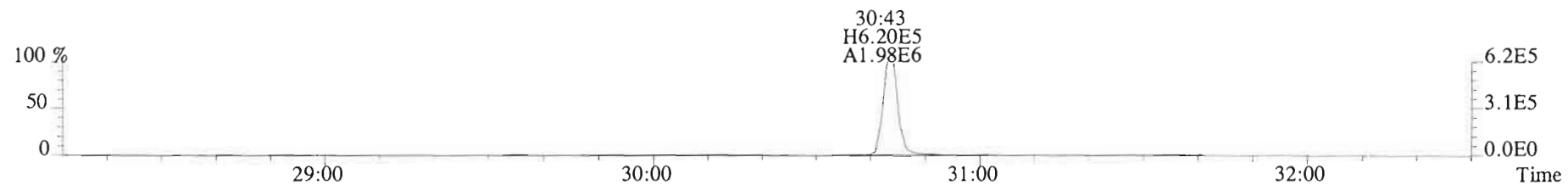
355.8546 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



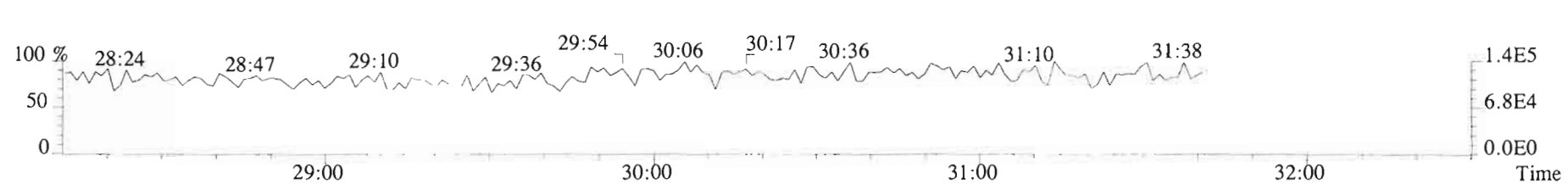
365.8978 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



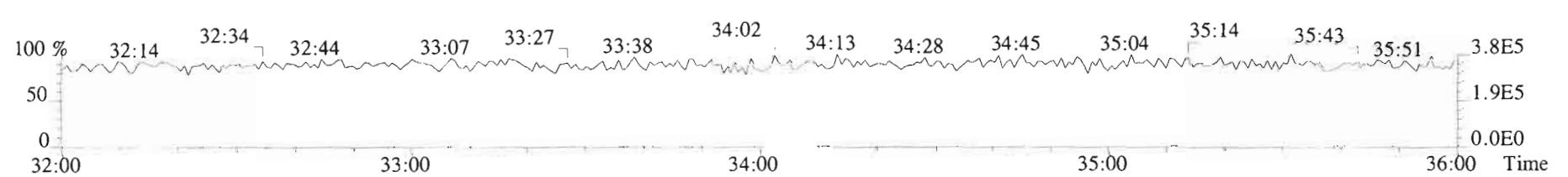
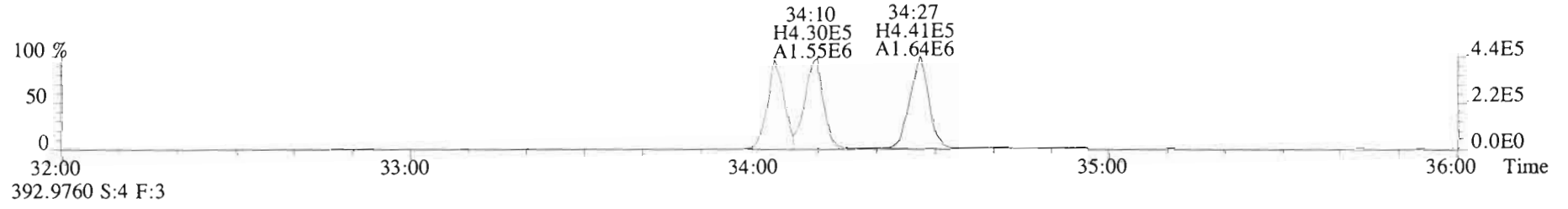
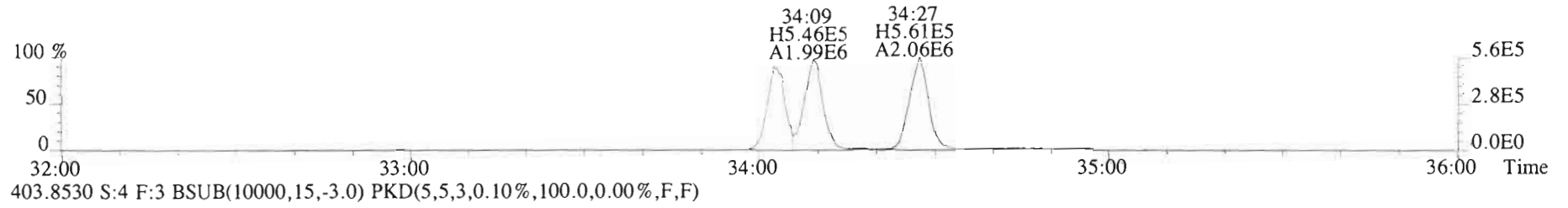
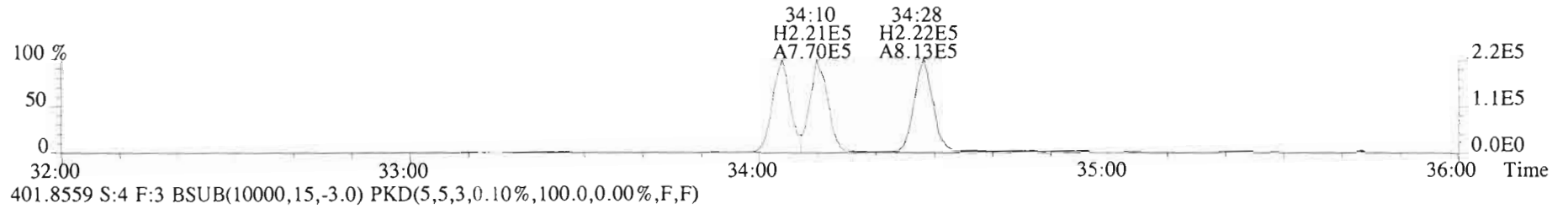
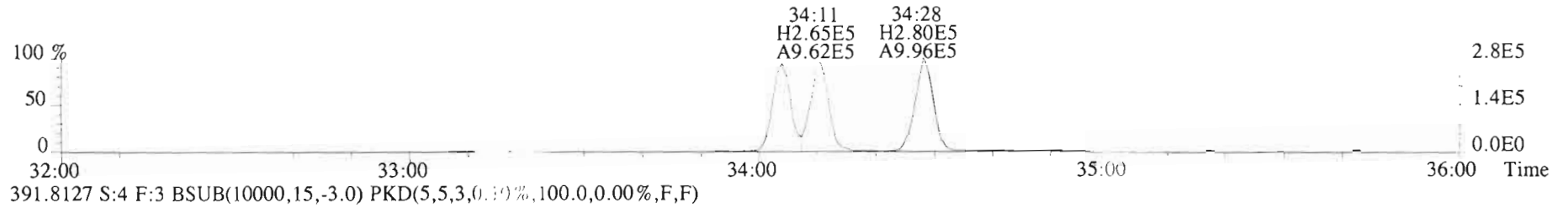
367.8949 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



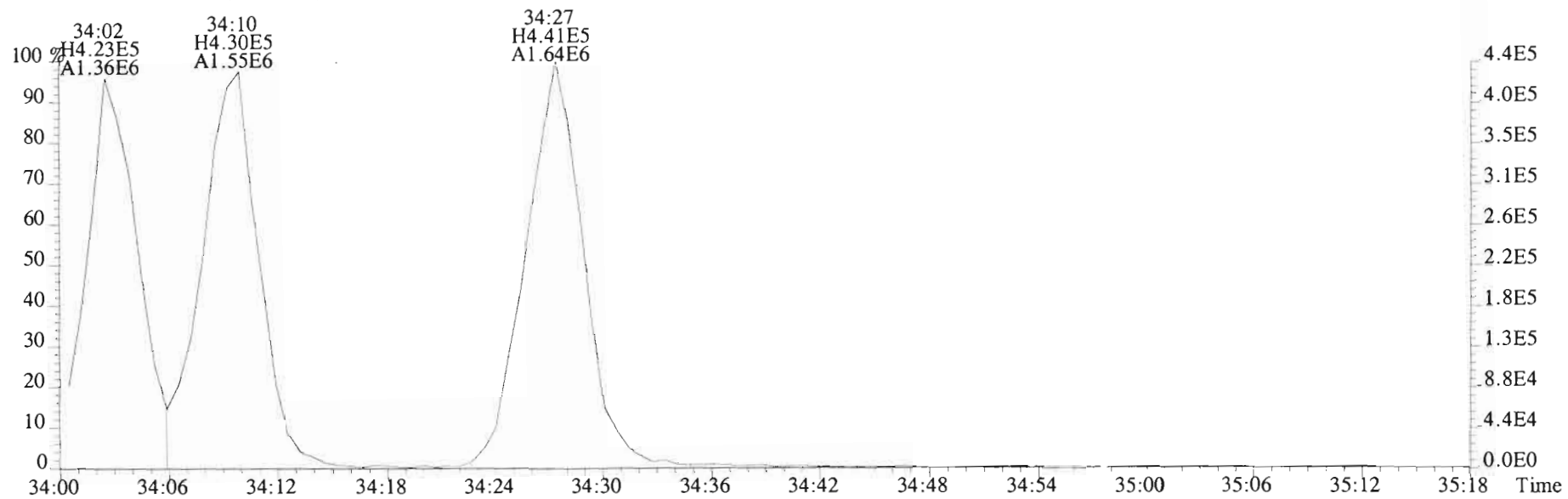
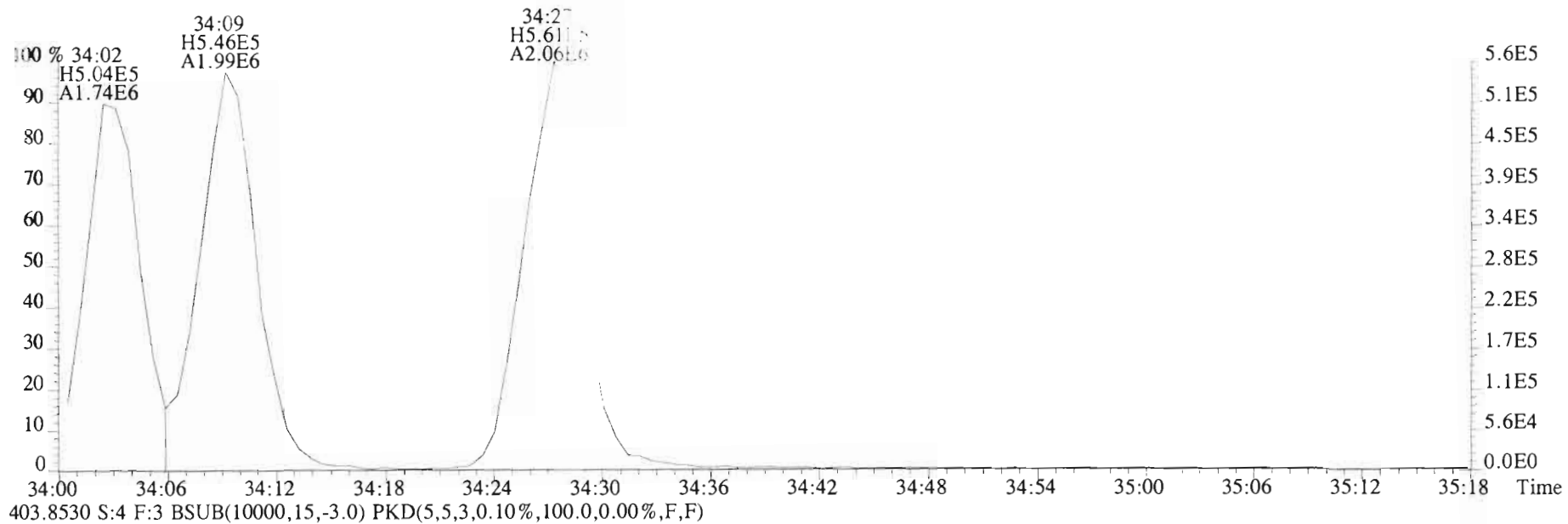
366.9792 S:4 F:2



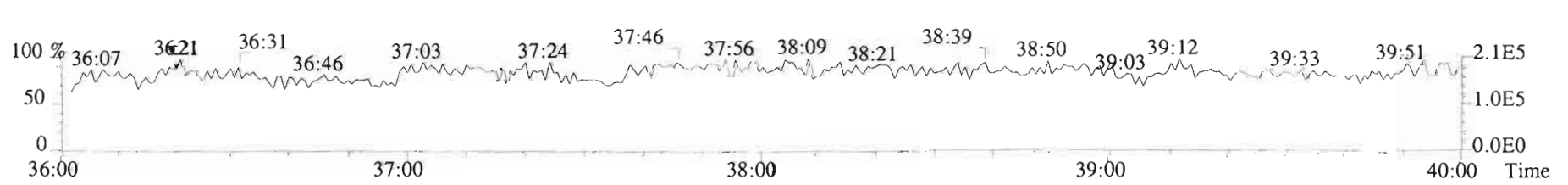
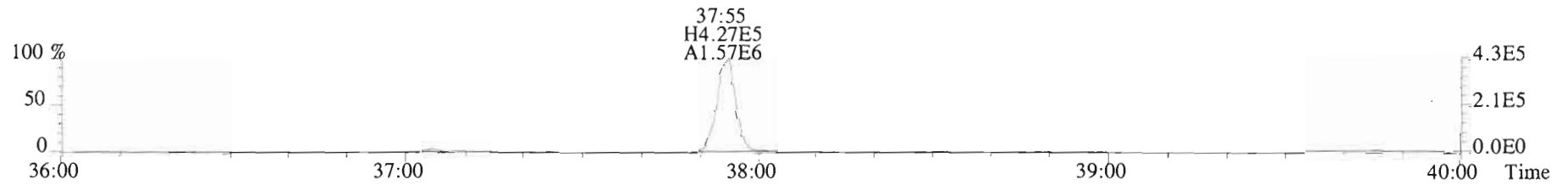
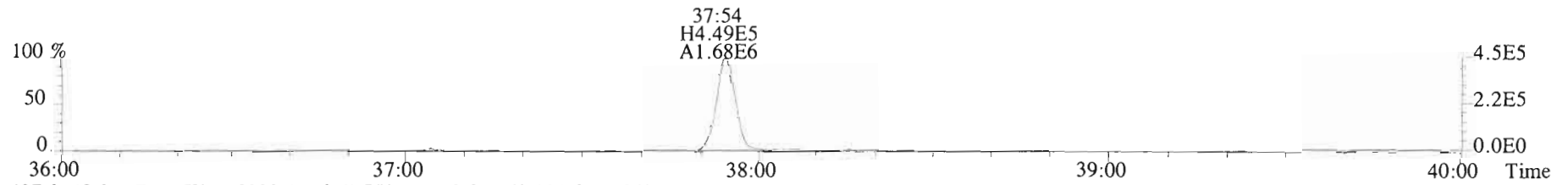
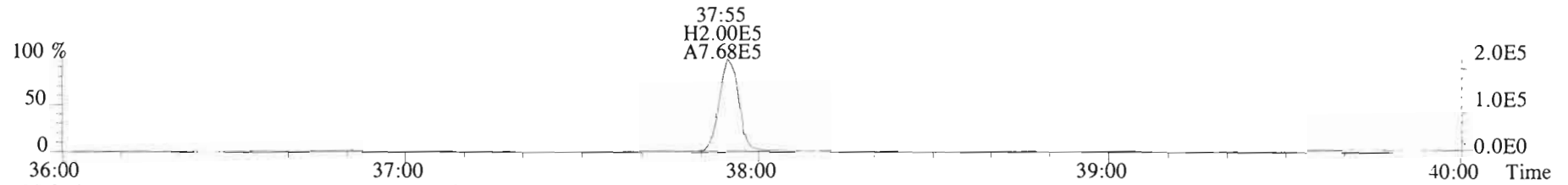
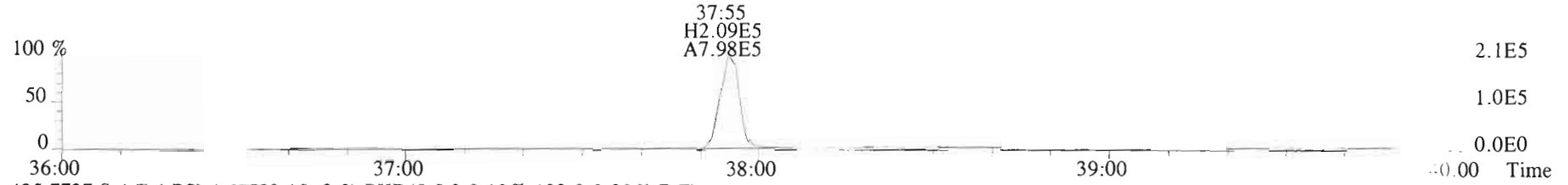
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Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:OCDD_DB5
389.8156 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



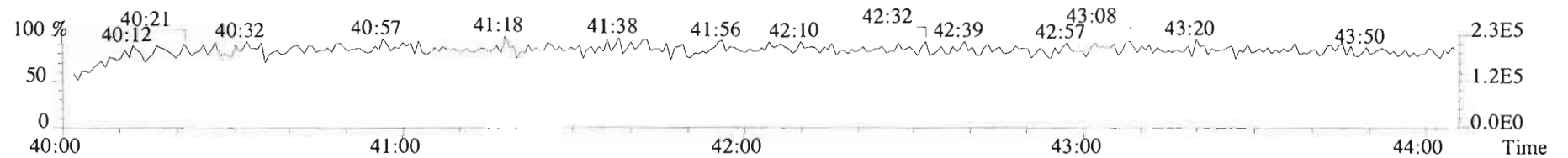
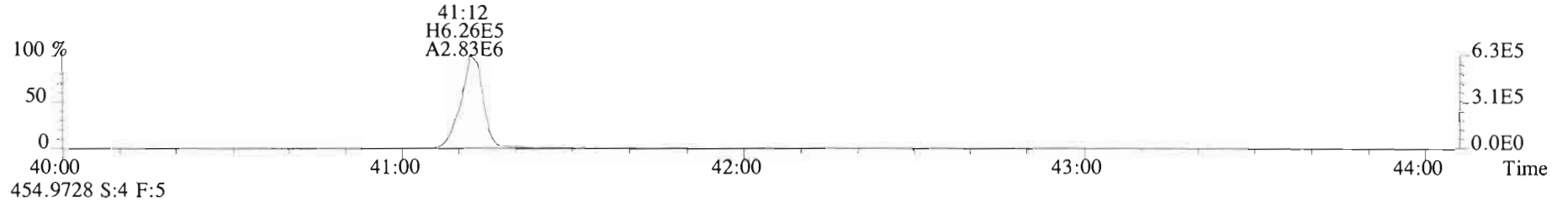
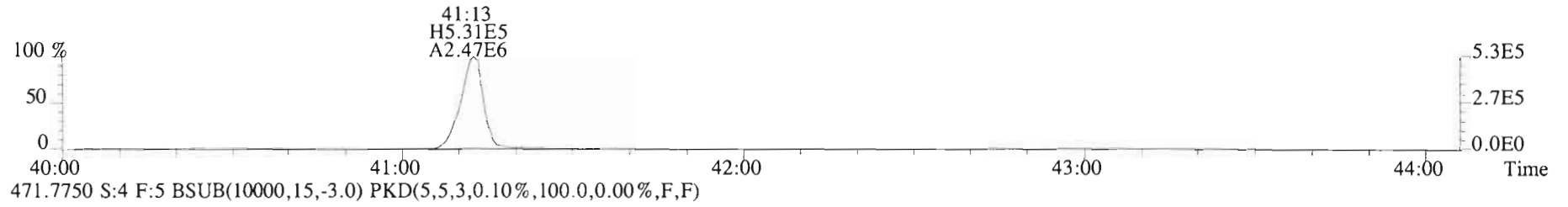
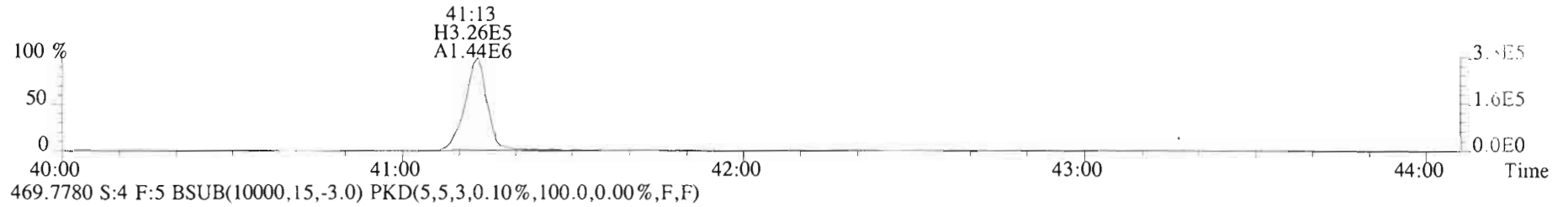
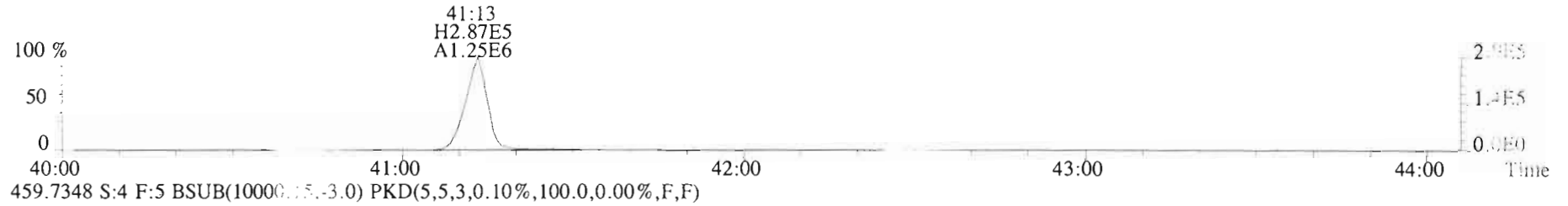
File:191104D1 #1-384 Acq: 4-NOV-2019 14:54:24 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata Analytical Laboratory_VG7 Text:000144-BS1 OPR 10 Exp:OCDD_DB5
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



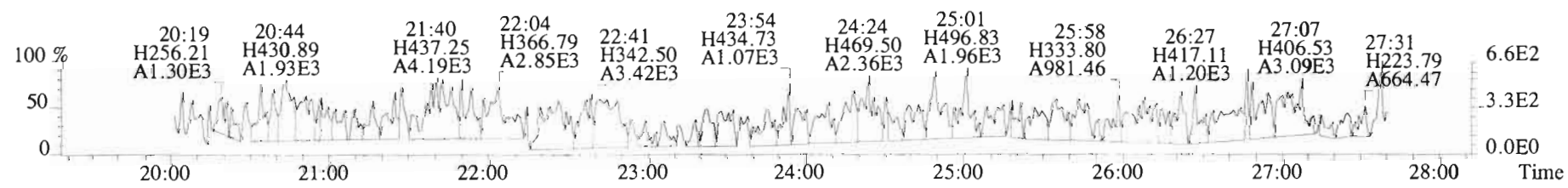
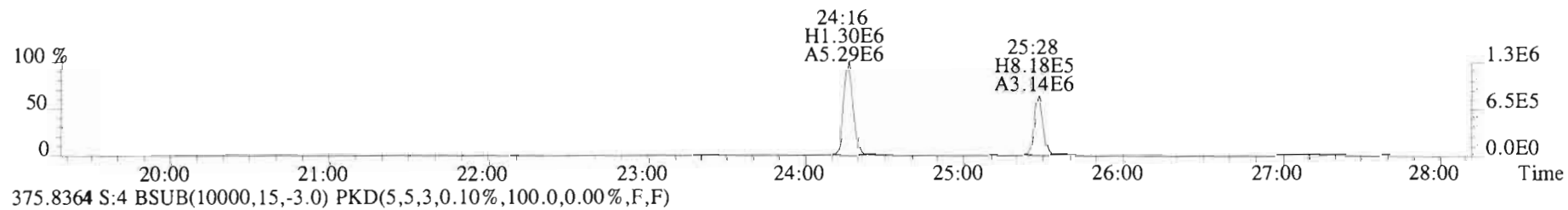
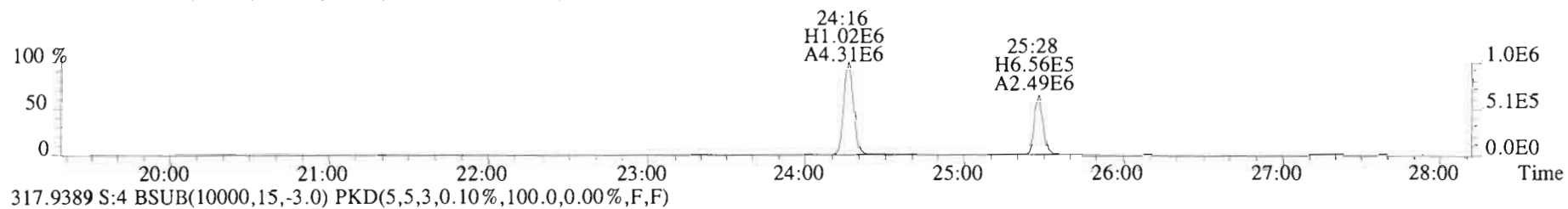
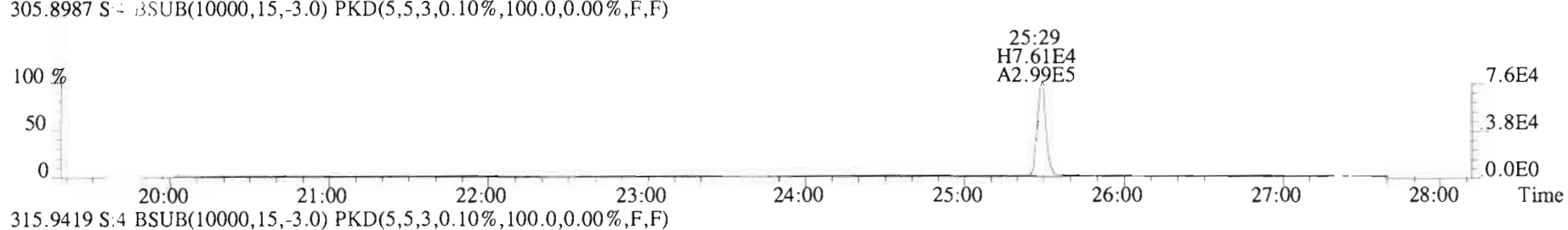
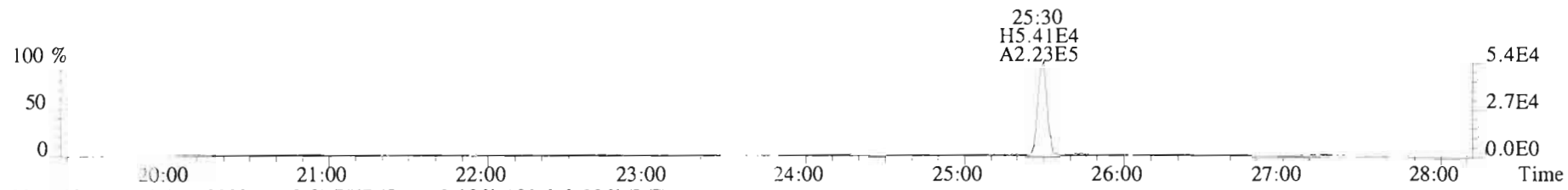
File:191104D1 #1-356 Nov 4-NOV-2019 14:54:24 GC EI+ Voltage SIR Autospec-Ultim...
Sample#4 File Text:V... Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:(...)_DB5
423.7767 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



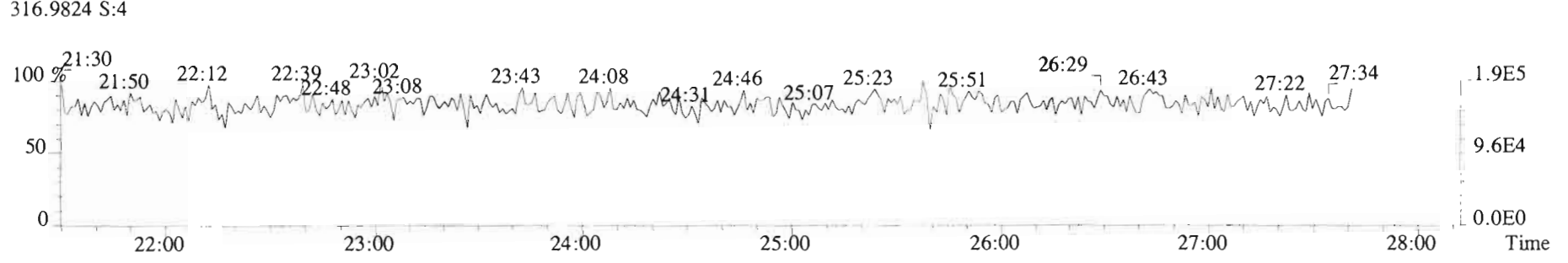
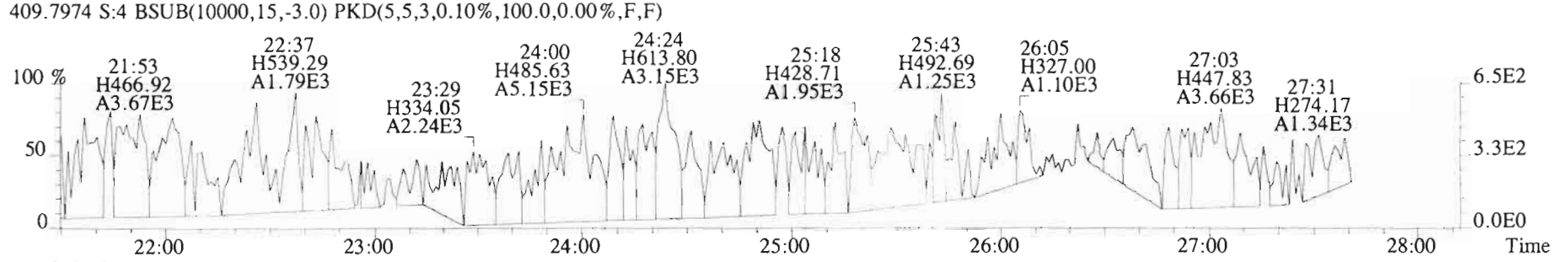
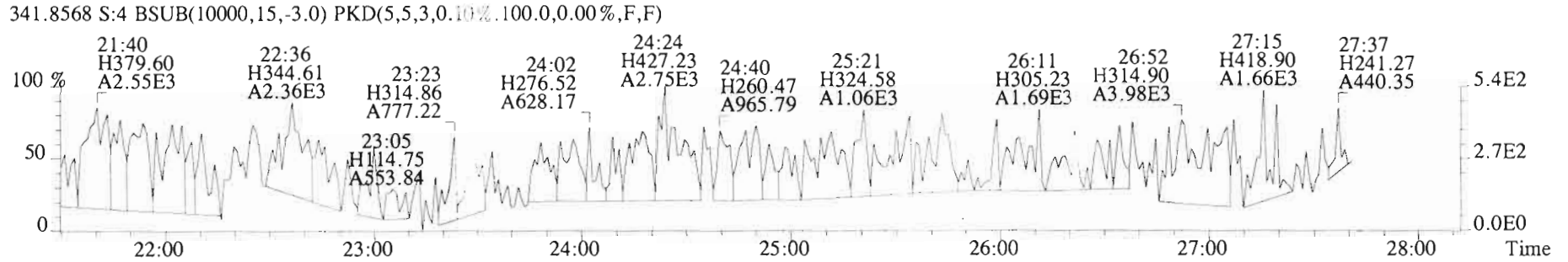
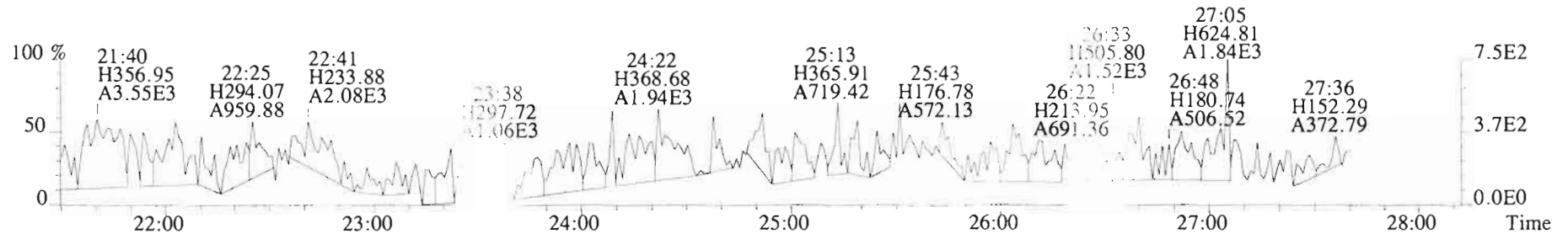
File:191104D1 #1-432 Acq: 4-NOV-2019 14:54:24 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:OCDD_Dis
457.7377 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



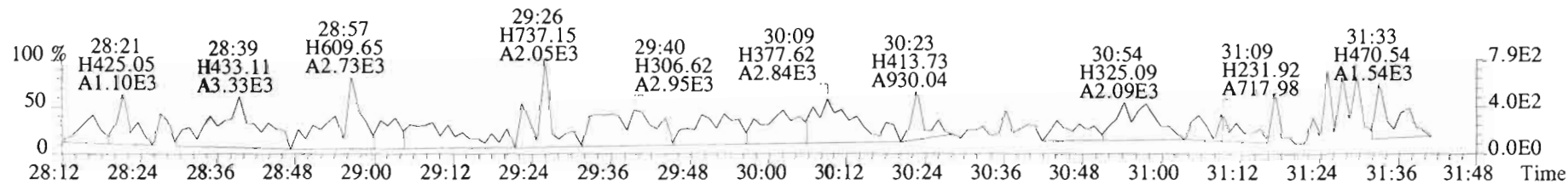
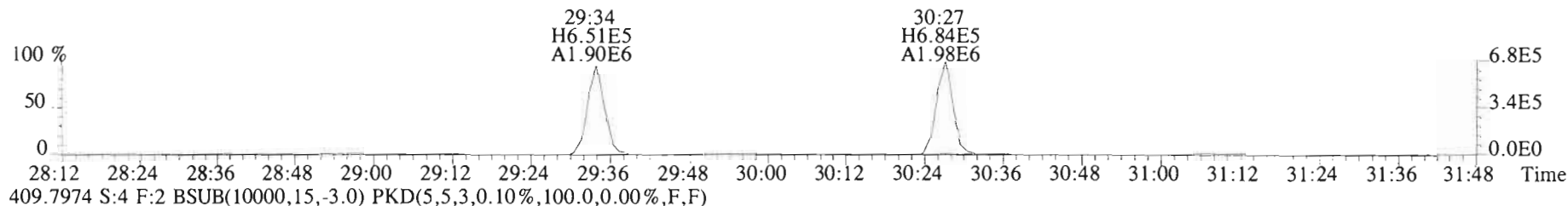
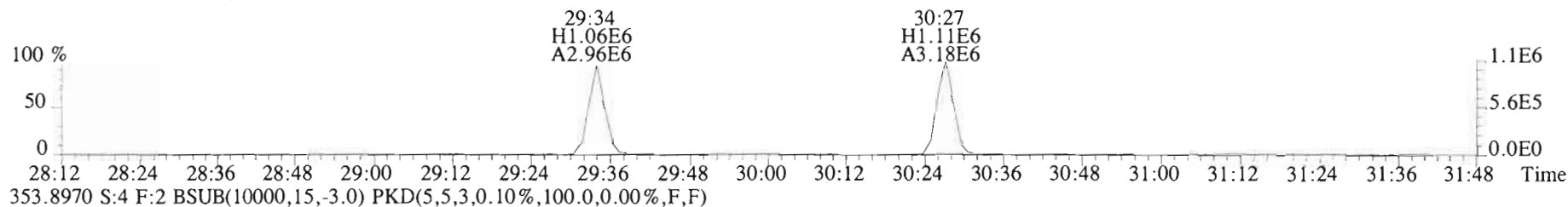
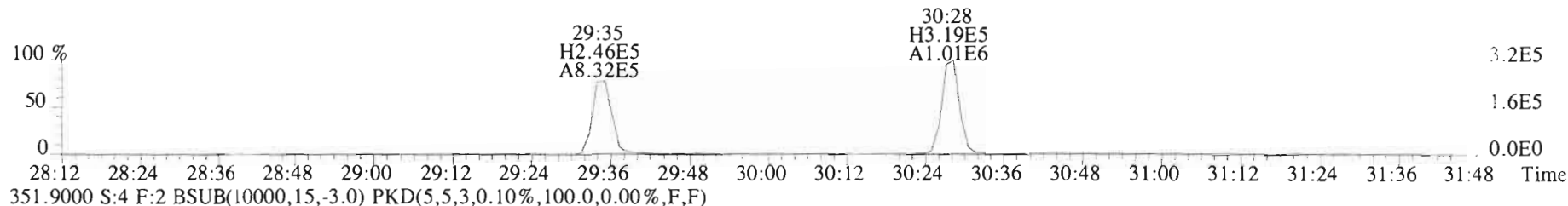
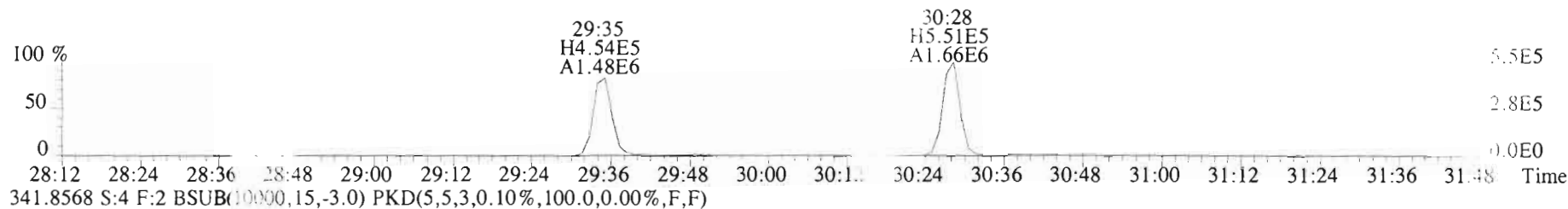
File:191104...-1-493 Acq: 4-NOV-2019 14:54:24 GC EI+ Voltage SIR Autosampler UltimaE
 Sample#4 F... Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR... Exp:OCDD_DB5
 303.9016 S-... SUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



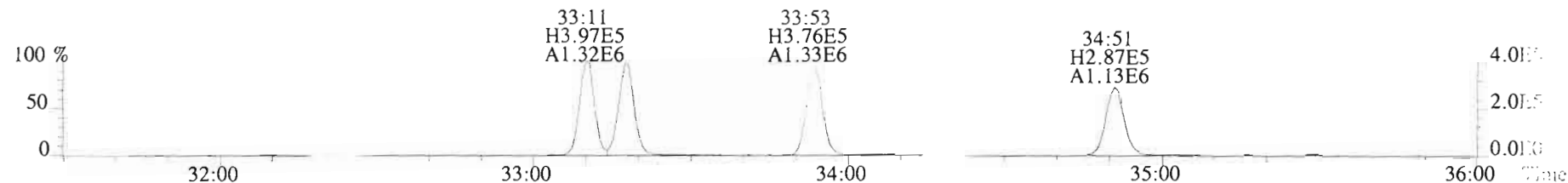
File:191104D1 #1-493 Acq: 4-NOV-2019 14:54:24 EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Viata Analytical Laboratory \7 Text:B9J0144-BS1 OPR 10 Exp:OCDD_DB5
 339.8597 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.1) 100.0,0.00%,F,F)



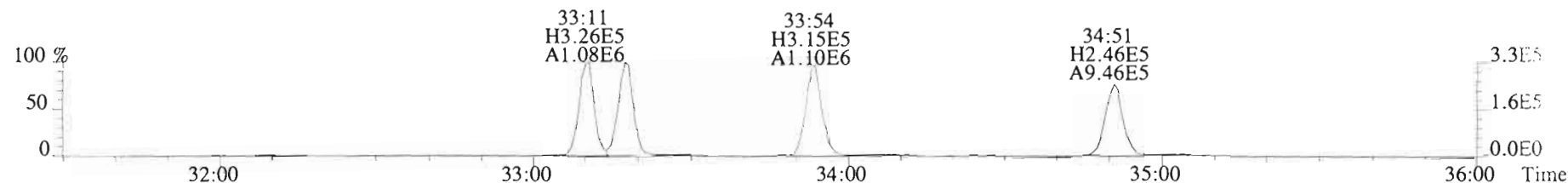
File:191104D1 #1-211 A: -NOV-2019 14:54:24 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Viata Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:OCDP 19B5
 339.8597 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



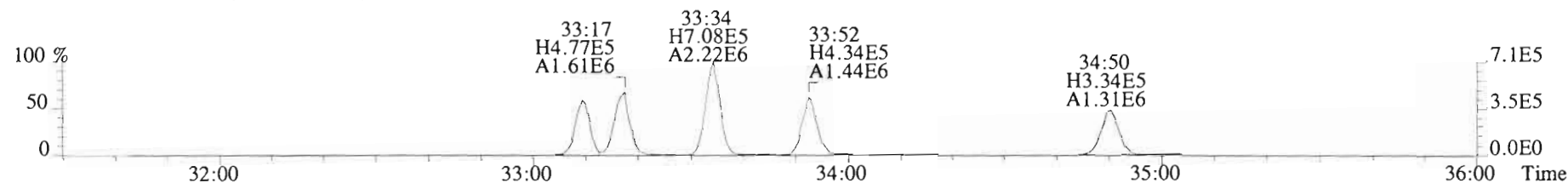
File:191104D1 #1-384 Acq: 4-NO₂-2019 14:54:24 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:OCDD_DB5
 373.8207 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



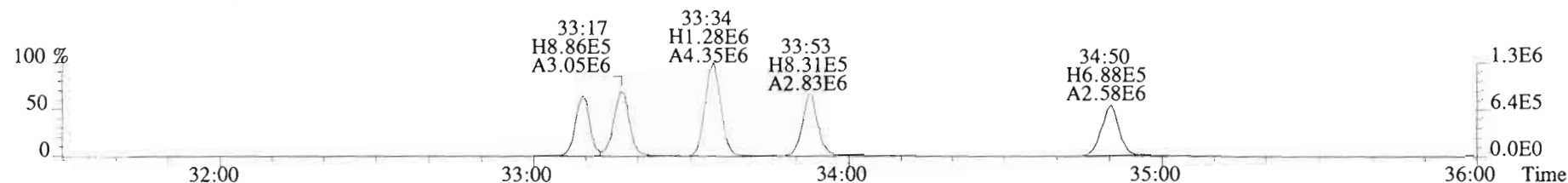
375.8178 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



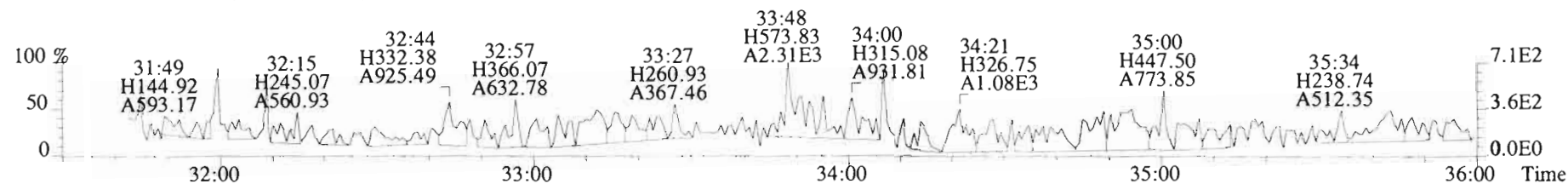
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



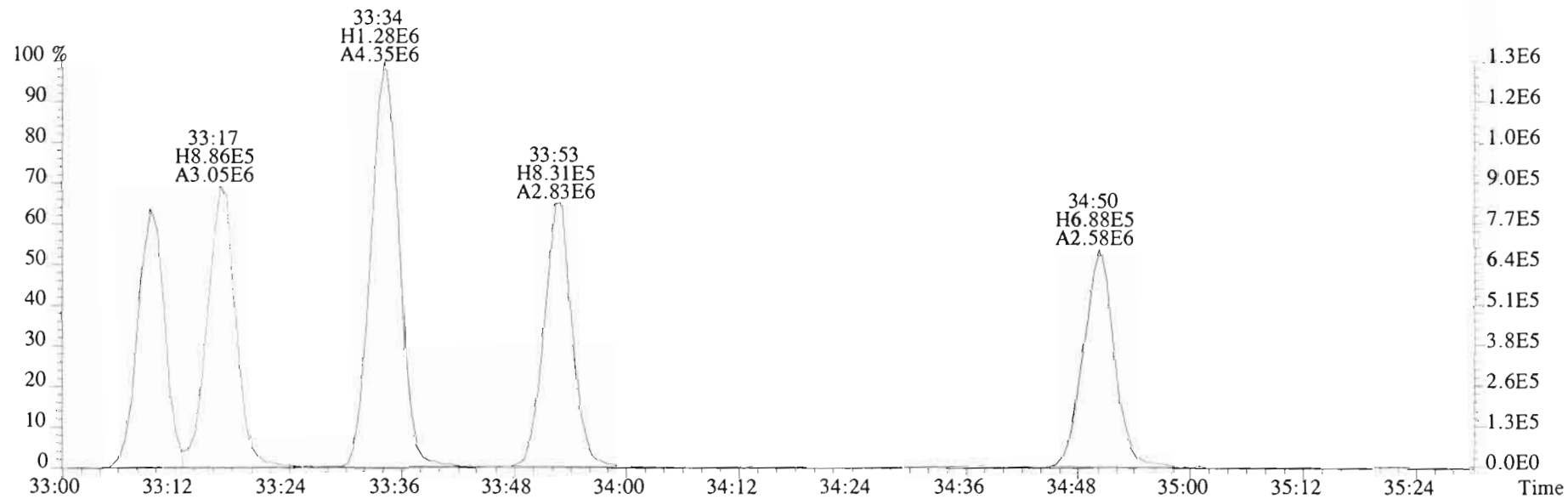
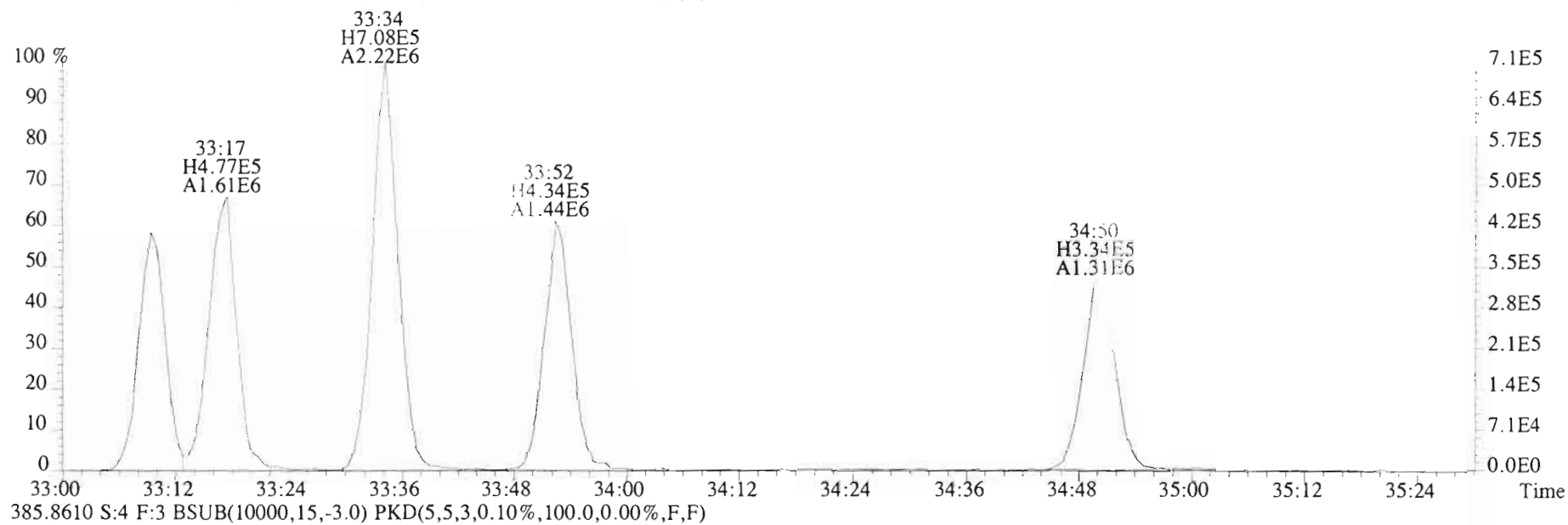
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



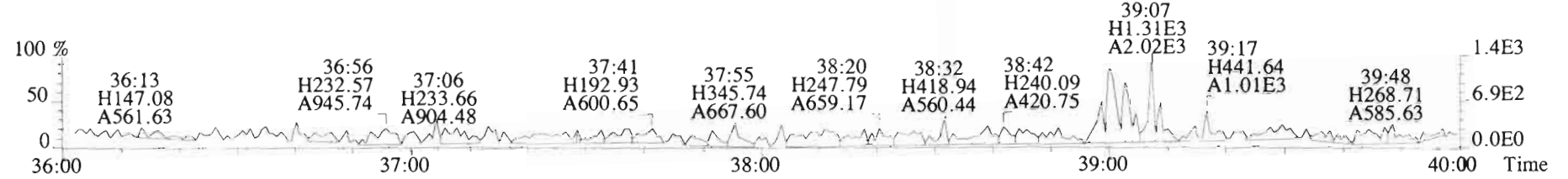
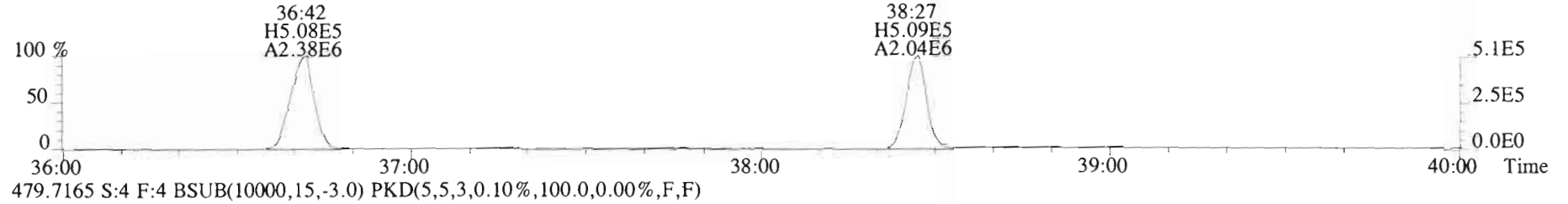
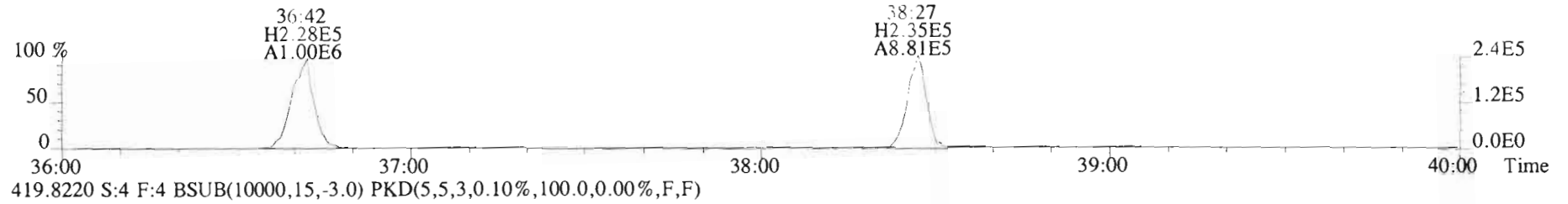
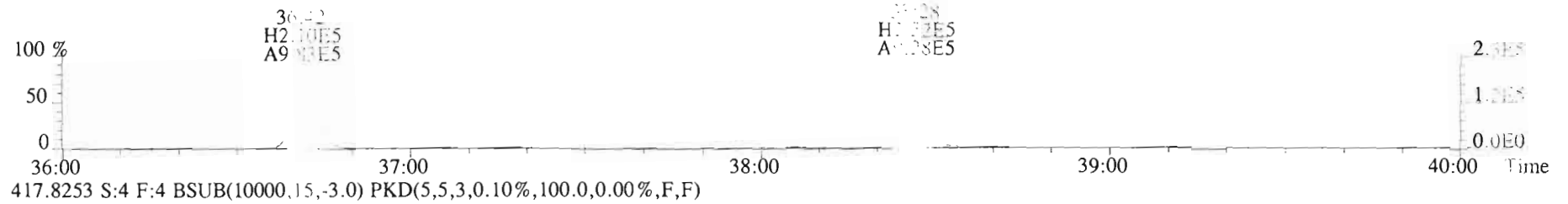
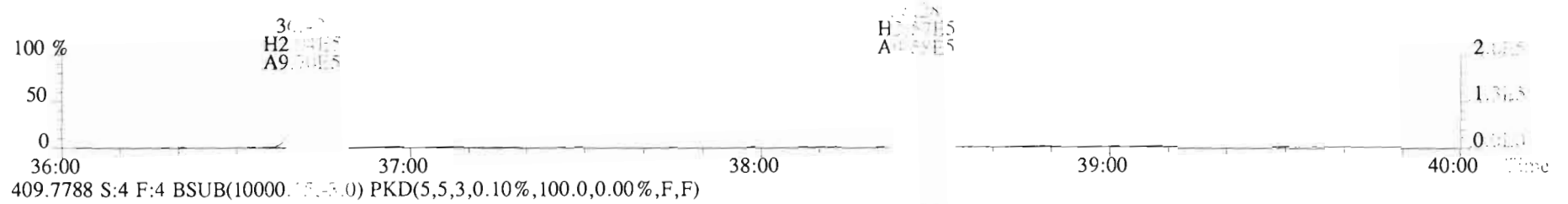
445.7555 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191104D1 #1-384 Acq: 4-NOV-2019 14:54:24 GC-MS Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata Analytical Laboratory VG Text:B9J0144-BS1 OPR 10 Exp:OCDD_DB5
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.20%,100.0,0.00%,F,F)



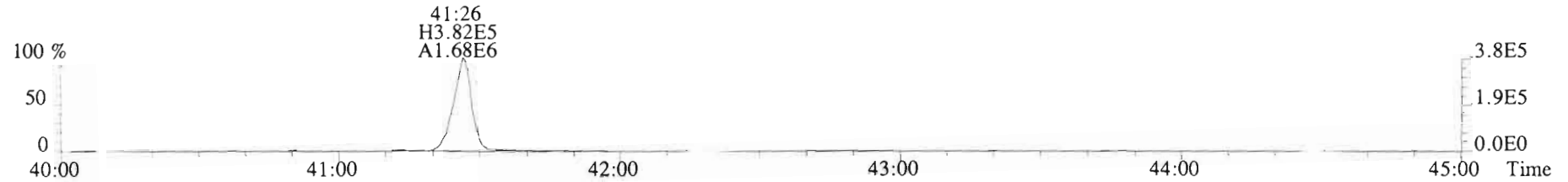
File:191104D1 #1-356 Acq: 4-N... 2019 14:54:24 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Viata_Analy... Laboratory_VG7 Text:B9J0144-BS1 OPR 10 Exp:OCDD_DE...
 407.7818 S:4 F:4 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



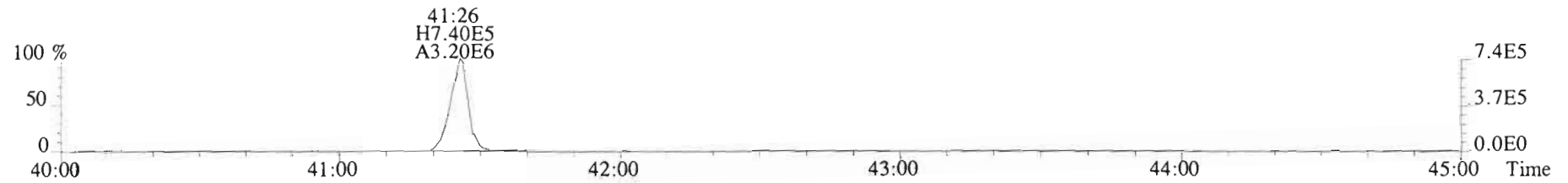
File:19110... #1-432 Acq: 4-NOV-2019 14:54:24 GC EI+ Voltage SIR Au... UltimaE
 Sample#4... Text:Viata_Analytical_Laboratory_VG7 Text:B9J0144-BS1 OF... Exp:OCDD_DB5
 441.7428... BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



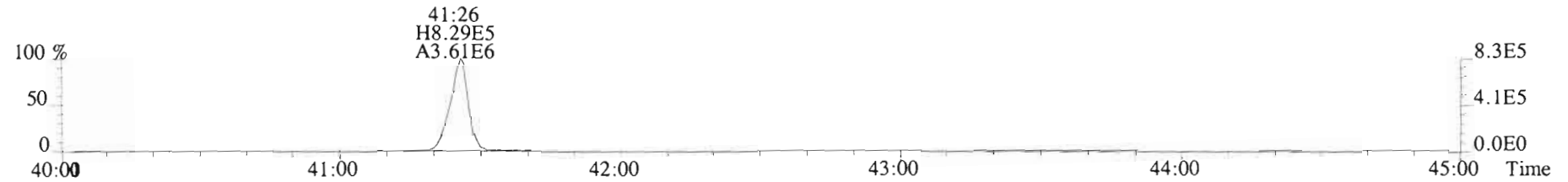
443.7398 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



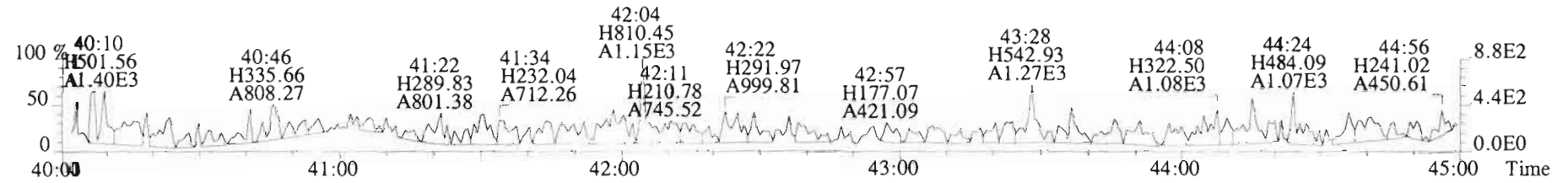
453.7831 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



455.7801 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D1\191106D1-14.qld
 Last Altered: Wednesday, November 13, 2019 13:32:18 Pacific Standard Time
 Printed: Wednesday, November 13, 2019 13:33:58 Pacific Standard Time

HZ 11.13.19

CT 11/15/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 13 Nov 2019 12:50:09

Name: VG7 191106D1_14, Date: 6-NOV-2019, Time: 22:03:32, ID: 1903431-01 PDI-030SC-A-11-11.8-190929,
 Description: 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		9.23e4	10.0160	0.905			1.001		26.31					0.158
2	2 1,2,3,7,8-PeCDD		8.51e4	10.0160	0.903			1.001		30.78					0.213
3	3 1,2,3,4,7,8-HxCDD		6.96e4	10.0160	1.101			1.000		34.09					0.281
4	4 1,2,3,6,7,8-HxCDD		7.78e4	10.0160	0.939			1.000		34.18					0.302
5	5 1,2,3,7,8,9-HxCDD		8.22e4	10.0160	0.961			1.001		34.50					0.300
6	6 1,2,3,4,6,7,8-HpCDD	4.53e2	6.55e4	10.0160	0.979	0.889	NO	1.000	1.000	37.94	37.94	1.4112		1.41	0.350
7	7 OCDD	3.55e3	1.21e5	10.0160	0.959	0.923	NO	1.000	1.000	41.22	41.23	12.279		12.3	0.269
8	8 2,3,7,8-TCDF		1.31e5	10.0160	0.950			1.001		25.52					0.117
9	9 1,2,3,7,8-PeCDF		1.23e5	10.0160	0.960			1.001		29.60					0.0989
10	10 2,3,4,7,8-PeCDF		1.22e5	10.0160	1.015			1.001		30.50					0.0905
11	11 1,2,3,4,7,8-HxCDF		1.01e5	10.0160	1.177			1.000		33.18					0.0833
12	12 1,2,3,6,7,8-HxCDF		1.07e5	10.0160	1.069			1.000		33.31					0.0935
13	13 2,3,4,6,7,8-HxCDF		9.70e4	10.0160	1.114			1.001		33.93					0.0999
14	14 1,2,3,7,8,9-HxCDF		8.91e4	10.0160	1.062			1.000		34.85					0.142
15	15 1,2,3,4,6,7,8-HpCDF		7.68e4	10.0160	1.128			1.001		36.75					0.139
16	16 1,2,3,4,7,8,9-HpCDF		6.33e4	10.0160	1.280			1.000		38.46					0.125
17	17 OCDF		1.53e5	10.0160	0.947			1.000		41.45					0.190
18	18 13C-2,3,7,8-TCDD	9.23e4	1.07e5	10.0160	1.095	0.794	NO	1.021	1.022	26.26	26.28	156.86	78.6		0.398
19	19 13C-1,2,3,7,8-PeCDD	8.51e4	1.07e5	10.0160	0.881	0.623	NO	1.187	1.196	30.52	30.76	179.84	90.1		0.250
20	20 13C-1,2,3,4,7,8-Hx...	6.96e4	1.19e5	10.0160	0.642	1.305	NO	1.014	1.014	34.06	34.08	181.92	91.1		0.692
21	21 13C-1,2,3,6,7,8-Hx...	7.78e4	1.19e5	10.0160	0.856	1.299	NO	1.017	1.017	34.18	34.18	152.78	76.5		0.520
22	22 13C-1,2,3,7,8,9-Hx...	8.22e4	1.19e5	10.0160	0.807	1.236	NO	1.026	1.026	34.48	34.47	171.04	85.7		0.551
23	23 13C-1,2,3,4,6,7,8-H...	6.55e4	1.19e5	10.0160	0.654	1.061	NO	1.126	1.129	37.83	37.93	168.17	84.2		1.04
24	24 13C-OCDD	1.21e5	1.19e5	10.0160	0.580	0.893	NO	1.226	1.227	41.19	41.22	349.09	87.4		0.587
25	25 13C-2,3,7,8-TCDF	1.31e5	1.76e5	10.0160	1.035	0.806	NO	0.993	0.992	25.55	25.50	144.13	72.2		0.462
26	26 13C-1,2,3,7,8-PeCDF	1.23e5	1.76e5	10.0160	0.854	1.662	NO	1.143	1.150	29.39	29.58	163.48	81.9		0.972
27	27 13C-2,3,4,7,8-PeCDF	1.22e5	1.76e5	10.0160	0.847	1.661	NO	1.176	1.185	30.25	30.47	163.16	81.7		0.980
28	28 13C-1,2,3,4,7,8-Hx...	1.01e5	1.19e5	10.0160	0.832	0.526	NO	0.987	0.988	33.17	33.18	202.89	101.6		0.858
29	29 13C-1,2,3,6,7,8-Hx...	1.07e5	1.19e5	10.0160	1.034	0.516	NO	0.991	0.991	33.28	33.30	173.17	86.7		0.690
30	30 13C-2,3,4,6,7,8-Hx...	9.70e4	1.19e5	10.0160	0.953	0.503	NO	1.009	1.009	33.90	33.90	170.80	85.5		0.749
31	31 13C-1,2,3,7,8,9-Hx...	8.91e4	1.19e5	10.0160	0.828	0.518	NO	1.039	1.037	34.89	34.85	180.82	90.6		0.862

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D1\191106D1-14.qld

Last Altered: Wednesday, November 13, 2019 13:32:18 Pacific Standard Time

Printed: Wednesday, November 13, 2019 13:33:58 Pacific Standard Time

Name: VG7 191106D1_14, Date: 6-NOV-2019, Time: 22:03:32, ID: 1903431-01 PDI-030SC-A-11-11.8-190929,
 Description: 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	7.68e4	1.19e5	10.0160	0.757	0.438	NO	1.093	1.093	36.71	36.71	170.13	85.2		1.11
33	33 13C-1,2,3,4,7,8,9-H...	6.33e4	1.19e5	10.0160	0.581	0.448	NO	1.143	1.145	38.40	38.46	182.77	91.5		1.45
34	34 13C-OCDF	1.53e5	1.19e5	10.0160	0.689	0.882	NO	1.233	1.234	41.43	41.45	372.72	93.3		0.544
35	35 37Cl-2,3,7,8-TCDD	3.66e4	1.07e5	10.0160	1.198			1.022	1.022	26.28	26.29	56.917	71.3		0.0646
36	36 13C-1,2,3,4-TCDD	1.07e5	1.07e5	10.0160	1.000	0.795	NO	1.000	1.000	25.70	25.71	199.68	100.0		0.436
37	37 13C-1,2,3,4-TCDF	1.76e5	1.76e5	10.0160	1.000	0.794	NO	1.000	1.000	24.28	24.30	199.68	100.0		0.479
38	38 13C-1,2,3,4,6,9-Hx...	1.19e5	1.19e5	10.0160	1.000	0.498	NO	1.000	1.000	33.55	33.59	199.68	100.0		0.714
39	39 Total Tetra-Dioxins		9.23e4	10.0160	0.901			0.000		25.50		0.00000		0.154	0.0836
40	40 Total Penta-Dioxins		8.51e4	10.0160	0.872			0.000		30.00					0.0690
41	41 Total Hexa-Dioxins		0.00e0	10.0160	0.976			0.000		33.80		0.82470		0.825	0.300
42	42 Total Hepta-Dioxins		6.55e4	10.0160	0.989			0.000		37.75		3.7548		3.75	0.347
43	43 Total Tetra-Furans		1.31e5	10.0160	0.943			0.000		24.00					0.0609
44	44 1st Func. Penta-Fur...		0.00e0	10.0160	0.940			0.000		27.63					0.0260
45	45 Total Penta-Furans		0.00e0	10.0160	0.940			0.000		30.00					0.0419
46	46 Total Hexa-Furans		0.00e0	10.0160	1.078			0.000		33.00					0.0579
47	47 Total Hepta-Furans		0.00e0	10.0160	1.135			0.000		37.75					0.0669

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D1\191106D1-14.qld
 Last Altered: Wednesday, November 13, 2019 13:32:18 Pacific Standard Time
 Printed: Wednesday, November 13, 2019 13:33:58 Pacific Standard Time

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Name: VG7 191106D1_14, Date: 6-NOV-2019, Time: 22:03:32, ID: 1903431-01 PDI-030SC-A-11-11.8-190929,
 Description: 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	39 Total Tetra-Dioxins	YES	24.41	27.915	40833.016	0.000	MM	0.0000	0.15

Penta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	32.54	176.780	42929.849	8.061	MM	0.8247	0.82

Hepta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	NO	37.94	213.346	33725.238	13.844	bb	1.4112	1.41
2	42 Total Hepta-Dioxins	NO	37.11	395.589	33725.238	23.208	bb	2.3436	2.34

Tetra-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D1\191106D1-14.qld

Last Altered: Wednesday, November 13, 2019 13:32:18 Pacific Standard Time

Printed: Wednesday, November 13, 2019 13:33:58 Pacific Standard Time

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Description: 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hepta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

Dataset: Untitled

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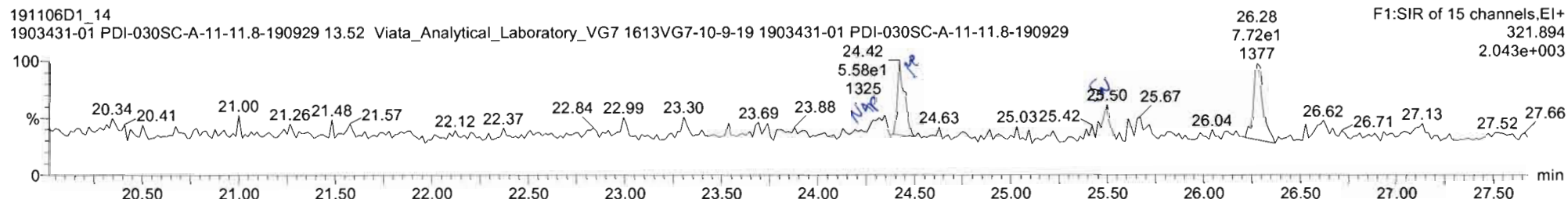
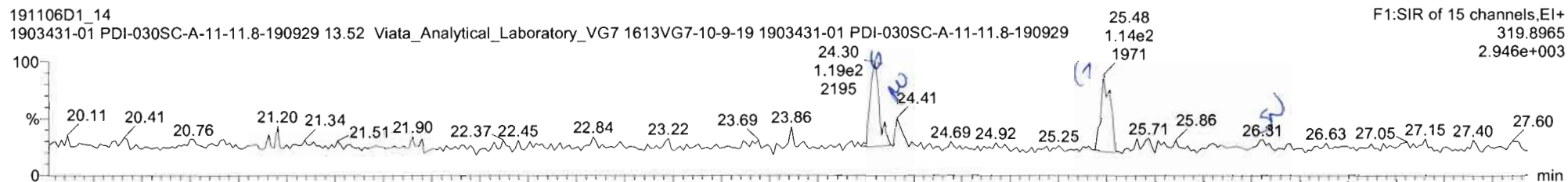
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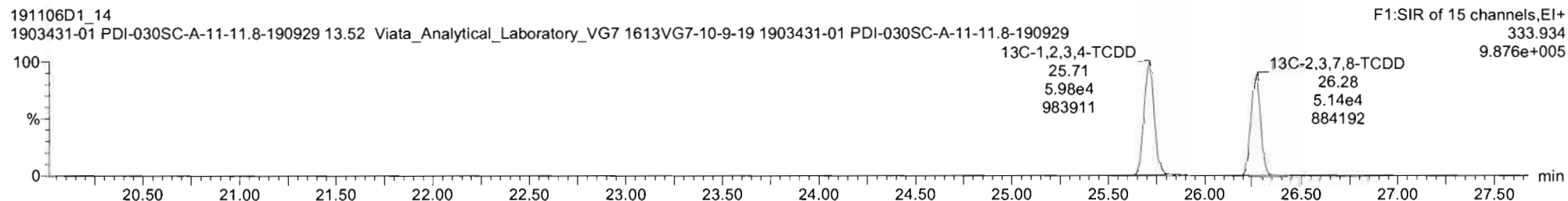
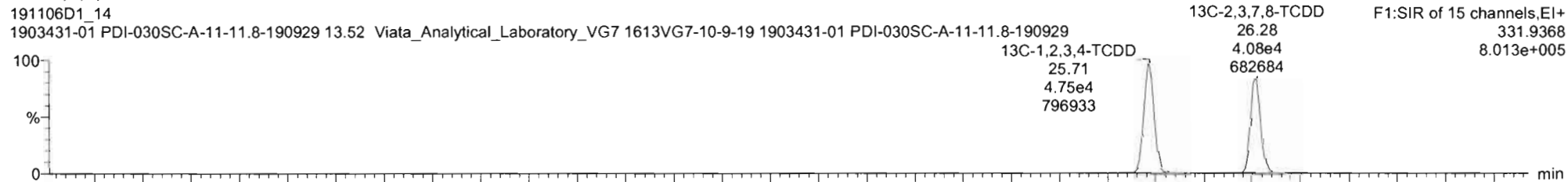
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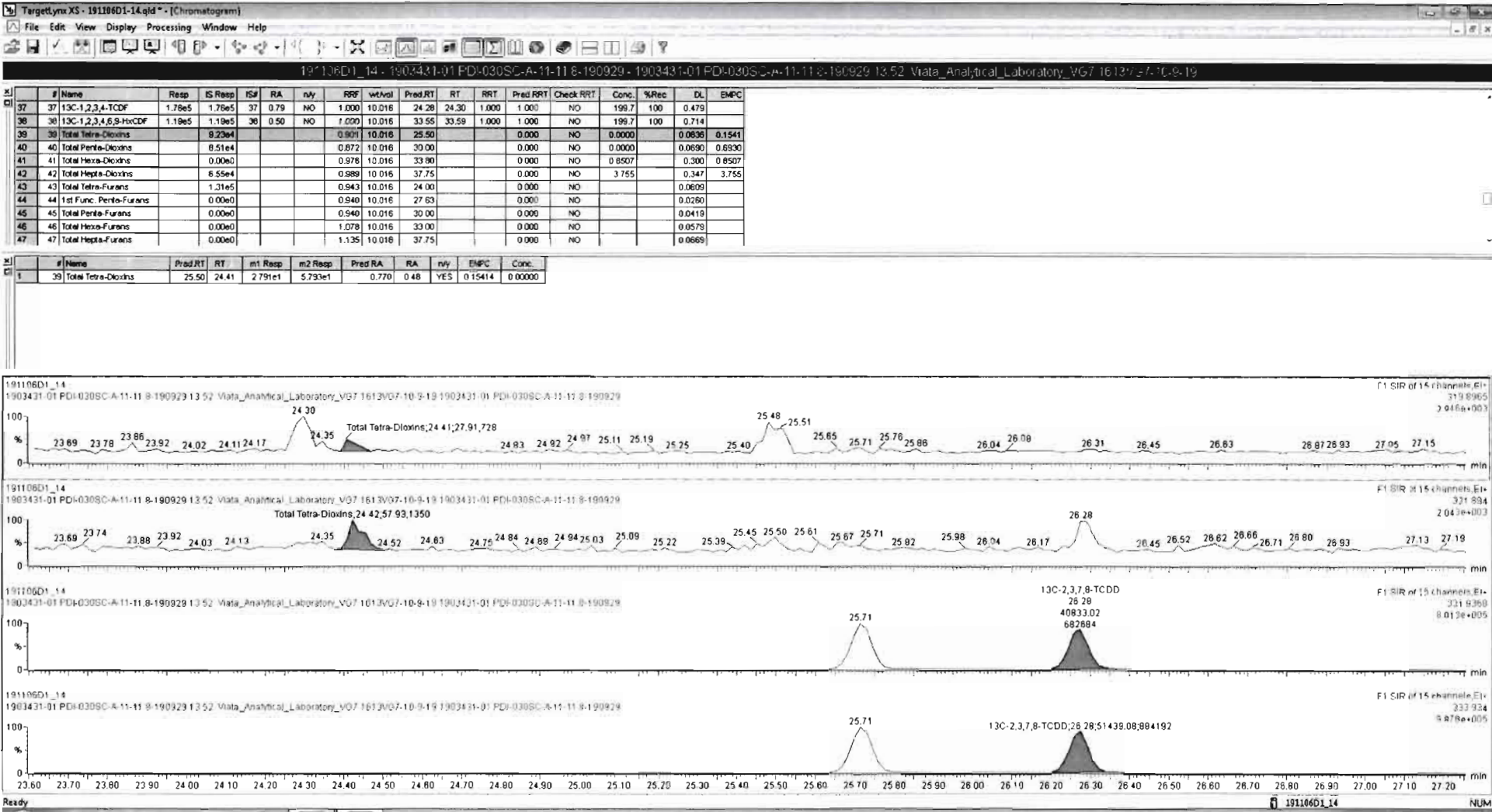
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Total Tetra-Dioxins



13C-2,3,7,8-TCDD





Vista Analytical Laboratory

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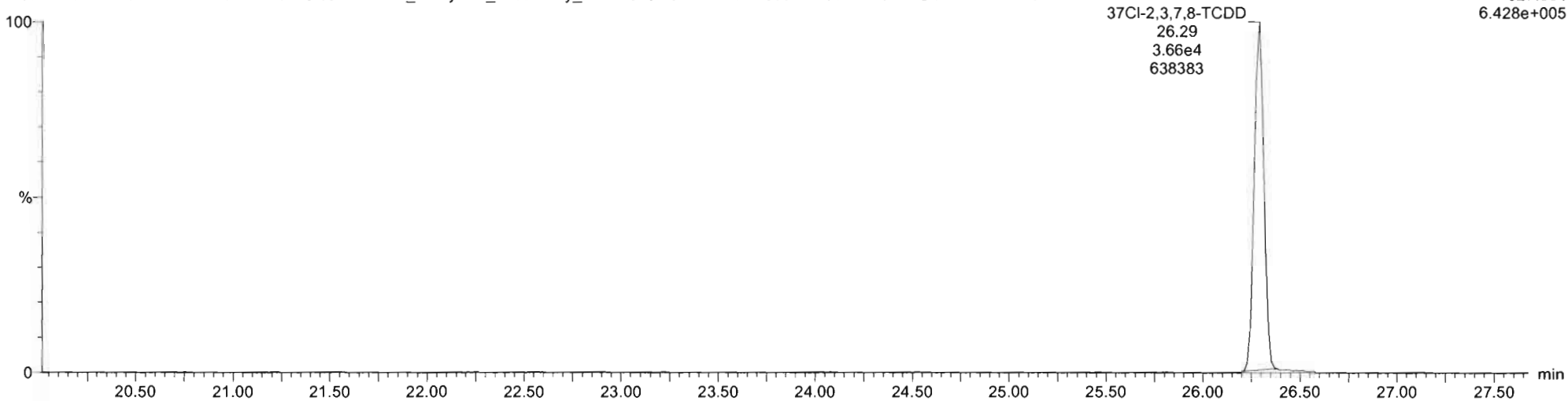
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37Cl-2,3,7,8-TCDD

191106D1_14
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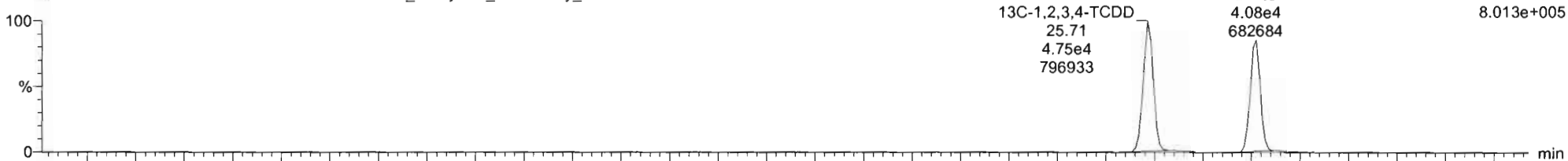
F1:SIR of 15 channels,EI+
327.884
6.428e+005



13C-1,2,3,4-TCDD

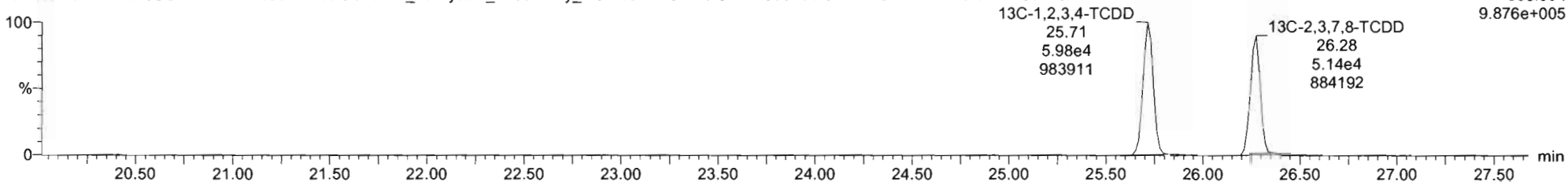
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13C-2,3,7,8-TCDD F1:SIR of 15 channels,EI+
26.28 331.9368
4.08e4 8.013e+005
682684



191106D1_14
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F1:SIR of 15 channels,EI+
333.934
9.876e+005



Vista Analytical Laboratory

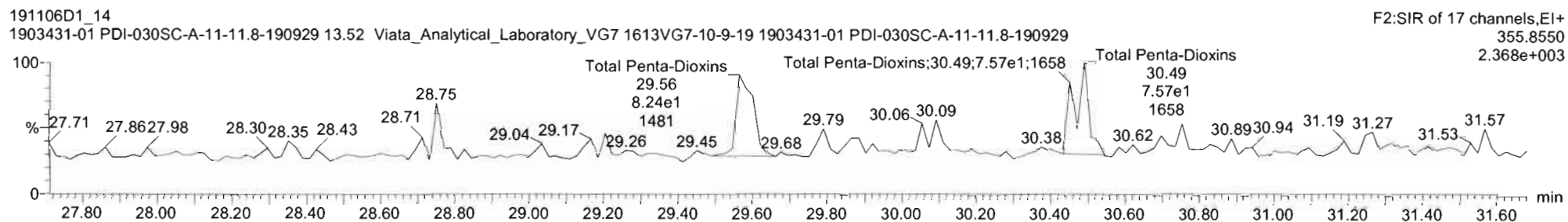
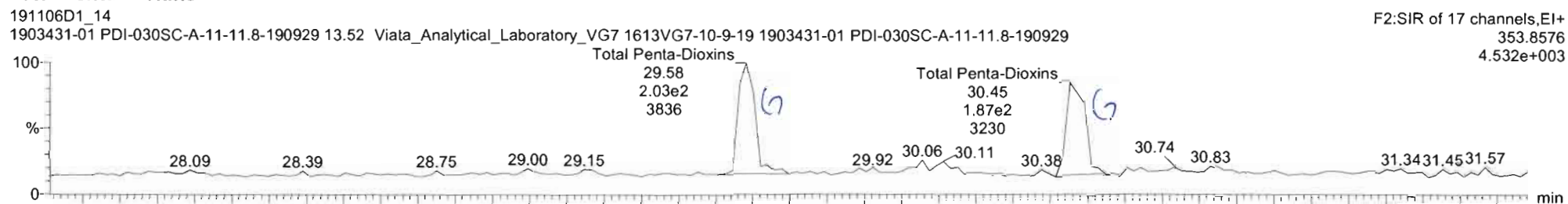
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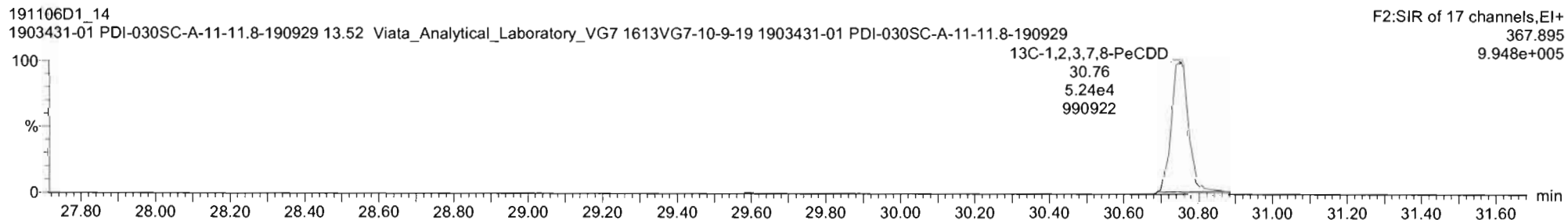
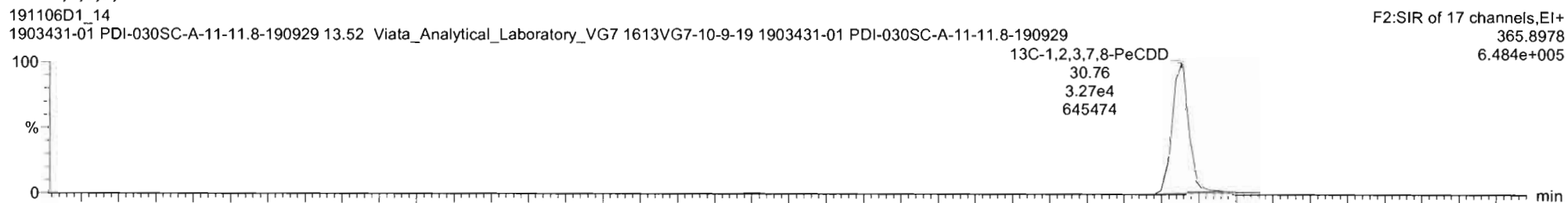
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Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



Vista Analytical Laboratory

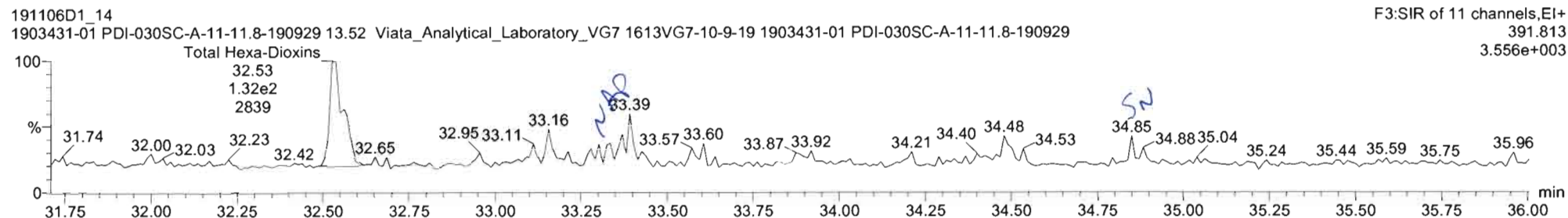
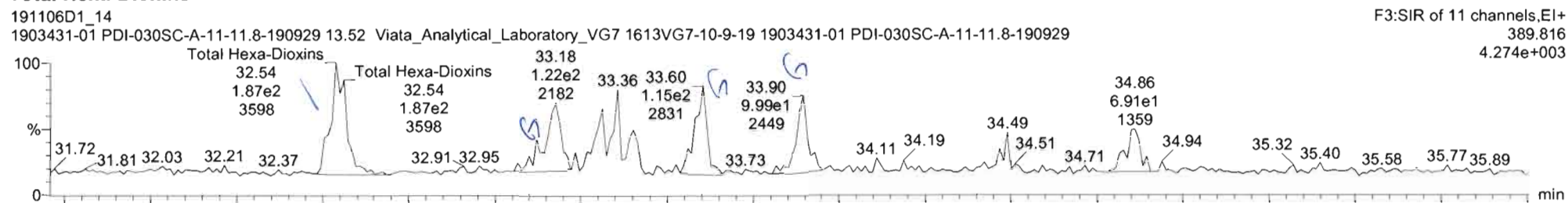
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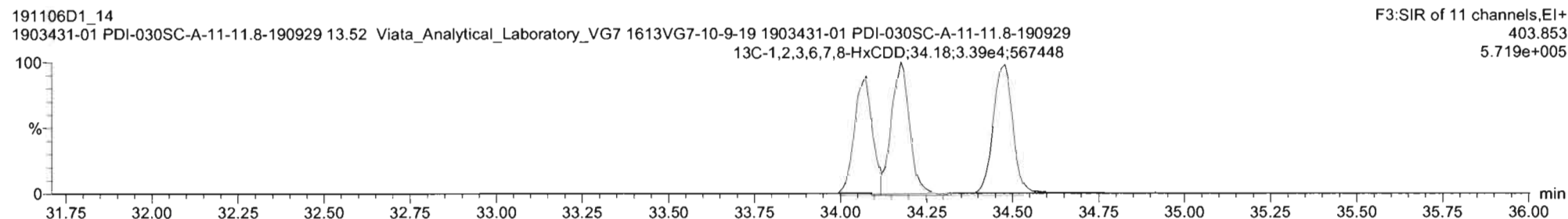
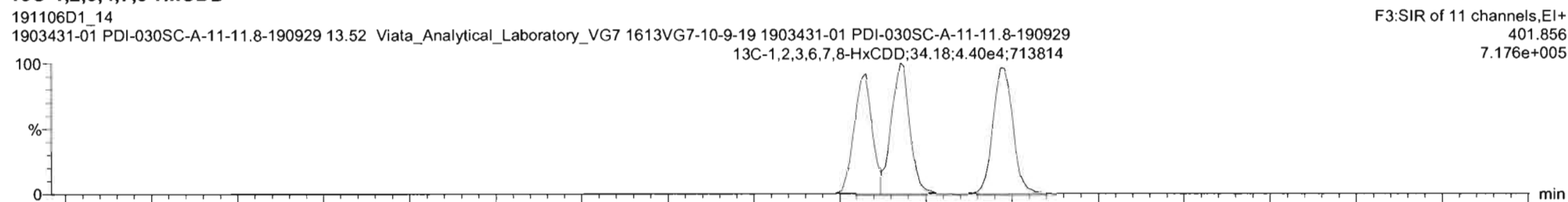
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Total Hexa-Dioxins



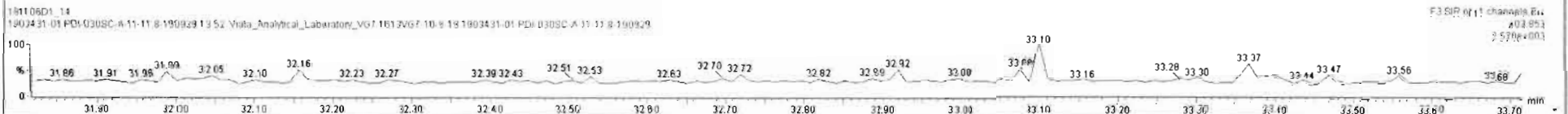
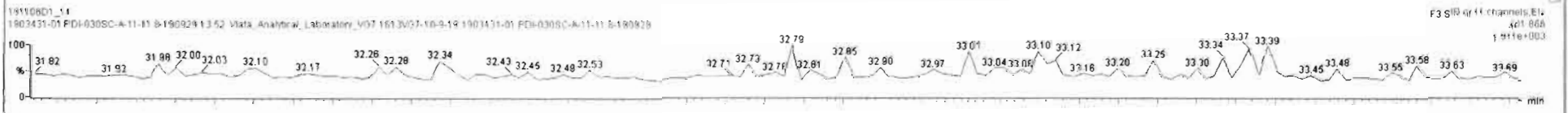
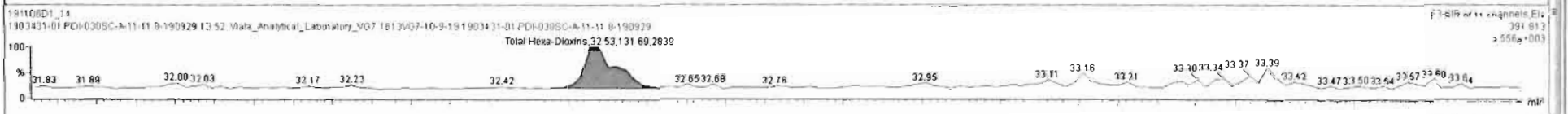
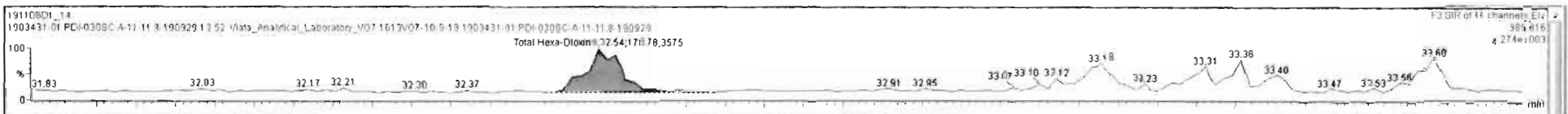
13C-1,2,3,4,7,8-HxCDD



191106D1_14 - 1903431-01 PDI-030SC-A-11-11 8-190929 - 1903431-01 PDI-030SC-A-11-11 8-190929 13.52 Vieta_Analytical_Laboratory_V07 1613V07-10-9-19

#	Name	Resp	IS Resp	ISF	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
37	13C-1,2,3,4-TCDF	1.78e5	1.78e5	37	0.79	NO	1.000	10.016	24.26	24.30	1.000	1.000	NO	199.7	100		0.479
38	13C-1,2,3,4,6,9-HxCDF	1.19e5	1.19e5	38	0.50	NO	1.000	10.016	33.55	33.59	1.000	1.000	NO	199.7	100		0.714
39	Total Tetra-Dioxins	8.23e4					0.801	10.016	25.50			0.000	NO	0.0000			0.0836
40	Total Penta-Dioxins	8.51e4					0.872	10.016	30.00			0.000	NO				0.0690
41	Total Hexa-Dioxins	0.00e0					0.976	10.016	33.80			0.000	NO	0.8247			0.300
42	Total Hepta-Dioxins	6.55e4					0.989	10.016	37.75			0.000	NO	3.755			0.347
43	Total Tetra-Furans	1.31e5					0.943	10.016	24.00			0.000	NO				0.0909
44	1st Func. Penta-Furans	0.00e0					0.940	10.016	27.83			0.000	NO				0.0260
45	Total Penta-Furans	0.00e0					0.940	10.016	30.00			0.000	NO				0.0419
46	Total Hexa-Furans	0.00e0					1.078	10.016	33.00			0.000	NO				0.0578

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	41 Total Hexa-Dioxins	33.80	32.54	1.788e2	1.317e2	1.240	1.34	NO	0.82470	0.82470



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, November 13, 2019 12:48:23 Pacific Standard Time

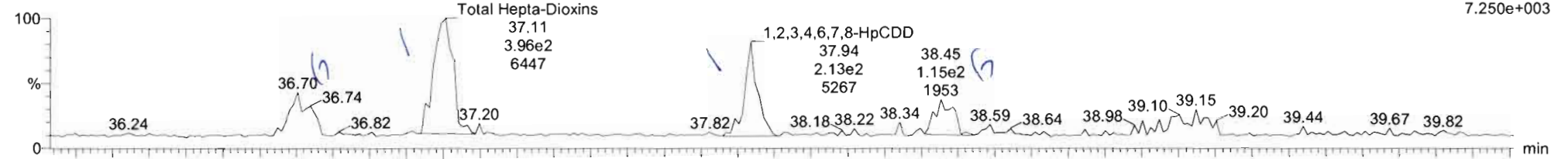
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Total Hepta-Dioxins

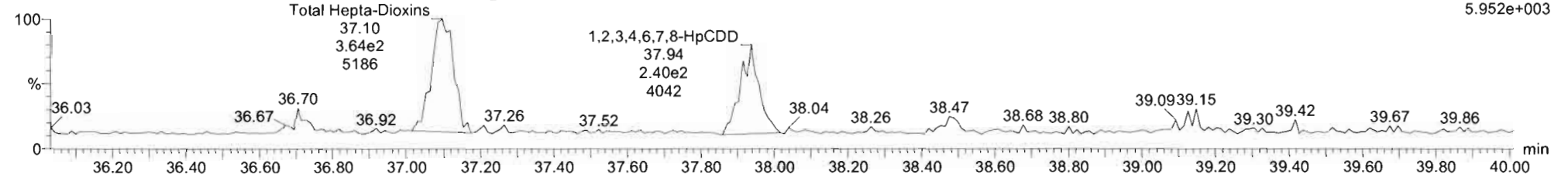
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F4:SIR of 11 channels,EI+ 423.777 7.250e+003



191106D1_14 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903431-01 PDI-030SC-A-11-11.8-190929

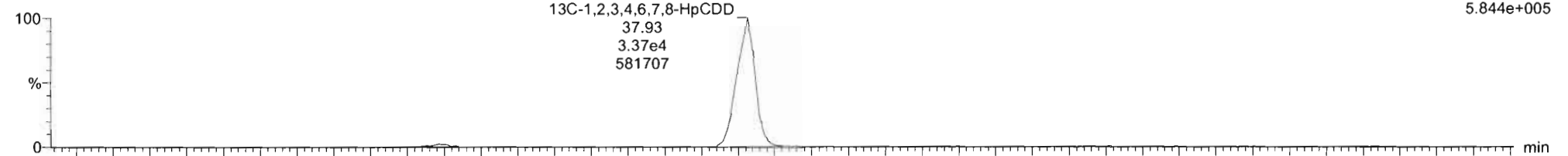
F4:SIR of 11 channels,EI+ 425.774 5.952e+003



13C-1,2,3,4,6,7,8-HpCDD

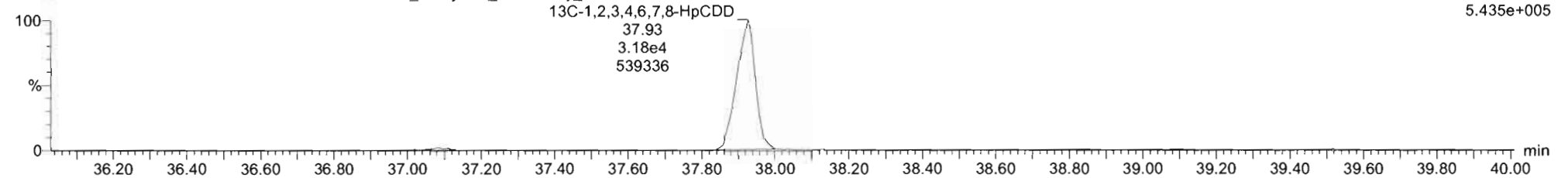
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F4:SIR of 11 channels,EI+ 435.817 5.844e+005



191106D1_14 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903431-01 PDI-030SC-A-11-11.8-190929

F4:SIR of 11 channels,EI+ 437.814 5.435e+005



Vista Analytical Laboratory

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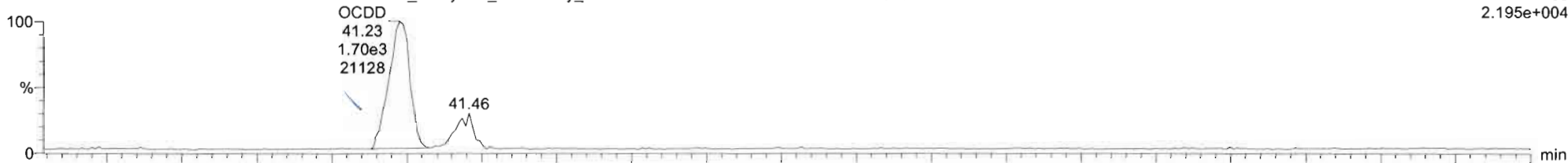
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OCDD

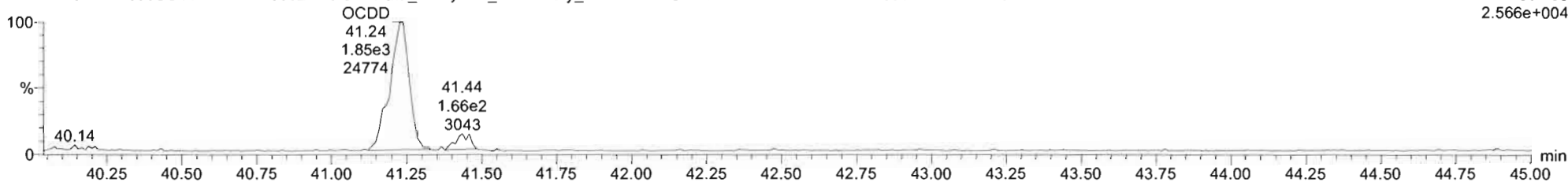
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F5:SIR of 11 channels,EI+
457.738
2.195e+004



191106D1_14
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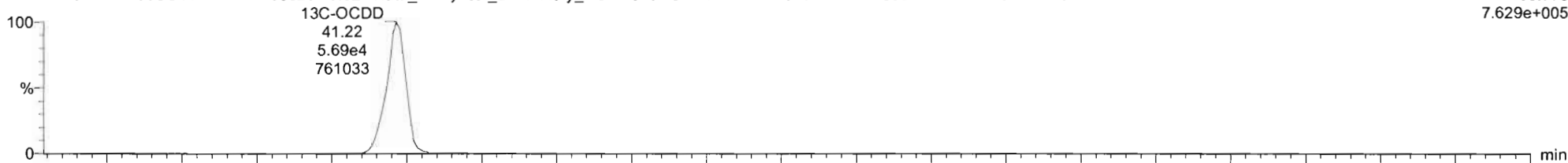
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2.566e+004



13C-OCDD

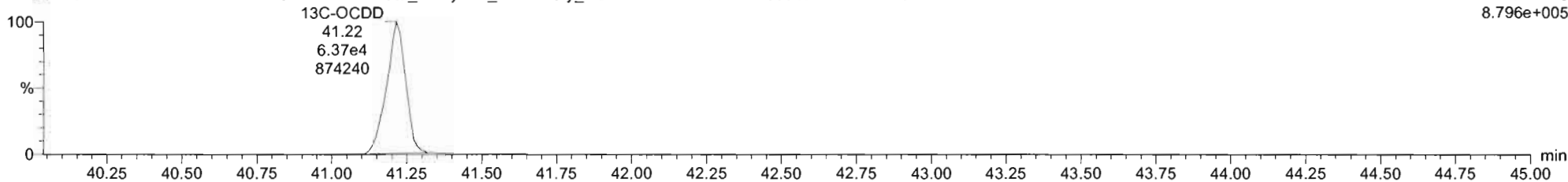
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F5:SIR of 11 channels,EI+
469.778
7.629e+005



191106D1_14
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F5:SIR of 11 channels,EI+
471.775
8.796e+005



Vista Analytical Laboratory

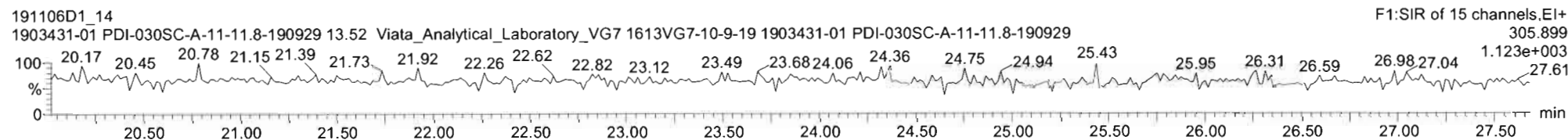
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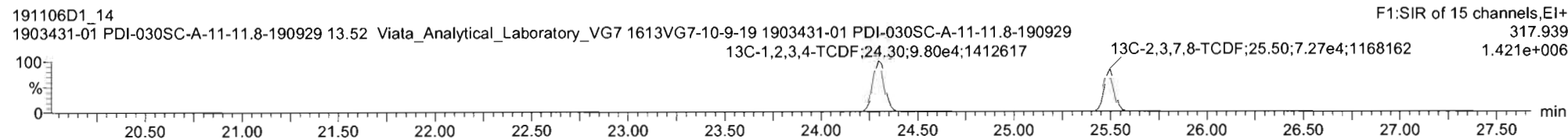
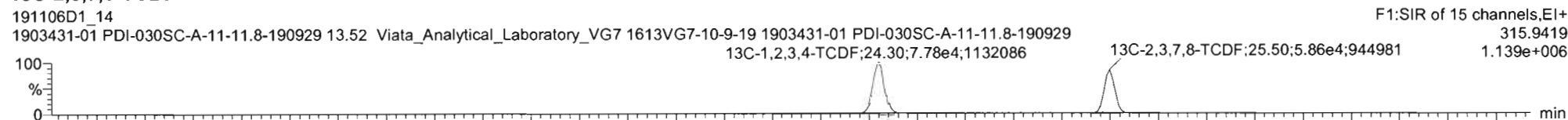
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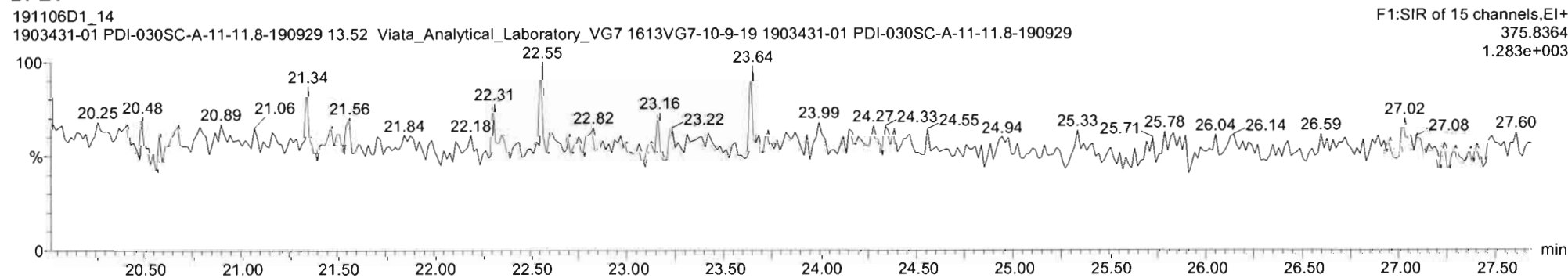
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

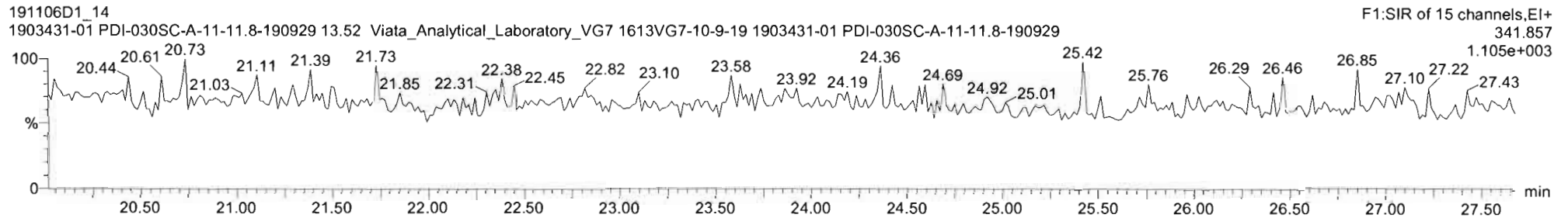
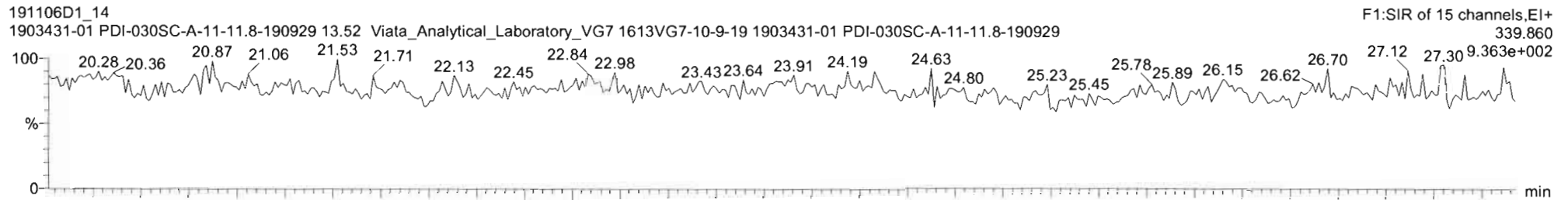
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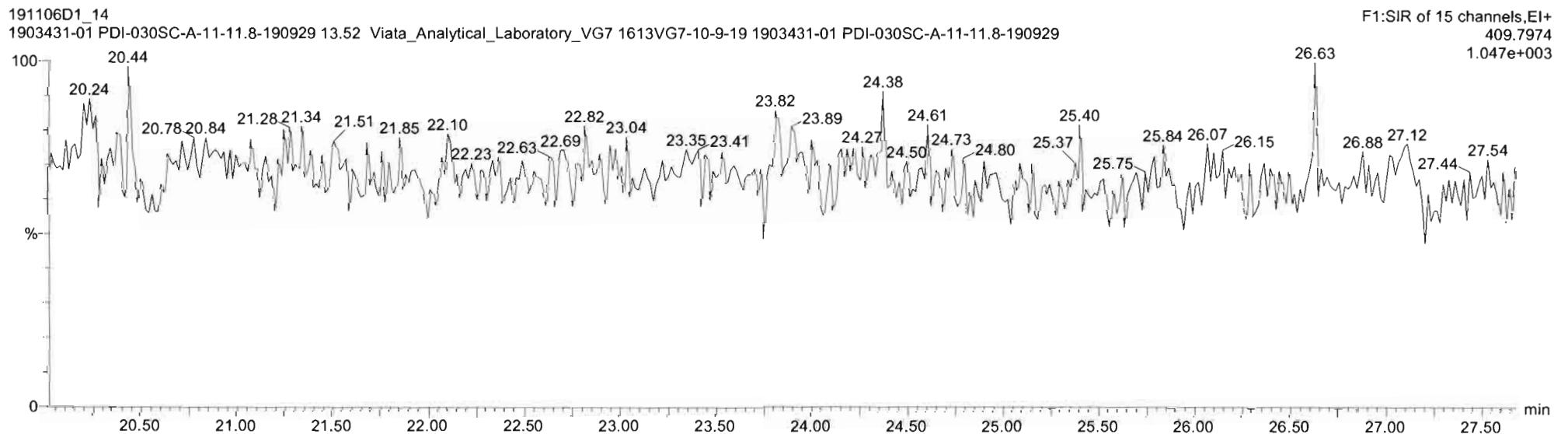
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Description: 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

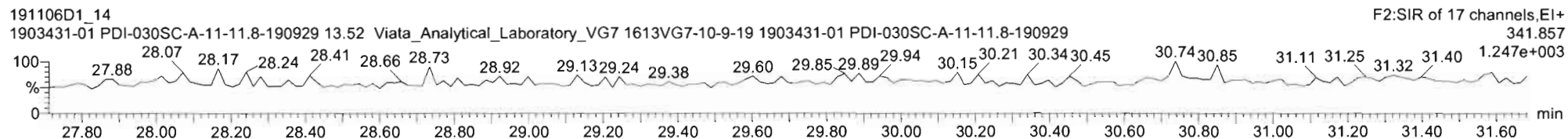
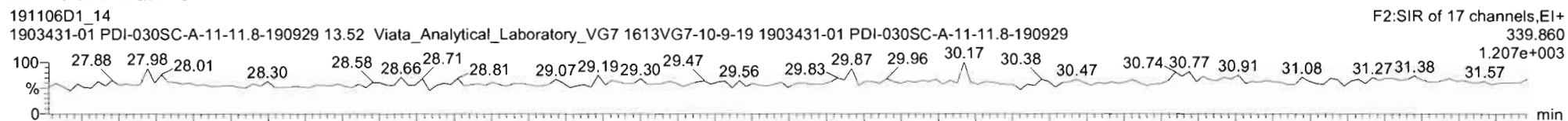
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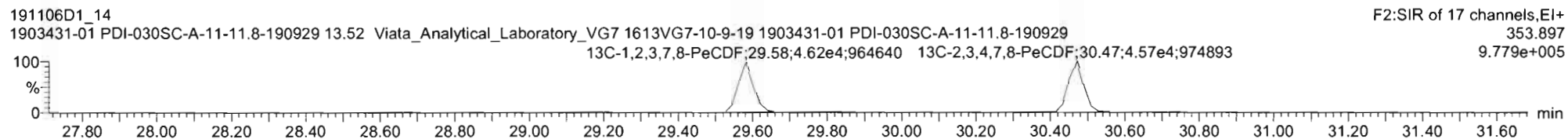
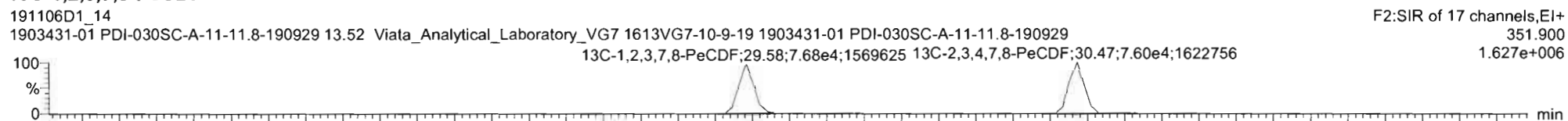
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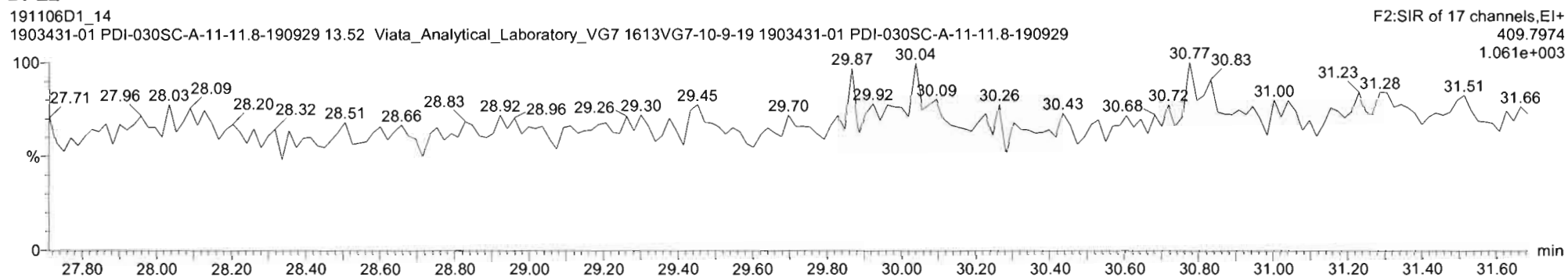
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



DPE2



Vista Analytical Laboratory

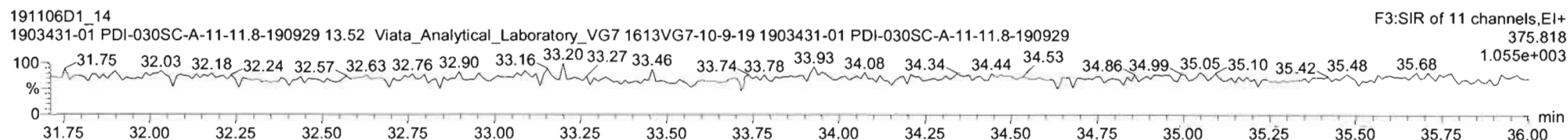
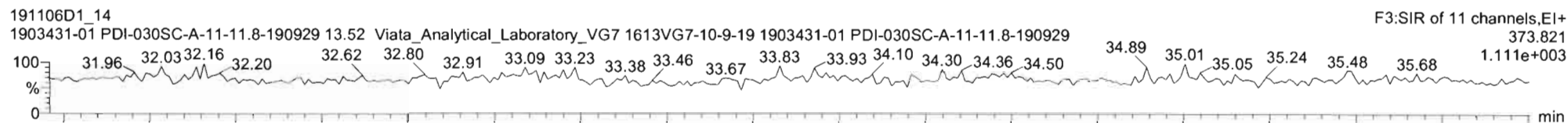
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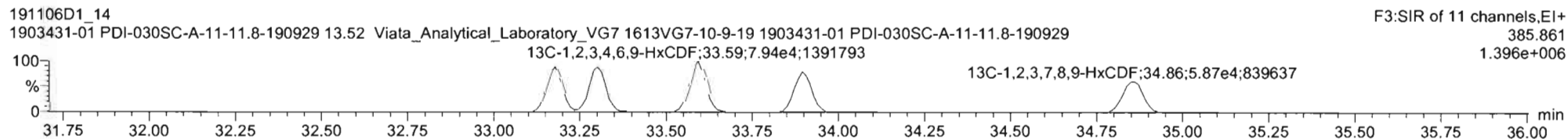
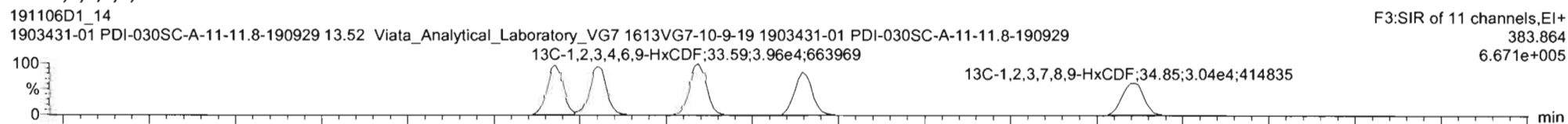
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Description: 1903431-01 PDI-030SC-A-11-11.8-190929 13.52 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

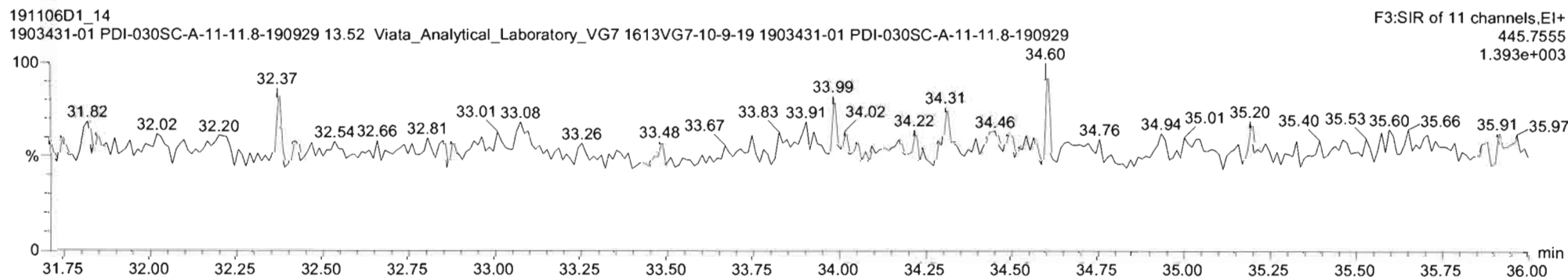
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

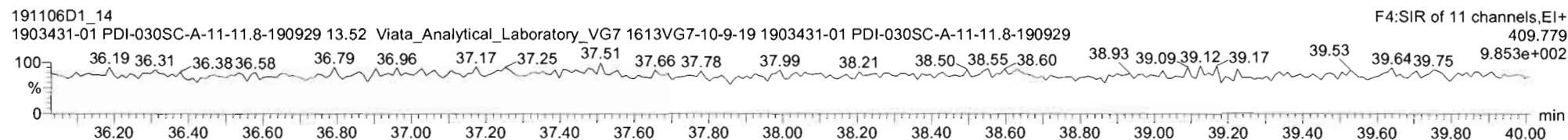
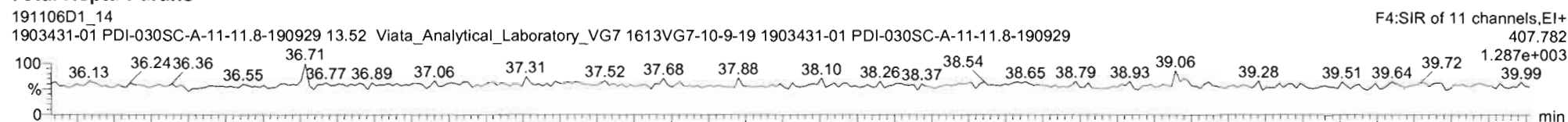
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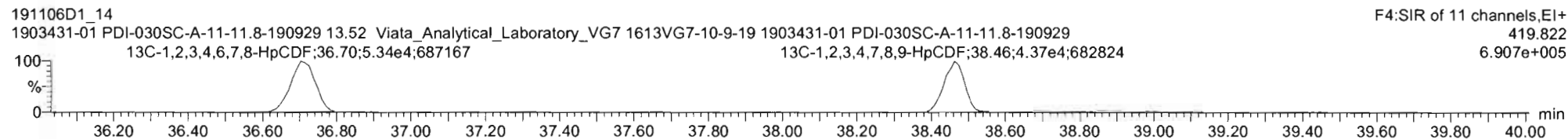
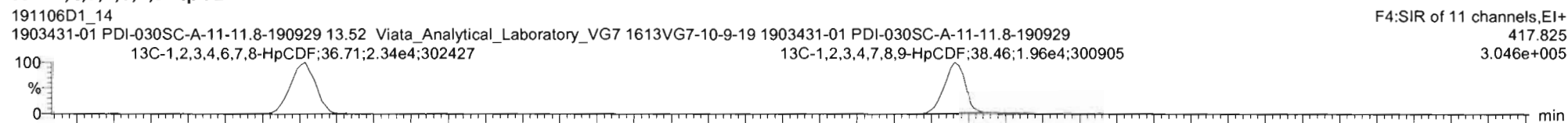
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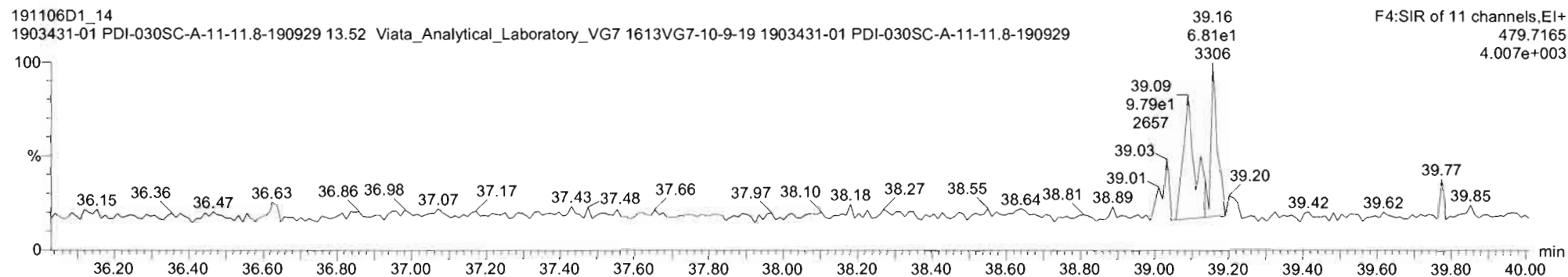
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13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

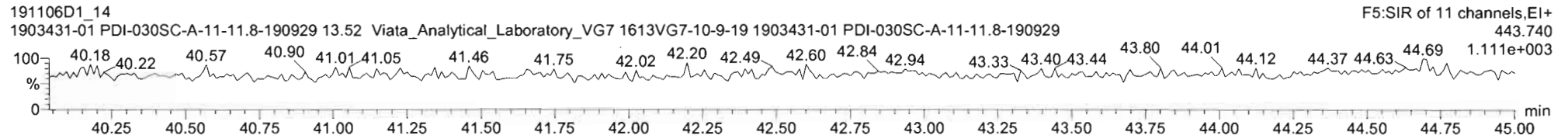
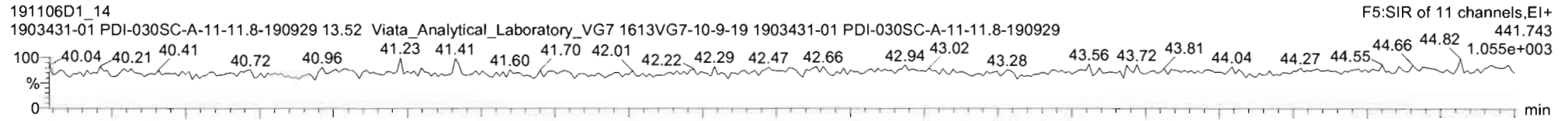
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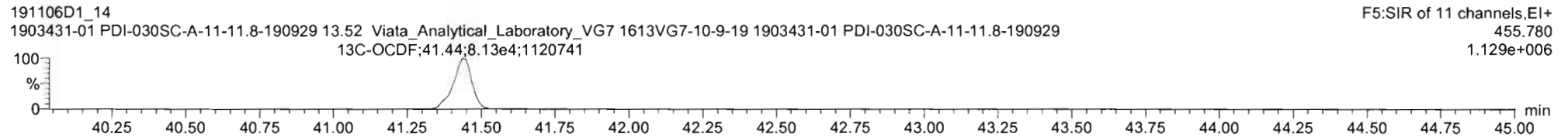
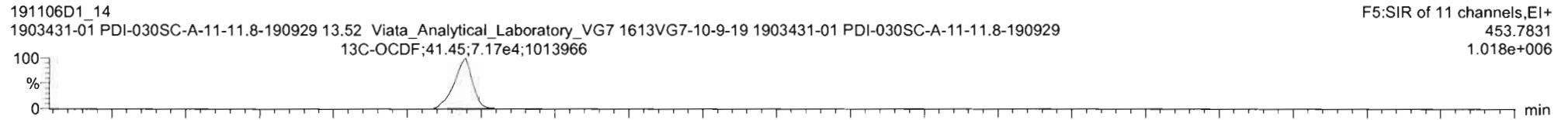
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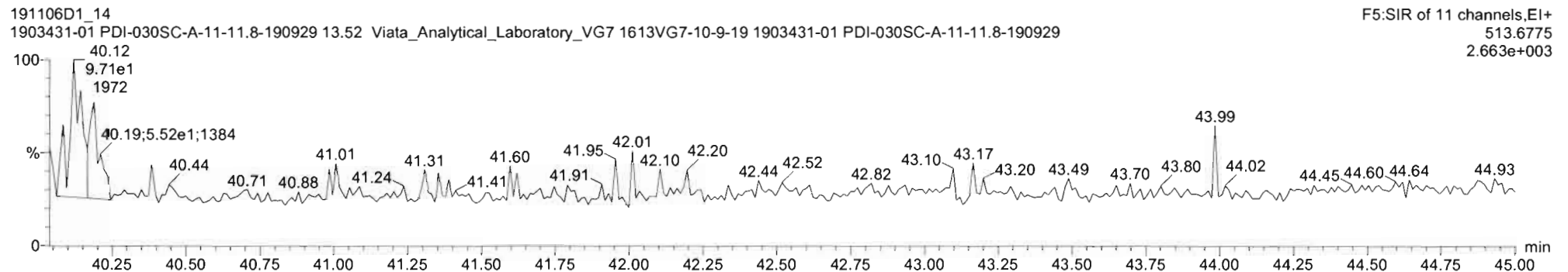
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

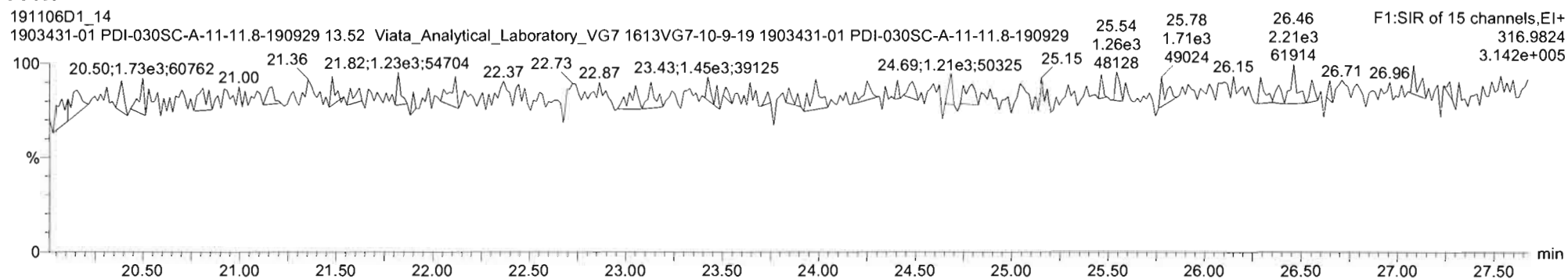
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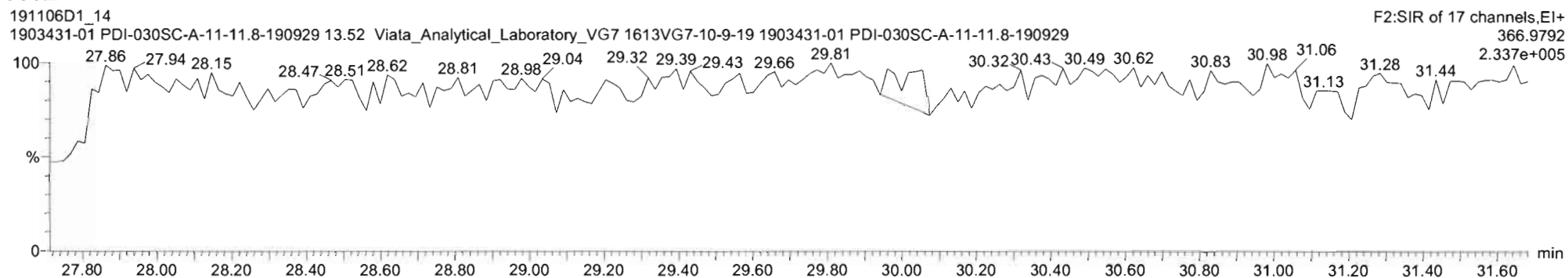
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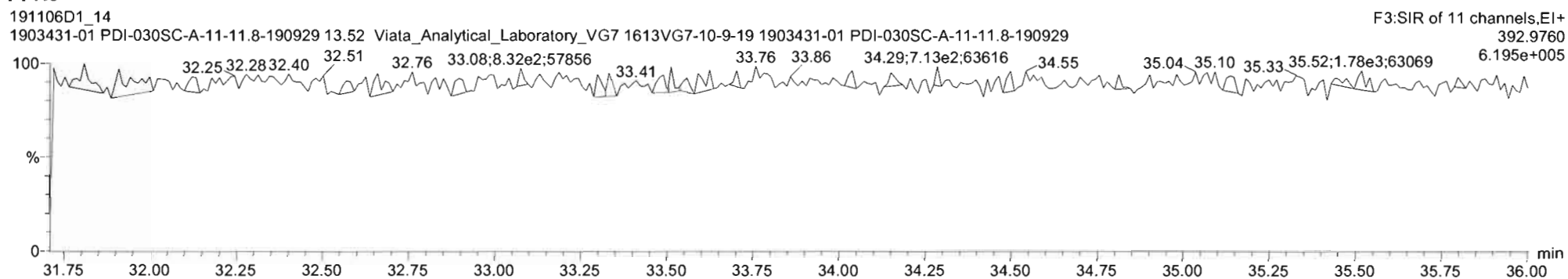
PFK1



PFK2



PFK3



Vista Analytical Laboratory

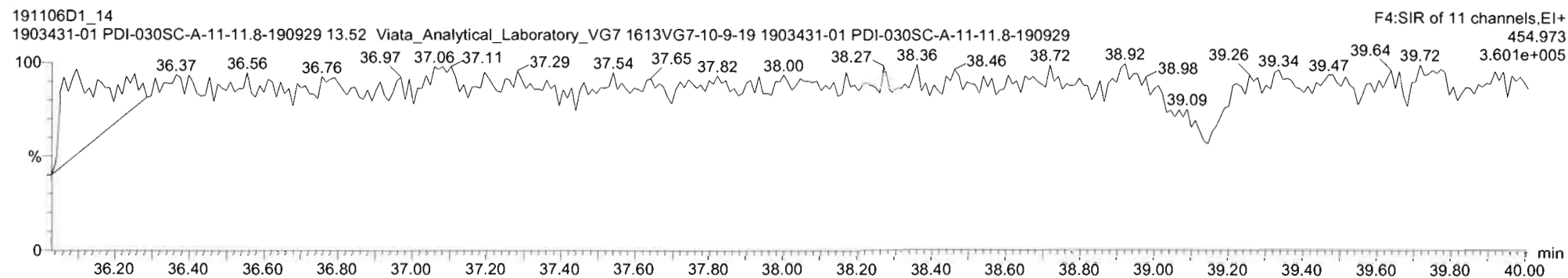
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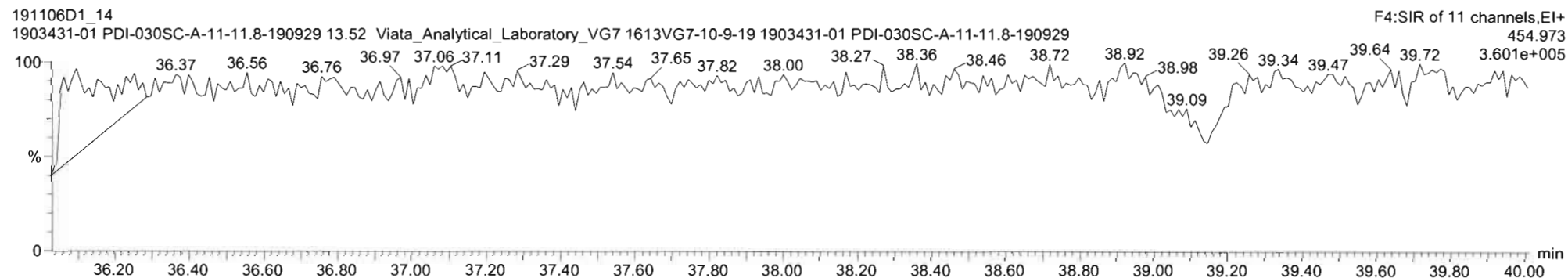
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PFK4



PFK5



Vista Analytical Laboratory

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Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D1\191106D1-15.qld

Last Altered: Wednesday, November 13, 2019 15:42:09 Pacific Standard Time

Printed: Wednesday, November 13, 2019 15:43:21 Pacific Standard Time

HC 11/13/19

CT 11/15/19

Method: U:\VG7.pro\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 13 Nov 2019 15:37:41

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Description: 1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 ✓

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		1.20e5	10.0153	0.905			1.001		26.29					0.140
2	2 1,2,3,7,8-PeCDD		1.00e5	10.0153	0.903			1.001		30.76					0.146
3	3 1,2,3,4,7,8-HxCDD		8.05e4	10.0153	1.101			1.000		34.08					0.299
4	4 1,2,3,6,7,8-HxCDD		8.43e4	10.0153	0.939			1.000		34.17					0.318
5	5 1,2,3,7,8,9-HxCDD		9.00e4	10.0153	0.961			1.001		34.51					0.308
6	6 1,2,3,4,6,7,8-HpCDD	5.34e2	7.45e4	10.0153	0.979	1.034	NO	1.000	1.000	37.94	37.94	1.4621		1.46	0.268
7	7 OCDD	3.70e3	1.34e5	10.0153	0.959	0.851	NO	1.000	1.000	41.21	41.23	11.557		11.6	0.213
8	8 2,3,7,8-TCDF		1.72e5	10.0153	0.950			1.001		25.52					0.107
9	9 1,2,3,7,8-PeCDF		1.62e5	10.0153	0.960			1.001		29.60					0.0715
10	10 2,3,4,7,8-PeCDF		1.52e5	10.0153	1.015			1.001		30.50					0.0730
11	11 1,2,3,4,7,8-HxCDF		1.12e5	10.0153	1.177			1.000		33.17					0.0810
12	12 1,2,3,6,7,8-HxCDF		1.20e5	10.0153	1.069			1.000		33.31					0.0836
13	13 2,3,4,6,7,8-HxCDF		1.11e5	10.0153	1.114			1.001		33.93					0.0931
14	14 1,2,3,7,8,9-HxCDF		1.02e5	10.0153	1.062			1.000		34.86					0.115
15	15 1,2,3,4,6,7,8-HpCDF		8.72e4	10.0153	1.128			1.001		36.75					0.135
16	16 1,2,3,4,7,8,9-HpCDF		7.31e4	10.0153	1.280			1.000		38.46					0.106
17	17 OCDF		1.74e5	10.0153	0.947			1.000		41.43					0.172
18	18 13C-2,3,7,8-TCDD	1.20e5	1.11e5	10.0153	1.095	0.806	NO	1.021	1.021	26.26	26.26	196.25	98.3		0.550
19	19 13C-1,2,3,7,8-PeCDD	1.00e5	1.11e5	10.0153	0.881	0.643	NO	1.187	1.195	30.51	30.74	204.61	102.5		0.332
20	20 13C-1,2,3,4,7,8-Hx...	8.05e4	1.23e5	10.0153	0.642	1.278	NO	1.014	1.014	34.06	34.07	203.22	101.8		0.759
21	21 13C-1,2,3,6,7,8-Hx...	8.43e4	1.23e5	10.0153	0.856	1.260	NO	1.017	1.017	34.18	34.17	159.83	80.0		0.570
22	22 13C-1,2,3,7,8,9-Hx...	9.00e4	1.23e5	10.0153	0.807	1.276	NO	1.026	1.026	34.48	34.48	180.96	90.6		0.604
23	23 13C-1,2,3,4,6,7,8-H...	7.45e4	1.23e5	10.0153	0.654	1.017	NO	1.126	1.129	37.83	37.92	184.58	92.4		0.973
24	24 13C-OCDD	1.34e5	1.23e5	10.0153	0.580	0.896	NO	1.226	1.227	41.19	41.21	373.43	93.5		0.777
25	25 13C-2,3,7,8-TCDF	1.72e5	1.80e5	10.0153	1.035	0.795	NO	0.993	0.992	25.55	25.50	184.45	92.4		0.580
26	26 13C-1,2,3,7,8-PeCDF	1.62e5	1.80e5	10.0153	0.854	1.555	NO	1.143	1.150	29.39	29.58	211.04	105.7		0.495
27	27 13C-2,3,4,7,8-PeCDF	1.52e5	1.80e5	10.0153	0.847	1.605	NO	1.176	1.185	30.25	30.47	198.89	99.6		0.499
28	28 13C-1,2,3,4,7,8-Hx...	1.12e5	1.23e5	10.0153	0.832	0.519	NO	0.987	0.987	33.16	33.17	218.45	109.4		0.863
29	29 13C-1,2,3,6,7,8-Hx...	1.20e5	1.23e5	10.0153	1.034	0.518	NO	0.991	0.991	33.28	33.30	188.44	94.4		0.694
30	30 13C-2,3,4,6,7,8-Hx...	1.11e5	1.23e5	10.0153	0.953	0.509	NO	1.009	1.009	33.90	33.89	189.33	94.8		0.753
31	31 13C-1,2,3,7,8,9-Hx...	1.02e5	1.23e5	10.0153	0.828	0.512	NO	1.039	1.038	34.89	34.86	198.87	99.6		0.867

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D1\191106D1-15.qld

Last Altered: Wednesday, November 13, 2019 15:42:09 Pacific Standard Time

Printed: Wednesday, November 13, 2019 15:43:21 Pacific Standard Time

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 Description: 1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	8.72e4	1.23e5	10.0153	0.757	0.435	NO	1.093	1.093	36.71	36.71	186.67	93.5		1.07
33	33 13C-1,2,3,4,7,8,9-H...	7.31e4	1.23e5	10.0153	0.581	0.424	NO	1.143	1.145	38.40	38.46	203.93	102.1		1.40
34	34 13C-OCDF	1.74e5	1.23e5	10.0153	0.689	0.873	NO	1.233	1.233	41.43	41.43	409.46	102.5		0.638
35	35 37Cl-2,3,7,8-TCDD	4.73e4	1.11e5	10.0153	1.198			1.022	1.022	26.28	26.29	70.969	88.8		0.0811
36	36 13C-1,2,3,4-TCDD	1.11e5	1.11e5	10.0153	1.000	0.807	NO	1.000	1.000	25.70	25.71	199.69	100.0		0.602
37	37 13C-1,2,3,4-TCDF	1.80e5	1.80e5	10.0153	1.000	0.795	NO	1.000	1.000	24.28	24.31	199.69	100.0		0.601
38	38 13C-1,2,3,4,6,9-Hx...	1.23e5	1.23e5	10.0153	1.000	0.519	NO	1.000	1.000	33.55	33.59	199.69	100.0		0.717
39	39 Total Tetra-Dioxins		1.20e5	10.0153	0.901			0.000		25.50					0.0821
40	40 Total Penta-Dioxins		1.00e5	10.0153	0.872			0.000		30.00					0.0594
41	41 Total Hexa-Dioxins		0.00e0	10.0153	0.976			0.000		33.80		0.73936		0.739	0.315
42	42 Total Hepta-Dioxins		7.45e4	10.0153	0.989			0.000		37.75		3.8164		3.82	0.266
43	43 Total Tetra-Furans		1.72e5	10.0153	0.943			0.000		24.00					0.0530
44	44 1st Func. Penta-Fur...		0.00e0	10.0153	0.940			0.000		27.63					0.0230
45	45 Total Penta-Furans		0.00e0	10.0153	0.940			0.000		30.00					0.0360
46	46 Total Hexa-Furans		0.00e0	10.0153	1.078			0.000		33.00					0.0464
47	47 Total Hepta-Furans		0.00e0	10.0153	1.135			0.000		37.75					0.0704

Vista Analytical Laboratory

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Description: 1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	32.55	163.261	47553.466	7.226	bb	0.7394	0.74

Hepta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	NO	37.94	271.420	37545.934	14.342	bb	1.4621	1.46
2	42 Total Hepta-Dioxins	NO	37.11	436.464	37545.934	23.313	bb	2.3543	2.35

Tetra-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D1\191106D1-15.qld

Last Altered: Wednesday, November 13, 2019 15:42:09 Pacific Standard Time

Printed: Wednesday, November 13, 2019 15:43:21 Pacific Standard Time

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Description: 1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hepta-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

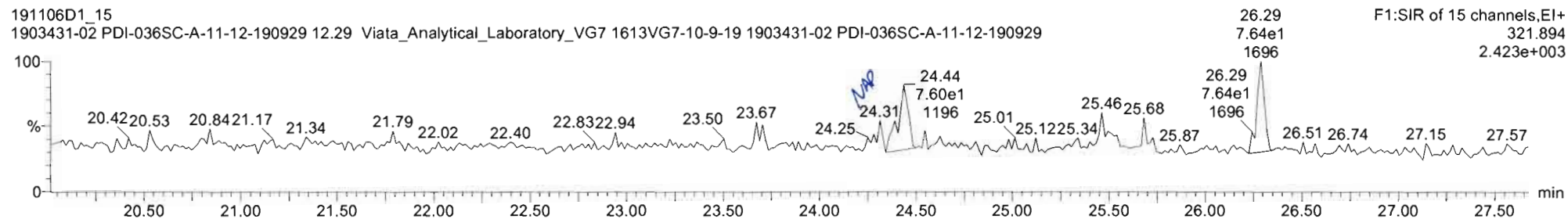
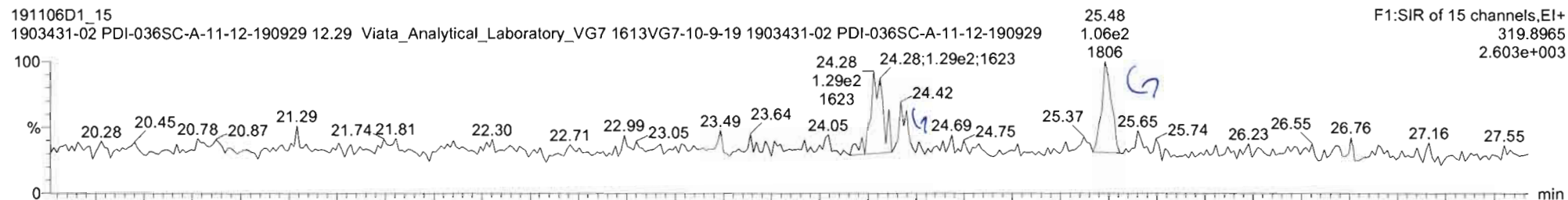
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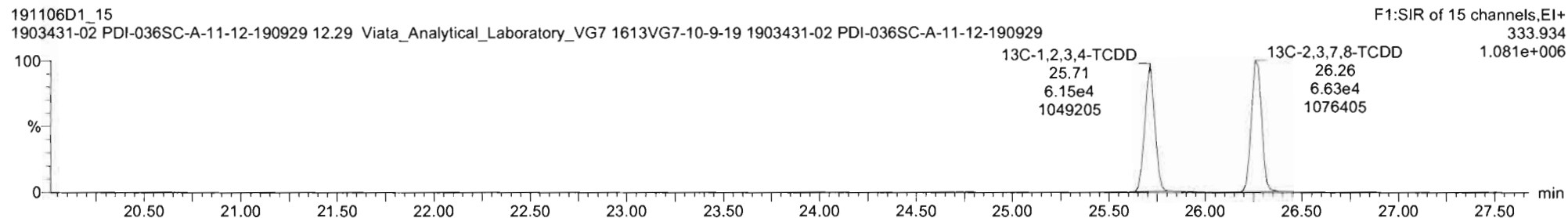
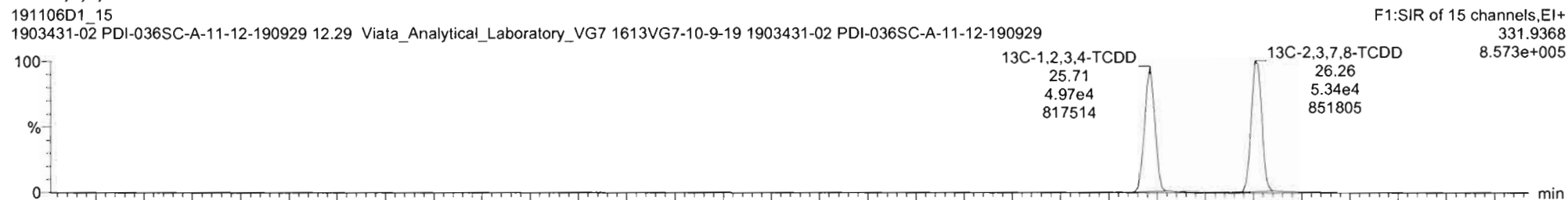
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Total Tetra-Dioxins



13C-2,3,7,8-TCDD



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, November 13, 2019 12:48:23 Pacific Standard Time

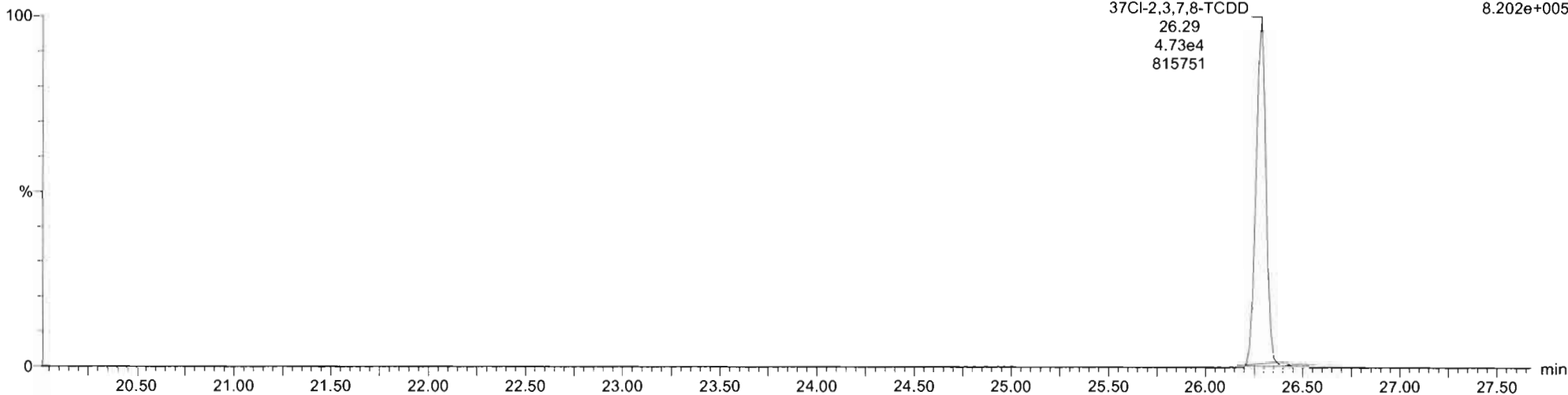
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37Cl-2,3,7,8-TCDD

191106D1_15
1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903431-02 PDI-036SC-A-11-12-190929

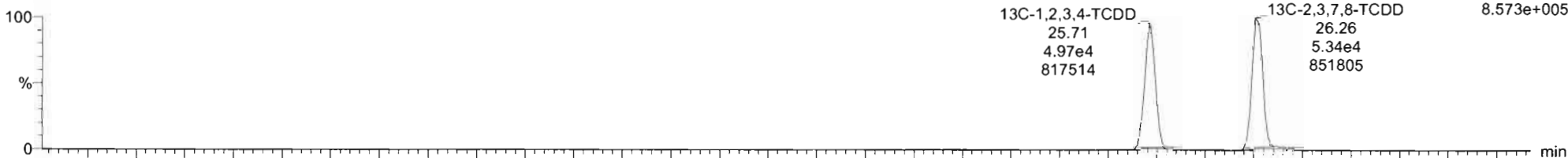
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8.202e+005



13C-1,2,3,4-TCDD

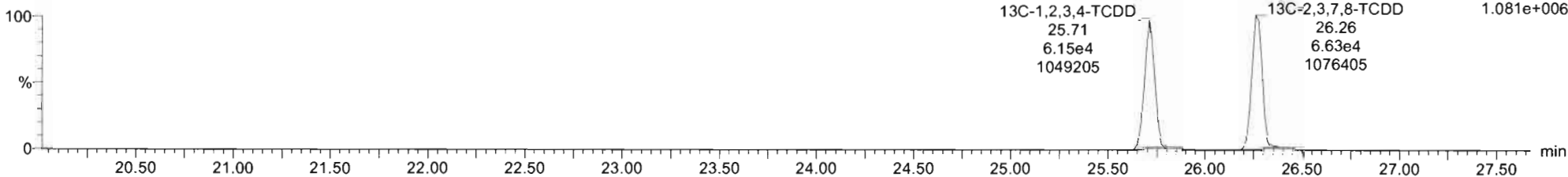
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F1:SIR of 15 channels,EI+
331.9368
8.573e+005



191106D1_15
1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903431-02 PDI-036SC-A-11-12-190929

F1:SIR of 15 channels,EI+
333.934
1.081e+006



Vista Analytical Laboratory

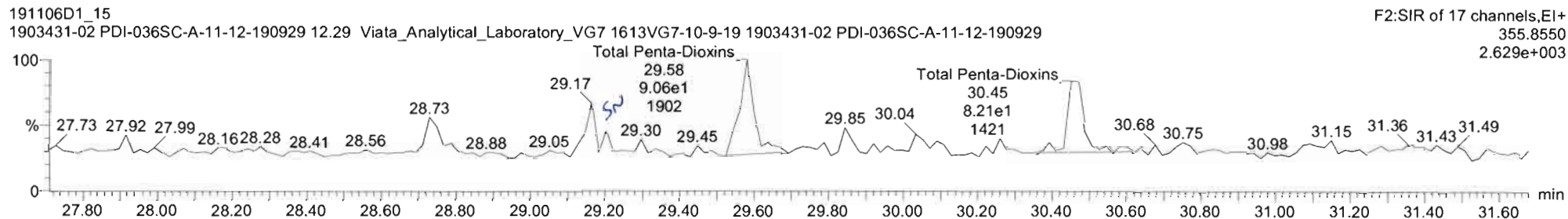
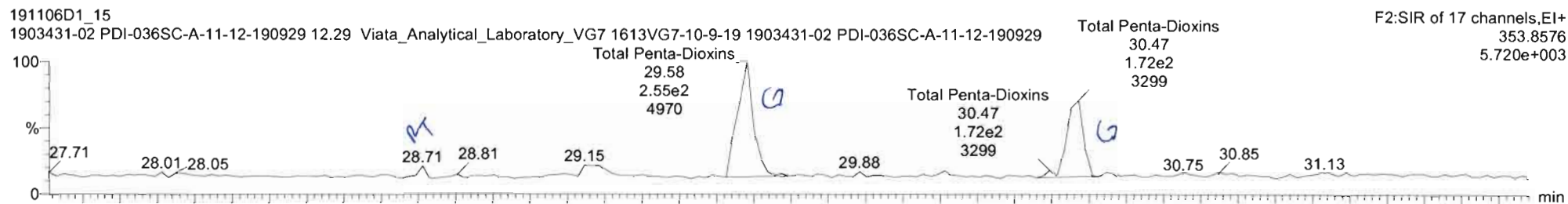
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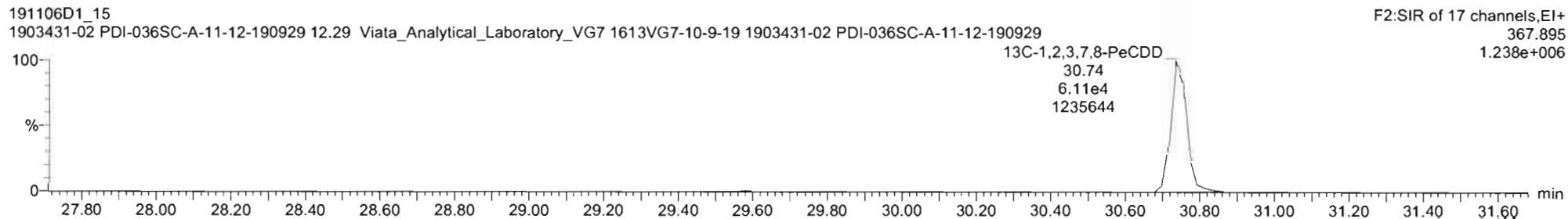
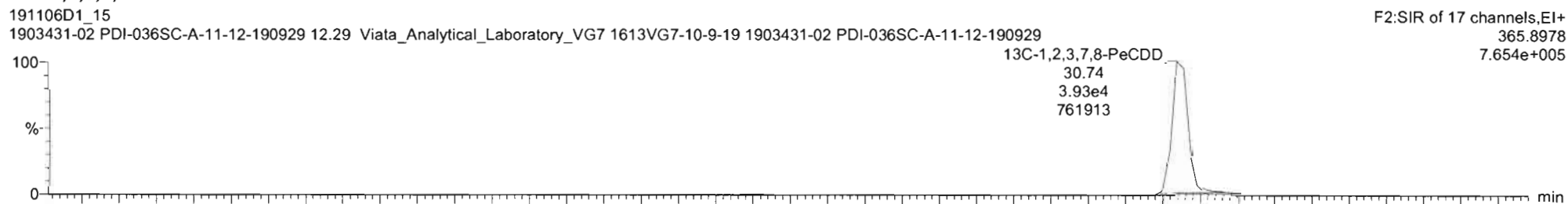
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Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



Vista Analytical Laboratory

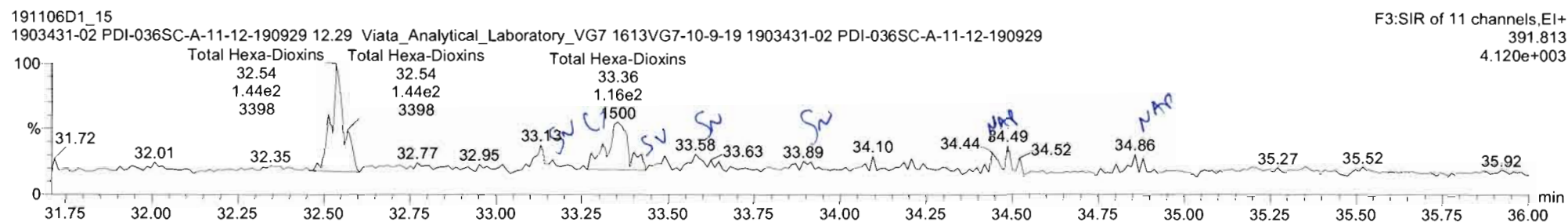
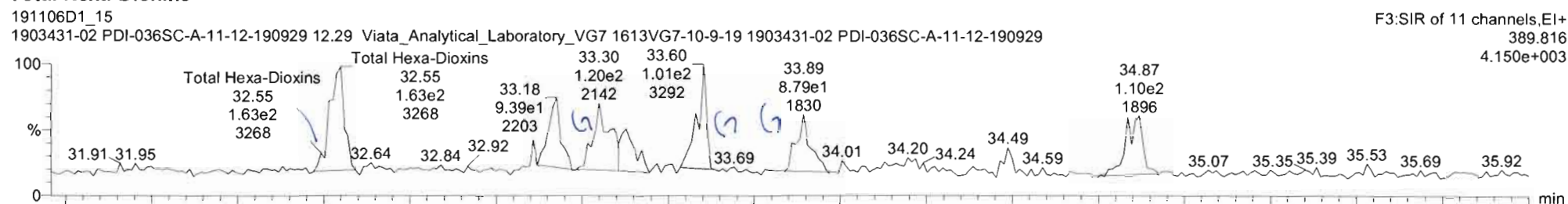
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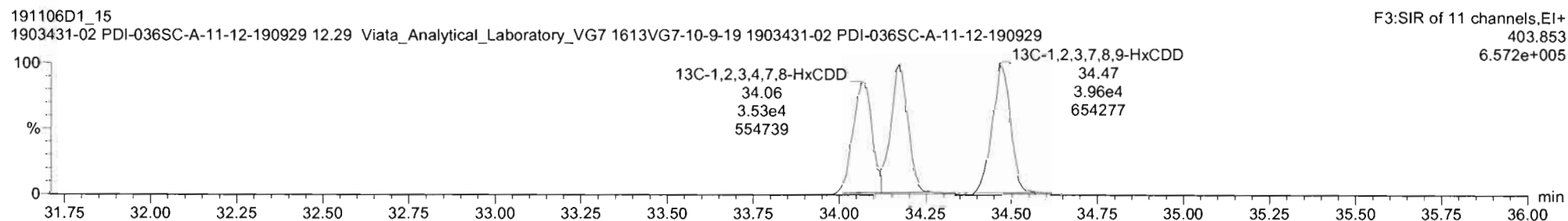
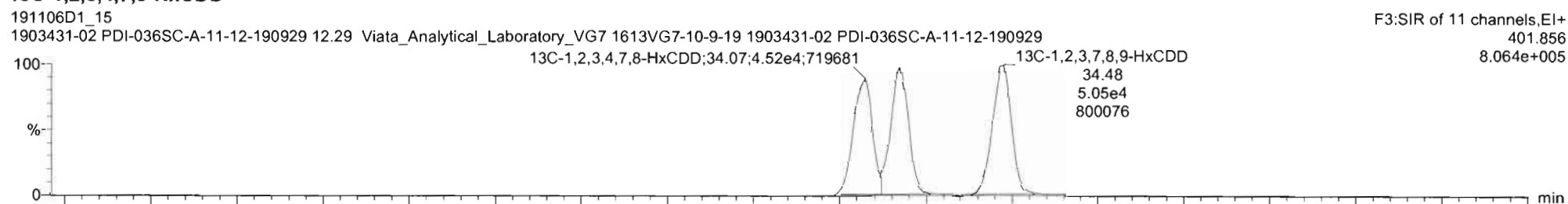
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Total Hexa-Dioxins



13C-1,2,3,4,7,8-HxCDD



Vista Analytical Laboratory

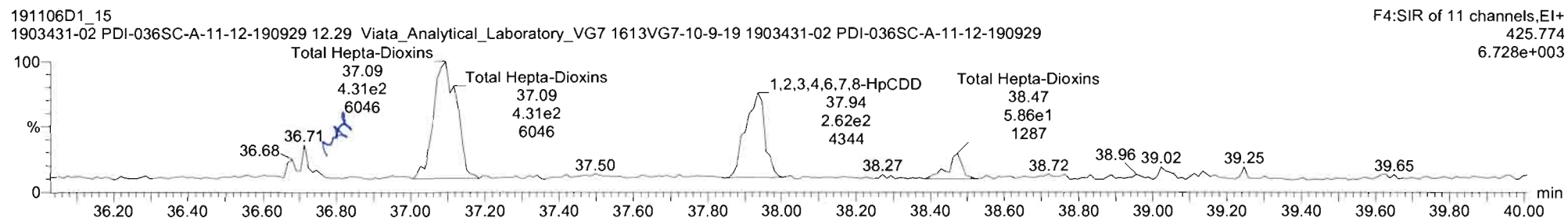
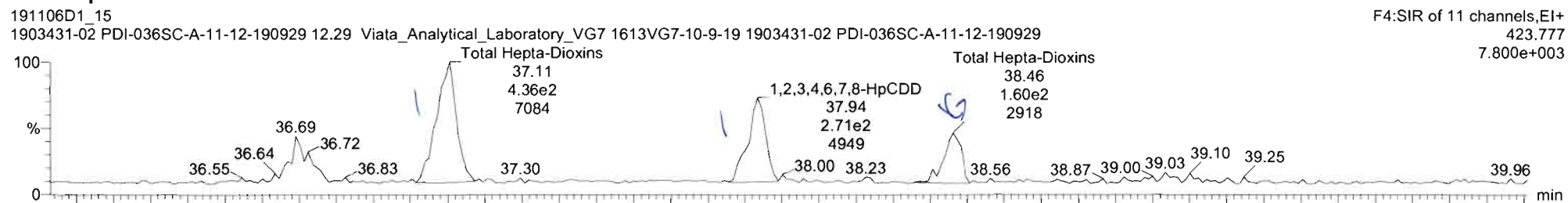
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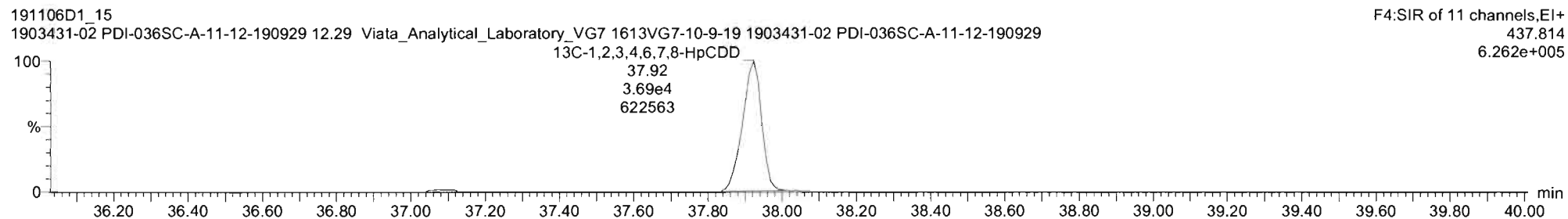
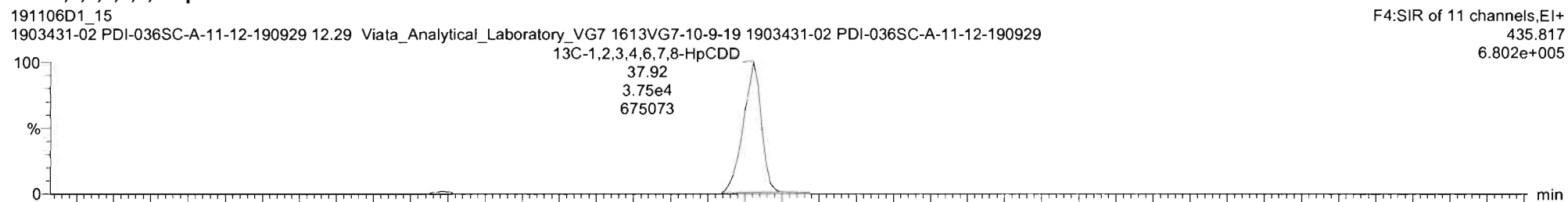
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Total Hepta-Dioxins



13C-1,2,3,4,6,7,8-HpCDD



Vista Analytical Laboratory

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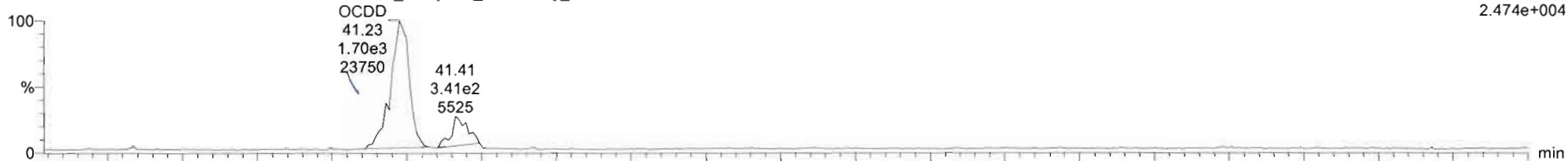
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OCDD

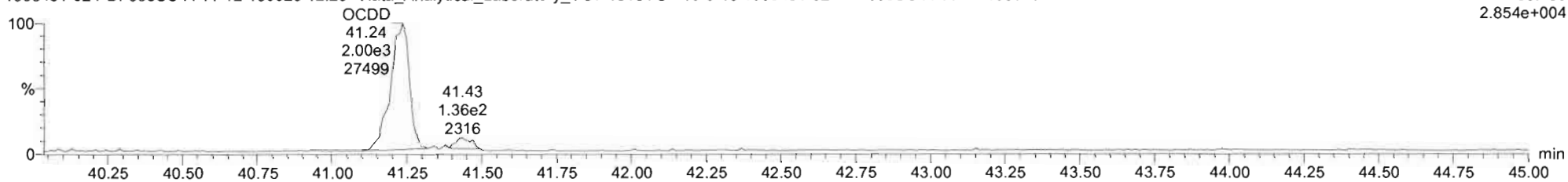
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1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903431-02 PDI-036SC-A-11-12-190929

F5:SIR of 11 channels,EI+
457.738
2.474e+004



191106D1_15
1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903431-02 PDI-036SC-A-11-12-190929

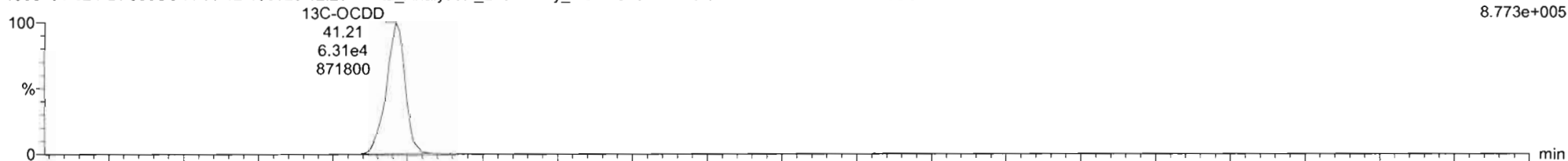
F5:SIR of 11 channels,EI+
459.735
2.854e+004



13C-OCDD

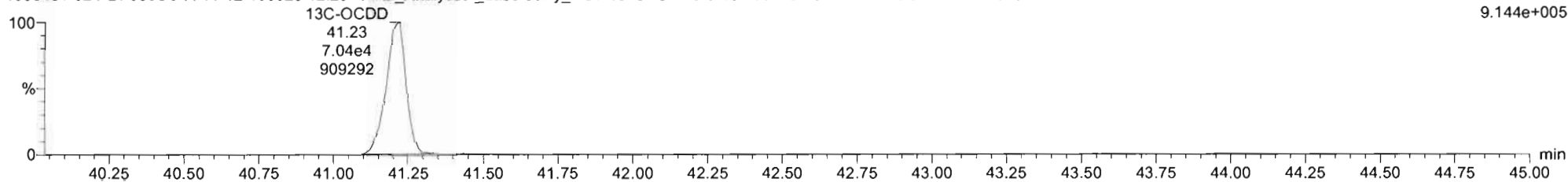
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F5:SIR of 11 channels,EI+
469.778
8.773e+005



191106D1_15
1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903431-02 PDI-036SC-A-11-12-190929

F5:SIR of 11 channels,EI+
471.775
9.144e+005



Vista Analytical Laboratory

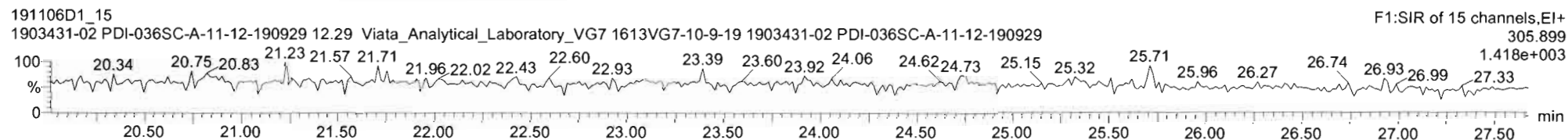
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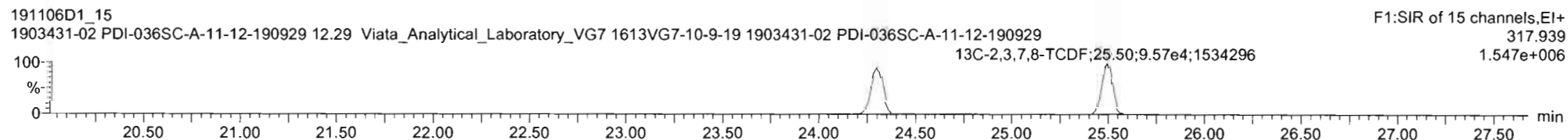
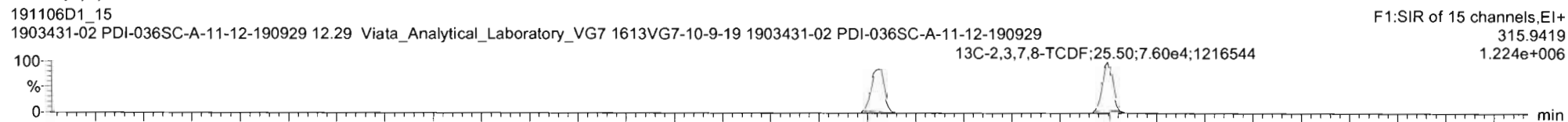
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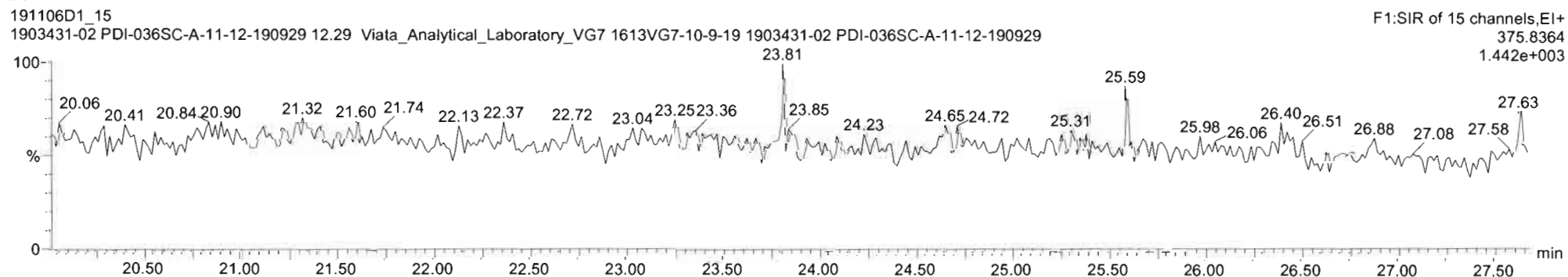
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

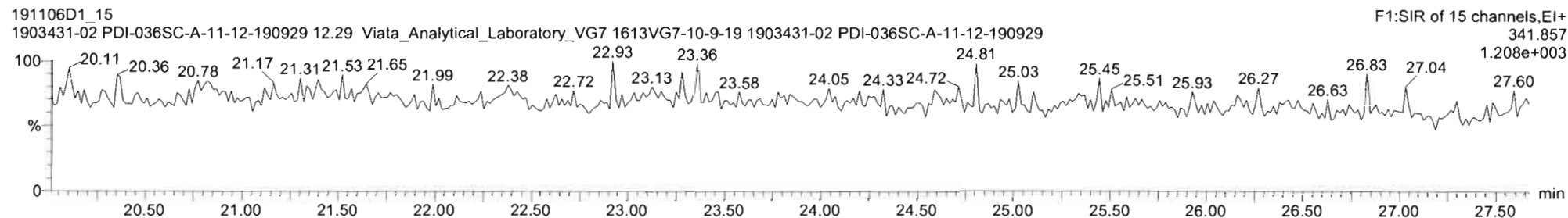
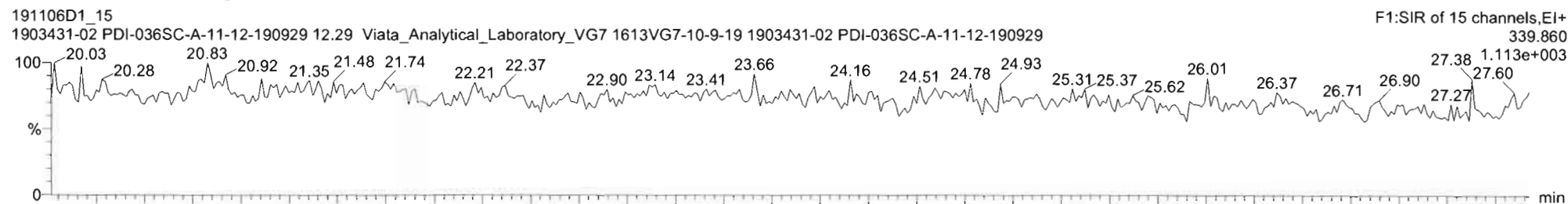
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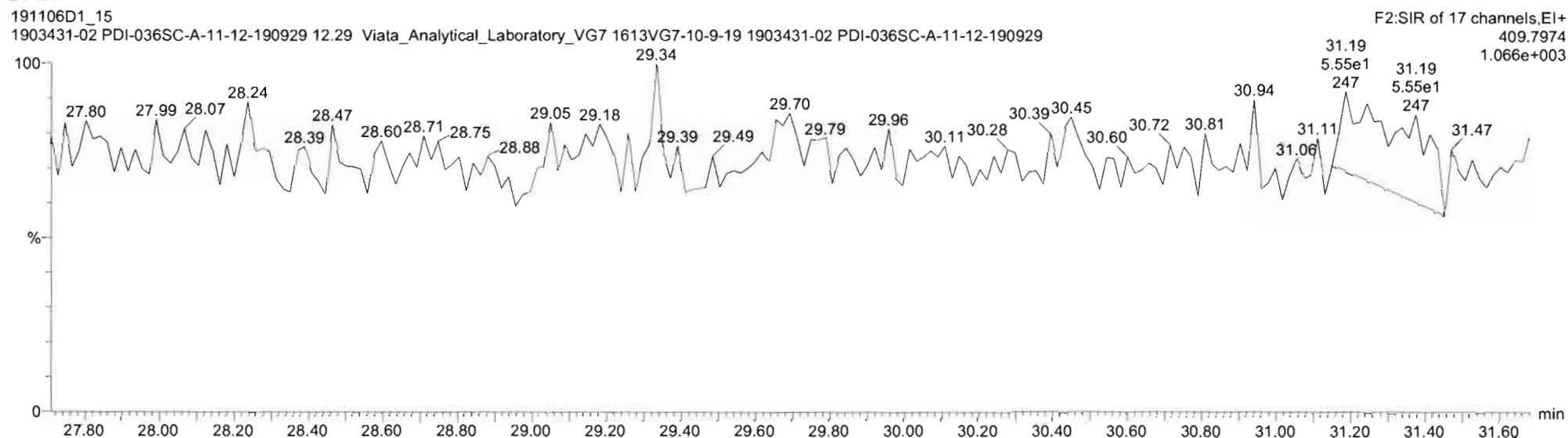
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Description: 1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

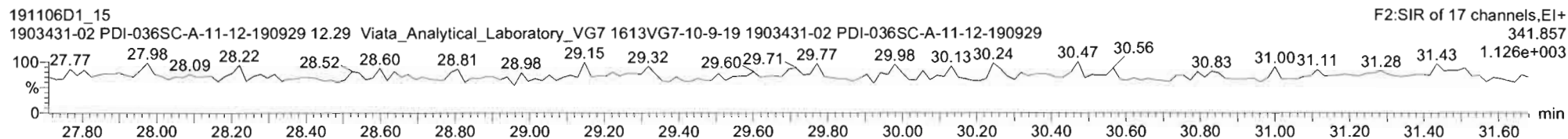
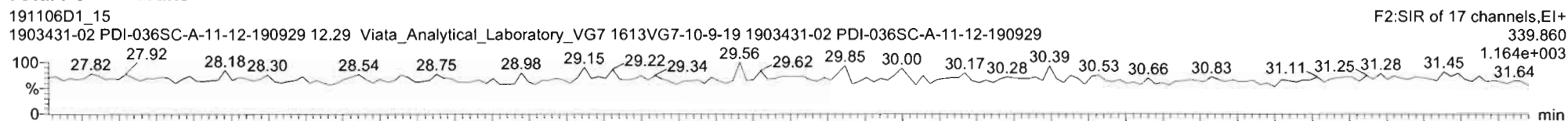
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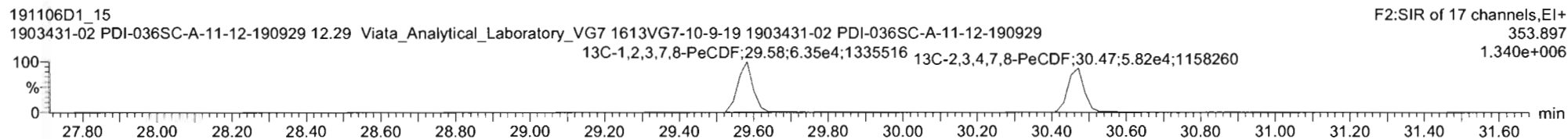
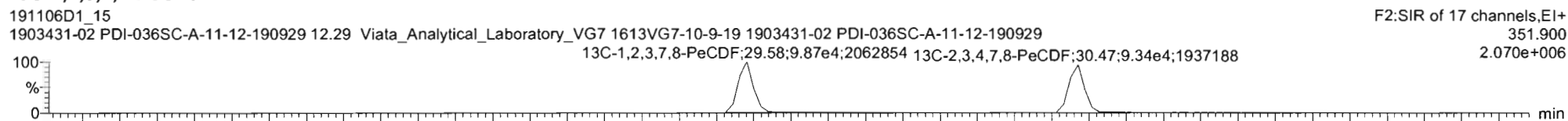
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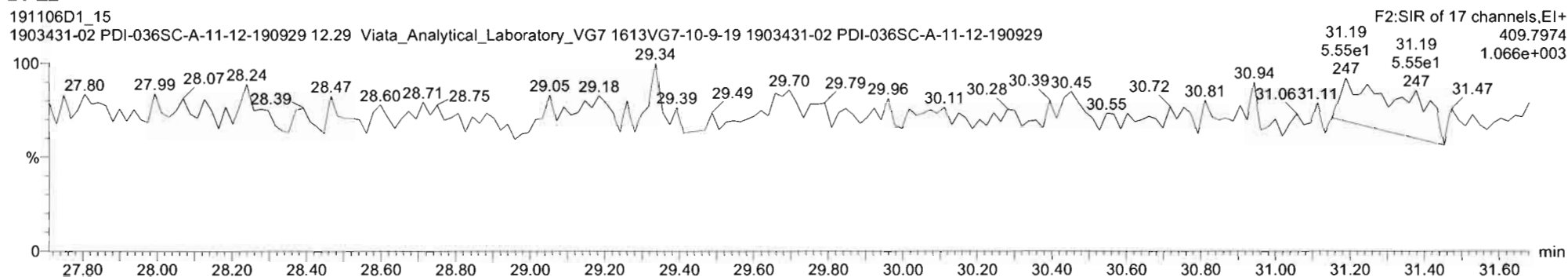
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



DPE2



Vista Analytical Laboratory

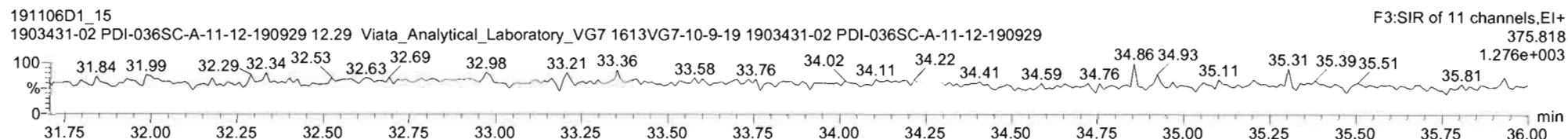
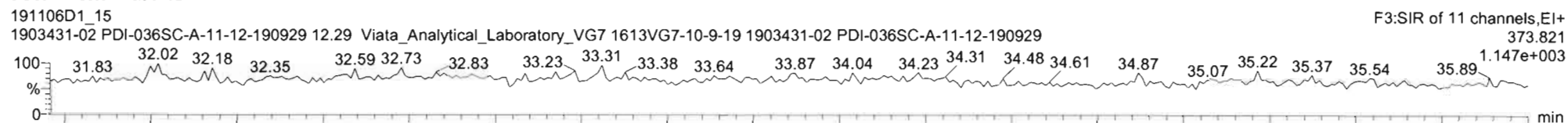
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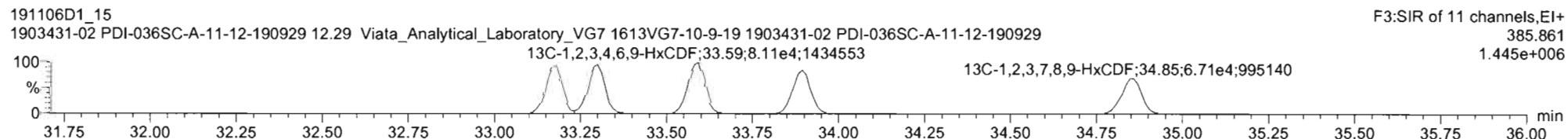
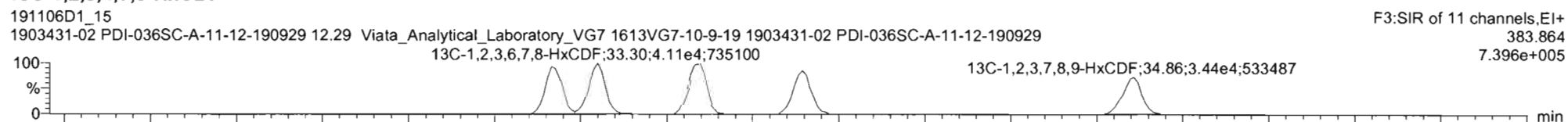
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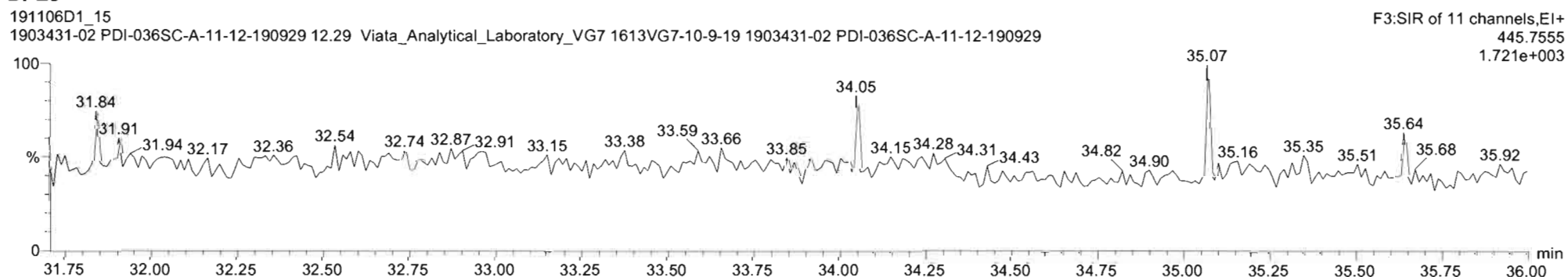
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

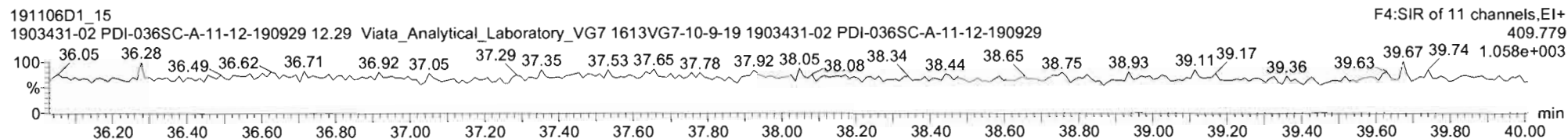
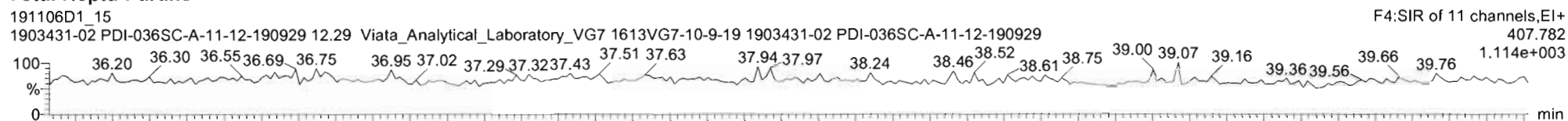
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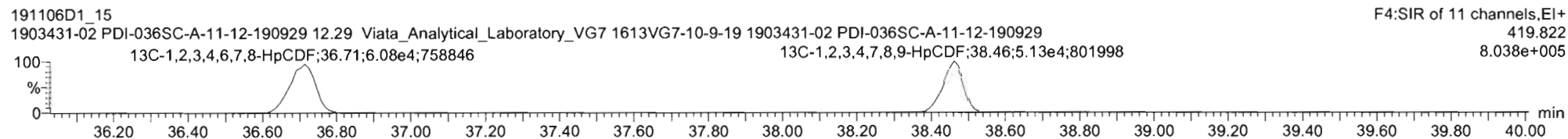
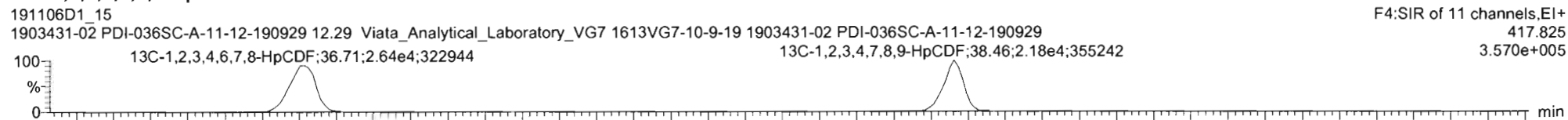
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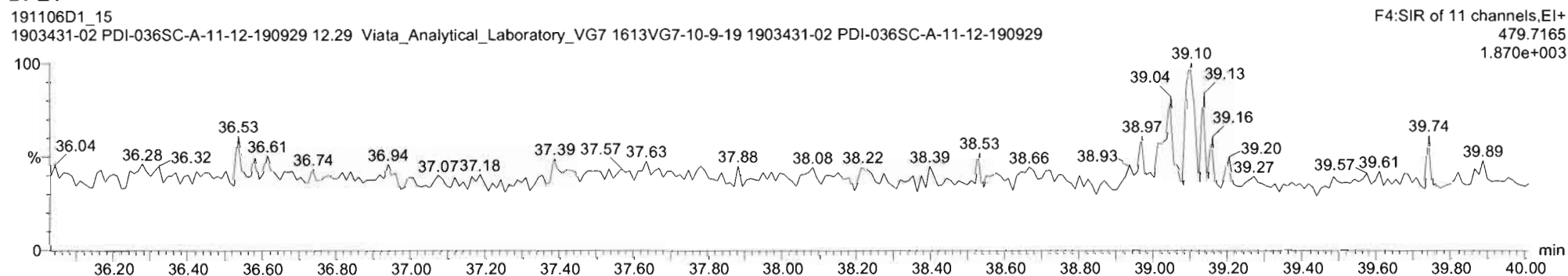
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

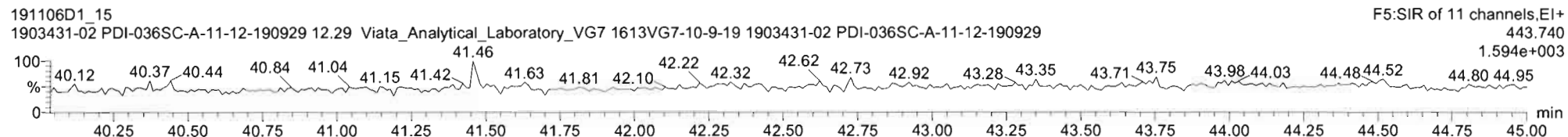
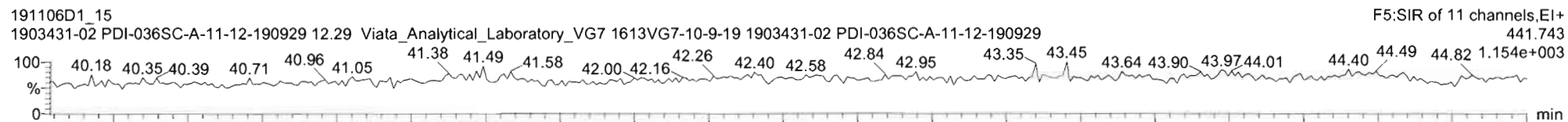
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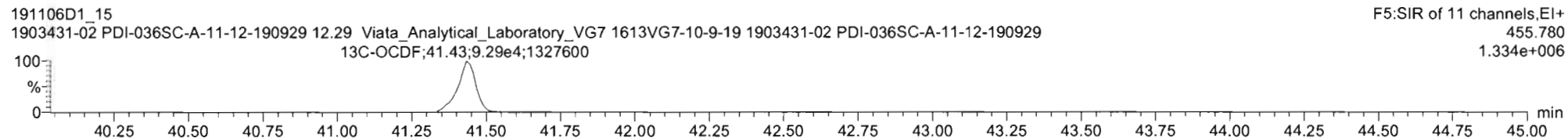
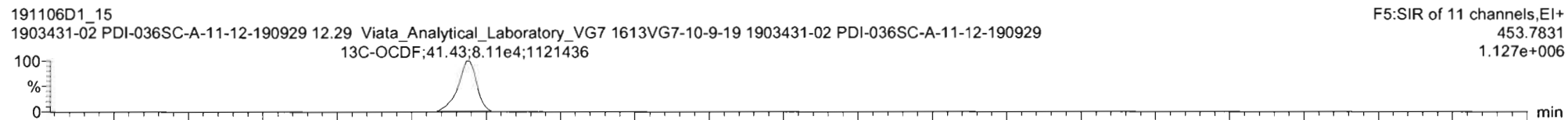
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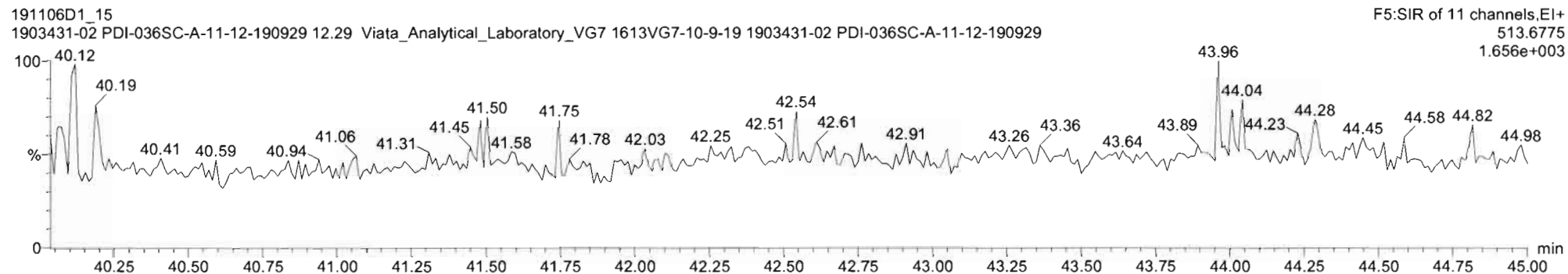
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

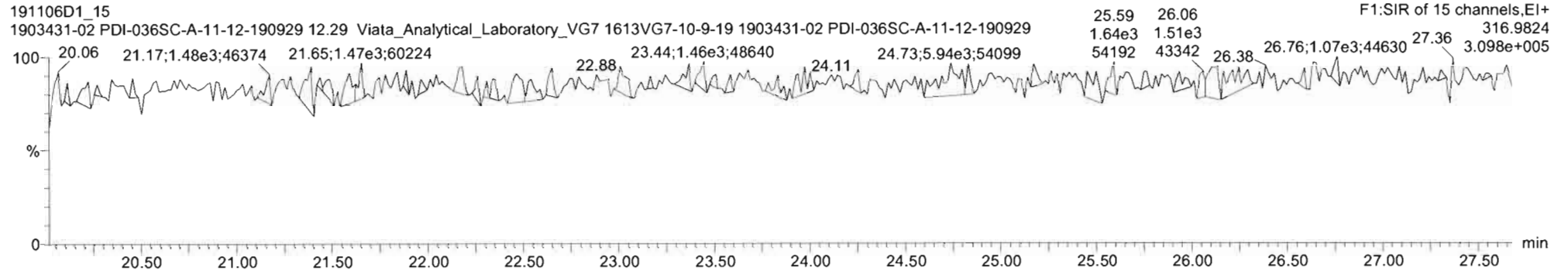
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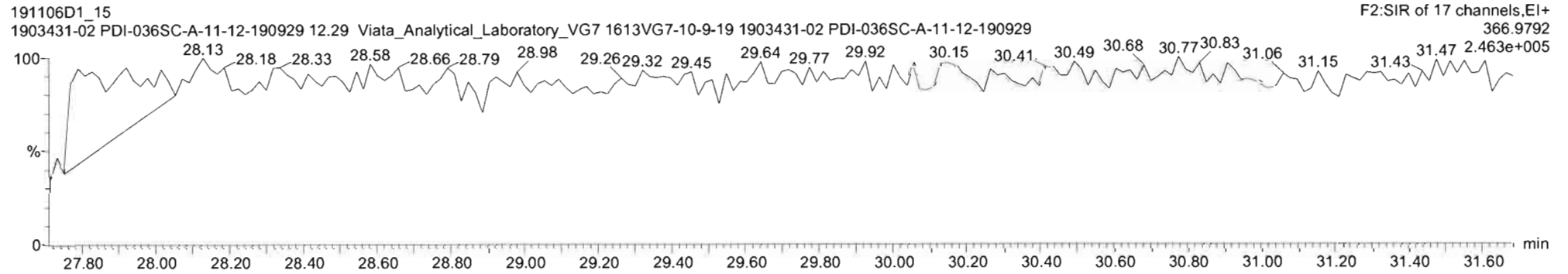
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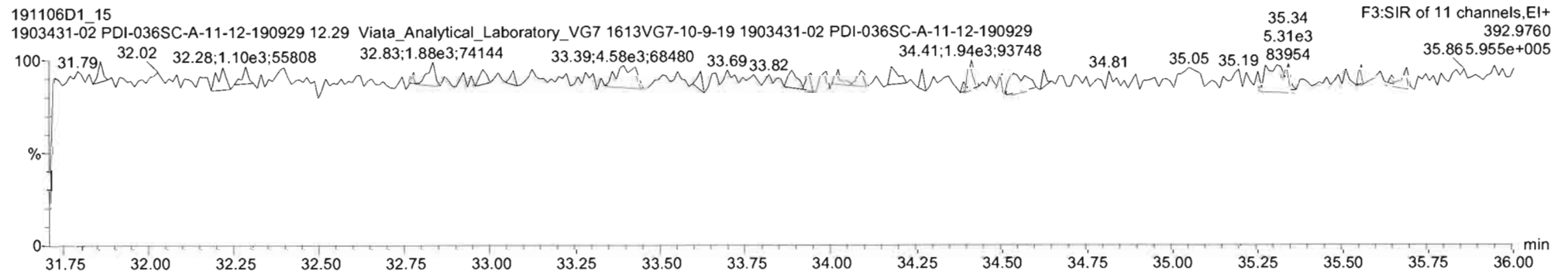
PFK1



PFK2



PFK3



Vista Analytical Laboratory

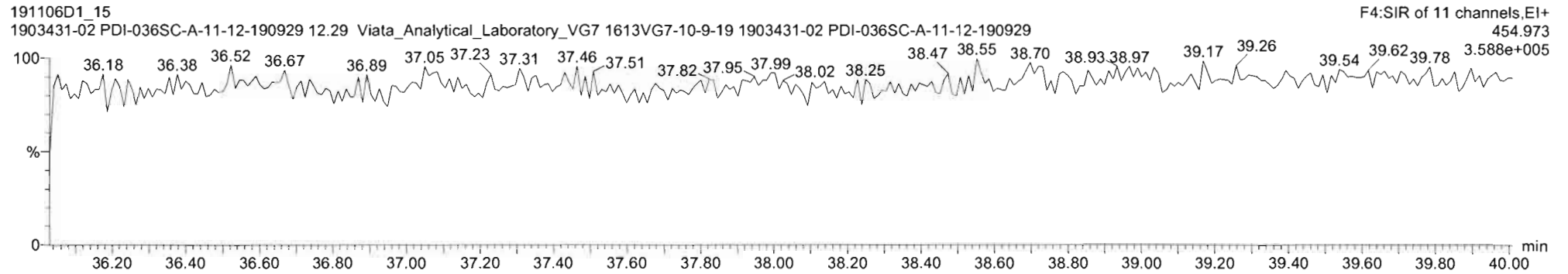
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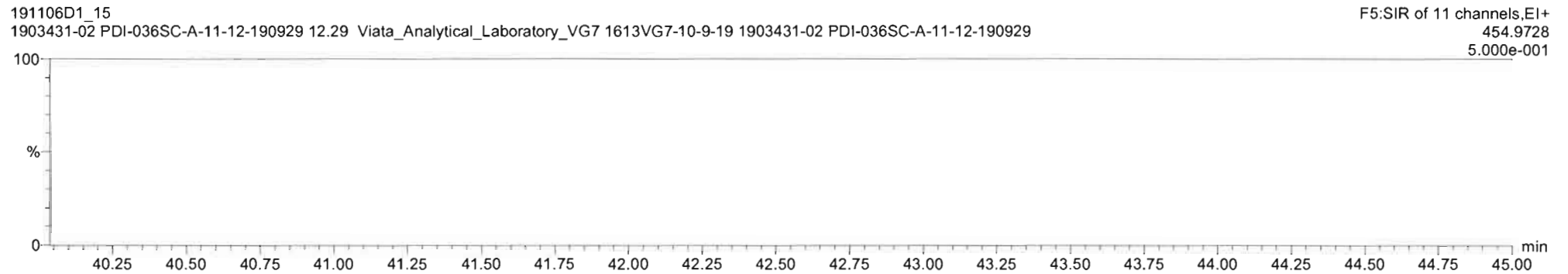
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Description: 1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, November 13, 2019 12:48:23 Pacific Standard Time

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Description: 1903431-02 PDI-036SC-A-11-12-190929 12.29 Viata_Analytical_Laboratory_VG7 1613VG7-10-9-19**

Vista Analytical Laboratory

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Hc 11:13:19

CT 11/15/19

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Calibration: 13 Nov 2019 16:09:50

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#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		1.05e5	10.0885	0.905			1.001		26.31					0.164
2	2 1,2,3,7,8-PeCDD		9.33e4	10.0885	0.903			1.001		30.78					0.159
3	3 1,2,3,4,7,8-HxCDD		7.62e4	10.0885	1.101			1.000		34.09					0.278
4	4 1,2,3,6,7,8-HxCDD		8.27e4	10.0885	0.939			1.000		34.19					0.298
5	5 1,2,3,7,8,9-HxCDD		8.66e4	10.0885	0.961			1.001		34.51					0.276
6	6 1,2,3,4,6,7,8-HpCDD	2.72e2	7.05e4	10.0885	0.979	1.042	NO	1.000	1.001	37.95	37.96	0.78052		0.781	0.246
7	7 OCDD	1.59e3	1.07e5	10.0885	0.959	0.913	NO	1.000	1.000	41.24	41.25	6.1568		6.16	0.340
8	8 2,3,7,8-TCDF		1.54e5	10.0885	0.950			1.001		25.52					0.0992
9	9 1,2,3,7,8-PeCDF		1.52e5	10.0885	0.960			1.001		29.60					0.102
10	10 2,3,4,7,8-PeCDF		1.45e5	10.0885	1.015			1.001		30.50					0.100
11	11 1,2,3,4,7,8-HxCDF		1.10e5	10.0885	1.177			1.000		33.19					0.0826
12	12 1,2,3,6,7,8-HxCDF		1.17e5	10.0885	1.069			1.000		33.32					0.0880
13	13 2,3,4,6,7,8-HxCDF		1.06e5	10.0885	1.114			1.001		33.94					0.105
14	14 1,2,3,7,8,9-HxCDF		9.99e4	10.0885	1.062			1.000		34.87					0.127
15	15 1,2,3,4,6,7,8-HpCDF		7.75e4	10.0885	1.128			1.001		36.76					0.148
16	16 1,2,3,4,7,8,9-HpCDF		6.52e4	10.0885	1.280			1.000		38.47					0.122
17	17 OCDF		1.43e5	10.0885	0.947			1.000		41.46					0.200
18	18 13C-2,3,7,8-TCDD	1.05e5	1.12e5	10.0885	1.095	0.810	NO	1.021	1.021	26.27	26.28	170.97	86.2		0.476
19	19 13C-1,2,3,7,8-PeCDD	9.33e4	1.12e5	10.0885	0.881	0.614	NO	1.187	1.195	30.54	30.76	188.08	94.9		0.258
20	20 13C-1,2,3,4,7,8-Hx...	7.62e4	1.22e5	10.0885	0.642	1.263	NO	1.014	1.014	34.07	34.08	192.46	97.1		0.701
21	21 13C-1,2,3,6,7,8-Hx...	8.27e4	1.22e5	10.0885	0.856	1.295	NO	1.017	1.017	34.19	34.19	156.77	79.1		0.526
22	22 13C-1,2,3,7,8,9-Hx...	8.66e4	1.22e5	10.0885	0.807	1.279	NO	1.026	1.026	34.49	34.48	174.13	87.8		0.558
23	23 13C-1,2,3,4,6,7,8-H...	7.05e4	1.22e5	10.0885	0.654	1.046	NO	1.126	1.129	37.85	37.94	174.77	88.2		1.01
24	24 13C-OCDD	1.07e5	1.22e5	10.0885	0.580	0.937	NO	1.226	1.227	41.20	41.24	299.33	75.5		0.475
25	25 13C-2,3,7,8-TCDF	1.54e5	1.91e5	10.0885	1.035	0.757	NO	0.993	0.991	25.56	25.50	154.69	78.0		0.491
26	26 13C-1,2,3,7,8-PeCDF	1.52e5	1.91e5	10.0885	0.854	1.588	NO	1.143	1.150	29.41	29.58	184.52	93.1		0.572
27	27 13C-2,3,4,7,8-PeCDF	1.45e5	1.91e5	10.0885	0.847	1.592	NO	1.176	1.184	30.27	30.47	178.57	90.1		0.577
28	28 13C-1,2,3,4,7,8-Hx...	1.10e5	1.22e5	10.0885	0.832	0.513	NO	0.987	0.988	33.18	33.19	214.10	108.0		0.866
29	29 13C-1,2,3,6,7,8-Hx...	1.17e5	1.22e5	10.0885	1.034	0.535	NO	0.991	0.991	33.30	33.31	182.73	92.2		0.696
30	30 13C-2,3,4,6,7,8-Hx...	1.06e5	1.22e5	10.0885	0.953	0.520	NO	1.009	1.009	33.91	33.91	180.16	90.9		0.755
31	31 13C-1,2,3,7,8,9-Hx...	9.99e4	1.22e5	10.0885	0.828	0.517	NO	1.039	1.038	34.90	34.87	195.85	98.8		0.870

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-3.qld

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Printed: Wednesday, November 13, 2019 16:13:37 Pacific Standard Time

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 Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	7.75e4	1.22e5	10.0885	0.757	0.426	NO	1.093	1.093	36.72	36.73	165.98	83.7		0.818
33	33 13C-1,2,3,4,7,8,9-H...	6.52e4	1.22e5	10.0885	0.581	0.420	NO	1.143	1.145	38.41	38.47	181.93	91.8		1.07
34	34 13C-OCDF	1.43e5	1.22e5	10.0885	0.689	0.860	NO	1.233	1.234	41.44	41.46	336.96	85.0		0.423
35	35 37Cl-2,3,7,8-TCDD	4.49e4	1.12e5	10.0885	1.198			1.022	1.022	26.30	26.29	66.642	84.0		0.106
36	36 13C-1,2,3,4-TCDD	1.12e5	1.12e5	10.0885	1.000	0.799	NO	1.000	1.000	25.70	25.73	198.25	100.0		0.522
37	37 13C-1,2,3,4-TCDF	1.91e5	1.91e5	10.0885	1.000	0.805	NO	1.000	1.000	24.28	24.32	198.25	100.0		0.508
38	38 13C-1,2,3,4,6,9-Hx...	1.22e5	1.22e5	10.0885	1.000	0.517	NO	1.000	1.000	33.55	33.60	198.25	100.0		0.720
39	39 Total Tetra-Dioxins		1.05e5	10.0885	0.901			0.000		25.50					0.0877
40	40 Total Penta-Dioxins		9.33e4	10.0885	0.872			0.000		30.00					0.0677
41	41 Total Hexa-Dioxins		0.00e0	10.0885	0.976			0.000		33.80		0.86537		0.865	0.290
42	42 Total Hepta-Dioxins		7.05e4	10.0885	0.989			0.000		37.75		2.2354		2.24	0.243
43	43 Total Tetra-Furans		1.54e5	10.0885	0.943			0.000		24.00					0.0513
44	44 1st Func. Penta-Fur...		0.00e0	10.0885	0.940			0.000		27.63					0.0918
45	45 Total Penta-Furans		0.00e0	10.0885	0.940			0.000		30.00					0.0516
46	46 Total Hexa-Furans		0.00e0	10.0885	1.078			0.000		33.00					0.0522
47	47 Total Hepta-Furans		0.00e0	10.0885	1.135			0.000		37.75					0.0740

Vista Analytical Laboratory

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Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	32.55	193.983	45921.246	8.520	MM	0.8654	0.87

Hepta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	42 Total Hepta-Dioxins	NO	37.10	265.123	36017.984	14.511	bb	1.4549	1.45
2	6 1,2,3,4,6,7,8-HpCDD	NO	37.96	138.651	36017.984	7.712	bb	0.7805	0.78

Tetra-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-3.qld

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Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Penta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
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Hepta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
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Vista Analytical Laboratory

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Printed: Wednesday, November 13, 2019 16:04:39 Pacific Standard Time

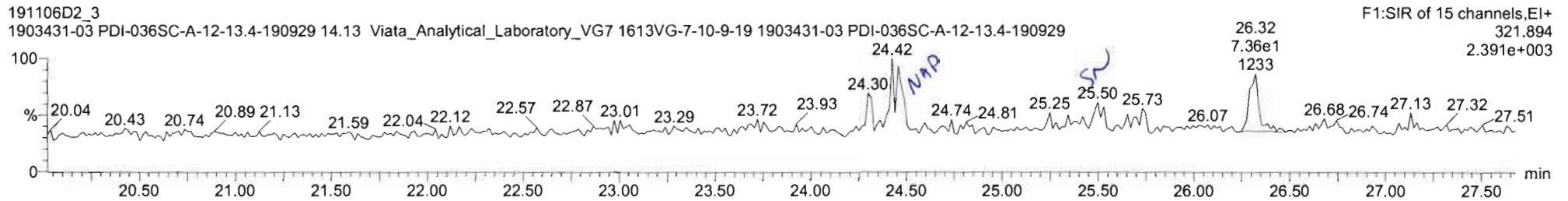
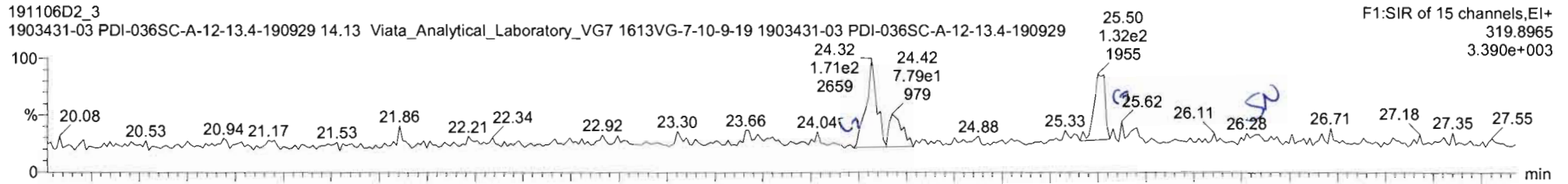
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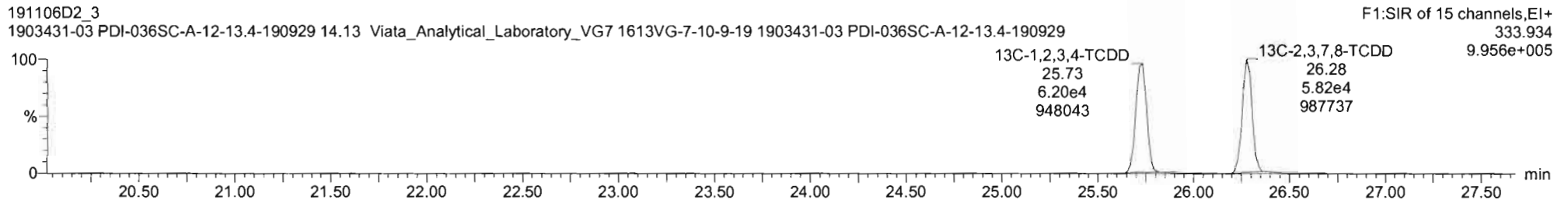
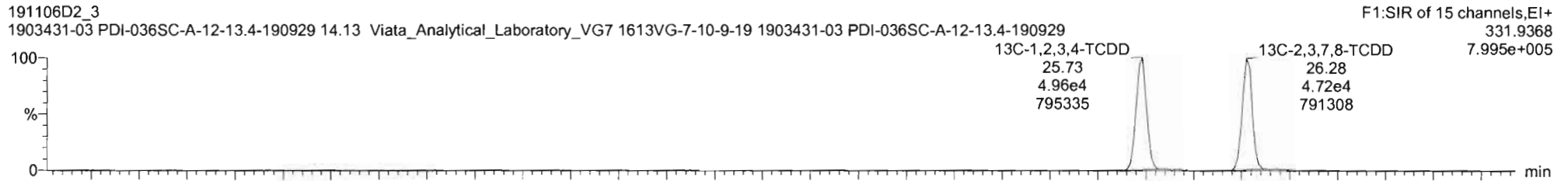
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Total Tetra-Dioxins



13C-2,3,7,8-TCDD



Vista Analytical Laboratory

Dataset: Untitled

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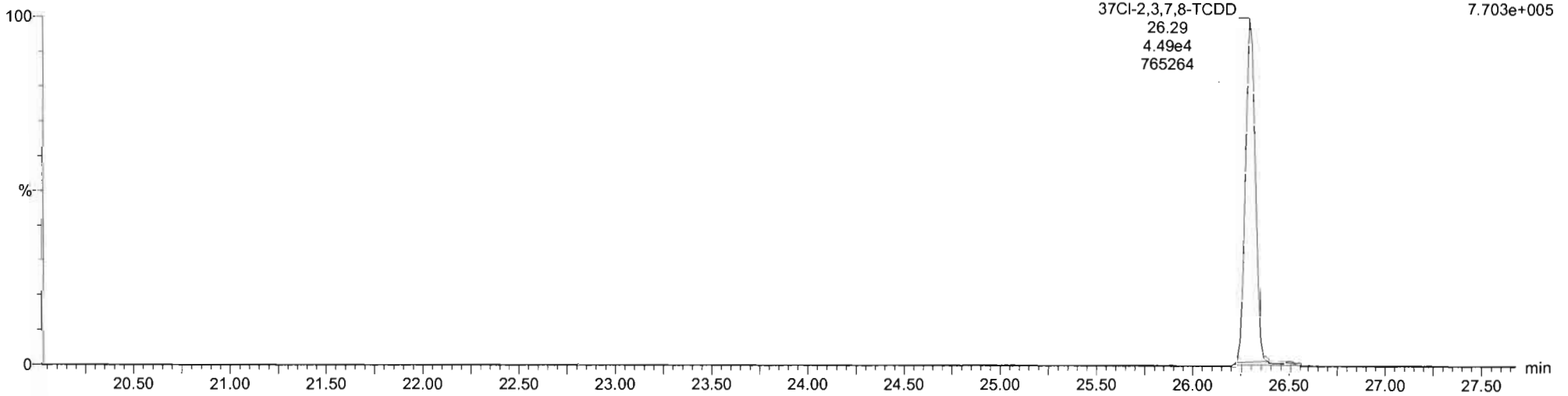
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37Cl-2,3,7,8-TCDD

191106D2_3
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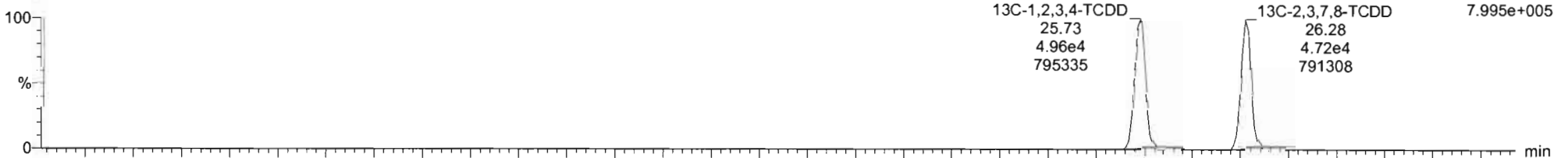
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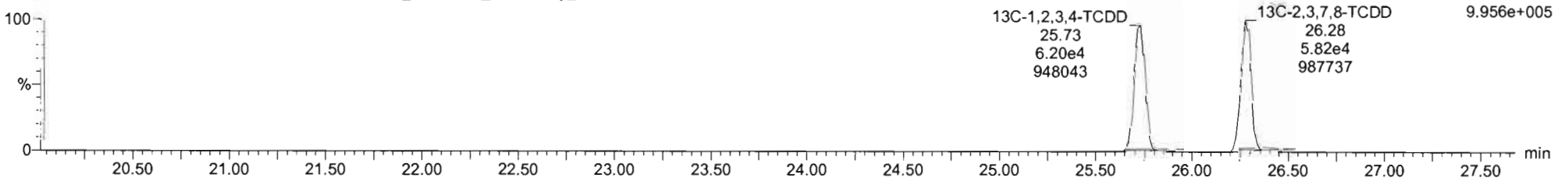
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F1:SIR of 15 channels, EI+
331.9368
7.995e+005



191106D2_3
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F1:SIR of 15 channels, EI+
333.934
9.956e+005



Vista Analytical Laboratory

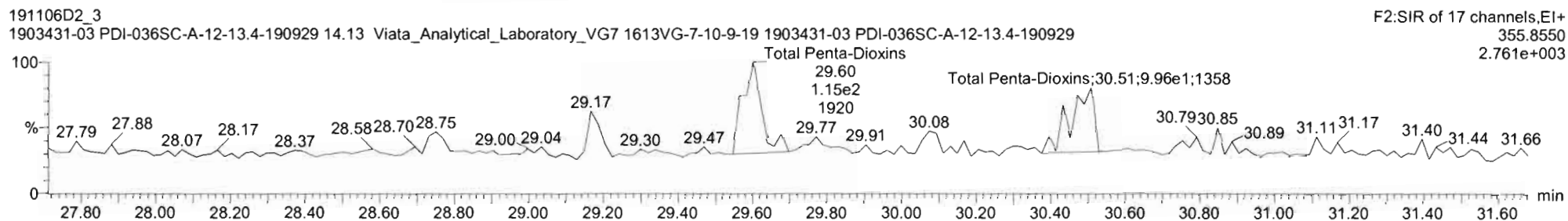
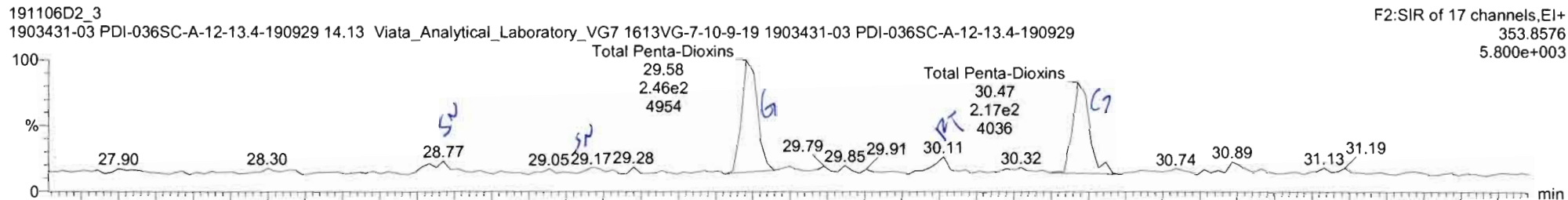
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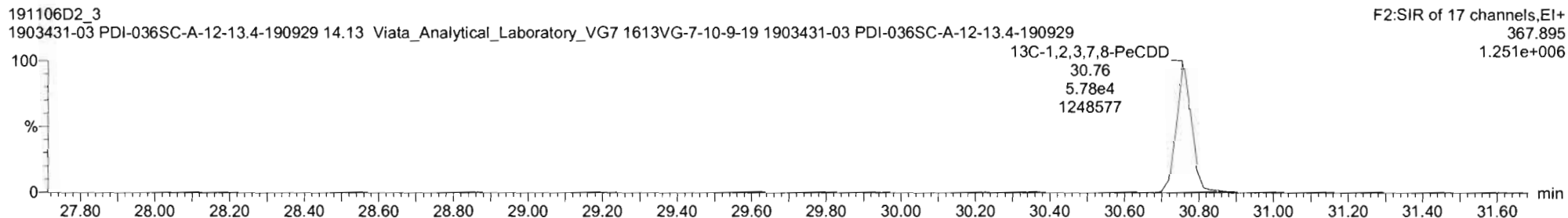
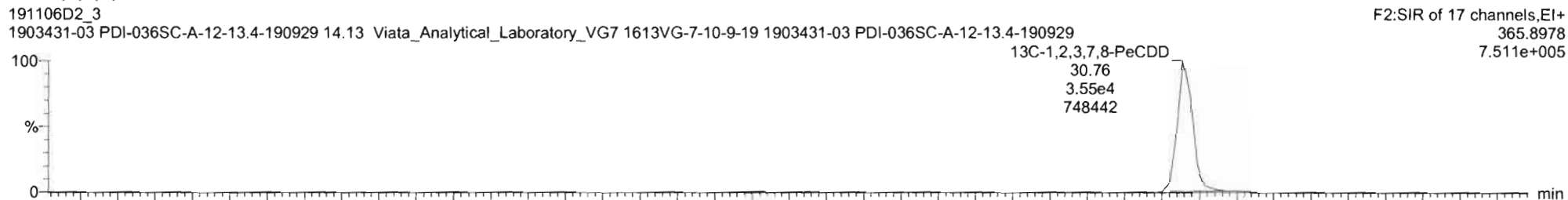
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Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



Vista Analytical Laboratory

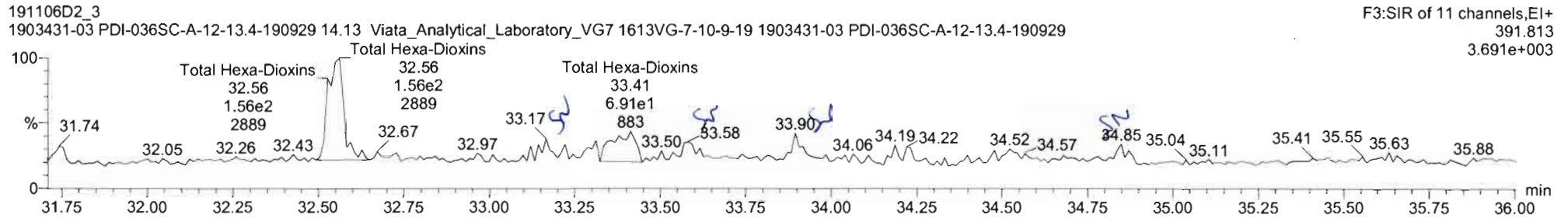
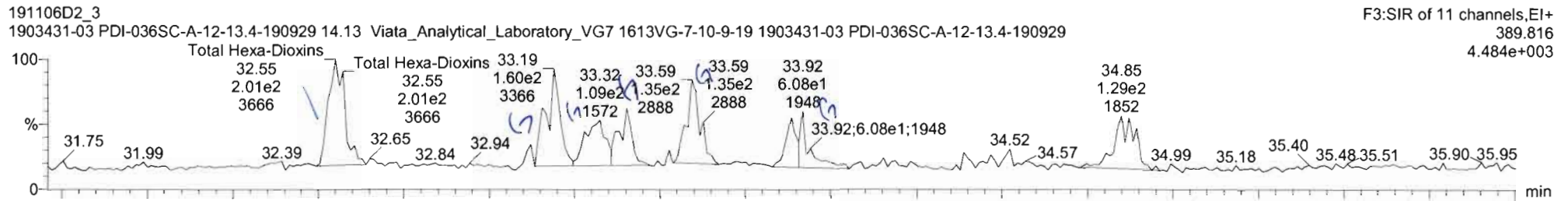
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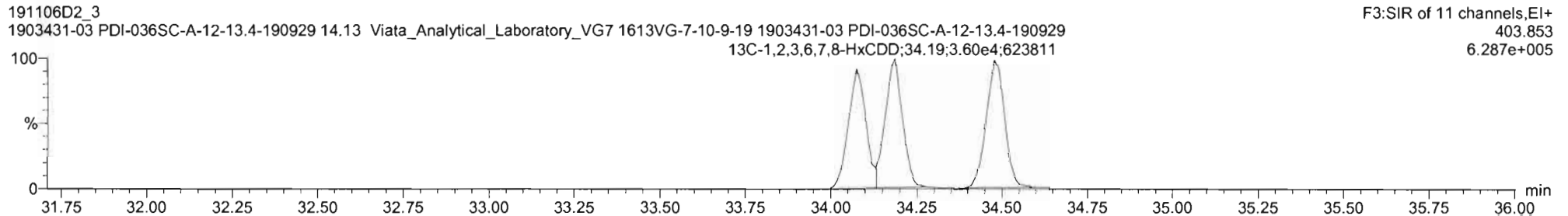
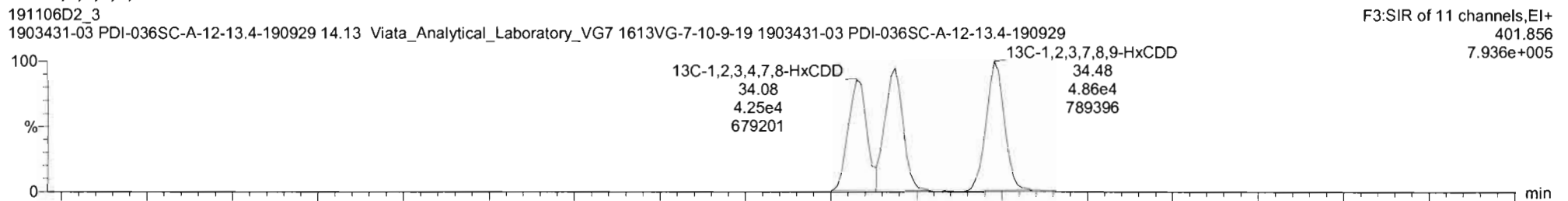
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Total Hexa-Dioxins

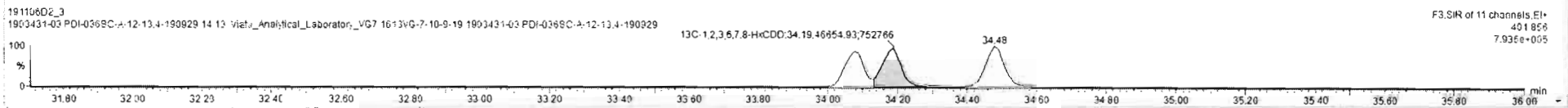
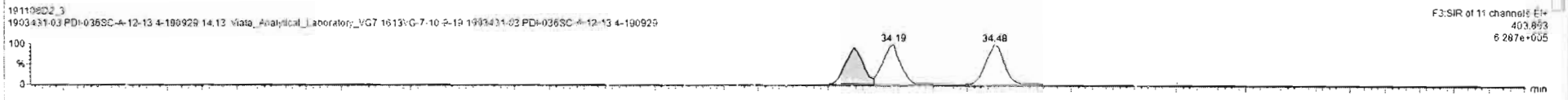
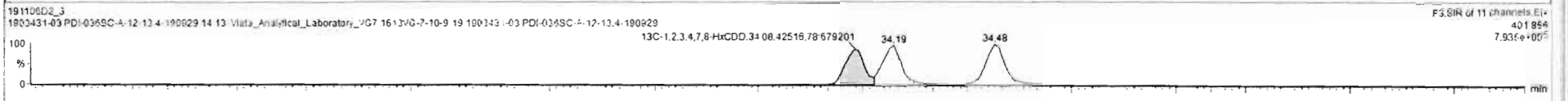
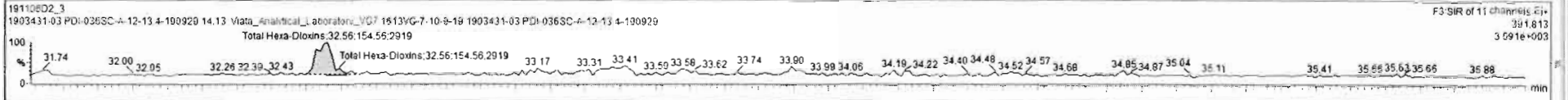
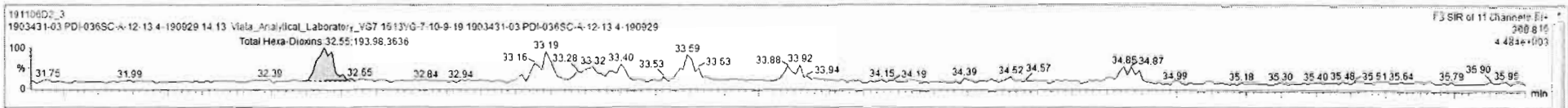


13C-1,2,3,4,7,8-HxCDD



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wtvol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
35	37C-1,2,3,7,8-TCDD	4.49e4	1.12e5	36			1.198	10.068	28.30	28.29	1.022	1.022	NO	86.64	84.0	0.126	
36	13C-1,2,3,4-TCDD	1.12e5	1.12e5	36	0.80	NO	1.000	10.068	25.70	25.73	1.000	1.000	NO	198.2	100	0.522	
37	13C-1,2,3,4-TCDF	1.91e5	1.91e5	37	0.80	NO	1.000	10.068	24.28	24.32	1.000	1.000	NO	198.2	100	0.508	
38	13C-1,2,3,4,6,9-HxCDF	1.22e5	1.22e5	38	0.52	NO	1.000	10.068	33.55	33.60	1.000	1.000	NO	198.2	100	0.720	
39	Total Tetra-Dioxins	1.05e5					0.901	10.058	25.50			0.000	NO			0.0377	
40	Total Penta-Dioxins	9.33e4					0.872	10.068	30.00			0.000	NO			0.0677	
41	Total Hexa-Dioxins	0.06e0					0.976	10.068	33.80			0.000	NO	0.8654	0.290	0.8654	
42	Total Hepta-Dioxine	7.05e4					0.989	10.068	37.75			0.000	NO	2.235	0.243	2.235	
43	Total Tetra-Furans	1.54e5					0.943	10.068	24.00			0.000	NO			0.0513	
44	Total Penta-Furans	0.06e0					0.940	10.068	27.63			0.000	NO			0.0318	
45	Total Hexa-Furans	0.06e0					0.920	10.068	30.00			0.000	NO			0.0541	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.55	1.940e2	1.546e2	1.240	1.26	NO	0.86537	0.86537



Vista Analytical Laboratory

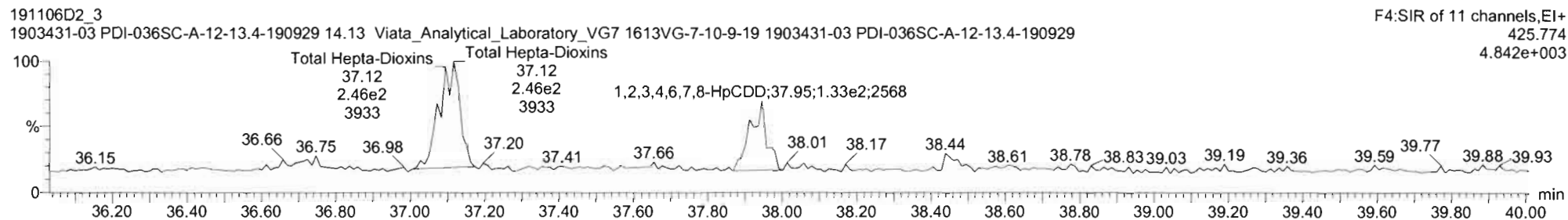
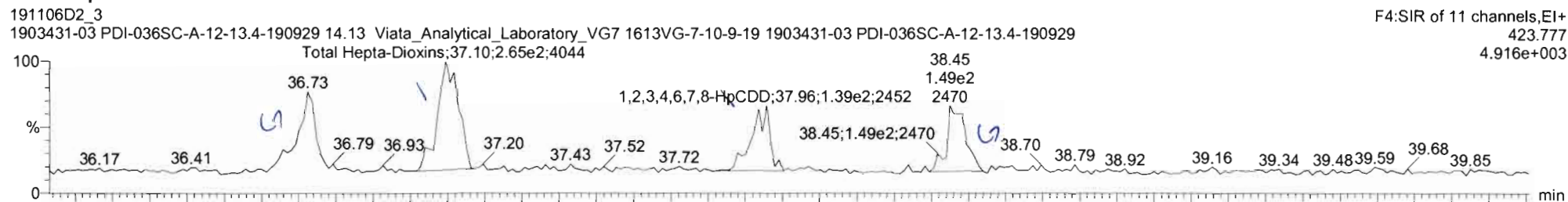
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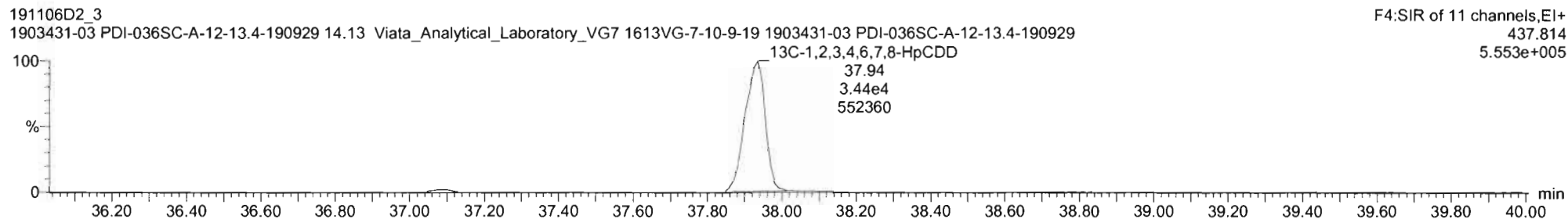
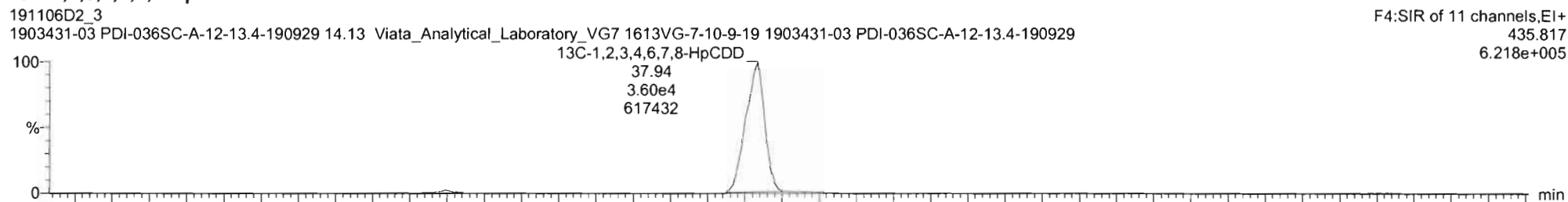
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Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Hepta-Dioxins



13C-1,2,3,4,6,7,8-HpCDD



Vista Analytical Laboratory

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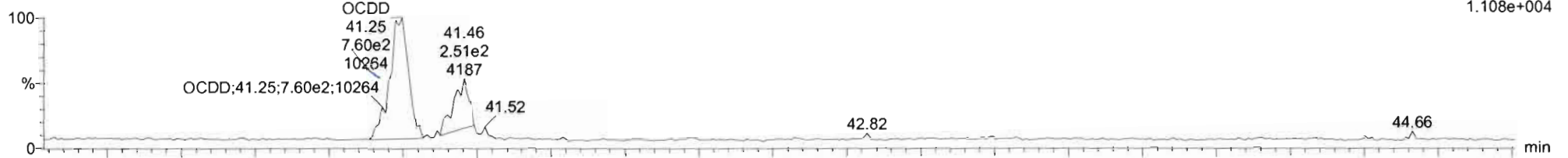
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OCDD

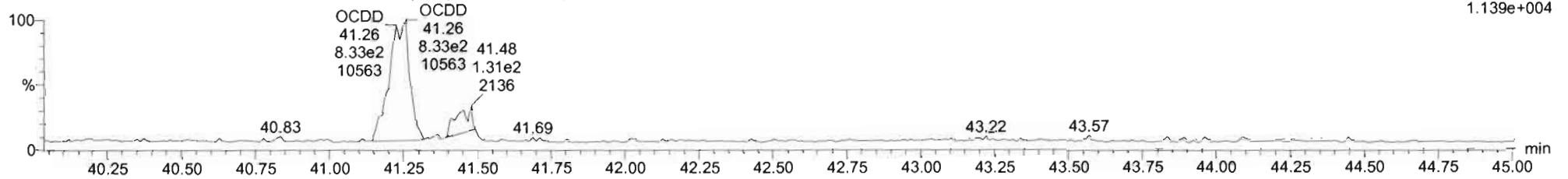
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F5:SIR of 11 channels,EI+
457.738
1.108e+004



191106D2_3
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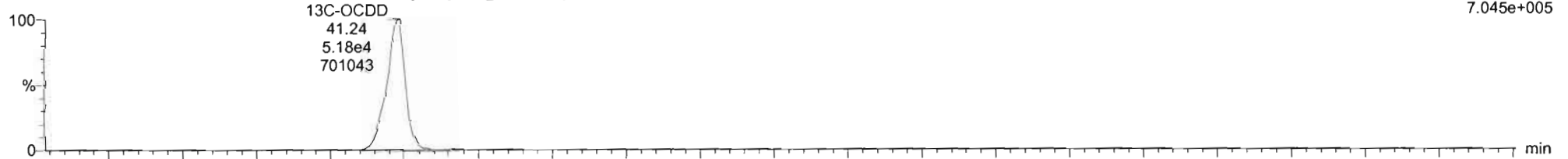
F5:SIR of 11 channels,EI+
459.735
1.139e+004



13C-OCDD

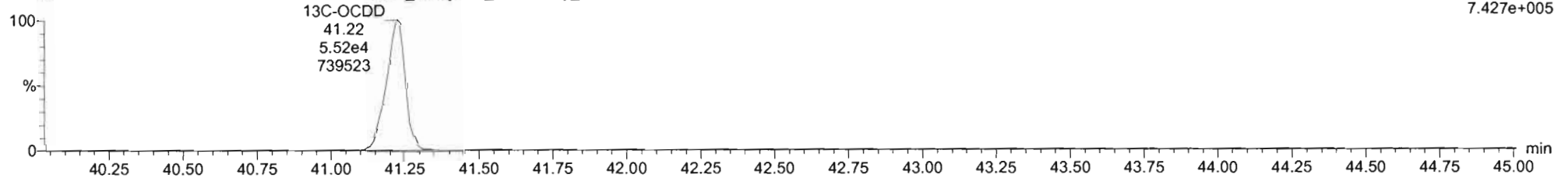
191106D2_3
1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 1903431-03 PDI-036SC-A-12-13.4-190929

F5:SIR of 11 channels,EI+
469.778
7.045e+005



191106D2_3
1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 1903431-03 PDI-036SC-A-12-13.4-190929

F5:SIR of 11 channels,EI+
471.775
7.427e+005



Vista Analytical Laboratory

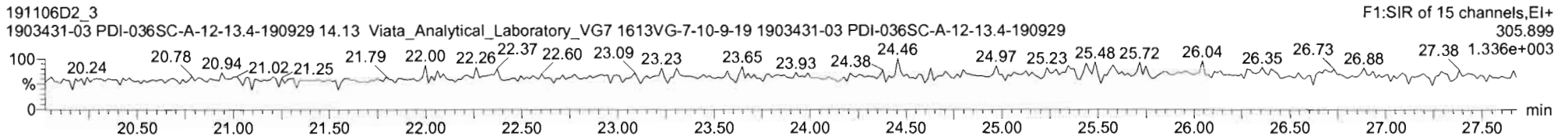
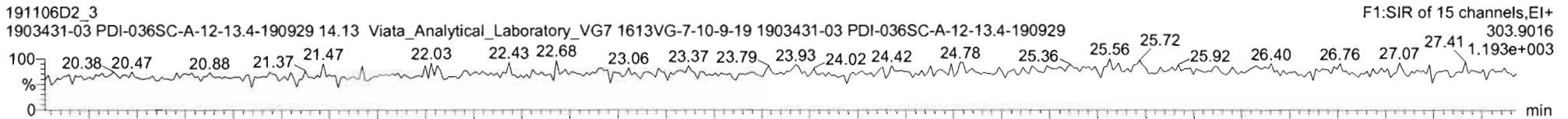
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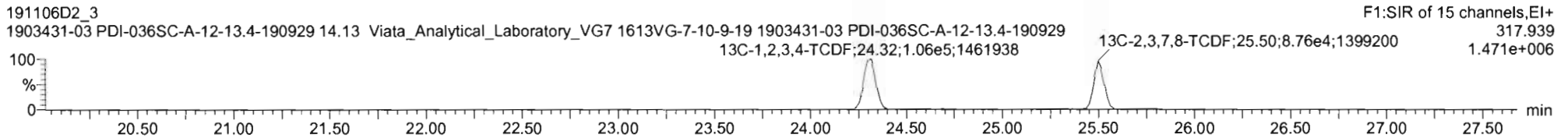
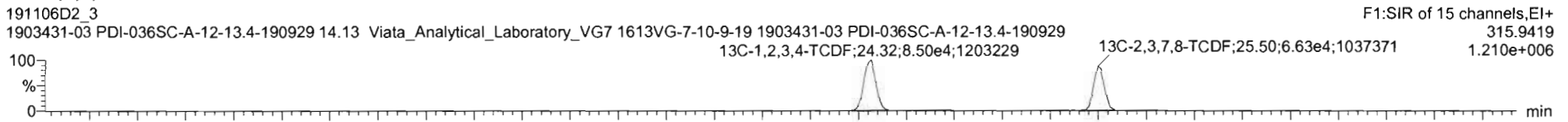
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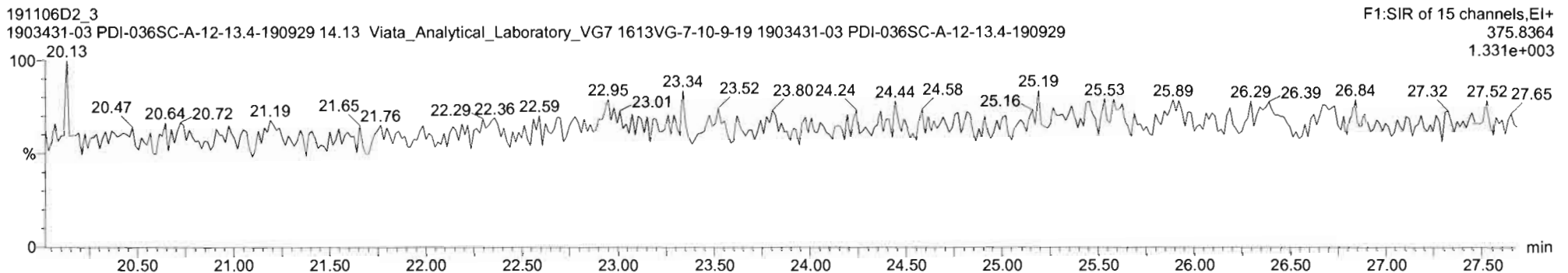
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

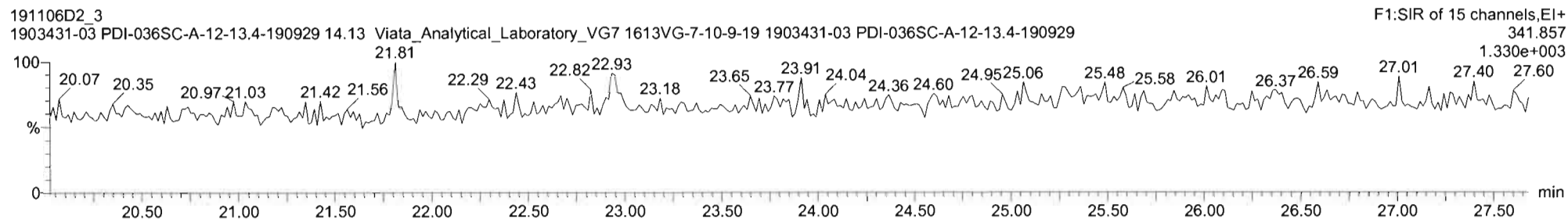
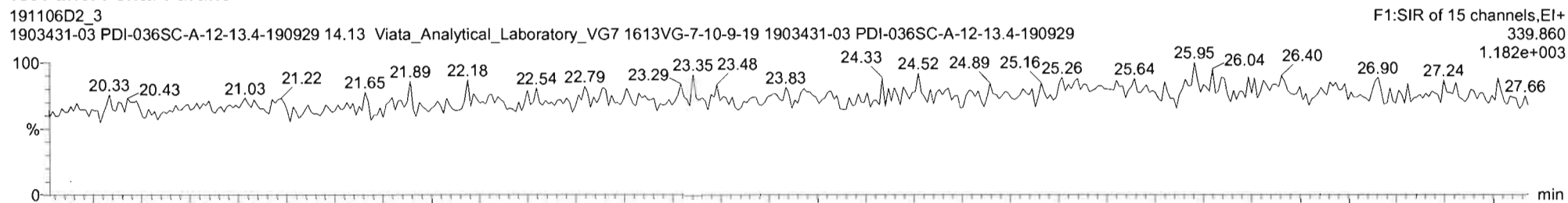
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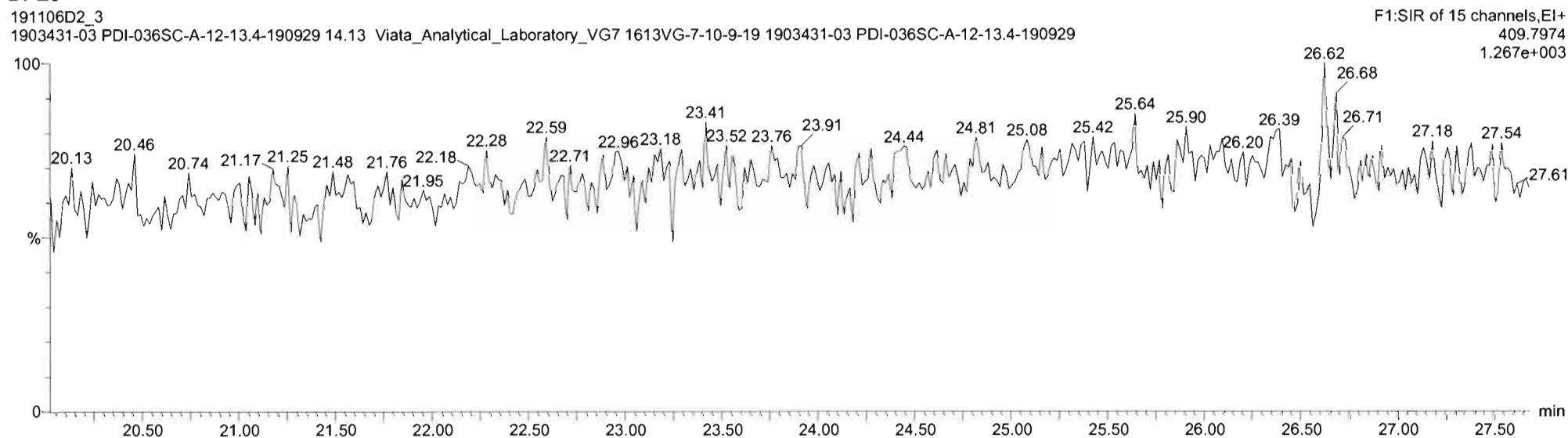
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Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

1st Func. Penta-Furans

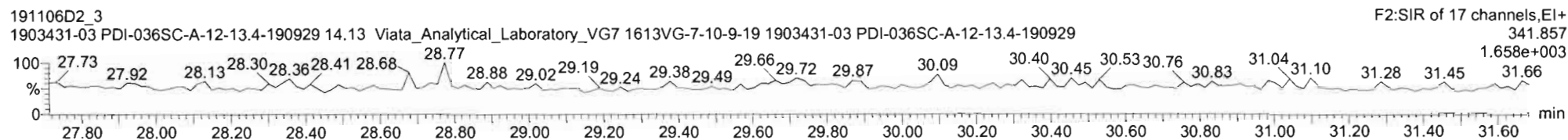
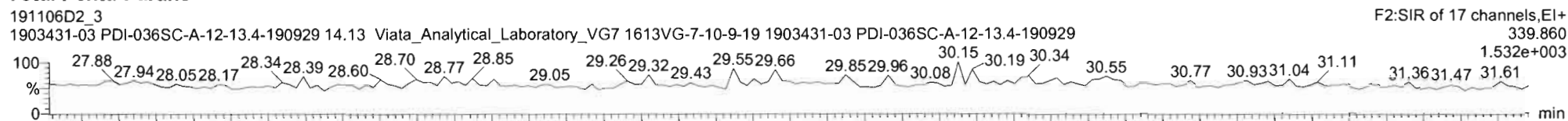


DPE6

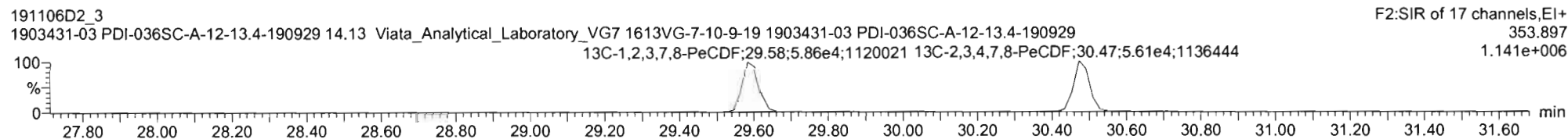
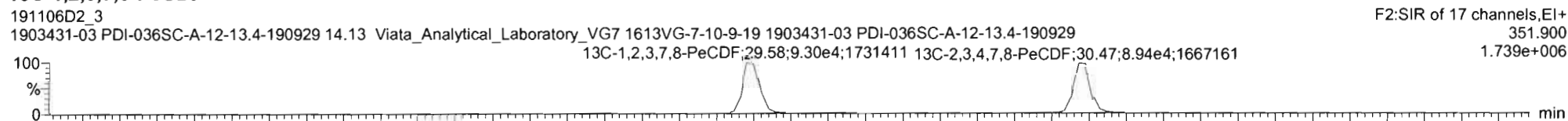


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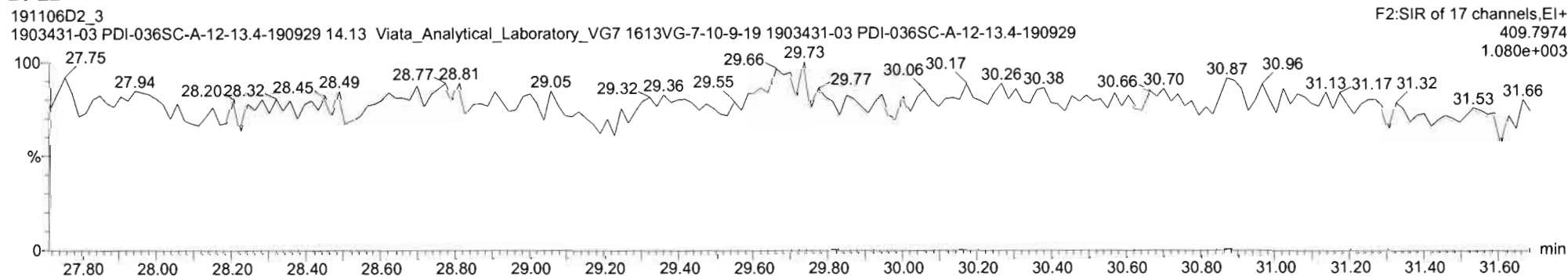
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



DPE2



Vista Analytical Laboratory

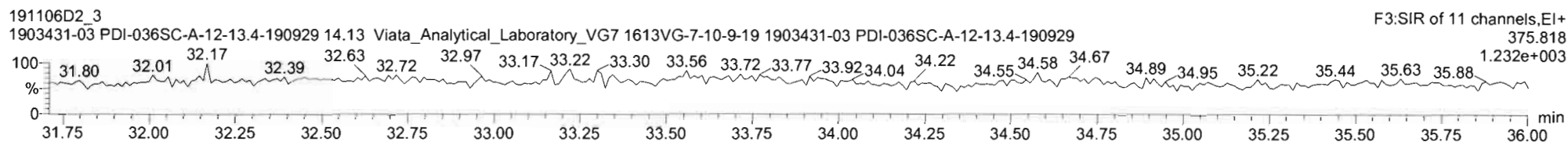
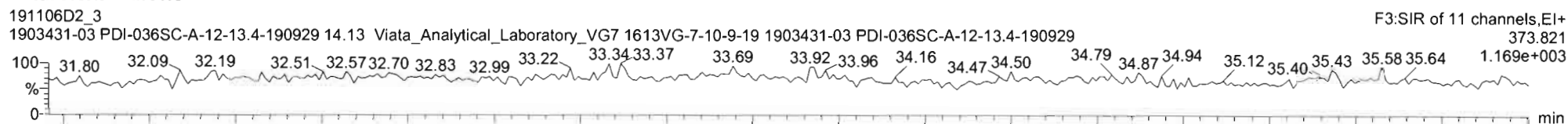
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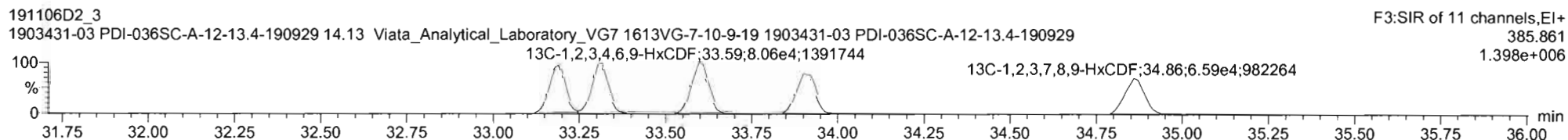
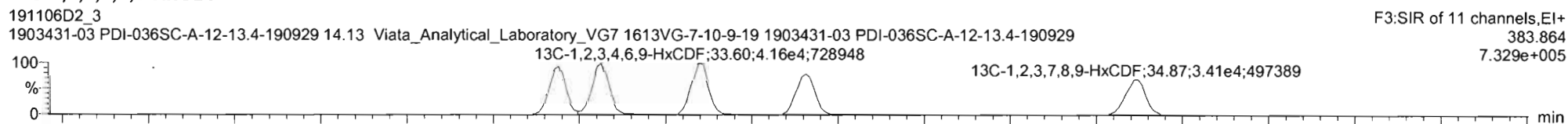
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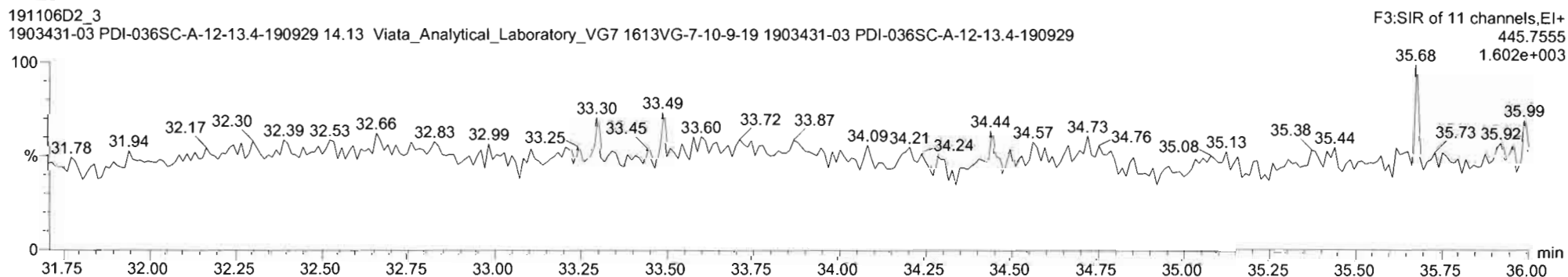
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

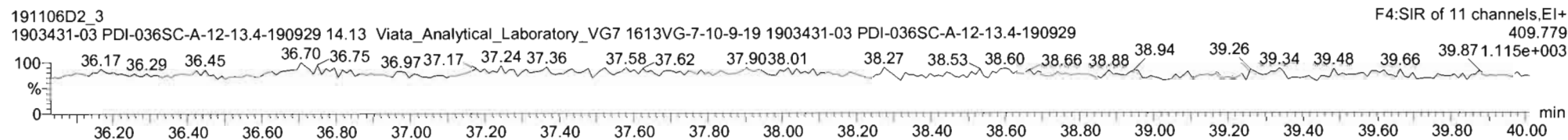
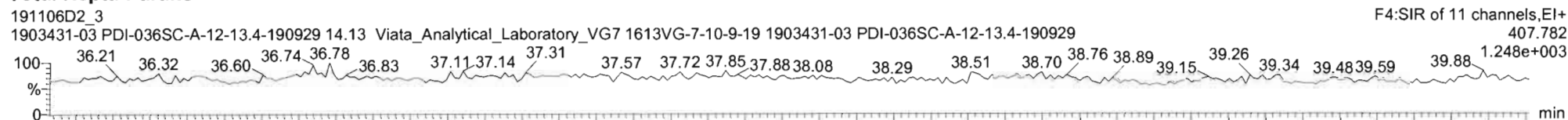
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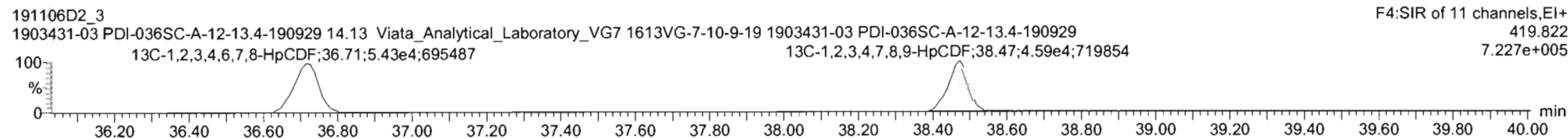
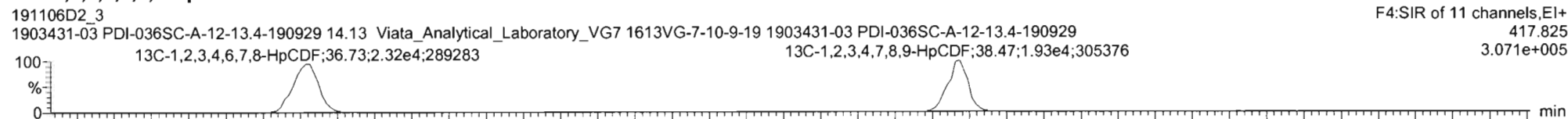
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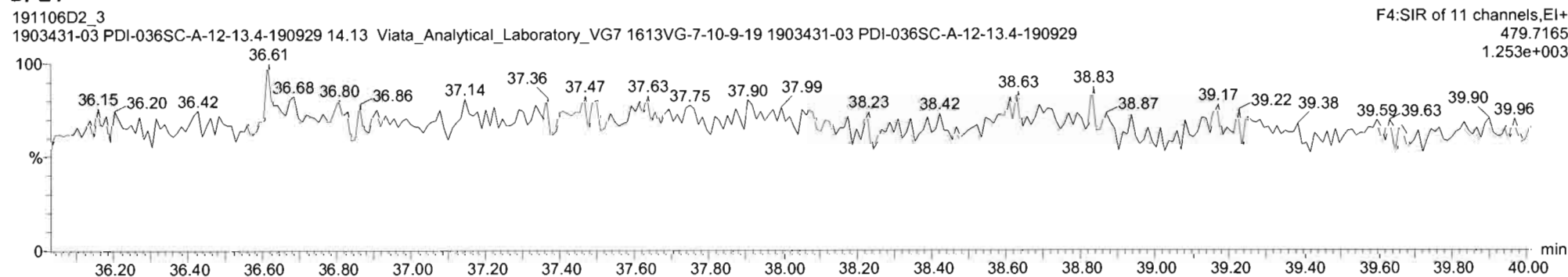
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

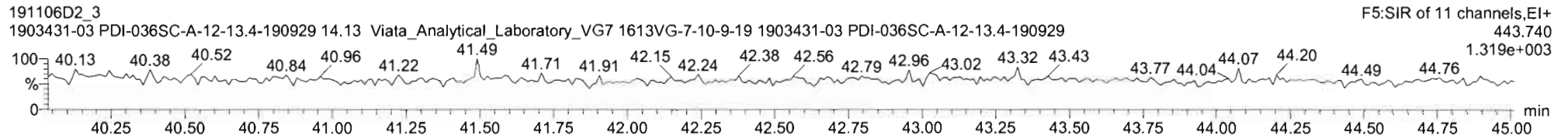
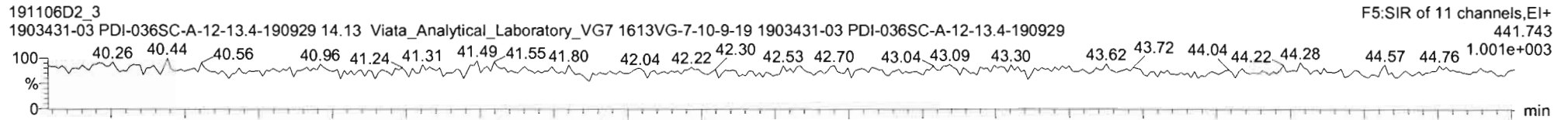
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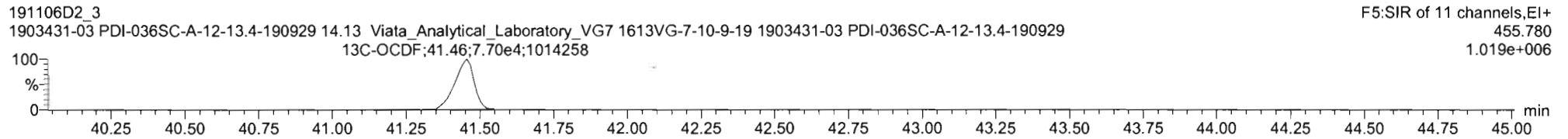
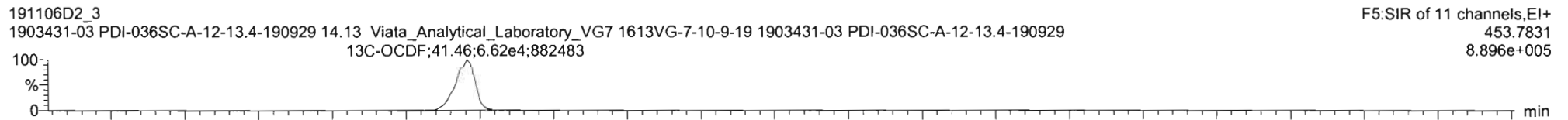
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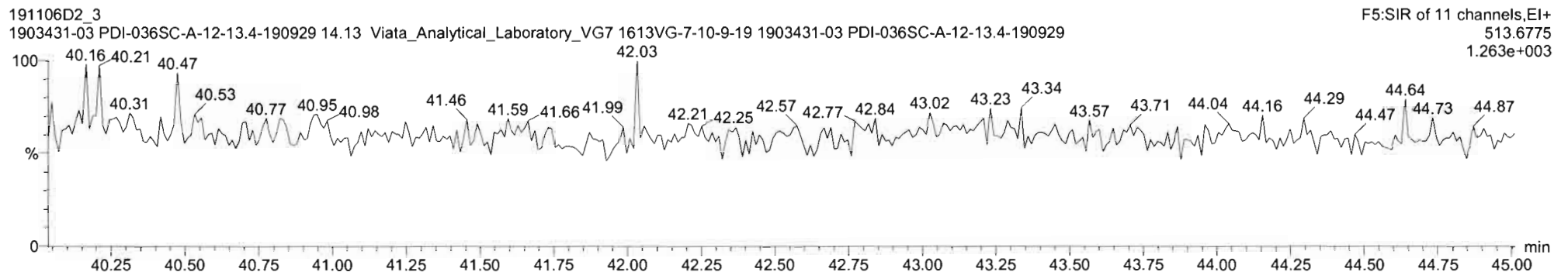
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

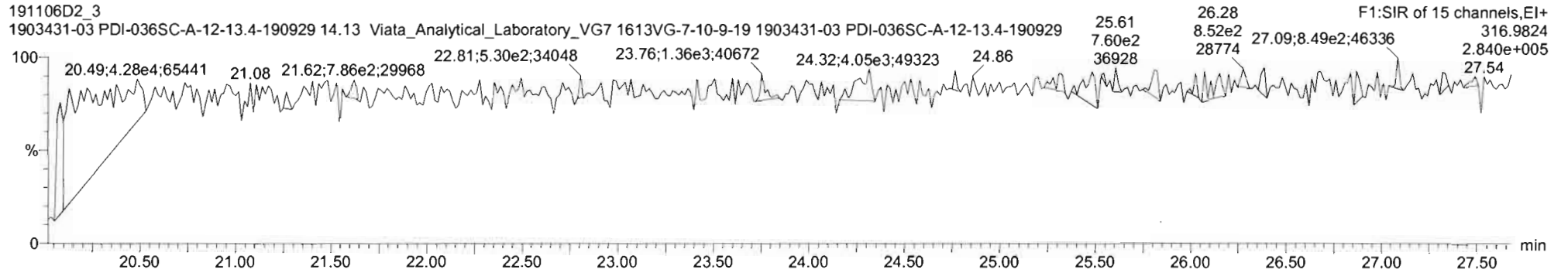
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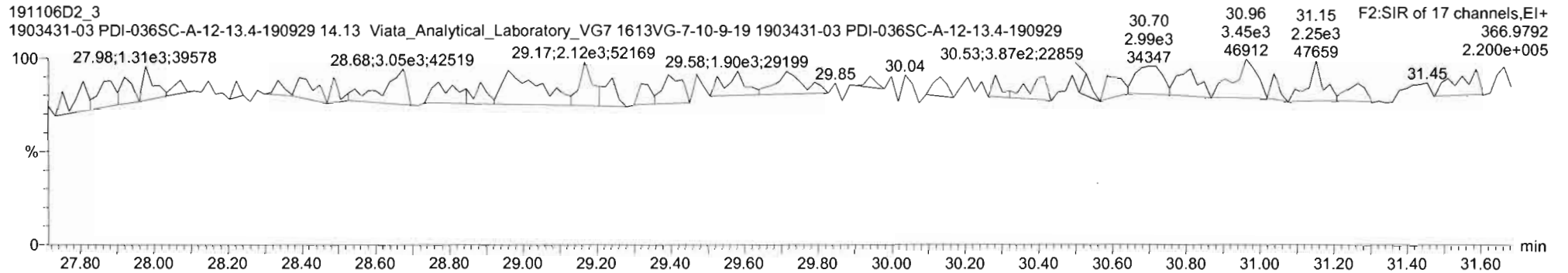
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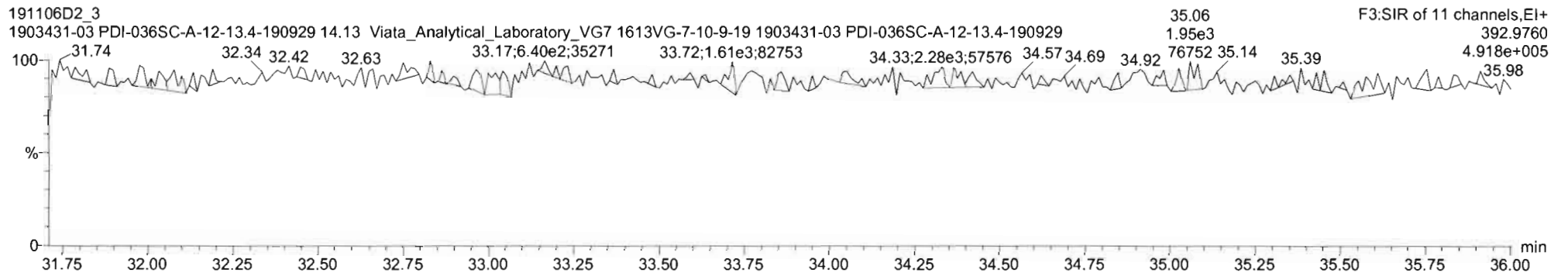
PFK1



PFK2



PFK3



Vista Analytical Laboratory

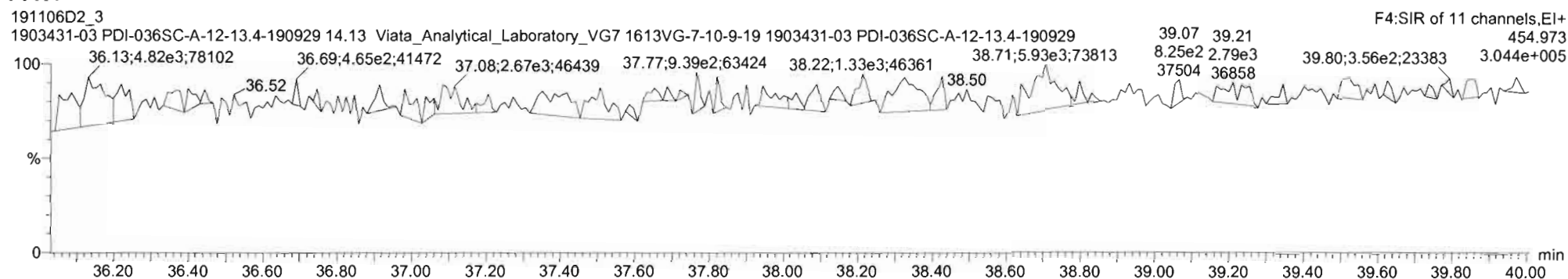
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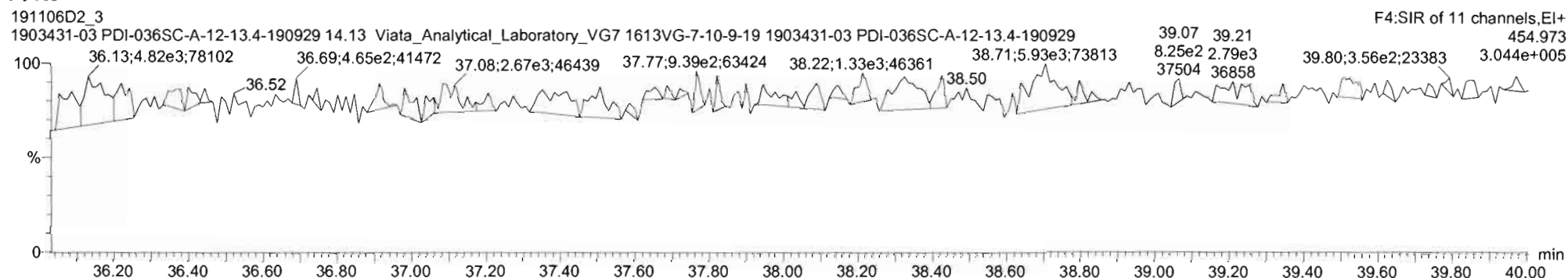
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Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

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Name: VG7 191106D2_3, Date: 7-NOV-2019, Time: 01:29:08, ID: 1903431-03 PDI-036SC-A-12-13.4-190929,

Description: 1903431-03 PDI-036SC-A-12-13.4-190929 14.13 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Vista Analytical Laboratory

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 Printed: Wednesday, November 13, 2019 16:29:48 Pacific Standard Time

HC 11-13-19

CT 11/15/19

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Calibration: 13 Nov 2019 16:26:17

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#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		7.63e4	10.0041	0.905			1.001		26.30					0.222
2	2 1,2,3,7,8-PeCDD		7.24e4	10.0041	0.903			1.001		30.77					0.176
3	3 1,2,3,4,7,8-HxCDD		6.00e4	10.0041	1.101			1.000		34.08					0.331
4	4 1,2,3,6,7,8-HxCDD		6.70e4	10.0041	0.939			1.000		34.18					0.364
5	5 1,2,3,7,8,9-HxCDD		7.03e4	10.0041	0.961			1.001		34.51					0.339
6	6 1,2,3,4,6,7,8-HpCDD		5.78e4	10.0041	0.979			1.000		37.94					0.461
7	7 OCDD	1.29e3	1.01e5	10.0041	0.959	1.001	NO	1.000	1.000	41.22	41.23	5.3197		5.32	0.337
8	8 2,3,7,8-TCDF		1.10e5	10.0041	0.950			1.001		25.53					0.132
9	9 1,2,3,7,8-PeCDF		1.07e5	10.0041	0.960			1.001		29.60					0.122
10	10 2,3,4,7,8-PeCDF		1.08e5	10.0041	1.015			1.001		30.50					0.109
11	11 1,2,3,4,7,8-HxCDF		8.41e4	10.0041	1.177			1.000		33.17					0.123
12	12 1,2,3,6,7,8-HxCDF		9.17e4	10.0041	1.069			1.000		33.32					0.120
13	13 2,3,4,6,7,8-HxCDF		8.55e4	10.0041	1.114			1.001		33.93					0.133
14	14 1,2,3,7,8,9-HxCDF		7.76e4	10.0041	1.062			1.000		34.85					0.176
15	15 1,2,3,4,6,7,8-HpCDF		6.46e4	10.0041	1.128			1.001		36.74					0.192
16	16 1,2,3,4,7,8,9-HpCDF		5.31e4	10.0041	1.280			1.000		38.47					0.157
17	17 OCDF		1.25e5	10.0041	0.947			1.000		41.44					0.231
18	18 13C-2,3,7,8-TCDD	7.63e4	1.13e5	10.0041	1.095	0.784	NO	1.021	1.021	26.27	26.27	122.69	61.4		0.415
19	19 13C-1,2,3,7,8-PeCDD	7.24e4	1.13e5	10.0041	0.881	0.606	NO	1.187	1.195	30.53	30.75	144.79	72.4		0.304
20	20 13C-1,2,3,4,7,8-Hx...	6.00e4	1.20e5	10.0041	0.642	1.297	NO	1.014	1.014	34.06	34.07	156.01	78.0		0.628
21	21 13C-1,2,3,6,7,8-Hx...	6.70e4	1.20e5	10.0041	0.856	1.285	NO	1.017	1.017	34.18	34.18	130.79	65.4		0.471
22	22 13C-1,2,3,7,8,9-Hx...	7.03e4	1.20e5	10.0041	0.807	1.259	NO	1.026	1.026	34.48	34.47	145.50	72.8		0.500
23	23 13C-1,2,3,4,6,7,8-H...	5.78e4	1.20e5	10.0041	0.654	1.022	NO	1.126	1.129	37.84	37.93	147.68	73.9		0.854
24	24 13C-OCDD	1.01e5	1.20e5	10.0041	0.580	0.909	NO	1.226	1.227	41.19	41.22	292.33	73.1		0.657
25	25 13C-2,3,7,8-TCDF	1.10e5	1.82e5	10.0041	1.035	0.804	NO	0.993	0.992	25.56	25.51	116.69	58.4		0.430
26	26 13C-1,2,3,7,8-PeCDF	1.07e5	1.82e5	10.0041	0.854	1.576	NO	1.143	1.150	29.40	29.58	138.17	69.1		0.705
27	27 13C-2,3,4,7,8-PeCDF	1.08e5	1.82e5	10.0041	0.847	1.623	NO	1.176	1.184	30.26	30.47	139.43	69.7		0.711
28	28 13C-1,2,3,4,7,8-Hx...	8.41e4	1.20e5	10.0041	0.832	0.519	NO	0.987	0.987	33.17	33.17	168.81	84.4		0.946
29	29 13C-1,2,3,6,7,8-Hx...	9.17e4	1.20e5	10.0041	1.034	0.511	NO	0.991	0.991	33.29	33.31	148.04	74.0		0.760
30	30 13C-2,3,4,6,7,8-Hx...	8.55e4	1.20e5	10.0041	0.953	0.529	NO	1.009	1.009	33.91	33.90	149.74	74.9		0.825
31	31 13C-1,2,3,7,8,9-Hx...	7.76e4	1.20e5	10.0041	0.828	0.499	NO	1.039	1.037	34.90	34.85	156.62	78.3		0.950



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-4.qld

Last Altered: Wednesday, November 13, 2019 16:28:43 Pacific Standard Time

Printed: Wednesday, November 13, 2019 16:29:48 Pacific Standard Time

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 Description: 1903431-04 PDI-064SC-A-14-15-190929 13.28 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	6.46e4	1.20e5	10.0041	0.757	0.430	NO	1.093	1.093	36.72	36.71	142.39	71.2		0.893
33	33 13C-1,2,3,4,7,8,9-H...	5.31e4	1.20e5	10.0041	0.581	0.406	NO	1.143	1.145	38.41	38.47	152.68	76.4		1.16
34	34 13C-OCDF	1.25e5	1.20e5	10.0041	0.689	0.873	NO	1.233	1.233	41.43	41.44	304.11	76.1		0.514
35	35 37Cl-2,3,7,8-TCDD	3.33e4	1.13e5	10.0041	1.198			1.022	1.022	26.29	26.30	48.987	61.3		0.117
36	36 13C-1,2,3,4-TCDD	1.13e5	1.13e5	10.0041	1.000	0.824	NO	1.000	1.000	25.70	25.73	199.92	100.0		0.454
37	37 13C-1,2,3,4-TCDF	1.82e5	1.82e5	10.0041	1.000	0.800	NO	1.000	1.000	24.28	24.31	199.92	100.0		0.445
38	38 13C-1,2,3,4,6,9-Hx...	1.20e5	1.20e5	10.0041	1.000	0.511	NO	1.000	1.000	33.55	33.60	199.92	100.0		0.787
39	39 Total Tetra-Dioxins		7.63e4	10.0041	0.901			0.000		25.50		0.32903		0.329	0.224
40	40 Total Penta-Dioxins		7.24e4	10.0041	0.872			0.000		30.00					0.0873
41	41 Total Hexa-Dioxins		0.00e0	10.0041	0.976			0.000		33.80		0.00000		0.343	0.197
42	42 Total Hepta-Dioxins		5.78e4	10.0041	0.989			0.000		37.75		1.0151		1.02	0.457
43	43 Total Tetra-Furans		1.10e5	10.0041	0.943			0.000		24.00					0.0648
44	44 1st Func. Penta-Fur...		0.00e0	10.0041	0.940			0.000		27.63				0.122	0.0424
45	45 Total Penta-Furans		0.00e0	10.0041	0.940			0.000		30.00					0.0618
46	46 Total Hexa-Furans		0.00e0	10.0041	1.078			0.000		33.00					0.0708
47	47 Total Hepta-Furans		0.00e0	10.0041	1.135			0.000		37.75					0.101

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-4.qld

Last Altered: Wednesday, November 13, 2019 16:28:43 Pacific Standard Time

Printed: Wednesday, November 13, 2019 16:29:48 Pacific Standard Time

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Calibration: 13 Nov 2019 16:26:17

Name: VG7 191106D2_4, Date: 7-NOV-2019, Time: 02:16:54, ID: 1903431-04 PDI-064SC-A-14-15-190929,

Description: 1903431-04 PDI-064SC-A-14-15-190929 13.28 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	39 Total Tetra-Dioxins	NO	24.45	52.361	33512.355	2.965	db	0.3290	0.33

Penta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	YES	32.56	60.916	36907.682	0.000	MM	0.0000	0.34

Hepta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	42 Total Hepta-Dioxins	NO	37.08	151.585	29231.881	10.041	MM	1.0151	1.02

Tetra-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-4.qld

Last Altered: Wednesday, November 13, 2019 16:28:43 Pacific Standard Time

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Description: 1903431-04 PDI-064SC-A-14-15-190929 13.28 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Hexa-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hepta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

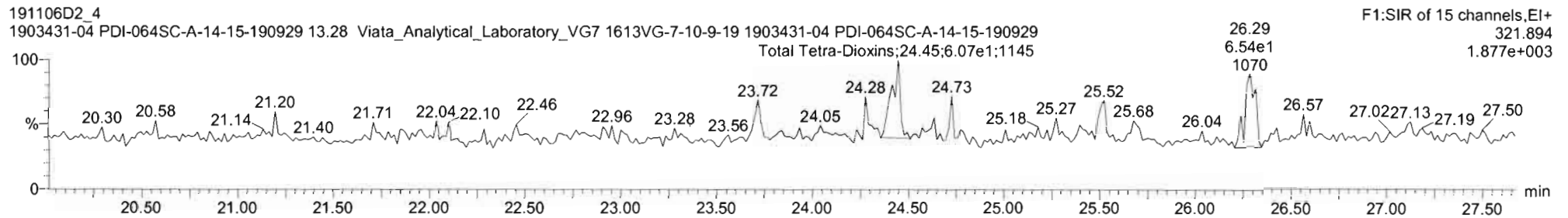
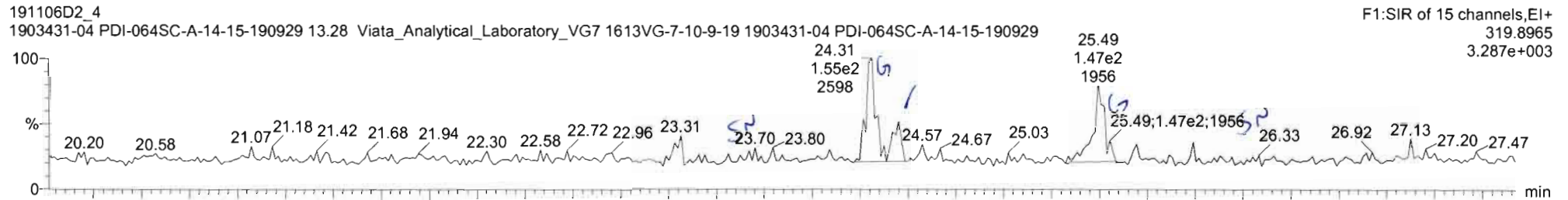
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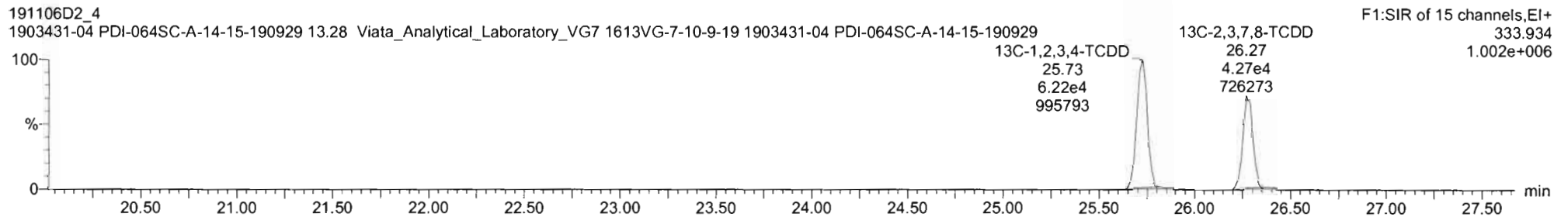
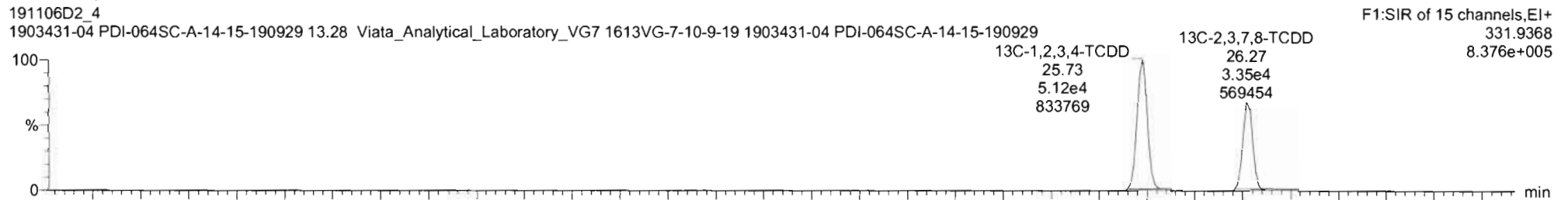
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Total Tetra-Dioxins



13C-2,3,7,8-TCDD



Vista Analytical Laboratory

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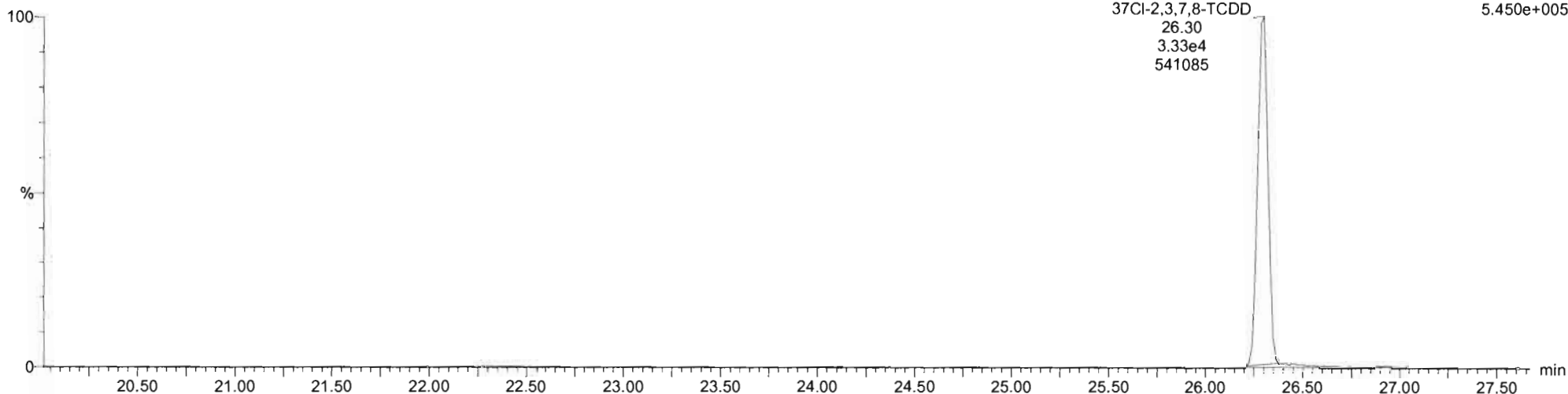
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37Cl-2,3,7,8-TCDD

191106D2_4
1903431-04 PDI-064SC-A-14-15-190929 13.28 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 1903431-04 PDI-064SC-A-14-15-190929

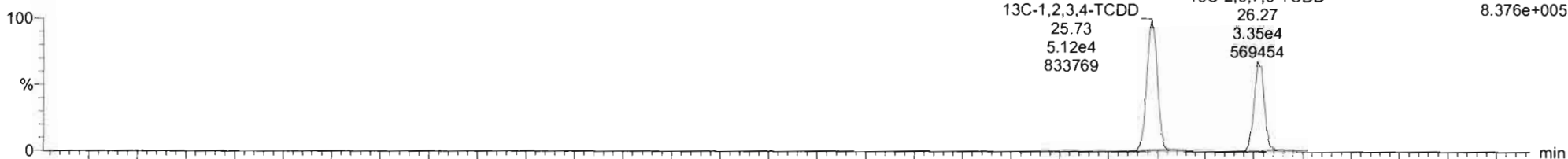
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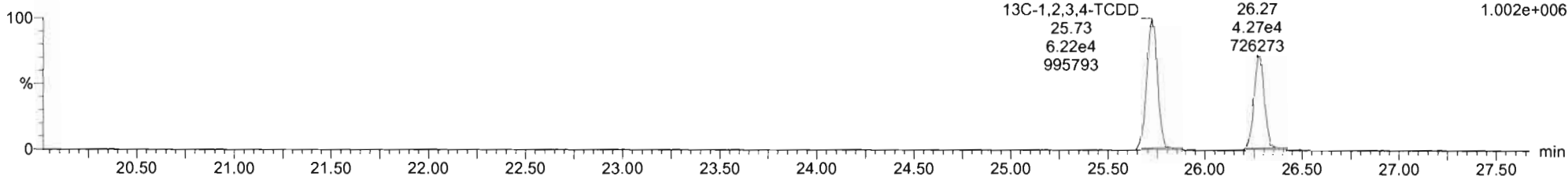
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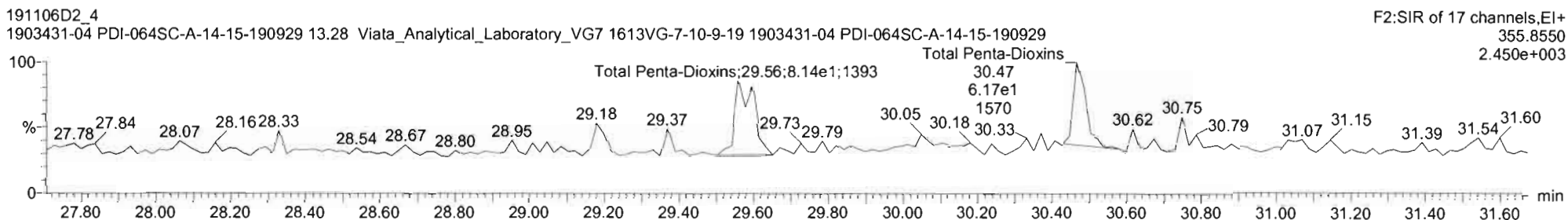
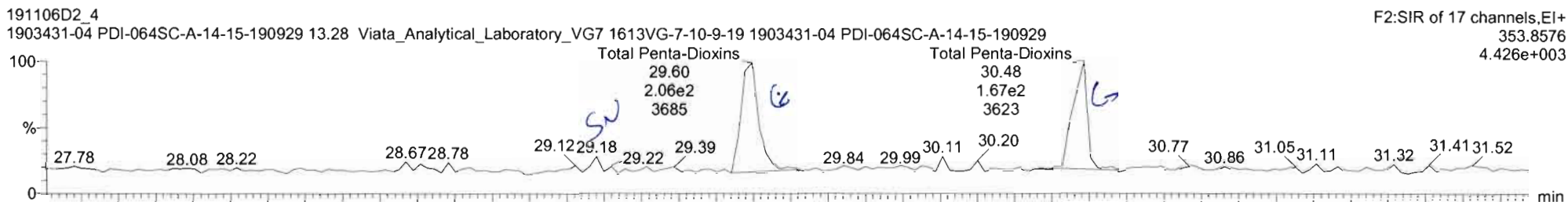
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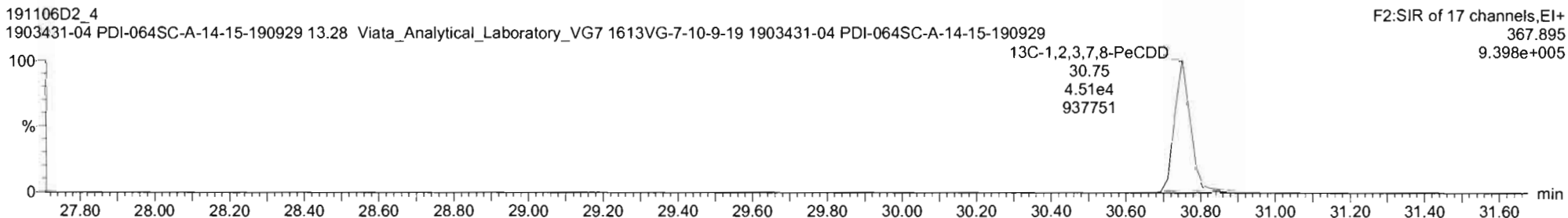
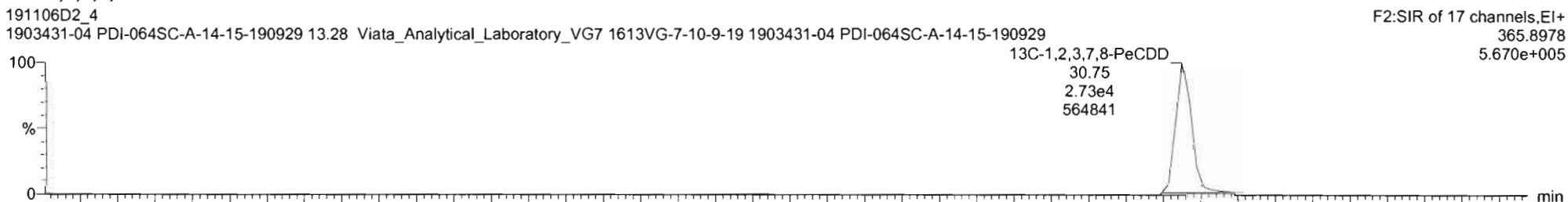


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Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



Vista Analytical Laboratory

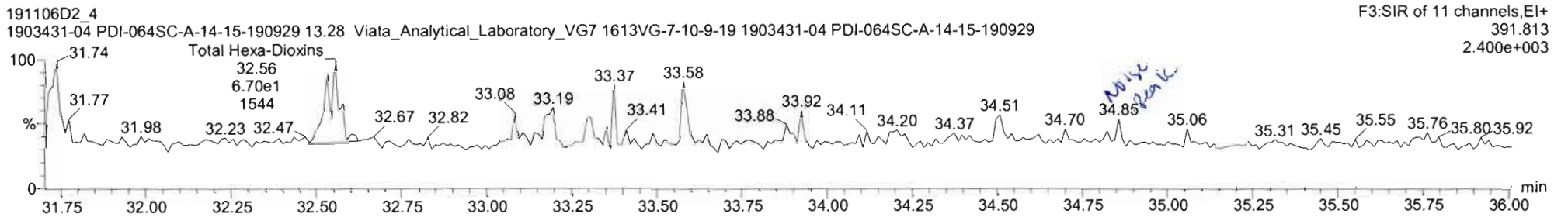
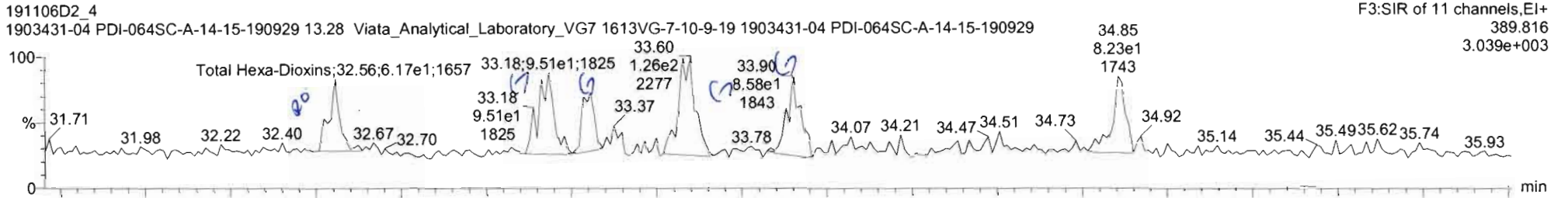
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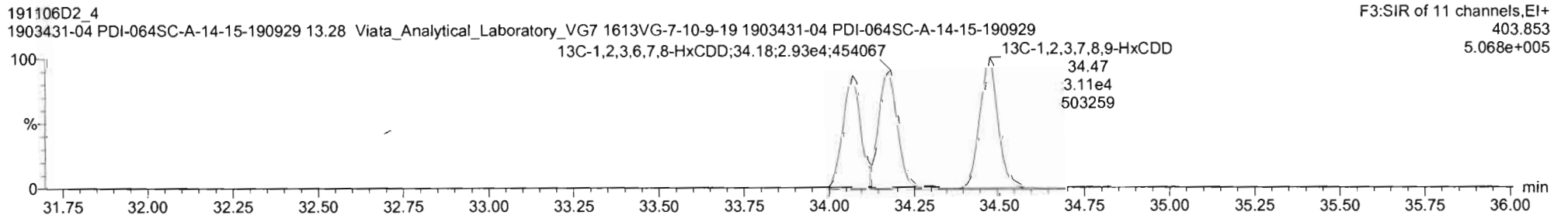
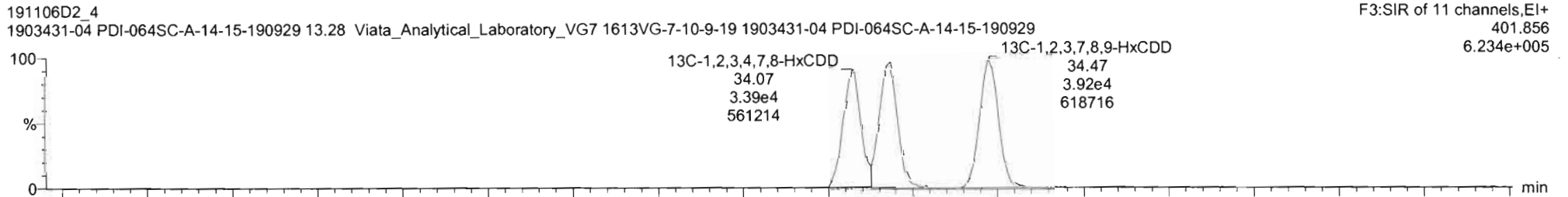
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Total Hexa-Dioxins

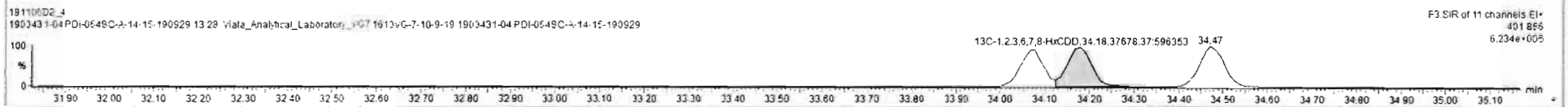
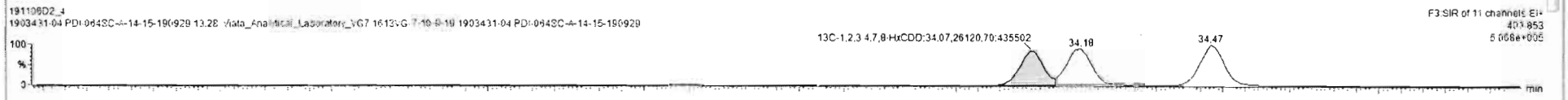
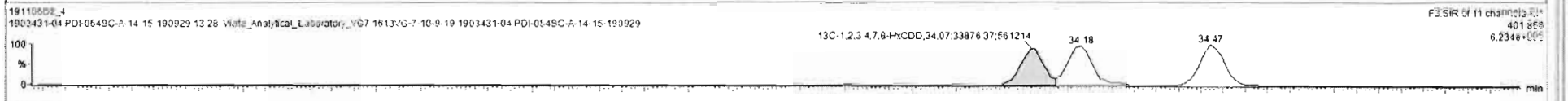
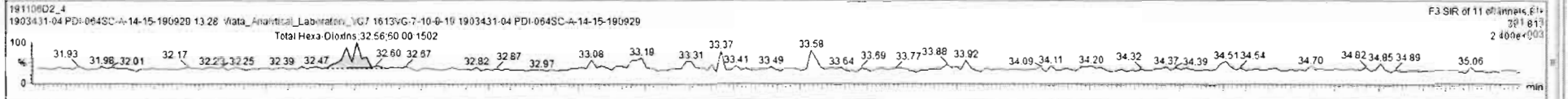
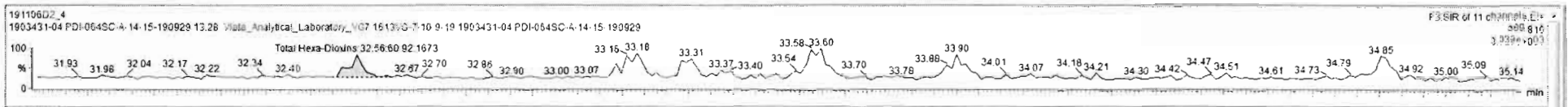


13C-1,2,3,4,7,8-HxCDD



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	retVol	Pred.RT	RT	RRT	Pred.RRT	Check.RRT	Conc.	%Rec	DL	EMPC
34	13C-OCDF	1.25e5	1.20e5	38	0.87	NO	0.698	10.004	41.43	41.44	1.233	1.233	NO	304.1	75.1	0.514	
35	37Cl-2,3,7,8-TCDD	3.33e4	1.13e5	36			1.198	10.004	26.29	26.30	1.022	1.022	NO	48.99	61.3	0.117	
36	13C-1,2,3,4-TCDD	1.13e5	1.13e5	26	0.82	NO	1.000	10.004	25.70	25.73	1.000	1.000	NO	199.5	100	0.454	
37	13C-1,2,3,4-TCDF	1.82e5	1.82e5	37	0.80	NO	1.000	10.004	24.28	24.31	1.000	1.000	NO	199.5	100	0.445	
38	13C-1,2,3,4,6,9-HxCDF	1.20e5	1.20e5	38	0.51	NO	1.000	10.004	33.55	33.60	1.000	1.000	NO	199.9	100	0.787	
39	Total Tetra-Dioxins	7.63e4					0.501	10.004	25.50				0.000	NO	0.2290	0.224	0.3290
40	Total Penta-Dioxins	7.24e4					0.872	10.004	35.09				0.000	NO		0.0873	
41	Total Hexa-Dioxins	0.000e0					0.978	10.004	33.80				0.000	NO	0.0000	0.187	0.3428
42	Total Hepta-Dioxins	5.78e4					0.989	10.004	37.75				0.000	NO	1.031	0.457	1.031
43	Total Tetra-Furans	1.10e5					0.943	10.004	24.00				0.000	NO		0.0648	
44	Total Penta-Furans	0.000e0					0.920	10.004	27.81				0.000	NO		0.0474	

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred.RA	RA	n/y	EMPC	Conc.
41	Total Hexa-Dioxins	33.60	32.56	6.052e1	6.000e1	1.240	1.02	YES	0.34277	0.00000



Vista Analytical Laboratory

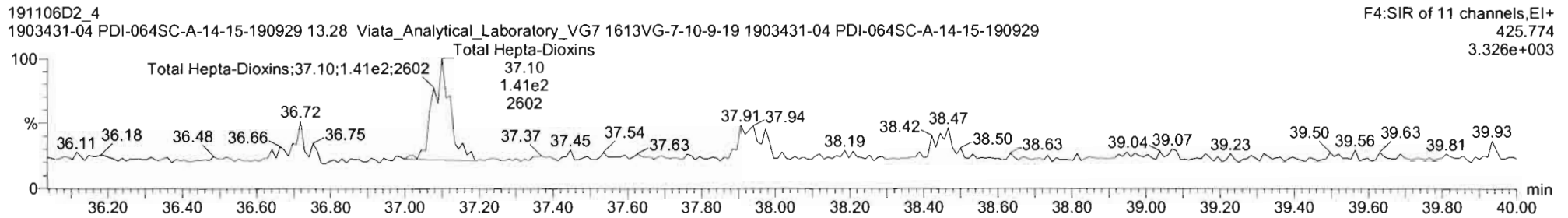
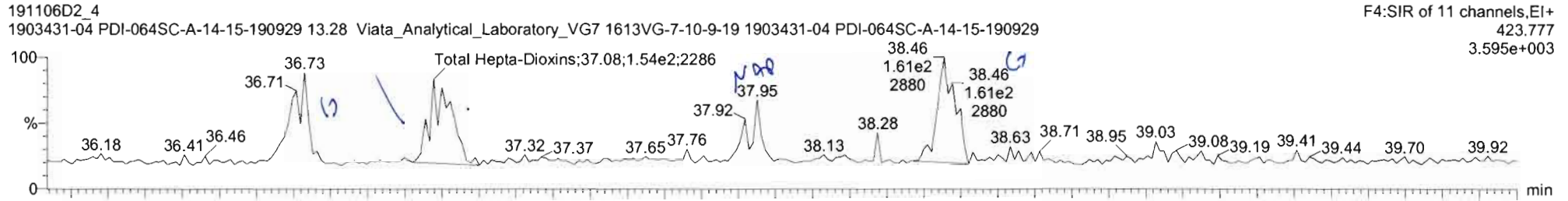
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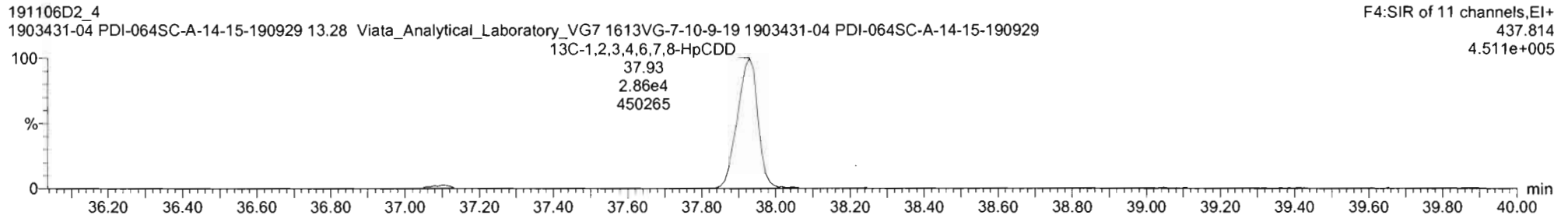
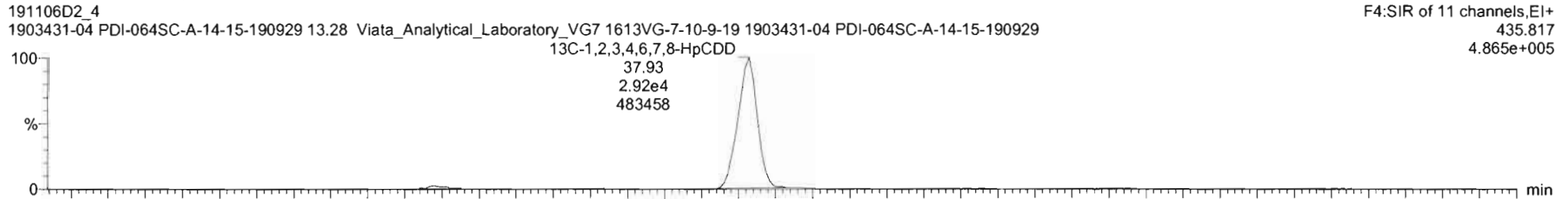
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Total Hepta-Dioxins

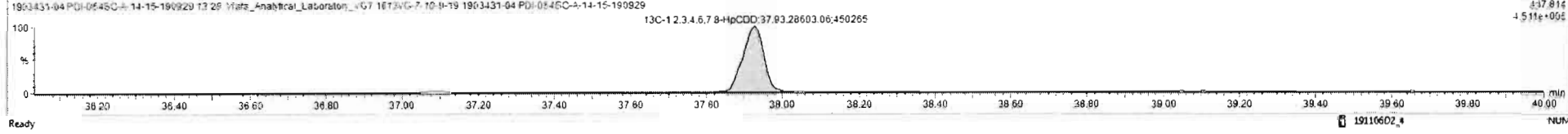
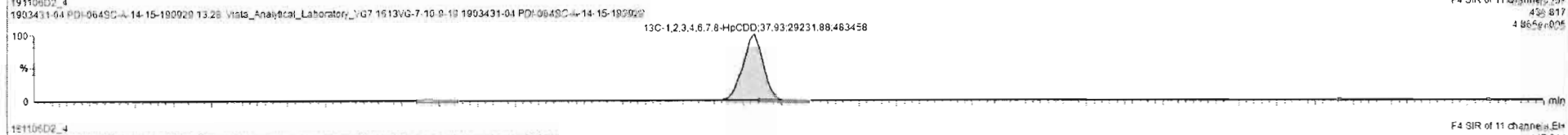
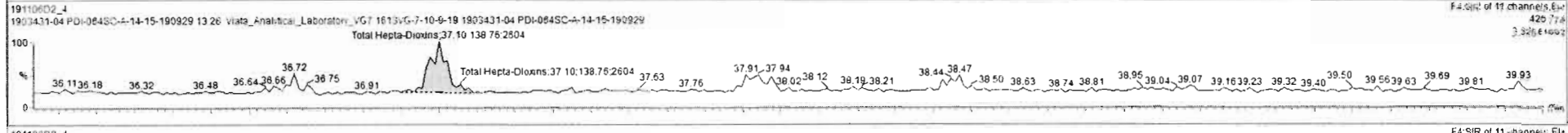
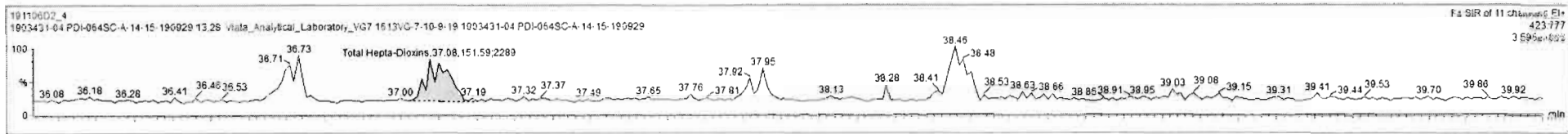


13C-1,2,3,4,6,7,8-HpCDD



#	Name	Resp	IS Resp	ISF	RA	nly	RRF	Wt/rd	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EUFC
34	13C-OCDF	1.25e5	1.20e5	38	0.87	NO	0.698	10.004	41.43	41.44	1.233	1.233	NO	304.1	76.1	0.514	
35	37Cl-2,3,7,8-TCDF	3.33e4	1.13e5	38			1.196	10.004	26.28	26.30	1.022	1.022	NO	48.69	61.3	3.117	
36	13C-1,2,3,4-TCDF	1.13e5	1.13e5	36	0.82	NO	1.050	10.004	25.70	25.73	1.000	1.000	NO	199.9	100	0.454	
37	13C-1,2,3,4-TCDF	1.82e5	1.82e5	37	0.80	NO	1.000	10.004	24.28	24.31	1.000	1.000	NO	199.9	100	0.445	
38	13C-1,2,3,4,6,8-HxCDF	1.20e5	1.20e5	38	0.51	NO	1.000	10.004	33.55	33.60	1.000	1.000	NO	199.9	100	0.787	
39	Total Tetra-Dioxins	7.62e4					0.901	10.004	25.50			0.000	NO	0.3290		0.224	0.3190
40	Total Penta-Dioxins	7.24e4					0.872	10.004	30.00			0.000	NO			0.0870	
41	Total Hexa-Dioxins	0.00e0					0.978	10.004	23.80			0.000	NO	0.0000		0.157	0.3428
42	Total Hepta-Dioxins	5.78e4					0.969	10.004	37.75			0.000	NO	1.015		0.457	1.015
43	Total Tetra-Furans	1.10e5					0.943	10.004	24.00			0.000	NO			0.0648	
44	Total Penta-Furans	0.00e0					0.940	10.004	22.80			0.000	NO			0.0474	

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	37.08	1.518e2	1.388e2	1.040	1.05	NO	1.0151	1.0151



Vista Analytical Laboratory

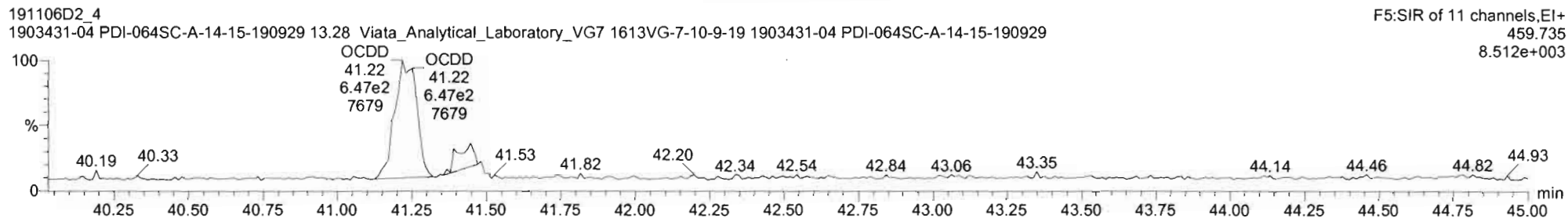
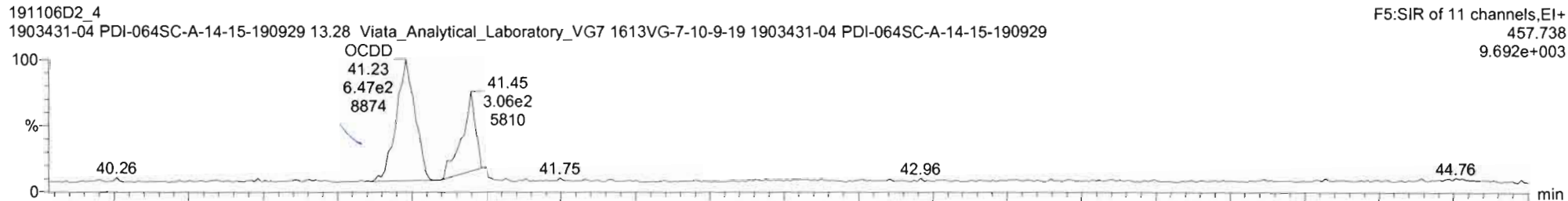
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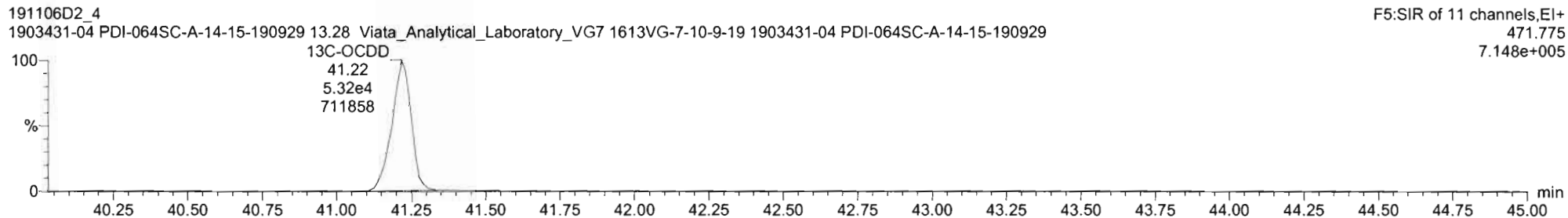
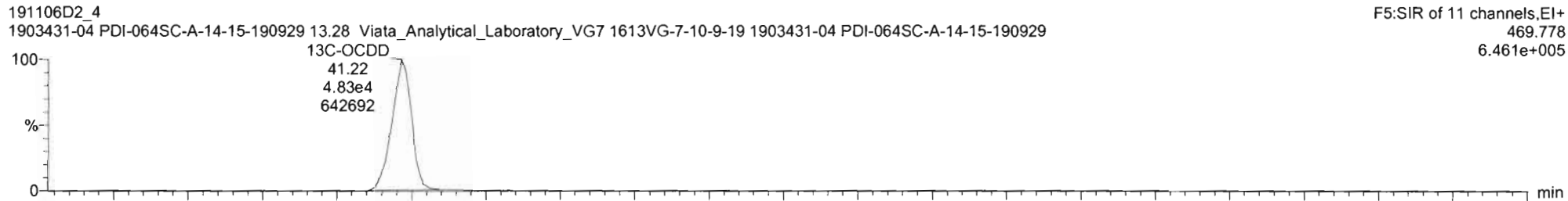
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Description: 1903431-04 PDI-064SC-A-14-15-190929 13.28 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

OCDD



13C-OCDD



Vista Analytical Laboratory

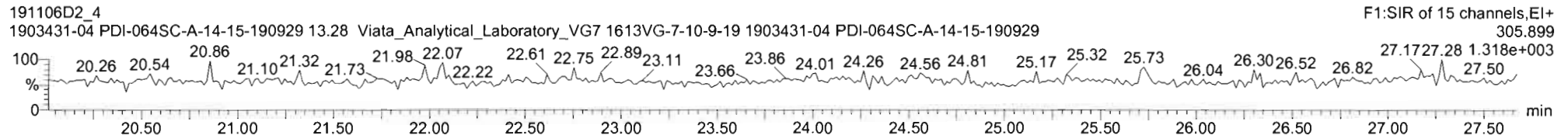
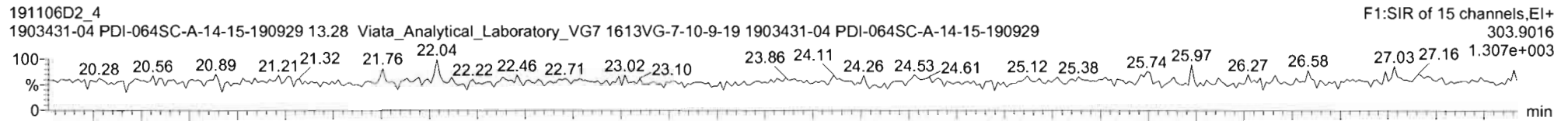
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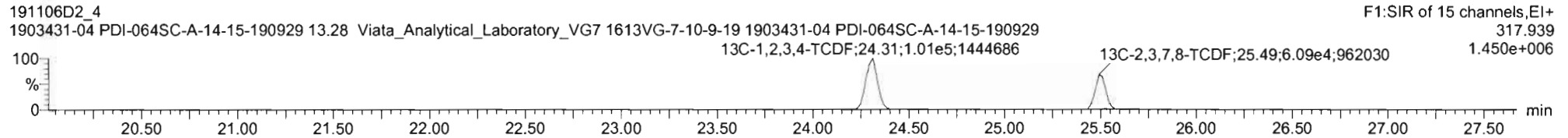
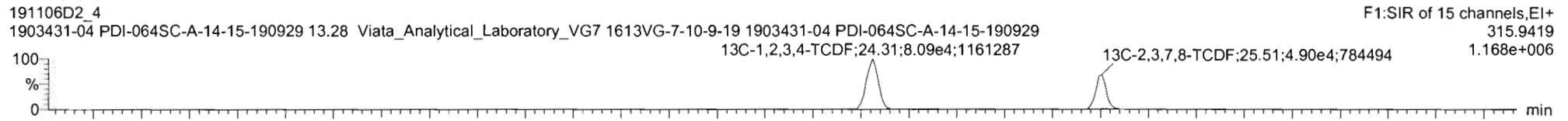
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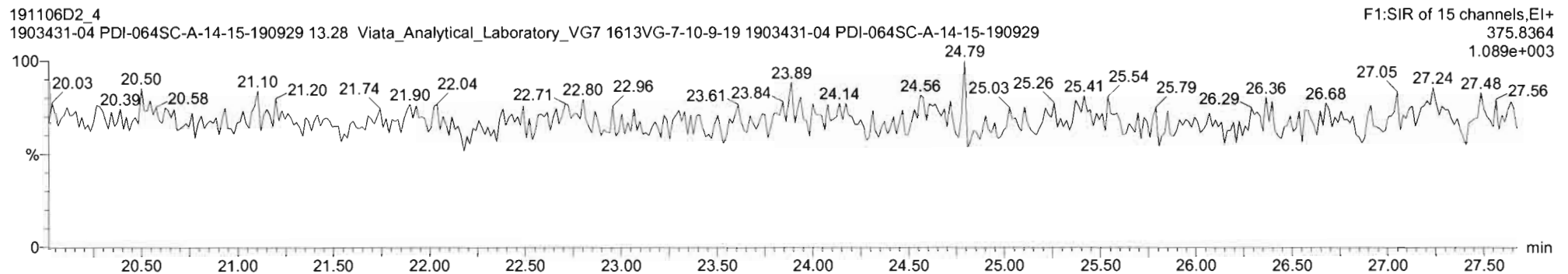
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

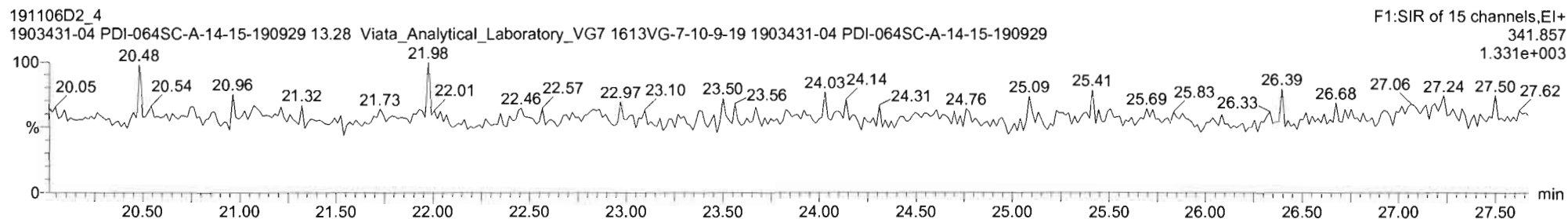
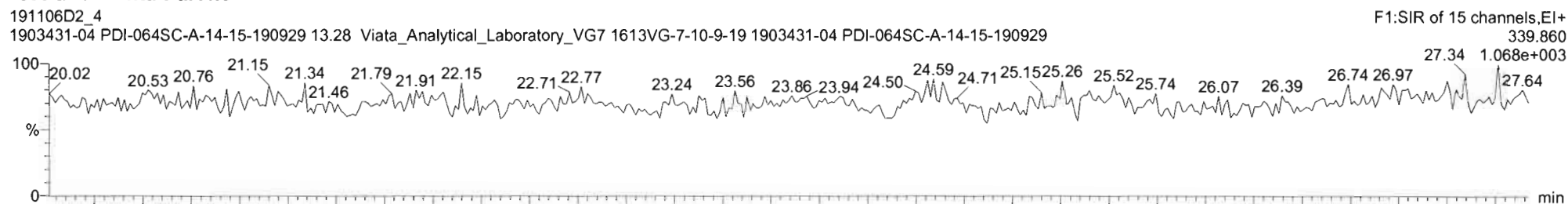
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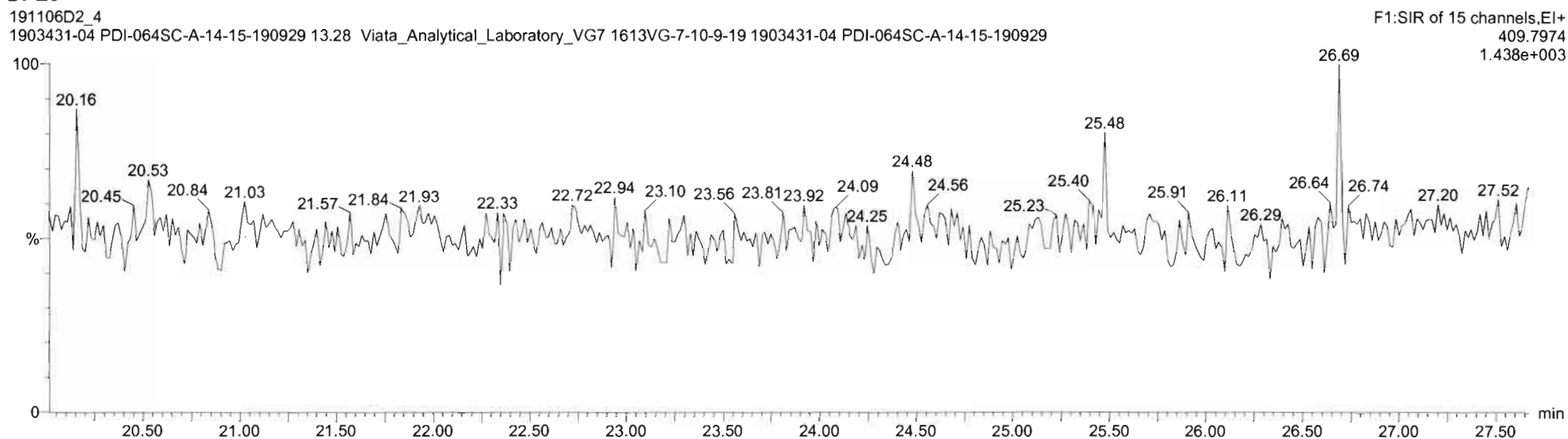
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Description: 1903431-04 PDI-064SC-A-14-15-190929 13.28 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

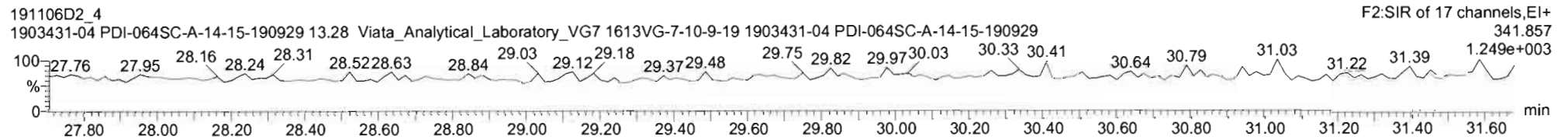
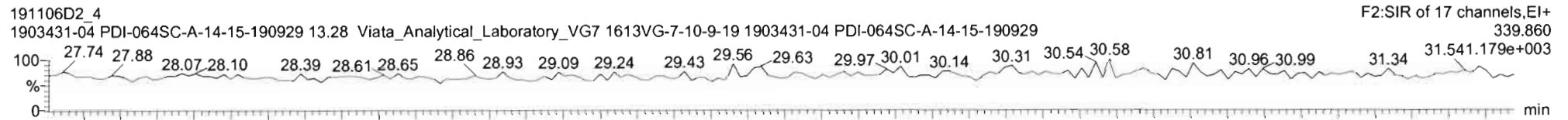
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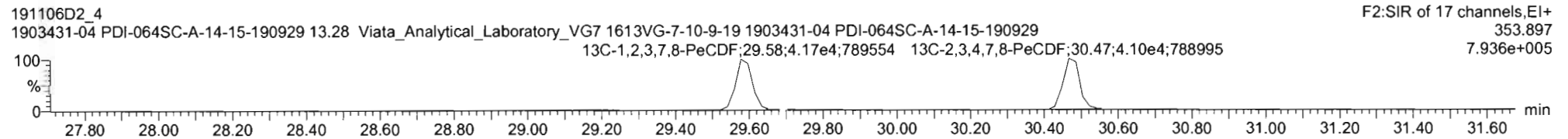
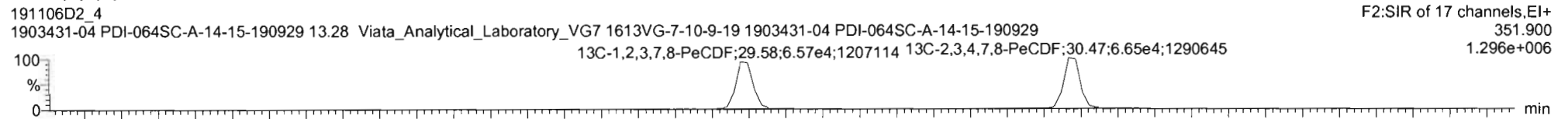
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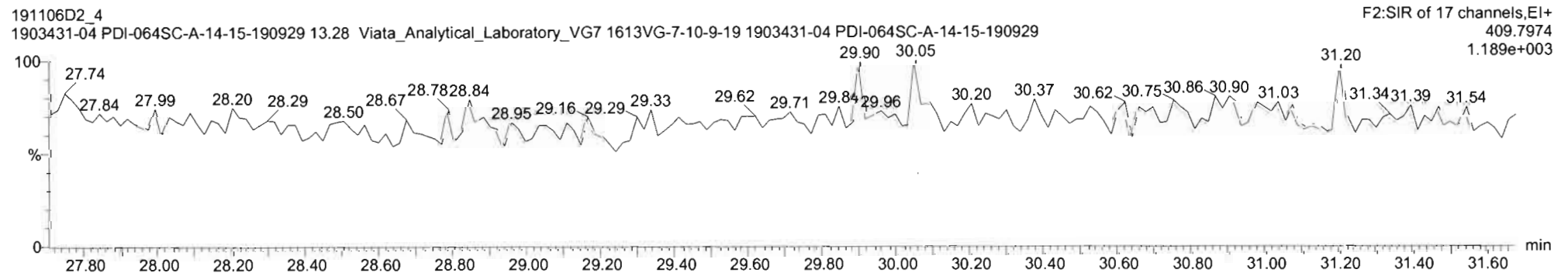
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

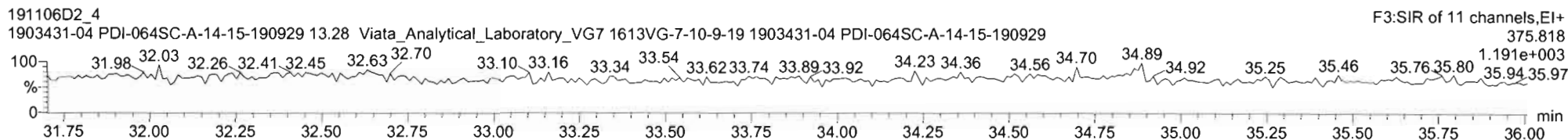
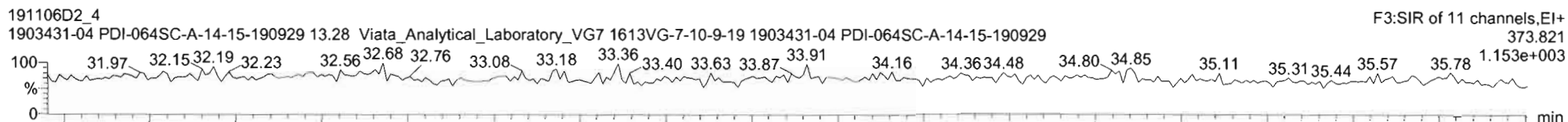


DPE2

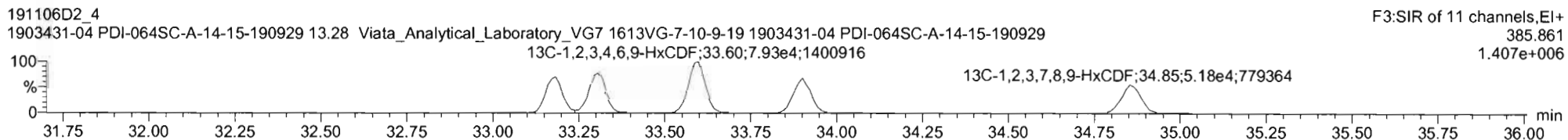
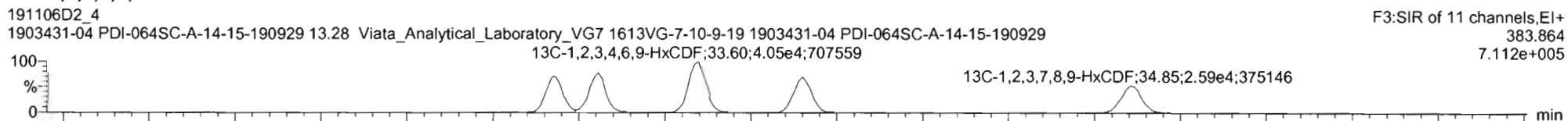


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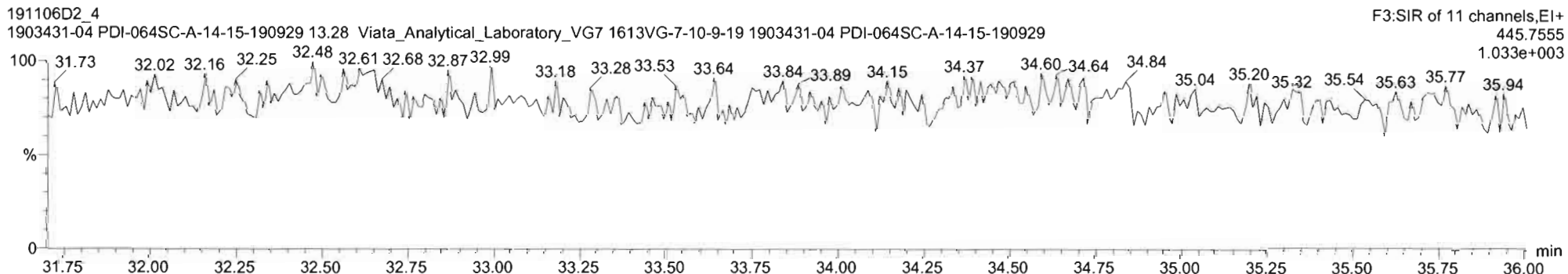
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

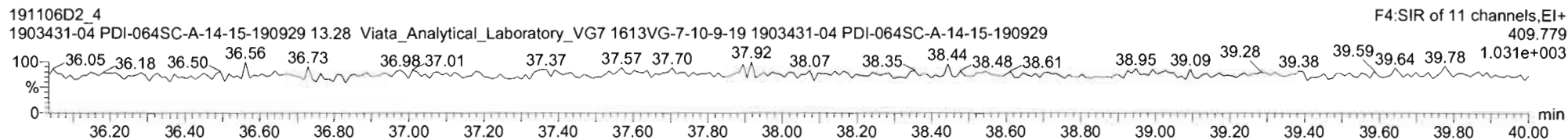
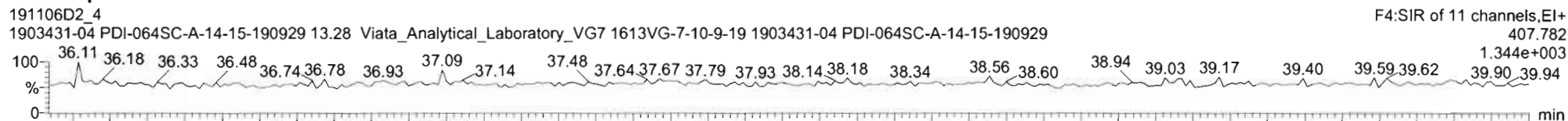
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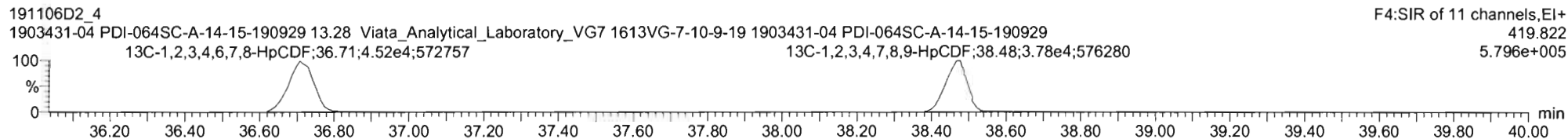
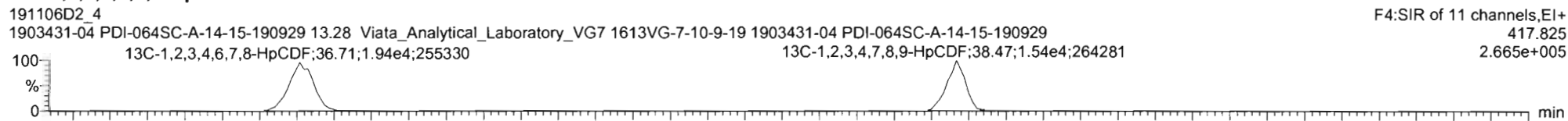
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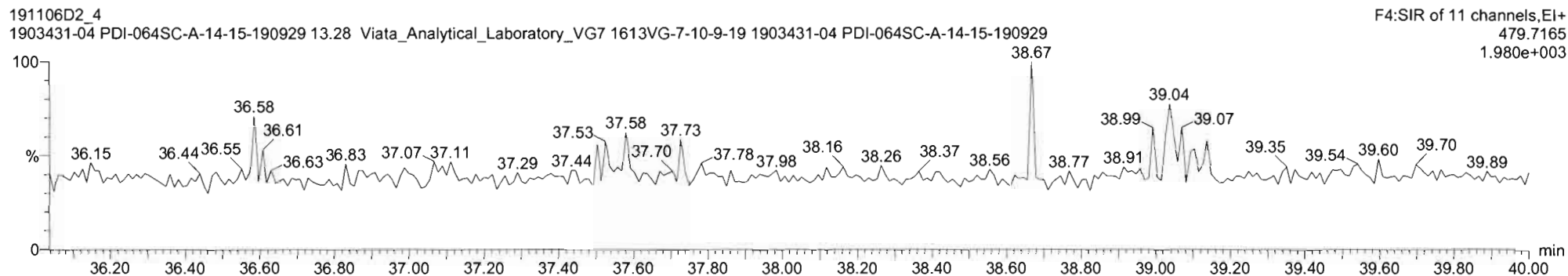
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

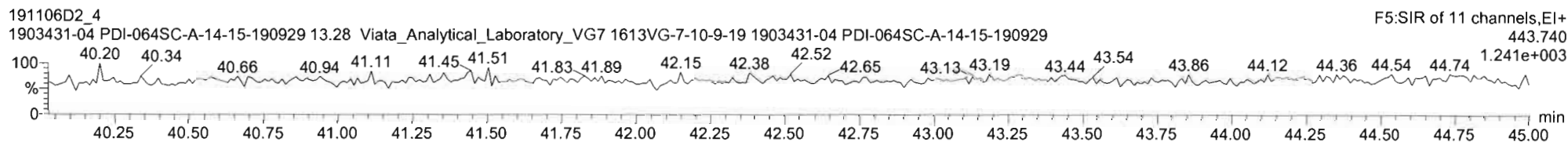
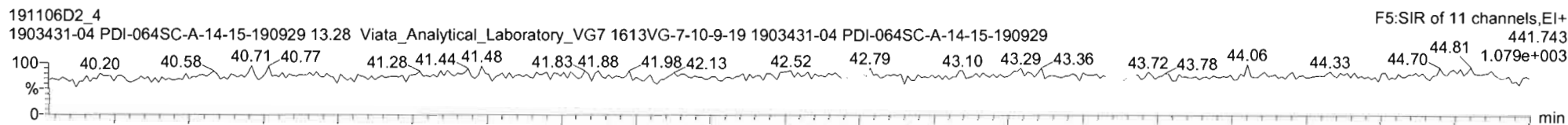
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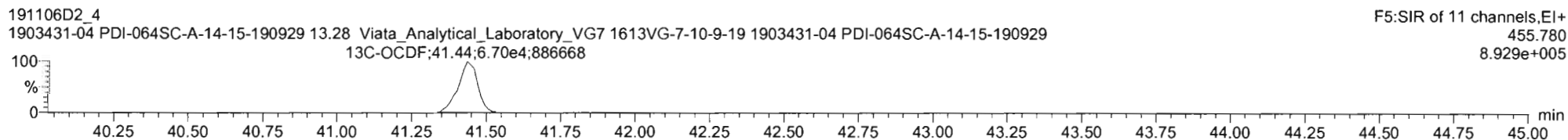
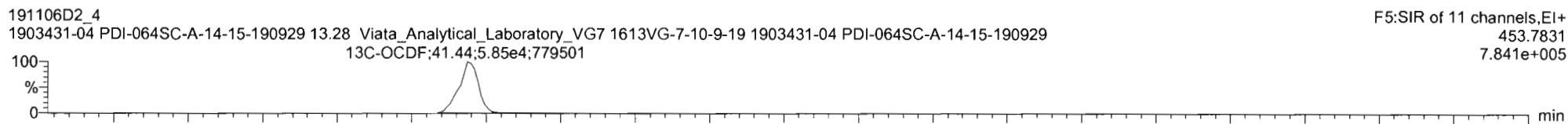
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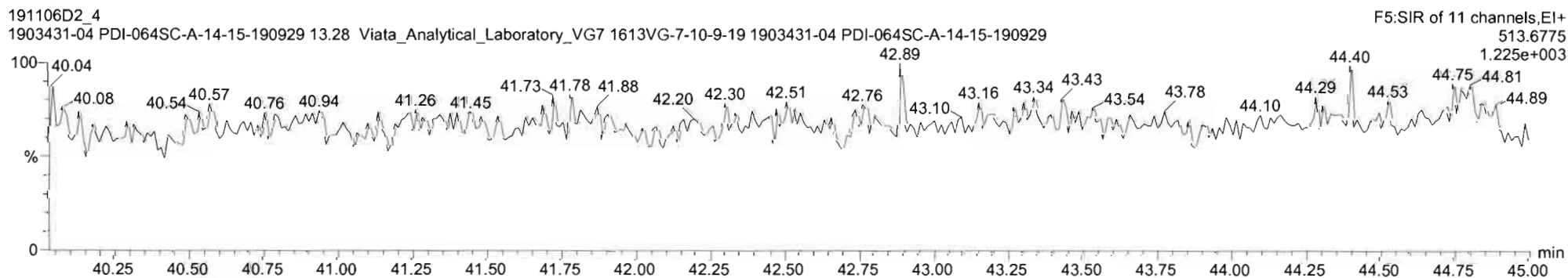
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

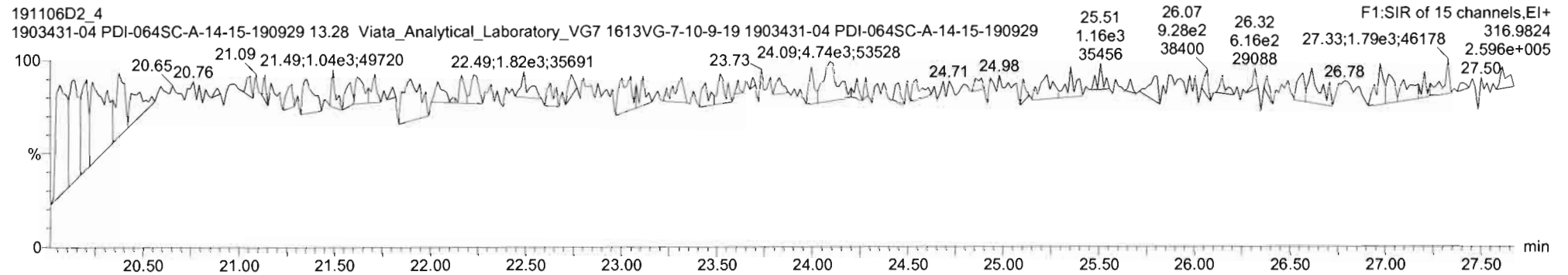
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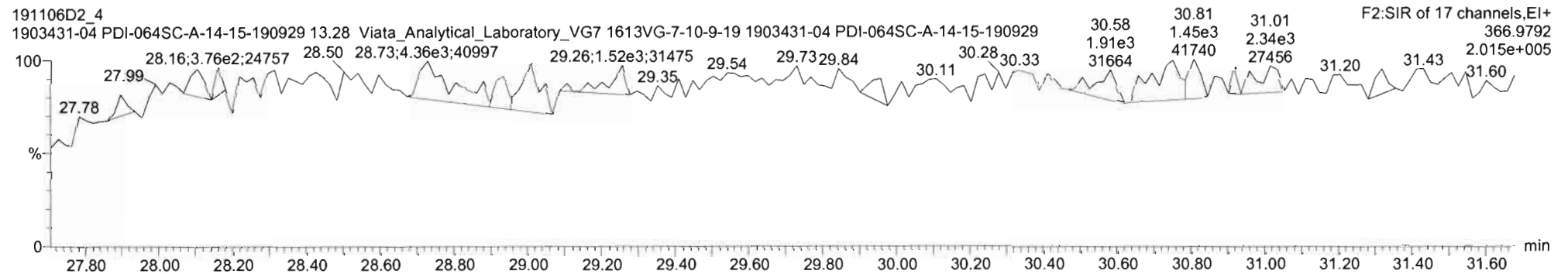
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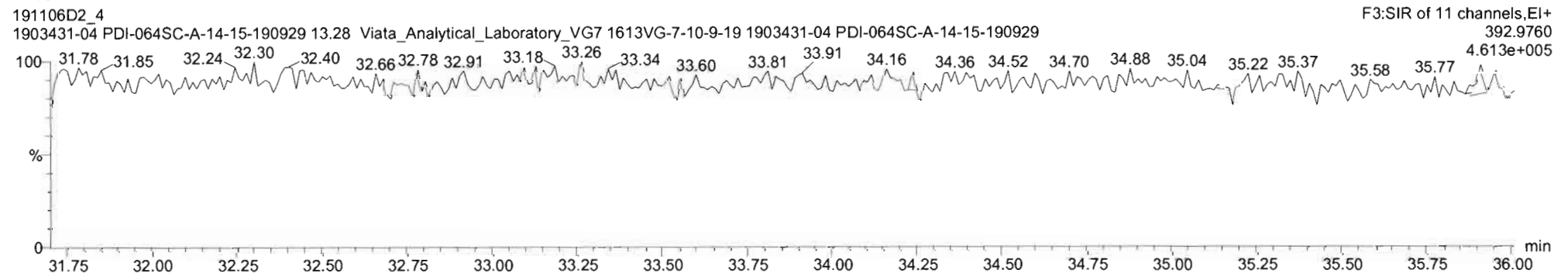
PFK1



PFK2



PFK3



Vista Analytical Laboratory

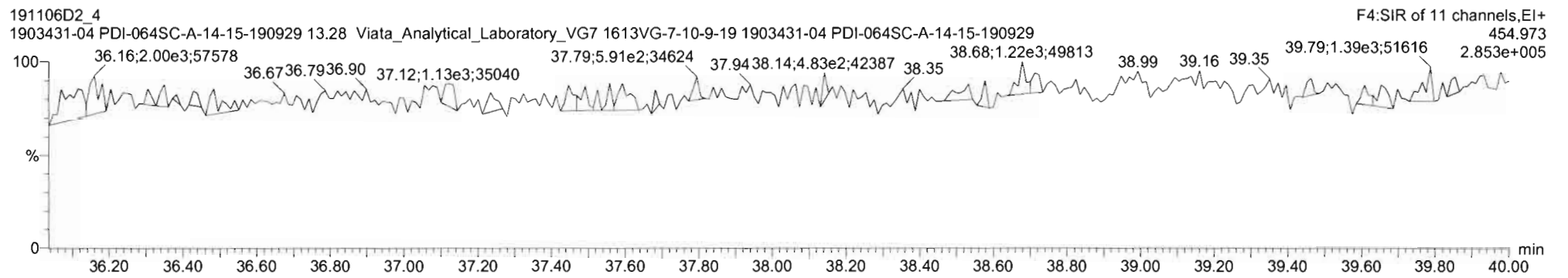
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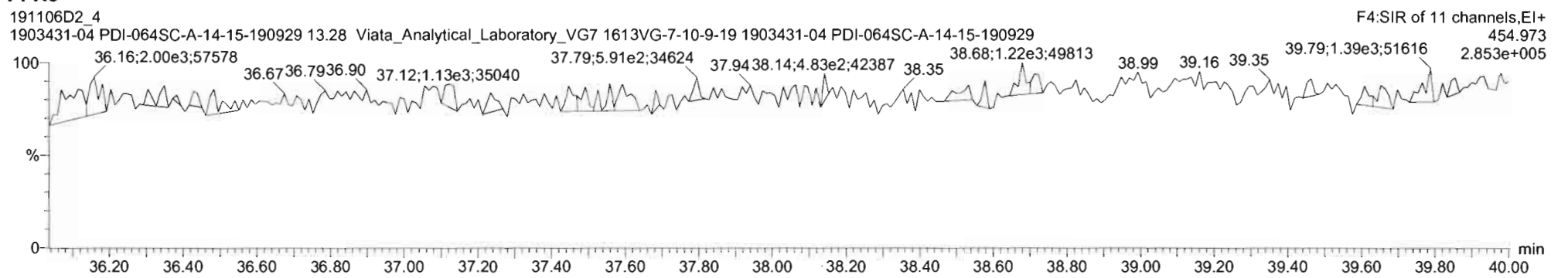
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Description: 1903431-04 PDI-064SC-A-14-15-190929 13.28 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

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Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-5.qld
 Last Altered: Wednesday, November 13, 2019 16:36:03 Pacific Standard Time
 Printed: Wednesday, November 13, 2019 16:37:05 Pacific Standard Time

H2 11-13-19 *CT 11/15/19*

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Calibration: 13 Nov 2019 16:29:57

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 Description: 1903431-05 PDI-064SC-A-15-15.8-190929 13.44 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		9.40e4	10.0651	0.905			1.001		26.30					0.154
2	2 1,2,3,7,8-PeCDD		8.22e4	10.0651	0.903			1.001		30.77					0.178
3	3 1,2,3,4,7,8-HxCDD		6.55e4	10.0651	1.101			1.000		34.09					0.249
4	4 1,2,3,6,7,8-HxCDD		7.39e4	10.0651	0.939			1.000		34.18					0.279
5	5 1,2,3,7,8,9-HxCDD		7.99e4	10.0651	0.961			1.001		34.50					0.259
6	6 1,2,3,4,6,7,8-HpCDD	1.90e2	6.42e4	10.0651	0.979	1.069	NO	1.000	1.000	37.94	37.93	0.59951		0.600	0.344
7	7 OCDD	1.54e3	1.15e5	10.0651	0.959	1.100	YES	1.000	1.001	41.21	41.24	5.5762		5.02	0.342
8	8 2,3,7,8-TCDF		1.35e5	10.0651	0.950			1.001		25.53					0.135
9	9 1,2,3,7,8-PeCDF		1.22e5	10.0651	0.960			1.001		29.61					0.107
10	10 2,3,4,7,8-PeCDF		1.17e5	10.0651	1.015			1.001		30.51					0.101
11	11 1,2,3,4,7,8-HxCDF		9.27e4	10.0651	1.177			1.000		33.18					0.0976
12	12 1,2,3,6,7,8-HxCDF		1.03e5	10.0651	1.069			1.000		33.31					0.104
13	13 2,3,4,6,7,8-HxCDF		9.59e4	10.0651	1.114			1.001		33.93					0.110
14	14 1,2,3,7,8,9-HxCDF		8.58e4	10.0651	1.062			1.000		34.86					0.149
15	15 1,2,3,4,6,7,8-HpCDF		7.22e4	10.0651	1.128			1.001		36.75					0.169
16	16 1,2,3,4,7,8,9-HpCDF		6.00e4	10.0651	1.280			1.000		38.46					0.140
17	17 OCDF		1.49e5	10.0651	0.947			1.000		41.44					0.218
18	18 13C-2,3,7,8-TCDD	9.40e4	1.01e5	10.0651	1.095	0.776	NO	1.021	1.021	26.27	26.27	169.37	85.2		0.520
19	19 13C-1,2,3,7,8-PeCDD	8.22e4	1.01e5	10.0651	0.881	0.646	NO	1.187	1.195	30.53	30.75	183.95	92.6		0.298
20	20 13C-1,2,3,4,7,8-Hx...	6.55e4	1.06e5	10.0651	0.642	1.332	NO	1.014	1.014	34.06	34.08	190.57	95.9		0.929
21	21 13C-1,2,3,6,7,8-Hx...	7.39e4	1.06e5	10.0651	0.856	1.272	NO	1.017	1.017	34.18	34.18	161.39	81.2		0.697
22	22 13C-1,2,3,7,8,9-Hx...	7.99e4	1.06e5	10.0651	0.807	1.269	NO	1.026	1.026	34.48	34.47	185.22	93.2		0.739
23	23 13C-1,2,3,4,6,7,8-H...	6.42e4	1.06e5	10.0651	0.654	1.070	NO	1.126	1.129	37.83	37.93	183.59	92.4		1.06
24	24 13C-OCDD	1.15e5	1.06e5	10.0651	0.580	0.930	NO	1.226	1.227	41.19	41.21	369.47	93.0		0.638
25	25 13C-2,3,7,8-TCDF	1.35e5	1.74e5	10.0651	1.035	0.774	NO	0.993	0.992	25.56	25.50	148.58	74.8		0.491
26	26 13C-1,2,3,7,8-PeCDF	1.22e5	1.74e5	10.0651	0.854	1.611	NO	1.143	1.150	29.40	29.59	162.53	81.8		0.591
27	27 13C-2,3,4,7,8-PeCDF	1.17e5	1.74e5	10.0651	0.847	1.553	NO	1.176	1.185	30.26	30.48	157.12	79.1		0.596
28	28 13C-1,2,3,4,7,8-Hx...	9.27e4	1.06e5	10.0651	0.832	0.530	NO	0.987	0.988	33.17	33.18	208.40	104.9		1.00
29	29 13C-1,2,3,6,7,8-Hx...	1.03e5	1.06e5	10.0651	1.034	0.522	NO	0.991	0.991	33.29	33.30	186.41	93.8		0.805
30	30 13C-2,3,4,6,7,8-Hx...	9.59e4	1.06e5	10.0651	0.953	0.504	NO	1.009	1.009	33.90	33.90	188.16	94.7		0.873
31	31 13C-1,2,3,7,8,9-Hx...	8.58e4	1.06e5	10.0651	0.828	0.521	NO	1.039	1.038	34.89	34.86	193.91	97.6		1.01

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-5.qld

Last Altered: Wednesday, November 13, 2019 16:36:03 Pacific Standard Time

Printed: Wednesday, November 13, 2019 16:37:05 Pacific Standard Time

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 Description: 1903431-05 PDI-064SC-A-15-15.8-190929 13.44 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	7.22e4	1.06e5	10.0651	0.757	0.435	NO	1.093	1.093	36.71	36.72	178.32	89.7		0.963
33	33 13C-1,2,3,4,7,8,9-H...	6.00e4	1.06e5	10.0651	0.581	0.450	NO	1.143	1.145	38.40	38.46	192.85	97.1		1.25
34	34 13C-OCDF	1.49e5	1.06e5	10.0651	0.689	0.872	NO	1.233	1.234	41.43	41.44	402.96	101.4		0.983
35	35 37Cl-2,3,7,8-TCDD	3.60e4	1.01e5	10.0651	1.198			1.022	1.022	26.29	26.30	59.304	74.6		0.0811
36	36 13C-1,2,3,4-TCDD	1.01e5	1.01e5	10.0651	1.000	0.808	NO	1.000	1.000	25.70	25.72	198.71	100.0		0.569
37	37 13C-1,2,3,4-TCDF	1.74e5	1.74e5	10.0651	1.000	0.816	NO	1.000	1.000	24.28	24.31	198.71	100.0		0.509
38	38 13C-1,2,3,4,6,9-Hx...	1.06e5	1.06e5	10.0651	1.000	0.535	NO	1.000	1.000	33.55	33.59	198.71	100.0		0.833
39	39 Total Tetra-Dioxins		9.40e4	10.0651	0.901			0.000		25.50					0.0790
40	40 Total Penta-Dioxins		8.22e4	10.0651	0.872			0.000		30.00					0.0894
41	41 Total Hexa-Dioxins		0.00e0	10.0651	0.976			0.000		33.80		0.58909		0.589	0.267
42	42 Total Hepta-Dioxins		6.42e4	10.0651	0.989			0.000		37.75		1.8166		1.82	0.341
43	43 Total Tetra-Furans		1.35e5	10.0651	0.943			0.000		24.00					0.0649
44	44 1st Func. Penta-Fur...		0.00e0	10.0651	0.940			0.000		27.63					0.0400
45	45 Total Penta-Furans		0.00e0	10.0651	0.940			0.000		30.00					0.0417
46	46 Total Hexa-Furans		0.00e0	10.0651	1.078			0.000		33.00					0.0654
47	47 Total Hepta-Furans		0.00e0	10.0651	1.135			0.000		37.75					0.0905

0.107

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Dataset: U:\VG7.PRO\Results\191106D2\191106D2-5.qld
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Calibration: 13 Nov 2019 16:29:57

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 Description: 1903431-05 PDI-064SC-A-15-15.8-190929 13.44 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	32.55	115.604	41146.027	5.786	MM	0.5891	0.59

Hepta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	NO	37.93	98.054	33193.766	5.910	MM	0.5995	0.60
2	42 Total Hepta-Dioxins	NO	37.09	201.345	33193.766	12.112	bb	1.2171	1.22

Tetra-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-5.qld

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Printed: Wednesday, November 13, 2019 16:37:05 Pacific Standard Time

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Description: 1903431-05 PDI-064SC-A-15-15.8-190929 13.44 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Penta-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hepta-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

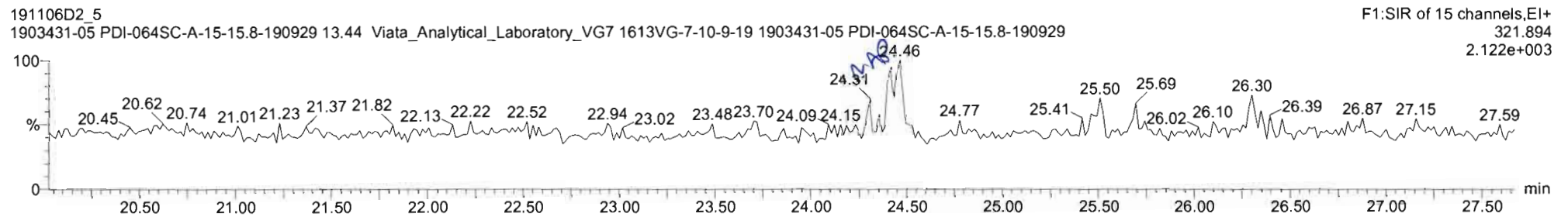
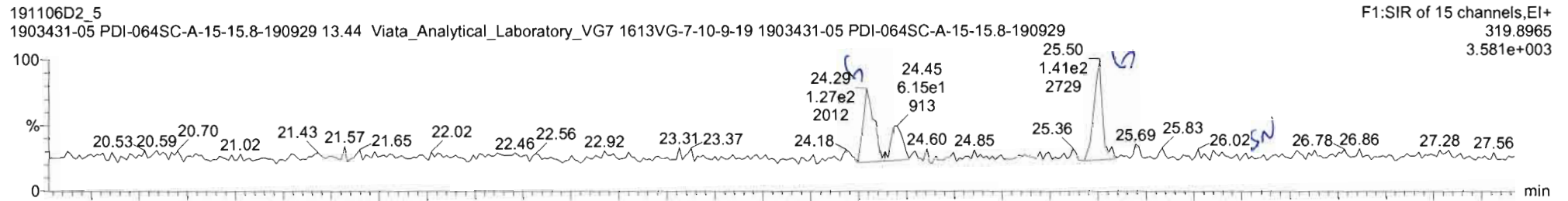
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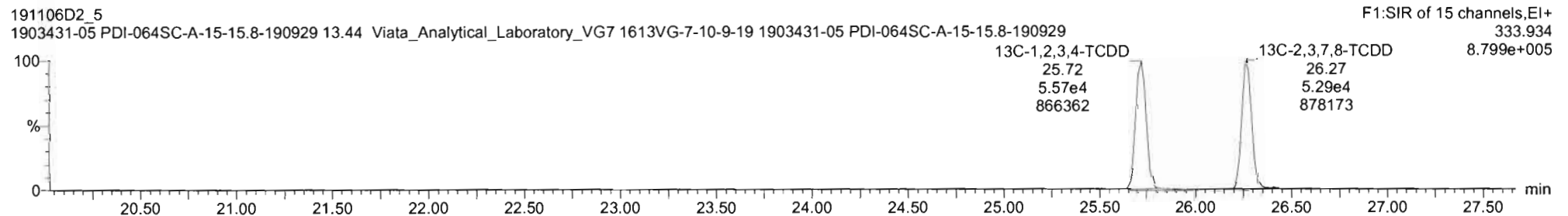
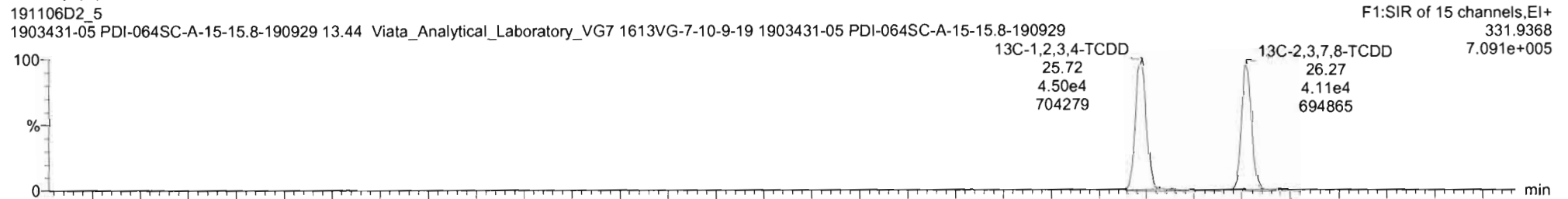
Printed: Wednesday, November 13, 2019 16:04:39 Pacific Standard Time

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Total Tetra-Dioxins



13C-2,3,7,8-TCDD



Vista Analytical Laboratory

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Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

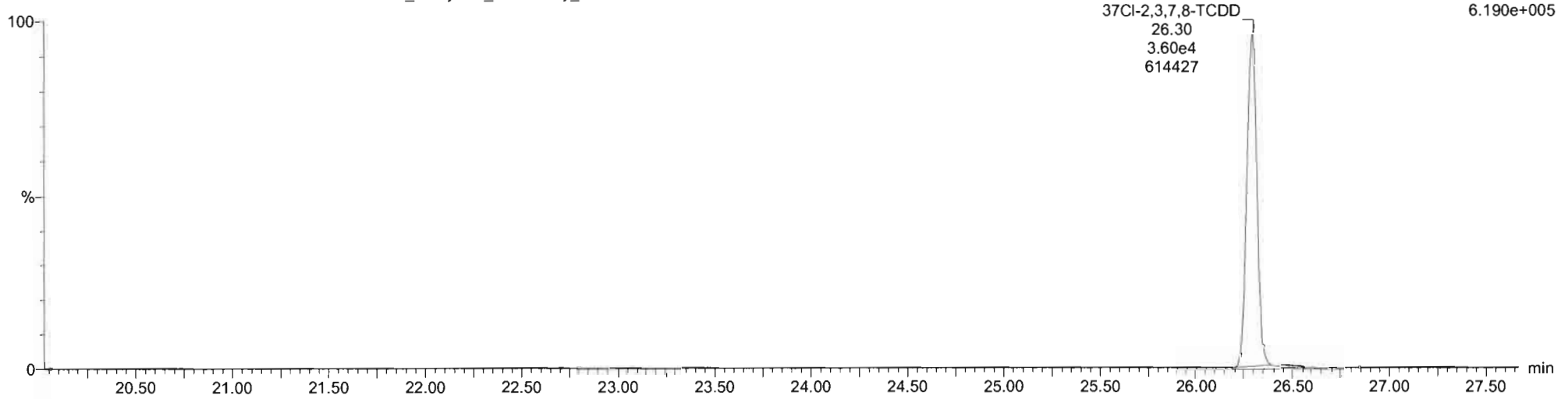
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Description: 1903431-05 PDI-064SC-A-15-15.8-190929 13.44 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

37Cl-2,3,7,8-TCDD

191106D2_5
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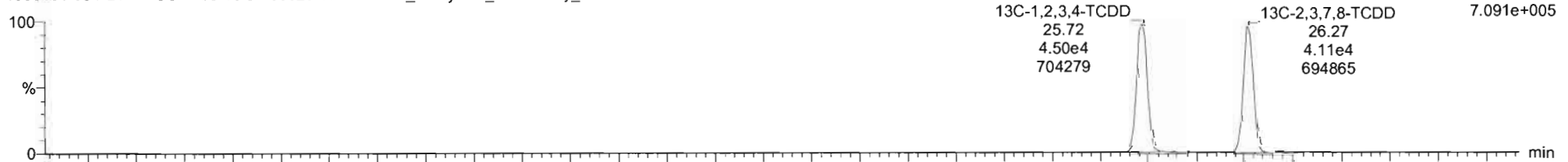
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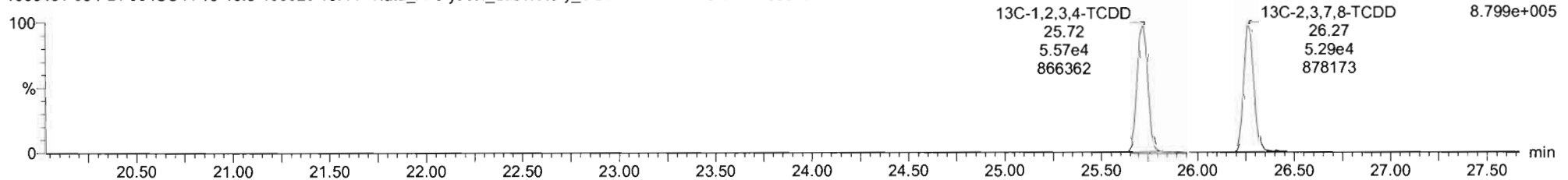
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F1:SIR of 15 channels,EI+
331.9368
7.091e+005



191106D2_5
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F1:SIR of 15 channels,EI+
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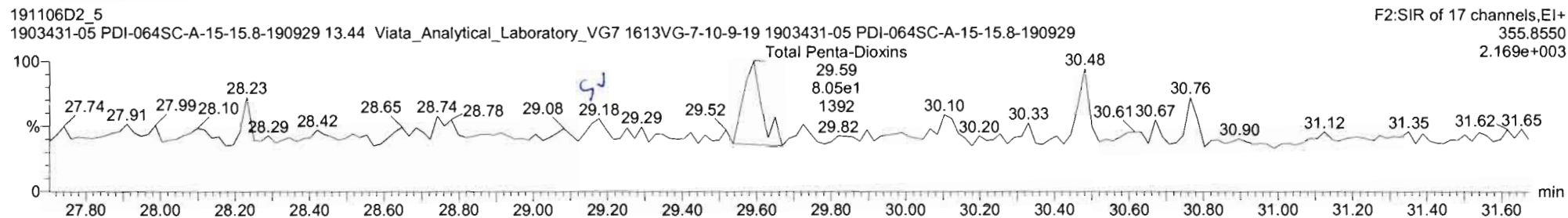
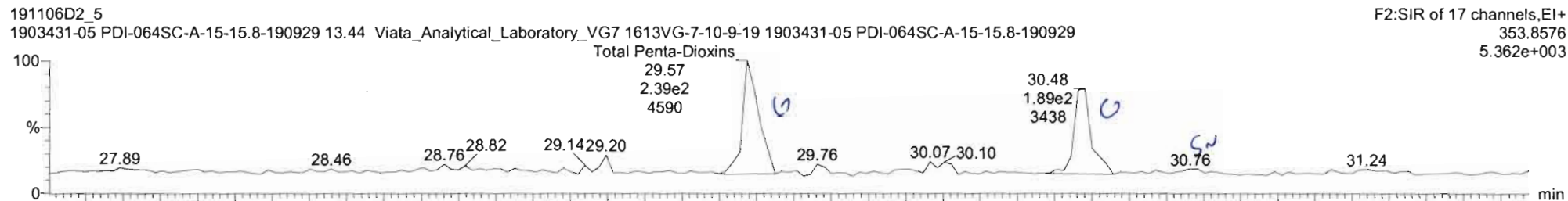
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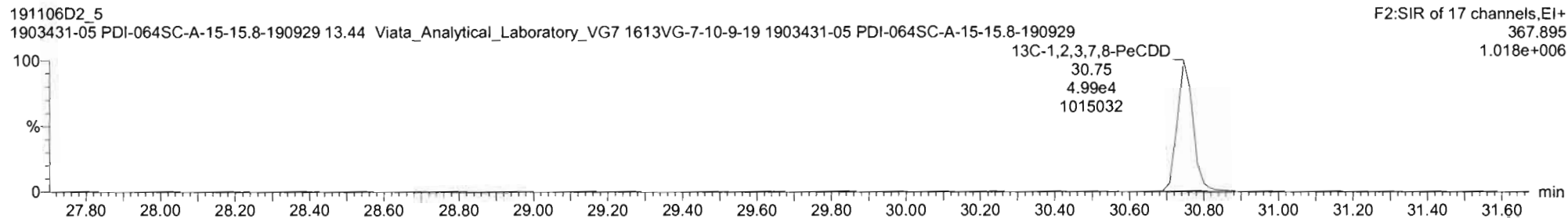
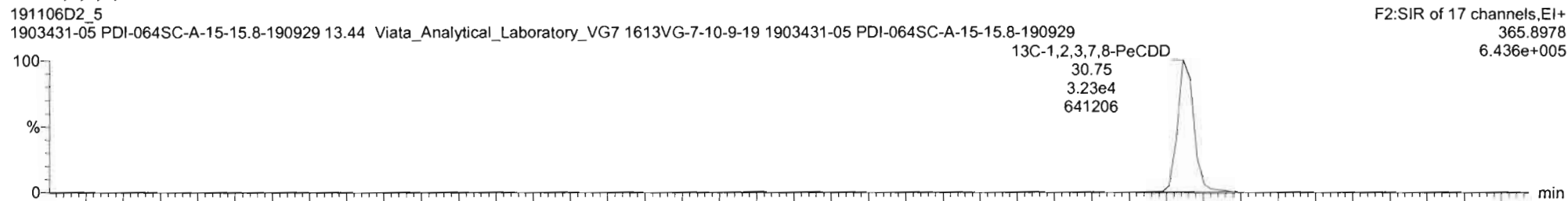
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Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



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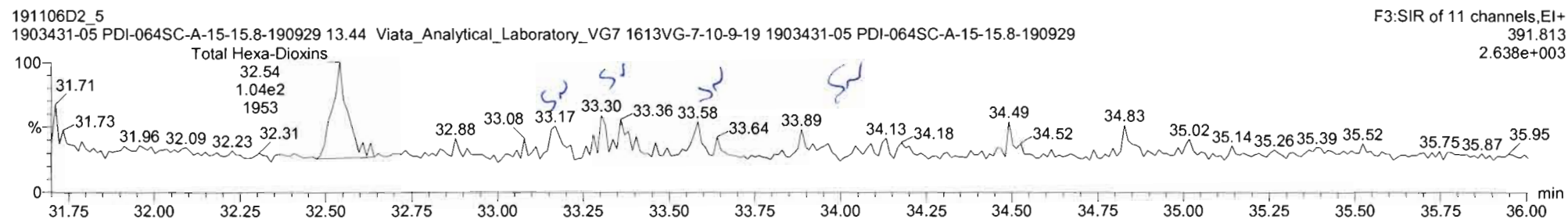
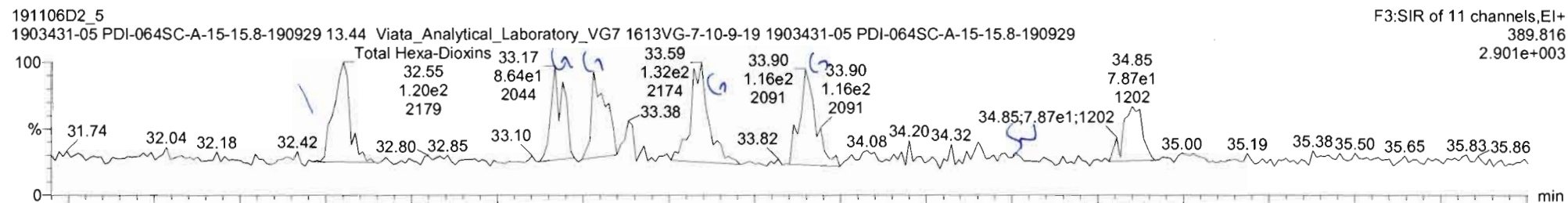
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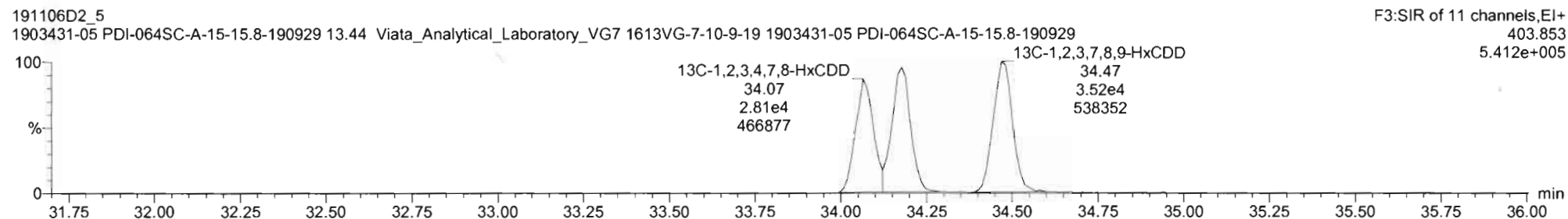
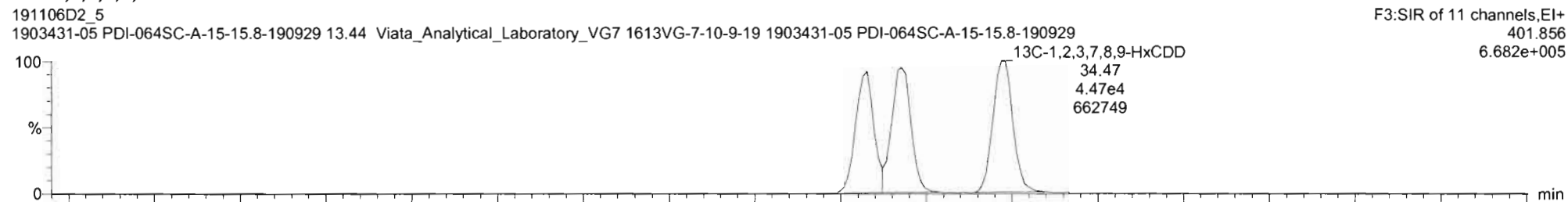
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Total Hexa-Dioxins

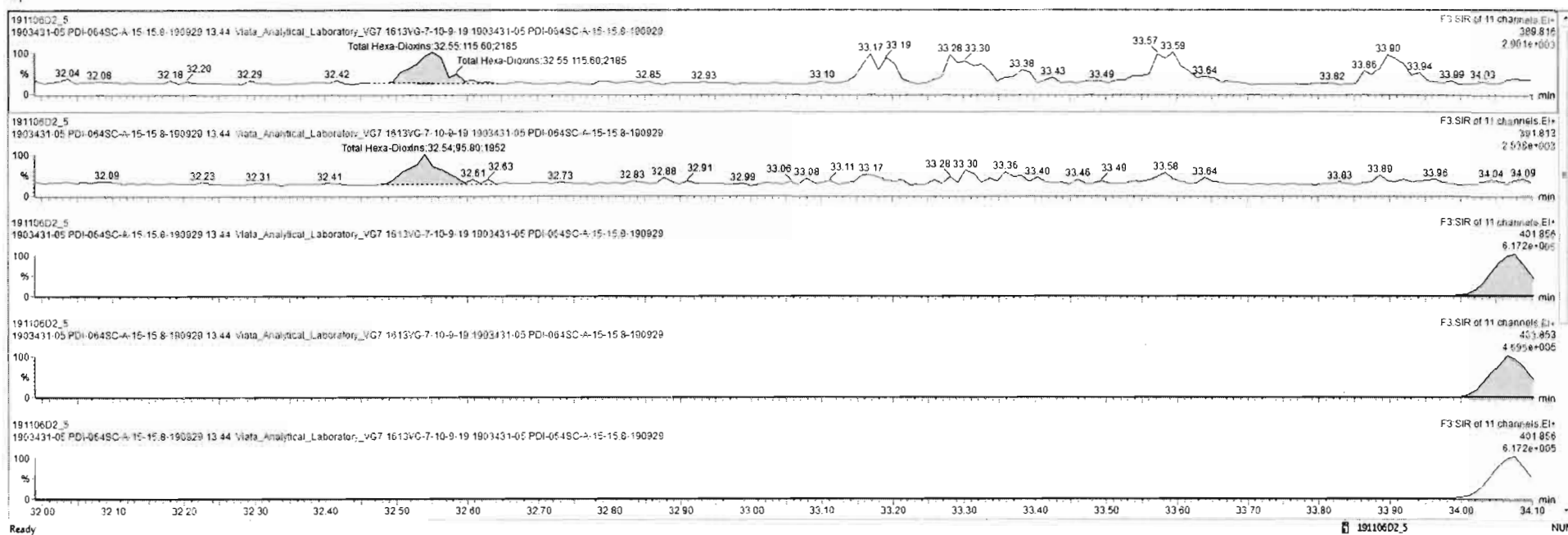


13C-1,2,3,4,7,8-HxCDD



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/wt	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	% Rec	DL	EMPC
31	13C-1,2,3,7,8,9-HxCDF	6.58e4	1.06e5	33	0.52	NO	0.828	19.095	34.89	34.86	1.038	1.038	NO	193.9	97.8	1.01	
32	13C-1,2,3,4,6,7,8-HpCDF	7.22e4	1.06e5	38	0.43	NO	0.757	10.065	36.71	36.72	1.093	1.093	NO	178.3	85.7	0.963	
33	13C-1,2,3,4,7,8,9-HpCDF	6.00e4	1.06e5	38	0.45	NO	0.581	10.065	38.40	38.46	1.145	1.143	NO	192.9	97.1	1.25	
34	13C-OCDF	1.48e5	1.06e5	38	0.87	NO	0.689	10.065	41.43	41.44	1.224	1.233	NO	403.0	101	0.983	
35	37Cl-2,3,7,8-TCDD	3.60e4	1.01e5	36			1.198	10.065	26.29	26.30	1.022	1.022	NO	59.30	74.6	0.0811	
36	13C-1,2,3,4-TCDD	1.01e5	1.01e5	36	0.81	NO	1.000	10.065	25.70	25.72	1.000	1.000	NO	198.7	100	0.566	
37	13C-1,2,3,4-TCDF	1.74e5	1.74e5	37	0.82	NO	1.000	10.065	24.28	24.31	1.000	1.000	NO	198.7	100	0.509	
38	13C-1,2,3,4,6,8-HxCDF	1.06e5	1.06e5	38	0.53	NO	1.000	10.065	33.56	33.59	1.000	1.000	NO	198.7	100	0.833	
39	Total Tetra-Dioxins		9.40e4				0.901	10.065	25.50			0.000	NO			0.0790	
40	Total Penta-Dioxins		8.22e4				0.872	10.065	30.00			0.000	NO			0.0854	
41	Total Hexa-Dioxins		0.00e0				0.858	10.065	33.00			0.000	NO	0.66e4		0.987	0.66e4

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred.RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.55	1.156e2	9.580e1	1.240	1.21	NO	0.58909	0.58909



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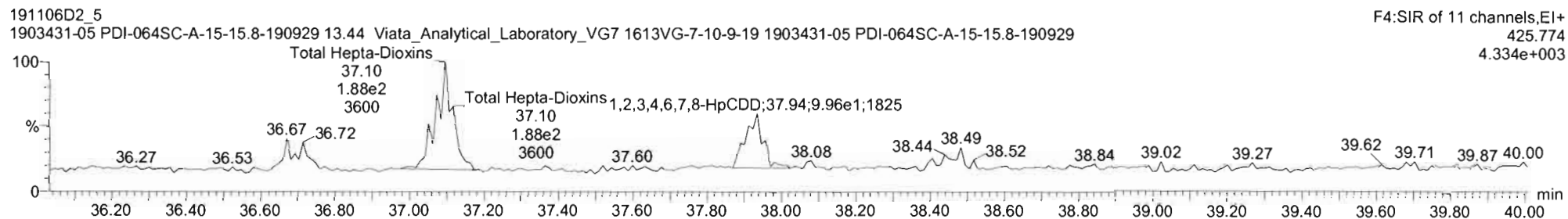
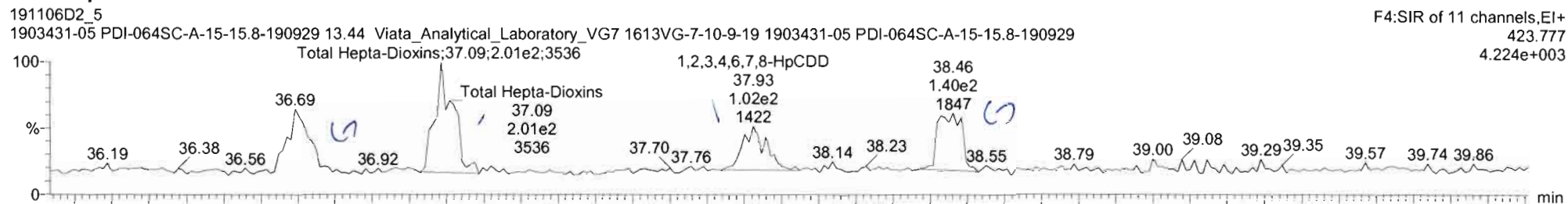
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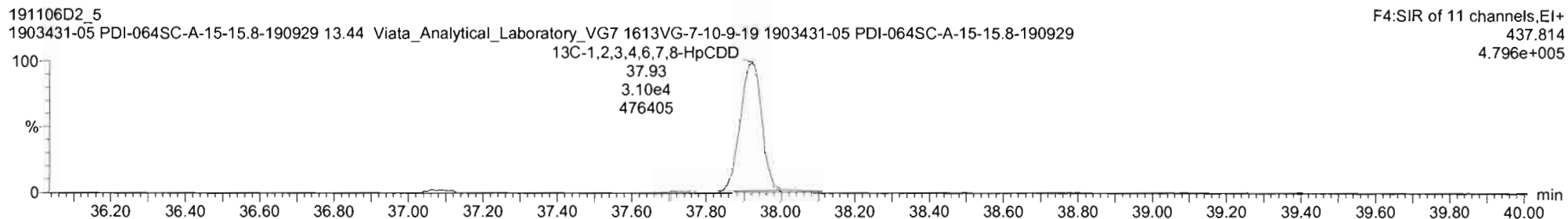
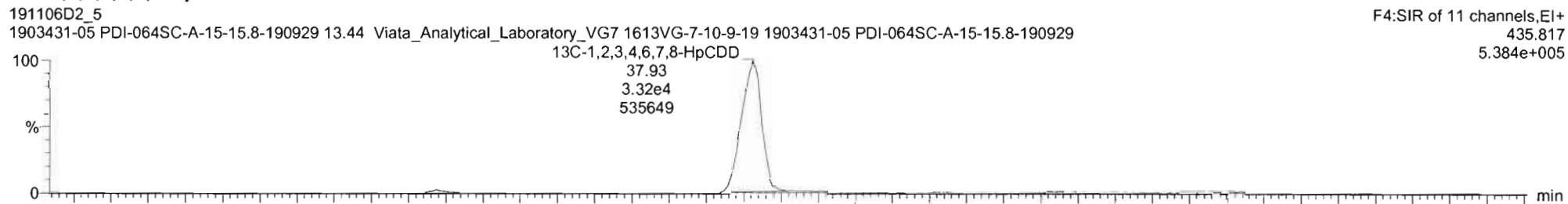
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Total Hepta-Dioxins



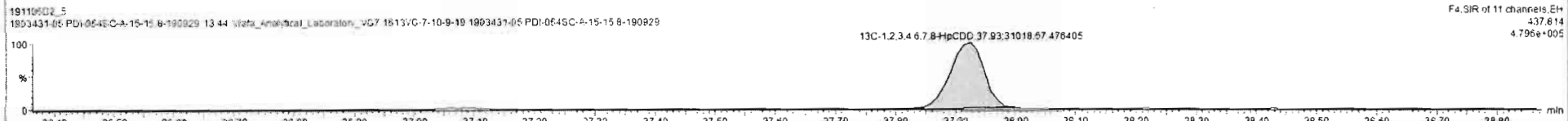
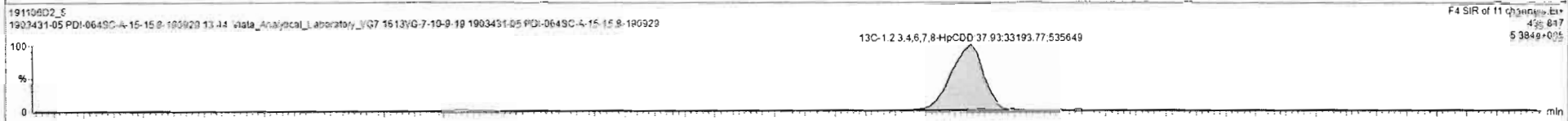
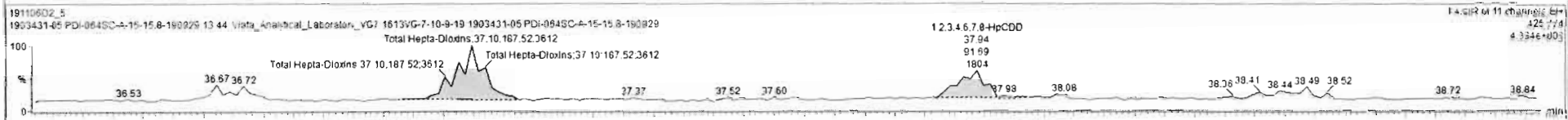
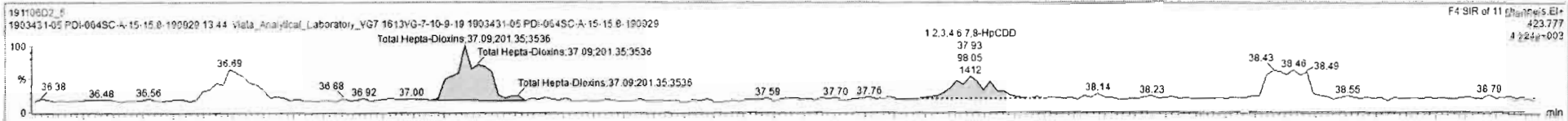
13C-1,2,3,4,6,7,8-HpCDD



191106D2_5 1903431-05 PDI-064SC-A-15-15-8-190929 1903431-05 PDI-064SC-A-15-15-8-190929 13 44 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

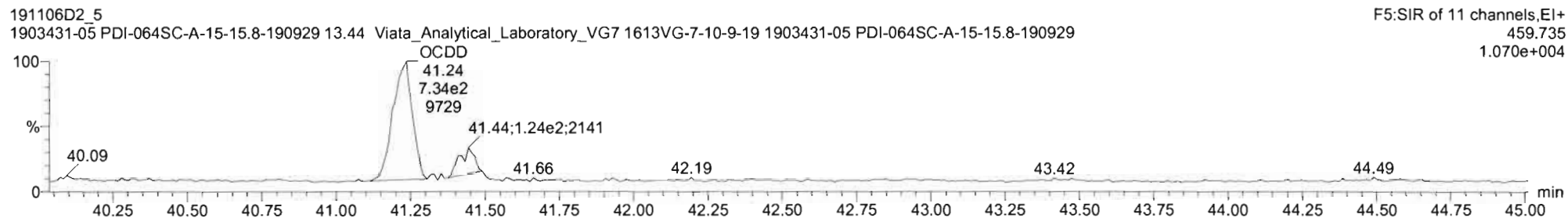
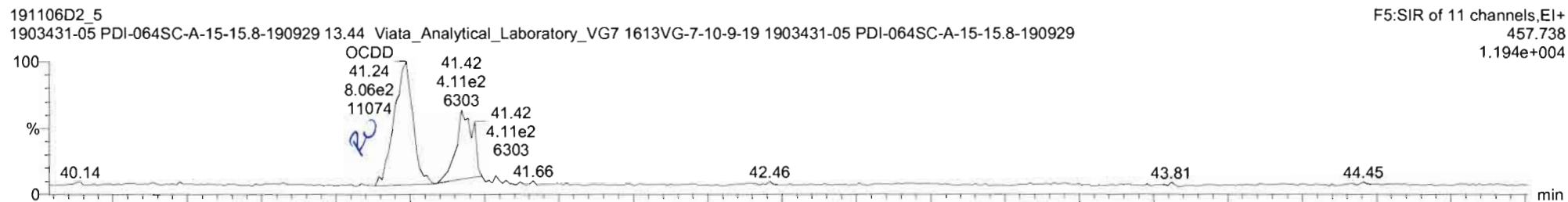
#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
42	Total Hepta-Dioxins		8.42e4				0.989	10.065	37.75			0.000	NO	1.817		0.341	1.817
43	Total Tetra-Furans		1.75e5				0.943	10.065	24.00			0.000	NO			0.0649	
44	1st Func. Penta-Furans		0.00e0				0.940	10.065	27.63			0.000	NO			0.0420	
45	Total Penta-Furans		0.00e0				0.940	10.065	30.00			0.000	NO			0.0417	
46	Total Hexa-Furans		0.00e0				1.078	10.065	33.00			0.000	NO			0.0654	
47	Total Hepta-Furans		0.00e0				1.135	10.065	37.75			0.000	NO			0.0905	
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
49	devc																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	37.09	2.013e2	1.875e2	1.040	1.07	NO	1.2171	1.2171
2	6 1,2,3,4,6,7,8-HpCDD	37.94	37.93	9.805e1	9.159e1	1.040	1.07	NO	0.59951	0.59951

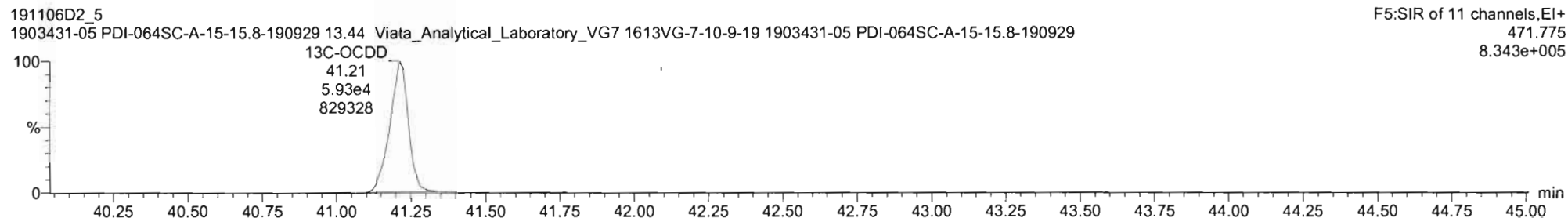
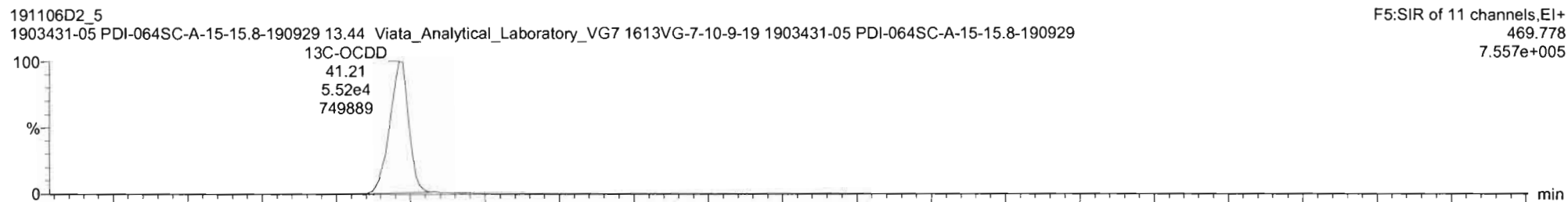


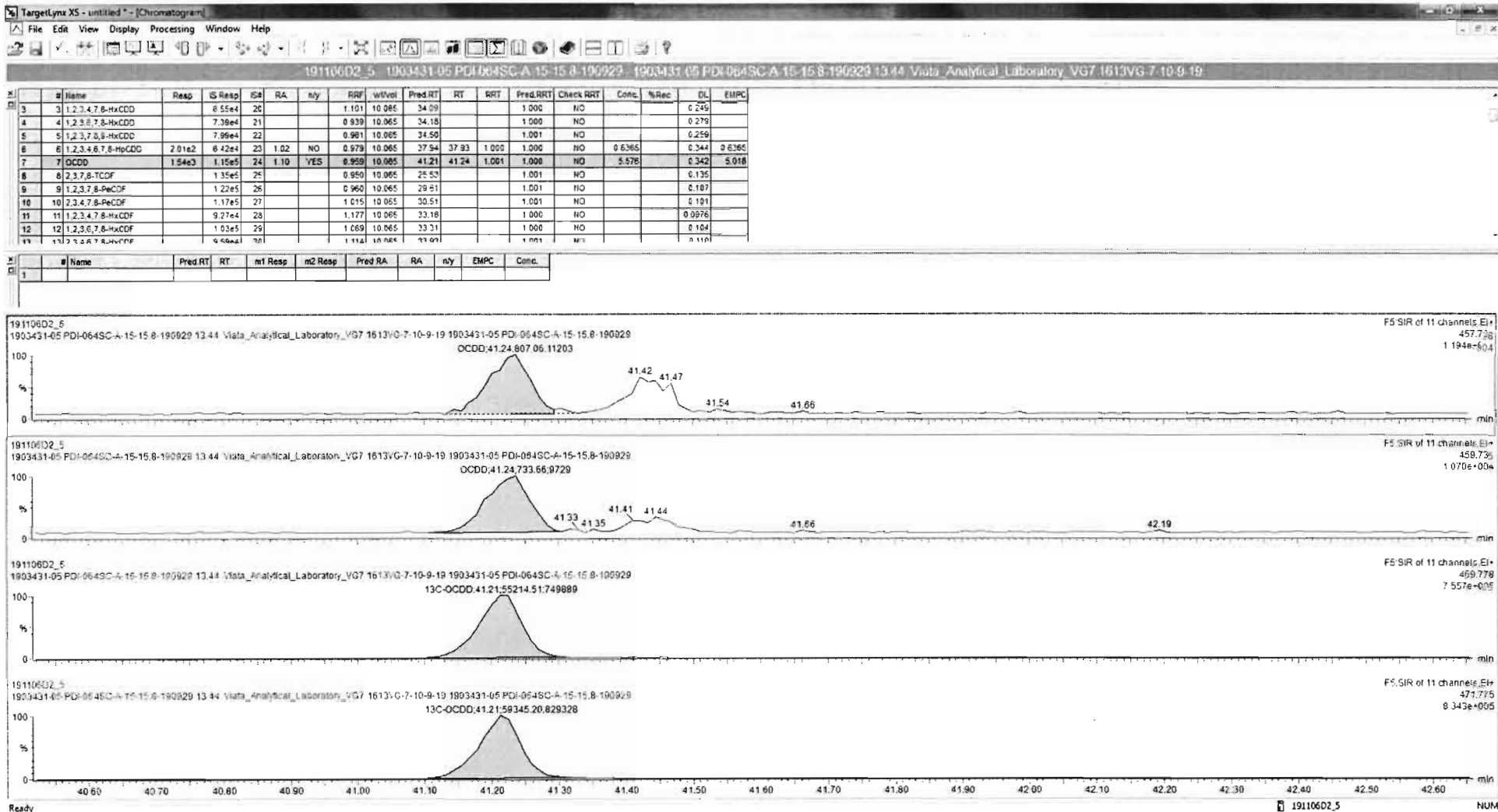
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OCDD



13C-OCDD





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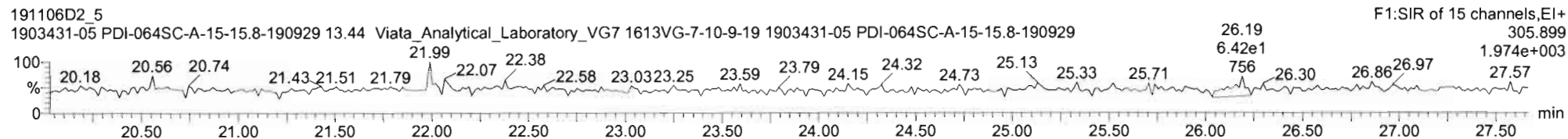
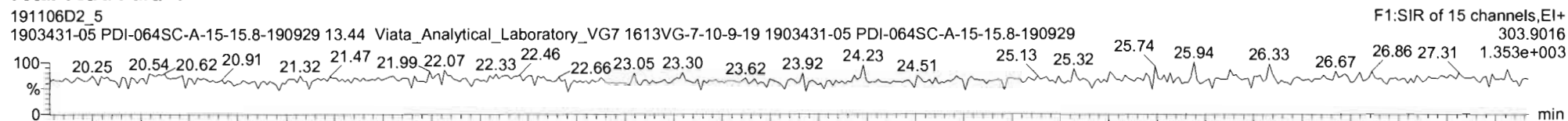
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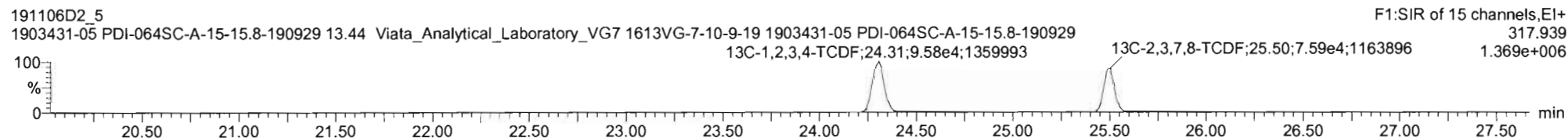
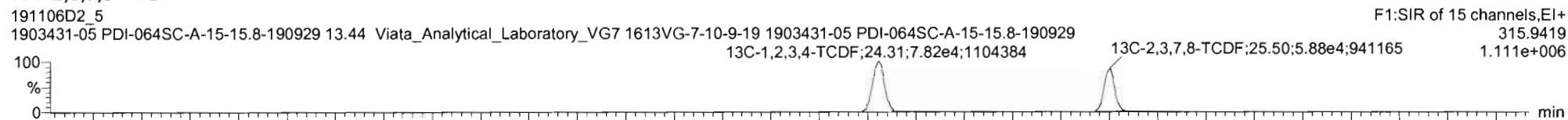
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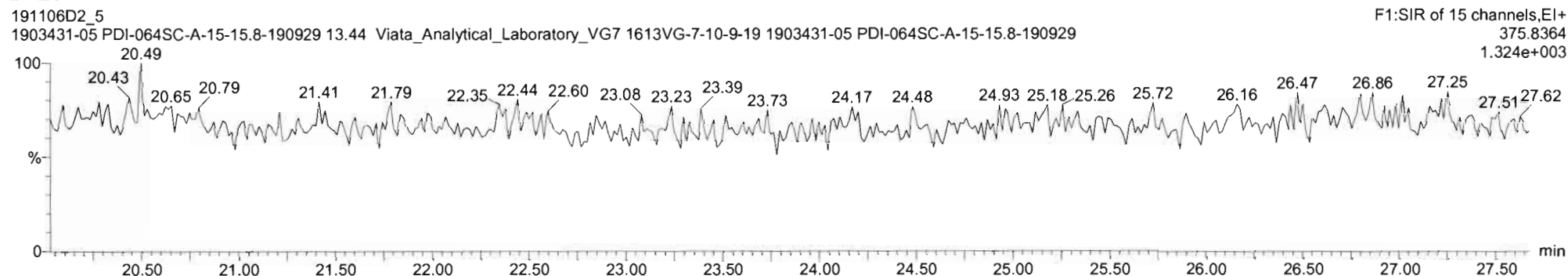
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

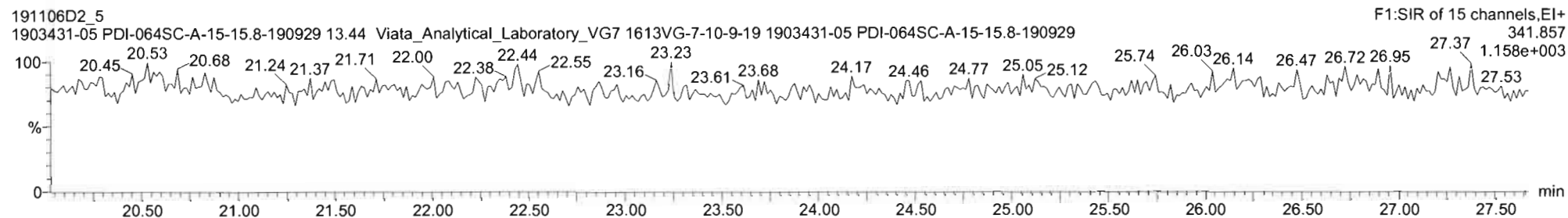
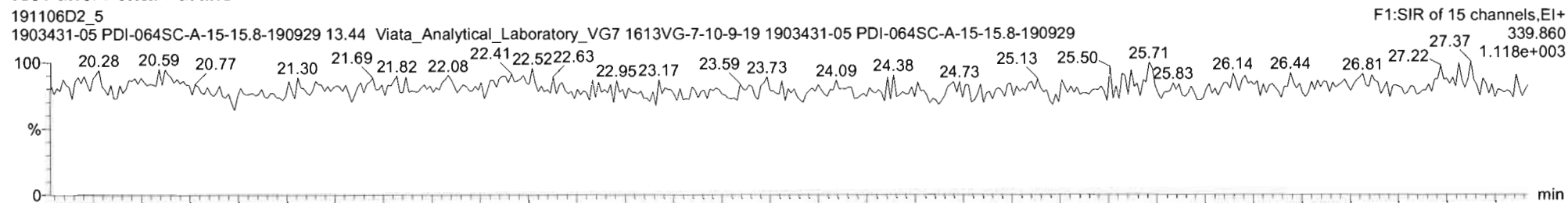
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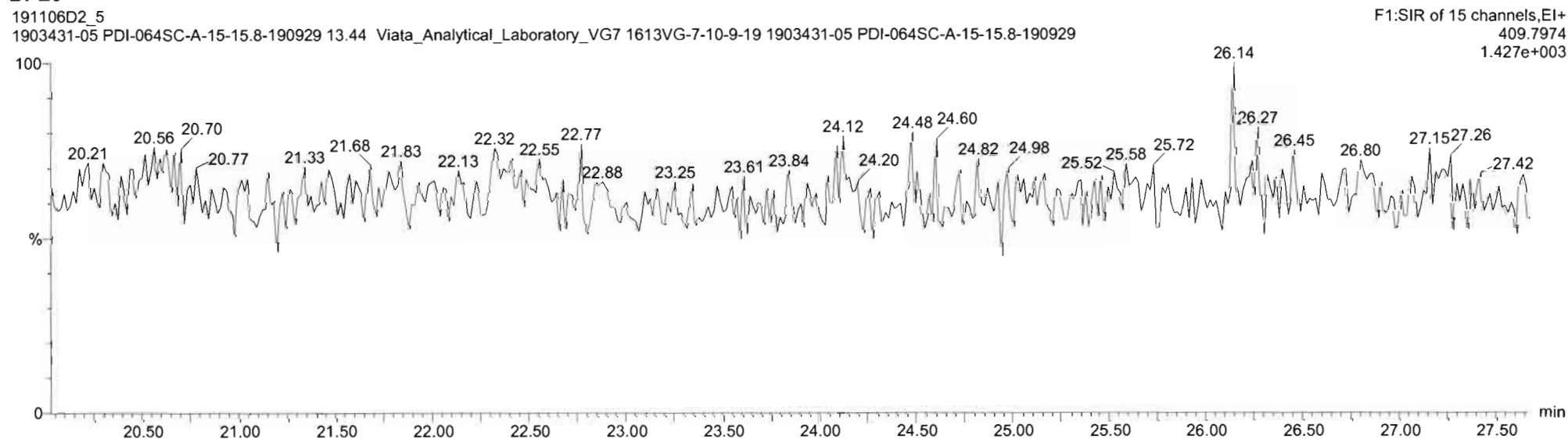
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1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

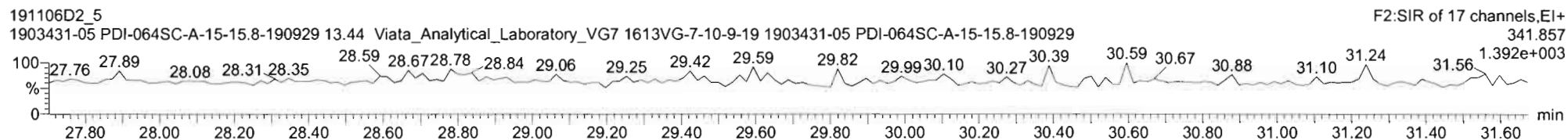
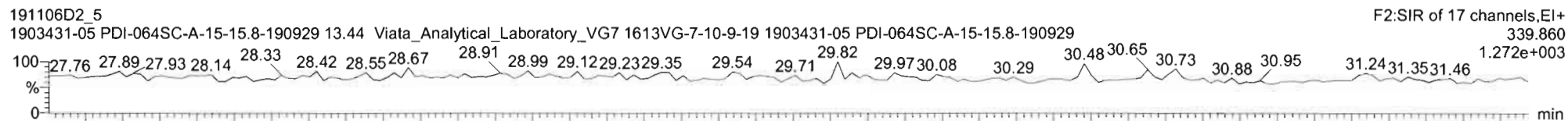
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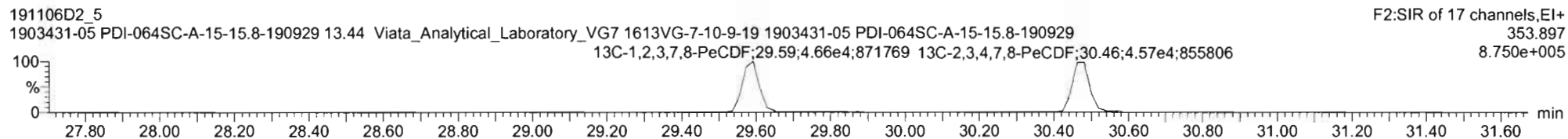
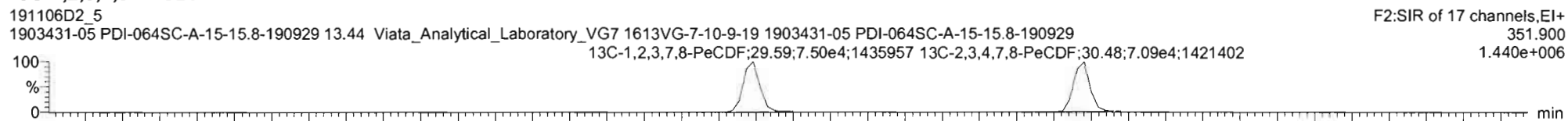
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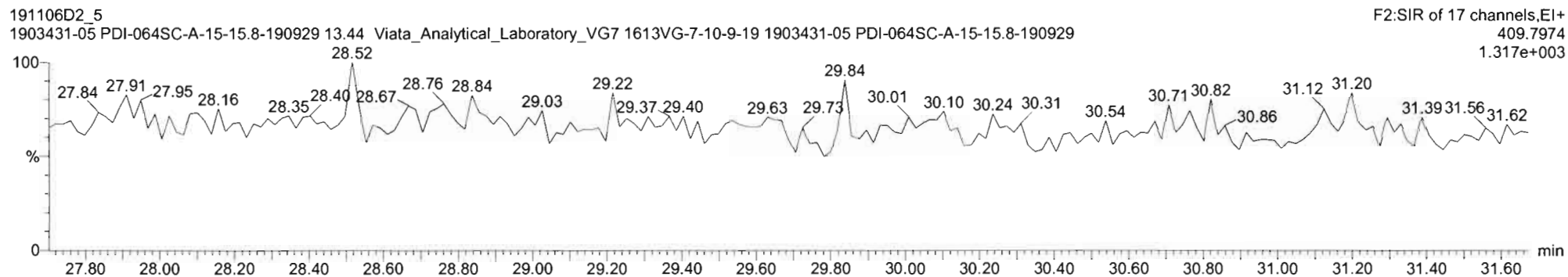
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



DPE2



Vista Analytical Laboratory

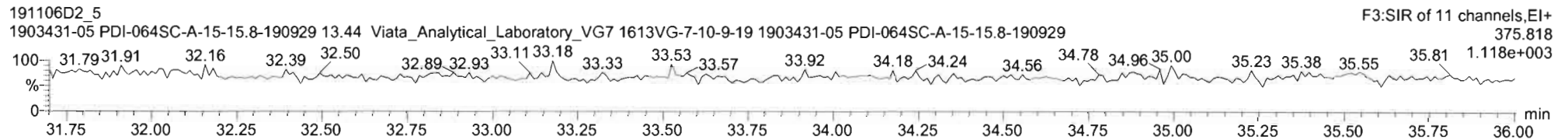
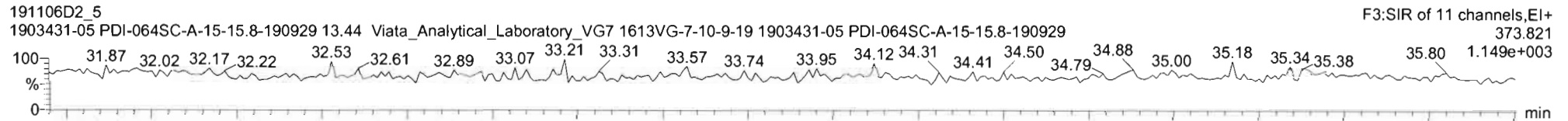
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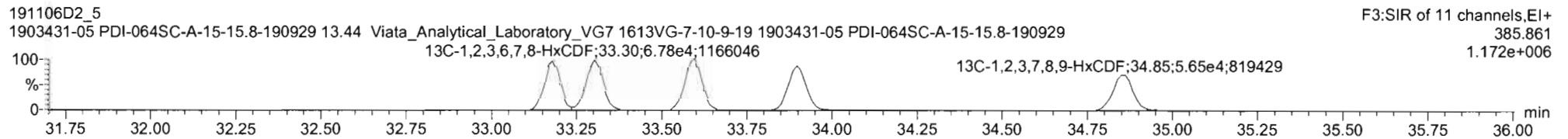
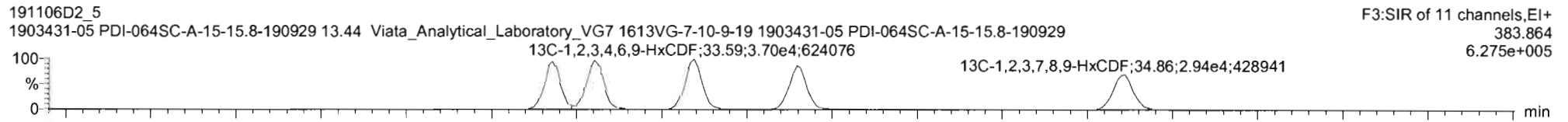
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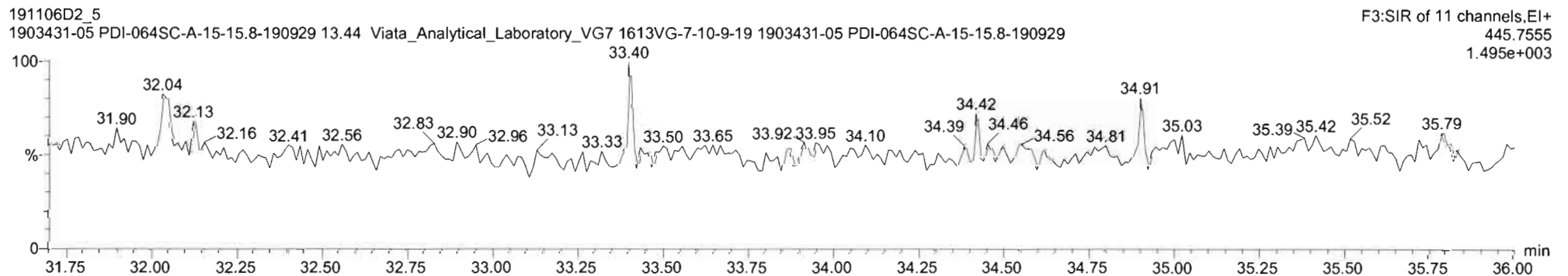
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

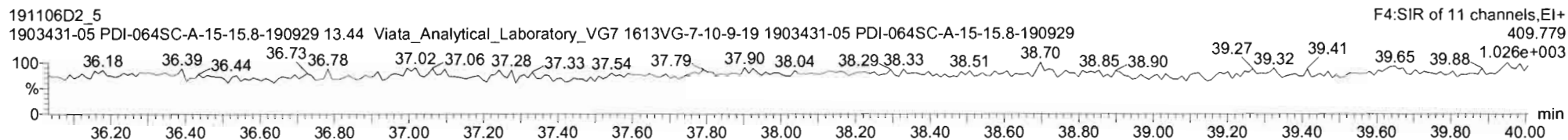
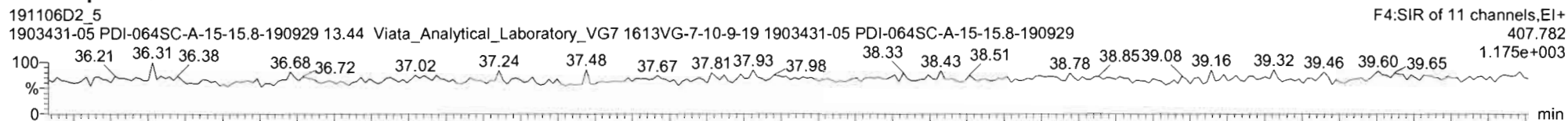
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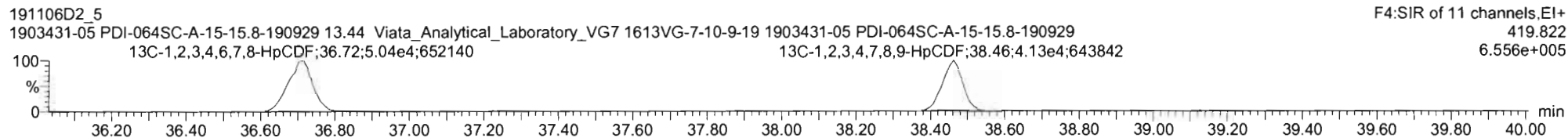
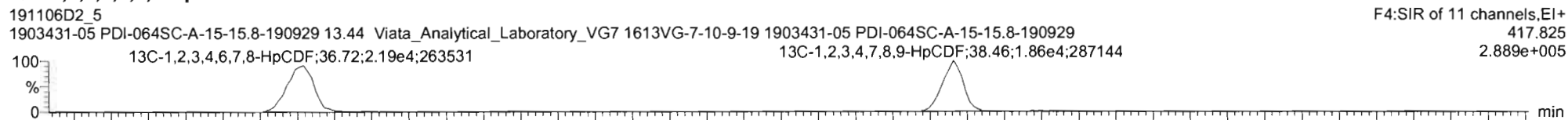
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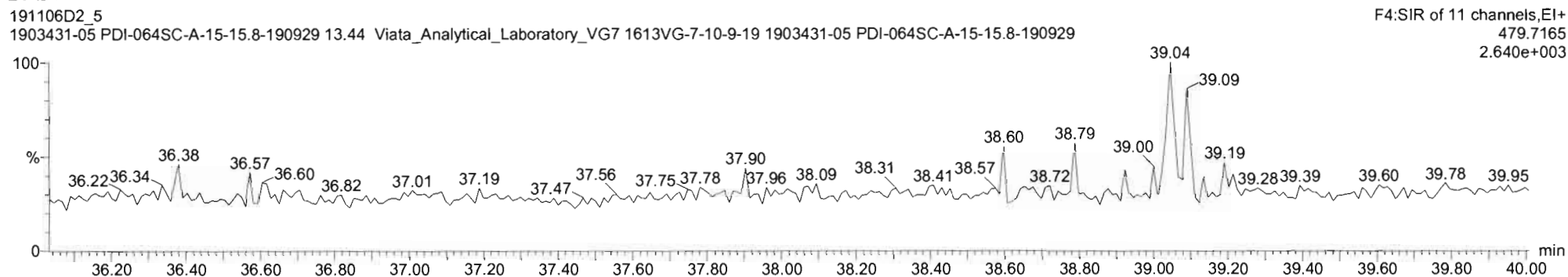
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

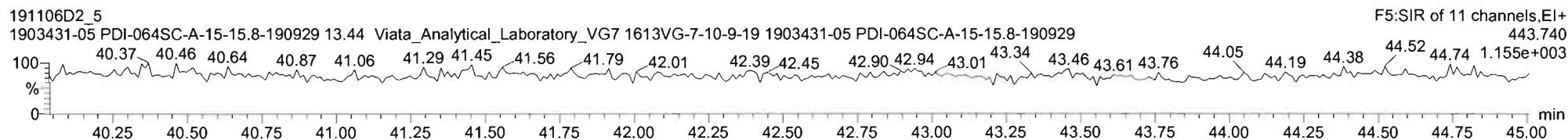
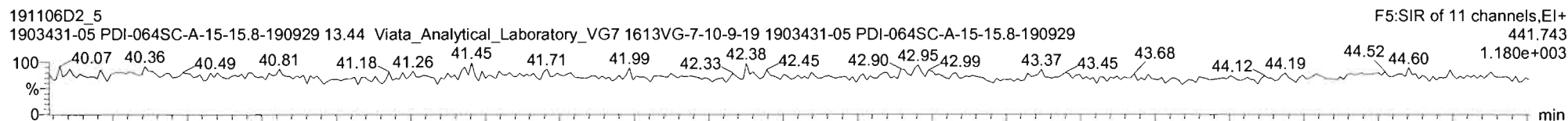
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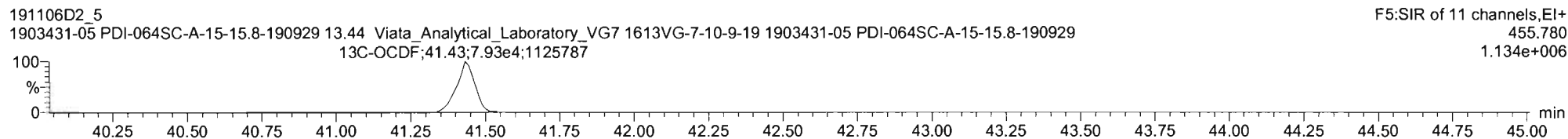
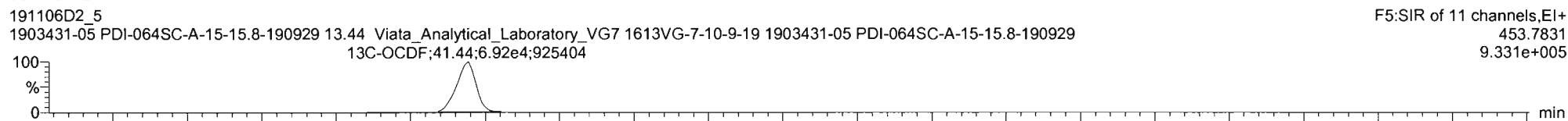
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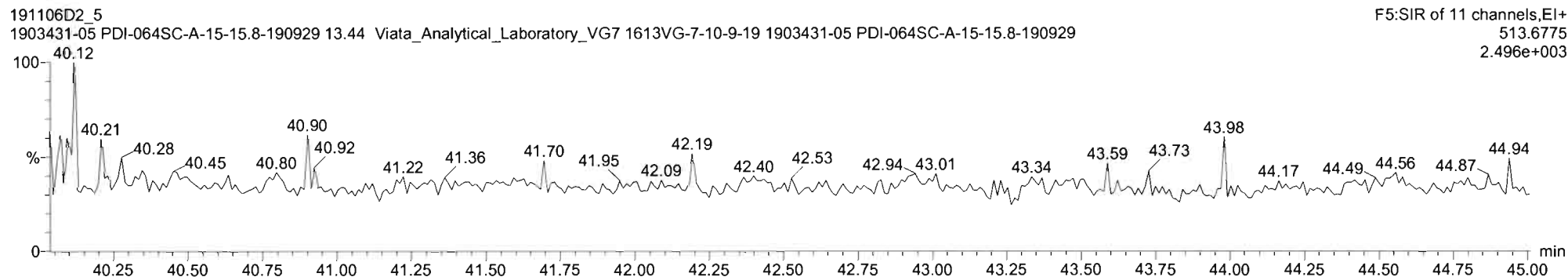
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

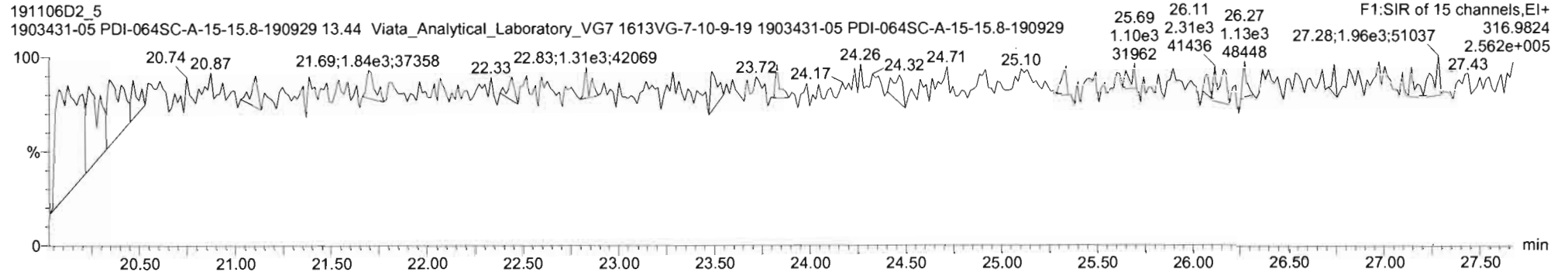
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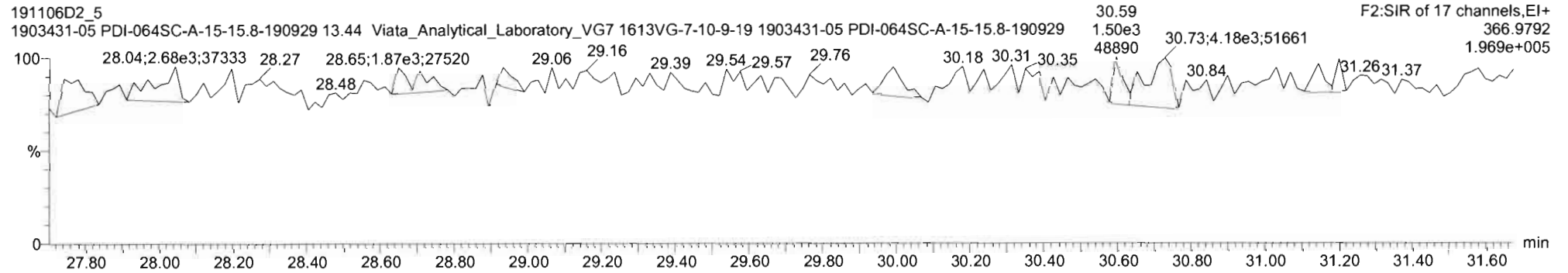
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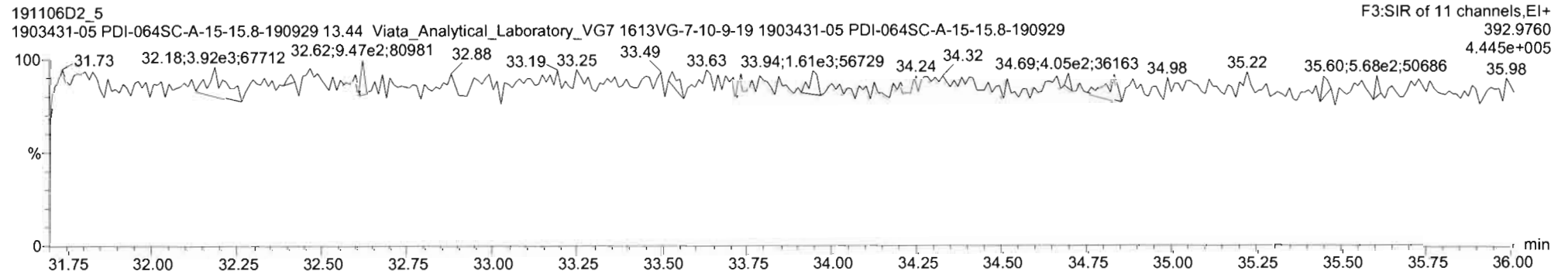
PFK1



PFK2



PFK3



Vista Analytical Laboratory

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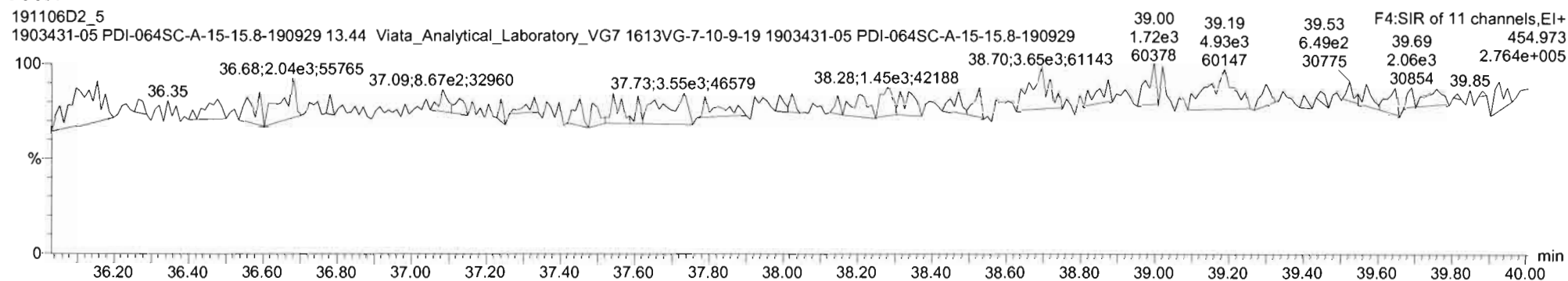
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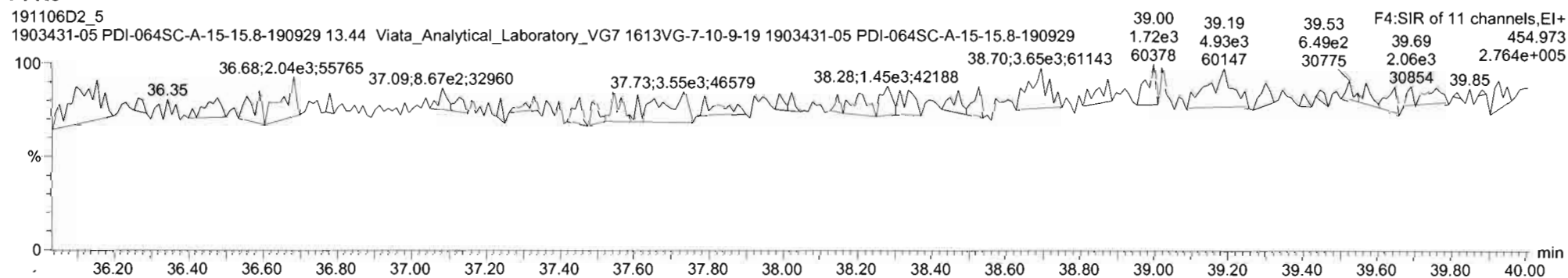
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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

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Vista Analytical Laboratory

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 Printed: Wednesday, November 13, 2019 17:28:42 Pacific Standard Time

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 Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD	6.31e2	1.10e5	10.0131	0.905	0.690	NO	1.001	1.000	26.33	26.30	1.2647		1.26	0.225
2	2 1,2,3,7,8-PeCDD	6.65e2	8.93e4	10.0131	0.903	0.517	YES	1.001	1.001	30.77	30.76	1.6462		1.45	0.494
3	3 1,2,3,4,7,8-HxCDD	7.38e2	7.17e4	10.0131	1.101	1.334	NO	1.000	1.001	34.09	34.11	1.8673		1.87	0.837
4	4 1,2,3,6,7,8-HxCDD	5.54e3	8.27e4	10.0131	0.939	1.179	NO	1.000	1.000	34.19	34.20	14.246		14.2	0.960
5	5 1,2,3,7,8,9-HxCDD	2.40e3	8.99e4	10.0131	0.961	1.266	NO	1.001	1.000	34.51	34.49	5.5447		5.54	0.793
6	6 1,2,3,4,6,7,8-HpCDD	1.96e5	7.46e4	10.0131	0.979	1.005	NO	1.000	1.001	37.94	37.95	535.61		536	2.80
7	7 OCDD	1.40e6	9.80e4	10.0131	0.959	0.907	NO	1.000	1.000	41.25	41.26	5957.7		5960	1.92
8	8 2,3,7,8-TCDF	5.58e4	1.40e5	10.0131	0.950	0.758	NO	1.001	1.001	25.55	25.54	83.448	ck	83.4	0.454
9	9 1,2,3,7,8-PeCDF	9.62e4	1.33e5	10.0131	0.960	1.489	NO	1.001	1.001	29.61	29.61	150.09		150	0.420
10	10 2,3,4,7,8-PeCDF	3.89e4	1.23e5	10.0131	1.015	1.531	NO	1.001	1.001	30.51	30.50	62.552		62.6	0.370
11	11 1,2,3,4,7,8-HxCDF	1.45e5	9.93e4	10.0131	1.177	1.252	NO	1.000	1.000	33.18	33.19	248.16		248	0.564
12	12 1,2,3,6,7,8-HxCDF	3.53e4	1.12e5	10.0131	1.069	1.188	NO	1.000	1.000	33.31	33.31	58.729		58.7	0.527
13	13 2,3,4,6,7,8-HxCDF	9.95e3	1.06e5	10.0131	1.114	1.263	NO	1.001	1.000	33.94	33.91	16.902		16.9	0.597
14	14 1,2,3,7,8,9-HxCDF	5.08e3	9.90e4	10.0131	1.062	1.226	NO	1.000	1.001	34.86	34.89	9.6524		9.65	0.681
15	15 1,2,3,4,6,7,8-HpCDF	6.68e4	7.27e4	10.0131	1.128	1.029	NO	1.001	1.001	36.75	36.74	162.93		163	0.792
16	16 1,2,3,4,7,8,9-HpCDF	1.99e4	6.65e4	10.0131	1.280	1.029	NO	1.000	1.000	38.47	38.48	46.793		46.8	0.681
17	17 OCDF	1.02e5	1.32e5	10.0131	0.947	0.850	NO	1.000	1.000	41.47	41.48	326.18		326	0.674
18	18 13C-2,3,7,8-TCDD	1.10e5	1.40e5	10.0131	1.095	0.814	NO	1.021	1.022	26.28	26.30	143.76	72.0		0.458
19	19 13C-1,2,3,7,8-PeCDD	8.93e4	1.40e5	10.0131	0.881	0.634	NO	1.187	1.195	30.54	30.75	144.88	72.5		0.233
20	20 13C-1,2,3,4,7,8-Hx...	7.17e4	1.37e5	10.0131	0.642	1.300	NO	1.014	1.014	34.06	34.08	162.24	81.2		0.602
21	21 13C-1,2,3,6,7,8-Hx...	8.27e4	1.37e5	10.0131	0.856	1.299	NO	1.017	1.018	34.18	34.19	140.61	70.4		0.452
22	22 13C-1,2,3,7,8,9-Hx...	8.99e4	1.37e5	10.0131	0.807	1.289	NO	1.026	1.026	34.48	34.48	162.11	81.2		0.479
23	23 13C-1,2,3,4,6,7,8-H...	7.46e4	1.37e5	10.0131	0.654	1.029	NO	1.126	1.129	37.83	37.92	165.76	83.0		0.992
24	24 13C-OCDD	9.80e4	1.37e5	10.0131	0.580	0.936	NO	1.226	1.228	41.19	41.25	245.82	61.5		0.495
25	25 13C-2,3,7,8-TCDF	1.40e5	2.05e5	10.0131	1.035	0.775	NO	0.993	0.992	25.57	25.52	132.51	66.3		0.433
26	26 13C-1,2,3,7,8-PeCDF	1.33e5	2.05e5	10.0131	0.854	1.663	NO	1.143	1.150	29.42	29.59	152.25	76.2		0.420
27	27 13C-2,3,4,7,8-PeCDF	1.23e5	2.05e5	10.0131	0.847	1.583	NO	1.176	1.184	30.28	30.48	141.15	70.7		0.424
28	28 13C-1,2,3,4,7,8-Hx...	9.93e4	1.37e5	10.0131	0.832	0.504	NO	0.987	0.988	33.17	33.18	173.57	86.9		0.925
29	29 13C-1,2,3,6,7,8-Hx...	1.12e5	1.37e5	10.0131	1.034	0.522	NO	0.991	0.991	33.28	33.30	157.67	78.9		0.744
30	30 13C-2,3,4,6,7,8-Hx...	1.06e5	1.37e5	10.0131	0.953	0.518	NO	1.009	1.009	33.90	33.91	161.06	80.6		0.807
31	31 13C-1,2,3,7,8,9-Hx...	9.90e4	1.37e5	10.0131	0.828	0.515	NO	1.039	1.038	34.89	34.86	173.85	87.0		0.929

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-6.qld
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 Printed: Wednesday, November 13, 2019 17:28:42 Pacific Standard Time

Name: VG7 191106D2_6, Date: 7-NOV-2019, Time: 03:52:37, ID: 1903431-06 PDI-064SC-B-00-02-190929,
 Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	7.27e4	1.37e5	10.0131	0.757	0.412	NO	1.093	1.093	36.71	36.71	139.45	69.8		0.747
33	33 13C-1,2,3,4,7,8,9-H...	6.65e4	1.37e5	10.0131	0.581	0.428	NO	1.143	1.145	38.40	38.47	166.21	83.2		0.974
34	34 13C-OCDF	1.32e5	1.37e5	10.0131	0.689	0.880	NO	1.233	1.234	41.43	41.47	278.47	69.7		0.515
35	35 37Cl-2,3,7,8-TCDD	4.24e4	1.40e5	10.0131	1.198			1.022	1.022	26.30	26.31	50.627	63.4		0.135
36	36 13C-1,2,3,4-TCDD	1.40e5	1.40e5	10.0131	1.000	0.789	NO	1.000	1.000	25.70	25.74	199.74	100.0		0.502
37	37 13C-1,2,3,4-TCDF	2.05e5	2.05e5	10.0131	1.000	0.803	NO	1.000	1.000	24.28	24.32	199.74	100.0		0.448
38	38 13C-1,2,3,4,6,9-Hx...	1.37e5	1.37e5	10.0131	1.000	0.512	NO	1.000	1.000	33.55	33.59	199.74	100.0		0.769
39	39 Total Tetra-Dioxins		1.10e5	10.0131	0.901			0.000		25.50		9.9711		13.7	0.226
40	40 Total Penta-Dioxins		8.93e4	10.0131	0.872			0.000		30.00		14.018		22.1	0.512
41	41 Total Hexa-Dioxins		0.00e0	10.0131	0.976			0.000		33.80		157.07		157	0.877
42	42 Total Hepta-Dioxins		7.46e4	10.0131	0.989			0.000		37.75		1266.3		1270	2.78
43	43 Total Tetra-Furans		1.40e5	10.0131	0.943			0.000		24.00		240.03		262	0.457
44	44 1st Func. Penta-Fur...		0.00e0	10.0131	0.940			0.000		27.63		35.922		35.9	0.0855
45	45 Total Penta-Furans		0.00e0	10.0131	0.940			0.000		30.00		406.02		410	0.415
46	46 Total Hexa-Furans		0.00e0	10.0131	1.078			0.000		33.00		471.64		474	0.604
47	47 Total Hepta-Furans		0.00e0	10.0131	1.135			0.000		37.75		445.66		446	0.778

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Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-6.qld

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Printed: Wednesday, November 13, 2019 17:28:42 Pacific Standard Time

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Calibration: 13 Nov 2019 16:37:13

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Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	1 2,3,7,8-TCDD	NO	26.30	257.727	49448.203	11.464	db	1.2647	1.26
2	39 Total Tetra-Dioxins	NO	26.08	294.010	49448.203	11.886	MM	1.3176	1.32
3	39 Total Tetra-Dioxins	NO	25.72	82.511	49448.203	3.754	MM	0.4161	0.42
4	39 Total Tetra-Dioxins	NO	25.41	106.796	49448.203	4.595	MM	0.5094	0.51
5	39 Total Tetra-Dioxins	YES	25.24	48.118	49448.203	0.000	MM	0.0000	0.22
6	39 Total Tetra-Dioxins	YES	25.04	70.144	49448.203	0.000	bb	0.0000	0.32
7	39 Total Tetra-Dioxins	NO	24.84	195.944	49448.203	7.659	db	0.8490	0.85
8	39 Total Tetra-Dioxins	YES	24.65	208.841	49448.203	0.000	MM	0.0000	0.82
9	39 Total Tetra-Dioxins	YES	24.46	85.179	49448.203	0.000	MM	0.0000	0.39
10	39 Total Tetra-Dioxins	YES	23.73	111.775	49448.203	0.000	bb	0.0000	0.41
11	39 Total Tetra-Dioxins	YES	23.33	379.747	49448.203	0.000	MM	0.0000	1.52
12	39 Total Tetra-Dioxins	NO	22.98	1099.554	49448.203	46.265	MM	5.1287	5.13
13	39 Total Tetra-Dioxins	NO	26.59	112.421	49448.203	4.381	MM	0.4857	0.49

Penta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	40 Total Penta-Dioxins	NO	31.12	149.199	34663.250	8.262	MM	0.9460	0.95
2	40 Total Penta-Dioxins	YES	31.05	59.065	34663.250	0.000	bd	0.0000	0.23
3	40 Total Penta-Dioxins	YES	30.84	104.799	34663.250	0.000	db	0.0000	0.55
4	2 1,2,3,7,8-PeCDD	YES	30.76	226.378	34663.250	0.000	MM	0.0000	1.45
5	40 Total Penta-Dioxins	YES	30.39	67.861	34663.250	0.000	bd	0.0000	0.45
6	40 Total Penta-Dioxins	NO	30.08	433.889	34663.250	25.497	MM	2.9195	2.92
7	40 Total Penta-Dioxins	YES	29.89	258.548	34663.250	0.000	dd	0.0000	1.40
8	40 Total Penta-Dioxins	NO	29.80	303.851	34663.250	18.222	dd	2.0865	2.09
9	40 Total Penta-Dioxins	YES	29.63	828.110	34663.250	0.000	MM	0.0000	3.81
10	40 Total Penta-Dioxins	NO	29.20	273.194	34663.250	14.629	bb	1.6750	1.68
11	40 Total Penta-Dioxins	NO	28.74	1042.642	34663.250	55.811	MM	6.3905	6.39
12	40 Total Penta-Dioxins	YES	30.80	25.828	34663.250	0.000	MM	0.0000	0.17

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-6.qld

Last Altered: Wednesday, November 13, 2019 17:28:11 Pacific Standard Time

Printed: Wednesday, November 13, 2019 17:28:42 Pacific Standard Time

Name: VG7 191106D2_6, Date: 7-NOV-2019, Time: 03:52:37, ID: 1903431-06 PDI-064SC-B-00-02-190929,
 Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Hexa-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	33.50	609.431	45970.869	26.055	MM	2.6664	2.67
2	41 Total Hexa-Dioxins	NO	33.37	12864.312	45970.869	571.557	MM	58.4908	58.49
3	41 Total Hexa-Dioxins	NO	33.11	1779.739	45970.869	76.831	MM	7.8626	7.86
4	41 Total Hexa-Dioxins	NO	32.55	13951.572	45970.869	623.449	MM	63.8012	63.80
5	5 1,2,3,7,8,9-HxCDD	NO	34.49	1341.007	50651.988	53.371	MM	5.5447	5.54
6	41 Total Hexa-Dioxins	NO	34.41	569.938	45970.869	25.341	bd	2.5933	2.59
7	4 1,2,3,6,7,8-HxCDD	NO	34.20	2997.516	46759.848	133.889	db	14.2461	14.25
8	3 1,2,3,4,7,8-HxCDD	NO	34.11	421.666	40500.770	20.592	MM	1.8673	1.87

Hepta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	NO	37.95	98134.570	37815.828	5252.573	bb	535.6056	535.61
2	42 Total Hepta-Dioxins	NO	37.11	135359.188	37815.828	7233.602	bb	730.6732	730.67

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-6.qld
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 Printed: Wednesday, November 13, 2019 17:28:42 Pacific Standard Time

Name: VG7 191106D2_6, Date: 7-NOV-2019, Time: 03:52:37, ID: 1903431-06 PDI-064SC-B-00-02-190929,
 Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	43 Total Tetra-Furans	NO	24.32	2463.849	61334.539	80.975	db	8.5776	8.58
2	43 Total Tetra-Furans	NO	24.23	1970.627	61334.539	64.169	MM	6.7973	6.80
3	43 Total Tetra-Furans	NO	24.10	299.779	61334.539	9.912	MM	1.0500	1.05
4	43 Total Tetra-Furans	NO	24.01	260.835	61334.539	8.082	MM	0.8561	0.86
5	43 Total Tetra-Furans	YES	23.65	1104.178	61334.539	0.000	MM	0.0000	3.30
6	43 Total Tetra-Furans	NO	23.50	221.506	61334.539	6.900	MM	0.7309	0.73
7	43 Total Tetra-Furans	NO	23.37	2867.492	61334.539	92.501	bd	9.7985	9.80
8	43 Total Tetra-Furans	NO	22.97	6193.581	61334.539	205.124	bb	21.7285	21.73
9	43 Total Tetra-Furans	NO	22.61	1395.848	61334.539	46.153	MM	4.8889	4.89
10	43 Total Tetra-Furans	NO	22.07	3185.780	61334.539	102.586	bb	10.8668	10.87
11	43 Total Tetra-Furans	NO	21.46	573.052	61334.539	19.376	bb	2.0525	2.05
12	43 Total Tetra-Furans	NO	20.87	70.600	61334.539	2.234	MM	0.2366	0.24
13	43 Total Tetra-Furans	YES	27.28	3290.131	61334.539	0.000	bb	0.0000	8.89
14	43 Total Tetra-Furans	YES	27.01	170.503	61334.539	0.000	MM	0.0000	0.29
15	43 Total Tetra-Furans	YES	26.86	76.675	61334.539	0.000	MM	0.0000	0.27
16	43 Total Tetra-Furans	YES	26.78	171.475	61334.539	0.000	MM	0.0000	0.35
17	43 Total Tetra-Furans	YES	26.10	198.779	61334.539	0.000	MM	0.0000	0.57
18	43 Total Tetra-Furans	NO	25.86	1330.574	61334.539	42.966	MM	4.5514	4.55
19	8 2,3,7,8-TCDF	NO	25.54	24040.426	61334.539	793.876	MM	83.4481	83.45
20	43 Total Tetra-Furans	YES	25.44	2698.107	61334.539	0.000	MM	0.0000	7.34
21	43 Total Tetra-Furans	NO	25.35	357.213	61334.539	11.606	MM	1.2294	1.23
22	43 Total Tetra-Furans	YES	25.19	261.920	61334.539	0.000	bb	0.0000	0.70
23	43 Total Tetra-Furans	NO	24.99	922.614	61334.539	28.081	MM	2.9745	2.97
24	43 Total Tetra-Furans	NO	24.76	23226.713	61334.539	757.554	MM	80.2467	80.25

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary IFlags	Conc.	EMPC
1	44 1st Func. Penta-Furans	NO	27.29	13168.474	79145.988	337.963	bb	35.9219	35.92

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-6.qld

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 Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Penta-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	10 2,3,4,7,8-PeCDF	NO	30.50	23548.490	75075.398	635.608	MM	62.5521	62.55
2	45 Total Penta-Furans	NO	30.31	93.178	79145.988	2.382	MM	0.2532	0.25
3	45 Total Penta-Furans	NO	29.86	18988.885	79145.988	501.454	MM	53.2993	53.30
4	9 1,2,3,7,8-PeCDF	NO	29.61	57528.500	83216.578	1443.371	MM	150.0925	150.09
5	45 Total Penta-Furans	NO	29.44	5979.789	79145.988	156.313	MM	16.6144	16.61
6	45 Total Penta-Furans	NO	29.23	2529.385	79145.988	63.731	MM	6.7739	6.77
7	45 Total Penta-Furans	NO	29.06	103.742	79145.988	2.644	MM	0.2810	0.28
8	45 Total Penta-Furans	NO	28.70	28888.934	79145.988	753.910	MM	80.1326	80.13
9	45 Total Penta-Furans	NO	28.57	1126.650	79145.988	30.292	MM	3.2198	3.22
10	45 Total Penta-Furans	NO	31.37	1640.857	79145.988	44.404	MM	4.7196	4.72
11	45 Total Penta-Furans	NO	30.52	8236.976	79145.988	207.421	MM	22.0467	22.05
12	45 Total Penta-Furans	NO	29.69	795.128	79145.988	19.956	MM	2.1211	2.12
13	45 Total Penta-Furans	NO	29.27	944.219	79145.988	0.000	MM	0.0000	2.53
14	45 Total Penta-Furans	YES	29.95	193.078	79145.988	0.000	MM	0.0000	0.39
15	45 Total Penta-Furans	NO	28.76	1442.448	79145.988	36.851	MM	3.9169	3.92
16	45 Total Penta-Furans	NO	30.41	480.858	79145.988	0.000	MM	0.0000	1.36

Hexa-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	14 1,2,3,7,8,9-HxCDF	NO	34.89	2797.013	33627.391	102.604	MM	9.6524	9.65
2	13 2,3,4,6,7,8-HxCDF	NO	33.91	5554.125	36066.445	188.465	MM	16.9019	16.90
3	46 Total Hexa-Furans	YES	33.74	170.979	35364.356	0.000	MM	0.0000	0.36
4	46 Total Hexa-Furans	NO	33.59	423.914	35364.356	14.720	MM	1.3642	1.36
5	12 1,2,3,6,7,8-HxCDF	NO	33.31	19147.154	38463.285	628.571	MM	58.7287	58.73
6	11 1,2,3,4,7,8-HxCDF	NO	33.19	80718.430	33300.301	2924.121	MM	248.1566	248.16
7	46 Total Hexa-Furans	YES	33.10	921.048	35364.356	0.000	MM	0.0000	2.44
8	46 Total Hexa-Furans	NO	32.71	17534.531	35364.356	612.602	bb	56.7746	56.77
9	46 Total Hexa-Furans	NO	32.53	308.775	35364.356	10.267	MM	0.9515	0.95
10	46 Total Hexa-Furans	NO	32.18	14754.980	35364.356	518.346	bb	48.0392	48.04
11	46 Total Hexa-Furans	NO	32.02	4325.776	35364.356	147.264	bb	13.6481	13.65
12	46 Total Hexa-Furans	NO	34.91	5486.067	35364.356	187.979	MM	17.4214	17.42

Vista Analytical Laboratory

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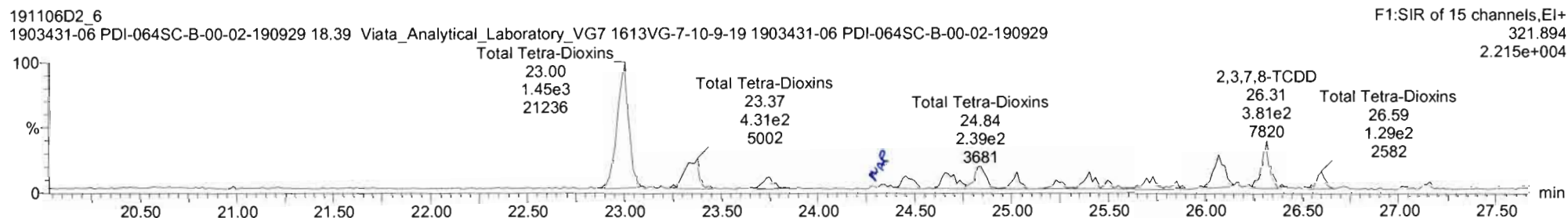
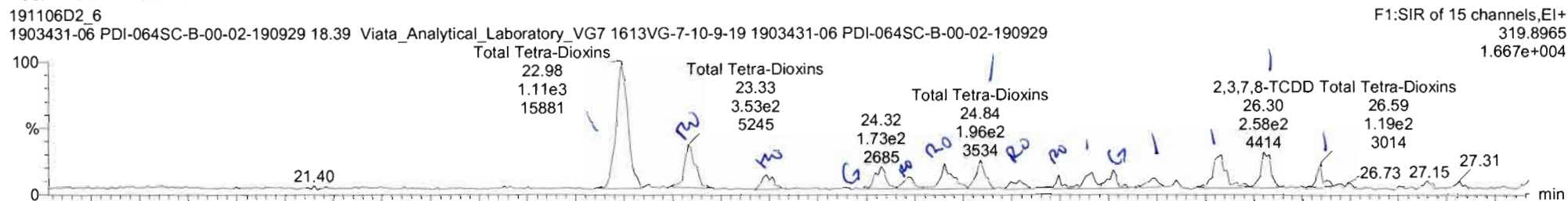
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Hepta-Furans

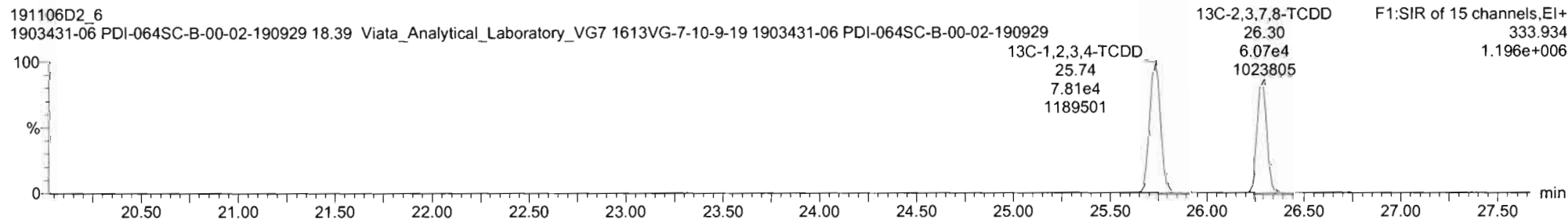
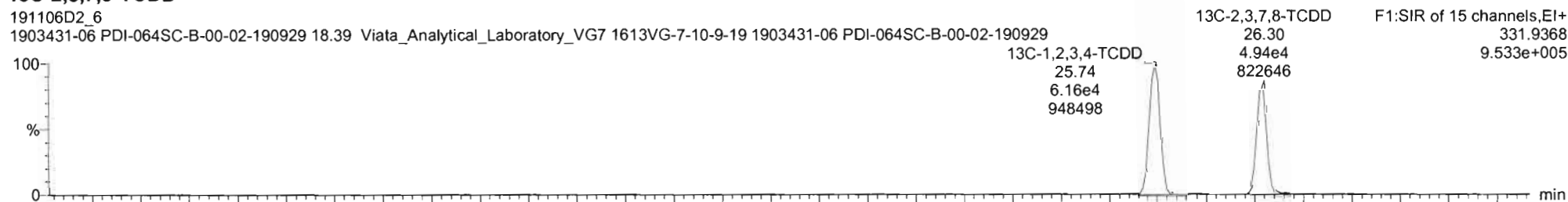
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1	16 1,2,3,4,7,8,9-HpCDF	NO	38.48	10104.649	19908.506	599.692	MM	46.7935	46.79
2	47 Total Hepta-Furans	NO	37.30	46608.375	20558.418	2643.538	MM	232.6685	232.67
3	47 Total Hepta-Furans	NO	37.12	678.015	20558.418	37.136	MM	3.2685	3.27
4	15 1,2,3,4,6,7,8-HpCDF	NO	36.74	33898.203	21208.330	1839.586	MM	162.9289	162.93

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Total Tetra-Dioxins

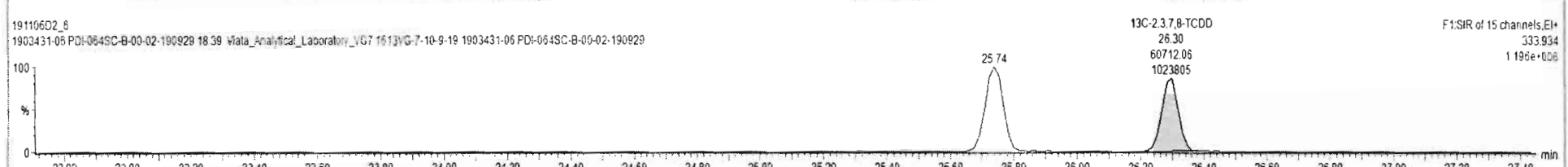
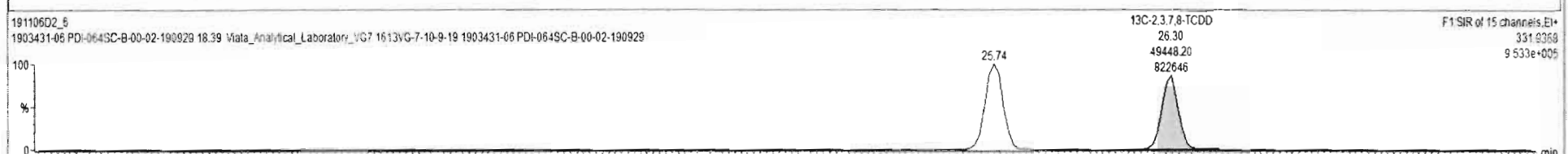
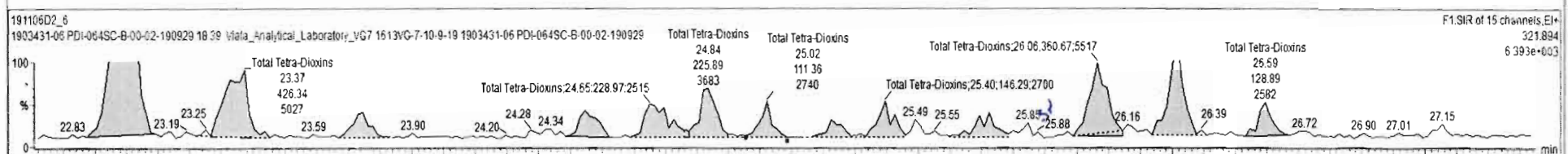
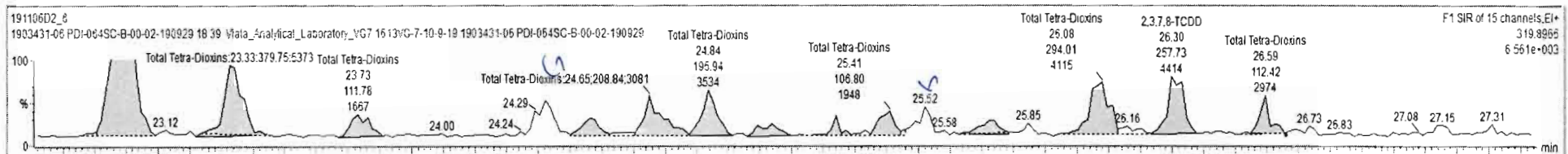


13C-2,3,7,8-TCDD



#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wt/wt	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
30	13C-2,3,4,6,7,8-HxCDF	1.06e5	1.37e5	38	0.52	NO	0.953	10.013	33.90	33.91	1.009	1.009	NO	161.1	80.8	0.897	
31	13C-1,2,3,7,8,9-HxCDF	9.90e4	1.37e5	38	0.51	NO	0.828	10.013	34.89	34.86	1.038	1.039	NO	173.9	87.0	0.929	
32	13C-1,2,3,4,6,7,8-HpCDF	7.27e4	1.37e5	38	0.41	NO	0.757	10.013	36.71	36.71	1.093	1.093	NO	139.5	65.9	0.747	
33	13C-1,2,3,4,7,8,9-HpCDF	6.55e4	1.37e5	38	0.43	NO	0.581	10.013	36.40	36.47	1.145	1.143	NO	166.2	83.2	0.974	
34	13C-OCDF	1.32e5	1.37e5	38	0.88	NO	0.689	10.013	41.43	41.47	1.234	1.233	NO	278.5	69.7	0.515	

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
6	39 Total Tetra-Dioxins	25.50	24.84	1.959e2	2.259e2	0.770	0.87	NO	0.84999	0.84999
7	39 Total Tetra-Dioxins	25.50	25.04	7.019e1	1.114e2	0.770	0.63	YES	0.32451	0.00000
8	39 Total Tetra-Dioxins	25.50	25.24	4.812e1	7.353e1	0.770	0.65	YES	0.22281	0.00000
9	39 Total Tetra-Dioxins	25.50	25.41	1.068e2	1.483e2	0.770	0.73	NO	0.50936	0.50936
10	39 Total Tetra-Dioxins	25.50	25.72	8.251e1	1.243e2	0.770	0.66	NO	0.41614	0.41614
11	39 Total Tetra-Dioxins	25.50	26.08	2.940e2	3.607e2	0.770	0.82	NO	1.3176	1.3176
12	1 2,3,7,8-TCDD	26.33	26.30	2.577e2	3.737e2	0.770	0.69	NO	1.2647	1.2647
13	39 Total Tetra-Dioxins	25.50	26.59	1.124e2	1.289e2	0.770	0.87	NO	0.48566	0.48566



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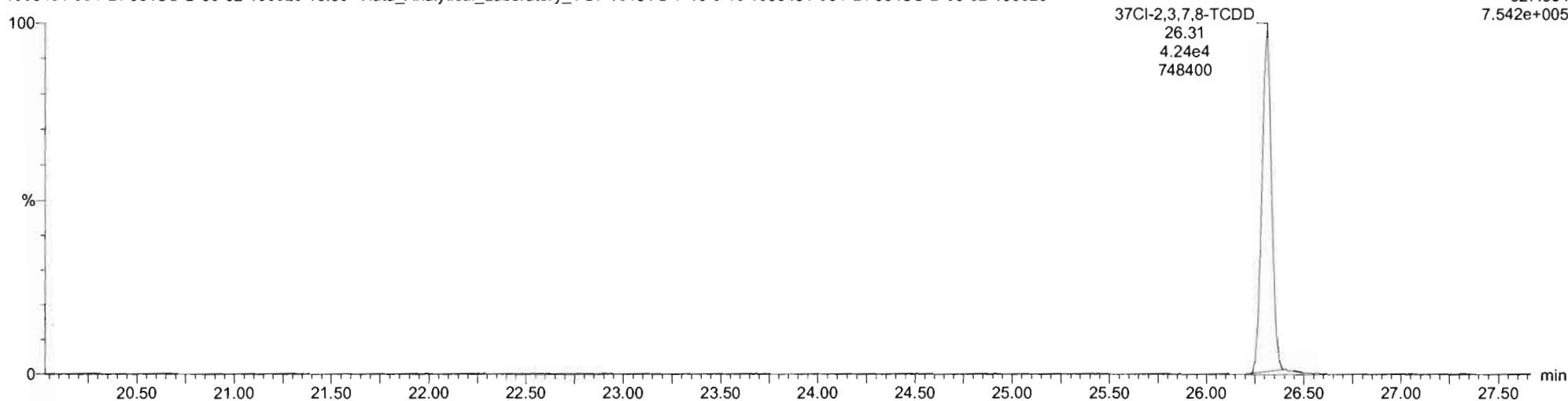
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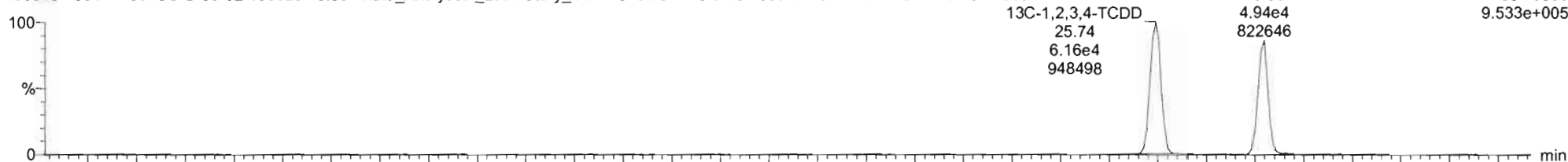
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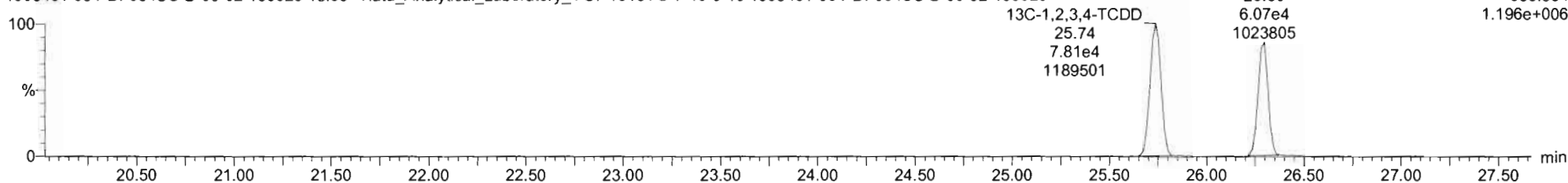
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F1:SIR of 15 channels,EI+
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191106D2_6
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Vista Analytical Laboratory

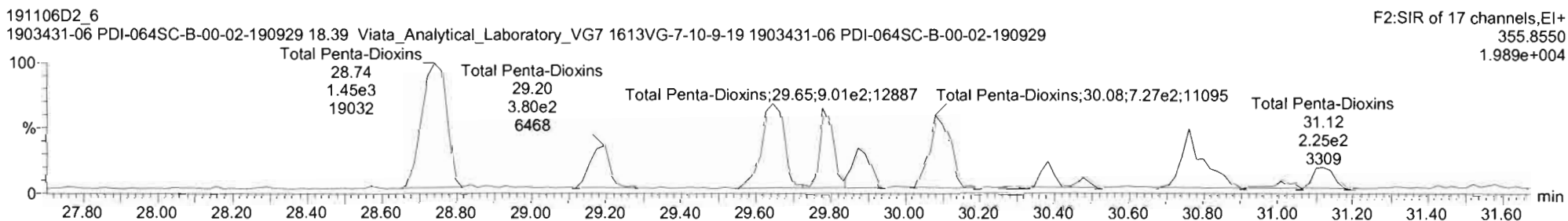
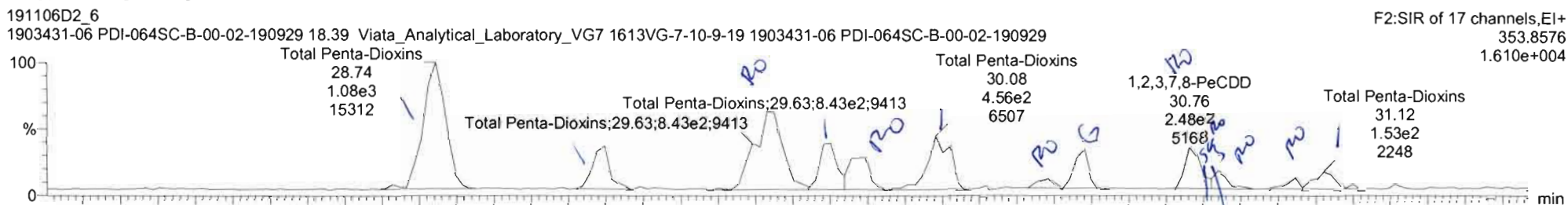
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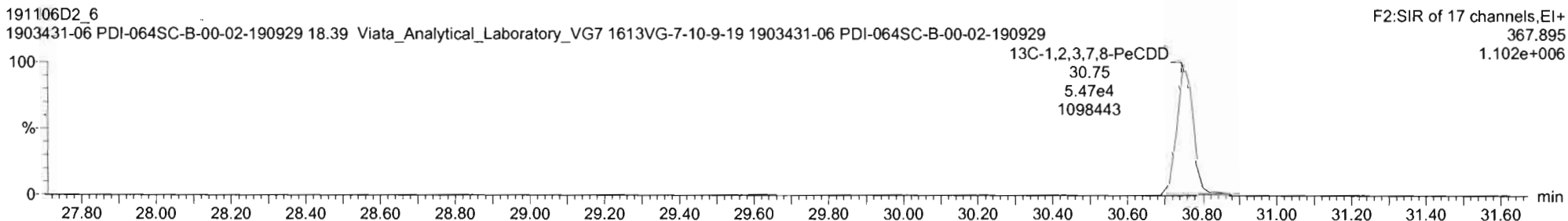
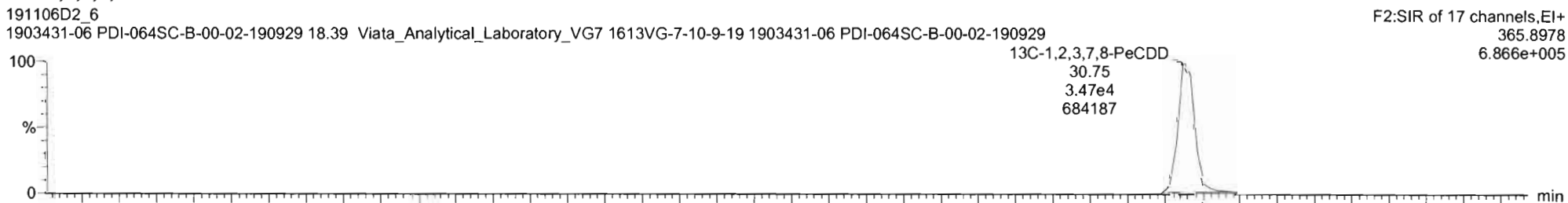
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Total Penta-Dioxins



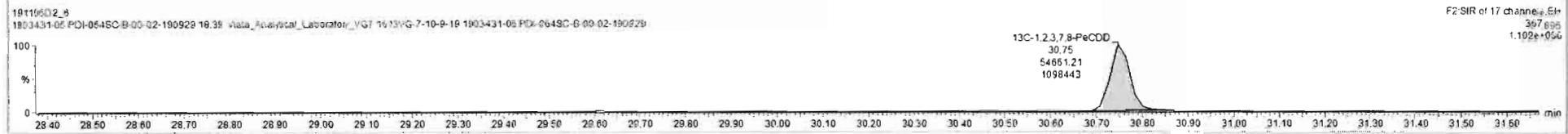
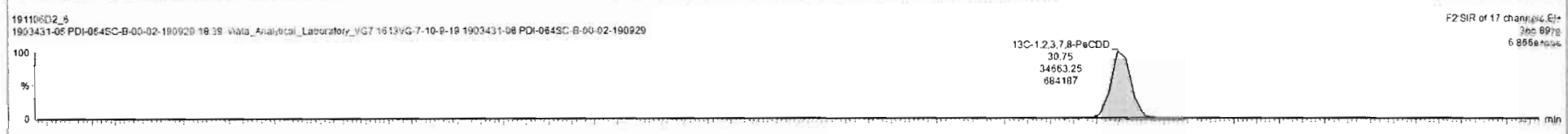
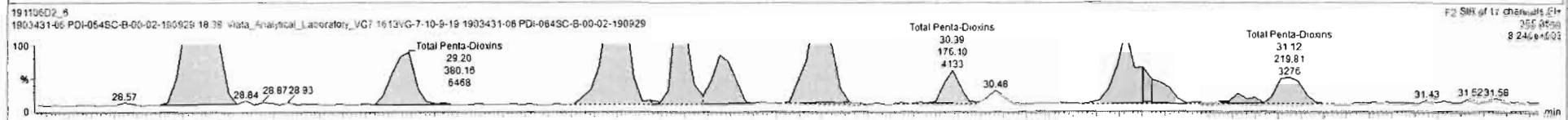
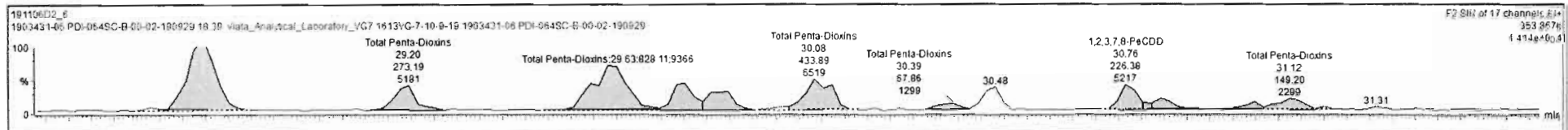
13C-1,2,3,7,8-PeCDD



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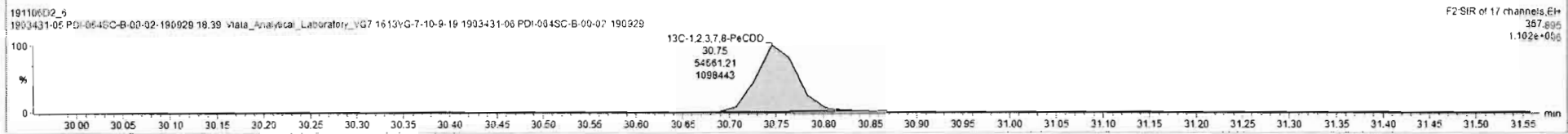
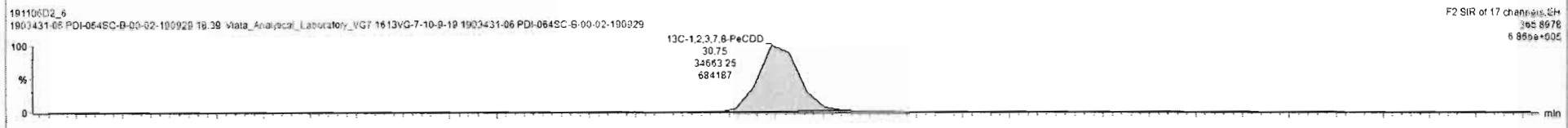
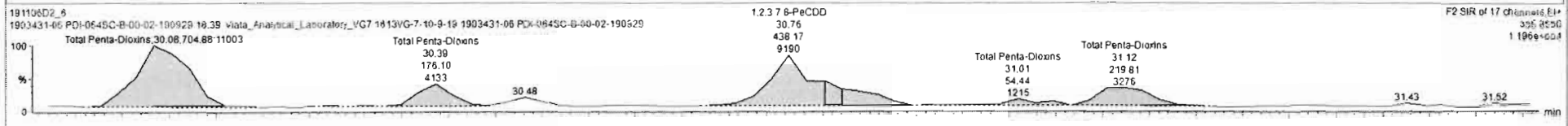
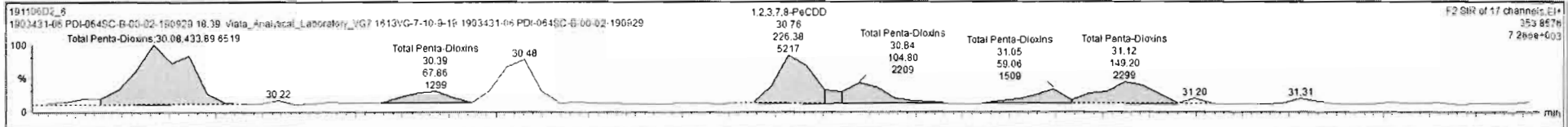
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25	25 13C-2,3,7,8-TCDF	1.40e5	2.05e5	37	0.77	NO	1.03E	10.013	25.57	25.52	0.992	0.990	NO	132.5	66.3	0.433	
26	26 13C-1,2,3,7,8-PeCDF	1.33e5	2.05e5	37	1.66	NO	0.854	10.013	29.42	29.59	1.150	1.143	NO	152.2	76.2	0.420	
27	27 13C-2,3,4,7,8-PeCDD	1.23e5	2.05e5	37	1.58	NO	0.847	10.013	30.28	30.48	1.184	1.176	NO	141.1	70.7	0.424	
28	28 13C-1,2,3,4,7,8-HxCDF	9.93e4	1.37e5	36	0.50	NO	0.832	10.013	33.17	33.18	0.988	0.967	NO	173.6	66.9	0.925	
29	29 13C-1,2,3,6,7,8-HxCDF	1.12e5	1.37e5	36	0.52	NO	1.034	10.013	33.28	33.30	0.991	0.991	NO	157.7	78.9	0.744	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	40 Total Penta-Dioxins	30.00	28.74	1.043e3	1.450e3	0.630	0.72	NO	6.3905	6.3905
2	40 Total Penta-Dioxins	30.00	29.20	2.732e2	3.602e2	0.630	0.72	NO	1.6750	1.6750
3	40 Total Penta-Dioxins	30.00	29.62	8.281e2	9.117e2	0.630	0.91	YES	3.8101	0.00000
4	40 Total Penta-Dioxins	30.00	29.80	3.039e2	5.109e2	0.630	0.80	NO	2.0965	2.0965
5	40 Total Penta-Dioxins	30.00	29.89	2.565e2	3.356e2	0.630	0.77	YES	1.4026	0.00000
6	40 Total Penta-Dioxins	30.00	30.08	4.339e2	7.049e2	0.630	0.62	NO	2.9195	2.9195
7	40 Total Penta-Dioxins	30.00	30.39	6.766e1	1.761e2	0.630	0.39	YES	0.15014	0.00000
8	2 1,2,3,7,8-PeCDD	30.77	30.75	2.284e2	4.362e2	0.630	0.52	YES	1.4506	0.00000



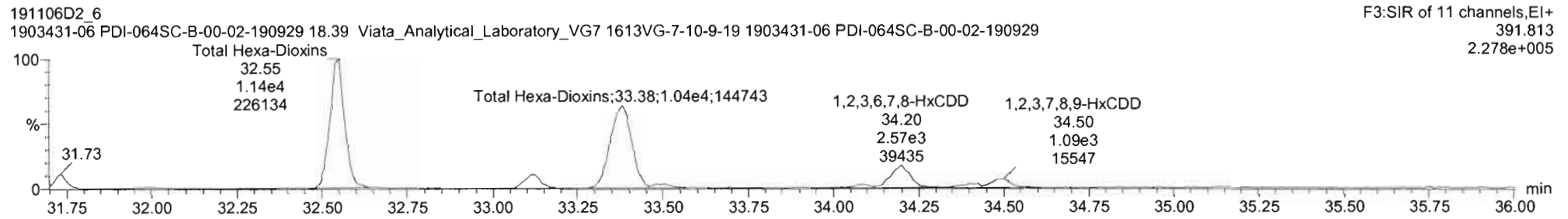
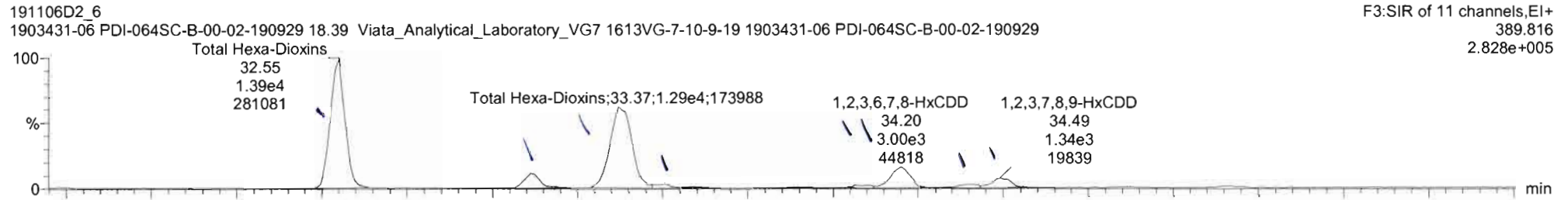
#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/wt	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
25	13C-2,3,7,8-TCDF	1.40e5	2.05e5	37	0.77	NO	1.035	10.013	25.57	25.52	0.992	0.992	NO	132.5	66.3	0.433	
26	13C-1,2,3,7,8-PeCDF	1.33e5	2.05e5	37	1.66	NO	0.854	10.013	29.42	29.59	1.150	1.143	NO	152.2	76.2	0.420	
27	13C-2,3,4,7,8-PeCDF	1.23e5	2.05e5	37	1.58	NO	0.847	10.013	30.28	30.48	1.184	1.176	NO	141.1	70.7	0.424	
28	13C-1,2,3,4,7,8-HxCDF	9.93e4	1.37e5	38	0.50	NO	0.832	10.013	33.17	33.18	0.988	0.987	NO	173.6	66.5	0.525	
29	13C-1,2,3,6,7,8-HxCDF	1.12e5	1.37e5	38	0.52	NO	1.034	10.013	33.28	33.30	0.991	0.991	NO	157.7	78.9	0.744	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	Total Penta-Dioxins	30.00	28.74	1.043e3	1.450e3	0.630	0.72	NO	6.3905	6.3805
2	Total Penta-Dioxins	30.00	29.20	2.732e2	3.802e2	0.630	0.72	NO	1.6750	1.6750
3	Total Penta-Dioxins	30.00	29.63	8.281e2	9.117e2	0.630	0.91	YES	3.8101	0.00000
4	Total Penta-Dioxins	30.00	29.80	3.039e2	5.100e2	0.630	0.50	NO	2.0845	2.0865
5	Total Penta-Dioxins	30.00	29.89	2.585e2	3.356e2	0.630	0.77	YES	1.4026	0.00000
6	Total Penta-Dioxins	30.00	30.08	4.339e2	7.049e2	0.630	0.62	NO	2.9195	2.9155
7	Total Penta-Dioxins	30.00	30.38	8.788e1	1.761e2	0.630	0.39	YES	0.45014	0.00000
8	1,2,3,7,8-PeCDD	30.77	30.76	2.284e2	4.362e2	0.630	0.52	YES	1.4509	0.00000

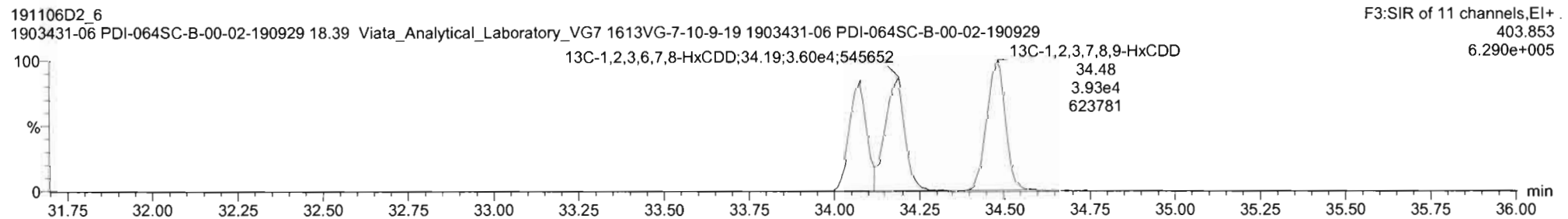
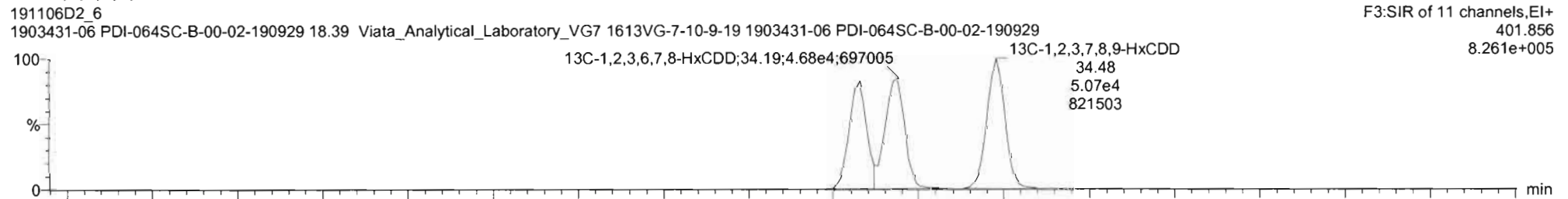


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 Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Hexa-Dioxins



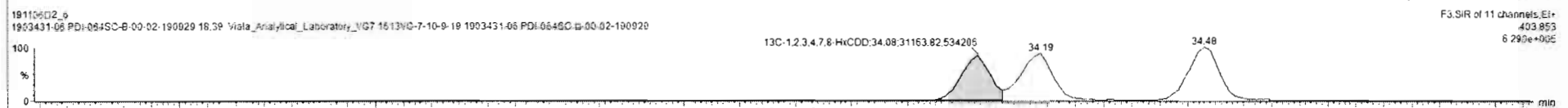
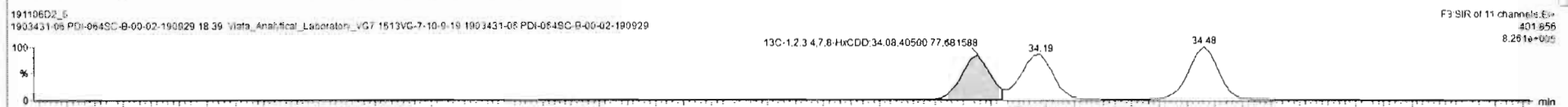
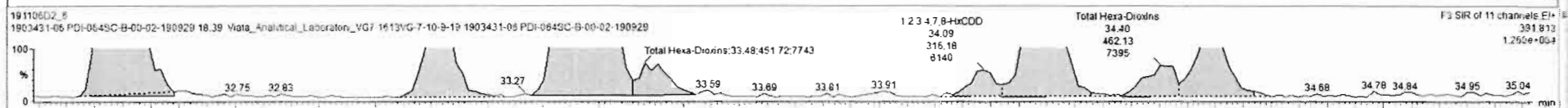
13C-1,2,3,4,7,8-HxCDD



191106D2_6 - 1903431-06 PDI-0645C-B-00-02-190929 - 1903431-06 PDI-0645C-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	S Resp	SA	RA	n/y	RRF	wt/wt	Pred RT	RT	RRT	Prec RRT	Check RRT	Conc	%Rec	DL	EMPC
27	13C-2,3,4,7,8-PeCDF	1.23e5	2.85e5	37	1.56	NO	0.847	10.013	30.28	30.48	1.164	1.176	NO	141.1	70.7	0.424	
28	13C-1,2,3,4,7,8-HxCDF	9.52e4	1.37e5	38	0.50	NO	0.832	10.013	33.17	33.18	0.988	0.987	NO	173.6	86.9	0.925	
29	13C-1,2,3,6,7,8-HxCDF	1.12e5	1.37e5	38	0.52	NO	1.034	10.013	33.28	33.30	0.991	0.991	NO	157.7	78.9	0.744	
30	13C-2,3,4,6,7,8-HxCDF	1.06e5	1.37e5	38	0.52	NO	0.953	10.013	33.90	33.91	1.009	1.009	NO	161.1	82.6	0.807	
31	13C-1,2,3,7,8,9-HxCDF	9.90e4	1.37e5	38	0.51	NO	0.826	10.013	34.86	34.86	1.036	1.039	NO	172.9	87.0	0.929	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.55	1.385e4	1.144e4	1.240	1.22	NO	63.801	63.801
2	41 Total Hexa-Dioxins	33.80	33.11	1.780e3	1.349e3	1.240	1.32	NO	7.8626	7.8626
3	41 Total Hexa-Dioxins	33.80	33.37	1.286e4	1.041e4	1.240	1.24	NO	58.491	58.491
4	41 Total Hexa-Dioxins	33.80	33.50	6.094e2	4.517e2	1.240	1.35	NO	2.6684	2.6684
5	3 1,2,3,4,7,8-HxCDD	34.09	34.11	4.217e2	3.162e2	1.240	1.33	NO	1.8673	1.8673
6	4 1,2,3,6,7,8-HxCDD	34.19	34.20	2.968e3	2.542e3	1.240	1.16	NO	14.246	14.246
7	41 Total Hexa-Dioxins	33.80	34.41	5.659e2	4.621e2	1.240	1.23	NO	2.5933	2.5933
8	5 1,2,3,7,8,9-HxCDD	34.51	34.49	1.341e3	1.059e3	1.240	1.27	NO	5.5447	5.5447



Vista Analytical Laboratory

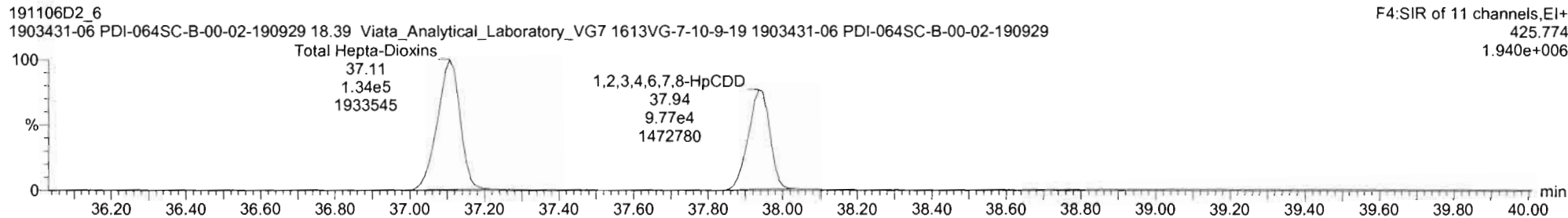
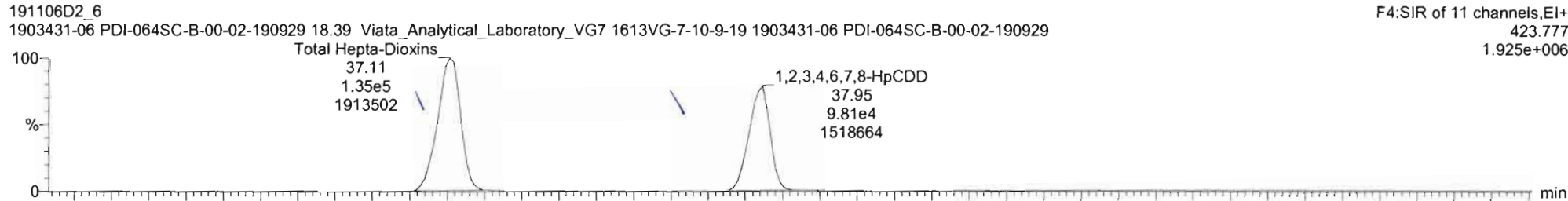
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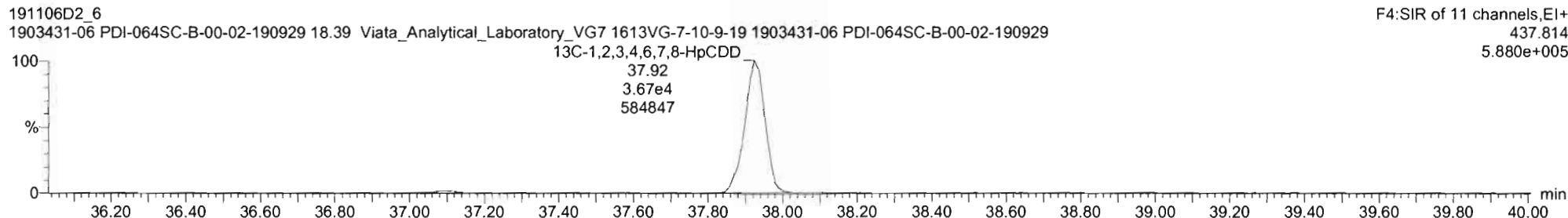
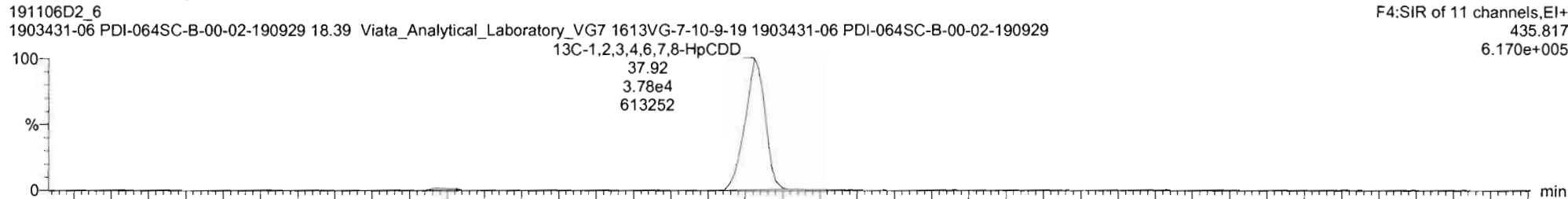
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Total Hepta-Dioxins



¹³C-1,2,3,4,6,7,8-HpCDD



Vista Analytical Laboratory

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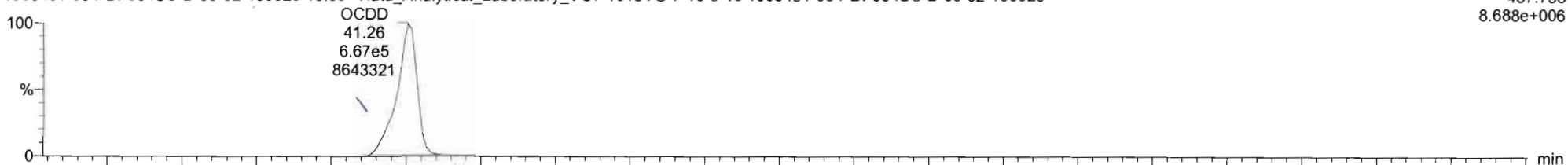
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OCDD

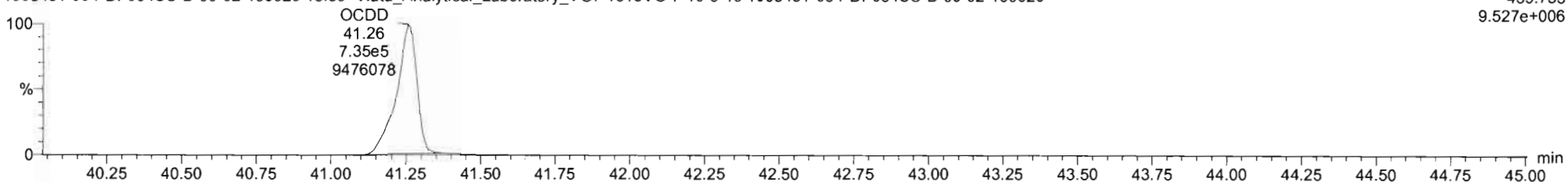
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F5:SIR of 11 channels,EI+
457.738
8.688e+006



191106D2_6
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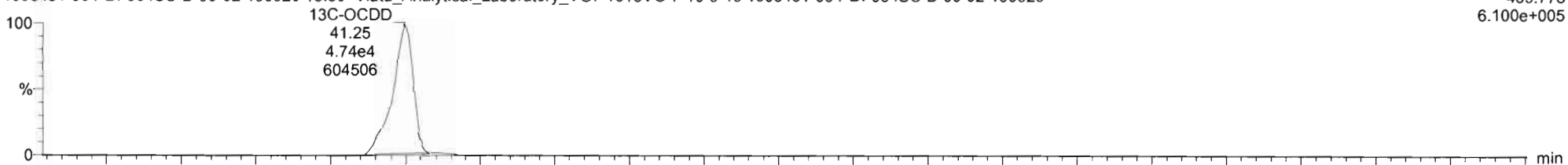
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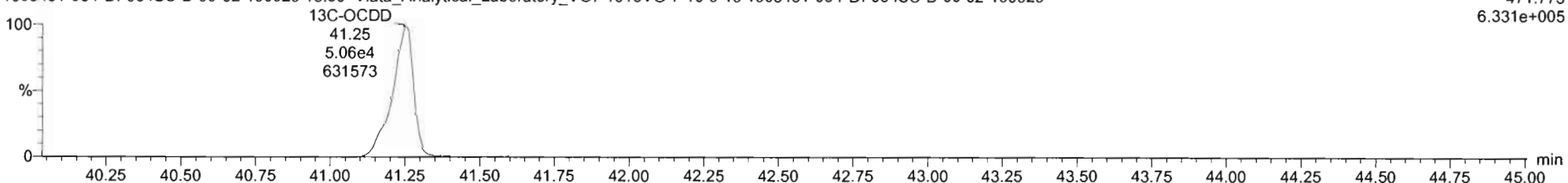
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Vista Analytical Laboratory

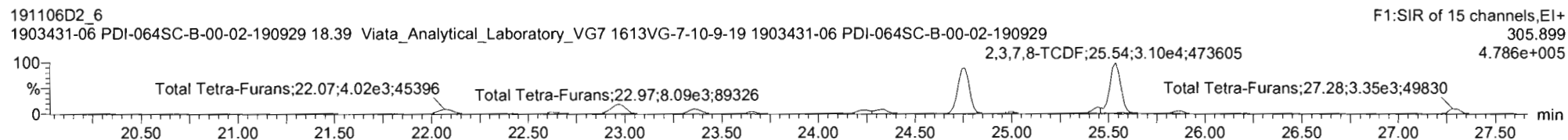
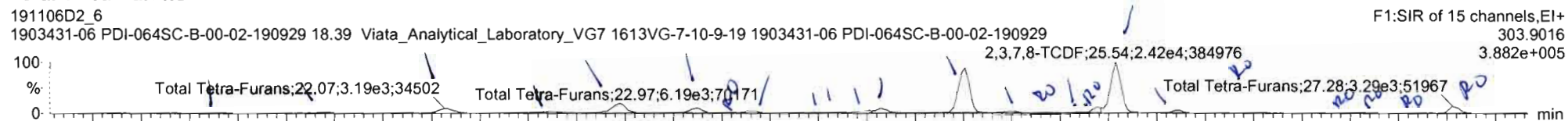
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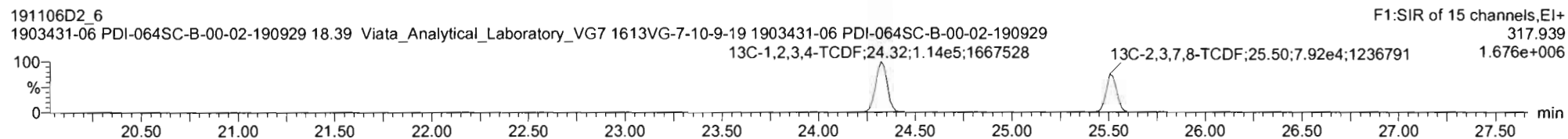
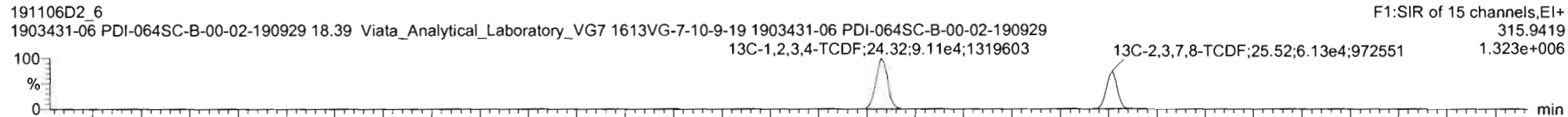
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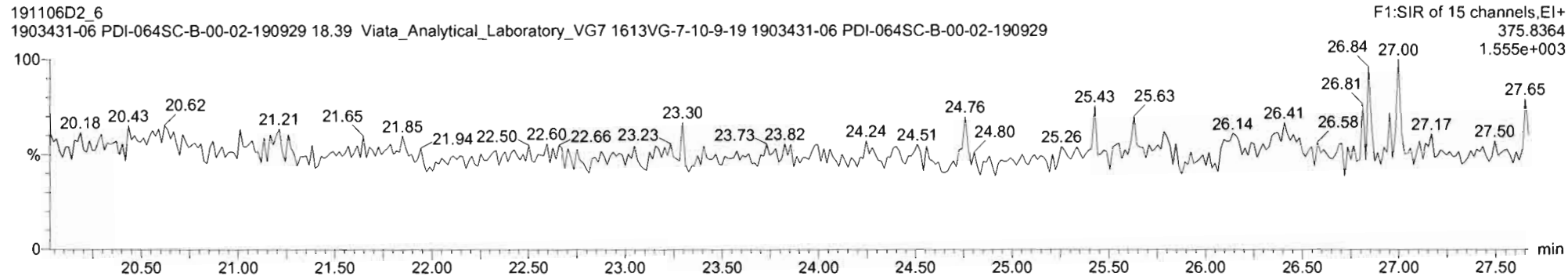
Total Tetra-Furans



13C-2,3,7,8-TCDF



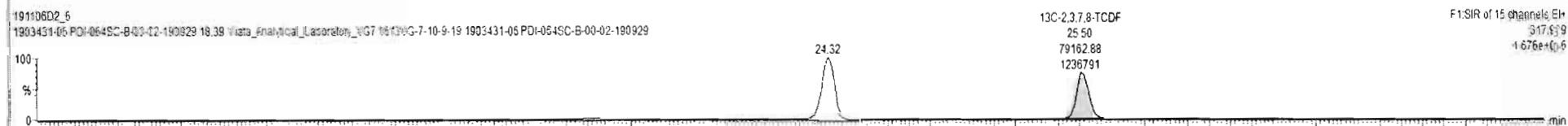
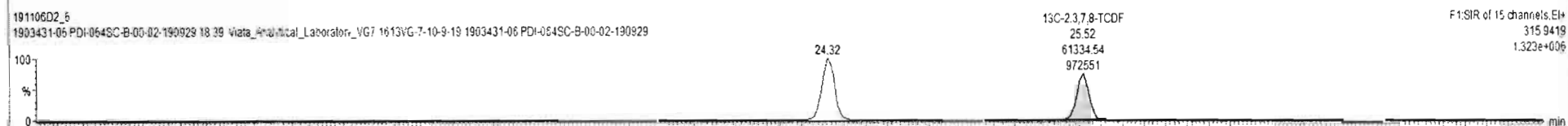
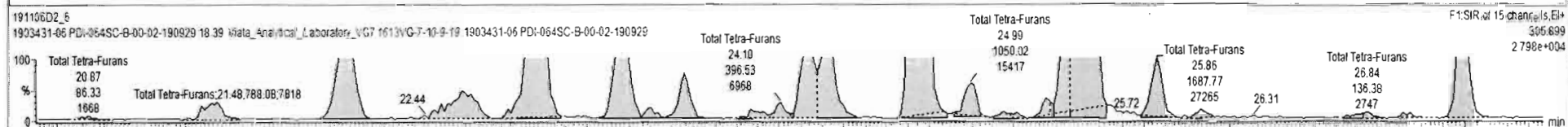
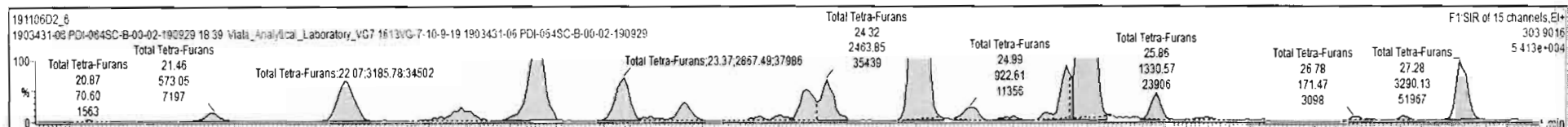
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19110602_6 - 1903431-06 PDI-064SC-B-00-02-190929 - 1903431-06 PDI-064SC-B-00-02-190929 18:39 Viata Analytical Laboratory_VG7 1613VG-7-10-9-19

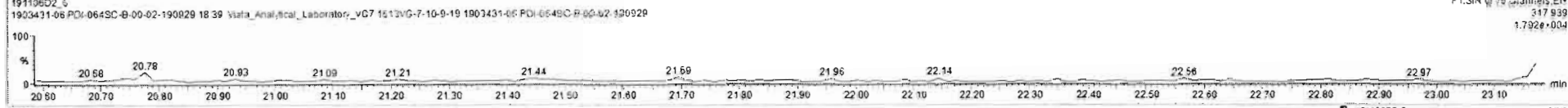
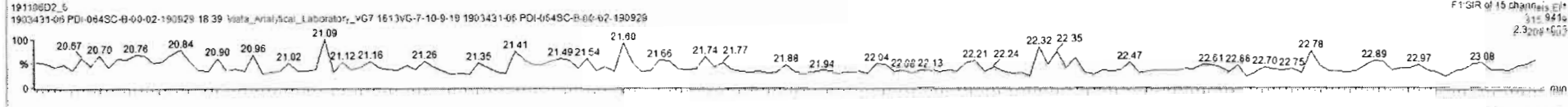
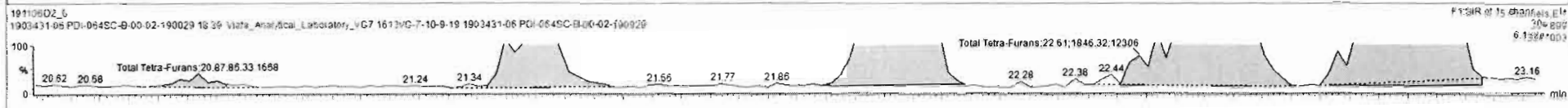
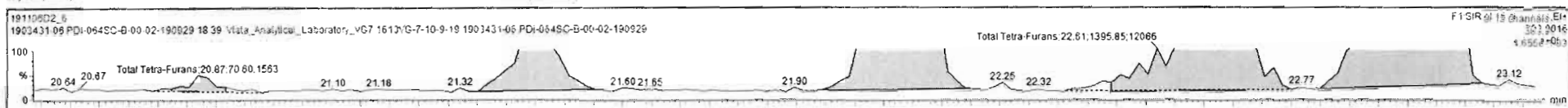
#	Name	Resp	IS Resp	IS	RA	nly	RRF	wtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
42	42 Total Hepta-Dioxins		7.46e4				0.989	10.013	37.75			0.000	NO	1266		2.78	1266
43	43 Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.6		0.457	261.7
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.013	27.63			0.000	NO	35.92		0.0855	35.92
45	45 Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	396.5		0.415	400.7
46	46 Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.3		0.604	474.5
47	47 Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	48 PFK1																
49	49 PFK2																
50	50 PFK3																
51	51 PFK4																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
12	43 Total Tetra-Furans	24.00	24.32	2.464e3	3.225e3	0.770	0.76	NO	8.5776	8.5776
13	43 Total Tetra-Furans	24.00	24.78	2.323e4	2.969e4	0.770	0.77	NO	80.247	86.247
14	43 Total Tetra-Furans	24.00	24.99	9.226e2	1.050e3	0.770	0.88	NO	2.9745	2.9745
15	43 Total Tetra-Furans	24.00	25.19	2.619e2	2.604e2	0.770	1.01	YES	0.89513	0.00000
16	43 Total Tetra-Furans	24.00	25.35	3.572e2	4.581e2	0.770	0.78	NO	1.2294	1.2294
17	43 Total Tetra-Furans	24.00	25.44	2.698e3	2.749e3	0.770	0.98	YES	7.3380	0.00000
18	8 2,3,7,8-TCDF	25.55	25.54	2.404e4	3.173e4	0.770	0.76	NO	83.448	83.448
19	43 Total Tetra-Furans	24.00	25.86	1.331e3	1.688e3	0.770	0.79	NO	4.5514	4.5514



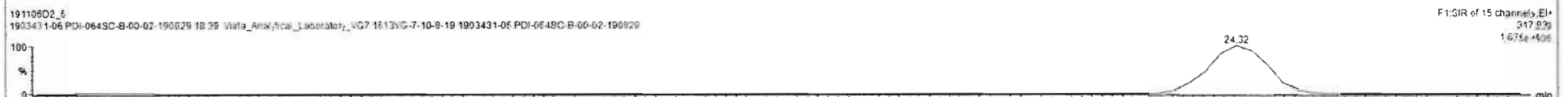
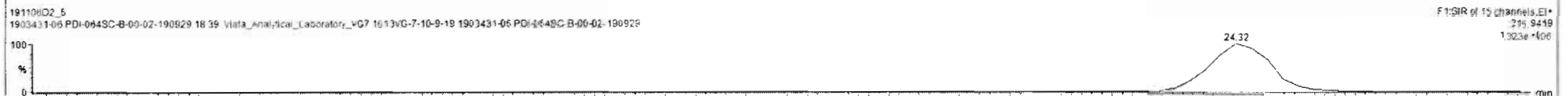
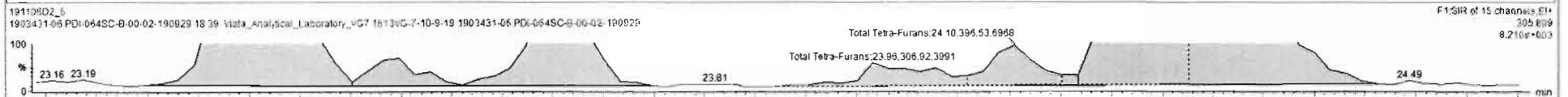
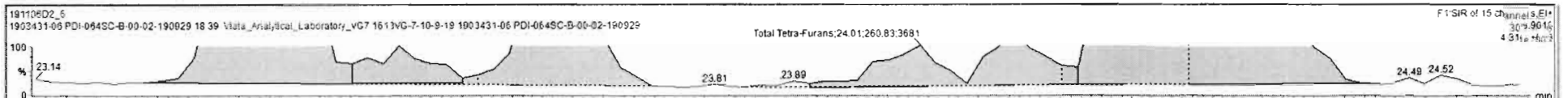
#	Name	Resp	S Resp	IS#	RA	nly	RRF	wt/wt	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
42	42 Total Hepta-Dioxins	7.46e4					0.989	10.013	37.75			0.000	NO	1266		2.78	1266
43	43 Total Tetra-Furans	1.40e5					0.948	10.013	24.00			0.000	NO	240.0		6.457	261.7
44	44 1st Func. Penta-Furans	0.00e0					0.940	10.013	27.63			0.000	NO	35.92		0.0855	35.92
45	45 Total Penta-Furans	0.00e0					0.940	10.013	30.00			0.000	NO	356.5		0.415	400.7
46	46 Total Hexa-Furans	0.00e0					1.078	10.013	33.00			0.000	NO	472.3		0.604	474.5
47	47 Total Hepta-Furans	0.00e0					1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	48 PFK1																
49	49 PFK2																
50	50 PFK3																
51	51 PFK4																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	20.87	7.060e1	8.633e1	0.770	0.82	NO	0.23664	0.23664
2	43 Total Tetra-Furans	24.00	21.48	5.791e2	7.861e2	0.770	0.73	NO	2.0525	2.0525
3	43 Total Tetra-Furans	24.00	22.07	3.186e3	4.021e3	0.770	0.79	NO	10.867	10.867
4	43 Total Tetra-Furans	24.00	22.81	1.396e3	1.846e3	0.770	0.76	NO	4.8859	4.8859
5	43 Total Tetra-Furans	24.00	22.97	6.194e3	8.216e3	0.770	0.75	NO	21.729	21.729
6	43 Total Tetra-Furans	24.00	23.37	2.867e3	3.631e3	0.770	0.79	NO	9.7985	9.7985
7	43 Total Tetra-Furans	24.00	23.50	2.215e2	2.832e2	0.770	0.84	NO	0.73090	0.73090
8	43 Total Tetra-Furans	24.00	23.85	1.104e3	1.235e3	0.770	0.88	YES	3.2974	0.00000



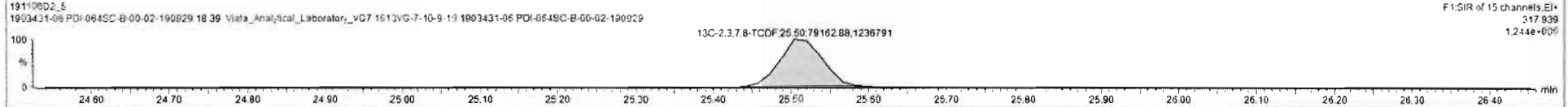
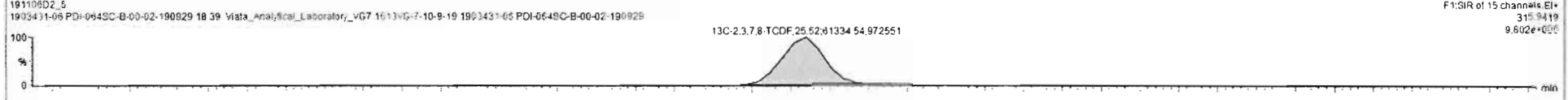
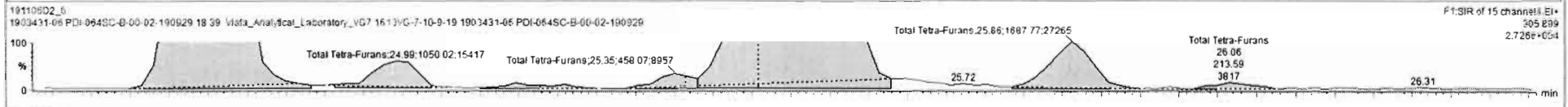
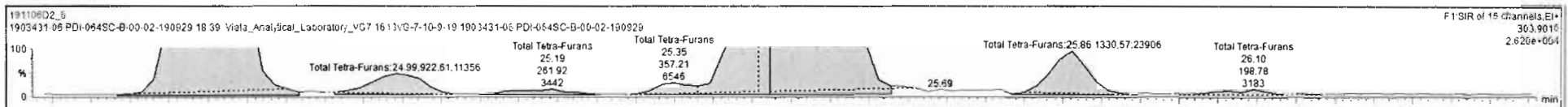
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42	Total Hepta-Dioxins	7.48e4					0.989	10.013	27.75			0.000	NO	1268		2.78	1268
43	Total Tetra-Furans	1.40e5					0.943	10.013	24.00			0.000	NO	240.0		0.457	2617
44	1st Func. Penta-Furans	0.00e0					0.940	10.013	27.63			0.000	NO	25.92		0.0855	25.92
45	Total Penta-Furans	0.00e0					0.940	10.013	29.00			0.000	NO	396.5		0.415	400.7
46	Total Hexa-Furans	0.00e0					1.078	10.013	32.50			0.000	NO	472.3		0.604	474.5
47	Total Hepta-Furans	0.00e0					1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
8	Total Tetra-Furane	24.00	23.37	2.867e3	3.631e3	0.770	0.79	NO	9.7985	9.7985
7	Total Tetra-Furans	24.00	23.50	2.215e2	2.832e2	0.770	0.84	NO	0.73090	0.73090
8	Total Tetra-Furans	24.00	23.65	1.104e3	1.235e3	0.770	0.85	YES	3.2974	0.00000
9	Total Tetra-Furans	24.00	24.01	2.608e2	3.089e2	0.770	0.85	NO	0.85612	0.85612
10	Total Tetra-Furans	24.00	24.10	2.998e2	3.965e2	0.770	0.76	NO	1.0500	1.0500
11	Total Tetra-Furans	24.00	24.23	1.971e3	2.537e3	0.770	0.78	NO	6.7973	6.7973
12	Total Tetra-Furans	24.00	24.32	2.464e3	3.225e3	0.770	0.76	NO	8.5776	8.5776
13	Total Tetra-Furans	24.00	24.76	2.323e4	2.999e4	0.770	0.77	NO	80.747	80.247



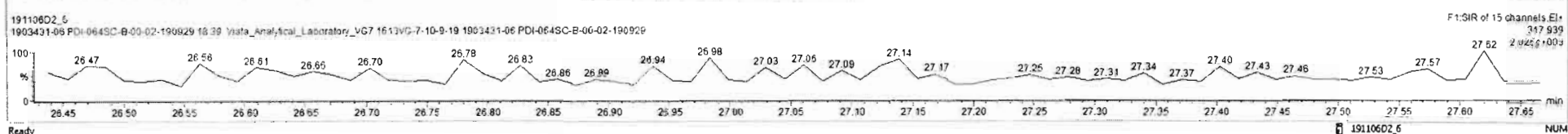
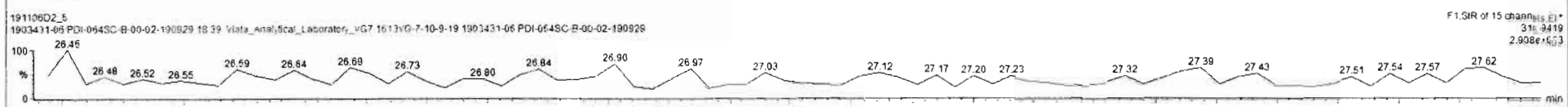
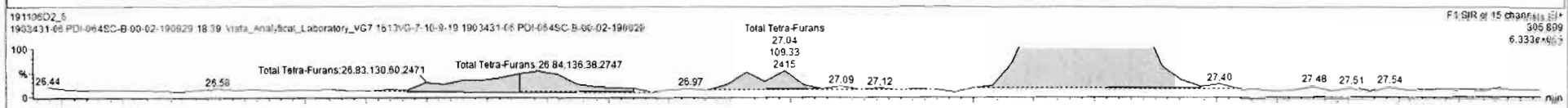
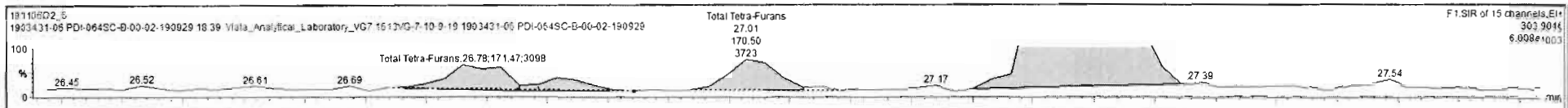
#	Name	Resp	IS Resp	RA	RA	nly	RRT	Wt/Int	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
42	Total Hepta-Dioxins		7.4664				0.980	10.013	37.75			0.000	NO	1286		2.78	1266
43	Total Tetra-Furans		1.4065				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.0060				0.940	10.013	27.63			0.000	NO	35.92		0.0855	35.92
45	Total Penta-Furans		0.0060				0.940	10.013	30.00			0.000	NO	396.5		0.415	400.7
46	Total Hexa-Furans		0.0060				1.078	10.013	33.00			0.000	NO	472.3		0.654	474.5
47	Total Hepta-Furans		0.0060				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.1
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
17	Total Tetra-Furans	24.00	25.44	2.695e3	2.749e3	0.770	0.96	YES	7.3380	0.00000
18	2,3,7,8-TCDF	25.55	25.54	2.404e4	3.173e4	0.770	0.76	NO	83.445	83.448
19	Total Tetra-Furans	24.00	25.86	1.331e3	1.688e3	0.770	0.79	NO	4.5514	4.5514
20	Total Tetra-Furans	24.00	26.10	1.985e2	2.136e2	0.770	0.93	YES	0.57007	0.00000
21	Total Tetra-Furans	24.00	26.78	1.737e2	1.308e2	0.770	1.33	YES	0.34856	0.00000
22	Total Tetra-Furans	24.00	26.86	7.667e1	1.264e2	0.770	0.56	YES	0.26577	0.00000
23	Total Tetra-Furans	24.00	27.01	1.705e2	1.093e2	0.770	1.58	YES	0.29182	0.00000
24	Total Tetra-Furans	24.00	27.28	3.290e3	3.329e3	0.770	0.99	YES	8.8850	0.00000



#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
42	Total Hepta-Furans		7.46e4				0.969	10.013	37.75			0.000	NO	1266	2.78	1266	
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0	0.457	261.7	
44	1st Func. Penta-Furans		0.00e0				0.940	10.013	27.63			0.000	NO	35.92	0.0855	35.92	
45	Total Penta-Furans		0.00e0				0.940	10.013	30.50			0.000	NO	396.5	0.415	400.7	
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.3	0.604	474.5	
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8	0.778	442.3	
48	PK1																
49	PK2																
50	PK3																
51	PK4																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	Total Tetra-Furans	24.00	20.87	7.06e1	8.83e1	0.770	0.82	NO	0.23664	0.23664
2	Total Tetra-Furans	24.00	21.46	5.731e2	7.881e2	0.770	0.73	NO	2.0525	2.0525
3	Total Tetra-Furans	24.00	22.07	3.168e3	4.021e3	0.770	0.79	NO	10.867	10.867
4	Total Tetra-Furans	24.00	22.61	1.396e3	1.846e3	0.770	0.76	NO	4.8889	4.8889
5	Total Tetra-Furans	24.00	21.97	8.194e3	8.218e3	0.770	0.75	NO	21.729	21.729
6	Total Tetra-Furans	24.00	23.37	2.867e3	3.631e3	0.770	0.79	NO	9.7985	9.7985
7	Total Tetra-Furans	24.00	23.50	2.215e2	2.632e2	0.770	0.84	NO	0.73090	0.73090
8	Total Tetra-Furans	24.00	23.65	1.104e3	1.235e3	0.770	0.88	YES	3.2974	0.00000



Vista Analytical Laboratory

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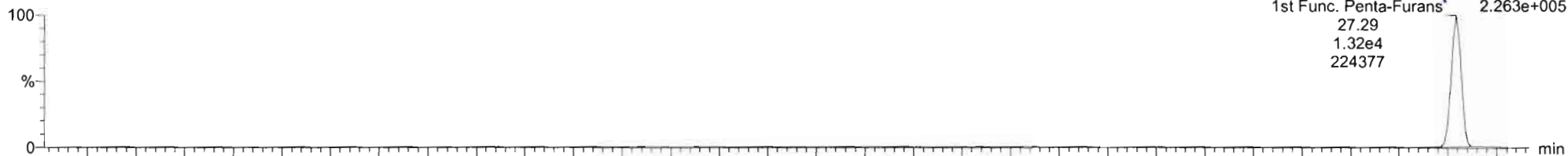
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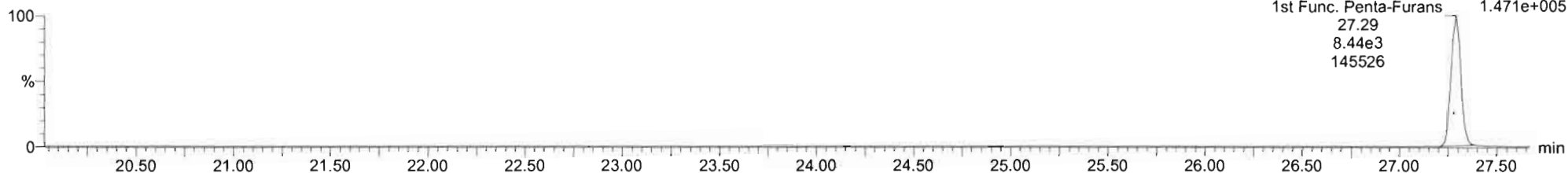
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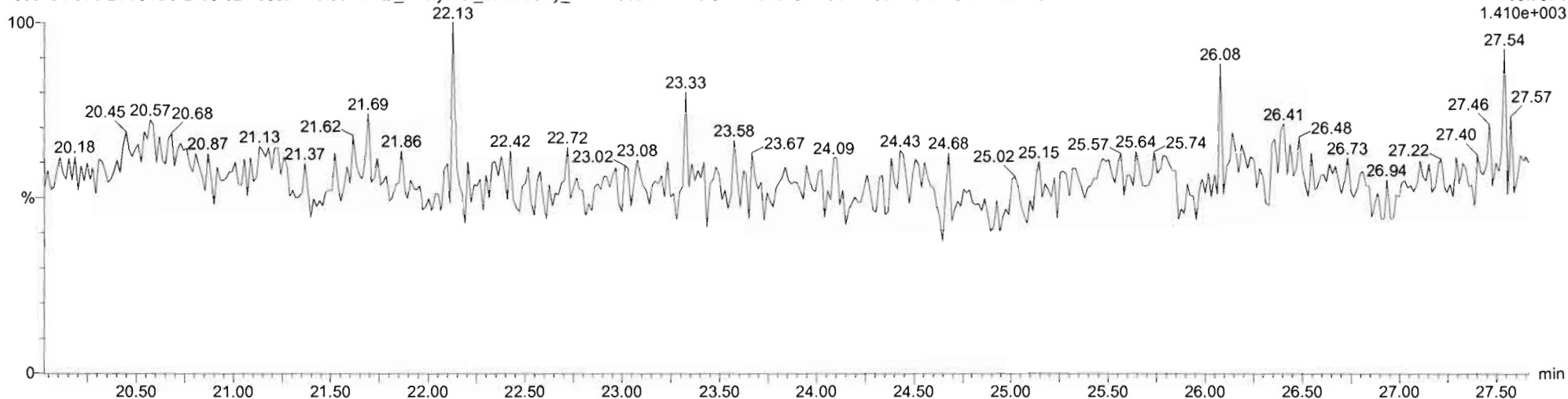
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F1:SIR of 15 channels,EI+
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Vista Analytical Laboratory

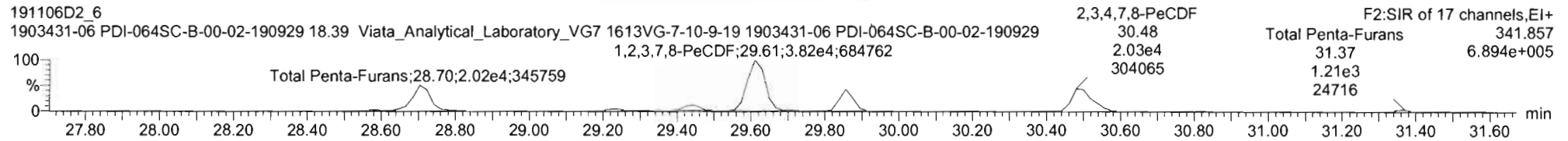
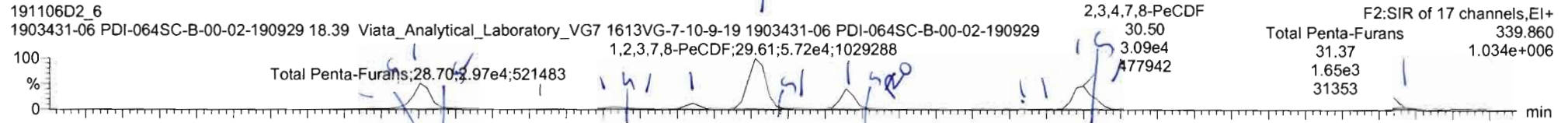
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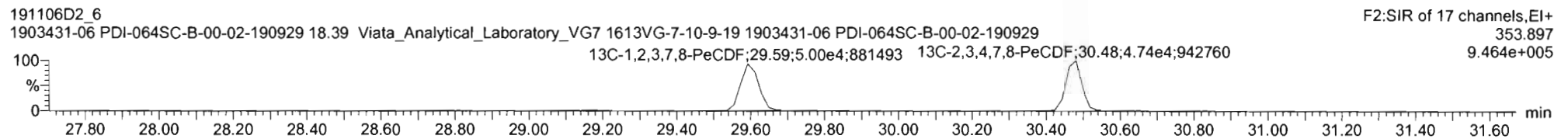
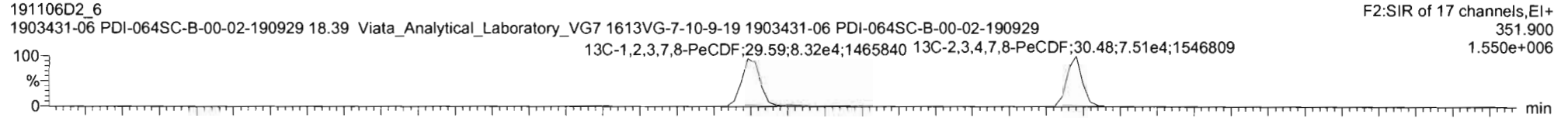
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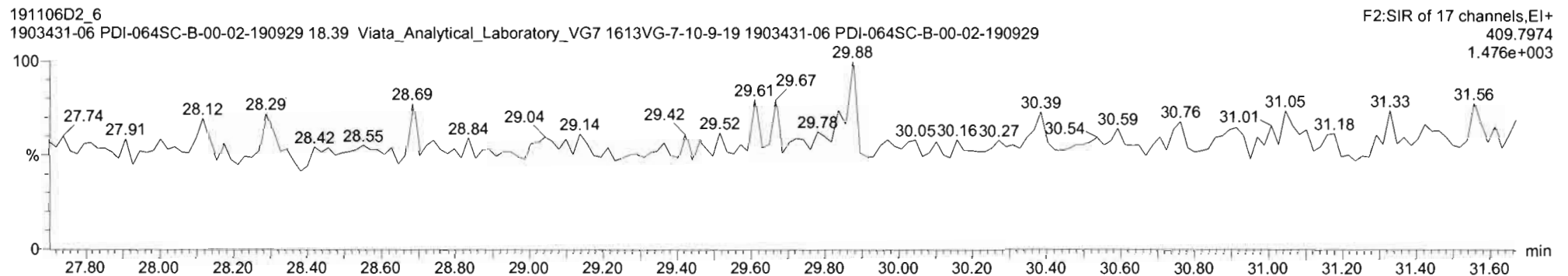
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13C-1,2,3,7,8-PeCDF

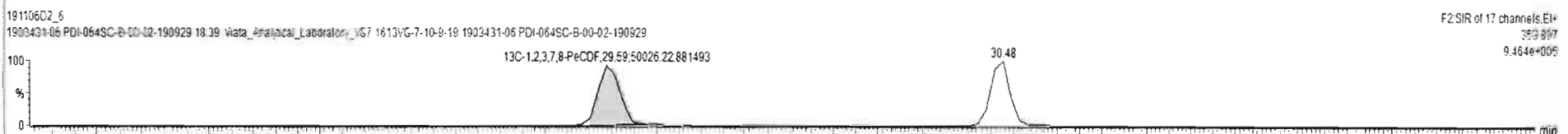
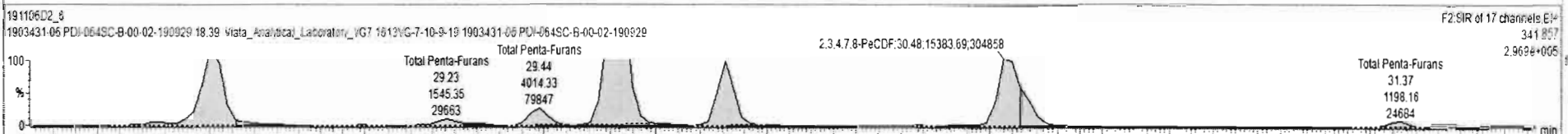
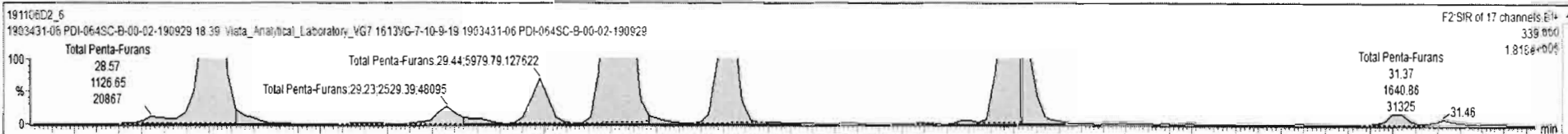


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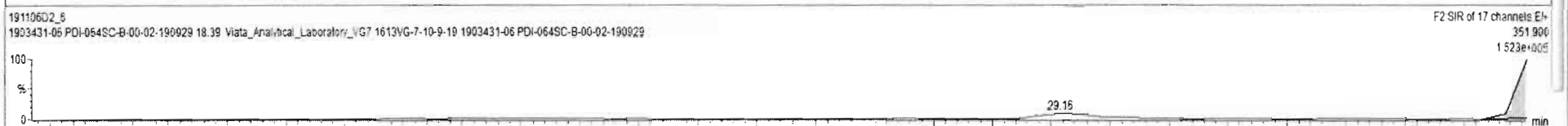
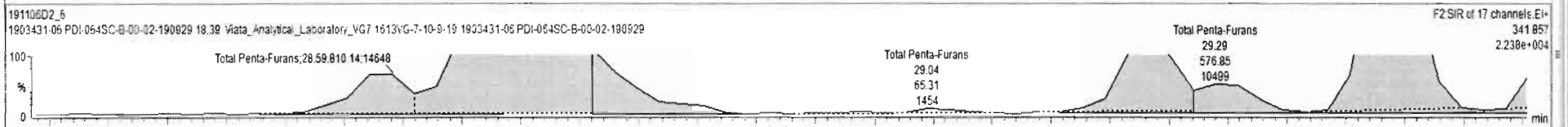
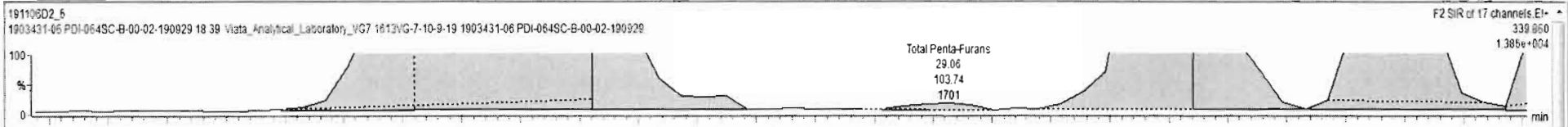
#	Name	Resp	IS Resp	IS#	RA	n/y	RRT	wtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
42	Total Hepta-Dioxins		7.46e4				0.989	10.013	37.75			0.000	NO	1266		2.78	1266
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.00e0				0.940	10.013	27.63			0.000	NO	35.92		0.0855	35.92
45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	406.0		0.415	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.3		0.604	474.5
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	Total Penta-Furans	30.00	28.57	1.127e3	6.101e2	1.550	1.39	NO	3.2198	3.2198
2	Total Penta-Furans	30.00	28.70	2.889e4	1.931e4	1.550	1.50	NO	63.133	60.133
3	Total Penta-Furans	30.00	28.76	1.442e3	9.137e2	1.550	1.58	NO	3.9189	3.9189
4	Total Penta-Furans	30.00	29.08	1.037e2	6.531e1	1.550	1.59	NO	0.28104	0.28104
5	Total Penta-Furans	30.00	29.23	2.529e3	1.545e3	1.550	1.54	NO	6.7739	6.7739
6	Total Penta-Furans	30.00	29.27	9.442e2	5.789e2	1.550	1.54	NO	2.5287	0.00000
7	Total Penta-Furans	30.00	29.44	5.980e3	4.014e3	1.550	1.49	NO	16.614	16.614
8	1,2,3,7,8-PeCDF	29.61	29.61	5.753e4	3.863e4	1.550	1.49	NO	150.09	150.09



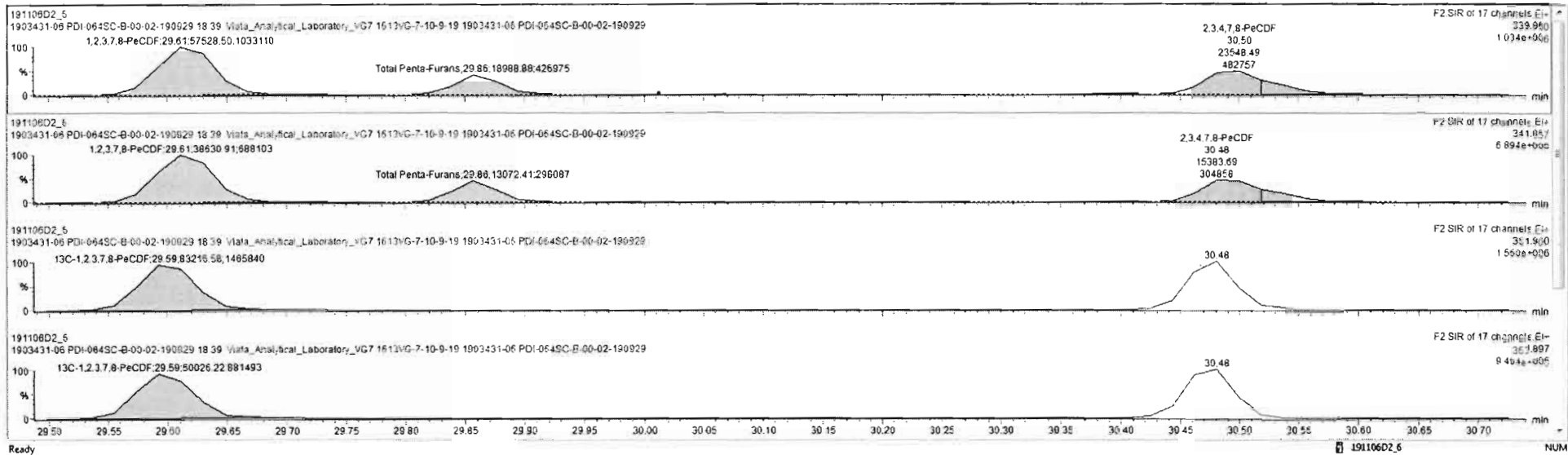
#	Name	Resp	IS Resp	IS#	RA	nly	RRF	w/wot	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
42	Total Hepta-Dioxins		7.46e4				0.989	10.013	37.75			0.000	NO	1266		2.78	1266
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.00e0				0.940	10.013	27.63			0.000	NO	35.92		0.0655	35.92
45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	406.0		0.415	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.3		0.604	474.5
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	45 Total Penta-Furans	30.00	28.57	1.127e3	8.101e2	1.550	1.39	NO	3.2196	3.2196
2	45 Total Penta-Furans	30.00	28.70	2.869e4	1.931e4	1.550	1.50	NO	80.133	80.133
3	45 Total Penta-Furans	30.00	28.76	1.442e3	9.137e2	1.550	1.58	NO	3.9169	3.9169
4	45 Total Penta-Furans	30.00	29.06	1.037e2	6.531e1	1.550	1.59	NO	0.28104	0.28104
5	45 Total Penta-Furans	30.00	29.23	2.529e3	1.545e3	1.550	1.64	NO	6.7739	6.7739
6	45 Total Penta-Furans	30.00	29.27	9.442e2	5.769e2	1.550	1.64	NO	2.5287	0.00000
7	45 Total Penta-Furans	30.00	29.44	5.989e3	4.014e3	1.550	1.49	NO	16.514	16.514
8	1,2,3,7,8-PeCDF	29.61	29.61	5.753e4	3.863e4	1.550	1.49	NO	150.09	150.09



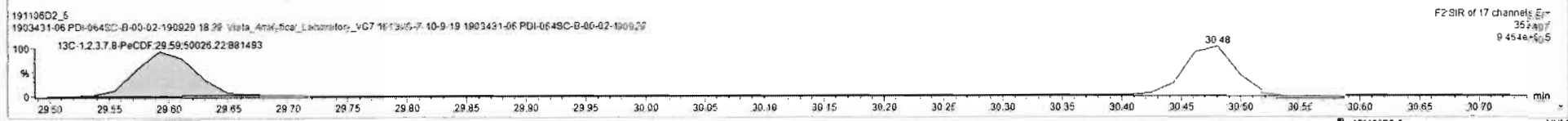
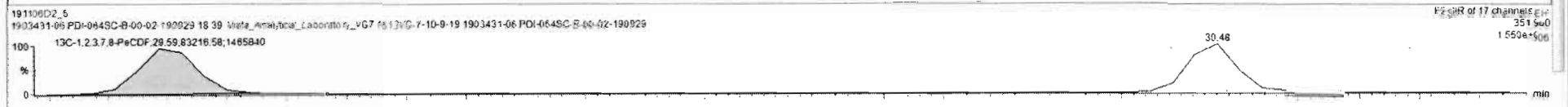
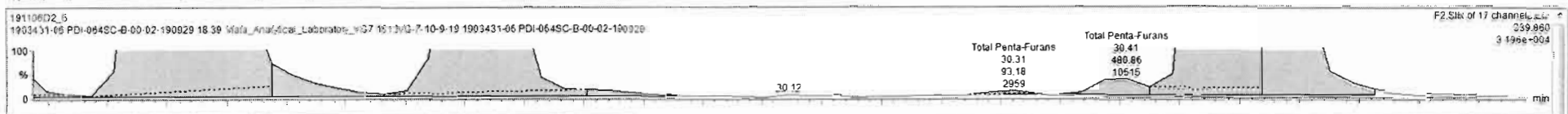
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42	42	Total Hepta-Dioxins		7.48e4				0.989	10.013	37.75			0.000	NO	1266		2.78	1266
43	43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	44	1st Func. Penta-Furans		0.00e0				0.940	10.013	27.63			0.000	NO	35.92		0.0855	35.92
45	45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	408.0		0.415	410.3
46	46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.3		0.604	474.5
47	47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	48	PFK1																
49	49	PFK2																
50	50	PFK3																
51	51	PFK4																
52	52	PFK5																

#I	#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	45	Total Penta-Furans	30.00	28.57	1.127e3	8.101e2	1.550	1.39	NO	3.2196	3.2196
2	45	Total Penta-Furans	30.00	28.70	2.869e4	1.931e4	1.550	1.50	NO	80.133	60.133
3	45	Total Penta-Furans	30.00	28.78	1.442e3	9.137e2	1.550	1.58	NO	3.9169	3.9169
4	45	Total Penta-Furans	30.00	29.06	1.037e2	8.531e1	1.550	1.59	NO	0.28104	0.28104
5	45	Total Penta-Furans	30.00	29.23	2.529e3	1.545e3	1.550	1.84	NO	6.7739	8.7739
6	45	Total Penta-Furans	30.00	29.27	9.442e2	5.769e2	1.550	1.64	NO	2.5287	0.00000
7	45	Total Penta-Furans	30.00	29.44	5.960e3	4.014e3	1.550	1.49	NO	16.814	16.614
8	8	1,2,3,7,8-PeCDF	29.61	29.81	5.753e4	3.852e4	1.550	1.48	NO	150.09	150.09



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
42	Total Hepta-Dioxins		7.46e4				0.989	10.013	37.75			0.000	NO	1266		2.78	1266
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.00e0				0.940	10.013	27.63			0.000	NO	35.92		0.0855	35.92
45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	406.0		0.416	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.3		0.604	474.5
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.6		0.776	442.3
48	PFK1																
49	PFK2																
50	PFK3																
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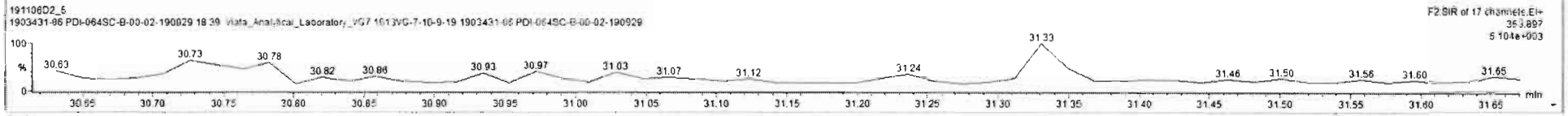
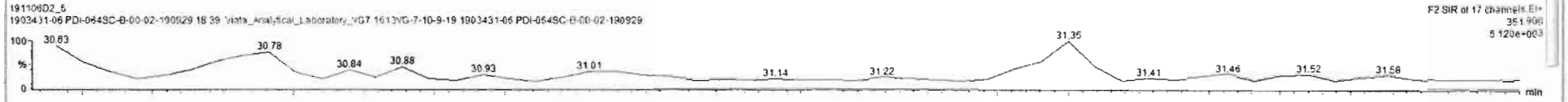
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
8	1,2,3,7,8-PeCDF	29.61	29.61	5.753e4	3.863e4	1.550	1.49	NO	150.09	150.09
9	Total Penta-Furans	30.00	29.69	7.951e2	4.608e2	1.550	1.65	NO	2.1211	2.1211
10	Total Penta-Furans	30.00	29.86	1.659e4	1.307e4	1.550	1.45	NO	53.299	53.299
11	Total Penta-Furans	30.00	29.95	1.931e2	9.089e1	1.550	2.12	YES	0.36529	0.00000
12	Total Penta-Furans	30.00	30.31	9.315e1	5.911e1	1.550	1.58	NO	0.25317	0.25317
13	Total Penta-Furans	30.00	30.41	4.809e2	3.391e2	1.550	1.42	NO	1.3632	0.00000
14	1,2,3,4,7,8-PeCDF	30.51	30.50	2.355e4	3.333e4	1.550	1.53	NO	62.552	62.552
15	Total Penta-Furans	30.00	30.52	6.237e3	5.025e3	1.550	1.84	NO	22.047	22.047



191106D2_5 - 1903431-06 PDI-064SC-B-00-02-190929 - 1903431-06 PDI-064SC-B-00-02-190929 18:39 Viata_Analytical_Laboratory_VG7 1613VG 7-10-9-19

#	Name	Resp	IS Resp	SA	RA	nly	RRF	wt/wt	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
42	Total Hepta-Furans		7.48e4				0.989	10.013	27.75			0.000	NO	1266		2.78	1266
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.00e0				0.940	10.013	27.83			0.000	NO	35.92		0.0855	35.92
45	Total Penta-Furans		0.06e0				0.940	10.013	30.00			0.000	NO	408.0		0.418	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.3		0.504	474.5
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
8	1,2,3,7,8-PeCDF	29.61	29.61	5.753e4	3.863e4	1.550	1.49	NO	150.09	150.09
9	Total Penta-Furans	30.00	29.89	7.551e2	4.808e2	1.550	1.65	NO	2.1211	2.1211
10	Total Penta-Furans	30.00	29.98	1.859e4	1.307e4	1.550	1.45	NO	53.299	53.299
11	Total Penta-Furans	30.00	29.95	1.931e2	9.089e1	1.550	2.12	YES	0.38529	0.00000
12	Total Penta-Furans	30.00	30.31	9.318e1	5.911e1	1.550	1.58	NO	0.25317	0.25317
13	Total Penta-Furans	30.00	30.41	4.809e2	3.391e2	1.550	1.42	NO	1.3632	0.00000
14	2,3,4,7,8-PeCDF	30.51	30.50	2.355e4	1.538e4	1.550	1.53	NO	62.552	62.552
15	Total Penta-Furans	30.00	30.52	8.237e3	5.025e3	1.550	1.64	NO	22.047	22.047



Vista Analytical Laboratory

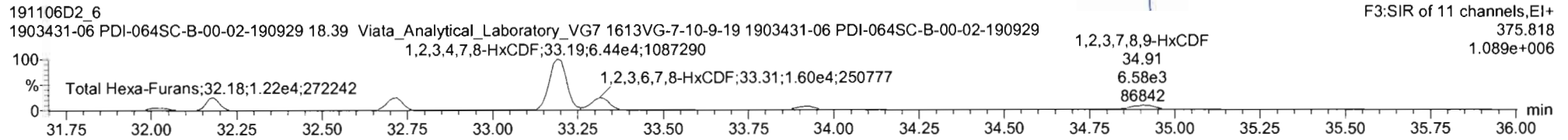
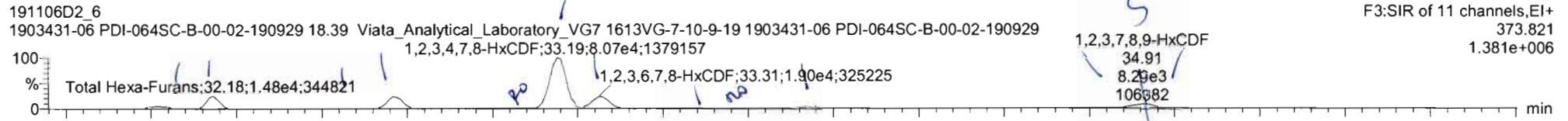
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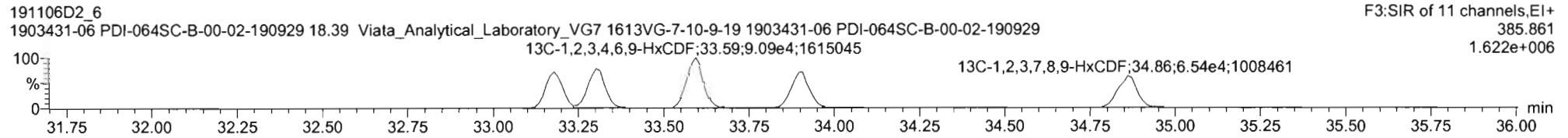
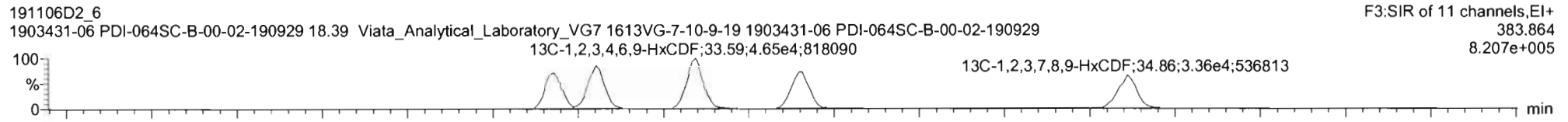
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Name: VG7 191106D2_6, Date: 7-NOV-2019, Time: 03:52:37, ID: 1903431-06 PDI-064SC-B-00-02-190929, Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

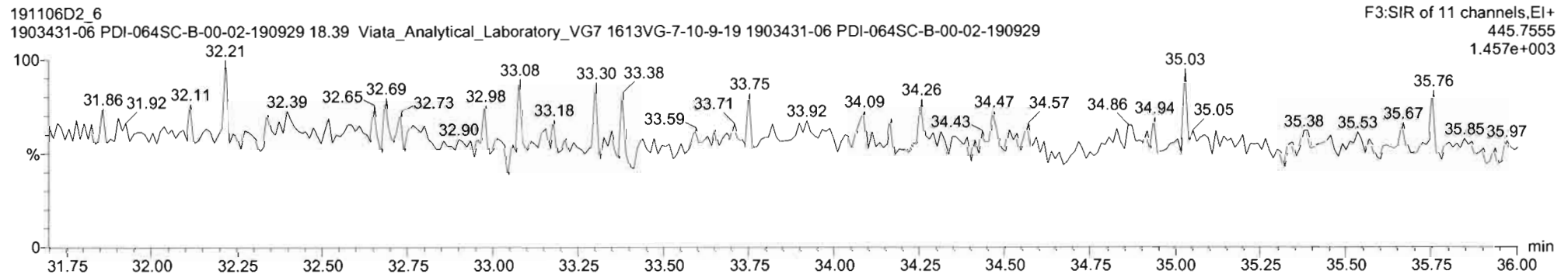
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

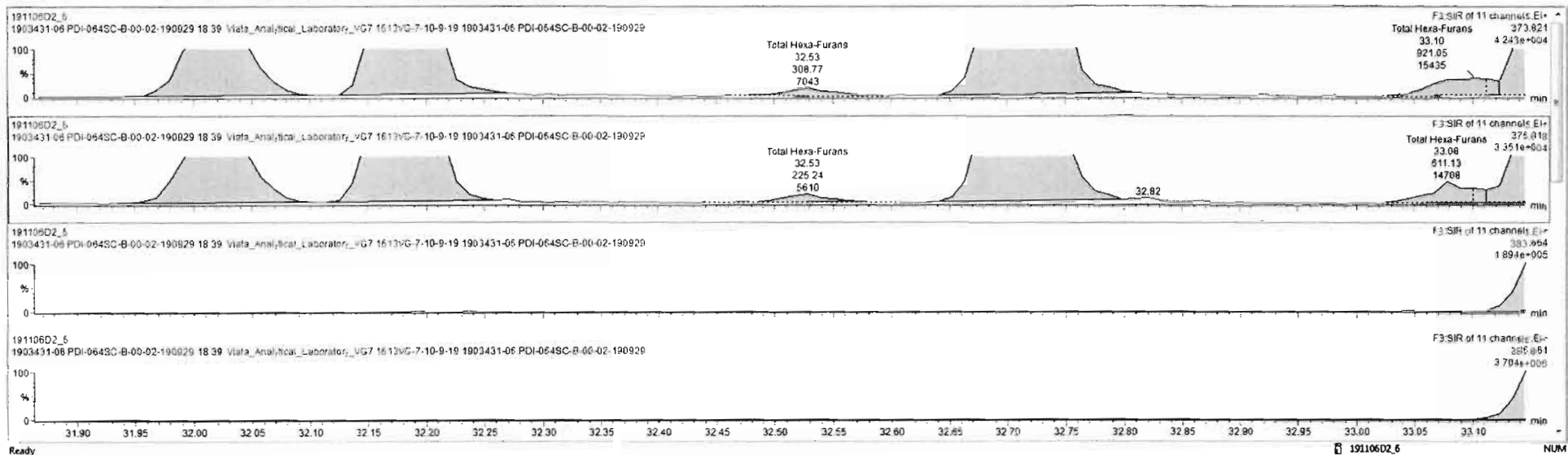


DPE3



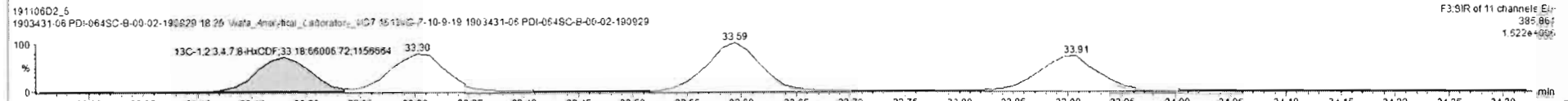
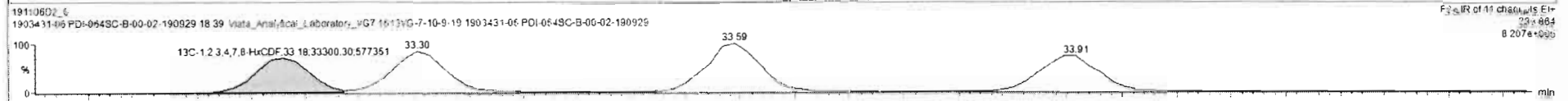
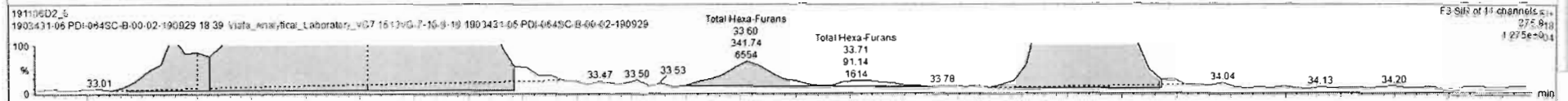
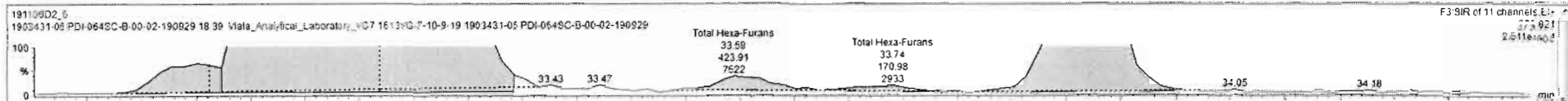
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42	Total Hepta-Dioxins		7.46e4				0.989	10.013	37.75			0.000	NO	126E		2.78	1268
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.00e3				0.940	10.013	27.60			0.000	NO	35.92		0.0855	35.92
45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	406.0		0.415	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.1		0.604	474.9
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.776	442.3
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	Total Hexa-Furans	33.00	32.02	4.329e3	3.334e3	1.240	1.30	NO	13.648	13.648
2	Total Hexa-Furans	33.00	32.18	1.475e4	1.221e4	1.240	1.21	NO	48.039	48.039
3	Total Hexa-Furans	33.00	32.53	3.058e2	2.252e2	1.240	1.37	NO	0.95149	0.95149
4	Total Hexa-Furans	33.00	32.71	1.753e4	1.433e4	1.240	1.22	NO	56.775	56.775
5	Total Hexa-Furans	33.00	33.10	9.210e2	6.111e2	1.240	1.51	YES	2.4391	0.00000
6	1,2,3,4,7,8-HxCDF	33.18	33.19	8.072e4	6.447e4	1.240	1.25	NO	248.16	248.16
7	1,2,3,6,7,8-HxCDF	33.31	33.31	1.915e4	1.611e4	1.240	1.19	NO	58.729	58.729
8	Total Hexa-Furans	33.00	33.59	4.239e2	3.417e2	1.240	1.24	NO	1.3642	1.3642



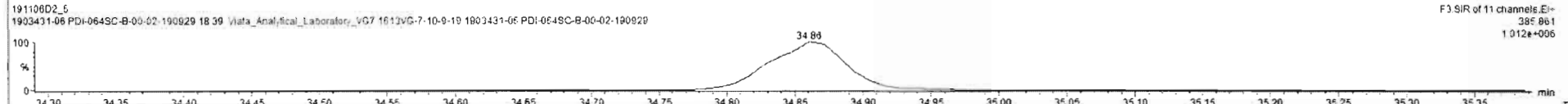
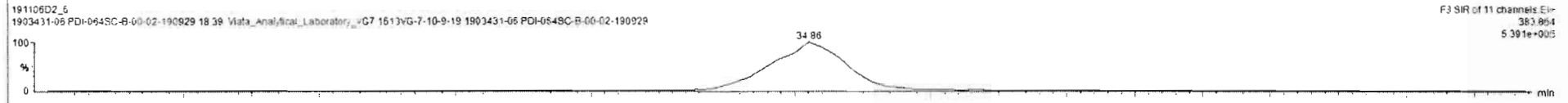
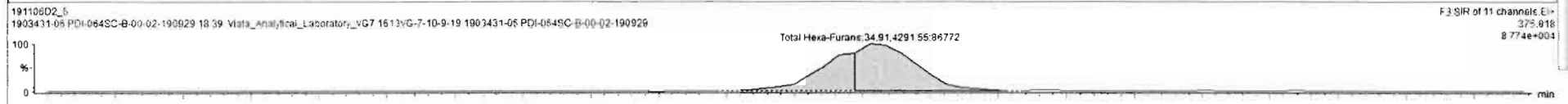
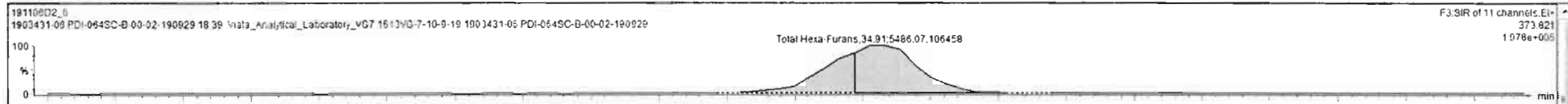
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42	Total Hepta-Furans		7.48e4				0.989	10.013	37.75			0.000	NO	1260		2.78	1268
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.00e0				0.940	10.013	27.62			0.000	NO	35.92		0.0855	35.92
45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	406.0		6.415	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	472.1		0.604	474.9
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
4	Total Hexa-Furans	33.00	32.71	1.753e4	1.433e4	1.240	1.22	NO	58.775	56.775
5	Total Hexa-Furans	33.00	33.10	9.210e2	6.111e2	1.240	1.51	YES	2.4391	0.00000
6	1,2,3,4,7,8-HxCDF	33.18	32.19	8.072e4	6.447e4	1.240	1.25	NO	248.16	248.16
7	1,2,3,6,7,8-HxCDF	33.31	33.31	1.915e4	1.611e4	1.240	1.19	NO	58.729	58.729
8	Total Hexa-Furans	33.00	33.59	4.239e2	3.417e2	1.240	1.24	NO	1.3642	1.3642
9	Total Hexa-Furans	33.00	33.74	1.710e2	9.114e1	1.240	1.88	YES	0.36374	0.00000
10	1,2,3,4,6,7,8-HxCDF	33.94	33.91	5.554e3	4.399e3	1.240	1.26	NO	16.902	16.902
11	1,2,3,7,8,9-HxCDF	34.86	34.91	8.294e3	6.220e3	1.240	1.33	NO	27.528	27.528



#	Name	Resp	IS Resp	IS#	RA	n/y	RPF	with/val	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
42	Total Hepta-Oxins		7.46e4				0.969	10.013	37.75			0.000	NO	1265		2.78	1266
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Furoic, Penta-Furans		0.00e0				0.940	10.012	27.63			0.000	NO	35.92		0.0855	35.92
45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	406.0		0.415	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	471.8		0.604	474.4
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	441.8		0.778	442.3
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
5	46 Total Hexa-Furans	33.00	33.10	9.210e2	6.111e2	1.240	1.51	YES	2.4391	0.00000
6	11 1,2,3,4,7,8-HxCDF	33.18	33.19	8.072e4	6.447e4	1.240	1.25	NO	248.16	248.16
7	12 1,2,3,6,7,8-HxCDF	33.31	33.31	1.915e4	1.811e4	1.240	1.19	NO	58.729	58.729
8	46 Total Hexa-Furans	33.00	33.59	4.239e2	3.417e2	1.240	1.24	NO	1.3642	1.3642
9	46 Total Hexa-Furans	33.00	33.74	1.710e2	9.114e1	1.240	1.88	YES	0.36374	0.00000
10	13 2,3,4,6,7,8-HxCDF	33.94	33.91	5.554e3	4.399e3	1.240	1.26	NO	16.902	16.902
11	14 1,2,3,7,8,9-HxCDF	34.86	34.89	2.797e3	2.281e3	1.240	1.23	NO	9.6524	9.6524
12	46 Total Hexa-Furans	33.00	34.91	5.466e3	4.292e3	1.240	1.28	NO	17.421	17.421



Vista Analytical Laboratory

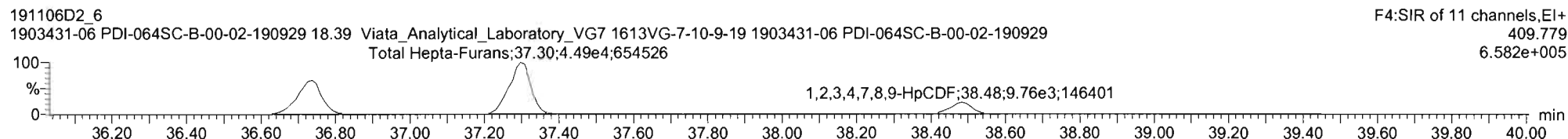
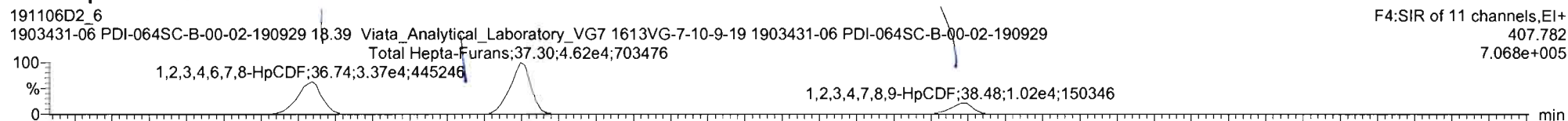
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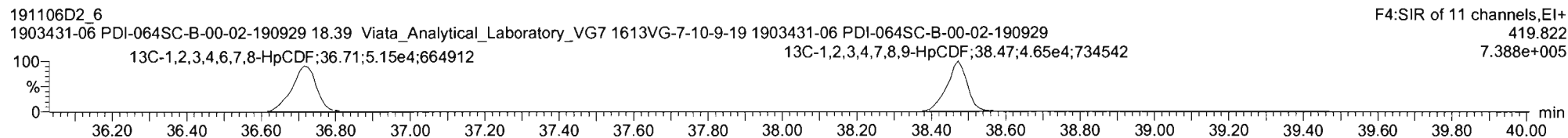
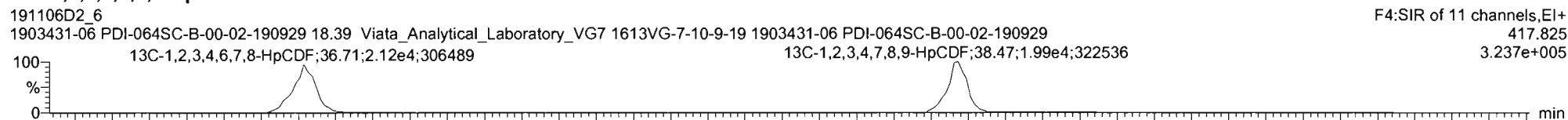
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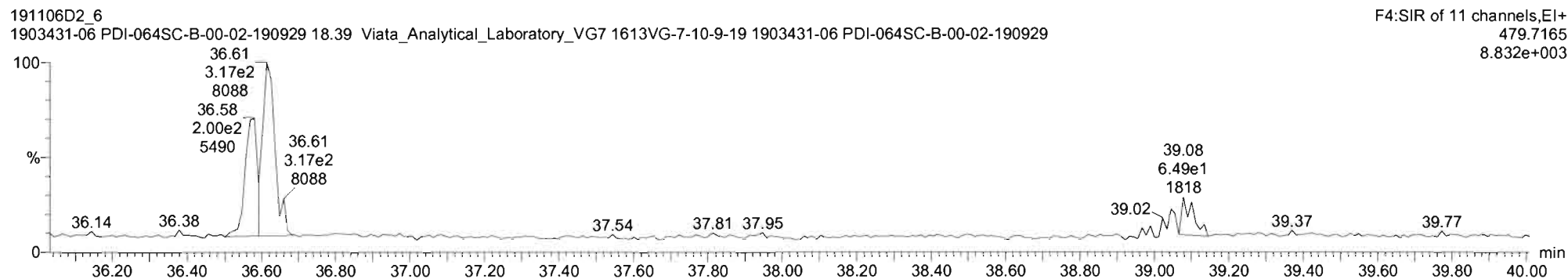
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



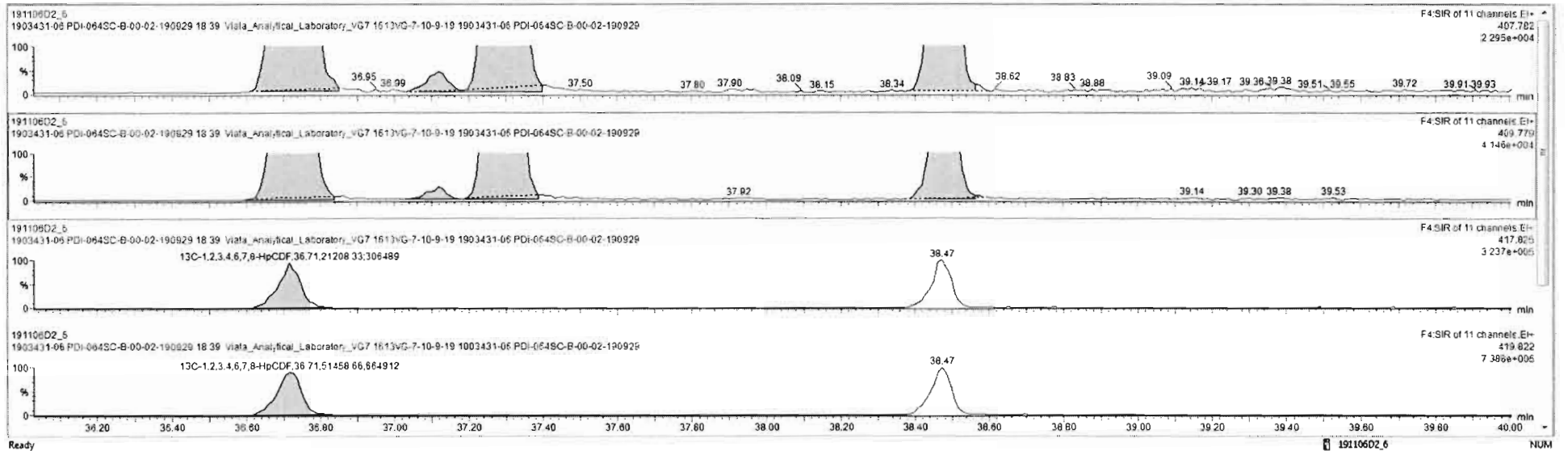
DPE4



191106D2_6 1903431-06-PDI-064SC-B-00-02-190929 1903431-06-PDI-064SC-B-00-02-190929 18:39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RPF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
42	Total Hepta-Furans		7.46e4				0.989	10.013	37.75			0.000	NO	1266		2.78	1266
43	Total Tetra-Furans		1.40e5				0.943	10.013	24.00			0.000	NO	240.0		0.457	261.7
44	1st Func. Penta-Furans		0.00e0				0.940	10.012	27.83			0.000	NO	35.92		0.0956	35.92
45	Total Penta-Furans		0.00e0				0.940	10.013	30.00			0.000	NO	406.0		0.415	410.3
46	Total Hexa-Furans		0.00e0				1.078	10.013	33.00			0.000	NO	471.6		0.604	474.4
47	Total Hepta-Furans		0.00e0				1.135	10.013	37.75			0.000	NO	445.7		0.778	445.7
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	None																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	1,2,3,4,6,7,8-HpCDF	36.75	36.74	3.380e4	3.294e4	1.040	1.03	NO	162.93	162.93
2	Total Hepta-Furans	37.75	37.12	6.780e2	6.136e2	1.040	1.11	NO	3.2685	3.2685
3	Total Hepta-Furans	37.75	37.30	4.881e4	4.534e4	1.040	1.03	NO	232.67	232.67
4	1,2,3,4,7,8,9-HpCDF	36.47	36.48	1.019e4	9.822e3	1.040	1.03	NO	46.793	46.793



Vista Analytical Laboratory

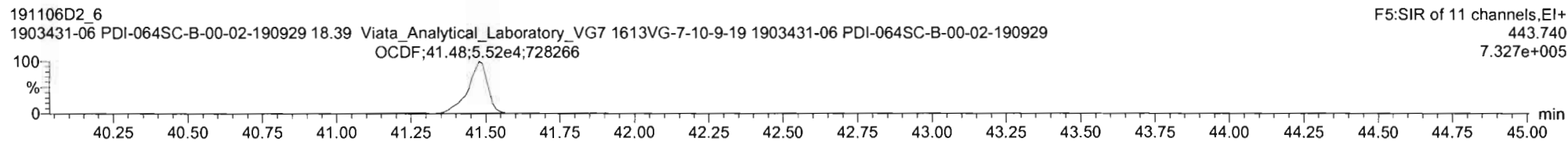
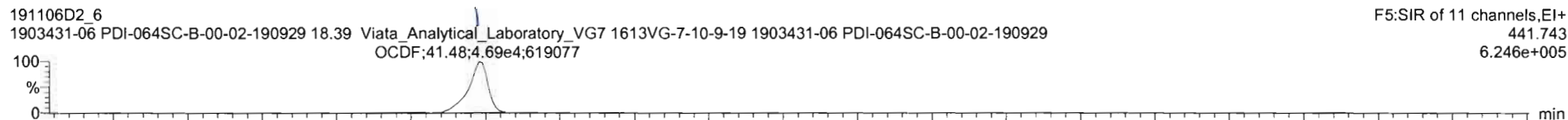
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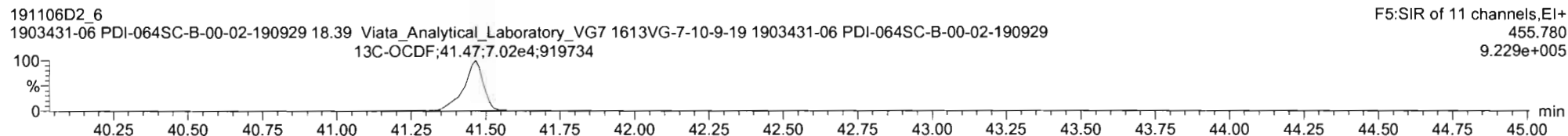
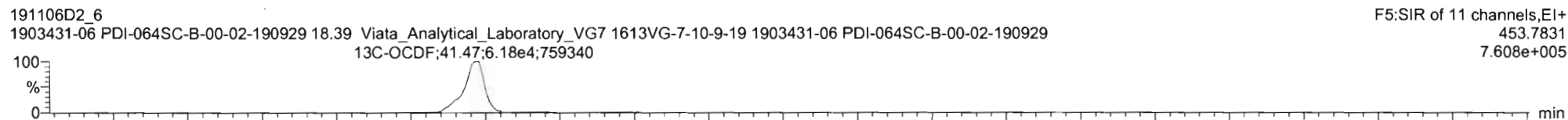
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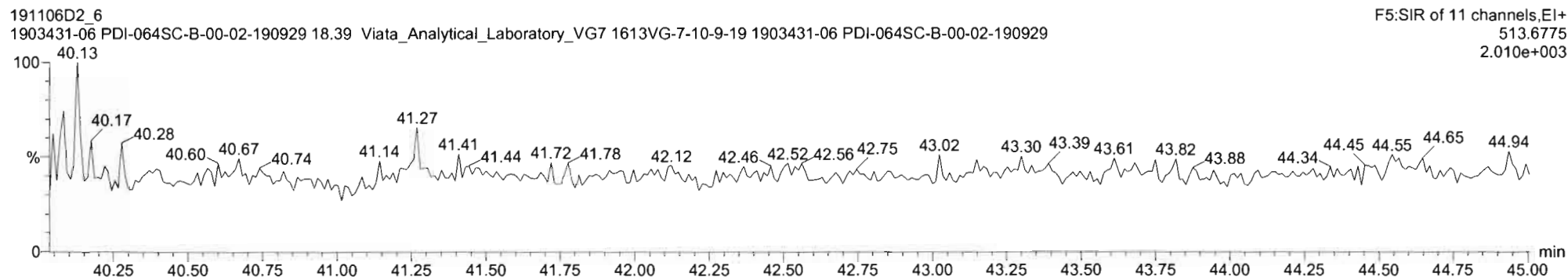
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

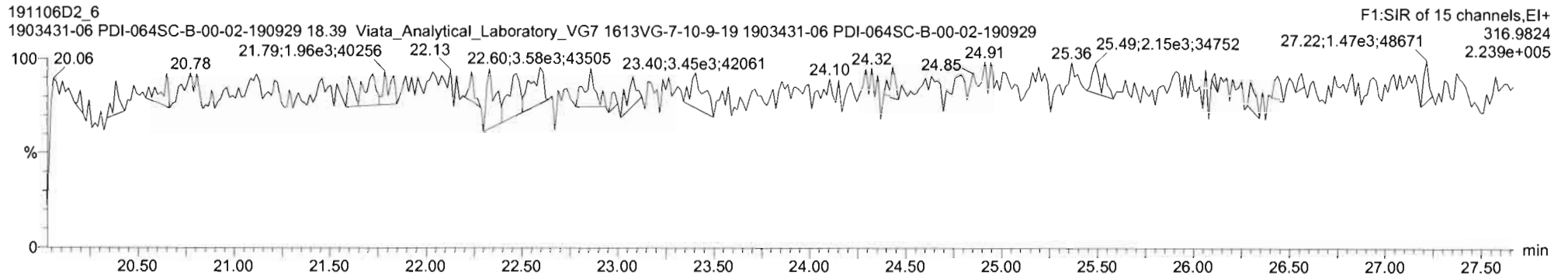
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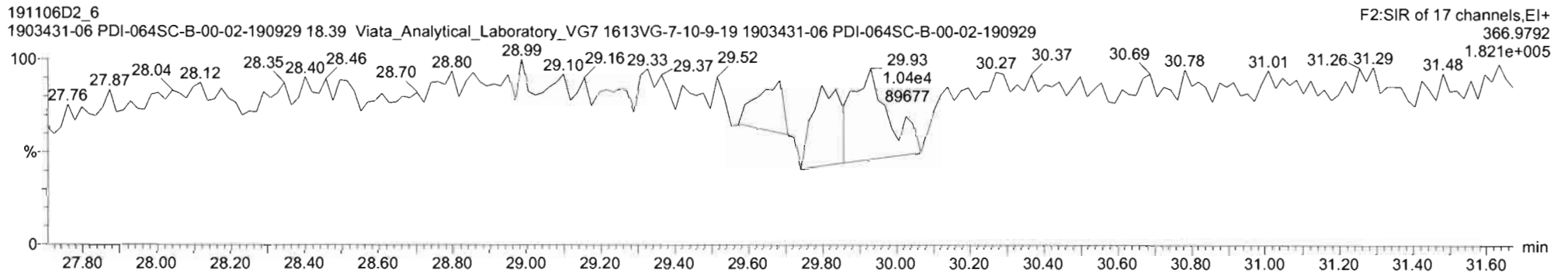
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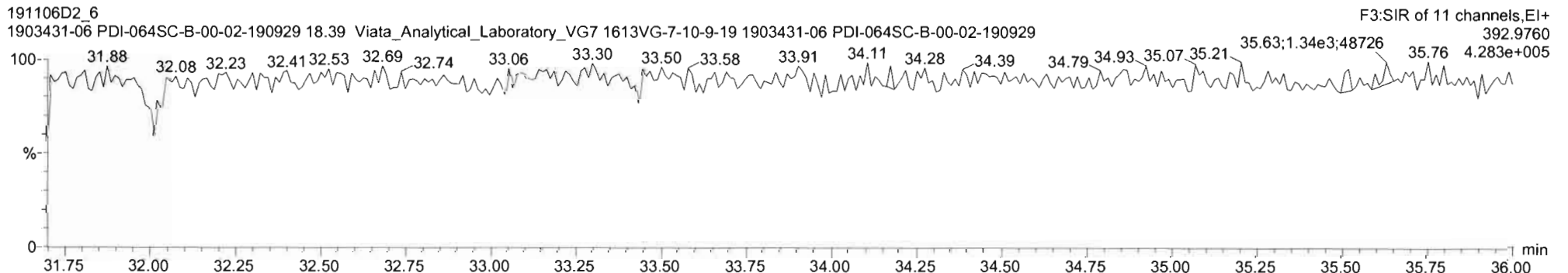
PFK1



PFK2



PFK3



Vista Analytical Laboratory

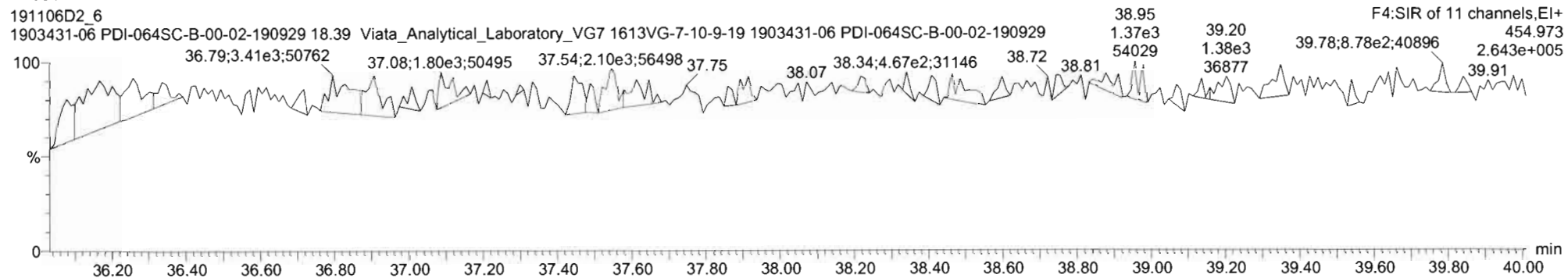
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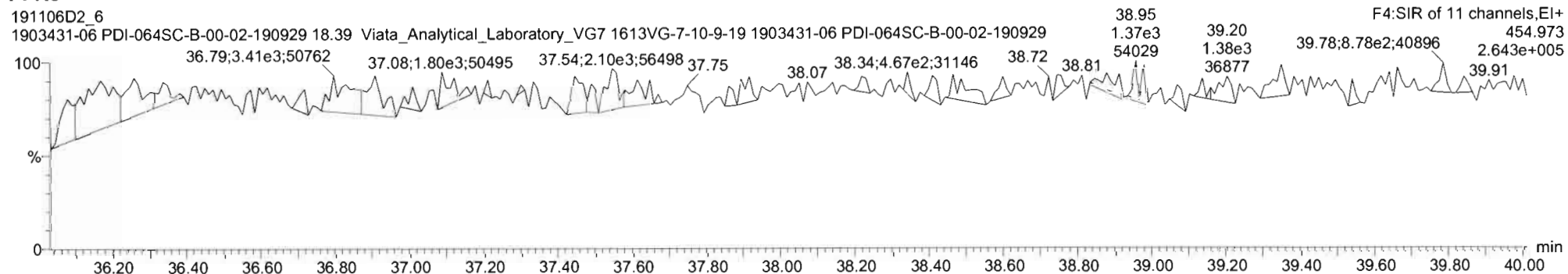
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Description: 1903431-06 PDI-064SC-B-00-02-190929 18.39 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

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Vista Analytical Laboratory

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Calibration: 13 Nov 2019 17:29:39

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Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

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1	1 2,3,7,8-TCDD		1.01e5	10.2420	0.905			1.001		26.30					0.251
2	2 1,2,3,7,8-PeCDD		9.11e4	10.2420	0.903			1.001		30.77					0.186
3	3 1,2,3,4,7,8-HxCDD		7.23e4	10.2420	1.101			1.000		34.08					0.303
4	4 1,2,3,6,7,8-HxCDD		8.27e4	10.2420	0.939			1.000		34.18					0.313
5	5 1,2,3,7,8,9-HxCDD		8.04e4	10.2420	0.961			1.001		34.52					0.326
6	6 1,2,3,4,6,7,8-HpCDD	7.57e2	7.38e4	10.2420	0.979	0.839	YES	1.000	1.001	37.94	37.95	2.0447		1.83	0.323
7	7 OCDD	3.75e3	1.13e5	10.2420	0.959	0.986	NO	1.000	1.001	41.21	41.24	13.521		13.5	0.310
8	8 2,3,7,8-TCDF	1.98e2	1.49e5	10.2420	0.950	0.587	YES	1.001	1.001	25.52	25.51	0.27341		0.233	0.248
9	9 1,2,3,7,8-PeCDF		1.36e5	10.2420	0.960			1.001		29.61					0.168
10	10 2,3,4,7,8-PeCDF		1.33e5	10.2420	1.015			1.001		30.51					0.161
11	11 1,2,3,4,7,8-HxCDF		9.71e4	10.2420	1.177			1.000		33.18					0.155
12	12 1,2,3,6,7,8-HxCDF		1.08e5	10.2420	1.069			1.000		33.31					0.160
13	13 2,3,4,6,7,8-HxCDF		9.65e4	10.2420	1.114			1.001		33.94					0.188
14	14 1,2,3,7,8,9-HxCDF		9.04e4	10.2420	1.062			1.000		34.85					0.227
15	15 1,2,3,4,6,7,8-HpCDF		7.57e4	10.2420	1.128			1.001		36.74					0.225
16	16 1,2,3,4,7,8,9-HpCDF		6.02e4	10.2420	1.280			1.000		38.46					0.188
17	17 OCDF		1.17e5	10.2420	0.947			1.000		41.44					0.287
18	18 13C-2,3,7,8-TCDD	1.01e5	1.21e5	10.2420	1.095	0.805	NO	1.021	1.021	26.27	26.27	148.47	76.0		0.430
19	19 13C-1,2,3,7,8-PeCDD	9.11e4	1.21e5	10.2420	0.881	0.617	NO	1.187	1.195	30.53	30.75	166.85	85.4		0.328
20	20 13C-1,2,3,4,7,8-Hx...	7.23e4	1.35e5	10.2420	0.642	1.323	NO	1.014	1.014	34.05	34.07	162.59	83.3		0.860
21	21 13C-1,2,3,6,7,8-Hx...	8.27e4	1.35e5	10.2420	0.856	1.273	NO	1.017	1.018	34.17	34.18	139.72	71.6		0.645
22	22 13C-1,2,3,7,8,9-Hx...	8.04e4	1.35e5	10.2420	0.807	1.269	NO	1.026	1.027	34.47	34.48	143.95	73.7		0.684
23	23 13C-1,2,3,4,6,7,8-H...	7.38e4	1.35e5	10.2420	0.654	1.053	NO	1.126	1.129	37.82	37.93	163.14	83.5		1.05
24	24 13C-OCDD	1.13e5	1.35e5	10.2420	0.580	0.893	NO	1.226	1.227	41.18	41.21	282.00	72.2		0.617
25	25 13C-2,3,7,8-TCDF	1.49e5	1.91e5	10.2420	1.035	0.796	NO	0.993	0.991	25.56	25.49	147.00	75.3		0.452
26	26 13C-1,2,3,7,8-PeCDF	1.36e5	1.91e5	10.2420	0.854	1.599	NO	1.143	1.150	29.40	29.59	162.32	83.1		0.847
27	27 13C-2,3,4,7,8-PeCDF	1.33e5	1.91e5	10.2420	0.847	1.565	NO	1.176	1.185	30.26	30.48	160.38	82.1		0.854
28	28 13C-1,2,3,4,7,8-Hx...	9.71e4	1.35e5	10.2420	0.832	0.522	NO	0.987	0.988	33.16	33.18	168.66	86.4		0.958
29	29 13C-1,2,3,6,7,8-Hx...	1.08e5	1.35e5	10.2420	1.034	0.524	NO	0.991	0.992	33.28	33.30	150.41	77.0		0.770
30	30 13C-2,3,4,6,7,8-Hx...	9.65e4	1.35e5	10.2420	0.953	0.539	NO	1.009	1.010	33.89	33.91	146.17	74.9		0.835
31	31 13C-1,2,3,7,8,9-Hx...	9.04e4	1.35e5	10.2420	0.828	0.509	NO	1.039	1.038	34.88	34.85	157.75	80.8		0.962

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-7.qld

Last Altered: Wednesday, November 13, 2019 17:41:35 Pacific Standard Time

Printed: Wednesday, November 13, 2019 17:42:33 Pacific Standard Time

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 Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	7.57e4	1.35e5	10.2420	0.757	0.409	NO	1.093	1.093	36.70	36.71	144.47	74.0		0.856
33	33 13C-1,2,3,4,7,8,9-H...	6.02e4	1.35e5	10.2420	0.581	0.428	NO	1.143	1.145	38.39	38.46	149.63	76.6		1.12
34	34 13C-OCDF	1.17e5	1.35e5	10.2420	0.689	0.850	NO	1.233	1.234	41.42	41.44	245.64	62.9		0.467
35	35 37Cl-2,3,7,8-TCDD	4.11e4	1.21e5	10.2420	1.198			1.022	1.022	26.29	26.30	55.414	70.9		0.163
36	36 13C-1,2,3,4-TCDD	1.21e5	1.21e5	10.2420	1.000	0.811	NO	1.000	1.000	25.70	25.72	195.27	100.0		0.471
37	37 13C-1,2,3,4-TCDF	1.91e5	1.91e5	10.2420	1.000	0.791	NO	1.000	1.000	24.28	24.31	195.27	100.0		0.467
38	38 13C-1,2,3,4,6,9-Hx...	1.35e5	1.35e5	10.2420	1.000	0.517	NO	1.000	1.000	33.55	33.58	195.27	100.0		0.796
39	39 Total Tetra-Dioxins		1.01e5	10.2420	0.901			0.000		25.50		0.48414		1.14	0.252
40	40 Total Penta-Dioxins		9.11e4	10.2420	0.872			0.000		30.00		0.00000		0.362	0.0920
41	41 Total Hexa-Dioxins		0.00e0	10.2420	0.976			0.000		33.80		1.2378		1.24	0.320
42	42 Total Hepta-Dioxins		7.38e4	10.2420	0.989			0.000		37.75		2.7691		4.60	0.320
43	43 Total Tetra-Furans		1.49e5	10.2420	0.943			0.000		24.00		1.7348		2.63	0.249
44	44 1st Func. Penta-Fur...		0.00e0	10.2420	0.940			0.000		27.63					0.0556
45	45 Total Penta-Furans		0.00e0	10.2420	0.940			0.000		30.00		0.00000		0.537	0.0770
46	46 Total Hexa-Furans		0.00e0	10.2420	1.078			0.000		33.00					0.100
47	47 Total Hepta-Furans		0.00e0	10.2420	1.135			0.000		37.75					0.112

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-7.qld
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 Printed: Wednesday, November 13, 2019 17:42:33 Pacific Standard Time

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 Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	39 Total Tetra-Dioxins	YES	24.45	49.957	44934.695	0.000	MM	0.0000	0.25
2	39 Total Tetra-Dioxins	YES	23.31	105.807	44934.695	0.000	bb	0.0000	0.41
3	39 Total Tetra-Dioxins	NO	22.94	99.957	44934.695	4.467	MM	0.4841	0.48

Penta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	40 Total Penta-Dioxins	YES	28.74	29.584	34768.102	0.000	MM	0.0000	0.19
2	40 Total Penta-Dioxins	YES	29.18	27.287	34768.102	0.000	MM	0.0000	0.17

Hexa-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	32.54	276.994	44151.828	12.372	bb	1.2378	1.24

Hepta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	YES	37.95	345.392	37879.141	0.000	bb	0.0000	1.83
2	42 Total Hepta-Dioxins	NO	37.10	532.293	37879.141	28.041	bb	2.7691	2.77

Tetra-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	8 2,3,7,8-TCDF	YES	25.51	73.217	65919.070	0.000	MM	0.0000	0.23
2	43 Total Tetra-Furans	NO	24.73	107.720	65919.070	3.353	bb	0.3473	0.35
3	43 Total Tetra-Furans	YES	22.58	178.519	65919.070	0.000	MM	0.0000	0.48
4	43 Total Tetra-Furans	NO	22.04	451.322	65919.070	13.398	MM	1.3875	1.39
5	43 Total Tetra-Furans	YES	25.83	56.704	65919.070	0.000	MM	0.0000	0.18

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-7.qld

Last Altered: Wednesday, November 13, 2019 17:41:35 Pacific Standard Time

Printed: Wednesday, November 13, 2019 17:42:33 Pacific Standard Time

Name: VG7 191106D2_7, Date: 7-NOV-2019, Time: 04:40:24, ID: 1903431-07 PDI-064SC-B-02-04-190929,
 Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	45 Total Penta-Furans	YES	28.55	157.590	82211.043	0.000	MM	0.0000	0.22
2	45 Total Penta-Furans	YES	28.71	122.523	82211.043	0.000	MM	0.0000	0.31

Hexa-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hepta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

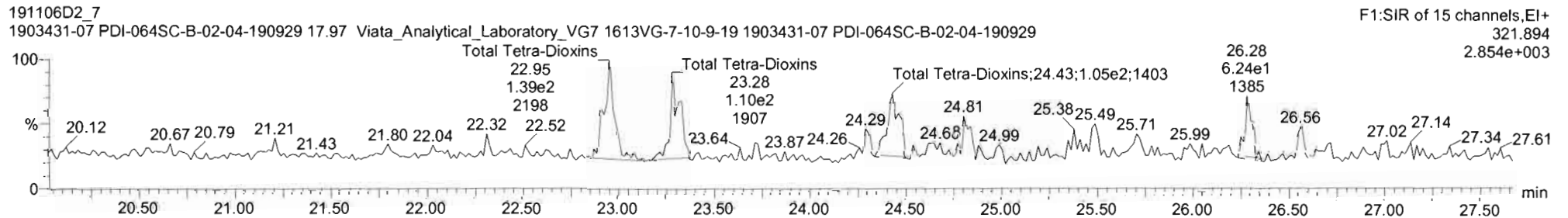
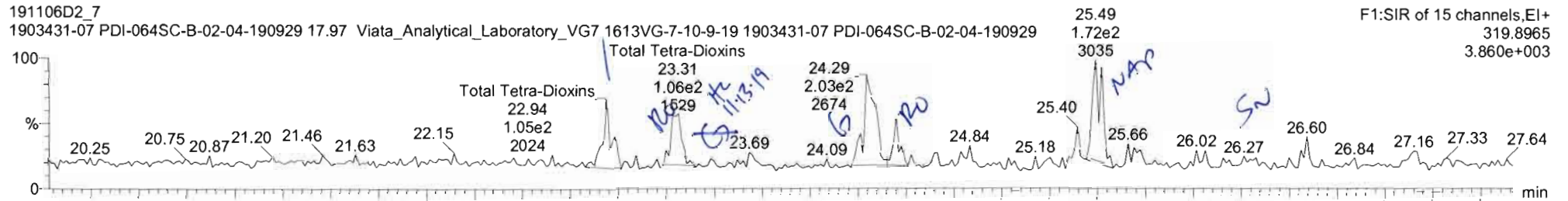
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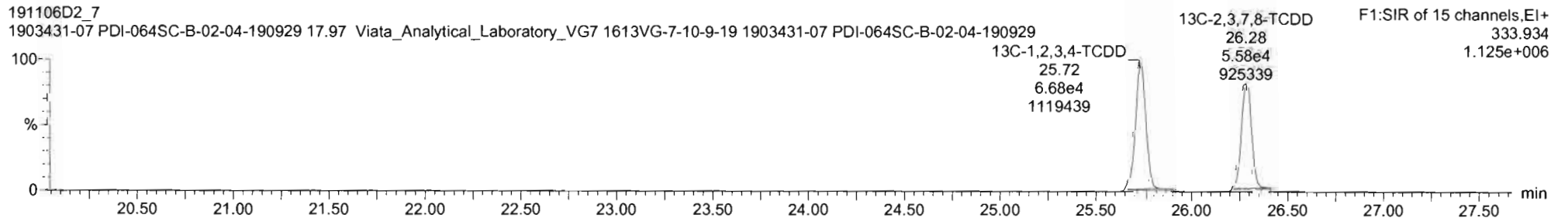
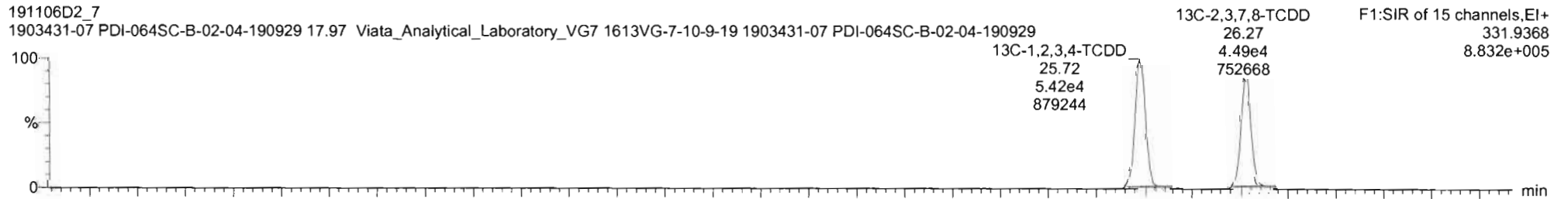
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Total Tetra-Dioxins



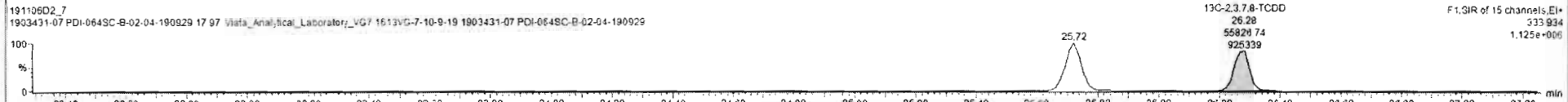
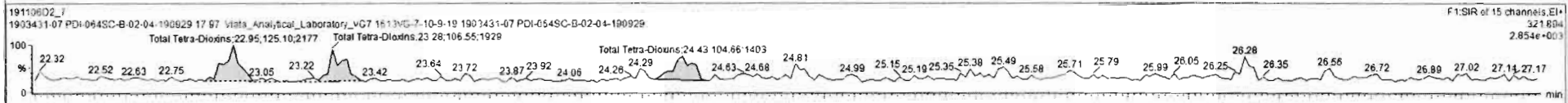
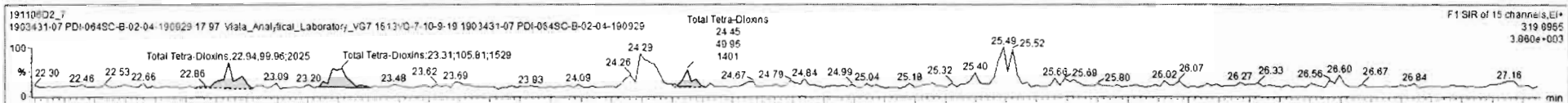
13C-2,3,7,8-TCDD



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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
34	13C-OCDF	1.17e5	1.35e5	38	0.85	NO	0.689	10.242	41.42	41.44	1.234	1.233	NO	245.6	62.9	0.487	
35	37Cl-2,3,7,8-TCDD	4.11e4	1.21e5	36			1.198	10.242	26.26	26.30	1.022	1.022	NO	55.41	70.9	0.153	
36	13C-1,2,3,4-TCDD	1.21e5	1.21e5	36	0.81	NO	1.000	10.242	25.70	25.72	1.000	1.000	NO	195.3	100	0.471	
37	13C-1,2,3,4-TCDF	1.91e5	1.91e5	37	0.79	NO	1.000	10.242	24.28	24.31	1.000	1.000	NO	195.3	100	0.467	
38	13C-1,2,3,4,6,9-HxCDF	1.35e5	1.35e5	38	0.52	NO	1.000	10.242	33.55	33.58	1.000	1.000	NO	195.3	100	0.796	
39	Total Tetra-Dioxins		1.01e5				0.901	10.242	25.50			0.000	NO	0.4841		0.252	1.137
40	Total Penta-Dioxins		9.11e4				0.872	10.242	30.00			0.000	NO	0.0000		0.0920	1.121
41	Total Hexa-Dioxins		0.00e0				0.978	10.242	33.80			0.000	NO	1.238		0.320	2.001
42	Total Hepta-Dioxins		7.38e4				0.889	10.242	37.75			0.000	NO	2.769		0.320	4.589
43	Total Tetra-Furans		1.45e5				0.943	10.242	24.00			0.000	NO	1.740		0.249	3.034

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	22.94	8.995e1	1.251e2	0.770	0.80	NO	0.46414	0.48414
2	39 Total Tetra-Dioxins	25.50	23.31	1.058e2	1.065e2	0.770	0.99	YES	0.40569	0.00000
3	39 Total Tetra-Dioxins	25.50	24.45	4.956e1	1.047e2	0.770	0.48	YES	0.24703	0.00000



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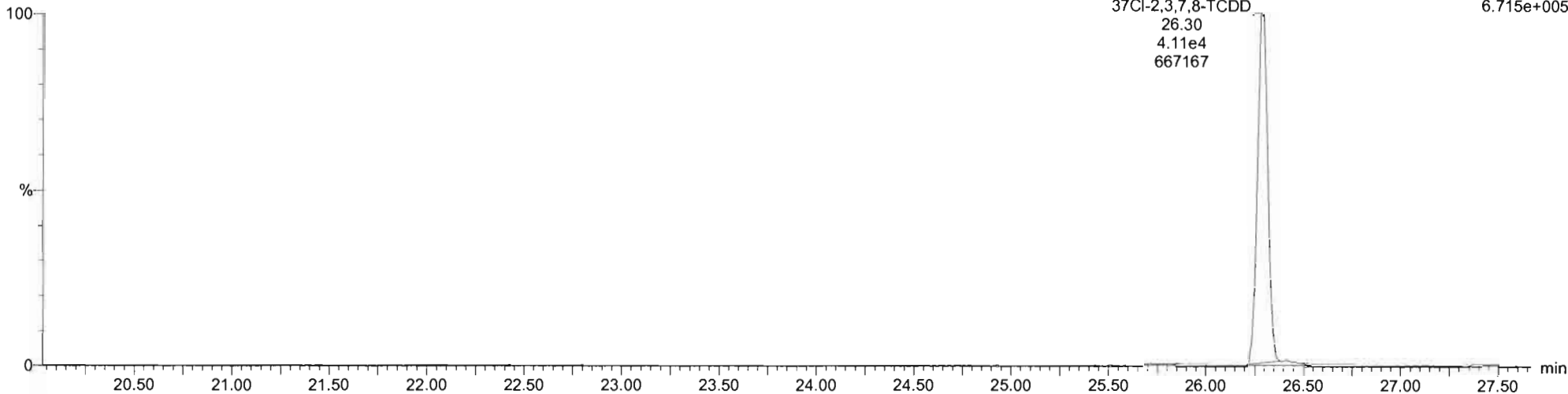
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37Cl-2,3,7,8-TCDD

191106D2_7
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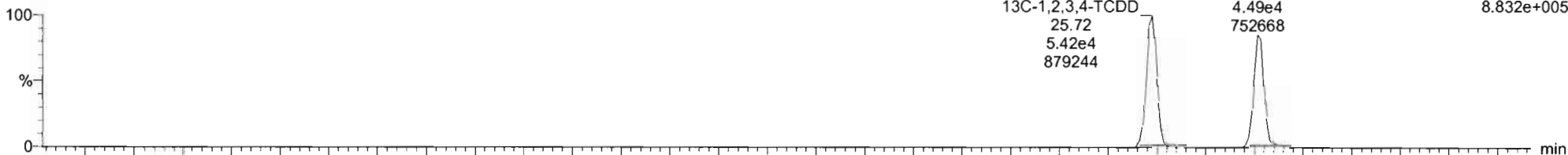
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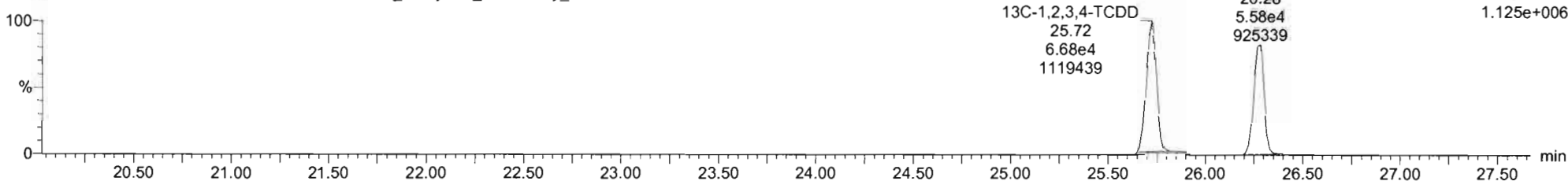
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F1:SIR of 15 channels,EI+
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191106D2_7
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F1:SIR of 15 channels,EI+
333.934
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Vista Analytical Laboratory

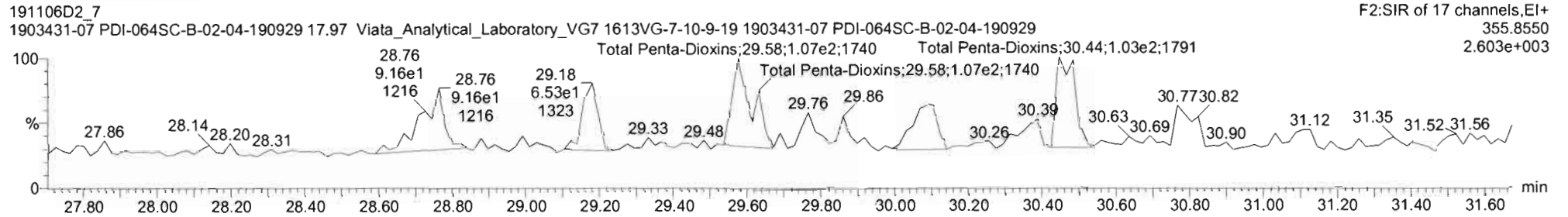
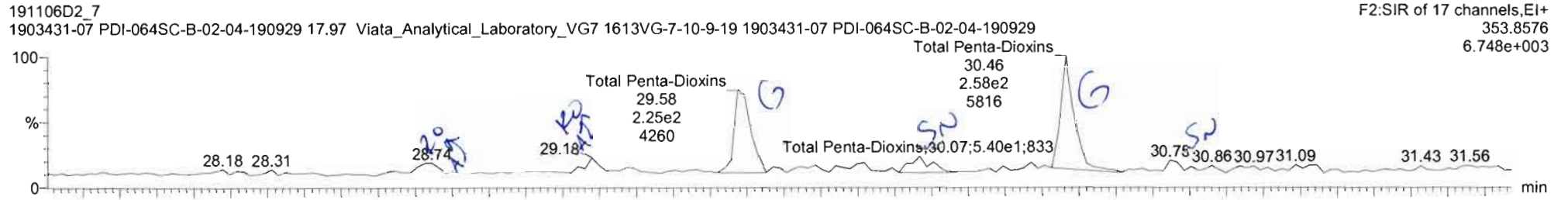
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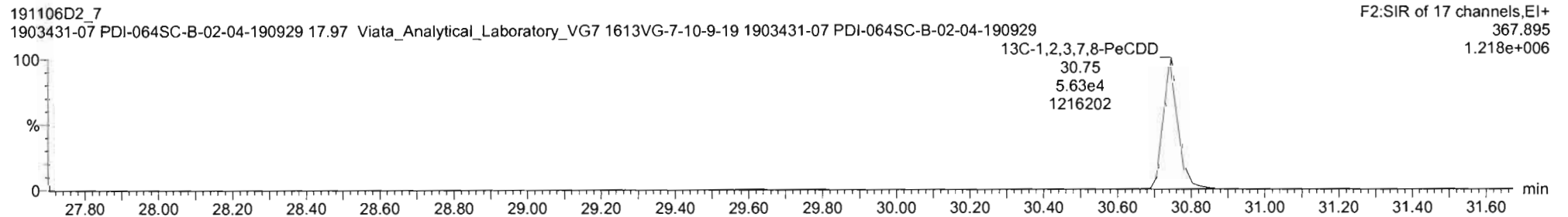
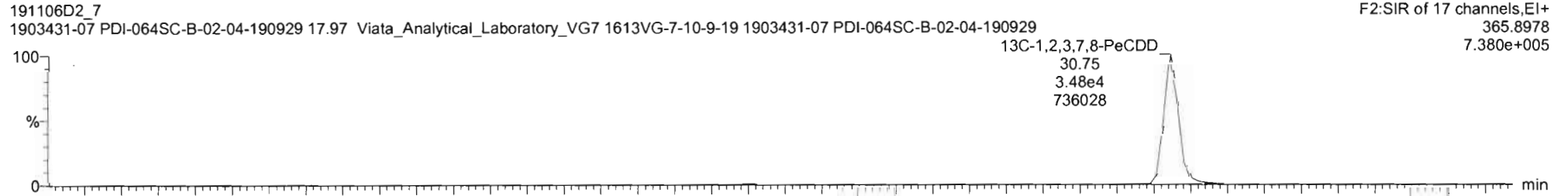
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Total Penta-Dioxins

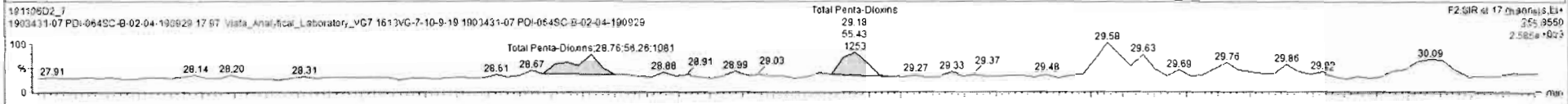
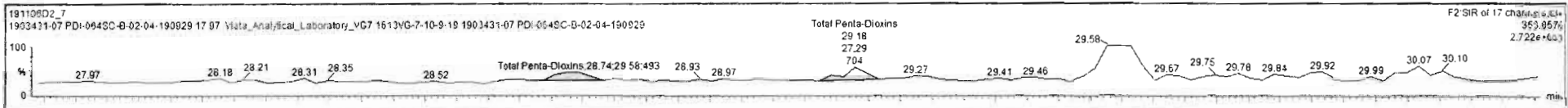


13C-1,2,3,7,8-PeCDD



#	Name	Resp	IS Resp	ISE	RA	nly	RRF	wtvol	Pred RT	RT	RRT	Pred.RRT	Check.RRT	Conc.	%Rec	DL	EMPC
34	13C-OCDF	1.17e5	1.25e5	38	0.85	NO	0.689	10.242	41.42	41.44	1.234	1.233	NO	245.6	62.9	0.467	
35	37Cl-2,3,7,8-TCDD	4.11e4	1.21e5	36			1.198	10.242	26.29	26.30	1.022	1.022	NO	55.41	70.9	0.153	
36	13C-1,2,3,4-TCDD	1.21e5	1.21e5	36	0.81	NO	1.000	10.242	25.70	25.72	1.000	1.000	NO	195.3	100	0.471	
37	13C-1,2,3,4-TCDF	1.91e5	1.91e5	37	0.79	NO	1.000	10.242	24.28	24.31	1.000	1.000	NO	195.3	100	0.467	
38	13C-1,2,3,4,6,9-hxCDF	1.35e5	1.35e5	38	0.52	NO	1.000	10.242	33.55	33.58	1.000	1.000	NO	195.3	100	0.796	
39	Total Tetra-Dioxins		1.01e5				0.901	10.242	25.50				NO	0.4841		0.252	1.137
40	Total Penta-Dioxins		9.11e4				0.872	10.242	30.00				NO	0.0000		0.0920	0.3616
41	Total Hexa-Dioxins		0.00e0				0.976	10.242	33.60				NO	1.238		0.326	2.001
42	Total Hepta-Dioxins		7.38e4				0.989	10.242	37.75				NO	2.769		0.320	4.559
43	Total Tetra-Furans		1.49e5				0.943	10.242	24.00				NO	1.740		0.249	3.034

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	40 Total Penta-Dioxins	30.00	28.74	2.958e1	5.625e1	0.630	0.53	YES	0.16809	0.00000
2	40 Total Penta-Dioxins	30.00	29.18	2.729e1	5.543e1	0.630	0.49	YES	0.17348	0.00000



Vista Analytical Laboratory

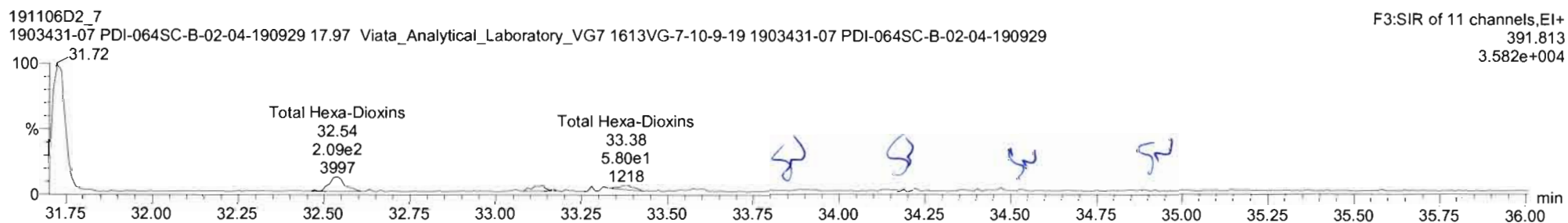
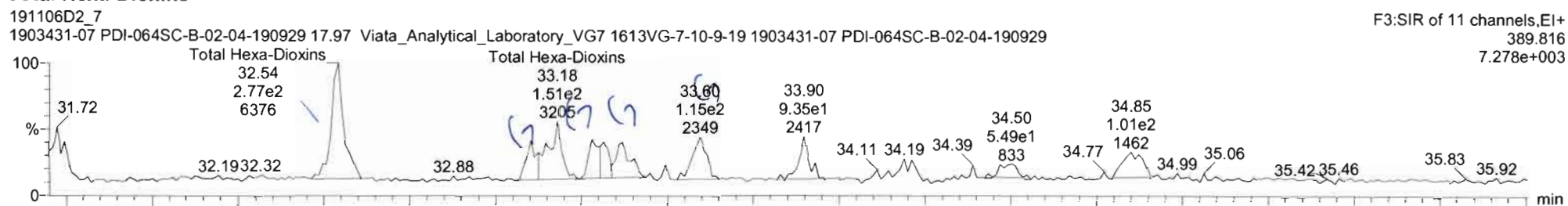
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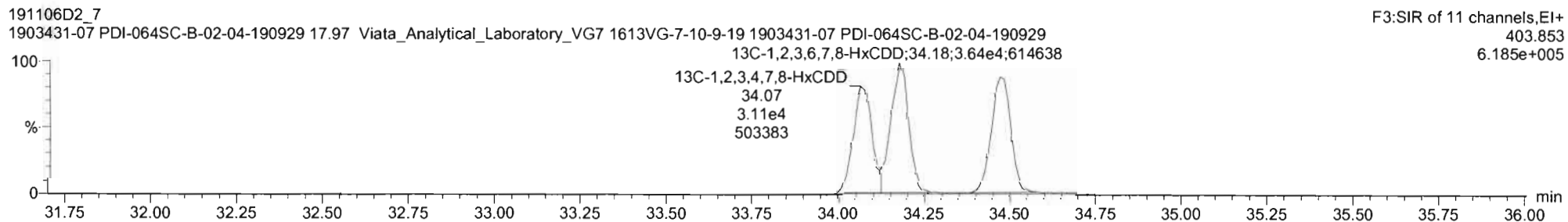
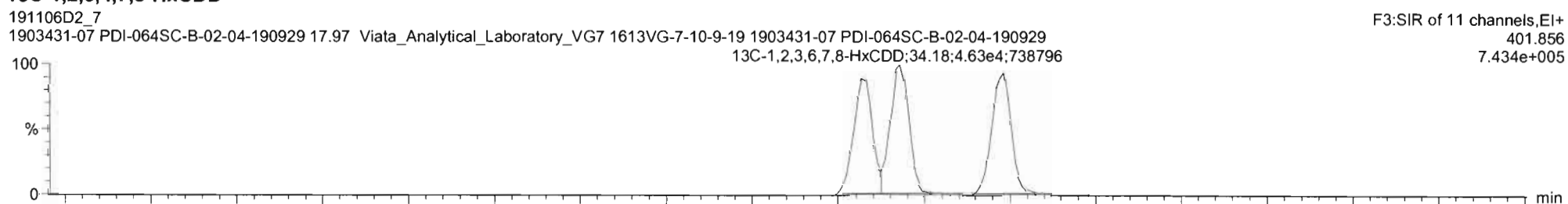
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Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Hexa-Dioxins

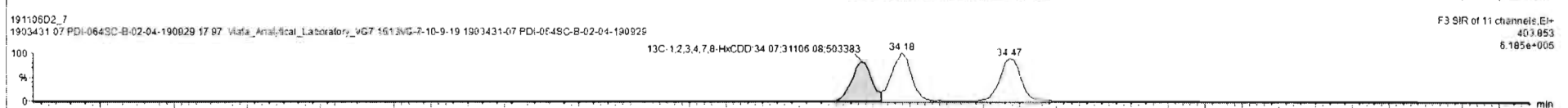
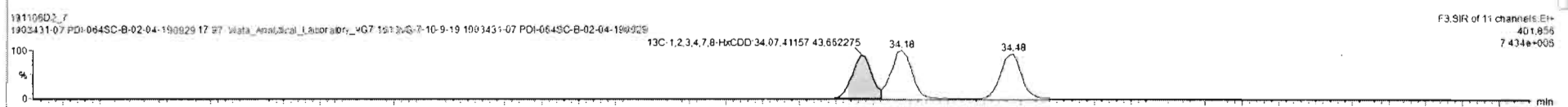
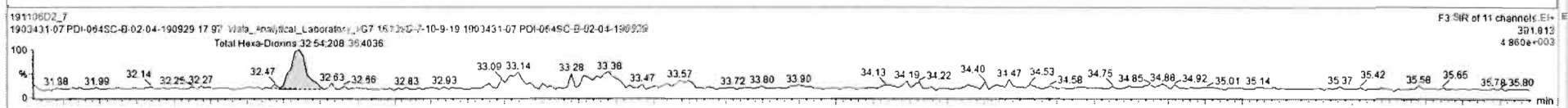
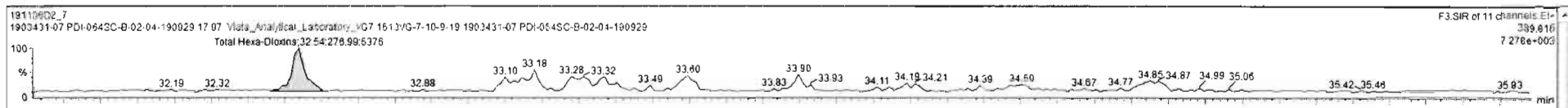


13C-1,2,3,4,7,8-HxCDD



#	Name	Resp	B Resp	ES	RA	n/y	RP	withol	Pred RT	RT	IRT	Pred IRT	Check IRT	Conc	%Rec	DL	EMPC
34	34 13C-OCDF	1.17e5	1.35e5	38	0.85	NO	0.699	10.242	41.42	41.44	1.234	1.233	NO	245.6	62.9	0.467	
35	35 37Cl-2,3,7,8-TCDD	4.11e4	1.21e5	36			1.198	10.242	26.29	26.30	1.022	1.022	NO	55.41	70.5	0.163	
36	36 13C-1,2,3,4-TCDD	1.21e5	1.21e5	36	0.81	NO	1.000	10.242	25.70	25.72	1.000	1.000	NO	195.3	100	0.471	
37	37 13C-1,2,3,4-TCDF	1.91e5	1.91e5	37	0.79	NO	1.000	10.242	24.28	24.31	1.000	1.000	NO	195.3	100	0.467	
38	38 13C-1,2,3,4,6,8-HxCDF	1.35e5	1.35e5	38	0.52	NO	1.000	10.242	33.55	33.58	1.000	1.000	NO	195.3	100	0.796	
39	39 Total Tetra-Dioxins		1.01e5				0.901	10.242	25.50			0.000	NO	0.4841	0.252	1.137	
40	40 Total Penta-Dioxins		9.11e4				0.872	10.242	30.00			0.000	NO	0.0000	0.0920	0.3816	
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.242	33.80			0.000	NO	1.238	0.320	1.238	
42	42 Total Hepta-Dioxins		7.36e4				0.989	10.242	37.75			0.000	NO	2.769	0.320	4.599	
43	43 Total Tetra-Furans		1.48e5				0.543	10.242	24.00			0.000	NO	1.740	0.249	3.034	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	41 Total Hexa-Dioxins	33.80	32.54	2.770e2	2.084e2	1.240	1.33	NO	1.2376	1.2376



Vista Analytical Laboratory

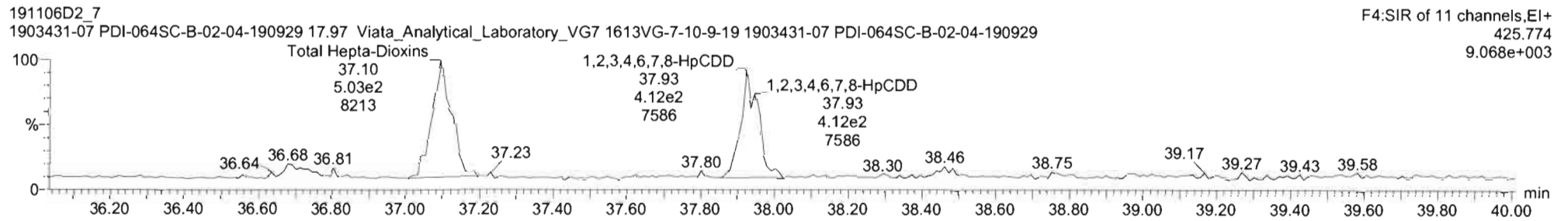
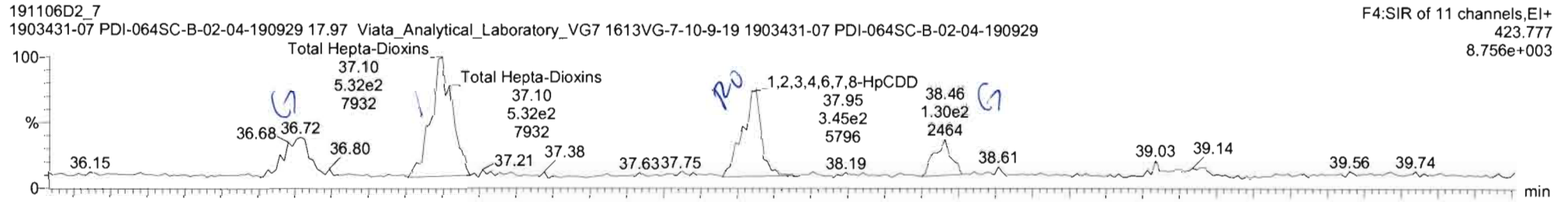
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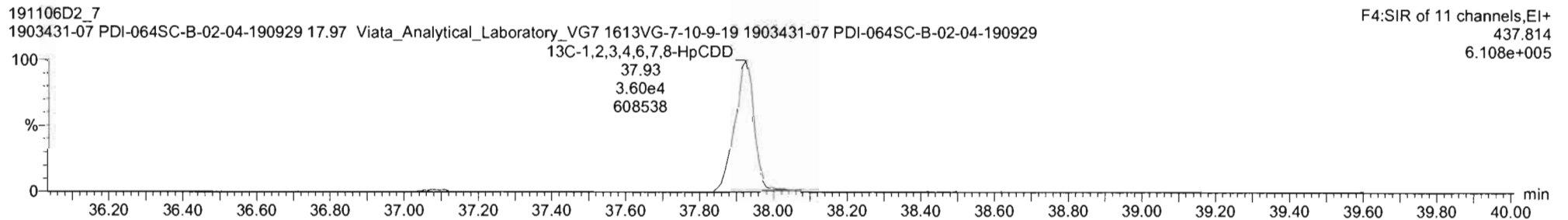
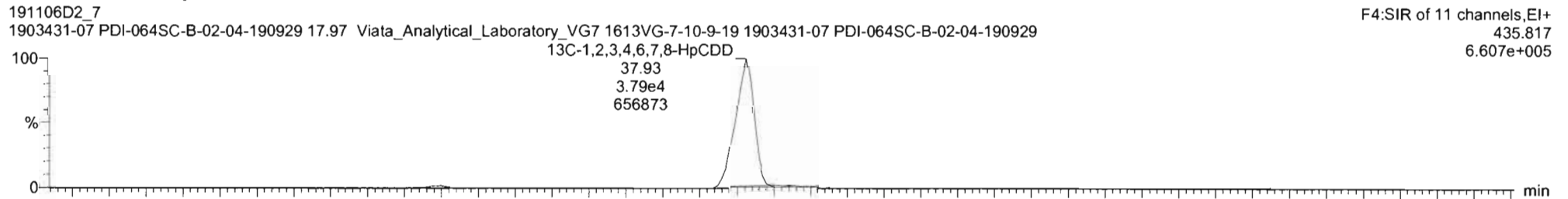
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Total Hepta-Dioxins



13C-1,2,3,4,6,7,8-HpCDD



Vista Analytical Laboratory

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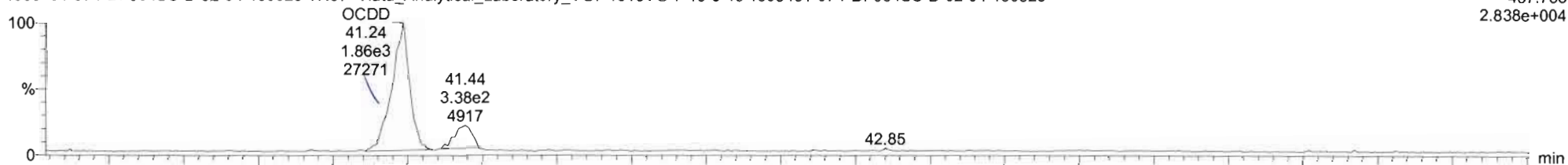
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OCDD

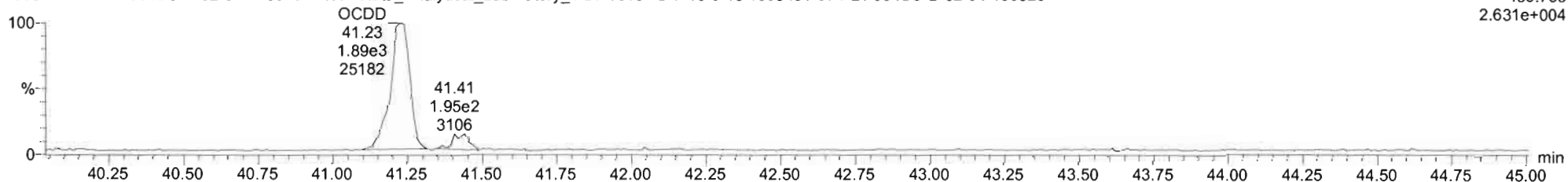
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F5:SIR of 11 channels,EI+
457.738
2.838e+004



191106D2_7
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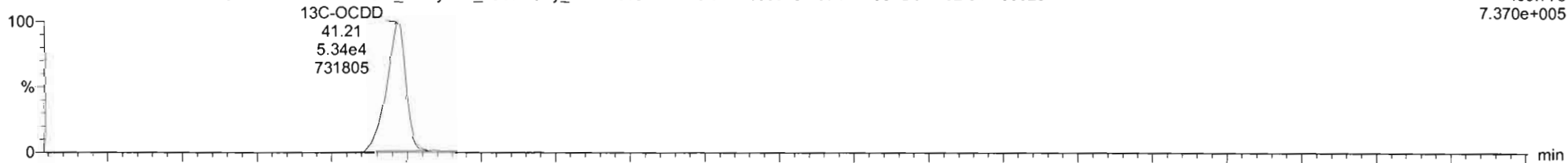
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13C-OCDD

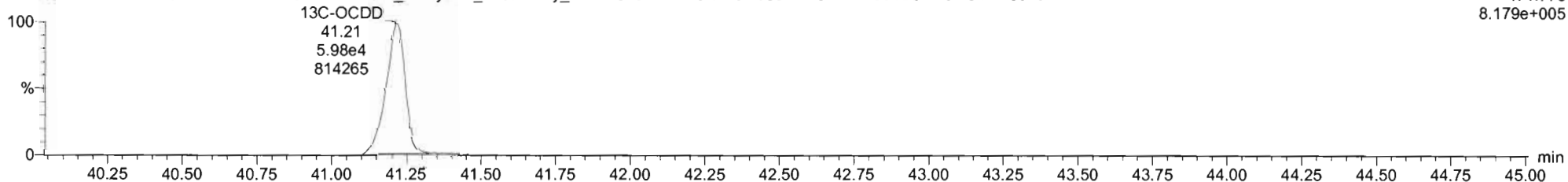
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191106D2_7
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F5:SIR of 11 channels,EI+
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Vista Analytical Laboratory

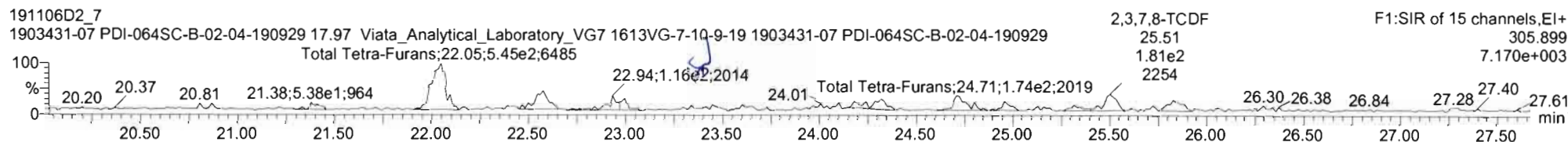
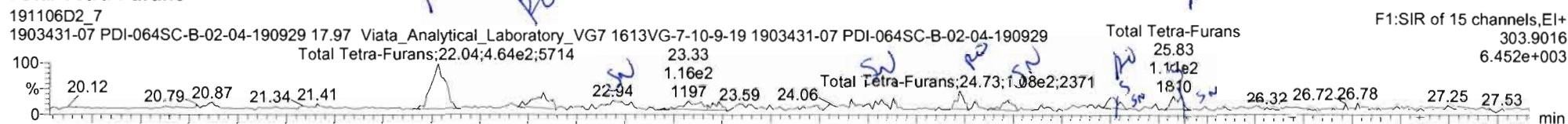
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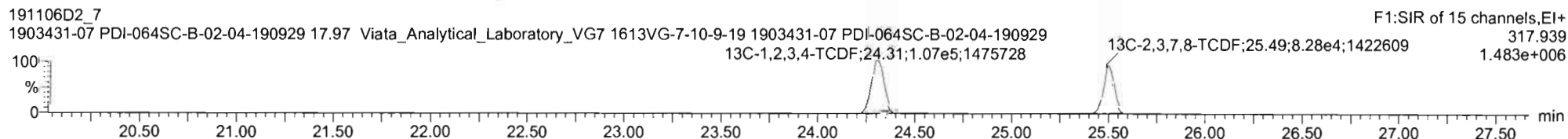
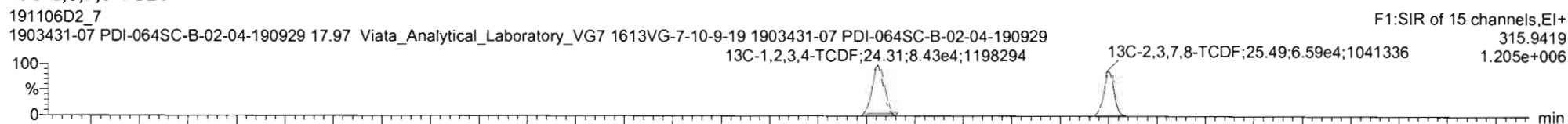
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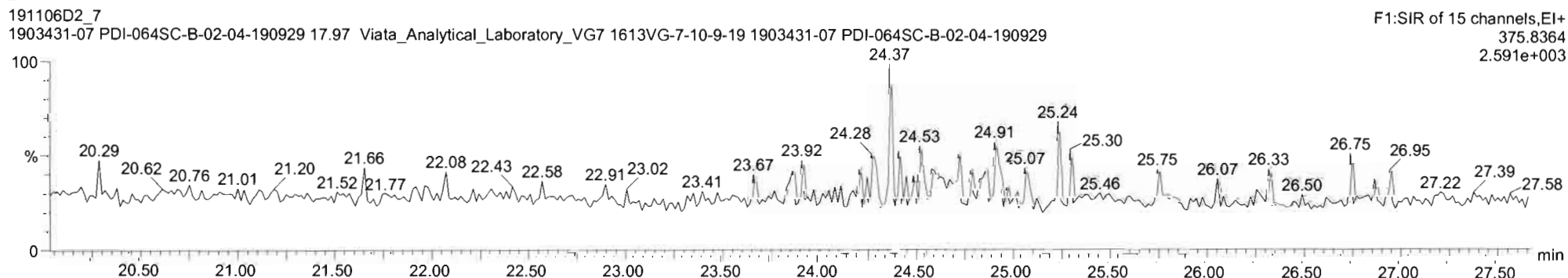
Total Tetra-Furans



13C-2,3,7,8-TCDF

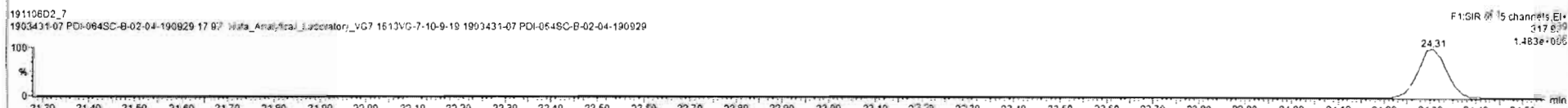
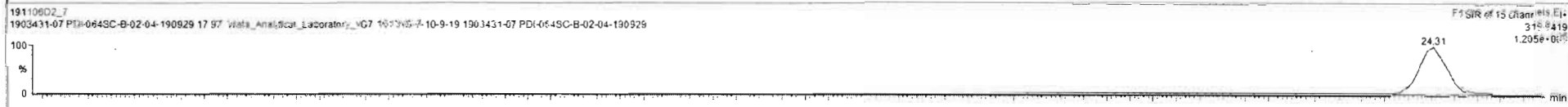
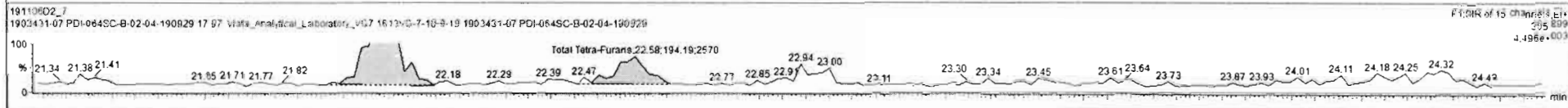
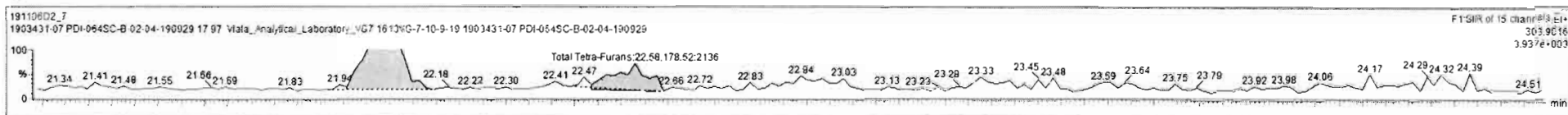


DPE1



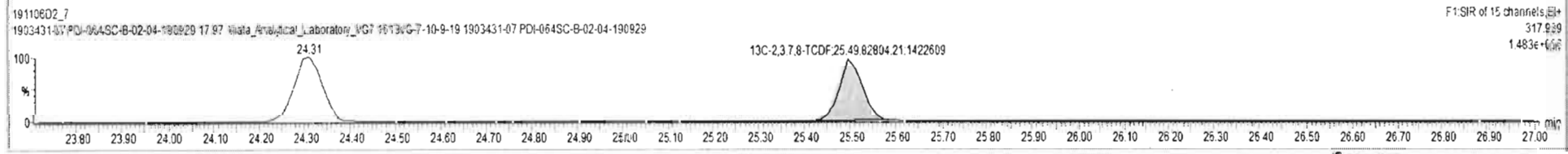
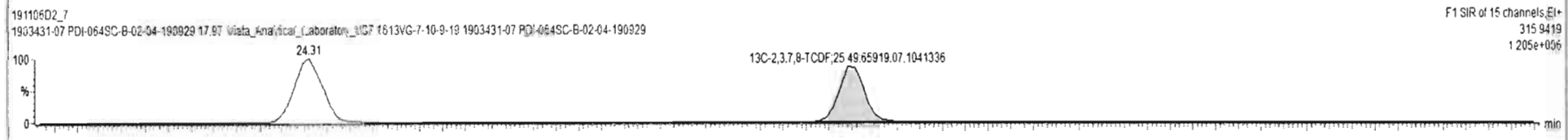
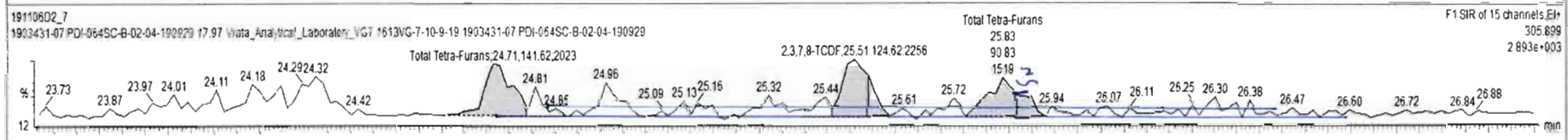
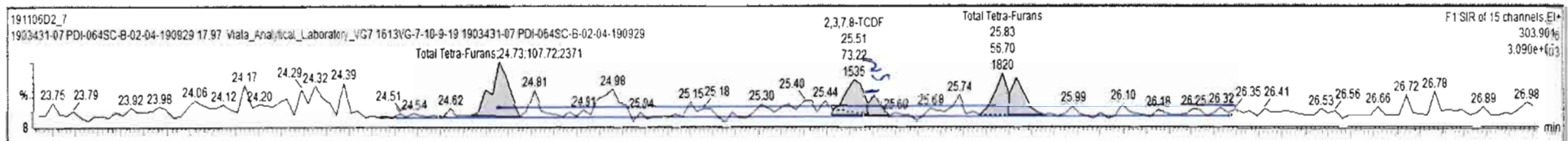
#	Name	Resp	IS Resp	IS#	RA	n/y	RFV	wt/vol	Pred.RT	RT	BRT	Pred.BRT	Check BRT	Conc	%Rec	DL	EMPC
34	13C-OCDF	1.17e5	1.35e5	38	9.85	NO	0.889	10.242	41.42	41.44	1.234	1.233	NO	245.8	62.9	0.467	
35	37Cl-2,3,7,8-TCDD	4.11e4	1.21e5	36			1.196	10.242	26.29	26.30	1.022	1.022	NO	55.41	70.9	0.163	
36	13C-1,2,3,4-TCDD	1.21e5	1.21e5	36	0.81	NO	1.009	10.242	25.70	25.72	1.000	1.000	NO	195.3	150	0.471	
37	13C-1,2,3,4-TCDF	1.91e5	1.91e5	37	0.79	NO	1.000	10.242	24.28	24.31	1.000	1.000	NO	195.3	100	0.467	
38	13C-1,2,3,4,6,8-HxCDF	1.35e5	1.35e5	38	0.52	NO	1.000	10.242	33.55	33.58	1.000	1.000	NO	195.3	100	0.796	
39	Total Tetra-Dioxins	1.01e5					0.901	10.242	25.50			0.000	NO	0.4841		0.252	1.137
40	Total Penta-Dioxins	9.11e4					0.872	10.242	30.00			0.000	NO	0.0000		0.0920	0.3616
41	Total Hexa-Dioxins	0.00e0					0.976	10.242	33.60			0.000	NO	1.238		0.320	1.238
42	Total Hepta-Dioxins	7.38e4					0.989	10.242	37.75			0.000	NO	2.769		0.320	4.599
43	Total Tetra-Furans	1.49e5					0.943	10.242	24.00			0.000	NO	2.079		0.249	3.066

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	22.04	4.513e2	5.450e2	0.770	0.83	NO	1.3875	1.3875
2	43 Total Tetra-Furans	24.00	22.56	1.785e2	1.942e2	0.770	0.92	YES	0.47867	0.00000
3	43 Total Tetra-Furans	24.00	24.73	1.077e2	1.418e2	0.770	0.76	NO	0.34725	0.00000
4	43 Total Tetra-Furans	24.00	24.56	7.161e1	6.511e1	0.770	1.10	YES	0.16049	0.00000
5	8 2,3,7,8-TCDF	25.52	25.51	1.043e2	1.543e2	0.770	0.87	NO	0.35699	0.35699
6	43 Total Tetra-Furans	24.00	25.83	1.107e2	1.296e2	0.770	0.85	NO	0.32469	0.32469



#	Name	Resp	IS Resp	IS#	RA	nly	RRF	w/wol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
34	13C-OCDF	1.17e5	1.35e5	38	0.65	NO	0.689	10.242	41.42	41.44	1.224	1.233	NO	245.6	62.9	0.487	
35	37C-2,3,7,8-TCDD	<1.1e4	1.21e5	36			1.198	10.242	26.29	26.30	1.022	1.022	NO	55.41	70.9	0.163	
36	13C-1,2,3,4-TCDD	1.21e5	1.21e5	36	0.81	NO	1.000	10.242	25.70	25.72	1.000	1.000	NO	195.3	100	0.471	
37	13C-1,2,3,4-TCDF	1.91e5	1.91e5	37	0.79	NO	1.000	10.242	24.28	24.31	1.000	1.000	NO	195.3	100	0.487	
38	13C-1,2,3,4,6,8-HxCDF	1.35e5	1.35e5	38	0.52	NO	1.000	10.242	33.55	33.58	1.000	1.000	NO	195.3	100	0.796	
39	Total Tetra-Dioxins		1.01e5				0.501	10.242	25.50			0.000	NO	0.4941		0.252	1.137
40	Total Penta-Dioxins		9.11e4				0.872	10.242	30.00			0.000	NO	0.0600		0.0920	0.361E
41	Total Hexa-Dioxins		0.00e0				0.976	10.242	33.80			0.000	NO	1.238		0.320	1.238
42	Total Hepta-Dioxins		7.38e4				0.989	10.242	37.75			0.000	NO	2.769		0.320	4.599
43	Total Tetra-Furans		1.49e5				0.943	10.242	24.00			0.000	NO	1.735		0.249	2.861

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	22.04	4.513e2	5.450e2	0.770	0.83	NO	1.3875	1.3875
2	43 Total Tetra-Furans	24.00	22.58	1.785e2	1.942e2	0.770	0.92	YES	0.47867	0.00000
3	43 Total Tetra-Furans	24.00	24.73	1.077e2	1.416e2	0.770	0.76	NO	0.34725	0.34725
4	8 2,3,7,8-TCDF	25.52	25.51	7.322e1	1.246e2	0.770	0.59	YES	0.23259	0.00000
5	43 Total Tetra-Furans	24.00	25.55	2.673e1	2.968e1	0.770	0.90	YES	0.073152	0.00000
6	43 Total Tetra-Furans	24.00	25.83	5.670e1	9.083e1	0.770	0.62	YES	0.18153	0.00000
7	43 Total Tetra-Furans	24.00	25.86	5.582e1	4.062e1	0.770	1.37	YES	0.10013	0.00000



Vista Analytical Laboratory

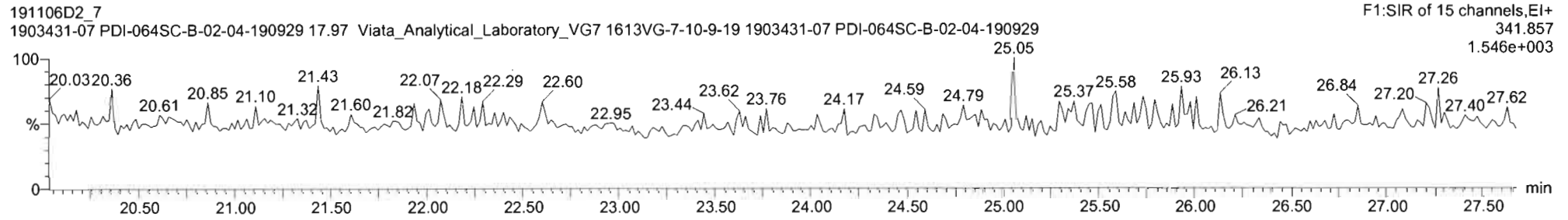
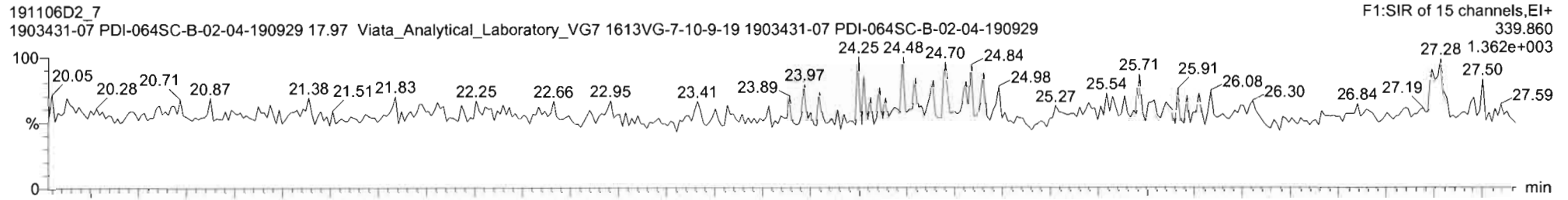
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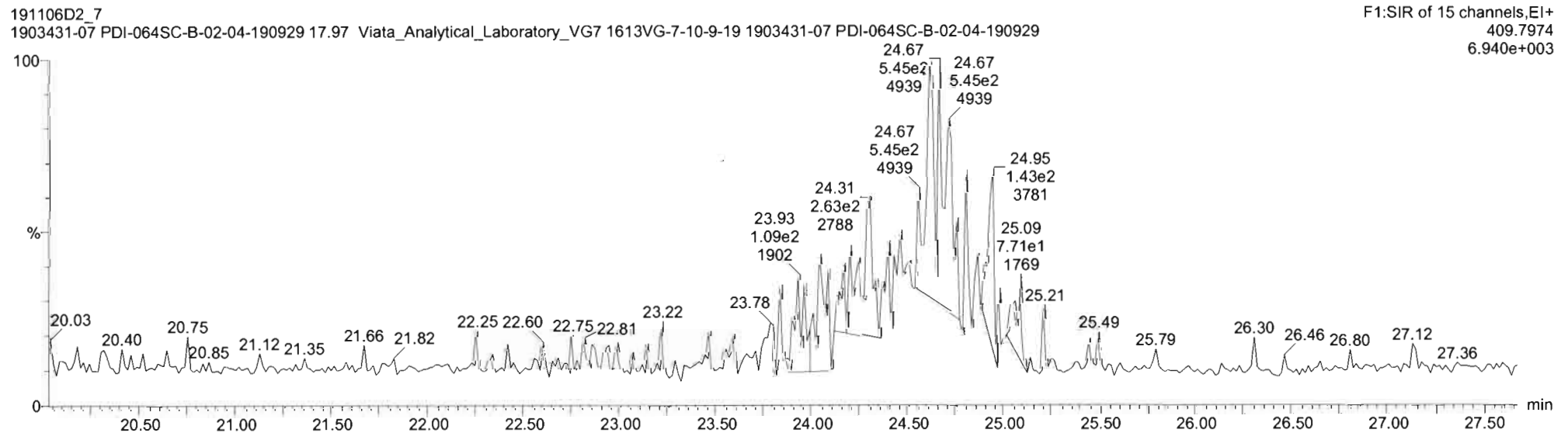
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Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

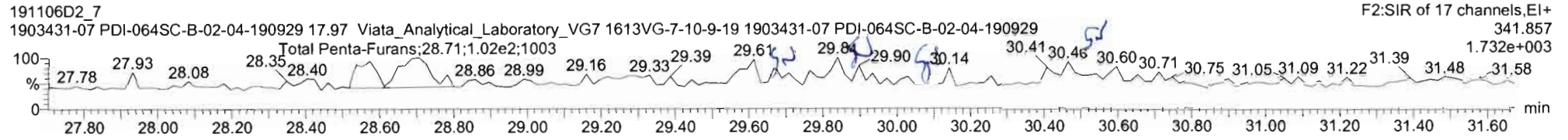
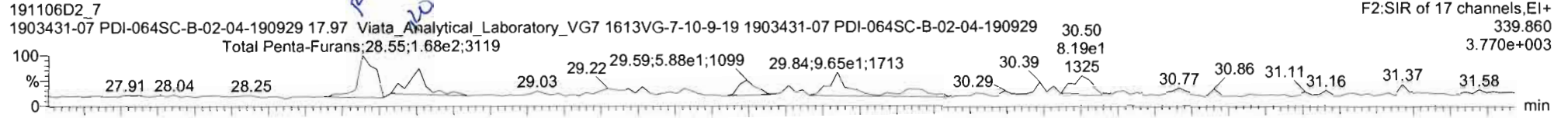
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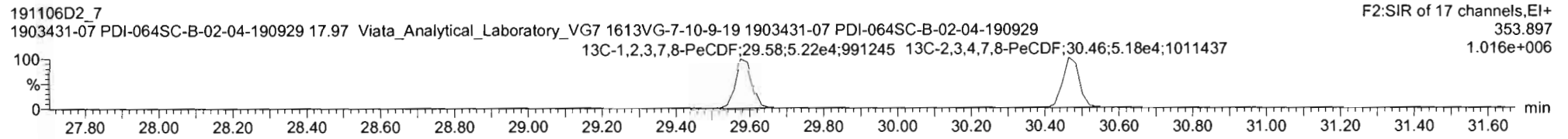
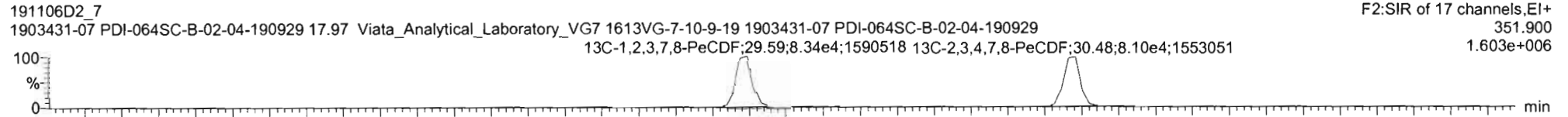
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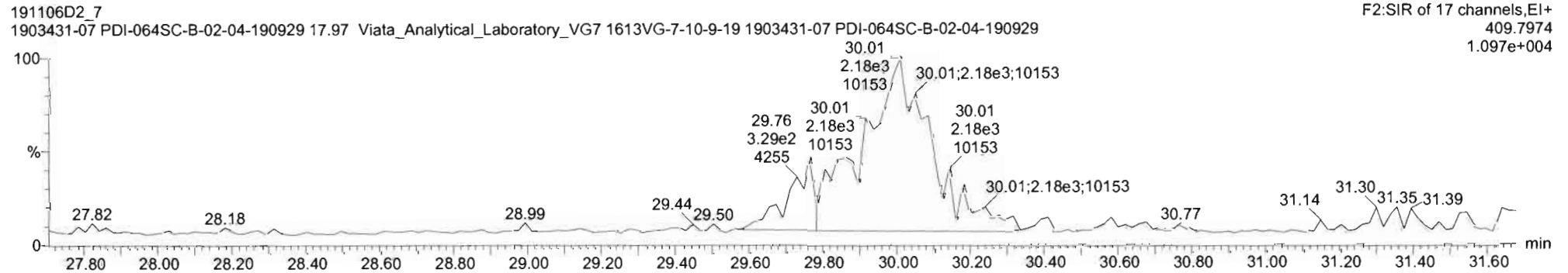
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

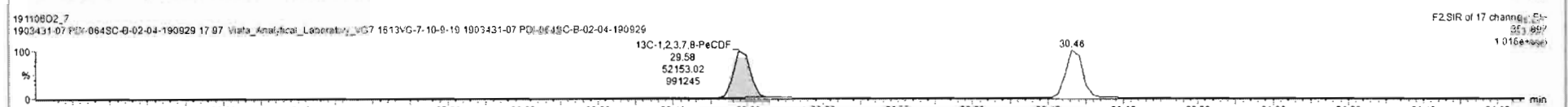
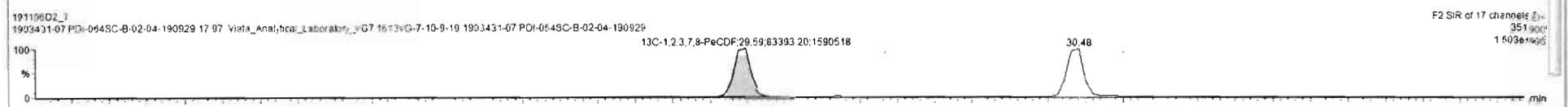
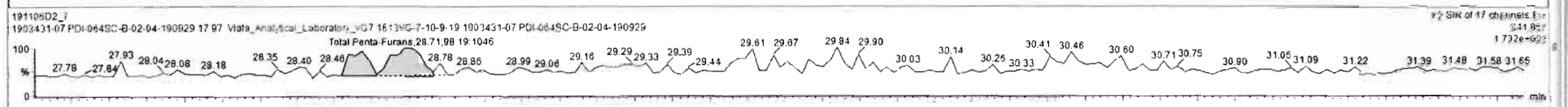
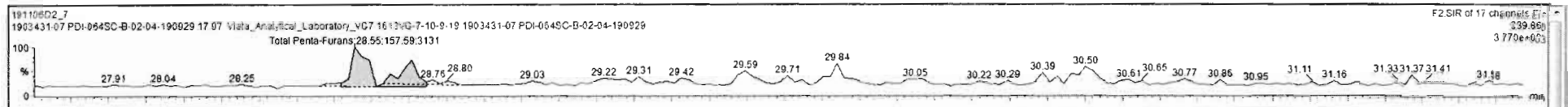


DPE2



#	Name	Resp	IS Resp	IS	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
45	45 Total Penta-Furans		0.00e0				0.940	10.242	30.00			0.000	NO	0.0000	0.0770	0.5386	
46	46 Total Hexa-Furans		0.00e0				1.078	10.242	33.00			0.000	NO		0.100		
47	47 Total Hepta-Furans		0.00e0				1.135	10.242	37.75			0.000	NO		0.112		
48	48 PFK1																
49	49 PFK2																
50	50 PFK3																
51	51 PFK4																
52	52 PFK5																
53	53 DPE1																
54	54 DPE2																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	45 Total Penta-Furans	30.00	28.55	1.576e2	5.683e1	1.550	2.77	YES	0.22445	0.00000
2	45 Total Penta-Furans	30.00	28.71	1.225e2	9.619e1	1.550	1.25	YES	0.31220	0.00000



Vista Analytical Laboratory

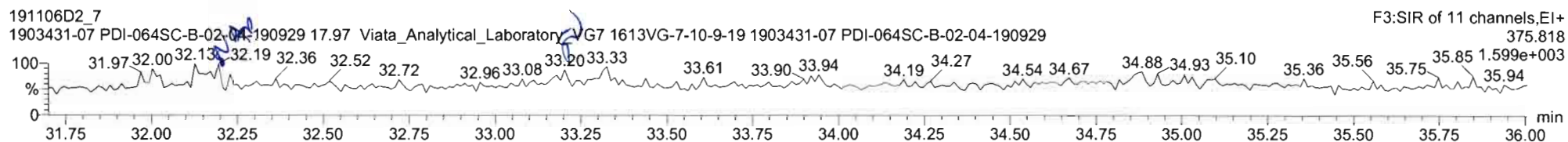
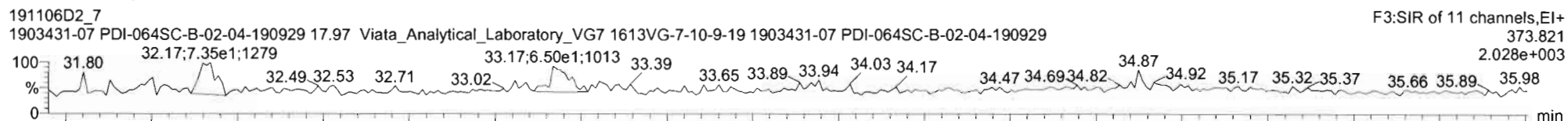
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Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

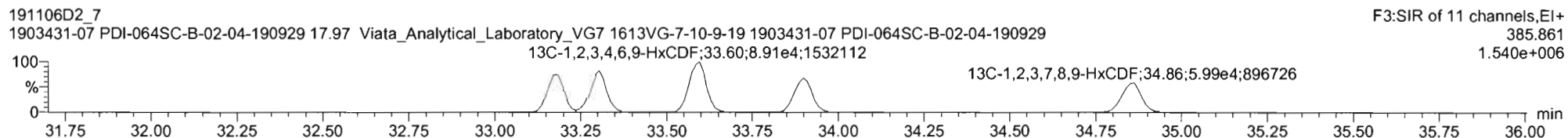
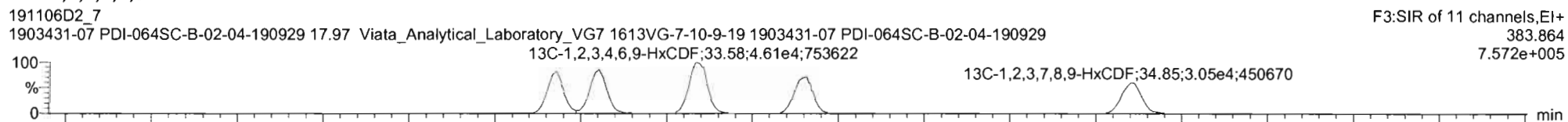
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Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

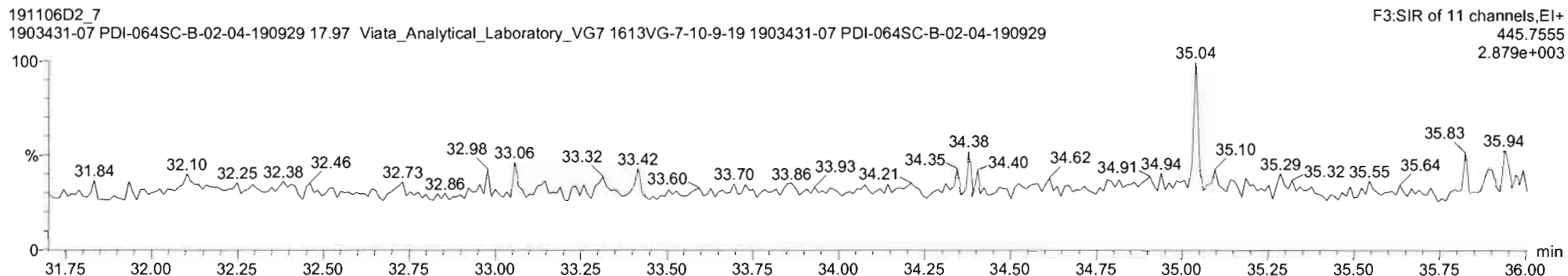
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

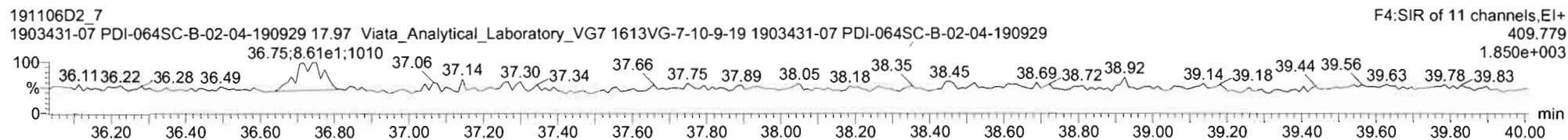
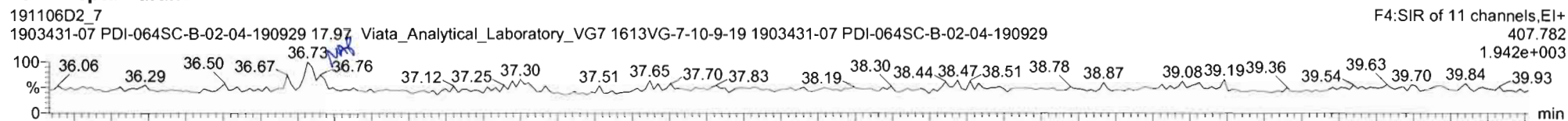
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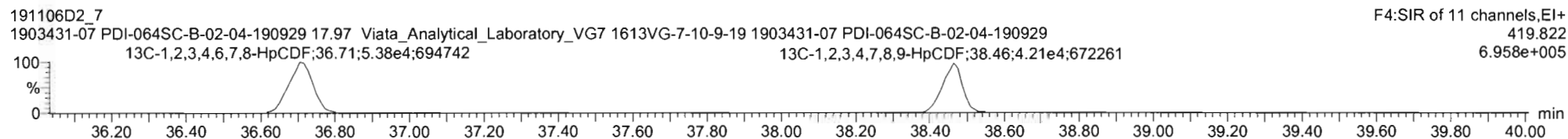
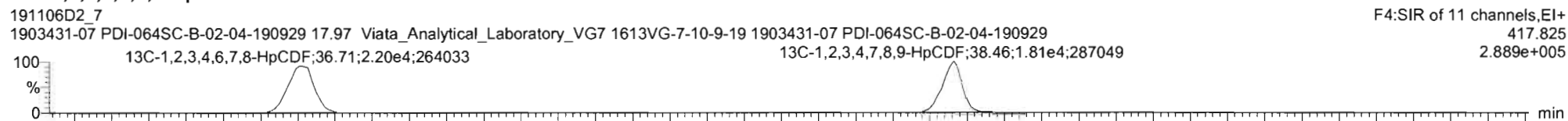
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Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

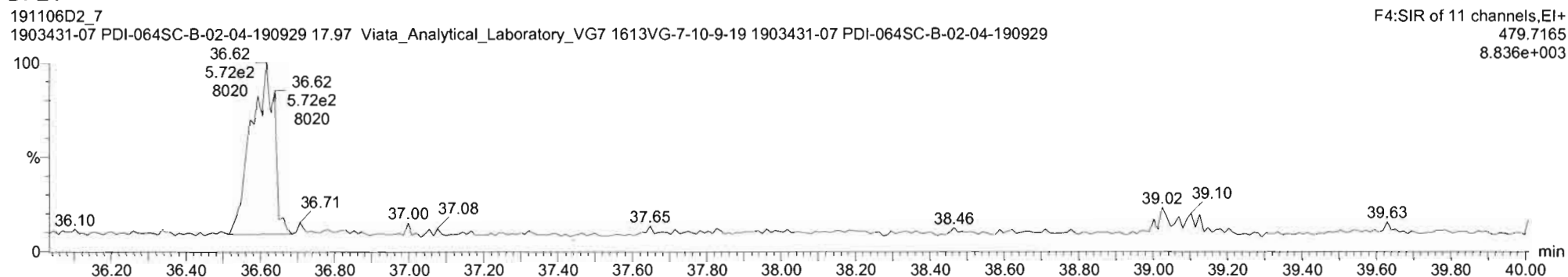
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

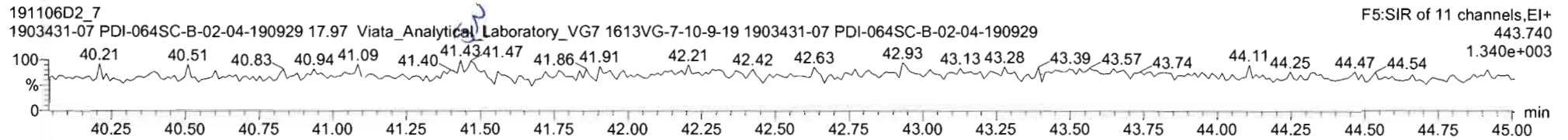
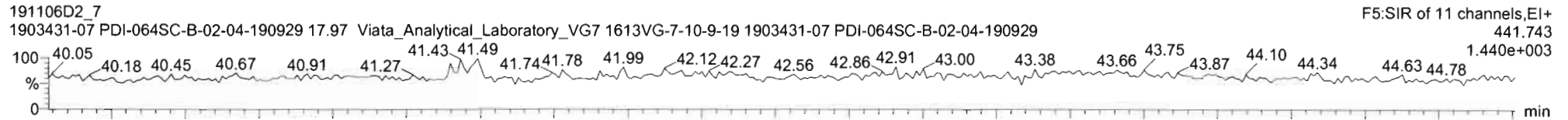
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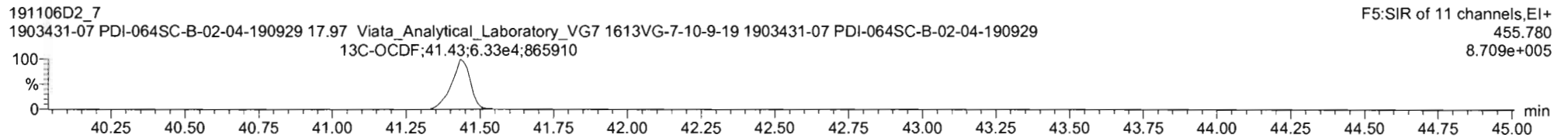
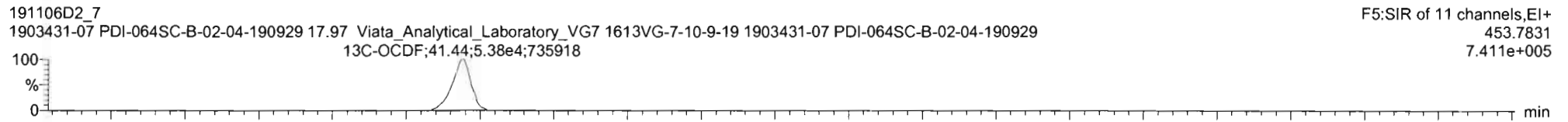
Printed: Wednesday, November 13, 2019 16:04:39 Pacific Standard Time

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Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

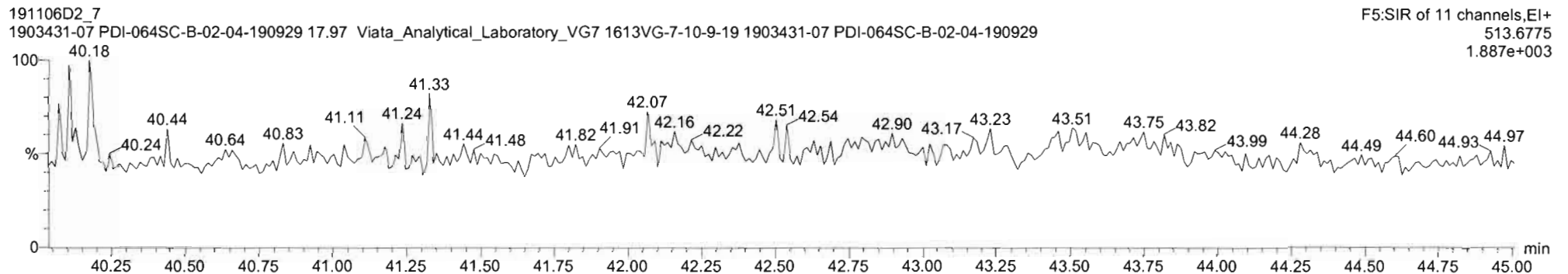
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

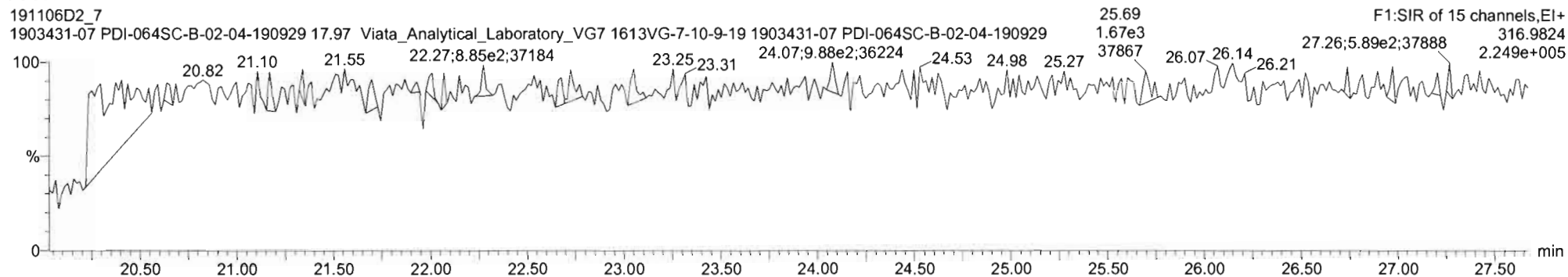
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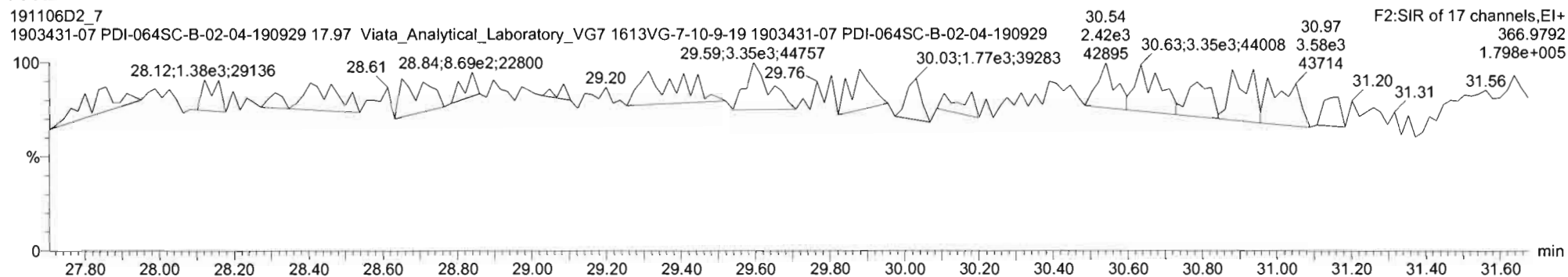
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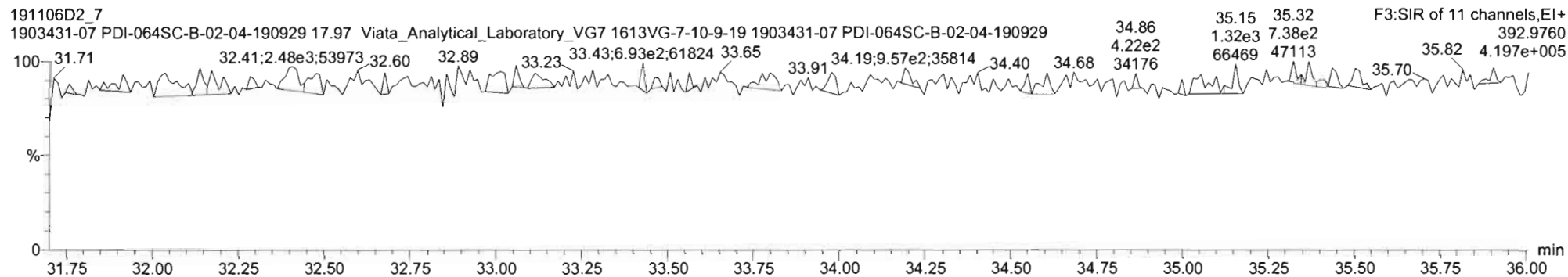
PFK1



PFK2



PFK3



Vista Analytical Laboratory

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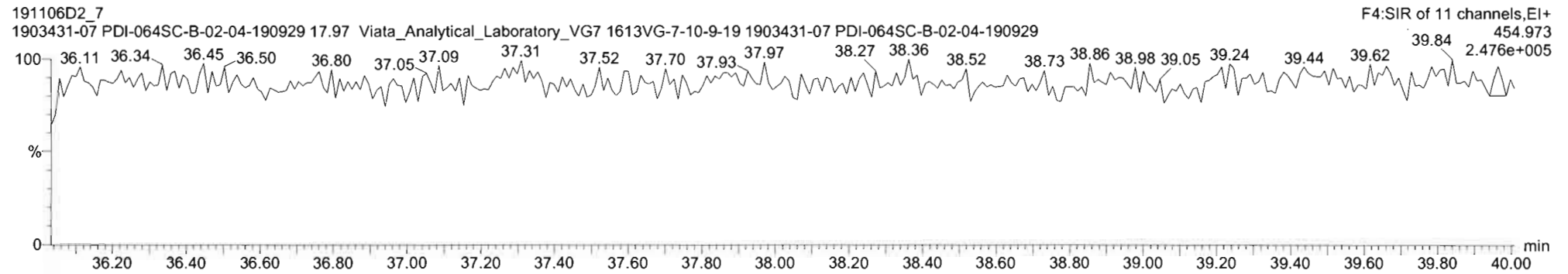
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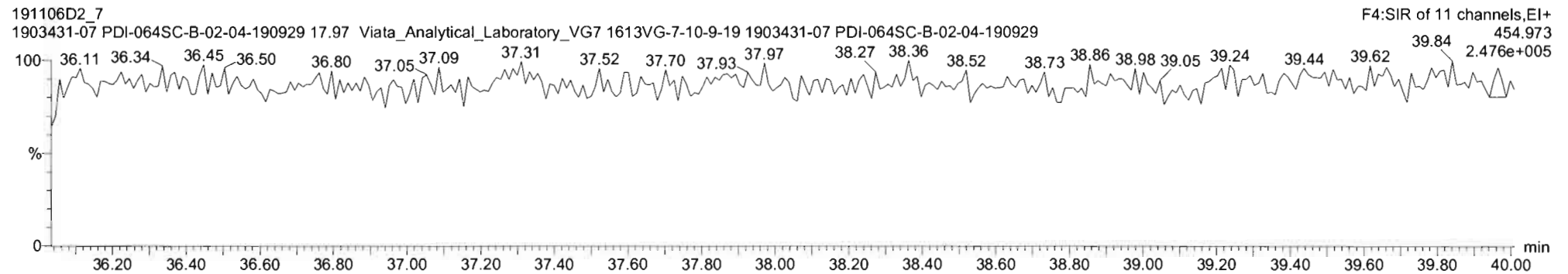
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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

Printed: Wednesday, November 13, 2019 16:04:39 Pacific Standard Time

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Description: 1903431-07 PDI-064SC-B-02-04-190929 17.97 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-8.qld

Last Altered: Thursday, November 14, 2019 07:02:31 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:03:04 Pacific Standard Time

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Method: U:\VG7.pro\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 13_Nov_2019_17:42:44

Name: VG7 191106D2_8, Date: 7-NOV-2019, Time: 05:28:21, ID: 1903431-08 PDI-064SC-B-04-06-190929, Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 ✓

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		1.13e5	10.0292	0.905			1.001		26.29					0.739
2	2 1,2,3,7,8-PeCDD		8.35e4	10.0292	0.903			1.001		30.76					0.549
3	3 1,2,3,4,7,8-HxCDD		7.11e4	10.0292	1.101			1.000		34.08					0.423
4	4 1,2,3,6,7,8-HxCDD		7.78e4	10.0292	0.939			1.000		34.18					0.488
5	5 1,2,3,7,8,9-HxCDD		7.96e4	10.0292	0.961			1.001		34.50					0.449
6	6 1,2,3,4,6,7,8-HpCDD	5.96e2	6.93e4	10.0292	0.979	1.047	NO	1.000	1.000	37.94	37.92	1.7510		1.75	0.335
7	7 OCDD	2.86e3	1.02e5	10.0292	0.959	0.943	NO	1.000	1.000	41.21	41.22	11.627		11.6	0.369
8	8 2,3,7,8-TCDF	2.38e2	1.55e5	10.0292	0.950	0.900	YES	1.001	1.001	25.53	25.52	0.32074		0.299	0.278
9	9 1,2,3,7,8-PeCDF	1.51e2	1.36e5	10.0292	0.960	1.103	YES	1.001	1.000	29.61	29.58	0.23024		0.199	0.243
10	10 2,3,4,7,8-PeCDF	1.25e2	1.27e5	10.0292	1.015	1.229	YES	1.001	1.001	30.50	30.49	0.19284		0.175	0.240
11	11 1,2,3,4,7,8-HxCDF		9.72e4	10.0292	1.177			1.000		33.18					0.196
12	12 1,2,3,6,7,8-HxCDF		1.07e5	10.0292	1.069			1.000		33.31					0.204
13	13 2,3,4,6,7,8-HxCDF		9.87e4	10.0292	1.114			1.001		33.93					0.226
14	14 1,2,3,7,8,9-HxCDF		9.30e4	10.0292	1.062			1.000		34.85					0.262
15	15 1,2,3,4,6,7,8-HpCDF	4.30e2	7.07e4	10.0292	1.128	0.991	NO	1.001	1.000	36.74	36.72	1.0752		1.08	0.285
16	16 1,2,3,4,7,8,9-HpCDF		6.54e4	10.0292	1.280			1.000		38.46					0.231
17	17 OCDF	1.26e3	1.40e5	10.0292	0.947	0.865	NO	1.000	1.001	41.43	41.47	3.8090		3.81	0.325
18	18 13C-2,3,7,8-TCDD	1.13e5	1.36e5	10.0292	1.095	0.776	NO	1.021	1.021	26.26	26.26	151.09	75.8		0.546
19	19 13C-1,2,3,7,8-PeCDD	8.35e4	1.36e5	10.0292	0.881	0.613	NO	1.187	1.195	30.52	30.74	139.04	69.7		0.272
20	20 13C-1,2,3,4,7,8-Hx...	7.11e4	1.39e5	10.0292	0.642	1.326	NO	1.014	1.014	34.05	34.06	158.69	79.6		0.692
21	21 13C-1,2,3,6,7,8-Hx...	7.78e4	1.39e5	10.0292	0.856	1.277	NO	1.017	1.018	34.17	34.18	130.30	65.3		0.520
22	22 13C-1,2,3,7,8,9-Hx...	7.96e4	1.39e5	10.0292	0.807	1.275	NO	1.026	1.026	34.47	34.47	141.44	70.9		0.551
23	23 13C-1,2,3,4,6,7,8-H...	6.93e4	1.39e5	10.0292	0.654	1.076	NO	1.126	1.129	37.82	37.92	151.89	76.2		0.872
24	24 13C-OCDD	1.02e5	1.39e5	10.0292	0.580	0.909	NO	1.226	1.227	41.18	41.21	253.15	63.5		0.509
25	25 13C-2,3,7,8-TCDF	1.55e5	2.04e5	10.0292	1.035	0.785	NO	0.993	0.992	25.55	25.50	146.92	73.7		0.422
26	26 13C-1,2,3,7,8-PeCDF	1.36e5	2.04e5	10.0292	0.854	1.607	NO	1.143	1.150	29.40	29.58	155.44	77.9		1.53
27	27 13C-2,3,4,7,8-PeCDF	1.27e5	2.04e5	10.0292	0.847	1.581	NO	1.176	1.185	30.25	30.47	147.03	73.7		1.55
28	28 13C-1,2,3,4,7,8-Hx...	9.72e4	1.39e5	10.0292	0.832	0.520	NO	0.987	0.988	33.16	33.18	167.59	84.0		0.701
29	29 13C-1,2,3,6,7,8-Hx...	1.07e5	1.39e5	10.0292	1.034	0.510	NO	0.991	0.992	33.27	33.30	148.15	74.3		0.564
30	30 13C-2,3,4,6,7,8-Hx...	9.87e4	1.39e5	10.0292	0.953	0.512	NO	1.009	1.009	33.89	33.90	148.39	74.4		0.612
31	31 13C-1,2,3,7,8,9-Hx...	9.30e4	1.39e5	10.0292	0.828	0.518	NO	1.039	1.038	34.88	34.85	161.06	80.8		0.705

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-8.qld

Last Altered: Thursday, November 14, 2019 07:02:31 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:03:04 Pacific Standard Time

Name: VG7 191106D2_8, Date: 7-NOV-2019, Time: 05:28:21, ID: 1903431-08 PDI-064SC-B-04-06-190929,
 Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	7.07e4	1.39e5	10.0292	0.757	0.404	NO	1.093	1.093	36.70	36.70	133.78	67.1		0.759
33	33 13C-1,2,3,4,7,8,9-H...	6.54e4	1.39e5	10.0292	0.581	0.415	NO	1.143	1.145	38.39	38.46	161.38	80.9		0.989
34	34 13C-OCDF	1.40e5	1.39e5	10.0292	0.689	0.874	NO	1.233	1.234	41.41	41.43	290.91	72.9		0.669
35	35 37Cl-2,3,7,8-TCDD	4.45e4	1.36e5	10.0292	1.198			1.022	1.022	26.28	26.29	54.499	68.3		0.226
36	36 13C-1,2,3,4-TCDD	1.36e5	1.36e5	10.0292	1.000	0.781	NO	1.000	1.000	25.70	25.72	199.42	100.0		0.598
37	37 13C-1,2,3,4-TCDF	2.04e5	2.04e5	10.0292	1.000	0.814	NO	1.000	1.000	24.28	24.30	199.42	100.0		0.437
38	38 13C-1,2,3,4,6,9-Hx...	1.39e5	1.39e5	10.0292	1.000	0.520	NO	1.000	1.000	33.55	33.58	199.42	100.0		0.583
39	39 Total Tetra-Dioxins		1.13e5	10.0292	0.901			0.000		25.50		0.00000		0.637	0.742
40	40 Total Penta-Dioxins		8.35e4	10.0292	0.872			0.000		30.00					0.184
41	41 Total Hexa-Dioxins		0.00e0	10.0292	0.976			0.000		33.80		1.2632		1.26	0.462
42	42 Total Hepta-Dioxins		6.93e4	10.0292	0.989			0.000		37.75		4.4164		4.42	0.332
43	43 Total Tetra-Furans		1.55e5	10.0292	0.943			0.000		24.00		1.9855		3.16	0.280
44	44 1st Func. Penta-Fur...		0.00e0	10.0292	0.940			0.000		27.63		0.23183	> 0.525	0.232	0.303
45	45 Total Penta-Furans		0.00e0	10.0292	0.940			0.000		30.00		0.29294		1.49	0.254
46	46 Total Hexa-Furans		0.00e0	10.0292	1.078			0.000		33.00		0.00000		0.418	0.104
47	47 Total Hepta-Furans		0.00e0	10.0292	1.135			0.000		37.75		1.0752		1.08	0.272

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-8.qld

Last Altered: Thursday, November 14, 2019 07:02:31 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:03:04 Pacific Standard Time

Method: U:\VG7.pro\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 13 Nov 2019 17:42:44

Name: VG7 191106D2_8, Date: 7-NOV-2019, Time: 05:28:21, ID: 1903431-08 PDI-064SC-B-04-06-190929,
 Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	39 Total Tetra-Dioxins	NO	22.95	152.338	49270.336	0.000	MM	0.0000	0.64

Penta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	32.54	250.374	42906.823	12.363	MM	1.2632	1.26

Hepta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	NO	37.92	304.681	35904.207	17.199	bb	1.7510	1.75
2	42 Total Hepta-Dioxins	NO	37.10	482.267	35904.207	26.430	bb	2.6654	2.67

Tetra-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	8 2,3,7,8-TCDF	YES	25.52	112.540	68391.484	0.000	MM	0.0000	0.30
2	43 Total Tetra-Furans	YES	24.74	137.969	68391.484	0.000	bb	0.0000	0.43
3	43 Total Tetra-Furans	NO	24.32	58.332	68391.484	0.000	MM	0.0000	0.19
4	43 Total Tetra-Furans	NO	22.56	190.959	68391.484	5.798	MM	0.6132	0.61
5	43 Total Tetra-Furans	NO	22.00	256.026	68391.484	7.461	bb	0.7891	0.79
6	43 Total Tetra-Furans	NO	25.86	196.098	68391.484	5.515	MM	0.5833	0.58
7	43 Total Tetra-Furans	YES	24.33	122.180	68391.484	0.000	MM	0.0000	0.25

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191106D2\191106D2-8.qld

Last Altered: Thursday, November 14, 2019 07:02:31 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:03:04 Pacific Standard Time

Name: VG7 191106D2_8, Date: 7-NOV-2019, Time: 05:28:21, ID: 1903431-08 PDI-064SC-B-04-06-190929,
 Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	44 1st Func. Penta-Furans	NO	27.27	91.548	80853.114	2.185	bb	0.2318	0.23

Penta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	10 2,3,4,7,8-PeCDF	YES	30.49	68.894	78013.172	0.000	MM	0.0000	0.17
2	45 Total Penta-Furans	YES	30.40	128.846	80853.114	0.000	MM	0.0000	0.19
3	45 Total Penta-Furans	YES	29.83	105.099	80853.114	0.000	MM	0.0000	0.28
4	9 1,2,3,7,8-PeCDF	YES	29.58	78.959	83693.055	0.000	bb	0.0000	0.20
5	45 Total Penta-Furans	NO	28.68	99.382	80853.114	0.000	MM	0.0000	0.25
6	45 Total Penta-Furans	NO	28.58	115.753	80853.114	2.761	MM	0.2929	0.29
7	45 Total Penta-Furans	YES	28.64	39.334	80853.114	0.000	MM	0.0000	0.10

Hexa-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	46 Total Hexa-Furans	YES	32.17	123.792	33624.666	0.000	MM	0.0000	0.42

Hepta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	15 1,2,3,4,6,7,8-HpCDF	NO	36.72	213.836	20332.568	12.159	MM	1.0752	1.08

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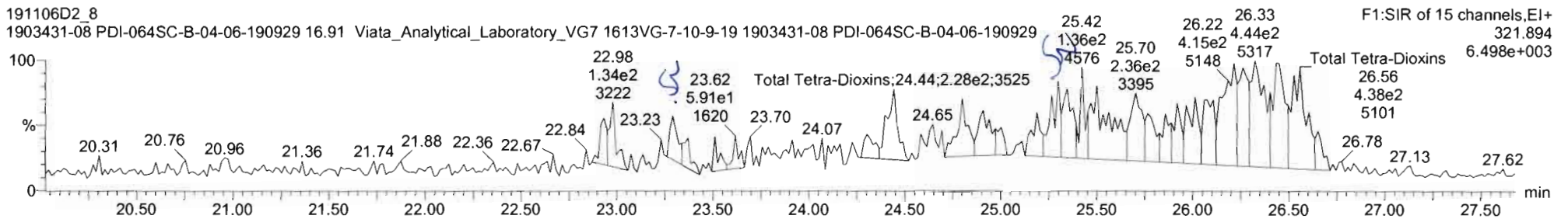
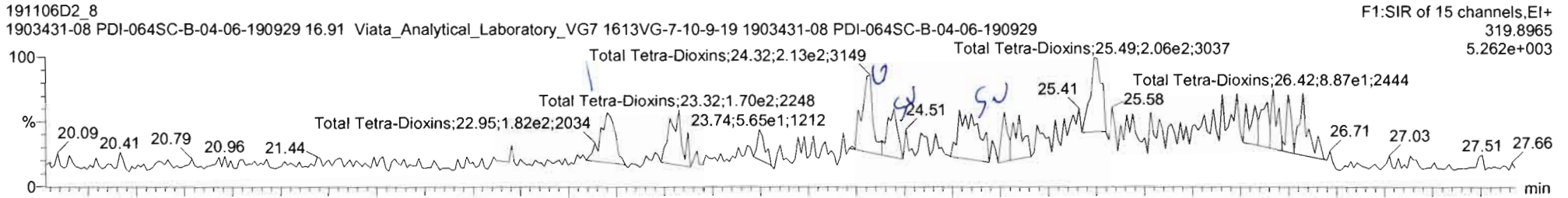
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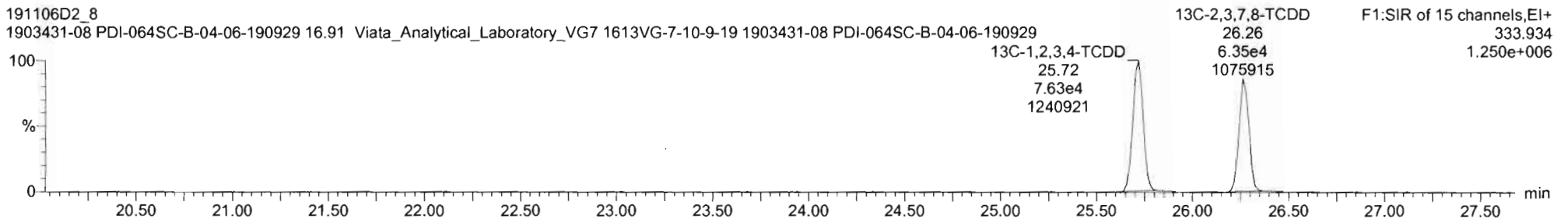
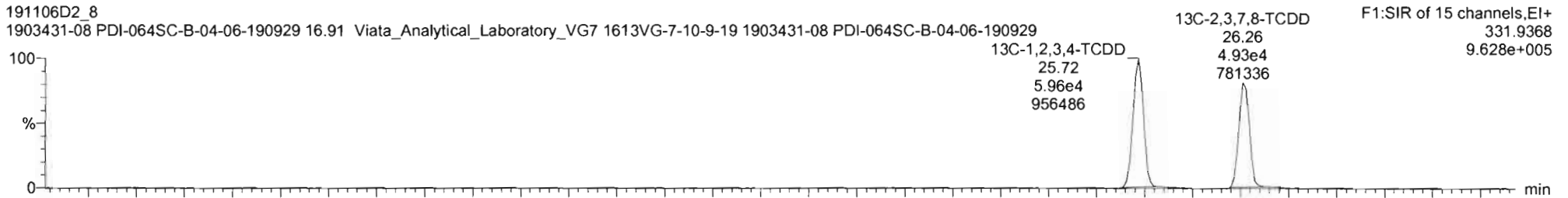
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Name: VG7 191106D2_8, Date: 7-NOV-2019, Time: 05:28:21, ID: 1903431-08 PDI-064SC-B-04-06-190929, Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Tetra-Dioxins



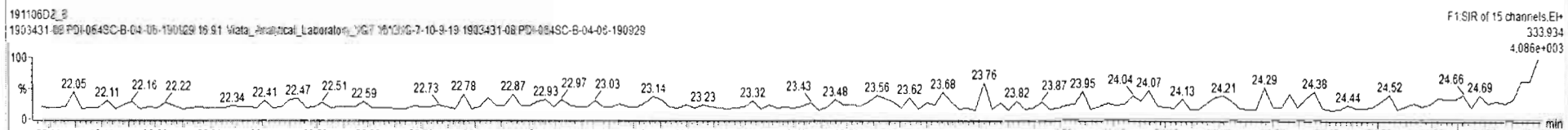
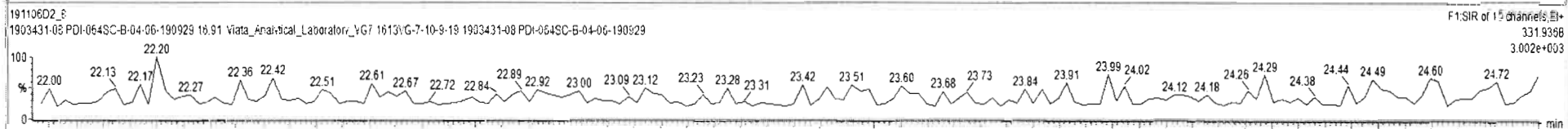
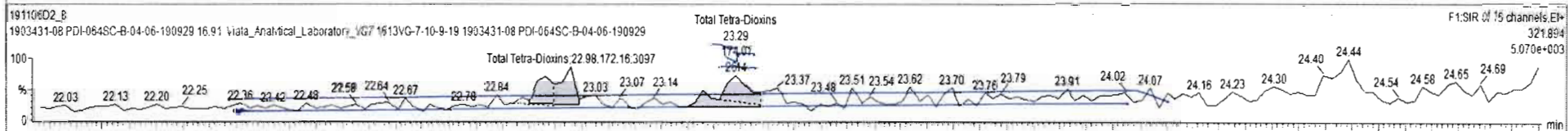
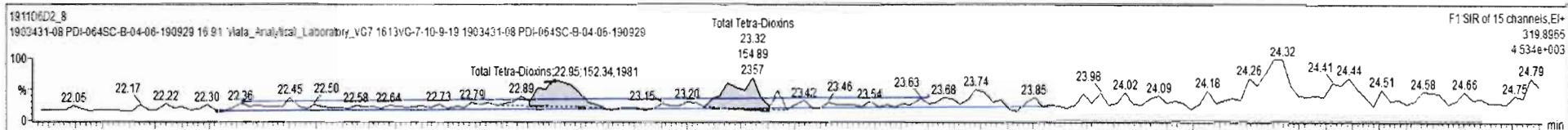
13C-2,3,7,8-TCDD



191106D2_8 - 1903431-08 PDI-064SC-B-04-06-190929 - 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS	RA	n/y	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	7.07e4	1.39e5	38	0.40	NO	0.757	10.029	36.70	36.70	1.093	1.093	NO	133.8	67.1	0.759	
33	33 13C-1,2,3,4,7,8,9-HpCDF	6.54e4	1.39e5	38	0.41	NO	0.581	10.029	38.39	38.46	1.145	1.143	NO	161.4	86.9	0.989	
34	34 13C-OCDF	1.40e5	1.39e5	38	0.87	NO	0.689	10.029	41.41	41.43	1.234	1.233	NO	290.9	72.9	0.669	
35	35 37Cl-2,3,7,8-TCDD	4.45e4	1.36e5	36			1.156	10.029	26.28	26.29	1.022	1.022	NO	54.50	68.3	0.226	
36	36 13C-1,2,3,4-TCDD	1.36e5	1.36e5	36	0.78	NO	1.000	10.029	25.70	25.72	1.000	1.000	NO	199.4	100	0.598	
37	37 13C-1,2,3,4-TCDF	2.04e5	2.04e5	37	0.81	NO	1.000	10.029	24.28	24.30	1.000	1.000	NO	199.4	100	0.437	
38	38 13C-1,2,3,4,6,9-HxCDF	1.39e5	1.39e5	38	0.52	NO	1.000	10.029	33.55	33.58	1.000	1.000	NO	199.4	100	0.583	
39	39 Total Tetra-Dioxins		1.13e5				0.901	10.029	25.50			0.000	NO	0.0000		0.742	1.242
40	40 Total Penta-Dioxins		8.35e4				0.872	10.029	30.00			0.000	NO	0.0000		0.184	7.711
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.029	33.80			0.000	NO	1.308		0.462	2.361

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred.RA	RA	n/y	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	22.95	1.523e2	1.722e2	0.770	0.88	NO	0.63715	0.00000
2	39 Total Tetra-Dioxins	25.50	23.32	1.549e2	1.741e2	0.770	0.89	YES	0.60497	0.00000



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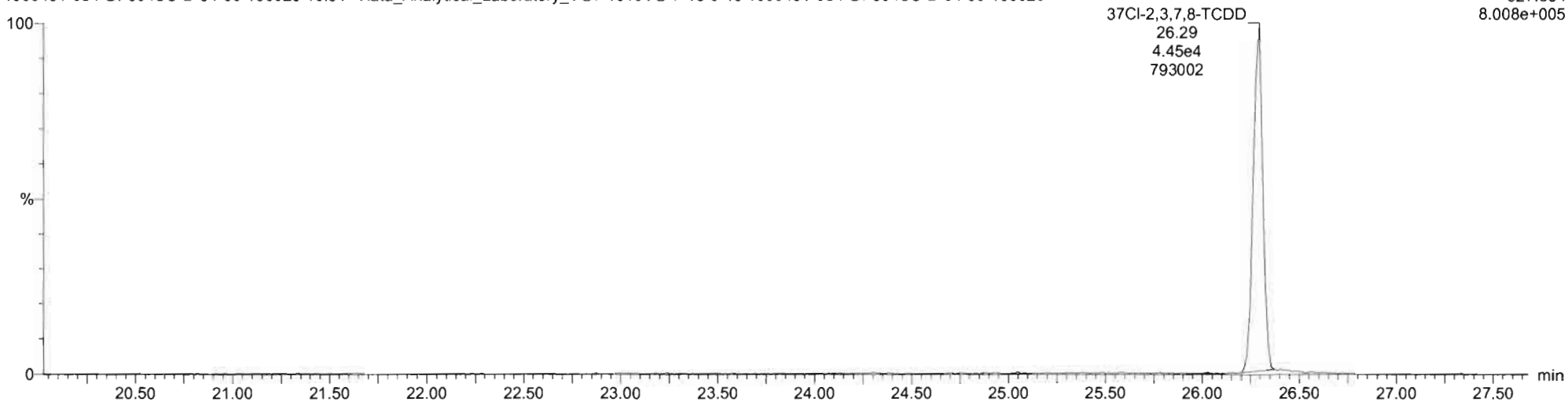
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Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

37Cl-2,3,7,8-TCDD

191106D2_8
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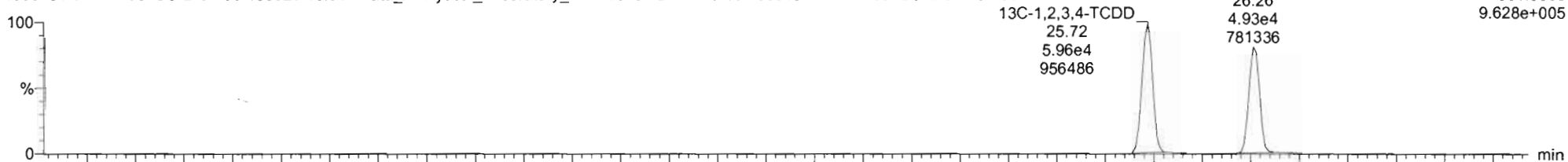
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13C-1,2,3,4-TCDD

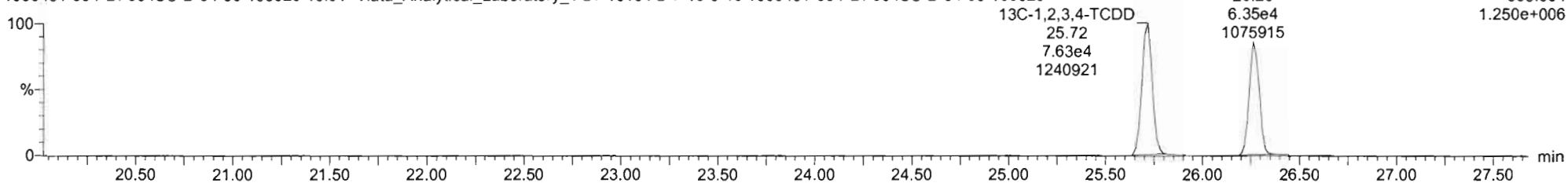
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F1:SIR of 15 channels,EI+
331.9368
9.628e+005



191106D2_8
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F1:SIR of 15 channels,EI+
333.934
1.250e+006



Vista Analytical Laboratory

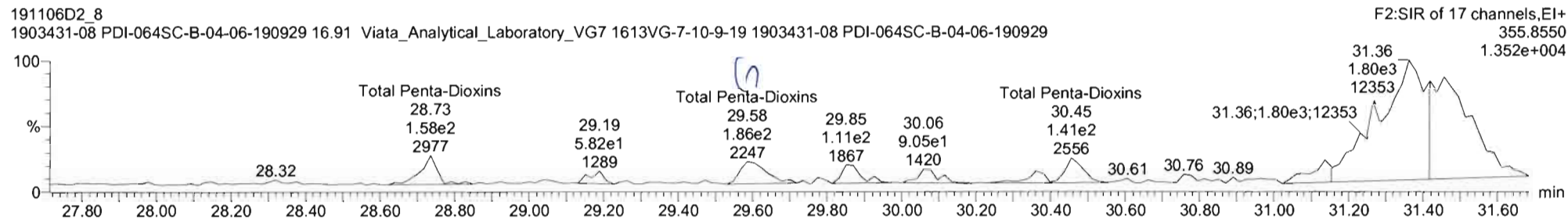
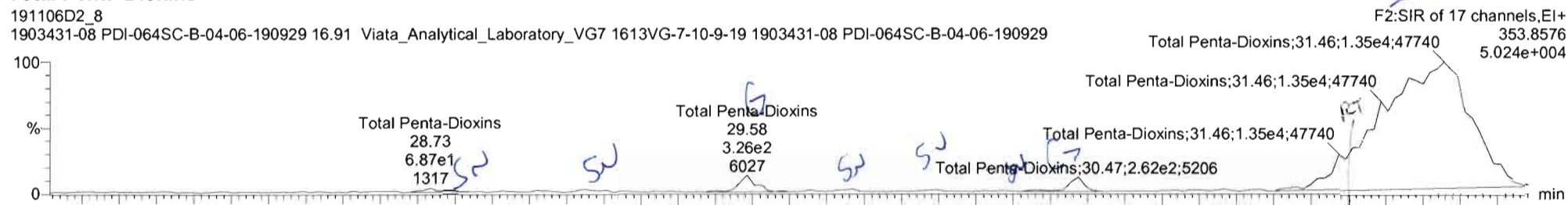
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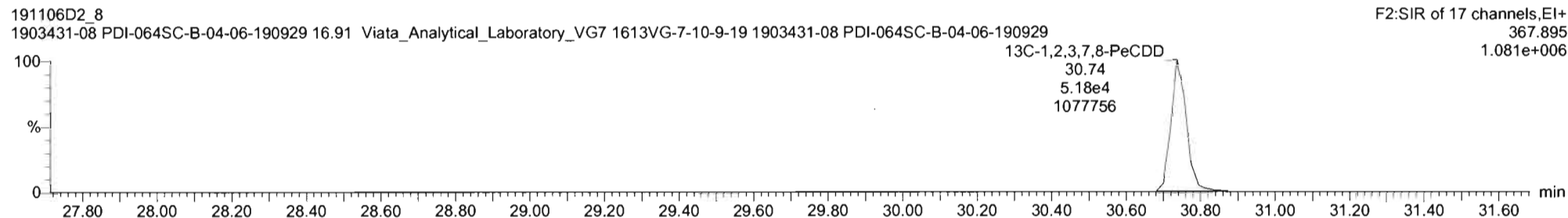
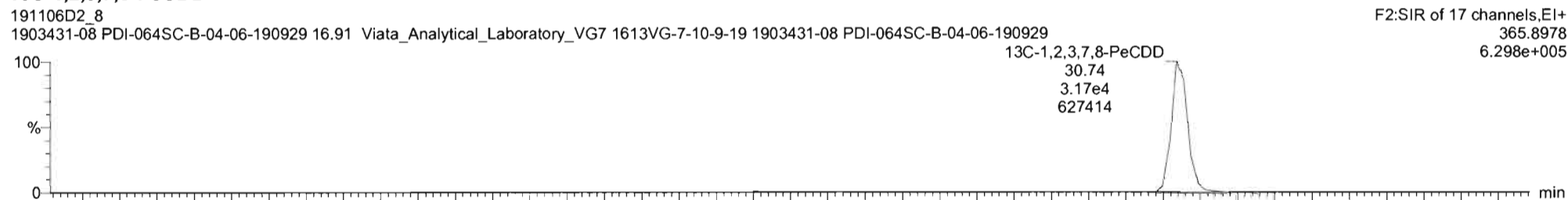
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Total Penta-Dioxins



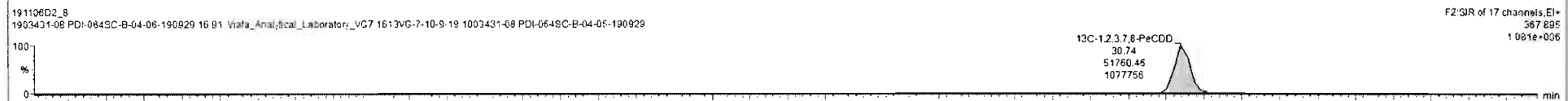
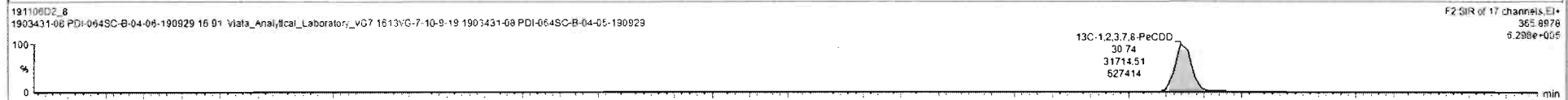
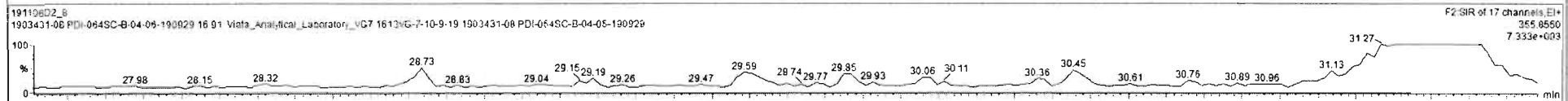
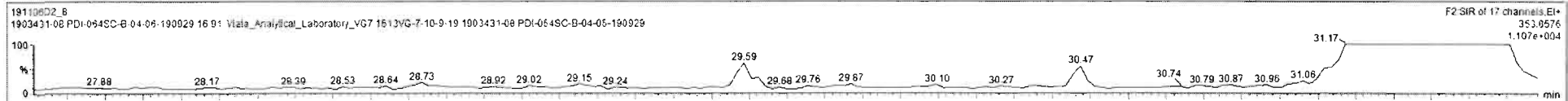
13C-1,2,3,7,8-PeCDD



191106D2_8 - 1903431-08 PDI-064SC-B-04-06-190929 - 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	ISL	RA	n/y	RR	wt/ret	Pred RT	RT	RET	Pred RRT	Check RRT	Conc.	%Rec	IDL	EMPC
32	13C-1,2,3,4,6,7,8-HpCDF	7.07e4	1.39e5	38	0.40	NO	0.757	10.029	38.70	39.70	1.093	1.093	NO	133.8	87.1	0.759	
33	13C-1,2,3,4,7,8,9-HpCDF	6.54e4	1.39e5	38	0.41	NO	0.581	10.029	38.36	38.46	1.145	1.143	NO	161.4	80.9	0.989	
34	13C-OCDF	1.40e5	1.39e5	38	0.87	NO	0.889	10.029	41.41	41.43	1.234	1.232	NO	290.9	72.9	0.889	
35	37Cl-2,3,7,8-TCDD	4.45e4	1.36e5	36			1.198	10.029	26.28	26.29	1.022	1.022	NO	54.50	68.3	0.226	
36	13C-1,2,3,4-TCDD	1.36e5	1.36e5	38	0.78	NO	1.000	10.029	25.70	25.72	1.000	1.000	NO	199.4	100	0.596	
37	13C-1,2,3,4-TCDF	2.04e5	2.04e5	37	0.81	NO	1.000	10.029	24.28	24.30	1.000	1.000	NO	159.4	100	0.437	
38	13C-1,2,3,4,6,9-HxCDF	1.39e5	1.39e5	38	0.52	NO	1.000	10.029	33.55	33.58	1.000	1.000	NO	199.4	100	0.583	
39	Total Tetra-Dioxins		1.13e5				0.901	10.029	25.50			0.000	NO	0.0500		0.742	0.6371
40	Total Penta-Dioxins		8.35e4				0.872	10.029	30.00			0.000	NO			0.184	
41	Total Hexa-Dioxins		0.90e0				0.976	10.029	33.80			0.000	NO	1.306		0.482	2.361

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1										



Vista Analytical Laboratory

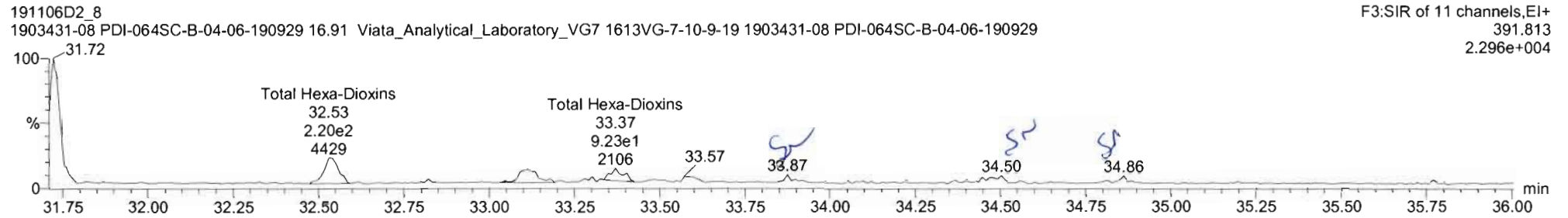
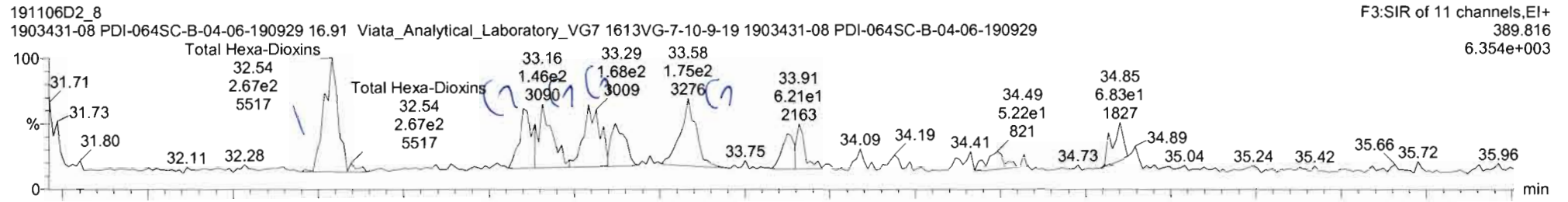
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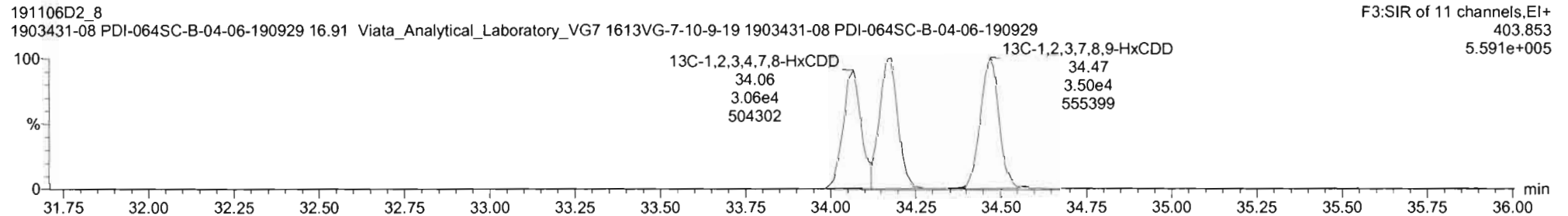
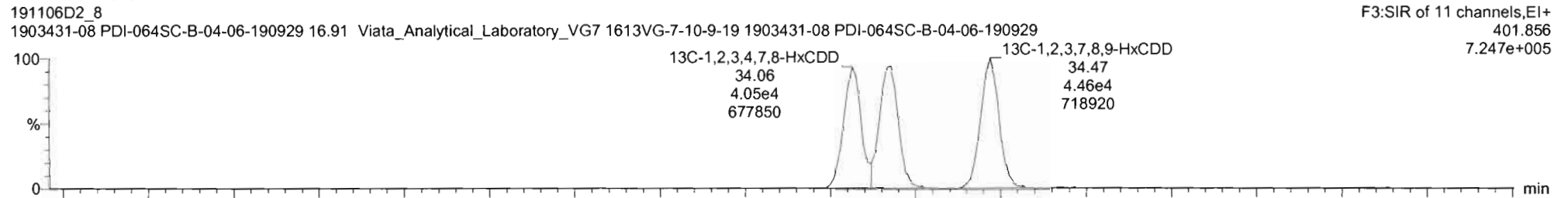
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Total Hexa-Dioxins

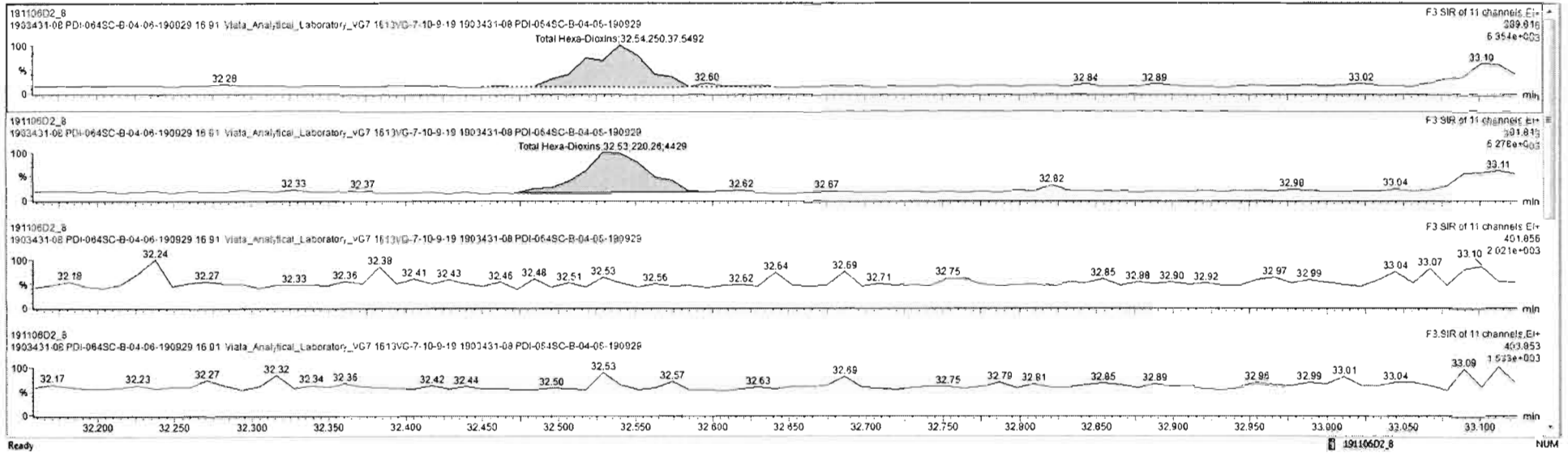


13C-1,2,3,4,7,8-HxCDD



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/Vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
32	13C-1,2,3,4,6,7,8-HpCDF	7.07e4	1.36e5	38	0.40	NO	0.757	10.029	38.70	38.70	1.093	1.093	NO	133.8	67.1	0.759	
33	13C-1,2,3,4,7,8,9-HpCDF	6.54e4	1.36e5	38	0.41	NO	0.581	10.029	38.36	38.48	1.145	1.143	NO	161.4	80.9	0.949	
34	13C-OCDF	1.10e5	1.36e5	38	0.87	NO	0.689	10.029	41.41	41.43	1.234	1.233	NO	290.9	72.9	0.669	
35	37Cl-2,3,7,8-TCDF	4.45e4	1.36e5	38			1.198	10.029	26.26	26.29	1.022	1.022	NO	54.50	68.3	0.226	
36	13C-1,2,3,4-TCDF	1.36e5	1.36e5	36	0.78	NO	1.000	10.029	25.70	25.72	1.000	1.000	NO	199.4	100	0.596	
37	13C-1,2,3,4-TCDF	2.04e5	2.04e5	37	0.81	NO	1.000	10.029	24.28	24.39	1.000	1.000	NO	199.4	100	0.437	
38	13C-1,2,3,4,6,8-HxCDF	1.39e5	1.39e5	38	0.52	NO	1.000	10.029	33.55	33.58	1.000	1.000	NO	199.4	100	0.583	
39	Total Tetra-Dioxins		1.13e5				0.901	10.029	25.50				NO	0.000		0.742	0.5371
40	Total Penta-Dioxins		8.35e4				0.872	10.029	30.00				NO	0.000		0.194	
41	Total Hexa-Dioxins		0.00e0				0.976	10.029	33.80				NO	1.263		0.462	1.263

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	41 Total Hexa-Dioxins	33.80	32.54	2.504e2	2.203e2	1.240	1.14	NO	1.2632	1.2632



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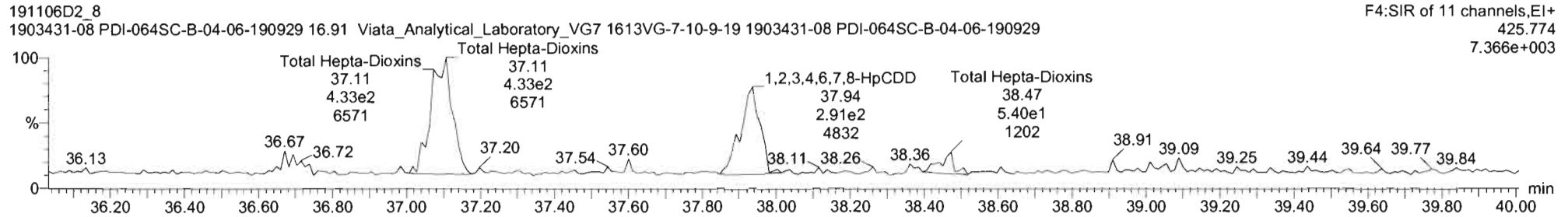
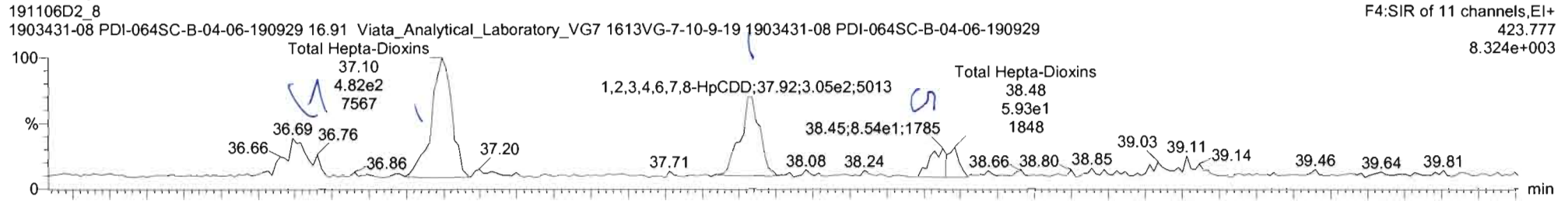
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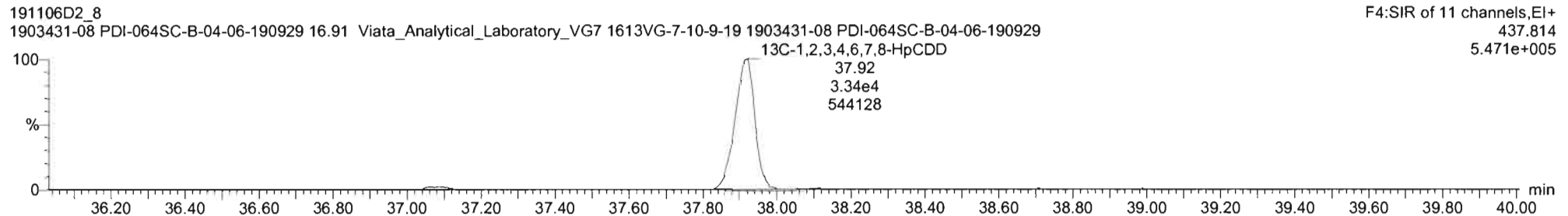
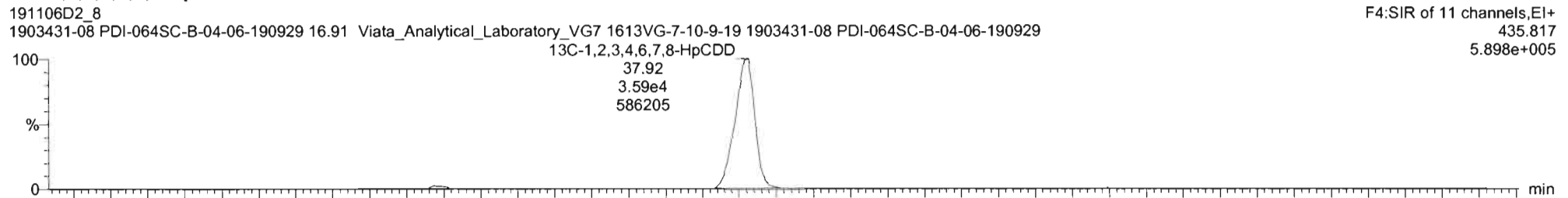
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Total Hepta-Dioxins



13C-1,2,3,4,6,7,8-HpCDD



Vista Analytical Laboratory

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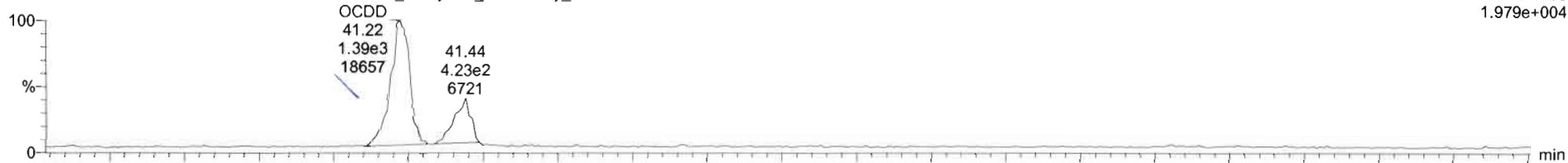
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OCDD

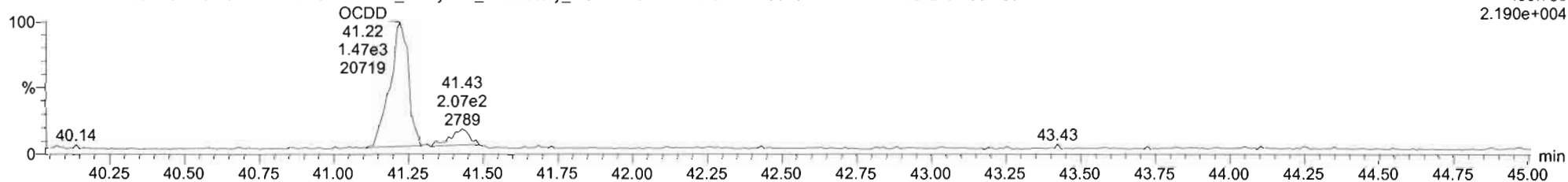
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F5:SIR of 11 channels,EI+
457.738
1.979e+004



191106D2_8
1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 1903431-08 PDI-064SC-B-04-06-190929

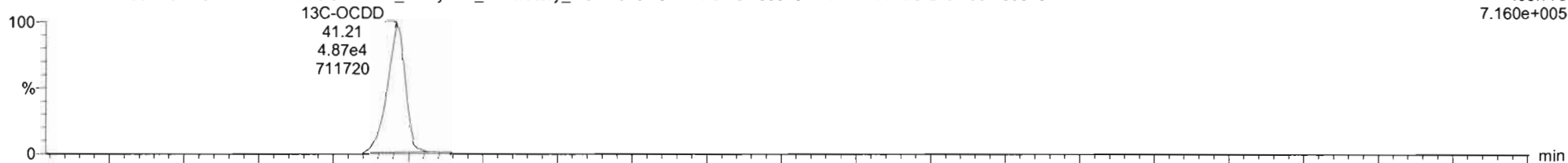
F5:SIR of 11 channels,EI+
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2.190e+004



13C-OCDD

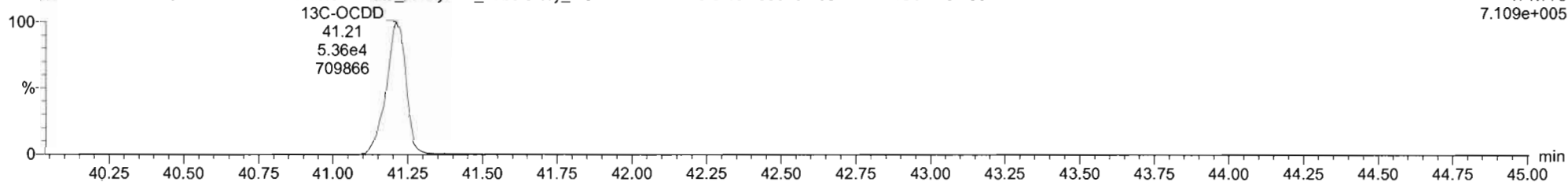
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F5:SIR of 11 channels,EI+
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7.160e+005



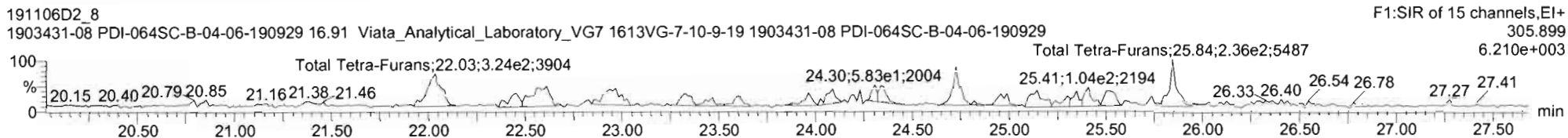
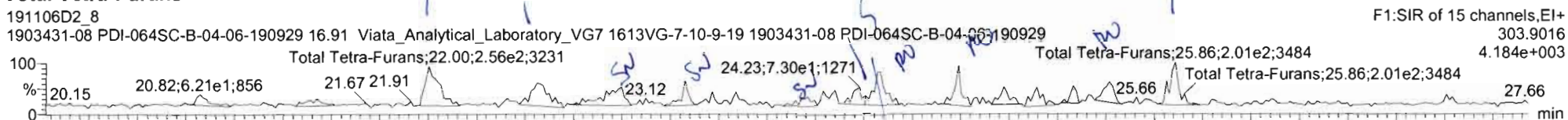
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F5:SIR of 11 channels,EI+
471.775
7.109e+005

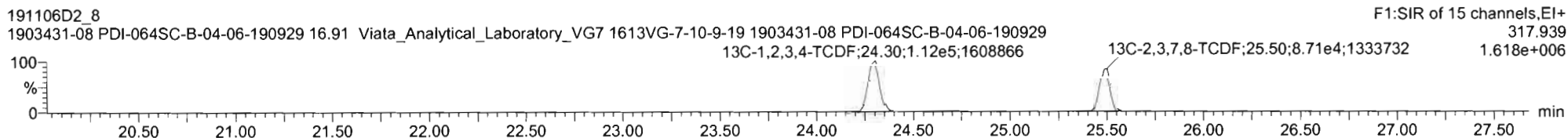
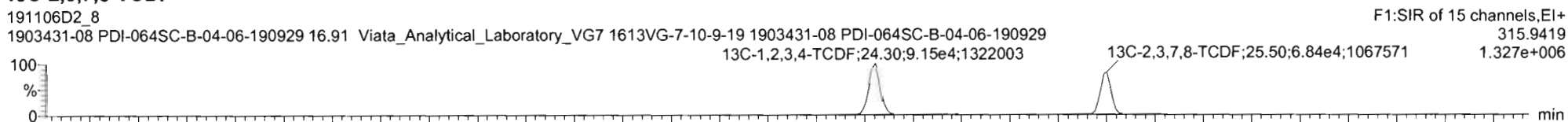


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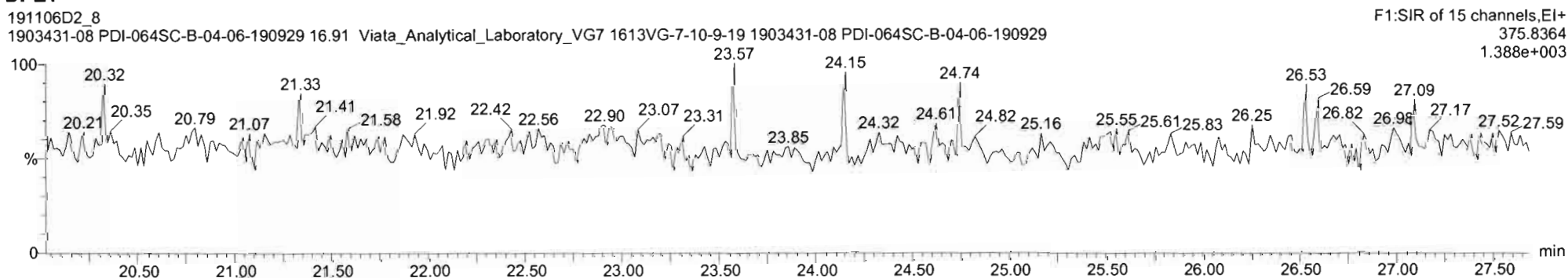
Total Tetra-Furans



13C-2,3,7,8-TCDF



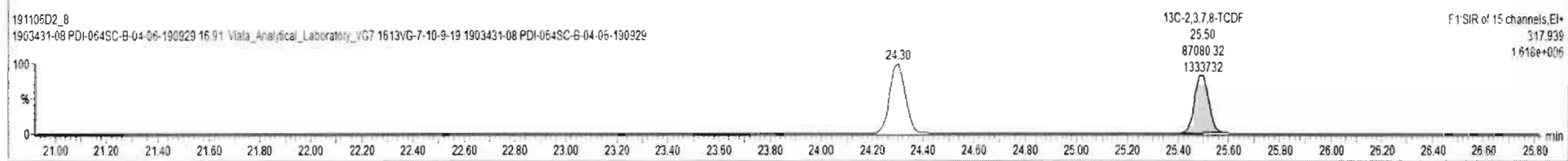
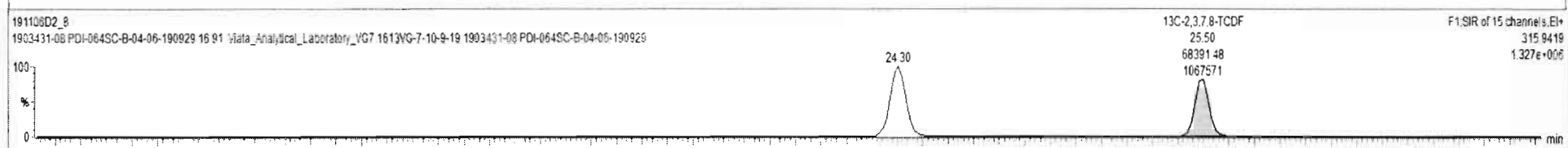
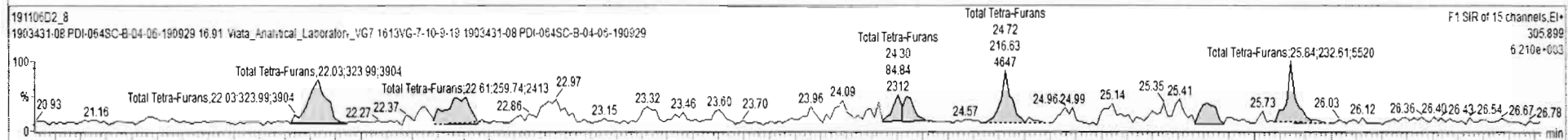
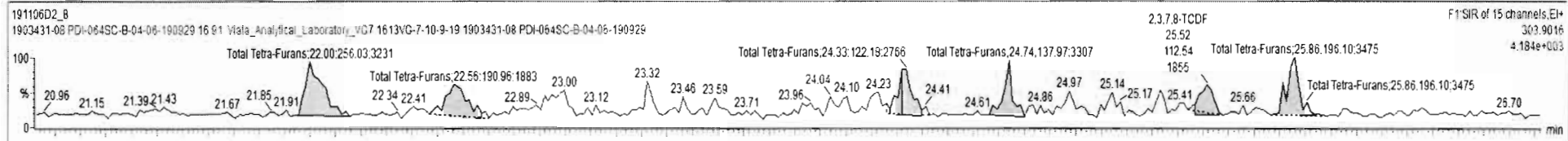
DPE1



191106D2_8 - 1903431-08 PDI-064SC-B-04-06-190929 - 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata Analytical Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wt/wal	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
43	Total Tetra-Furans		1.55e5				0.943	10.029	24.00			0.000	NO	1.986		0.280	3.161
44	1st Func. Penta-Furans		0.00e0				0.940	10.029	27.63			0.000	NO	0.2318		0.303	0.2318
45	Total Penta-Furans		0.00e0				0.940	10.029	30.00			0.000	NO	0.2038		0.254	0.9257
46	Total Hexa-Furans		0.00e0				1.078	10.329	33.00			0.000	NO	0.0000		0.104	0.4420
47	Total Hepta-Furans		0.00e0				1.135	10.029	37.75			0.000	NO	1.125		0.272	1.125
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																

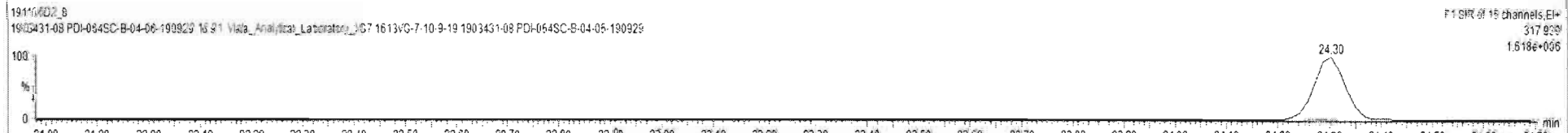
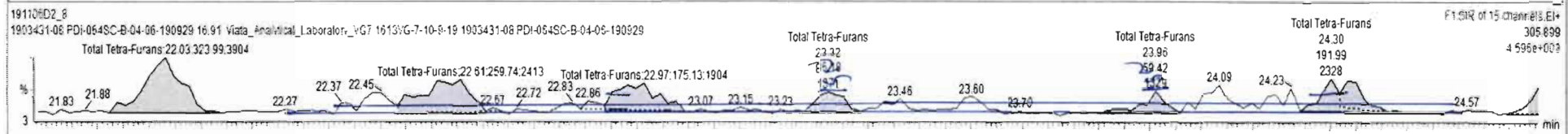
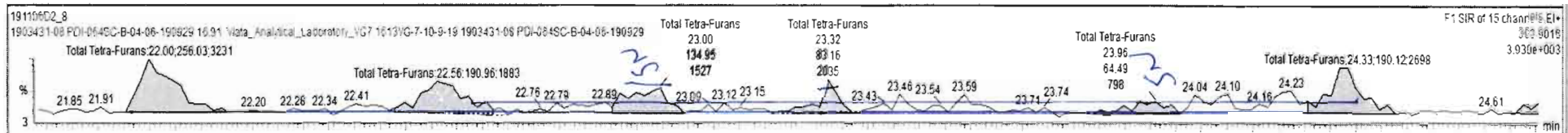
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	22.00	2.560e2	3.240e2	0.770	0.79	NO	0.78909	0.78909
2	43 Total Tetra-Furans	24.00	22.56	1.910e2	2.597e2	0.770	0.74	NO	0.61316	0.61316
3	43 Total Tetra-Furans	24.00	24.32	5.833e1	8.484e1	0.770	0.69	NO	0.19479	0.00000
4	43 Total Tetra-Furans	24.00	24.33	1.222e2	1.042e2	0.770	1.17	YES	0.25091	0.00000
5	43 Total Tetra-Furans	24.00	24.74	1.380e2	2.166e2	0.770	0.64	YES	0.43148	0.00000
6	8 2,3,7,8-TCDF	25.53	25.52	1.125e2	1.250e2	0.770	0.90	YES	0.29679	0.00000
7	43 Total Tetra-Furans	24.00	25.06	1.961e2	2.326e2	0.770	0.84	NO	0.58325	0.58325



191106D2_8 - 1903431-08 PDI-064SC-B-04-06-190929 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wWol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
43	Total Tetra-Furans		1.55e5				0.943	10.029	24.00			0.000	NO	2.407	0.280	4.619	
44	1st Func. Penta-Furans		0.00e0				0.940	10.029	27.63			0.000	NO	0.2318	0.303	0.2318	
45	Total Penta-Furans		0.00e0				0.940	10.029	30.00			0.000	NO	0.2823	0.254	0.9257	
46	Total Hexa-Furans		0.00e0				1.078	10.029	33.00			0.000	NO	0.0000	0.194	0.4420	
47	Total hepta-Furans		0.00e0				1.135	10.029	37.75			0.000	NO	1.125	0.272	1.125	
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																

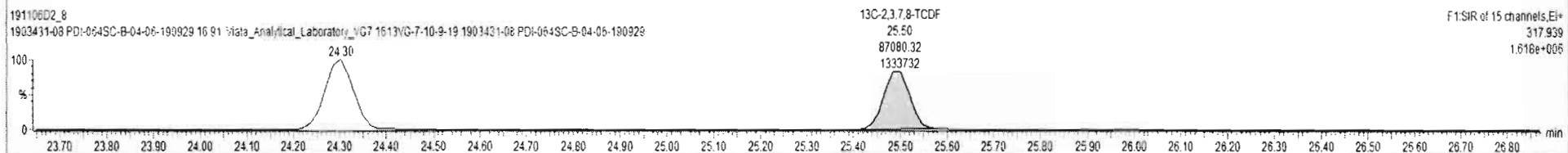
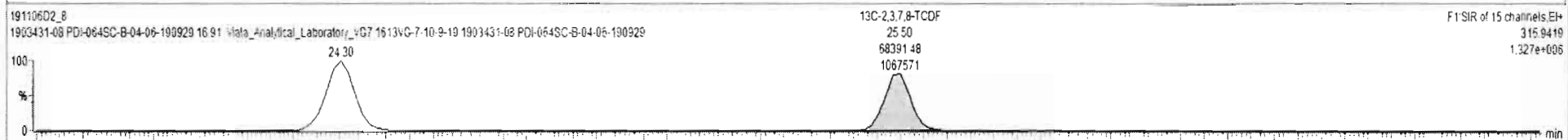
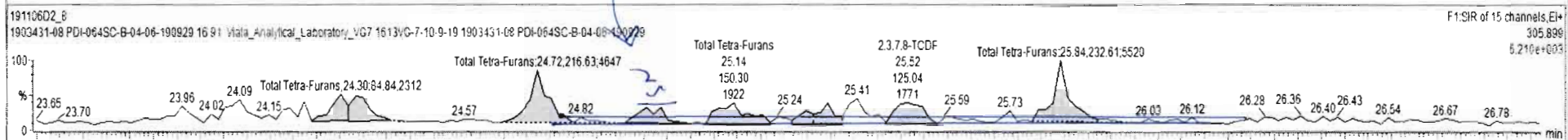
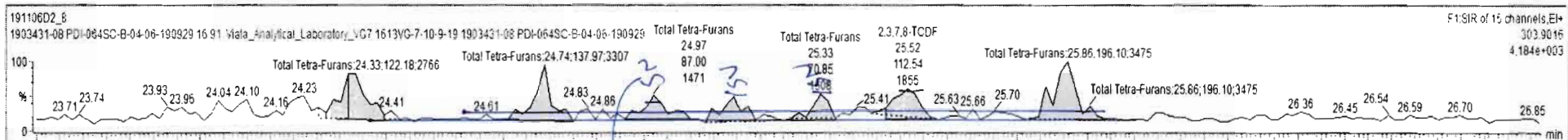
#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	Total Tetra-Furans	24.00	22.00	2.560e2	3.240e2	0.770	0.79	NO	0.78909	0.78909
2	Total Tetra-Furans	24.00	22.56	1.910e2	2.597e2	0.770	0.74	NO	0.61316	0.61316
3	Total Tetra-Furans	24.00	23.00	1.349e2	1.751e2	0.770	0.77	NO	0.42185	0.42185
4	Total Tetra-Furans	24.00	23.32	8.316e1	8.618e1	0.770	0.96	YES	0.20753	0.00000
5	Total Tetra-Furans	24.00	23.96	6.449e1	5.942e1	0.770	1.09	YES	0.14309	0.00000
6	Total Tetra-Furans	24.00	24.33	1.501e2	1.920e2	0.770	0.99	YES	0.46233	0.00000
7	Total Tetra-Furans	24.00	24.74	1.360e2	2.166e2	0.770	0.64	YES	0.43148	0.00000
8	Total Tetra-Furans	24.00	24.97	8.700e1	8.150e1	0.770	1.07	YES	0.19626	0.00000



191106D2_8 - 1903431-08 PDI-064SC-B-04-06-190929 - 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
43	Total Tetra-Furans		1.55e5				0.943	10.029	24.00			0.000	NO	1.986		0.280	3.830
44	1st Func. Penta-Furans		0.00e0				0.940	10.028	27.63			0.000	NO	0.2318		0.203	0.2318
45	Total Penta-Furans		0.00e0				0.940	10.029	30.00			0.000	NO	0.2838		0.254	0.9257
46	Total Hexa-Furans		0.00e0				1.078	10.029	33.00			0.000	NO	0.0009		0.104	0.4420
47	Total Hepta-Furans		0.00e0				1.125	10.029	37.75			0.000	NO	1.125		0.272	1.125
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																
53	PFK6																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	22.00	2.580e2	3.240e2	0.770	0.79	NO	0.78909	0.78909
2	43 Total Tetra-Furans	24.00	22.58	1.910e2	2.597e2	0.770	0.74	NO	0.61316	0.61316
3	43 Total Tetra-Furans	24.00	24.32	5.833e1	8.484e1	0.770	0.69	NO	0.19479	0.00000
4	43 Total Tetra-Furans	24.00	24.33	1.222e2	1.042e2	0.770	1.17	YES	0.25091	0.00000
5	43 Total Tetra-Furans	24.00	24.74	1.385e2	2.166e2	0.770	0.64	YES	0.43148	0.00000
6	43 Total Tetra-Furans	24.00	24.97	6.700e1	6.150e1	0.770	1.07	YES	0.19626	0.00000
7	43 Total Tetra-Furans	24.00	25.14	6.003e1	1.502e2	0.770	0.53	YES	0.25045	0.00000



Vista Analytical Laboratory

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Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

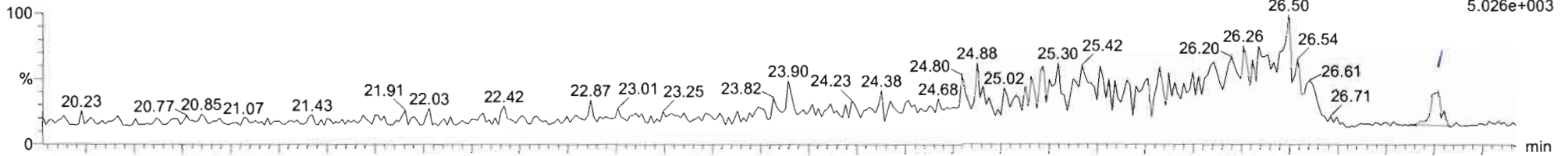
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Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

1st Func. Penta-Furans

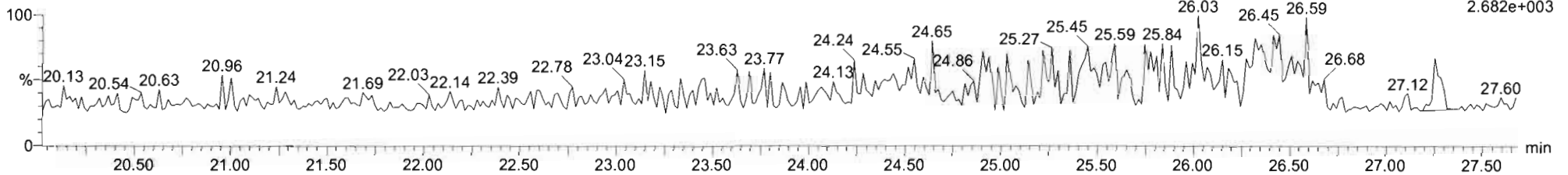
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F1:SIR of 15 channels,EI+
339.860
5.026e+003



191106D2_8
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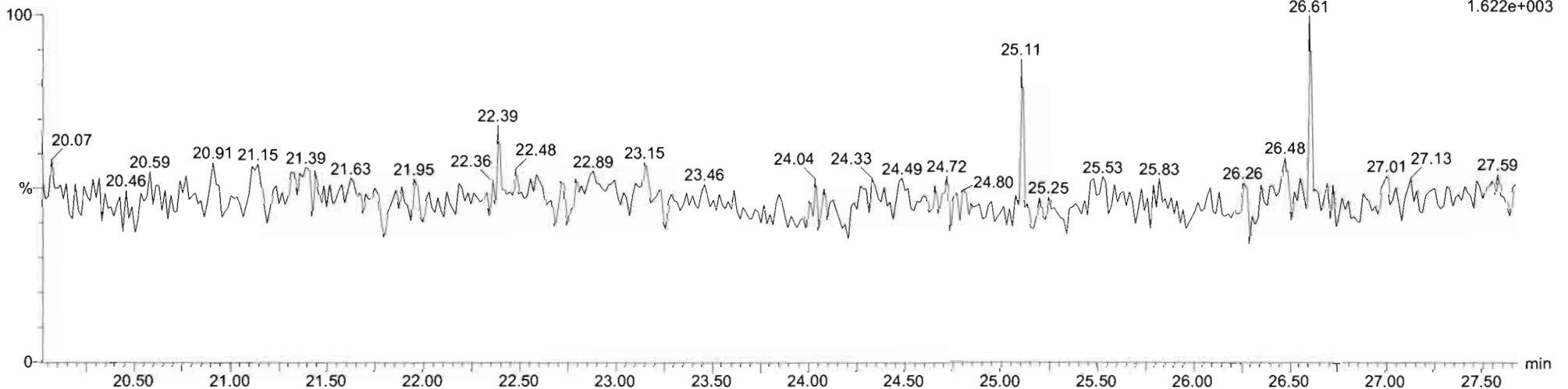
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DPE6

191106D2_8
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Vista Analytical Laboratory

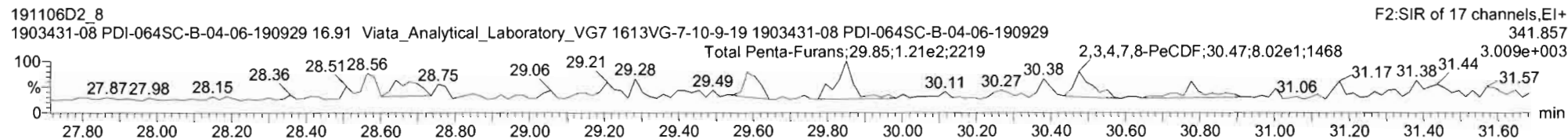
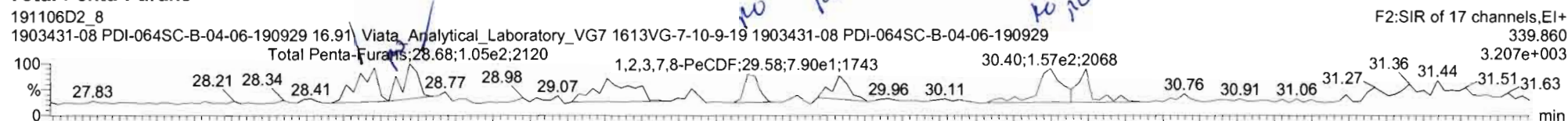
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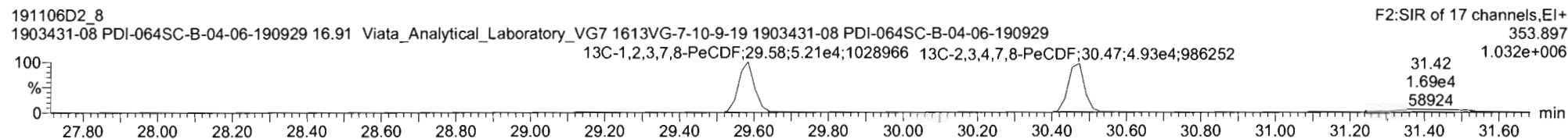
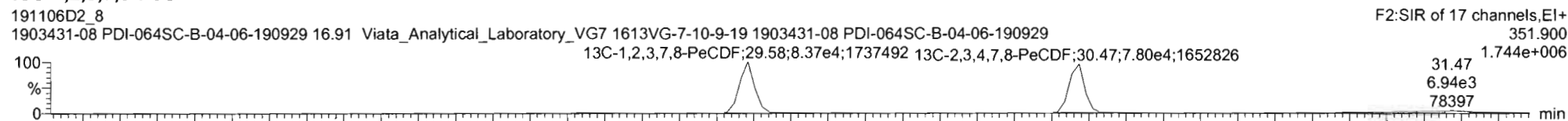
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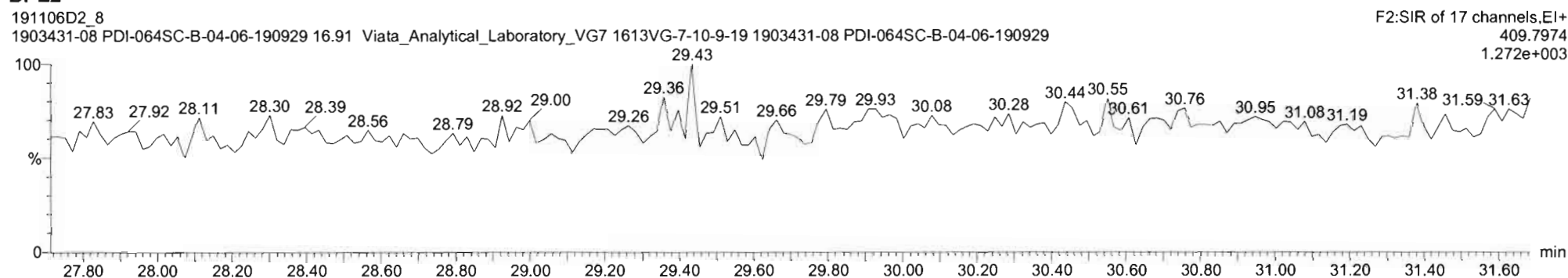
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



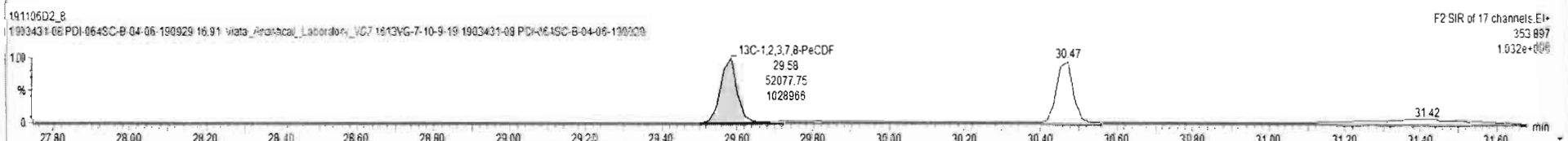
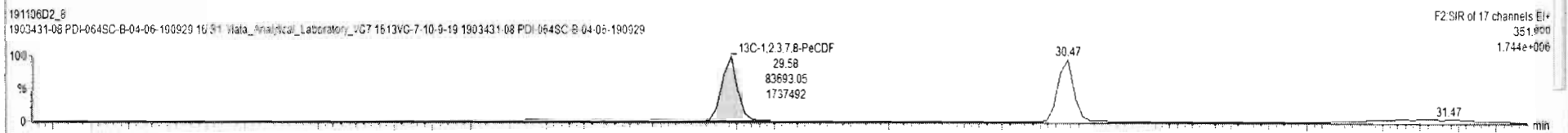
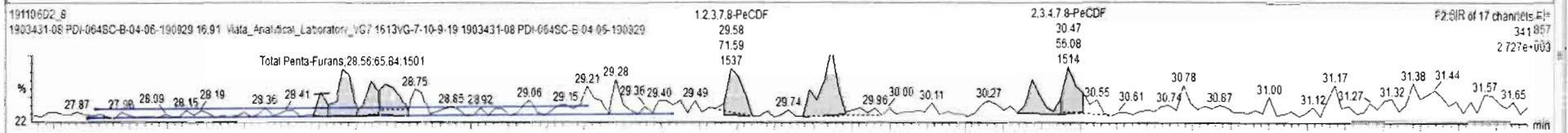
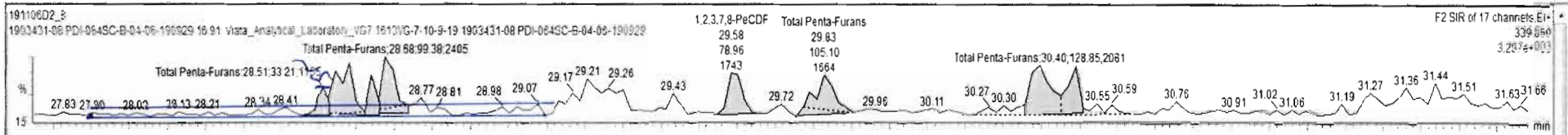
DPE2



191106D2_8 - 1903431.08 PDI-064SC-B-04-06-190929 - 1903431.08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

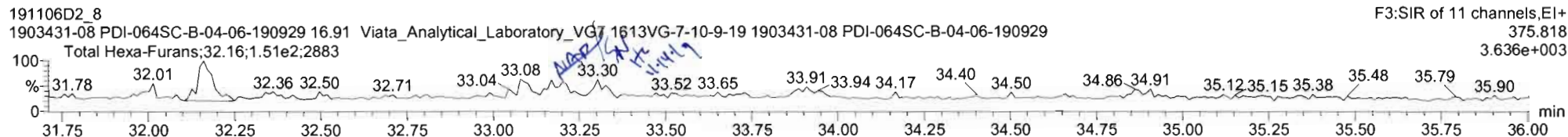
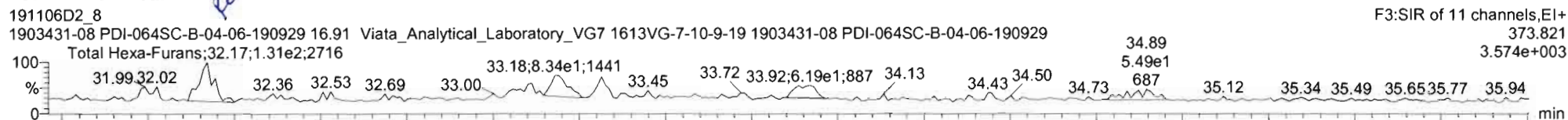
#	Name	Resp	IS Resp	IS#	RA	nly	RIF	w/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
43	43 Total Tetra-Furans		1.55e5				0.943	10.029	24.00			0.006	NO	1.566		0.280	3.161
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.029	27.63			0.006	NO	0.2318		0.303	0.2318
45	45 Total Penta-Furans		0.00e0				0.940	10.029	30.00			0.006	NO	0.2329		0.254	1.562
46	46 Total Hexa-Furans		0.00e0				1.078	10.029	33.00			0.009	NO	0.0000		0.104	0.4420
47	47 Total Hepta-Furans		0.00e0				1.135	10.029	37.75			0.009	NO	1.125		0.272	1.125
48	48 PFK1																
49	49 PFK2																
50	50 PFK3																
51	51 PFK4																
52	52 PFK5																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	45 Total Penta-Furans	30.00	28.51	3.321e1	1.769e1	1.550	1.68	YES	0.072787	0.00000
2	45 Total Penta-Furans	30.00	28.58	1.158e2	6.584e1	1.550	1.76	NO	0.29294	0.29294
3	45 Total Penta-Furans	30.00	28.64	3.933e1	3.657e1	1.550	1.08	YES	0.10439	0.00000
4	45 Total Penta-Furans	30.00	28.68	9.538e1	5.603e1	1.550	1.77	NO	0.25072	0.00000
5	9 1,2,3,7,8-PeCDF	29.61	29.58	7.895e1	7.153e1	1.550	1.10	YES	0.19866	0.00000
6	45 Total Penta-Furans	30.00	29.83	1.051e2	1.050e2	1.550	1.00	YES	0.27883	0.00000
7	45 Total Penta-Furans	30.00	30.40	1.268e2	4.594e1	1.550	2.80	YES	0.18698	0.00000

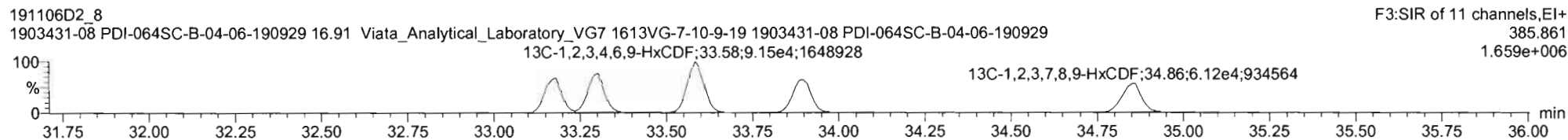
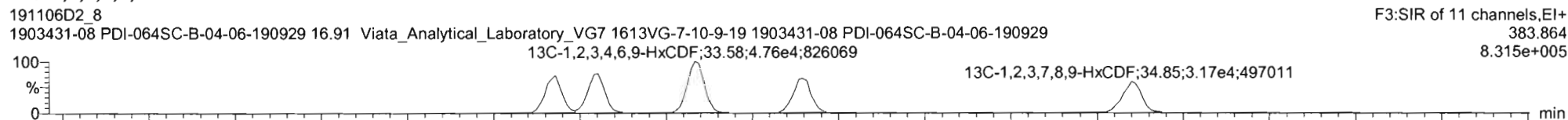


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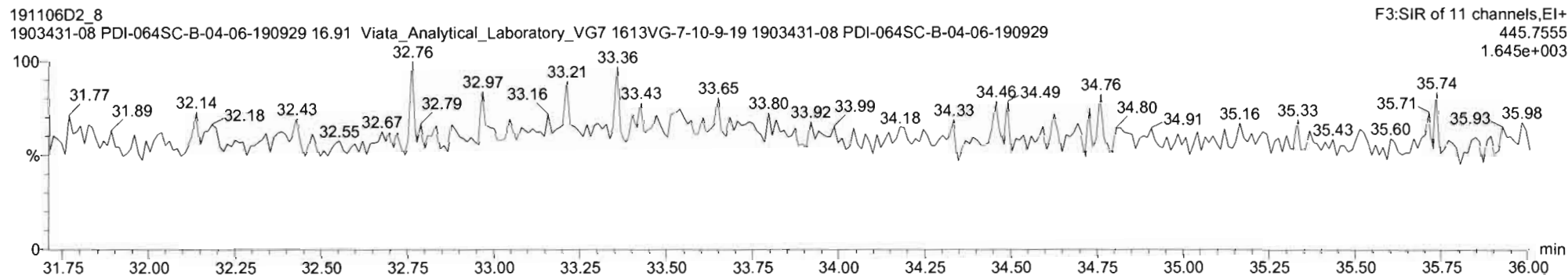
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

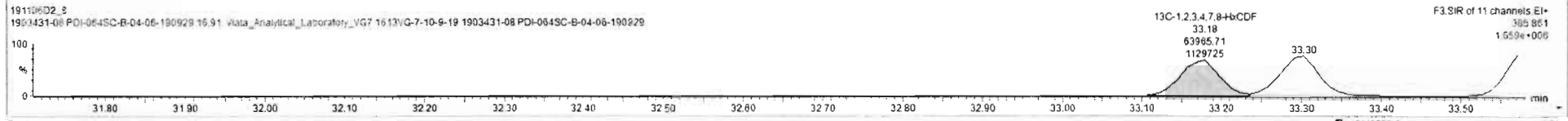
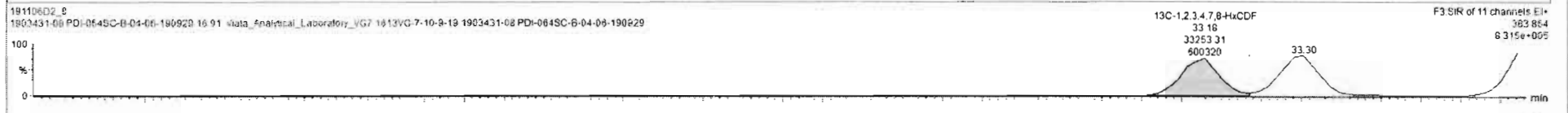
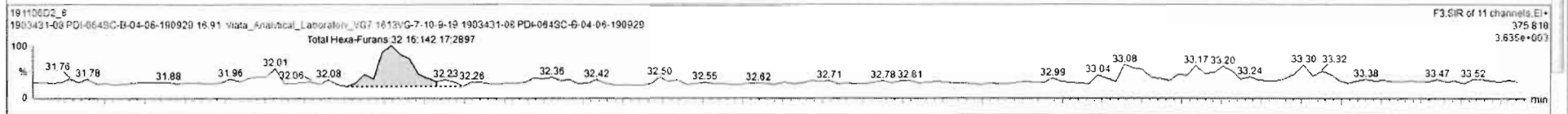
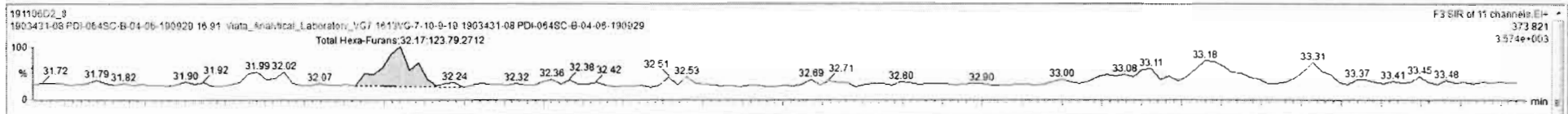


DPE3



#	Name	Resp	IS Resp	IS#	RA	n/y	RPF	Wt/Vol	Pred RT	RT	IRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
43	Total Tetra-Furans		1.55e5				0.943	10.029	24.00			0.000	NO	1.986		0.290	3.161
44	1st Func. Penta-Furans		0.00e0				0.940	10.025	27.63			0.000	NO	0.2318		0.383	0.2318
45	Total Penta-Furans		0.00e0				0.940	10.025	30.00			0.000	NO	0.2929		0.254	1.490
46	Total Hexa-Furans		0.00e0				1.078	10.029	33.00			0.000	NO	0.0000		0.194	0.4163
47	Total Hepta-Furans		0.00e0				1.125	10.029	37.75			0.000	NO	1.125		0.272	1.125
48	PK1																
49	PK2																
50	PK3																
51	PK4																
52	PK5																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	46 Total Hexa-Furans	33.00	32.17	1.238e2	1.422e2	1.240	0.87	YES	0.41827	0.00000



Vista Analytical Laboratory

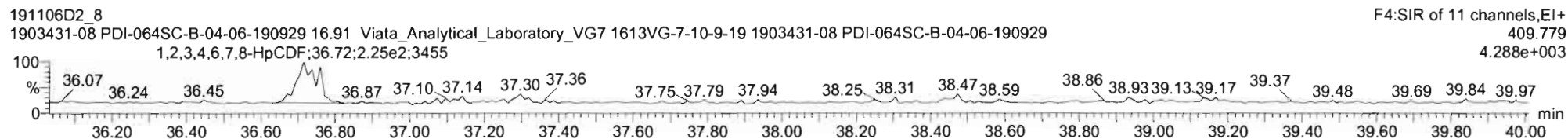
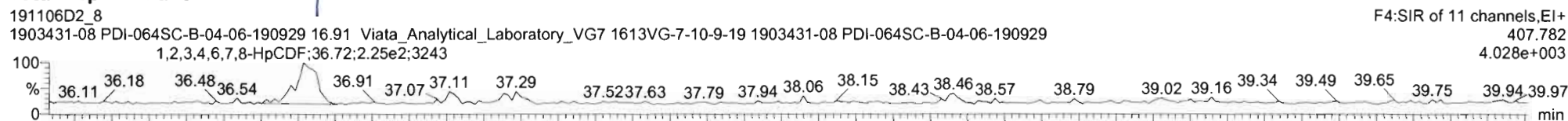
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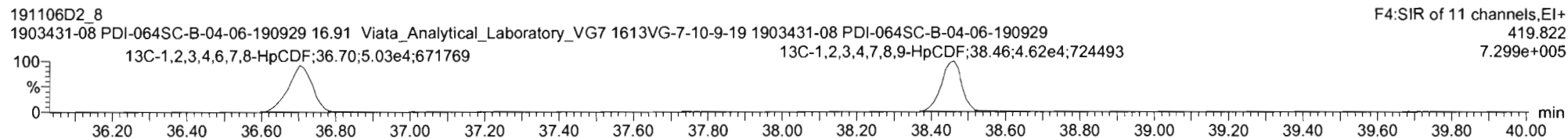
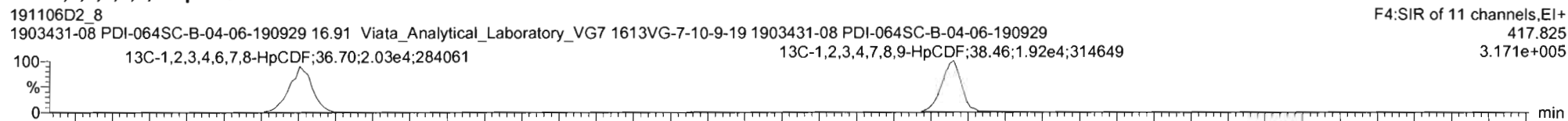
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Name: VG7 191106D2_8, Date: 7-NOV-2019, Time: 05:28:21, ID: 1903431-08 PDI-064SC-B-04-06-190929, Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

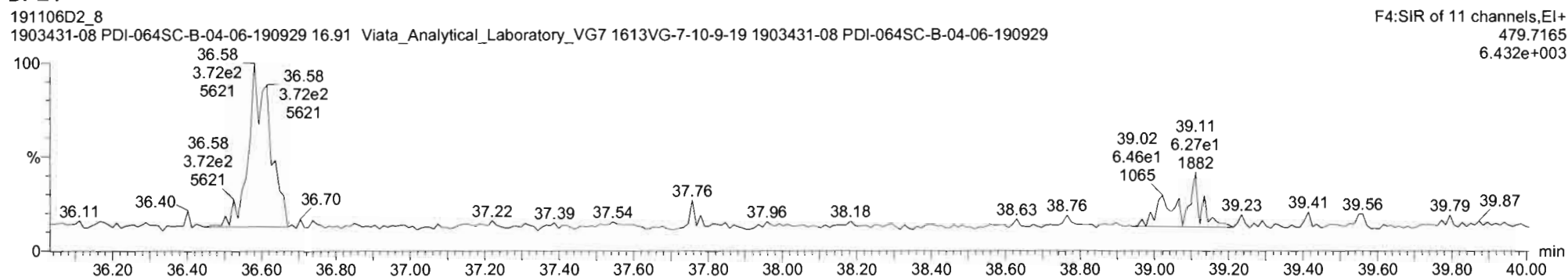
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF

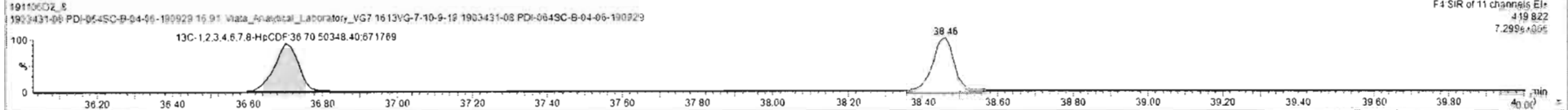
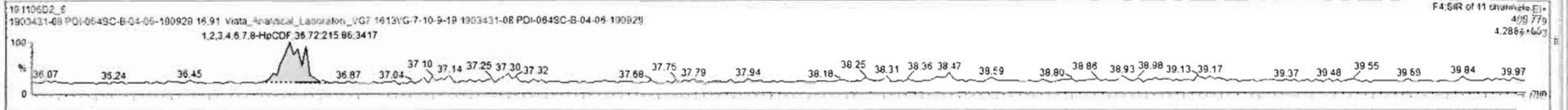
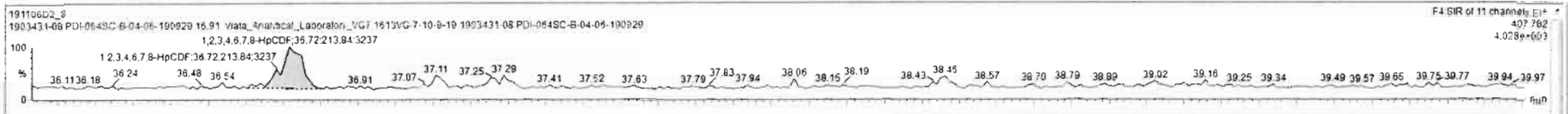


DPE4



#	Name	Resp	IS Resp	ISL	RA	n/y	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC	
43	Total Tetra-Furans		1.55e5				0.943	10.029	24.00			0.000	NO	1.996		0.280	3.181	
44	1st Func. Penta-Furans		0.00e0				0.940	10.029	27.63			0.000	NO	0.2318		0.303	0.2318	
45	Total Penta-Furans		0.00e0				0.940	10.029	30.00			0.000	NO	0.2929		0.254	1.490	
46	Total Hexa-Furans		0.00e0				1.078	10.029	33.00			0.000	NO	0.0000		0.194	0.4163	
47	Total Hepta-Furans		0.00e0				1.125	10.029	37.75			0.000	NO	1.075		0.272	1.075	
48	PFK1																	
49	PFK2																	
50	PFK3																	
51	PFK4																	
52	PFK5																	

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred.RA	RA	n/y	EMPC	Conc.
1	1,2,3,4,6,7,8-HpCDF	36.74	36.72	2.139e2	2.159e2	1.040	0.99	NO	1.0752	1.0752



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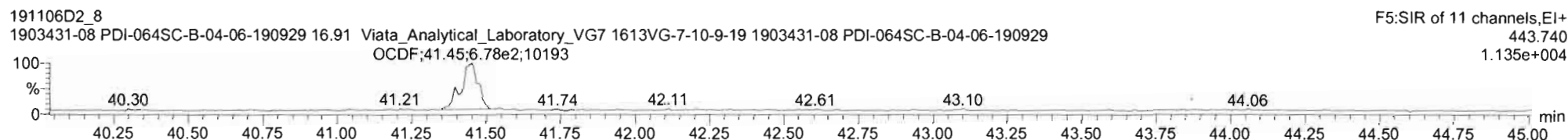
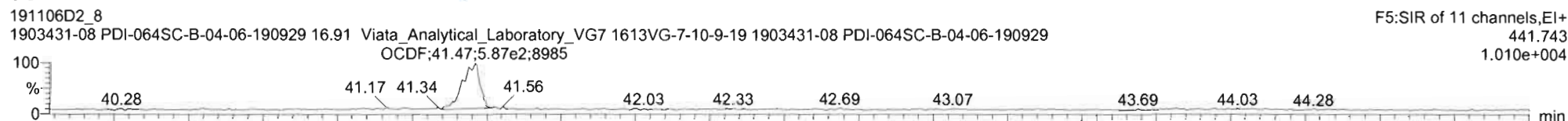
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Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

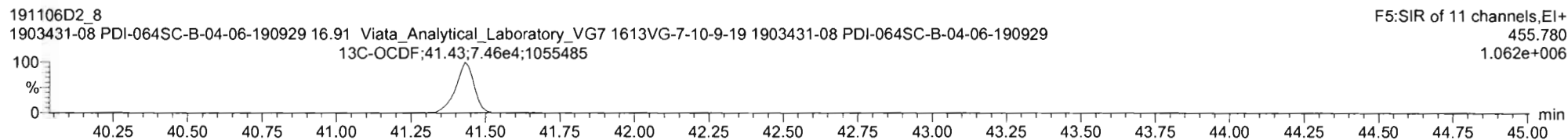
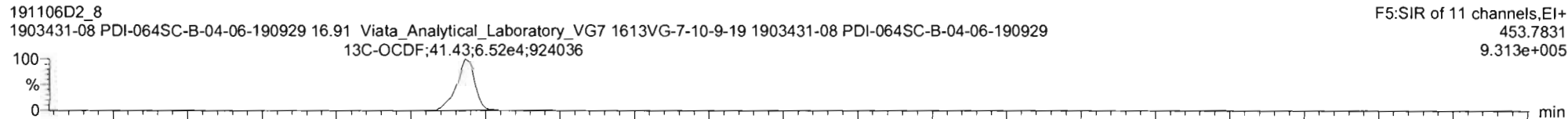
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Name: VG7 191106D2_8, Date: 7-NOV-2019, Time: 05:28:21, ID: 1903431-08 PDI-064SC-B-04-06-190929, Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

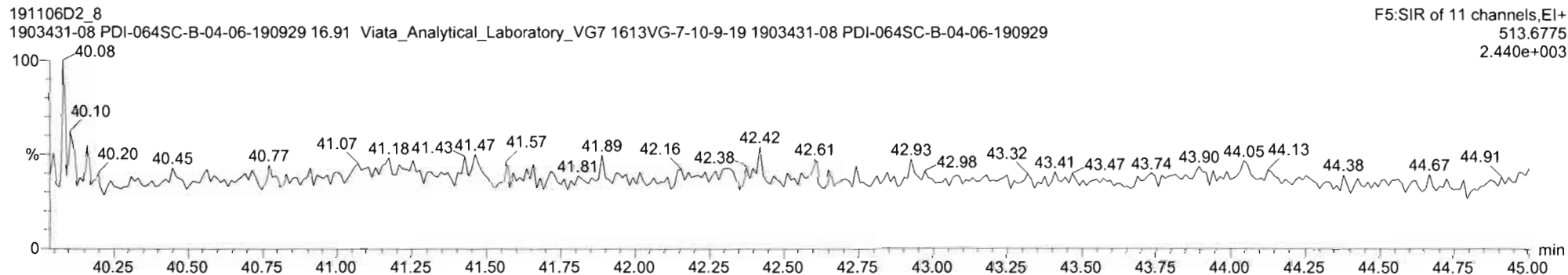
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

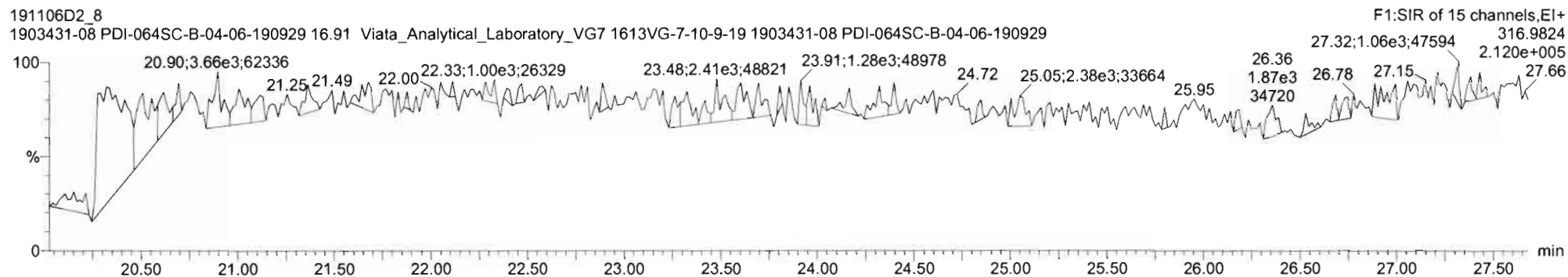
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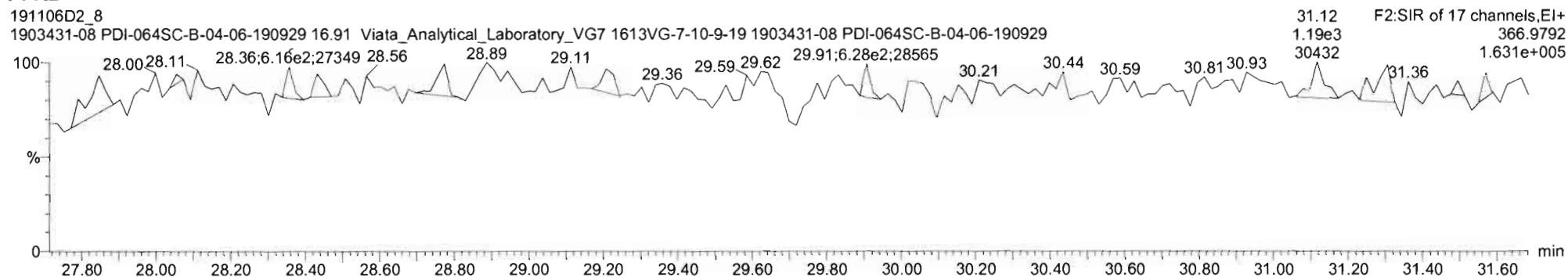
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Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

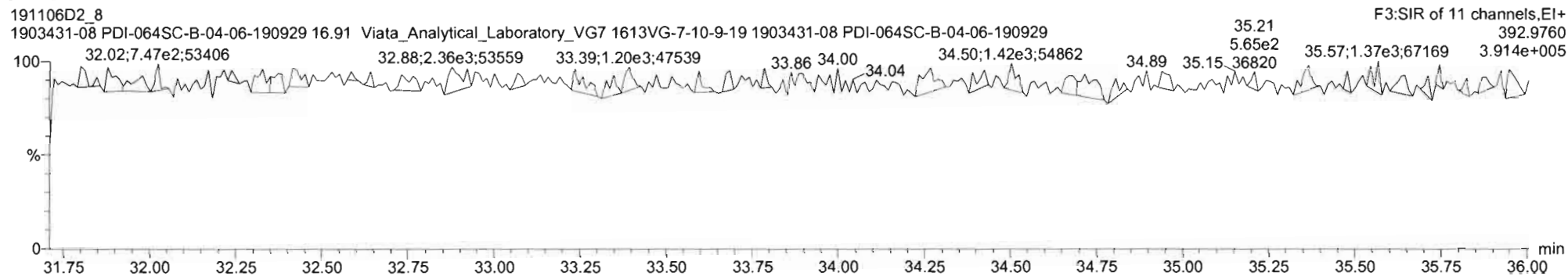
PFK1



PFK2



PFK3



Vista Analytical Laboratory

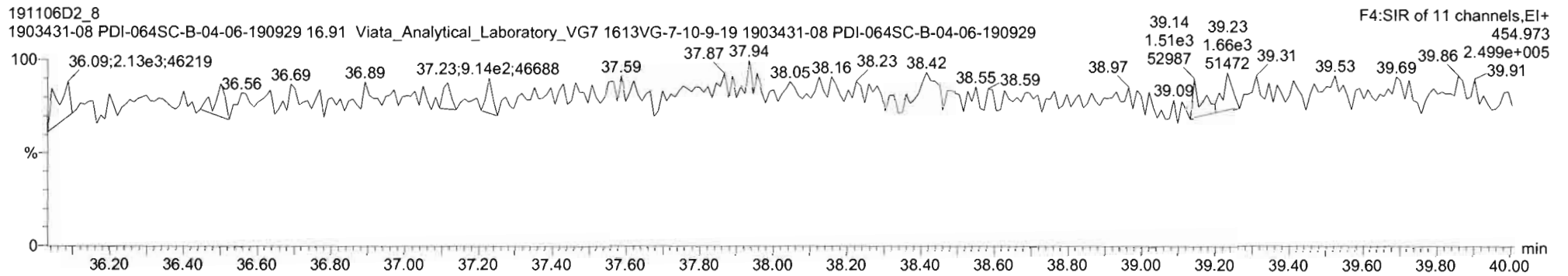
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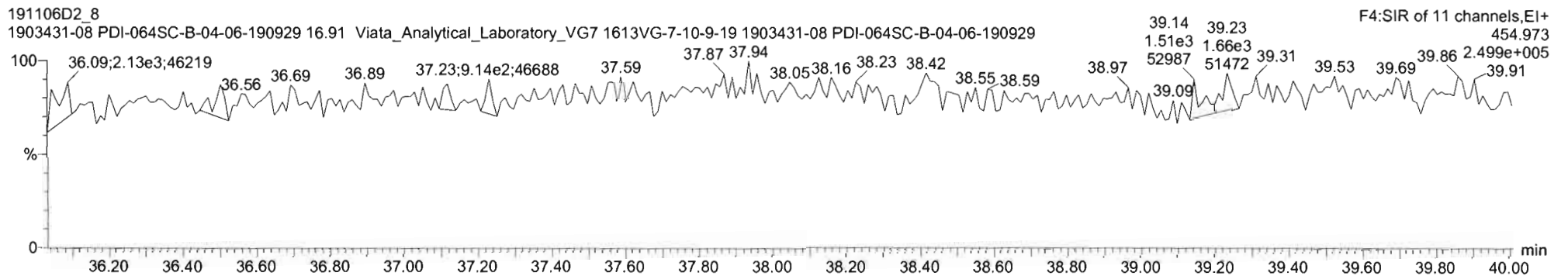
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Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, November 13, 2019 16:04:07 Pacific Standard Time

Printed: Wednesday, November 13, 2019 16:04:39 Pacific Standard Time

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Description: 1903431-08 PDI-064SC-B-04-06-190929 16.91 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-5.qld

Last Altered: Thursday, November 14, 2019 07:32:37 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:33:01 Pacific Standard Time

Hc 11/14/19

CT 11/15/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 14 Nov 2019 07:10:24

Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate, Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 ✓

#	Name	Area	IS Area	WL/Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		1.65e5												0.148
2	2 1,2,3,7,8-PeCDD		1.39e5	10.0114	✓ 0.903			1.001			30.74				0.168
3	3 1,2,3,4,7,8-HxCDD		1.26e5	10.0114	1.101			1.000			34.04				0.217
4	4 1,2,3,6,7,8-HxCDD		1.44e5	10.0114	0.939			1.000			34.13				0.238
5	5 1,2,3,7,8,9-HxCDD	1.25e2	1.42e5	10.0114	0.961	1.457	YES	1.001	1.001	34.46	34.44	0.18401		0.168	0.237
6	6 1,2,3,4,6,7,8-HpCDD	1.22e3	1.28e5	10.0114	0.979	1.081	NO	1.000	1.001	37.88	37.89	1.9324		1.93	0.229
7	7 OCDD	5.64e3	1.99e5	10.0114	0.959	0.895	NO	1.000	1.000	41.16	41.17	11.813		11.8	0.326
8	8 2,3,7,8-TCDF	1.54e2	2.40e5	10.0114	0.950	1.180	YES	1.001	1.002	25.47	25.49	0.13487		0.110	0.160
9	9 1,2,3,7,8-PeCDF	1.73e2	2.13e5	10.0114	0.960	1.397	NO	1.001	1.001	29.56	29.56	0.16909		0.169	0.132
10	10 2,3,4,7,8-PeCDF	2.57e2	2.03e5	10.0114	1.015	1.853	YES	1.001	1.001	30.46	30.45	0.24896		0.222	0.115
11	11 1,2,3,4,7,8-HxCDF	3.71e2	1.69e5	10.0114	1.177	1.203	NO	1.000	1.000	33.13	33.14	0.37283		0.373	0.122
12	12 1,2,3,6,7,8-HxCDF	2.39e2	1.87e5	10.0114	1.069	1.455	YES	1.000	1.001	33.27	33.28	0.23907		0.218	0.129
13	13 2,3,4,6,7,8-HxCDF	2.75e2	1.73e5	10.0114	1.114	1.443	YES	1.001	1.000	33.88	33.86	0.28466		0.261	0.136
14	14 1,2,3,7,8,9-HxCDF		1.64e5	10.0114	1.062			1.000			34.81				0.183
15	15 1,2,3,4,6,7,8-HpCDF	1.10e3	1.46e5	10.0114	1.128	0.992	NO	1.001	1.001	36.68	36.68	1.3370		1.34	0.182
16	16 1,2,3,4,7,8,9-HpCDF	1.37e2	1.21e5	10.0114	1.280	1.025	NO	1.000	1.001	38.42	38.44	0.17716		0.177	0.165
17	17 OCDF	1.08e3	2.50e5	10.0114	0.947	0.936	NO	1.000	1.001	41.39	41.41	1.8269		1.83	0.277
18	18 13C-2,3,7,8-TCDD	1.65e5	2.10e5	10.0114	1.095	0.795	NO	1.021	1.021	26.22	26.22	143.40	71.8		0.352
19	19 13C-1,2,3,7,8-PeCDD	1.39e5	2.10e5	10.0114	0.881	0.635	NO	1.187	1.196	30.47	30.72	149.88	75.0		0.283
20	20 13C-1,2,3,4,7,8-Hx...	1.26e5	2.63e5	10.0114	0.642	1.281	NO	1.014	1.014	34.01	34.03	148.94	74.6		0.537
21	21 13C-1,2,3,6,7,8-Hx...	1.44e5	2.63e5	10.0114	0.856	1.292	NO	1.017	1.017	34.13	34.13	127.69	63.9		0.403
22	22 13C-1,2,3,7,8,9-Hx...	1.42e5	2.63e5	10.0114	0.807	1.247	NO	1.026	1.026	34.43	34.42	133.21	66.7		0.427
23	23 13C-1,2,3,4,6,7,8-H...	1.28e5	2.63e5	10.0114	0.654	1.065	NO	1.126	1.129	37.78	37.87	148.78	74.5		0.732
24	24 13C-OCDD	1.99e5	2.63e5	10.0114	0.580	0.908	NO	1.226	1.227	41.13	41.16	260.27	65.1		0.360
25	25 13C-2,3,7,8-TCDF	2.40e5	3.43e5	10.0114	1.035	0.805	NO	0.993	0.991	25.51	25.45	135.26	67.7		0.360
26	26 13C-1,2,3,7,8-PeCDF	2.13e5	3.43e5	10.0114	0.854	1.640	NO	1.143	1.150	29.35	29.54	145.20	72.7		0.568
27	27 13C-2,3,4,7,8-PeCDF	2.03e5	3.43e5	10.0114	0.847	1.596	NO	1.176	1.185	30.21	30.43	139.79	70.0		0.572
28	28 13C-1,2,3,4,7,8-Hx...	1.69e5	2.63e5	10.0114	0.832	0.515	NO	0.987	0.988	33.12	33.13	154.10	77.1		0.614
29	29 13C-1,2,3,6,7,8-Hx...	1.87e5	2.63e5	10.0114	1.034	0.518	NO	0.991	0.991	33.24	33.26	137.18	68.7		0.494
30	30 13C-2,3,4,6,7,8-Hx...	1.73e5	2.63e5	10.0114	0.953	0.502	NO	1.009	1.009	33.86	33.85	137.79	69.0		0.536
31	31 13C-1,2,3,7,8,9-Hx...	1.64e5	2.63e5	10.0114	0.828	0.525	NO	1.039	1.038	34.85	34.81	150.45	75.3		0.617

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-5.qld

Last Altered: Thursday, November 14, 2019 07:32:37 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:33:01 Pacific Standard Time

Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate,
 Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	1.46e5	2.63e5	10.0114	0.757	0.432	NO	1.093	1.092	36.66	36.65	145.85	73.0		0.599
33	33 13C-1,2,3,4,7,8,9-H...	1.21e5	2.63e5	10.0114	0.581	0.440	NO	1.143	1.145	38.35	38.42	157.77	79.0		0.780
34	34 13C-OCDF	2.50e5	2.63e5	10.0114	0.689	0.905	NO	1.233	1.234	41.37	41.39	275.20	68.9		0.480
35	35 37Cl-2,3,7,8-TCDD	6.77e4	2.10e5	10.0114	1.198			1.022	1.022	26.24	26.26	53.716	67.2		0.0575
36	36 13C-1,2,3,4-TCDD	2.10e5	2.10e5	10.0114	1.000	0.808	NO	1.000	1.000	25.70	25.68	199.77	100.0		0.385
37	37 13C-1,2,3,4-TCDF	3.43e5	3.43e5	10.0114	1.000	0.813	NO	1.000	1.000	24.28	24.26	199.77	100.0		0.373
38	38 13C-1,2,3,4,6,9-Hx...	2.63e5	2.63e5	10.0114	1.000	0.523	NO	1.000	1.000	33.55	33.55	199.77	100.0		0.511
39	39 Total Tetra-Dioxins		1.65e5	10.0114	0.901			0.000		25.50		0.60878		1.19	0.185
40	40 Total Penta-Dioxins		1.39e5	10.0114	0.872			0.000		30.00		0.25366		0.805	0.174
41	41 Total Hexa-Dioxins		0.00e0	10.0114	0.976			0.000		33.80		1.0849		1.95	0.235
42	42 Total Hepta-Dioxins		1.28e5	10.0114	0.989			0.000		37.75		4.2516		4.25	0.227
43	43 Total Tetra-Furans		2.40e5	10.0114	0.943			0.000		24.00		1.0543		2.66	0.170
44	44 1st Func. Penta-Fur...		0.00e0	10.0114	0.940			0.000		27.63		0.00000		0.219	0.0335
45	45 Total Penta-Furans		0.00e0	10.0114	0.940			0.000		30.00		0.90852	2.13	1.91	0.130
46	46 Total Hexa-Furans		0.00e0	10.0114	1.078			0.000		33.00		1.3977		1.88	0.145
47	47 Total Hepta-Furans		0.00e0	10.0114	1.135			0.000		37.75		1.8106		1.81	0.183

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-5.qld

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Printed: Thursday, November 14, 2019 07:33:01 Pacific Standard Time

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Calibration: 14 Nov 2019 07:10:24

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 Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	39 Total Tetra-Dioxins	YES	24.37	128.252	73212.352	0.000	db	0.0000	0.33
2	39 Total Tetra-Dioxins	YES	23.25	133.033	73212.352	0.000	MM	0.0000	0.25
3	39 Total Tetra-Dioxins	NO	22.88	203.581	73212.352	5.491	MM	0.6088	0.61

Penta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	40 Total Penta-Dioxins	YES	28.73	73.062	54011.309	0.000	MM	0.0000	0.31
2	40 Total Penta-Dioxins	YES	30.07	56.389	54011.309	0.000	MM	0.0000	0.24
3	40 Total Penta-Dioxins	NO	29.15	58.274	54011.309	2.215	MM	0.2537	0.25

Hexa-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	YES	33.08	310.959	76886.331	0.000	MM	0.0000	0.70
2	41 Total Hexa-Dioxins	NO	32.49	424.731	76886.331	10.600	bb	1.0849	1.08
3	5 1,2,3,7,8,9-HxCDD	YES	34.44	74.395	78623.086	0.000	MM	0.0000	0.17

Hepta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	NO	37.89	631.393	66155.180	18.947	MM	1.9324	1.93
2	42 Total Hepta-Dioxins	NO	37.03	772.018	66155.180	22.957	MM	2.3193	2.32

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-5.qld

Last Altered: Thursday, November 14, 2019 07:32:37 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:33:01 Pacific Standard Time

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 Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	43 Total Tetra-Furans	NO	21.97	338.252	107193.633	6.180	MM	0.6548	0.65
2	43 Total Tetra-Furans	YES	25.84	68.370	107193.633	0.000	db	0.0000	0.14
3	43 Total Tetra-Furans	NO	25.45	57.632	107193.633	1.169	MM	0.1239	0.12
4	43 Total Tetra-Furans	YES	25.38	51.757	107193.633	0.000	MM	0.0000	0.09
5	43 Total Tetra-Furans	YES	25.26	17.846	107193.633	0.000	MM	0.0000	0.04
6	43 Total Tetra-Furans	YES	25.10	48.411	107193.633	0.000	MM	0.0000	0.10
7	43 Total Tetra-Furans	YES	24.93	106.028	107193.633	0.000	db	0.0000	0.15
8	43 Total Tetra-Furans	NO	24.67	136.792	107193.633	2.602	MM	0.2757	0.28
9	43 Total Tetra-Furans	YES	24.28	229.955	107193.633	0.000	db	0.0000	0.40
10	43 Total Tetra-Furans	YES	24.17	116.140	107193.633	0.000	dd	0.0000	0.18
11	43 Total Tetra-Furans	YES	22.53	165.561	107193.633	0.000	db	0.0000	0.34
12	8 2,3,7,8-TCDF	YES	25.49	83.438	107193.633	0.000	MM	0.0000	0.11
13	43 Total Tetra-Furans	YES	25.32	37.476	107193.633	0.000	MM	0.0000	0.08

Penta-Furans function 1

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	44 1st Func. Penta-Furans	YES	27.22	130.108	128630.973	0.000	MM	0.0000	0.22

Penta-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	10 2,3,4,7,8-PeCDF	YES	30.45	167.001	124988.305	0.000	MM	0.0000	0.22
2	45 Total Penta-Furans	NO	30.38	190.586	128630.973	2.948	MM	0.3134	0.31
3	45 Total Penta-Furans	YES	29.79	202.419	128630.973	0.000	MM	0.0000	0.26
4	9 1,2,3,7,8-PeCDF	NO	29.56	100.884	132273.641	1.626	MM	0.1691	0.17
5	45 Total Penta-Furans	YES	28.67	298.802	128630.973	0.000	MM	0.0000	0.43
6	45 Total Penta-Furans	NO	28.54	238.760	128630.973	4.008	bd	0.4261	0.43
7	45 Total Penta-Furans	YES	28.71	54.612	128630.973	0.000	MM	0.0000	0.09

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-5.qld

Last Altered: Thursday, November 14, 2019 07:32:37 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:33:01 Pacific Standard Time

Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate,
 Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Hexa-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	13 2,3,4,6,7,8-HxCDF	YES	33.86	162.359	57872.918	0.000	MM	0.0000	0.26
2	12 1,2,3,6,7,8-HxCDF	YES	33.28	141.875	63874.098	0.000	MM	0.0000	0.22
3	11 1,2,3,4,7,8-HxCDF	NO	33.14	202.721	57477.402	4.392	MM	0.3728	0.37
4	46 Total Hexa-Furans	NO	33.05	164.606	58935.561	3.241	MM	0.3005	0.30
5	46 Total Hexa-Furans	NO	32.13	282.201	58935.561	5.879	bb	0.5449	0.54
6	46 Total Hexa-Furans	NO	31.97	97.664	58935.561	1.937	bb	0.1795	0.18

Hepta-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	16 1,2,3,4,7,8,9-HpCDF	NO	38.44	69.463	36920.813	2.270	MM	0.1772	0.18
2	47 Total Hepta-Furans	NO	37.25	122.041	40450.391	3.367	bb	0.2964	0.30
3	15 1,2,3,4,6,7,8-HpCDF	NO	36.68	547.624	43979.969	15.094	bb	1.3370	1.34

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

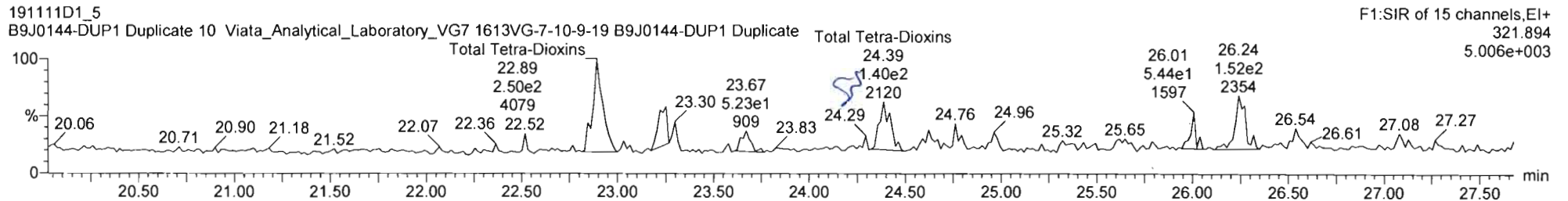
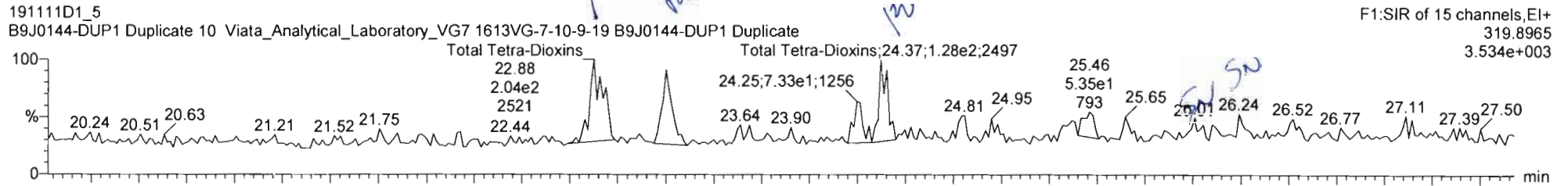
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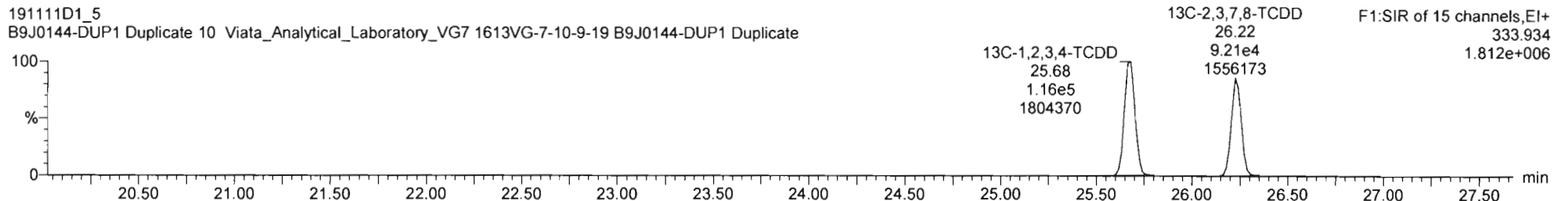
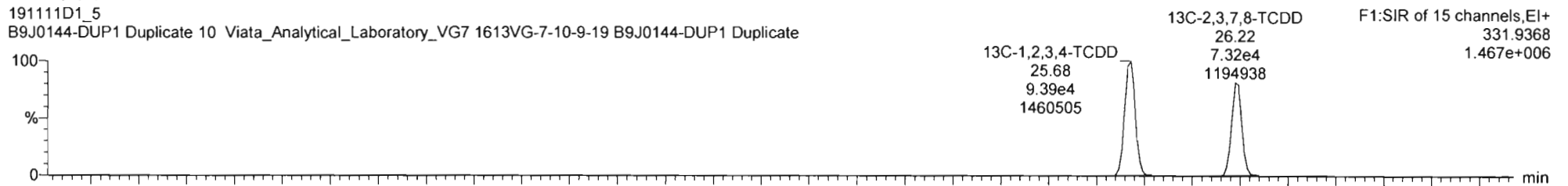
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Name: VG7 19111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate, Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Tetra-Dioxins



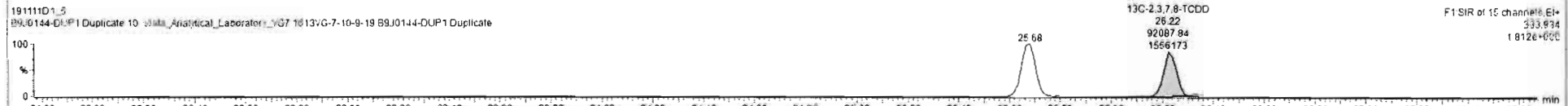
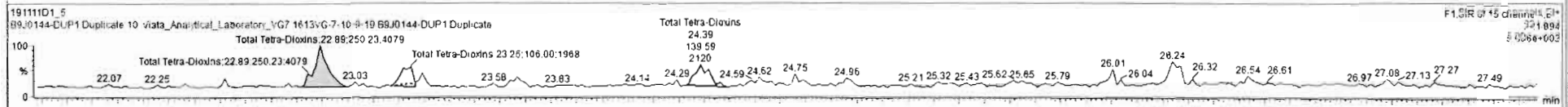
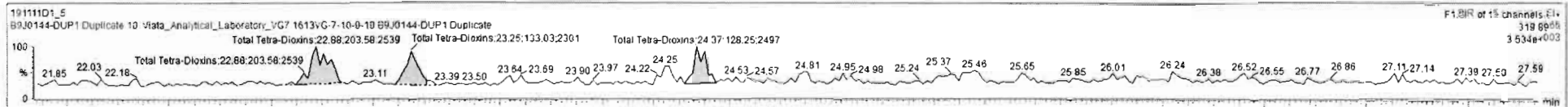
13C-2,3,7,8-TCDD



191111D1_5 - 89J0144-DUP1 Duplicate - 89J0144-DUP1 Duplicate 10 Vista Analytical Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	S Resp	IS#	RA	n/y	RRF	w/val	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
34	13C-OCDF	2.50e5	2.63e5	38	0.91	NO	0.688	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	37Cl-2,3,7,8-TCDD	6.77e4	2.10e5	38			1.198	10.011	26.24	26.26	1.022	1.022	NO	53.72	67.2	0.0575	
36	13C-1,2,3,4-TCDD	2.10e5	2.10e5	38	0.81	NO	1.000	10.011	25.70	25.68	1.000	1.000	NO	199.6	100	0.385	
37	13C-1,2,3,4-TCDF	3.43e5	3.43e5	37	0.81	NO	1.000	10.011	24.28	24.28	1.000	1.000	NO	199.8	100	0.373	
38	13C-1,2,3,4,6,9-HxCDF	2.63e5	2.63e5	38	0.52	NO	1.000	10.011	33.55	33.55	1.000	1.000	NO	199.6	100	0.511	
39	Total Tetra-Dioxins	1.85e5					0.901	10.011	25.50		0.000	NO	0.6088		0.185	1.182	
40	Total Penta-Dioxins	1.39e5					0.872	10.011	30.00		0.000	NO	0.5374		0.174	1.751	
41	Total Hexa-Dioxins	0.00e0					0.976	10.011	33.60		0.000	NO	0.9349		0.235	1.691	
42	Total Hepta-Dioxins	1.28e5					0.988	10.011	37.75		0.000	NO	4.274		0.227	4.274	
43	Total Tetra-Furans	2.40e5					0.943	10.011	24.50		0.000	NO	1.741		0.170	3.423	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	22.88	2.036e2	2.502e2	0.770	0.81	NO	0.60878	0.62875
2	38 Total Tetra-Dioxins	25.50	23.25	1.330e2	1.060e2	0.770	1.25	YES	0.25169	0.00000
3	38 Total Tetra-Dioxins	25.50	24.37	1.283e2	1.396e2	0.770	0.92	YES	0.33146	0.00000



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

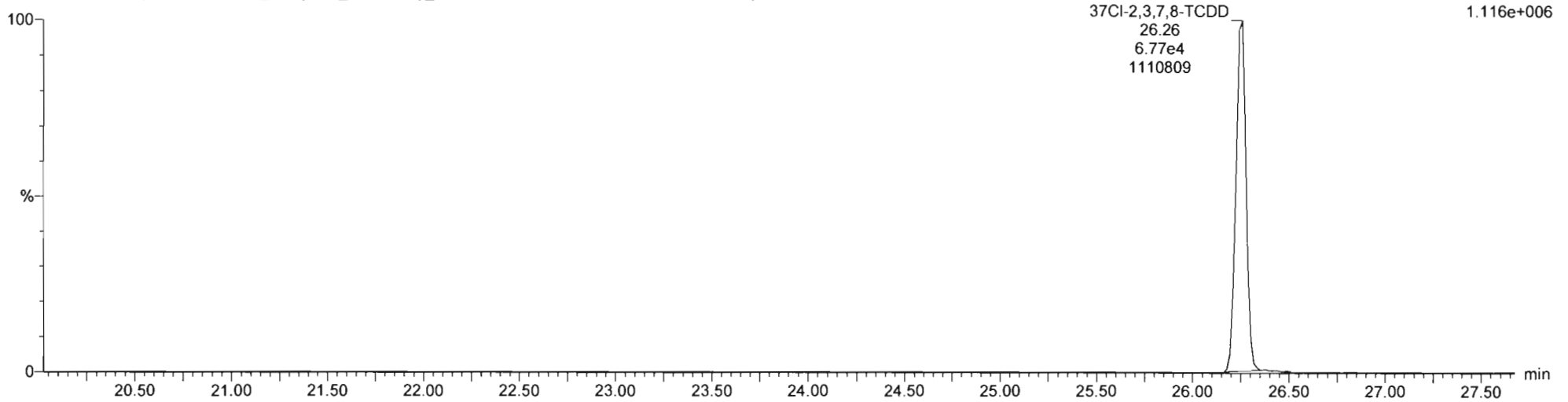
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Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate,
Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

37Cl-2,3,7,8-TCDD

191111D1_5
B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

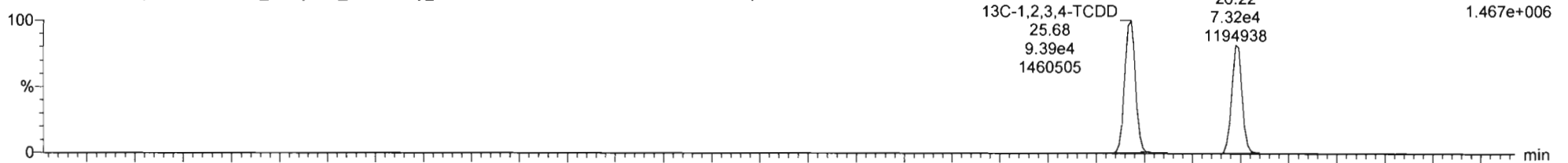
F1:SIR of 15 channels,EI+
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1.116e+006



13C-1,2,3,4-TCDD

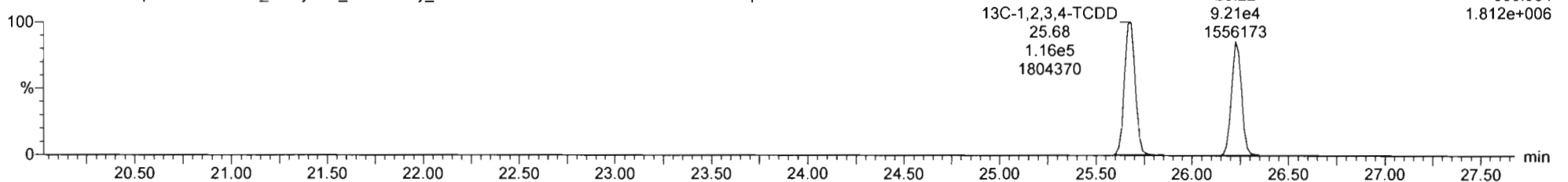
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B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

F1:SIR of 15 channels,EI+
331.9368
1.467e+006



191111D1_5
B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

F1:SIR of 15 channels,EI+
333.934
1.812e+006



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

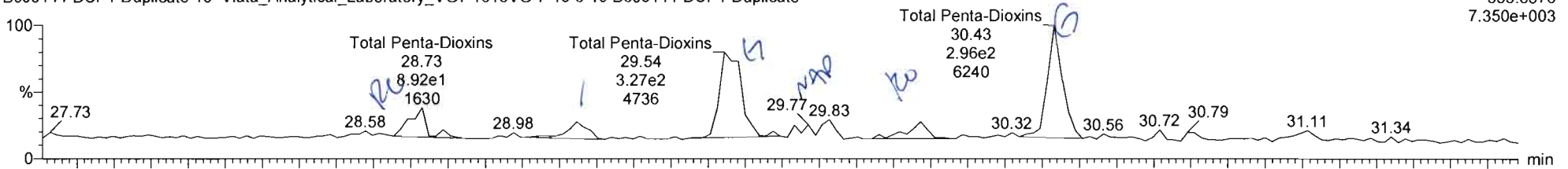
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 Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Penta-Dioxins

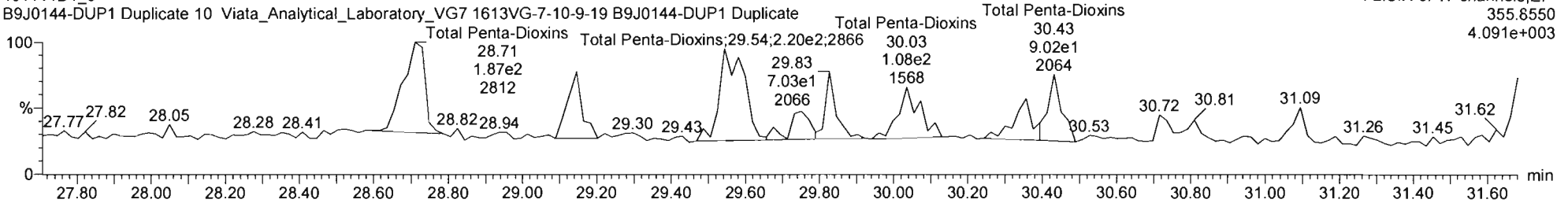
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 B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

F2:SIR of 17 channels,EI+
 353.8576
 7.350e+003



19111D1_5
 B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

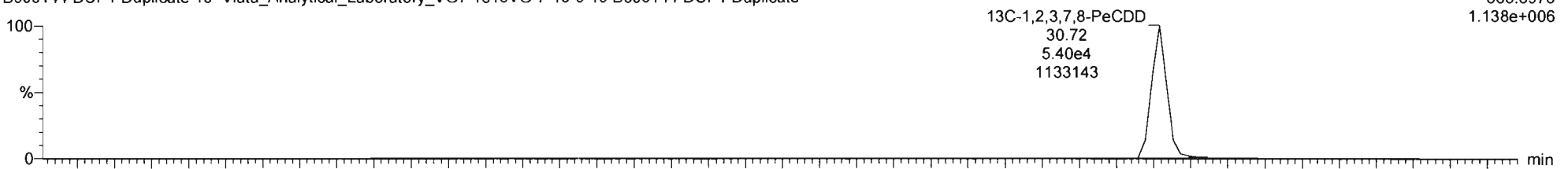
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 4.091e+003



13C-1,2,3,7,8-PeCDD

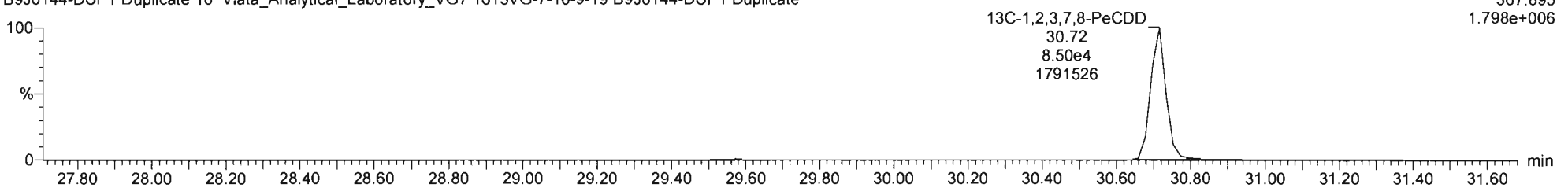
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 B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

F2:SIR of 17 channels,EI+
 365.8978
 1.138e+006



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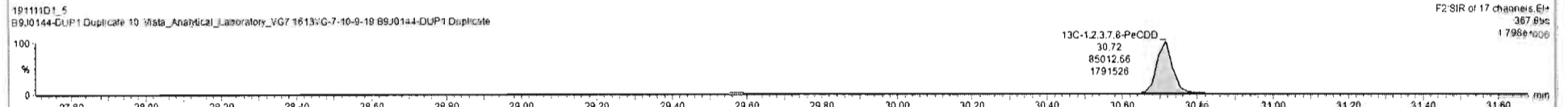
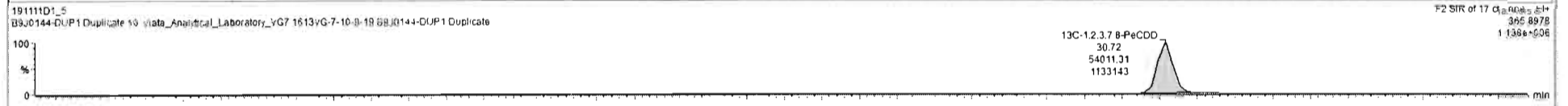
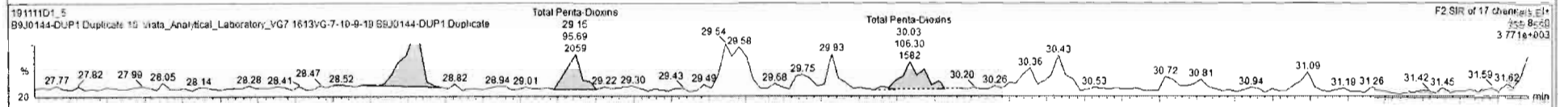
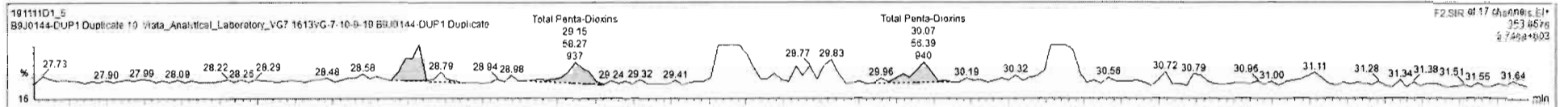
F2:SIR of 17 channels,EI+
 367.895
 1.798e+006



191111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate 10 - Vista Analytical Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	S Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	% Rec	DL	EMPC
34	13C-OCDF	2.50e5	2.83e5	38	0.91	NO	0.888	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	37Cl-2,3,7,8-TCDF	6.77e4	2.16e5	38			1.156	16.011	26.24	26.28	1.022	1.022	NO	53.72	67.2	0.0575	
36	13C-1,2,3,4-TCDF	2.10e5	2.10e5	36	0.81	NO	1.000	10.011	25.70	25.68	1.000	1.000	NO	199.6	100	0.355	
37	13C-1,2,3,4-TCDF	3.43e5	3.43e5	37	0.81	NO	1.000	10.011	24.28	24.26	1.000	1.000	NO	199.8	100	0.373	
38	13C-1,2,3,4,8-HxCDF	2.63e5	2.63e5	38	0.52	NO	1.000	10.011	33.55	33.55	1.000	1.000	NO	199.5	100	0.511	
39	Total Tetra-Dioxins	1.65e5					0.901	10.011	25.50		0.000	0.000	NO	0.6068		0.185	1.192
40	Total Penta-Dioxins	1.38e5					0.872	10.011	30.00		0.000	0.000	NO	0.2537		0.174	0.8056
41	Total Hexa-Dioxins	0.30e0					0.976	10.011	33.80		0.000	0.000	NO	0.9349		0.235	1.691
42	Total Hepta-Dioxins	1.28e5					0.989	10.011	37.75		0.000	0.000	NO	4.274		0.227	4.274
43	Total Tetra-Furans	2.40e5					0.943	10.011	24.00		0.500	0.500	NO	1.741		0.170	3.423

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	40 Total Penta-Dioxins	30.00	28.73	7.306e1	1.671e2	0.830	0.39	YES	0.31144	0.00000
2	40 Total Penta-Dioxins	30.00	29.15	5.827e1	9.569e1	0.830	0.61	NO	0.25366	0.25366
3	40 Total Penta-Dioxins	30.00	30.07	5.838e1	1.063e2	0.830	0.53	YES	0.24036	0.00000



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

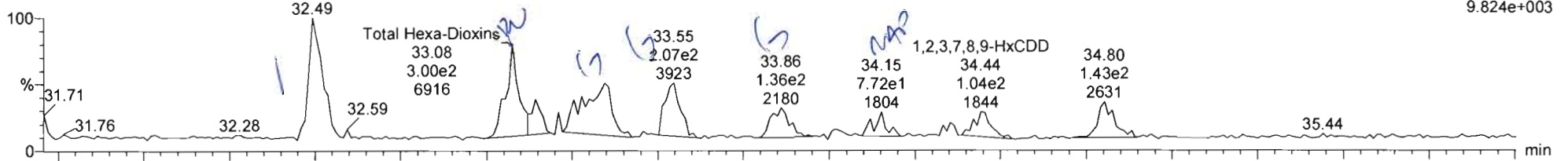
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Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate, Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Hexa-Dioxins

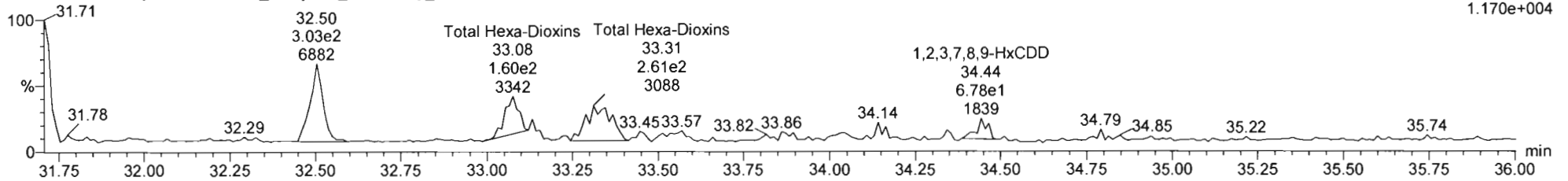
191111D1_5 B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

F3:SIR of 11 channels,EI+ 389.816 9.824e+003



191111D1_5 B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

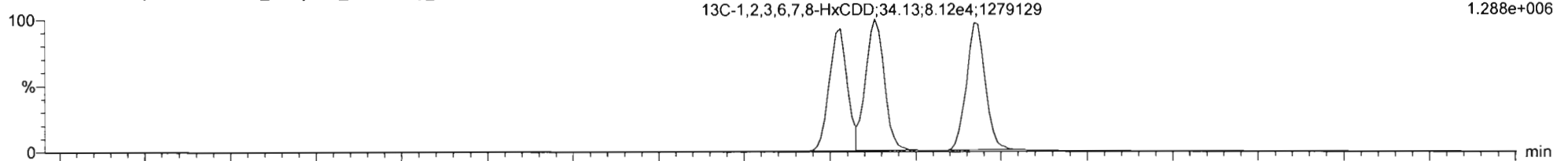
F3:SIR of 11 channels,EI+ 391.813 1.170e+004



13C-1,2,3,4,7,8-HxCDD

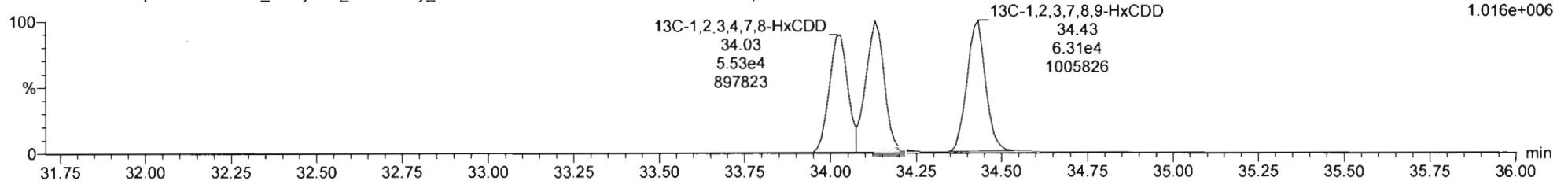
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F3:SIR of 11 channels,EI+ 401.856 1.288e+006



191111D1_5 B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

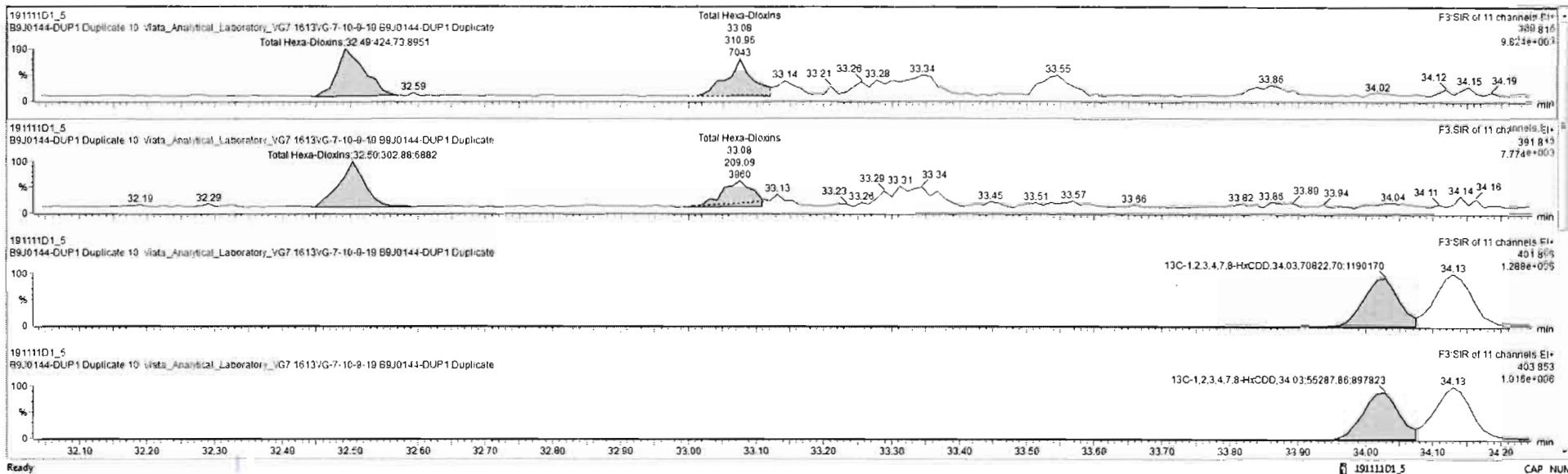
F3:SIR of 11 channels,EI+ 403.853 1.016e+006



191111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate 10 - Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	S Resp	IS#	RA	n/y	RRF	wt/wt	Pred_RT	RT	RRT	Pred_RRT	Check_RRT	Conc.	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	1.21e5	2.63e5	38	0.44	NO	0.581	10.011	38.35	38.42	1.145	1.143	NO	157.8	79.0	0.790	
34	13C-OCDF	2.50e5	2.83e5	38	0.91	NO	0.689	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	37Cl-2,3,7,8-TCDD	6.77e4	2.10e5	36			1.158	10.011	26.24	26.26	1.022	1.022	NO	53.72	67.2	0.0575	
36	13C-1,2,3,4-TCDD	2.10e5	2.10e5	36	0.81	NO	1.000	10.011	25.70	25.68	1.000	1.000	NO	199.8	100	0.395	
37	13C-1,2,3,4-TCDF	3.43e5	3.43e5	37	0.81	NO	1.000	10.011	24.28	24.26	1.000	1.000	NO	199.6	100	0.373	
38	13C-1,2,3,4,6,8-HxCDF	2.63e5	2.63e5	38	0.52	NO	1.000	10.011	33.55	33.55	1.000	1.000	NO	199.8	100	0.511	
39	Total Tetra-Dioxins	1.85e5					0.901	10.011	25.50			0.000	NO	0.8088		0.185	1.192
40	Total Penta-Dioxins	1.36e5					0.872	10.011	30.00			0.000	NO	0.2637		0.174	0.8055
41	Total Hexa-Dioxins	0.80e5					0.976	10.011	33.80			0.000	NO	1.085		0.235	1.951
42	Total Hepta-Dioxins	1.28e5					0.989	10.011	37.75			0.000	NO	4.274		0.227	4.274

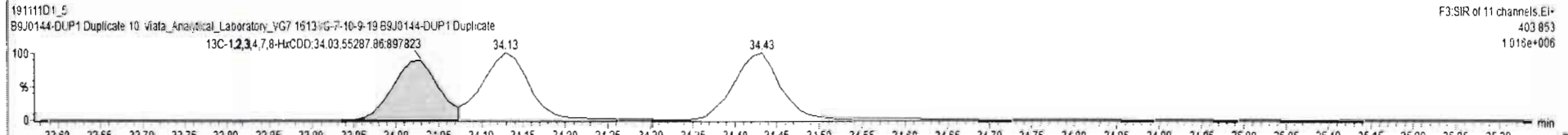
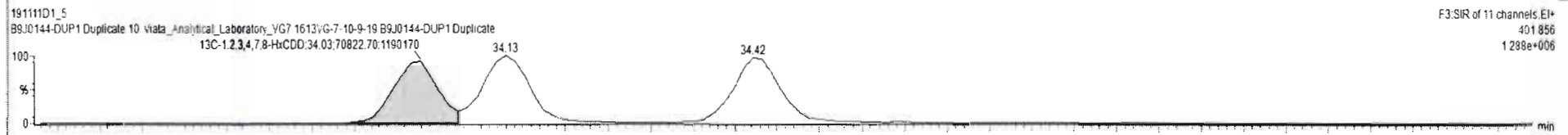
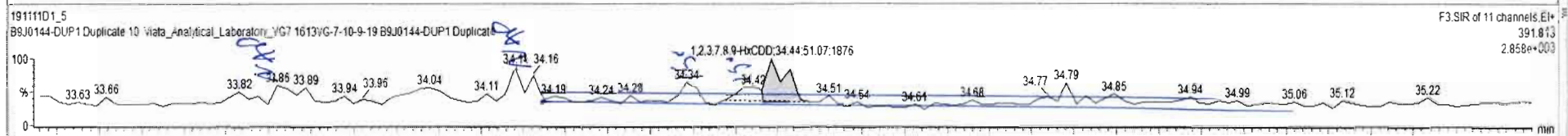
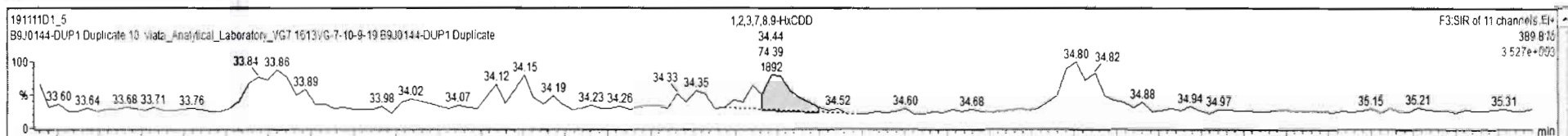
#	Name	Pred_RT	RT	m1 Resp	m2 Resp	Pred_RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.49	4.247e2	3.029e2	1.240	1.40	NO	1.0849	1.0849
2	41 Total Hexa-Dioxins	33.80	33.08	3.110e2	2.091e2	1.240	1.48	YES	0.89837	0.00000
3	5 1,2,3,7,8-HxCDD	34.45	34.44	7.439e1	5.107e1	1.240	1.46	YES	0.16776	0.00000



191111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate 10 - Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/val	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
27	13C-2,3,4,7,8-PeCDF	2.03e5	3.42e5	37	1.60	NO	0.847	10.011	30.21	30.43	1.185	1.176	NO	139.8	76.0	0.572	
28	13C-1,2,3,4,7,8-HxCDF	1.69e5	2.63e5	38	0.52	NO	0.832	10.011	33.12	33.13	0.988	0.987	NO	154.1	77.1	0.614	
29	13C-1,2,3,6,7,8-HxCDF	1.87e5	2.83e5	38	0.52	NO	1.034	10.011	33.24	33.26	0.991	0.991	NO	137.2	68.7	0.494	
30	13C-2,3,4,6,7,8-HxCDF	1.73e5	2.63e5	38	0.50	NO	0.953	10.011	33.86	33.85	1.009	1.009	NO	137.3	69.0	0.536	
31	13C-1,2,3,7,8,9-HxCDF	1.64e5	2.83e5	38	0.52	NO	0.828	10.011	34.85	34.81	1.038	1.039	NO	150.5	75.3	0.617	
32	13C-1,2,3,4,6,7,8-HpCDF	1.46e5	2.63e5	38	0.43	NO	0.757	10.011	36.68	36.65	1.092	1.093	NO	145.8	73.0	0.599	
33	13C-1,2,3,4,7,8,9-HpCDF	1.21e5	2.63e5	38	0.44	NO	0.581	10.011	38.35	38.42	1.145	1.143	NO	157.8	79.0	0.780	
34	13C-OCDF	2.56e5	2.63e5	38	0.91	NO	0.689	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	37Cl-2,3,7,8-TCDD	6.77e4	2.10e5	38			1.198	10.011	26.24	26.26	1.022	1.022	NO	53.72	67.2	0.0575	
36	13C-1,2,3,4-TCDD	2.10e5	2.10e5	38	0.81	NO	1.000	10.011	25.70	25.68	1.000	1.000	NO	199.8	100	0.385	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Chlorins	33.80	33.08	3.110e2	2.091e2	1.240	1.49	YES	0.69837	0.00000
2	5 1,2,3,7,8,9-HxCDD	34.46	34.44	7.439e1	5.107e1	1.240	1.46	YES	0.16778	0.00000



Vista Analytical Laboratory

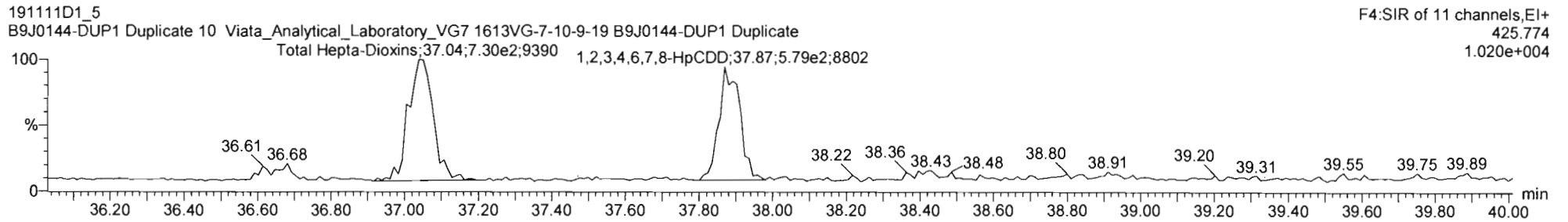
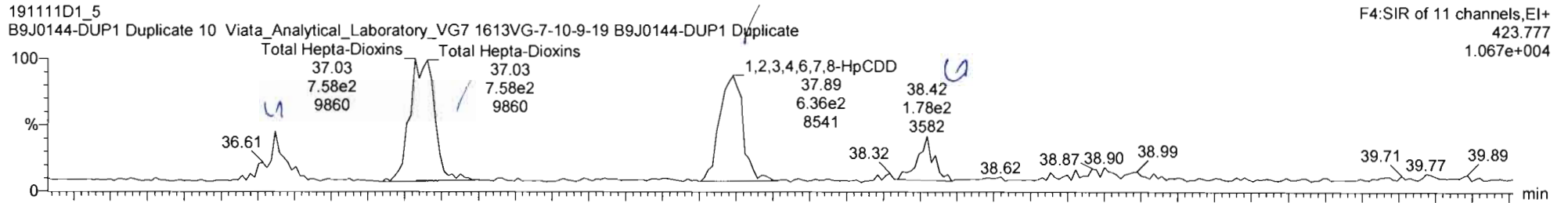
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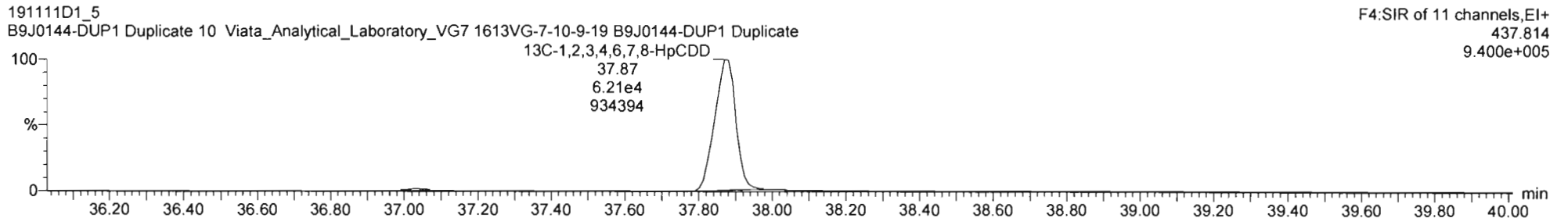
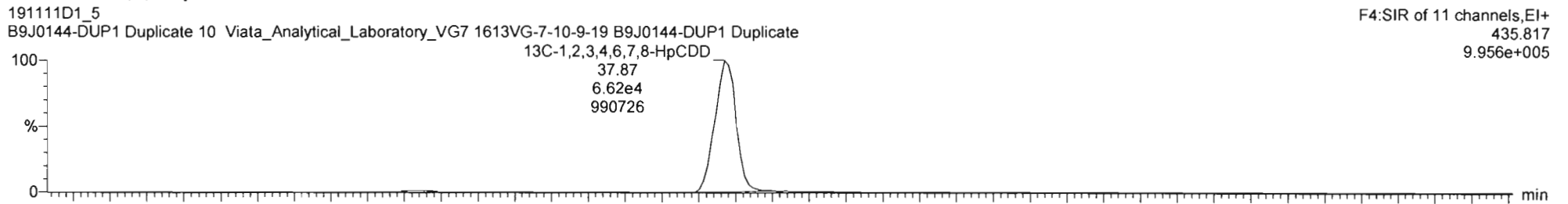
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Total Hepta-Dioxins



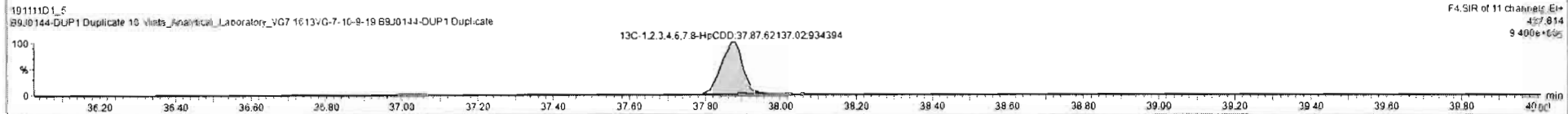
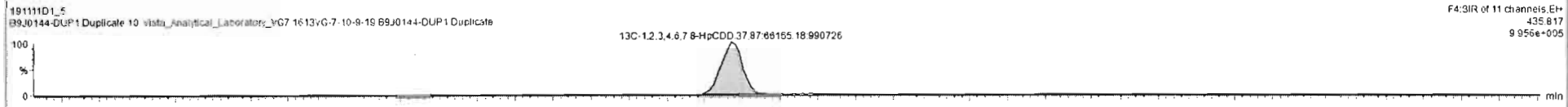
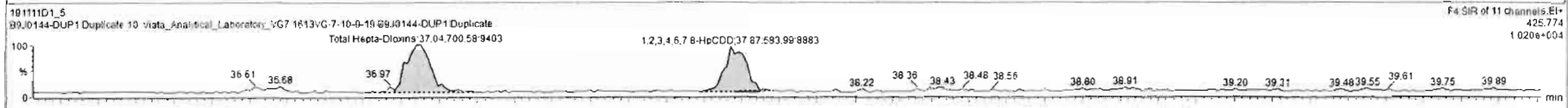
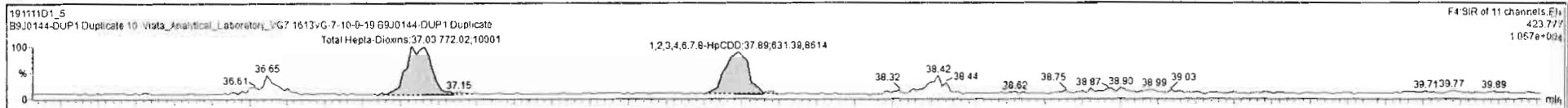
13C-1,2,3,4,6,7,8-HpCDD



191111D1_5 B9J0144-DUP1 Duplicate B9J0144-DUP1 Duplicate 10 Vista_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	1.21e5	2.63e5	38	0.44	NO	0.581	10.011	38.35	38.42	1.145	1.143	NO	157.8	78.0	0.760	
34	13C-OCDF	2.59e5	2.63e5	38	0.91	NO	0.689	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	37Cl-2,3,7,8-TCDD	6.77e4	2.10e5	36			1.158	10.011	28.24	26.26	1.022	1.022	NO	53.72	67.2	0.0575	
36	13C-1,2,3,4-TCDD	2.10e5	2.10e5	36	0.81	NO	1.030	10.011	25.70	25.68	1.000	1.000	NO	199.8	100	0.385	
37	13C-1,2,3,4-TCDF	3.43e5	3.43e5	37	0.81	NO	1.000	10.011	24.28	24.28	1.000	1.000	NO	199.8	100	0.373	
38	13C-1,2,3,4,6,8-HxCDF	2.63e5	2.63e5	38	0.52	NO	1.000	10.011	33.55	33.55	1.000	1.000	NO	199.8	100	0.511	
39	Total Tetra-Dioxins		1.85e5				0.901	10.011	26.50			0.000	NO	0.6088		0.185	1.192
40	Total Penta-Dioxins		1.39e5				0.872	10.011	30.00			0.000	NO	0.2537		0.174	0.8955
41	Total Hexa-Dioxins		0.80e0				0.876	10.011	33.80			0.000	NO	1.065		0.235	1.951
42	Total Hepta-Dioxins		1.28e5				0.988	10.011	37.75			0.000	NO	4.252		0.227	4.252

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	37.03	7.729e2	7.009e2	1.040	1.10	NO	2.3193	2.3190
2	6 1,2,3,4,6,7,8-HpCDD	37.68	37.69	6.314e2	5.640e2	1.040	1.08	NO	1.9324	1.9324



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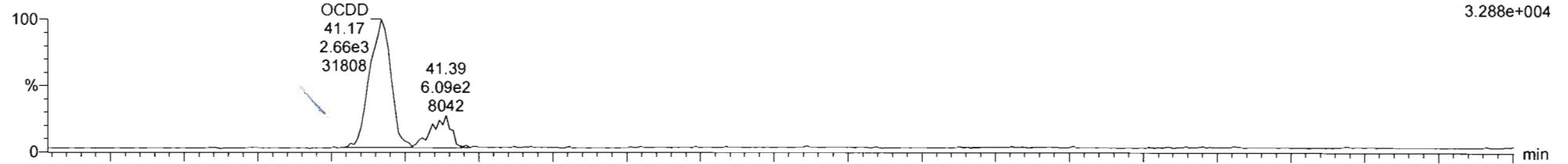
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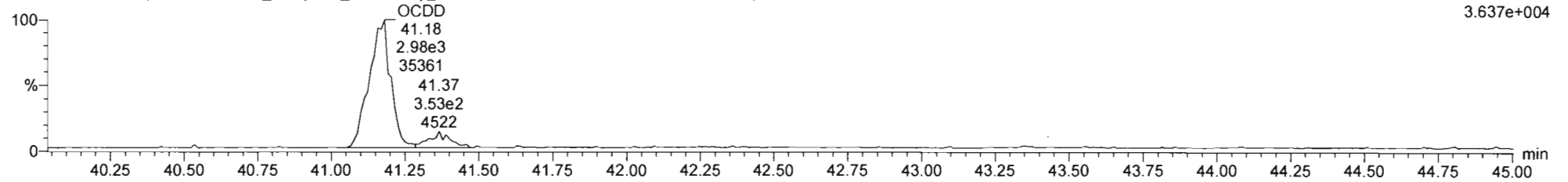
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457.738
3.288e+004



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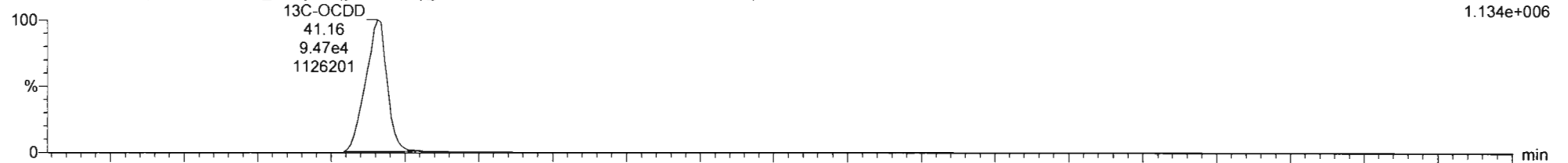
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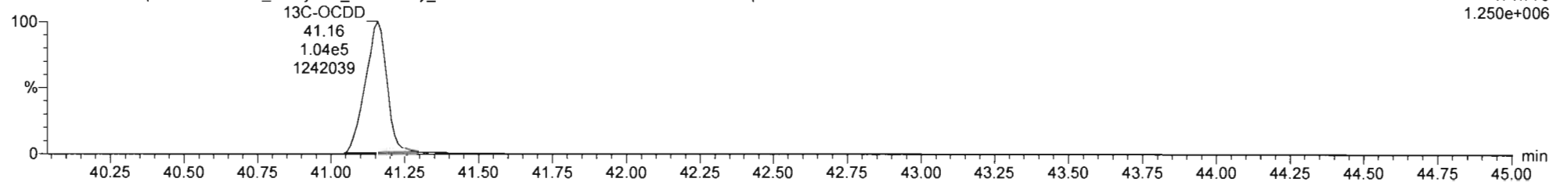
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F5:SIR of 11 channels,EI+
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F5:SIR of 11 channels,EI+
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Vista Analytical Laboratory

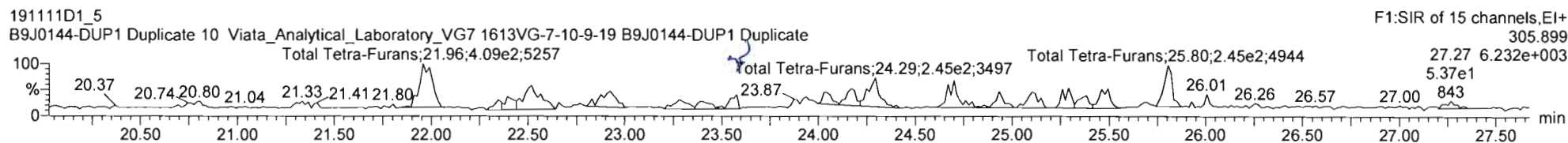
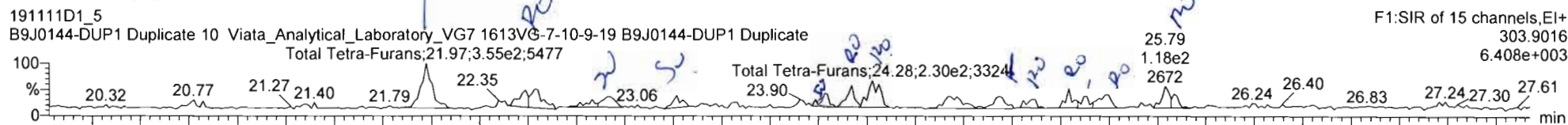
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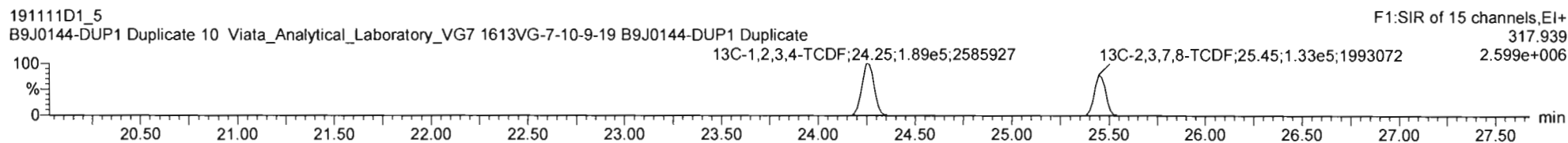
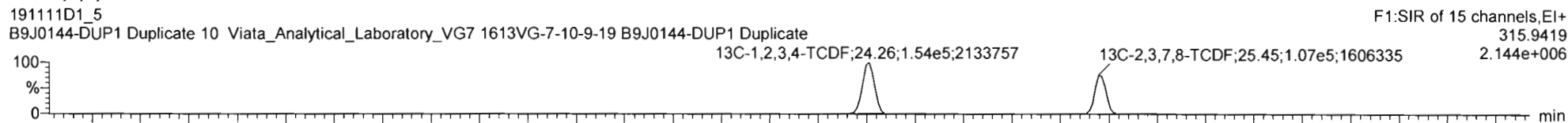
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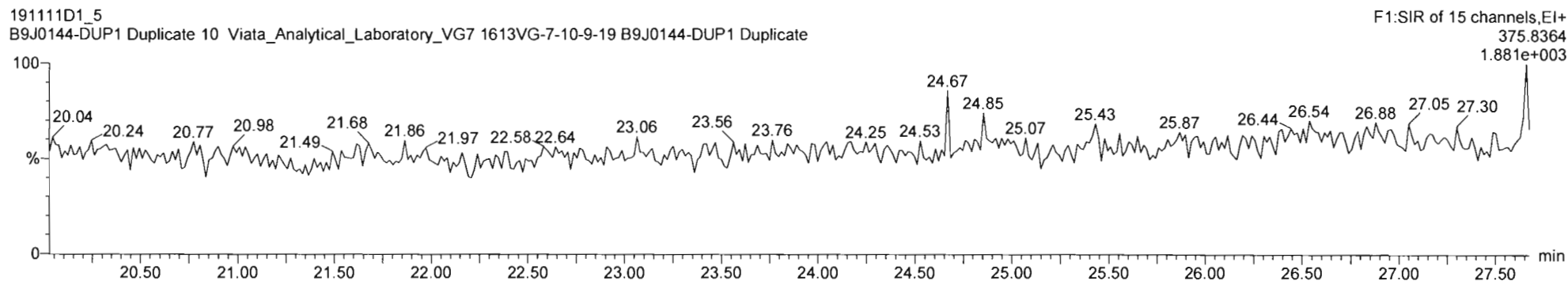
Total Tetra-Furans



13C-2,3,7,8-TCDF

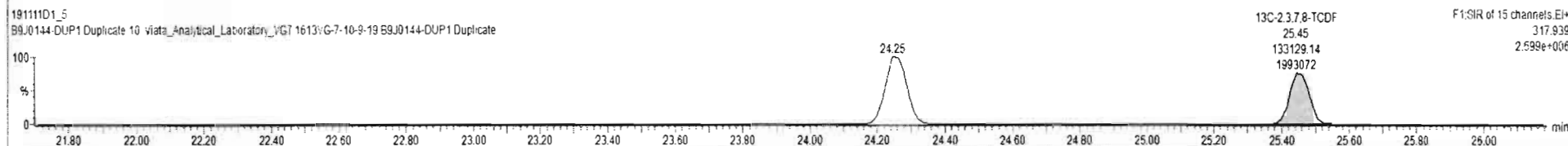
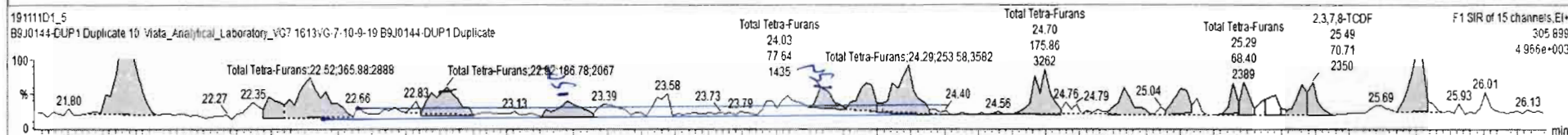
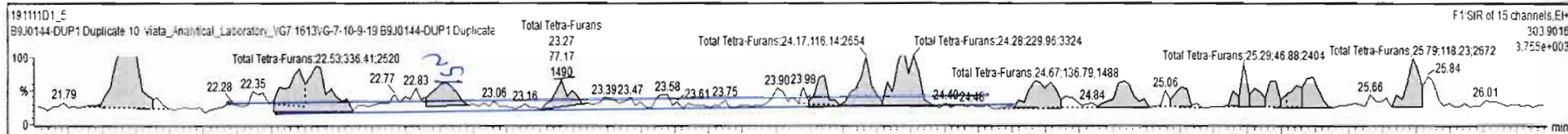


DPE1



#	Name	Resp	IS Resp	IS#	RA	nly	RRF	w/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	1.21e5	2.63e5	38	0.44	NO	0.581	10.011	38.35	38.42	1.145	1.143	NO	157.8	79.0	0.780	
34	13C-OCDF	2.50e5	2.63e5	38	0.91	NO	0.689	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	37Cl-2,3,7,8-TCDF	6.77e4	2.10e5	26			1.198	10.011	26.24	26.26	1.022	1.022	NO	53.72	67.2	0.0575	
36	13C-1,2,3,4-TCDF	2.10e5	2.10e5	36	0.81	NO	1.000	10.011	25.70	25.68	1.000	1.000	NO	199.8	100	0.385	
37	13C-1,2,3,4-TCDF	3.43e5	3.43e5	37	0.81	NO	1.000	10.011	24.28	24.26	1.000	1.000	NO	199.8	100	0.373	
38	13C-1,2,3,4,6,9-HxCDF	2.63e5	2.63e5	38	0.52	NO	1.000	10.011	33.55	33.55	1.000	1.000	NO	199.8	100	0.511	
39	Total Tetra-Dioxins	1.65e5					0.901	10.011	25.50			0.000	NO	0.6088		0.185	1.192
40	Total Penta-Dioxins	1.39e5					0.872	10.011	30.90			0.000	NO	0.2537		0.174	0.8095
41	Total Hexa-Dioxins	0.00e0					0.978	10.011	33.80			0.000	NO	1.085		0.235	1.951
42	Total Hepta-Dioxins	1.28e5					0.989	10.011	37.75			0.000	NO	4.252		0.227	4.252

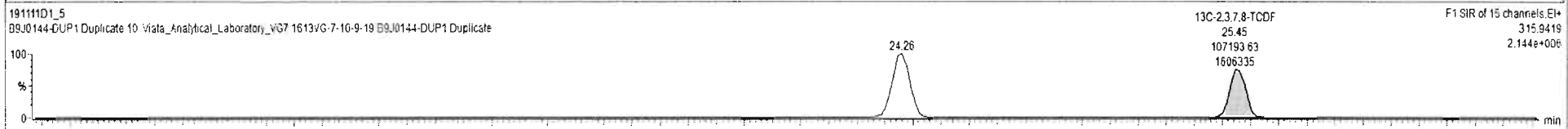
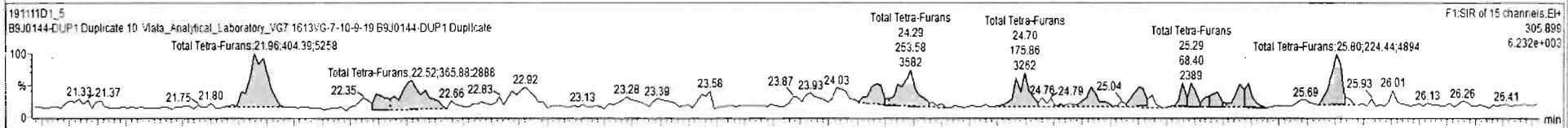
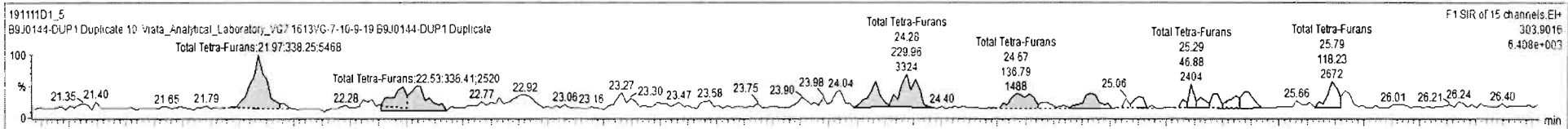
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc
1	43 Total Tetra-Furans	24.00	21.97	3.383e2	4.044e2	0.770	0.84	NO	0.65479	0.65479
2	43 Total Tetra-Furans	24.00	22.53	3.364e2	3.659e2	0.770	0.92	YES	0.57100	0.00000
3	43 Total Tetra-Furans	24.00	22.92	9.928e1	1.868e2	0.770	0.53	YES	0.20122	0.00000
4	43 Total Tetra-Furans	24.00	23.27	7.717e1	9.531e1	0.770	0.81	NO	0.15207	0.15207
5	43 Total Tetra-Furans	24.00	24.04	7.522e1	7.764e1	0.770	0.97	YES	0.12116	0.00000
6	43 Total Tetra-Furans	24.00	24.17	1.161e2	1.127e2	0.770	1.03	YES	0.17591	0.00000
7	43 Total Tetra-Furans	24.00	24.28	2.309e2	2.536e2	0.770	0.91	YES	0.39574	0.00000



191111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate to Vista_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	1.21e5	2.63e5	38	0.44	NO	0.581	10.011	38.35	38.42	1.145	1.143	NO	157.8	79.0	0.780	
34	13C-OCDF	2.50e5	2.63e5	38	0.91	NO	0.689	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	37Cl-2,3,7,8-TCDF	8.77e4	2.10e5	36			1.198	10.011	26.24	26.26	1.022	1.022	NO	53.72	67.2	0.0575	
36	13C-1,2,3,4-TCDF	2.10e5	2.10e5	36	0.81	NO	1.000	10.011	25.70	25.68	1.000	1.000	NO	199.8	100	0.355	
37	13C-1,2,3,4-TCDF	3.43e5	3.43e5	37	0.81	NO	1.000	10.011	24.28	24.28	1.000	1.000	NO	199.8	100	0.373	
38	13C-1,2,3,4,8,9-HxCDF	2.63e5	2.63e5	38	0.52	NO	1.000	10.011	33.55	33.55	1.000	1.000	NO	199.8	100	0.511	
39	Total Tetra-Dioxins	1.65e5					0.901	10.011	25.50			0.000	NO	0.6088		0.185	1.192
40	Total Penta-Dioxins	1.39e5					0.872	10.011	30.00			0.000	NO	0.2537		0.114	0.8055
41	Total Hexa-Dioxins	0.00e0					0.978	10.011	33.80			0.000	NO	1.085		0.235	1.951
42	Total Hepta-Dioxins	1.28e5					0.989	10.011	37.75			0.000	NO	4.252		0.227	4.252

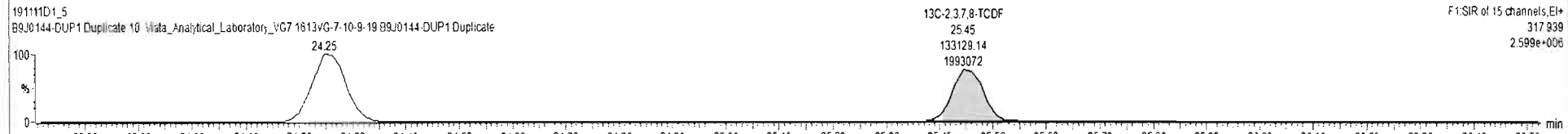
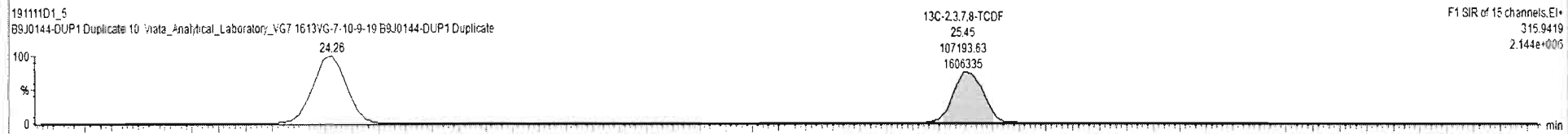
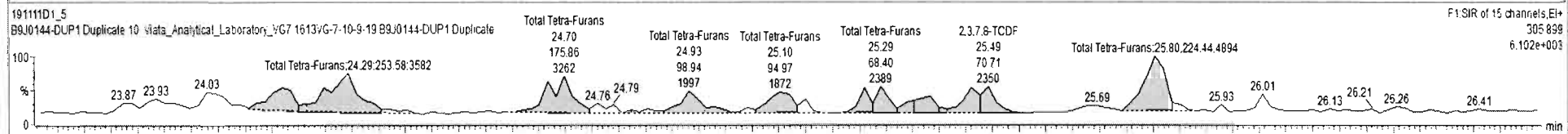
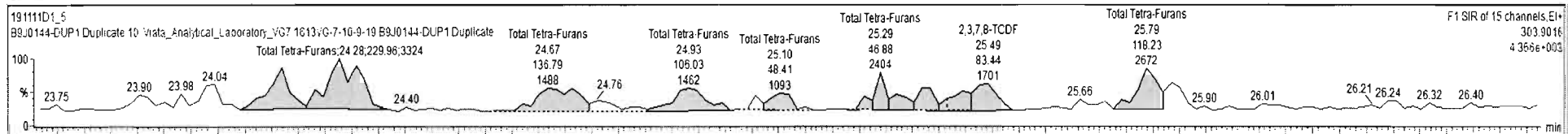
#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred.RA	RA	nly	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	21.97	3.353e2	4.044e2	0.770	0.84	NO	0.65479	0.65479
2	43 Total Tetra-Furans	24.00	22.53	3.364e2	3.659e2	0.770	0.92	YES	0.57100	0.00000
3	43 Total Tetra-Furans	24.00	24.17	1.161e2	1.127e2	0.770	1.03	YES	0.17591	0.00000
4	43 Total Tetra-Furans	24.00	24.28	2.303e2	2.536e2	0.770	0.91	YES	0.39574	0.00000
5	43 Total Tetra-Furans	24.00	24.67	1.368e2	1.759e2	0.770	0.78	NO	0.27567	0.27567
6	43 Total Tetra-Furans	24.00	24.93	1.060e2	9.894e1	0.770	1.07	YES	0.15410	0.00000
7	43 Total Tetra-Furans	24.00	25.10	4.841e1	9.497e1	0.770	0.51	YES	0.098118	0.00000



191111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate 10 Vista_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
33	33 13C-1,2,3,4,7,8,9-HpCDF	1.21e5	2.83e5	38	0.44	NO	0.581	10.011	36.35	38.42	1.145	1.143	NO	157.8	79.0	0.780	
34	34 13C-OCDF	2.50e5	2.63e5	38	0.91	NO	0.689	10.011	41.37	41.39	1.234	1.233	NO	275.2	68.9	0.480	
35	35 37C-2,3,7,8-TCDF	6.77e4	2.10e5	36			1.198	10.011	26.24	26.26	1.022	1.022	NO	53.72	67.2	0.0575	
36	36 13C-1,2,3,4-TCDD	2.10e5	2.10e5	36	0.81	NO	1.000	10.011	25.70	25.68	1.000	1.000	NO	199.8	100	0.385	
37	37 13C-1,2,3,4-TCDF	3.43e5	3.42e5	37	0.81	NO	1.000	10.011	24.28	24.26	1.000	1.000	NO	199.6	100	0.373	
38	38 13C-1,2,3,4,6,9-HxCDF	2.63e5	2.63e5	38	0.52	NO	1.000	10.011	33.55	33.55	1.000	1.000	NO	199.8	100	0.511	
39	39 Total Tetra-Dioxins	1.65e5					0.991	10.011	25.50				NO	0.6388	0.185	1.192	
40	40 Total Penta-Dioxins	1.39e5					0.872	10.011	30.00				NO	0.2537	0.174	0.8955	
41	41 Total Hexa-Dioxins	0.00e0					0.976	10.011	33.80				NO	1.085	0.235	1.951	
42	42 Total Hepta-Dioxins	1.28e5					0.989	10.011	37.75				NO	4.252	0.227	4.252	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	21.97	3.383e2	4.044e2	0.770	0.84	NO	0.65479	0.65479
2	43 Total Tetra-Furans	24.00	22.53	3.364e2	3.659e2	0.770	0.92	YES	0.57100	0.00000
3	43 Total Tetra-Furans	24.00	24.17	1.161e2	1.127e2	0.770	1.03	YES	0.17591	0.00000
4	43 Total Tetra-Furans	24.00	24.28	2.300e2	2.536e2	0.770	0.91	YES	0.39574	0.00000
5	43 Total Tetra-Furans	24.00	24.67	1.368e2	1.759e2	0.770	0.78	NO	0.27567	0.27567
6	43 Total Tetra-Furans	24.00	24.93	1.060e2	9.894e1	0.770	1.07	YES	0.15440	0.00000
7	43 Total Tetra-Furans	24.00	25.10	4.841e1	9.497e1	0.770	0.51	YES	0.098118	0.00000



Vista Analytical Laboratory

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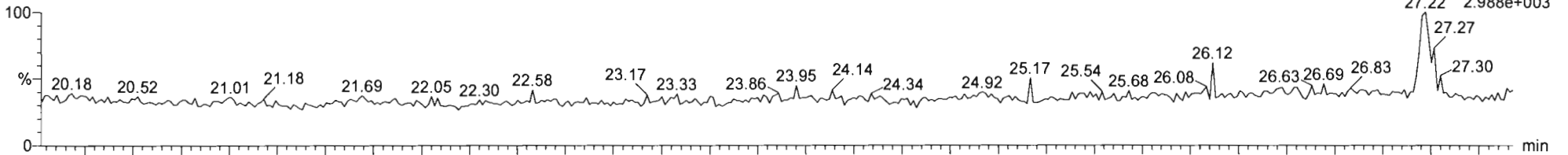
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1st Func. Penta-Furans

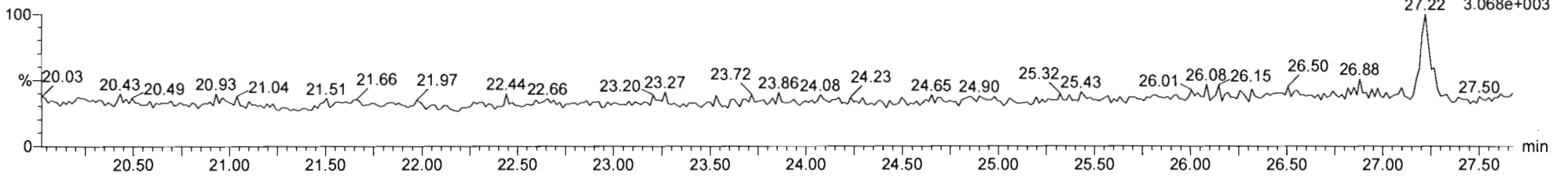
191111D1_5
B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

F1:SIR of 15 channels,EI+
339.860
27.22 2.988e+003



191111D1_5
B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 B9J0144-DUP1 Duplicate

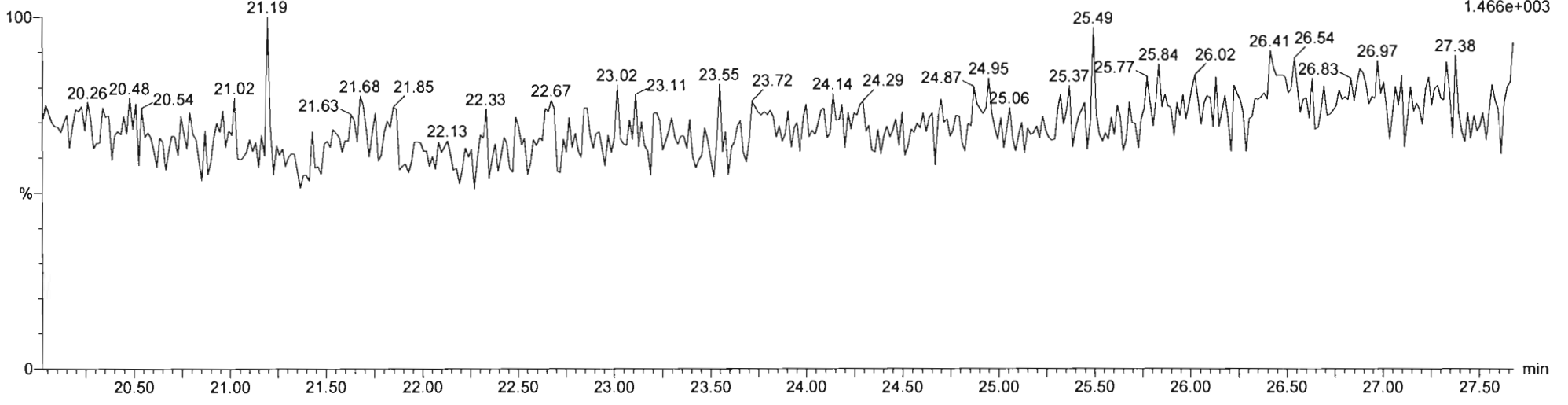
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341.857
27.22 3.068e+003



DPE6

191111D1_5
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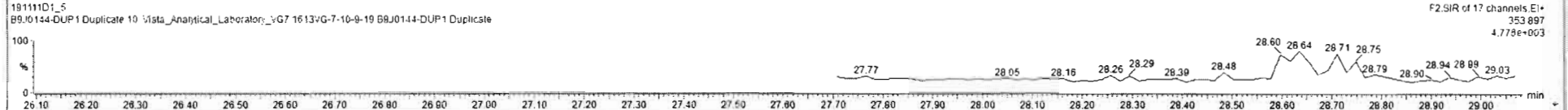
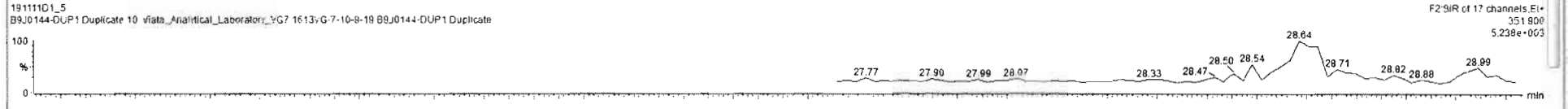
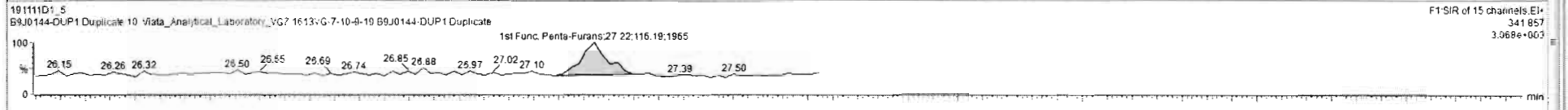
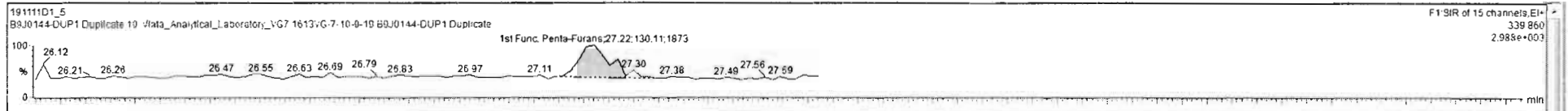
F1:SIR of 15 channels,EI+
409.7974
25.49 1.466e+003



19111D1_5: B9J0144-DUP1 Duplicate B9J0144-DUP1 Duplicate 10: Vista_Analytical_Laboratory_VG7 1613VG-7-10-9-19

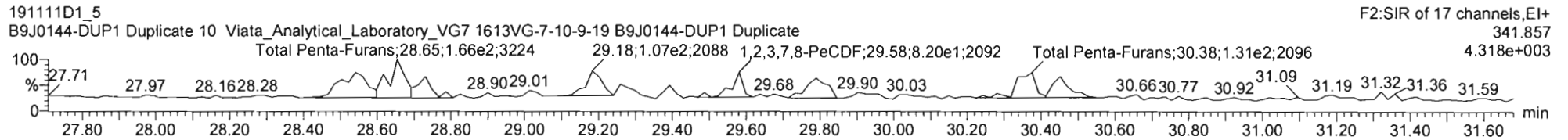
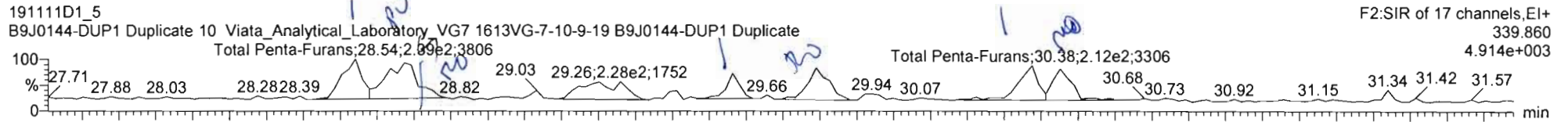
#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/wt	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
41	Total Hexa-Dioxins	0.00e0					0.976	10.011	33.80			0.000	NO	1.065	0.235	1.951	
42	Total Hepta-Dioxins	1.28e5					0.989	10.011	37.75			0.000	NO	4.252	0.227	4.252	
43	Total Tetra-Furans	2.40e5					0.943	10.011	24.00			0.000	NO	1.054	0.170	2.662	
44	1st Func. Penta-Furans	0.00e0					0.940	10.011	27.83			0.000	NO	0.0000	0.0335	0.2187	
45	Total Penta-Furans	0.00e0					0.940	10.011	30.00			0.000	NO	0.9027	0.130	1.915	
46	Total Hexa-Furans	0.00e0					1.078	10.011	33.00			0.000	NO	1.909	0.145	1.909	
47	Total Hepta-Furans	0.00e0					1.135	10.011	37.75			0.000	NO	1.848	0.183	1.848	
48	PFK1																
49	PFK2																
50	PFK3																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	44 1st Func. Penta-Furans	27.63	27.22	1.301e2	1.162e2	1.550	1.12	YES	0.21866	0.00000

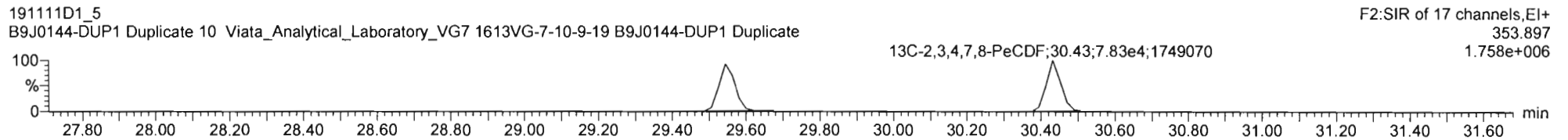
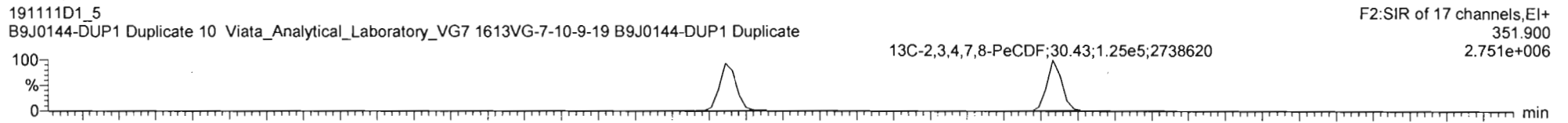


Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate,
Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

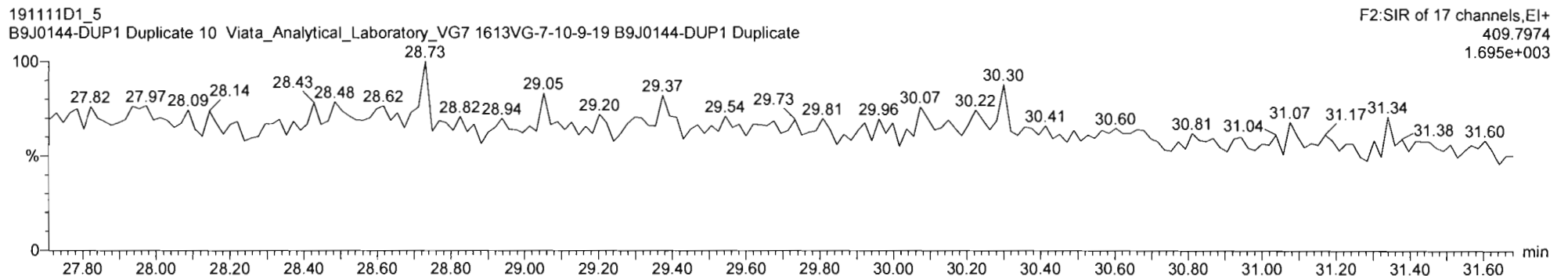
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



DPE2

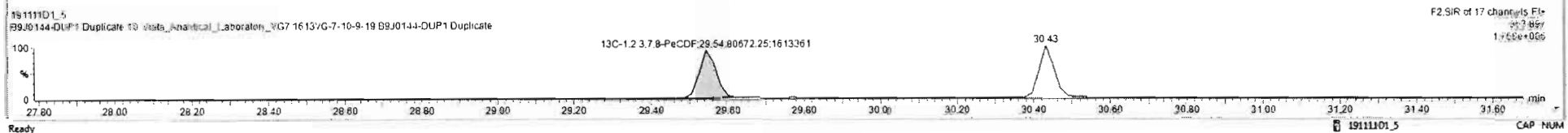
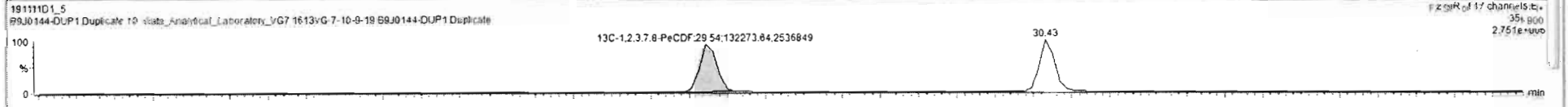
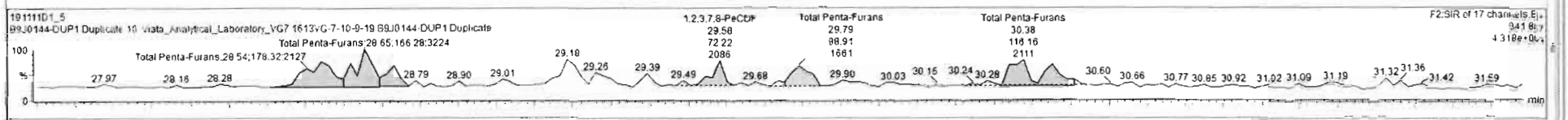
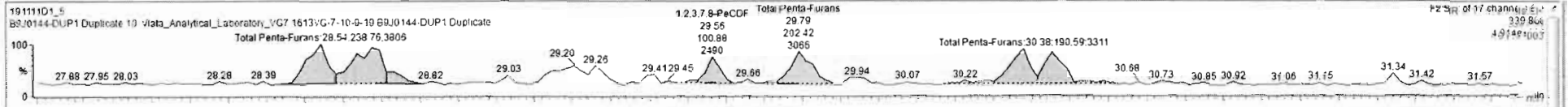


TargetLynx XS - 191111D1_5 - Chromatogram

191111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate 10 - Vials_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	ISA	RA	n/y	RRF	wtVal	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
41	Total Hexa-Dioxins		0.00e0				0.976	10.011	32.80			0.000	NO	1.066		0.235	1.951
42	Total Hepta-Dioxins		1.28e5				0.989	10.011	37.75			0.000	NO	4.252		0.227	4.252
43	Total Tetra-Furans		2.40e5				0.913	10.011	24.00			0.000	NO	1.054		0.170	2.662
44	1st Func. Penta-Furans		0.00e0				0.940	10.011	27.83			0.000	NO	0.0000		0.0335	0.2167
45	Total Penta-Furans		0.00e0				0.940	10.011	30.00			0.000	NO	0.5985		0.130	1.914
46	Total Hexa-Furans		0.00e0				1.078	10.011	33.03			0.000	NO	1.969		0.145	1.969
47	Total Hepta-Furans		0.00e0				1.135	10.011	37.75			0.000	NO	1.848		0.193	1.848
48	PFK1																
49	PFK2																
50	PFK3																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	Total Penta-Furans	30.00	28.54	2.38e2	1.78e2	1.550	1.34	NO	0.42608	0.42608
2	Total Penta-Furans	30.00	28.67	2.968e2	1.663e2	1.550	1.80	YES	0.43316	0.00000
3	Total Penta-Furans	30.00	28.71	5.481e1	7.107e1	1.550	0.77	YES	0.091783	0.00000
4	1,2,3,7,8-PeCDF	29.56	29.56	1.009e2	7.222e1	1.550	1.40	NO	0.16909	0.16909
5	Total Penta-Furans	30.00	29.79	2.024e2	9.891e1	1.550	2.05	YES	0.25786	0.00000
6	Total Penta-Furans	30.00	30.38	1.906e2	1.162e2	1.550	1.64	NO	0.31336	0.31336
7	1,2,3,4,7,8-PeCDF	30.46	30.45	1.679e2	9.011e1	1.550	1.85	YES	0.22250	0.00000



Vista Analytical Laboratory

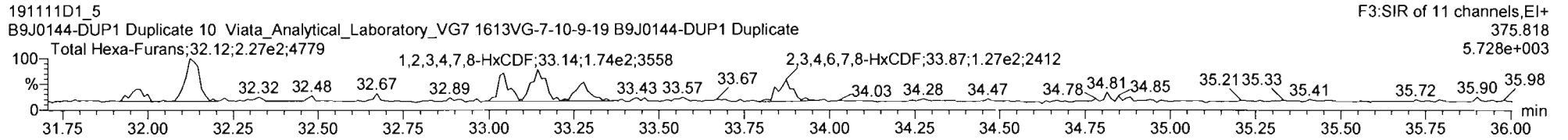
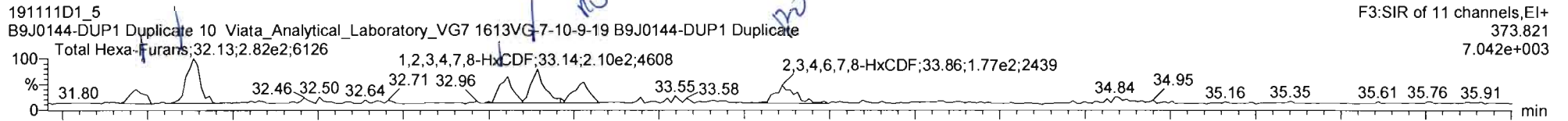
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Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

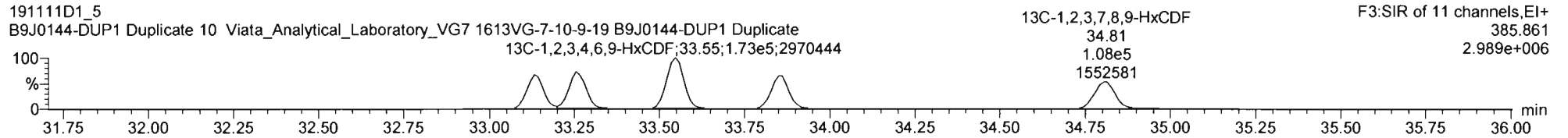
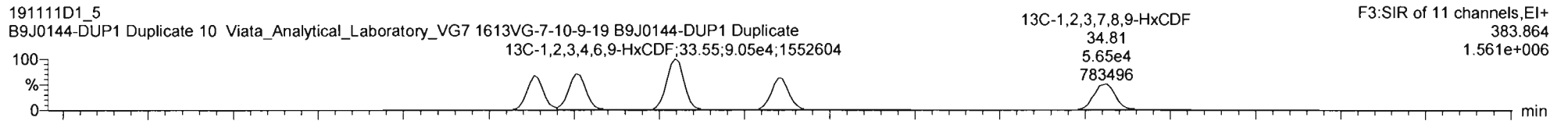
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Name: VG7 19111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate, Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

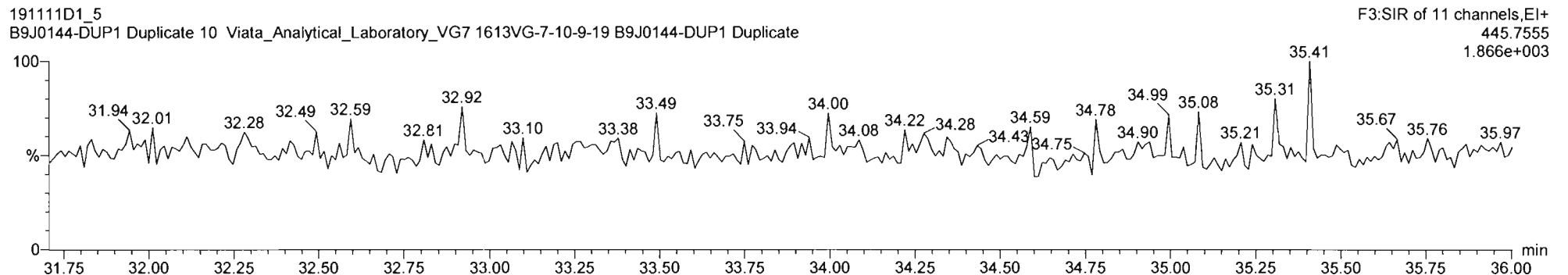
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

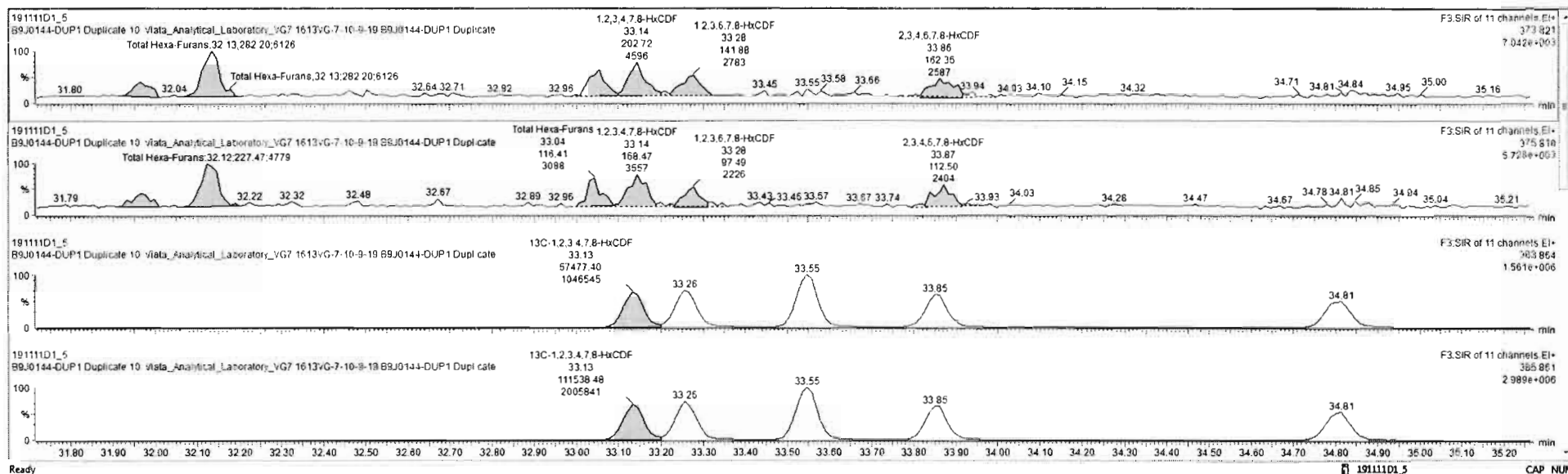


DPE3



#	Name	Resp	S Resp	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	% Rec	DL	EMPC
41	Total Hexa-Dioxins	0.00e0				0.978	10.011	33.80			0.000	NO	1.065	0.235	1.951	
42	Total Hepta-Dioxins	1.28e5				0.989	10.011	37.75			0.000	NO	4.252	0.227	4.252	
43	Total Tetra-Furans	2.40e5				0.943	10.011	24.00			0.000	NO	1.054	0.170	2.662	
44	1st Func. Penta-Furans	0.00e0				0.940	10.011	27.63			0.000	NO	0.0000	0.0335	0.2187	
45	Total Penta-Furans	0.00e0				0.940	10.011	30.00			0.000	NO	0.9285	0.130	1.914	
46	Total Hexa-Furans	0.00e0				1.078	10.011	33.00			0.000	NO	1.368	0.145	1.677	
47	Total Hepta-Furans	0.00e0				1.135	10.011	37.75			0.000	NO	1.848	0.183	1.848	
48	PFK1															
49	PFK2															
50	PFK3															

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	Total Hexa-Furans	33.00	31.97	9.768e1	7.023e1	1.240	1.39	NO	0.17951	0.17951
2	Total Hexa-Furans	33.00	32.13	2.822e2	2.275e2	1.240	1.24	NO	0.54492	0.54492
3	Total Hexa-Furans	33.00	33.05	1.646e2	1.164e2	1.240	1.41	NO	0.30045	0.30045
4	1,2,3,4,7,8-HxCDF	33.13	33.14	2.027e2	1.685e2	1.240	1.20	NO	0.37283	0.37283
5	1,2,3,6,7,8-HxCDF	33.27	33.28	1.419e2	9.749e1	1.240	1.46	YES	0.21811	0.00000
6	1,2,3,4,6,7,8-HxCDF	33.88	33.88	1.624e2	1.125e2	1.240	1.44	YES	0.26097	0.00000



Vista Analytical Laboratory

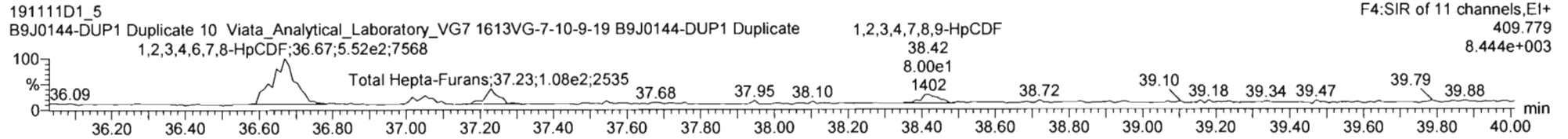
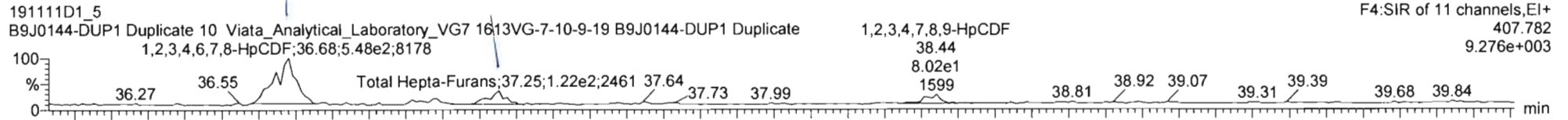
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Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

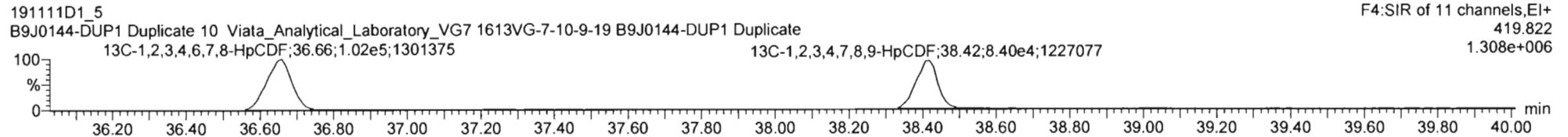
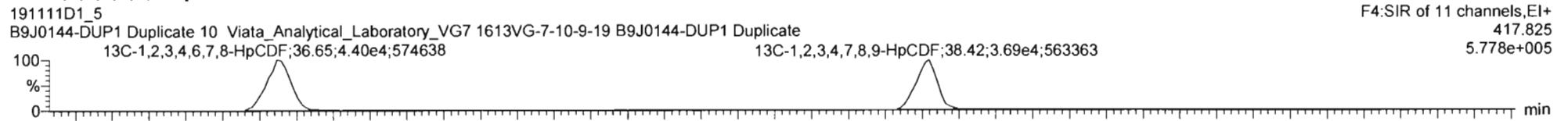
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Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate, Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

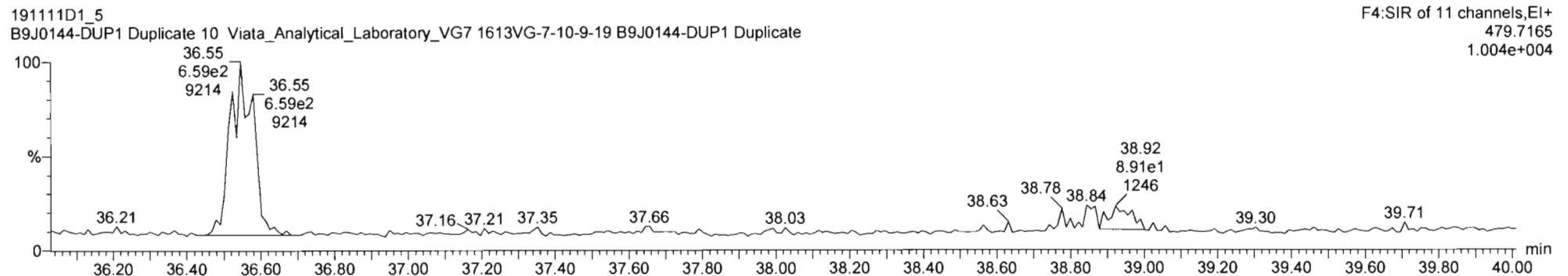
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



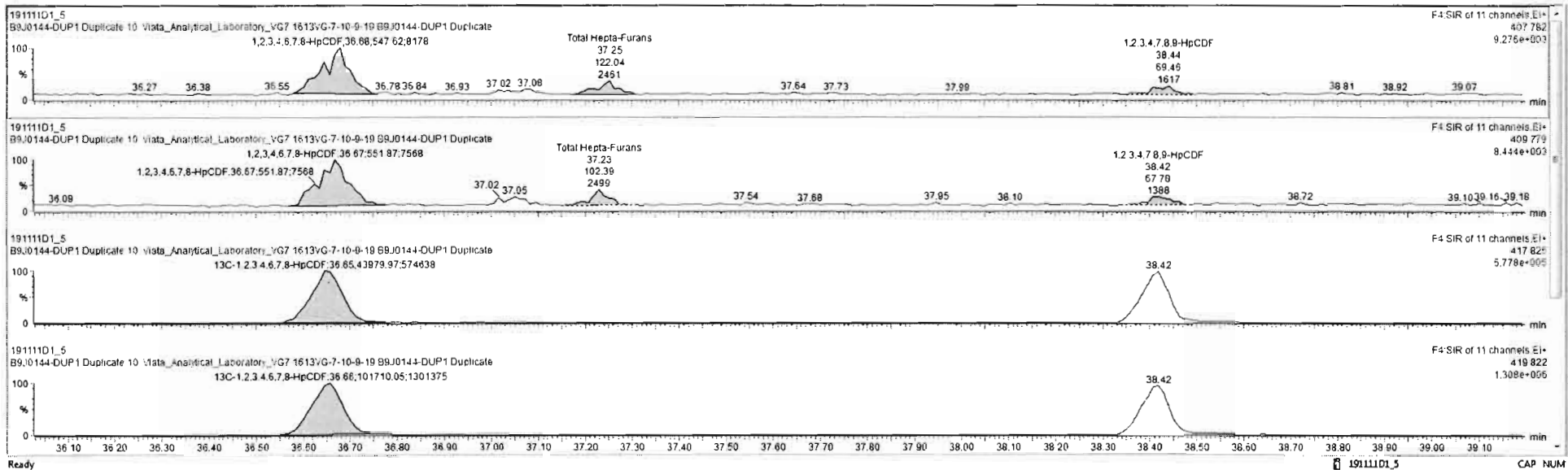
DPE4



19111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate 10 - Vista Analytical Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	ISA	RA	n/y	RRF	wVol	Pred RT	RT	RRT	Pred.RRT	Check.RRT	Conc	%Rec	DL	EMPC
41	Total Hexa-Dioxins		0.00e0				0.976	10.011	33.80			0.000	NO	1.085		0.235	1.951
42	Total Hepta-Dioxins		1.28e5				0.989	10.011	37.75			0.000	NO	4.252		0.227	4.252
43	Total Tetra-Furans		2.40e5				0.943	10.011	24.00			0.000	NO	1.054		0.170	2.662
44	1st Func. Penta-Furans		0.00e0				0.940	10.011	27.83			0.000	NO	0.0000		0.0335	0.2167
45	Total Penta-Furans		0.00e0				0.940	10.011	30.00			0.000	NO	0.9585		0.130	1.914
46	Total Hexa-Furans		0.00e0				1.078	10.011	33.00			0.000	NO	1.398		0.145	1.877
47	Total Hepta-Furans		0.00e0				1.135	10.011	37.75			0.000	NO	1.811		0.183	1.811
48	PFK1																
49	PFK2																
50	PFK3																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	1,2,3,4,6,7,8-HpCDF	36.68	36.68	5.478e2	5.519e2	1.040	0.99	NO	1.3370	1.3370
2	Total Hepta-Furans	37.75	37.25	1.220e2	1.024e2	1.040	1.19	NO	0.29641	0.29641
3	1,2,3,4,7,8,9-HpCDF	38.42	38.44	6.946e1	6.778e1	1.040	1.02	NO	0.17718	0.17718



Vista Analytical Laboratory

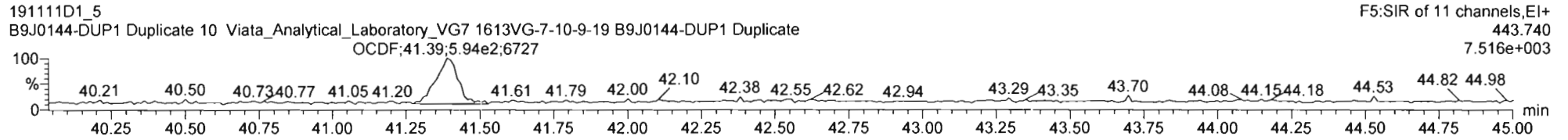
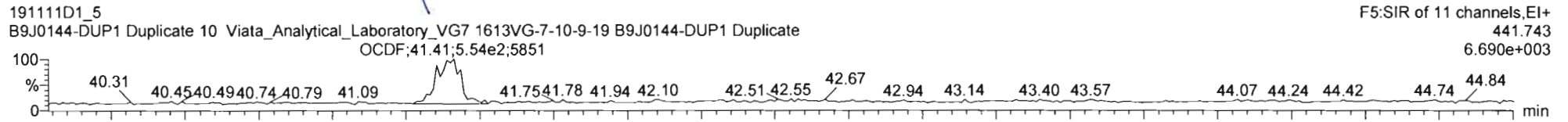
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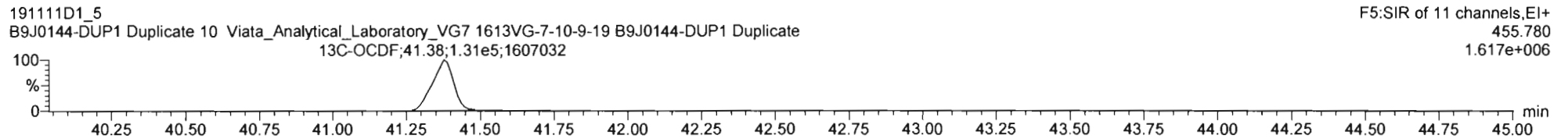
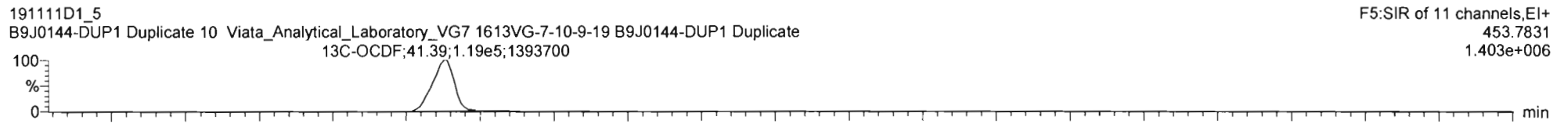
Printed: Thursday, November 14, 2019 07:09:37 Pacific Standard Time

Name: VG7 191111D1_5, Date: 11-NOV-2019, Time: 13:31:22, ID: B9J0144-DUP1 Duplicate,
Description: B9J0144-DUP1 Duplicate 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

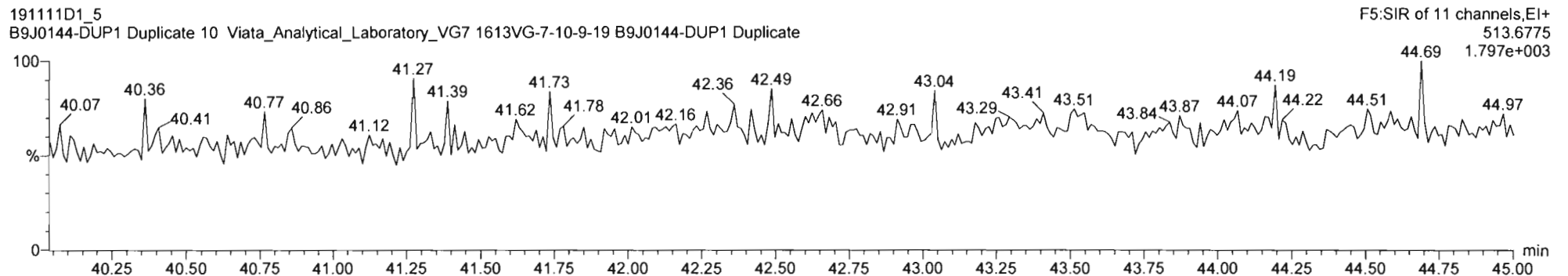
OCDF



13C-OCDF



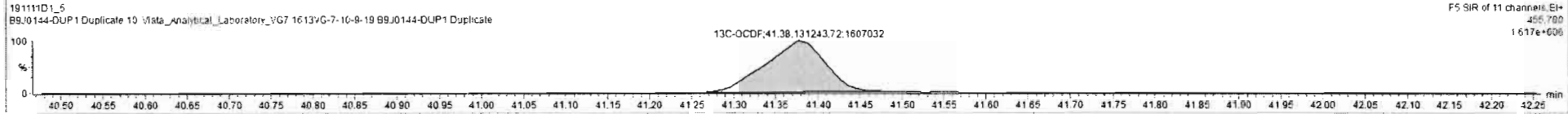
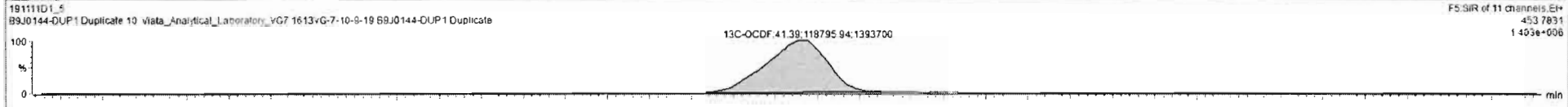
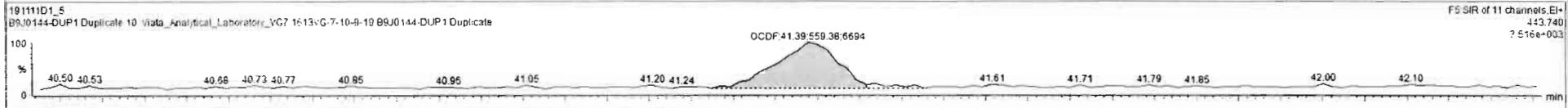
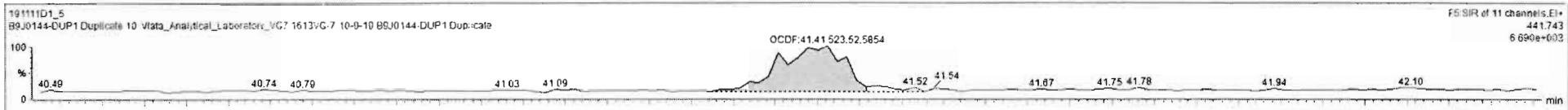
DPE5



191111D1_5 - B9J0144-DUP1 Duplicate - B9J0144-DUP1 Duplicate 10 - Vista_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	S Resp	ISF	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
12	1,2,3,6,7,8-HxCDF	7.55e2	1.87e5	28	1.41	NO	1.089	10.011	33.27	33.28	1.001	1.000	NO	0.2545		0.129	0.2545
13	2,3,4,6,7,8-HxCDF	3.03e2	1.73e5	30	1.40	NO	1.114	10.011	33.88	33.86	1.000	1.001	NO	0.3143		0.136	0.3143
14	1,2,3,7,8,9-HxCDF		1.64e5	31			1.022	10.011	34.81			1.000	NO			0.123	
15	1,2,3,4,6,7,8-HpCDF	1.10e3	1.46e5	32	0.99	NO	1.128	10.011	36.66	36.68	1.001	1.001	NO	1.137		0.182	1.137
16	1,2,3,4,7,8,9-HpCDF	1.60e2	1.21e5	33	1.00	NO	1.280	10.011	38.42	38.44	1.001	1.000	NO	0.2069		0.165	0.2069
17	OCDF	1.08e3	2.50e5	34	0.94	NO	0.947	10.011	41.39	41.41	1.001	1.000	NO	1.827		0.277	1.827
18	13C-2,3,7,8-TCDD	1.65e5	2.16e5	36	0.20	NO	1.095	10.011	36.22	36.22	1.021	1.021	NO	143.4	71.8	0.352	
19	13C-1,2,3,7,8-PeCDD	1.39e5	2.16e5	36	0.04	NO	0.881	10.011	30.47	30.72	1.196	1.187	NO	149.9	75.0	0.283	
20	13C-1,2,3,4,7,8-HxCDD	1.26e5	2.65e5	38	1.38	NO	0.642	10.011	34.01	34.03	1.014	1.014	NO	148.9	74.6	0.537	
21	13C-1,2,3,6,7,8-HxCDD	1.44e5	2.83e5	38	1.29	NO	0.856	10.011	34.13	34.13	1.017	1.017	NO	127.7	63.9	0.403	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1										



Vista Analytical Laboratory

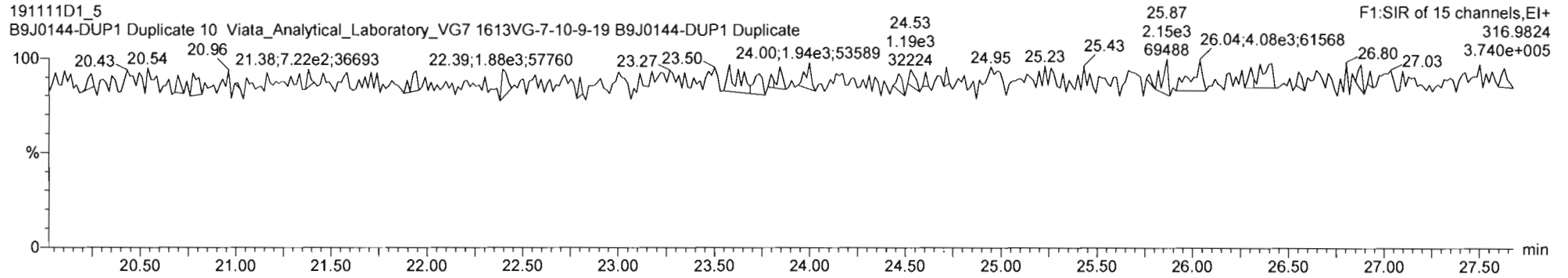
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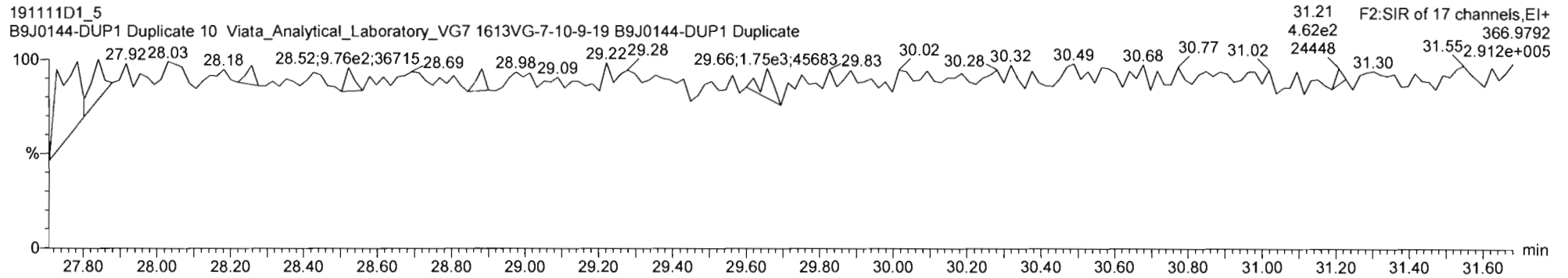
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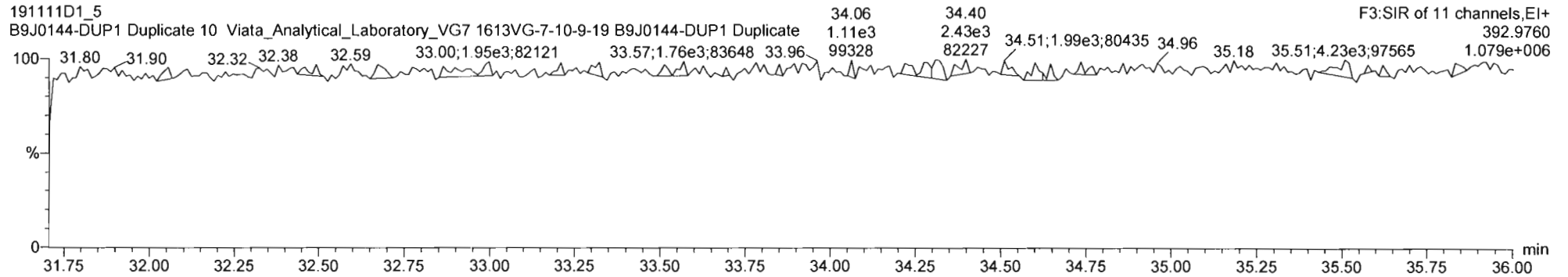
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PFK2

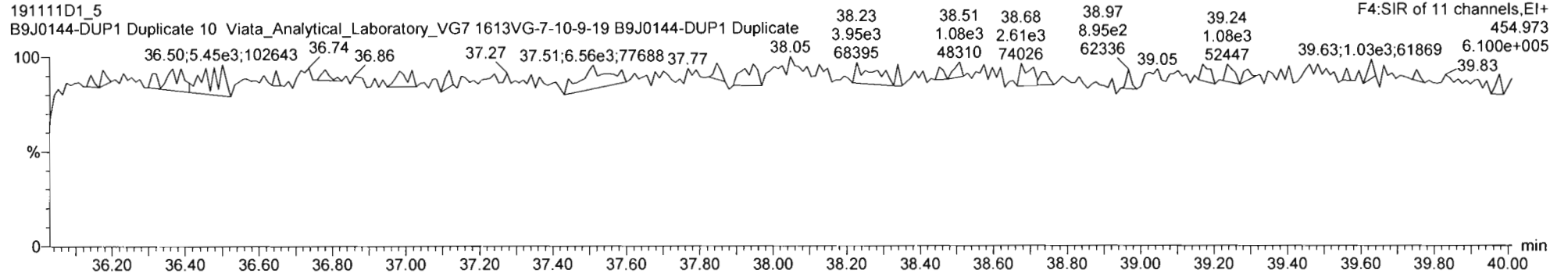


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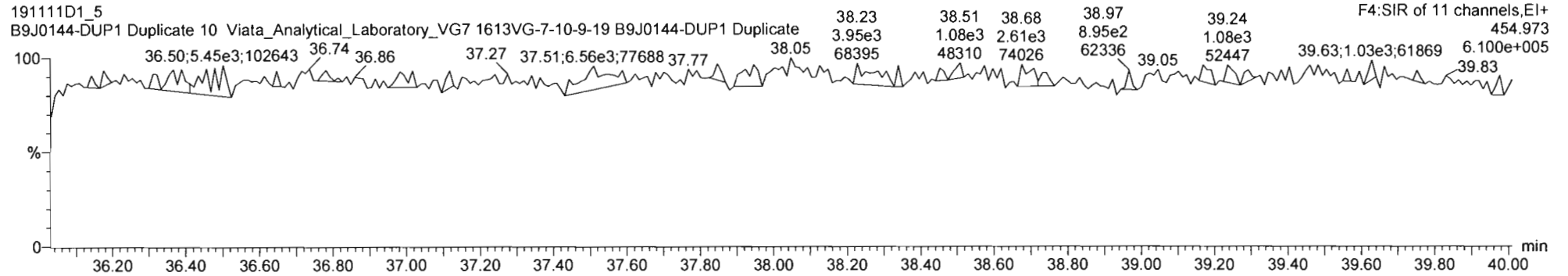


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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:09:37 Pacific Standard Time

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Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-6.qld

Last Altered: Thursday, November 14, 2019 07:48:49 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:49:24 Pacific Standard Time

Hc *11-14-19* *CT 11/15/19*

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Calibration: 14 Nov 2019 07:34:11

Name: VG7 191111D1_6, Date: 11-NOV-2019, Time: 14:19:19, ID: 1903431-09 PDI-064SC-B-06-08-190929,

Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 ✓

#	Name	Area	IS Area	Wt.Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD	1.79e2	2.20e5	10.0408	0.905	0.402	YES	1.001	1.001	26.26	26.26	0.17901		0.118	0.141
2	2 1,2,3,7,8-PeCDD		1.78e5	10.0408	0.903			1.001		30.74					0.144
3	3 1,2,3,4,7,8-HxCDD		1.65e5	10.0408	1.101			1.000		34.02					0.196
4	4 1,2,3,6,7,8-HxCDD		1.89e5	10.0408	0.939			1.000		34.12					0.202
5	5 1,2,3,7,8,9-HxCDD		1.89e5	10.0408	0.961			1.001		34.44					0.209
6	6 1,2,3,4,6,7,8-HpCDD	8.85e2	1.68e5	10.0408	0.979	1.079	NO	1.000	1.000	37.88	37.88	1.0682		1.07	0.175
7	7 OCDD	5.11e3	2.87e5	10.0408	0.959	0.985	NO	1.000	1.000	41.13	41.14	7.4004		7.40	0.326
8	8 2,3,7,8-TCDF	2.31e2	3.15e5	10.0408	0.950	1.496	YES	1.001	1.001	25.49	25.48	0.15333		0.109	0.163
9	9 1,2,3,7,8-PeCDF		2.75e5	10.0408	0.960			1.001		29.56					0.106
10	10 2,3,4,7,8-PeCDF		2.70e5	10.0408	1.015			1.001		30.46					0.101
11	11 1,2,3,4,7,8-HxCDF		2.20e5	10.0408	1.177			1.000		33.13					0.0977
12	12 1,2,3,6,7,8-HxCDF		2.41e5	10.0408	1.069			1.000		33.26					0.0998
13	13 2,3,4,6,7,8-HxCDF		2.28e5	10.0408	1.114			1.001		33.87					0.111
14	14 1,2,3,7,8,9-HxCDF		2.13e5	10.0408	1.062			1.000		34.79					0.133
15	15 1,2,3,4,6,7,8-HpCDF		1.90e5	10.0408	1.128			1.001		36.67					0.133
16	16 1,2,3,4,7,8,9-HpCDF		1.59e5	10.0408	1.280			1.000		38.39					0.125
17	17 OCDF		3.62e5	10.0408	0.947			1.000		41.35					0.150
18	18 13C-2,3,7,8-TCDD	2.20e5	2.21e5	10.0408	1.095	0.796	NO	1.021	1.021	26.22	26.22	180.96	90.9		0.286
19	19 13C-1,2,3,7,8-PeCDD	1.78e5	2.21e5	10.0408	0.881	0.627	NO	1.187	1.196	30.47	30.71	182.01	91.4		0.239
20	20 13C-1,2,3,4,7,8-Hx...	1.65e5	2.70e5	10.0408	0.642	1.284	NO	1.014	1.014	34.00	34.01	189.08	94.9		0.770
21	21 13C-1,2,3,6,7,8-Hx...	1.89e5	2.70e5	10.0408	0.856	1.295	NO	1.017	1.017	34.12	34.12	162.68	81.7		0.578
22	22 13C-1,2,3,7,8,9-Hx...	1.89e5	2.70e5	10.0408	0.807	1.234	NO	1.026	1.026	34.42	34.41	173.08	86.9		0.613
23	23 13C-1,2,3,4,6,7,8-H...	1.68e5	2.70e5	10.0408	0.654	1.064	NO	1.126	1.129	37.77	37.87	189.96	95.4		0.877
24	24 13C-OCDD	2.87e5	2.70e5	10.0408	0.580	0.895	NO	1.226	1.227	41.12	41.13	365.11	91.7		0.512
25	25 13C-2,3,7,8-TCDF	3.15e5	3.69e5	10.0408	1.035	0.787	NO	0.993	0.992	25.51	25.46	164.70	82.7		0.269
26	26 13C-1,2,3,7,8-PeCDF	2.75e5	3.69e5	10.0408	0.854	1.599	NO	1.143	1.150	29.35	29.54	174.06	87.4		0.679
27	27 13C-2,3,4,7,8-PeCDF	2.70e5	3.69e5	10.0408	0.847	1.556	NO	1.176	1.185	30.21	30.43	172.44	86.6		0.685
28	28 13C-1,2,3,4,7,8-Hx...	2.20e5	2.70e5	10.0408	0.832	0.511	NO	0.987	0.988	33.11	33.13	194.85	97.8		0.664
29	29 13C-1,2,3,6,7,8-Hx...	2.41e5	2.70e5	10.0408	1.034	0.511	NO	0.991	0.992	33.23	33.25	171.80	86.3		0.534
30	30 13C-2,3,4,6,7,8-Hx...	2.28e5	2.70e5	10.0408	0.953	0.516	NO	1.009	1.009	33.84	33.84	176.18	88.5		0.580
31	31 13C-1,2,3,7,8,9-Hx...	2.13e5	2.70e5	10.0408	0.828	0.508	NO	1.039	1.037	34.83	34.79	189.34	95.1		0.668

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-6.qld

Last Altered: Thursday, November 14, 2019 07:48:49 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:49:24 Pacific Standard Time

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 Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	32 13C-1,2,3,4,6,7,8-H...	1.90e5	2.70e5	10.0408	0.757	0.437	NO	1.093	1.092	36.65	36.63	185.00	92.9		0.716
33	33 13C-1,2,3,4,7,8,9-H...	1.59e5	2.70e5	10.0408	0.581	0.438	NO	1.143	1.145	38.33	38.39	202.34	101.6		0.933
34	34 13C-OCDF	3.62e5	2.70e5	10.0408	0.689	0.900	NO	1.233	1.233	41.35	41.35	387.43	97.3		0.483
35	35 37Cl-2,3,7,8-TCDD	9.76e4	2.21e5	10.0408	1.198			1.022	1.022	26.24	26.24	73.348	92.1		0.0641
36	36 13C-1,2,3,4-TCDD	2.21e5	2.21e5	10.0408	1.000	0.822	NO	1.000	1.000	25.70	25.68	199.19	100.0		0.313
37	37 13C-1,2,3,4-TCDF	3.69e5	3.69e5	10.0408	1.000	0.789	NO	1.000	1.000	24.28	24.26	199.19	100.0		0.278
38	38 13C-1,2,3,4,6,9-Hx...	2.70e5	2.70e5	10.0408	1.000	0.508	NO	1.000	1.000	33.55	33.53	199.19	100.0		0.553
39	39 Total Tetra-Dioxins		2.20e5	10.0408	0.901			0.000		25.50		0.89762		1.02	0.142
40	40 Total Penta-Dioxins		1.78e5	10.0408	0.872			0.000		30.00		0.00000		0.300	0.0756
41	41 Total Hexa-Dioxins		0.00e0	10.0408	0.976			0.000		33.80		0.00000		0.630	0.206
42	42 Total Hepta-Dioxins		1.68e5	10.0408	0.989			0.000		37.75		2.4137		2.41	0.173
43	43 Total Tetra-Furans		3.15e5	10.0408	0.943			0.000		24.00		0.24827		1.35	0.164
44	44 1st Func. Penta-Fur...		0.00e0	10.0408	0.940			0.000		27.63					0.0217
45	45 Total Penta-Furans		0.00e0	10.0408	0.940			0.000		30.00		0.10954		0.110	0.109
46	46 Total Hexa-Furans		0.00e0	10.0408	1.078			0.000		33.00		0.10291		0.137	0.113
47	47 Total Hepta-Furans		0.00e0	10.0408	1.135			0.000		37.75					0.0586

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-6.qld
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Calibration: 14 Nov 2019 07:34:11

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 Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Tetra-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	39 Total Tetra-Dioxins	NO	22.91	149.780	97612.617	2.919	bb	0.3227	0.32
2	39 Total Tetra-Dioxins	NO	23.25	113.278	97612.617	2.423	MM	0.2679	0.27
3	39 Total Tetra-Dioxins	NO	24.39	142.374	97612.617	2.778	MM	0.3071	0.31
4	1 2,3,7,8-TCDD	YES	26.26	51.368	97612.617	0.000	bb	0.0000	0.12

Penta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	40 Total Penta-Dioxins	YES	28.69	47.383	68734.844	0.000	MM	0.0000	0.16
2	40 Total Penta-Dioxins	YES	29.15	51.337	68734.844	0.000	MM	0.0000	0.14

Hexa-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	NO	32.49	293.668	101218.323	0.000	MM	0.0000	0.63

Hepta-Dioxins

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	42 Total Hepta-Dioxins	NO	37.04	546.921	86848.109	13.357	bb	1.3454	1.35
2	6 1,2,3,4,6,7,8-HpCDD	NO	37.88	459.239	86848.109	10.505	bb	1.0682	1.07

Tetra-Furans

	# Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	43 Total Tetra-Furans	YES	21.99	457.953	138902.375	0.000	MM	0.0000	0.70
2	43 Total Tetra-Furans	NO	24.29	153.281	138902.375	2.350	MM	0.2483	0.25
3	43 Total Tetra-Furans	YES	24.65	126.036	138902.375	0.000	MM	0.0000	0.13
4	8 2,3,7,8-TCDF	YES	25.48	138.282	138902.375	0.000	MM	0.0000	0.11
5	43 Total Tetra-Furans	YES	25.80	188.243	138902.375	0.000	MM	0.0000	0.16

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191111D1\191111D1-6.qld

Last Altered: Thursday, November 14, 2019 07:48:49 Pacific Standard Time

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 Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Penta-Furans function 1

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Penta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	45 Total Penta-Furans	NO	29.79	84.575	166954.531	1.033	bb	0.1095	0.11

Hexa-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	46 Total Hexa-Furans	NO	32.12	69.836	76250.385	1.114	bb	0.1029	0.10
2	46 Total Hexa-Furans	YES	31.95	23.040	76250.385	0.000	MM	0.0000	0.03

Hepta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

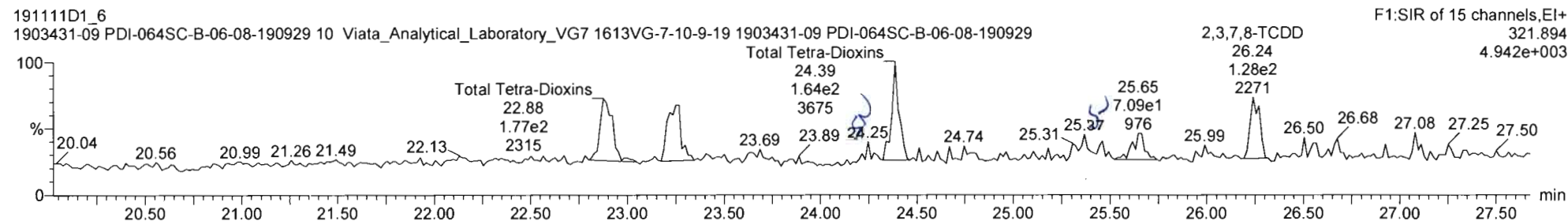
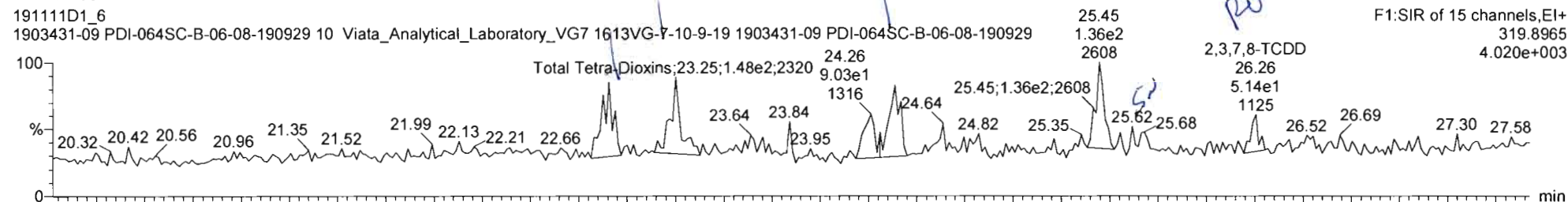
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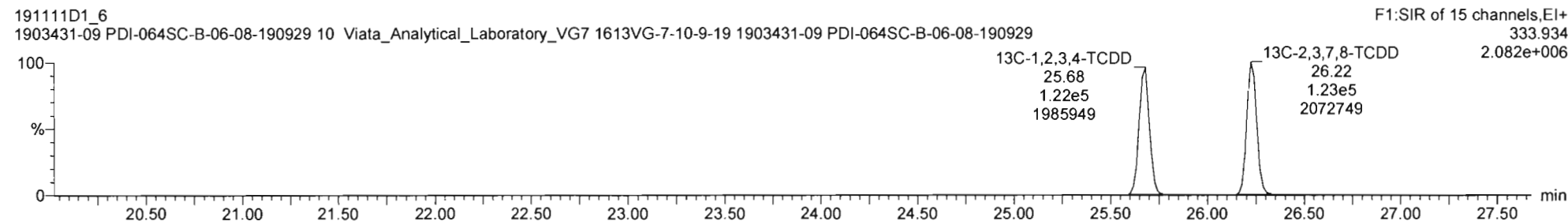
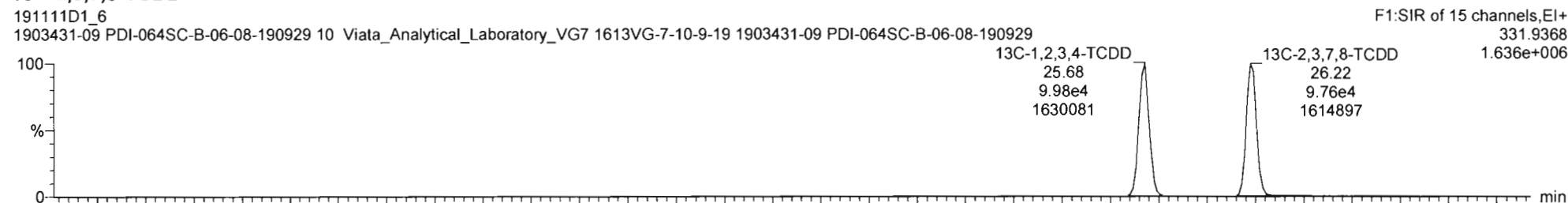
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Total Tetra-Dioxins



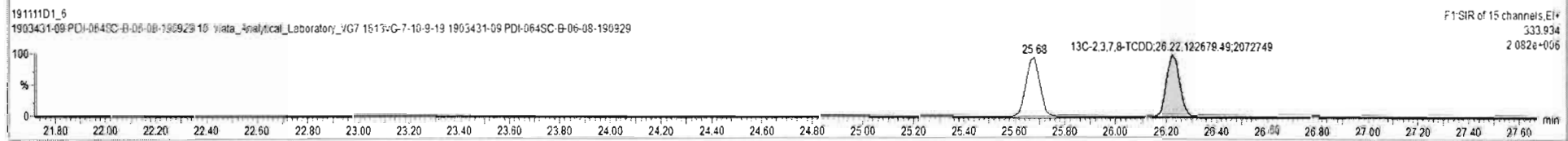
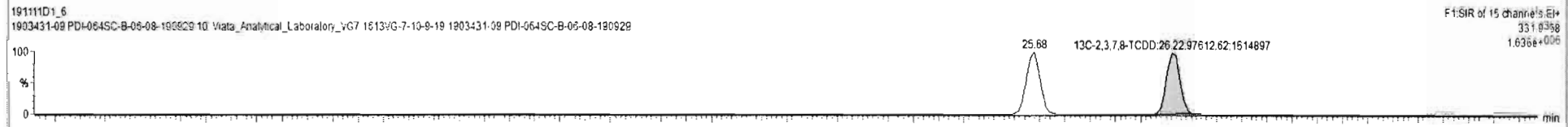
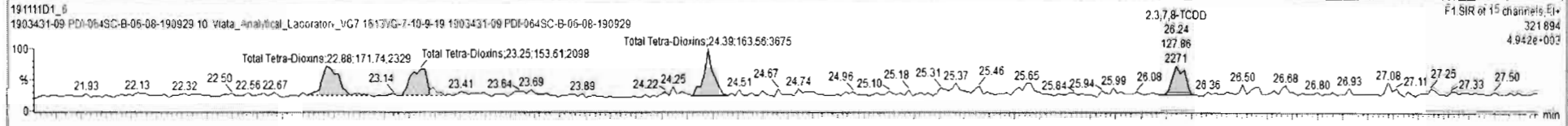
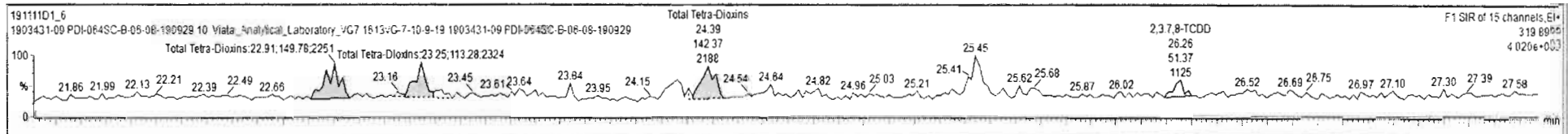
13C-2,3,7,8-TCDD



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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred_RT	RT	RRT	Pred_RRT	Check_RRT	Conc.	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	1.59e5	2.70e5	38	0.44	NO	0.581	10.041	38.33	38.39	1.145	1.143	NO	202.3	102	0.933	
34	13C-OCDF	3.62e5	2.70e5	38	0.90	NO	0.689	10.041	41.35	41.35	1.233	1.233	NO	387.4	97.3	0.483	
35	37Cl-2,3,7,8-TCDD	9.76e4	2.21e5	36			1.158	10.041	26.24	26.24	1.022	1.022	NO	73.35	92.1	0.0641	
36	13C-1,2,3,4-TCDD	2.21e5	2.21e5	36	0.82	NO	1.000	10.041	25.70	25.68	1.000	1.000	NO	199.2	100	0.313	
37	13C-1,2,3,4-TCDF	3.89e5	3.69e5	37	0.79	NO	1.000	10.041	24.28	24.26	1.000	1.000	NO	199.2	100	0.278	
38	13C-1,2,3,4,6,8-HxCDF	2.70e5	2.70e5	38	0.51	NO	1.000	10.041	33.55	33.53	1.000	1.000	NO	199.2	100	0.553	
39	Total Tetra-Dioxins	2.20e5					0.901	10.041	25.50			0.000	NO	0.8978		0.142	1.016
40	Total Penta-Dioxins	1.78e5					0.872	10.041	30.00			0.000	NO	0.0000		0.0756	0.9016
41	Total Hexa-Dioxins	0.00e0					0.975	10.041	33.80			0.000	NO	0.0000		0.122	0.4255
42	Total Hepta-Dioxins	1.68e5					0.989	10.041	37.75			0.000	NO	2.414		0.173	2.659

#	Name	Pred_RT	RT	m1 Resp	m2 Resp	Pred_RA	RA	n/y	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	22.91	1.499e2	1.717e2	0.770	0.87	NO	0.32278	0.32270
2	39 Total Tetra-Dioxins	25.50	23.25	1.133e2	1.536e2	0.770	0.74	NO	0.26787	0.26787
3	39 Total Tetra-Dioxins	25.50	24.39	1.424e2	1.636e2	0.770	0.87	NO	0.30706	0.30706
4	1 2,3,7,8-TCDD	26.26	26.26	5.137e1	1.279e2	0.770	0.40	YES	0.11794	0.00000



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Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

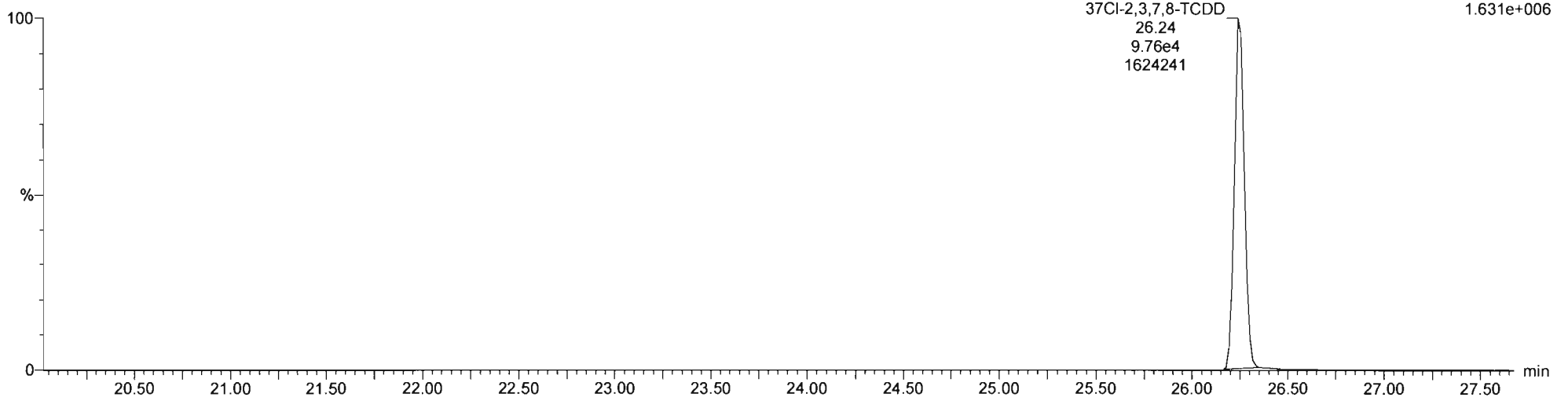
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191111D1_6
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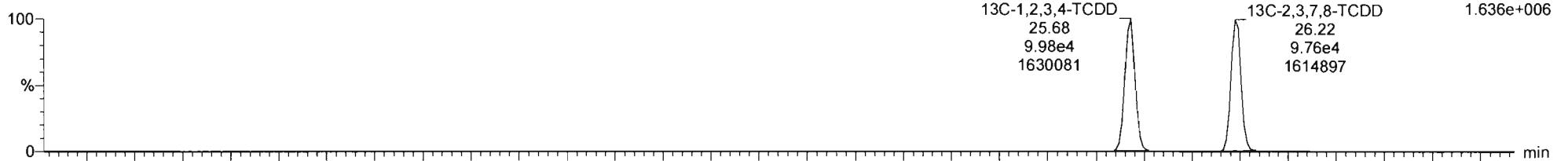
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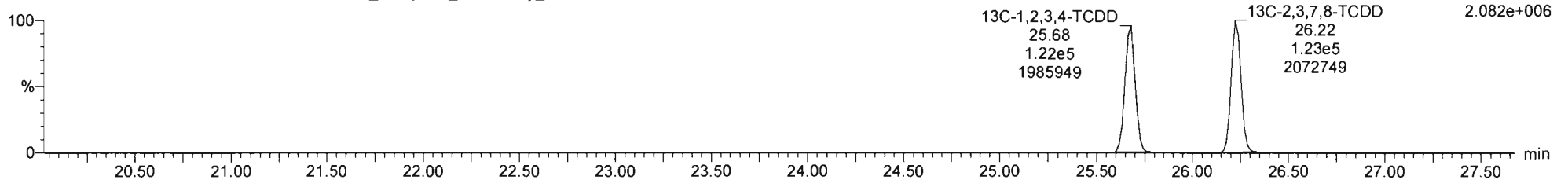
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F1:SIR of 15 channels,EI+
331.9368
1.636e+006



191111D1_6
1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 1903431-09 PDI-064SC-B-06-08-190929

F1:SIR of 15 channels,EI+
333.934
2.082e+006



Vista Analytical Laboratory

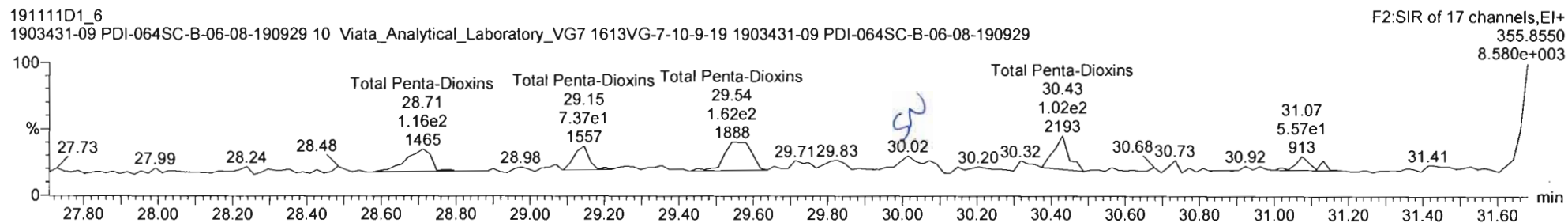
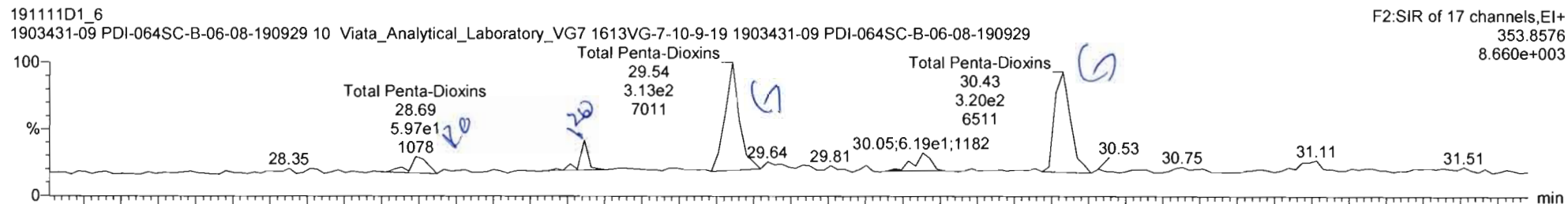
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Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

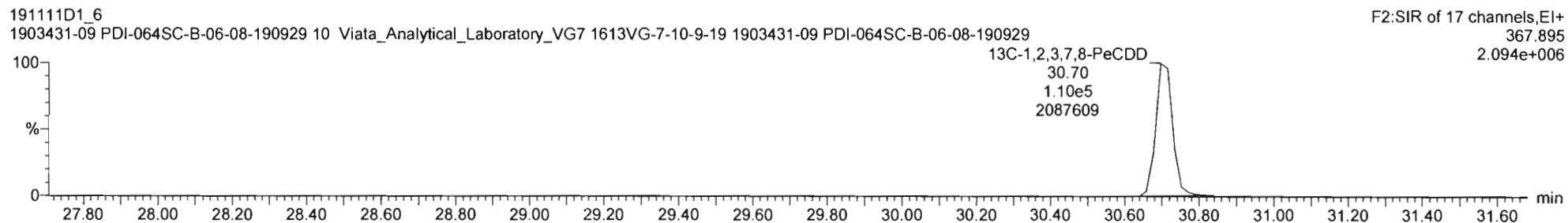
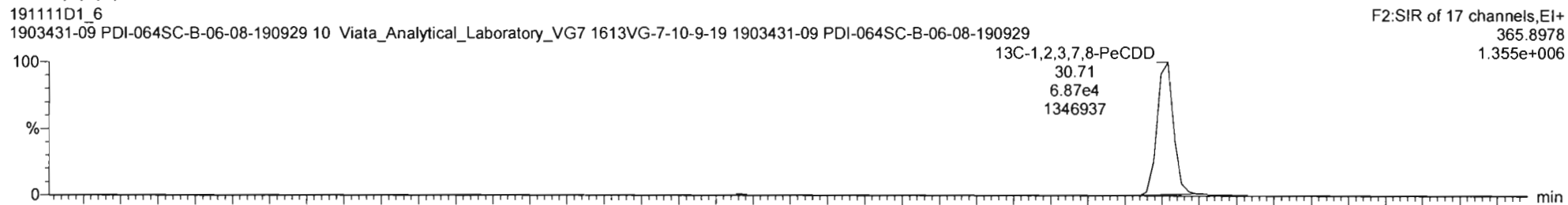
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Name: VG7 191111D1_6, Date: 11-NOV-2019, Time: 14:19:19, ID: 1903431-09 PDI-064SC-B-06-08-190929,
 Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Penta-Dioxins



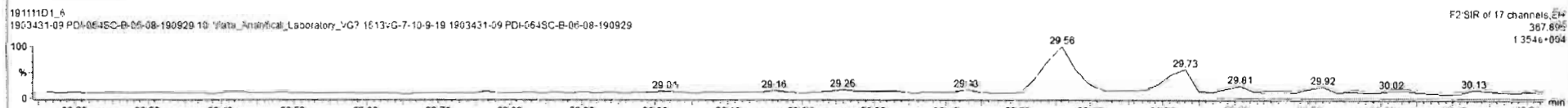
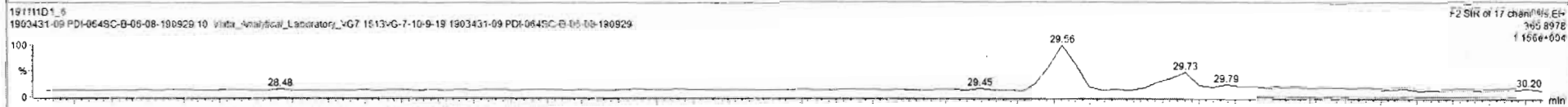
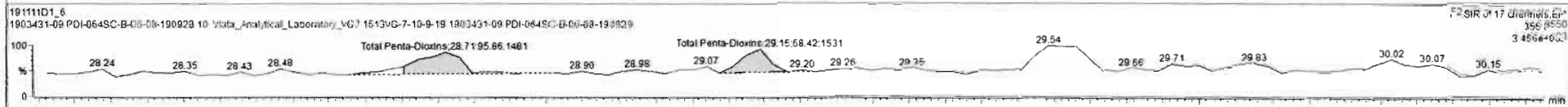
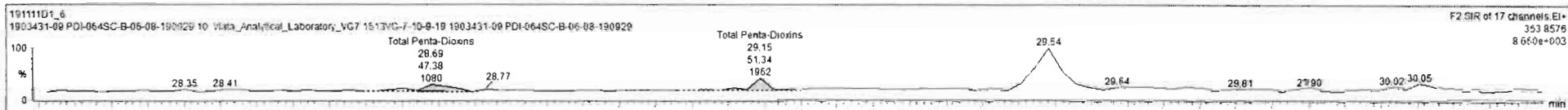
13C-1,2,3,7,8-PeCDD



19111D1_6 1903431-09 PDI-064SC-B-06-08-190929 1903431-09 PDI-064SC-B-06-08-190929 10 Viata Analytical Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wfvol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-mpCDF	1.59e5	2.70e5	38	0.44	NO	0.581	10.041	38.33	38.39	1.145	1.143	NO	202.3	102	0.933	
34	13C-OCDF	3.62e5	2.70e5	38	0.90	NO	0.689	10.041	41.25	41.35	1.233	1.233	NO	387.4	97.3	0.483	
35	37Cl-2,3,7,8-TCDD	9.76e4	2.21e5	38			1.198	10.041	26.24	26.24	1.022	1.022	NO	73.35	92.1	0.0641	
36	13C-1,2,3,4-TCDD	2.21e5	2.21e5	36	0.82	NO	1.000	10.041	25.70	25.68	1.000	1.000	NO	199.2	100	0.313	
37	13C-1,2,3,4-TCDF	3.69e5	3.69e5	37	0.79	NO	1.000	10.041	24.28	24.26	1.000	1.000	NO	199.2	100	0.278	
38	13C-1,2,3,4,6,9-HxCDF	2.70e5	2.70e5	38	0.51	NO	1.000	10.041	33.55	33.53	1.000	1.000	NO	199.2	100	0.553	
39	Total Tetra-Dioxins		2.20e5				0.901	10.041	25.50			0.000	NO	0.8976		0.142	1.016
40	Total Penta-Dioxins		1.78e5				0.872	10.041	30.00			0.000	NO	0.0000		0.0758	0.2999
41	Total Hexa-Dioxins		0.00e0				0.976	10.041	33.80			0.000	NO	0.0000		0.122	0.4755
42	Total Hepta-Dioxins		1.68e5				0.989	10.041	37.75			0.000	NO	2.114		0.173	2.959

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	Total Penta-Dioxins	30.00	28.69	4.738e1	9.586e1	0.630	0.49	YES	0.15704	0.00000
2	Total Penta-Dioxins	30.00	29.15	5.134e1	6.642e1	0.630	0.75	YES	0.14235	0.00000



Vista Analytical Laboratory

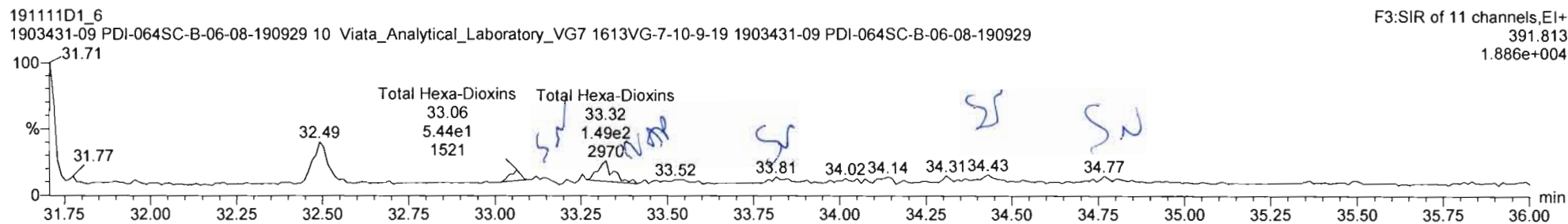
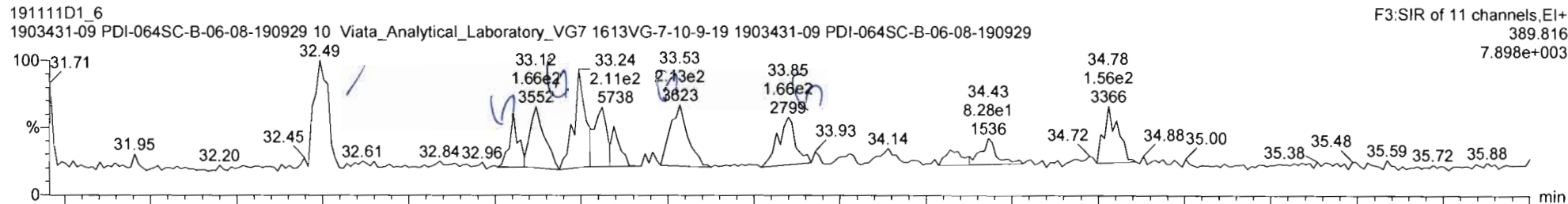
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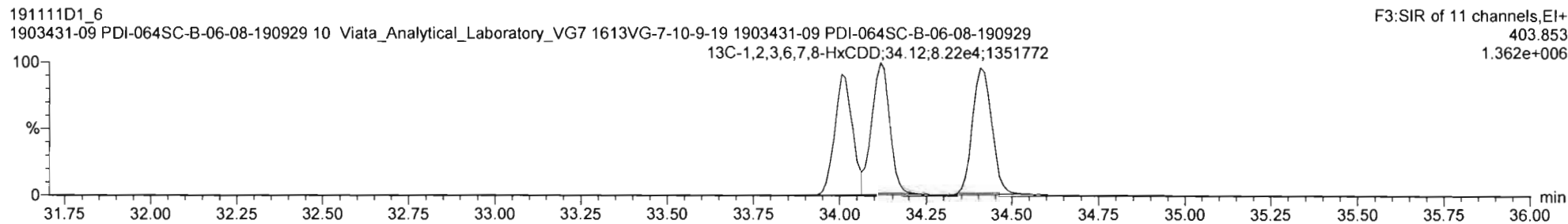
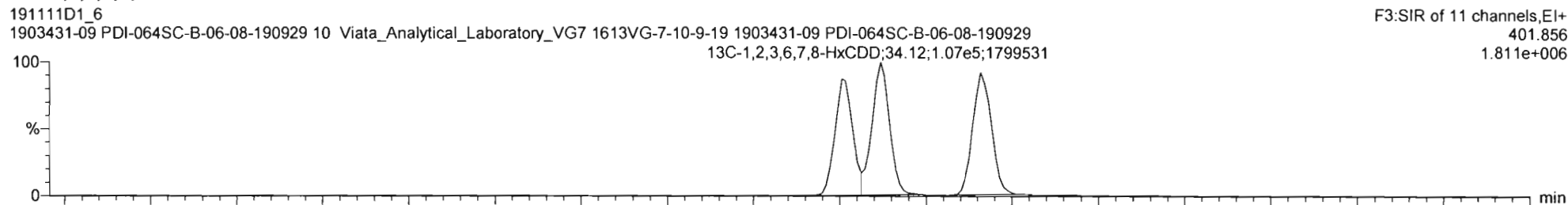
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Name: VG7 19111D1_6, Date: 11-NOV-2019, Time: 14:19:19, ID: 1903431-09 PDI-064SC-B-06-08-190929, Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

Total Hexa-Dioxins

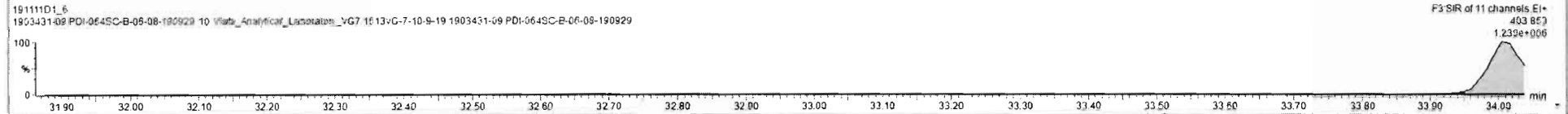
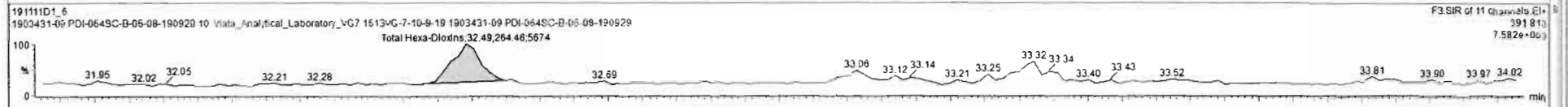
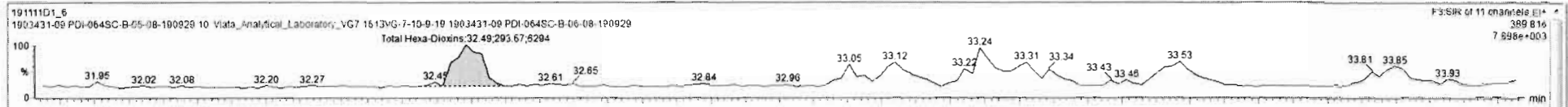


13C-1,2,3,4,7,8-HxCDD



#	Name	Resp	S Resp	IS#	RA	n/y	RRF	wt/vol	Pred_RT	RT	RRT	Pred_RRT	Check_RRT	Conc	%Rec	DL	EMPC
32	13C-1,2,3,4,6,7,8-HpCDF	1.90e5	2.70e5	38	0.44	NO	0.757	10.041	36.65	36.63	1.092	1.090	NO	185.0	92.9	0.716	
33	13C-1,2,3,4,7,8,9-HpCDF	1.59e5	2.70e5	38	0.44	NO	0.581	10.041	38.33	38.29	1.145	1.143	NO	202.3	102	0.933	
34	13C-OCDF	3.82e5	2.70e5	38	0.90	NO	0.689	10.041	41.35	41.35	1.233	1.222	NO	387.4	57.3	0.423	
35	37Cl-2,3,7,8-TCDD	9.76e4	2.71e5	36			1.198	10.041	26.24	26.24	1.022	1.022	NO	73.35	92.1	0.0641	
36	13C-1,2,3,4-TCDD	2.21e5	2.21e5	35	0.82	NO	1.000	10.041	25.70	25.68	1.000	1.000	NO	199.2	100	0.313	
37	13C-1,2,3,4-TCDF	3.69e5	3.69e5	37	0.79	NO	1.000	10.041	24.28	24.26	1.000	1.000	NO	199.2	100	0.278	
38	13C-1,2,3,4,6,9-HxCDF	2.70e5	2.70e5	38	0.51	NO	1.000	10.041	33.55	33.53	1.000	1.000	NO	199.2	100	0.553	
39	Total Tetra-Dioxins	2.20e5					0.901	10.041	25.50		0.900		NO	0.8976	0.142	1.016	
40	Total Penta-Dioxins	1.78e5					0.872	10.041	30.00		0.860		NO	0.8000	0.0756	0.2996	
41	Total Hexa-Dioxins	0.00e0					0.976	10.041	33.80		0.960		NO	0.0000	0.206	0.6297	

#	Name	Pred_RT	RT	m1 Resp	m2 Resp	Pred_RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.49	2.937e2	2.645e2	1.240	1.11	NO	0.52970	0.00000



Vista Analytical Laboratory

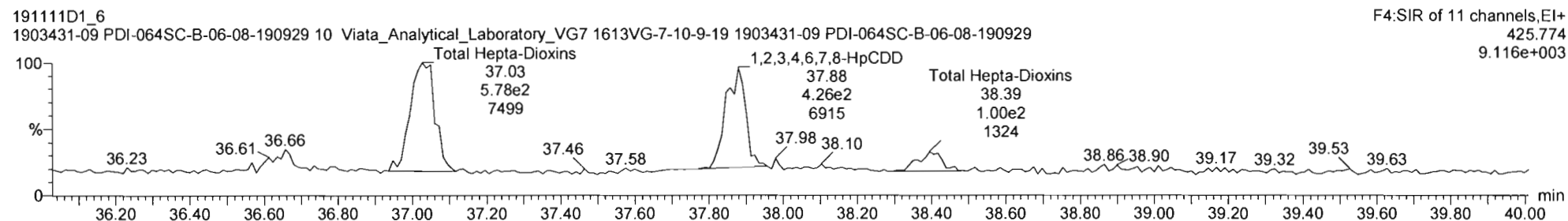
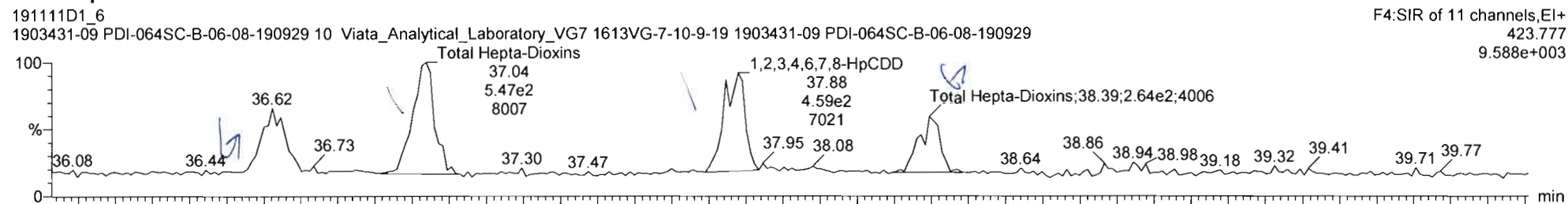
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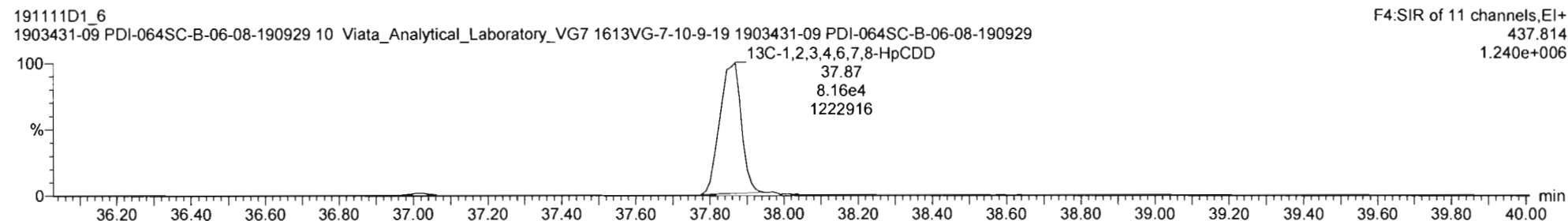
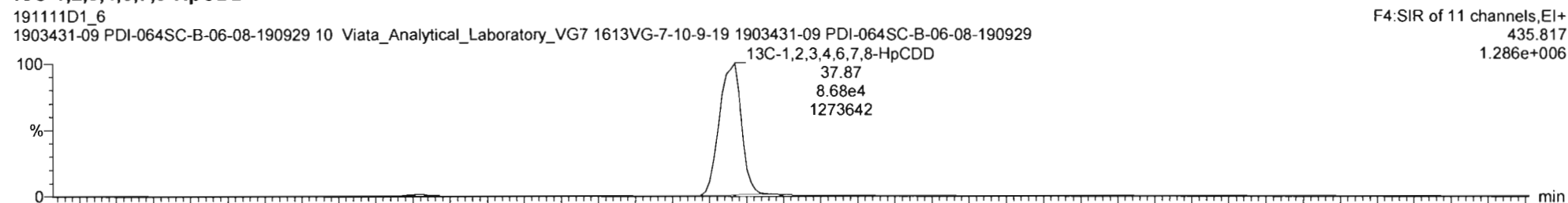
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Total Hepta-Dioxins



13C-1,2,3,4,6,7,8-HpCDD



Vista Analytical Laboratory

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Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

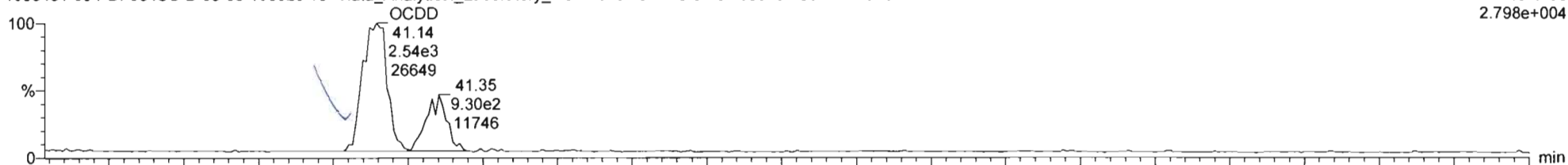
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OCDD

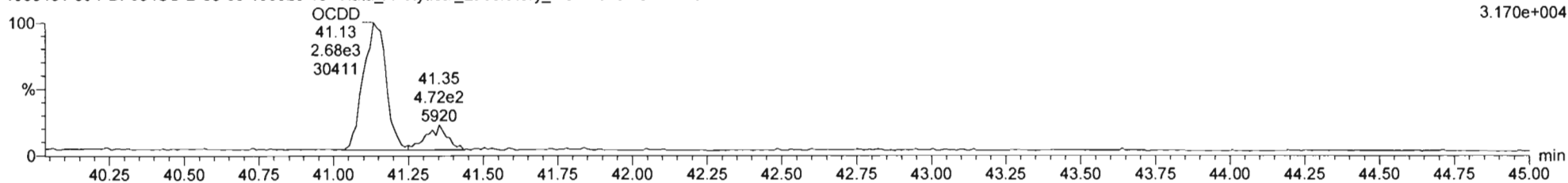
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F5:SIR of 11 channels,EI+
457.738
2.798e+004



191111D1_6
1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 1903431-09 PDI-064SC-B-06-08-190929

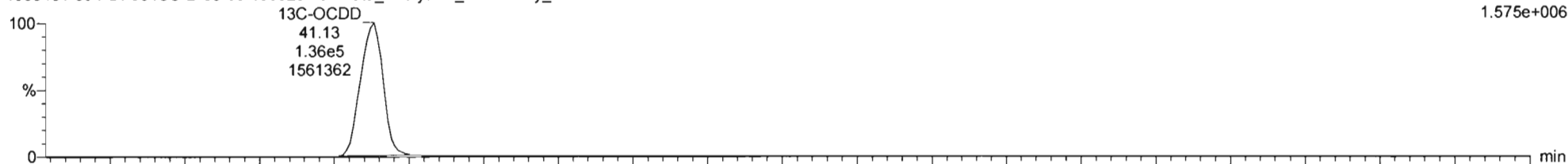
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13C-OCDD

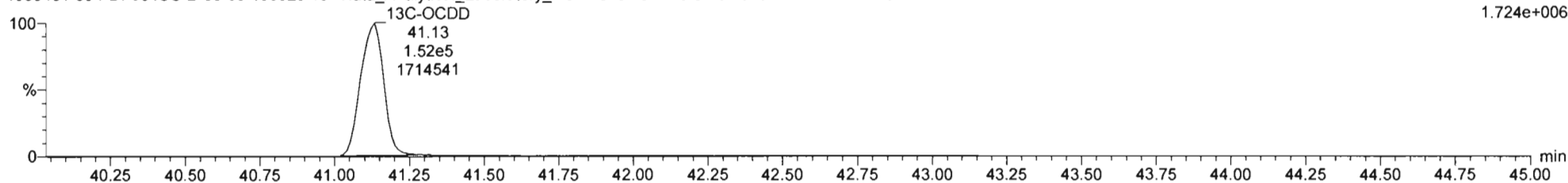
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F5:SIR of 11 channels,EI+
469.778
1.575e+006



191111D1_6
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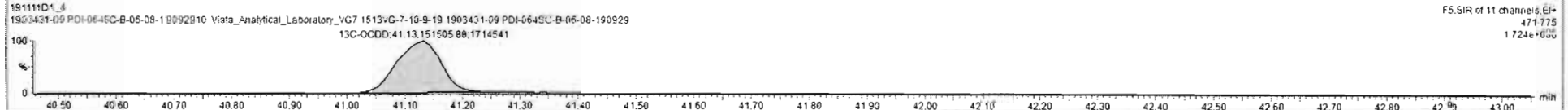
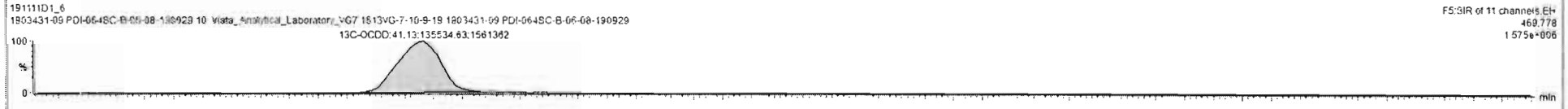
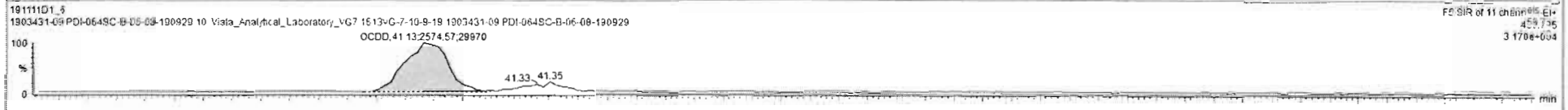
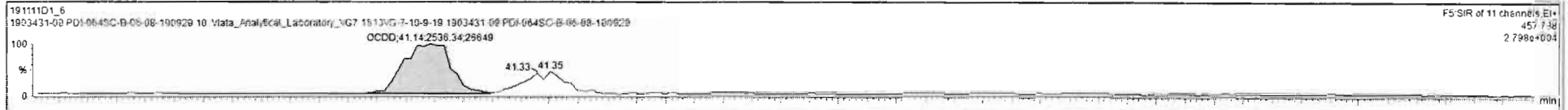
F5:SIR of 11 channels,EI+
471.775
1.724e+006



19111D1_6 - 1903431-09-PDI-064SC-B-06-08-190929 - 1903431-09-PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7-1013VG-7-10-9-19

#	Name	Resp	S Resp	IS#	RA	n/y	RRF	wt/wt	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
1	1,2,3,7,8-TCDD	1.79e2	2.20e5	18	0.40	YES	0.905	10.041	28.28	28.28	1.001	1.001	NO	0.1790		0.141	0.1160
2	1,2,3,7,8-PeCDD		1.78e5	19			0.903	10.041	30.74			1.001	NO				0.144
3	1,2,3,4,7,8-HxCDD		1.65e5	20			1.101	10.041	34.02			1.000	NO				0.196
4	1,2,3,6,7,8-HxCDD		1.88e5	21			0.939	10.041	34.12			1.000	NO				0.202
5	1,2,3,7,8,9-HxCDD		1.88e5	22			0.981	10.041	34.44			1.001	NO				0.209
6	1,2,3,4,6,7,8-HpCDD	8.25e2	1.66e5	23	1.08	NO	0.979	10.041	37.88	37.88	1.000	1.000	NO	1.088		0.175	1.068
7	OCDD	5.11e3	2.87e5	24	0.99	NO	0.959	10.041	41.13	41.14	1.000	1.000	NO	7.400		0.326	7.400
8	1,2,3,7,8-TCDF	3.45e2	3.15e5	25	2.69	YES	0.950	10.041	25.48	25.48	1.001	1.001	NO	0.2292		0.153	0.1100
9	1,2,3,7,8-PeCDF		2.75e5	26			0.960	10.041	29.58			1.001	NO				0.106
10	1,2,3,4,7,8-PeCDF		2.70e5	27			1.015	10.041	30.46			1.001	NO				0.101

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred.RA	RA	n/y	EMPC	Conc.
1										



Vista Analytical Laboratory

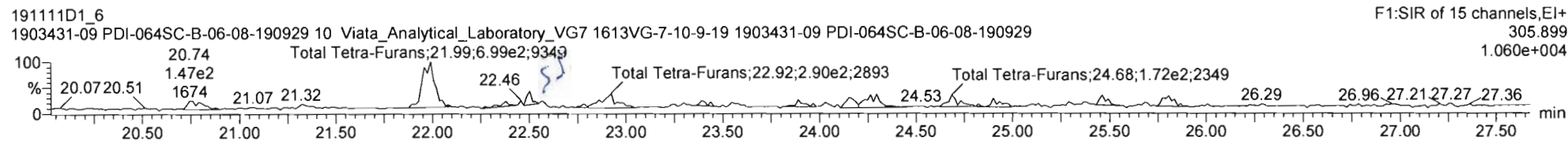
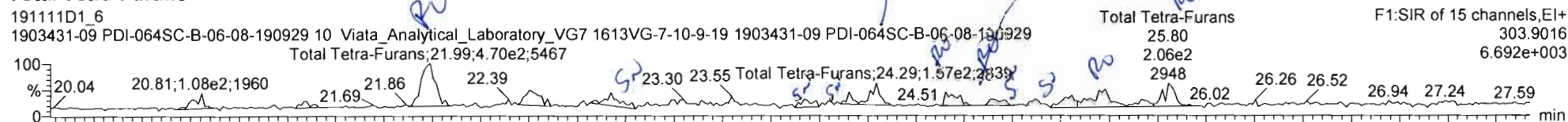
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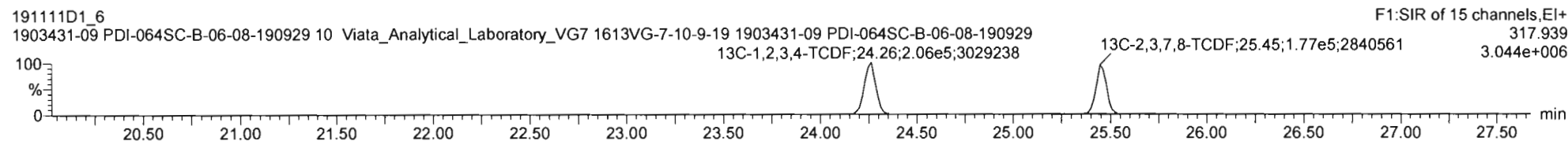
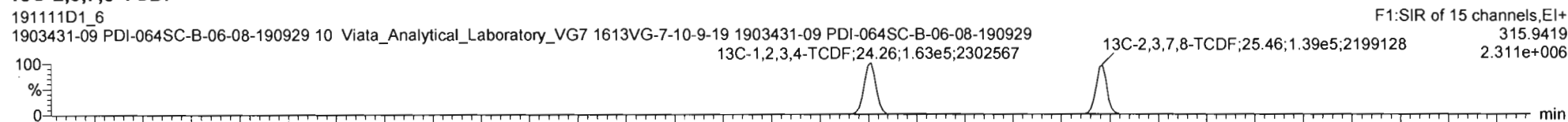
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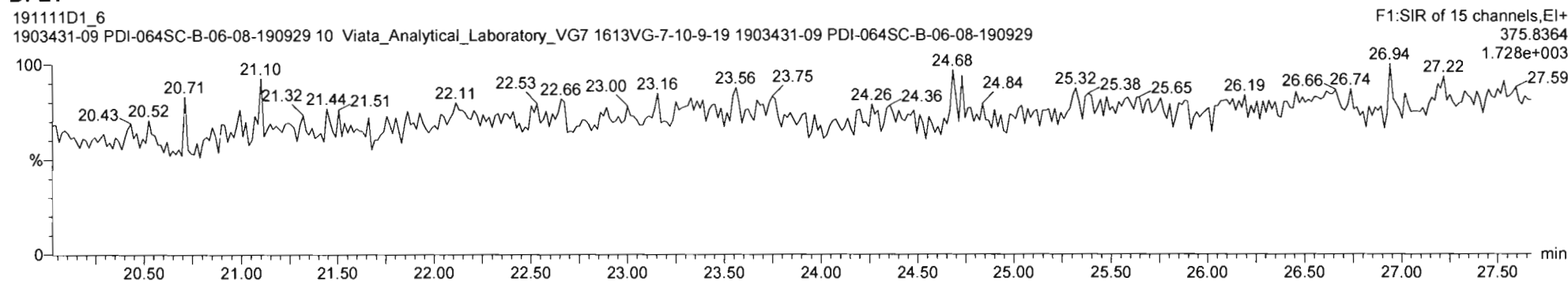
Total Tetra-Furans



13C-2,3,7,8-TCDF



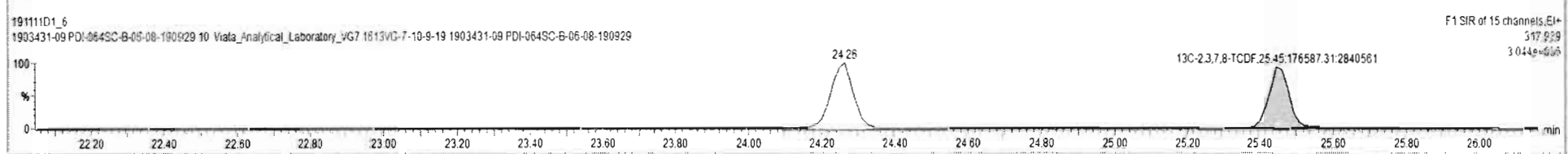
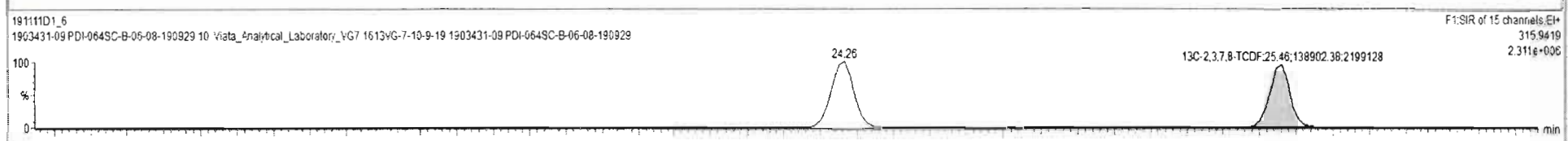
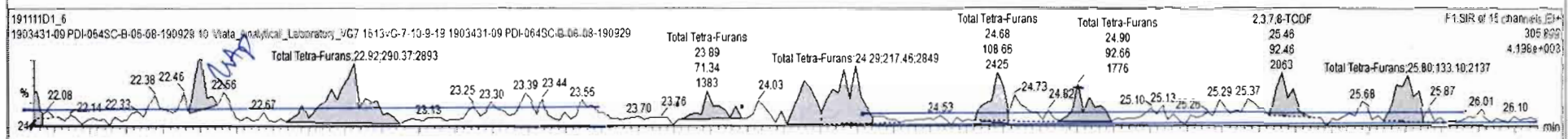
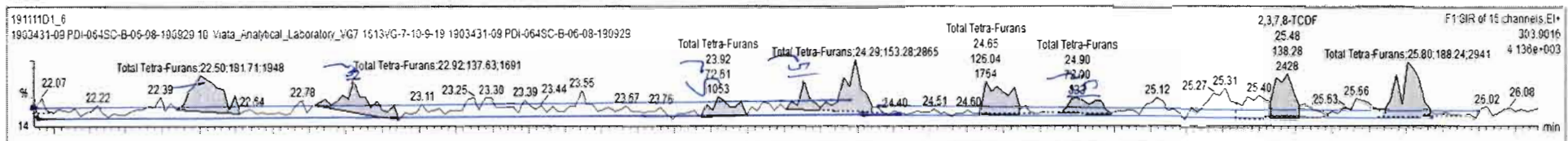
DPE1



191111D1_6_1903431-09 PDI-064SC-B-06-08-190929_1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	rt/val	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
43	Total Tetra-Furans		3.15e5				0.943	10.941	24.00			0.000	NO	0.3585	0.184	1.998	
44	1st Func. Penta-Furans		0.00e0				0.940	10.041	27.53			0.000	NO			0.0217	
45	Total Penta-Furans		0.00e0				0.940	10.041	30.00			0.000	NO	0.1095	0.109	0.3684	
46	Total Hexa-Furans		0.00e0				1.078	10.941	33.00			0.000	NO	0.1916	0.113	0.1916	
47	Total Hepta-Furans		0.00e0				1.135	10.041	37.75			0.000	NO			0.0586	
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																

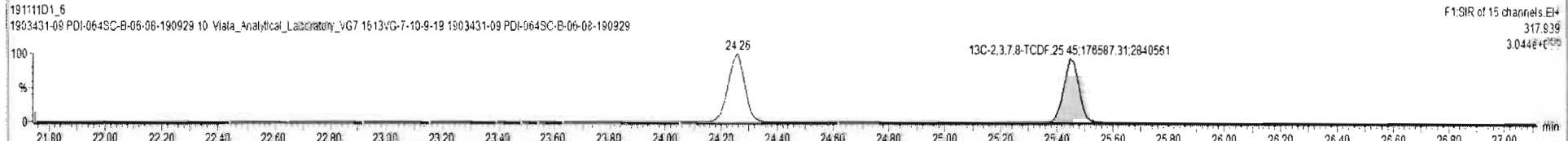
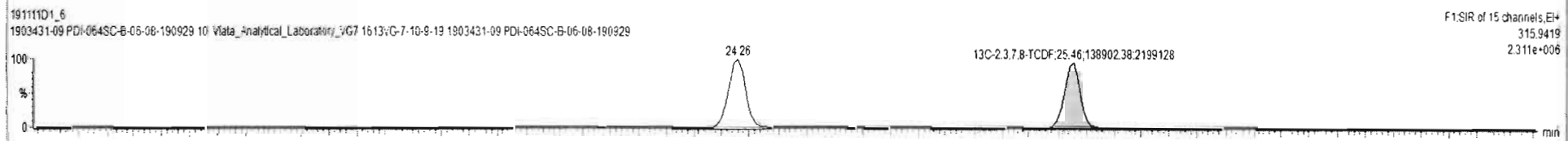
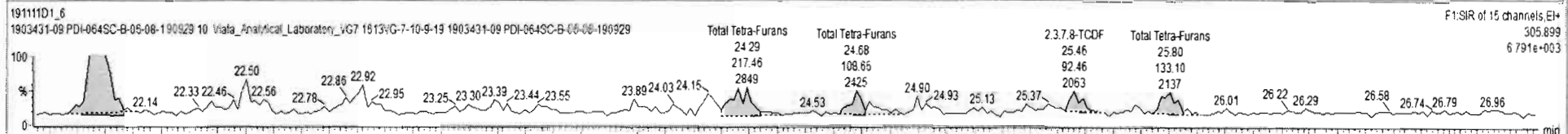
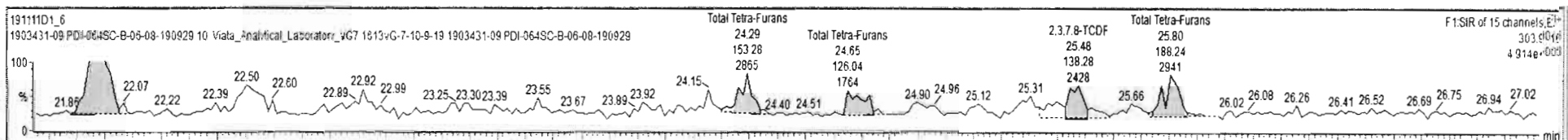
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	43 Total Tetra-Furans	24.00	21.99	4.580e2	7.225e2	0.770	0.63	YES	0.70495	0.00000
2	43 Total Tetra-Furans	24.00	22.50	1.817e2	6.715e1	0.770	2.09	YES	0.10329	0.00000
3	43 Total Tetra-Furans	24.00	22.92	1.375e2	2.904e2	0.770	0.47	YES	0.21196	0.00000
4	43 Total Tetra-Furans	24.00	23.92	7.261e1	7.134e1	0.770	1.02	YES	0.08450	0.00000
5	43 Total Tetra-Furans	24.00	24.15	5.167e1	1.199e2	0.770	0.43	YES	0.079539	0.00000
6	43 Total Tetra-Furans	24.00	24.29	1.533e2	2.175e2	0.770	0.70	NO	0.24827	0.24827
7	43 Total Tetra-Furans	24.00	24.65	1.260e2	1.087e2	0.770	1.18	YES	0.12880	0.00000



19111D1_6 - 1903431-09 PDI-064SC-B-06-08-190929 - 1903431-09 PDI-064SC-B-06-08-190929 - 10 Viata_Analytical_Laboratory_VG7-1613VG-7-10-9-19

#	Name	Resp	iS Resp	iS#	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
43	43 Total Tetra-Furans		3.15e5				0.943	10.041	24.00			0.000	NO	0.2483		0.164	1.349
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.041	27.63			0.000	NO				0.0217
45	45 Total Penta-Furans		0.00e0				0.940	10.041	30.00			0.000	NO	0.1095		0.109	0.3624
46	46 Total Hexa-Furans		0.00e0				1.078	10.041	33.00			0.000	NO	0.1916		0.113	0.1916
47	47 Total Hepta-Furans		0.00e0				1.135	10.041	37.75			0.000	NO			0.0586	
48	48 PFK1																
49	49 PFK2																
50	50 PFK3																
51	51 PFK4																
52	52 PFK5																
53	53 PFK6																

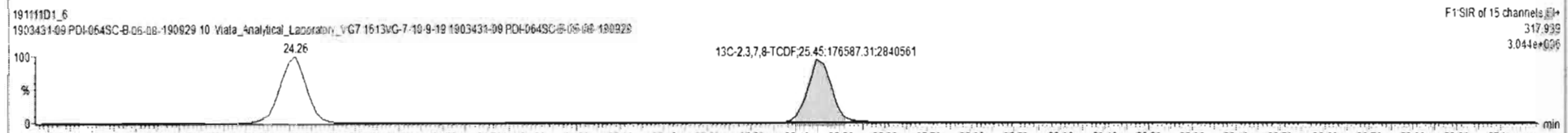
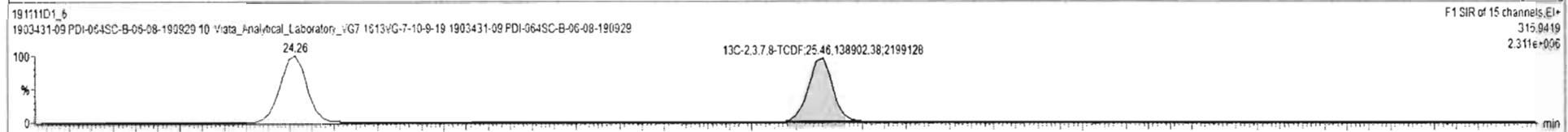
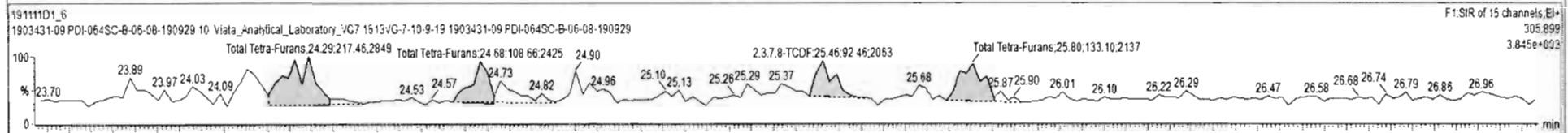
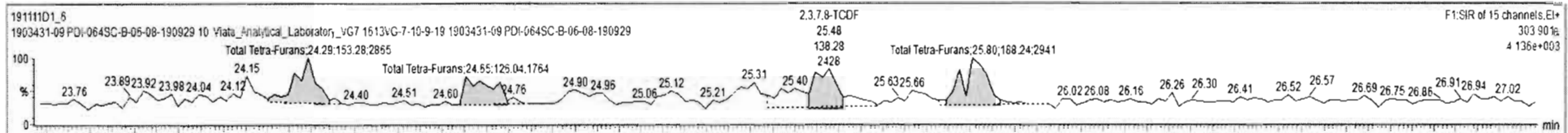
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	21.99	4.580e2	7.225e2	0.770	0.63	YES	0.70495	0.00000
2	43 Total Tetra-Furans	24.00	24.29	1.533e2	2.175e2	0.770	0.70	NO	0.24827	0.24827
3	43 Total Tetra-Furans	24.00	24.65	1.260e2	1.087e2	0.770	1.16	YES	0.12680	0.00000
4	8 2,3,7,8-TCDF	25.49	25.48	1.383e2	9.248e1	0.770	1.50	YES	0.10675	0.00000
5	43 Total Tetra-Furans	24.00	25.80	1.882e2	1.331e2	0.770	1.41	YES	0.15777	0.00000



19111D1_6_1903431-09 PDI-064SC-B-06-08-190929_1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
43	Total Tetra-Furans		3.15e5				0.943	10.041	24.00			0.000	NO	0.2483		0.164	1.349
44	1st Func. Penta-Furans		0.00e0				0.940	10.041	27.83			0.000	NO				0.0217
45	Total Penta-Furans		0.00e0				0.940	10.041	30.00			0.000	NO	0.1095		0.109	0.3664
46	Total Hexa-Furans		0.00e0				1.078	10.041	33.00			0.000	NO	0.1316		0.113	0.1916
47	Total Hepta-Furans		0.00e0				1.125	10.041	37.75			0.000	NO				0.0566
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																
53	PFK6																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	21.99	4.580e2	7.225e2	0.770	0.83	YES	0.70495	0.00000
2	43 Total Tetra-Furans	24.00	24.29	1.533e2	2.175e2	0.770	0.70	NO	0.24827	0.24827
3	43 Total Tetra-Furans	24.00	24.85	1.260e2	1.087e2	0.770	1.16	YES	0.12860	0.00000
4	6 2,3,7,8-TCDF	25.46	25.48	1.383e2	9.246e1	0.770	1.50	YES	0.10875	0.00000
5	43 Total Tetra-Furans	24.00	25.80	1.882e2	1.331e2	0.770	1.41	YES	0.15777	0.00000



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

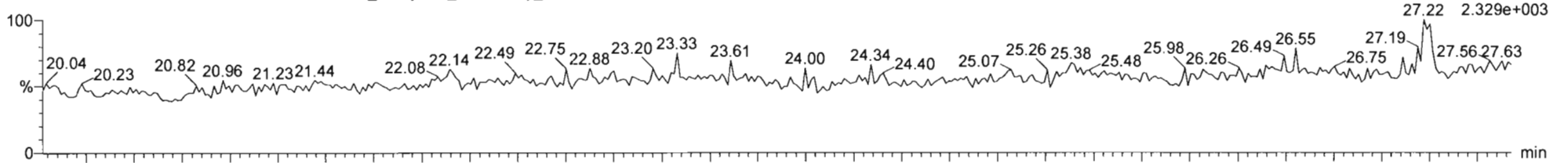
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Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

1st Func. Penta-Furans

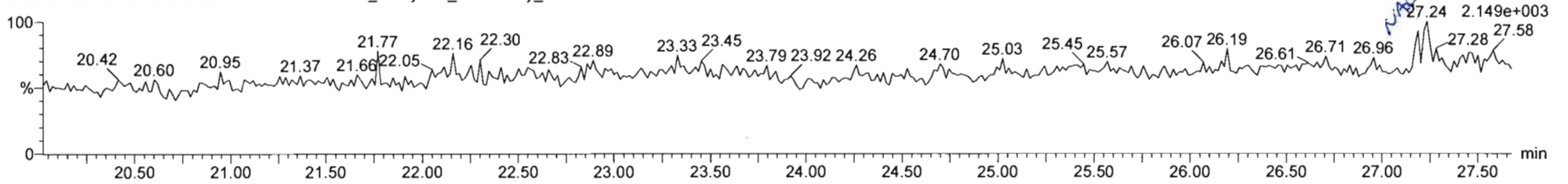
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F1:SIR of 15 channels,EI+
339.860



191111D1_6
1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19 1903431-09 PDI-064SC-B-06-08-190929

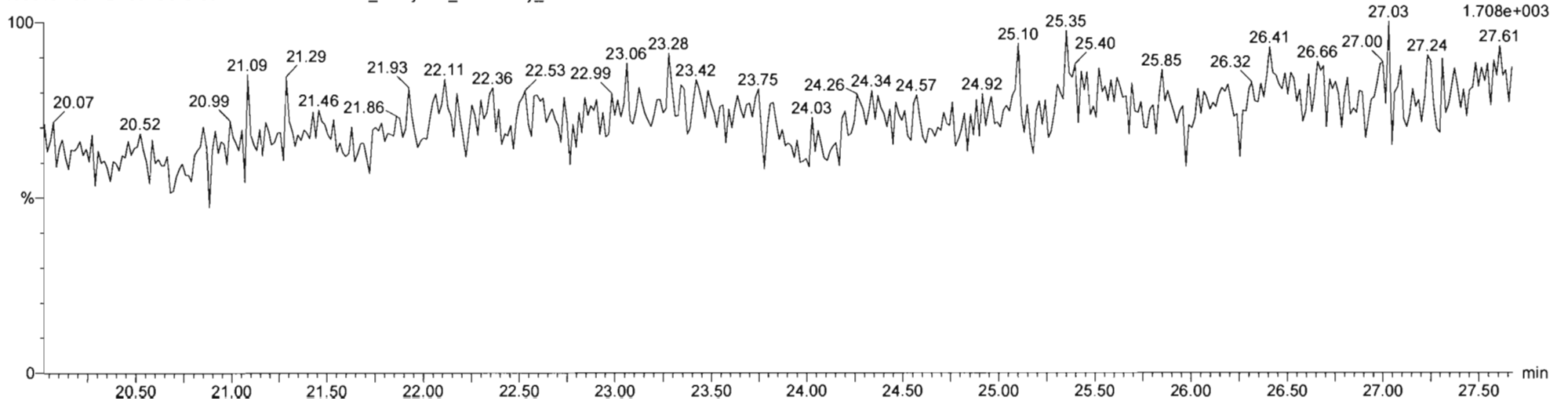
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341.857



DPE6

191111D1_6
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F1:SIR of 15 channels,EI+
409.7974



Vista Analytical Laboratory

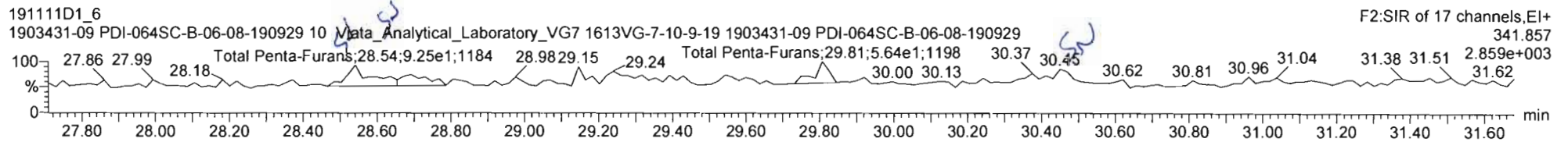
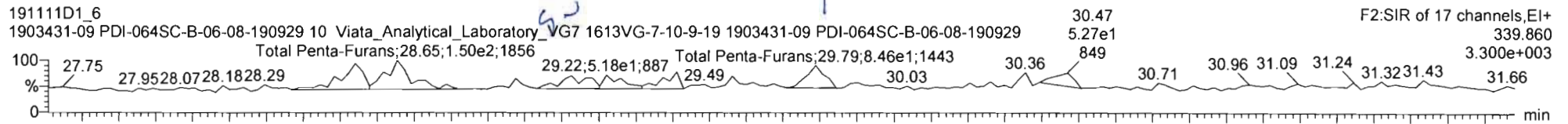
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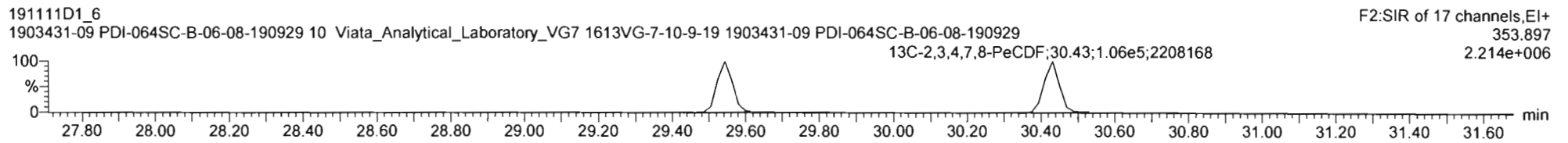
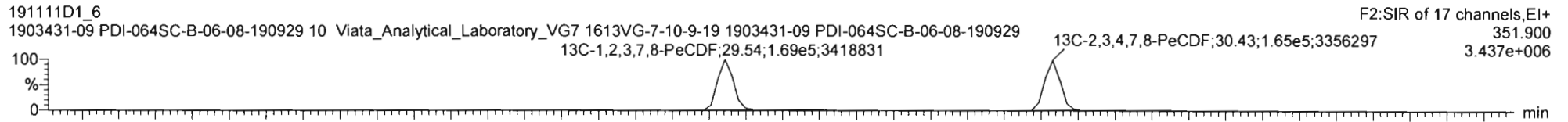
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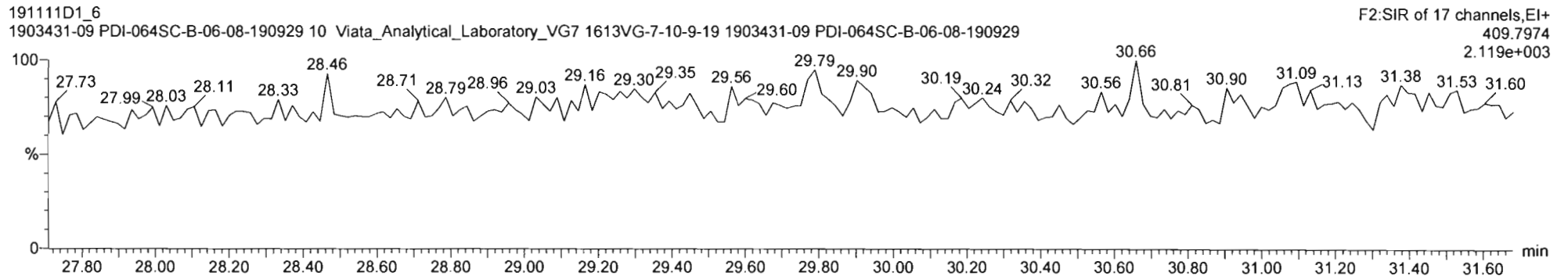
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



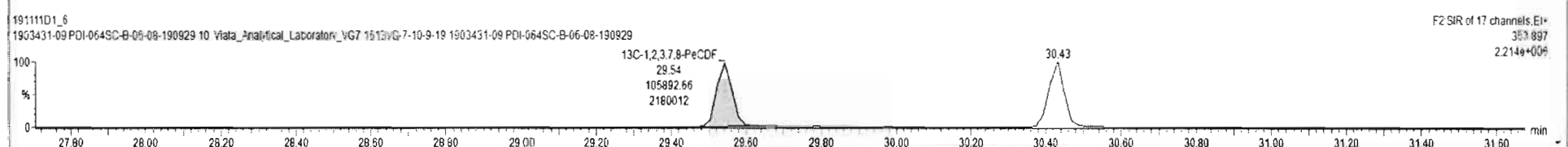
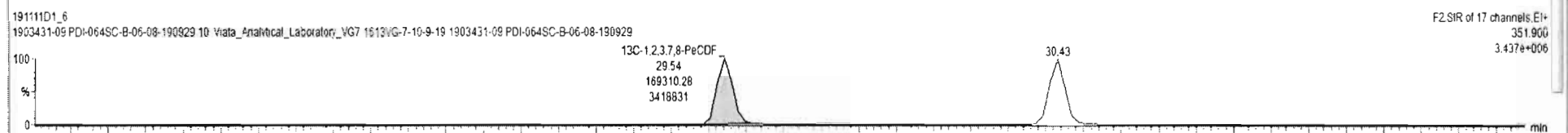
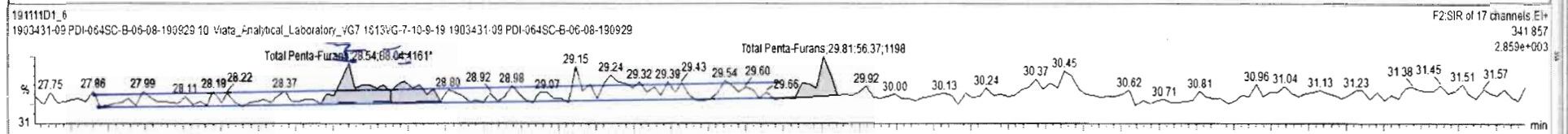
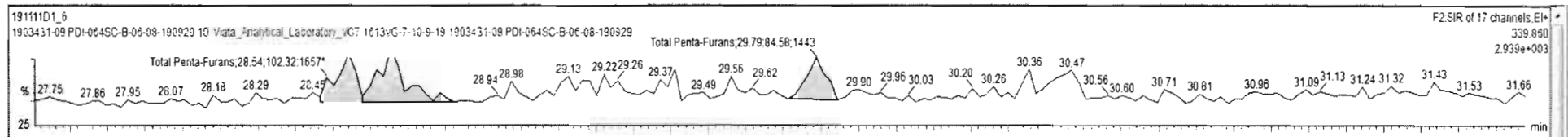
DPE2



19111D1_6 - 1903431-09 PDI-064SC-B-06-08-190929 - 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

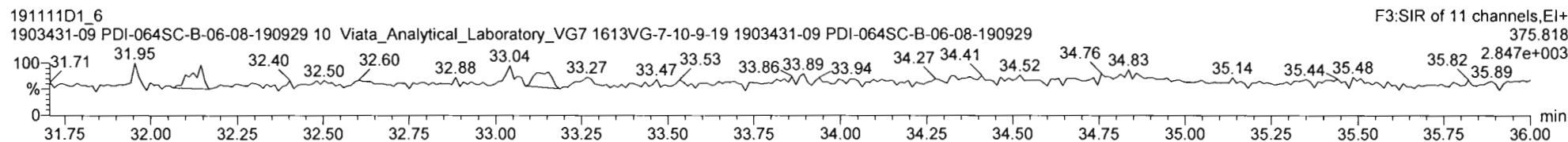
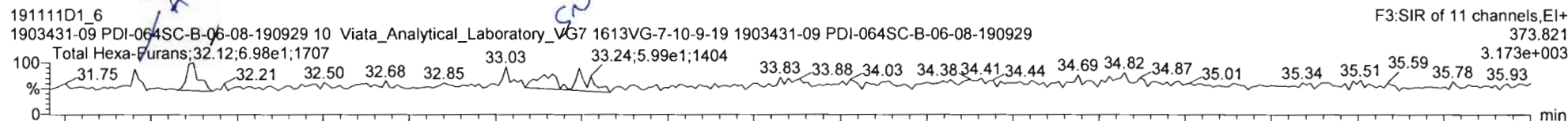
#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC	
43	43 Total Tetra-Furans		3.15e5				0.943	10.041	24.00			0.000	NO	0.2483		0.164	1.349	
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.041	27.63			0.000	NO			0.0217		
45	45 Total Penta-Furans		0.00e0				0.940	10.041	30.00			0.000	NO	0.1095		0.109	0.3684	
46	46 Total Hexa-Furans		0.00e0				1.078	10.041	33.00			0.000	NO	0.1916		0.113	0.1916	
47	47 Total Hepta-Furans		0.00e0				1.135	10.041	37.75			0.000	NO			0.0586		
48	48 PFK1																	
49	49 PFK2																	
50	50 PFK3																	
51	51 PFK4																	
52	52 PFK5																	
53	53 PFK6																	

#	Name	Pred RT	RT	m/z Resp	m/z Resp	Pred RA	RA	n/y	EMPC	Conc.
1	45 Total Penta-Furans	30.00	28.54	1.206e2	9.248e1	1.550	1.30	YES	0.15419	0.00000
2	45 Total Penta-Furans	30.00	28.85	1.504e2	5.281e1	1.550	2.85	YES	0.10466	0.00000
3	45 Total Penta-Furans	30.00	29.79	8.458e1	5.637e1	1.550	1.50	NO	0.10954	0.10954

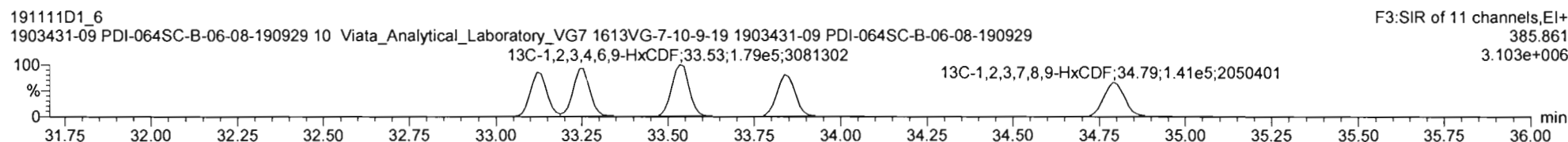
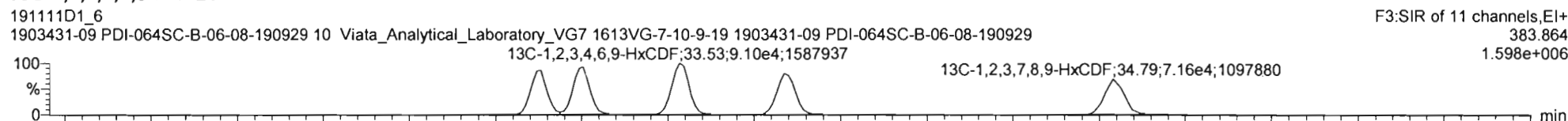


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Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

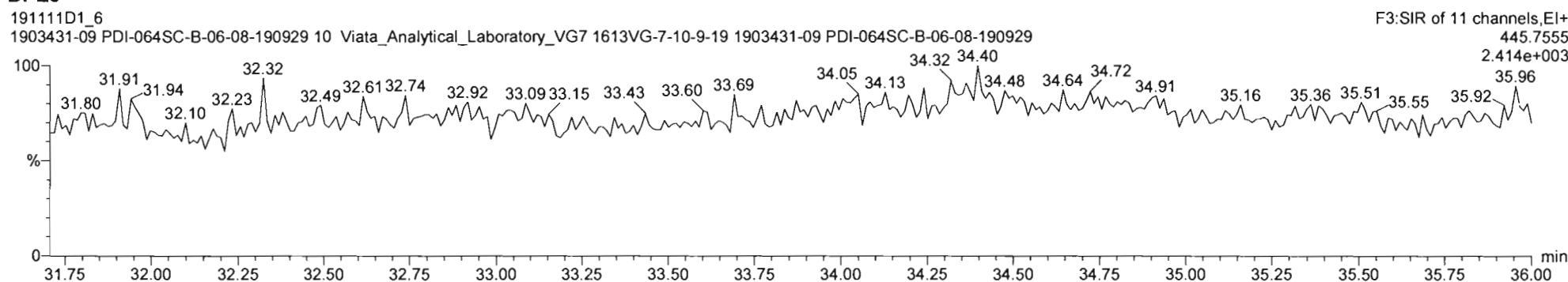
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

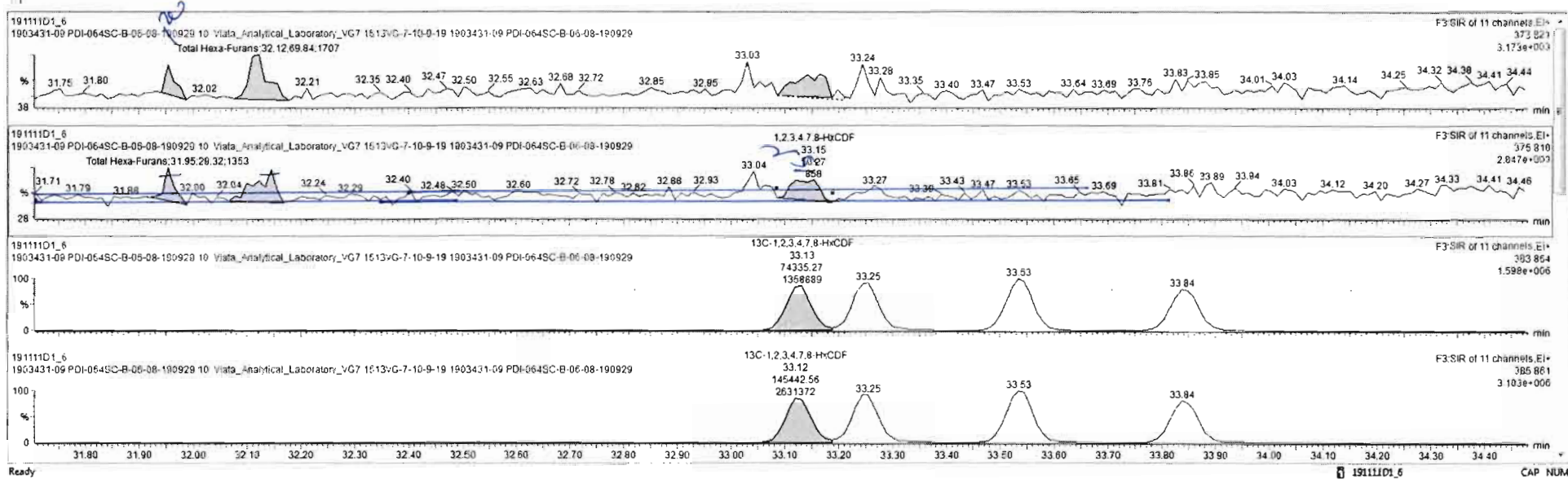


DPE3



#	Name	Resp	IS Resp	ISE	RA	n/y	RRF	wtdVol	Pred.RT	RT	RRT	Pred.RRT	Check.RRT	Conc.	%Rec	DL	EMPC	
43	Total Tetra-Furans	3.15e5					0.943	10.041	24.00			0.000	NO	0.2463		0.164	1.349	
44	1st Func. Penta-Furans	0.00e0					0.940	10.041	27.63			0.000	NO			0.0217		
45	Total Penta-Furans	0.00e0					0.940	10.041	30.00			0.000	NO	0.1095		0.159	0.1095	
46	Total Hexa-Furans	0.00e0					1.078	10.041	33.00			0.000	NO	0.1856		0.113	0.2199	
47	Total Hepta-Furans	0.00e0					1.135	10.041	37.75			0.000	NO			0.0586		
48	PFK1																	
49	PFK2																	
50	PFK3																	
51	PFK4																	
52	PFK5																	
53	PKK6																	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	46 Total Hexa-Furans	33.00	31.95	2.304e1	2.932e1	1.240	0.79	YES	0.034151	0.00000
2	46 Total Hexa-Furans	33.00	32.12	6.984e1	5.559e1	1.240	1.26	NO	0.10291	0.10291
3	11 1,2,3,4,7,8-HxCDF	33.13	33.16	5.731e1	5.027e1	1.240	1.14	NO	0.082849	0.082849



Vista Analytical Laboratory

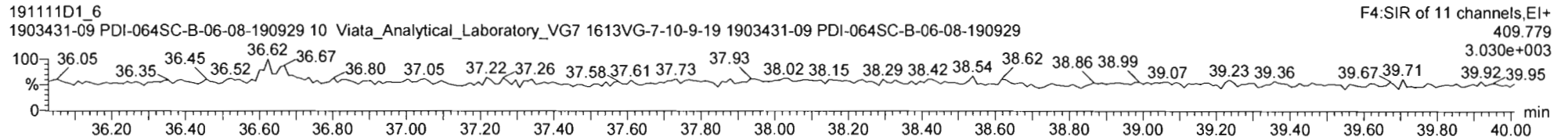
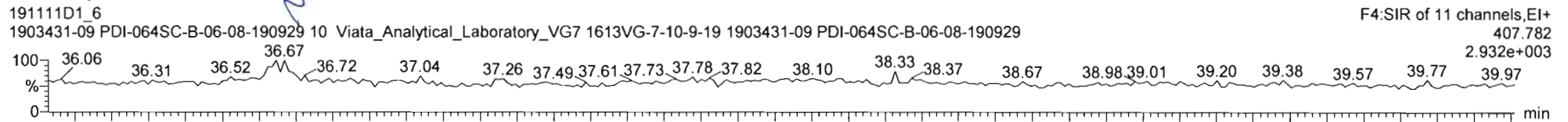
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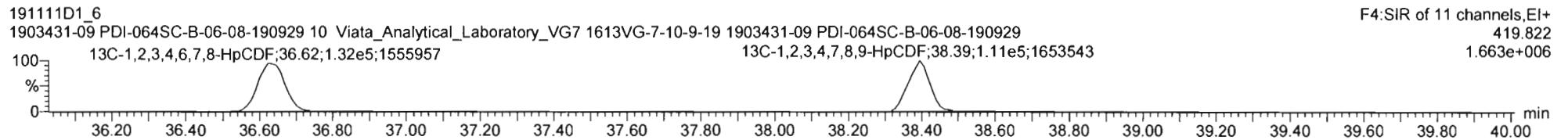
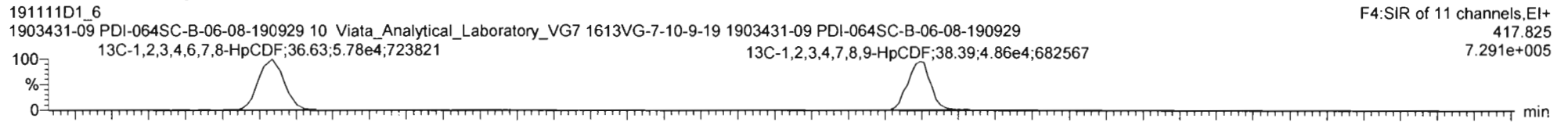
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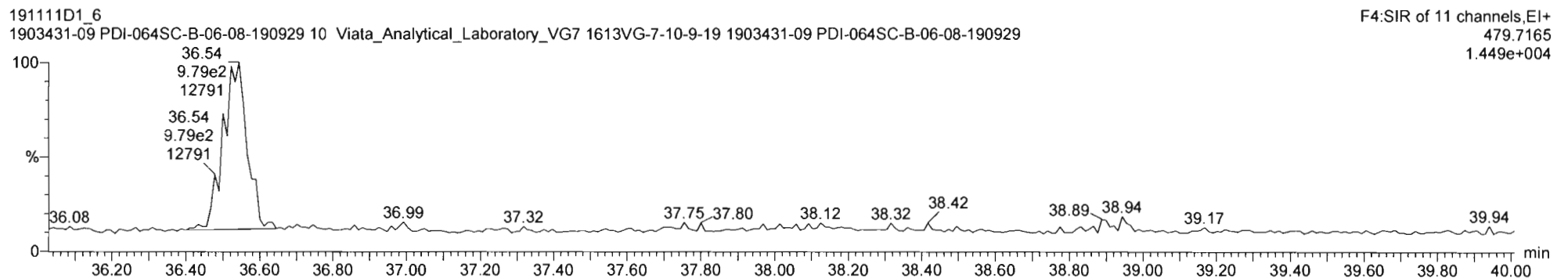
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

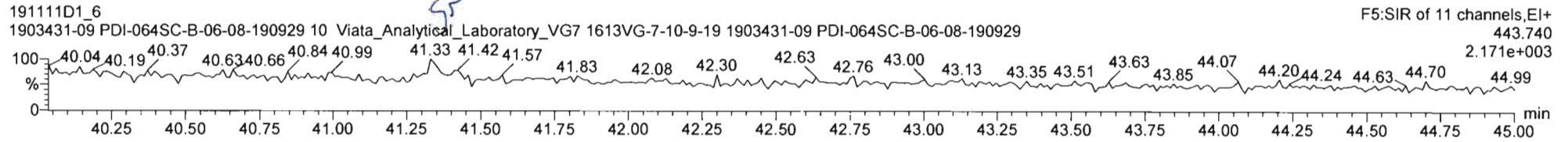
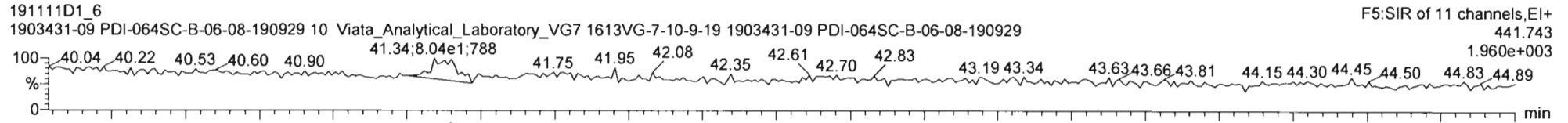
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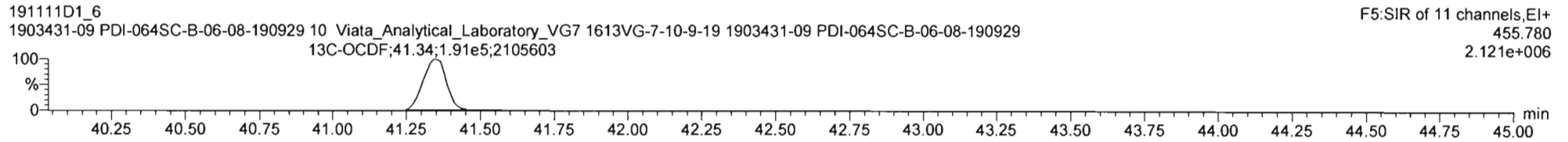
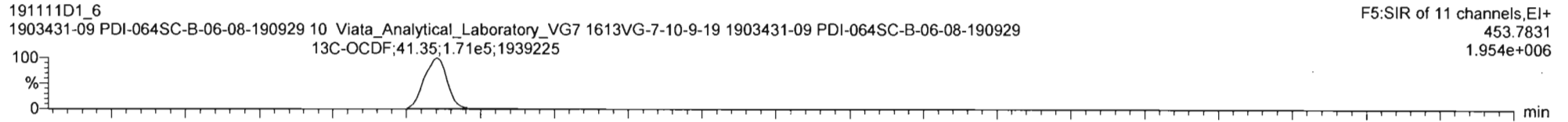
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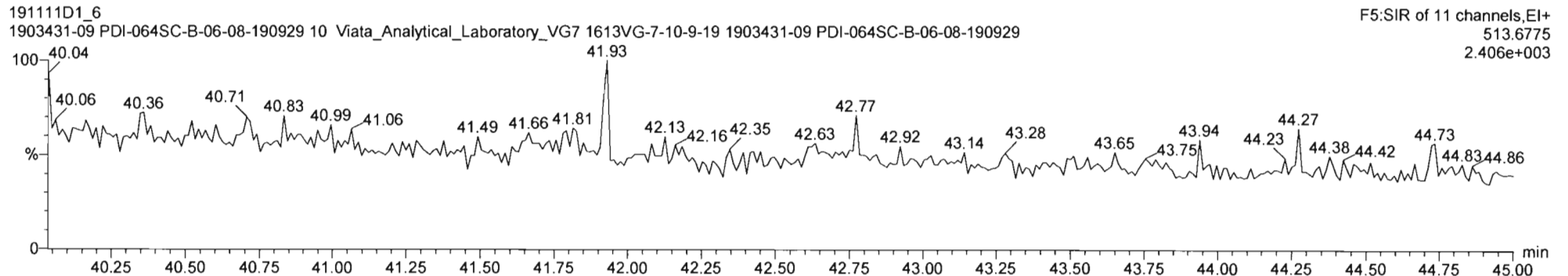
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

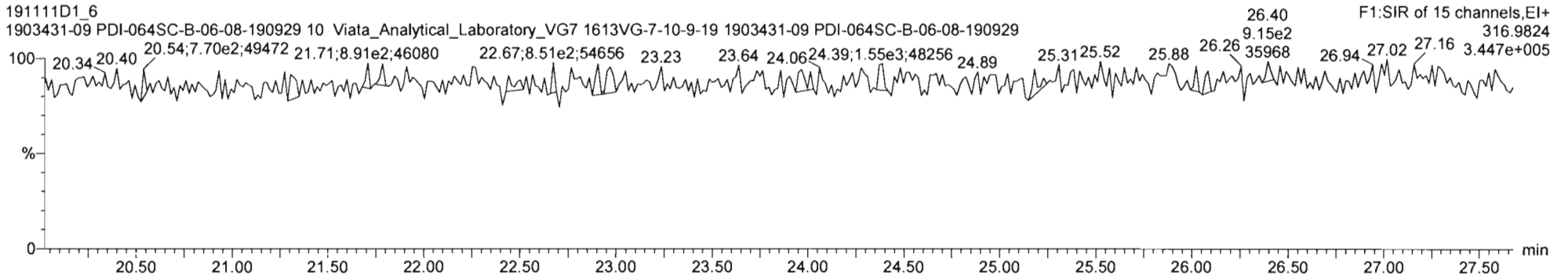
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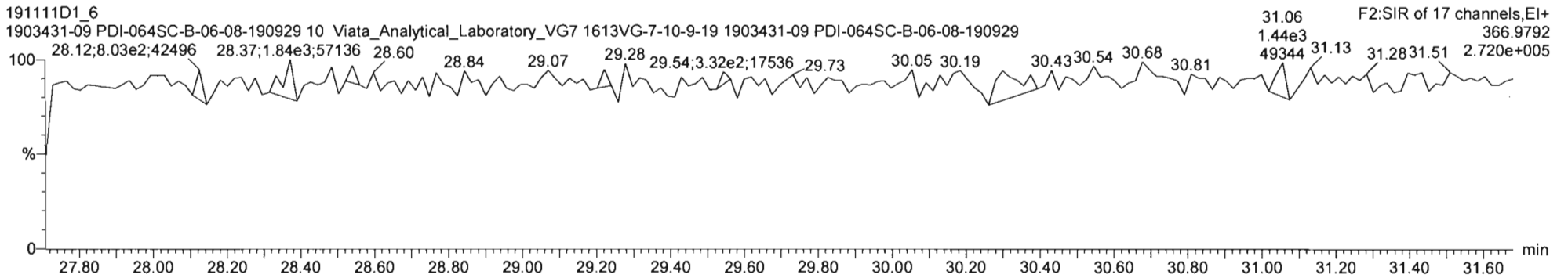
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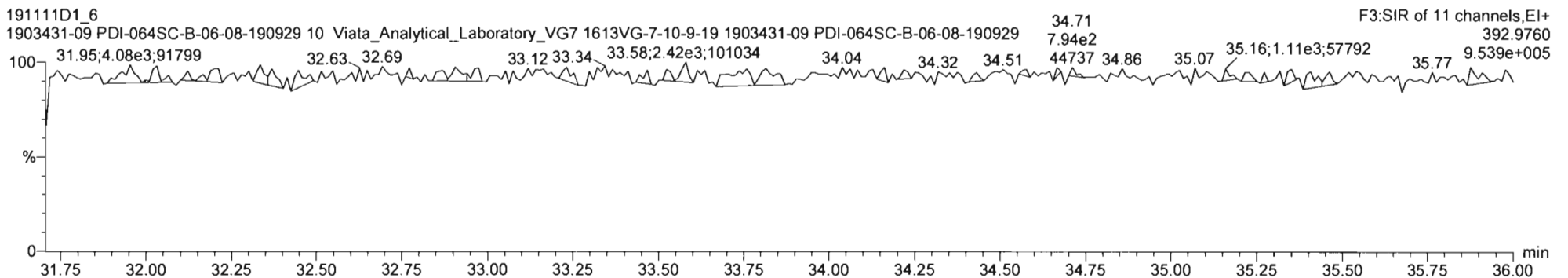
PFK1



PFK2



PFK3



Vista Analytical Laboratory

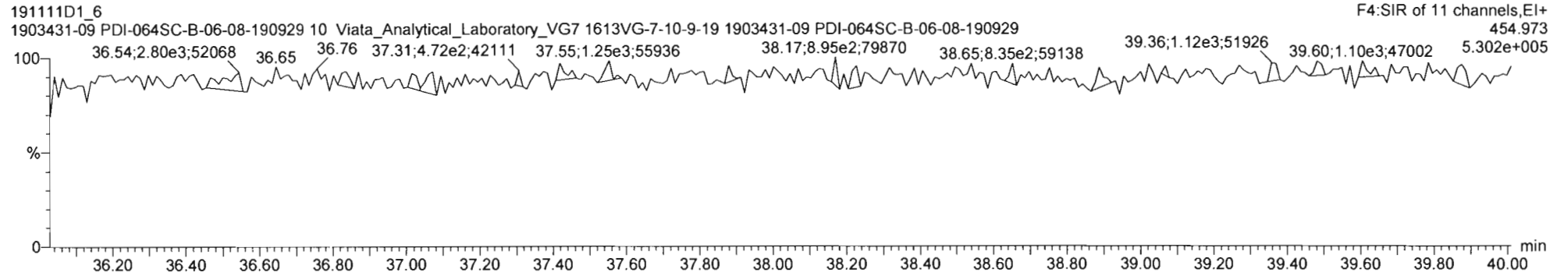
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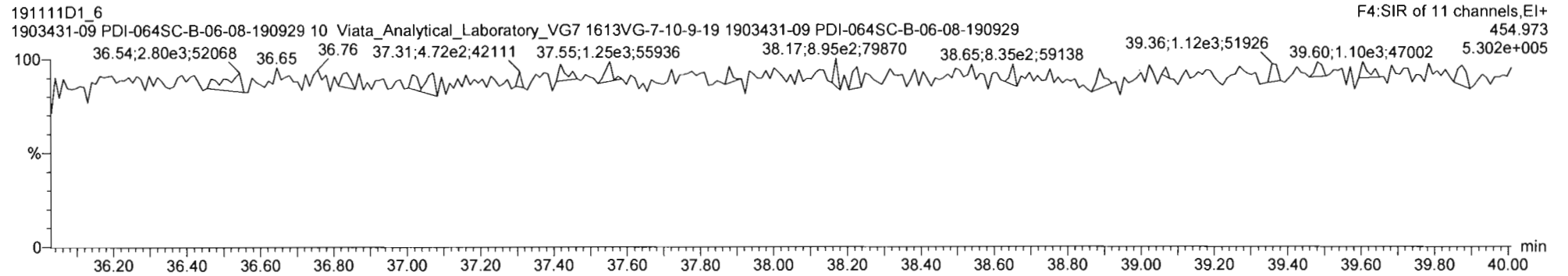
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Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, November 14, 2019 07:09:09 Pacific Standard Time

Printed: Thursday, November 14, 2019 07:09:37 Pacific Standard Time

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Description: 1903431-09 PDI-064SC-B-06-08-190929 10 Viata_Analytical_Laboratory_VG7 1613VG-7-10-9-19

CONFIRMATION

Client ID: PDI-064SC-B-00-02-1909 Filename: 191107D1 S:7 Acq: 7-NOV-19 14:01:35

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Page 5 of 5

Lab ID: 1903431-06RE1

GC Column ID: DB-225 ICal: 1613TCDFVG7-5-30-19 wt/vol:10.013

EndCAL: NA

Name	Resp	RA	RT	RRF	Conc	Rec
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13C-2,3,7,8-TCDF	1.02e+07	0.81 y	17:48	1.02	138.5	69.3
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Integrations

by
Analyst: DB

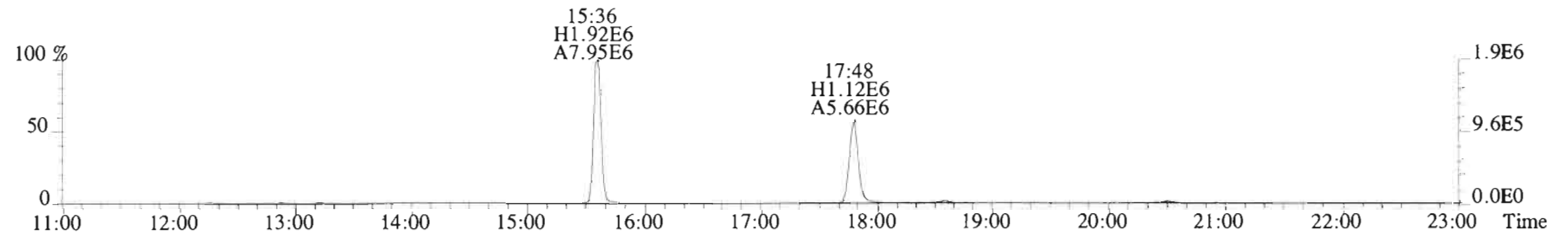
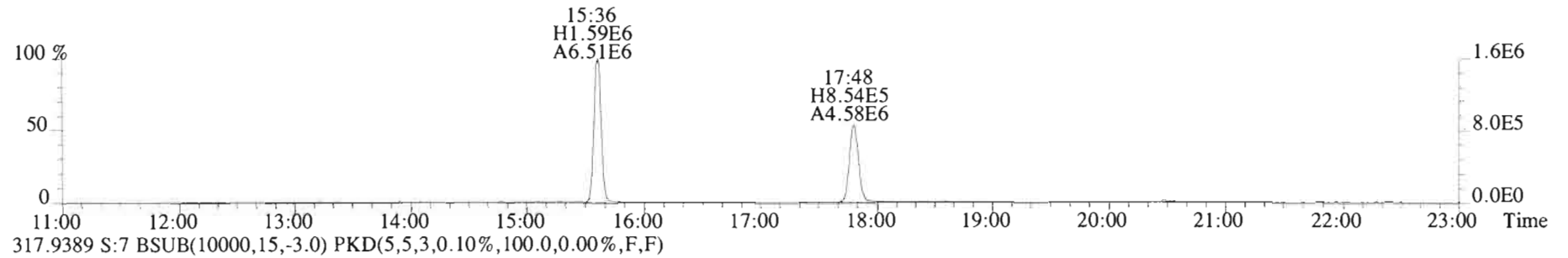
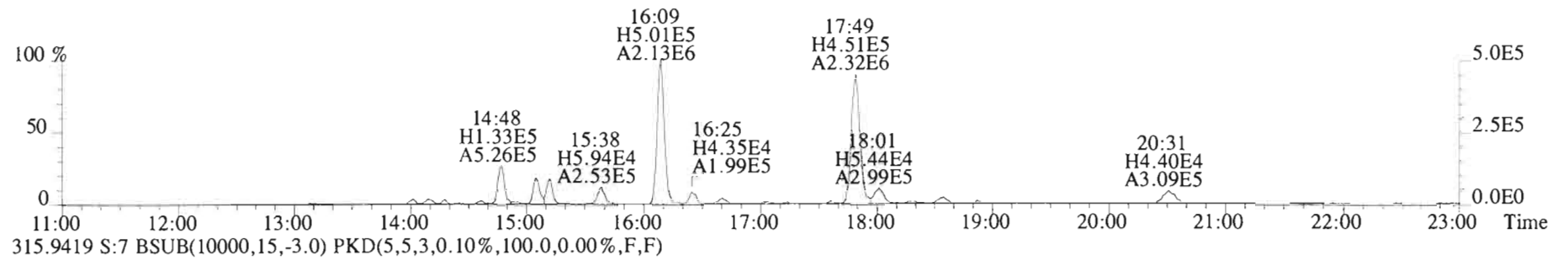
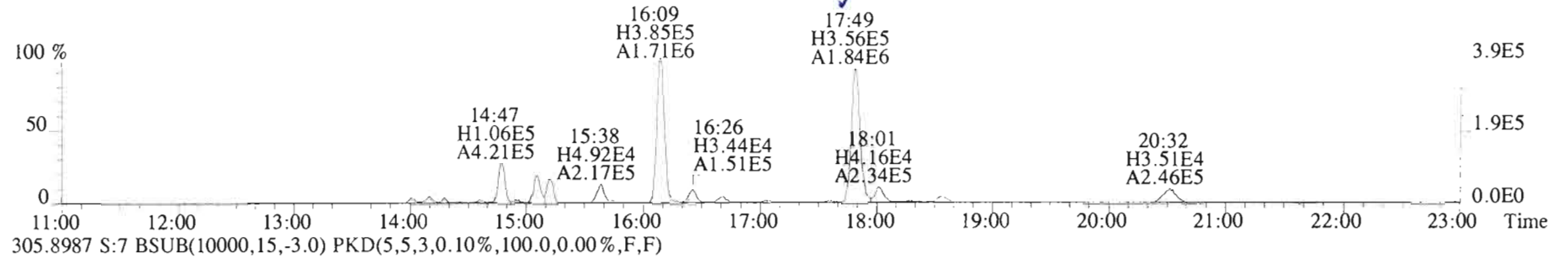
Date: 11/7/19

Reviewed

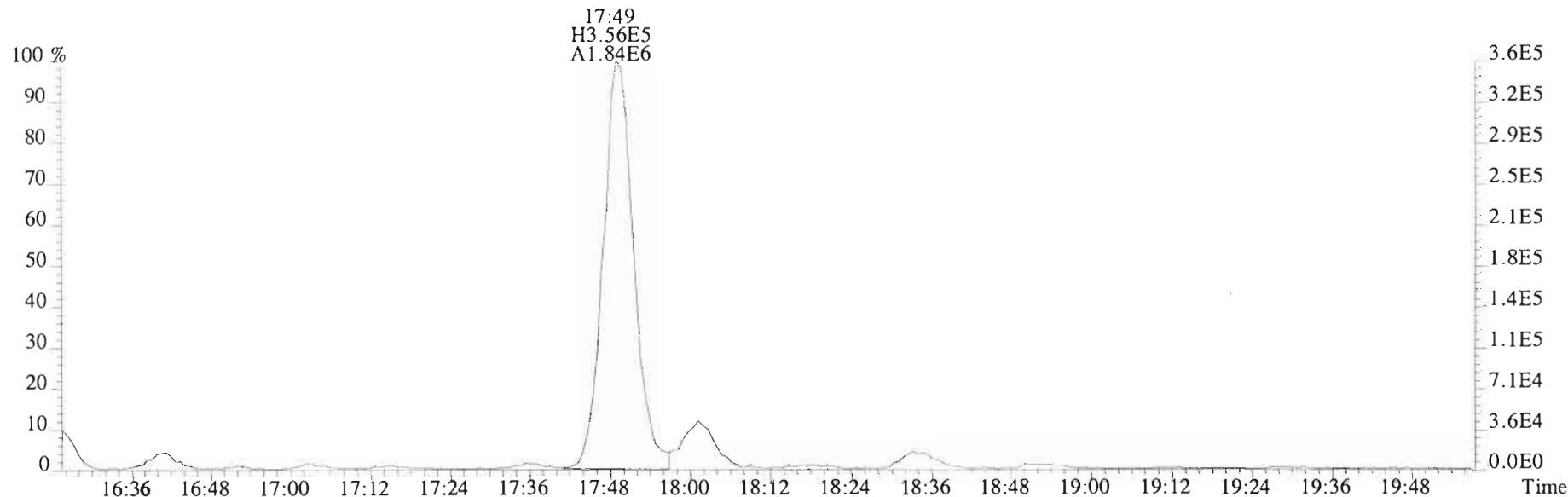
by
Analyst: CT

Date: 11/15/19

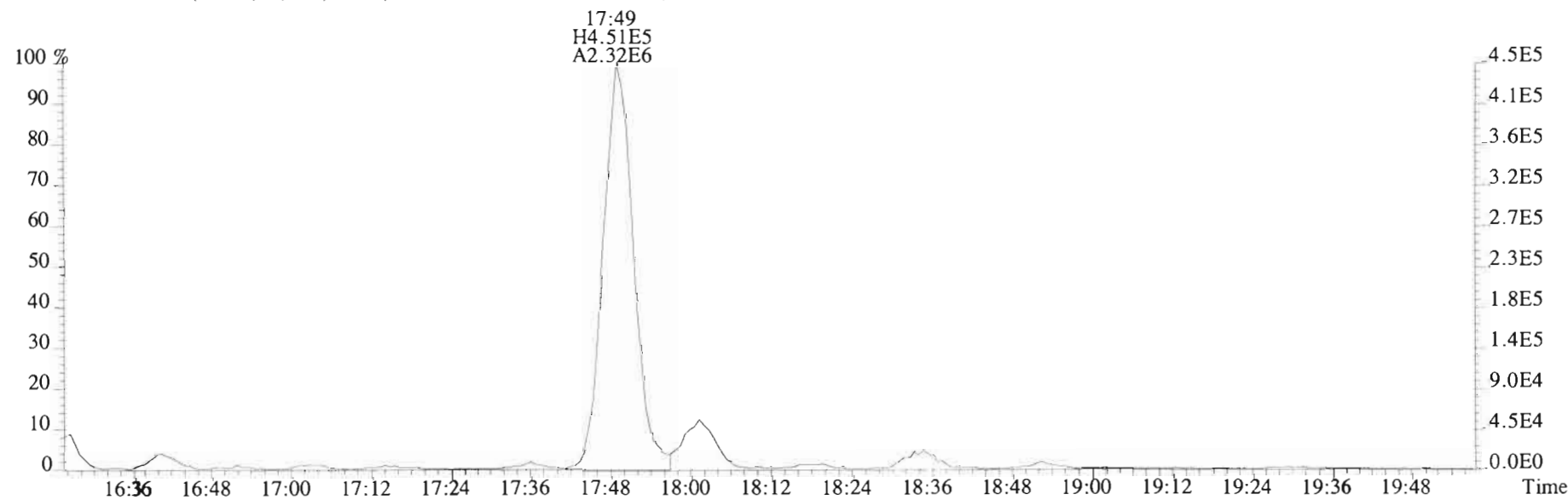
File:191107D1 #1-1682 Acq: 7-NOV-2019 14:01:35 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:1903431-06RE1 PDI-064SC-B-00-02-190929 18.39 Exp:TCDF_DB225
303.9016 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



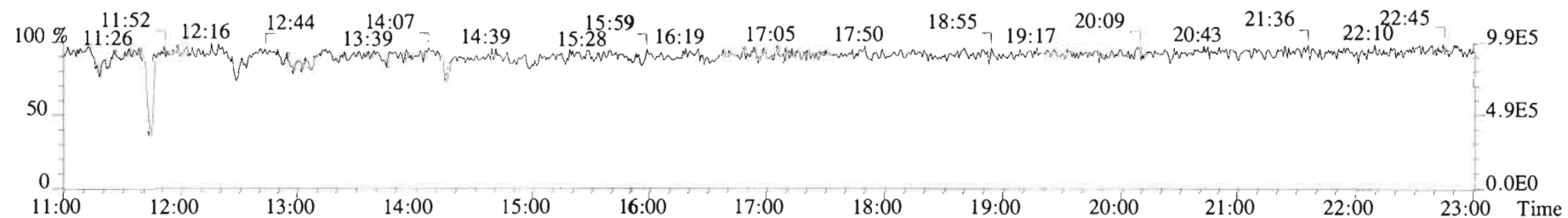
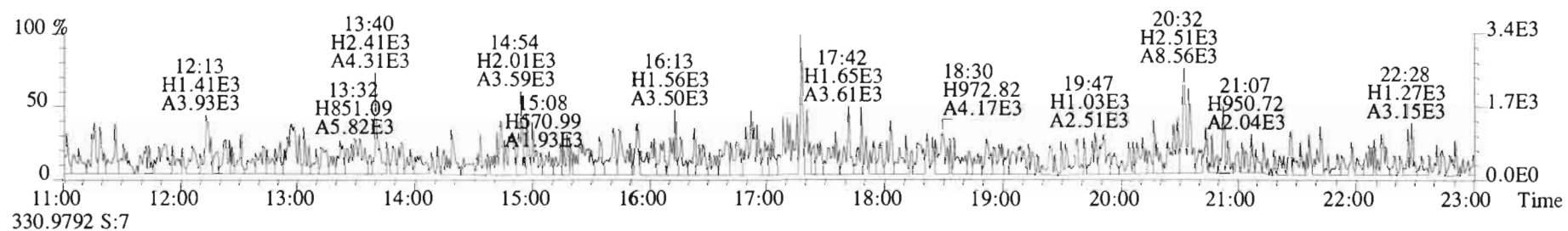
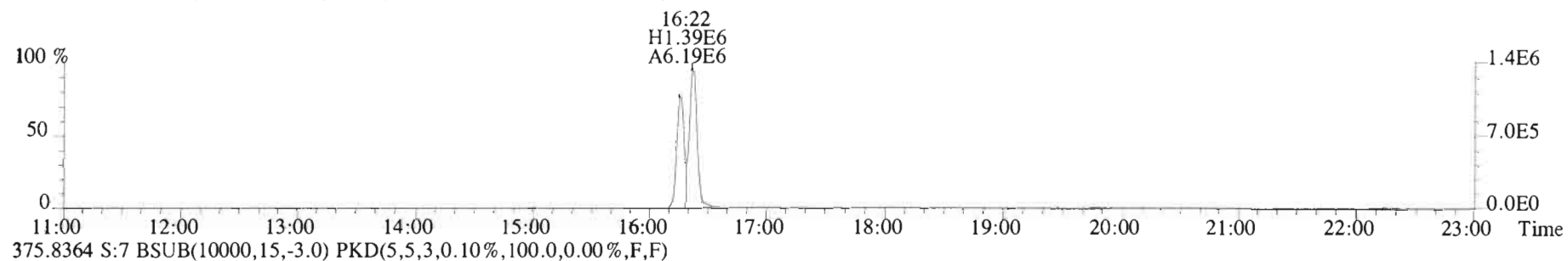
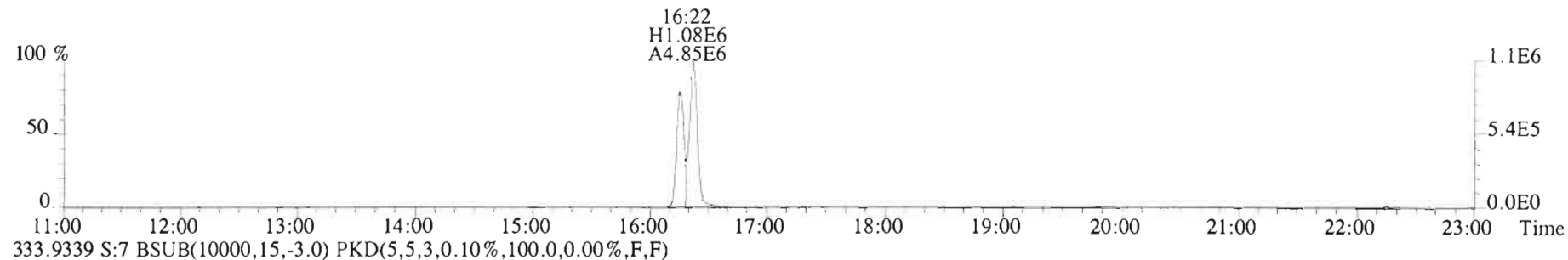
File:191107D1 #1-1682 Acq: 7-NOV-2019 14:01:35 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:1903431-06RE1 PDI-064SC-B-00-02-190929 18.39 Exp:TCDF_DB225
303.9016 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



305.8987 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191107D1 #1-1682 Acq: 7-NOV-2019 14:01:35 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata Analytical Laboratory VG7 Text:1903431-06RE1 PDI-064SC-B-00-02-190929 18.39 Exp:TCDF_DB225
 331.9368 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



CONTINUING CALIBRATION

HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST191104D 1-1

Reviewed By: CT 11/05/19

Initials & Date

End Calibration ID: NA

	<u>Beg.</u>	<u>End</u>
Ion abundance within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
Concentrations within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TCDD/TCDF Valleys <25%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
First and last eluters present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Retention Times within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Verification Std. named correctly? (ST-Year-Month-Day-VG ID)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Forms signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Correct ICAL referenced?	<u>DB</u>	<input type="checkbox"/>
Run Log:		
- Correct instrument listed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Samples within 12 hour clock?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
- Bottle position verified?	<u>DB</u>	

Mass resolution ≥

5k 6-8K 8K 10K
 1614 1699 429 1613/1668/8280

Intergrated peaks display correctly?

GC Break <20%

8280 CS1 End Standard:

- Ratios within limits, S/N <2.5:1, CS1 within 12 hours

Comments:

(A) SIOS CRASHED DURING END RES CHECK.
 NO FUNCTIONS PRINTED.
 RE-BOOTED & RES CHECK RUN IN THE MORNING
 DB 11/5/19

Vista Analytical Laboratory - Injection Log Run file: 191104D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	Ecal
191104D1	1	ST191104D1-1	DB	4-NOV-19	12:30:33	ST191104D1-1	NA
191104D1	2	ST191104D1-2	DB	4-NOV-19	13:18:28	ST191104D1-2	ST191104D1-3
191104D1	3	B9J0166-BS1	DB	4-NOV-19	14:06:24	ST191104D1-1	NA
191104D1	4	B9J0144-BS1	DB	4-NOV-19	14:54:24	ST191104D1-1	NA
191104D1	5	SOLVENT BLANK	DB	4-NOV-19	15:42:20	NA	NA
191104D1	6	B9J0166-BLK1	DB	4-NOV-19	16:30:16	ST191104D1-1	NA
191104D1	7	B9J0144-BLK1	DB	4-NOV-19	17:18:01	ST191104D1-1	NA
191104D1	8	1903260-01RE2	DB	4-NOV-19	18:05:55	ST191104D1-2	ST191104D1-3
191104D1	9	1903565-16RE1	DB	4-NOV-19	18:53:40	ST191104D1-1	NA
191104D1	10	1903651-01	DB	4-NOV-19	19:41:34	ST191104D1-1	NA
191104D1	11	1903651-02	DB	4-NOV-19	20:29:23	ST191104D1-1	NA
191104D1	12	1903651-03	DB	4-NOV-19	21:17:07	ST191104D1-1	NA
191104D1	13	1903651-04	DB	4-NOV-19	22:04:51	ST191104D1-1	NA
191104D1	14	1903642-01	DB	4-NOV-19	22:52:35	ST191104D1-1	NA
191104D1	15	SOLVENT BLANK	DB	4-NOV-19	23:40:17	NA	NA
191104D1	16	ST191104D1-3	DB	5-NOV-19	00:28:12	ST191104D1-2	ST191104D1-3

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST191104D1-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191104D1 S#1 Analysis Date: 4-NOV-19 Time: 12:30:33

NATIVE ANALYTES	M/Z'S	ION	QC	Pass	CONC. FOUND	CONC. RANGE (3) (ng/mL)
	FORMING RATIO (1)	ABUND. RATIO	LIMITS (2)			
2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	y	11.2	7.8 - 12.9 8.2 - 12.3 (4)
1,2,3,7,8-PeCDD	M/M+2	0.61	0.54-0.72	y	54.3	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.22	1.05-1.43	y	50.8	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	y	51.6	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	y	51.9	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	y	50.2	43.0 - 58.0
OCDD	M+2/M+4	0.91	0.76-1.02	y	105	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	y	9.80	8.4 - 12.0 8.6 - 11.6 (4)
1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	54.0	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	y	52.4	41.0 - 61.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	y	48.3	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	y	48.8	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.21	1.05-1.43	y	49.5	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.20	1.05-1.43	y	48.2	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	y	48.8	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	y	47.4	43.0 - 58.0
OCDF	M+2/M+4	0.89	0.76-1.02	y	94.7	63.0 - 159.0

(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) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DB

Date: 11/4/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191104D1 S#1 Analysis Date: 4-NOV-19 Time: 12:30:33

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC. FOUND	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	y	102	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	103	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.20	1.05-1.43	y	102	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.33	1.05-1.43	y	89.2	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.30	1.05-1.43	y	96.0	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88-1.20	y	108	72.0 - 138.0
13C-OCDD	M/M+2	0.87	0.76-1.02	y	218	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.80	0.65-0.89	y	104	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	y	107	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	y	107	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.50	0.43-0.59	y	106	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	98.1	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	100	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	y	106	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.44	0.37-0.51	y	102	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.45	0.37-0.51	y	115	77.0 - 129.0
13C-OCDF	M+2/M+4	0.90	0.76-1.02	y	232	96.0 - 415.0
CLEANUP STANDARD (3) 37Cl-2,3,7,8-TCDD					9.73	7.9 - 12.7

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

(2) Ion Abundance Ratio Control Limits as specified

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

Analyst: DB

Date: 11/4/19

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191104D1 S#1 Analysis Date: 4-NOV-19 Time: 12:30:33

ZB-5MS IS Data Filename: 191104D1 S#1 Analysis Date: 4-NOV-19 Time: 12:30:33

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:55	1,3,6,8-TCDF (F)	20:48
1,2,8,9-TCDD (L)	27:07	1,2,8,9-TCDF (L)	27:16
1,2,4,7,9-PeCDD (F)	28:43	1,3,4,6,8-PeCDF (F)	27:14
1,2,3,8,9-PeCDD (L)	31:07	1,2,3,8,9-PeCDF (L)	31:21
1,2,4,6,7,9-HxCDD (F)	32:32	1,2,3,4,6,8-HxCDF (F)	31:60
1,2,3,7,8,9-HxCDD (L)	34:28	1,2,3,7,8,9-HxCDF (L)	34:51
1,2,3,4,6,7,9-HpCDD (F)	37:05	1,2,3,4,6,7,8-HpCDF (F)	36:43
1,2,3,4,6,7,8-HpCDD (L)	37:55	1,2,3,4,7,8,9-HpCDF (L)	38:28

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT BETWEEN COMPARED PEAKS (1)

<25%

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

Analyst: DB

Date: 11/4/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191104D1 S#1 Analysis Date: 4-NOV-19 Time: 12:30:33

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME		RRT	QC LIMITS (1)
	REFERENCE	RRT	RRT	
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002	
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	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-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	1.000	0.999-1.002	

LABELED COMPOUNDS

13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.976-1.043
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.196	1.000-1.567
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.991	0.923-1.103
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.151	1.000-1.425
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.185	1.011-1.526
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052

Analyst: JB

Date: 11/4/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191104D1 S#1 Analysis Date: 4-NOV-19 Time: 12:30:33

NATIVE ANALYTES	RETENTION TIME		RRT	QC LIMITS (1)
	REFERENCE	RRT		
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	1.000	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	
1,2,3,4,7,8-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-1,2,3,7,8,9-HxCDD	1.000	0.998-1.004	
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001	
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	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	1.000	0.999-1.001	
OCDF	13C-OCDF	1.000	0.999-1.001	

LABELED COMPOUNDS

13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.988	0.975-1.001
13C-1,2,3,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.992	0.979-1.005
13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.009	1.001-1.020
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.038	1.002-1.072
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.014	1.002-1.026
13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.018	1.007-1.029
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.026	1.014-1.038
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.093	1.069-1.111
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.145	1.098-1.192
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.129	1.117-1.141
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.227	1.085-1.365
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.234	1.091-1.371

Analyst: DB

Date: 11/4/19

Client ID: 1613 CS3 19C2204
Lab ID: ST191104D1-1

Filename: 191104D1 S:1 Acq: 4-NOV-19 12:30:33
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191104D1-1
EndCAL: NA

Page 1 of 1

Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	6.91e+05	0.81 y	0.91	26:17	11.165		* 2.5		*	Total Tetra-Dioxins	79.8	80.5		*	*
1,2,3,7,8-PeCDD	2.72e+06	0.61 y	0.90	30:45	54.333		* 2.5		*	Total Penta-Dioxins	202	202		*	*
1,2,3,4,7,8-HxCDD	2.83e+06	1.22 y	1.10	34:04	50.752		* 2.5		*	Total Hexa-Dioxins	227	228		*	*
1,2,3,6,7,8-HxCDD	2.85e+06	1.24 y	0.94	34:11	51.606		* 2.5		*	Total Hepta-Dioxins	114	115		*	*
1,2,3,7,8,9-HxCDD	2.98e+06	1.26 y	0.96	34:28	51.870		* 2.5		*	Total Tetra-Furans	36.9	38.0		*	*
1,2,3,4,6,7,8-HpCDD	2.69e+06	1.04 y	0.98	37:55	50.236		* 2.5		*	Total Penta-Furans	226.42	227.73		*	*
OCDD	4.90e+06	0.91 y	0.96	41:13	105.00		* 2.5		*	Total Hexa-Furans	259	259		*	*
										Total Hepta-Furans	96.2	97.1		*	*
2,3,7,8-TCDF	9.65e+05	0.78 y	0.95	25:30	9.8043		* 2.5		*						
1,2,3,7,8-PeCDF	4.53e+06	1.61 y	0.96	29:35	54.022		* 2.5		*						
2,3,4,7,8-PeCDF	4.62e+06	1.62 y	1.01	30:29	52.356		* 2.5		*						
1,2,3,4,7,8-HxCDF	3.86e+06	1.24 y	1.18	33:11	48.264		* 2.5		*						
1,2,3,6,7,8-HxCDF	4.08e+06	1.25 y	1.07	33:18	48.802		* 2.5		*						
2,3,4,6,7,8-HxCDF	4.06e+06	1.21 y	1.11	33:54	49.489		* 2.5		*						
1,2,3,7,8,9-HxCDF	3.46e+06	1.20 y	1.06	34:51	48.197		* 2.5		*						
1,2,3,4,6,7,8-HpCDF	3.29e+06	1.02 y	1.13	36:43	48.821		* 2.5		*						
1,2,3,4,7,8,9-HpCDF	3.11e+06	1.04 y	1.28	38:28	47.361		* 2.5		*						
OCDF	5.53e+06	0.89 y	0.95	41:27	94.695		* 2.5		*						
IS	13C-2,3,7,8-TCDD	6.83e+06	0.78 y	1.10	26:15	102.17				Rec	Qual				
IS	13C-1,2,3,7,8-PeCDD	5.55e+06	0.63 y	0.88	30:45	103.05				102					
IS	13C-1,2,3,4,7,8-HxCDD	5.06e+06	1.20 y	0.64	34:03	102.15				103					
IS	13C-1,2,3,6,7,8-HxCDD	5.88e+06	1.33 y	0.86	34:10	89.162				102					
IS	13C-1,2,3,7,8,9-HxCDD	5.97e+06	1.30 y	0.81	34:28	96.017				89.2					
IS	13C-1,2,3,4,6,7,8-HpCDD	5.47e+06	1.07 y	0.65	37:54	108.49				96.0					
IS	13C-OCDD	9.74e+06	0.87 y	0.58	41:13	217.88				108					
IS	13C-2,3,7,8-TCDF	1.04e+07	0.80 y	1.03	25:28	104.23				109					
IS	13C-1,2,3,7,8-PeCDF	8.74e+06	1.60 y	0.85	29:34	106.54				104					
IS	13C-2,3,4,7,8-PeCDF	8.70e+06	1.60 y	0.85	30:28	106.94				107					
IS	13C-1,2,3,4,7,8-HxCDF	6.80e+06	0.50 y	0.83	33:10	105.99				106					
IS	13C-1,2,3,6,7,8-HxCDF	7.83e+06	0.52 y	1.03	33:18	98.077				98.1					
IS	13C-2,3,4,6,7,8-HxCDF	7.36e+06	0.52 y	0.95	33:53	100.14				100					
IS	13C-1,2,3,7,8,9-HxCDF	6.77e+06	0.51 y	0.83	34:51	105.99				106					
IS	13C-1,2,3,4,6,7,8-HpCDF	5.97e+06	0.44 y	0.76	36:42	102.17				102					
IS	13C-1,2,3,4,7,8,9-HpCDF	5.14e+06	0.45 y	0.58	38:27	114.55				115					
IS	13C-OCDF	1.23e+07	0.90 y	0.69	41:26	231.93				116					
C/Up	37C1-2,3,7,8-TCDD	7.11e+05		1.20	26:16	9.7269				97.3					
RS/RT	13C-1,2,3,4-TCDD	6.11e+06	0.79 y	1.00	25:42	100.00									
RS	13C-1,2,3,4-TCDF	9.60e+06	0.81 y	1.00	24:16	100.00									
RS/RT	13C-1,2,3,4,6,9-HxCDF	7.71e+06	0.53 y	1.00	33:35	100.00									

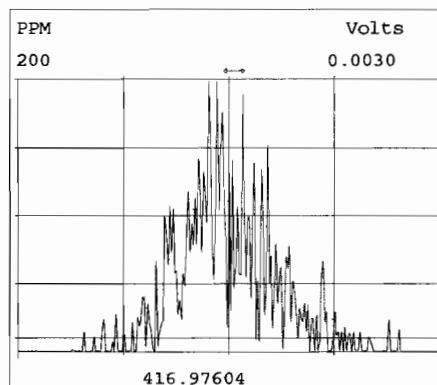
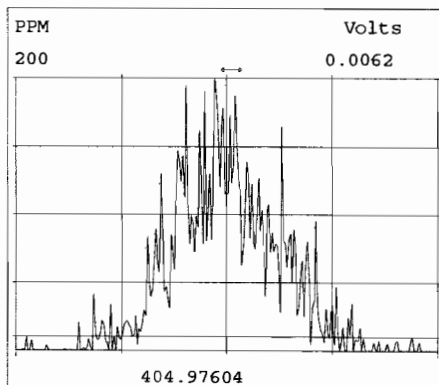
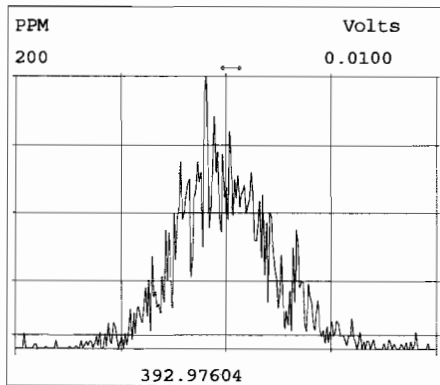
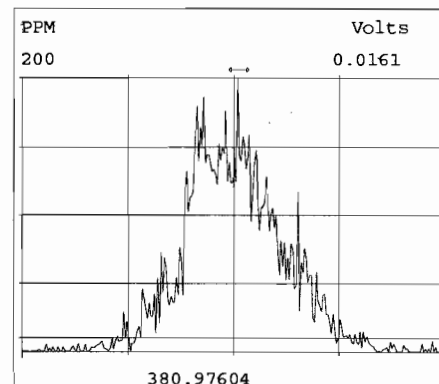
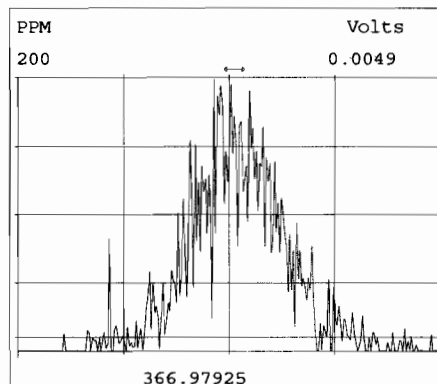
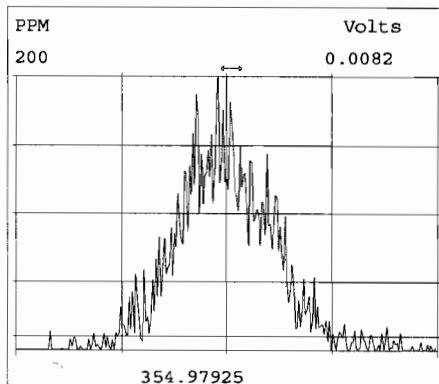
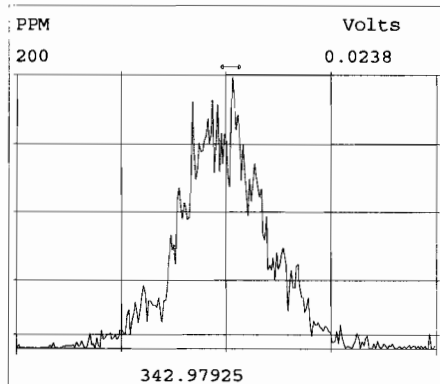
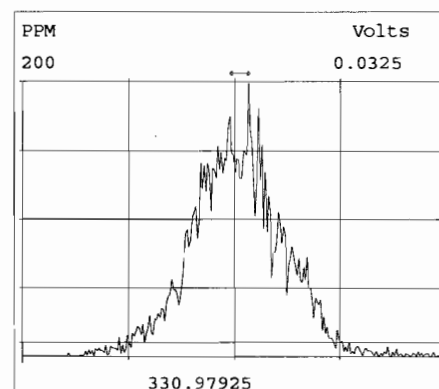
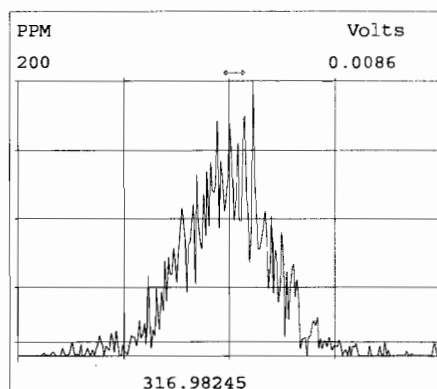
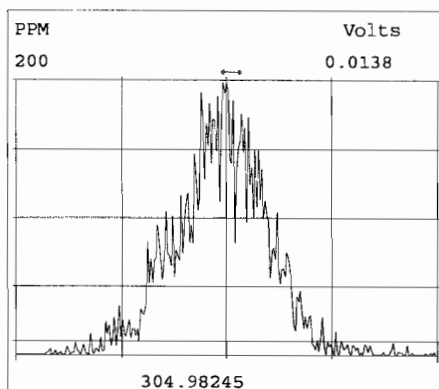
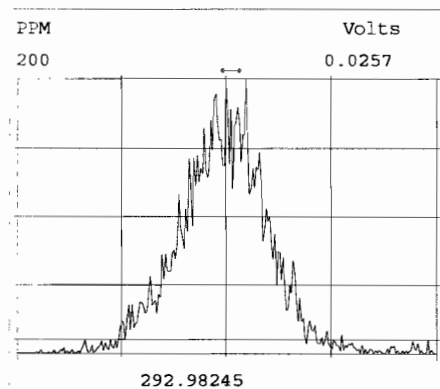
Integrations
by DB
Analyst: DB
Reviewed by CT
Analyst: CT
Date: 11/4/19
Date: 11/05/19

Vista Analytical Laboratory - Injection Log Run file: 191104D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191104D1	1	ST191104D1-1	DB	4-NOV-19	12:30:33	ST191104D1-1	NA
191104D1	2	ST191104D1-2	DB	4-NOV-19	13:18:28	ST191104D1-2	ST191104D1-3
191104D1	3	B9J0166-BS1	DB	4-NOV-19	14:06:24	ST191104D1-1	NA
191104D1	4	B9J0144-BS1	DB	4-NOV-19	14:54:24	ST191104D1-1	NA
191104D1	5	SOLVENT BLANK	DB	4-NOV-19	15:42:20	NA	NA
191104D1	6	B9J0166-BLK1	DB	4-NOV-19	16:30:16	ST191104D1-1	NA
191104D1	7	B9J0144-BLK1	DB	4-NOV-19	17:18:01	ST191104D1-1	NA
191104D1	8	1903260-01RE2	DB	4-NOV-19	18:05:55	ST191104D1-2	ST191104D1-3
191104D1	9	1903565-16RE1	DB	4-NOV-19	18:53:40	ST191104D1-1	NA
191104D1	10	1903651-01	DB	4-NOV-19	19:41:34	ST191104D1-1	NA
191104D1	11	1903651-02	DB	4-NOV-19	20:29:23	ST191104D1-1	NA
191104D1	12	1903651-03	DB	4-NOV-19	21:17:07	ST191104D1-1	NA
191104D1	13	1903651-04	DB	4-NOV-19	22:04:51	ST191104D1-1	NA
191104D1	14	1903642-01	DB	4-NOV-19	22:52:35	ST191104D1-1	NA
191104D1	15	SOLVENT BLANK	DB	4-NOV-19	23:40:17	NA	NA
191104D1	16	ST191104D1-3	DB	5-NOV-19	00:28:12	ST191104D1-2	ST191104D1-3

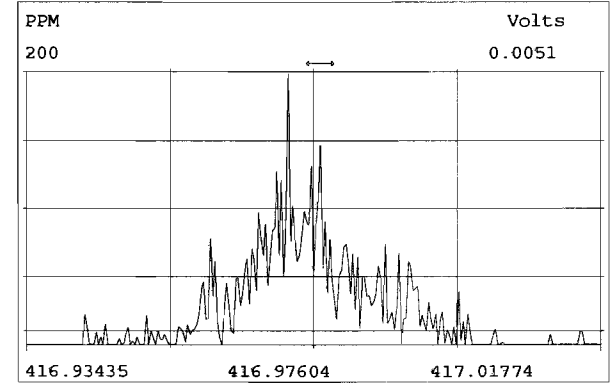
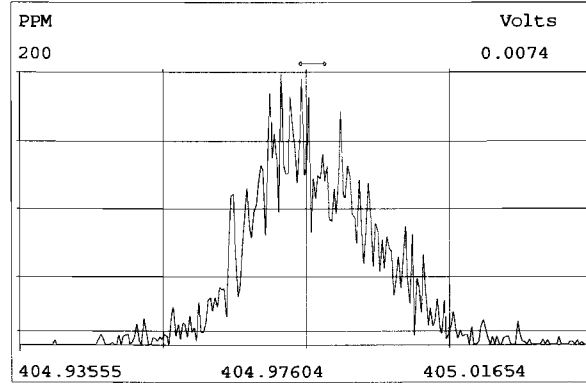
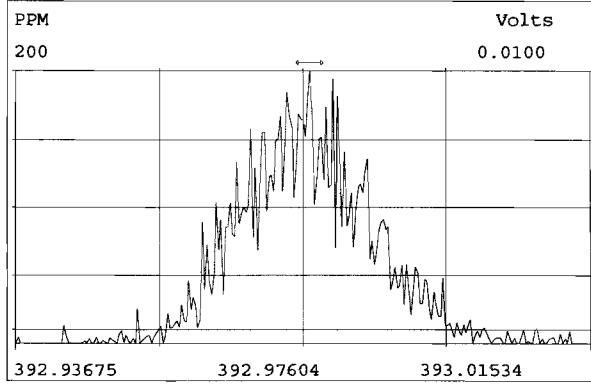
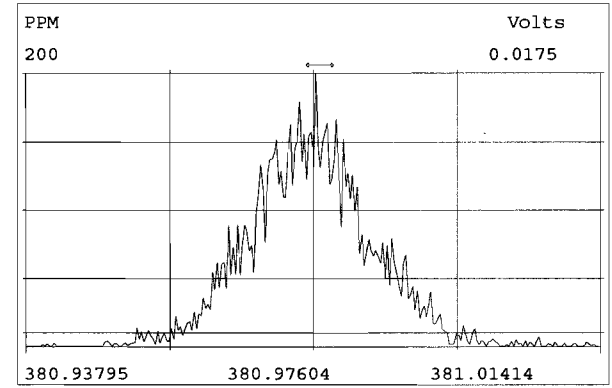
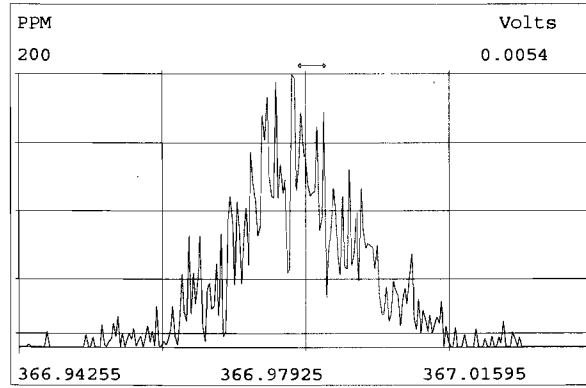
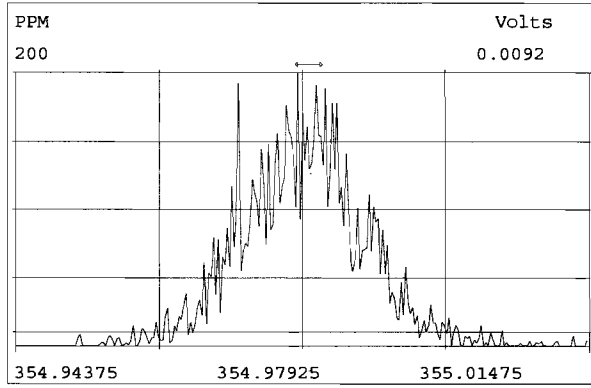
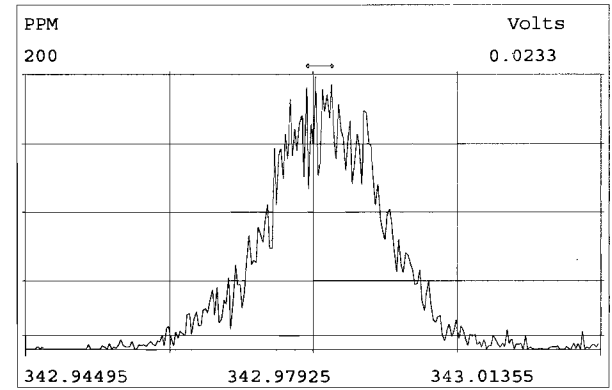
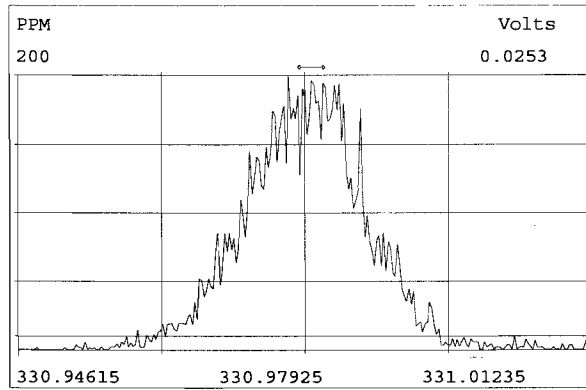
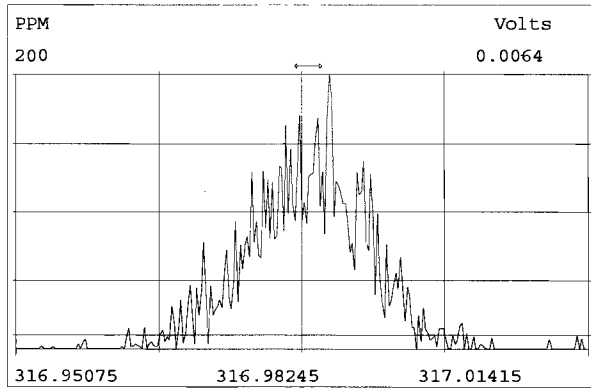
Peak Locate Examination: 4-NOV-2019:12:27 File:191104D1

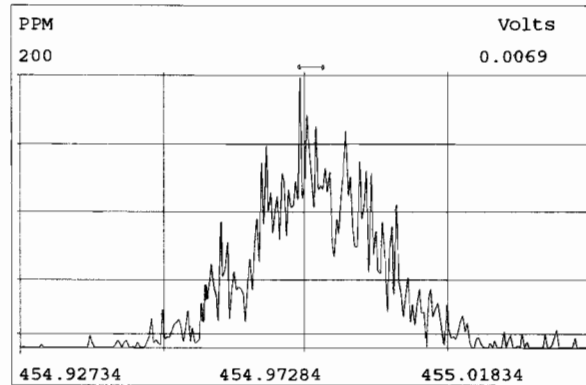
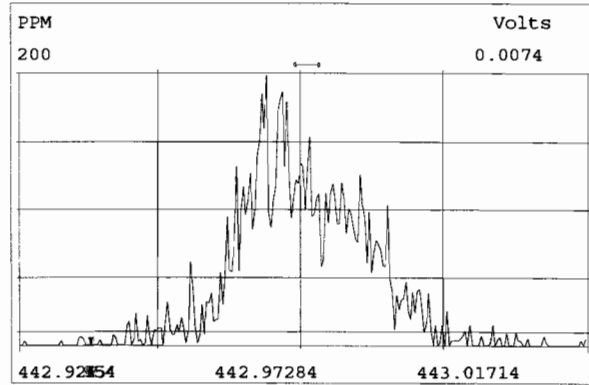
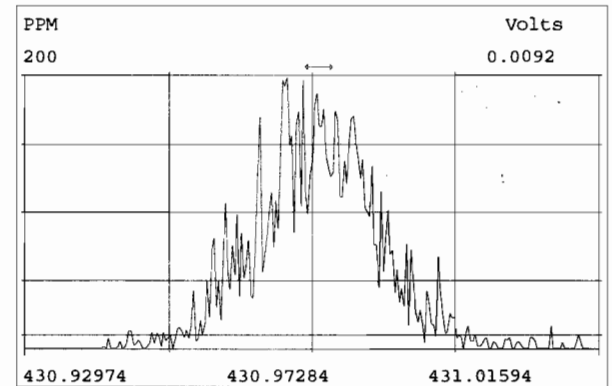
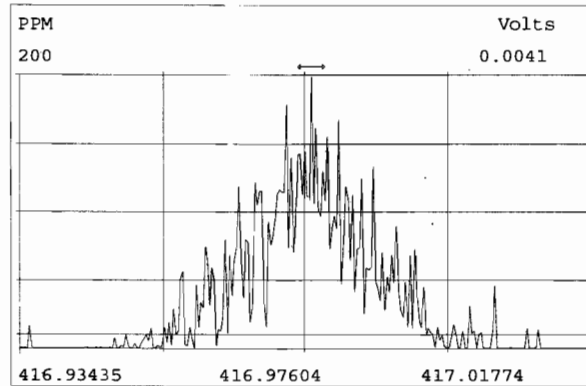
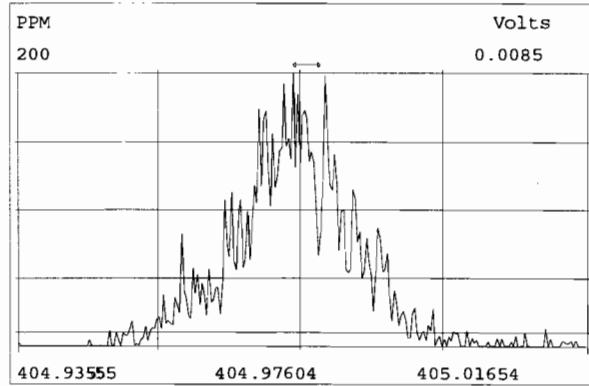
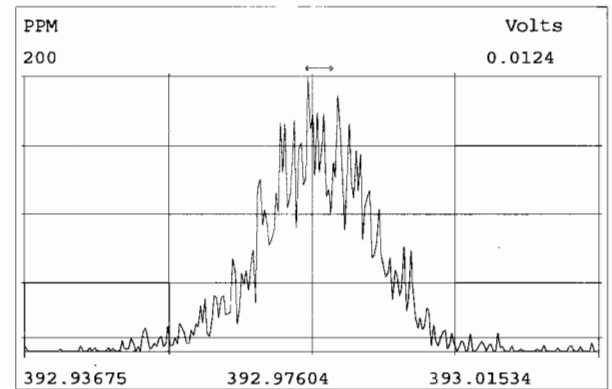
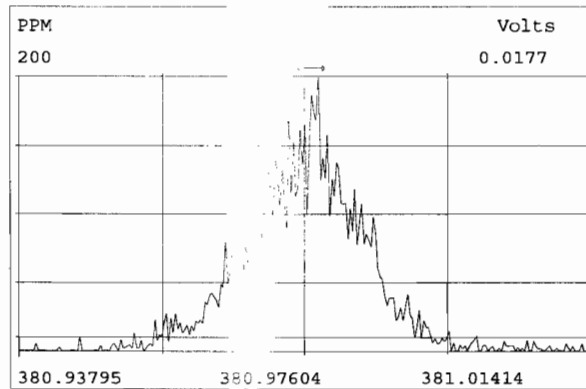
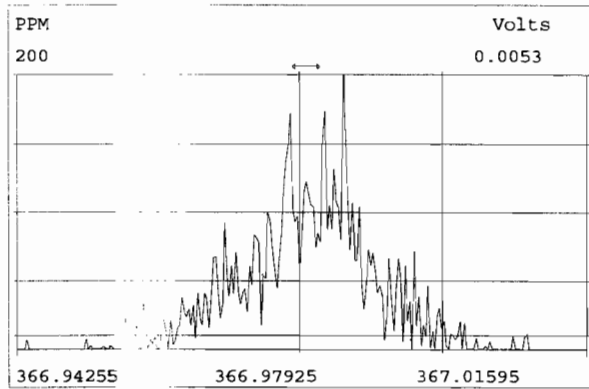
Experiment:OCDD_DB5 Function:1 Reference:PFK



Peak Locate Examination: 4-NOV-2019:12:28 File:191104D1

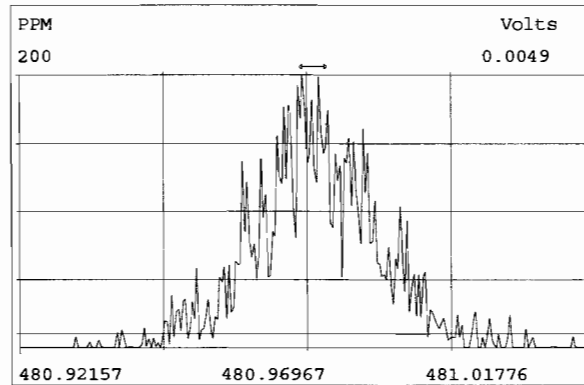
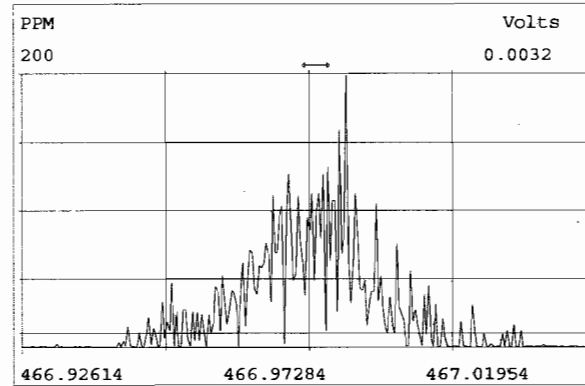
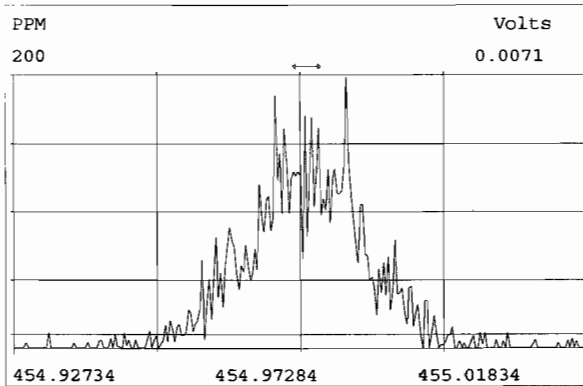
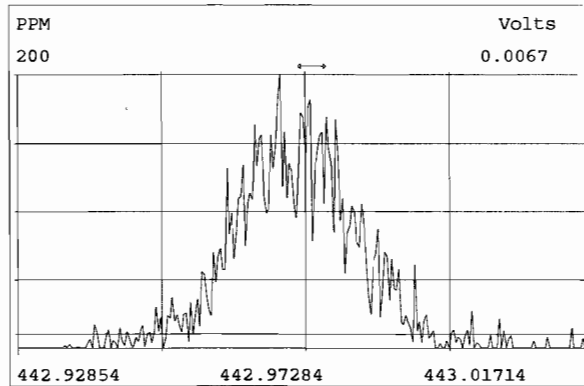
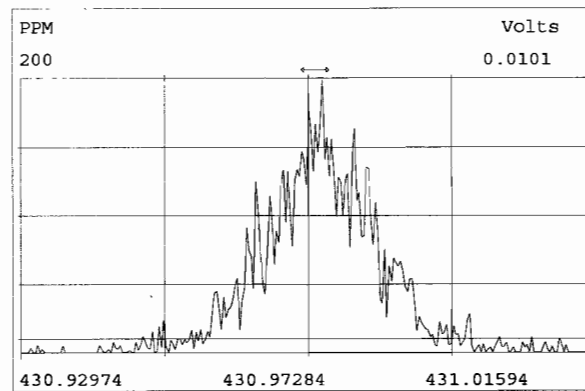
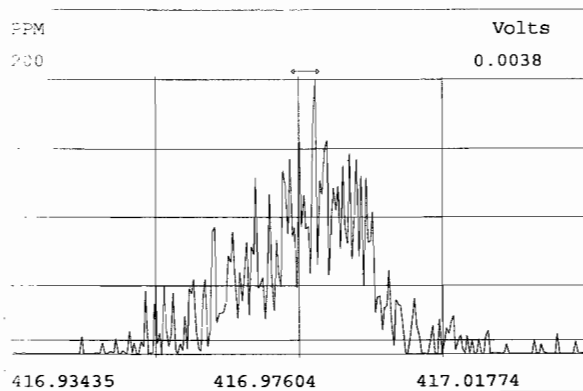
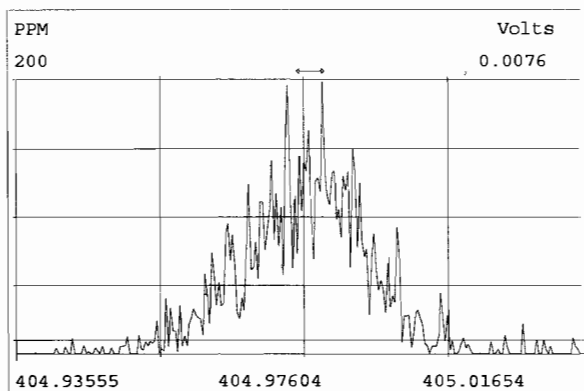
Experiment:OCDD_DB5 Function:2 Reference:PFK





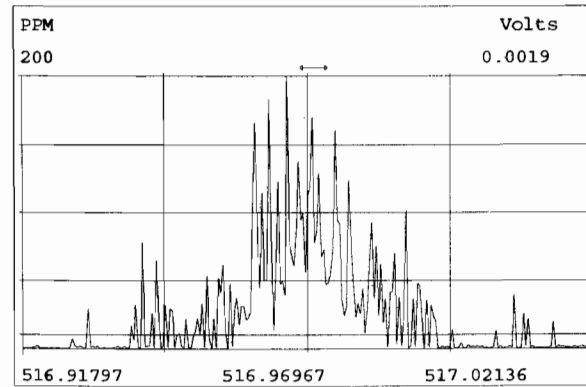
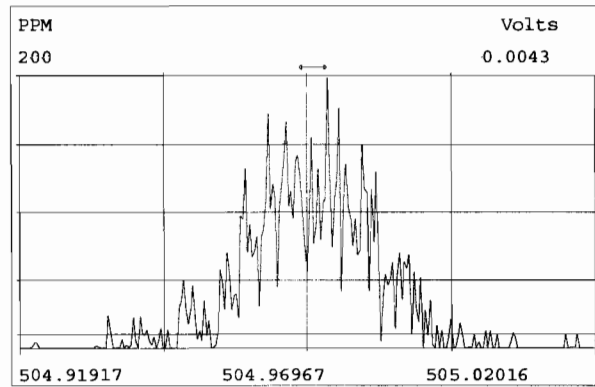
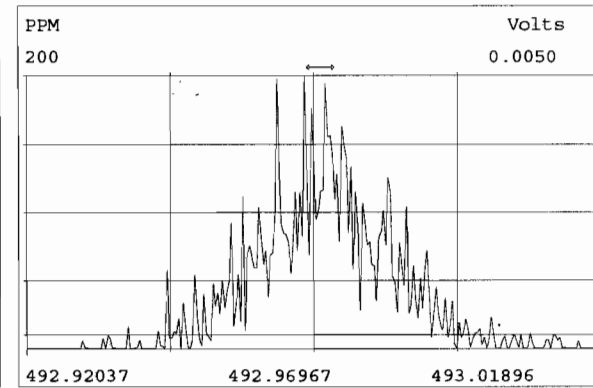
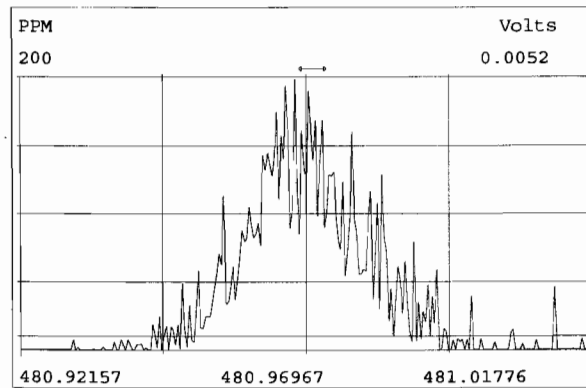
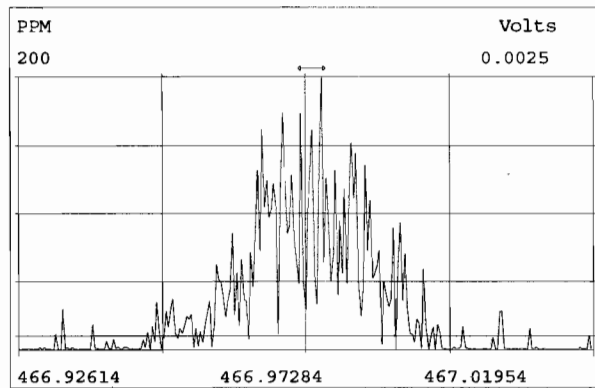
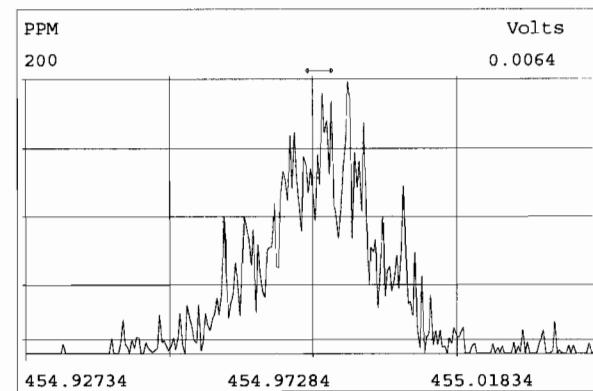
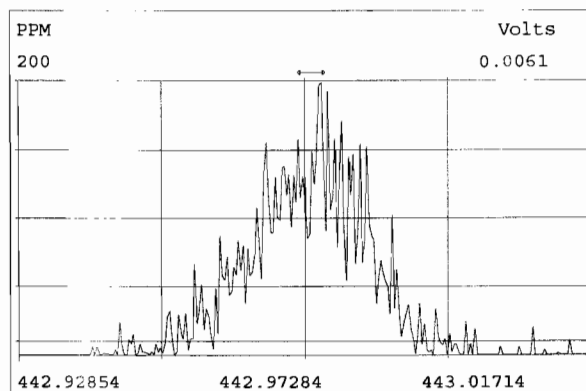
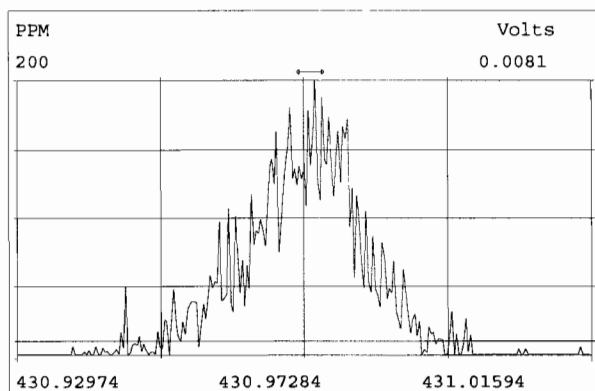
Peak Locate Examination: 4-NOV-2019:12:29 File:191104D1

Experiment: WDD_DB5 Function:4 Reference:PFK

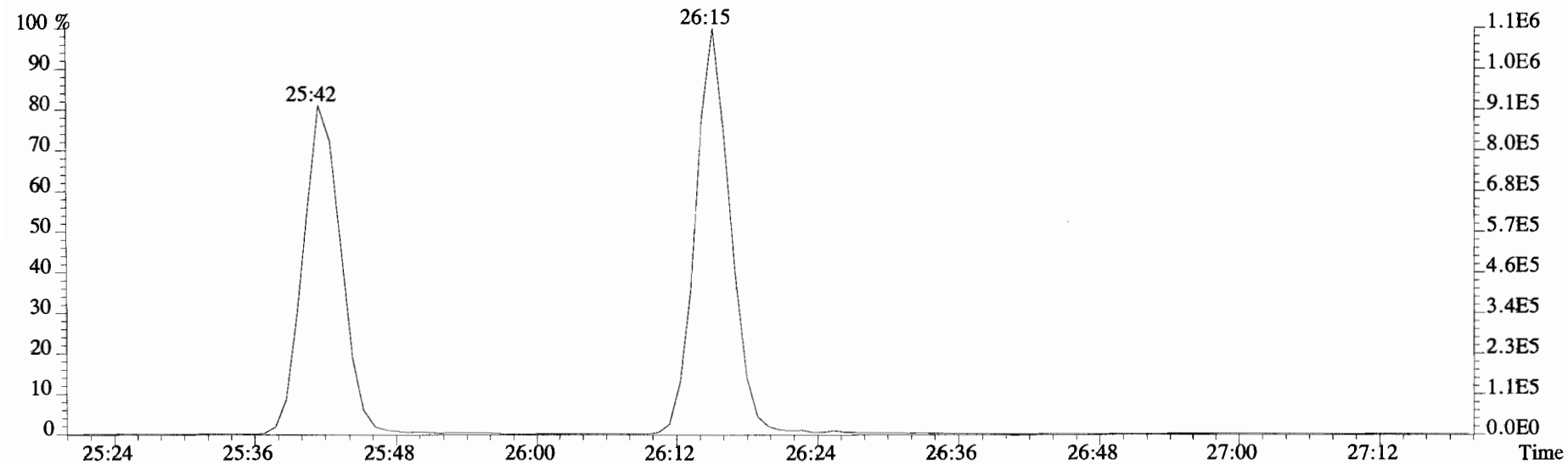
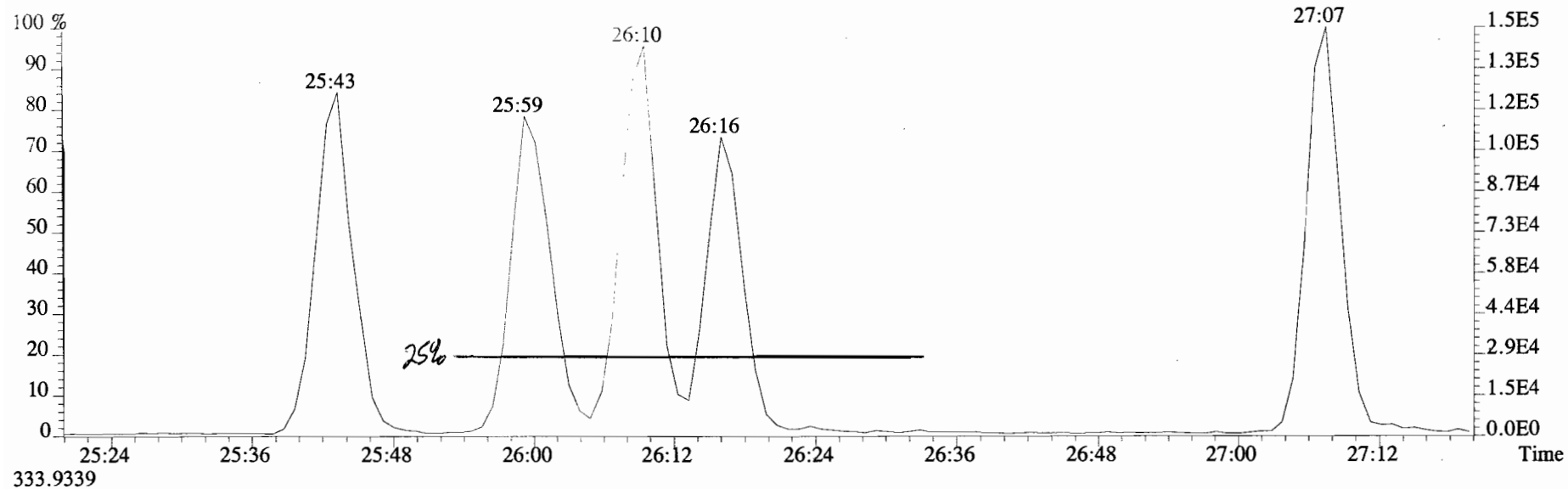


Peak Locate Examination: 4-NOV-2019:12:29 File:191104D1

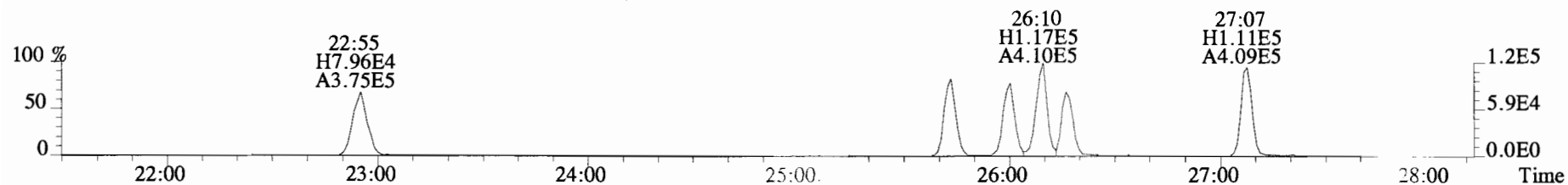
Experiment:OCDD_E86 Function:5 Reference:PFK



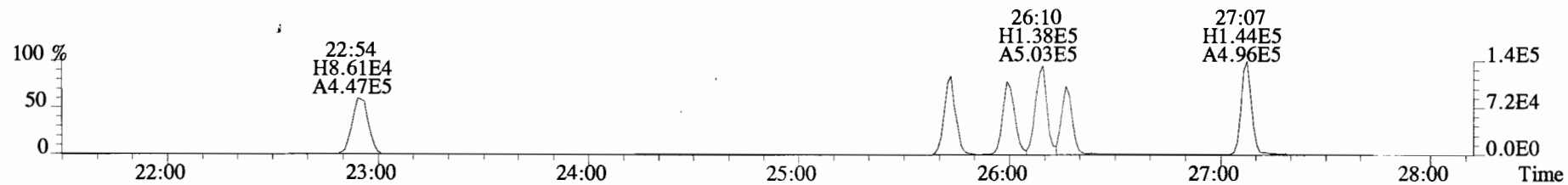
File:191104D1 #1-492 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST:191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
521.8936



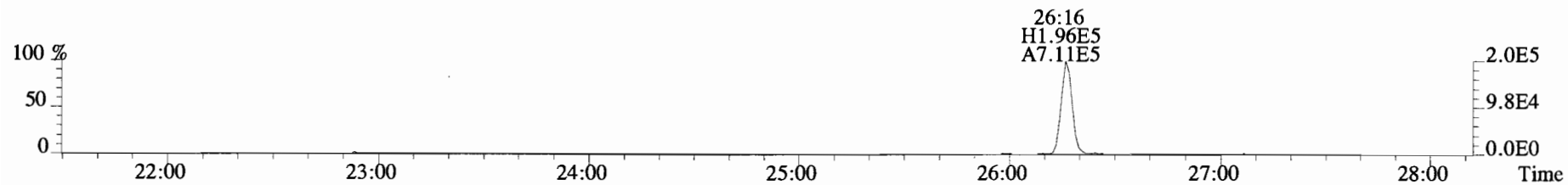
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Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



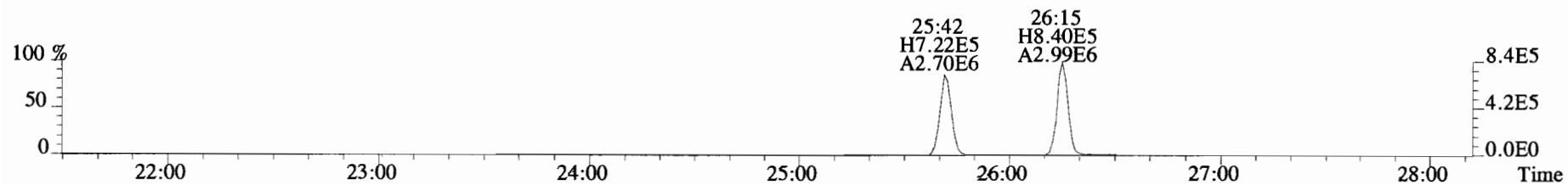
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



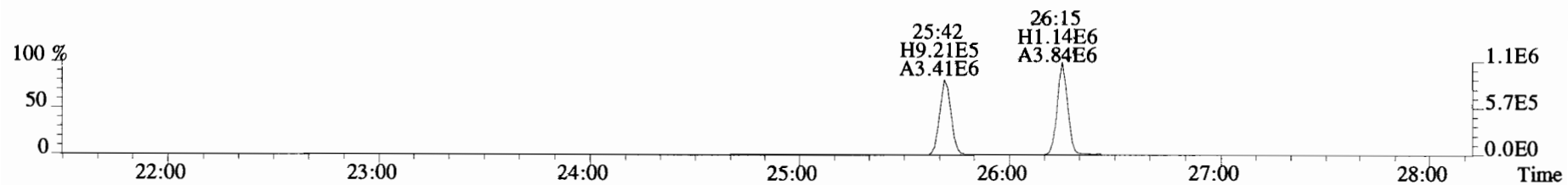
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



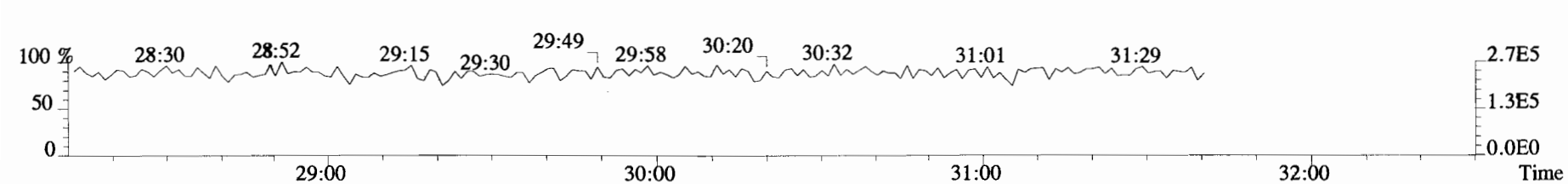
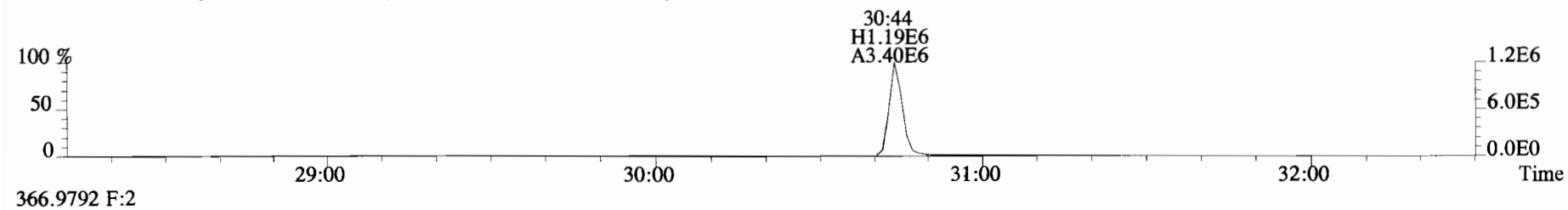
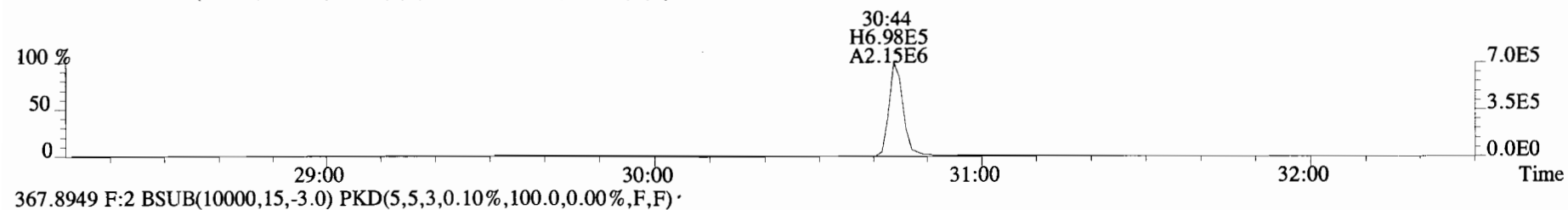
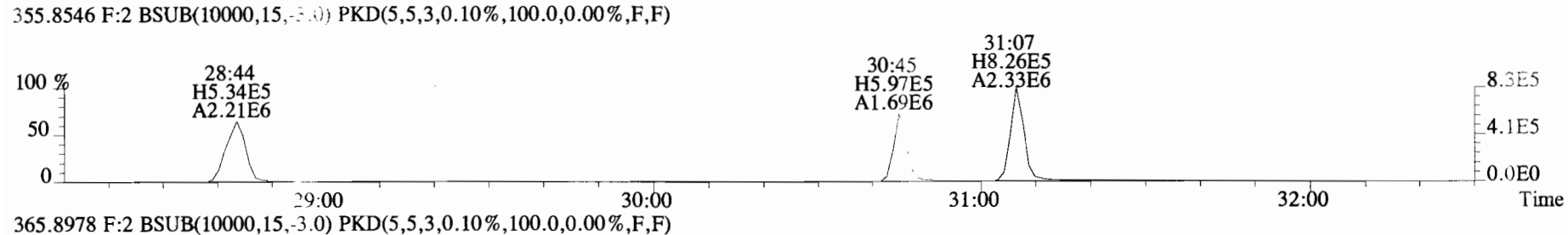
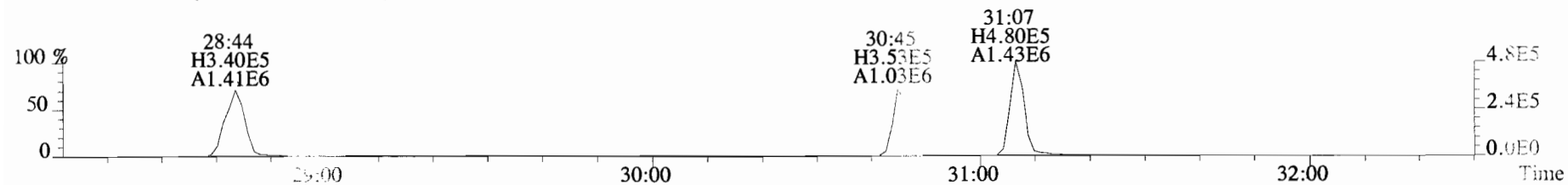
331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



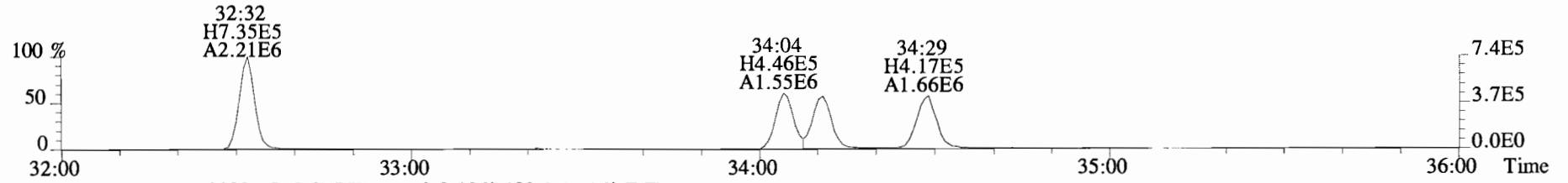
333.9339 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



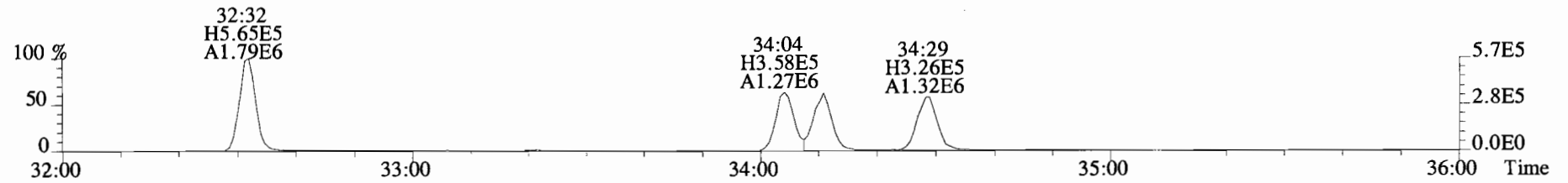
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Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



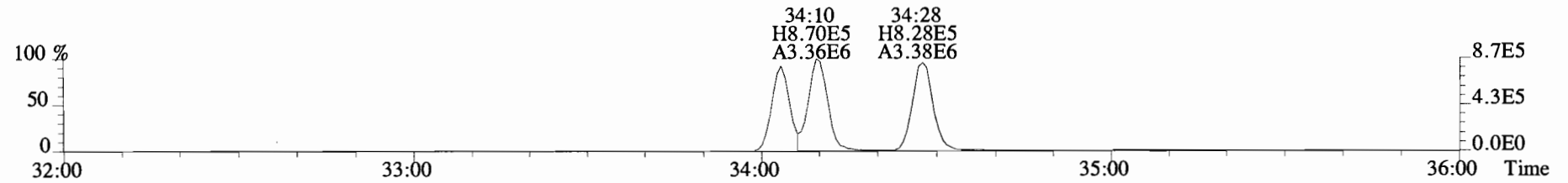
File:191104D1 #1-385 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



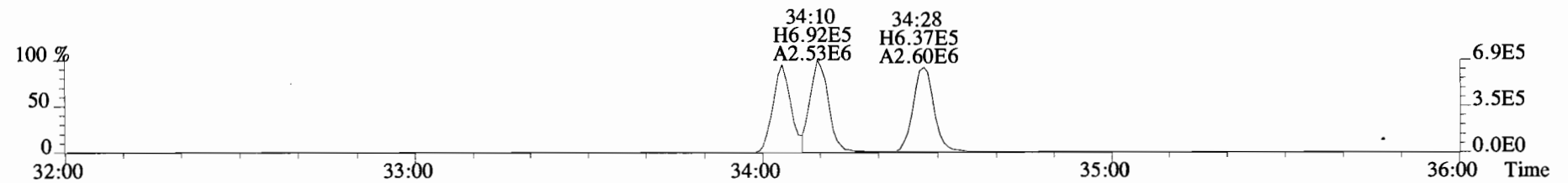
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



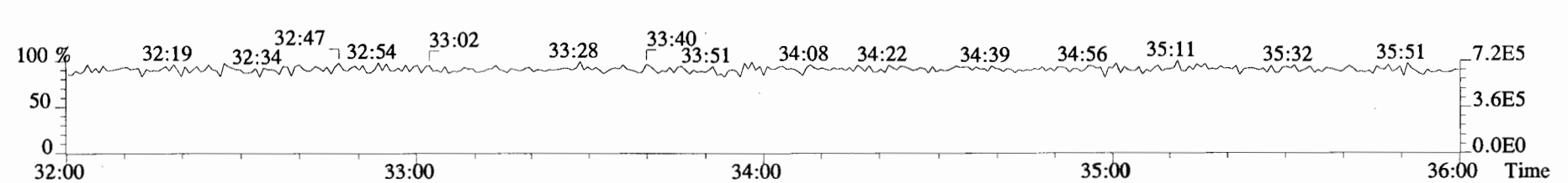
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



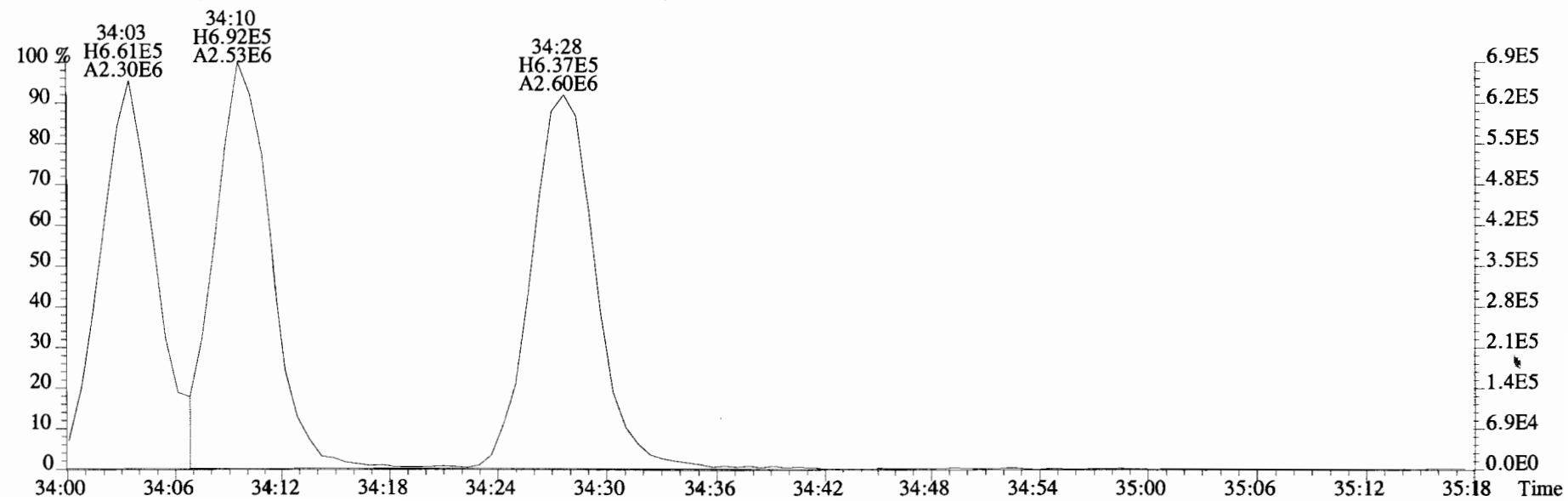
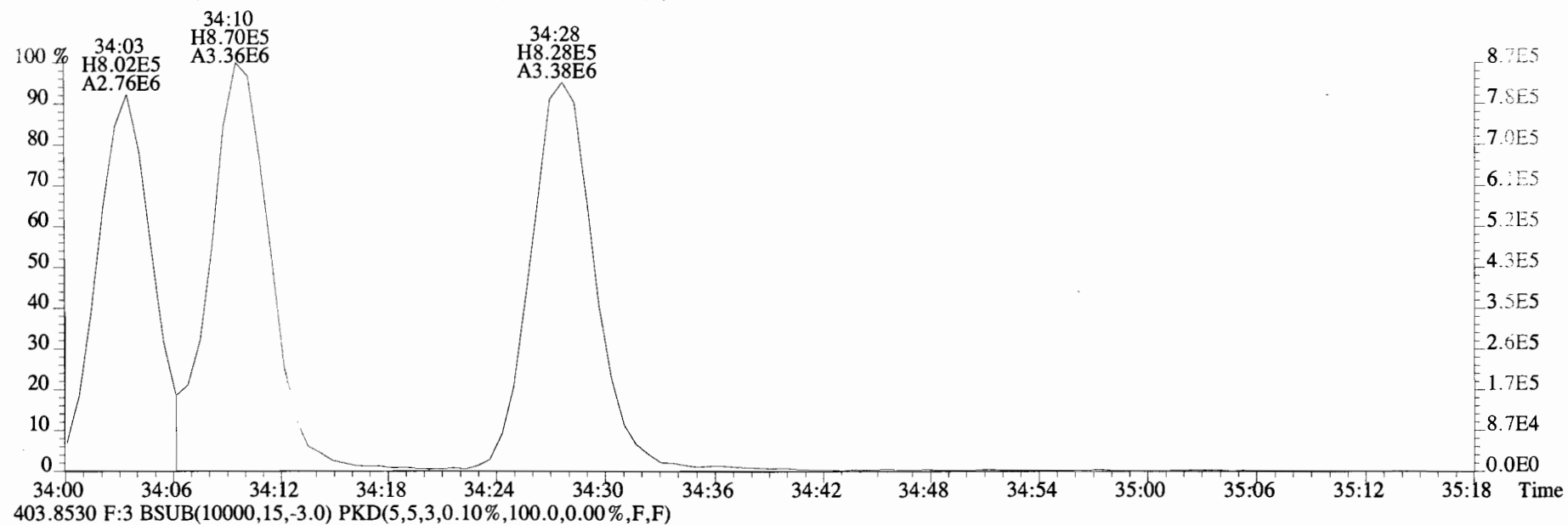
403.8530 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



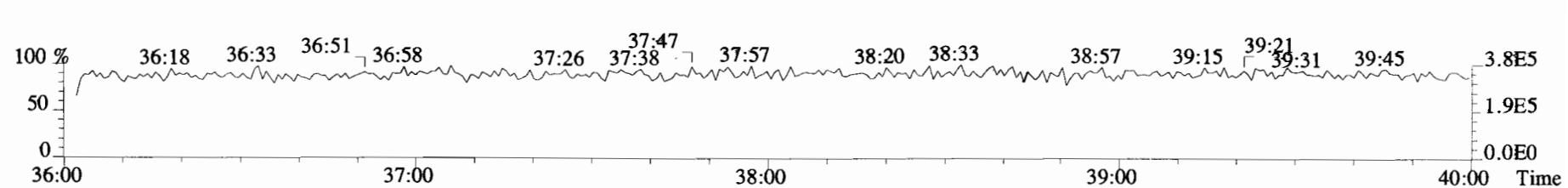
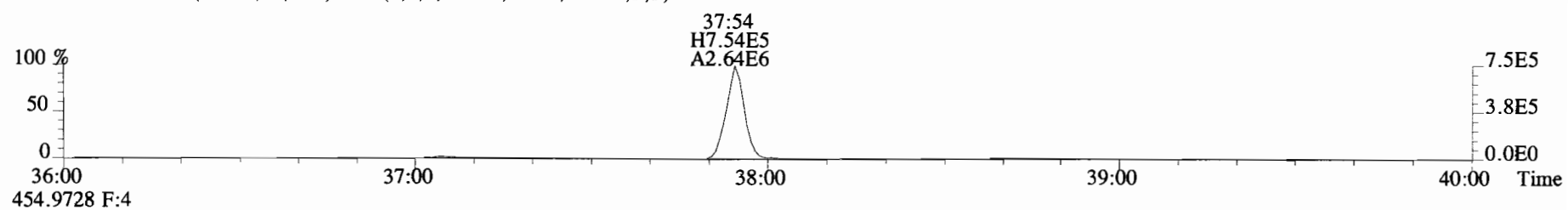
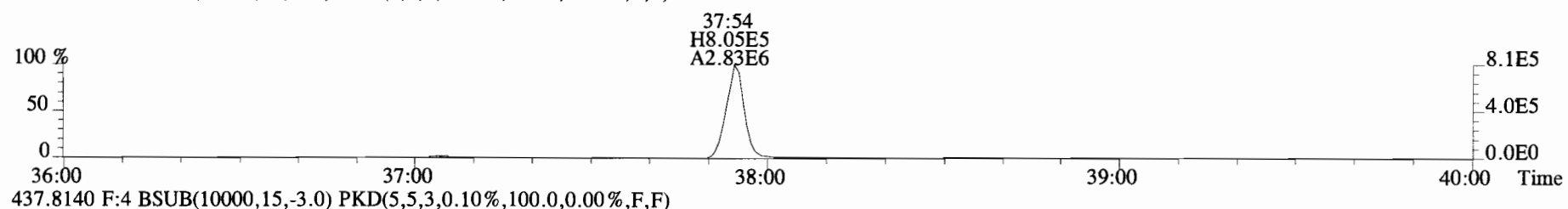
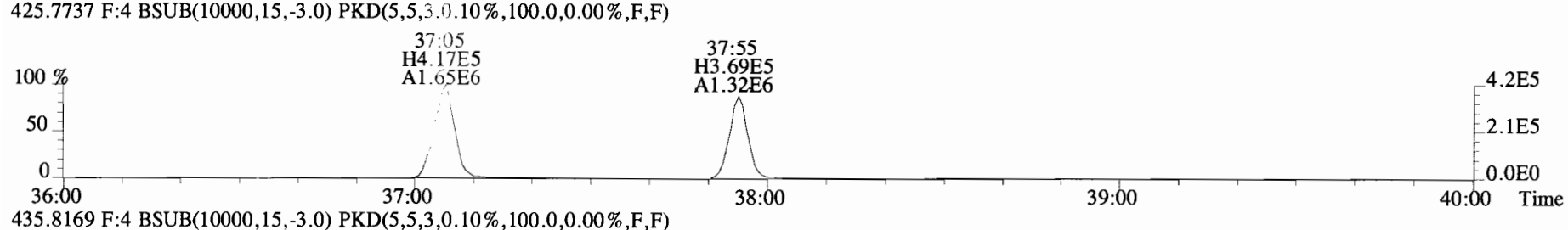
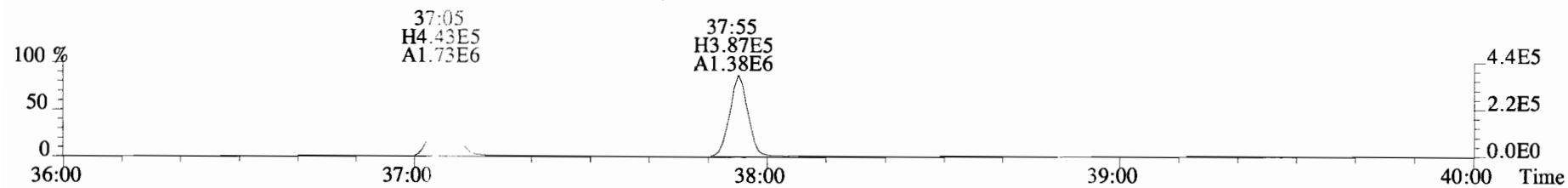
392.9760 F:3



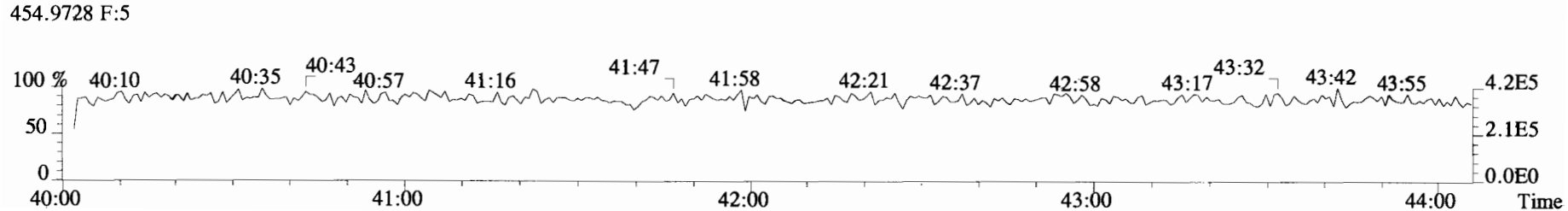
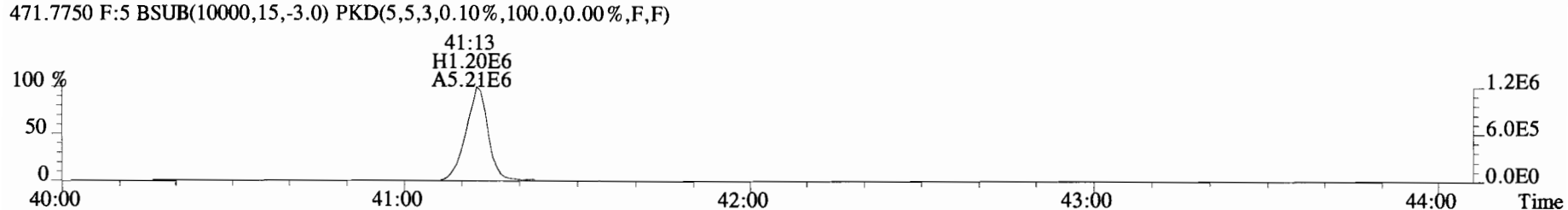
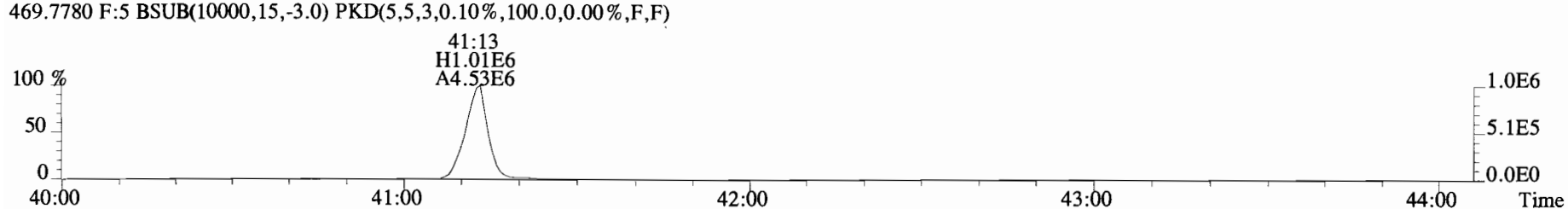
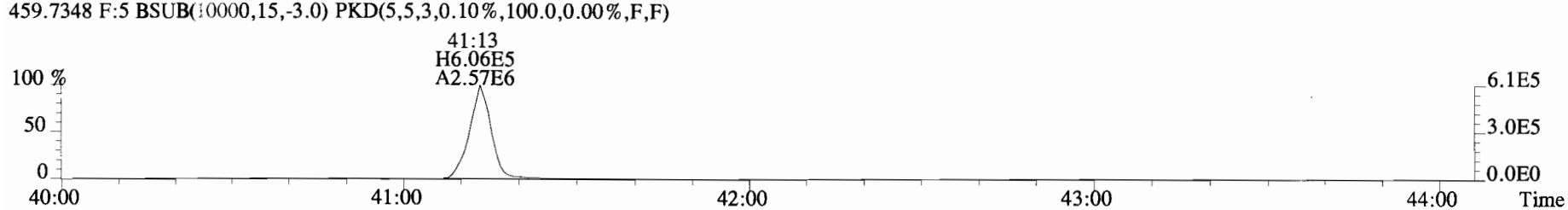
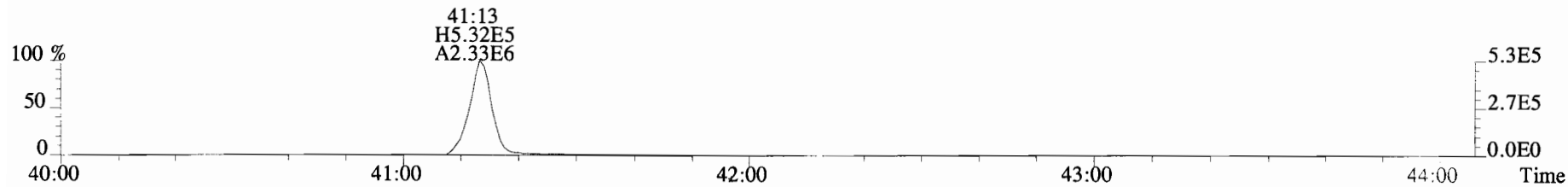
File:191104D1 #1-385 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



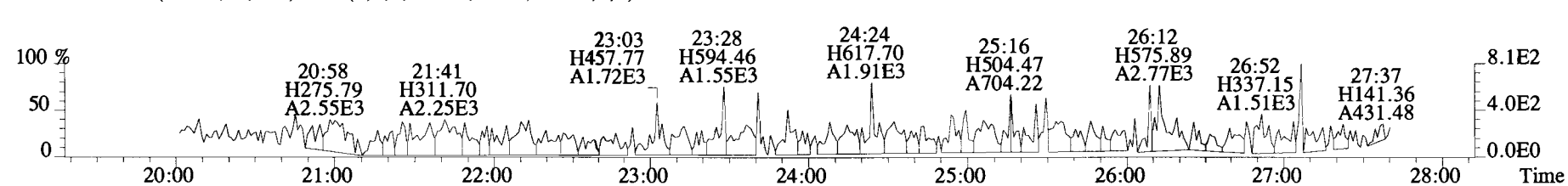
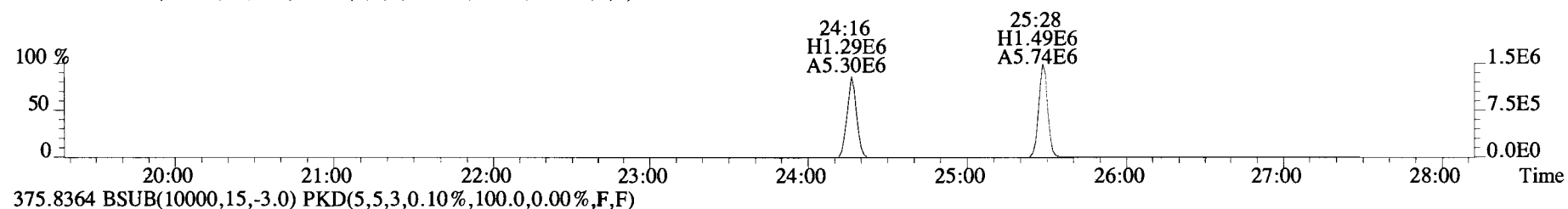
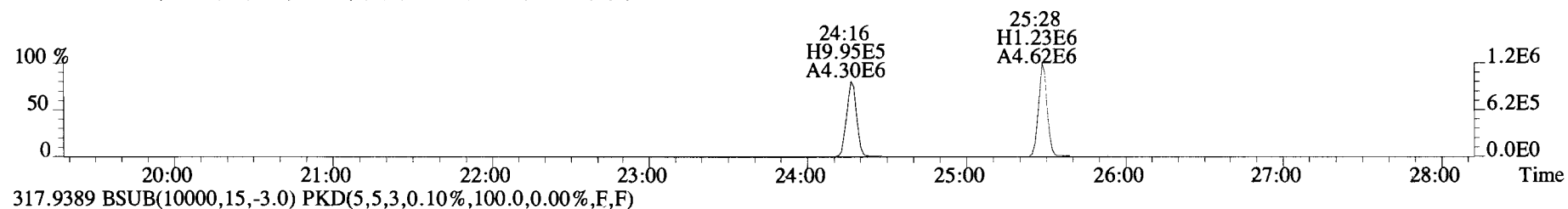
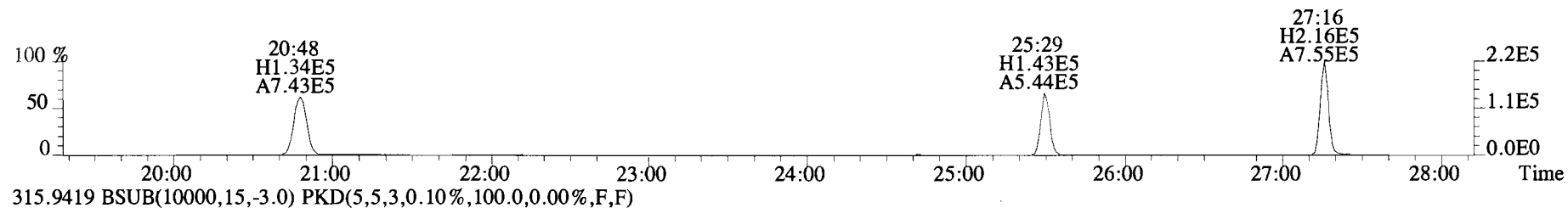
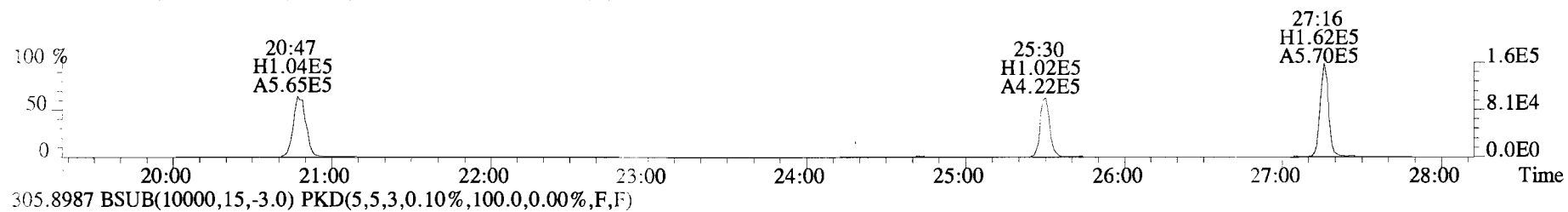
File:191104D1 #1-355 Acq: 4-NOV-2019 12:30:53 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



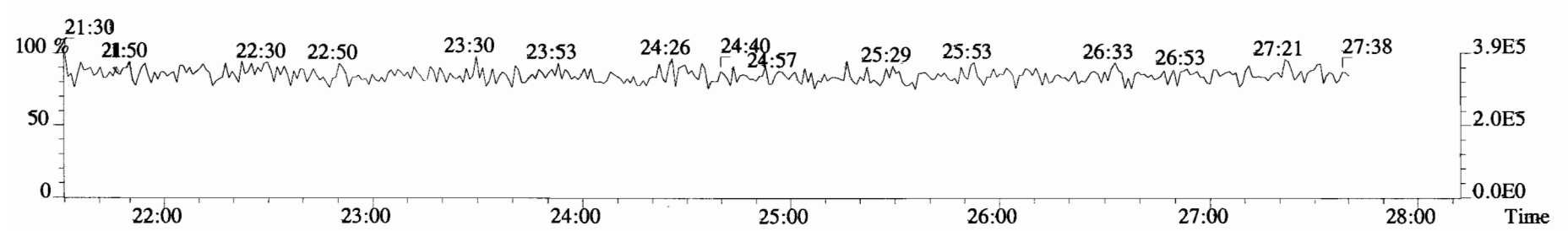
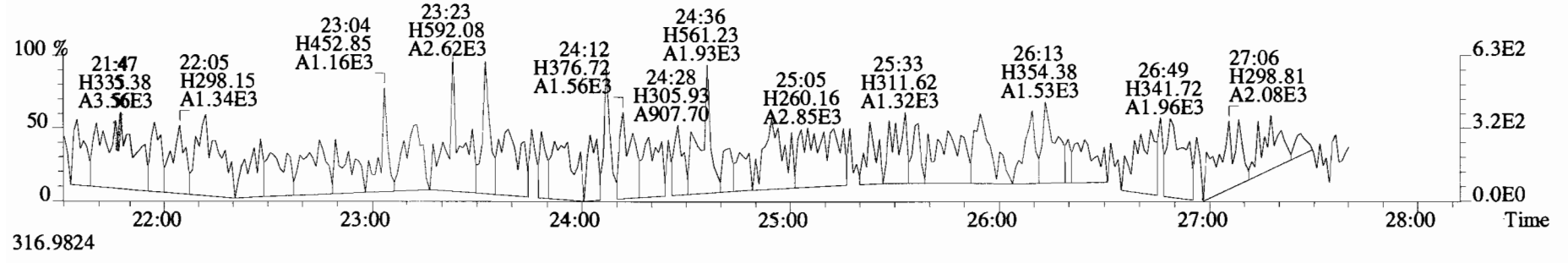
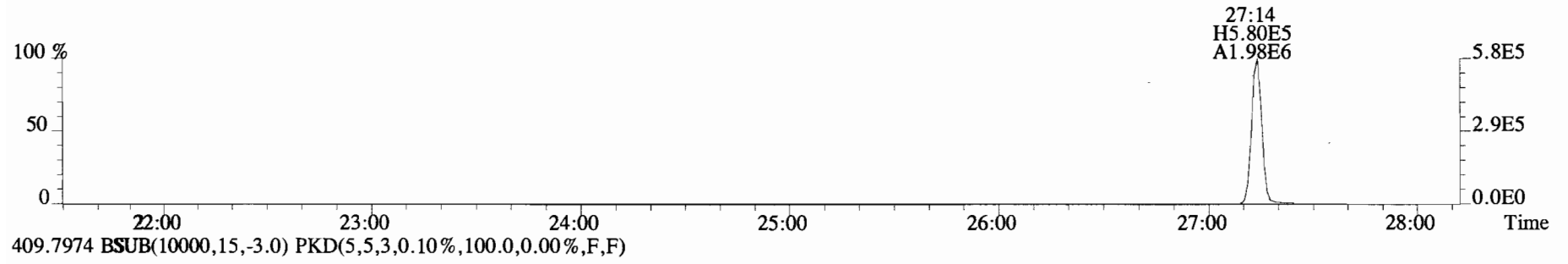
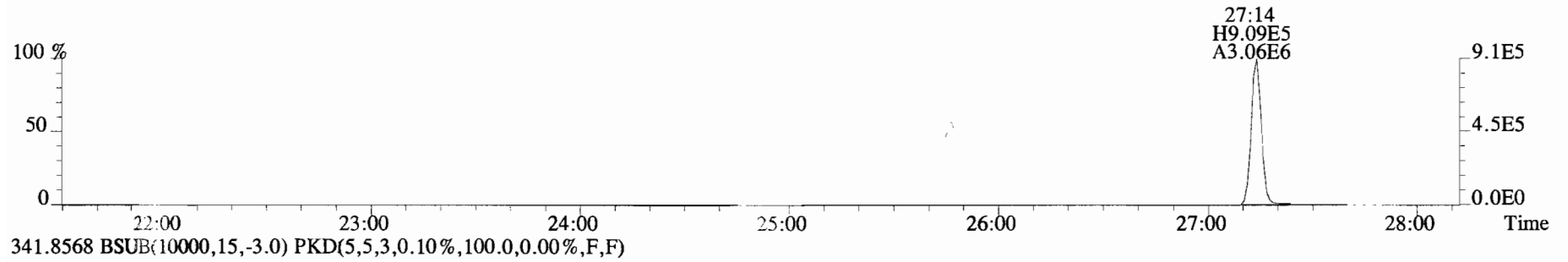
File:191104D1 #1-432 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



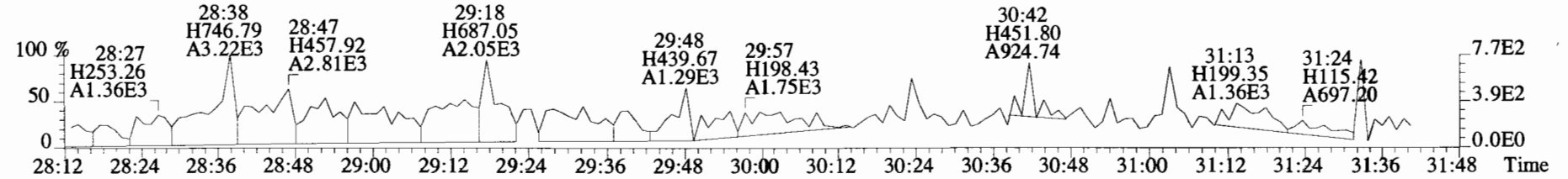
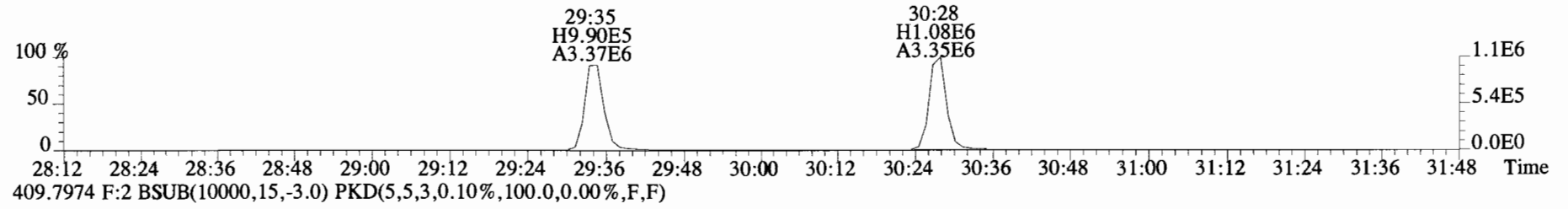
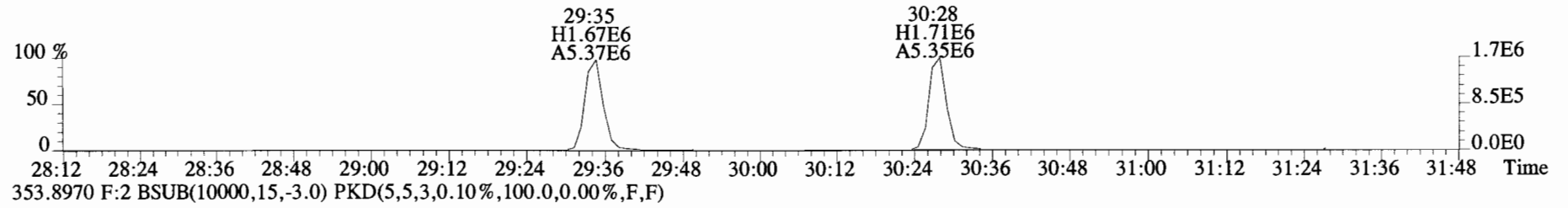
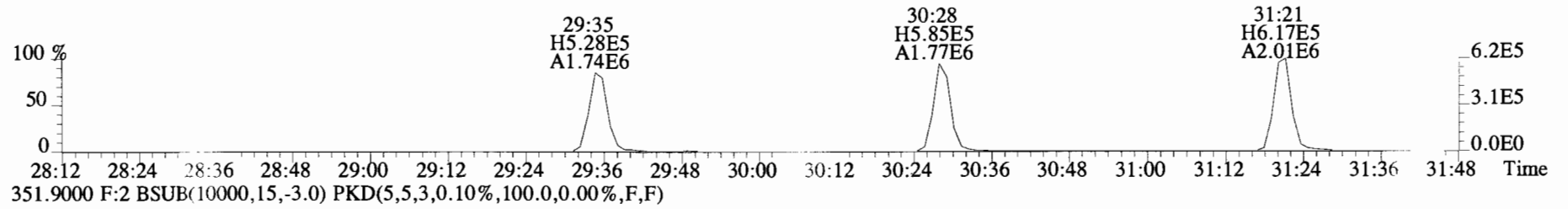
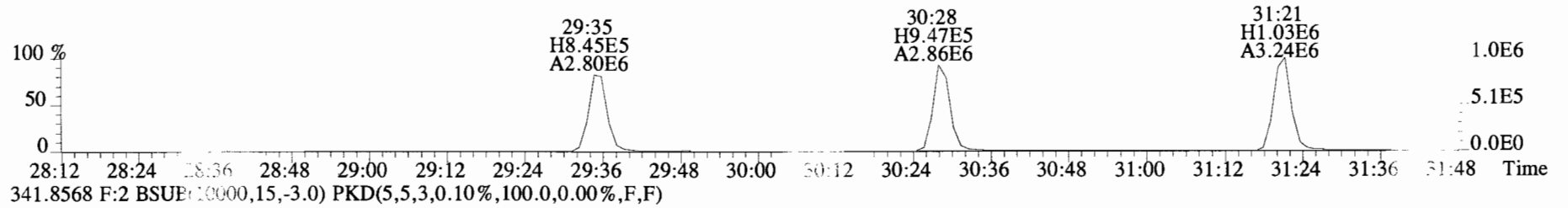
File:191104D1 #1-492 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



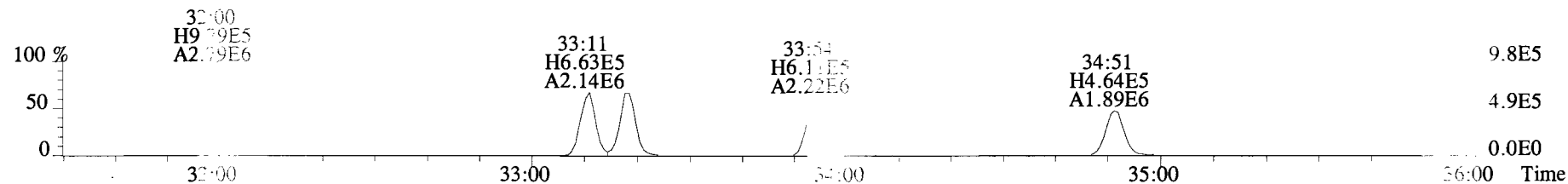
File:191104D1 #1-492 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



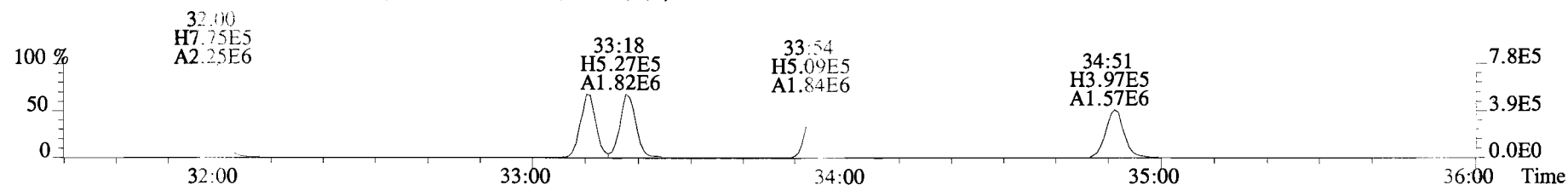
File:191104D1 #1-21 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-Ultimate
Sample#1 File Text:Meta Analytical Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



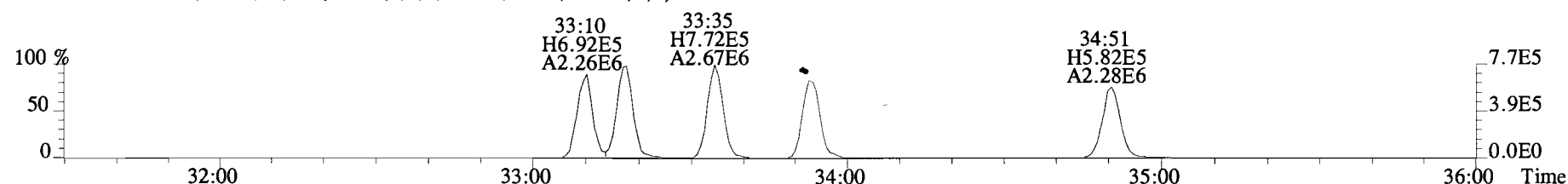
File:191104D1 #1-385 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-Ultima
 Sample#1 File Text:Vira Analytical Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19112204 Exp:OCDD_DB5
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



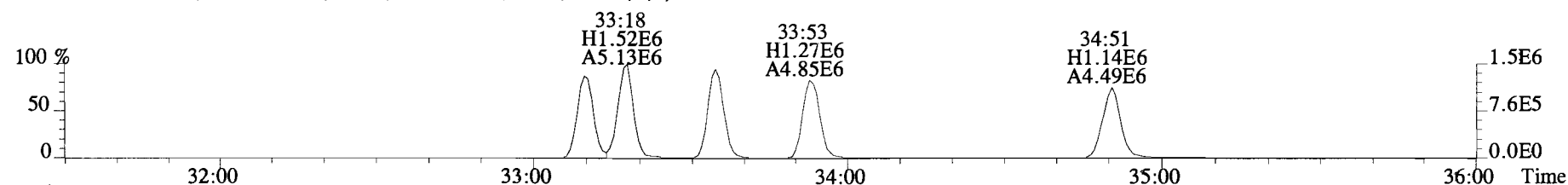
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



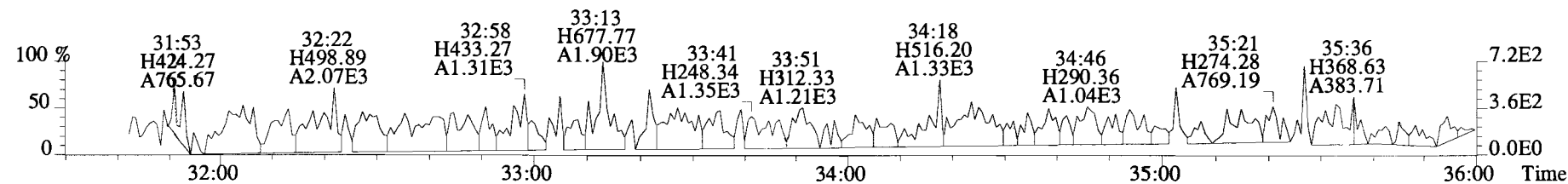
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



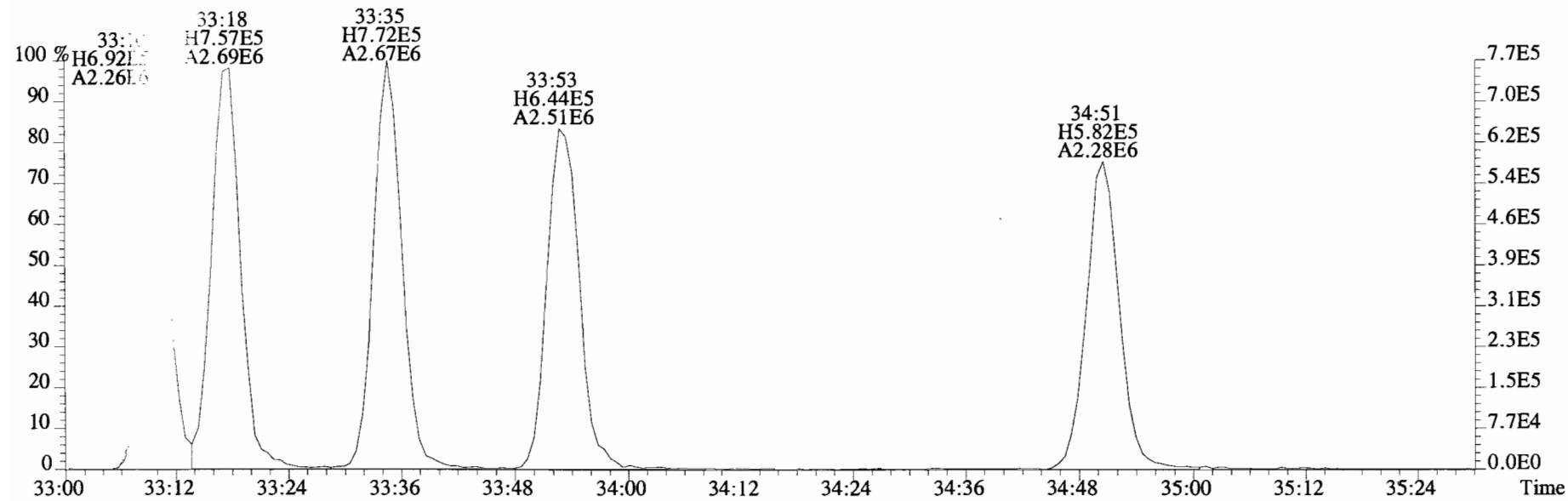
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



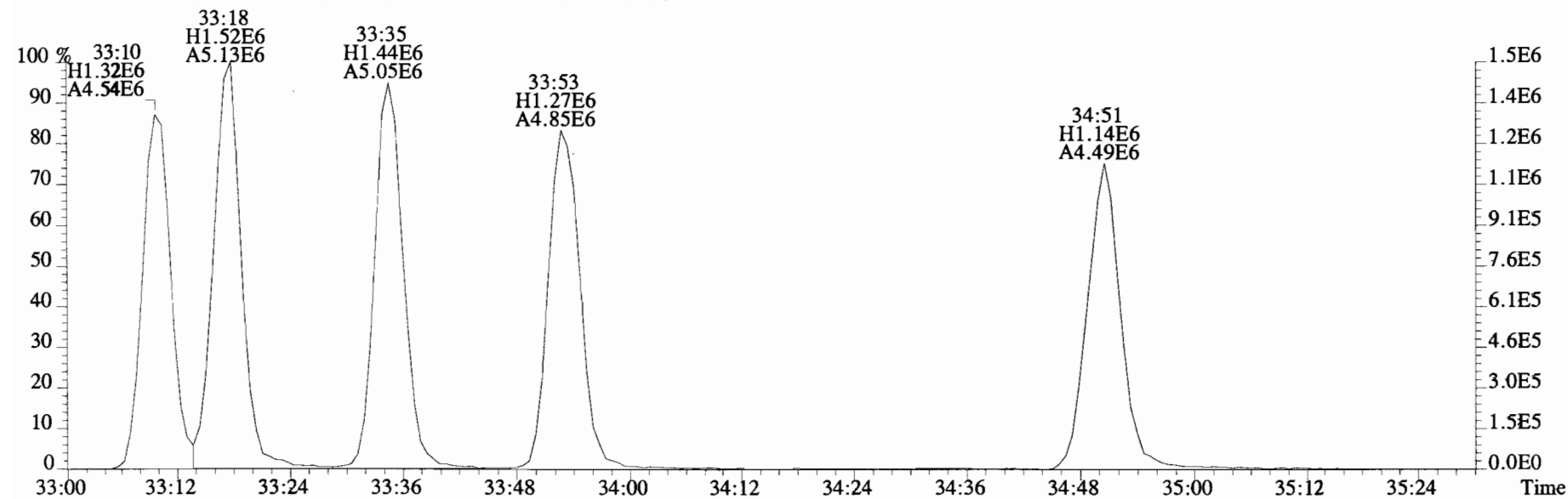
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



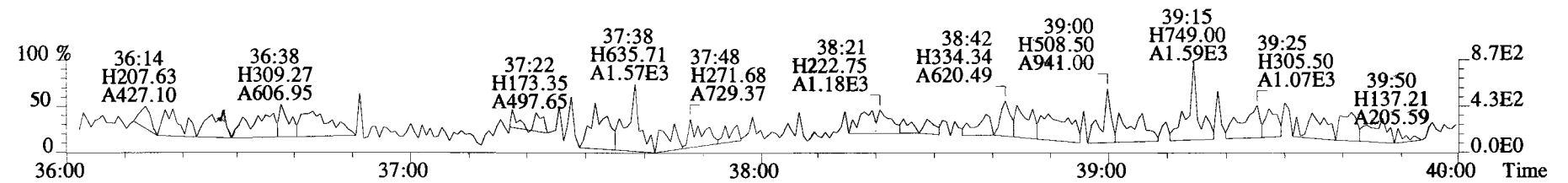
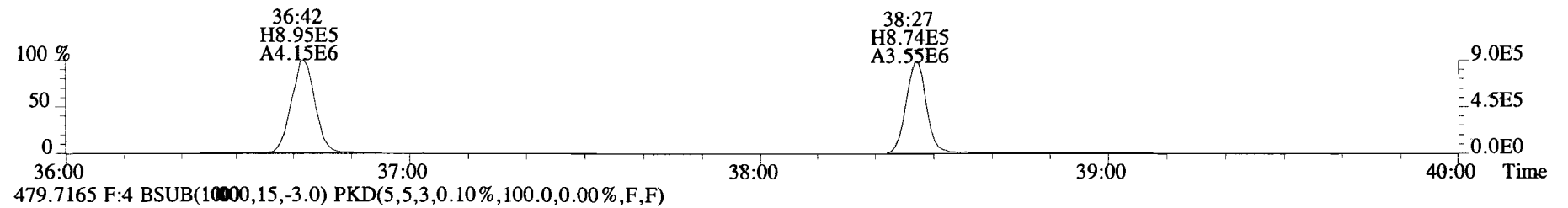
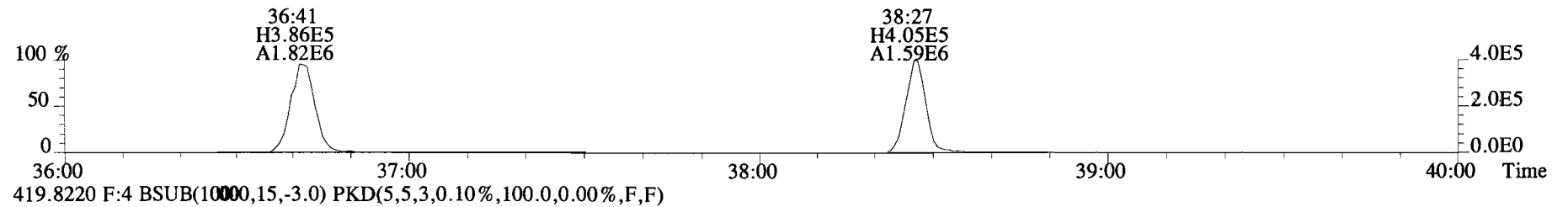
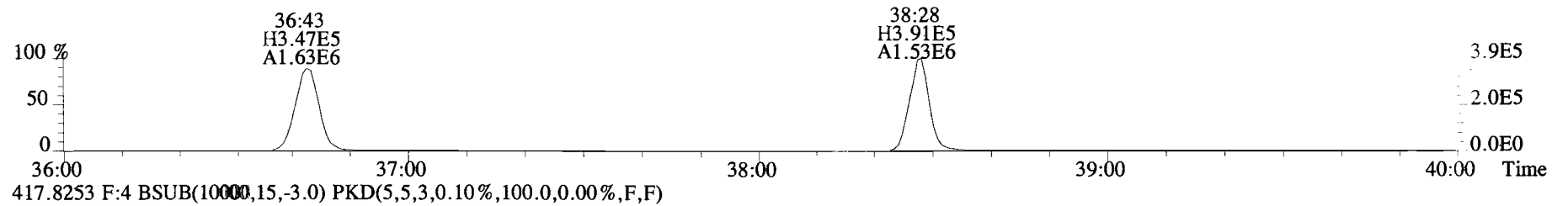
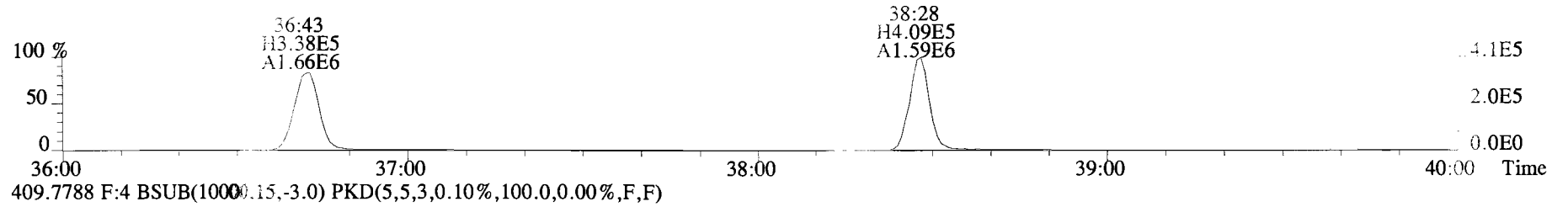
File:191104D1-1-385 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UtimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191104D1-1 1615 CS3 19C2204 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



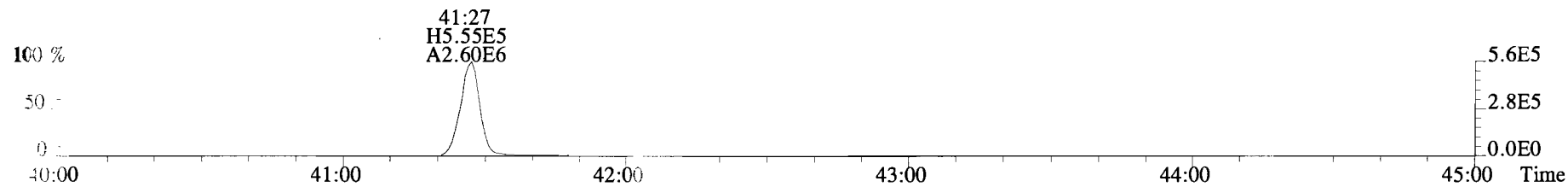
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



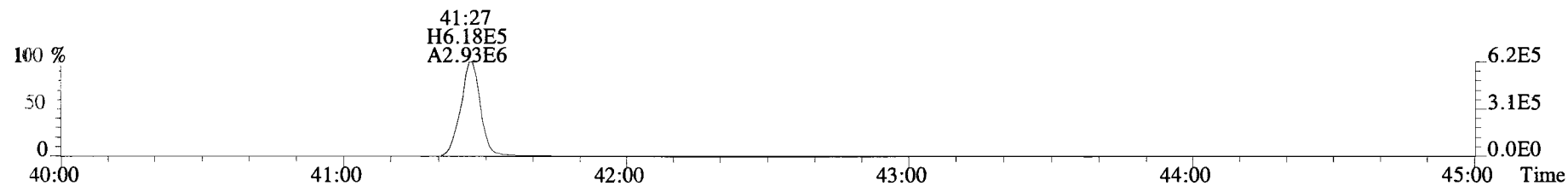
File:191104D1 #1-355 Acc #:-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



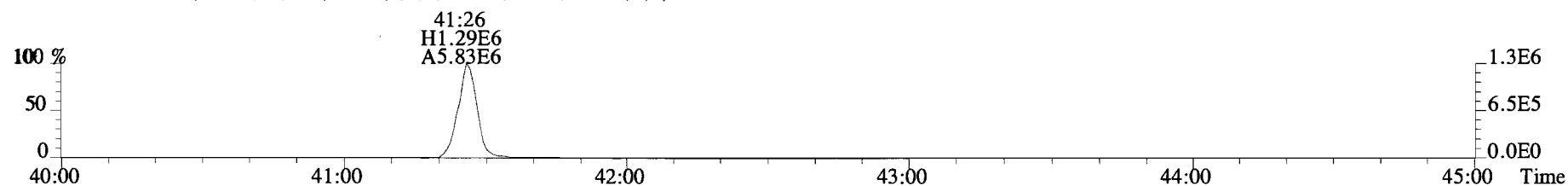
File:191104D1 #1-432 Acq: 4-NOV-2019 12:30:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191104D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



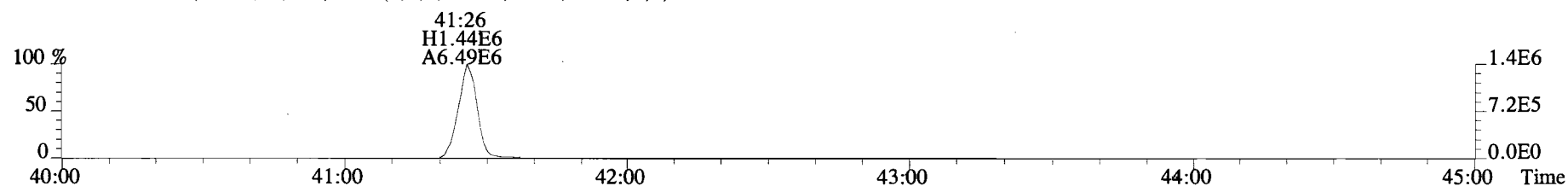
443.7398 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



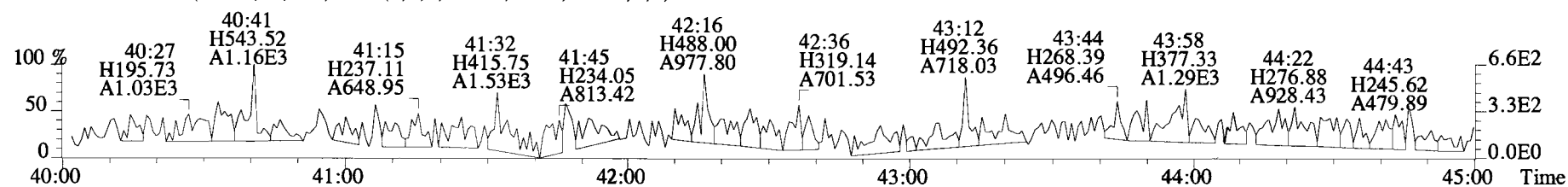
453.7831 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

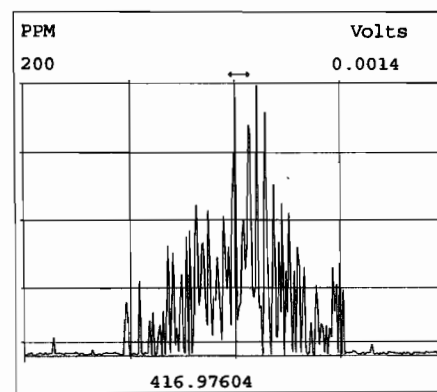
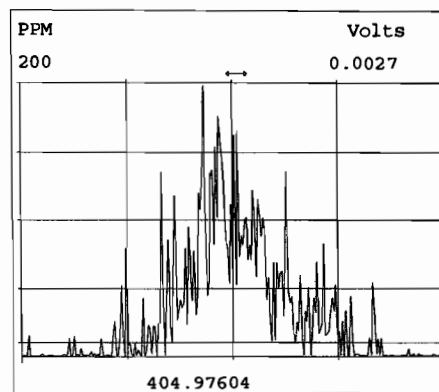
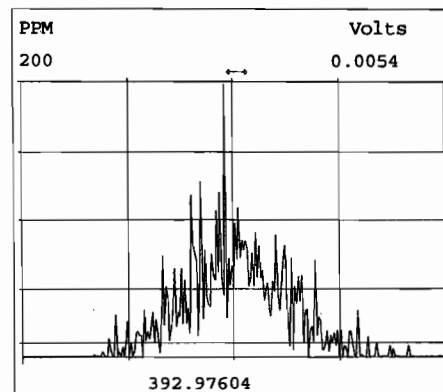
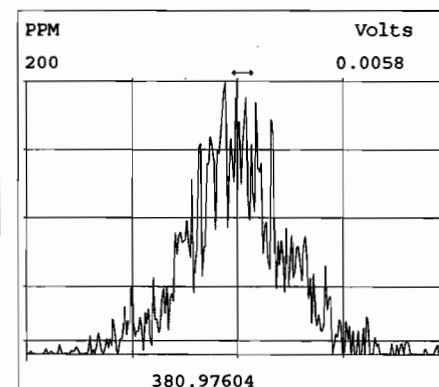
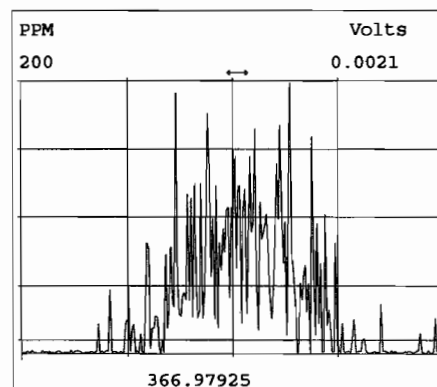
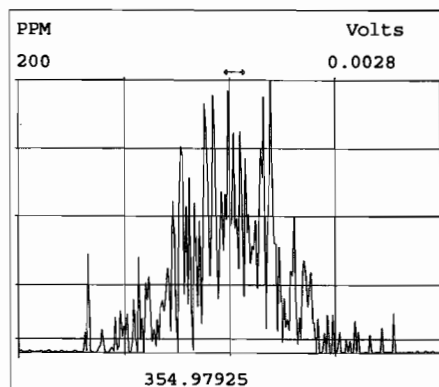
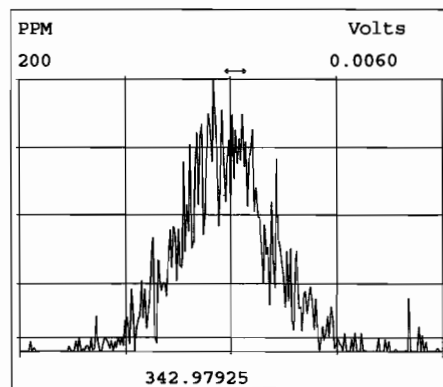
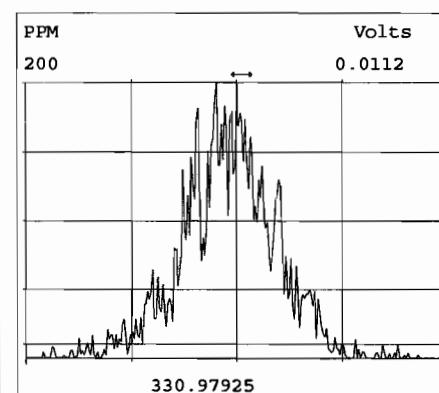
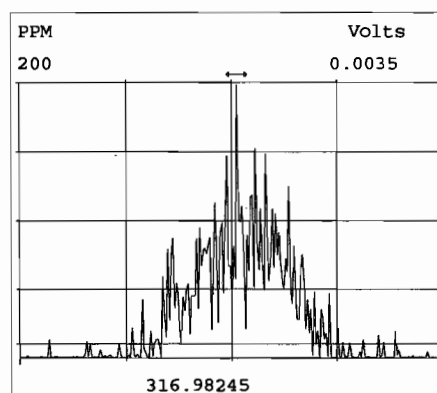
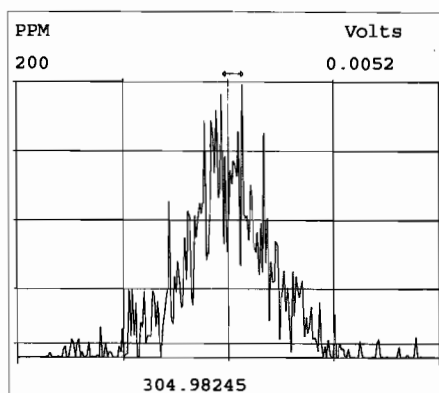
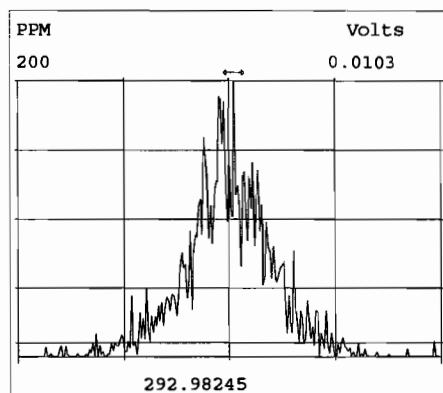


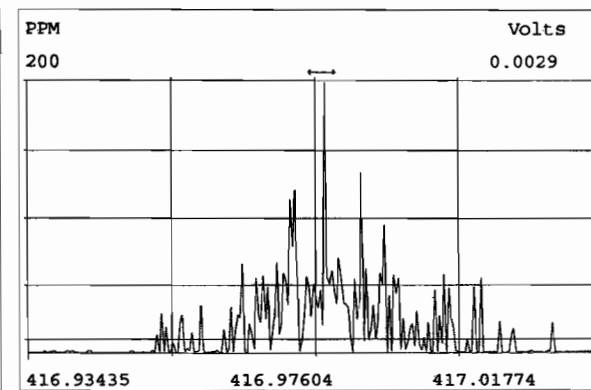
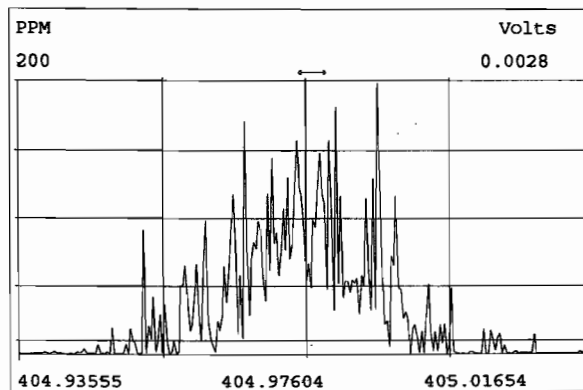
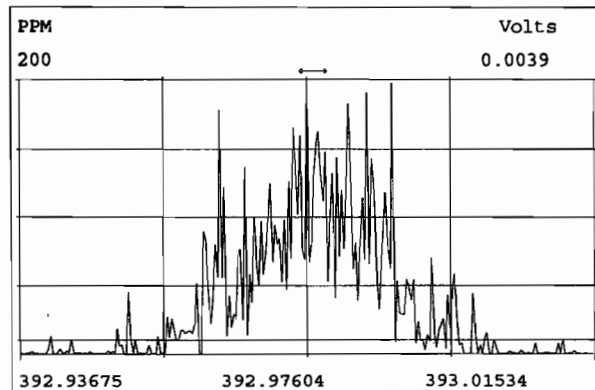
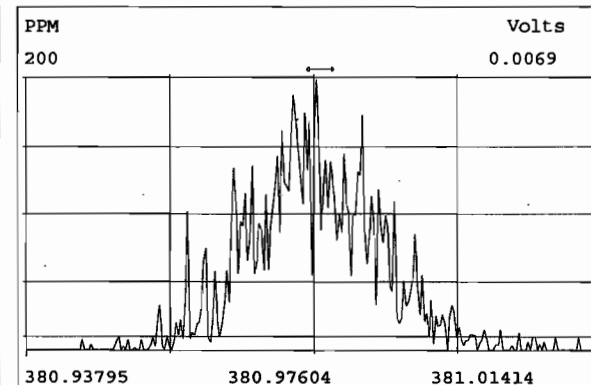
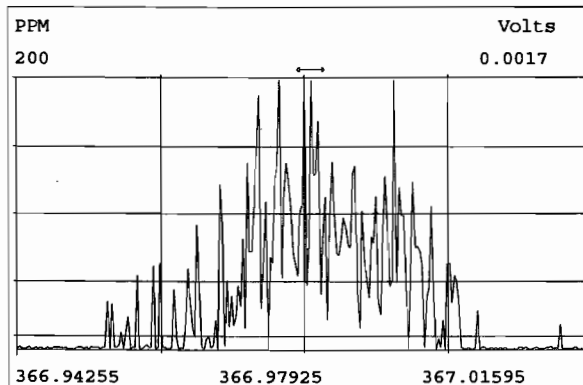
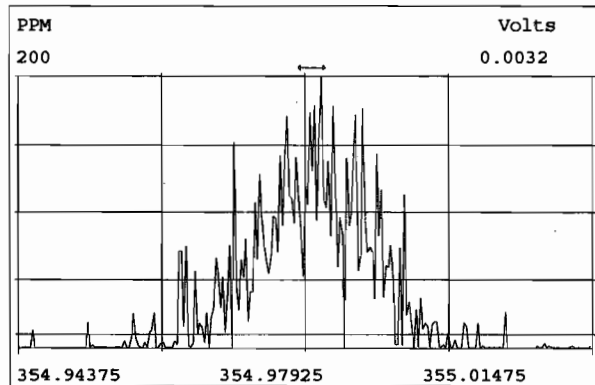
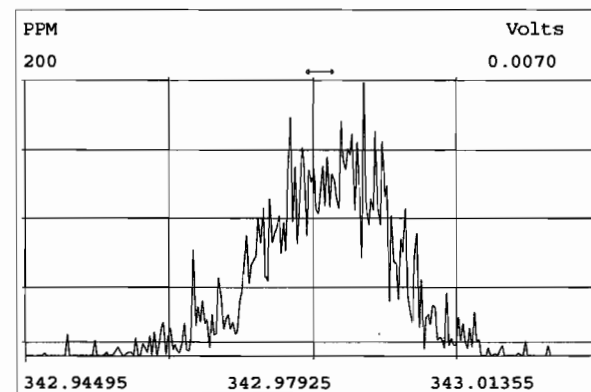
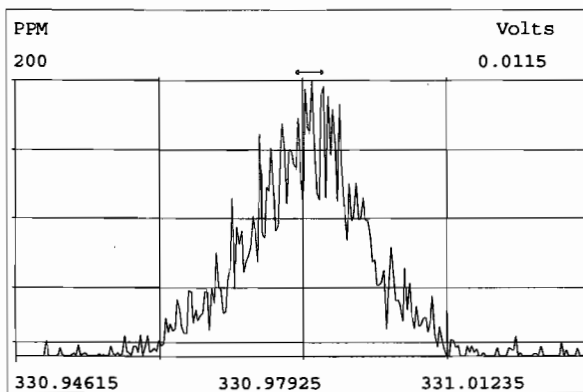
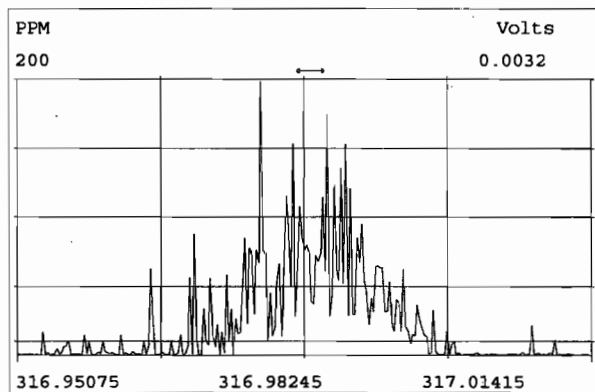
455.7801 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

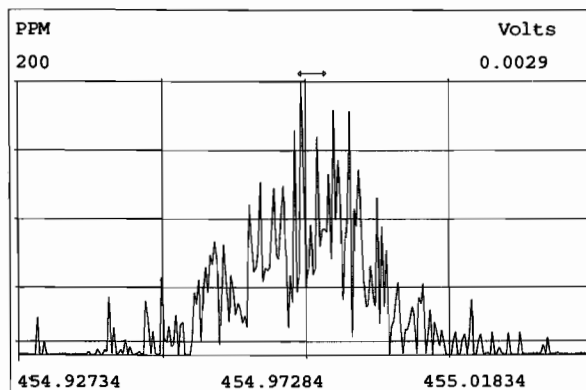
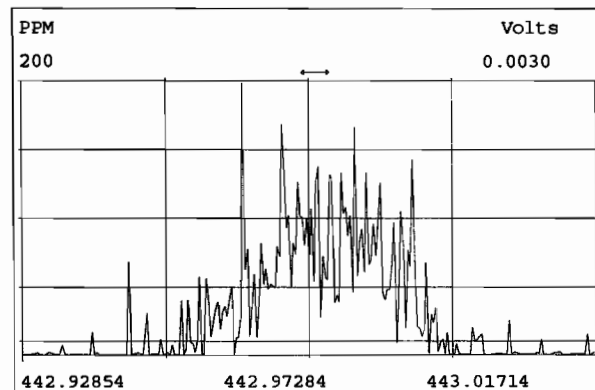
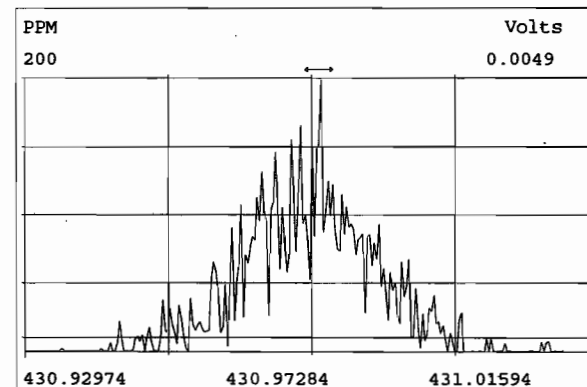
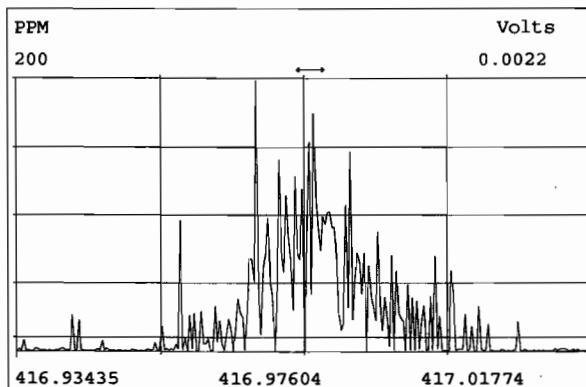
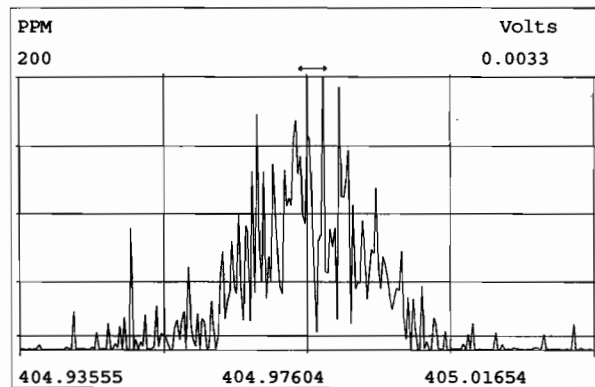
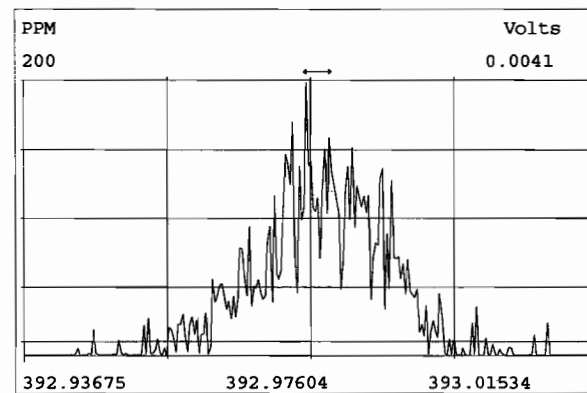
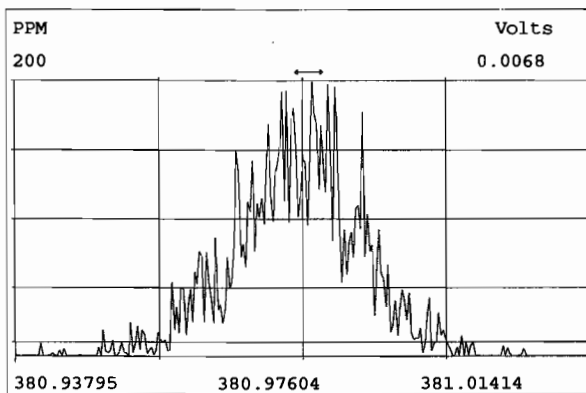
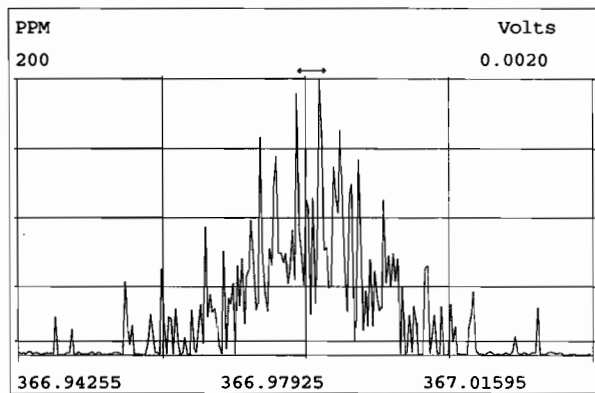






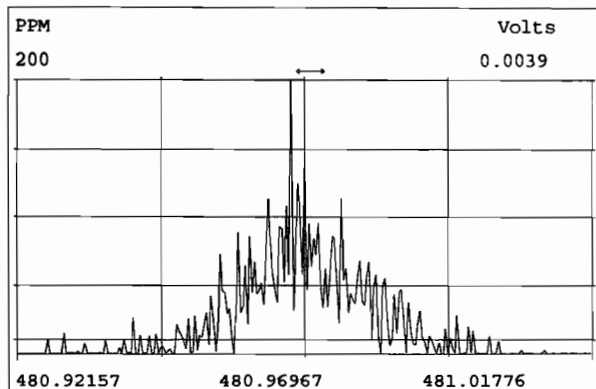
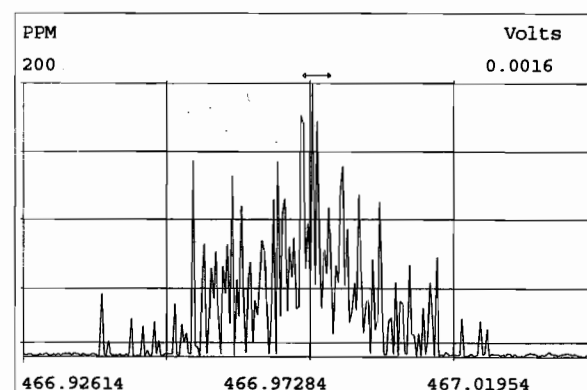
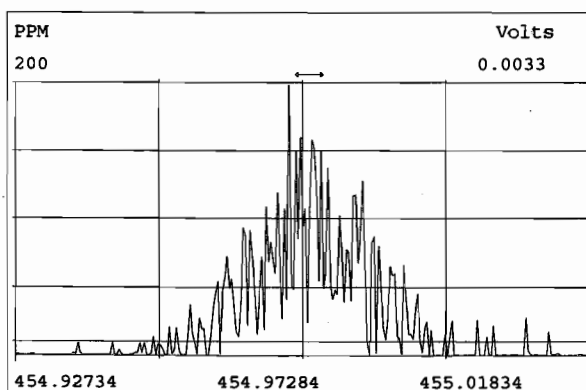
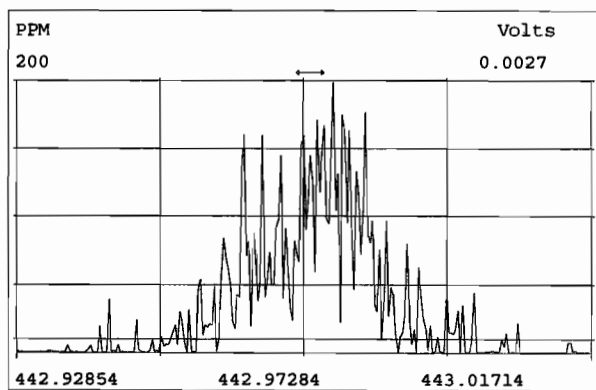
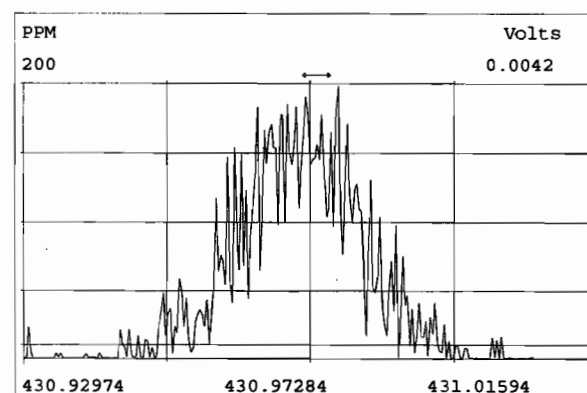
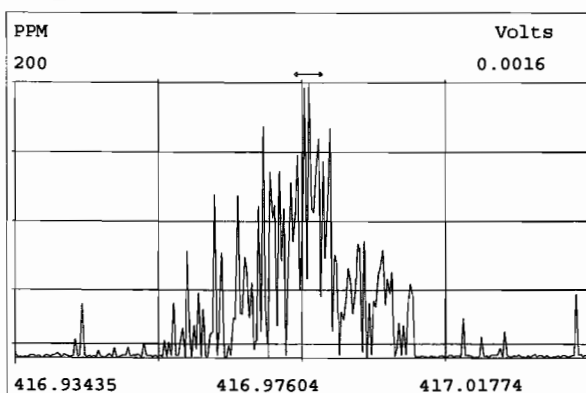
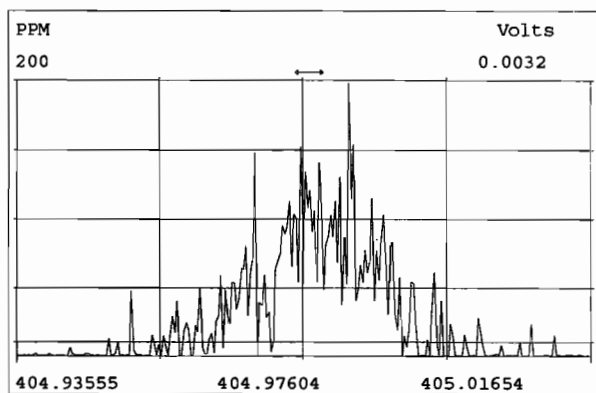
Peak Locate Examination: 5-NOV-2019:09:14 File:RES_CHECK

Experiment:OCDD_DB5 Function:3 Reference:PFK



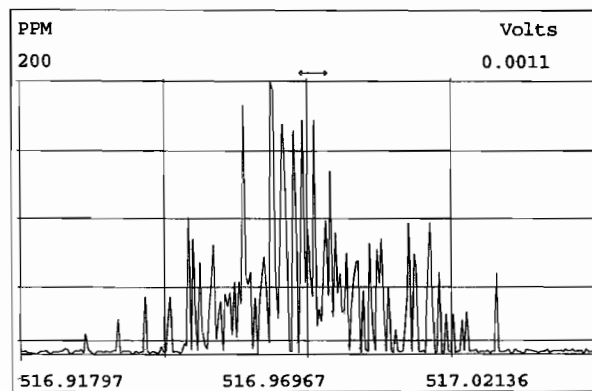
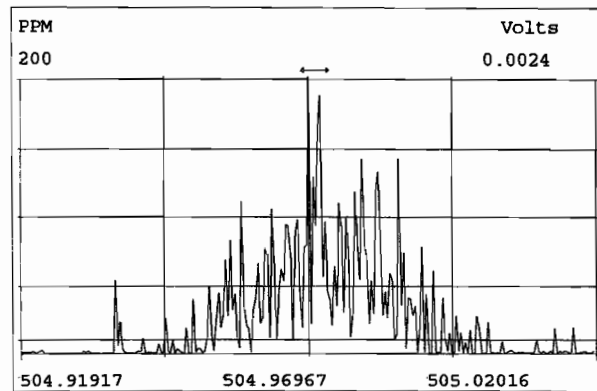
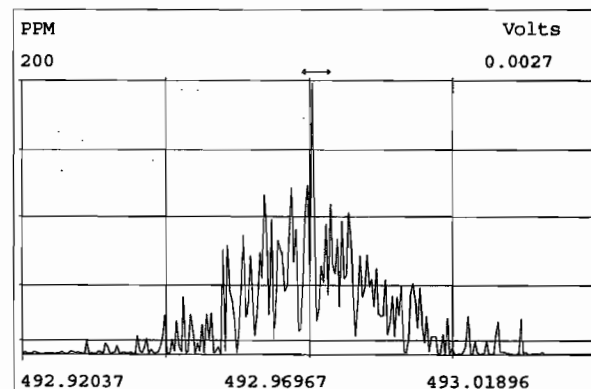
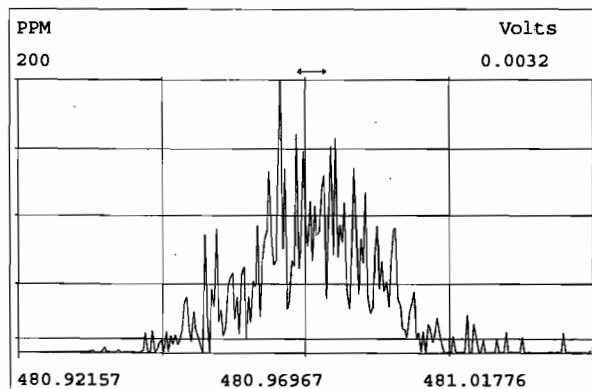
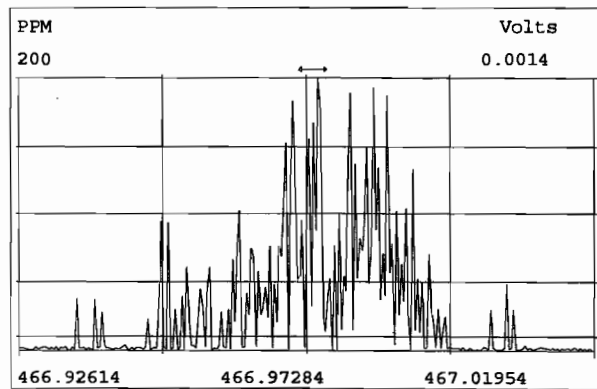
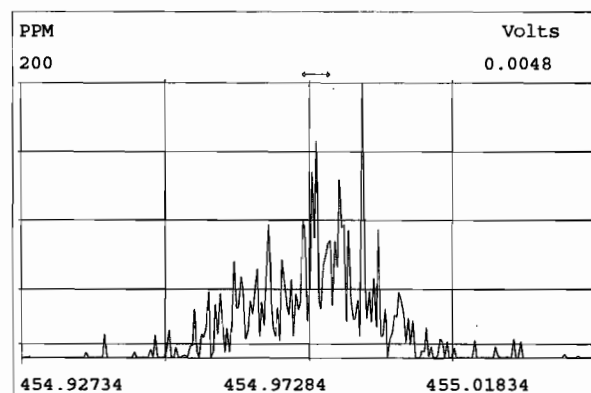
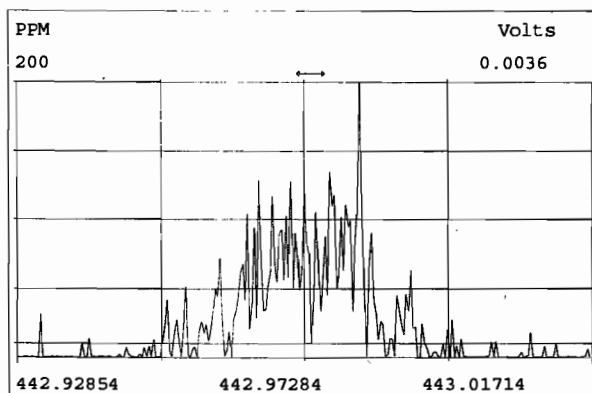
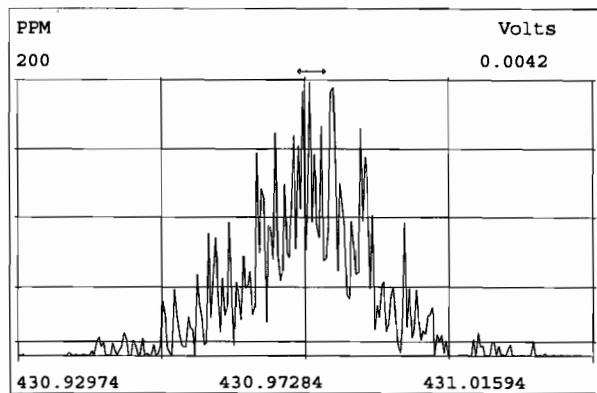
Peak Locate Examination: 5-NOV-2019:09:15 File:RES_CHECK

Experiment:OCDD_DB5 Function:4 Reference:PFK



Peak Locate Examination: 5-NOV-2019:09:15 File:RES_CHECK

Experiment:OCDD_DB5 Function:5 Reference:PFK



HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST191106D1-1

Reviewed By: CT 11/07/19
Initials & Date

End Calibration ID: NA

	<u>Beg.</u>	<u>End</u>		<u>Beg.</u>	<u>End</u>
Ion abundance within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA	Mass resolution \geq	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Concentrations within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 5k <input type="checkbox"/> 6-8K <input type="checkbox"/> 8K <input checked="" type="checkbox"/> 10K 1614 1699 429 1613/1668/8280		
TCDD/TCDF Valleys <25%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Intergrated peaks display correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
First and last eluters present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	GC Break <20%	<input type="checkbox"/> NA	
Retention Times within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>8280 CS1 End Standard:</u>		
Verification Std. named correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	- Ratios within limits, S/N <2.5:1, CS1 within 12 hours	<input type="checkbox"/> NA	
(ST-Year-Month-Day-VG ID)					
Forms signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Comments:		
Correct ICAL referenced?	<input type="checkbox"/> DB	<input type="checkbox"/>			
<u>Run Log:</u>					
- Correct instrument listed?	<input checked="" type="checkbox"/>	<input type="checkbox"/> V			
- Samples within 12 hour clock?	<input type="checkbox"/> Y	<input type="checkbox"/> N			
- Bottle position verified?	<input type="checkbox"/> DB	<input type="checkbox"/>			

Vista Analytical Laboratory - Injection Log Run file: 191106D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191106D1	1	ST191106D1-1	DB	6-NOV-19	11:41:40	ST191106D1-1	NA
191106D1	2	SOLVENT BLANK	DB	6-NOV-19	12:29:34	ST191106D1-1	NA
191106D1	3	1903565-05RE1@5X	DB	6-NOV-19	13:17:30	ST191106D1-1	NA
191106D1	4	1903565-16RE1	DB	6-NOV-19	14:05:25	ST191106D1-1	NA
191106D1	5	1903460-03	DB	6-NOV-19	14:53:21	ST191106D1-1	NA
191106D1	6	1903651-05	DB	6-NOV-19	15:41:12	ST191106D1-1	NA
191106D1	7	1903651-06	DB	6-NOV-19	16:29:02	ST191106D1-1	NA
191106D1	8	1903651-07	DB	6-NOV-19	17:16:52	ST191106D1-1	NA
191106D1	9	1903653-01	DB	6-NOV-19	18:04:47	ST191106D1-1	NA
191106D1	10	B9J0312-DUP2	DB	6-NOV-19	18:52:31	ST191106D1-1	NA
191106D1	11	1903653-02	DB	6-NOV-19	19:40:15	ST191106D1-1	NA
191106D1	12	1903653-03	DB	6-NOV-19	20:28:00	ST191106D1-1	NA
191106D1	13	1903653-04	DB	6-NOV-19	21:15:43	ST191106D1-1	NA
191106D1	14	1903431-01	DB	6-NOV-19	22:03:32	ST191106D1-1	NA
191106D1	15	1903431-02	DB	6-NOV-19	22:51:22	ST191106D1-1	NA

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST191106D1-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-SMS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

NATIVE ANALYTES	M/Z'S	ION	QC	Pass	CONC. FOUND	CONC. RANGE (3) (ng/mL)
	FORMING RATIO (1)	ABUND. RATIO	LIMITS (2)			
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	y	11.4	7.8 - 12.9
1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	50.5	8.2 - 12.3 (4) 39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	y	50.5	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	y	50.1	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	y	50.3	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	y	46.8	43.0 - 58.0
OCDD	M+2/M+4	0.87	0.76-1.02	y	98.8	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.72	0.65-0.89	y	8.85	8.4 - 12.0 8.6 - 11.6 (4)
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	y	55.7	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	y	54.2	41.0 - 61.0
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	1.23	1.05-1.43	y	47.7	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	y	50.1	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	y	47.8	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	y	47.2	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	y	47.7	43.0 - 58.0
OCDF	M+2/M+4	0.86	0.76-1.02	y	96.1	63.0 - 159.0

(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) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DB

Date: 11/6/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

LABELLED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC. FOUND	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.84	0.65-0.89	y	95.1	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	98.8	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.33	1.05-1.43	y	112	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	y	97.2	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	y	99.5	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	y	107	72.0 - 138.0
13C-OCDD	M/M+2	0.89	0.76-1.02	y	241	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.77	0.65-0.89	y	103	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	y	95.4	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	y	92.6	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	108	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	103	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	102	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	y	105	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.44	0.37-0.51	y	97.5	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.44	0.37-0.51	y	106	77.0 - 129.0
13C-OCDF	M+2/M+4	0.86	0.76-1.02	y	242	96.0 - 415.0
CLEANUP STANDARD (3)						
37Cl-2,3,7,8-TCDD					9.45	7.9 - 12.7

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

(2) Ion Abundance Ratio Control Limits as specified

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

Analyst: DB

Date: 11/6/19

FORM 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

ZB-5MS IS Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:54	1,3,6,8-TCDF (F)	20:47
1,2,8,9-TCDD (L)	27:07	1,2,8,9-TCDF (L)	27:15
1,2,4,7,9-PeCDD (F)	28:43	1,3,4,6,8-PeCDF (F)	27:13
1,2,3,8,9-PeCDD (L)	31:07	1,2,3,8,9-PeCDF (L)	31:21
1,2,4,6,7,9-HxCDD (F)	32:32	1,2,3,4,6,8-HxCDF (F)	31:60
1,2,3,7,8,9-HxCDD (L)	34:29	1,2,3,7,8,9-HxCDF (L)	34:51
1,2,3,4,6,7,9-HpCDD (F)	37:05	1,2,3,4,6,7,8-HpCDF (F)	36:43
1,2,3,4,6,7,8-HpCDD (L)	37:55	1,2,3,4,7,8,9-HpCDF (L)	38:28

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

=====

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT
BETWEEN
COMPARED PEAKS (1)

<25%

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

Analyst: DBDate: 11/6/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME	RRT	RRT
	REFERENCE		QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	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-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	1.000	0.999-1.002

LABELED COMPOUNDS

13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.976-1.043
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.196	1.000-1.567
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.991	0.923-1.103
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.151	1.000-1.425
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.186	1.011-1.526
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052

Analyst: DB

Date: 11/6/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
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	1.000	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
1,2,3,4,7,8-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-1,2,3,7,8,9-HxCDD	1.000	0.998-1.004
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	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	1.000	0.999-1.001
OCDF	13C-OCDF	1.000	0.999-1.001

LABELED COMPOUNDS

13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.988	0.975-1.001
13C-1,2,3,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.991	0.979-1.005
13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.009	1.001-1.020
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.038	1.002-1.072
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.014	1.002-1.026
13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.017	1.007-1.029
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.026	1.014-1.038
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.093	1.069-1.111
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.145	1.098-1.192
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.129	1.117-1.141
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.227	1.085-1.365
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.234	1.091-1.371

Analyst: DB

Date: 11/6/19

Client ID: 1613 CS3 19C2204
 Lab ID: ST191106D1-1

Filename: 191106D1 S:1 Acq: 6-NOV-19 11:41:40
 GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

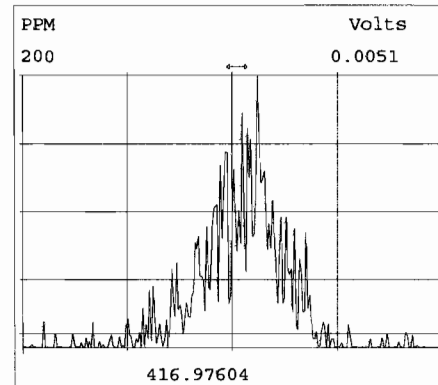
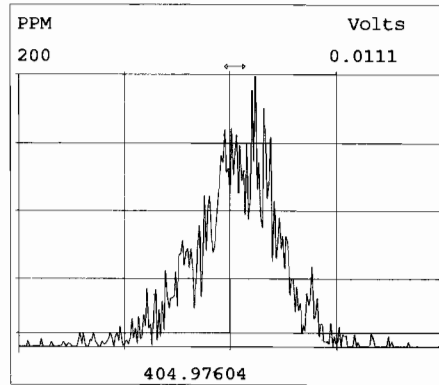
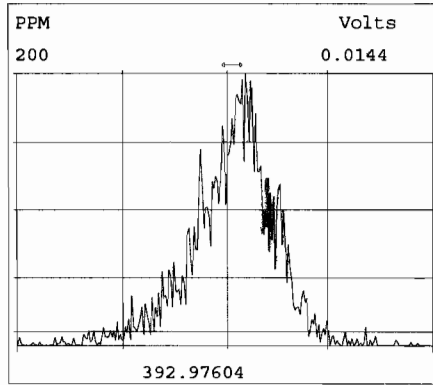
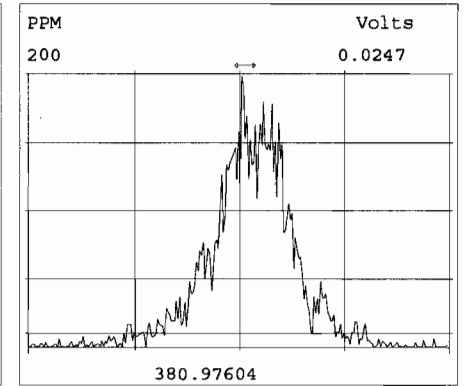
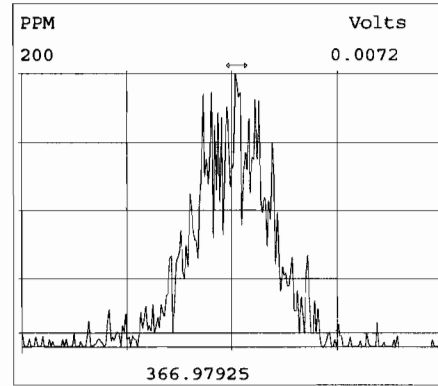
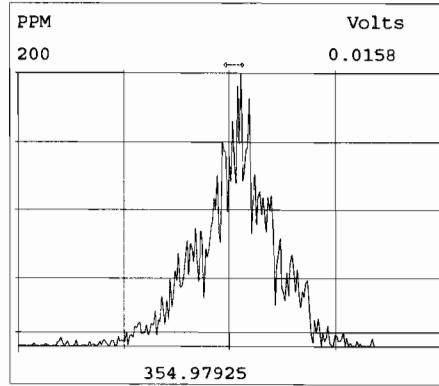
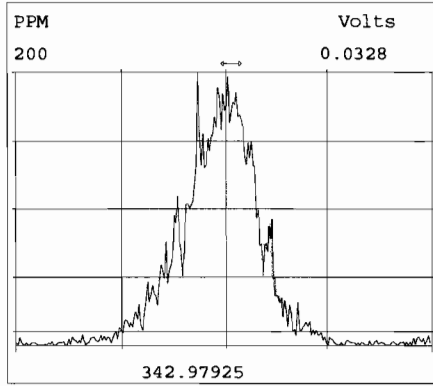
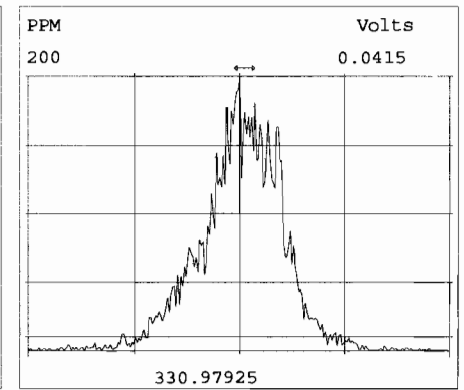
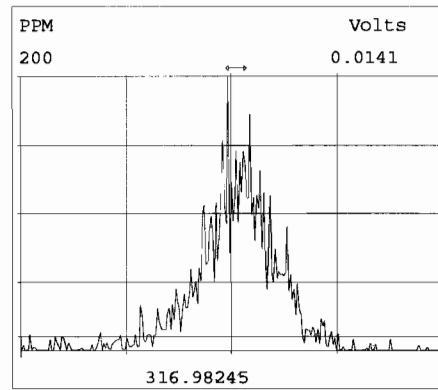
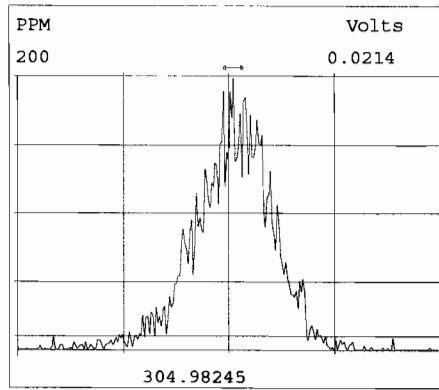
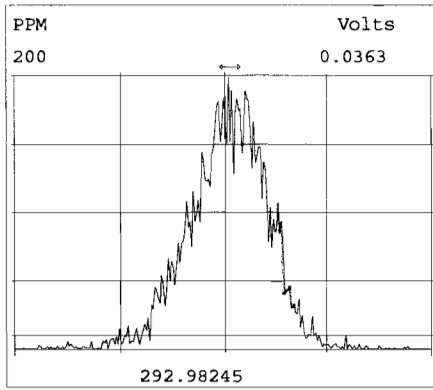
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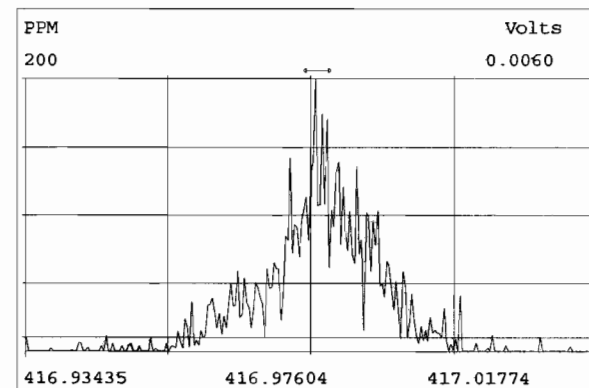
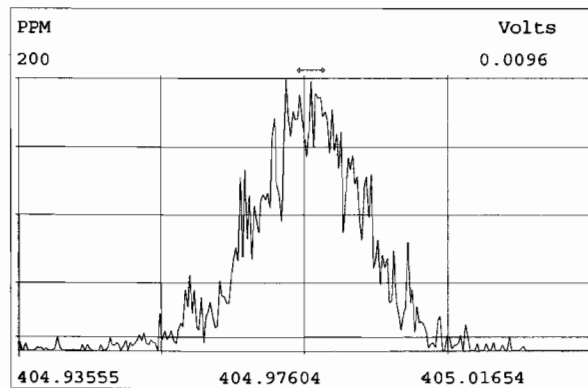
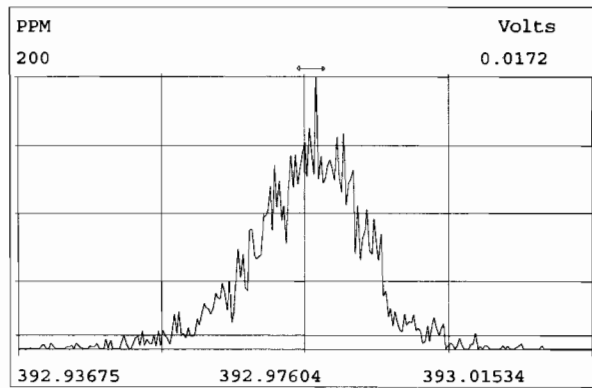
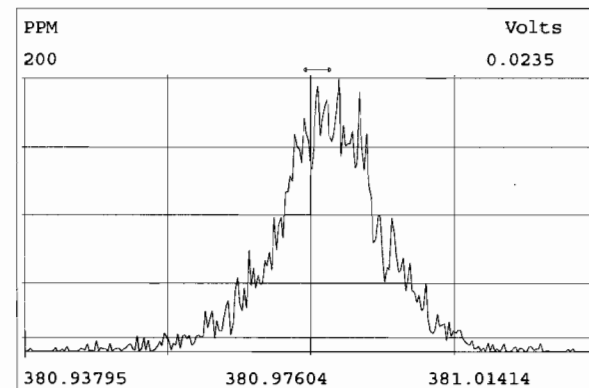
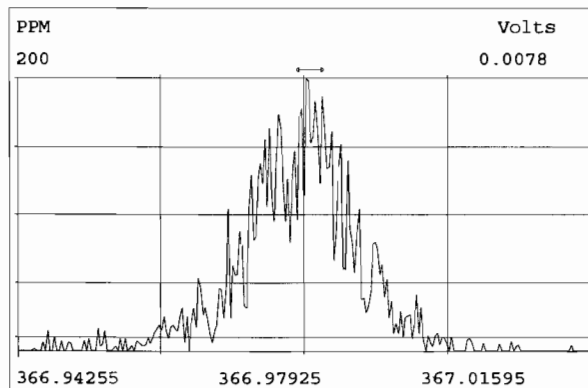
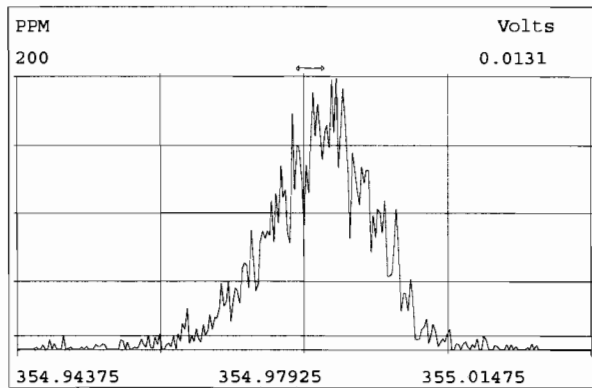
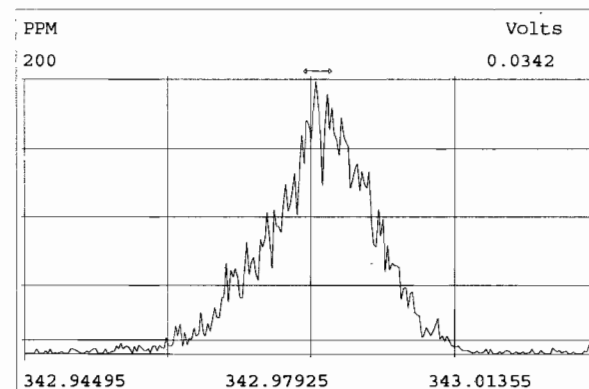
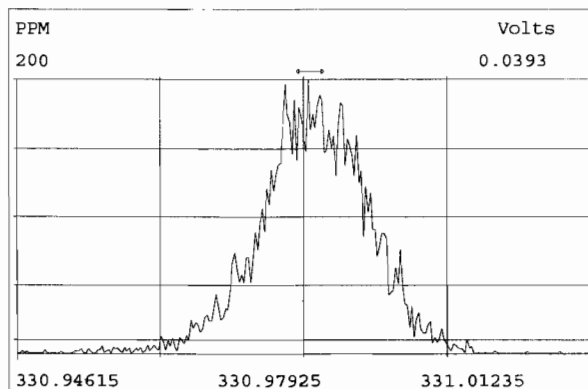
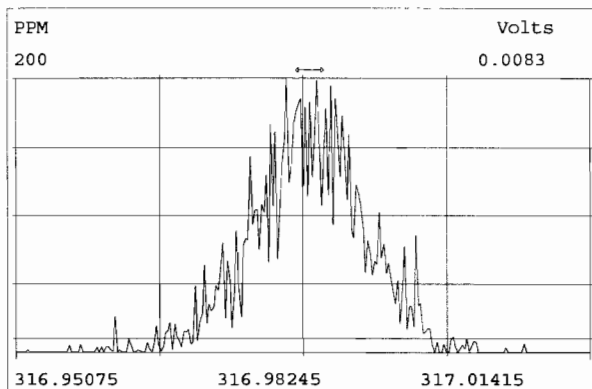
Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	6.82e+05	0.77 y	0.91	26:16	11.450		* 2.5		*	Total Tetra-Dioxins	86.8	87.8	*	*	
1,2,3,7,8-PeCDD	2.51e+06	0.63 y	0.90	30:45	50.469		* 2.5		*	Total Penta-Dioxins	198	198	*	*	
1,2,3,4,7,8-HxCDD	2.74e+06	1.25 y	1.10	34:04	50.478		* 2.5		*	Total Hexa-Dioxins	222	223	*	*	
1,2,3,6,7,8-HxCDD	2.68e+06	1.29 y	0.94	34:11	50.148		* 2.5		*	Total Hepta-Dioxins	122	123	*	*	
1,2,3,7,8,9-HxCDD	2.65e+06	1.26 y	0.96	34:29	50.280		* 2.5		*	Total Tetra-Furans	34.0	34.9	*	*	
1,2,3,4,6,7,8-HpCDD	2.19e+06	1.02 y	0.98	37:55	46.849		* 2.5		*	Total Penta-Furans	238.77	240.08	*	*	
OCDD	4.52e+06	0.87 y	0.96	41:14	98.839		* 2.5		*	Total Hexa-Furans	257	258	*	*	
										Total Hepta-Furans	95.3	96.2	*	*	
2,3,7,8-TCDF	9.41e+05	0.72 y	0.95	25:29	8.8480		* 2.5		*						
1,2,3,7,8-PeCDF	4.56e+06	1.54 y	0.96	29:35	55.662		* 2.5		*						
2,3,4,7,8-PeCDF	4.51e+06	1.52 y	1.01	30:28	54.177		* 2.5		*						
1,2,3,4,7,8-HxCDF	3.55e+06	1.24 y	1.18	33:10	48.899		* 2.5		*						
1,2,3,6,7,8-HxCDF	3.70e+06	1.23 y	1.07	33:18	47.690		* 2.5		*						
2,3,4,6,7,8-HxCDF	3.72e+06	1.25 y	1.11	33:54	50.074		* 2.5		*						
1,2,3,7,8,9-HxCDF	3.02e+06	1.26 y	1.06	34:51	47.785		* 2.5		*						
1,2,3,4,6,7,8-HpCDF	2.69e+06	1.03 y	1.13	36:43	47.193		* 2.5		*						
1,2,3,4,7,8,9-HpCDF	2.58e+06	1.04 y	1.28	38:28	47.715		* 2.5		*						
OCDF	5.18e+06	0.86 y	0.95	41:27	96.090		* 2.5		*						
										Rec	Qual				
IS	13C-2,3,7,8-TCDD	6.58e+06	0.84 y	1.10	26:15	95.114				95.1					
IS	13C-1,2,3,7,8-PeCDD	5.51e+06	0.63 y	0.88	30:44	98.847				98.8					
IS	13C-1,2,3,4,7,8-HxCDD	4.94e+06	1.33 y	0.64	34:03	112.46				112					
IS	13C-1,2,3,6,7,8-HxCDD	5.68e+06	1.30 y	0.86	34:10	97.212				97.2					
IS	13C-1,2,3,7,8,9-HxCDD	5.48e+06	1.26 y	0.81	34:28	99.459				99.5					
IS	13C-1,2,3,4,6,7,8-HpCDD	4.78e+06	1.05 y	0.65	37:55	106.99				107					
IS	13C-OCDD	9.54e+06	0.89 y	0.58	41:13	240.70				120					
IS	13C-2,3,7,8-TCDF	1.12e+07	0.77 y	1.03	25:28	103.38				103					
IS	13C-1,2,3,7,8-PeCDF	8.53e+06	1.62 y	0.85	29:34	95.413				95.4					
IS	13C-2,3,4,7,8-PeCDF	8.21e+06	1.62 y	0.85	30:28	92.617				92.6					
IS	13C-1,2,3,4,7,8-HxCDF	6.17e+06	0.51 y	0.83	33:10	108.47				108					
IS	13C-1,2,3,6,7,8-HxCDF	7.26e+06	0.51 y	1.03	33:17	102.72				103					
IS	13C-2,3,4,6,7,8-HxCDF	6.68e+06	0.51 y	0.95	33:53	102.49				102					
IS	13C-1,2,3,7,8,9-HxCDF	5.95e+06	0.52 y	0.83	34:51	105.22				105					
IS	13C-1,2,3,4,6,7,8-HpCDF	5.05e+06	0.44 y	0.76	36:42	97.470				97.5					
IS	13C-1,2,3,4,7,8,9-HpCDF	4.22e+06	0.44 y	0.58	38:27	106.34				106					
IS	13C-OCDF	1.14e+07	0.86 y	0.69	41:26	241.89				121					
C/Up	37C1-2,3,7,8-TCDD	7.15e+05		1.20	26:16	9.4475				94.5					
RS/RT	13C-1,2,3,4-TCDD	6.32e+06	0.86 y	1.00	25:41	100.00									
RS	13C-1,2,3,4-TCDF	1.05e+07	0.80 y	1.00	24:16	100.00									
RS/RT	13C-1,2,3,4,6,9-HxCDF	6.84e+06	0.51 y	1.00	33:35	100.00									

Integrations
 by DB
 Analyst: DB
 Date: 11/6/19
 Reviewed
 by CT
 Analyst: CT
 Date: 11/07/19

Vista Analytical Laboratory - Injection Log Run file: 191106D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

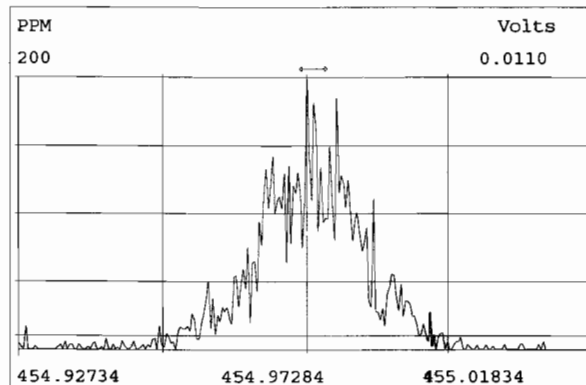
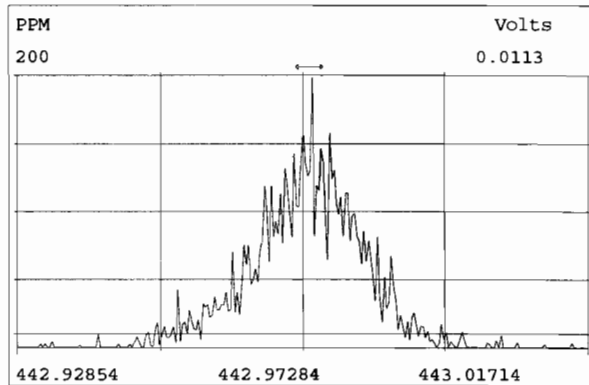
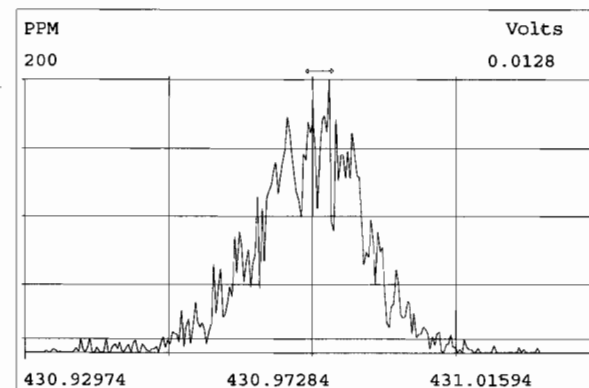
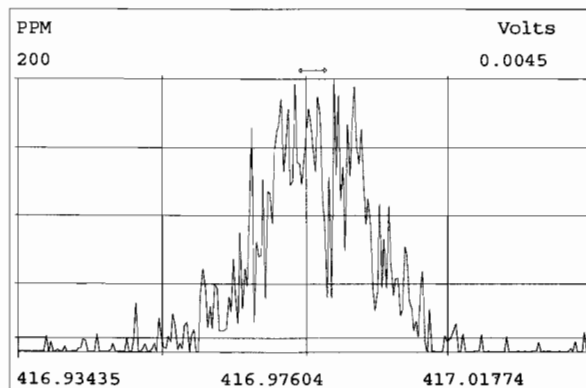
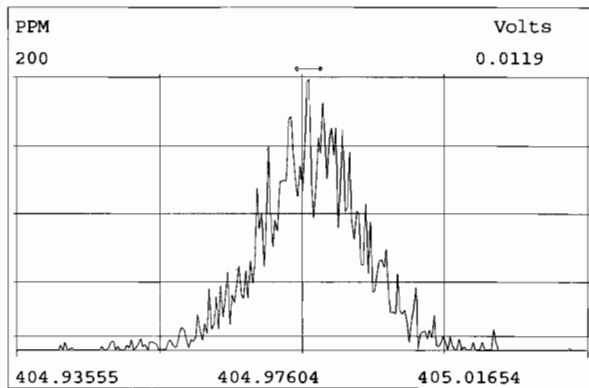
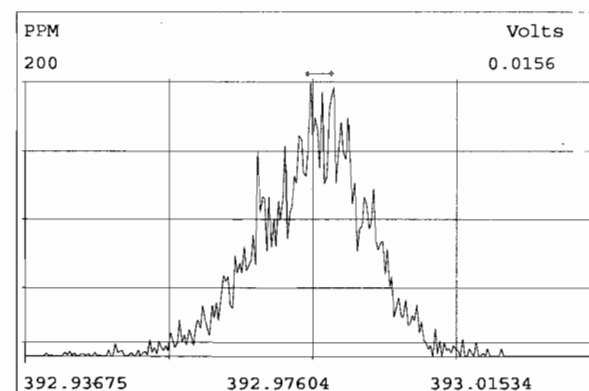
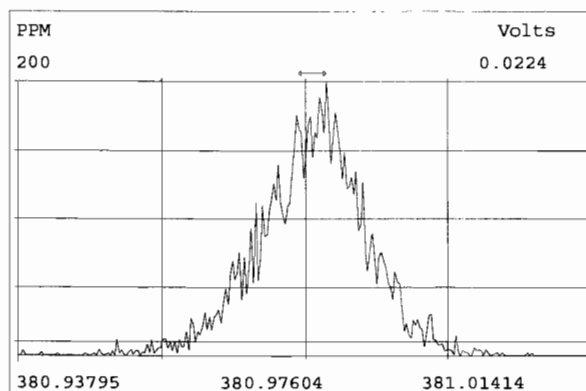
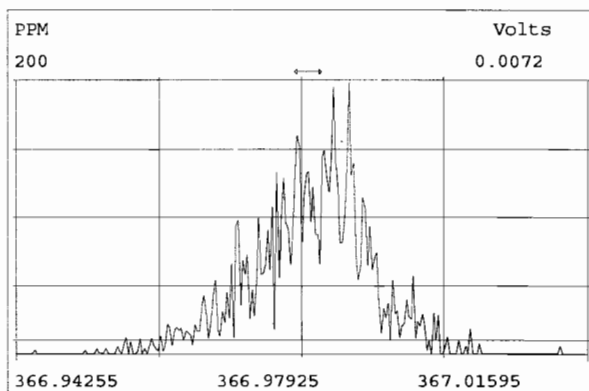
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191106D1	2	SOLVENT BLANK	DB	6-NOV-19	12:29:34	ST191106D1-1	NA
191106D1	3	1903565-05RE1@5X	DB	6-NOV-19	13:17:30	ST191106D1-1	NA
191106D1	4	1903565-16RE1	DB	6-NOV-19	14:05:25	ST191106D1-1	NA
191106D1	5	1903460-03	DB	6-NOV-19	14:53:21	ST191106D1-1	NA
191106D1	6	1903651-05	DB	6-NOV-19	15:41:12	ST191106D1-1	NA
191106D1	7	1903651-06	DB	6-NOV-19	16:29:02	ST191106D1-1	NA
191106D1	8	1903651-07	DB	6-NOV-19	17:16:52	ST191106D1-1	NA
191106D1	9	1903653-01	DB	6-NOV-19	18:04:47	ST191106D1-1	NA
191106D1	10	B9J0312-DUP2	DB	6-NOV-19	18:52:31	ST191106D1-1	NA
191106D1	11	1903653-02	DB	6-NOV-19	19:40:15	ST191106D1-1	NA
191106D1	12	1903653-03	DB	6-NOV-19	20:28:00	ST191106D1-1	NA
191106D1	13	1903653-04	DB	6-NOV-19	21:15:43	ST191106D1-1	NA
191106D1	14	1903431-01	DB	6-NOV-19	22:03:32	ST191106D1-1	NA
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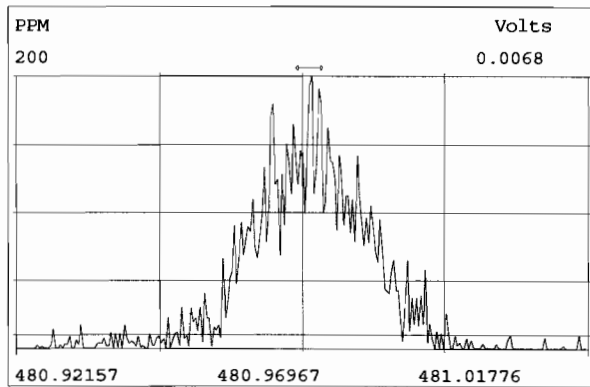
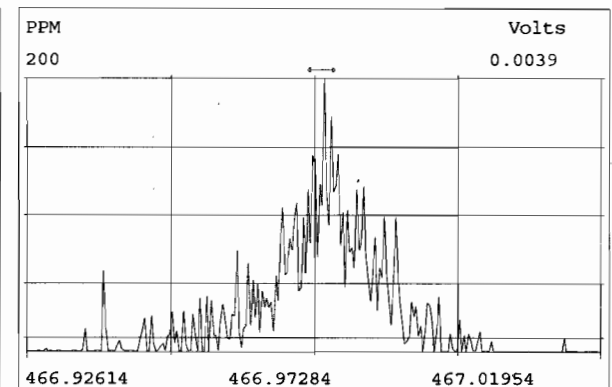
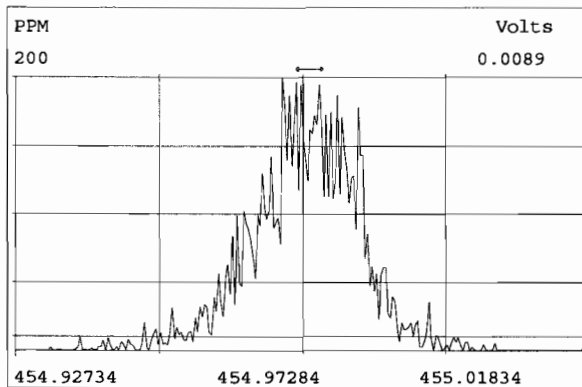
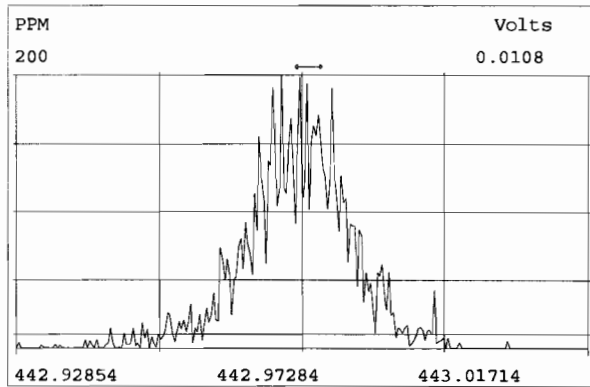
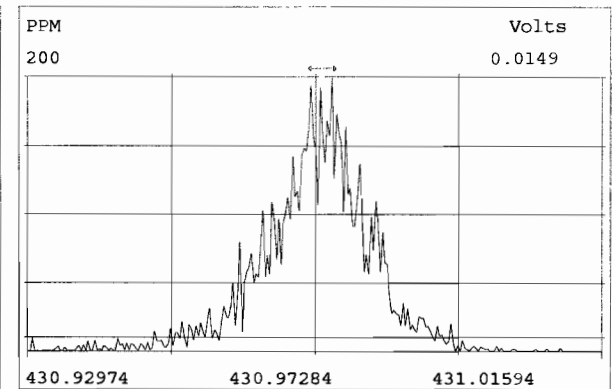
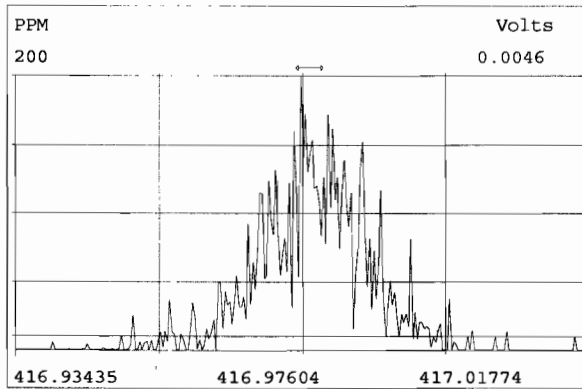
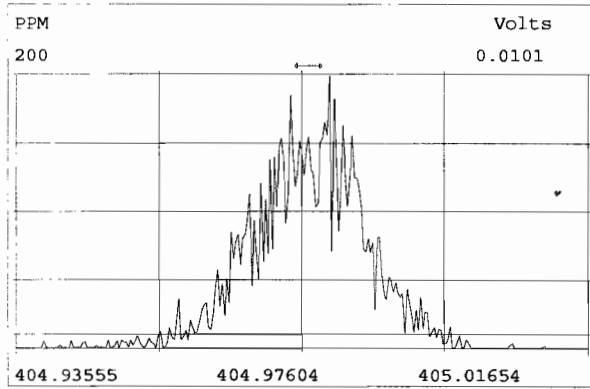


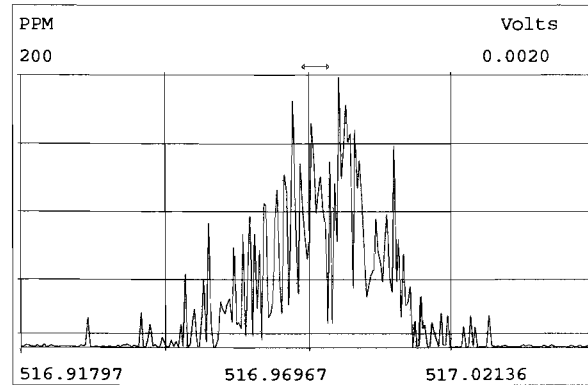
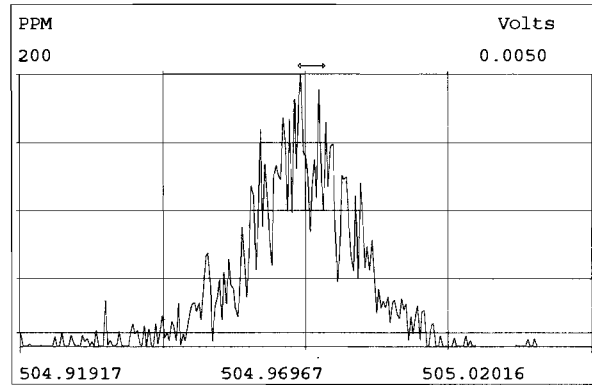
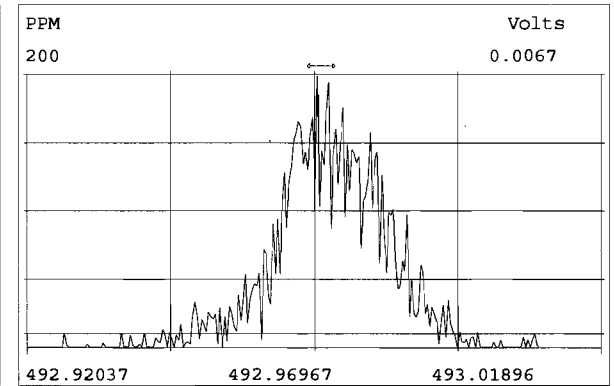
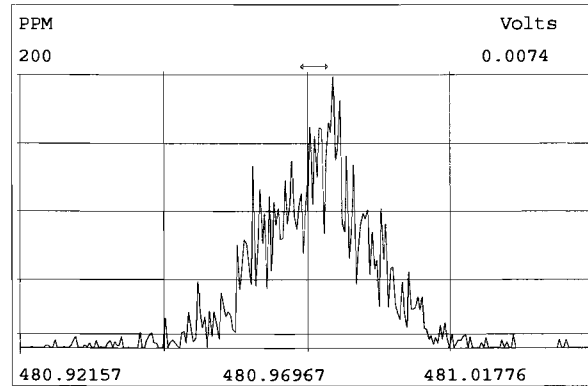
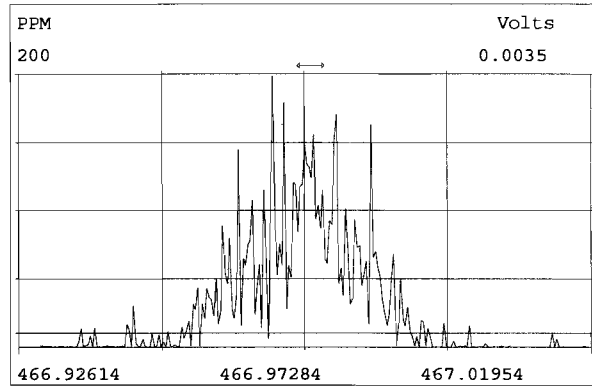
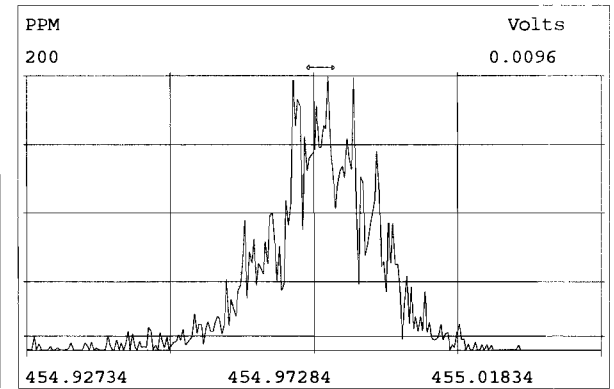
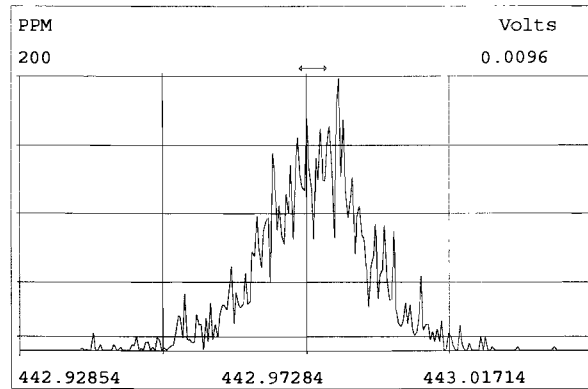
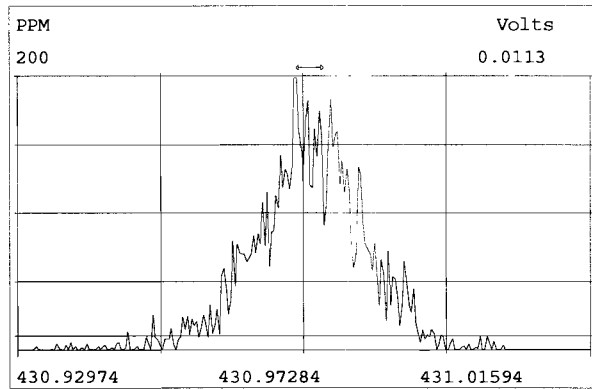


Peak Locate Examination: 6-NOV-2019:11:39 File:191106D1

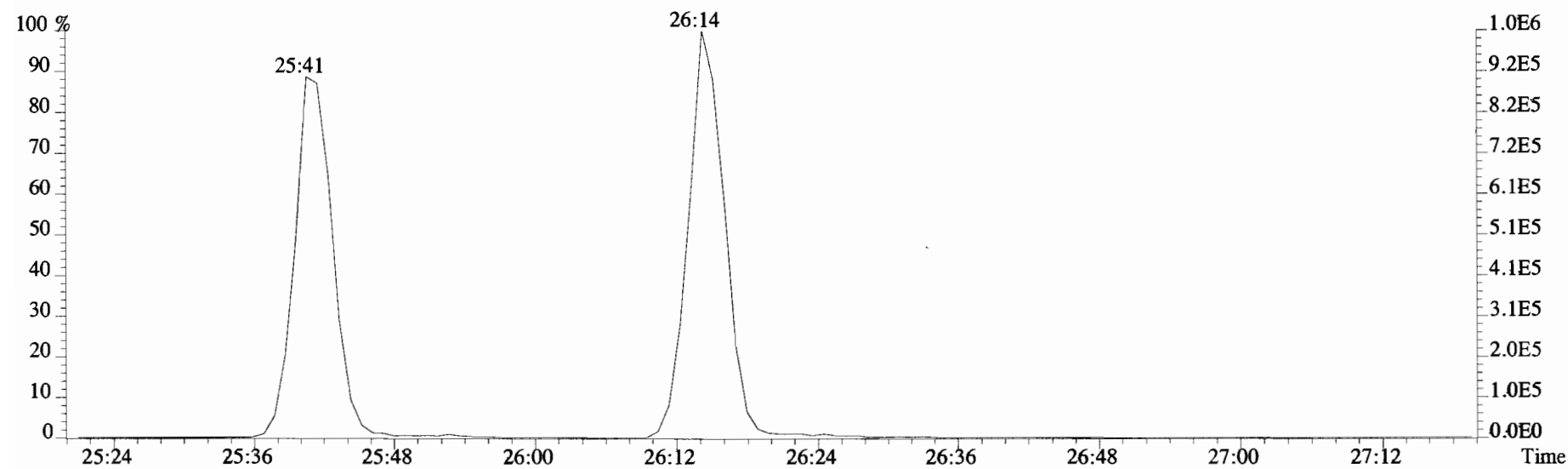
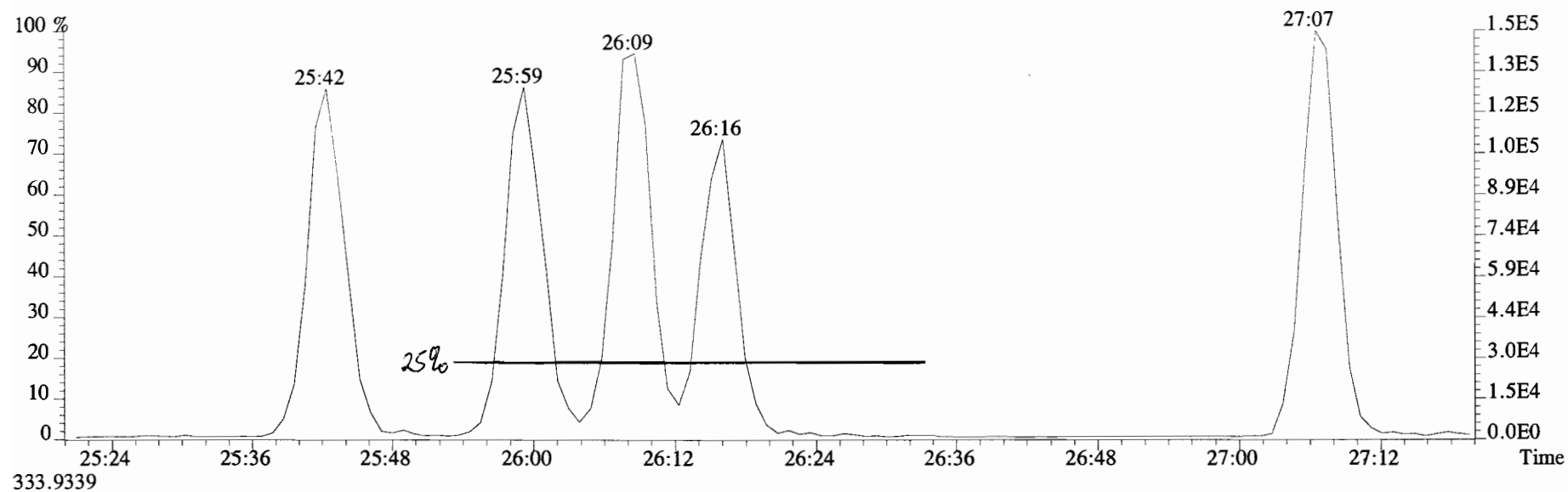
Experiment:OCDD_DB5 Function:3 Reference:PFK



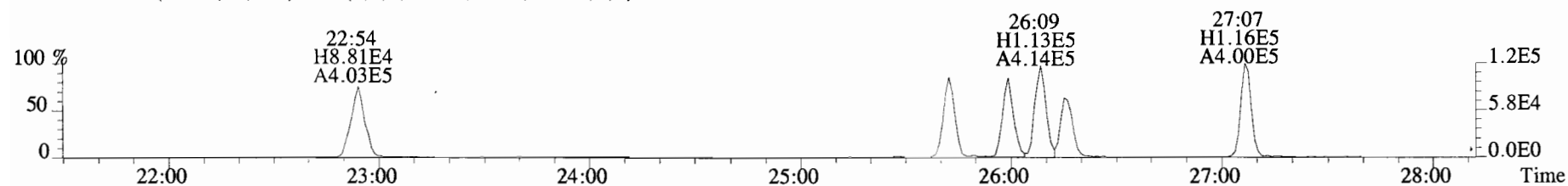




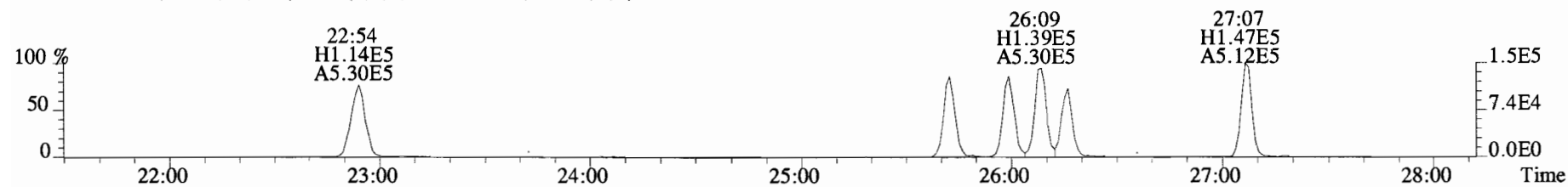
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
321.8936



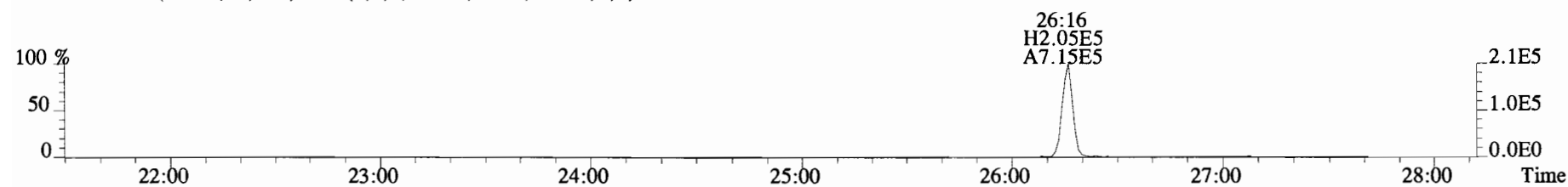
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



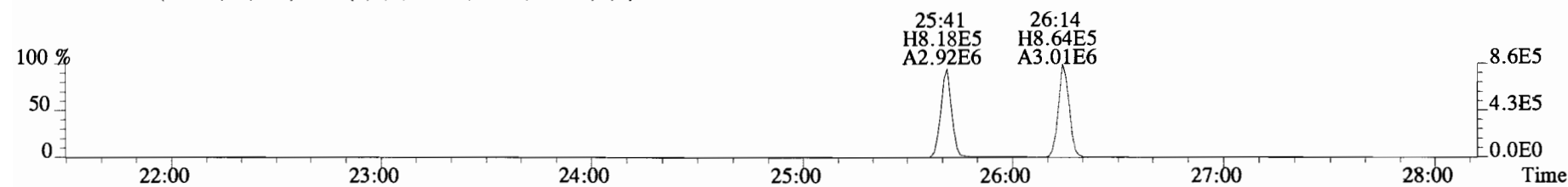
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



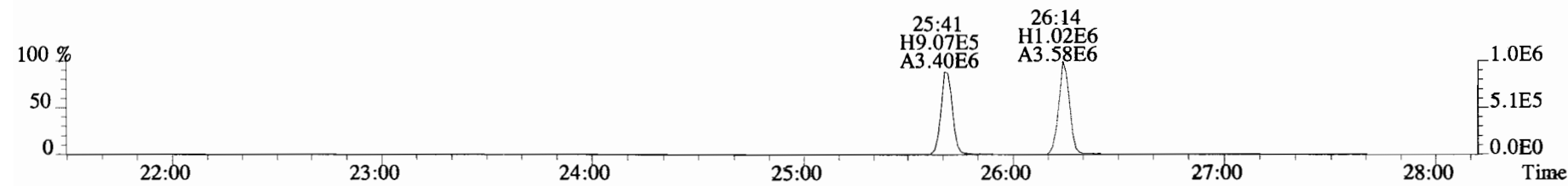
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



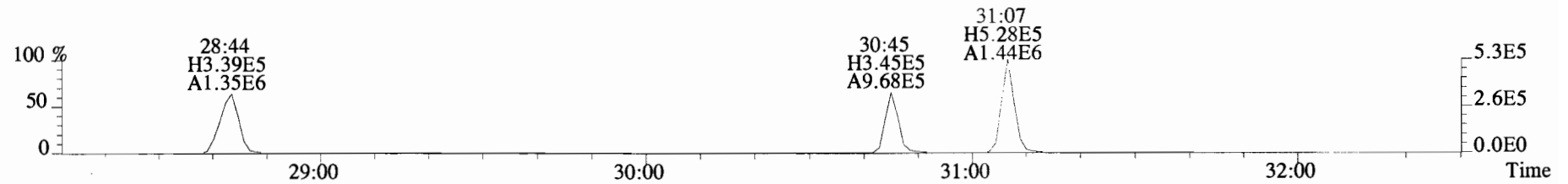
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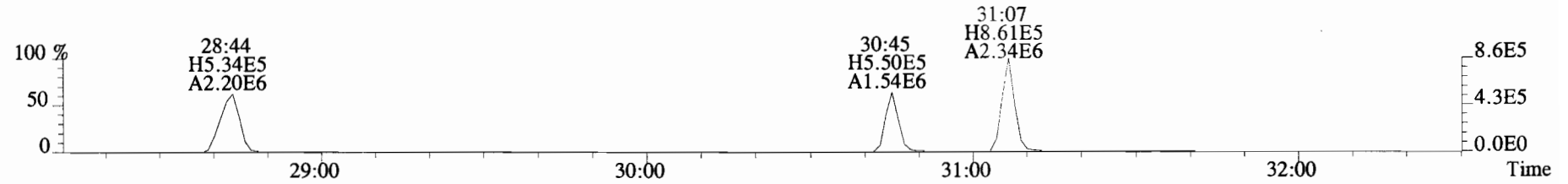
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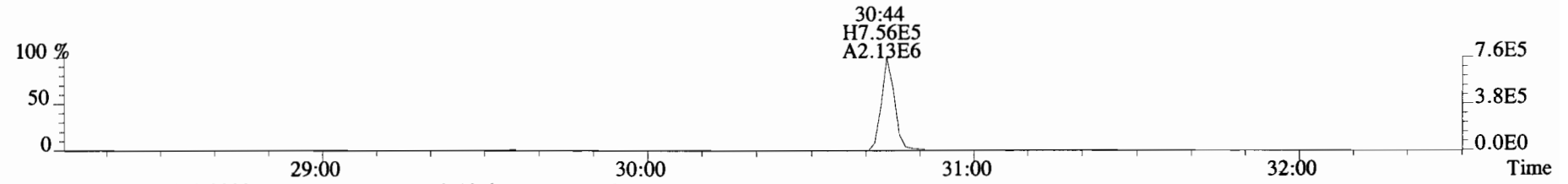
File:191106D1 #1-211 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



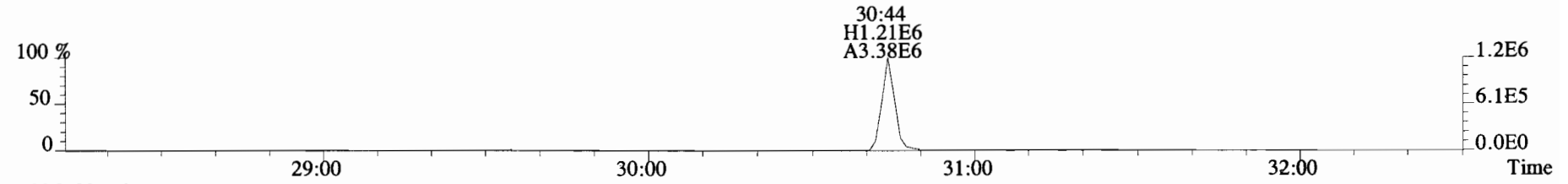
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



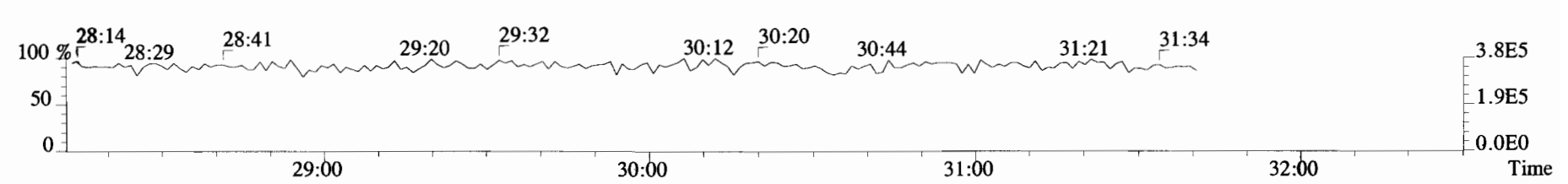
365.8978 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



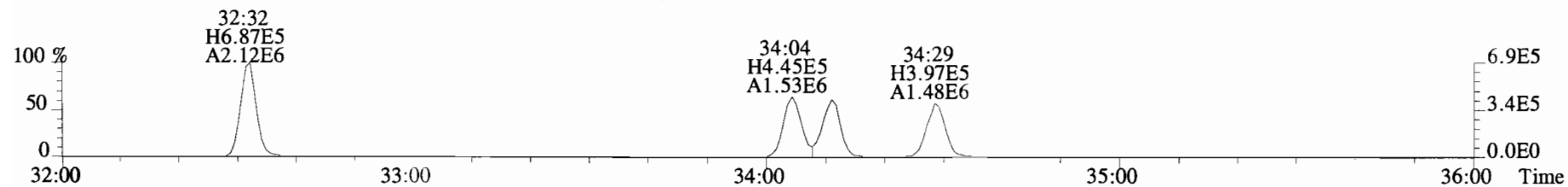
367.8949 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



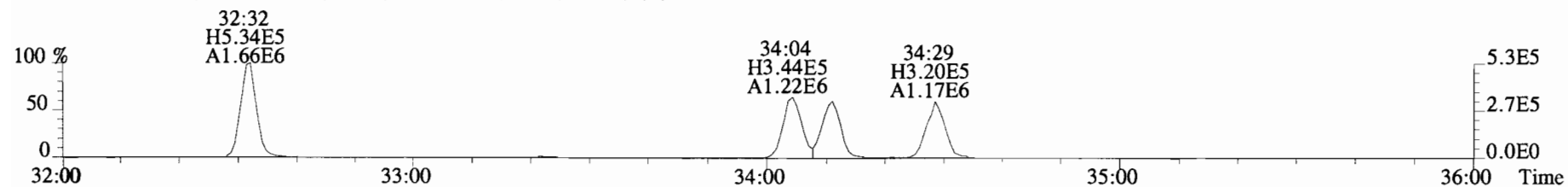
366.9792 F:2



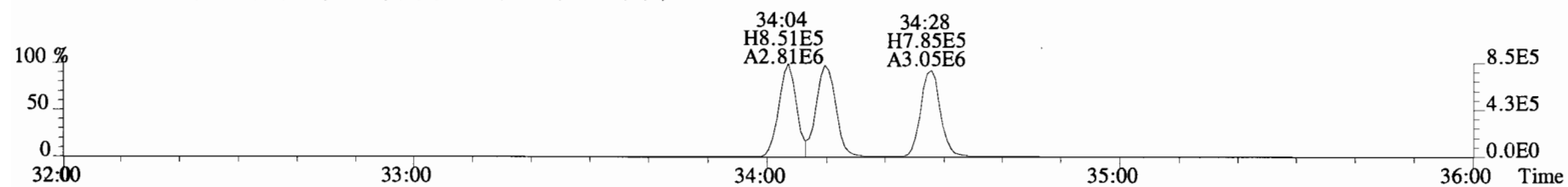
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



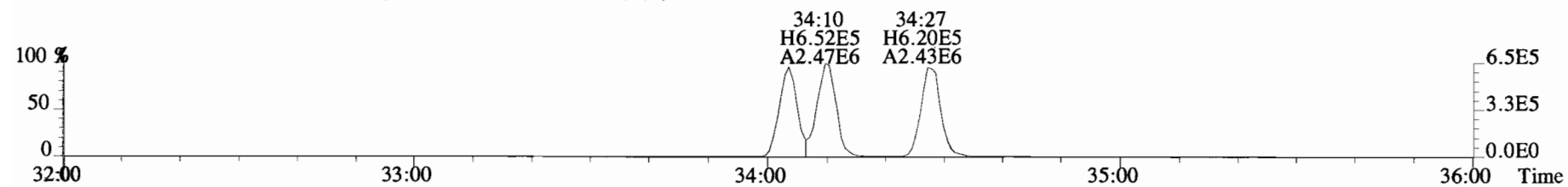
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



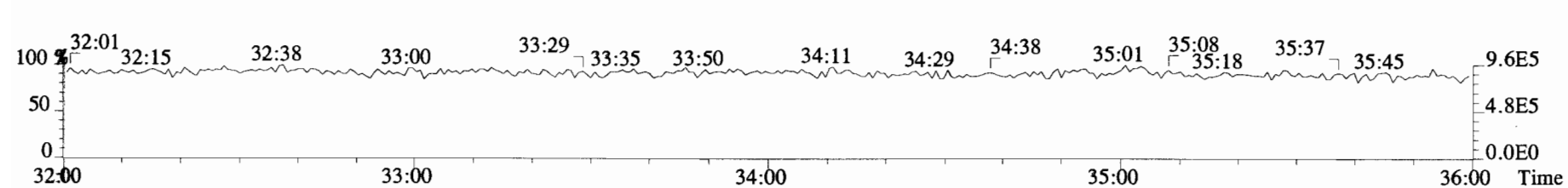
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



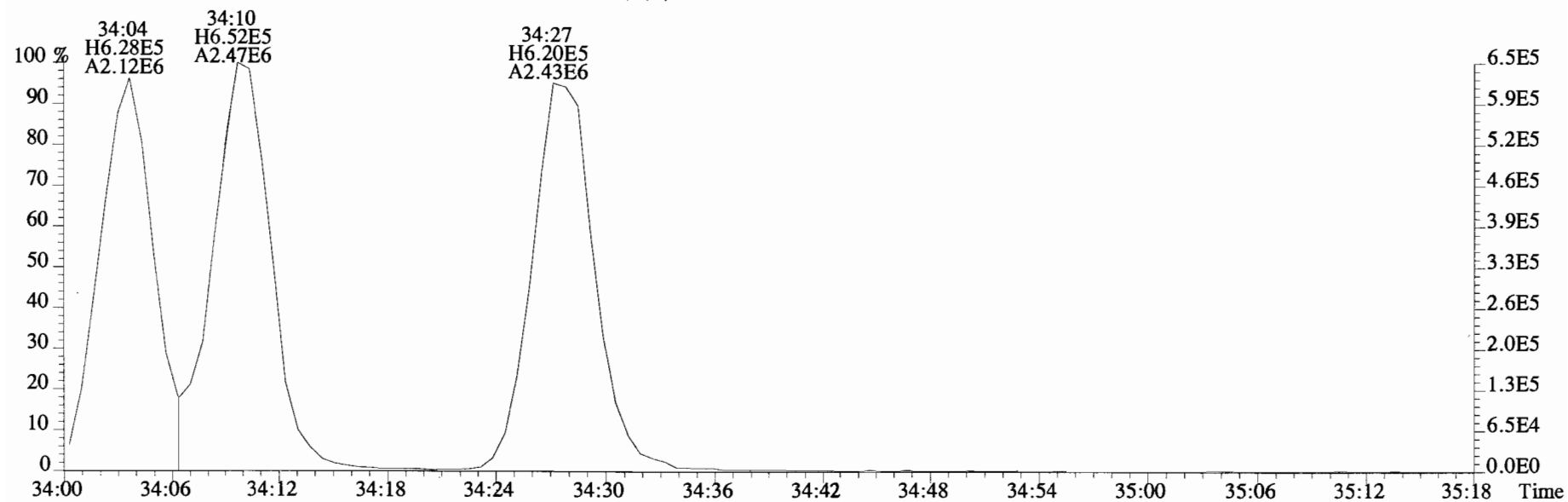
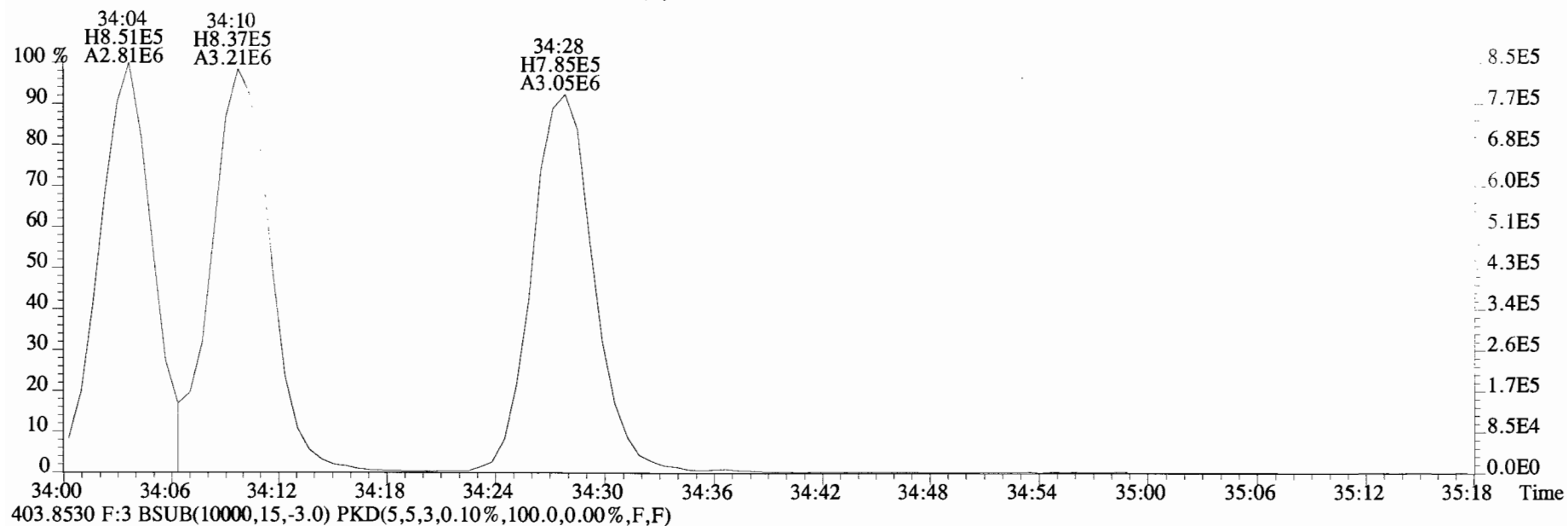
403.8530 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



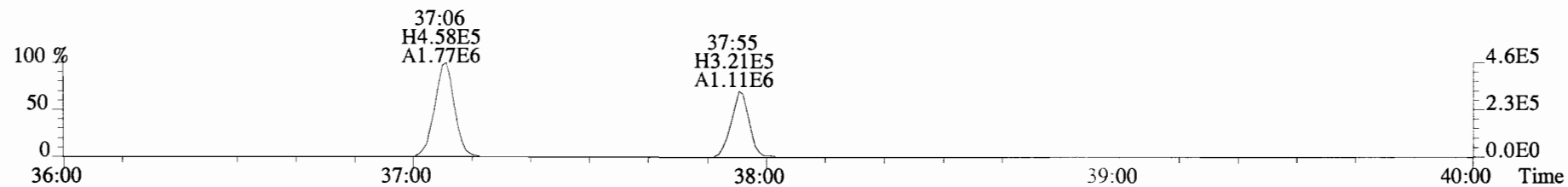
392.9760 F:3



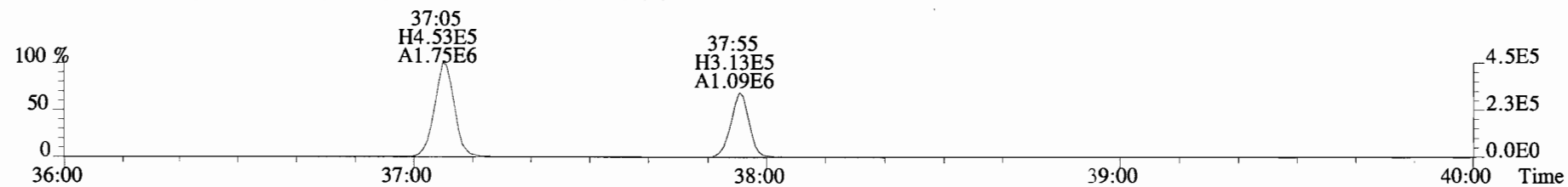
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 F:3 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



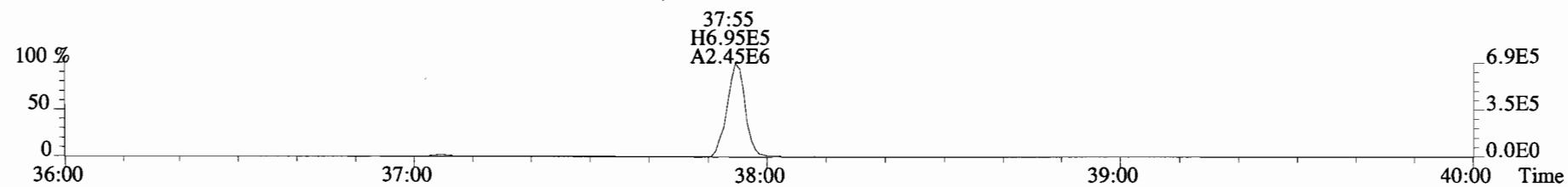
File:191106D1 #1-356 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



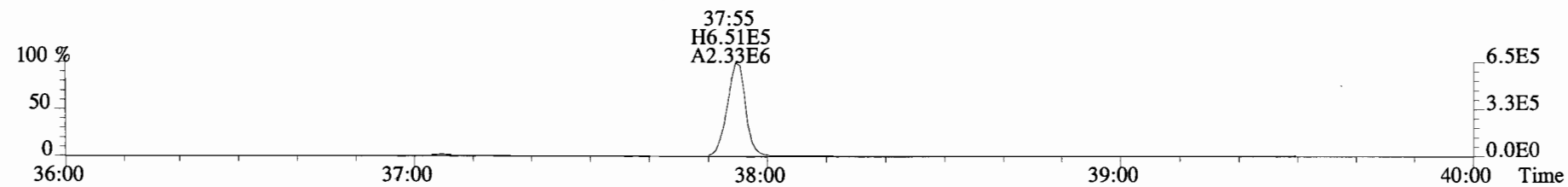
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



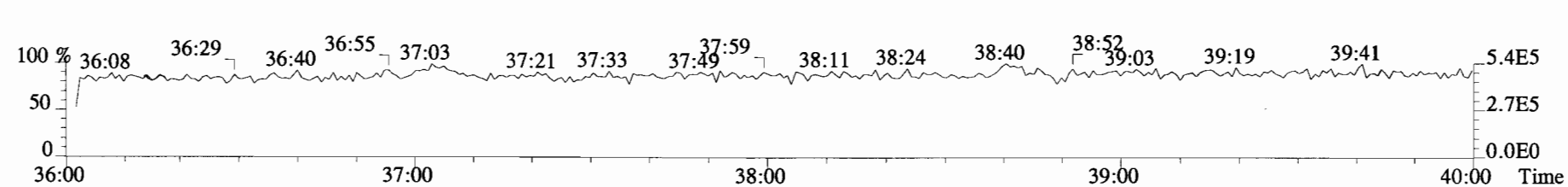
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



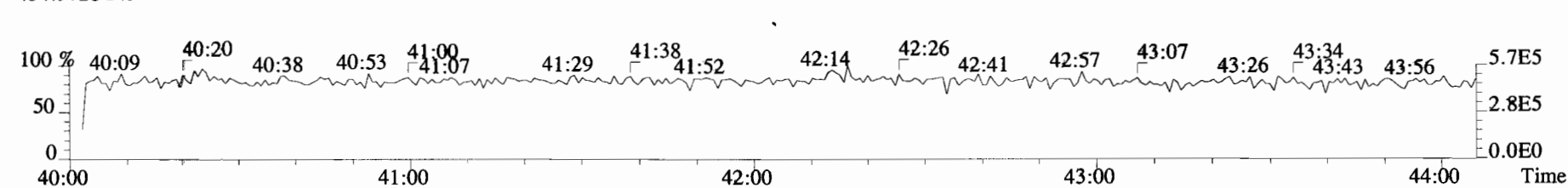
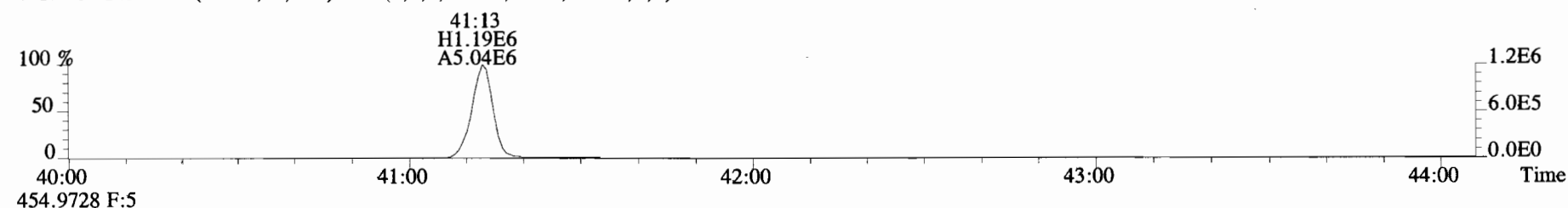
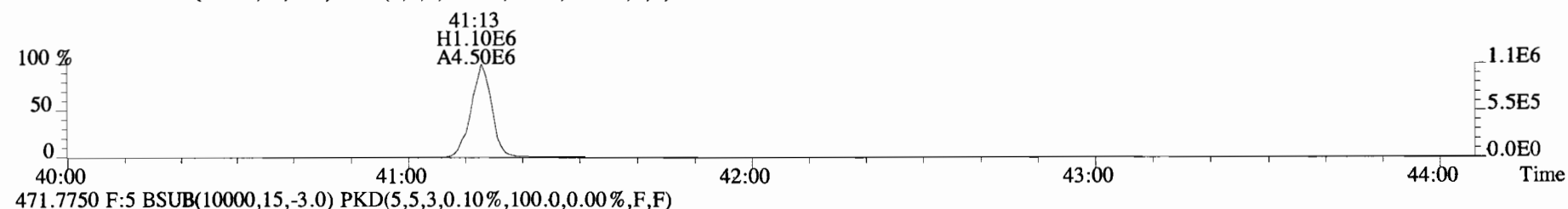
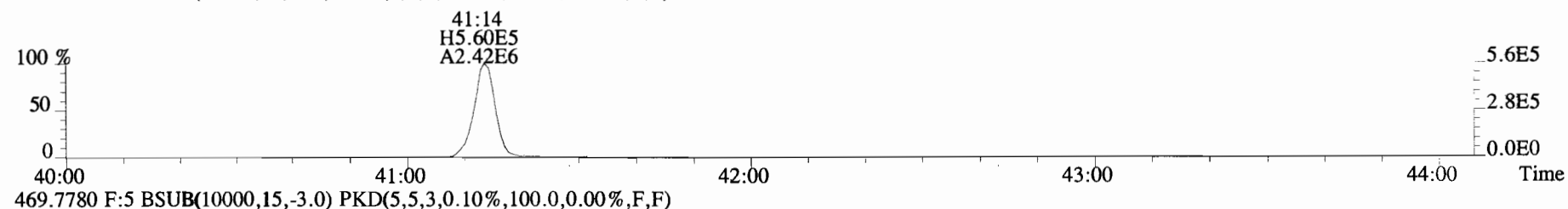
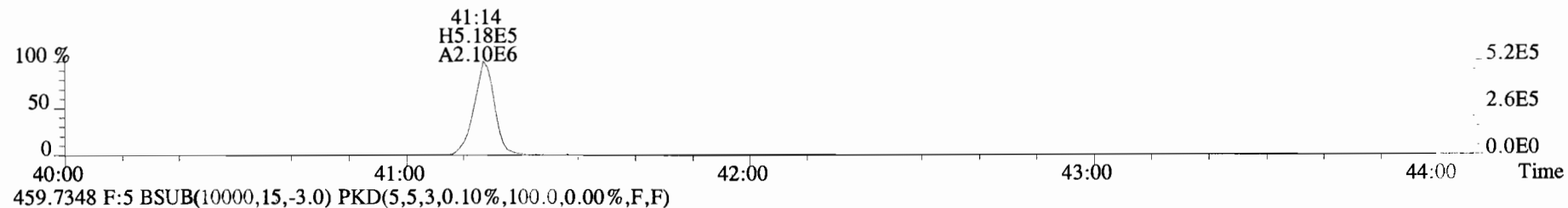
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



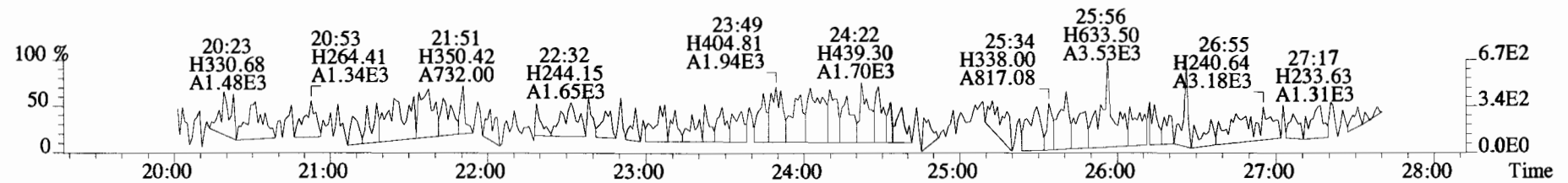
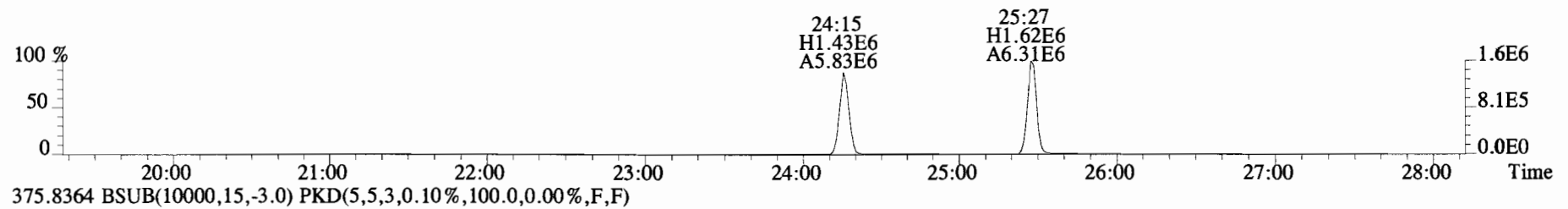
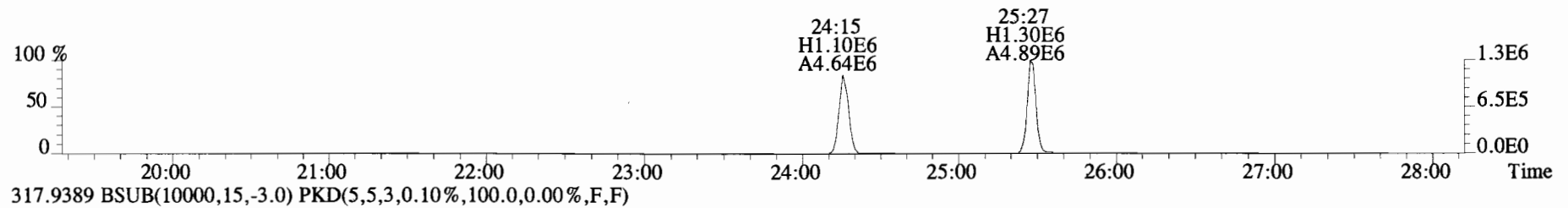
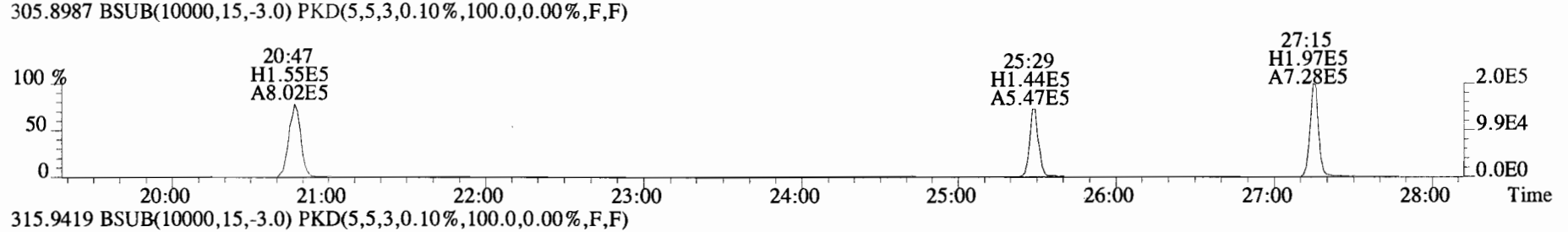
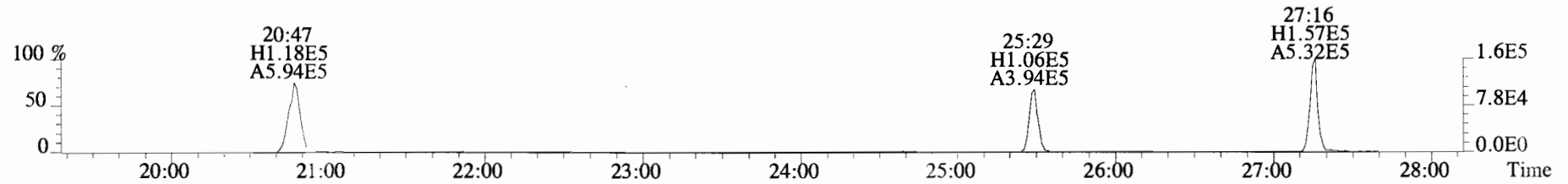
454.9728 F:4



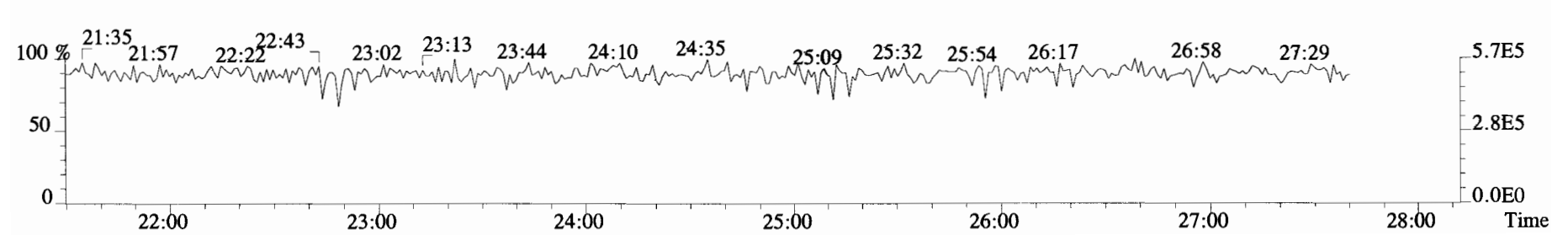
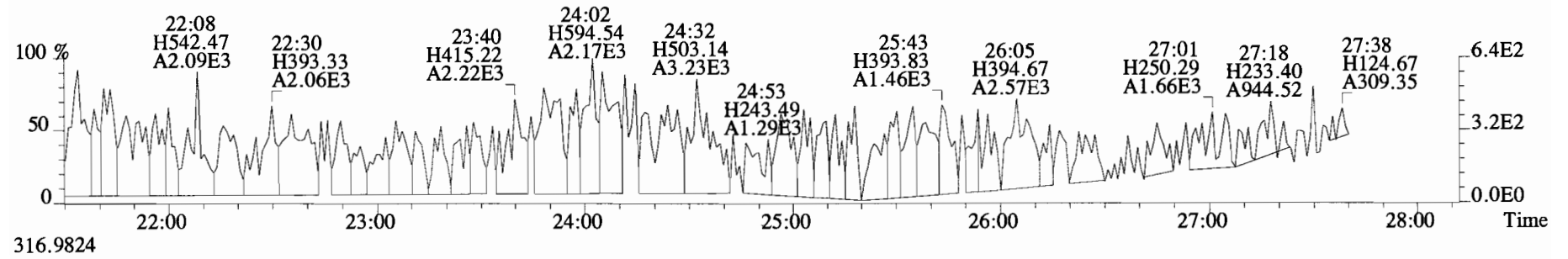
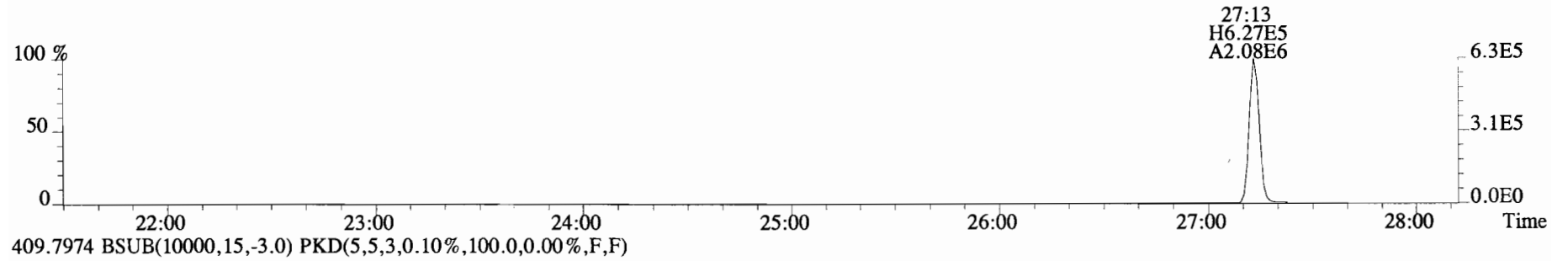
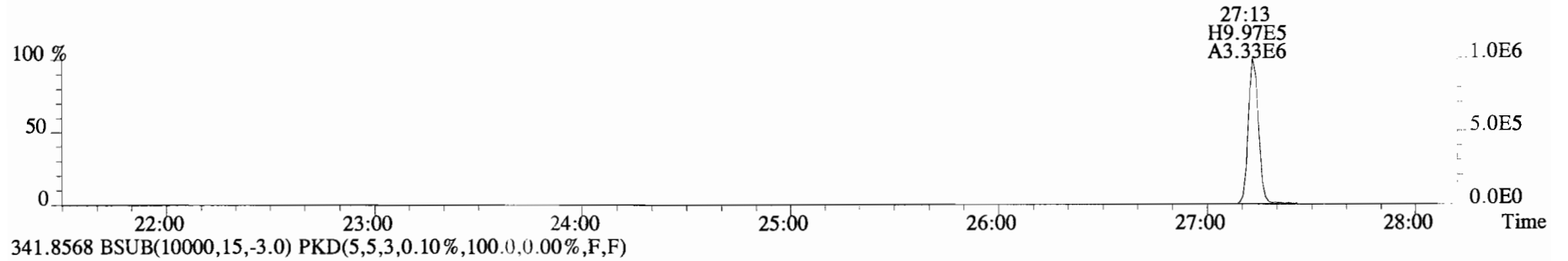
File:191106D1 #1-431 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



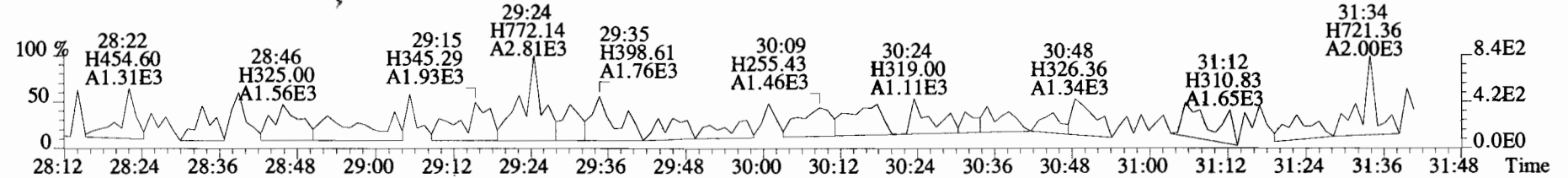
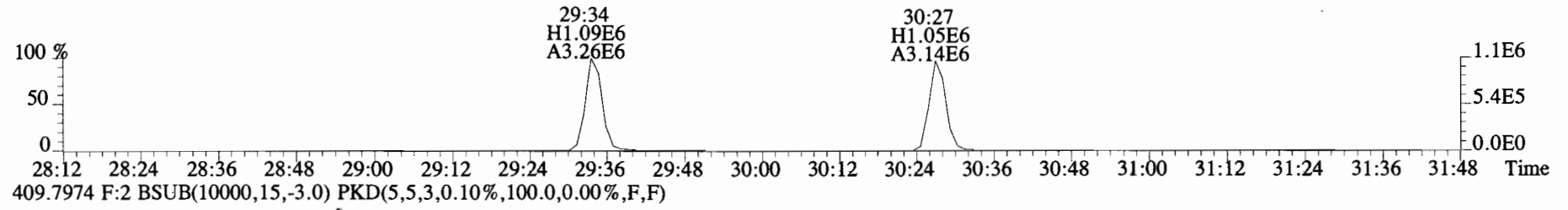
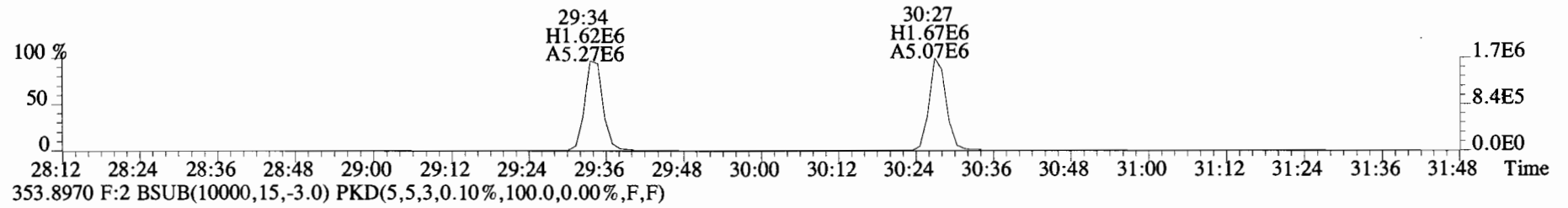
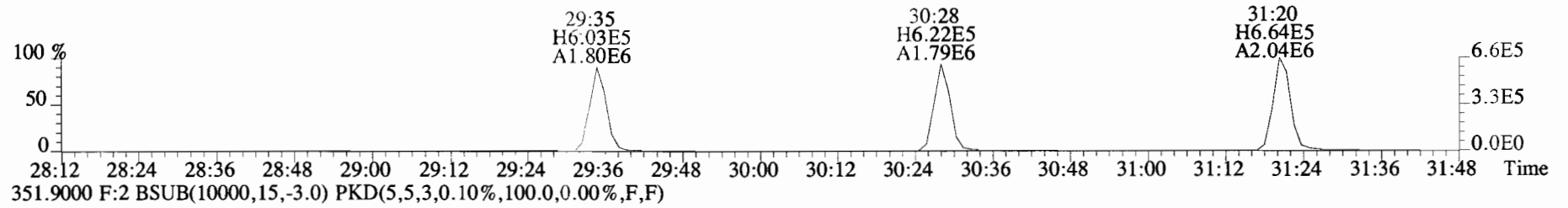
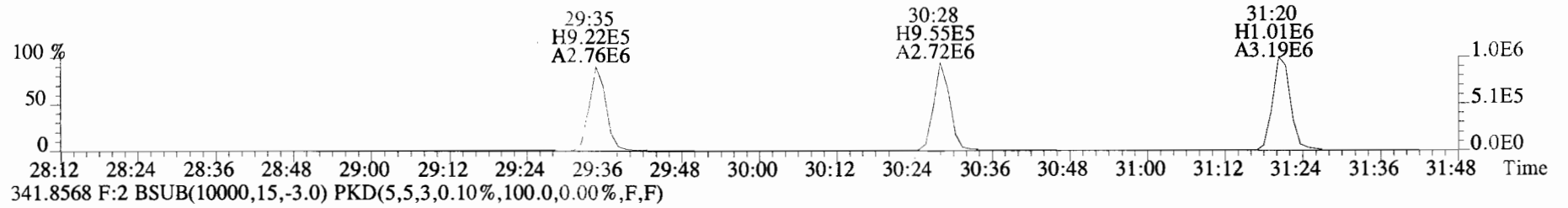
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



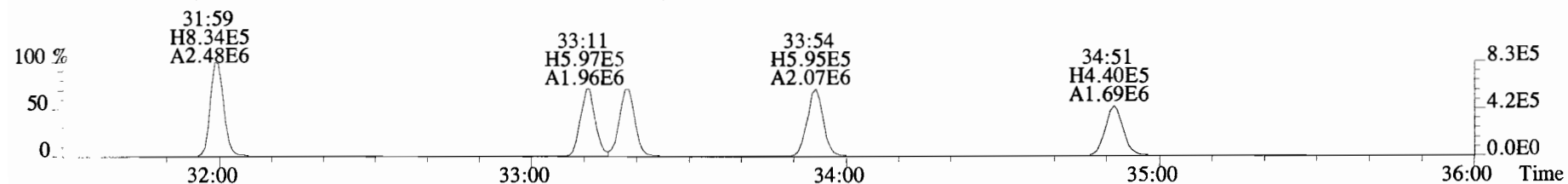
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



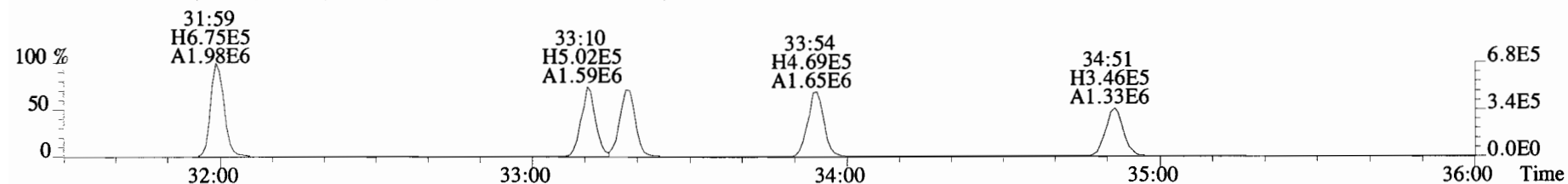
File:191106D1 #1-211 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



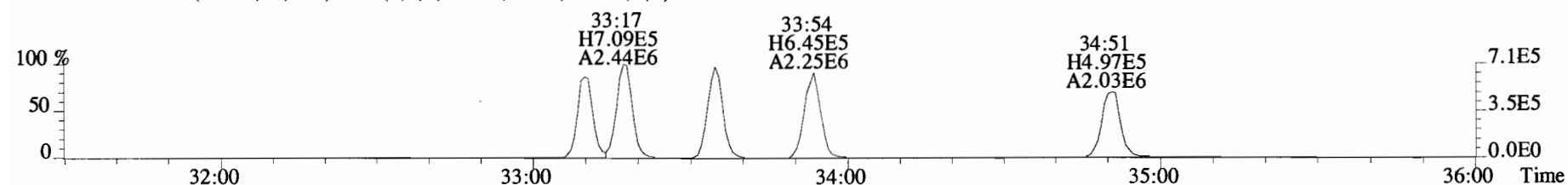
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



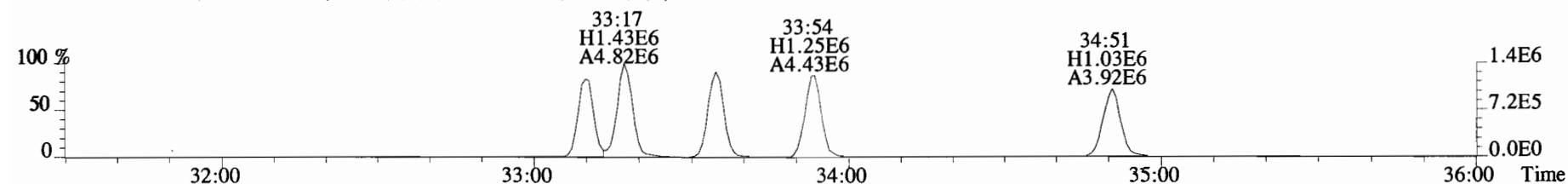
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



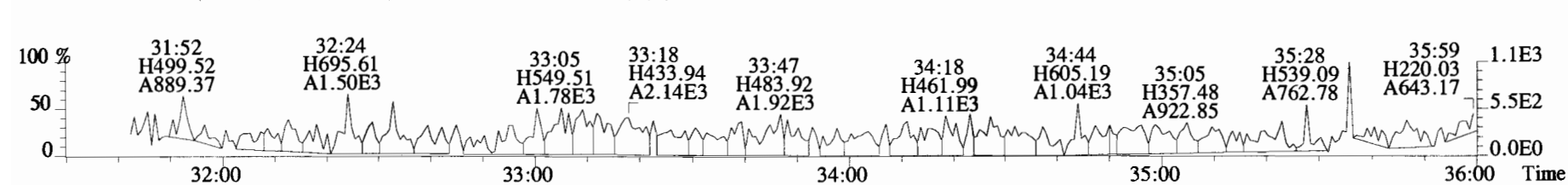
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



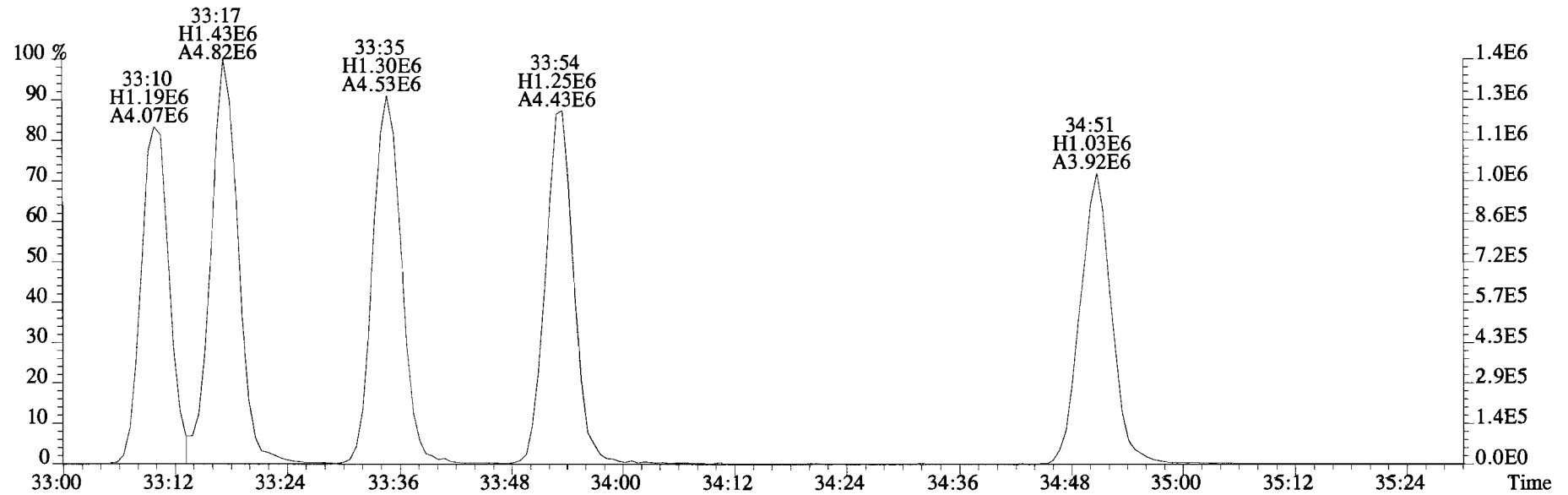
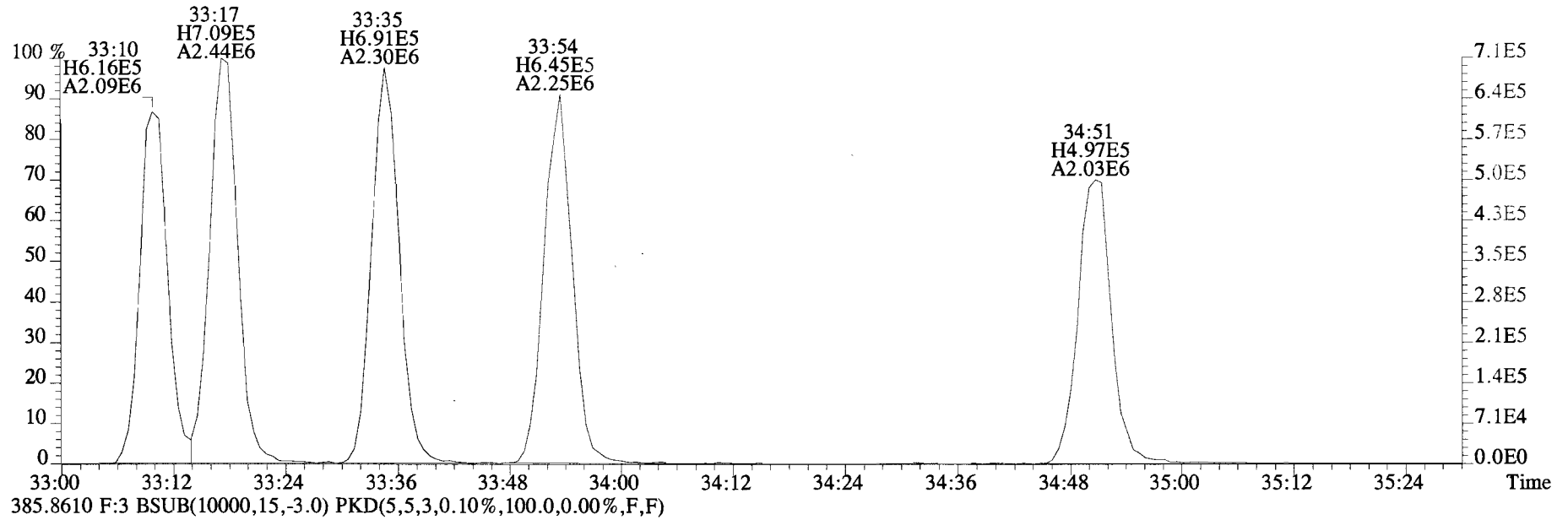
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



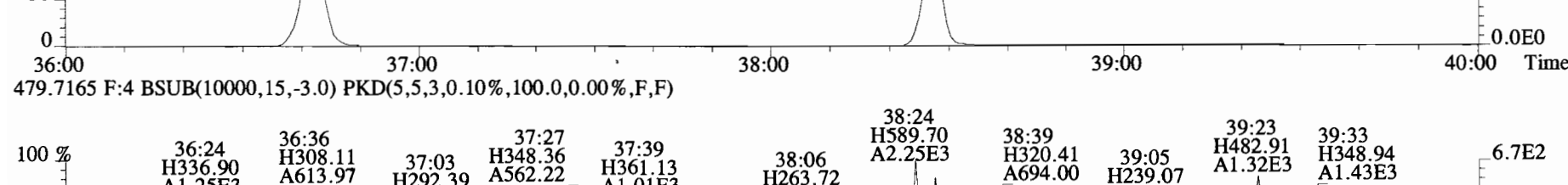
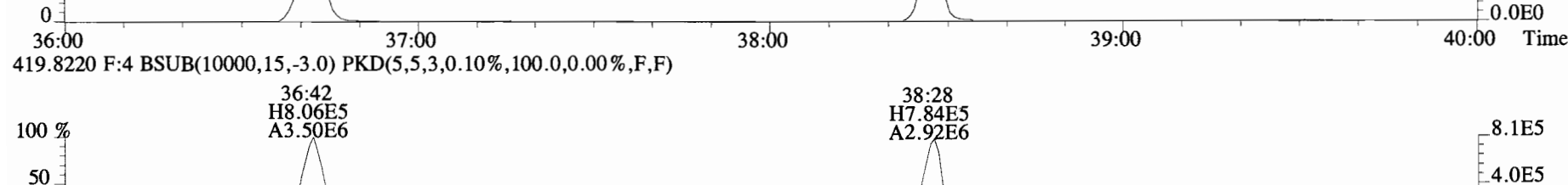
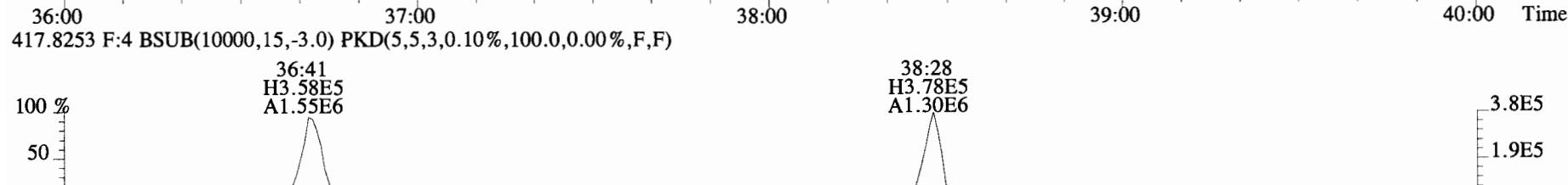
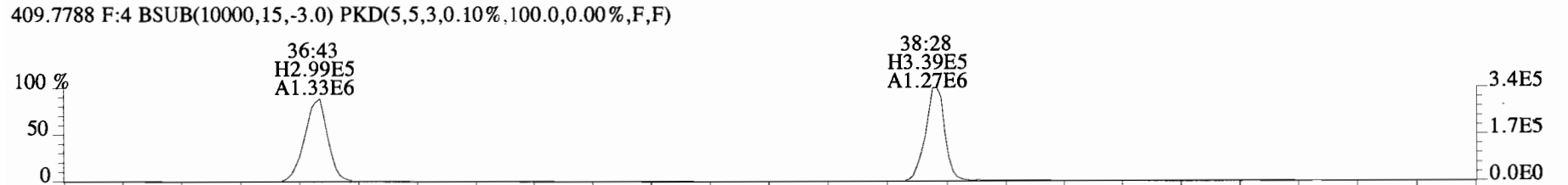
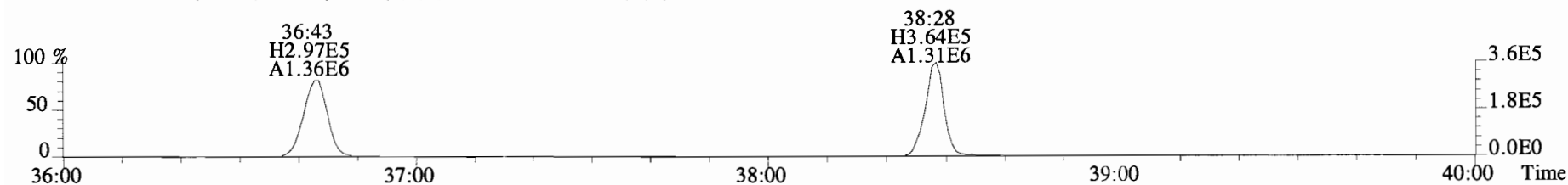
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



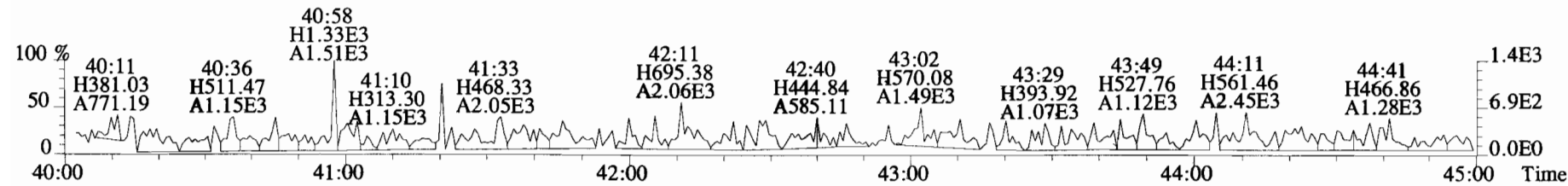
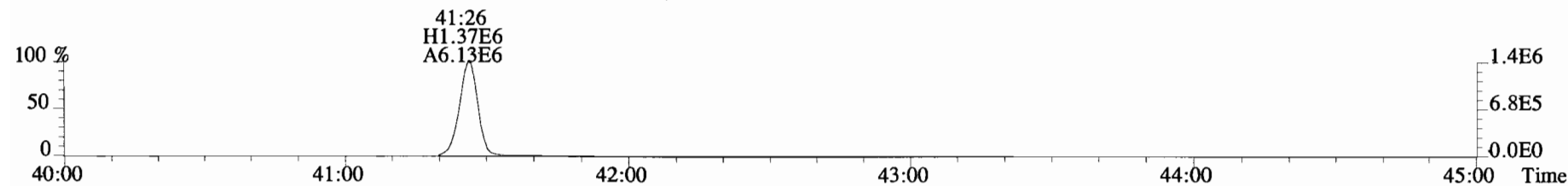
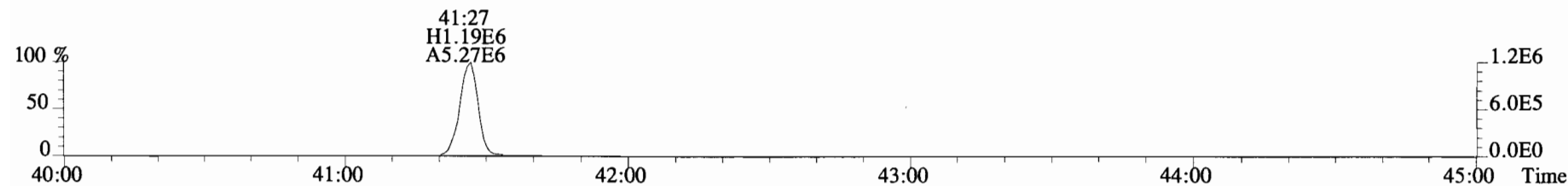
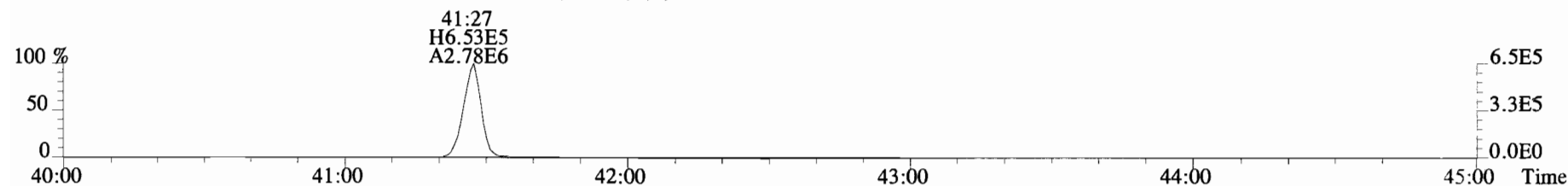
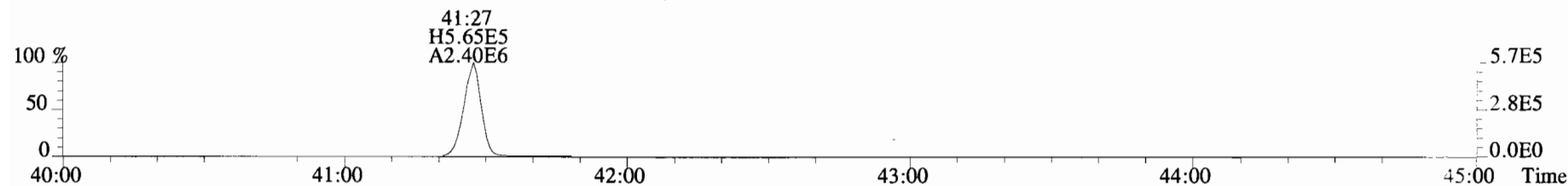
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

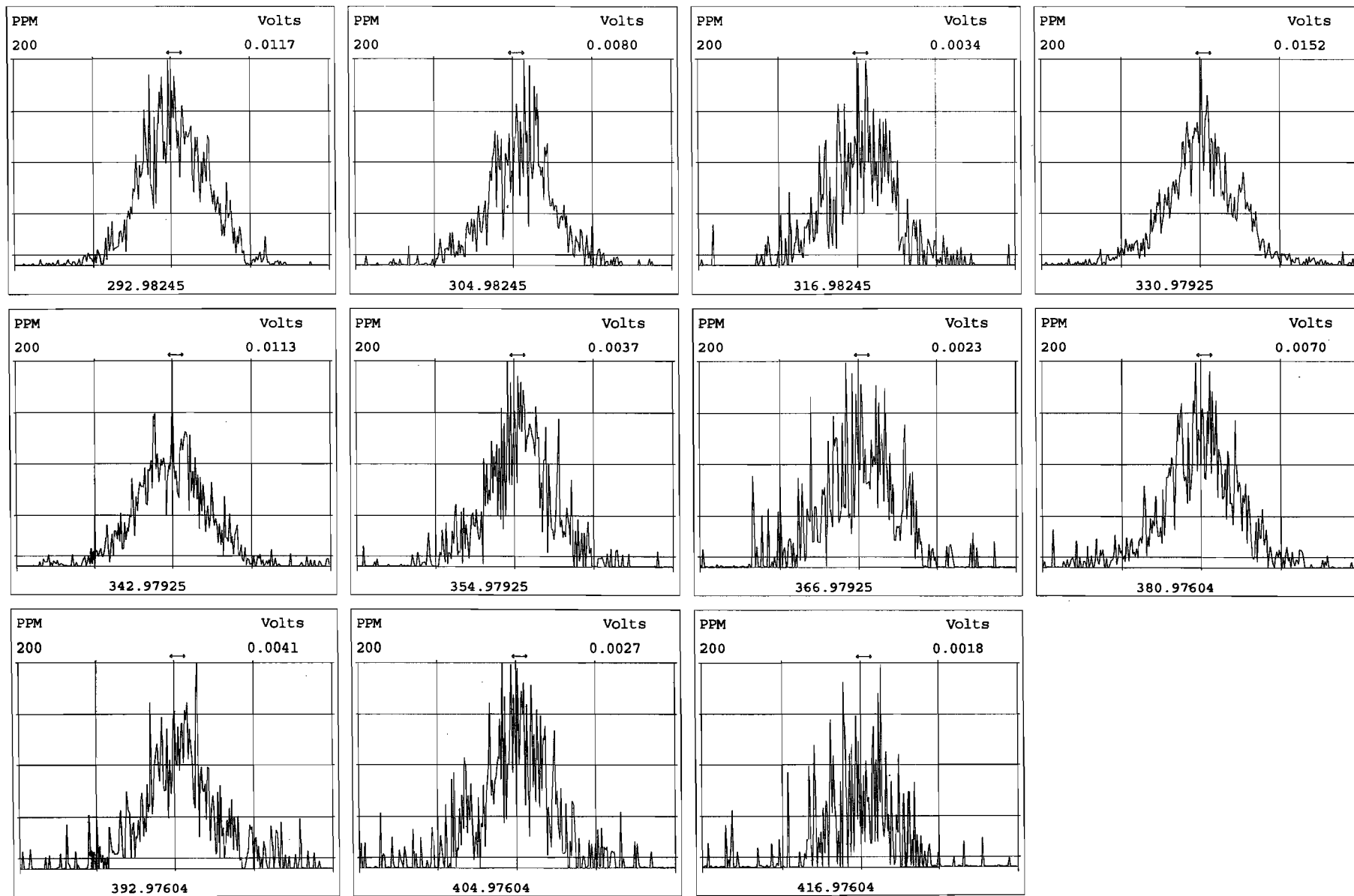


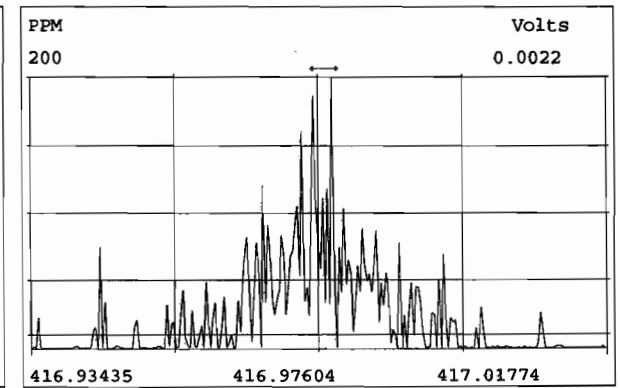
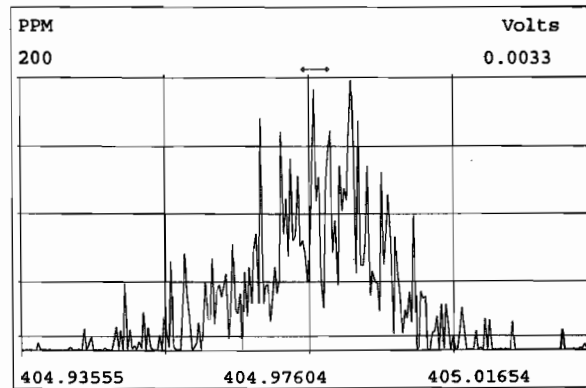
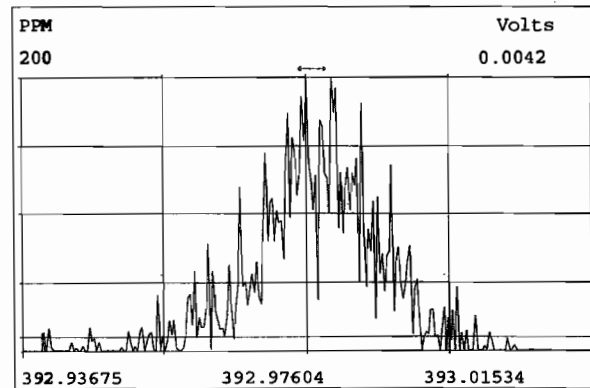
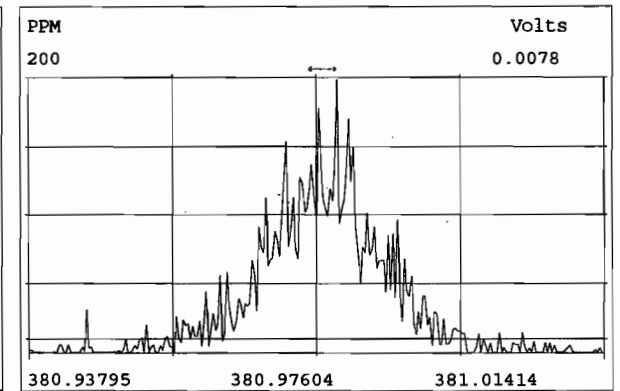
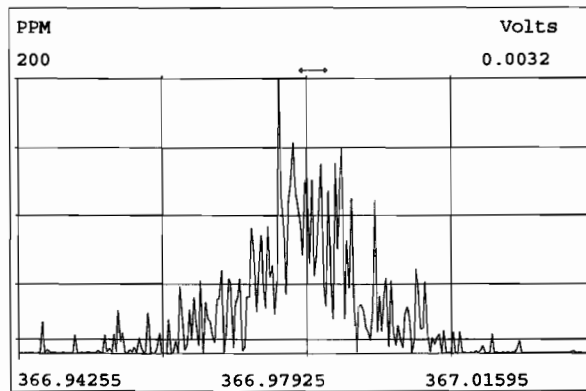
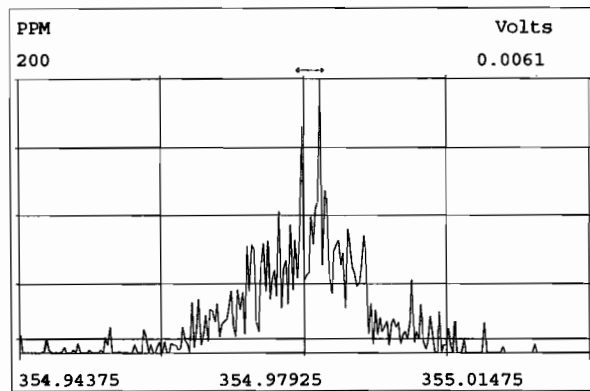
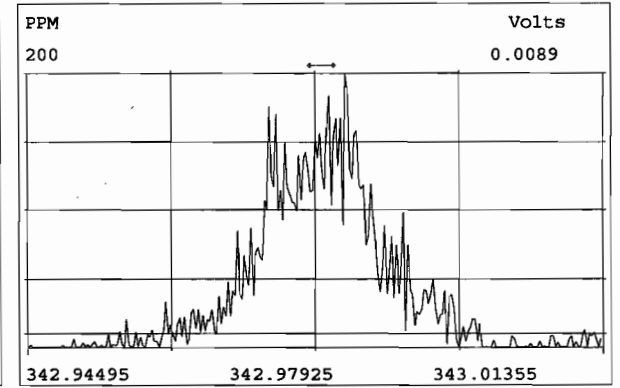
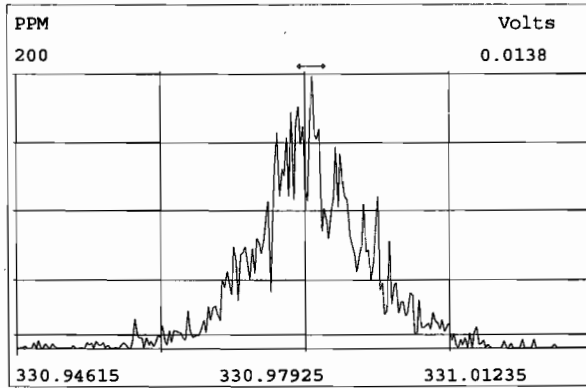
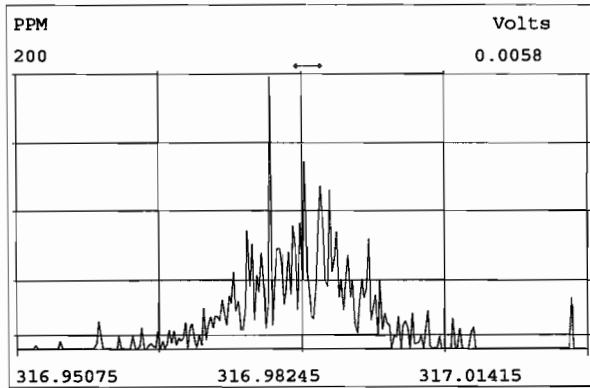
File:191106D1 #1-356 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%.100.0,0.00%,F,F)

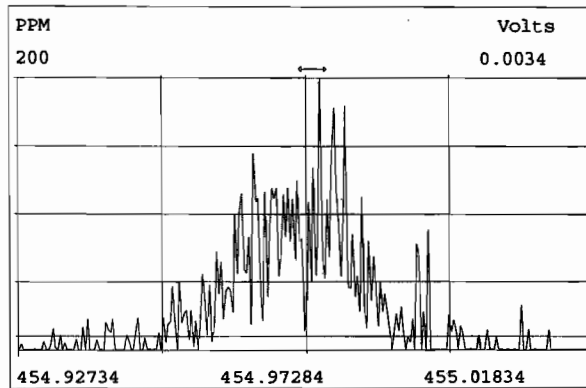
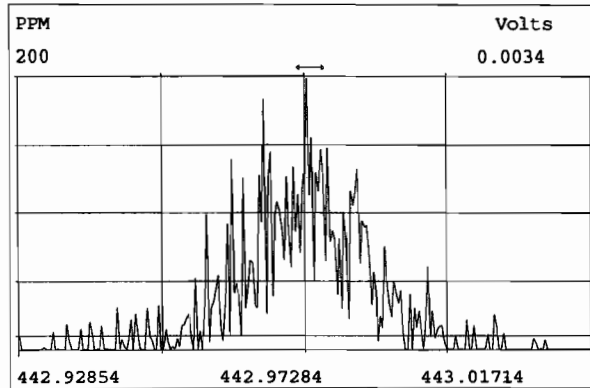
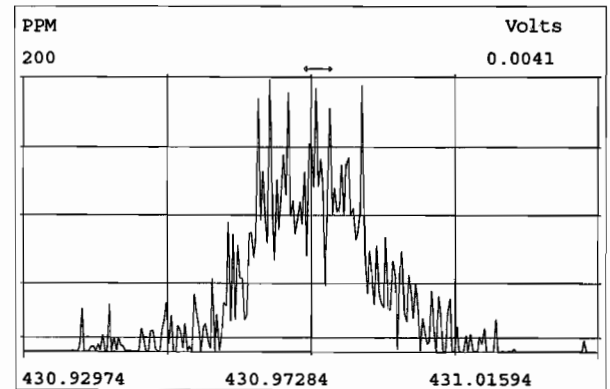
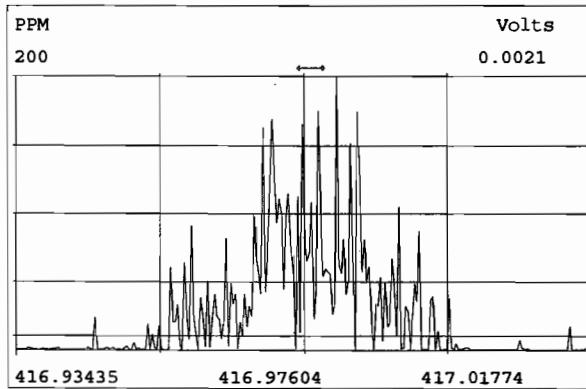
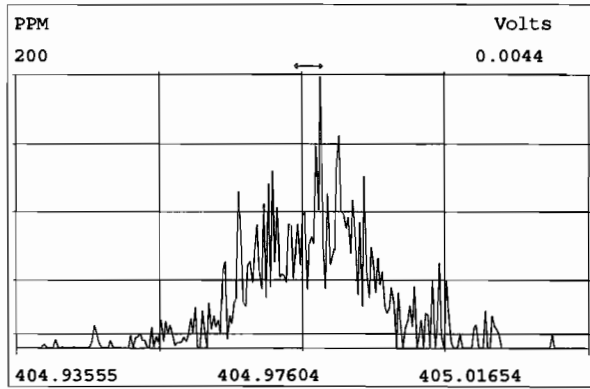
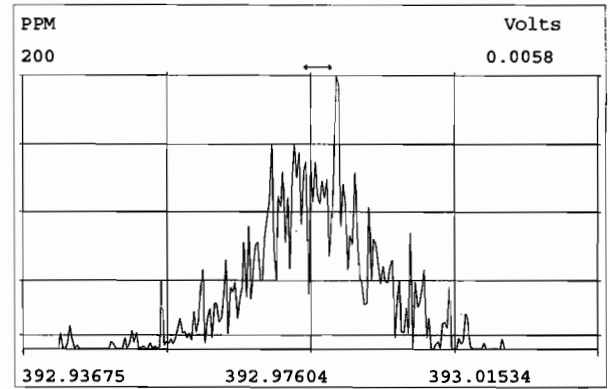
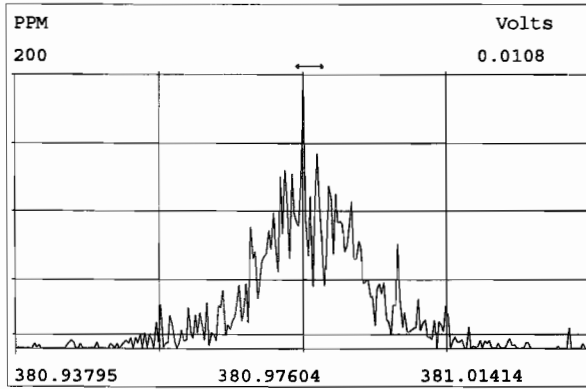
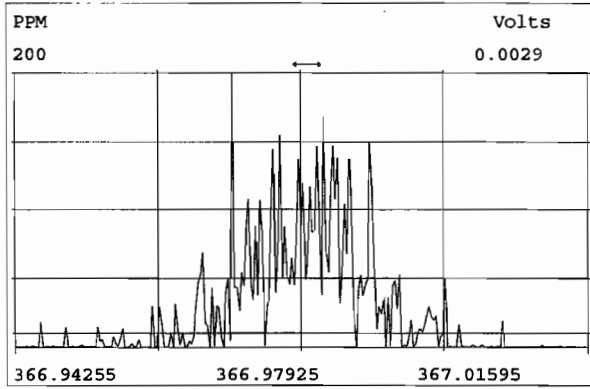


File:191106D1 #1-431 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



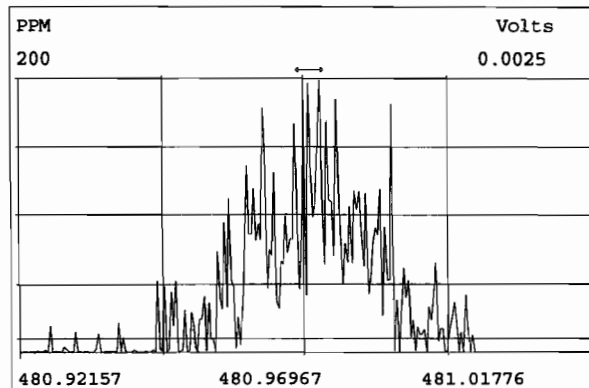
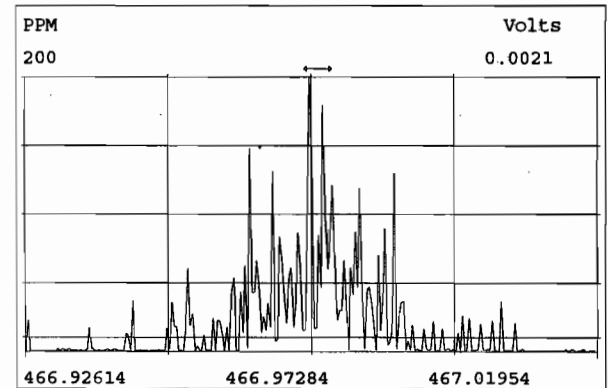
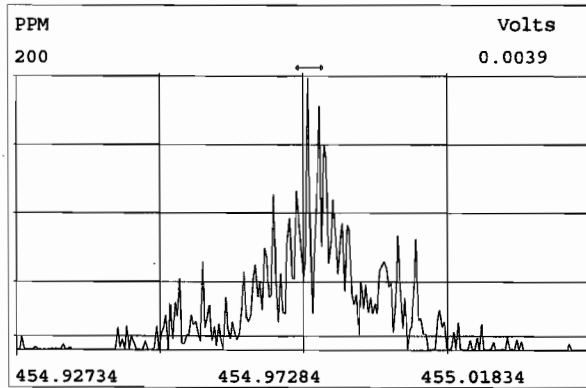
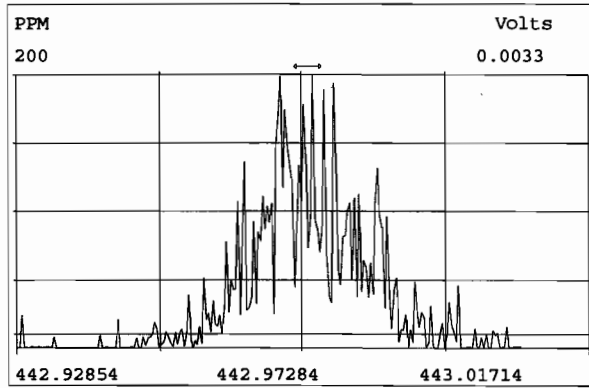
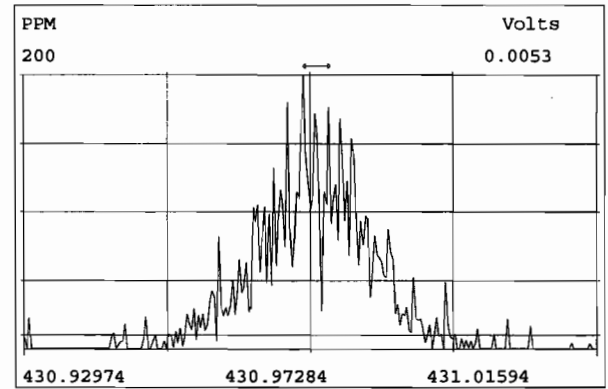
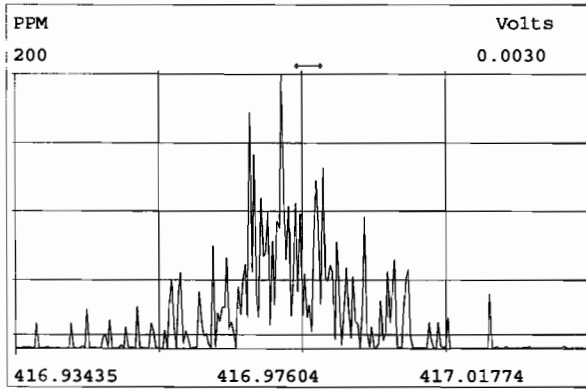
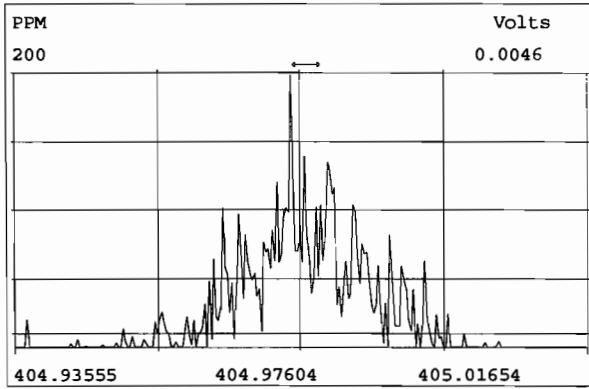






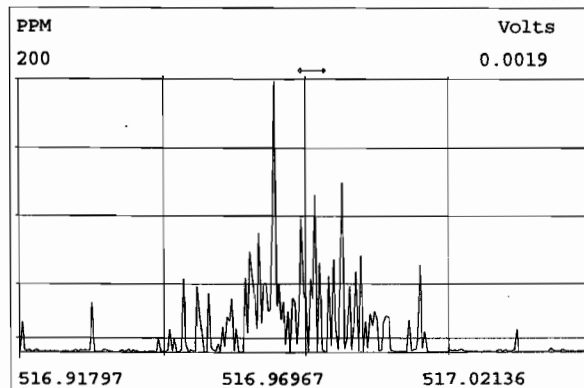
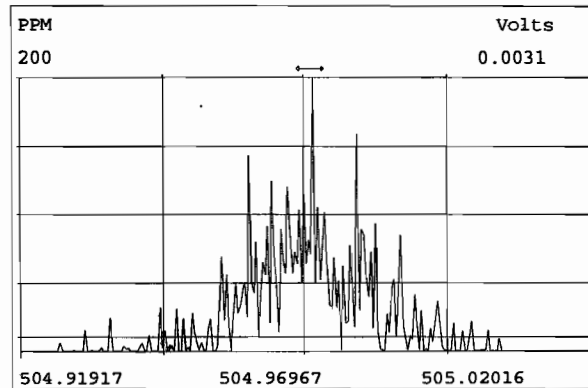
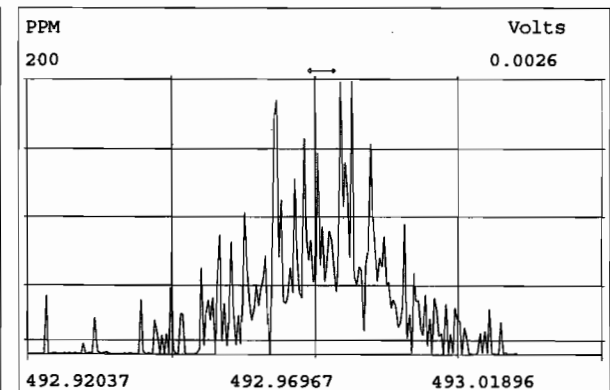
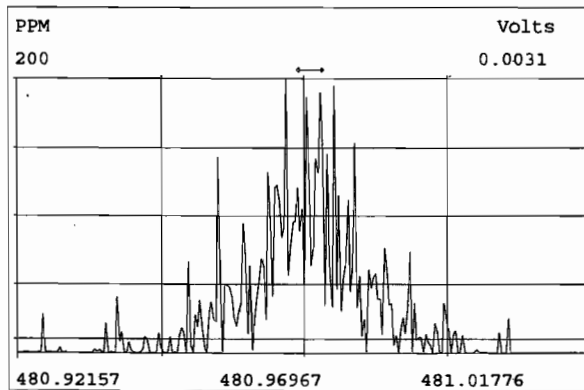
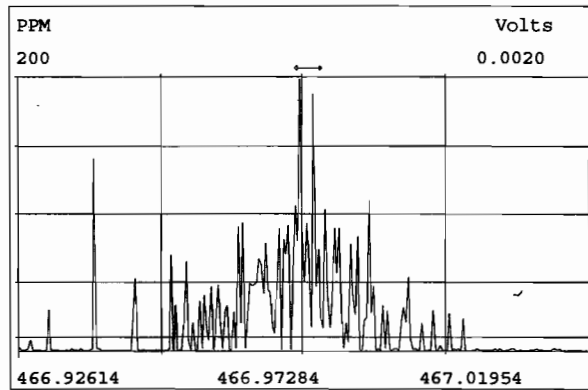
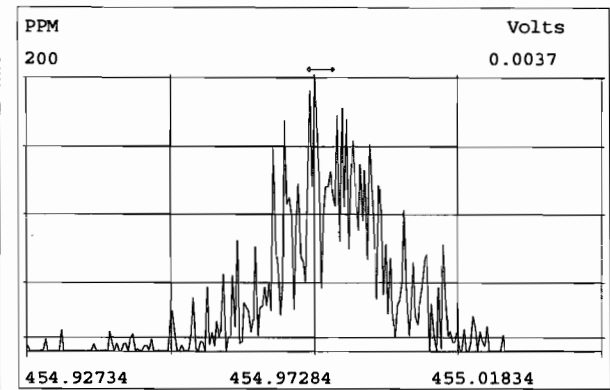
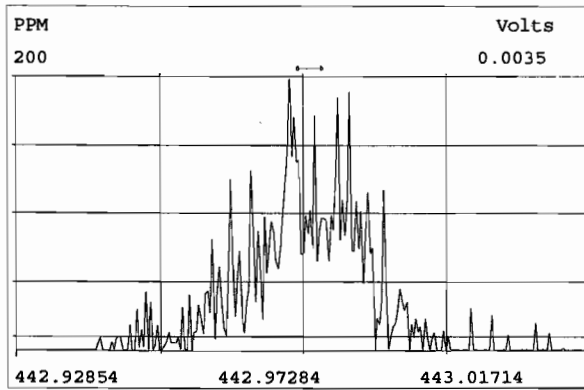
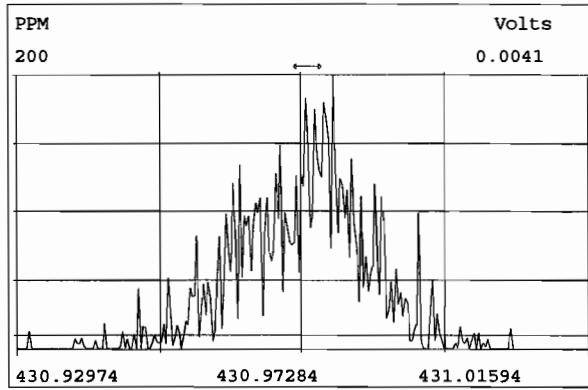
Peak Locate Examination: 6-NOV-2019:23:51 File:RES_CHECK

Experiment:OCDD_DB5 Function:4 Reference:PFK



Peak Locate Examination: 6-NOV-2019:23:52 File:RES_CHECK

Experiment:OCDD_DB5 Function:5 Reference:PFK



HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST19110602-1

Reviewed By: CT 11/07/19
Initials & Date

End Calibration ID: NA

	<u>Beg.</u>	<u>End</u>
Ion abundance within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
Concentrations within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TCDD/TCDF Valleys <25%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
First and last eluters present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Retention Times within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Verification Std. named correctly? (ST-Year-Month-Day-VG ID)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Forms signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Correct ICAL referenced?	<u>DB</u>	<input type="checkbox"/>
<u>Run Log:</u>		
- Correct instrument listed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Samples within 12 hour clock?	<input checked="" type="checkbox"/> (Y)	<input type="checkbox"/> N
- Bottle position verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Mass resolution \geq

5k 6-8K 8K 10K
 1614 1699 429 1613/1668/8280

Intergrated peaks display correctly?

GC Break <20%

8280 CS1 End Standard:

- Ratios within limits, S/N <2.5:1, CS1 within 12 hours

Comments:

SIDS CRASHED ON END RES CHECK. REBOOTED & PRINTED RES CHECK
 DB 11/7/19

Vista Analytical Laboratory - Injection Log Run file: 191106D2 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191106D2	1	ST191106D2-1	DB	6-NOV-19	23:53:31	ST191106D2-1	NA
191106D2	2	SOLVENT BLANK	DB	7-NOV-19	00:41:15	ST191106D2-1	NA
191106D2	3	1903431-03	DB	7-NOV-19	01:29:08	ST191106D2-1	NA
191106D2	4	1903431-04	DB	7-NOV-19	02:16:54	ST191106D2-1	NA
191106D2	5	1903431-05	DB	7-NOV-19	03:04:50	ST191106D2-1	NA
191106D2	6	1903431-06	DB	7-NOV-19	03:52:37	ST191106D2-1	NA
191106D2	7	1903431-07	DB	7-NOV-19	04:40:24	ST191106D2-1	NA
191106D2	8	1903431-08	DB	7-NOV-19	05:28:21	ST191106D2-1	NA
191106D2	9	B9J0144-DUP1	DB	7-NOV-19	06:16:18	ST191106D2-1	NA
191106D2	10	1903431-09	DB	7-NOV-19	07:04:14	ST191106D2-1	NA

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST191106D2-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191106D2 S#1 Analysis Date: 6-NOV-19 Time: 23:53:31

NATIVE ANALYTES	M/Z'S	ION	QC	Pass	CONC.	CONC.
	FORMING	ABUND.	LIMITS		FOUND	RANGE (3)
	RATIO (1)	RATIO	(2)		FOUND	(ng/mL)
2,3,7,8-TCDD	M/M+2	0.83	0.65-0.89	y	10.6	7.8 - 12.9
1,2,3,7,8-PeCDD	M/M+2	0.60	0.54-0.72	y	51.5	8.2 - 12.3 (4) 39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	y	51.0	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	y	51.4	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	y	52.4	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	y	49.5	43.0 - 58.0
OCDD	M+2/M+4	0.91	0.76-1.02	y	103	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	y	9.87	8.4 - 12.0 8.6 - 11.6 (4)
1,2,3,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	y	53.1	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	y	51.8	41.0 - 61.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	48.2	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	y	47.9	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	y	49.5	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	y	47.9	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	y	48.0	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88-1.20	y	49.3	43.0 - 58.0
OCDF	M+2/M+4	0.90	0.76-1.02	y	96.4	63.0 - 159.0

(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) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DB

Date: 11/7/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191106D2 S#1 Analysis Date: 6-NOV-19 Time: 23:53:31

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC. FOUND	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	y	103	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	101	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	y	104	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	y	89.1	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	y	95.6	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88-1.20	y	103	72.0 - 138.0
13C-OCDD	M/M+2	0.93	0.76-1.02	y	220	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.80	0.65-0.89	y	102	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.63	1.32-1.78	y	112	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	102	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	y	114	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	99.9	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	101	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	y	106	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.42	0.37-0.51	y	96.3	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.41	0.37-0.51	y	104	77.0 - 129.0
13C-OCDF	M+2/M+4	0.87	0.76-1.02	y	233	96.0 - 415.0
CLEANUP STANDARD (3)						
37Cl-2,3,7,8-TCDD					9.53	7.9 - 12.7

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

(2) Ion Abundance Ratio Control Limits as specified

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

Analyst: DB

Date: 11/7/19

FORM 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191106D2 S#1 Analysis Date: 6-NOV-19 Time: 23:53:31

ZB-5MS IS Data Filename: 191106D2 S#1 Analysis Date: 6-NOV-19 Time: 23:53:31

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:56	1,3,6,8-TCDF (F)	20:49
1,2,8,9-TCDD (L)	27:08	1,2,8,9-TCDF (L)	27:16
1,2,4,7,9-PeCDD (F)	28:44	1,3,4,6,8-PeCDF (F)	27:14
1,2,3,8,9-PeCDD (L)	31:07	1,2,3,8,9-PeCDF (L)	31:21
1,2,4,6,7,9-HxCDD (F)	32:32	1,2,3,4,6,8-HxCDF (F)	32:00
1,2,3,7,8,9-HxCDD (L)	34:29	1,2,3,7,8,9-HxCDF (L)	34:52
1,2,3,4,6,7,9-HpCDD (F)	37:06	1,2,3,4,6,7,8-HpCDF (F)	36:43
1,2,3,4,6,7,8-HpCDD (L)	37:56	1,2,3,4,7,8,9-HpCDF (L)	38:28

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

=====

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT
BETWEEN
COMPARED PEAKS (1)

<25%

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

Analyst: DB

Date: 11/7/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191106D2 S#1 Analysis Date: 6-NOV-19 Time: 23:53:31

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME		RRT
	REFERENCE	RRT	QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	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-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	1.000	0.999-1.002

LABELED COMPOUNDS

13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.976-1.043
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.196	1.000-1.567
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.992	0.923-1.103
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.151	1.000-1.425
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.185	1.011-1.526
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052

Analyst: DB

Date: 11/7/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191106D2 S#1 Analysis Date: 6-NOV-19 Time: 23:53:31

NATIVE ANALYTES	RETENTION TIME		RRT	QC LIMITS (1)
	REFERENCE	REFERENCE	RRT	
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	1.000	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	
1,2,3,4,7,8-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-1,2,3,7,8,9-HxCDD	1.000	0.998-1.004	
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001	
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	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	1.000	0.999-1.001	
OCDF	13C-OCDF	1.000	0.999-1.001	

LABELED COMPOUNDS

13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.988	0.975-1.001
13C-1,2,3,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.991	0.979-1.005
13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.009	1.001-1.020
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.038	1.002-1.072
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.014	1.002-1.026
13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.017	1.007-1.029
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.026	1.014-1.038
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.093	1.069-1.111
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.145	1.098-1.192
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.129	1.117-1.141
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.227	1.085-1.365
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.234	1.091-1.371

Analyst: DB

Date: 11/7/19

Client ID: 1613 CS3 19C2204
Lab ID: ST191106D2-1

Filename: 191106D2 S:1 Acq: 6-NOV-19 23:53:31
GC Column ID: ZB-SMS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191106D2-1
EndCAL: NA

Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	7.68e+05	0.83 y	0.91	26:17	10.646		* 2.5		*	Total Tetra-Dioxins	75.8	76.3		*	*
1,2,3,7,8-PeCDD	2.92e+06	0.60 y	0.90	30:46	51.503		* 2.5		*	Total Penta-Dioxins	204	204		*	*
1,2,3,4,7,8-HxCDD	2.82e+06	1.28 y	1.10	34:05	50.957		* 2.5		*	Total Hexa-Dioxins	232	232		*	*
1,2,3,6,7,8-HxCDD	2.78e+06	1.25 y	0.94	34:11	51.397		* 2.5		*	Total Hepta-Dioxins	113	114		*	*
1,2,3,7,8,9-HxCDD	2.93e+06	1.25 y	0.96	34:29	52.398		* 2.5		*	Total Tetra-Furans	38.5	39.5		*	*
1,2,3,4,6,7,8-HpCDD	2.46e+06	1.03 y	0.98	37:56	49.541		* 2.5		*	Total Penta-Furans	223.17	223.74		*	*
OCDD	4.76e+06	0.91 y	0.96	41:14	103.19		* 2.5		*	Total Hexa-Furans	258	258		*	*
										Total Hepta-Furans	97.8	98.5		*	*
2,3,7,8-TCDF	1.09e+06	0.81 y	0.95	25:31	9.8696		* 2.5		*						
1,2,3,7,8-PeCDF	5.36e+06	1.51 y	0.96	29:35	53.071		* 2.5		*						
2,3,4,7,8-PeCDF	5.03e+06	1.51 y	1.01	30:29	51.759		* 2.5		*						
1,2,3,4,7,8-HxCDF	4.06e+06	1.22 y	1.18	33:11	48.196		* 2.5		*						
1,2,3,6,7,8-HxCDF	4.00e+06	1.23 y	1.07	33:19	47.890		* 2.5		*						
2,3,4,6,7,8-HxCDF	4.00e+06	1.23 y	1.11	33:55	49.508		* 2.5		*						
1,2,3,7,8,9-HxCDF	3.37e+06	1.23 y	1.06	34:52	47.909		* 2.5		*						
1,2,3,4,6,7,8-HpCDF	2.98e+06	1.02 y	1.13	36:43	48.027		* 2.5		*						
1,2,3,4,7,8,9-HpCDF	2.87e+06	1.01 y	1.28	38:28	49.318		* 2.5		*						
OCDF	5.54e+06	0.90 y	0.95	41:27	96.365		* 2.5		*						
IS	13C-2,3,7,8-TCDD	7.97e+06	0.76 y	1.10	26:16	103.37				Rec	Qual				
IS	13C-1,2,3,7,8-PeCDD	6.28e+06	0.63 y	0.88	30:44	101.14				103					
IS	13C-1,2,3,4,7,8-HxCDD	5.02e+06	1.26 y	0.64	34:03	103.52				101					
IS	13C-1,2,3,6,7,8-HxCDD	5.76e+06	1.26 y	0.86	34:10	89.130				104					
IS	13C-1,2,3,7,8,9-HxCDD	5.82e+06	1.26 y	0.81	34:28	95.571				89.1					
IS	13C-1,2,3,4,6,7,8-HpCDD	5.08e+06	1.07 y	0.65	37:55	102.77				95.6					
IS	13C-OCDD	9.62e+06	0.93 y	0.58	41:13	219.85				103					
IS	13C-2,3,7,8-TCDF	1.17e+07	0.80 y	1.03	25:29	102.04				110					
IS	13C-1,2,3,7,8-PeCDF	1.05e+07	1.63 y	0.85	29:35	111.51				102					
IS	13C-2,3,4,7,8-PeCDF	9.57e+06	1.61 y	0.85	30:28	102.28				112					
IS	13C-1,2,3,4,7,8-HxCDF	7.16e+06	0.53 y	0.83	33:10	114.00				102					
IS	13C-1,2,3,6,7,8-HxCDF	7.81e+06	0.51 y	1.03	33:18	99.936				114					
IS	13C-2,3,4,6,7,8-HxCDF	7.26e+06	0.51 y	0.95	33:54	100.80				99.9					
IS	13C-1,2,3,7,8,9-HxCDF	6.63e+06	0.51 y	0.83	34:51	106.09				101					
IS	13C-1,2,3,4,6,7,8-HpCDF	5.51e+06	0.42 y	0.76	36:42	96.306				106					
IS	13C-1,2,3,4,7,8,9-HpCDF	4.55e+06	0.41 y	0.58	38:27	103.72				96.3					
IS	13C-OCDF	1.21e+07	0.87 y	0.69	41:26	233.34				104					
C/Up	37C1-2,3,7,8-TCDD	8.04e+05		1.20	26:17	9.5299				117					
RS/RT	13C-1,2,3,4-TCDD	7.04e+06	0.78 y	1.00	25:42	100.00									
RS	13C-1,2,3,4-TCDF	1.10e+07	0.82 y	1.00	24:17	100.00									
RS/RT	13C-1,2,3,4,6,9-HxCDF	7.55e+06	0.52 y	1.00	33:35	100.00									

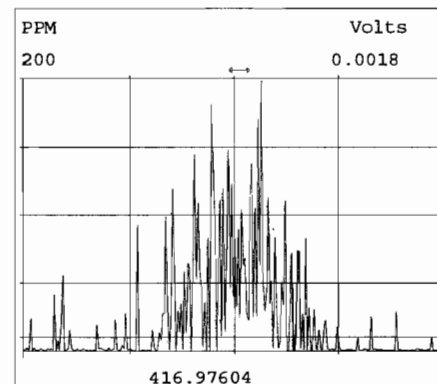
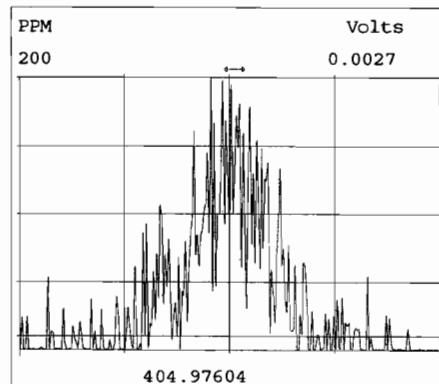
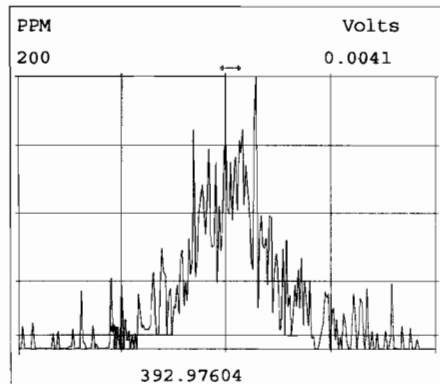
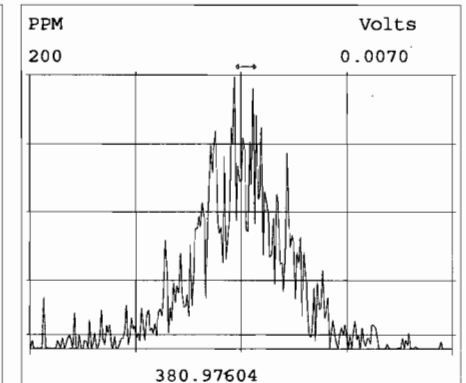
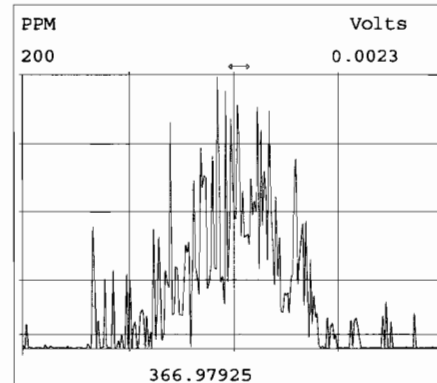
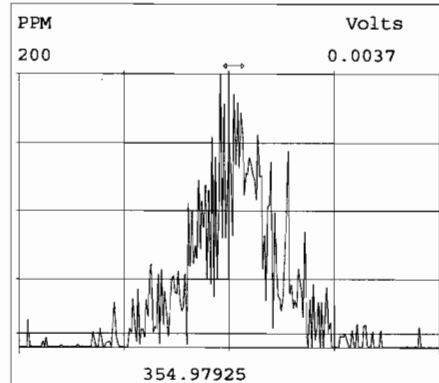
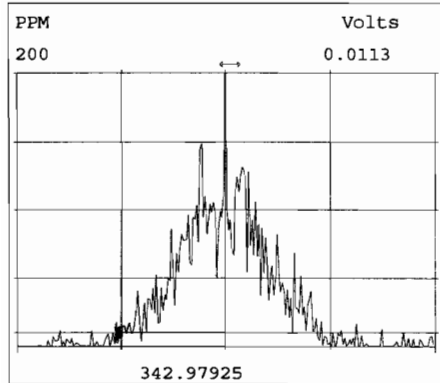
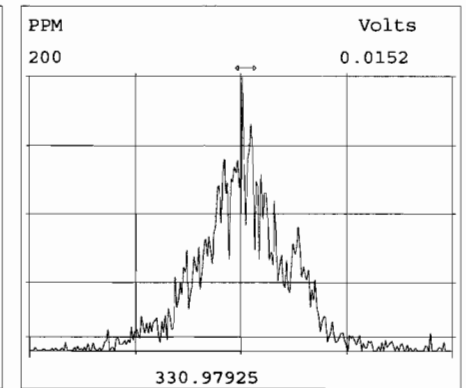
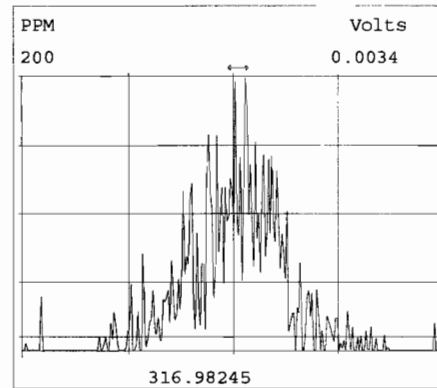
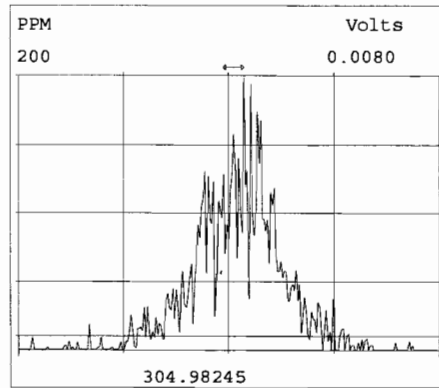
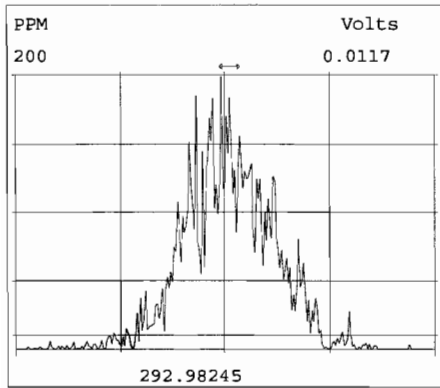
Integrations
by DB
Analyst: DB
Date: 11/7/19
Reviewed
by CT
Analyst: CT
Date: 11/07/19

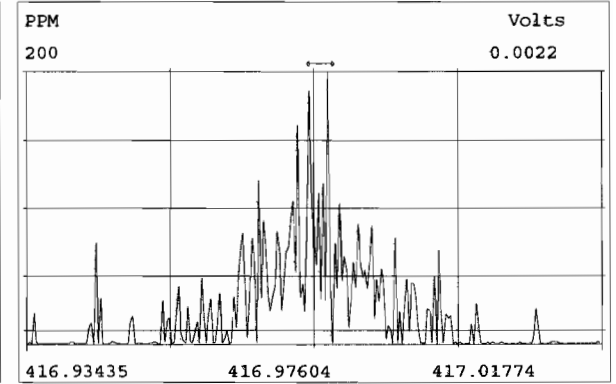
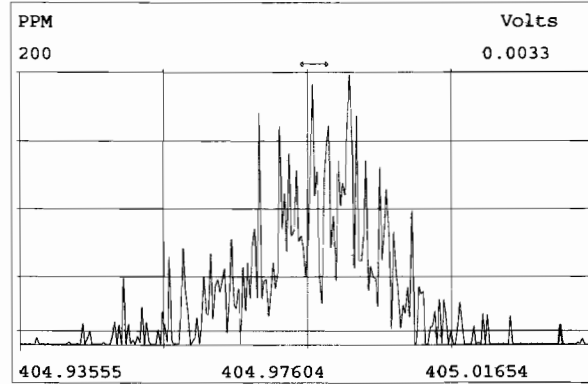
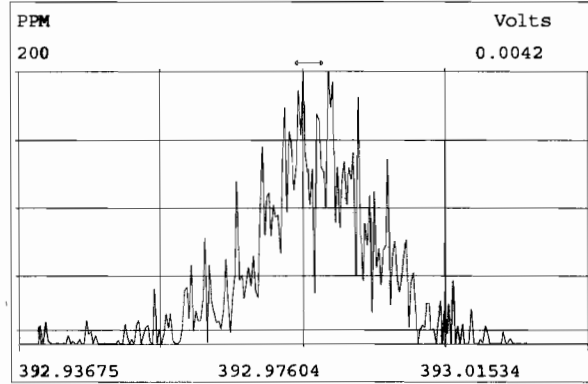
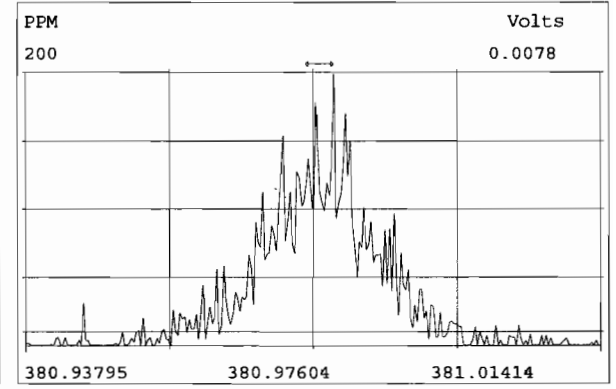
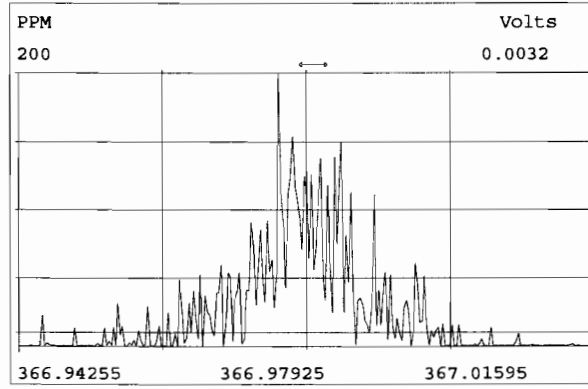
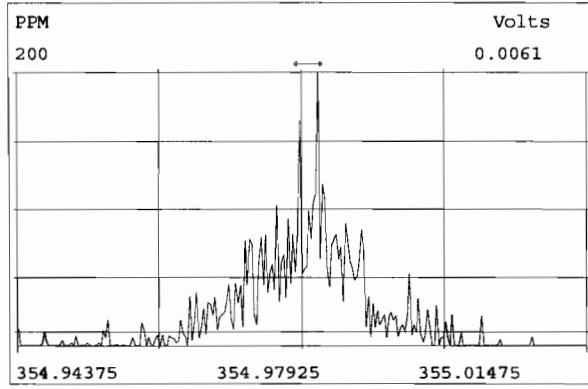
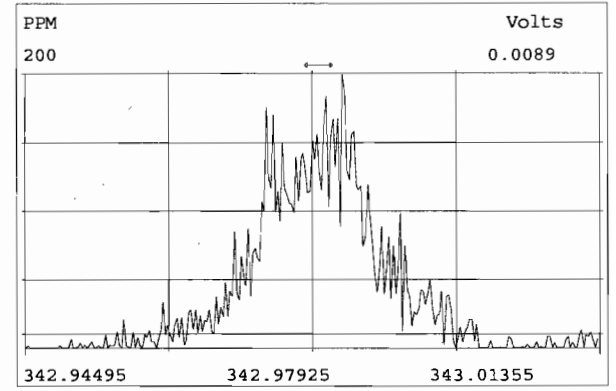
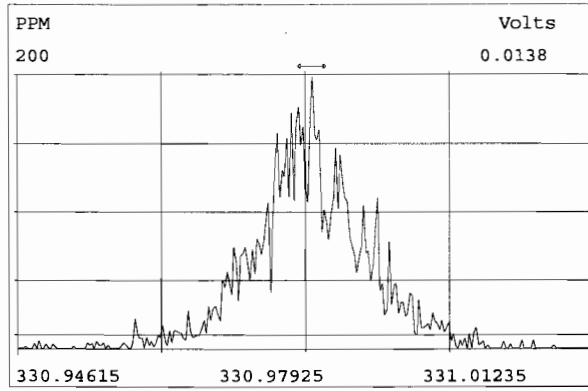
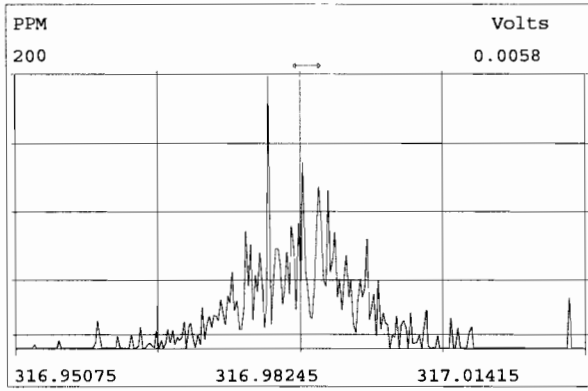
Vista Analytical Laboratory - Injection Log Run file: 191106D2 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191106D2	1	ST191106D2-1	DB	6-NOV-19	23:53:31	ST191106D2-1	NA
191106D2	2	SOLVENT BLANK	DB	7-NOV-19	00:41:15	ST191106D2-1	NA
191106D2	3	1903431-03	DB	7-NOV-19	01:29:08	ST191106D2-1	NA
191106D2	4	1903431-04	DB	7-NOV-19	02:16:54	ST191106D2-1	NA
191106D2	5	1903431-05	DB	7-NOV-19	03:04:50	ST191106D2-1	NA
191106D2	6	1903431-06	DB	7-NOV-19	03:52:37	ST191106D2-1	NA
191106D2	7	1903431-07	DB	7-NOV-19	04:40:24	ST191106D2-1	NA
191106D2	8	1903431-08	DB	7-NOV-19	05:28:21	ST191106D2-1	NA
191106D2	9	B9J0144-DUP1	DB	7-NOV-19	06:16:18	ST191106D2-1	NA
191106D2	10	1903431-09	DB	7-NOV-19	07:04:14	ST191106D2-1	NA

Peak Locate Examination: 6-NOV-2019:23:48 File:RES_CHECK

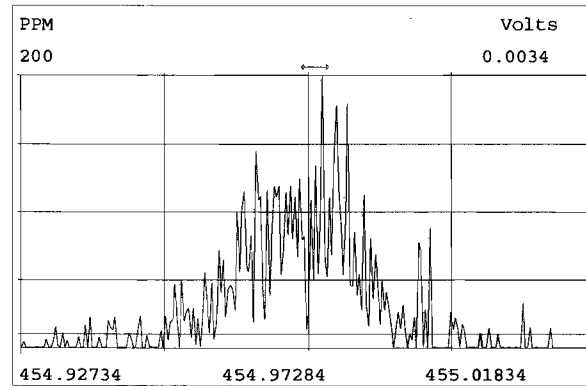
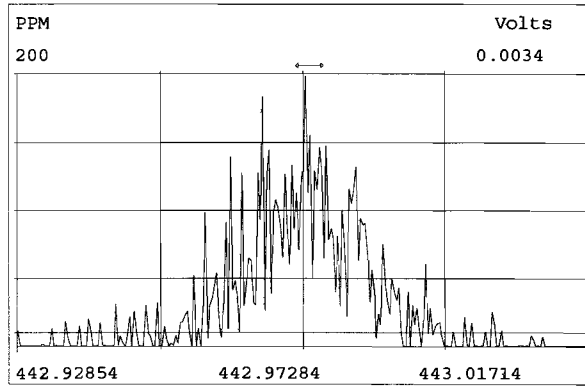
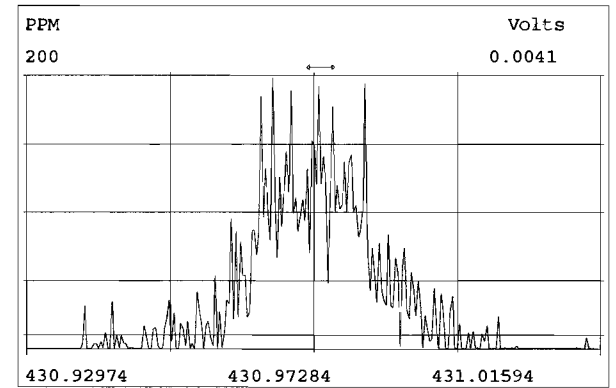
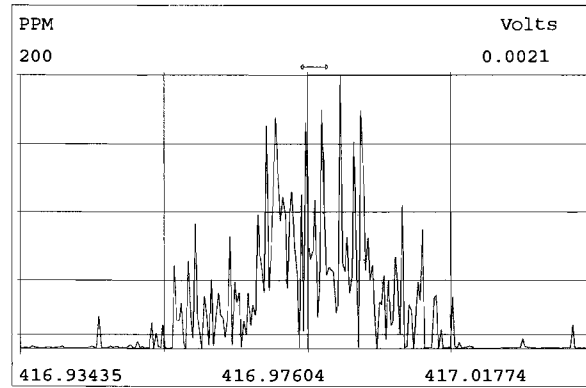
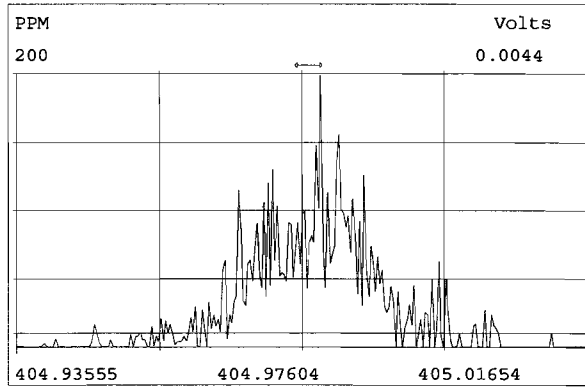
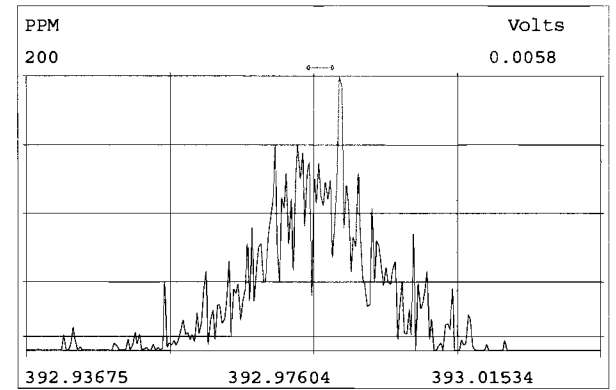
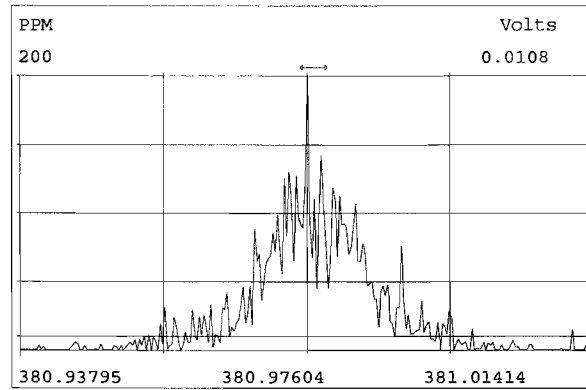
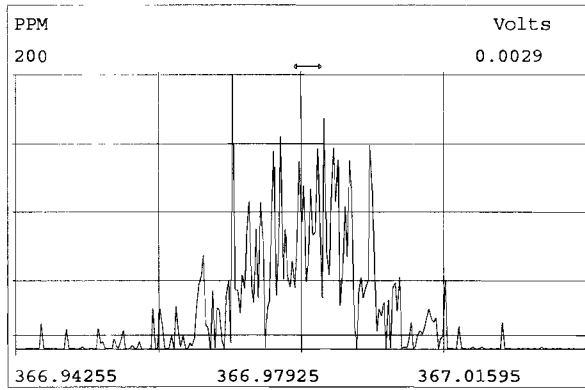
Experiment:OCDD_DB5 Function:1 Reference:PFK





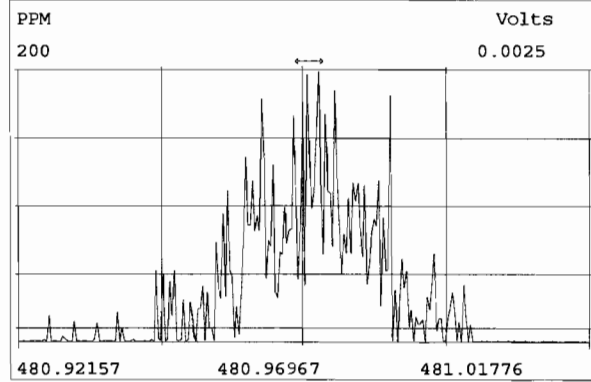
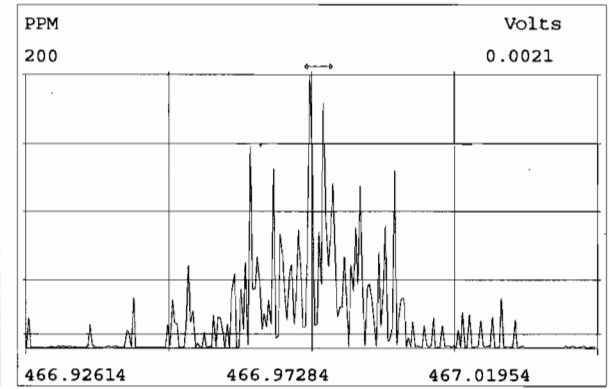
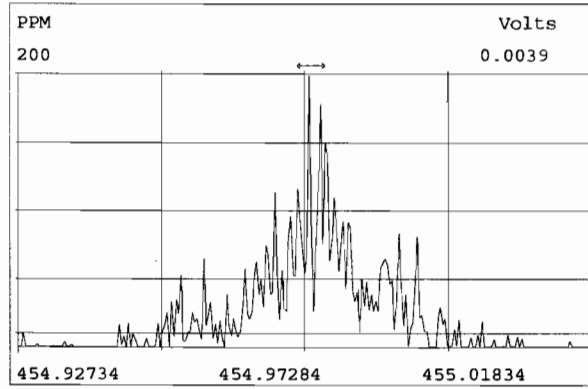
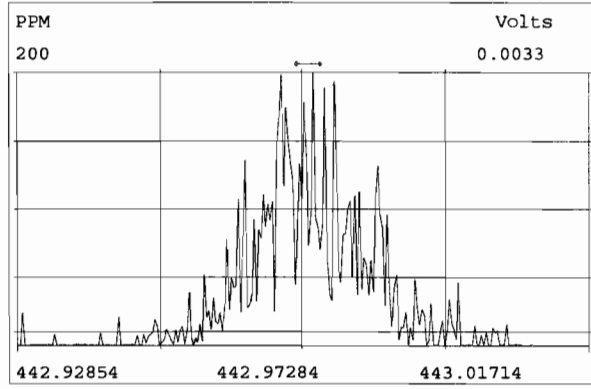
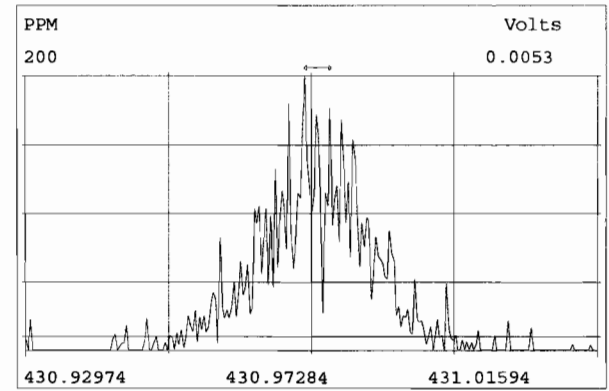
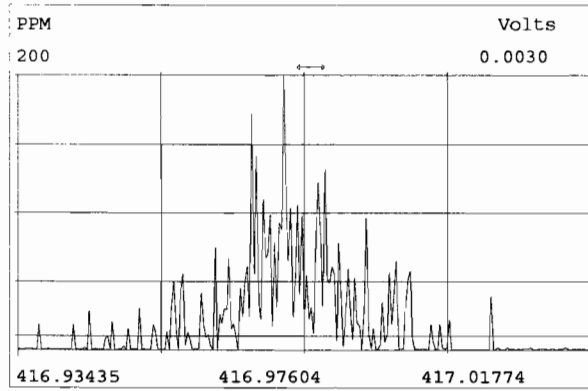
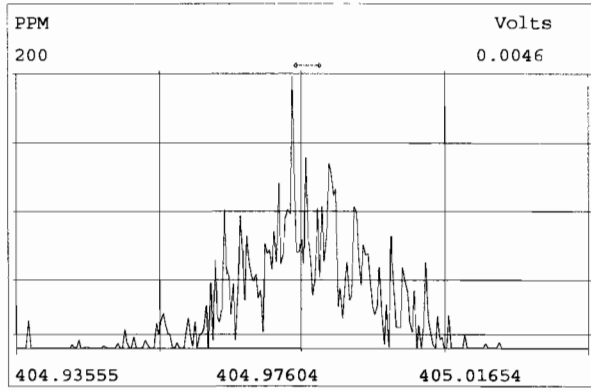
Peak Locate Examination: 6-NOV-2019:23:50 File:RES_CHECK

Experiment:OCDD_DB5 Function:3 Reference:PFK



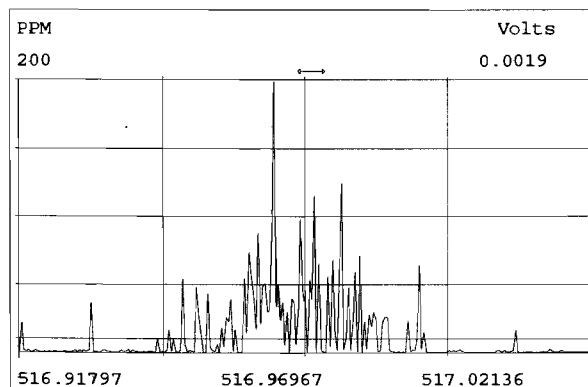
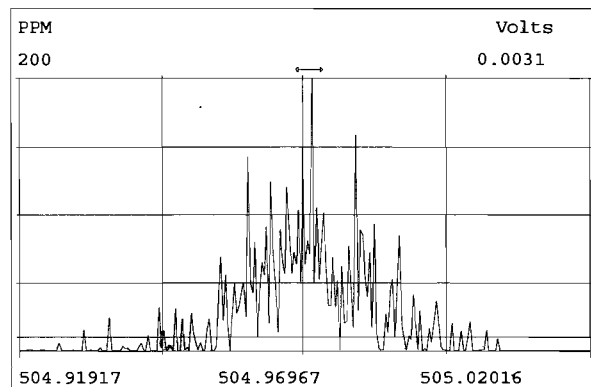
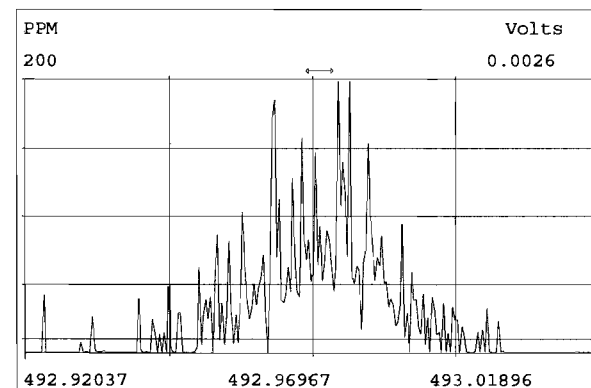
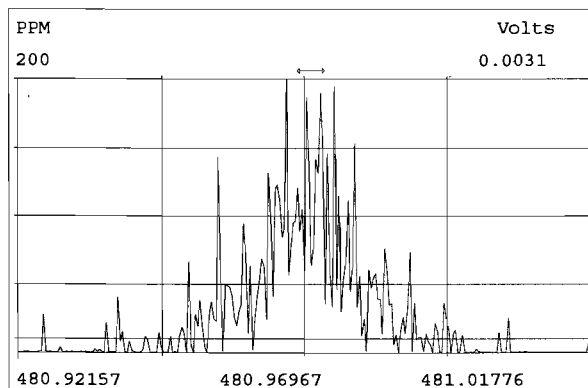
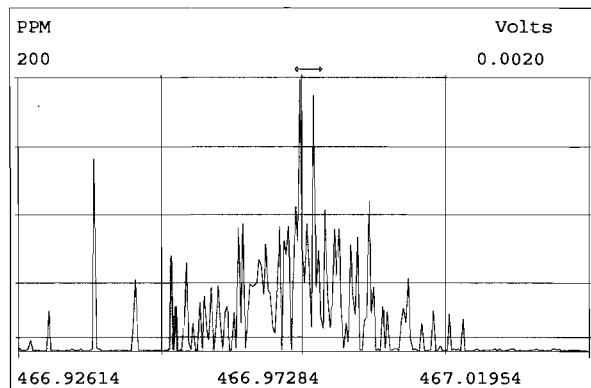
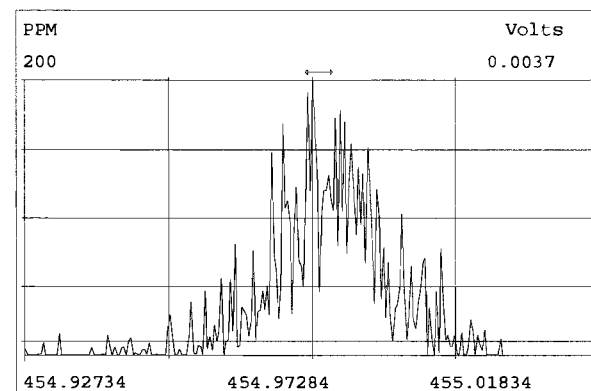
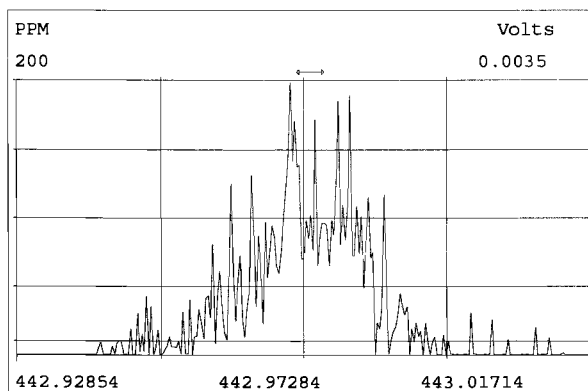
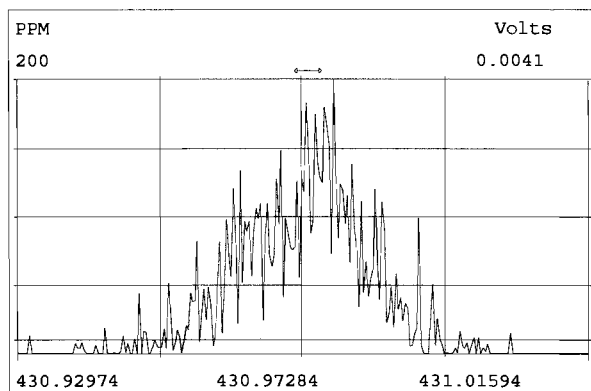
Peak Locate Examination: 6-NOV-2019:23:51 File:RES_CHECK

Experiment:OCDD_DB5 Function:4 Reference:PFK

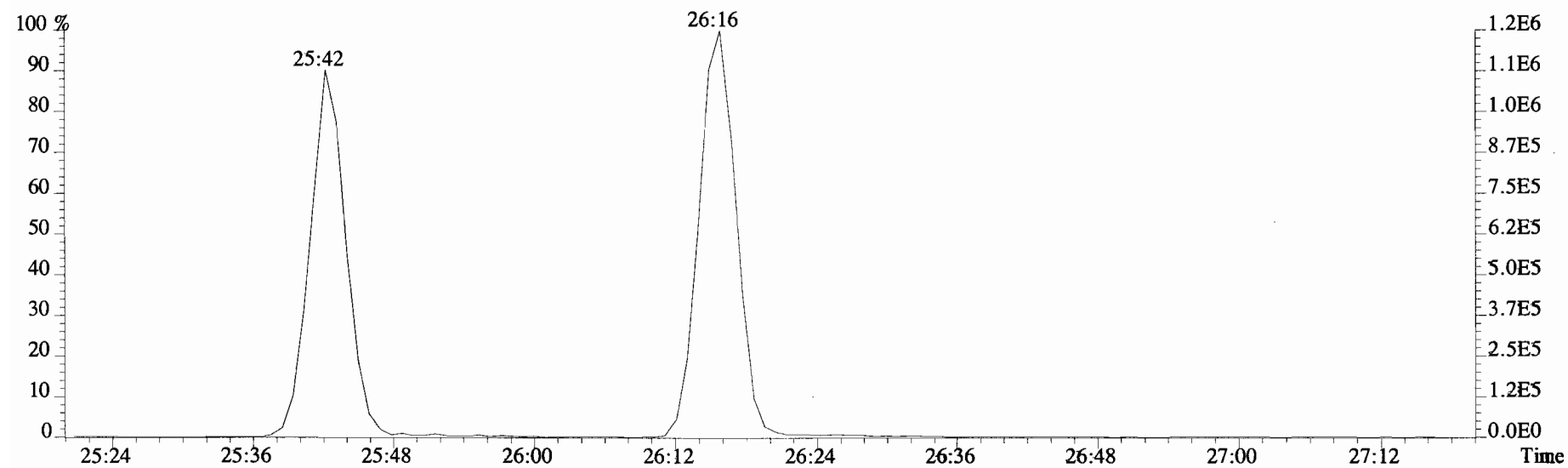
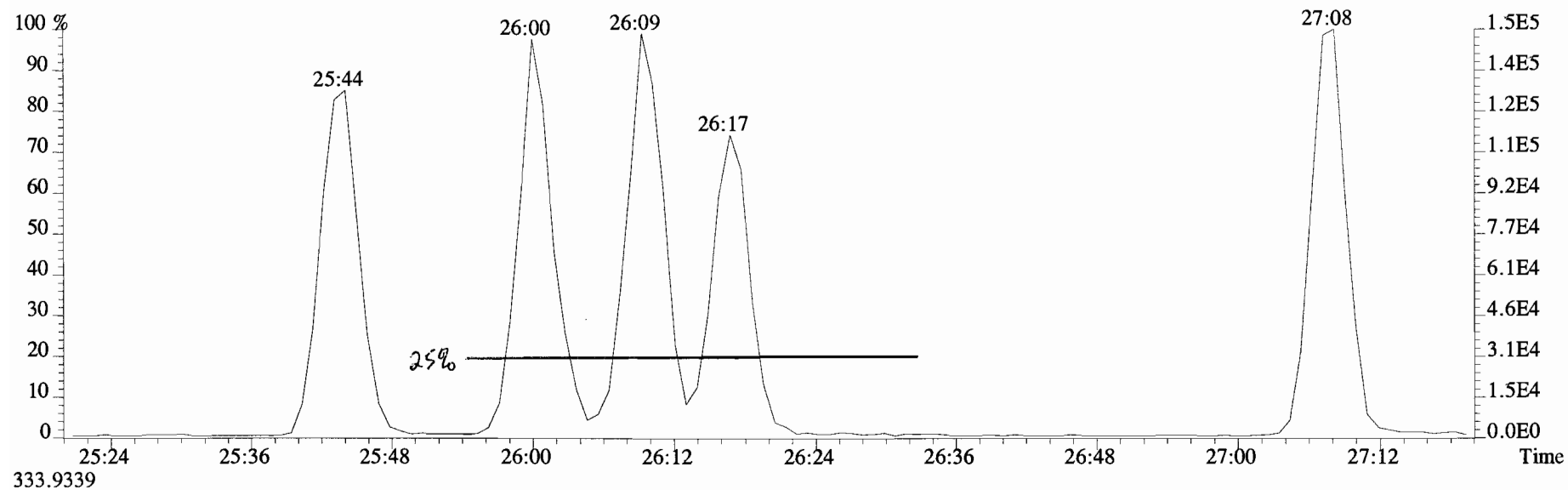


Peak Locate Examination: 6-NOV-2019:23:52 File:RES_CHECK

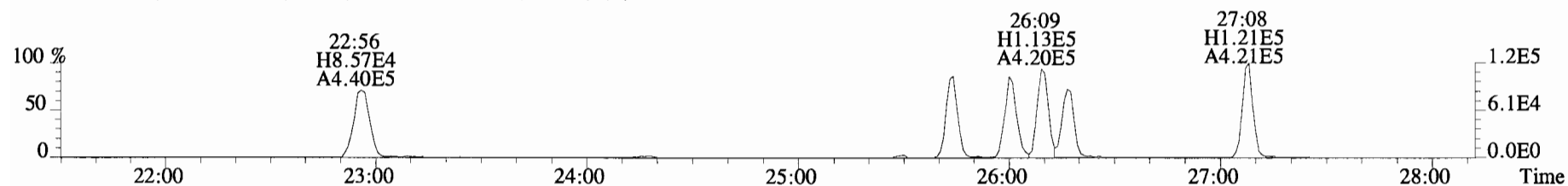
Experiment:OCDD_DB5 Function:5 Reference:PFK



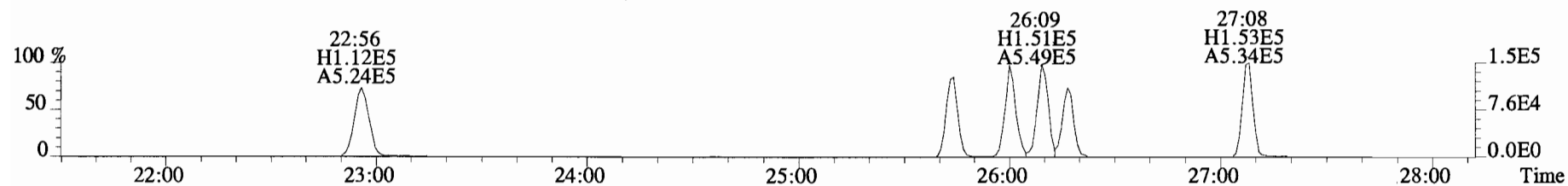
File:191106D2 #1-493 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
321.8936



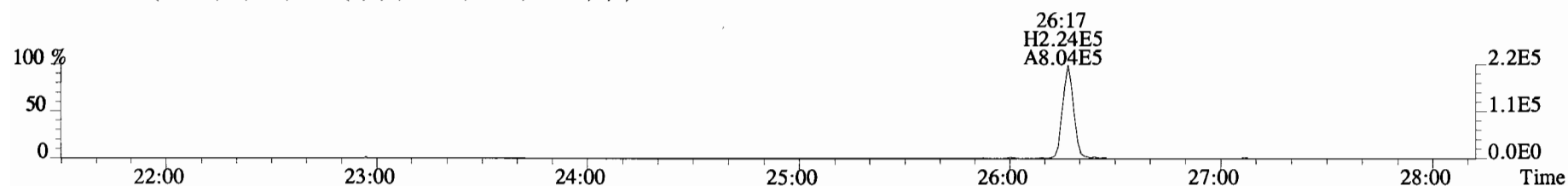
File:191106D2 #1-493 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



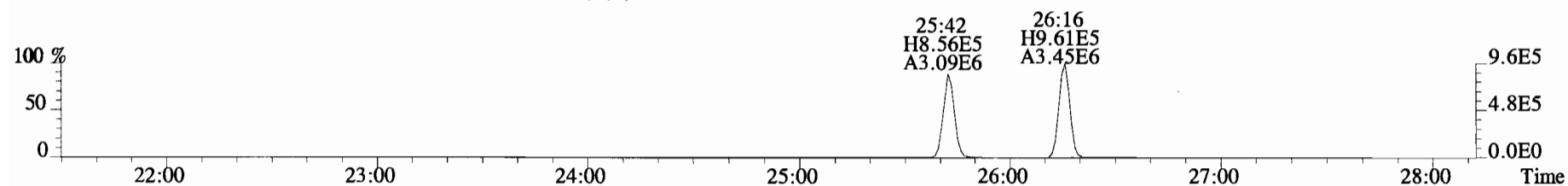
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



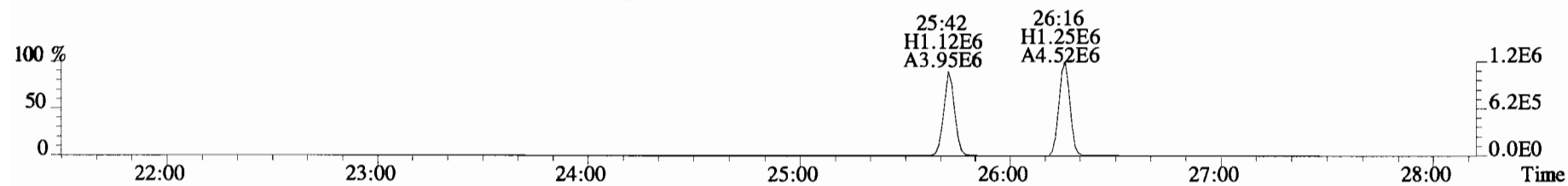
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



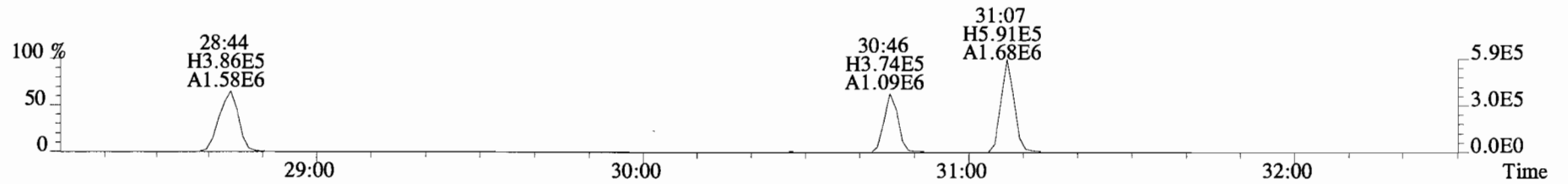
331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



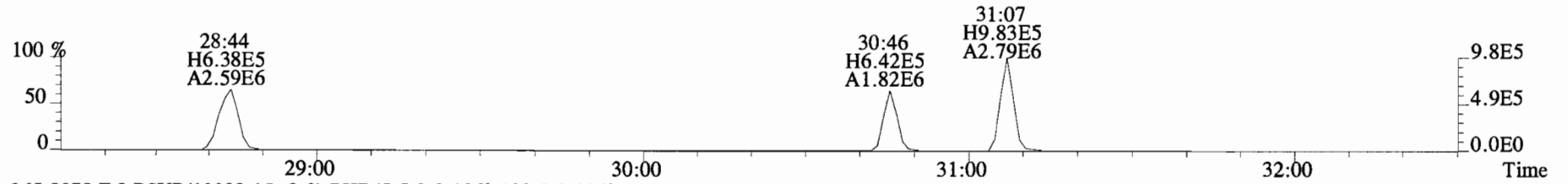
333.9339 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



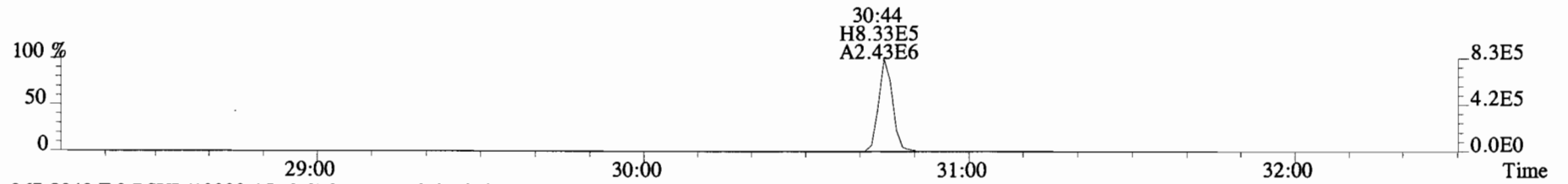
File:191106D2 #1-211 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



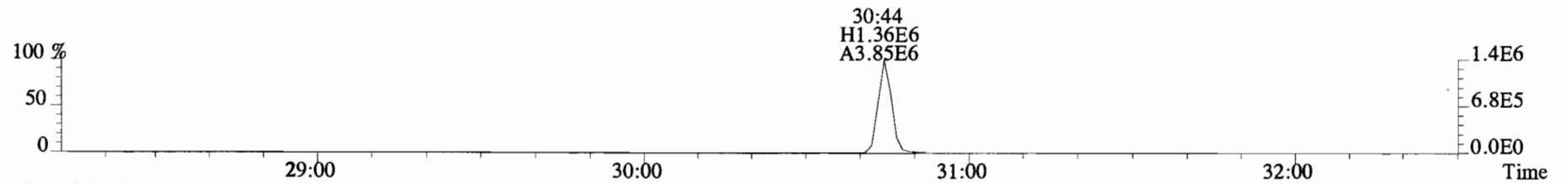
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



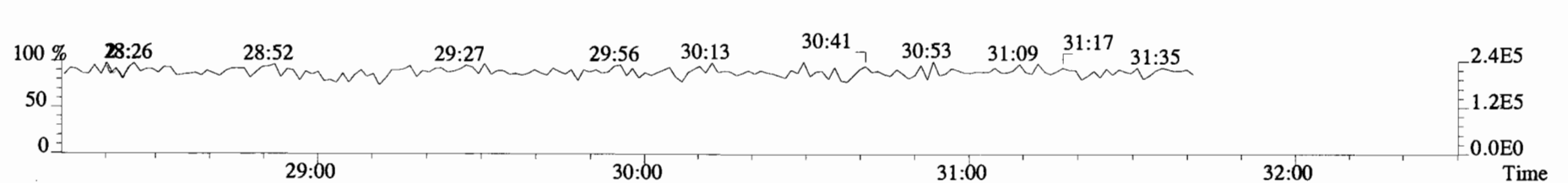
365.8978 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



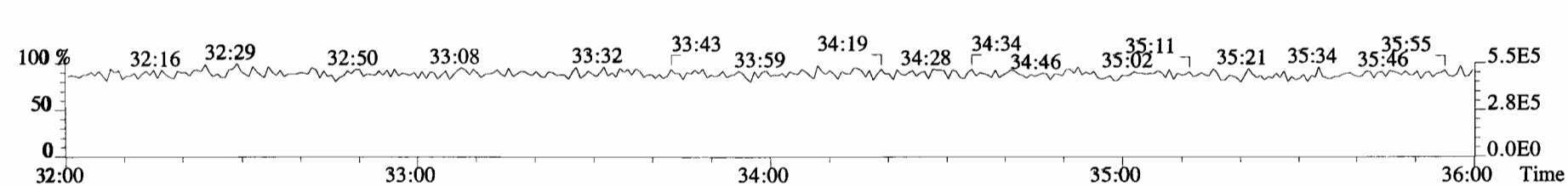
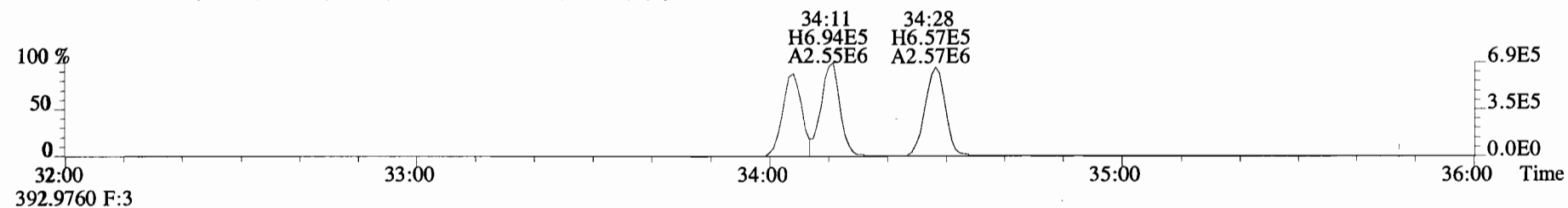
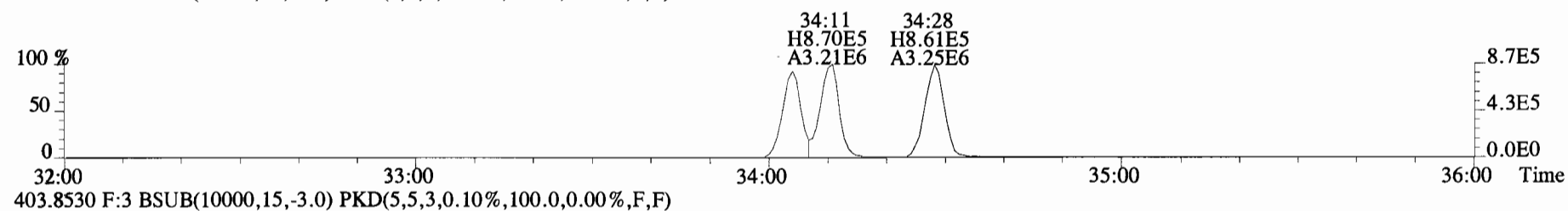
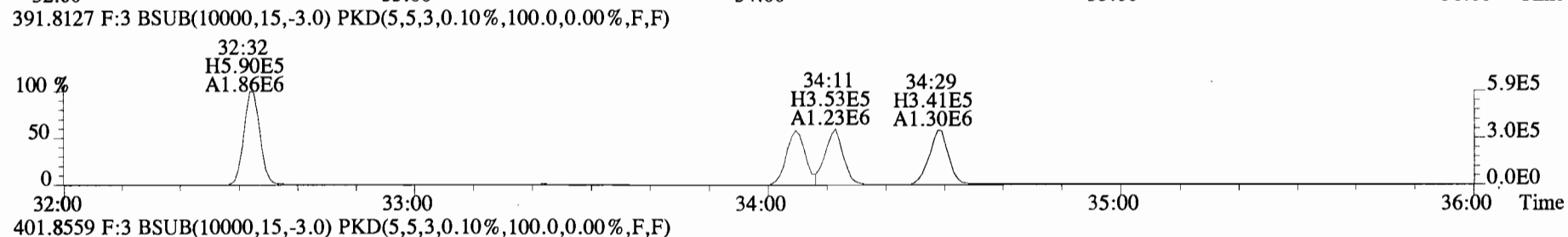
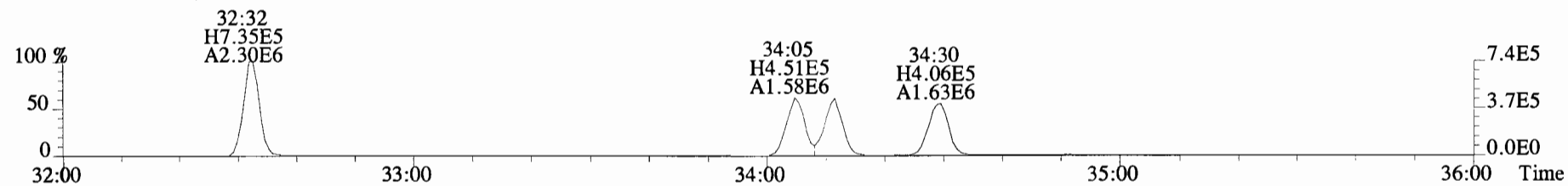
367.8949 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



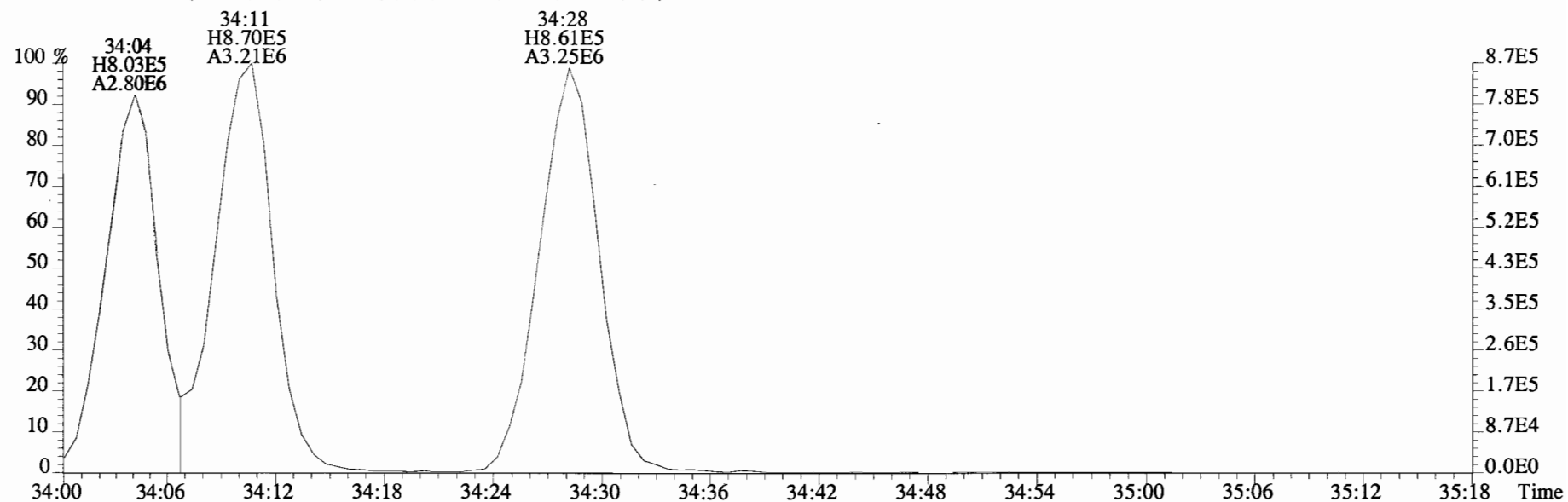
366.9792 F:2



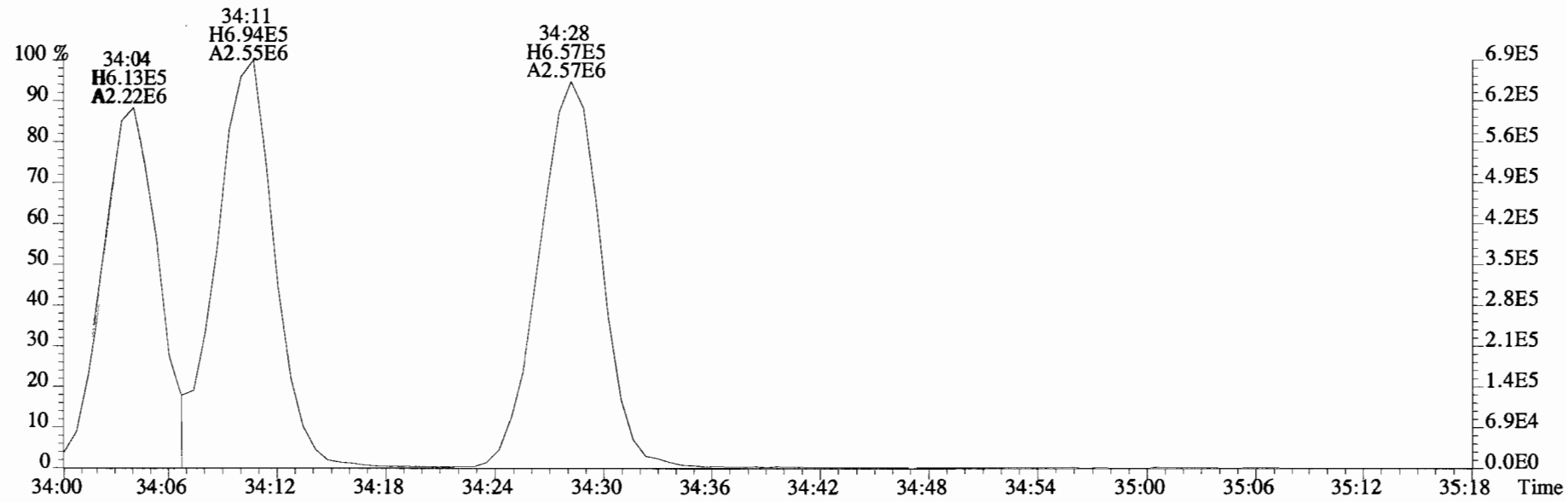
File:191106D2 #1-384 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
 389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



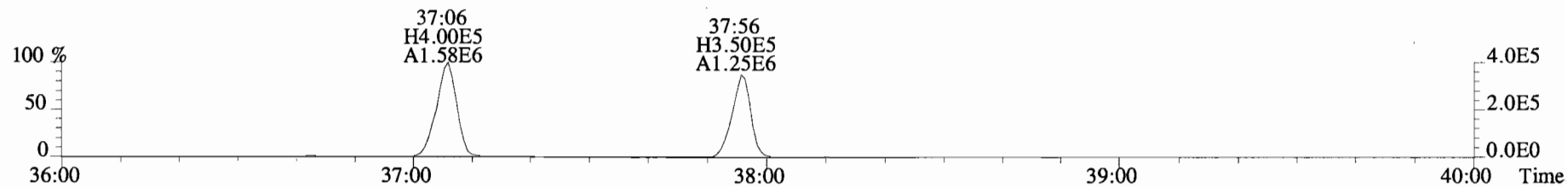
File:191106D2 #1-384 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



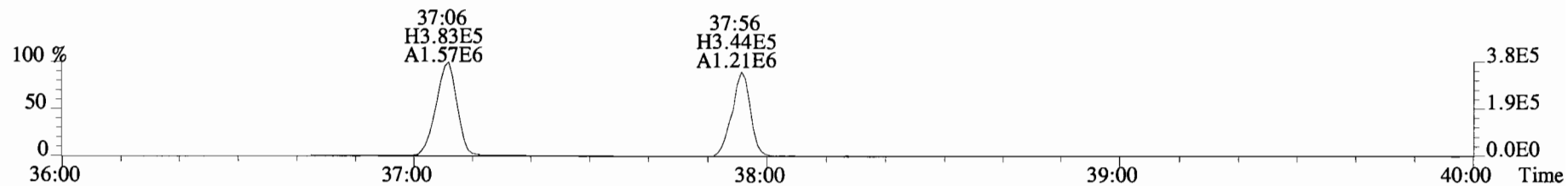
403.8530 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



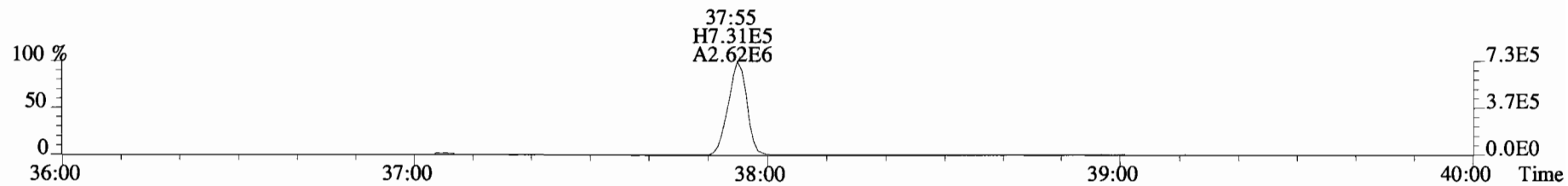
File:191106D2 #1-355 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



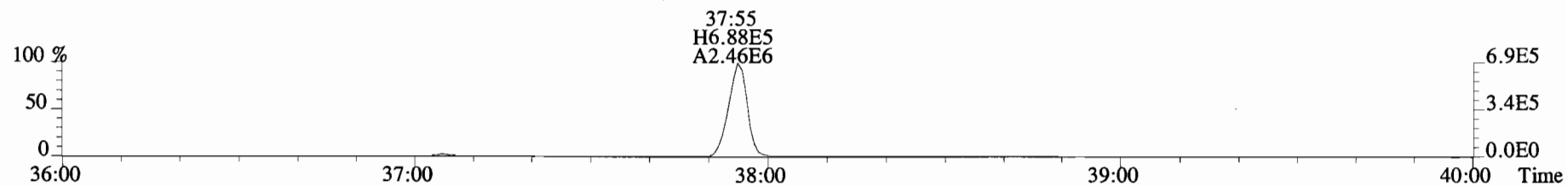
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



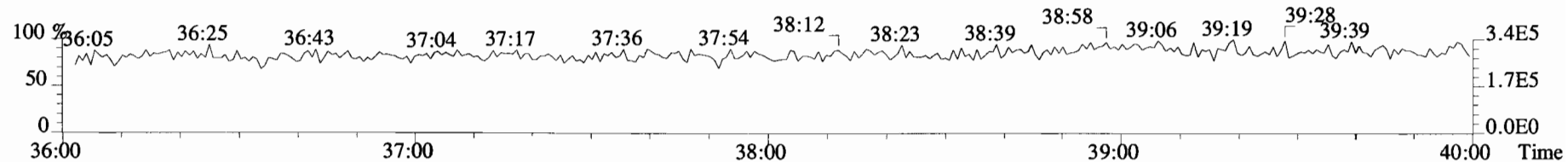
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



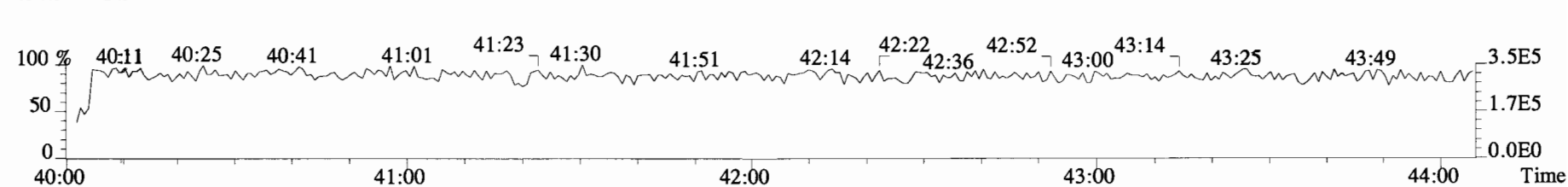
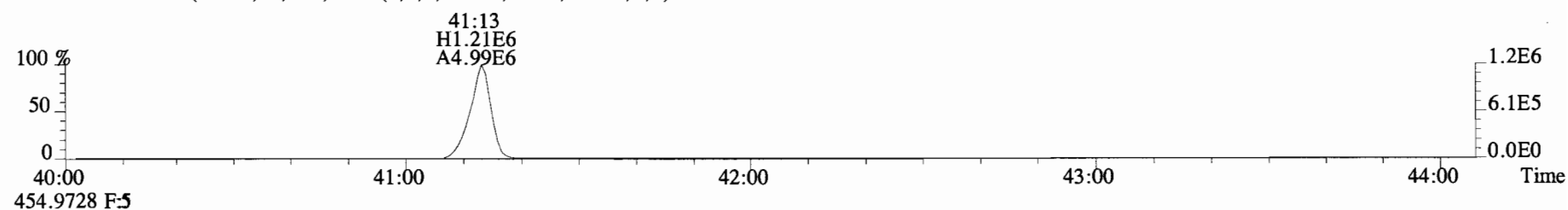
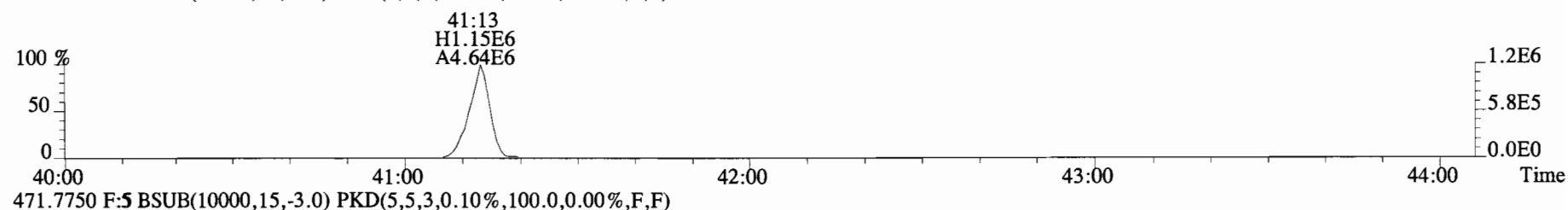
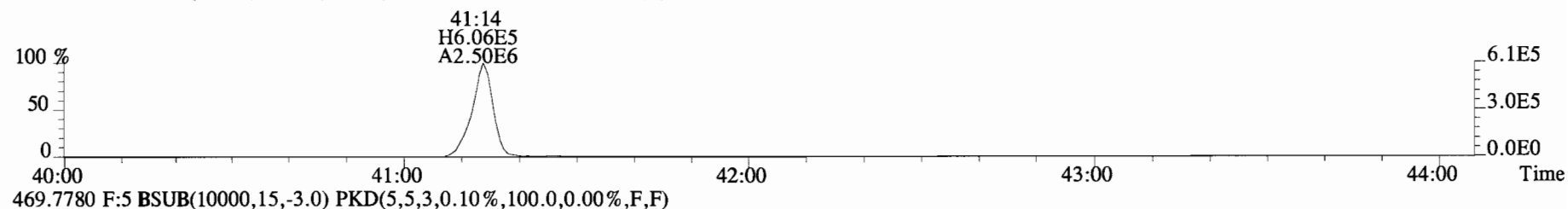
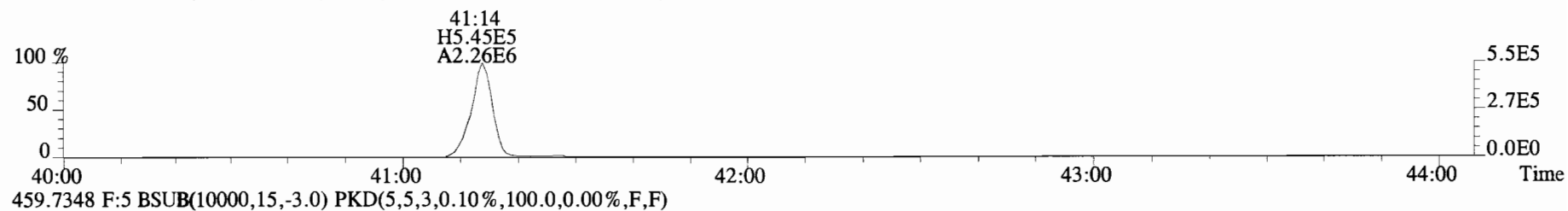
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



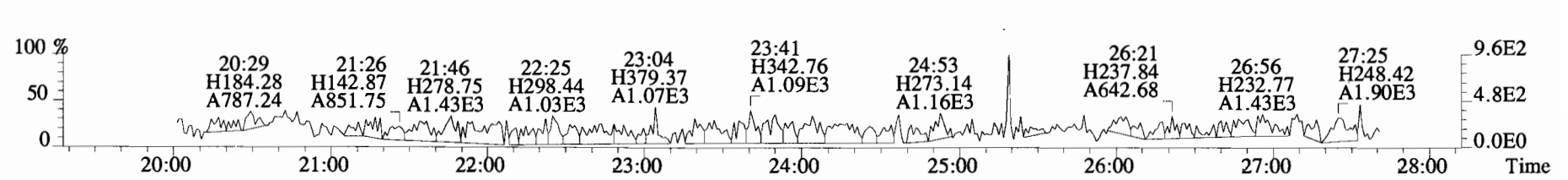
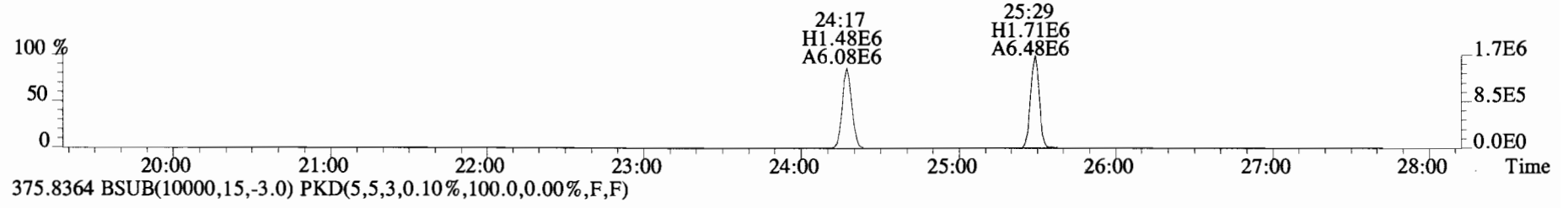
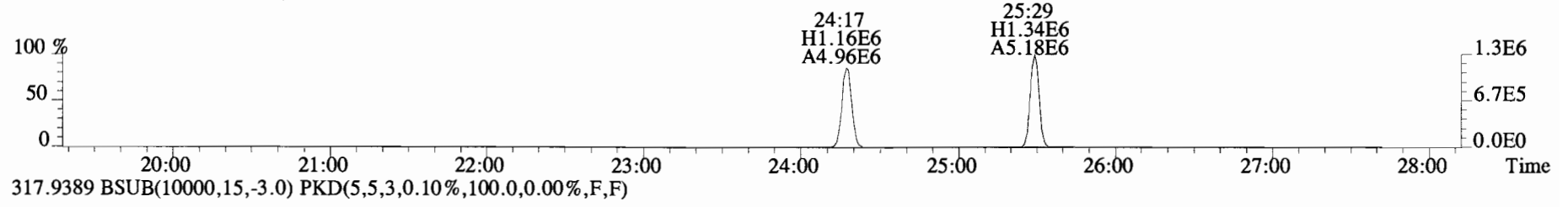
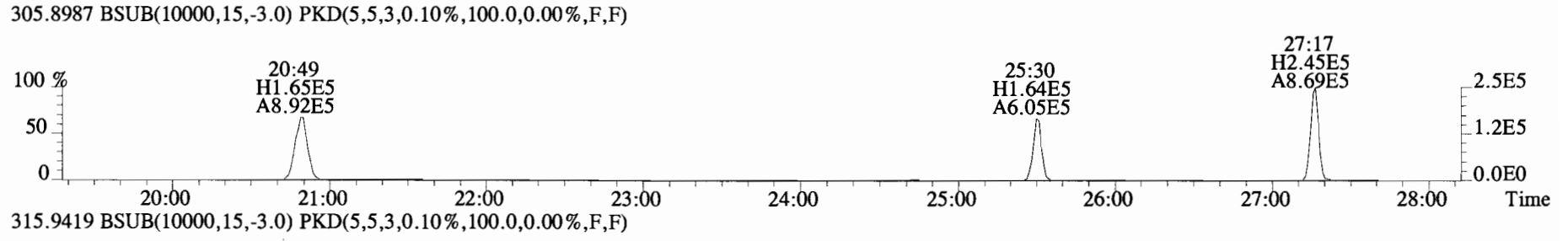
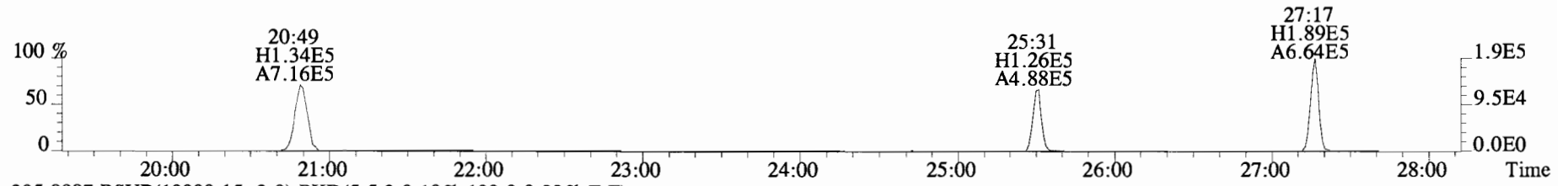
454.9728 F:4



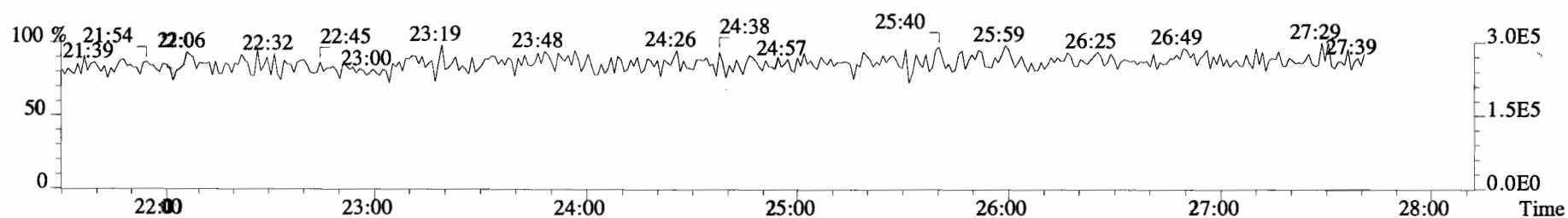
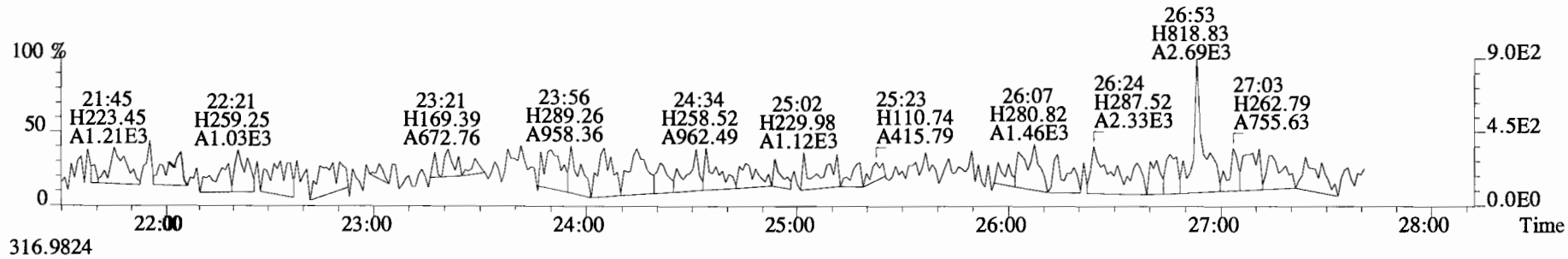
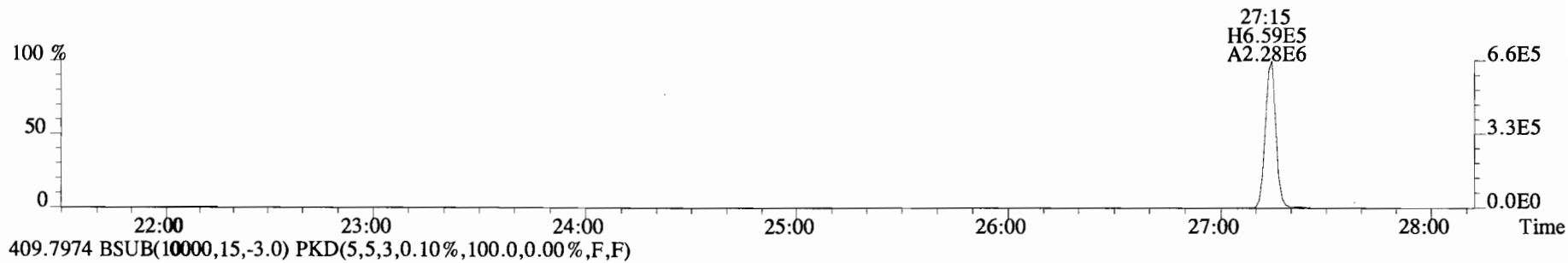
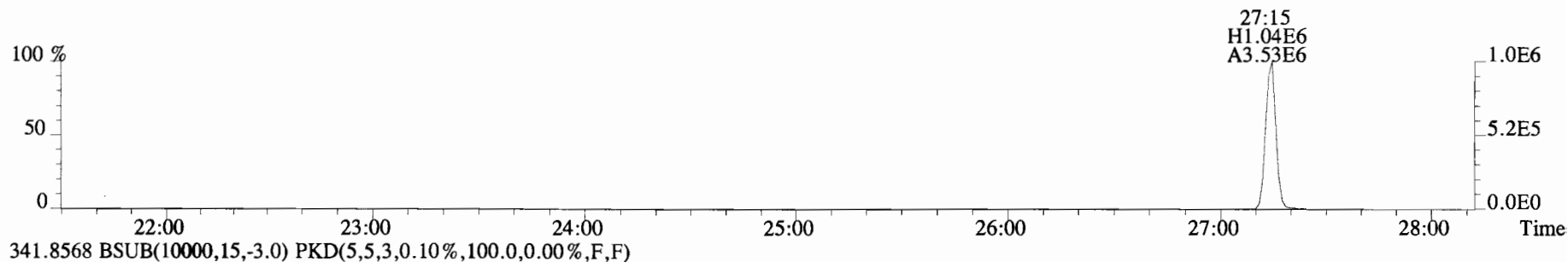
File:191106D2 #1-432 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



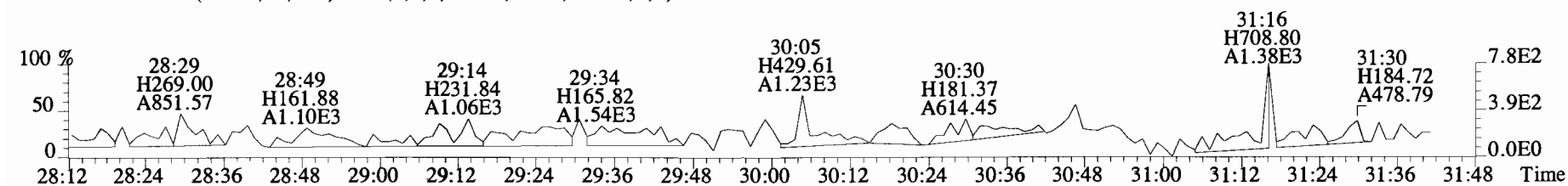
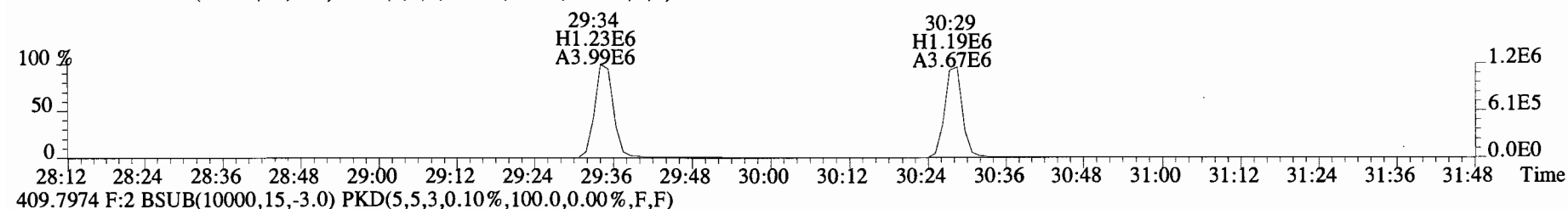
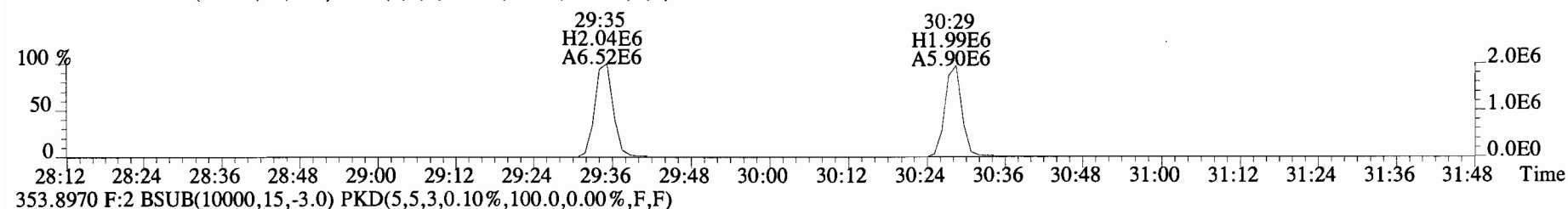
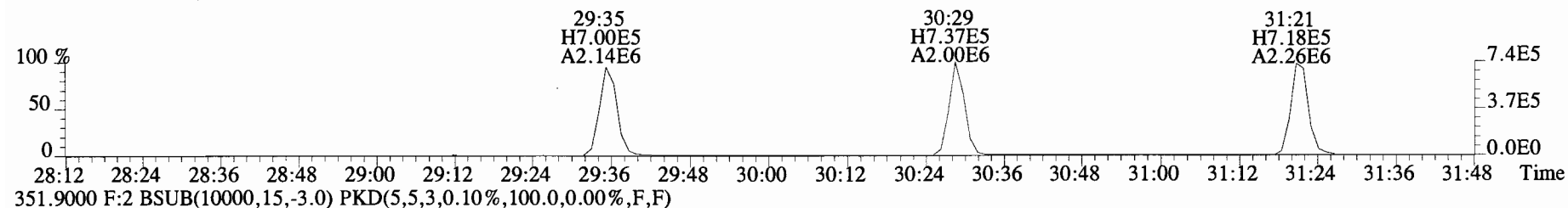
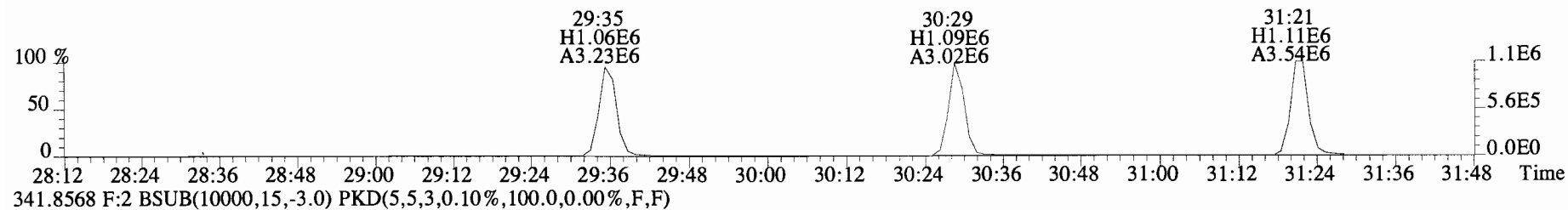
File:191106D2 #1-493 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



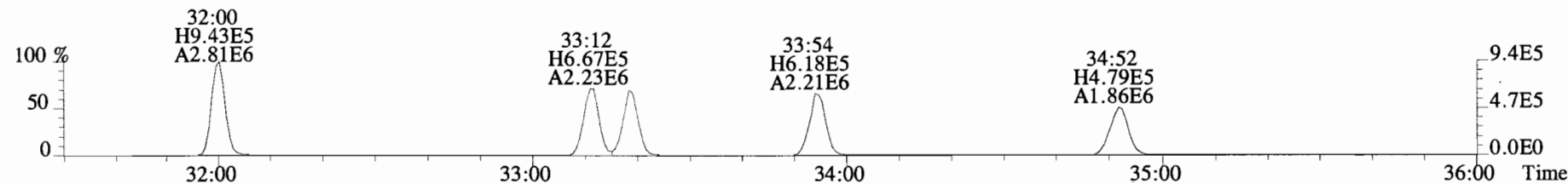
File:191106D2 #1-493 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



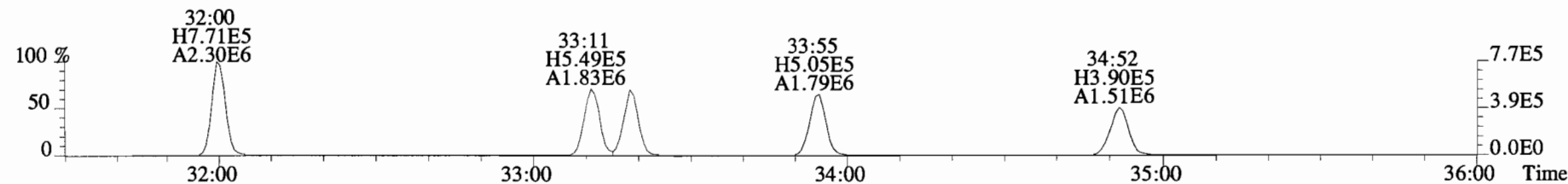
File:191106D2 #1-211 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



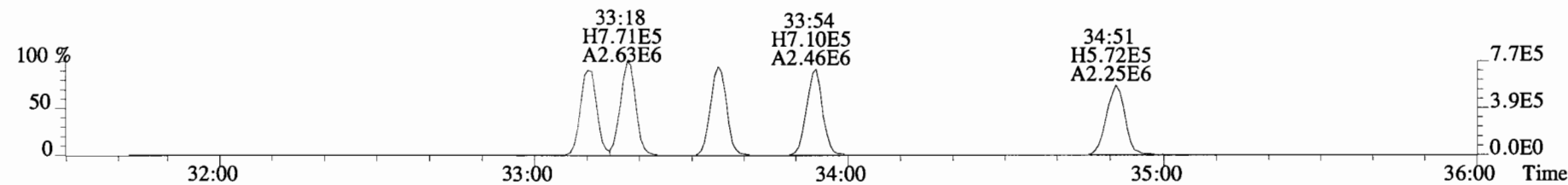
File:191106D2 #1-384 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



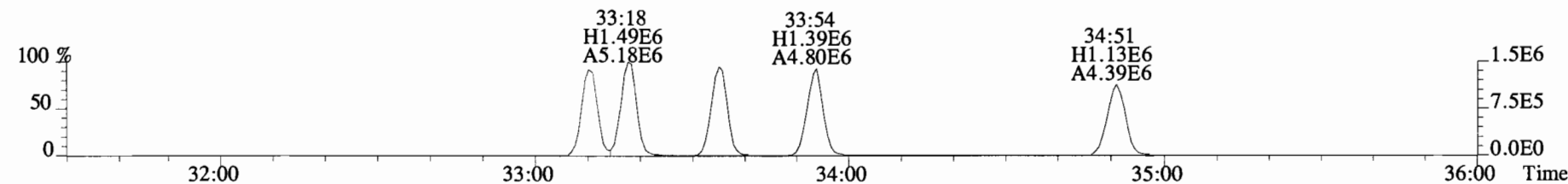
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



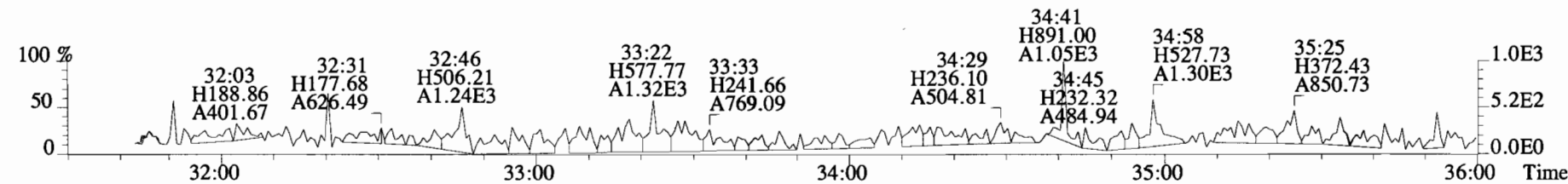
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



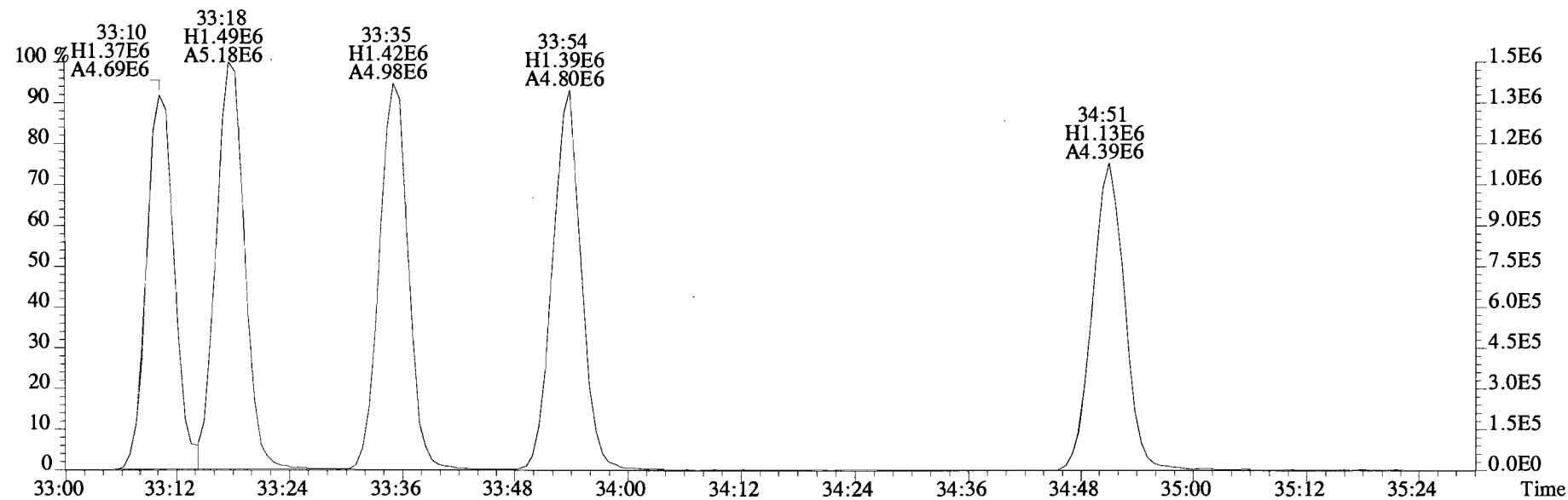
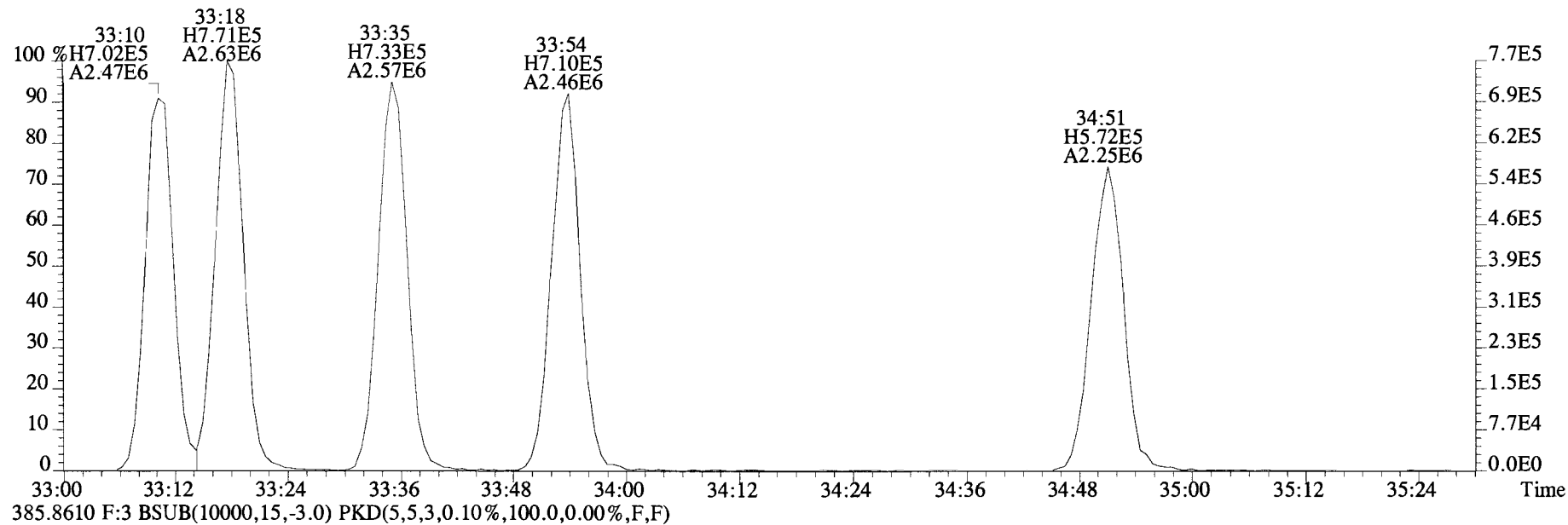
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



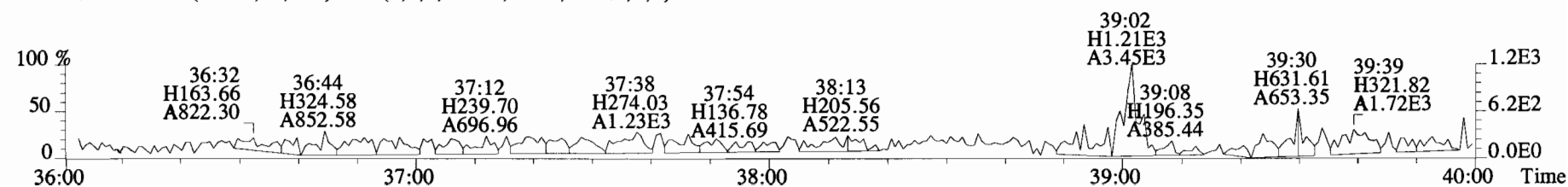
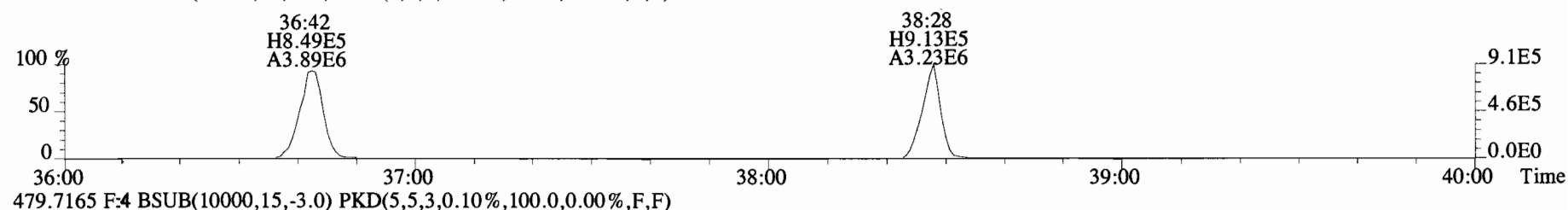
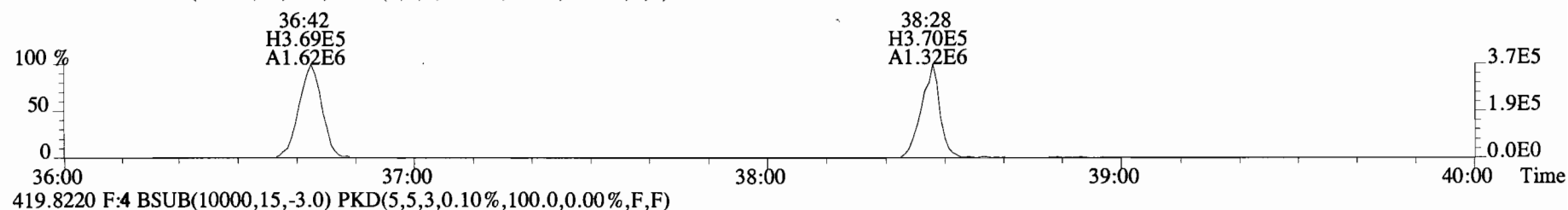
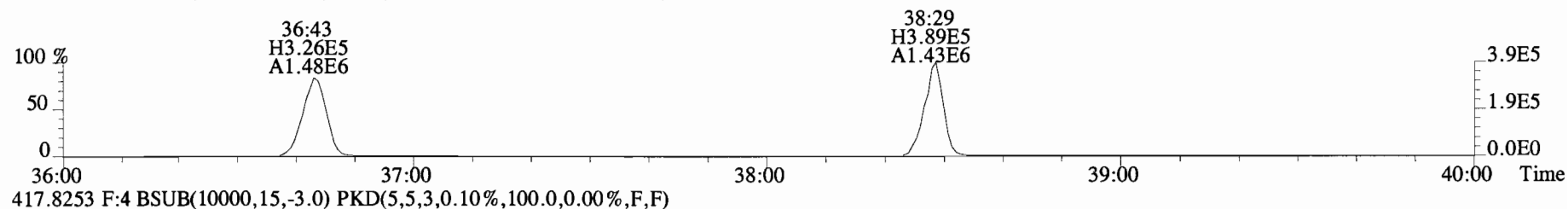
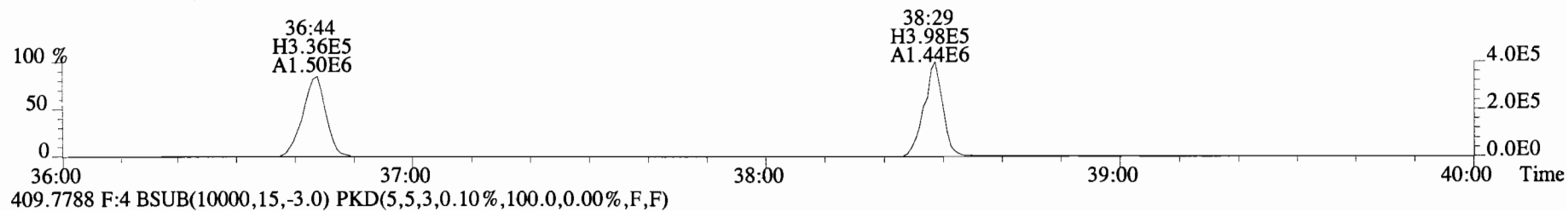
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



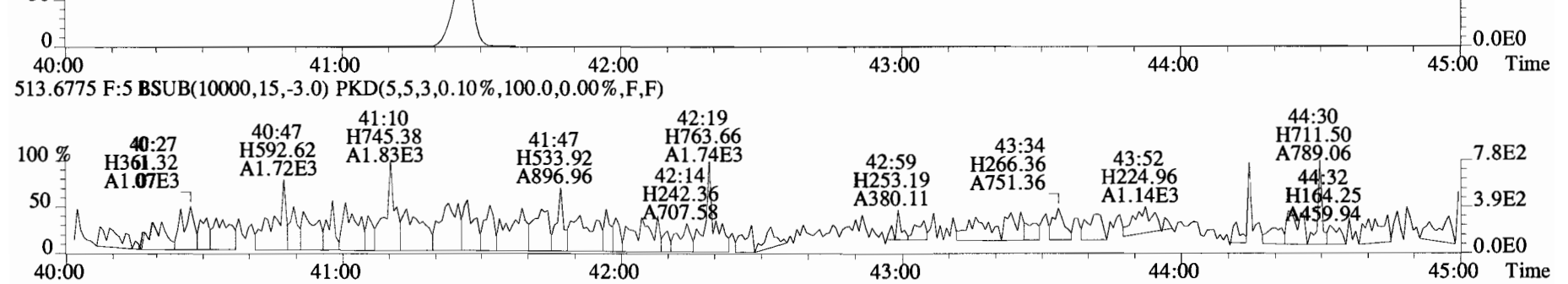
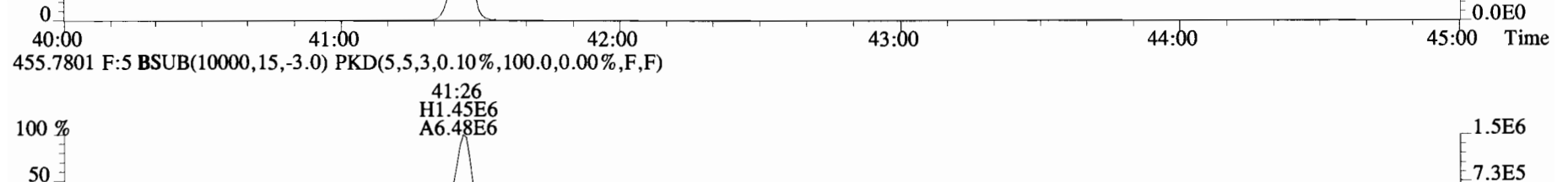
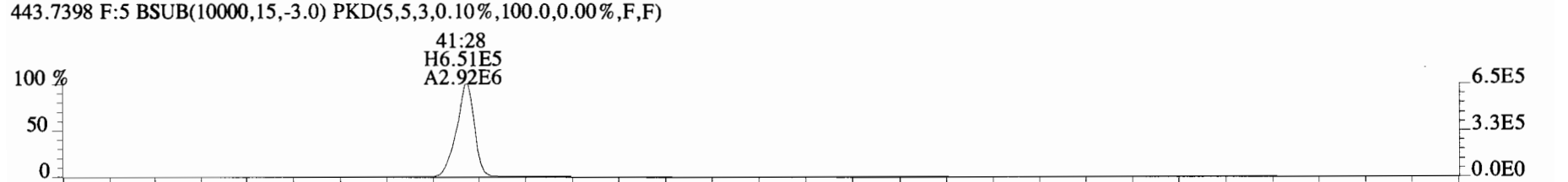
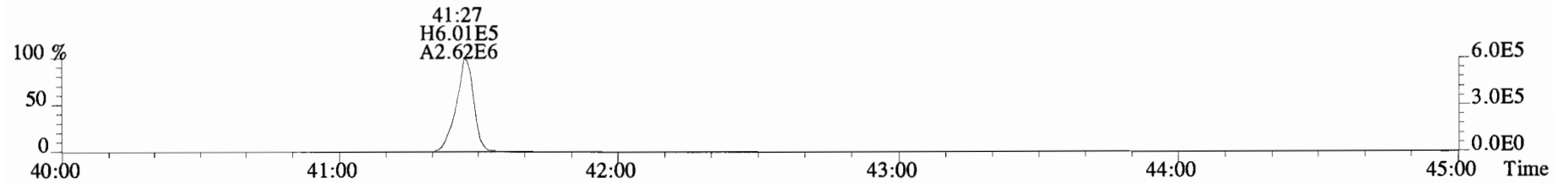
File:191106D2 #1-384 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191106D2 #1-355 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
 407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

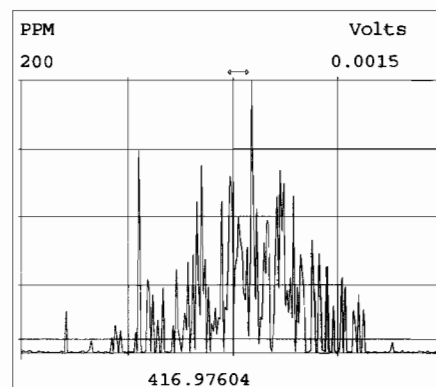
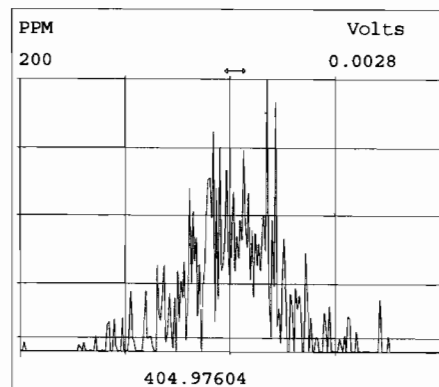
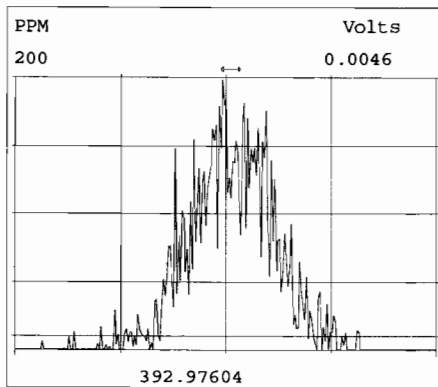
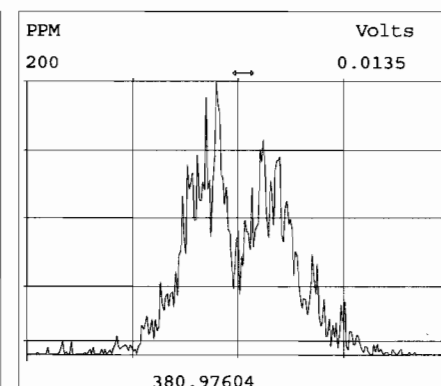
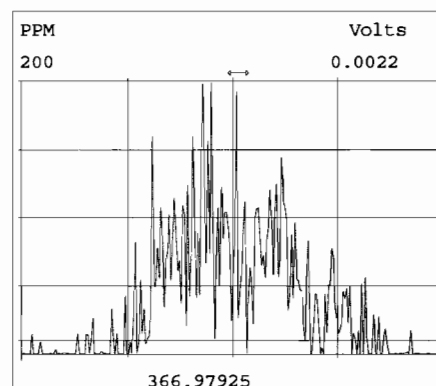
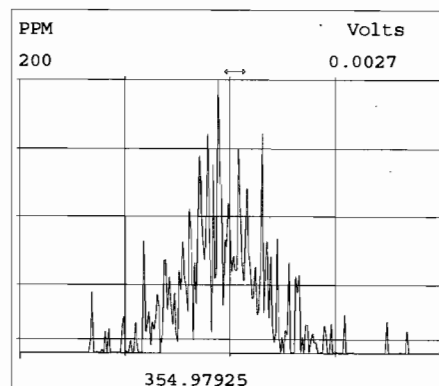
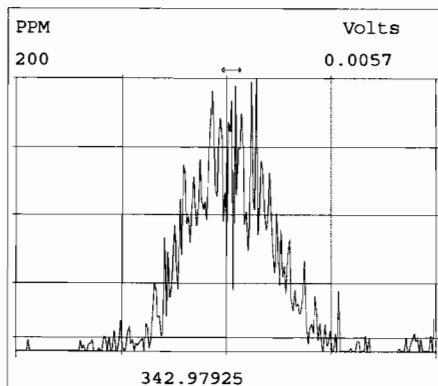
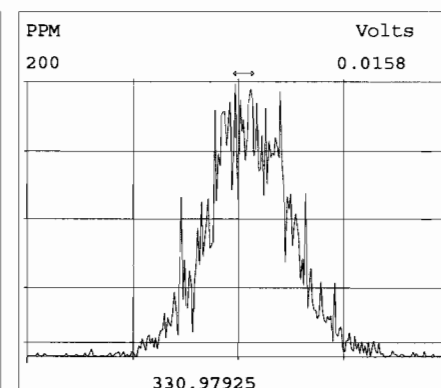
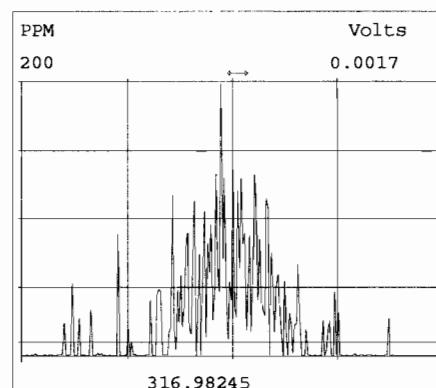
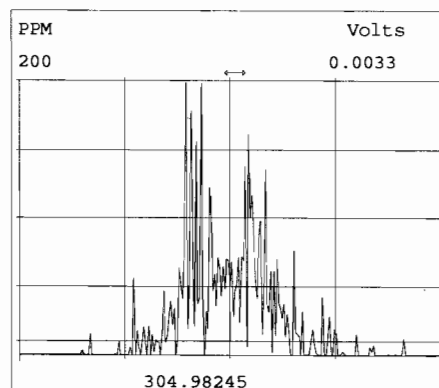
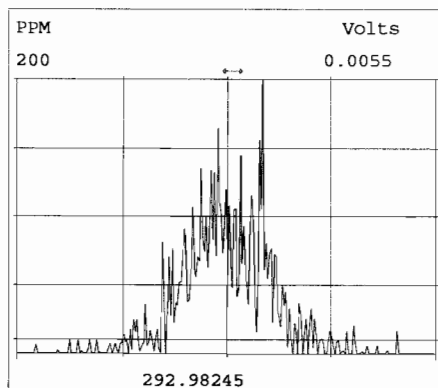


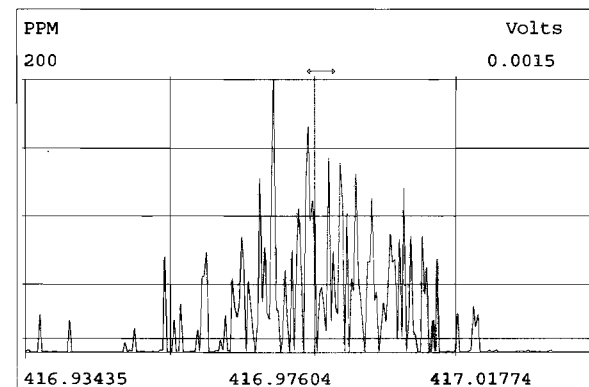
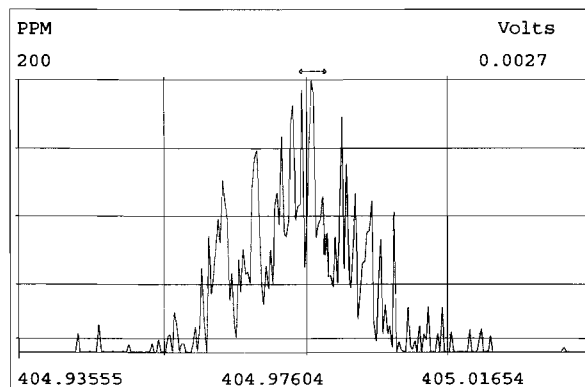
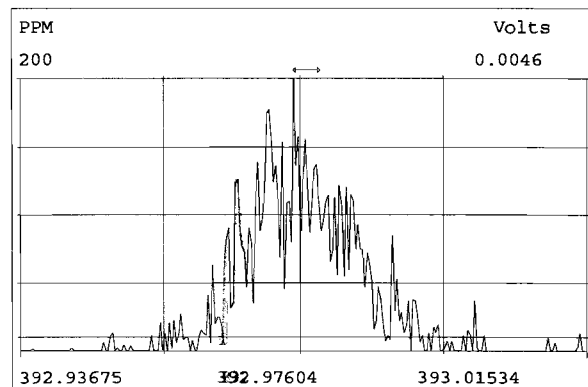
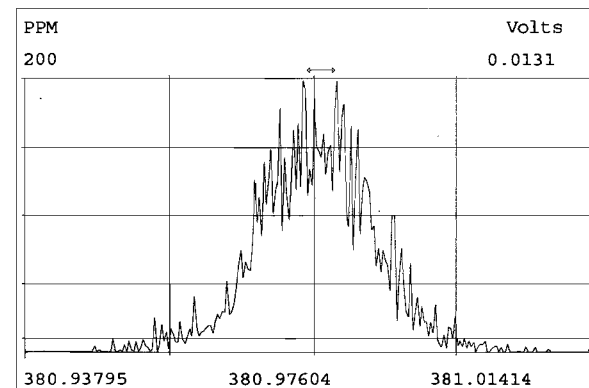
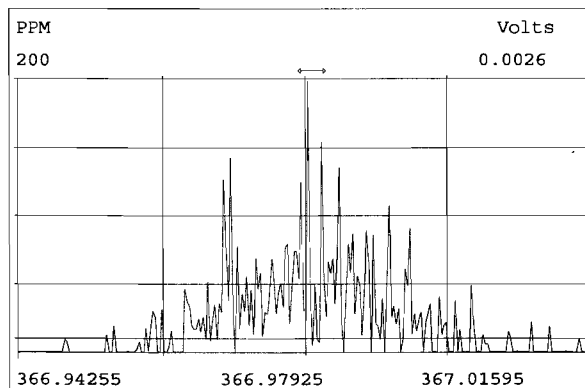
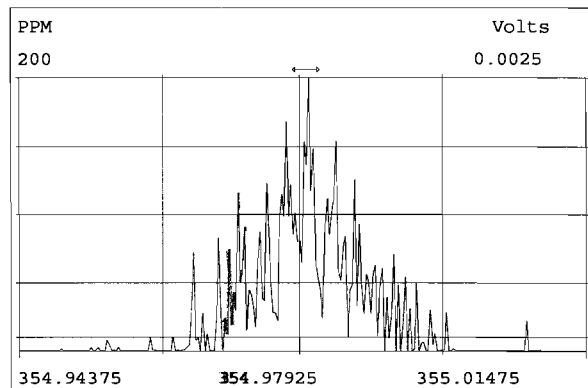
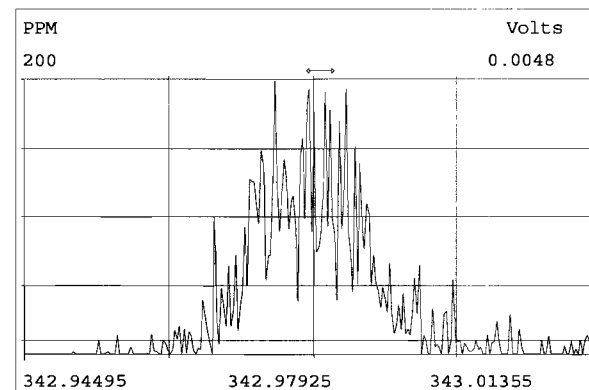
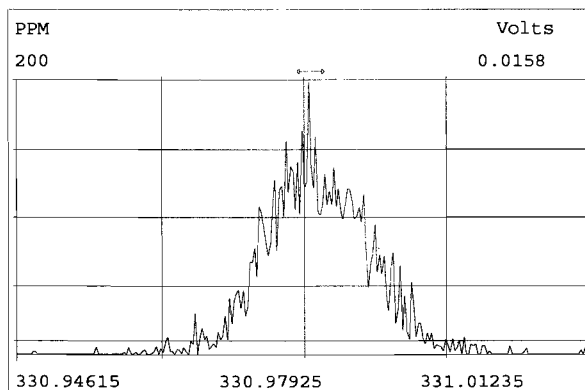
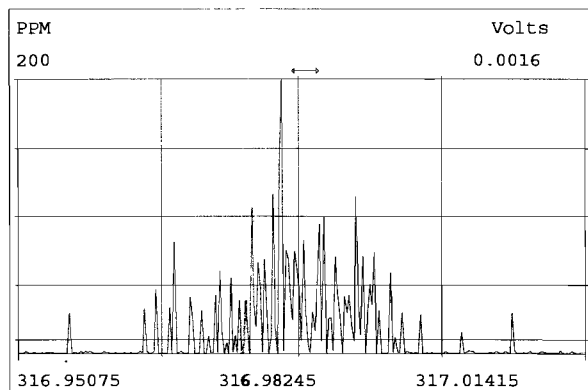
File:191106D2 #1-432 Acq: 6-NOV-2019 23:53:31 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D2-1 1613 CS3 19C2204 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Peak Locate Examination: 7-NOV-2019:09:18 File:RES_CHECK

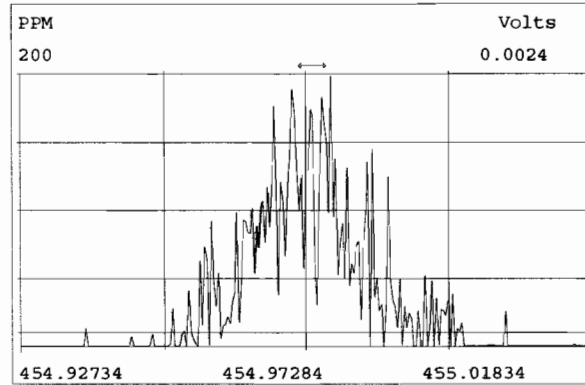
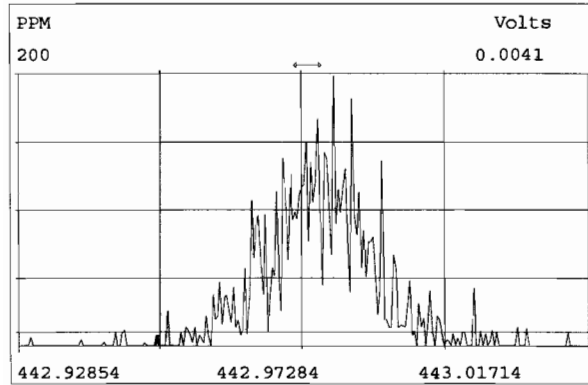
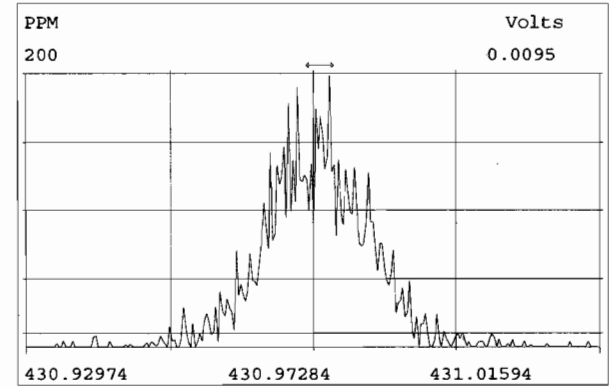
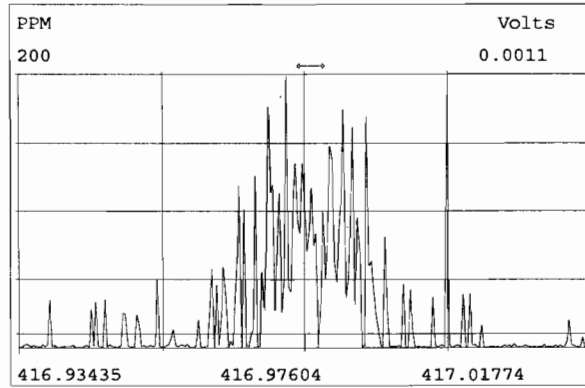
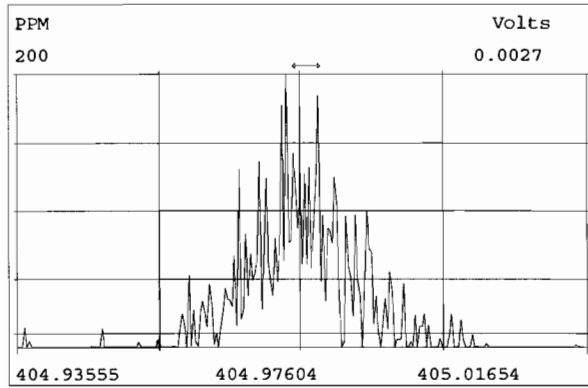
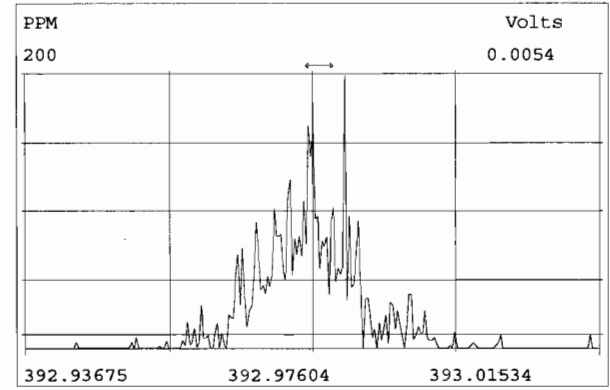
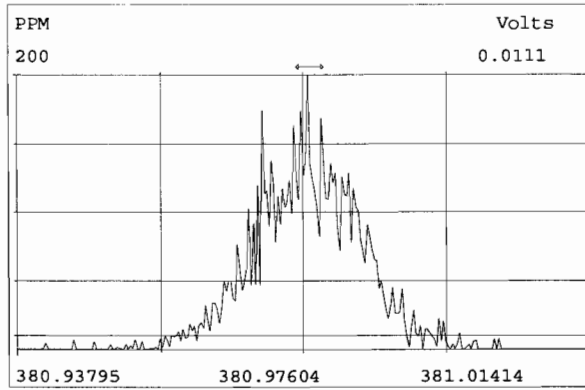
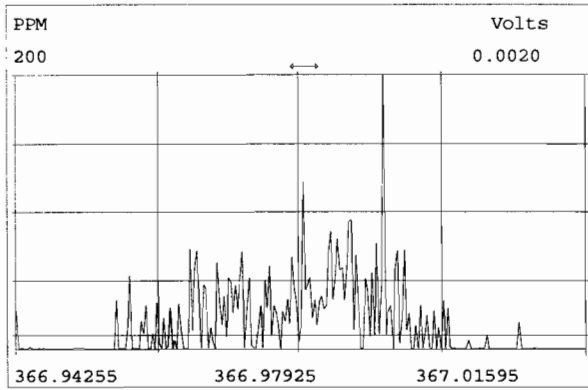
Experiment:OCDD_DB5 Function:1 Reference:PFK

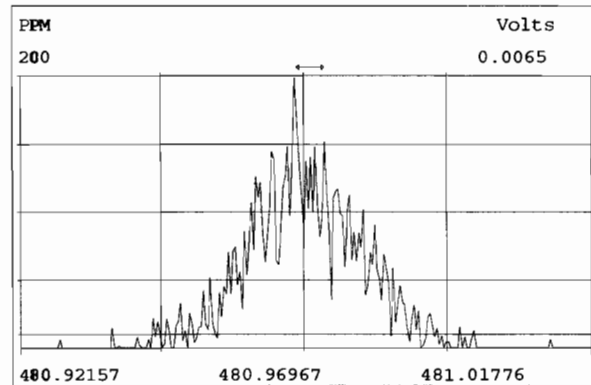
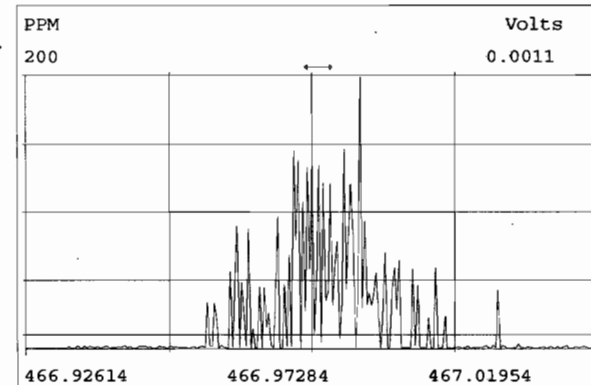
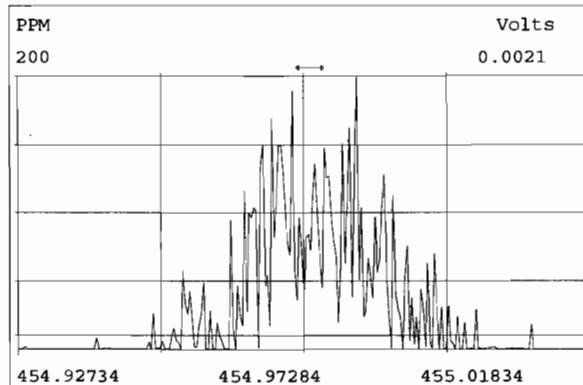
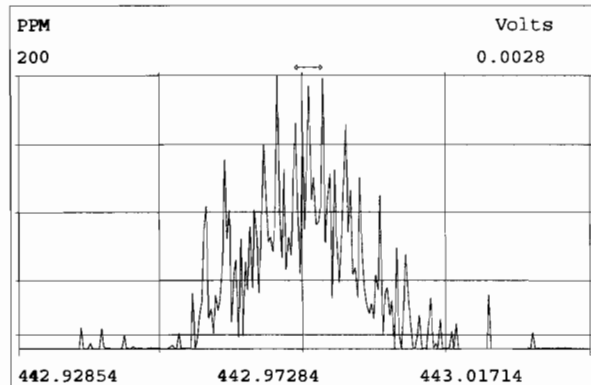
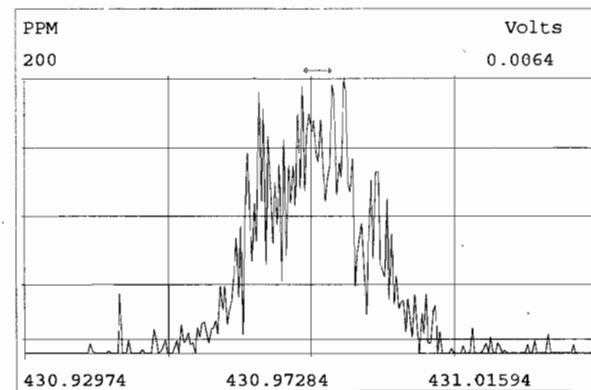
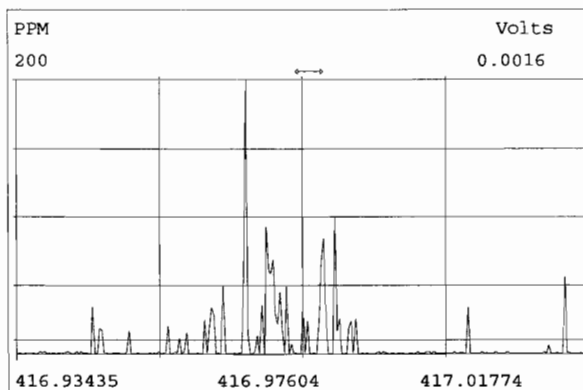
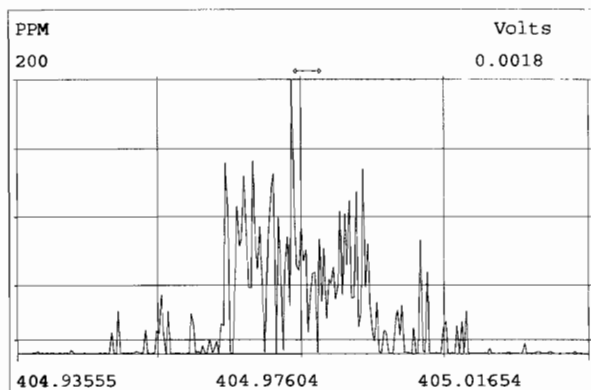




Peak Locate Examination: 7-NOV-2019:09:20 File:RBS_CHECK

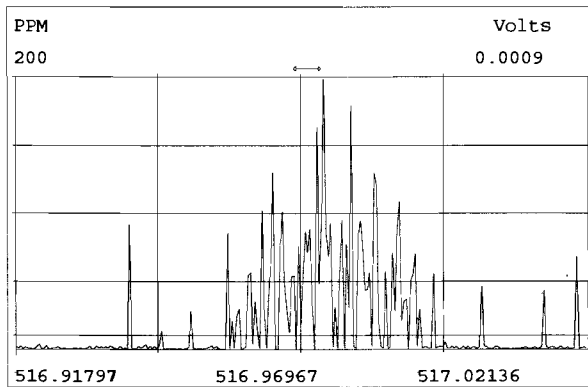
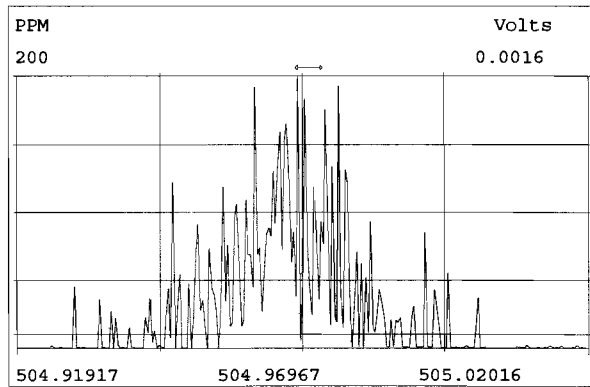
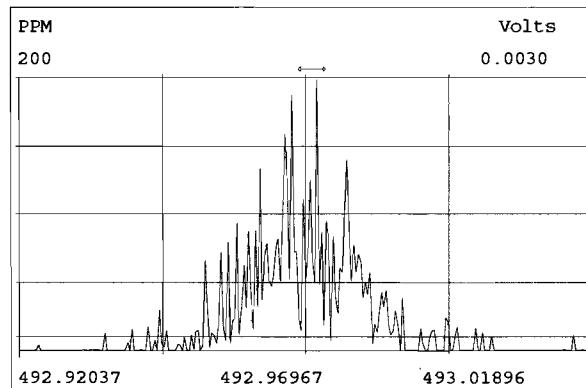
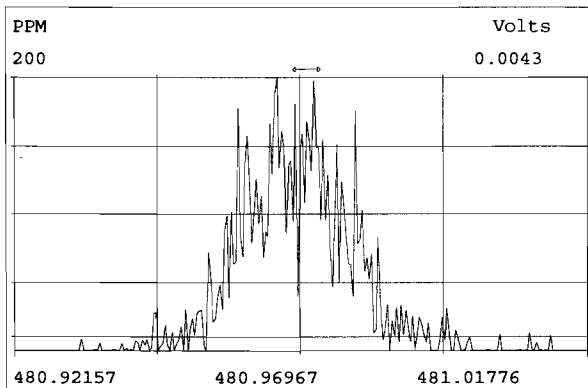
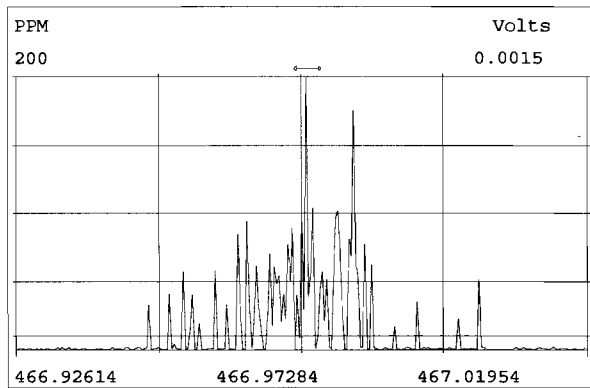
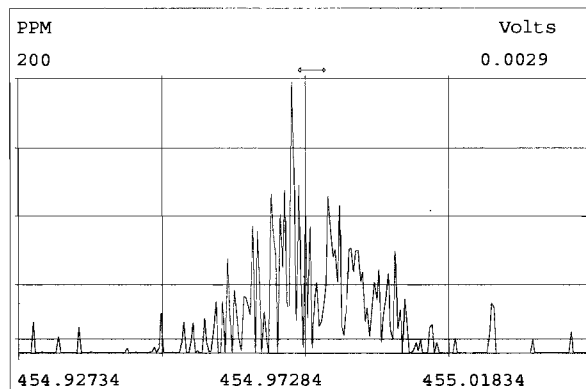
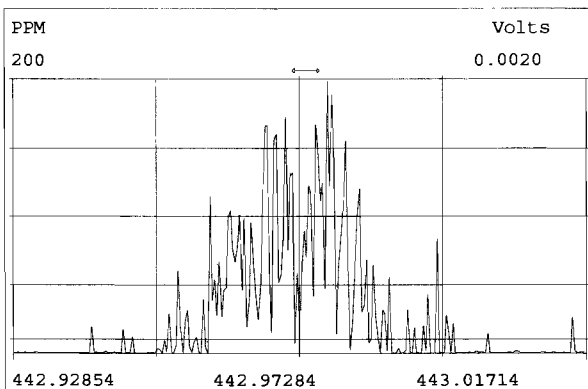
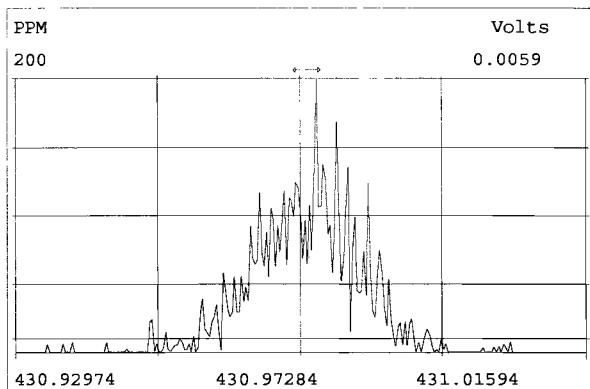
Experiment:OCDD_DB5 Function:3 Reference:PFK





Peak Locate Examination: 7-NOV-2019:09:21 File:RES_CHECK

Experiment:OCDD_DB5 Function:5 Reference:PFK



HKMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST191111D1-1

Reviewed By: CT 11/13/19

Initials & Date

End Calibration ID: NA

	<u>Beg.</u>	<u>End</u>
Ion abundance within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
Concentrations within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TCDD/TCDF Valleys <25%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
First and last eluters present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Retention Times within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Verification Std. named correctly? (ST-Year-Month-Day-VG ID)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Forms signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Correct ICAL referenced?	<u>DB</u>	<input type="checkbox"/>
<u>Run Log:</u>		
- Correct instrument listed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Samples within 12 hour clock?	<input checked="" type="checkbox"/> (Y)	<input type="checkbox"/> N
- Bottle position verified?	<u>DB</u>	

	<u>Beg.</u>	<u>End</u>
Mass resolution \geq	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 5k <input type="checkbox"/> 6-8K <input type="checkbox"/> 8K <input checked="" type="checkbox"/> 10K 1614 1699 429 1613/1668/8280		
Intergrated peaks display correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
GC Break <20%		<input type="checkbox"/> NA
<u>8280 CS1 End Standard:</u>		
- Ratios within limits, S/N <2.5:1, CS1 within 12 hours		<input type="checkbox"/> NA

Comments:

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.: CCAL ID: ST191111D1-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191111D1 S#1 Analysis Date: 11-NOV-19 Time: 10:19:32

NATIVE ANALYTES	M/Z'S	ION	QC	Pass	CONC. FOUND	CONC. RANGE (3) (ng/mL)
	FORMING RATIO (1)	ABUND. RATIO	LIMITS (2)			
2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	y	11.5	7.8 - 12.9
1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	53.6	8.2 - 12.3 (4) 39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	52.1	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	y	52.4	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	y	53.3	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	y	50.2	43.0 - 58.0
OCDD	M+2/M+4	0.89	0.76-1.02	y	104	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.74	0.65-0.89	y	9.82	8.4 - 12.0 8.6 - 11.6 (4)
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	y	51.8	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	50.8	41.0 - 61.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	49.6	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	50.1	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	50.5	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	y	49.3	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	y	50.1	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	y	49.6	43.0 - 58.0
OCDF	M+2/M+4	0.91	0.76-1.02	y	101	63.0 - 159.0

(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) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: JB

Date: 11/11/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191111D1 S#1 Analysis Date: 11-NOV-19 Time: 10:19:32

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC. FOUND	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	y	101	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.62	0.54-0.72	y	103	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	y	98.9	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	92.3	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	y	93.5	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	y	107	72.0 - 138.0
13C-OCDD	M/M+2	0.90	0.76-1.02	y	211	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.80	0.65-0.89	y	101	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	y	103	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	y	102	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	102	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	99.3	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	101	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	y	103	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.43	0.37-0.51	y	105	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.44	0.37-0.51	y	112	77.0 - 129.0
13C-OCDF	M+2/M+4	0.89	0.76-1.02	y	226	96.0 - 415.0
CLEANUP STANDARD (3) 37Cl-2,3,7,8-TCDD					9.59	7.9 - 12.7

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

(2) Ion Abundance Ratio Control Limits as specified

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

Analyst: DB

Date: 11/11/19

FORM 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191111D1 S#1 Analysis Date: 11-NOV-19 Time: 10:19:32

ZB-5MS IS Data Filename: 191111D1 S#1 Analysis Date: 11-NOV-19 Time: 10:19:32

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	22:50	1,3,6,8-TCDF (F)	20:43
1,2,8,9-TCDD (L)	27:05	1,2,8,9-TCDF (L)	27:13
1,2,4,7,9-PeCDD (F)	28:40	1,3,4,6,8-PeCDF (F)	27:11
1,2,3,8,9-PeCDD (L)	31:04	1,2,3,8,9-PeCDF (L)	31:19
1,2,4,6,7,9-HxCDD (F)	32:30	1,2,3,4,6,8-HxCDF (F)	31:57
1,2,3,7,8,9-HxCDD (L)	34:26	1,2,3,7,8,9-HxCDF (L)	34:49
1,2,3,4,6,7,9-HpCDD (F)	37:03	1,2,3,4,6,7,8-HpCDF (F)	36:40
1,2,3,4,6,7,8-HpCDD (L)	37:53	1,2,3,4,7,8,9-HpCDF (L)	38:25

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

=====

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT
BETWEEN
COMPARED PEAKS (1)

<25%

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

Analyst: DB

Date: 11/11/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-SMS

VER Data Filename: 191111D1 S#1 Analysis Date: 11-NOV-19 Time: 10:19:32

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME		RRT
	REFERENCE	RRT	QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	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-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	1.000	0.999-1.002

LABELED COMPOUNDS

13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.976-1.043
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.197	1.000-1.567
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.992	0.923-1.103
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.152	1.000-1.425
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.186	1.011-1.526
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.023	0.989-1.052

Analyst: DB

Date: 11/11/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191111D1 S#1 Analysis Date: 11-NOV-19 Time: 10:19:32

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
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	1.000	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
1,2,3,4,7,8-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-1,2,3,7,8,9-HxCDD	1.000	0.998-1.004
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	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	1.000	0.999-1.001
OCDF	13C-OCDF	1.000	0.999-1.001

LABELED COMPOUNDS

13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.988	0.975-1.001
13C-1,2,3,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.992	0.979-1.005
13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.009	1.001-1.020
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.038	1.002-1.072
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.014	1.002-1.026
13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.018	1.007-1.029
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.027	1.014-1.038
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.093	1.069-1.111
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.145	1.098-1.192
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.129	1.117-1.141
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.227	1.085-1.365
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.234	1.091-1.371

Analyst: DB

Date: 11/11/19

Client ID: 1613 CS3 19C2204
Lab ID: ST191111D1-1

Filename: 191111D1 S:1 Acq:11-NOV-19 10:19:32
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191111D1-1
EndCAL: NA

Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	1.35e+06	0.79 y	0.91	26:13	11.525		*	2.5	*	Total Tetra-Dioxins	79.2	79.7		*	*
1,2,3,7,8-PeCDD	5.14e+06	0.63 y	0.90	30:43	53.581		*	2.5	*	Total Penta-Dioxins	201	201		*	*
1,2,3,4,7,8-HxCDD	5.45e+06	1.27 y	1.10	34:02	52.131		*	2.5	*	Total Hexa-Dioxins	232	234		*	*
1,2,3,6,7,8-HxCDD	5.81e+06	1.26 y	0.94	34:08	52.425		*	2.5	*	Total Hepta-Dioxins	116	117		*	*
1,2,3,7,8,9-HxCDD	5.77e+06	1.27 y	0.96	34:26	53.282		*	2.5	*	Total Tetra-Furans	38.6	39.3		*	*
1,2,3,4,6,7,8-HpCDD	5.14e+06	1.04 y	0.98	37:53	50.182		*	2.5	*	Total Penta-Furans	224.39	224.88		*	*
OCDD	9.10e+06	0.89 y	0.96	41:09	103.97		*	2.5	*	Total Hexa-Furans	266	267		*	*
										Total Hepta-Furans	100	101		*	*
2,3,7,8-TCDF	1.81e+06	0.74 y	0.95	25:26	9.8187		*	2.5	*						
1,2,3,7,8-PeCDF	8.12e+06	1.57 y	0.96	29:32	51.845		*	2.5	*						
2,3,4,7,8-PeCDF	8.24e+06	1.61 y	1.01	30:26	50.767		*	2.5	*						
1,2,3,4,7,8-HxCDF	7.41e+06	1.22 y	1.18	33:08	49.598		*	2.5	*						
1,2,3,6,7,8-HxCDF	8.21e+06	1.22 y	1.07	33:16	50.088		*	2.5	*						
2,3,4,6,7,8-HxCDF	8.07e+06	1.22 y	1.11	33:52	50.498		*	2.5	*						
1,2,3,7,8,9-HxCDF	6.64e+06	1.23 y	1.06	34:49	49.257		*	2.5	*						
1,2,3,4,6,7,8-HpCDF	6.68e+06	1.03 y	1.13	36:39	50.069		*	2.5	*						
1,2,3,4,7,8,9-HpCDF	6.19e+06	1.03 y	1.28	38:25	49.567		*	2.5	*						
OCDF	1.12e+07	0.91 y	0.95	41:23	101.21		*	2.5	*						
IS 13C-2,3,7,8-TCDD	1.30e+07	0.79 y	1.10	26:12	101.03					Rec	Qual				
IS 13C-1,2,3,7,8-PeCDD	1.06e+07	0.62 y	0.88	30:42	102.93					101					
IS 13C-1,2,3,4,7,8-HxCDD	9.49e+06	1.28 y	0.64	34:01	98.947					103					
IS 13C-1,2,3,6,7,8-HxCDD	1.18e+07	1.27 y	0.86	34:08	92.311					98.9					
IS 13C-1,2,3,7,8,9-HxCDD	1.13e+07	1.27 y	0.81	34:26	93.524					92.3					
IS 13C-1,2,3,4,6,7,8-HpCDD	1.05e+07	1.04 y	0.65	37:52	107.02					93.5					
IS 13C-OCDD	1.83e+07	0.90 y	0.58	41:09	210.85					107					
IS 13C-2,3,7,8-TCDF	1.94e+07	0.80 y	1.03	25:26	100.99					105					
IS 13C-1,2,3,7,8-PeCDF	1.63e+07	1.58 y	0.85	29:32	102.91					101					
IS 13C-2,3,4,7,8-PeCDF	1.60e+07	1.61 y	0.85	30:25	101.78					103					
IS 13C-1,2,3,4,7,8-HxCDF	1.27e+07	0.51 y	0.83	33:07	102.14					102					
IS 13C-1,2,3,6,7,8-HxCDF	1.53e+07	0.52 y	1.03	33:15	99.266					102					
IS 13C-2,3,4,6,7,8-HxCDF	1.43e+07	0.52 y	0.95	33:51	100.71					99.3					
IS 13C-1,2,3,7,8,9-HxCDF	1.27e+07	0.52 y	0.83	34:48	102.70					101					
IS 13C-1,2,3,4,6,7,8-HpCDF	1.18e+07	0.43 y	0.76	36:39	104.60					101					
IS 13C-1,2,3,4,7,8,9-HpCDF	9.76e+06	0.44 y	0.58	38:24	112.46					103					
IS 13C-OCDF	2.33e+07	0.89 y	0.69	41:22	226.13					105					
C/Up 37Cl-2,3,7,8-TCDD	1.34e+06		1.20	26:13	9.5950					112					
RS/RT 13C-1,2,3,4-TCDD	1.17e+07	0.80 y	1.00	25:39	100.00					113					
RS 13C-1,2,3,4-TCDF	1.85e+07	0.81 y	1.00	24:13	100.00										
RS/RT 13C-1,2,3,4,6,9-HxCDF	1.49e+07	0.51 y	1.00	33:32	100.00										

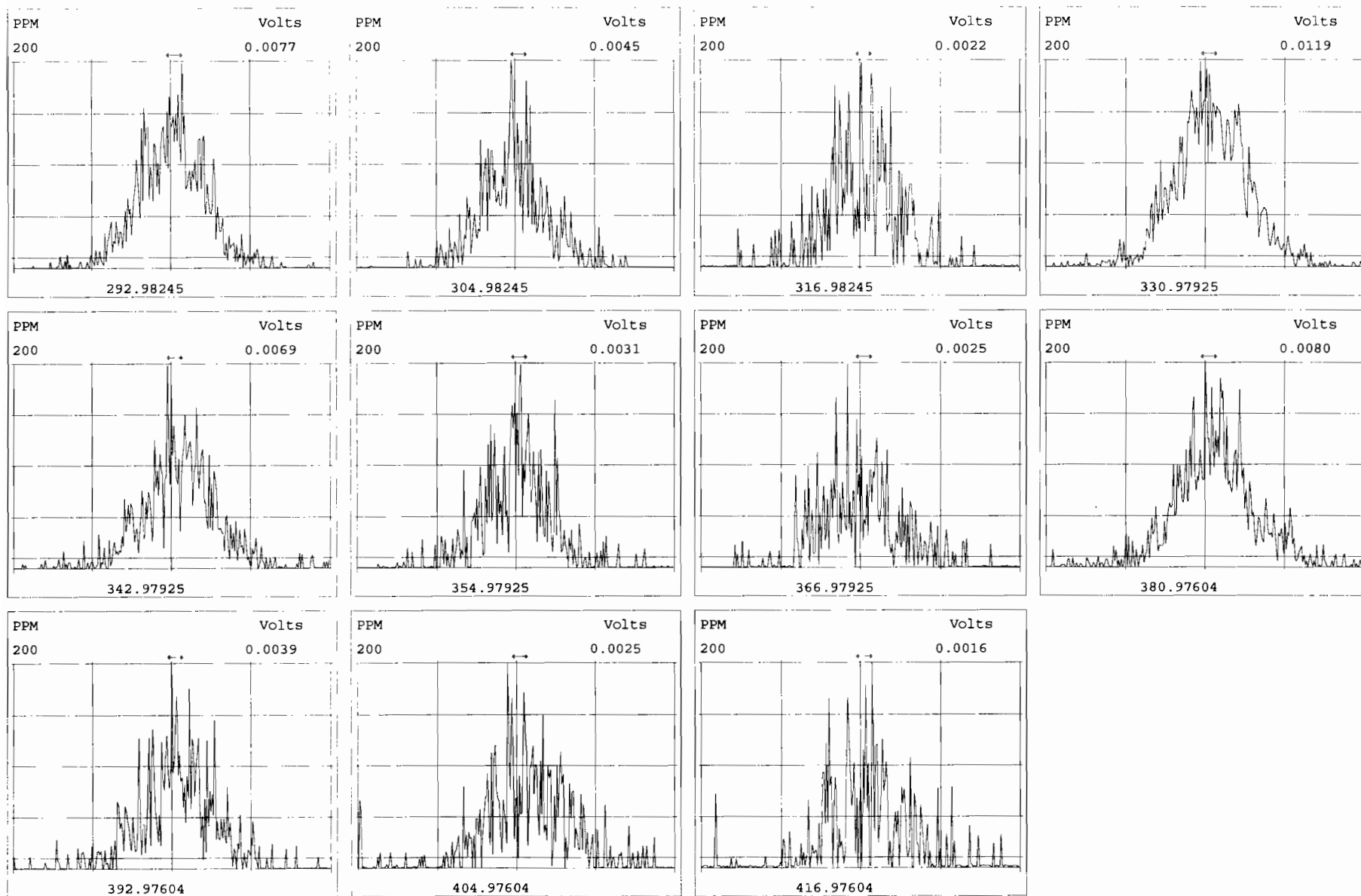
Integrations
by DB
Analyst: DB
Date: 11/11/19
Reviewed
by CT
Analyst: CT
Date: 11/13/19

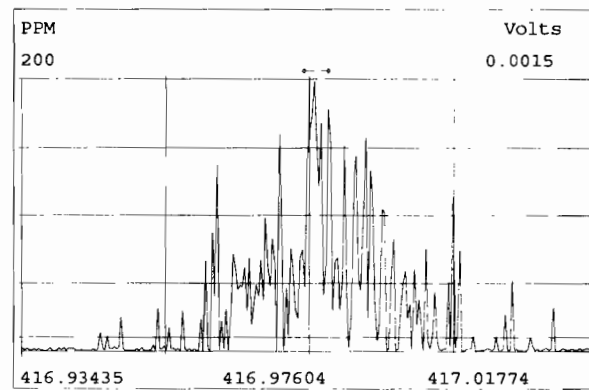
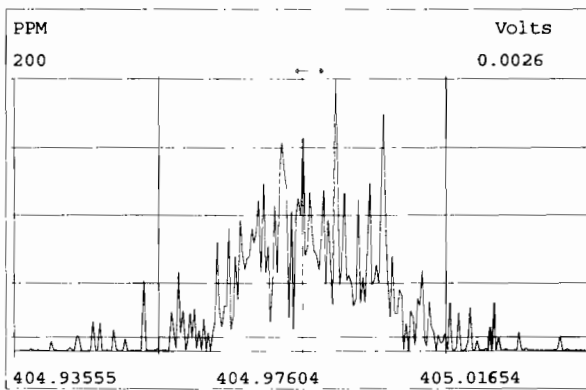
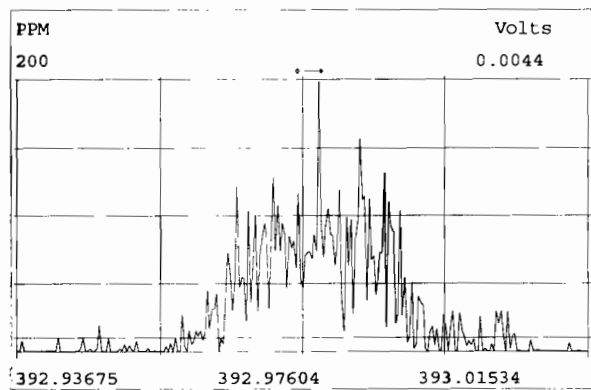
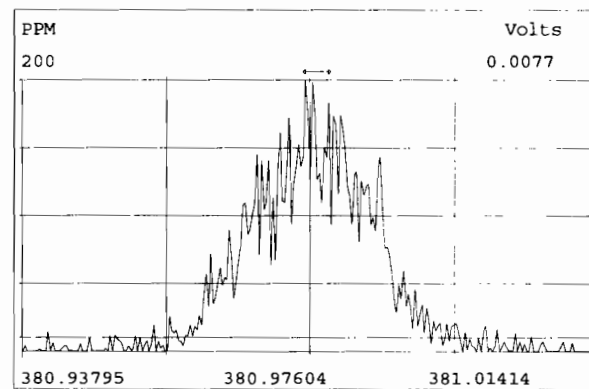
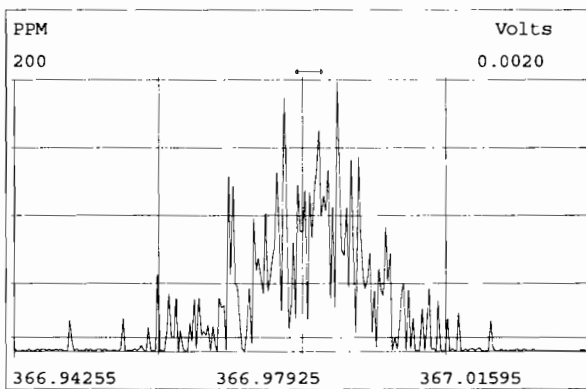
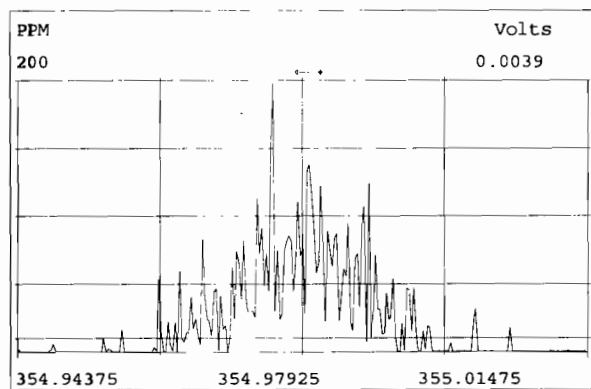
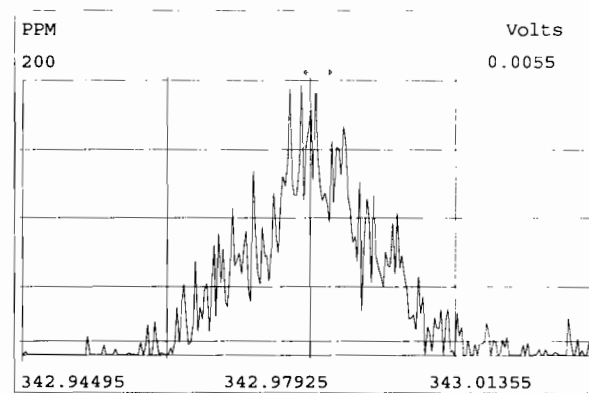
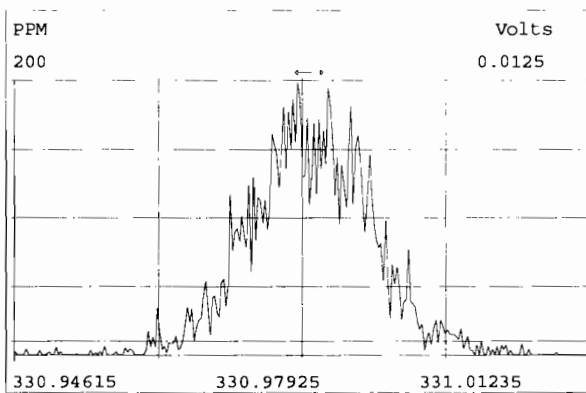
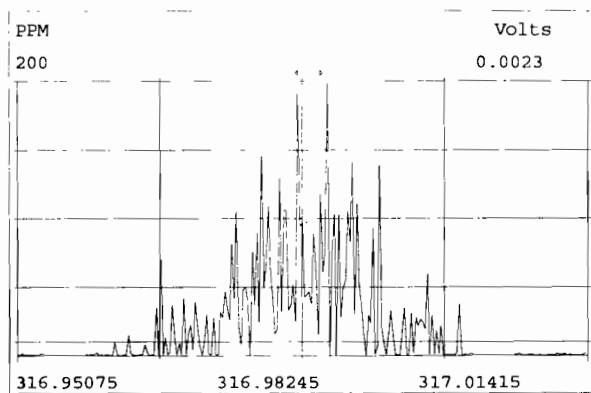
Vista Analytical Laboratory - Injection Log Run file: 191111D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

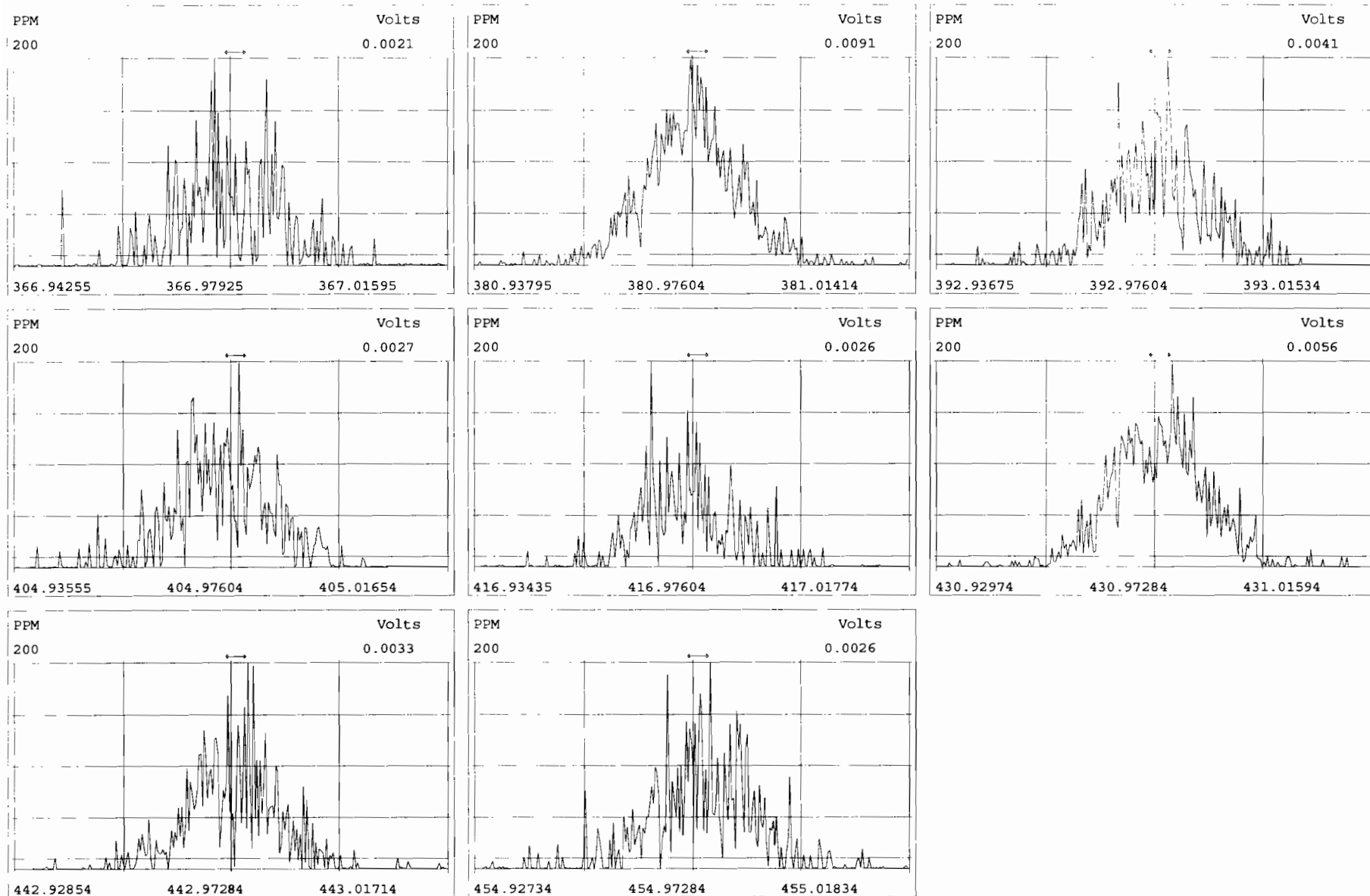
Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191111D1	1	ST191111D1-1	DB	11-NOV-19	10:19:32	ST191111D1-1	NA
191111D1	2	B9J0332-BS1	DB	11-NOV-19	11:07:28	ST191111D1-1	NA
191111D1	3	SOLVENT BLANK	DB	11-NOV-19	11:55:24	ST191111D1-1	NA
191111D1	4	B9J0332-BLK1	DB	11-NOV-19	12:43:25	ST191111D1-1	NA
191111D1	5	B9J0144-DUP1	DB	11-NOV-19	13:31:22	ST191111D1-1	NA
191111D1	6	1903431-09	DB	11-NOV-19	14:19:19	ST191111D1-1	NA
191111D1	7	1903743-01	DB	11-NOV-19	15:07:15	ST191111D1-1	NA
191111D1	8	1903743-02	DB	11-NOV-19	15:55:12	ST191111D1-1	NA
191111D1	9	1903645-01	DB	11-NOV-19	16:43:10	ST191111D1-1	NA
191111D1	10	1903645-03	DB	11-NOV-19	17:30:56	ST191111D1-1	NA
191111D1	11	1903645-02	DB	11-NOV-19	18:18:51	ST191111D1-1	NA
191111D1	12	1903645-04	DB	11-NOV-19	19:06:37	ST191111D1-1	NA
191111D1	13	1903645-05	DB	11-NOV-19	19:54:22	ST191111D1-1	NA
191111D1	14	1903645-06	DB	11-NOV-19	20:42:07	ST191111D1-1	NA
191111D1	15	1903645-07	DB	11-NOV-19	21:29:52	ST191111D1-1	NA

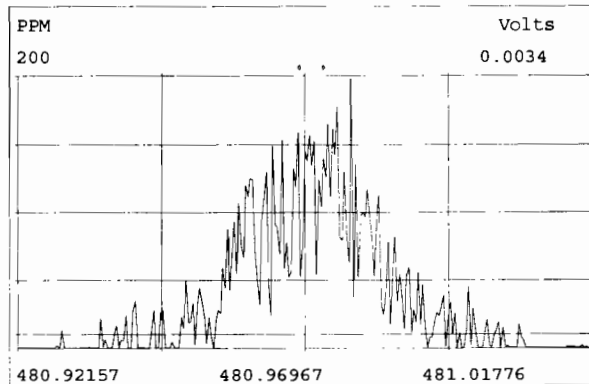
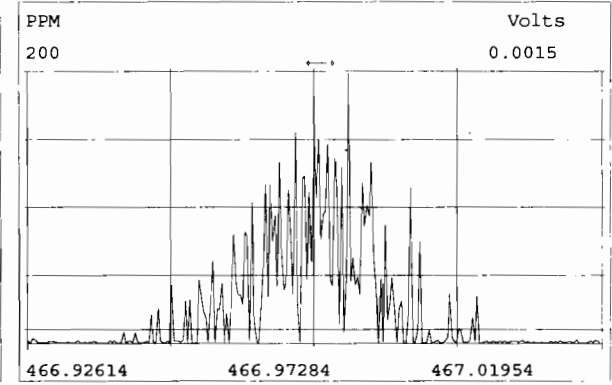
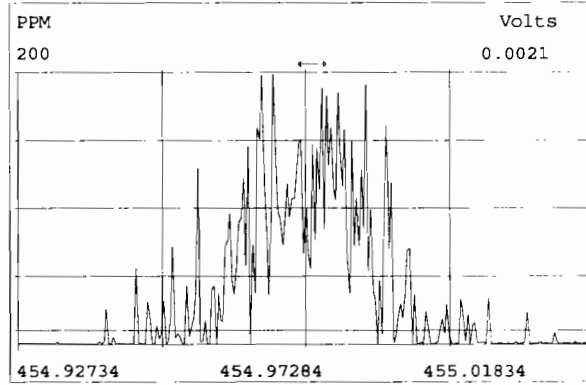
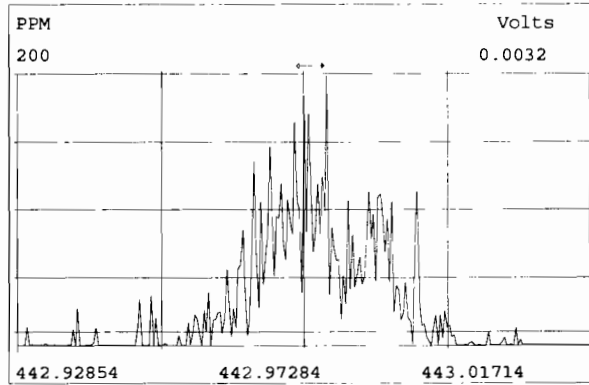
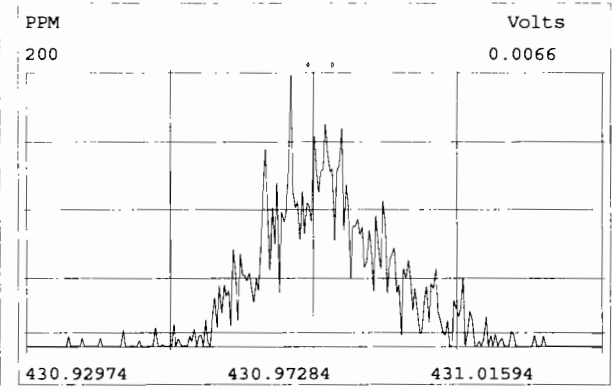
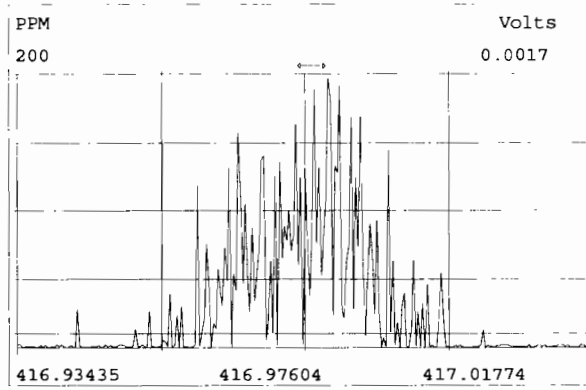
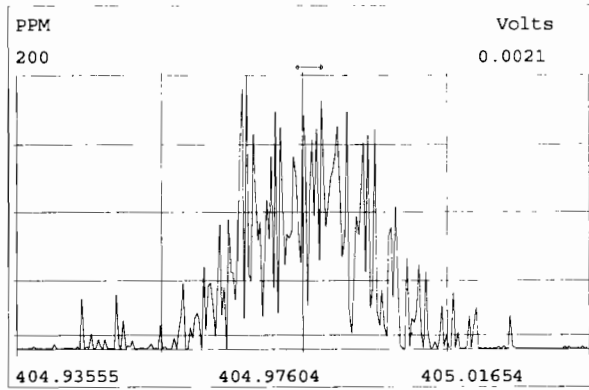
Peak Locate Examination:11-NOV-2019:10:16 File:191111D1

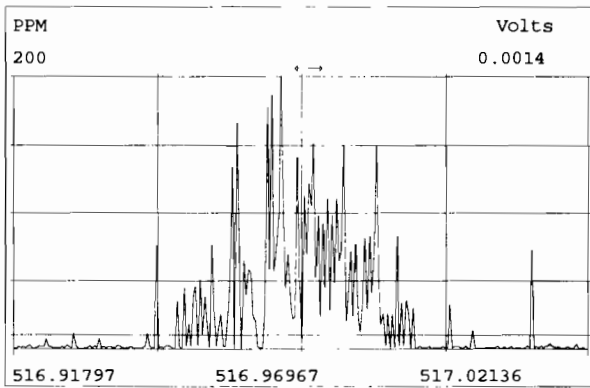
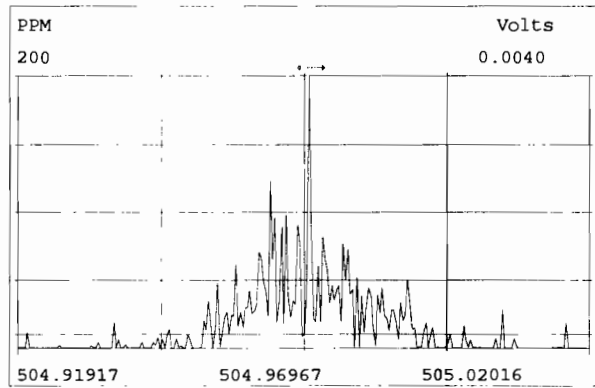
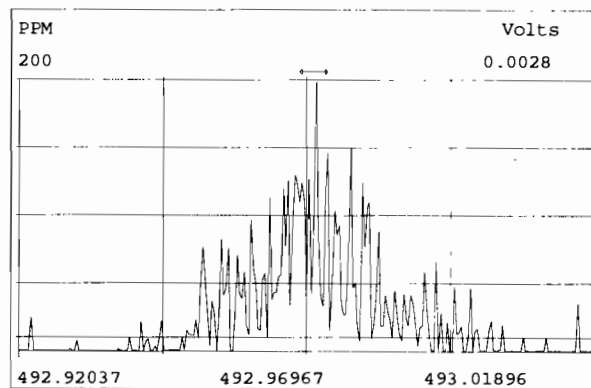
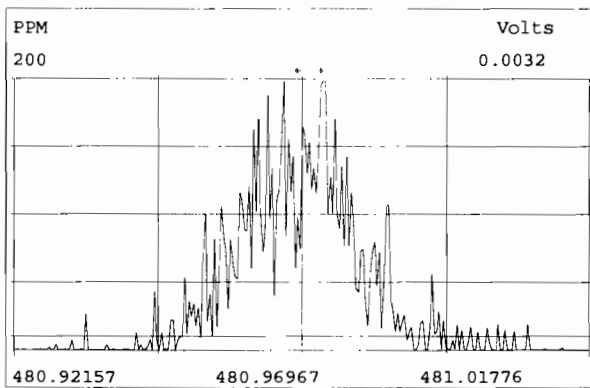
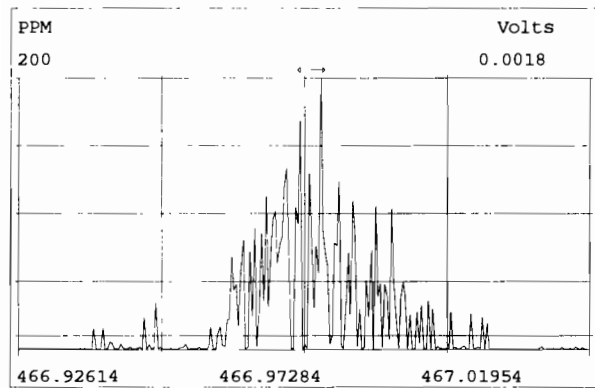
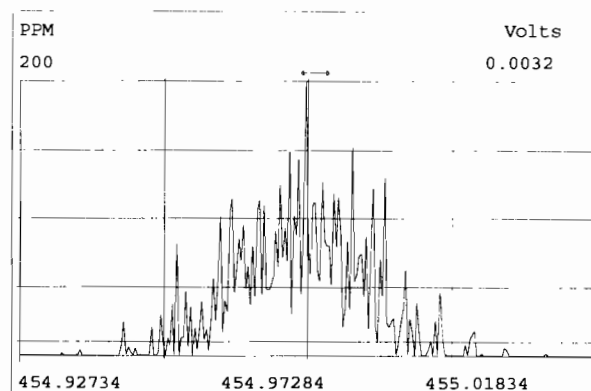
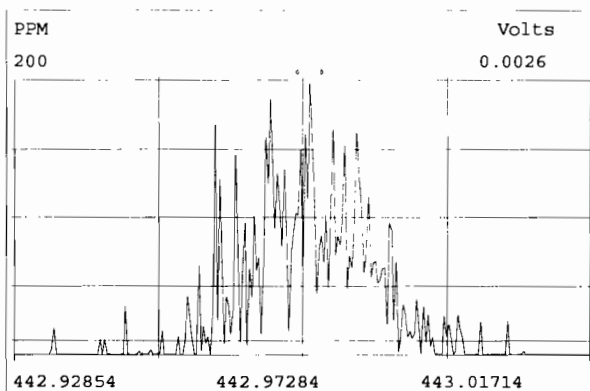
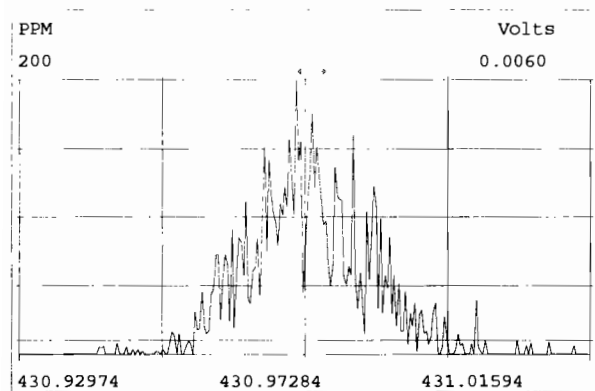
Experiment:OCDD_DB5 Function:1 Reference:PFK



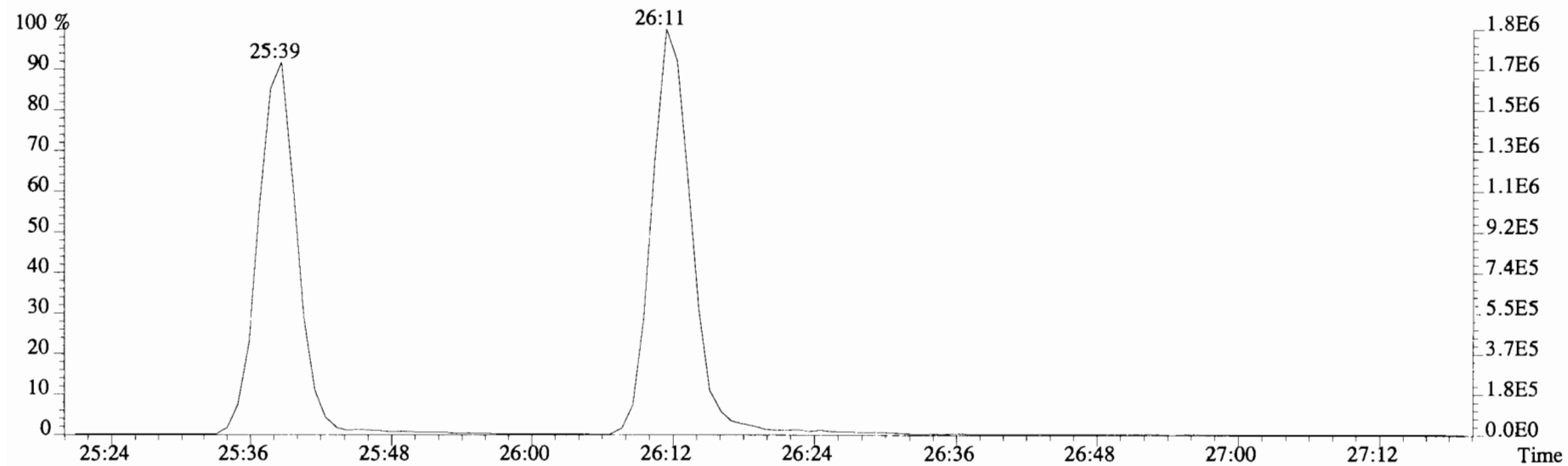
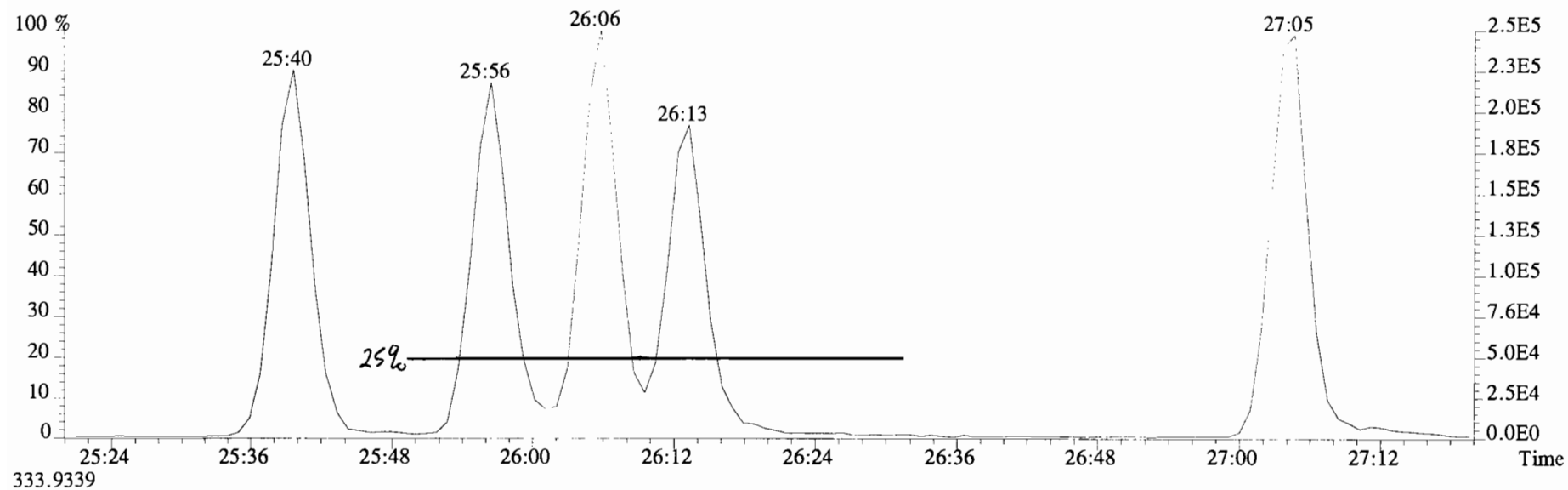




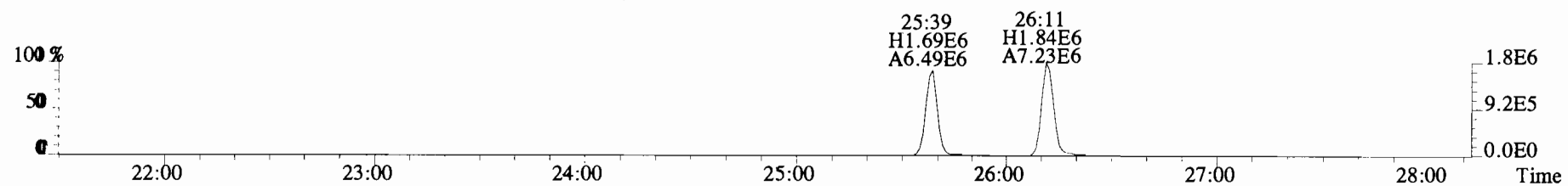
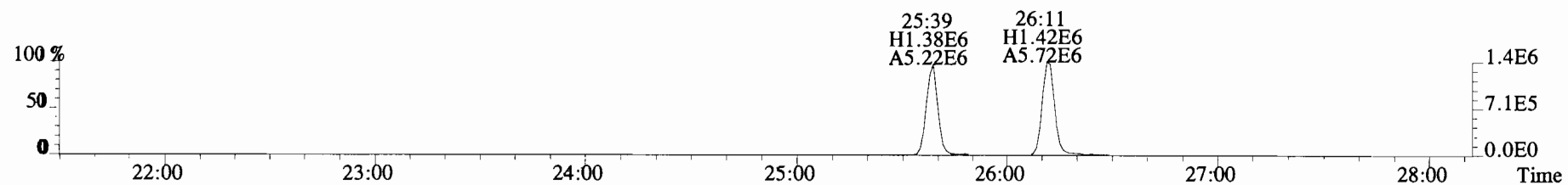
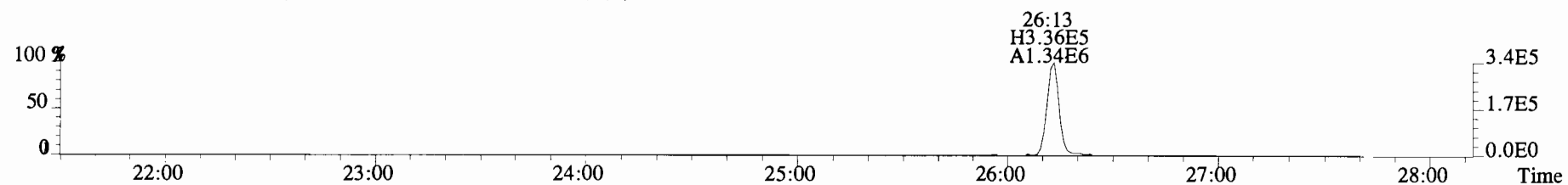
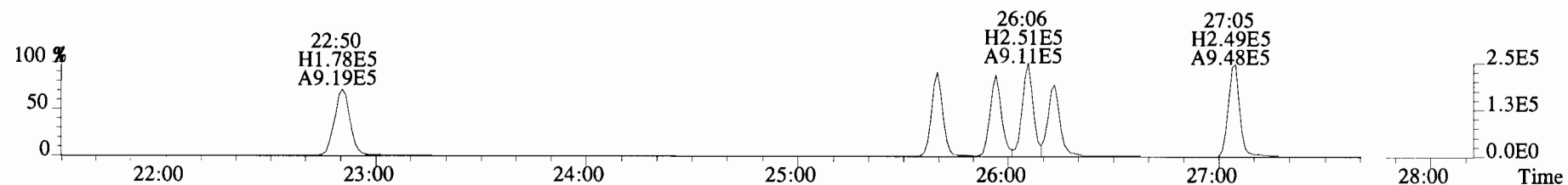
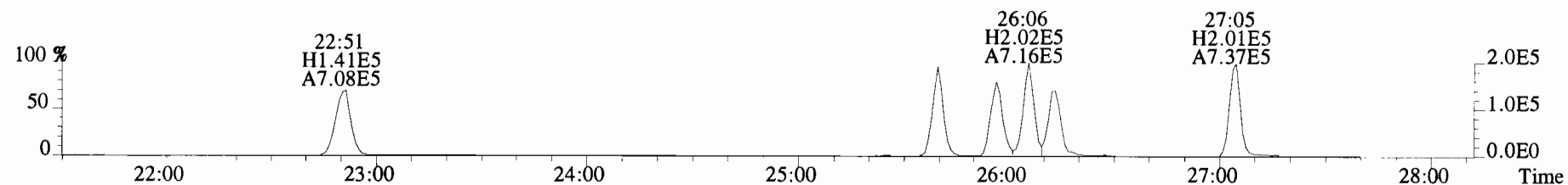




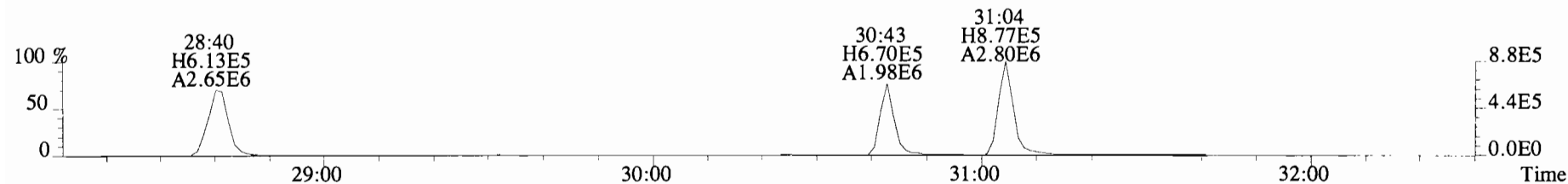
File:191111D1 #1-492 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
321.8936



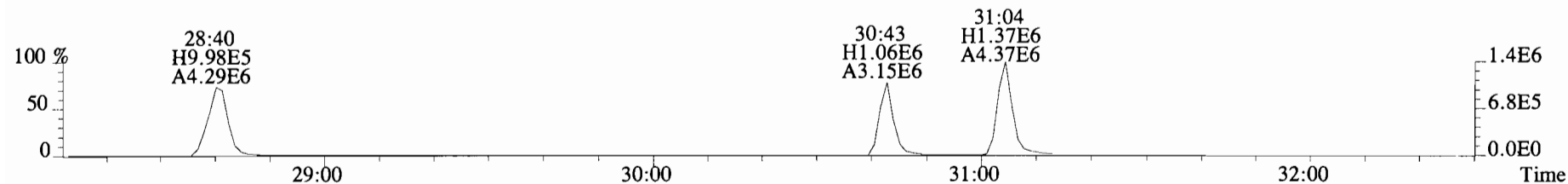
File:191111D1 #1-492 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



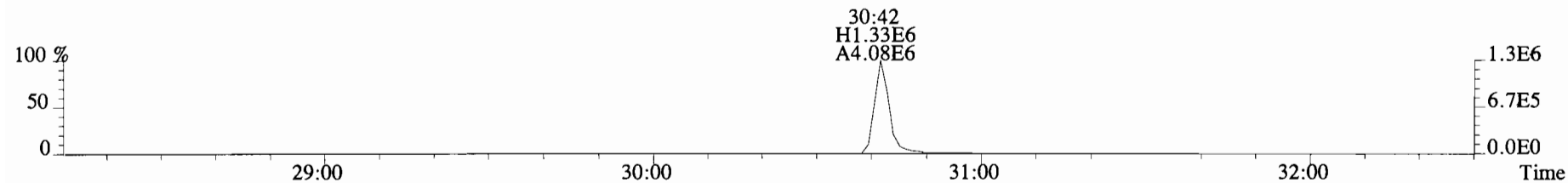
File:191111D1 #1-211 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



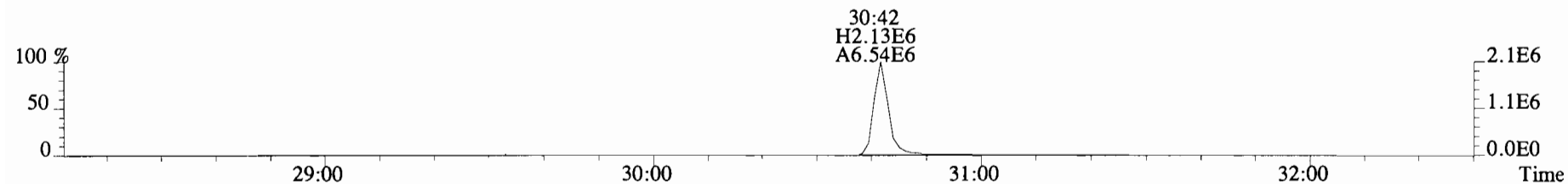
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



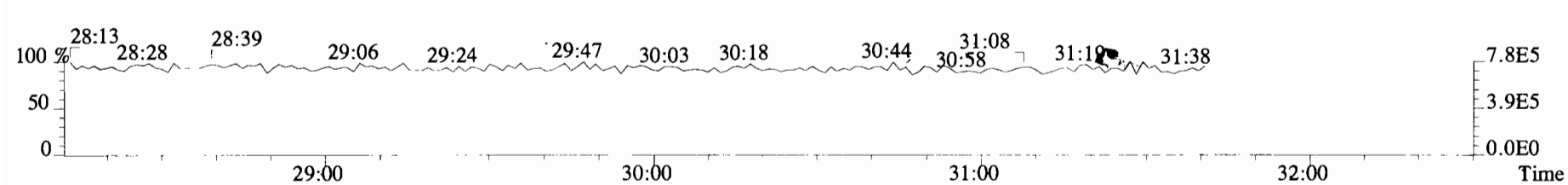
365.8978 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



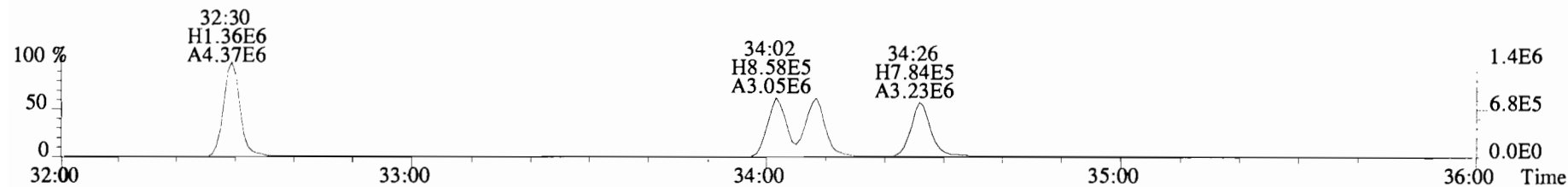
367.8949 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



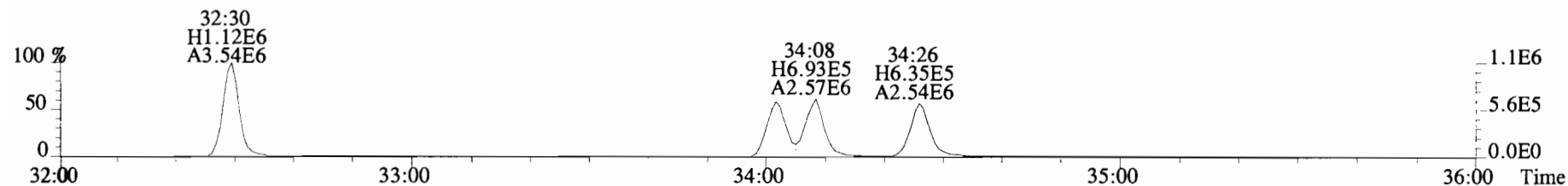
366.9792 F:2



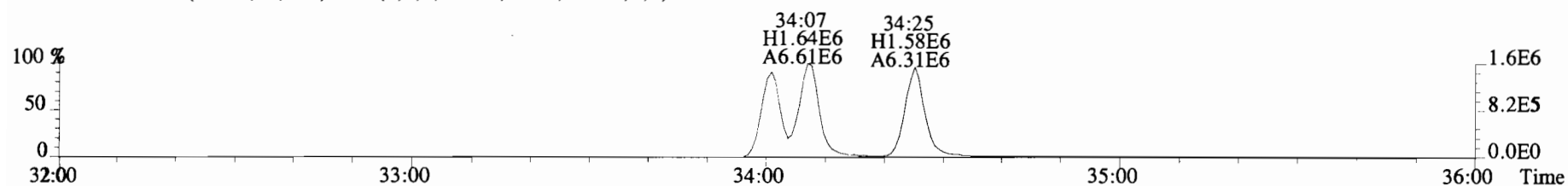
File:191111D1 #1-384 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



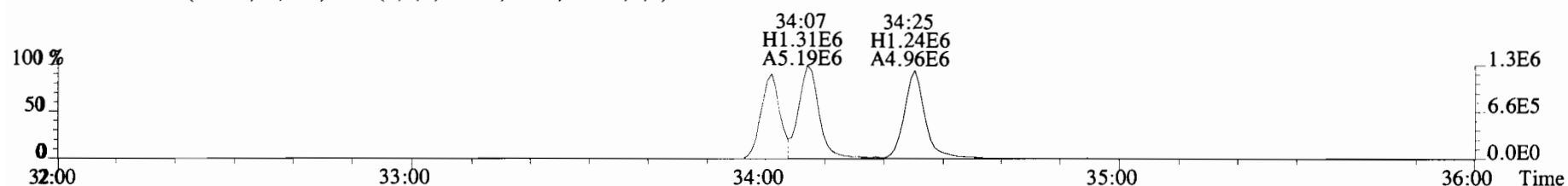
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



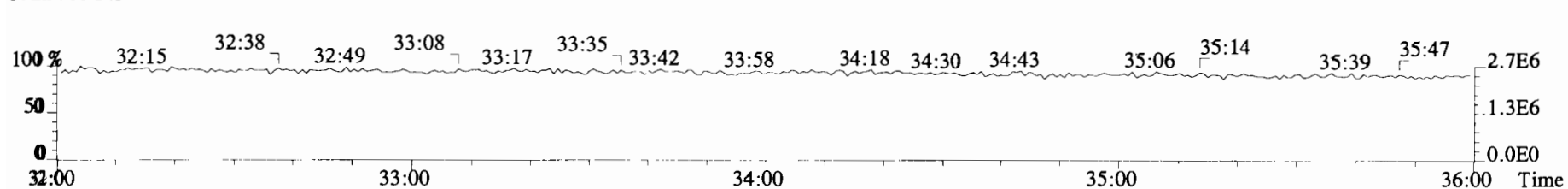
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



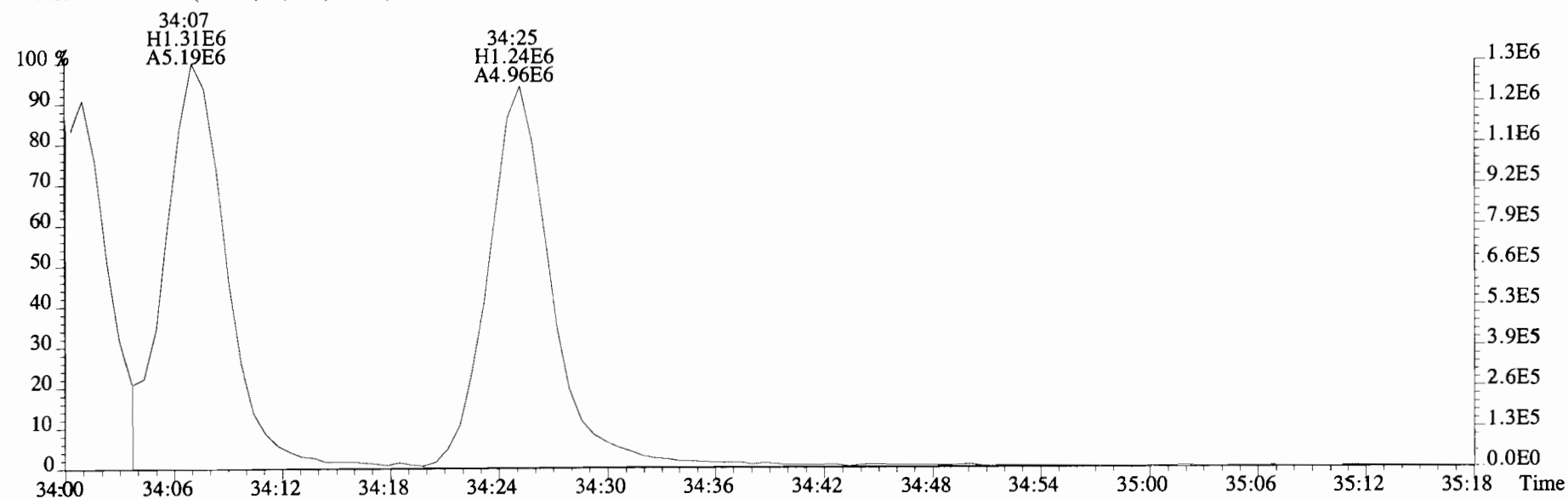
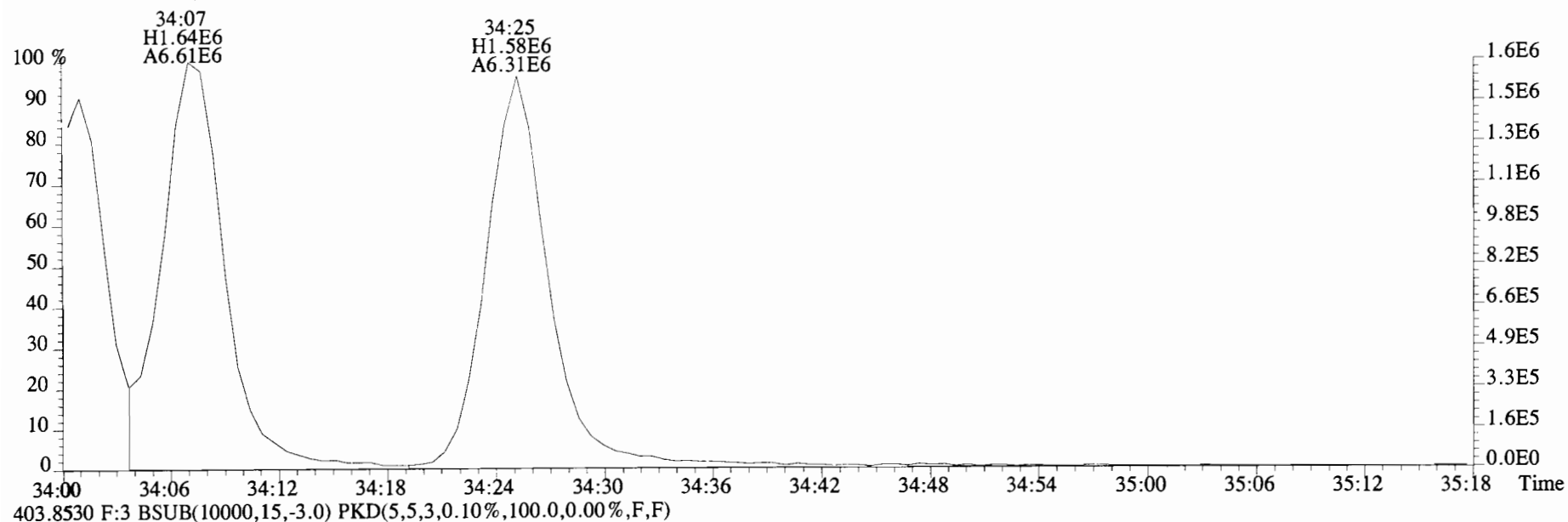
403.8530 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



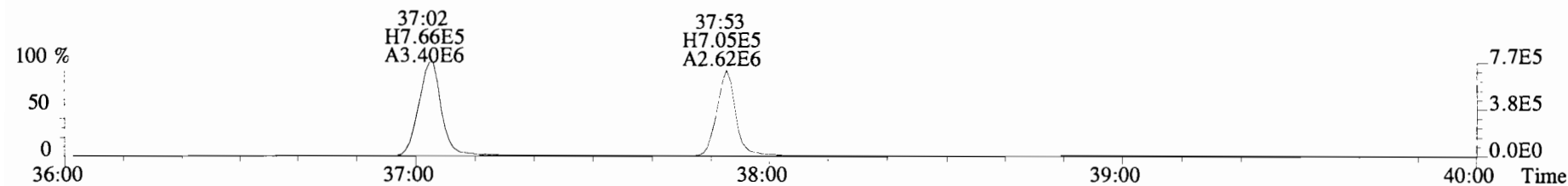
392.9760 F:3



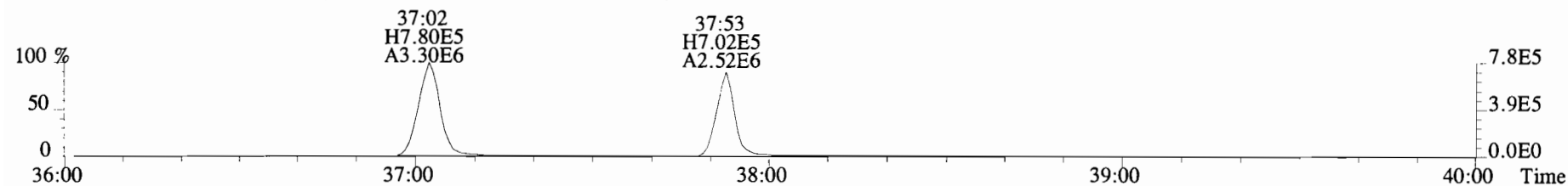
File:191111D1 #1-384 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



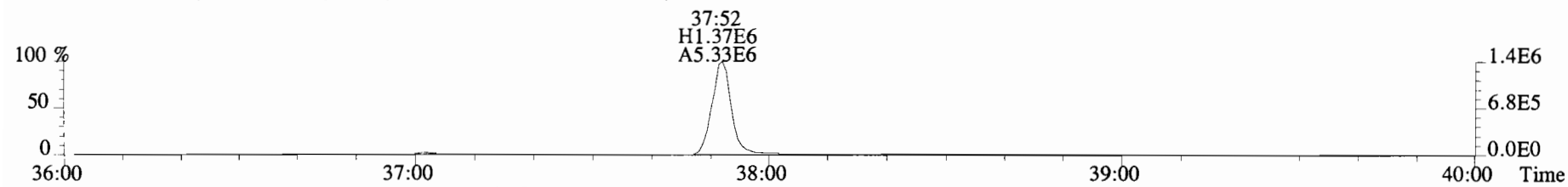
File:191111D1 #1-356 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



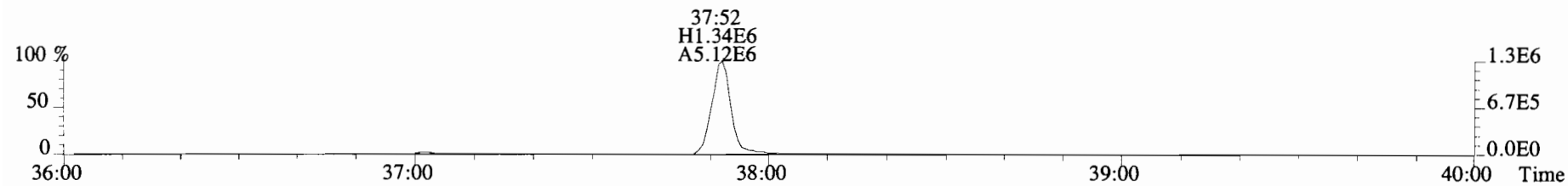
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



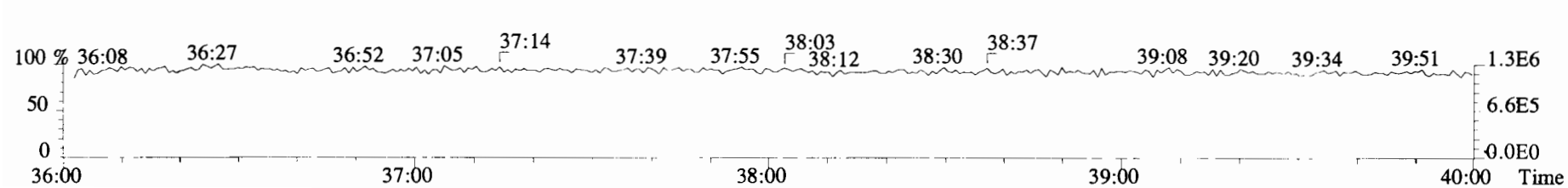
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



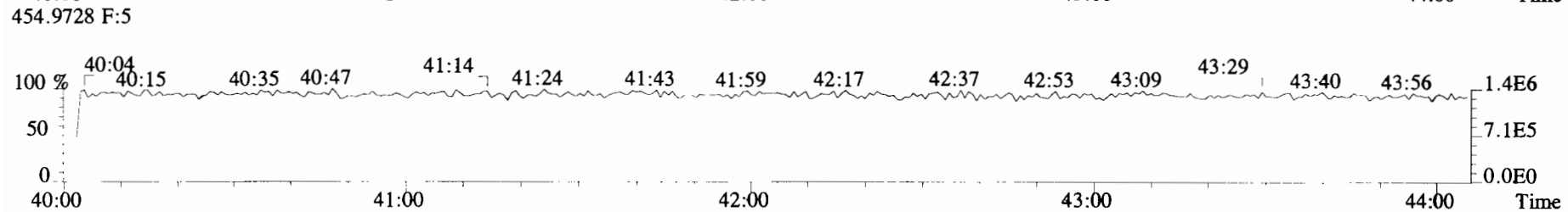
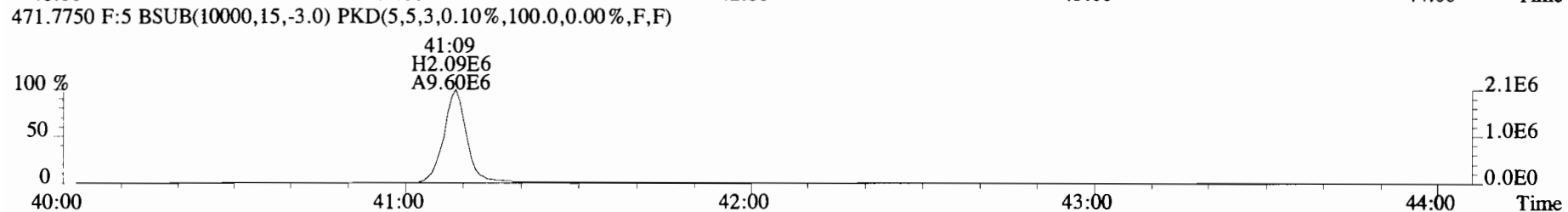
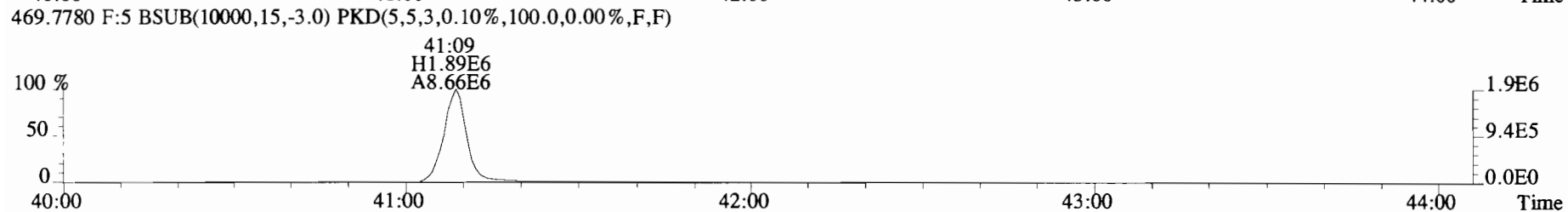
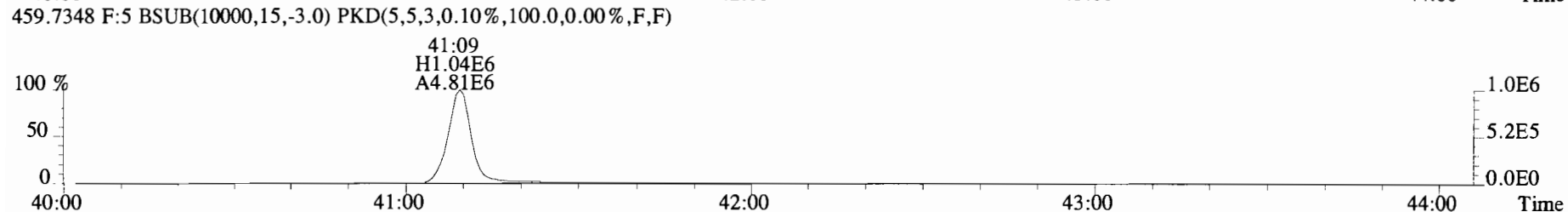
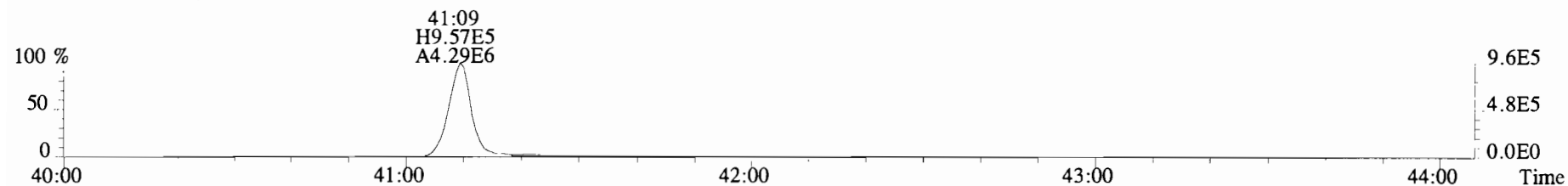
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



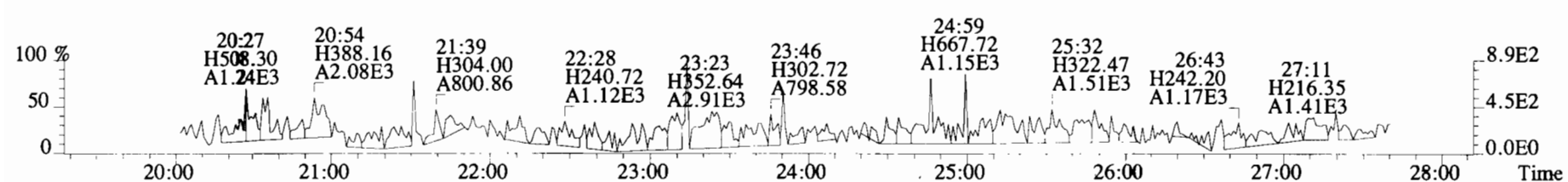
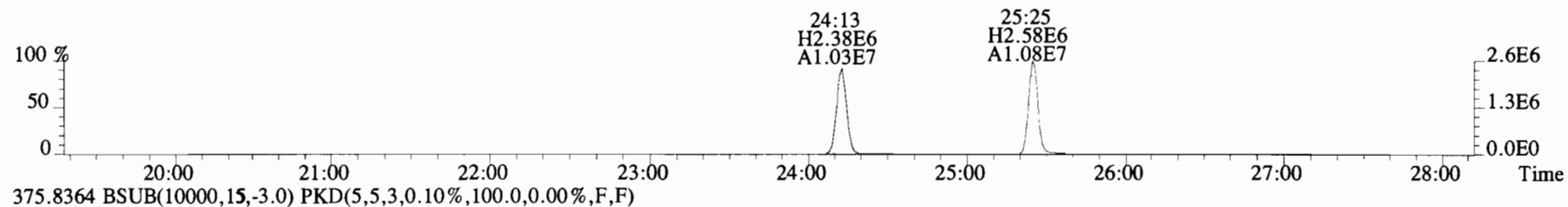
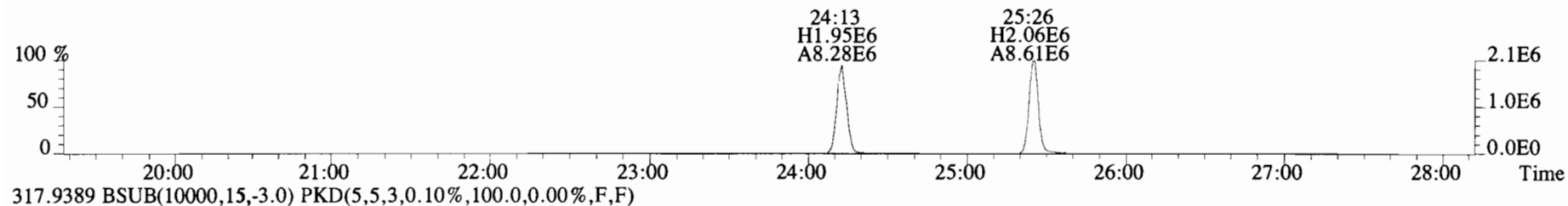
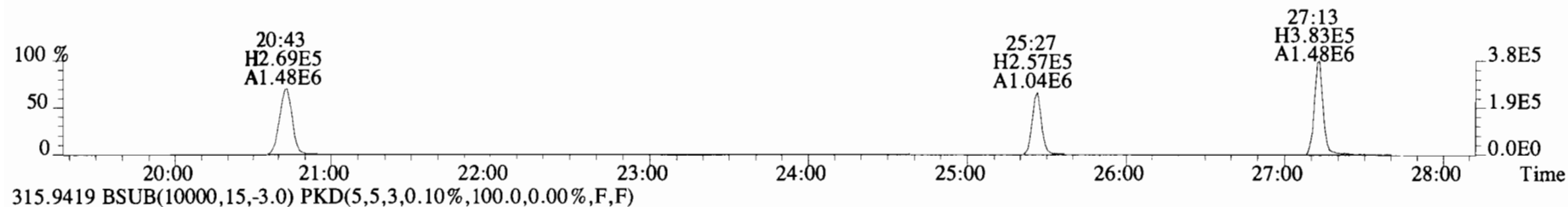
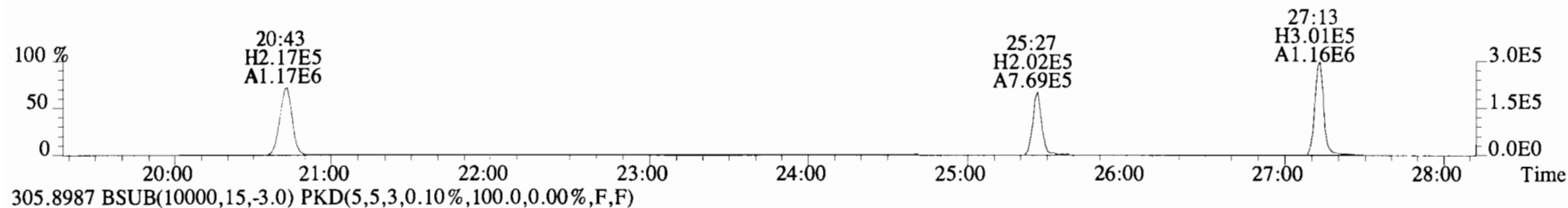
454.9728 F:4



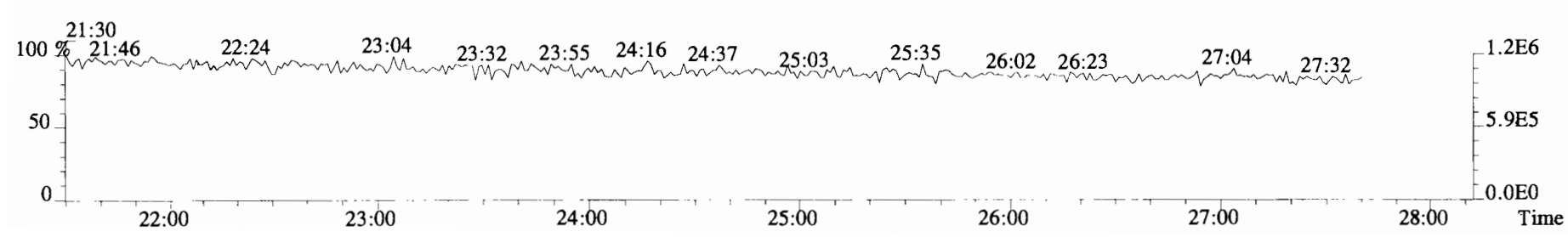
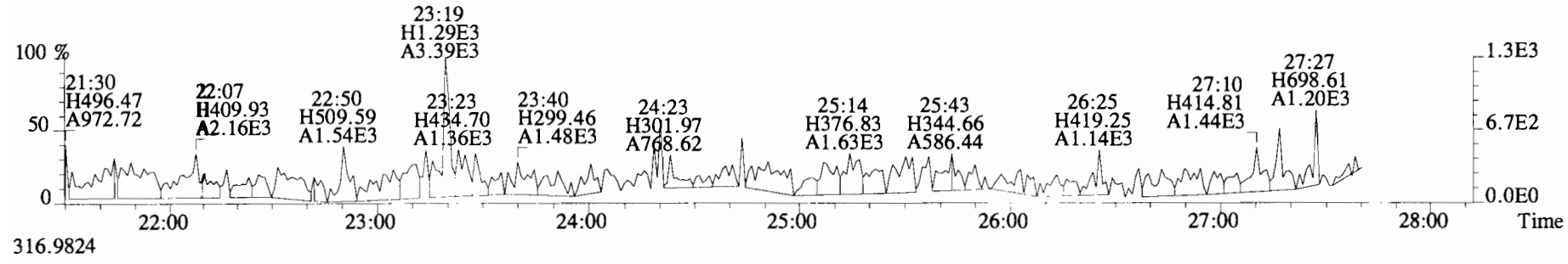
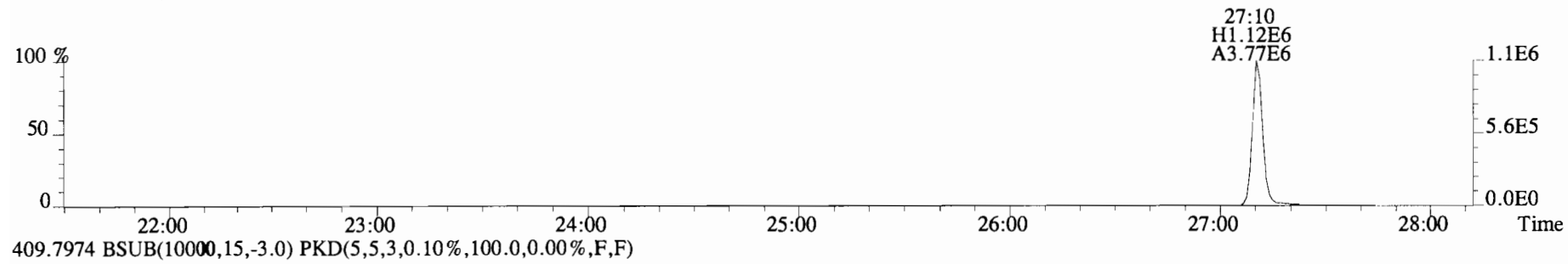
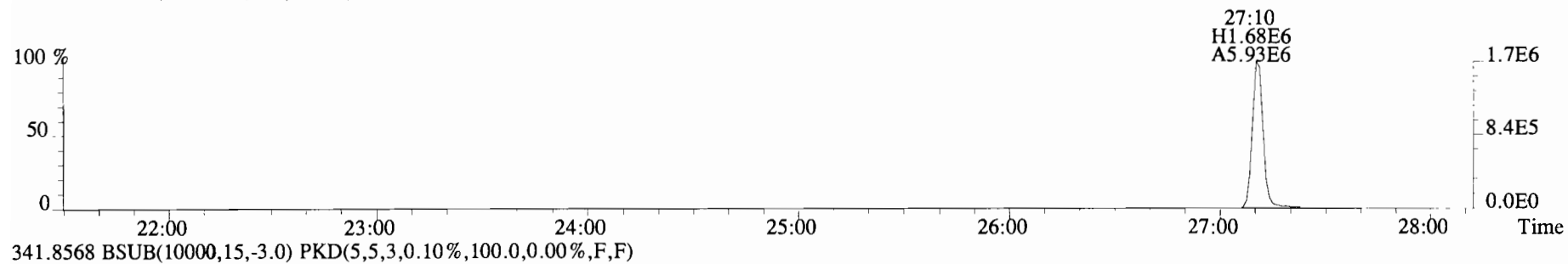
File:191111D1 #1-431 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



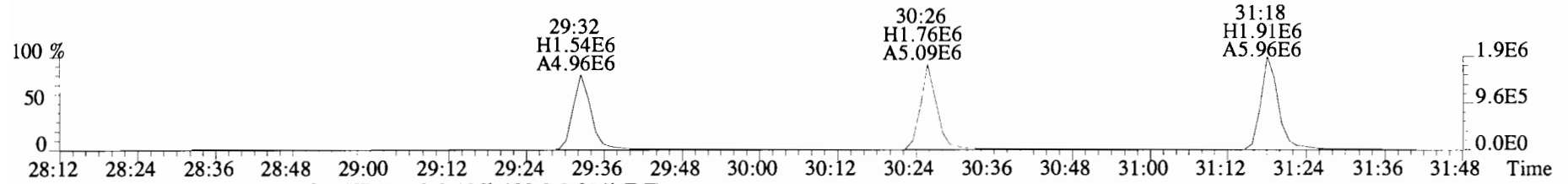
File:191111D1 #1-492 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



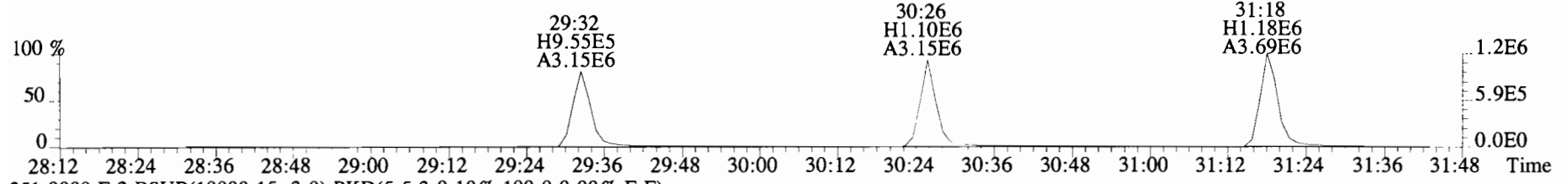
File:191111D1 #1-492 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



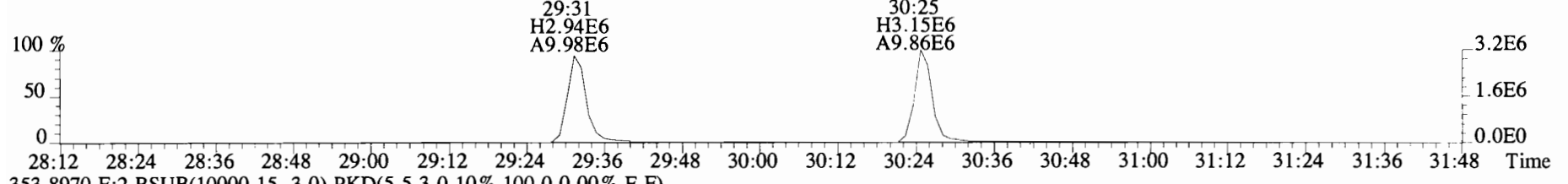
File:191111D1 #1-211 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



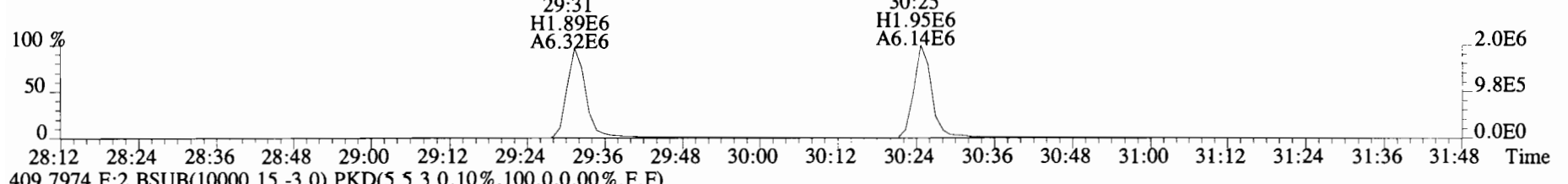
341.8568 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



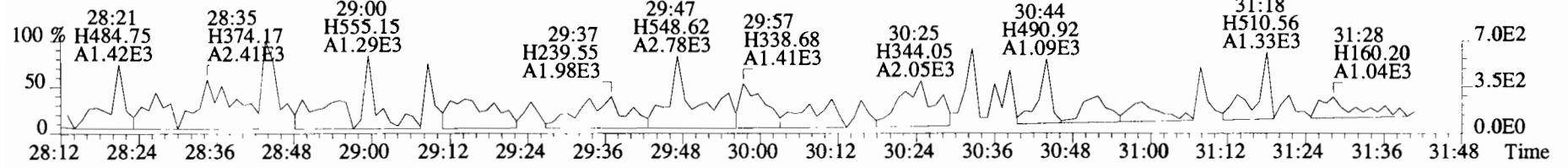
351.9000 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



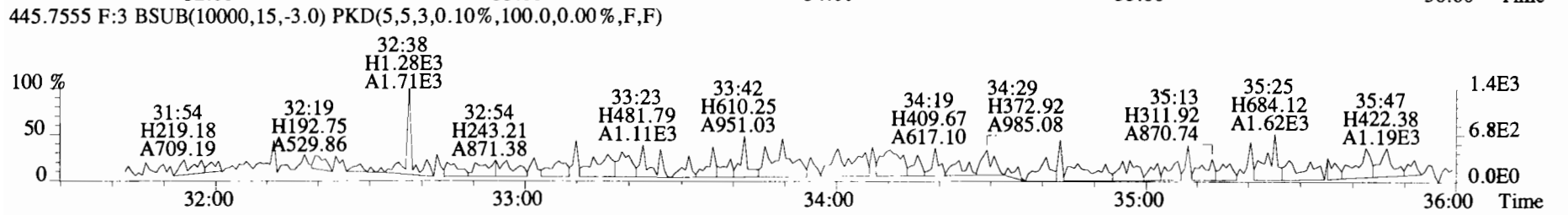
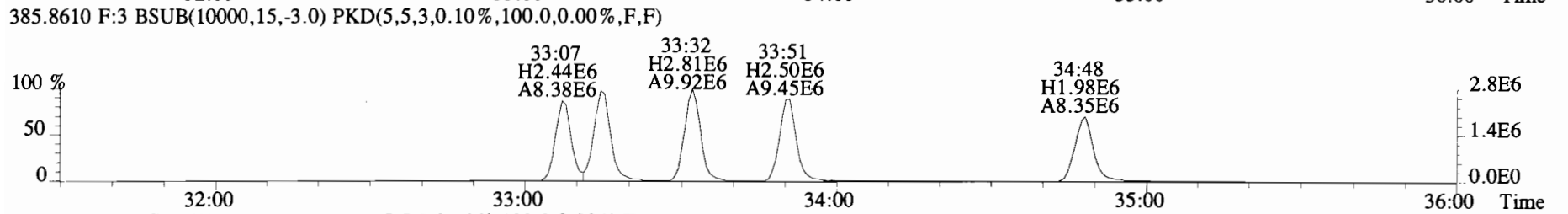
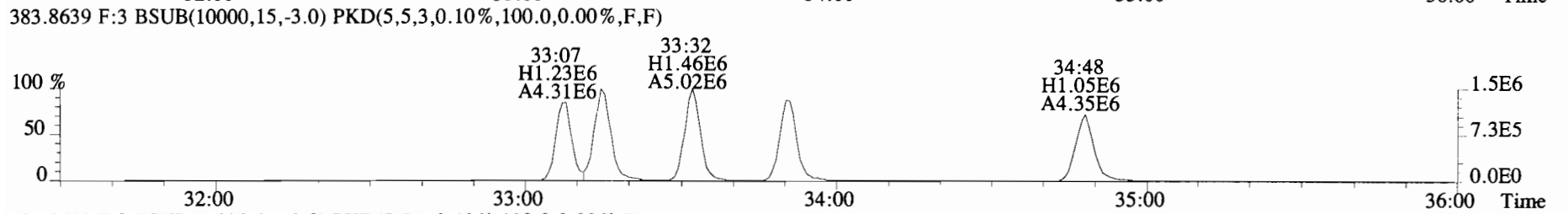
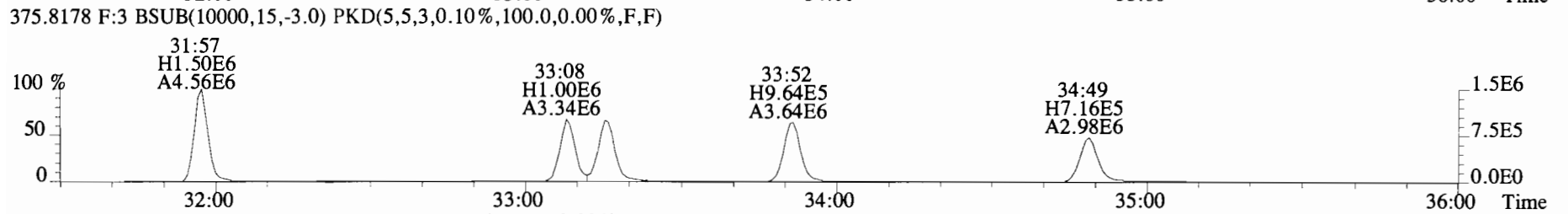
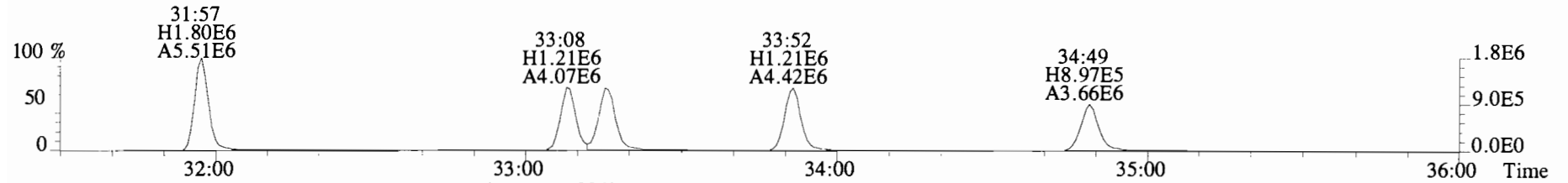
353.8970 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



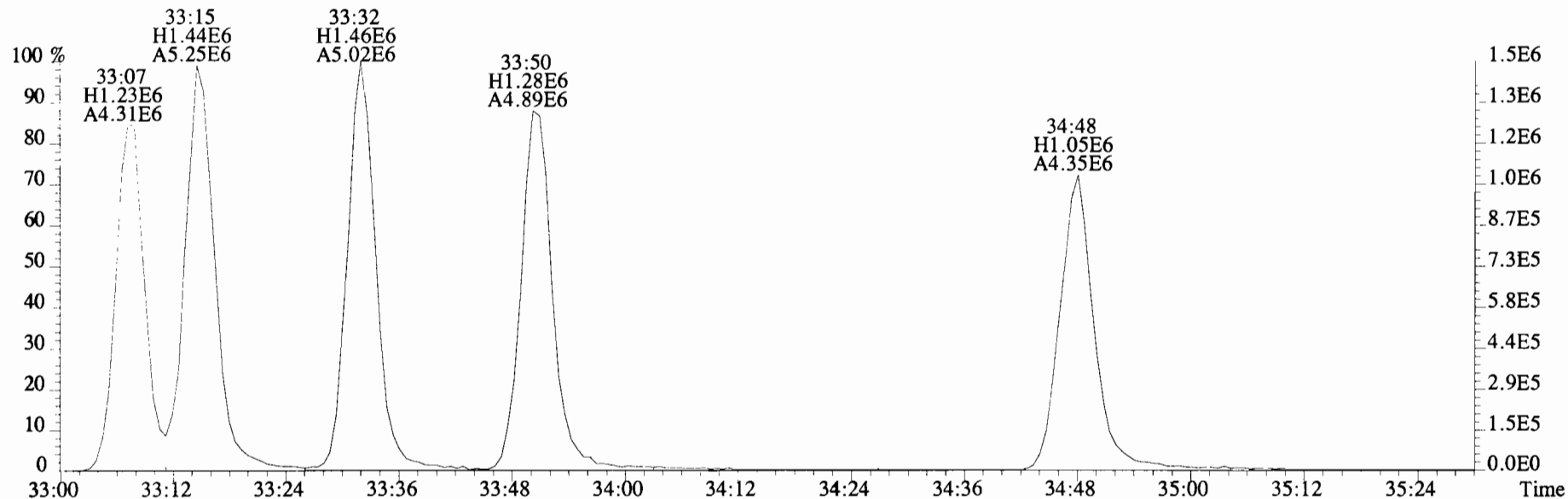
409.7974 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



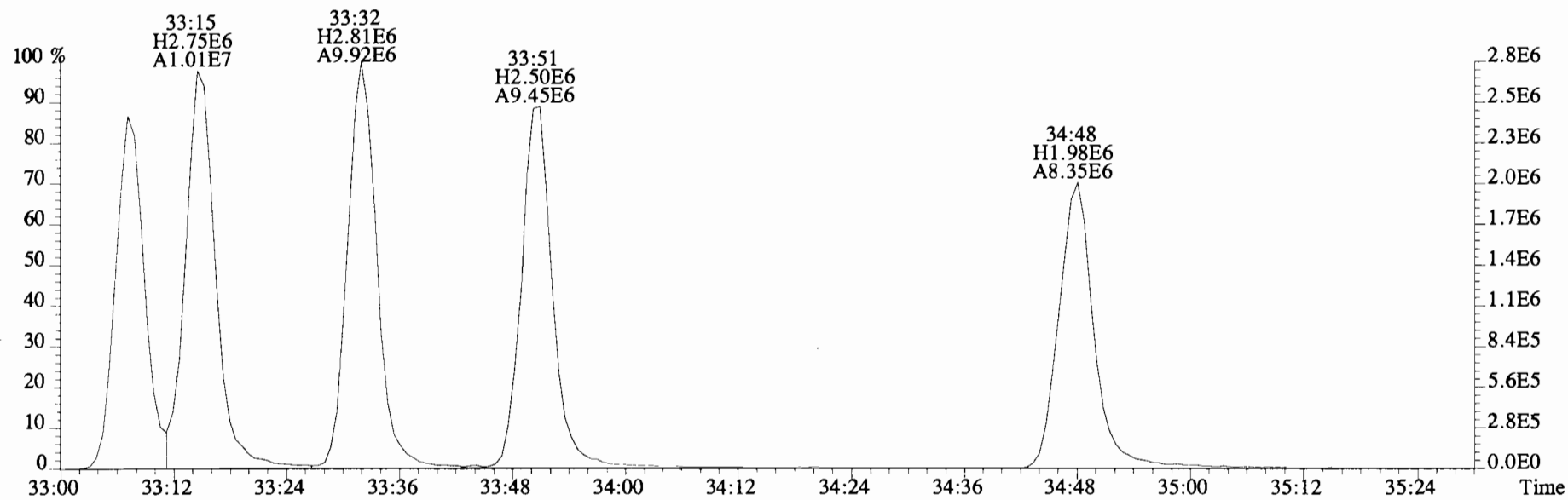
File:191111D1 #1-384 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



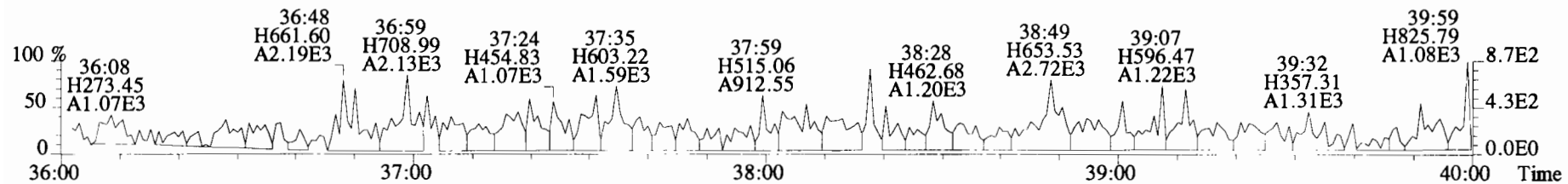
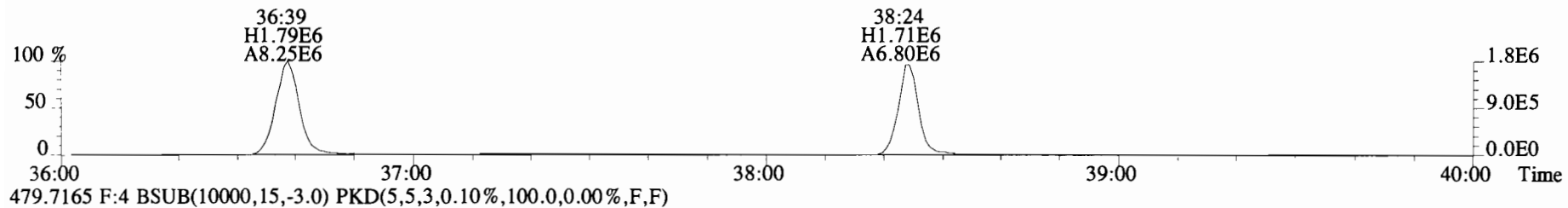
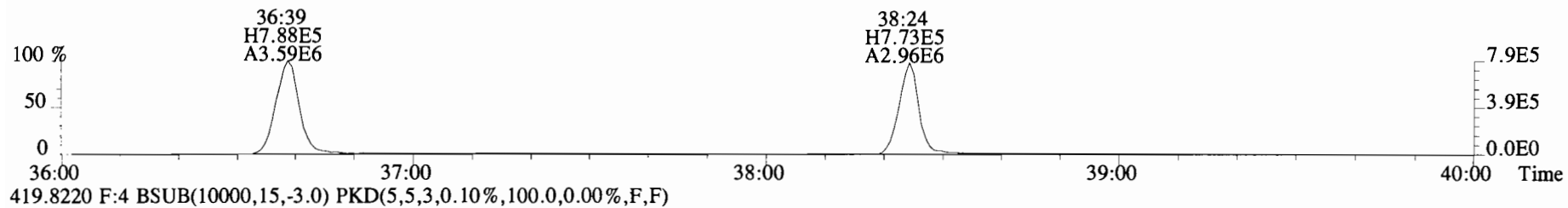
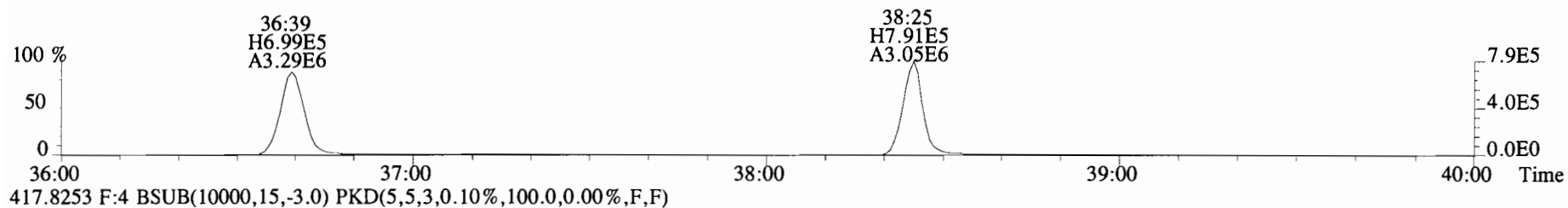
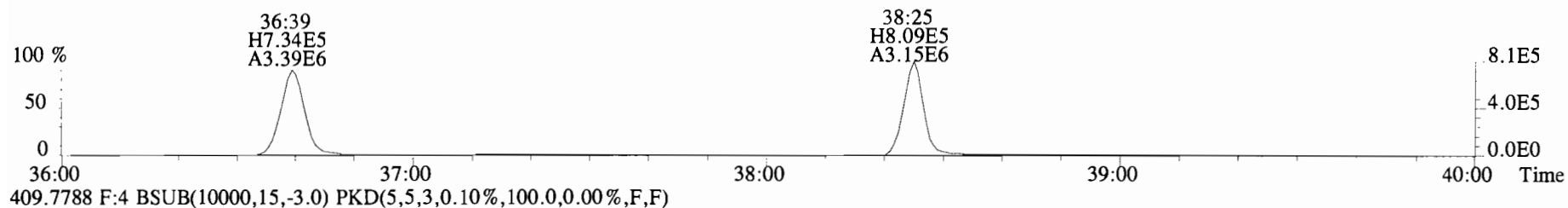
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Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



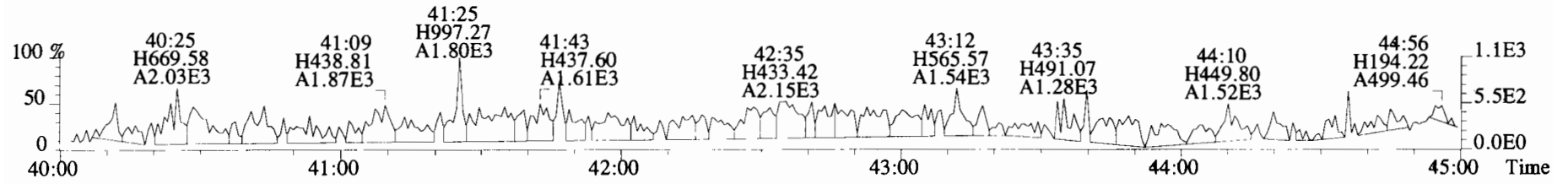
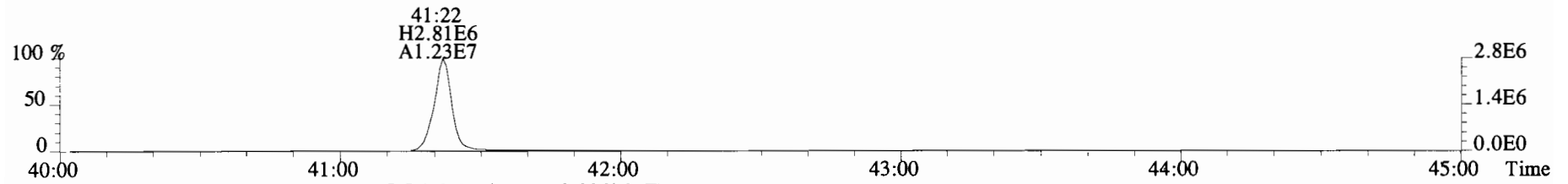
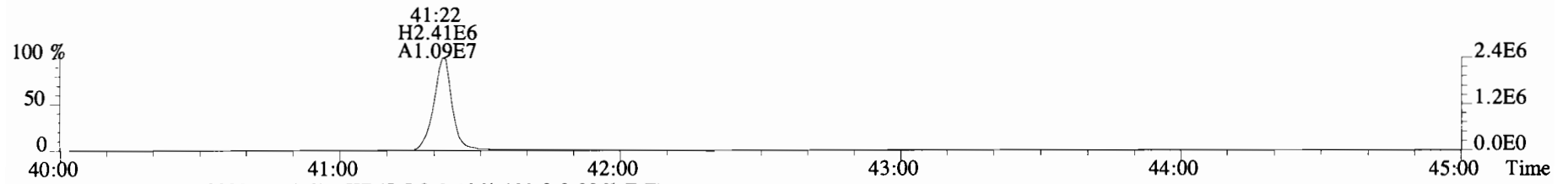
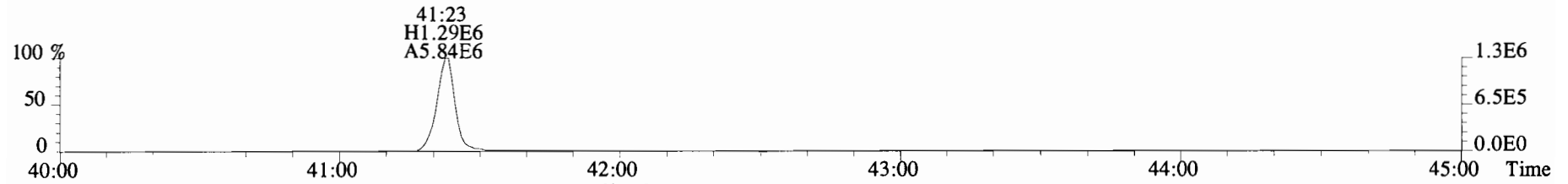
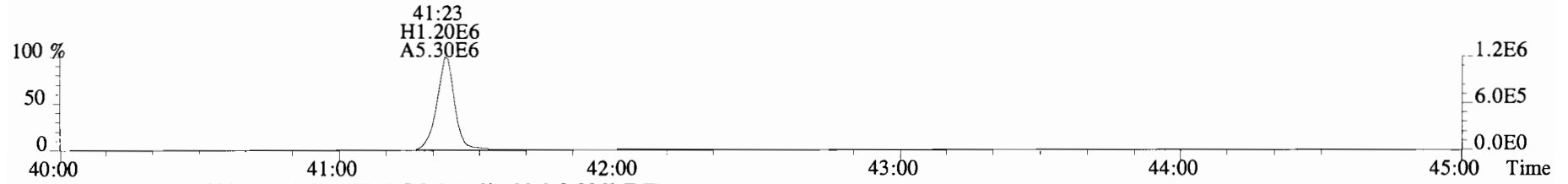
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

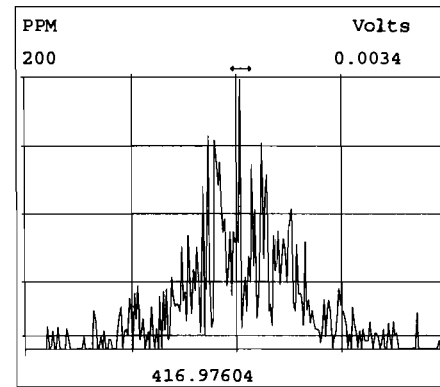
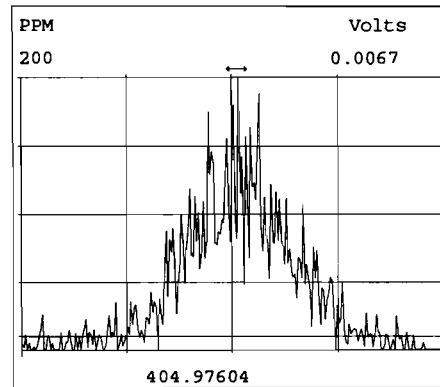
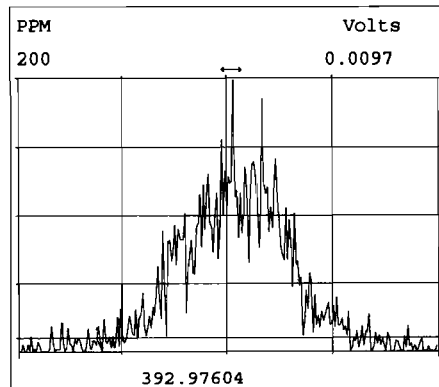
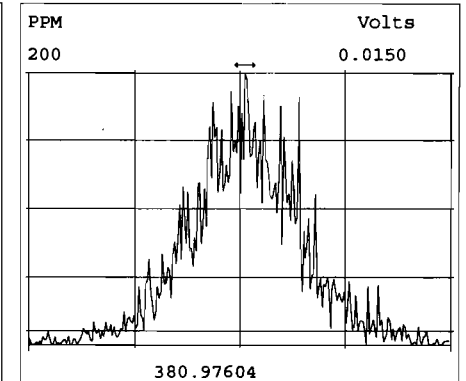
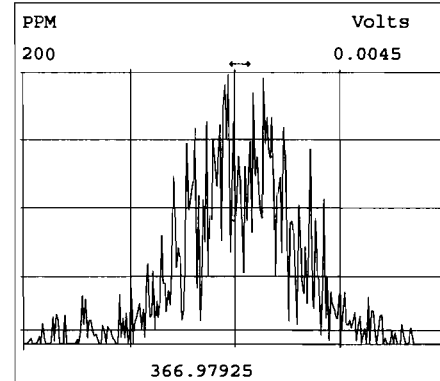
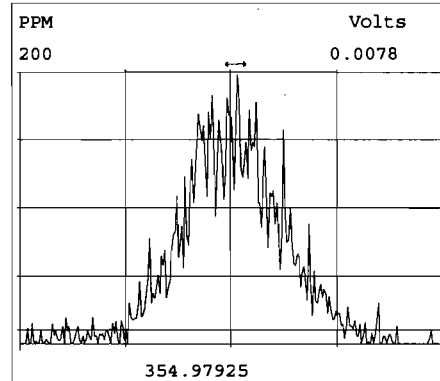
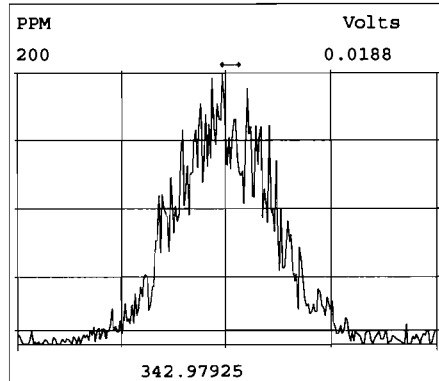
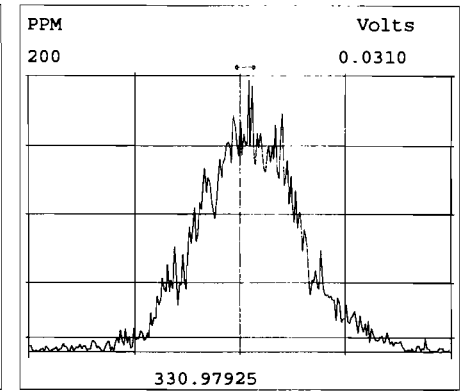
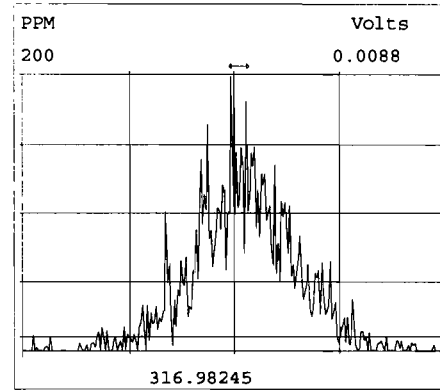
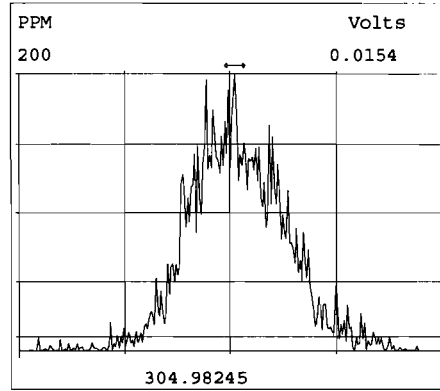
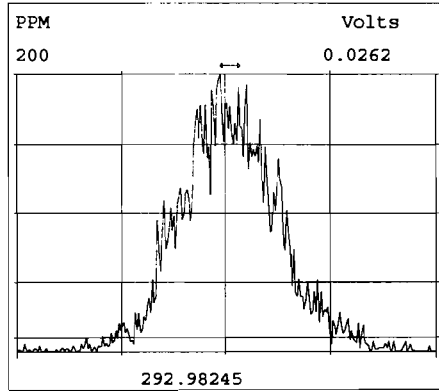


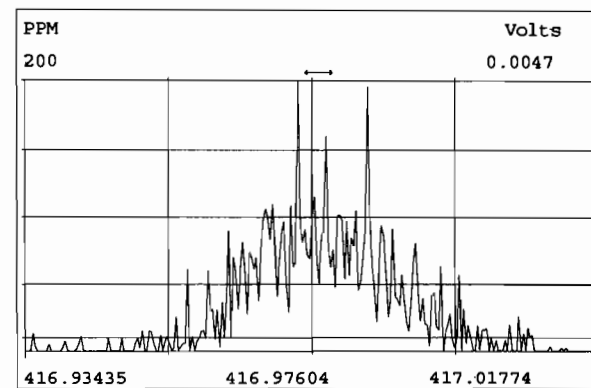
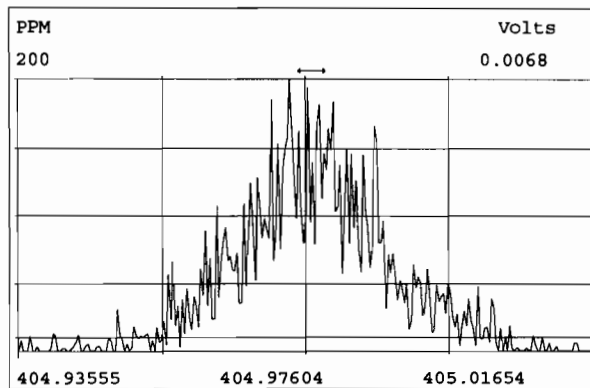
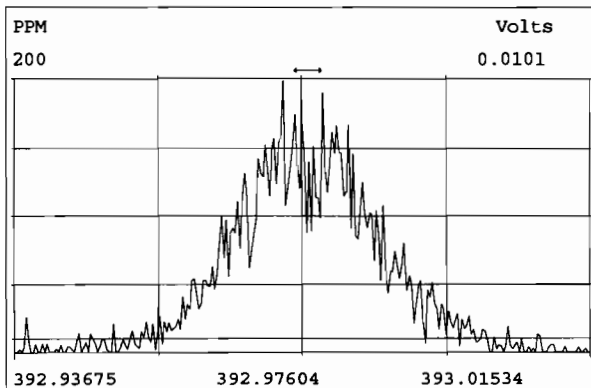
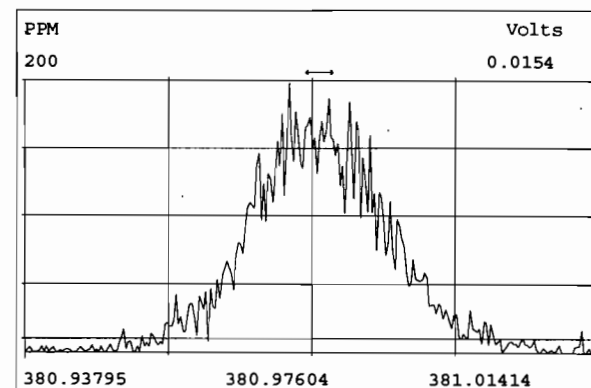
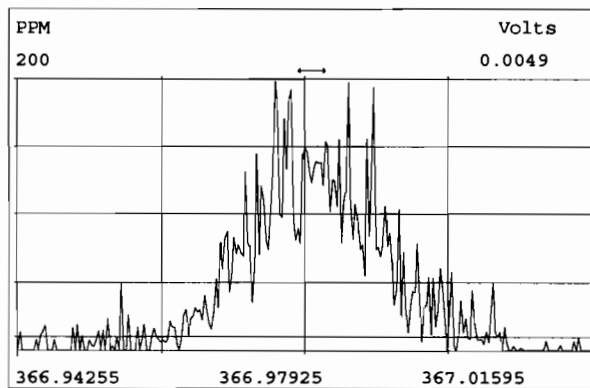
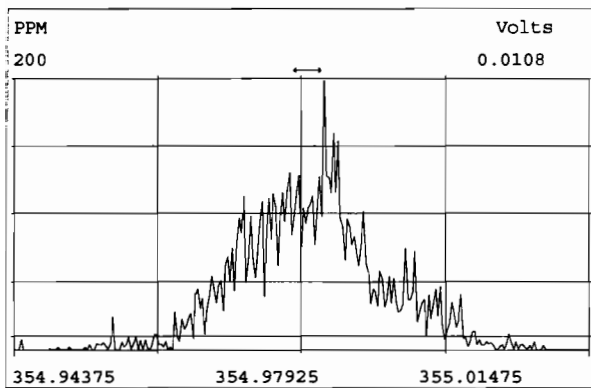
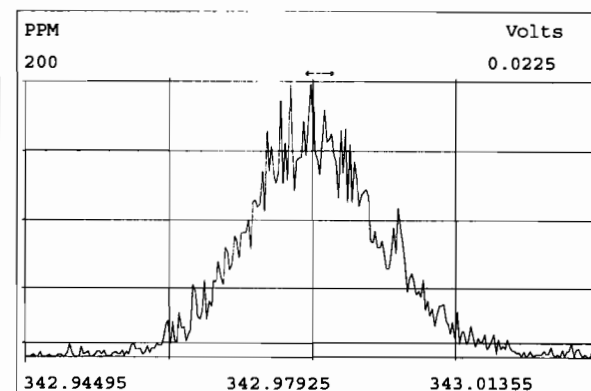
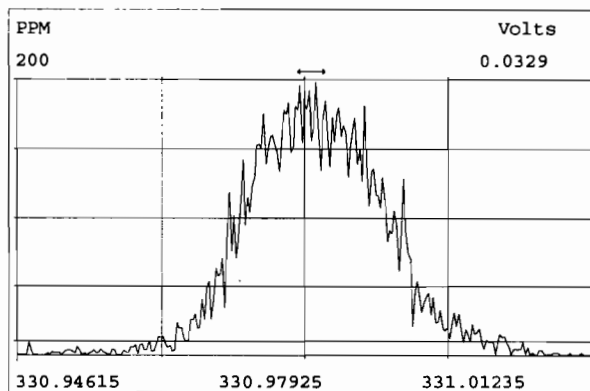
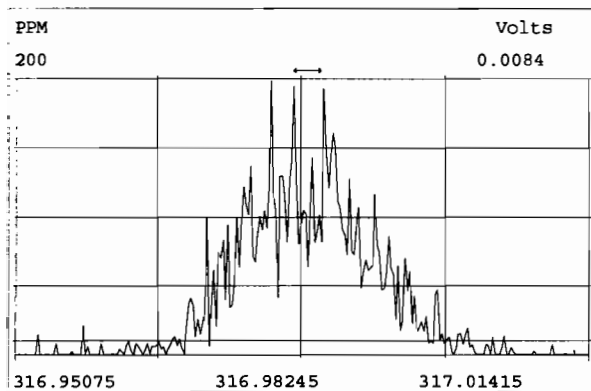
File:191111D1 #1-356 Acq:11-NOV-2019 10:19:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191111D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

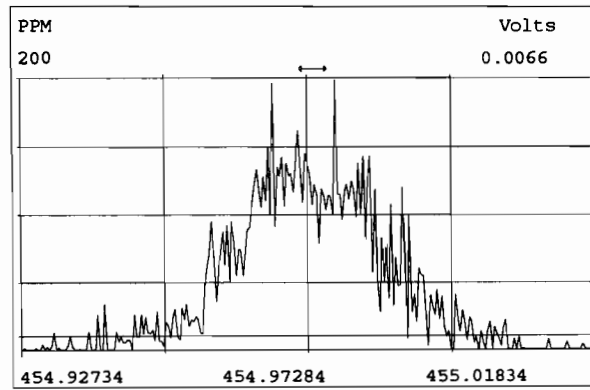
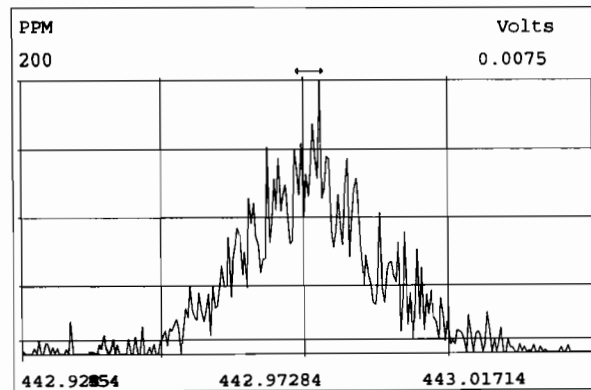
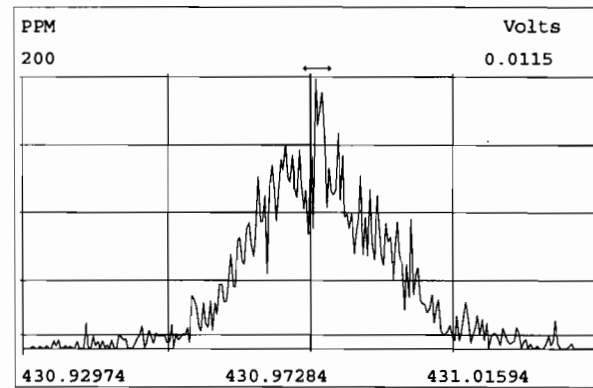
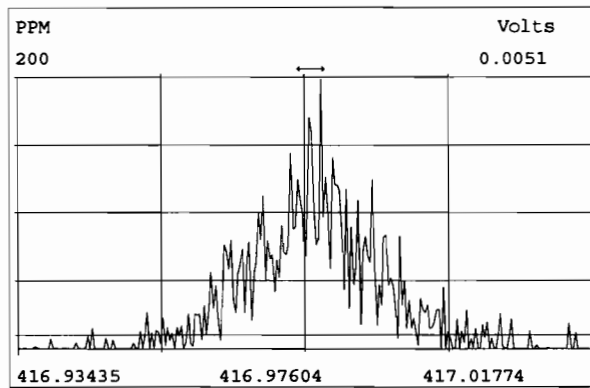
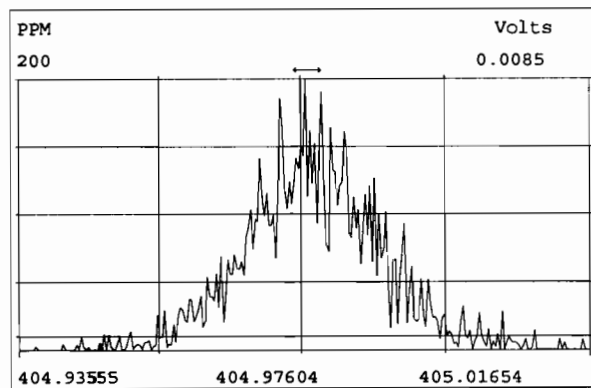
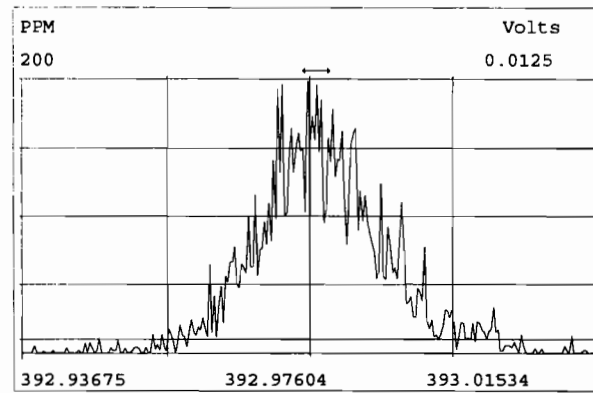
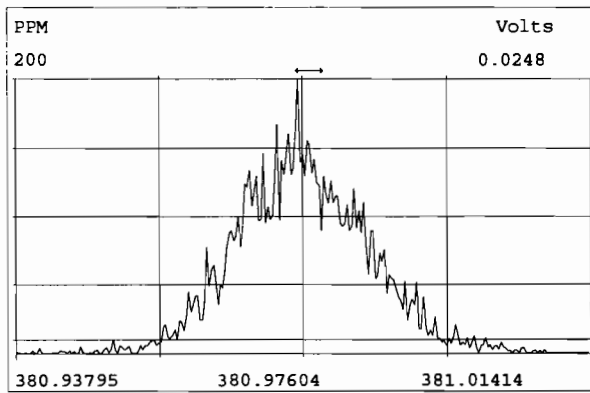
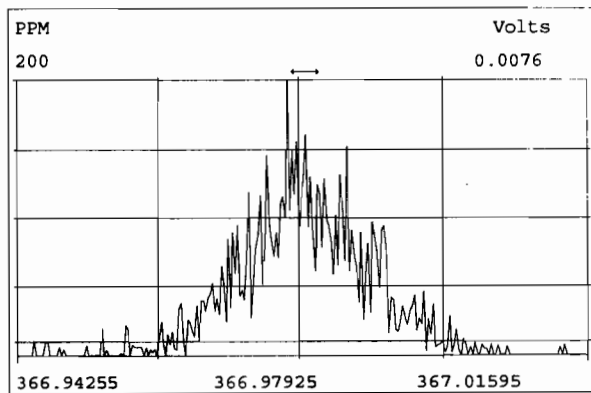


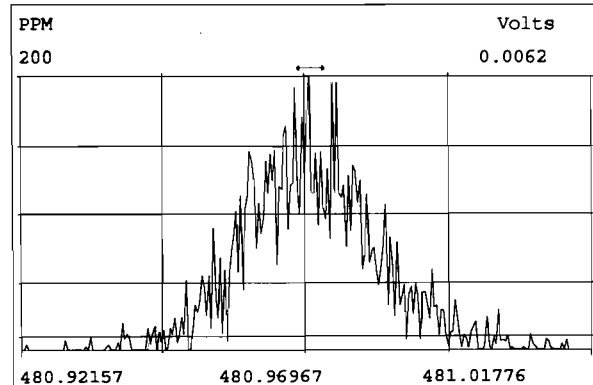
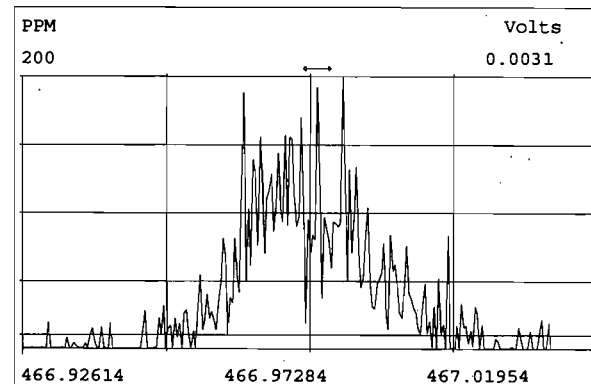
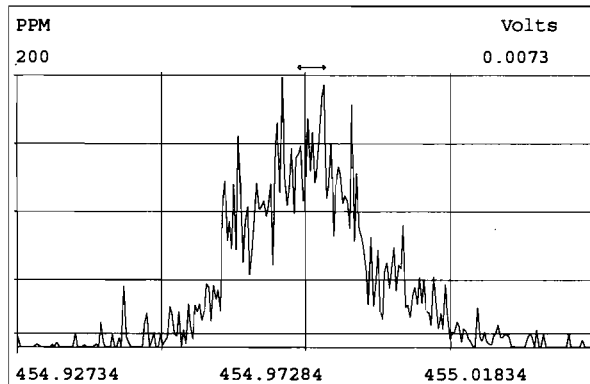
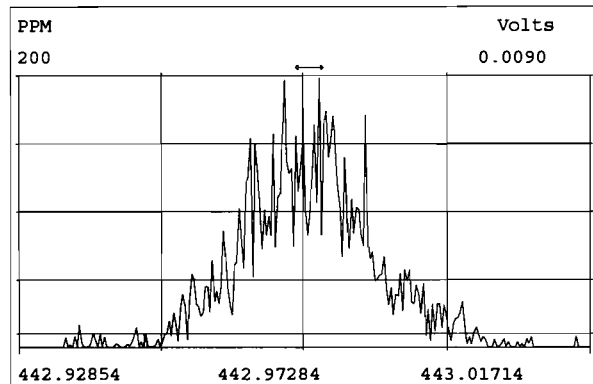
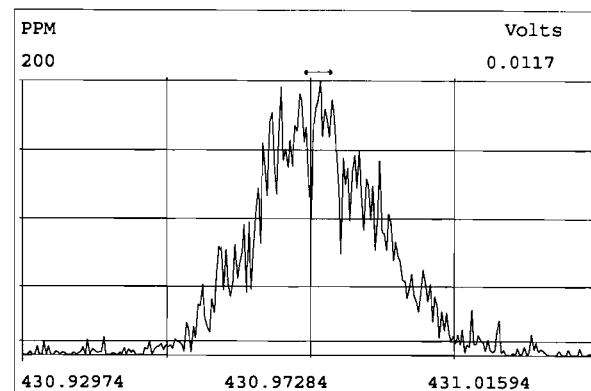
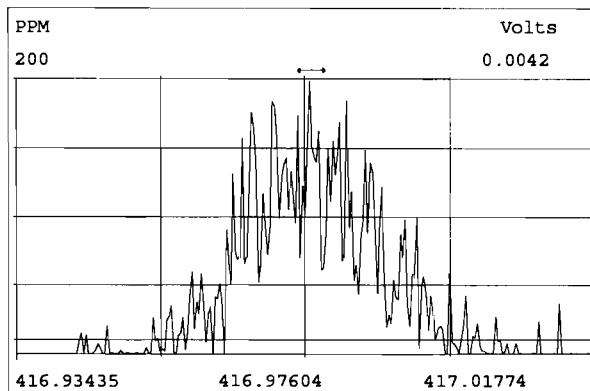
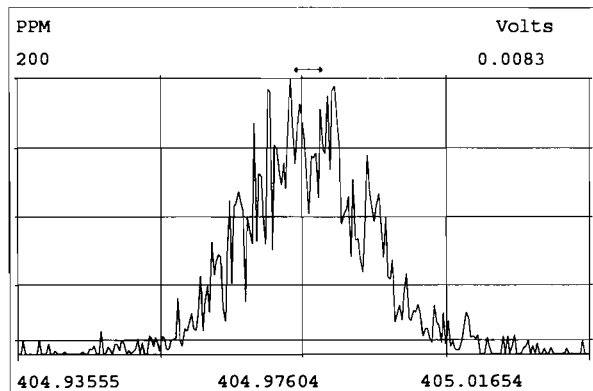
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441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

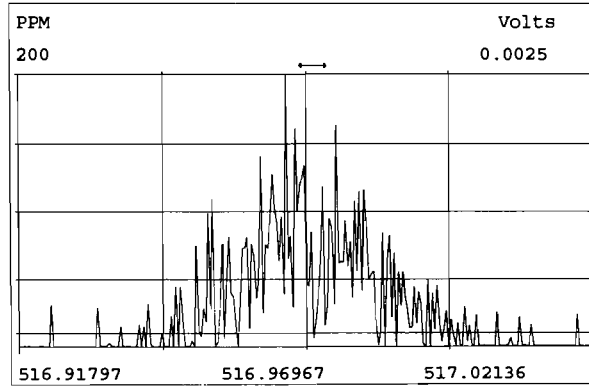
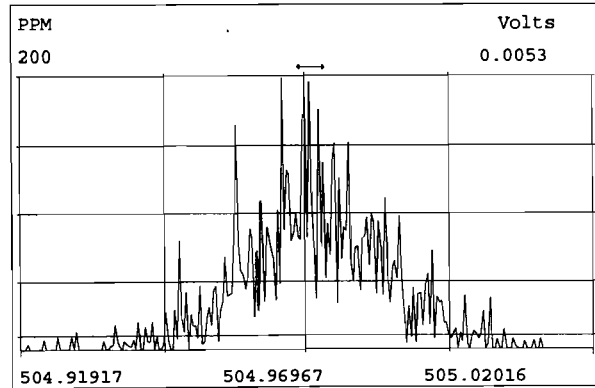
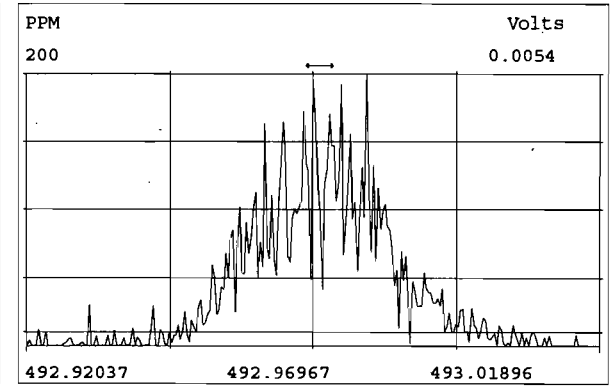
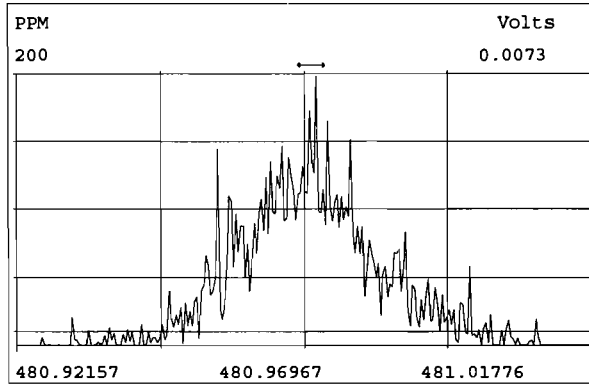
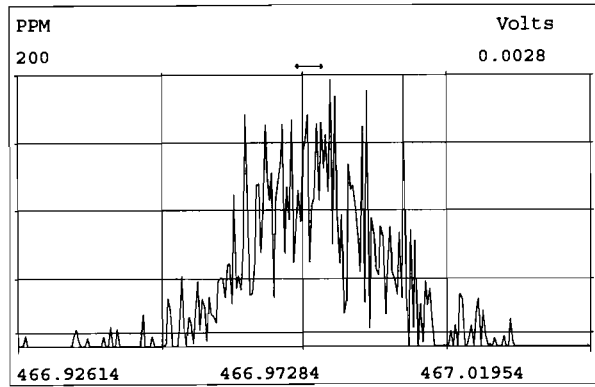
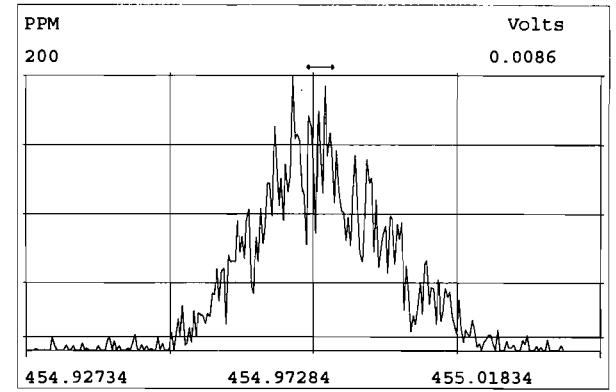
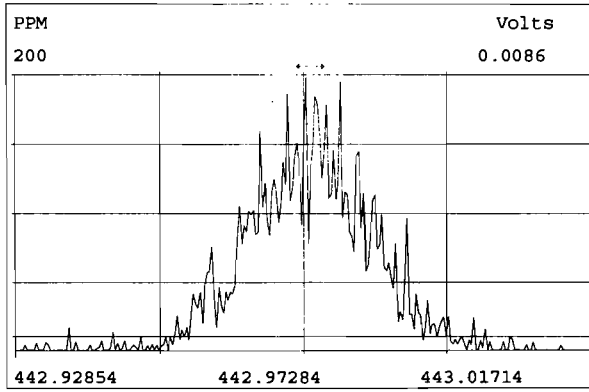
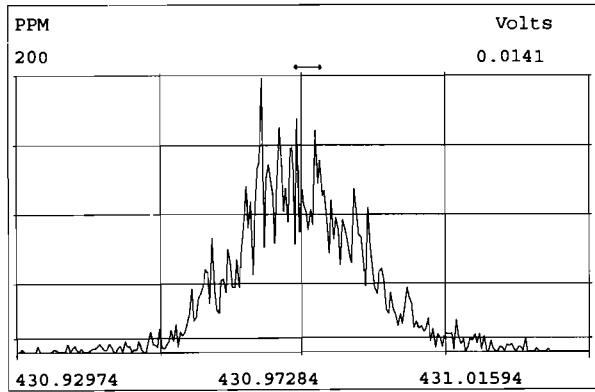












HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST191107D1-1

Reviewed By: CT 11/07/19
Initials & Date

End Calibration ID: NA

	<u>Beg.</u>	<u>End</u>
Ion abundance within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
Concentrations within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TCDD/TCDF Valleys <25%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
First and last eluters present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Retention Times within criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Verification Std. named correctly? (ST-Year-Month-Day-VG ID)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Forms signed and dated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Correct ICAL referenced?	<u>DB</u>	<input type="checkbox"/>
<u>Run Log:</u>		
- Correct instrument listed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Samples within 12 hour clock?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
- Bottle position verified?		

Mass resolution \geq
 5k 6-8K 8K 10K
 1614 1699 429 1613/1668/8280

Intergrated peaks display correctly? NA

GC Break <20% NA

8280 CS1 End Standard:

- Ratios within limits, S/N <2.5:1, CS1 within 12 hours NA

Comments:

FORM 4A/4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory

CCAL ID: ST191107D1-1

Initial Calibration Date: 5-30-19

Instrument ID: VG-7

GC Column ID: DB-225

VER Data Filename: 191107D1 S#2 Analysis Date: 7-NOV-19 Time: 11:22:48

ANALYTES	M/Z'S	ION	QC	CONC.	CONC. RANGE	CONC. RANGE
	FORMING	ABUND.	LIMITS		1613	8290
	RATIO (1)	RATIO	(2)	FOUND	(ng/mL)	(ng/mL)
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	10.5	8.4 - 12.0 (3) 8.6 - 11.6 (4)	8.0 - 12.0
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	109.1	71.0 - 140.0 (3) 76.0 - 131.0 (4)	70.0 - 130.0

(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, under VER.

(4) Contract required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DBDate: 11/7/19

Client ID: 1613 CS3 19C2204

Filename: 191107D1 S:2 Acq: 7-NOV-19 11:22:48

ConCal: ST191107D1-1

Page 1 of 1

Lab ID: ST191107D1-1

GC Column ID: DB-225 ICal: 1613TCDFVG7-5-30-19 wt/vol: 1.000

EndCAL: NA

Name	Resp	RA	RT	RRF	Conc	Rec
13C-1,2,3,4-TCDF	1.37e+07	0.82 y	15:35	1.00	100.0	-
13C-2,3,7,8-TCDF	1.53e+07	0.80 y	17:47	1.02	109.1	109.1
2,3,7,8-TCDF	1.52e+06	0.78 y	17:48	0.95	10.50	

Integrations

by
Analyst: DB

Date: 11/7/19

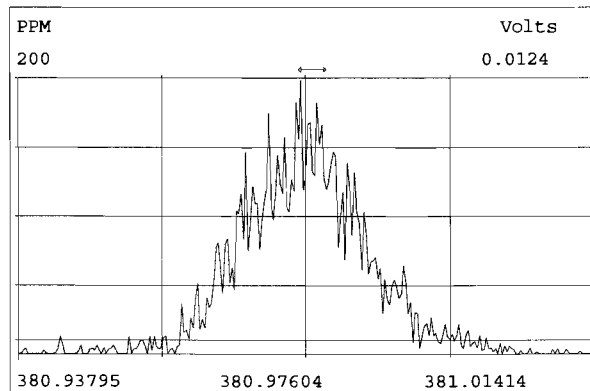
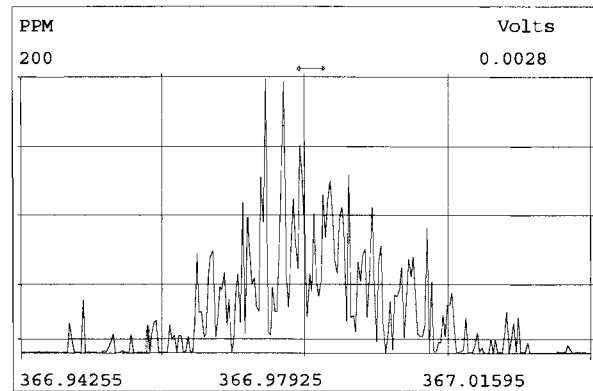
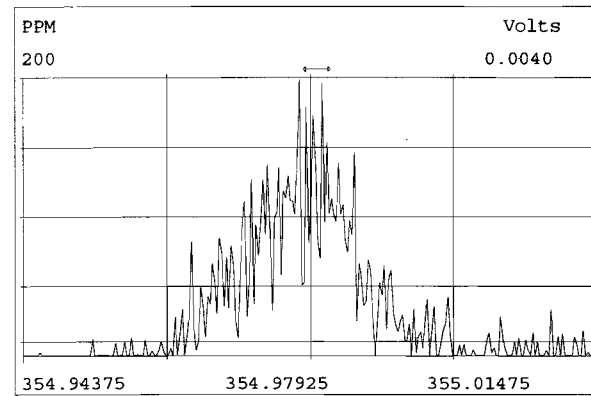
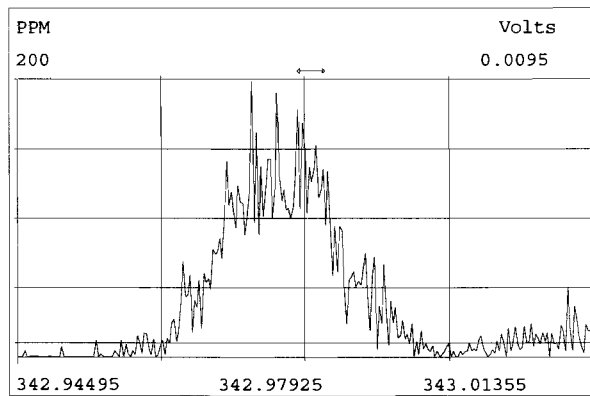
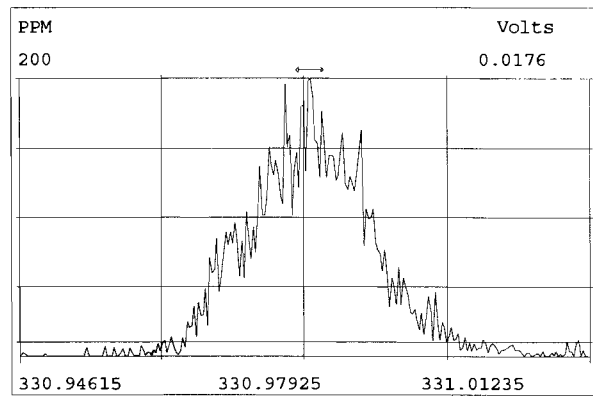
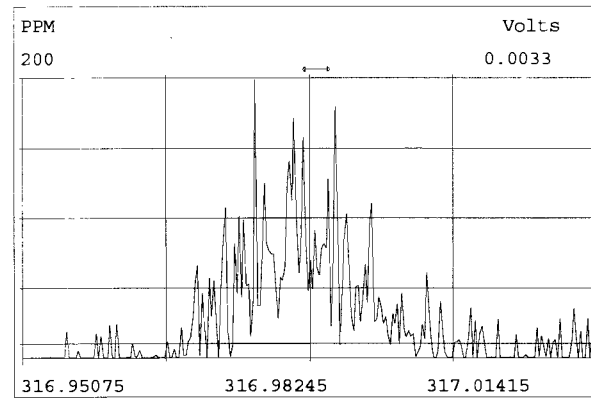
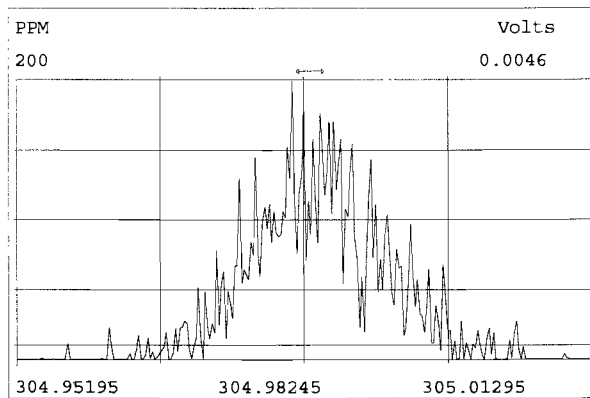
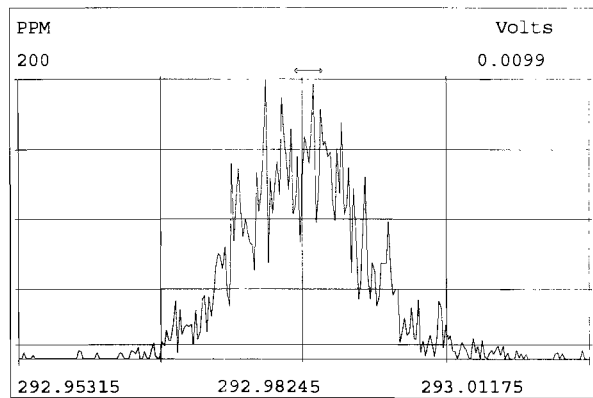
Reviewed

by
Analyst: CT

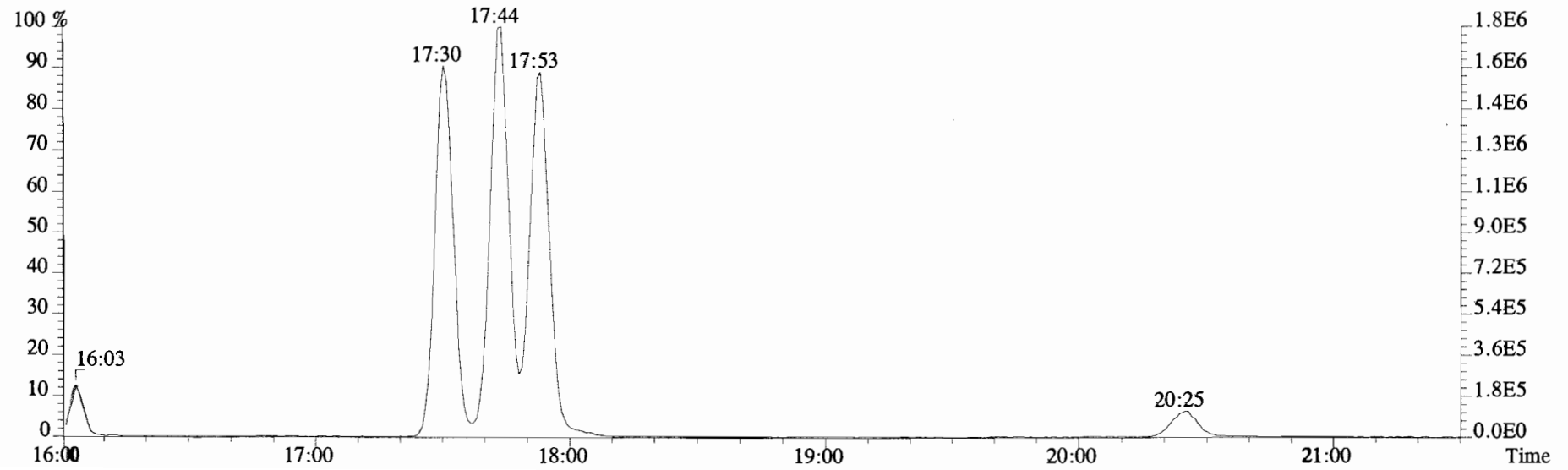
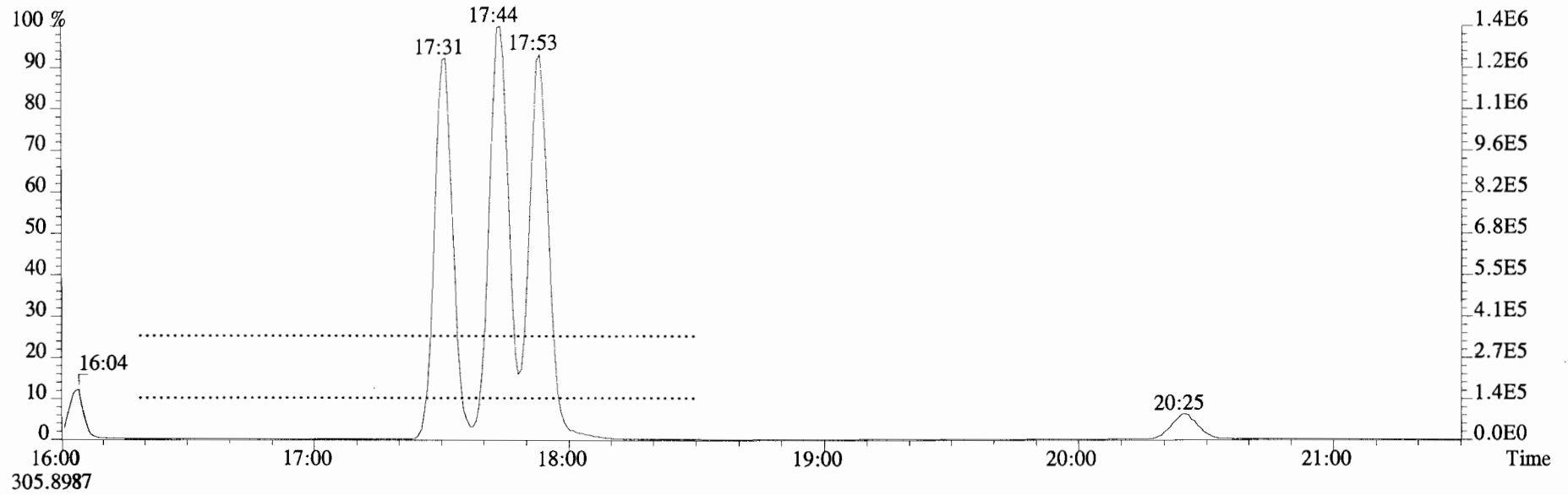
Date: 11/07/19

Vista Analytical Laboratory - Injection Log Run file: 191107D1 Instrument ID: VG-7 GC Column ID: DB-225

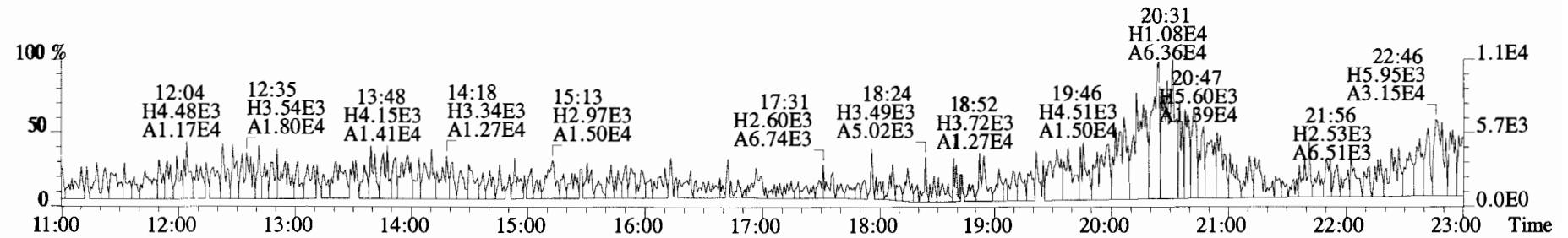
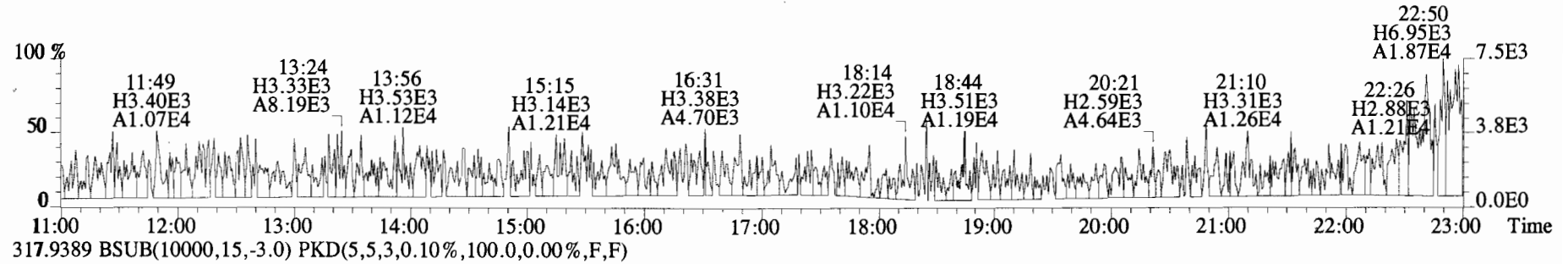
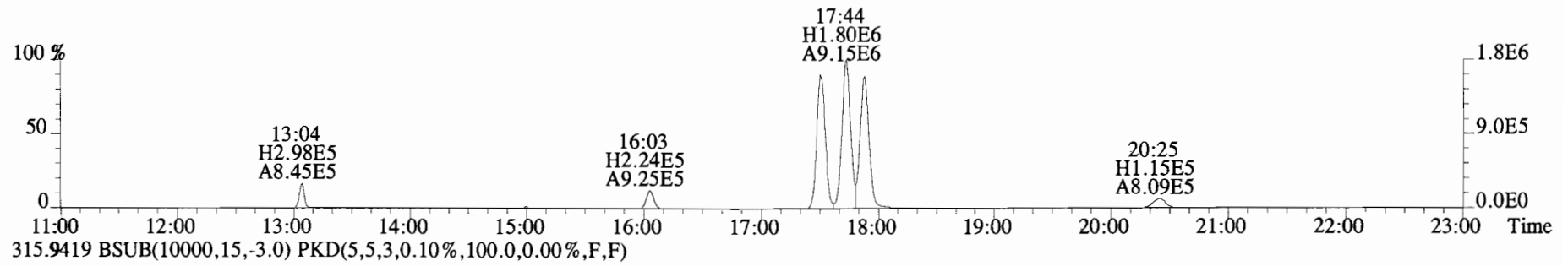
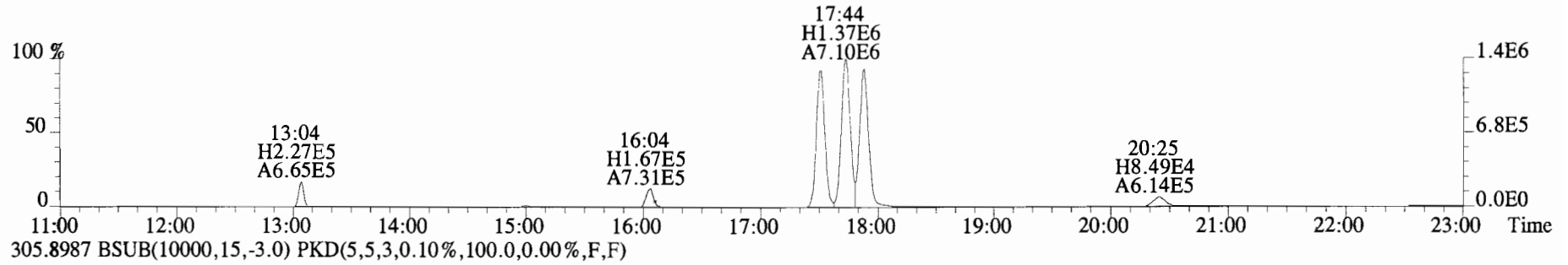
Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191107D1	1	CP191107D1-1	DB	7-NOV-19	10:51:03	ST191107D1-1	NA
191107D1	2	ST191107D1-1	DB	7-NOV-19	11:22:48	ST191107D1-1	NA
191107D1	3	SOLVENT BLANK	DB	7-NOV-19	11:54:33	ST191107D1-1	NA
191107D1	4	1903651-04RE1	DB	7-NOV-19	12:26:19	ST191107D1-1	NA
191107D1	5	1903546-15RE2	DB	7-NOV-19	12:58:04	ST191107D1-1	NA
191107D1	6	1903565-16RE2	DB	7-NOV-19	13:29:50	ST191107D1-1	NA
191107D1	7	1903431-06RE1	DB	7-NOV-19	14:01:35	ST191107D1-1	NA



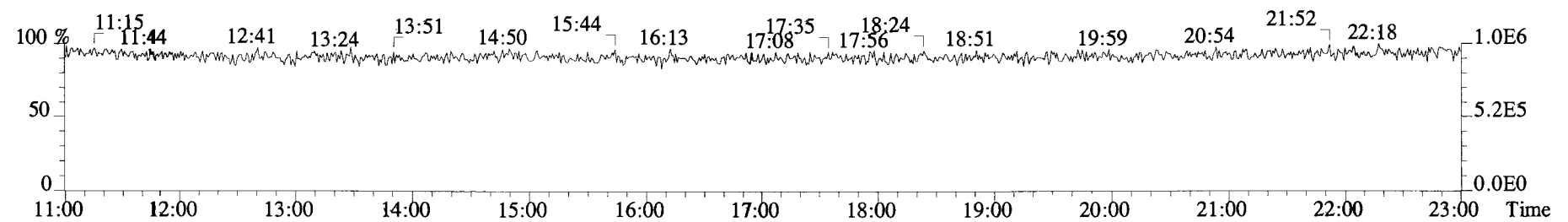
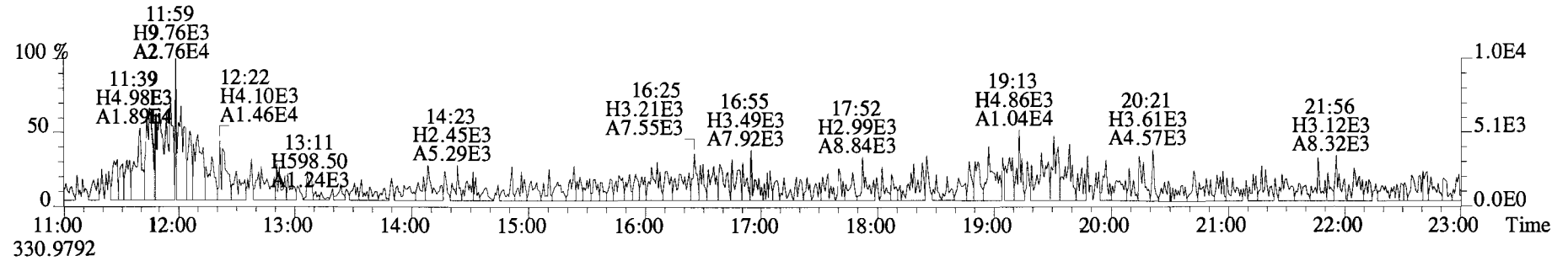
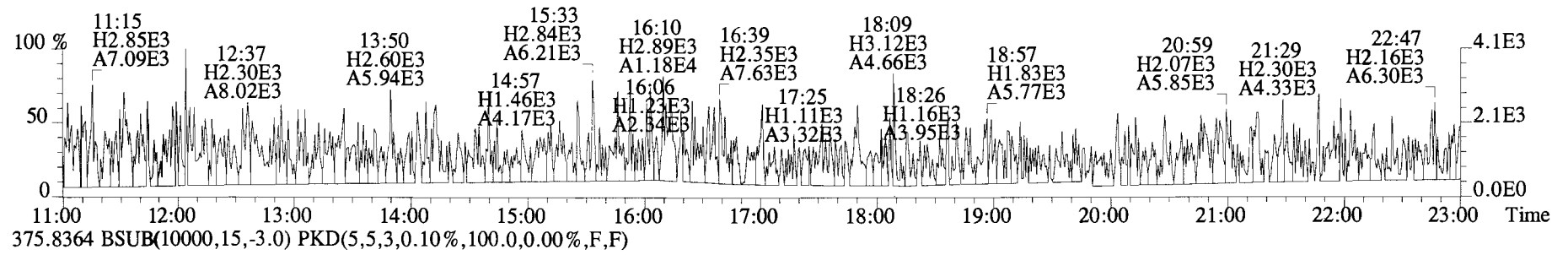
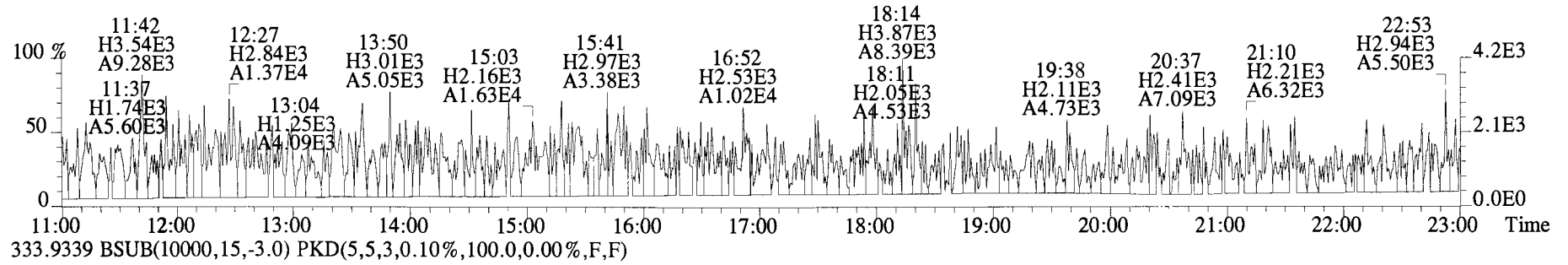
File:191107D1 #1-1683 Acq: 7-NOV-2019 10:51:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:CP191107D1-1 DB225 CPSM Exp:TCDF_DB225
303.9016



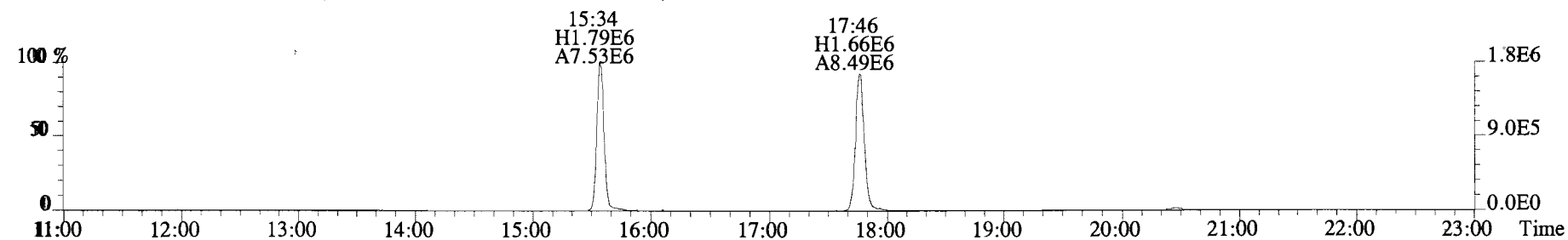
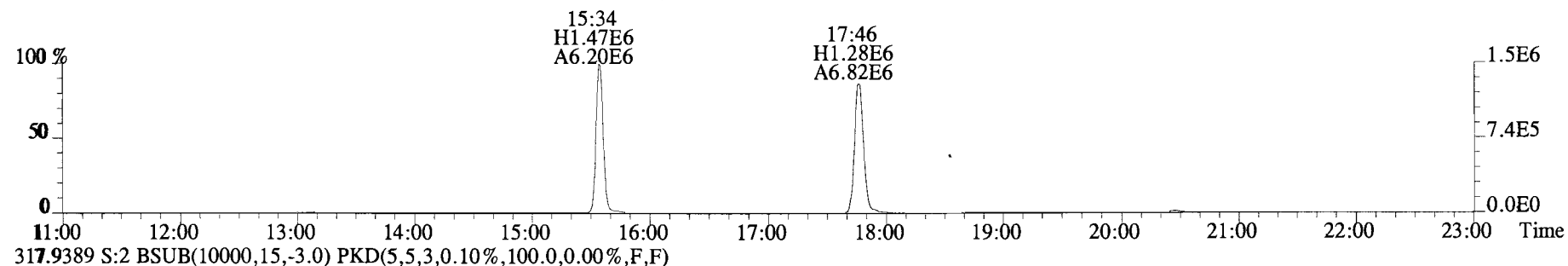
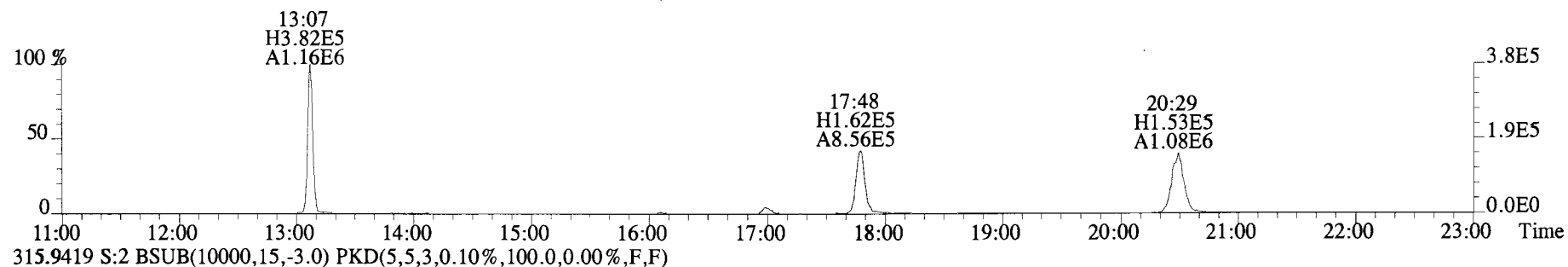
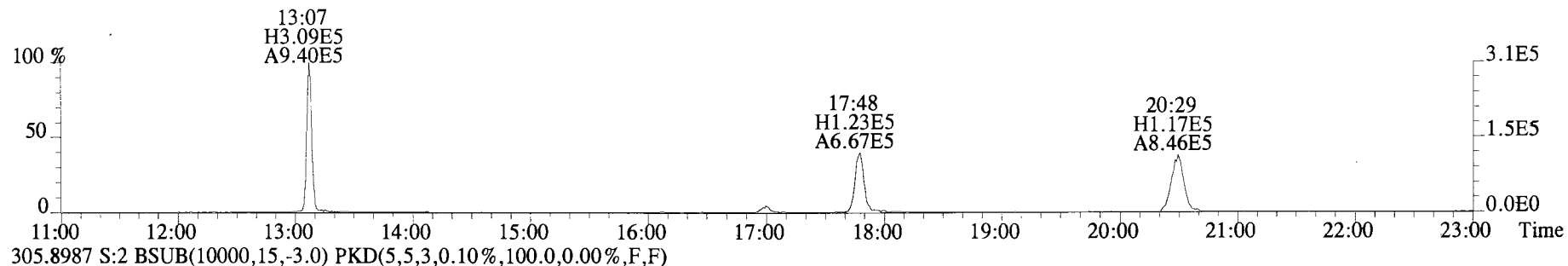
File:191107D1 #1-1683 Acq: 7-NOV-2019 10:51:03 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:CP191107D1-1 DB225 CPSM Exp:TCDF_DB225
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



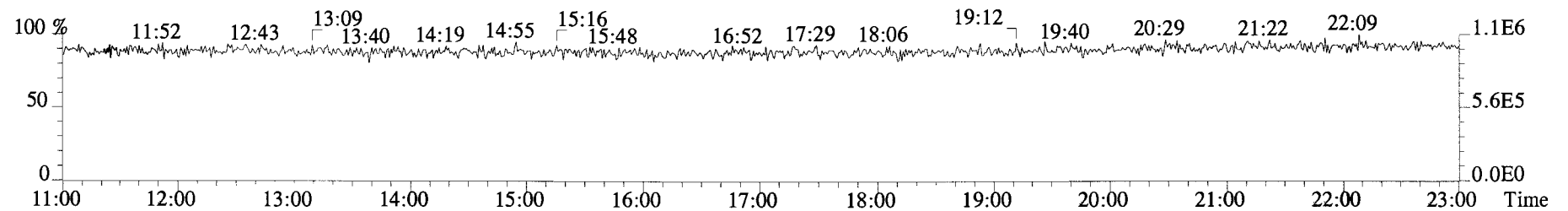
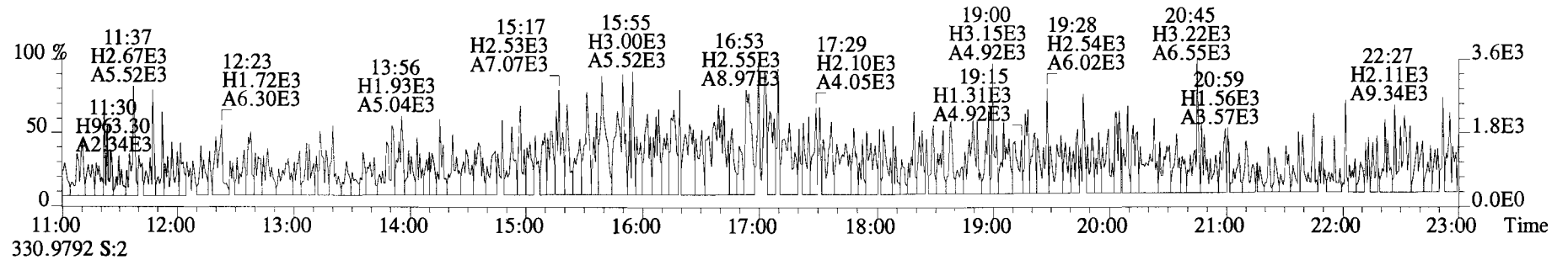
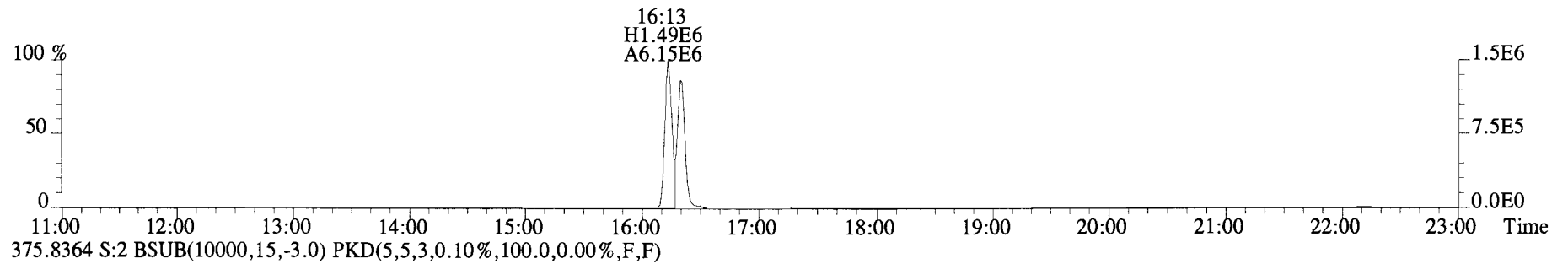
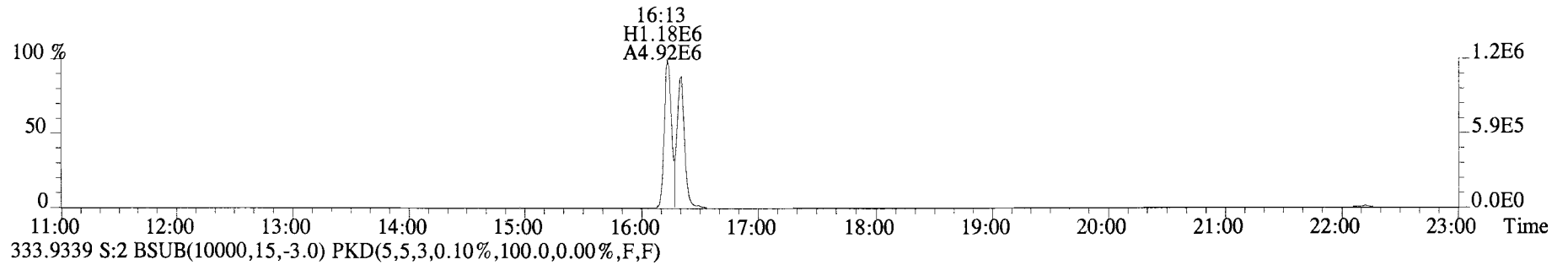
File:191107D1 #1-1683 Acq: 7-NOV-2019 10:51:03 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory VG7 Text:CP191107D1-1 DB225 CPSM Exp:TCDF_DB225
 331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191107D1 #1-1682 Acq: 7-NOV-2019 11:22:48 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Viata Analytical Laboratory_VG7 Text:ST191107D1-1 1613 CS3 19C2204 Exp:TCDF_DB225
303.9016 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

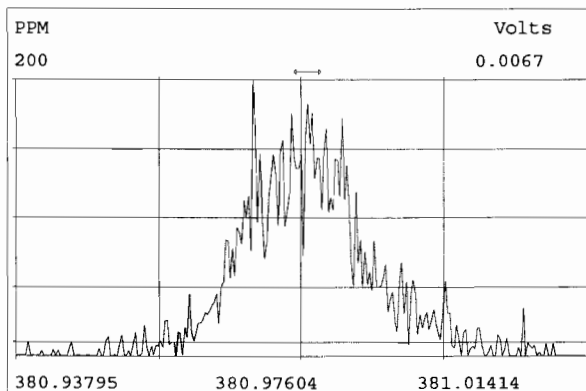
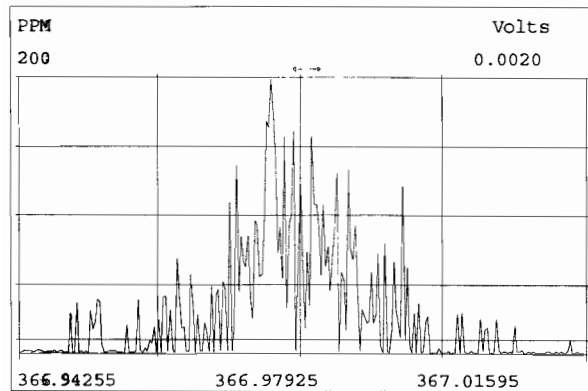
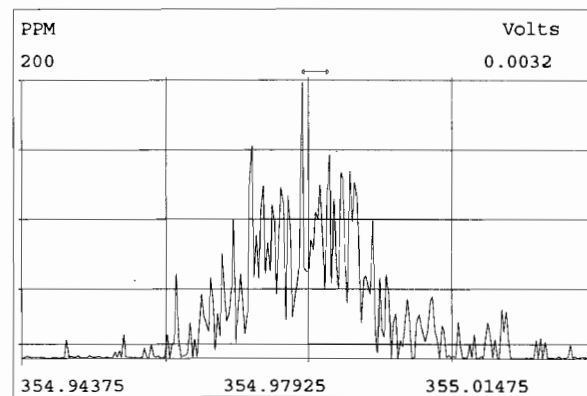
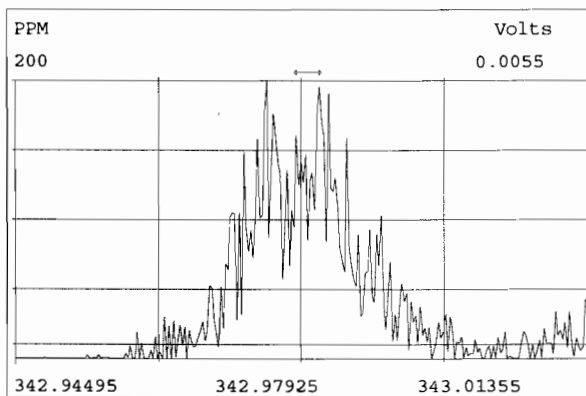
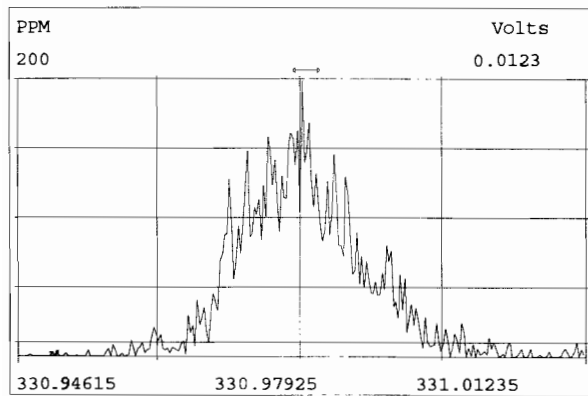
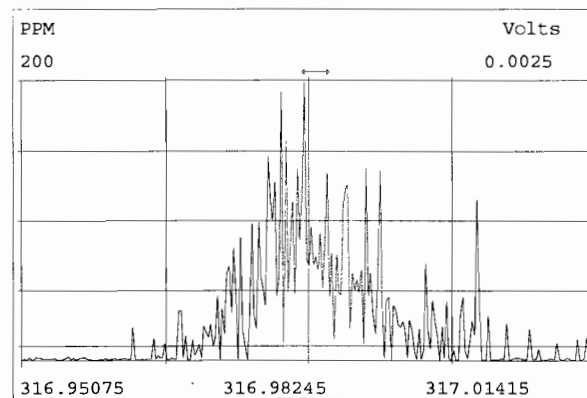
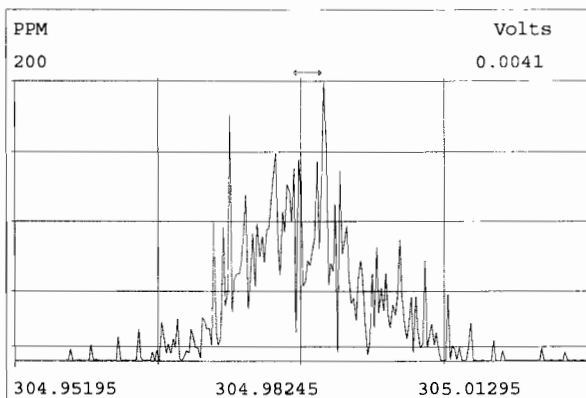
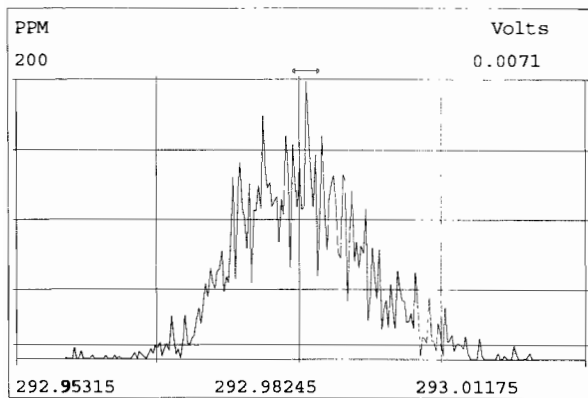


File:191107D1 #1-1682 Acq: 7-NOV-2019 11:22:48 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Viata Analytical Laboratory_VG7 Text:ST191107D1-1 1613 CS3 19C2204 Exp:TCDF_DB225
331.9368 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Peak Locate Examination: 7-NOV-2019:14:42 File:RES_CHECK

Experiment:TCDF_DB225 Function:1 Reference:PFK



INITIAL CALIBRATION

Initial Calibration RRF Summary (ICAL)

Vista Analytical Laboratory

Run: 191009D1

Analyte:

Cal: 1613VG7-10-9-19

Inst. ID: VG-7

Data filename: 191009D1

Samp# 1	Samp# 2	Samp# 3	Samp# 4	Samp# 5	Samp# 6
0.25	0.50	2.0	10	40	300

Name	Mean RRF	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6
2,3,7,8-TCDD	0.9053	7.55 %	0.84	0.83	0.87	0.99	0.92	0.98
1,2,3,7,8-PeCDD	0.9027	4.95 %	0.86	0.87	0.88	0.88	0.96	0.96
1,2,3,4,7,8-HxCDD	1.1013	3.97 %	1.12	1.13	1.03	1.08	1.09	1.15
1,2,3,6,7,8-HxCDD	0.9386	7.68 %	0.83	0.88	1.01	0.92	0.98	1.00
1,2,3,7,8,9-HxCDD	0.9613	4.62 %	0.95	0.90	0.93	0.95	1.00	1.03
1,2,3,4,6,7,8-HpCDD	0.9794	5.84 %	0.90	0.97	0.95	0.96	1.03	1.06
OCDD	0.9585	4.07 %	0.93	0.94	0.92	0.94	1.01	1.01
2,3,7,8-TCDF	0.9501	8.27 %	1.09	0.90	0.89	0.89	0.95	0.99
1,2,3,7,8-PeCDF	0.9603	4.05 %	0.94	0.94	0.92	0.95	1.00	1.01
2,3,4,7,8-PeCDF	1.0148	3.01 %	1.00	0.99	1.00	1.00	1.03	1.07
1,2,3,4,7,8-HxCDF	1.1768	4.35 %	1.23	1.11	1.15	1.14	1.20	1.24
1,2,3,6,7,8-HxCDF	1.0689	3.63 %	1.01	1.07	1.06	1.05	1.12	1.11
2,3,4,6,7,8-HxCDF	1.1136	5.58 %	1.06	1.03	1.12	1.11	1.16	1.20
1,2,3,7,8,9-HxCDF	1.0616	3.91 %	1.05	1.02	1.02	1.06	1.08	1.13
1,2,3,4,6,7,8-HpCDF	1.1276	3.90 %	1.13	1.13	1.06	1.10	1.17	1.18
1,2,3,4,7,8,9-HpCDF	1.2799	3.29 %	1.30	1.24	1.25	1.25	1.31	1.34
OCDF	0.9472	3.80 %	0.95	0.92	0.91	0.92	1.00	0.98
13C-2,3,7,8-TCDD	1.0954	1.91 %	1.11	1.08	1.06	1.10	1.12	1.11
13C-1,2,3,7,8-PeCDD	0.8814	5.11 %	0.89	0.86	0.83	0.86	0.89	0.96
13C-1,2,3,4,7,8-HxCDD	0.6421	10.35 %	0.65	0.60	0.58	0.61	0.65	0.77
13C-1,2,3,6,7,8-HxCDD	0.8555	4.13 %	0.86	0.87	0.82	0.87	0.80	0.90
13C-1,2,3,7,8,9-HxCDD	0.8066	5.57 %	0.84	0.80	0.76	0.80	0.76	0.88
13C-1,2,3,4,6,7,8-HpCDD	0.6539	9.07 %	0.70	0.63	0.59	0.62	0.63	0.75
13C-OCDD	0.5797	10.98 %	0.60	0.52	0.53	0.55	0.59	0.69
13C-2,3,7,8-TCDF	1.0349	1.62 %	1.04	1.00	1.03	1.05	1.04	1.04
13C-1,2,3,7,8-PeCDF	0.8542	4.58 %	0.84	0.82	0.82	0.87	0.86	0.92
13C-2,3,4,7,8-PeCDF	0.8471	3.79 %	0.81	0.84	0.83	0.84	0.85	0.91
13C-1,2,3,4,7,8-HxCDF	0.8317	8.50 %	0.76	0.80	0.79	0.86	0.83	0.96
13C-1,2,3,6,7,8-HxCDF	1.0344	5.35 %	1.00	1.03	1.03	1.03	0.98	1.14
13C-2,3,4,6,7,8-HxCDF	0.9533	6.17 %	0.94	0.94	0.90	0.93	0.93	1.07
13C-1,2,3,7,8,9-HxCDF	0.8277	8.68 %	0.82	0.80	0.77	0.78	0.83	0.96
13C-1,2,3,4,6,7,8-HpCDF	0.7575	6.47 %	0.76	0.73	0.72	0.75	0.73	0.85
13C-1,2,3,4,7,8,9-HpCDF	0.5812	8.97 %	0.62	0.54	0.52	0.55	0.58	0.66
13C-OCDF	0.6890	12.48 %	0.69	0.62	0.62	0.65	0.72	0.85
37Cl-2,3,7,8-TCDD	1.1977	8.83 %	1.40	1.16	1.16	1.11	1.15	1.21
13C-1,2,3,4-TCDD	1.0000	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00
13C-1,2,3,4-TCDF	1.0000	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00
13C-1,2,3,4,6,9-HxCDF	1.0000	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00

DB CT
 10/10/19 10/10/19

Filename: 191009D1 S: 1 Acquired: 9-OCT-19 16:13:04
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-1 1613 CS0 19C2201

	Typ	Name	Amount	Resp	RA	RT	RF	RRF
1	Unk	2,3,7,8-TCDD	0.25	1.97e+04	0.80 y	26:32	-	0.84
2	Unk	1,2,3,7,8-PeCDD	1.25	8.06e+04	0.62 y	30:54	-	0.86
3	Unk	1,2,3,4,7,8-HxCDD	1.25	7.34e+04	1.23 y	34:16	-	1.12
4	Unk	1,2,3,6,7,8-HxCDD	1.25	7.23e+04	1.12 y	34:23	-	0.83
5	Unk	1,2,3,7,8,9-HxCDD	1.25	8.01e+04	1.19 y	34:43	-	0.95
6	Unk	1,2,3,4,6,7,8-HpCDD	1.25	6.39e+04	1.06 y	38:05	-	0.90
7	Unk	OCDD	2.50	1.14e+05	0.95 y	41:28	-	0.93
8	Unk	2,3,7,8-TCDF	0.25	3.62e+04	0.85 y	25:49	-	1.09
9	Unk	1,2,3,7,8-PeCDF	1.25	1.26e+05	1.52 y	29:46	-	0.94
10	Unk	2,3,4,7,8-PeCDF	1.25	1.31e+05	1.52 y	30:40	-	1.00
11	Unk	1,2,3,4,7,8-HxCDF	1.25	9.36e+04	1.22 y	33:22	-	1.23
12	Unk	1,2,3,6,7,8-HxCDF	1.25	1.02e+05	1.11 y	33:29	-	1.01
13	Unk	2,3,4,6,7,8-HxCDF	1.25	1.01e+05	1.30 y	34:07	-	1.06
14	Unk	1,2,3,7,8,9-HxCDF	1.25	8.74e+04	1.10 y	35:08	-	1.05
15	Unk	1,2,3,4,6,7,8-HpCDF	1.25	8.63e+04	1.01 y	36:57	-	1.13
16	Unk	1,2,3,4,7,8,9-HpCDF	1.25	8.18e+04	1.14 y	38:40	-	1.30
17	Unk	OCDF	2.50	1.32e+05	0.94 y	41:43	-	0.95
36	IS	13C-2,3,7,8-TCDD	100.00	9.40e+06	0.78 y	26:32	-	1.11
37	IS	13C-1,2,3,7,8-PeCDD	100.00	7.48e+06	0.62 y	30:55	-	0.89
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	5.24e+06	1.19 y	34:15	-	0.65
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	6.96e+06	1.32 y	34:22	-	0.86
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	6.74e+06	1.31 y	34:42	-	0.84
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	5.68e+06	1.05 y	38:05	-	0.70
42	IS	13C-OCDD	200.00	9.75e+06	0.88 y	41:28	-	0.60
43	IS	13C-2,3,7,8-TCDF	100.00	1.33e+07	0.79 y	25:49	-	1.04
44	IS	13C-1,2,3,7,8-PeCDF	100.00	1.07e+07	1.58 y	29:46	-	0.84
45	IS	13C-2,3,4,7,8-PeCDF	100.00	1.05e+07	1.58 y	30:39	-	0.81
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	6.11e+06	0.51 y	33:21	-	0.76
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	8.04e+06	0.50 y	33:29	-	1.00
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	7.61e+06	0.50 y	34:07	-	0.94
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	6.66e+06	0.48 y	35:07	-	0.82
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	6.12e+06	0.42 y	36:57	-	0.76
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	5.02e+06	0.45 y	38:41	-	0.62
52	IS	13C-OCDF	200.00	1.11e+07	0.90 y	41:43	-	0.69
53	C/Up	37Cl-2,3,7,8-TCDD	0.25	2.97e+04		26:33	-	1.40
54	RS/RT	13C-1,2,3,4-TCDD	100.00	8.45e+06	0.80 y	25:59	-	1.00
55	RS	13C-1,2,3,4-TCDF	100.00	1.28e+07	0.79 y	24:39	-	1.00
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	8.07e+06	0.52 y	33:47	-	1.00

DB
10/10/14

Filename: 191009D1 S: 2 Acquired: 9-OCT-19 17:00:45
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-2 1613 CS1 19C2202

	Typ	Name	Amount	Resp	RA	RT	RF	RRF
1	Unk	2,3,7,8-TCDD	0.50	3.54e+04	0.78 y	26:34	-	0.83
2	Unk	1,2,3,7,8-PeCDD	2.50	1.46e+05	0.60 y	30:56	-	0.87
3	Unk	1,2,3,4,7,8-HxCDD	2.50	1.25e+05	1.20 y	34:16	-	1.13
4	Unk	1,2,3,6,7,8-HxCDD	2.50	1.40e+05	1.22 y	34:23	-	0.88
5	Unk	1,2,3,7,8,9-HxCDD	2.50	1.33e+05	1.15 y	34:43	-	0.90
6	Unk	1,2,3,4,6,7,8-HpCDD	2.50	1.13e+05	0.97 y	38:06	-	0.97
7	Unk	OCDD	5.00	1.78e+05	0.90 y	41:28	-	0.94
8	Unk	2,3,7,8-TCDF	0.50	5.25e+04	0.74 y	25:51	-	0.90
9	Unk	1,2,3,7,8-PeCDF	2.50	2.25e+05	1.59 y	29:48	-	0.94
10	Unk	2,3,4,7,8-PeCDF	2.50	2.42e+05	1.50 y	30:40	-	0.99
11	Unk	1,2,3,4,7,8-HxCDF	2.50	1.62e+05	1.16 y	33:22	-	1.11
12	Unk	1,2,3,6,7,8-HxCDF	2.50	2.03e+05	1.20 y	33:30	-	1.07
13	Unk	2,3,4,6,7,8-HxCDF	2.50	1.79e+05	1.30 y	34:07	-	1.03
14	Unk	1,2,3,7,8,9-HxCDF	2.50	1.49e+05	1.24 y	35:08	-	1.02
15	Unk	1,2,3,4,6,7,8-HpCDF	2.50	1.51e+05	0.91 y	36:57	-	1.13
16	Unk	1,2,3,4,7,8,9-HpCDF	2.50	1.23e+05	0.94 y	38:41	-	1.24
17	Unk	OCDF	5.00	2.09e+05	0.91 y	41:43	-	0.92
36	IS	13C-2,3,7,8-TCDD	100.00	8.50e+06	0.78 y	26:34	-	1.08
37	IS	13C-1,2,3,7,8-PeCDD	100.00	6.74e+06	0.63 y	30:56	-	0.86
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	4.41e+06	1.38 y	34:16	-	0.60
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	6.35e+06	1.20 y	34:23	-	0.87
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	5.87e+06	1.26 y	34:42	-	0.80
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	4.64e+06	1.05 y	38:05	-	0.63
42	IS	13C-OCDD	200.00	7.58e+06	0.89 y	41:28	-	0.52
43	IS	13C-2,3,7,8-TCDF	100.00	1.17e+07	0.80 y	25:51	-	1.00
44	IS	13C-1,2,3,7,8-PeCDF	100.00	9.60e+06	1.59 y	29:48	-	0.82
45	IS	13C-2,3,4,7,8-PeCDF	100.00	9.80e+06	1.58 y	30:40	-	0.84
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	5.84e+06	0.52 y	33:21	-	0.80
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	7.58e+06	0.51 y	33:29	-	1.03
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	6.92e+06	0.51 y	34:07	-	0.94
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	5.84e+06	0.49 y	35:08	-	0.80
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	5.38e+06	0.43 y	36:57	-	0.73
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	3.99e+06	0.43 y	38:41	-	0.54
52	IS	13C-OCDF	200.00	9.05e+06	0.88 y	41:43	-	0.62
53	C/Up	37Cl-2,3,7,8-TCDD	0.50	4.55e+04		26:34	-	1.16
54	RS/RT	13C-1,2,3,4-TCDD	100.00	7.86e+06	0.77 y	26:01	-	1.00
55	RS	13C-1,2,3,4-TCDF	100.00	1.17e+07	0.83 y	24:41	-	1.00
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	7.33e+06	0.52 y	33:47	-	1.00

DB
10/10/19

Filename: 191009D1 S: 3 Acquired: 9-OCT-19 17:48:27
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-3 1613 CS2 19C2203

	Typ	Name	Amount	Resp	RA	RT	RF	RRF
1	Unk	2,3,7,8-TCDD	2.00	1.35e+05	0.74 y	26:33	-	0.87
2	Unk	1,2,3,7,8-PeCDD	10.00	5.33e+05	0.64 y	30:56	-	0.88
3	Unk	1,2,3,4,7,8-HxCDD	10.00	3.94e+05	1.22 y	34:16	-	1.03
4	Unk	1,2,3,6,7,8-HxCDD	10.00	5.50e+05	1.25 y	34:23	-	1.01
5	Unk	1,2,3,7,8,9-HxCDD	10.00	4.71e+05	1.36 y	34:43	-	0.93
6	Unk	1,2,3,4,6,7,8-HpCDD	10.00	3.70e+05	1.02 y	38:06	-	0.95
7	Unk	OCDD	20.00	6.41e+05	0.90 y	41:29	-	0.92
8	Unk	2,3,7,8-TCDF	2.00	1.90e+05	0.83 y	25:49	-	0.89
9	Unk	1,2,3,7,8-PeCDF	10.00	7.88e+05	1.58 y	29:47	-	0.92
10	Unk	2,3,4,7,8-PeCDF	10.00	8.71e+05	1.56 y	30:40	-	1.00
11	Unk	1,2,3,4,7,8-HxCDF	10.00	6.02e+05	1.14 y	33:22	-	1.15
12	Unk	1,2,3,6,7,8-HxCDF	10.00	7.20e+05	1.27 y	33:30	-	1.06
13	Unk	2,3,4,6,7,8-HxCDF	10.00	6.66e+05	1.26 y	34:08	-	1.12
14	Unk	1,2,3,7,8,9-HxCDF	10.00	5.16e+05	1.16 y	35:08	-	1.02
15	Unk	1,2,3,4,6,7,8-HpCDF	10.00	5.02e+05	1.05 y	36:57	-	1.06
16	Unk	1,2,3,4,7,8,9-HpCDF	10.00	4.31e+05	1.08 y	38:41	-	1.25
17	Unk	OCDF	20.00	7.38e+05	0.91 y	41:44	-	0.91
36	IS	13C-2,3,7,8-TCDD	100.00	7.73e+06	0.78 y	26:33	-	1.06
37	IS	13C-1,2,3,7,8-PeCDD	100.00	6.03e+06	0.62 y	30:55	-	0.83
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	3.81e+06	1.24 y	34:15	-	0.58
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	5.44e+06	1.28 y	34:22	-	0.82
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	5.03e+06	1.21 y	34:42	-	0.76
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	3.89e+06	1.09 y	38:05	-	0.59
42	IS	13C-OCDD	200.00	6.97e+06	0.90 y	41:28	-	0.53
43	IS	13C-2,3,7,8-TCDF	100.00	1.08e+07	0.82 y	25:49	-	1.03
44	IS	13C-1,2,3,7,8-PeCDF	100.00	8.55e+06	1.59 y	29:47	-	0.82
45	IS	13C-2,3,4,7,8-PeCDF	100.00	8.70e+06	1.59 y	30:40	-	0.83
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	5.22e+06	0.49 y	33:21	-	0.79
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	6.80e+06	0.51 y	33:29	-	1.03
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	5.93e+06	0.52 y	34:07	-	0.90
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	5.05e+06	0.51 y	35:08	-	0.77
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	4.73e+06	0.44 y	36:57	-	0.72
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	3.46e+06	0.45 y	38:41	-	0.52
52	IS	13C-OCDF	200.00	8.15e+06	0.92 y	41:44	-	0.62
53	C/Up	37Cl-2,3,7,8-TCDD	2.00	1.69e+05		26:33	-	1.16
54	RS/RT	13C-1,2,3,4-TCDD	100.00	7.29e+06	0.77 y	25:59	-	1.00
55	RS	13C-1,2,3,4-TCDF	100.00	1.04e+07	0.82 y	24:39	-	1.00
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	6.60e+06	0.52 y	33:47	-	1.00

DB
10/10/19

Filename: 191009D1 S: 4 Acquired: 9-OCT-19 18:36:09
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-4 1613 CS3 19C2204

	Typ	Name	Amount	Resp	RA	RT	RF	RRF
1	Unk	2,3,7,8-TCDD	10.00	8.37e+05	0.80 y	26:35	-	0.99
2	Unk	1,2,3,7,8-PeCDD	50.00	2.94e+06	0.61 y	30:56	-	0.88
3	Unk	1,2,3,4,7,8-HxCDD	50.00	2.38e+06	1.21 y	34:16	-	1.08
4	Unk	1,2,3,6,7,8-HxCDD	50.00	2.90e+06	1.19 y	34:23	-	0.92
5	Unk	1,2,3,7,8,9-HxCDD	50.00	2.74e+06	1.24 y	34:42	-	0.95
6	Unk	1,2,3,4,6,7,8-HpCDD	50.00	2.15e+06	1.03 y	38:05	-	0.96
7	Unk	OCDD	100.00	3.73e+06	0.91 y	41:28	-	0.94
8	Unk	2,3,7,8-TCDF	10.00	1.05e+06	0.80 y	25:51	-	0.89
9	Unk	1,2,3,7,8-PeCDF	50.00	4.65e+06	1.59 y	29:47	-	0.95
10	Unk	2,3,4,7,8-PeCDF	50.00	4.70e+06	1.68 y	30:40	-	1.00
11	Unk	1,2,3,4,7,8-HxCDF	50.00	3.52e+06	1.24 y	33:21	-	1.14
12	Unk	1,2,3,6,7,8-HxCDF	50.00	3.92e+06	1.25 y	33:29	-	1.05
13	Unk	2,3,4,6,7,8-HxCDF	50.00	3.74e+06	1.22 y	34:07	-	1.11
14	Unk	1,2,3,7,8,9-HxCDF	50.00	3.00e+06	1.19 y	35:07	-	1.06
15	Unk	1,2,3,4,6,7,8-HpCDF	50.00	2.97e+06	1.04 y	36:57	-	1.10
16	Unk	1,2,3,4,7,8,9-HpCDF	50.00	2.49e+06	1.07 y	38:41	-	1.25
17	Unk	OCDF	100.00	4.33e+06	0.91 y	41:43	-	0.92
36	IS	13C-2,3,7,8-TCDD	100.00	8.46e+06	0.74 y	26:33	-	1.10
37	IS	13C-1,2,3,7,8-PeCDD	100.00	6.66e+06	0.62 y	30:55	-	0.86
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	4.42e+06	1.25 y	34:15	-	0.61
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	6.30e+06	1.28 y	34:22	-	0.87
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	5.76e+06	1.27 y	34:41	-	0.80
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	4.47e+06	1.05 y	38:05	-	0.62
42	IS	13C-OCDD	200.00	7.90e+06	0.94 y	41:27	-	0.55
43	IS	13C-2,3,7,8-TCDF	100.00	1.18e+07	0.79 y	25:50	-	1.05
44	IS	13C-1,2,3,7,8-PeCDF	100.00	9.79e+06	1.62 y	29:47	-	0.87
45	IS	13C-2,3,4,7,8-PeCDF	100.00	9.43e+06	1.61 y	30:39	-	0.84
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	6.19e+06	0.50 y	33:21	-	0.86
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	7.47e+06	0.51 y	33:29	-	1.03
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	6.75e+06	0.49 y	34:06	-	0.93
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	5.64e+06	0.49 y	35:07	-	0.78
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	5.40e+06	0.43 y	36:55	-	0.75
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	3.99e+06	0.44 y	38:40	-	0.55
52	IS	13C-OCDF	200.00	9.37e+06	0.89 y	41:43	-	0.65
53	C/Up	37Cl-2,3,7,8-TCDD	10.00	8.56e+05		26:35	-	1.11
54	RS/RT	13C-1,2,3,4-TCDD	100.00	7.70e+06	0.75 y	26:00	-	1.00
55	RS	13C-1,2,3,4-TCDF	100.00	1.13e+07	0.82 y	24:41	-	1.00
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	7.23e+06	0.51 y	33:47	-	1.00

DB

10/10/19

Filename: 191009D1 S: 5 Acquired: 9-OCT-19 19:23:46
Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
Sample text: ST191009D1-5 1613 CS4 19C2205

	Typ	Name	Amount	Resp	RA	RT	RF	RRF
1	Unk	2,3,7,8-TCDD	40.00	3.53e+06	0.81 y	26:35	-	0.92
2	Unk	1,2,3,7,8-PeCDD	200.00	1.48e+07	0.63 y	30:55	-	0.96
3	Unk	1,2,3,4,7,8-HxCDD	200.00	1.19e+07	1.19 y	34:15	-	1.09
4	Unk	1,2,3,6,7,8-HxCDD	200.00	1.34e+07	1.20 y	34:22	-	0.98
5	Unk	1,2,3,7,8,9-HxCDD	200.00	1.30e+07	1.18 y	34:41	-	1.00
6	Unk	1,2,3,4,6,7,8-HpCDD	200.00	1.10e+07	1.03 y	38:04	-	1.03
7	Unk	OCDD	400.00	2.03e+07	0.91 y	41:26	-	1.01
8	Unk	2,3,7,8-TCDF	40.00	5.17e+06	0.77 y	25:52	-	0.95
9	Unk	1,2,3,7,8-PeCDF	200.00	2.24e+07	1.58 y	29:47	-	1.00
10	Unk	2,3,4,7,8-PeCDF	200.00	2.29e+07	1.55 y	30:40	-	1.03
11	Unk	1,2,3,4,7,8-HxCDF	200.00	1.69e+07	1.21 y	33:21	-	1.20
12	Unk	1,2,3,6,7,8-HxCDF	200.00	1.85e+07	1.21 y	33:29	-	1.12
13	Unk	2,3,4,6,7,8-HxCDF	200.00	1.83e+07	1.21 y	34:06	-	1.16
14	Unk	1,2,3,7,8,9-HxCDF	200.00	1.53e+07	1.22 y	35:06	-	1.08
15	Unk	1,2,3,4,6,7,8-HpCDF	200.00	1.46e+07	1.04 y	36:56	-	1.17
16	Unk	1,2,3,4,7,8,9-HpCDF	200.00	1.30e+07	1.05 y	38:39	-	1.31
17	Unk	OCDF	400.00	2.42e+07	0.91 y	41:41	-	1.00
36	IS	13C-2,3,7,8-TCDD	100.00	9.63e+06	0.75 y	26:34	-	1.12
37	IS	13C-1,2,3,7,8-PeCDD	100.00	7.72e+06	0.63 y	30:54	-	0.89
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	5.48e+06	1.31 y	34:14	-	0.65
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	6.83e+06	1.22 y	34:21	-	0.80
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	6.48e+06	1.26 y	34:40	-	0.76
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	5.36e+06	1.08 y	38:03	-	0.63
42	IS	13C-OCDD	200.00	1.01e+07	0.91 y	41:25	-	0.59
43	IS	13C-2,3,7,8-TCDF	100.00	1.36e+07	0.80 y	25:51	-	1.04
44	IS	13C-1,2,3,7,8-PeCDF	100.00	1.12e+07	1.57 y	29:46	-	0.86
45	IS	13C-2,3,4,7,8-PeCDF	100.00	1.11e+07	1.52 y	30:39	-	0.85
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	7.05e+06	0.50 y	33:20	-	0.83
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	8.28e+06	0.49 y	33:28	-	0.98
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	7.90e+06	0.51 y	34:05	-	0.93
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	7.08e+06	0.51 y	35:06	-	0.83
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	6.23e+06	0.46 y	36:55	-	0.73
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	4.95e+06	0.44 y	38:38	-	0.58
52	IS	13C-OCDF	200.00	1.22e+07	0.90 y	41:40	-	0.72
53	C/Up	37Cl-2,3,7,8-TCDD	40.00	3.96e+06		26:35	-	1.15
54	RS/RT	13C-1,2,3,4-TCDD	100.00	8.64e+06	0.78 y	26:00	-	1.00
55	RS	13C-1,2,3,4-TCDF	100.00	1.30e+07	0.83 y	24:41	-	1.00
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	8.48e+06	0.51 y	33:46	-	1.00

DB
10/10/19

Filename: 191009D1 S: 6 Acquired: 9-OCT-19 20:11:17
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-6 1613 CS5 19C2206

	Typ	Name	Amount	Resp	RA	RT	RF	RRF
1	Unk	2,3,7,8-TCDD	300.00	2.80e+07	0.81 y	26:35	-	0.98
2	Unk	1,2,3,7,8-PeCDD	1500.00	1.19e+08	0.62 y	30:55	-	0.96
3	Unk	1,2,3,4,7,8-HxCDD	1500.00	1.04e+08	1.22 y	34:15	-	1.15
4	Unk	1,2,3,6,7,8-HxCDD	1500.00	1.07e+08	1.21 y	34:22	-	1.00
5	Unk	1,2,3,7,8,9-HxCDD	1500.00	1.06e+08	1.23 y	34:41	-	1.03
6	Unk	1,2,3,4,6,7,8-HpCDD	1500.00	9.32e+07	1.05 y	38:03	-	1.06
7	Unk	OCDD	3000.00	1.64e+08	0.92 y	41:25	-	1.01
8	Unk	2,3,7,8-TCDF	300.00	3.95e+07	0.79 y	25:52	-	0.99
9	Unk	1,2,3,7,8-PeCDF	1500.00	1.79e+08	1.58 y	29:47	-	1.01
10	Unk	2,3,4,7,8-PeCDF	1500.00	1.86e+08	1.57 y	30:39	-	1.07
11	Unk	1,2,3,4,7,8-HxCDF	1500.00	1.40e+08	1.20 y	33:21	-	1.24
12	Unk	1,2,3,6,7,8-HxCDF	1500.00	1.48e+08	1.21 y	33:29	-	1.11
13	Unk	2,3,4,6,7,8-HxCDF	1500.00	1.51e+08	1.22 y	34:06	-	1.20
14	Unk	1,2,3,7,8,9-HxCDF	1500.00	1.28e+08	1.25 y	35:06	-	1.13
15	Unk	1,2,3,4,6,7,8-HpCDF	1500.00	1.18e+08	1.03 y	36:55	-	1.18
16	Unk	1,2,3,4,7,8,9-HpCDF	1500.00	1.04e+08	1.05 y	38:38	-	1.34
17	Unk	OCDF	3000.00	1.96e+08	0.91 y	41:40	-	0.98
36	IS	13C-2,3,7,8-TCDD	100.00	9.53e+06	0.73 y	26:33	-	1.11
37	IS	13C-1,2,3,7,8-PeCDD	100.00	8.28e+06	0.64 y	30:54	-	0.96
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	6.01e+06	1.21 y	34:14	-	0.77
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	7.08e+06	1.32 y	34:21	-	0.90
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	6.90e+06	1.26 y	34:39	-	0.88
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	5.86e+06	1.08 y	38:03	-	0.75
42	IS	13C-OCDD	200.00	1.08e+07	0.92 y	41:25	-	0.69
43	IS	13C-2,3,7,8-TCDF	100.00	1.33e+07	0.80 y	25:51	-	1.04
44	IS	13C-1,2,3,7,8-PeCDF	100.00	1.18e+07	1.59 y	29:46	-	0.92
45	IS	13C-2,3,4,7,8-PeCDF	100.00	1.16e+07	1.60 y	30:38	-	0.91
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	7.52e+06	0.51 y	33:20	-	0.96
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	8.92e+06	0.50 y	33:28	-	1.14
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	8.38e+06	0.51 y	34:05	-	1.07
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	7.57e+06	0.52 y	35:05	-	0.96
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	6.70e+06	0.43 y	36:54	-	0.85
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	5.19e+06	0.43 y	38:37	-	0.66
52	IS	13C-OCDF	200.00	1.33e+07	0.89 y	41:39	-	0.85
53	C/Up	37Cl-2,3,7,8-TCDD	199.98	2.09e+07		26:35	-	1.21
54	RS/RT	13C-1,2,3,4-TCDD	100.00	8.62e+06	0.76 y	26:01	-	1.00
55	RS	13C-1,2,3,4-TCDF	100.00	1.27e+07	0.84 y	24:41	-	1.00
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	7.85e+06	0.49 y	33:45	-	1.00

DB

10/10/19

Run: 191009D1 Analyte: Cal: 1613VG7-10 9-19 Inst. ID: VG-7

Data filename: 191009D1

Samp# 1	Samp# 2	Samp# 3	Samp# 4	Samp# 5	Samp# 6
0.25	0.50	2.0	10	40	300

Name	Mean RRF	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6
Total Tetra-Dioxins	0.9053	7.55 %	0.84	0.83	0.87	0.99	0.92	0.98
TCDD EMPC	0.9053	7.55 %	0.84	0.83	0.87	0.99	0.92	0.98
Total Penta-Dioxins	0.9027	4.95 %	0.86	0.87	0.88	0.88	0.96	0.96
PeCDD EMPC	0.9027	4.95 %	0.86	0.87	0.88	0.88	0.96	0.96
Total Hexa-Dioxins	0.9918	4.02 %	0.95	0.96	0.99	0.97	1.02	1.06
HxCDD EMPC	0.9918	4.02 %	0.95	0.96	0.99	0.97	1.02	1.06
Total Hepta-Dioxins	0.9794	5.84 %	0.90	0.97	0.95	0.96	1.03	1.06
HpCDD EMPC	0.9794	5.84 %	0.90	0.97	0.95	0.96	1.03	1.06
Total Tetra-Furans	0.9501	8.27 %	1.09	0.90	0.89	0.89	0.95	0.99
TCDF EMPC	0.9501	8.27 %	1.09	0.90	0.89	0.89	0.95	0.99
1st Func. Penta-Furans	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04
1st Func. PeCDF EMPC	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04
Total Penta-Furans	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04
PeCDF EMPC	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04
Total Hexa-Furans	1.1033	3.70 %	1.08	1.06	1.09	1.09	1.14	1.17
HxCDF EMPC	1.1033	3.70 %	1.08	1.06	1.09	1.09	1.14	1.17
Total Hepta-Furans	1.1937	3.56 %	1.21	1.17	1.14	1.16	1.23	1.25
HpCDF EMPC	1.1937	3.56 %	1.21	1.17	1.14	1.16	1.23	1.25

DB
10/10/19

Run: 191009D1

Analyte:

Cal: 1613VG7-10-9-19

Inst. ID: VG-7

Data filename: 191009D1

		Samp# 1	Samp# 2	Samp# 3	Samp# 4	Samp# 5	Samp# 6	
		0.25	0.50	2.0	10	40	300	
	RRT Limits							
Name	Lower	Upper	RRT#1	RRT#2	RRT#3	RRT#4	RRT#5	RRT#6
2,3,7,8-TCDD	0.999	-1.002	1.000	1.000	1.000	1.001	1.001	1.001
1,2,3,7,8-PeCDD	0.999	-1.002	0.999	1.000	1.001	1.001	1.001	1.001
1,2,3,4,7,8-HxCDD	0.999	-1.001	1.000	1.000	1.001	1.000	1.000	1.000
1,2,3,6,7,8-HxCDD	0.998	-1.004	1.000	1.000	1.000	1.001	1.001	1.000
1,2,3,7,8,9-HxCDD	0.998	-1.004	1.001	1.000	1.000	1.000	1.001	1.001
1,2,3,4,6,7,8-HpCDD	0.999	-1.001	1.000	1.000	1.000	1.000	1.000	1.000
OCDD	0.999	-1.001	1.000	1.000	1.000	1.000	1.000	1.000
2,3,7,8-TCDF	0.999	-1.003	1.000	1.000	1.000	1.001	1.001	1.001
1,2,3,7,8-PeCDF	0.999	-1.002	1.000	1.000	1.000	1.000	1.000	1.001
2,3,4,7,8-PeCDF	0.999	-1.002	1.000	1.000	1.000	1.001	1.001	1.001
1,2,3,4,7,8-HxCDF	0.999	-1.001	1.000	1.000	1.000	1.000	1.000	1.000
1,2,3,6,7,8-HxCDF	0.997	-1.005	1.000	1.000	1.001	1.000	1.000	1.000
2,3,4,6,7,8-HxCDF	0.999	-1.001	1.000	1.000	1.000	1.001	1.001	1.000
1,2,3,7,8,9-HxCDF	0.999	-1.001	1.000	1.000	1.000	1.000	1.000	1.000
1,2,3,4,6,7,8-HpCDF	0.999	-1.001	1.000	1.000	1.000	1.001	1.000	1.000
1,2,3,4,7,8,9-HpCDF	0.999	-1.001	1.000	1.000	1.000	1.000	1.000	1.000
OCDF	0.999	-1.001	1.000	1.000	1.000	1.000	1.000	1.000
13C-2,3,7,8-TCDD	0.976	-1.043	1.022	1.022	1.022	1.021	1.021	1.021
13C-1,2,3,7,8-PeCDD	1.000	-1.567	1.190	1.189	1.190	1.189	1.188	1.188
13C-1,2,3,4,7,8-HxCDD	1.002	-1.026	1.014	1.014	1.014	1.014	1.014	1.014
13C-1,2,3,6,7,8-HxCDD	1.007	-1.029	1.017	1.018	1.018	1.017	1.017	1.018
13C-1,2,3,7,8,9-HxCDD	1.014	-1.038	1.027	1.027	1.027	1.027	1.027	1.027
13C-1,2,3,4,6,7,8-HpCDD	1.117	-1.141	1.127	1.127	1.128	1.127	1.127	1.127
13C-OCDD	1.085	-1.365	1.227	1.227	1.228	1.227	1.227	1.227
13C-2,3,7,8-TCDF	0.923	-1.103	0.994	0.994	0.994	0.994	0.994	0.994
13C-1,2,3,7,8-PeCDF	1.000	-1.425	1.146	1.146	1.146	1.145	1.145	1.144
13C-2,3,4,7,8-PeCDF	1.011	-1.526	1.180	1.179	1.180	1.179	1.178	1.178
13C-1,2,3,4,7,8-HxCDF	0.975	-1.001	0.987	0.987	0.987	0.987	0.987	0.987
13C-1,2,3,6,7,8-HxCDF	0.979	-1.005	0.991	0.991	0.991	0.991	0.991	0.991
13C-2,3,4,6,7,8-HxCDF	1.001	-1.020	1.010	1.010	1.010	1.009	1.009	1.010
13C-1,2,3,7,8,9-HxCDF	1.002	-1.072	1.040	1.040	1.040	1.039	1.039	1.039
13C-1,2,3,4,6,7,8-HpCDF	1.069	-1.111	1.093	1.093	1.094	1.093	1.093	1.093
13C-1,2,3,4,7,8,9-HpCDF	1.098	-1.192	1.145	1.145	1.145	1.145	1.144	1.144
13C-OCDF	1.091	-1.371	1.235	1.234	1.235	1.235	1.234	1.234
37Cl-2,3,7,8-TCDD	0.989	-1.052	1.022	1.021	1.022	1.022	1.022	1.022
13C-1,2,3,4-TCDD	0.000	-0.000	*	*	*	*	*	*
13C-1,2,3,4-TCDF	0.000	-0.000	*	*	*	*	*	*
13C-1,2,3,4,6,9-HxCDF	0.000	-0.000	*	*	*	*	*	*

D)B
10/10/19

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191009D1 S#4 Analysis Date: 9-OCT-19 Time: 18:36:09

ZB-5MS IS Data Filename: 191009D1 S#4 Analysis Date: 9-OCT-19 Time: 18:36:09

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

ISOMERS	ABSOLUTE RT	ISOMERS	ABSOLUTE RT
1,3,6,8-TCDD (F)	23:24	1,3,6,8-TCDF (F)	21:25
1,2,8,9-TCDD (L)	27:24	1,2,8,9-TCDF (L)	27:33
1,2,4,7,9-PeCDD (F)	28:55	1,3,4,6,8-PeCDF (F)	27:28
1,2,3,8,9-PeCDD (L)	31:17	1,2,3,8,9-PeCDF (L)	31:32
1,2,4,6,7,9-HxCDD (F)	32:41	1,2,3,4,6,8-HxCDF (F)	32:08
1,2,3,7,8,9-HxCDD (L)	34:42	1,2,3,7,8,9-HxCDF (L)	35:07
1,2,3,4,6,7,9-HpCDD (F)	37:16	1,2,3,4,6,7,8-HpCDF (F)	36:57
1,2,3,4,6,7,8-HpCDD (L)	38:05	1,2,3,4,7,8,9-HpCDF (L)	38:41

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

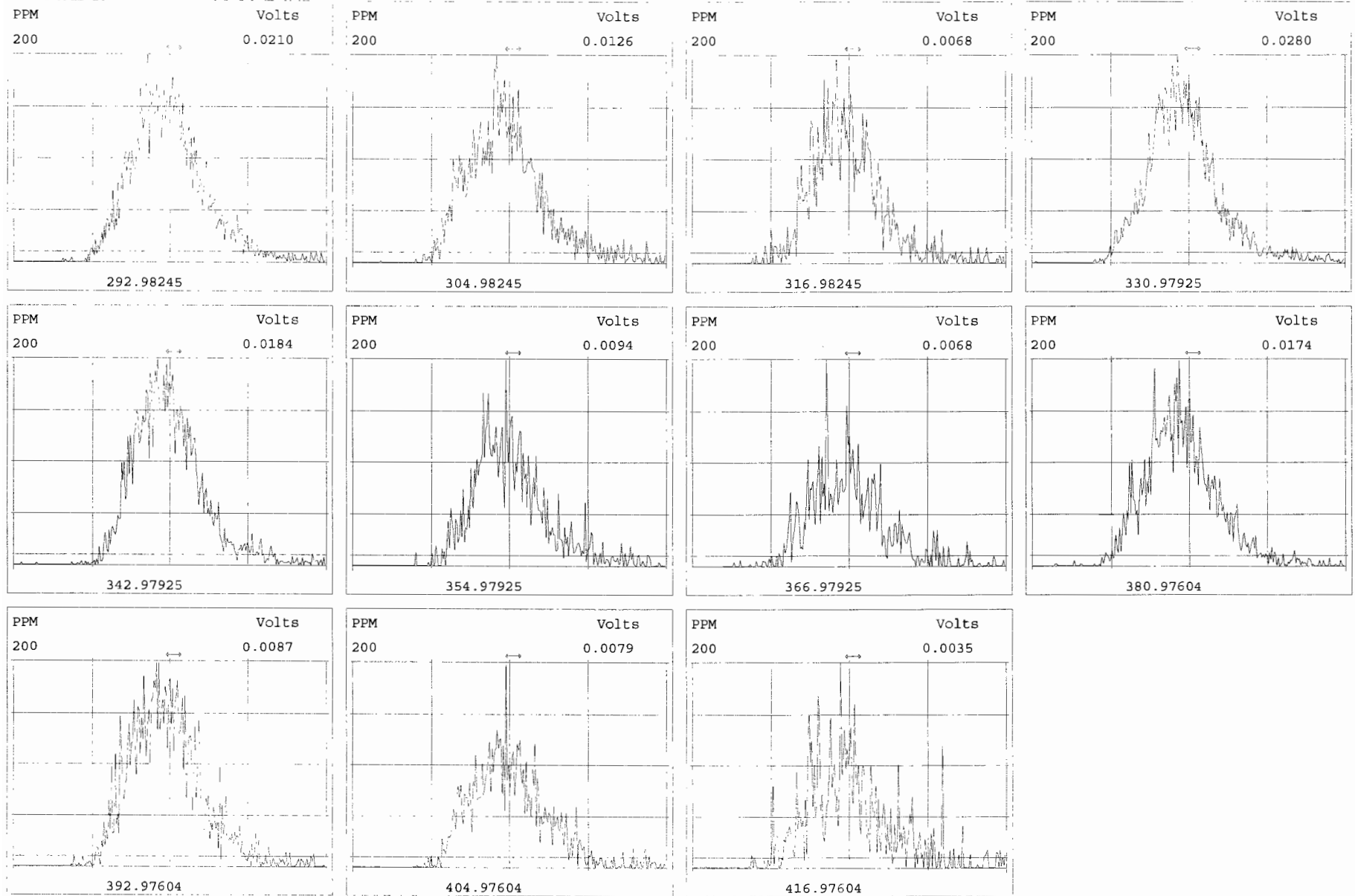
% VALLEY HEIGHT BETWEEN COMPARED PEAKS (1)

<25%

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

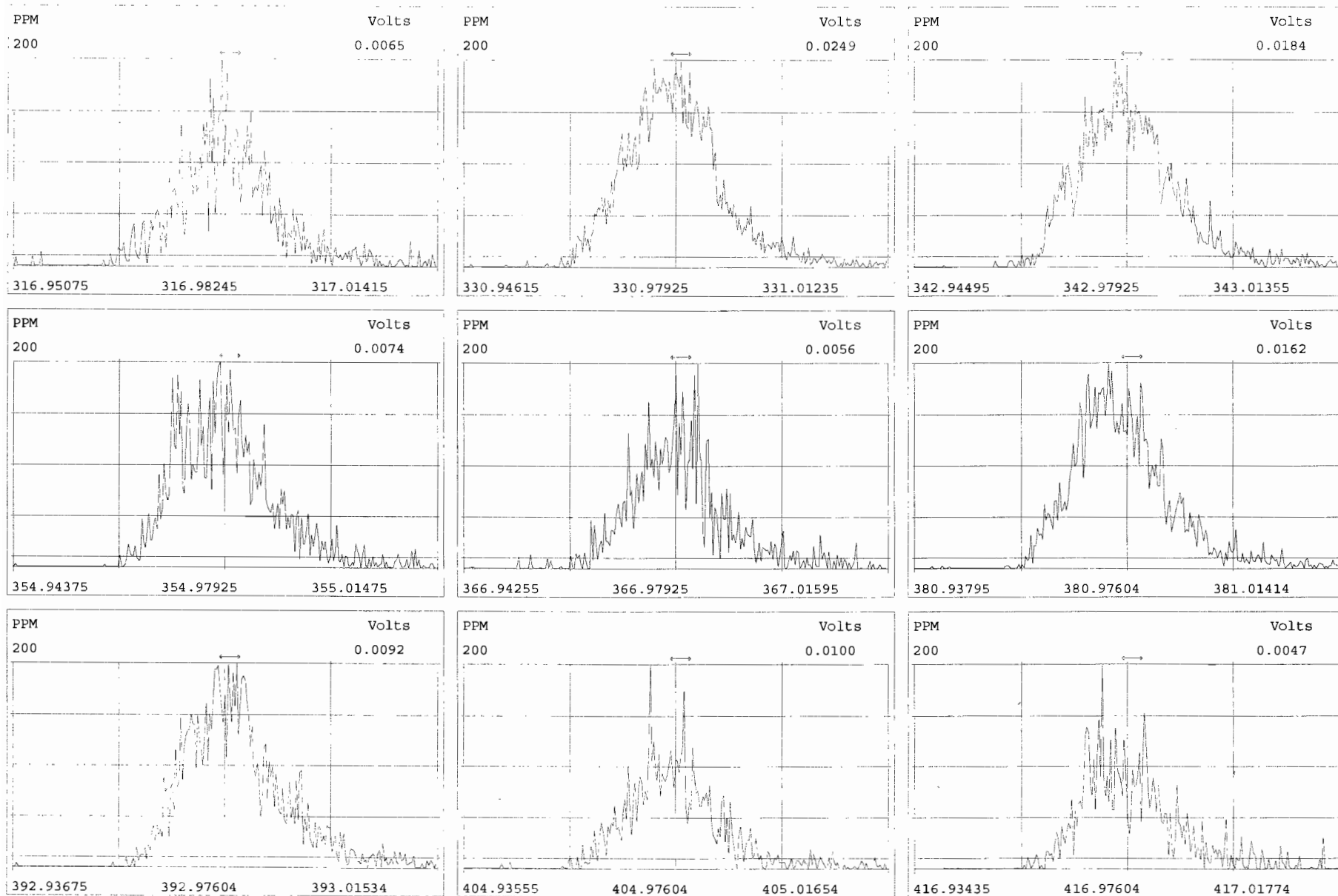
Analyst: DB

Date: 10/10/19



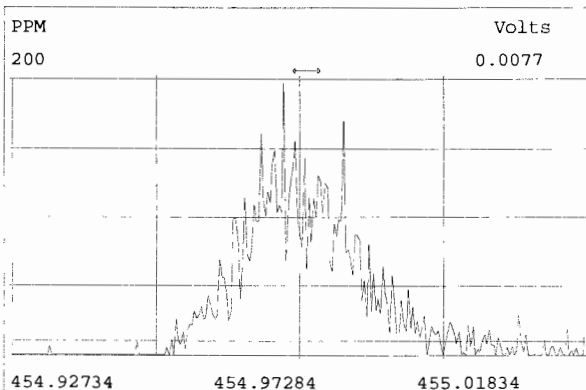
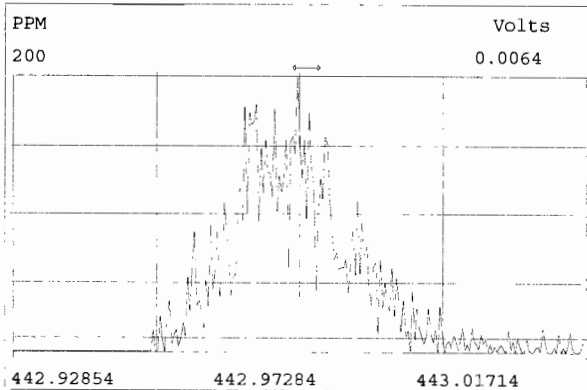
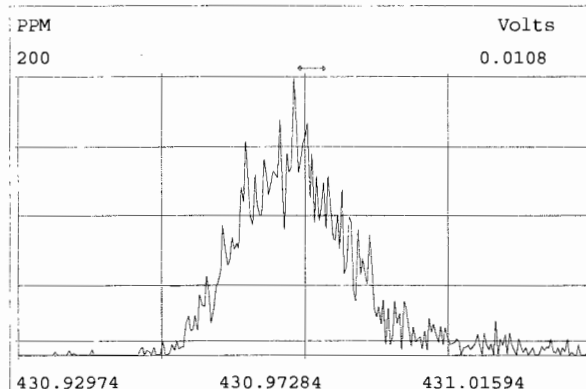
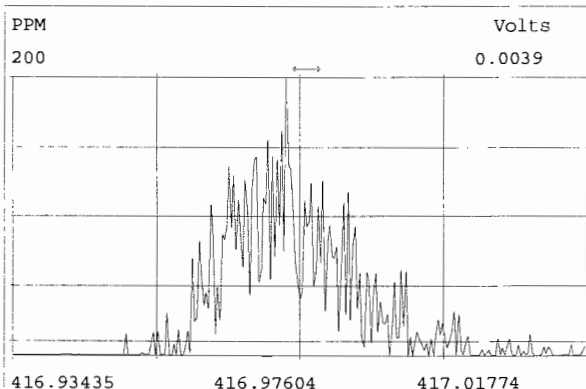
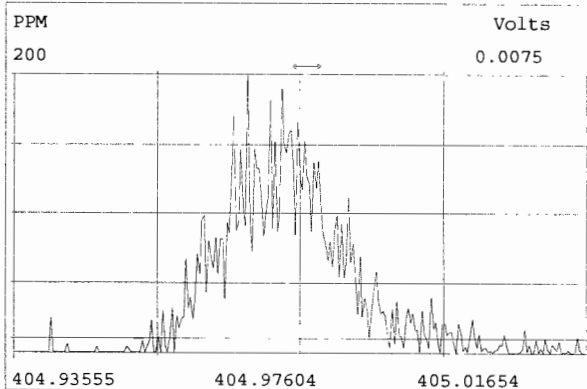
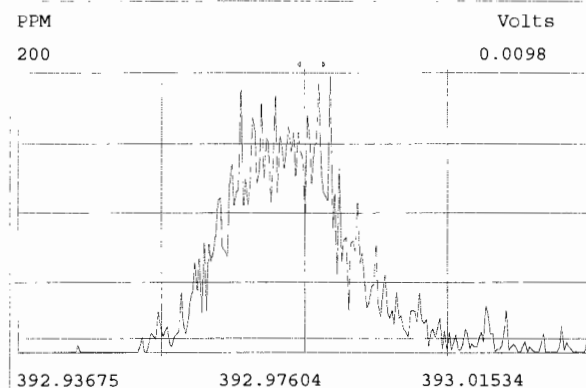
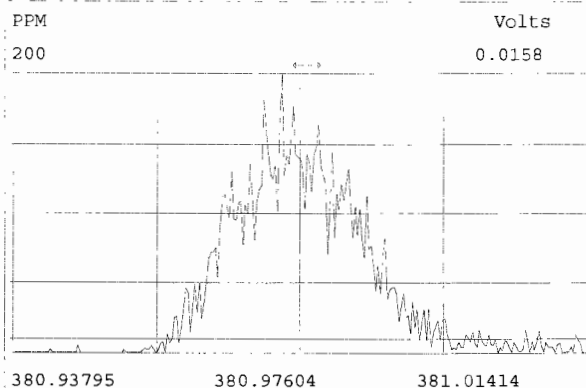
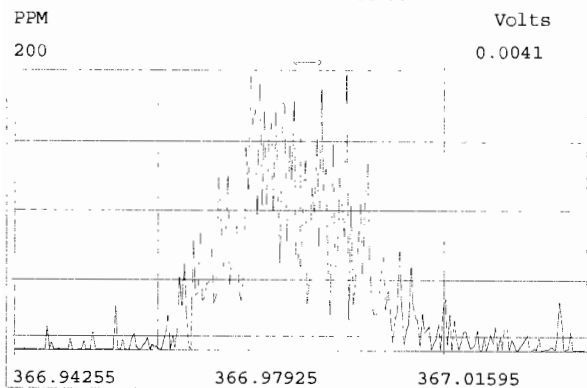
Peak Locate Examination: 9-OCT-2019:16:10 File:191009D1

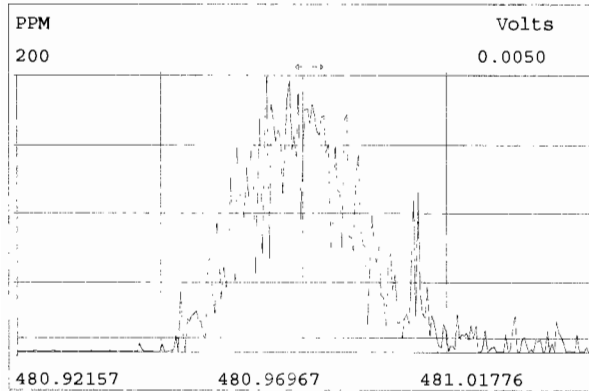
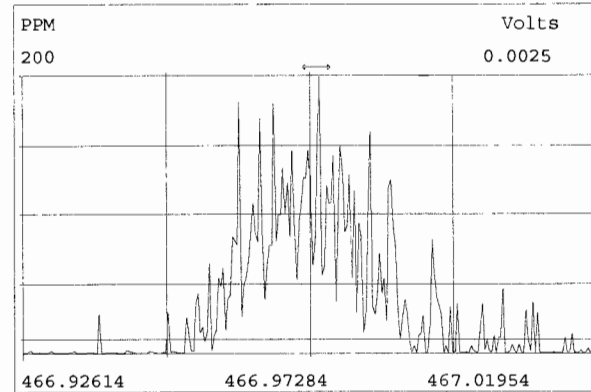
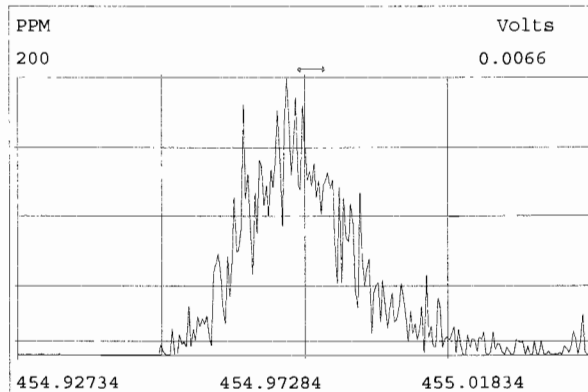
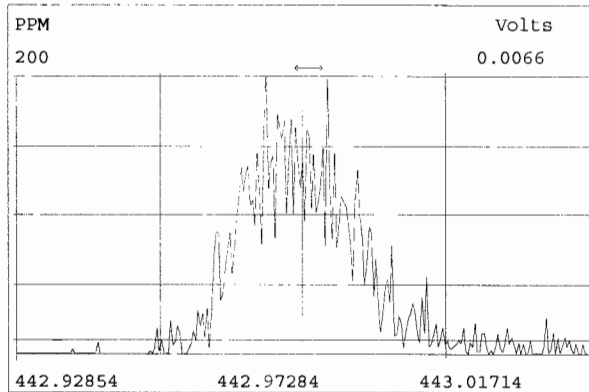
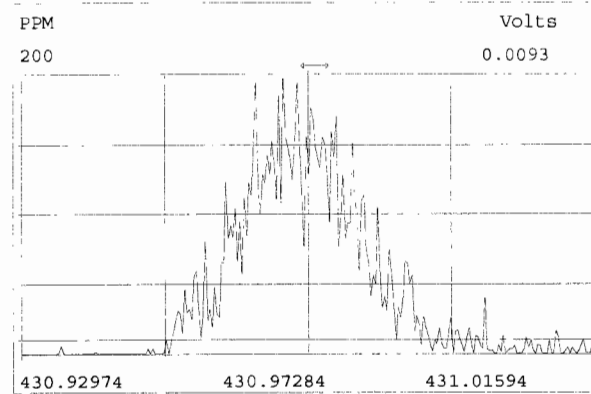
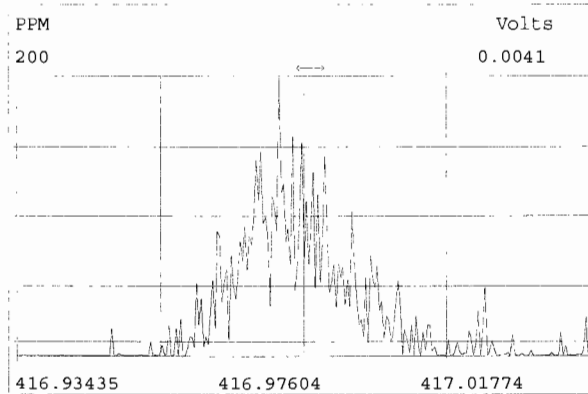
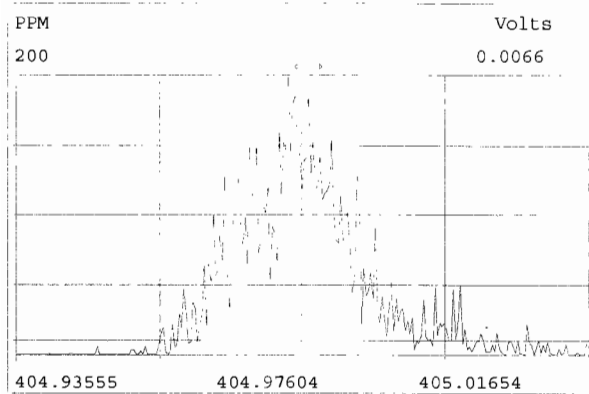
Experiment:OCDD_DB5 Function:2 Reference:PFK

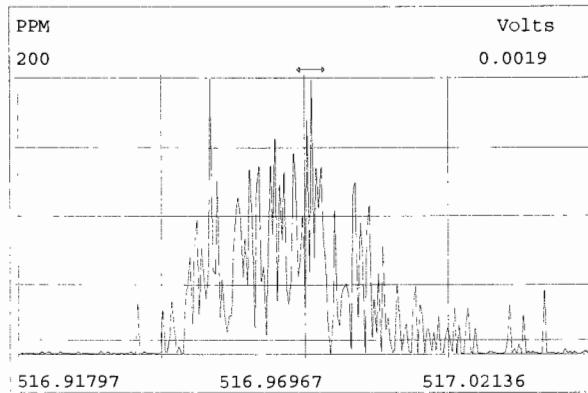
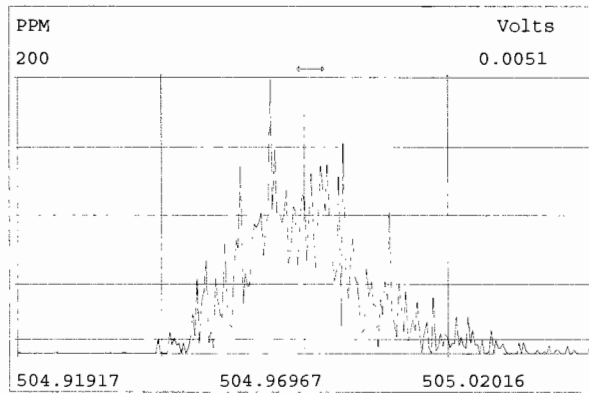
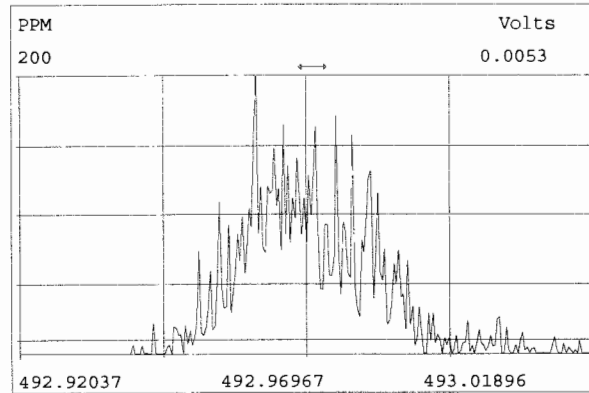
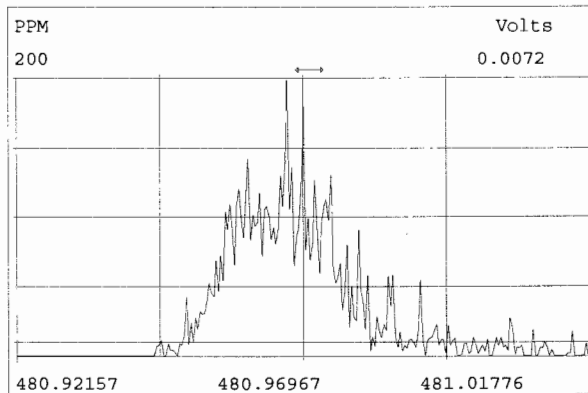
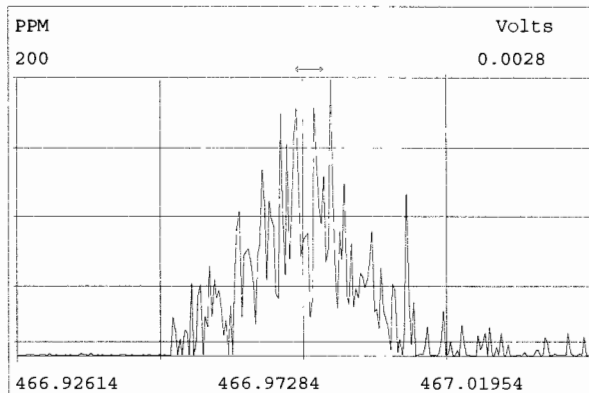
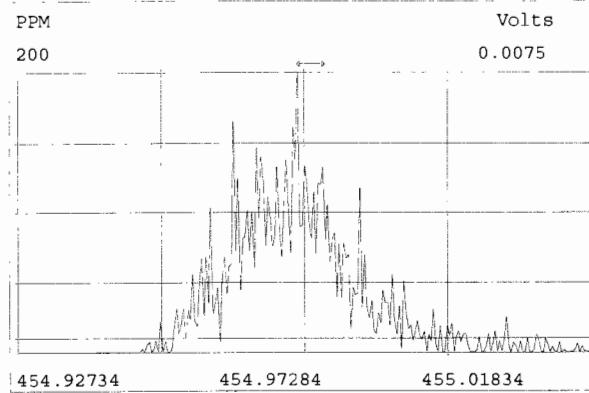
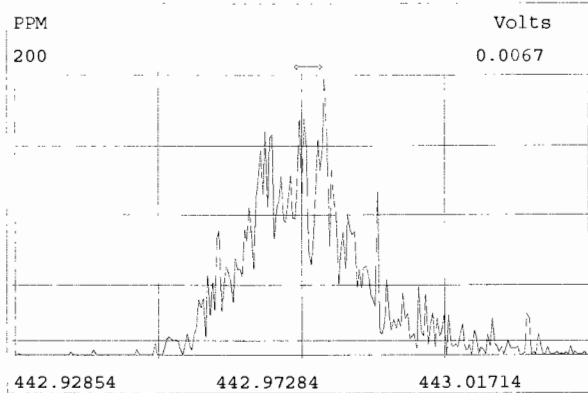
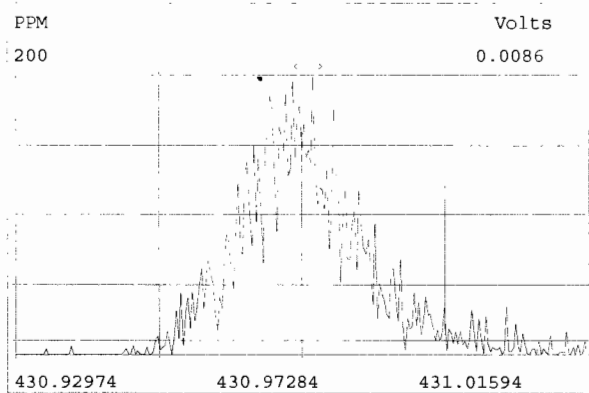


Peak Locate Examination: 9-OCT-2019:16:11 File:191009D1

Experiment:OCDD_DB5 Function:3 Reference:PFK



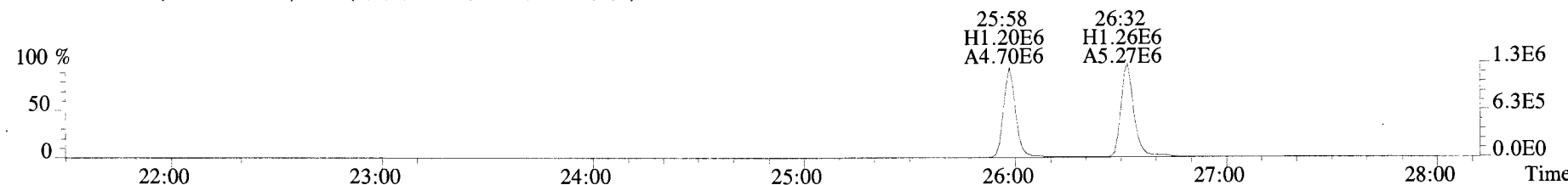
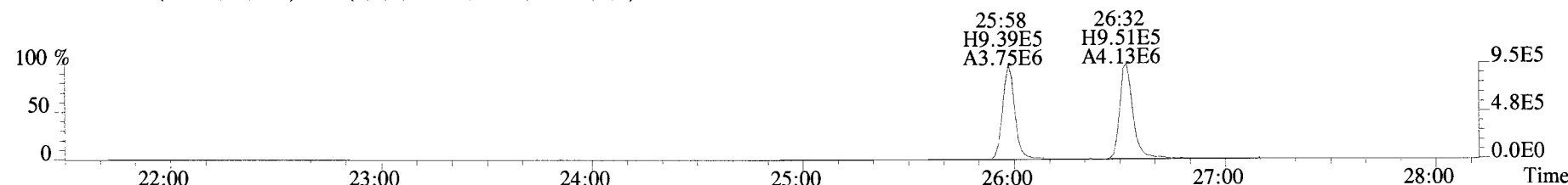
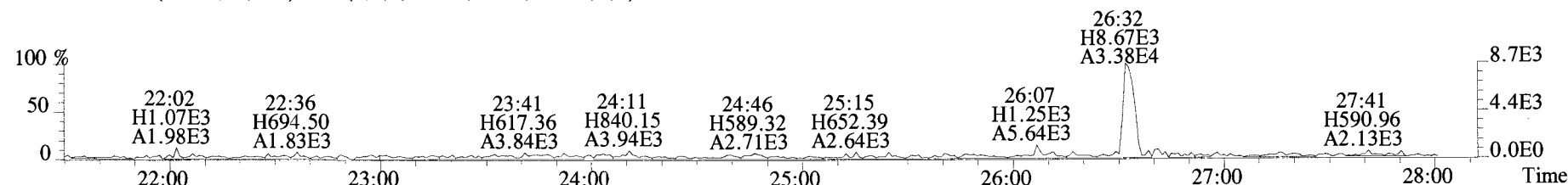
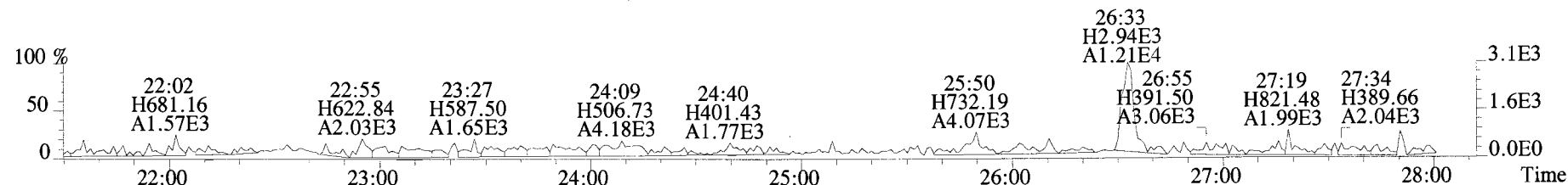
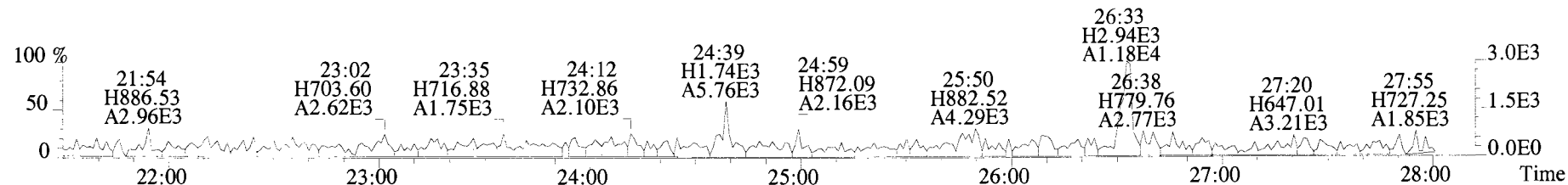




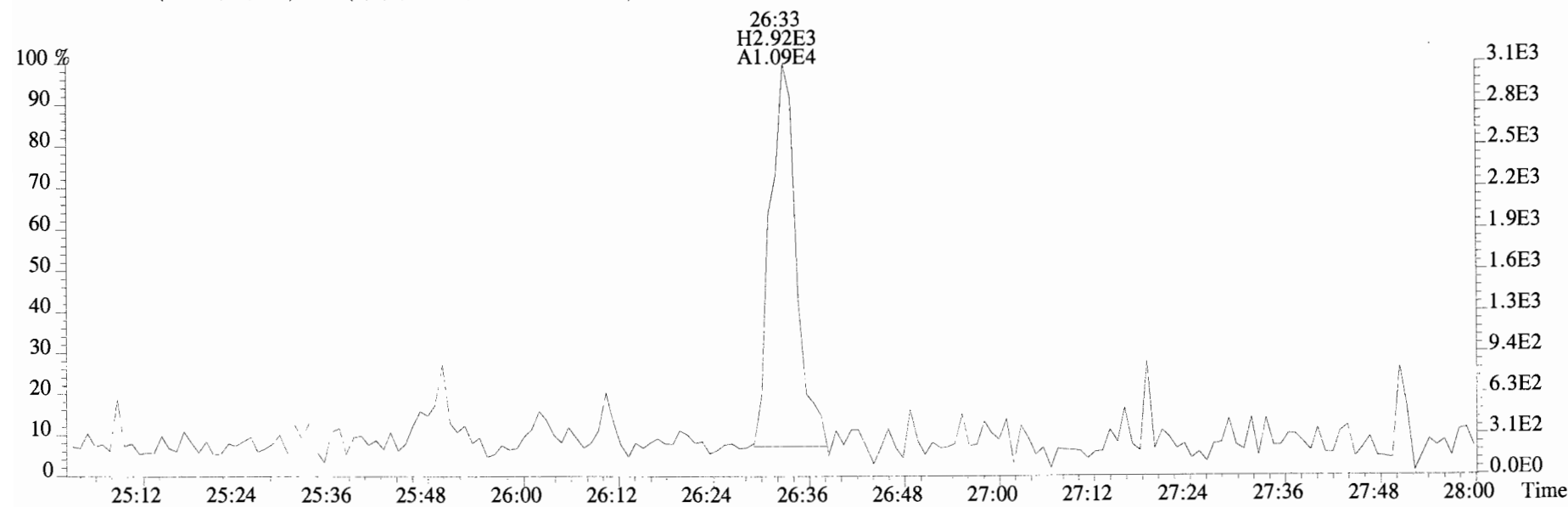
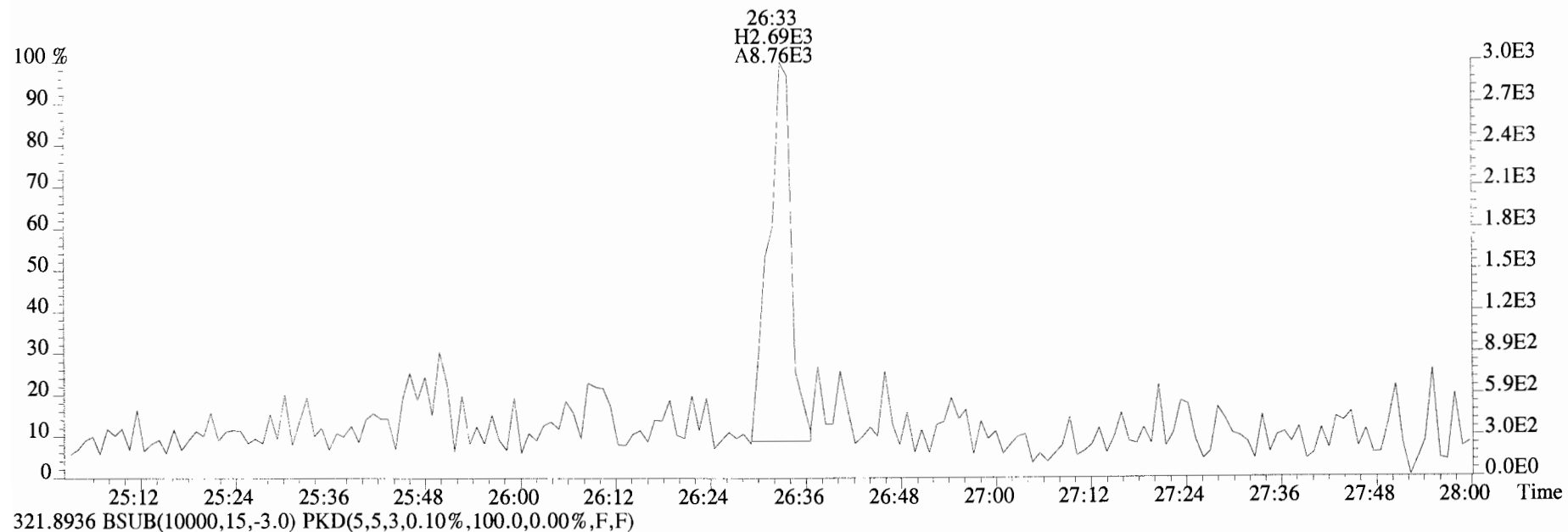
Vista Analytical Laboratory - Injection Log Run file: 191009D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191009D1	1	ST191009D1-1	DB	9-OCT-19	16:13:04	ST191009D1-4	NA
191009D1	2	ST191009D1-2	DB	9-OCT-19	17:00:45	ST191009D1-4	NA
191009D1	3	ST191009D1-3	DB	9-OCT-19	17:48:27	ST191009D1-4	NA
191009D1	4	ST191009D1-4	DB	9-OCT-19	18:36:09	ST191009D1-4	NA
191009D1	5	ST191009D1-5	DB	9-OCT-19	19:23:46	ST191009D1-4	NA
191009D1	6	ST191009D1-6	DB	9-OCT-19	20:11:17	ST191009D1-4	NA
191009D1	7	SOLVENT BLANK	DB	9-OCT-19	20:58:57	ST191009D1-4	NA
191009D1	8	SS191009D1-1	DB	9-OCT-19	21:46:34	ST191009D1-4	NA
191009D1	9	B9J0001-BS1	DB	9-OCT-19	22:34:09	ST191009D1-4	NA
191009D1	10	SOLVENT BLANK	DB	9-OCT-19	23:21:45	ST191009D1-4	NA
191009D1	11	B9J0001-BLK1	DB	10-OCT-19	00:09:30	ST191009D1-4	NA
191009D1	12	QC191007D1-1	DB	10-OCT-19	00:57:00	ST191009D1-4	NA
191009D1	13	1903285-08	DB	10-OCT-19	01:44:36	ST191009D1-4	NA
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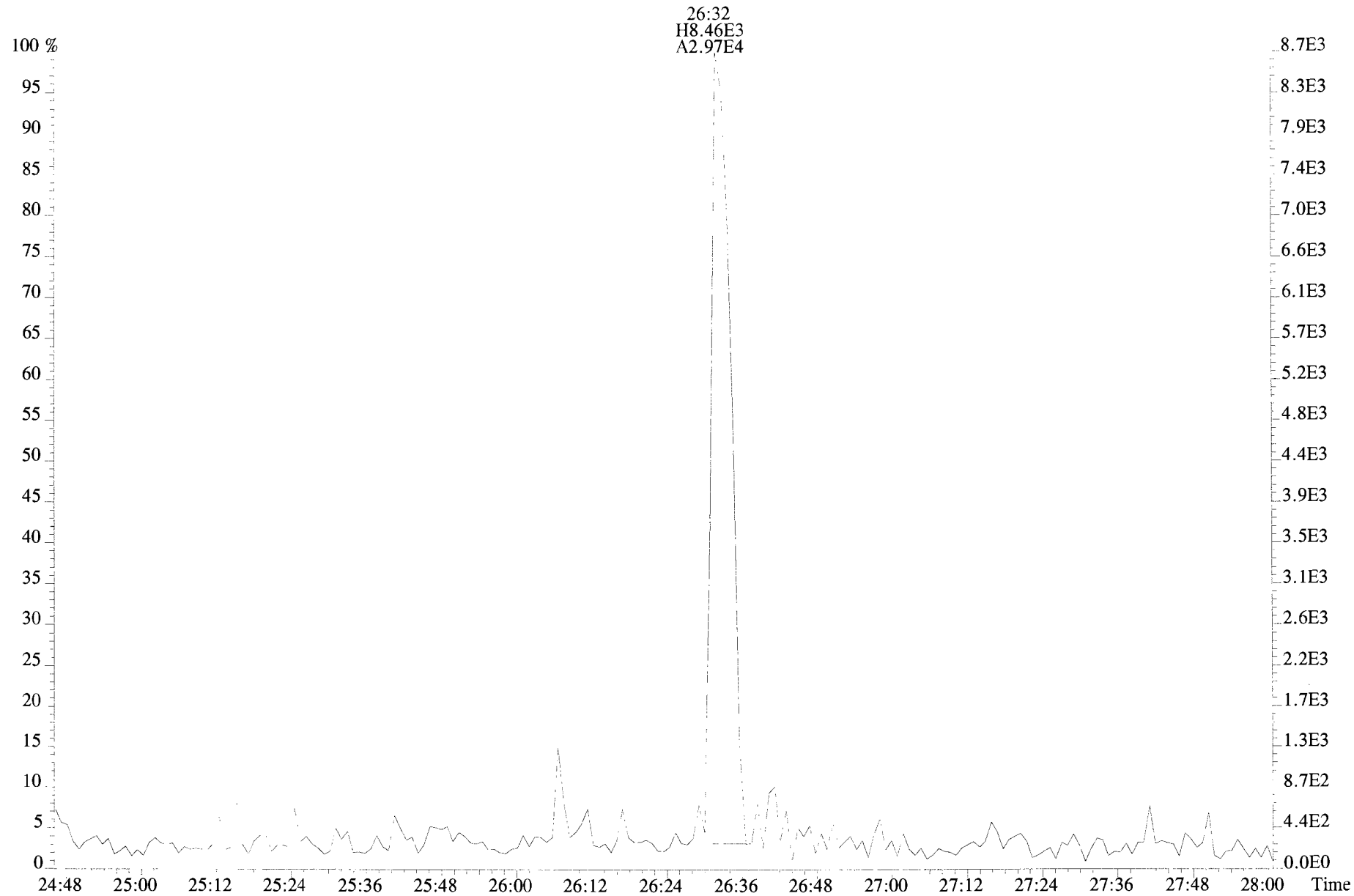
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319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



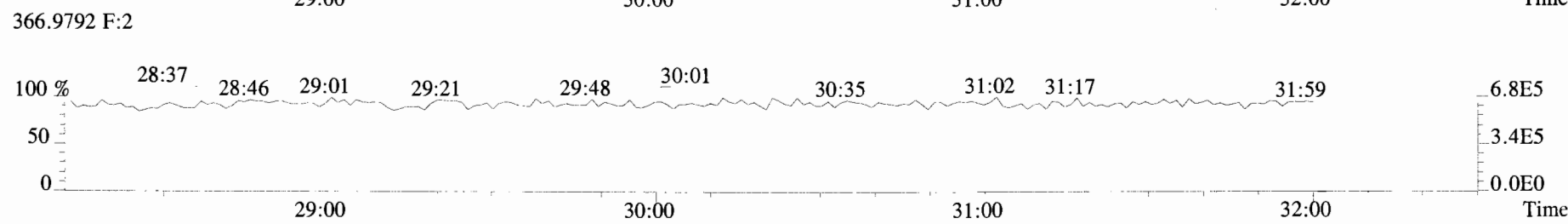
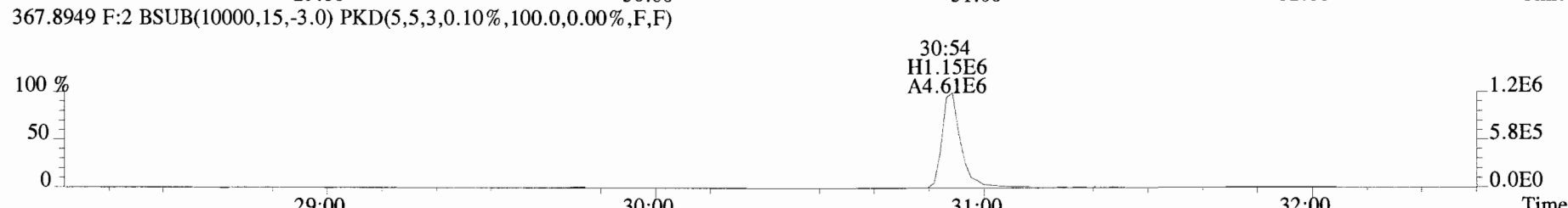
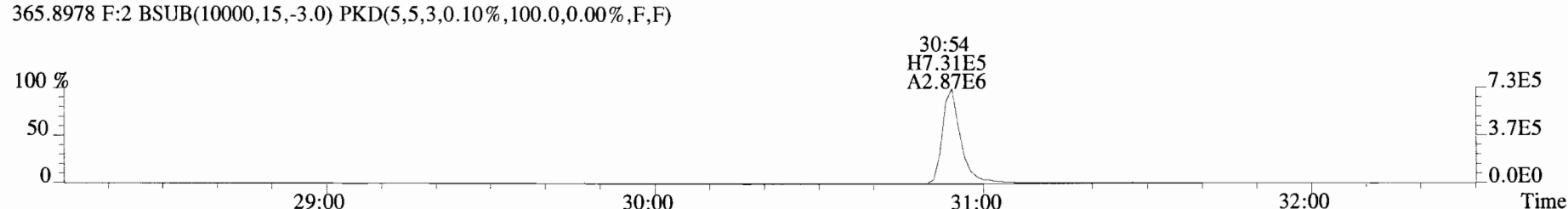
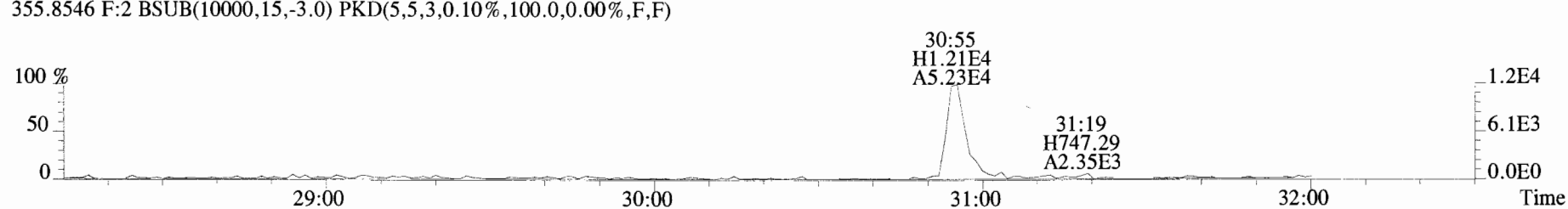
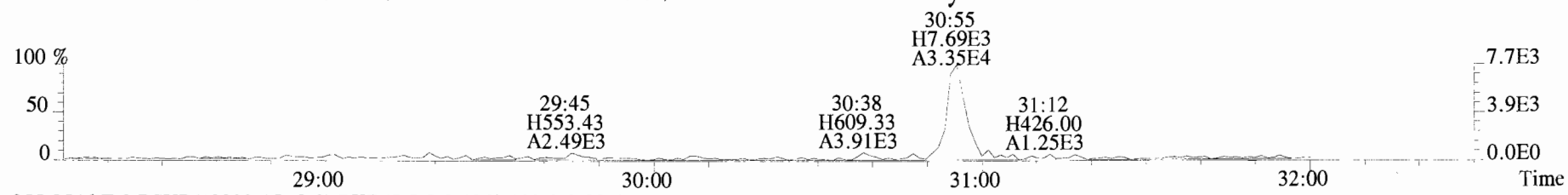
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



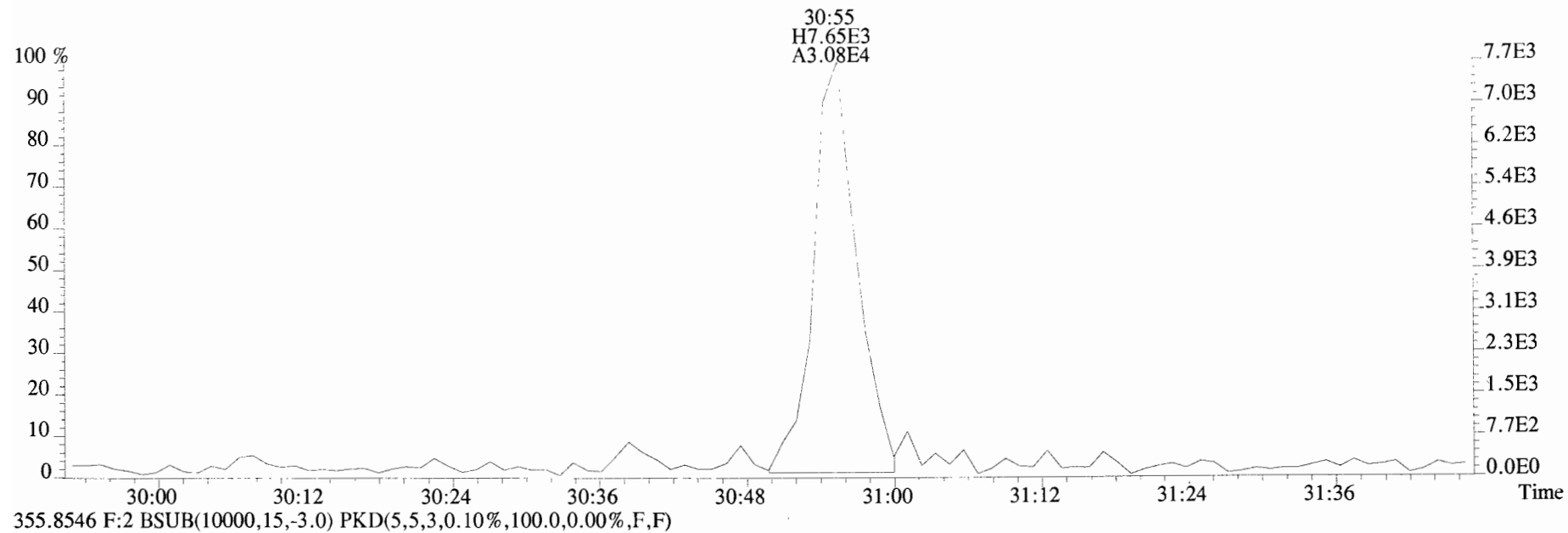
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
327.8847 BSUB(10000,15,-3.0)



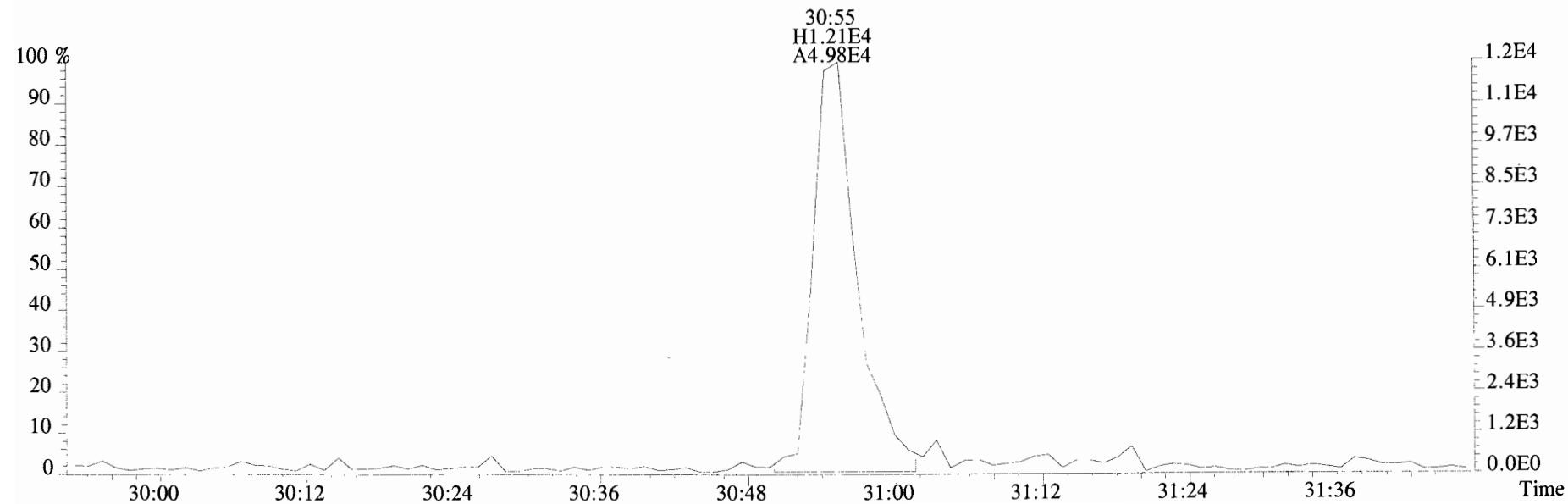
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



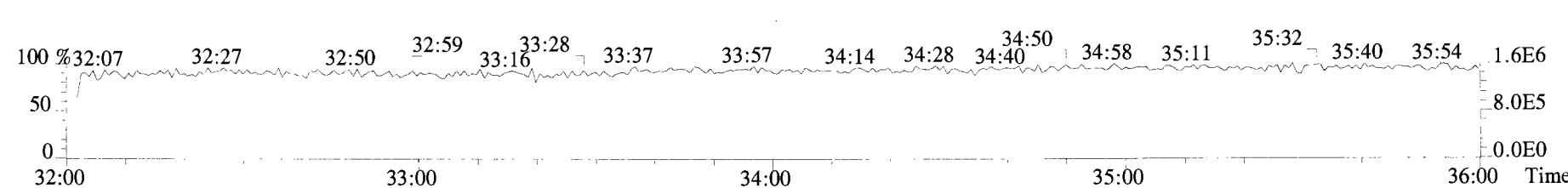
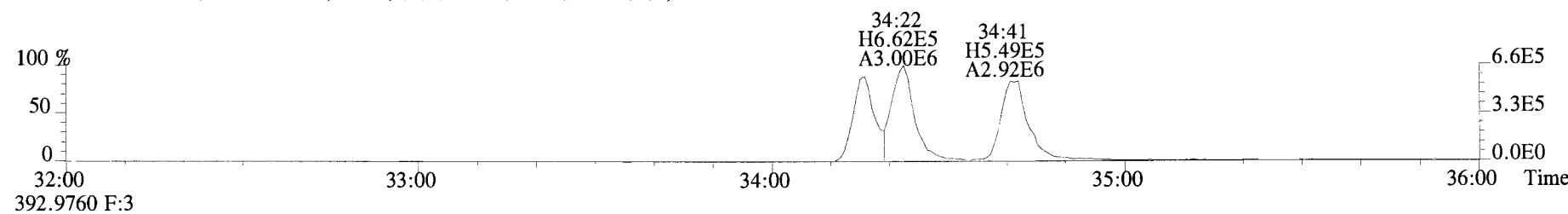
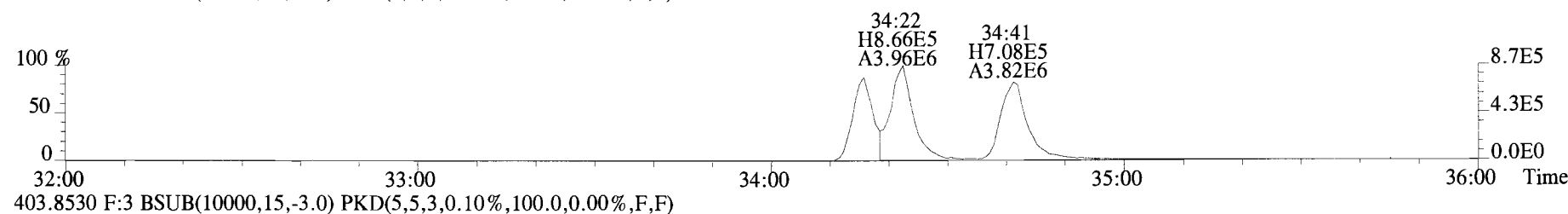
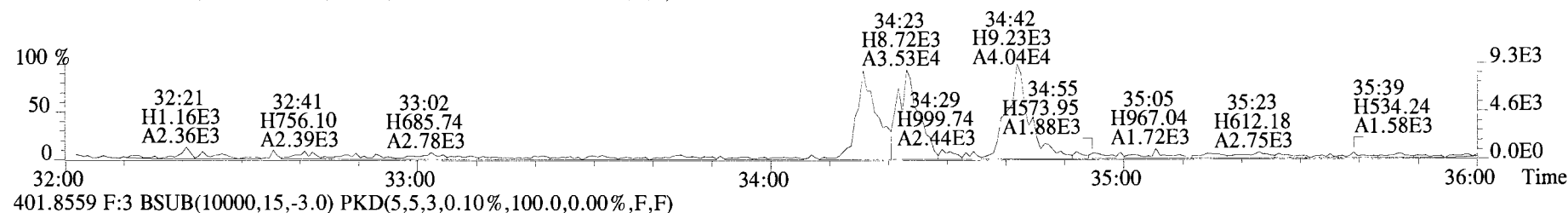
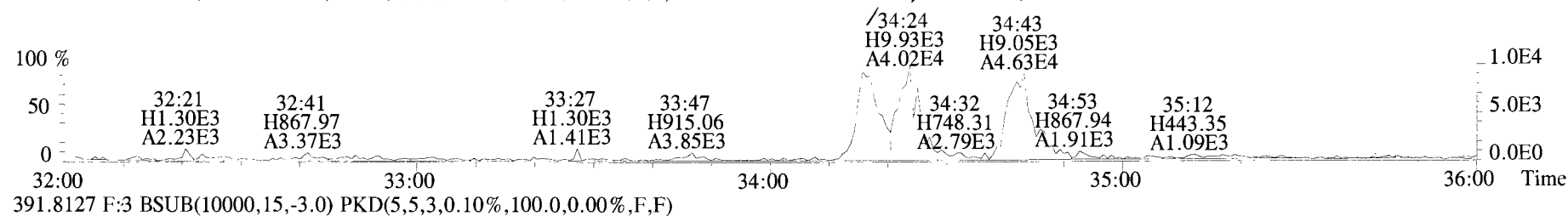
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



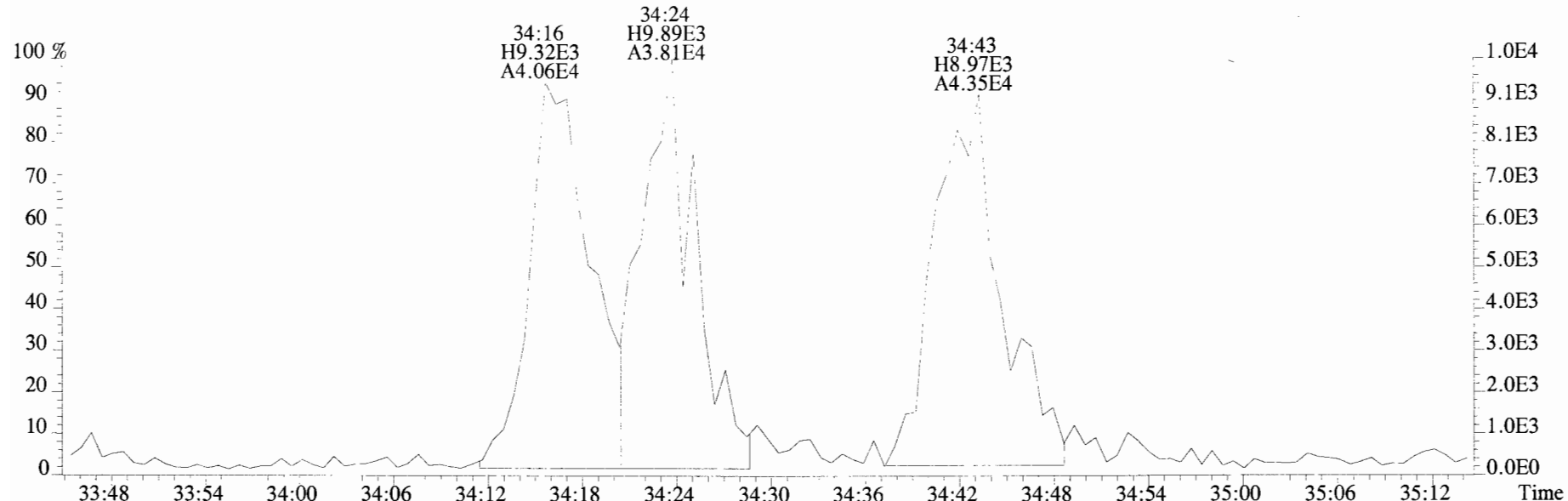
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



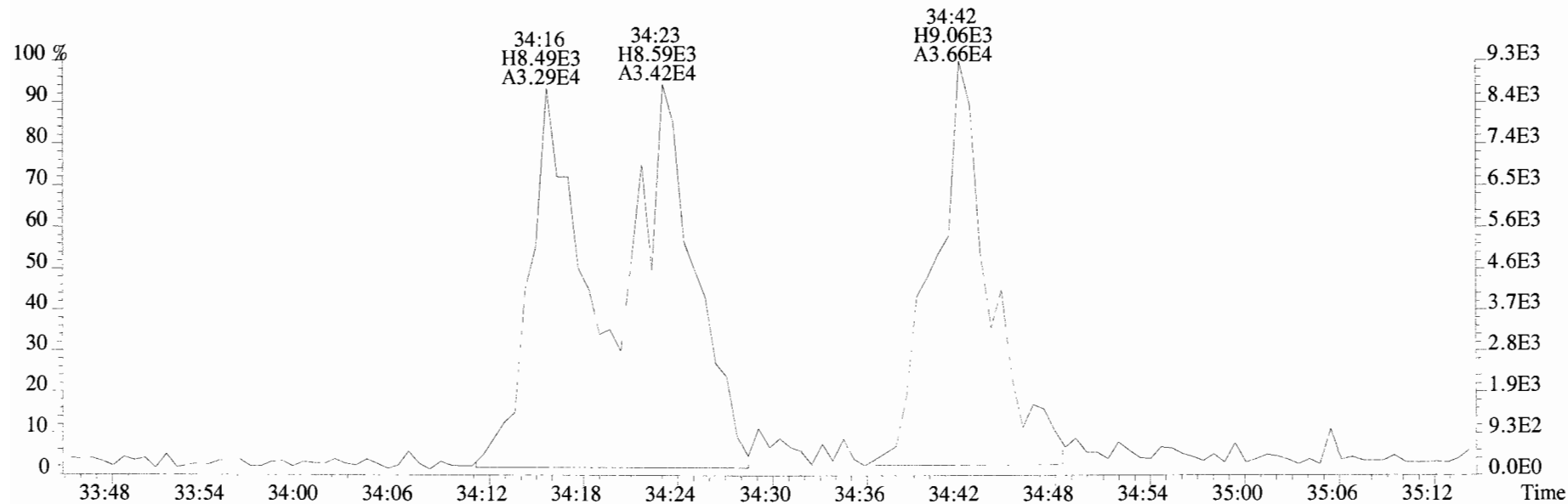
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
 389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



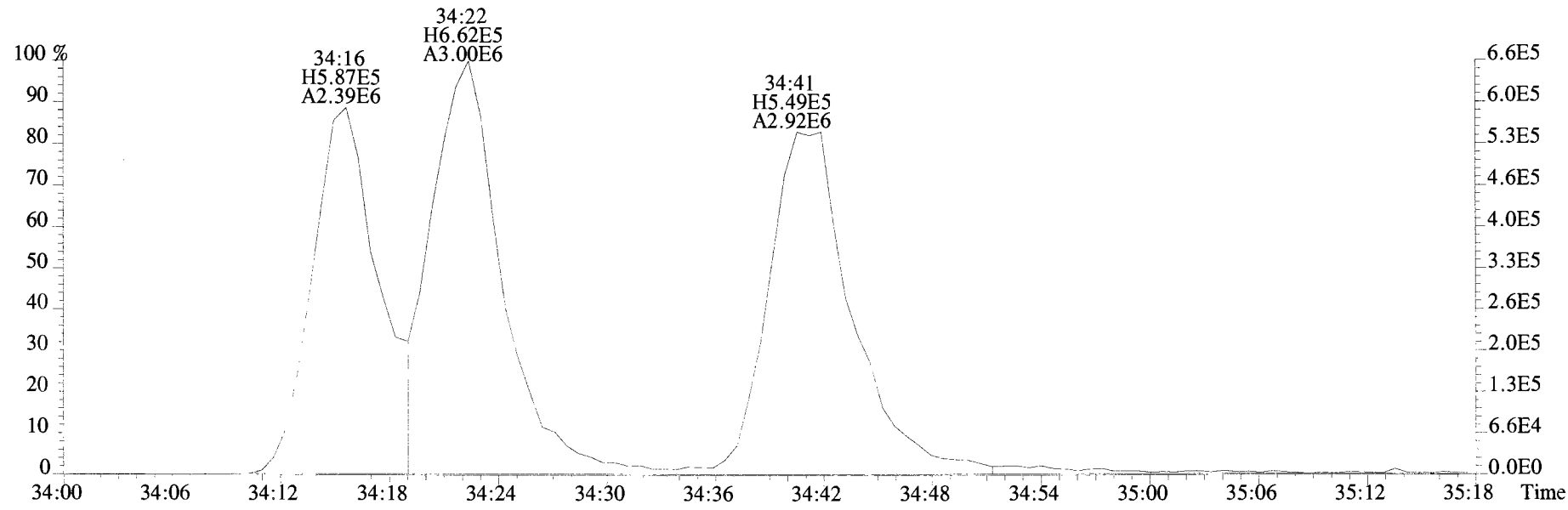
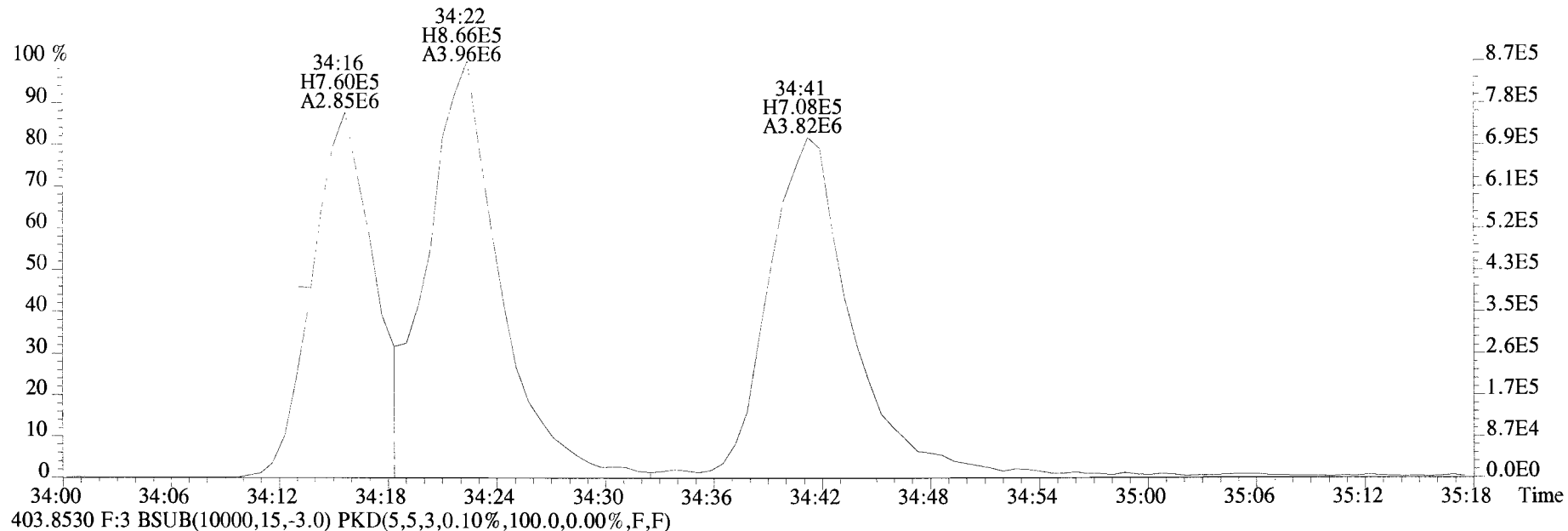
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



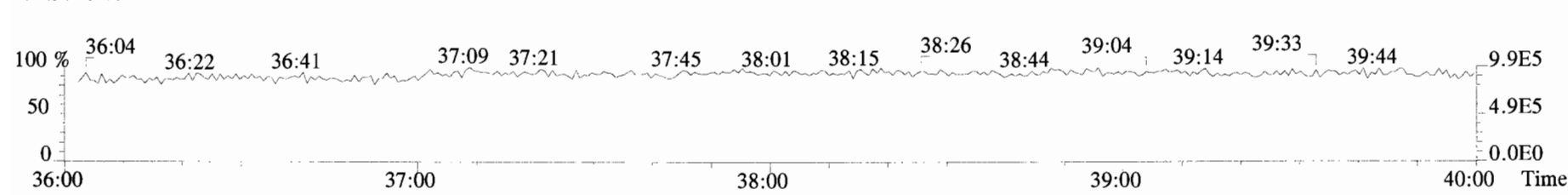
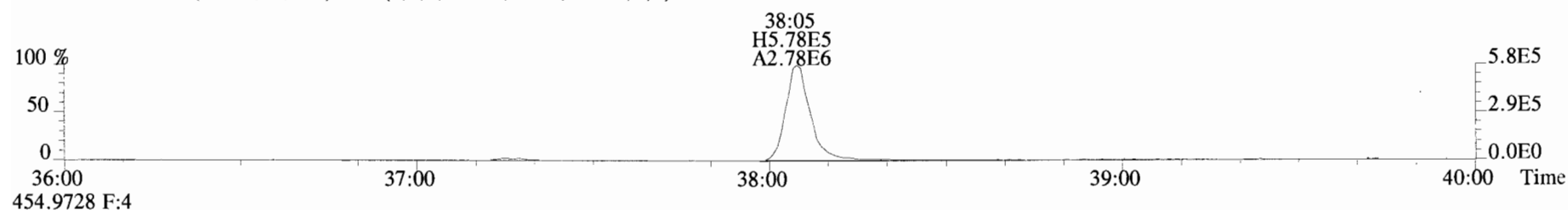
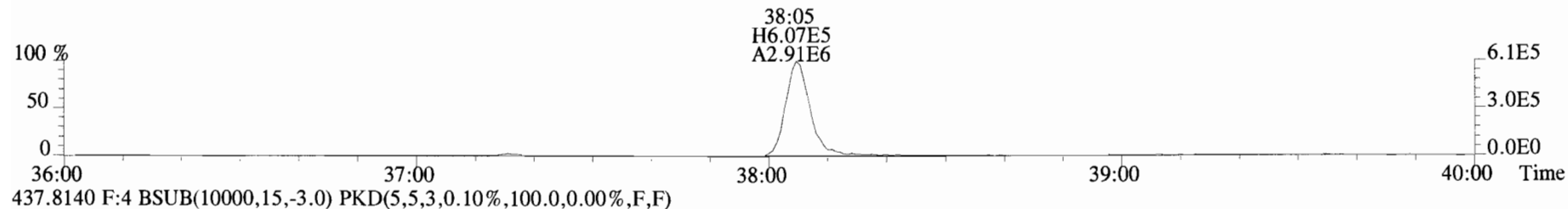
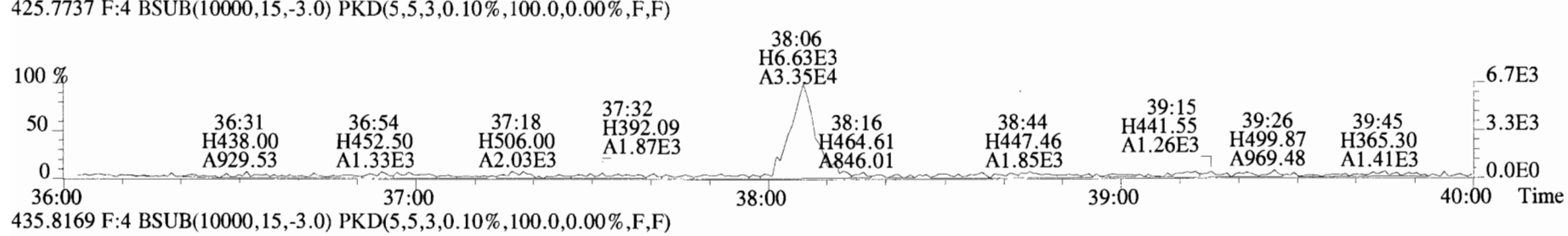
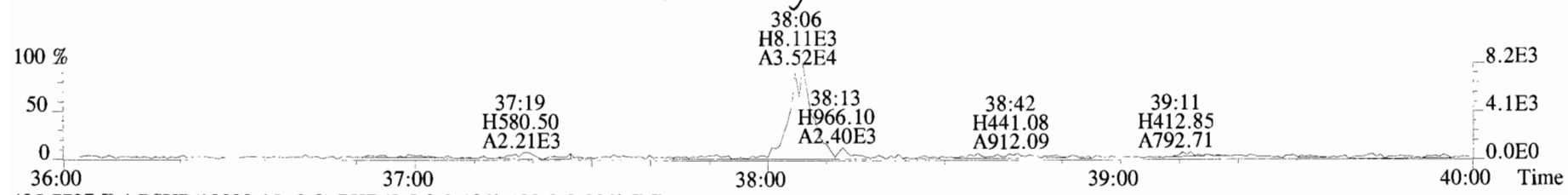
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



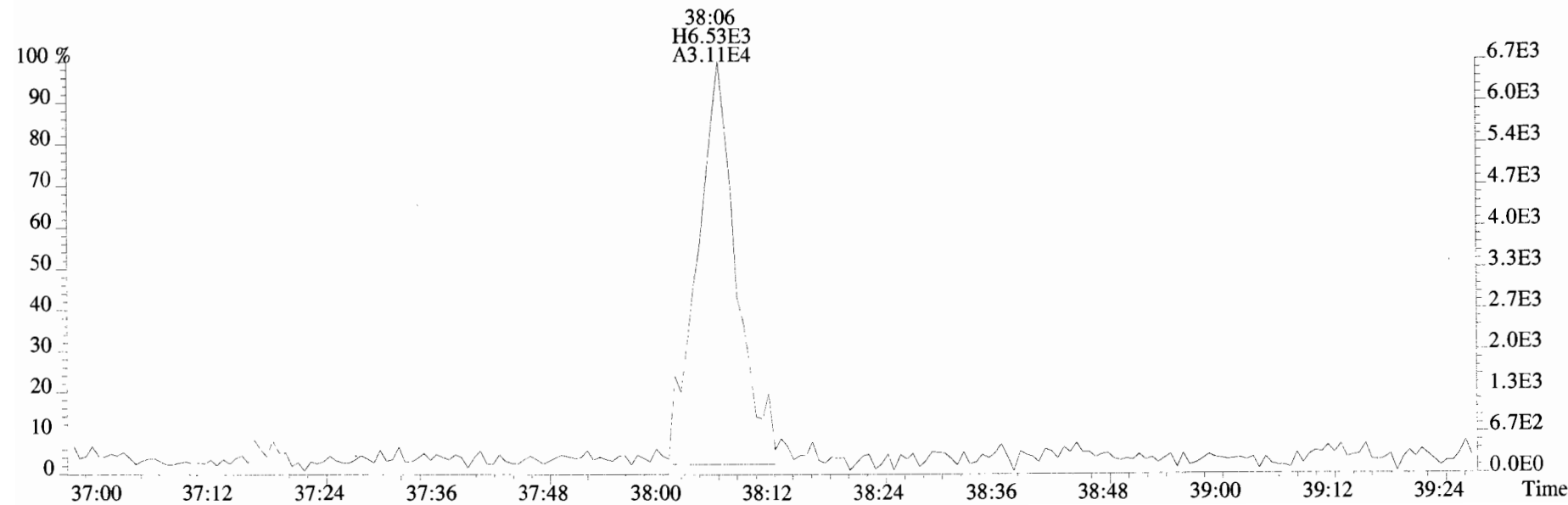
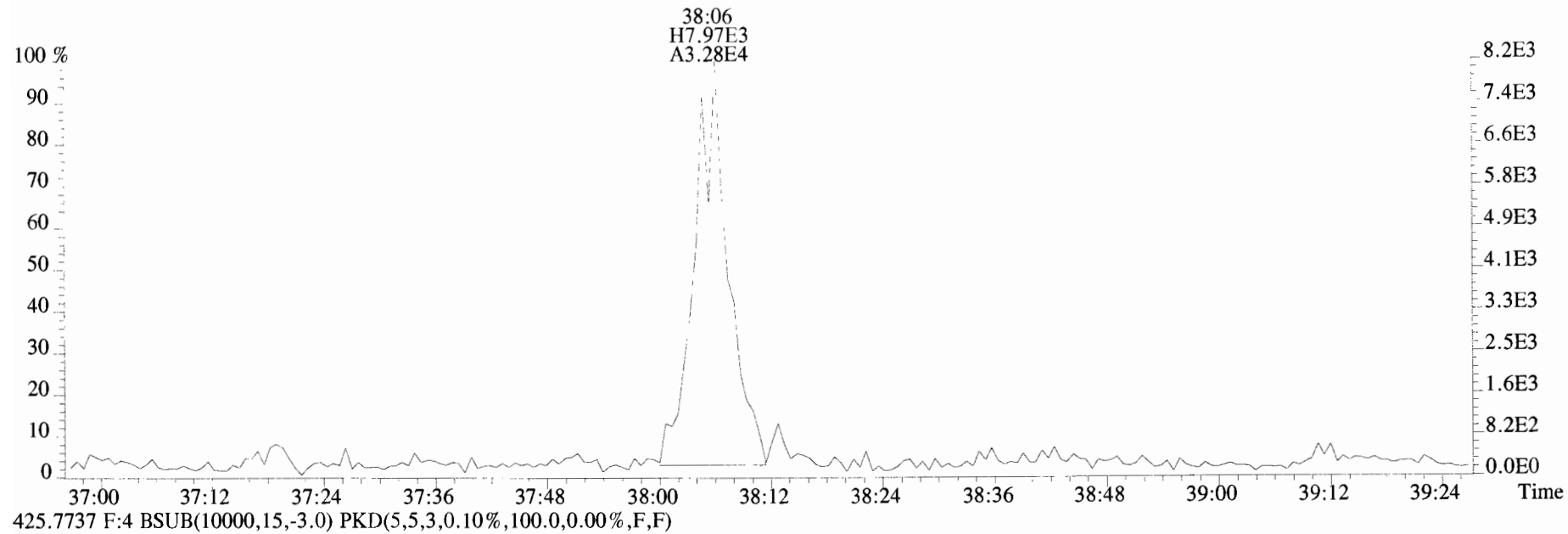
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



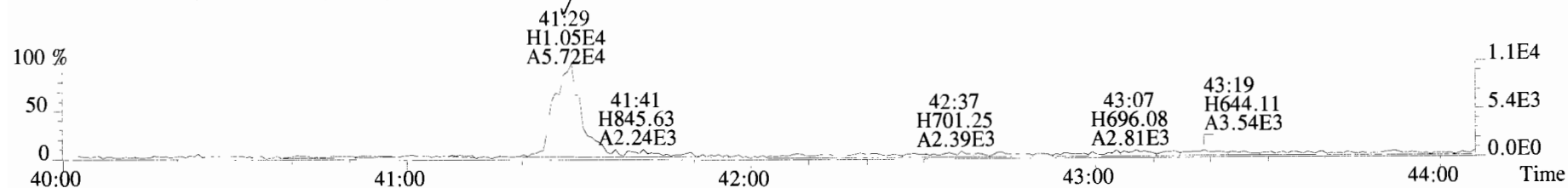
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
 423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



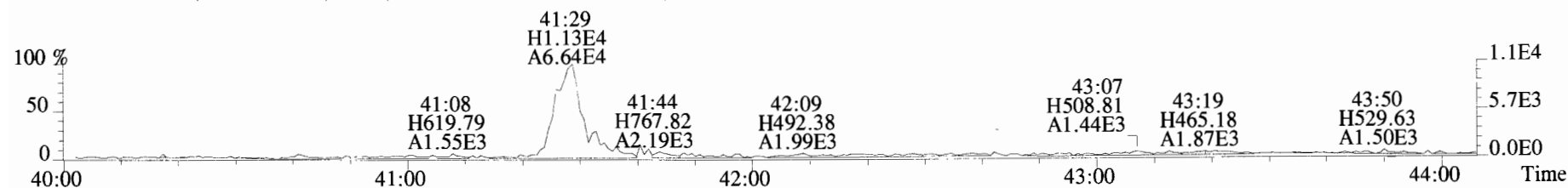
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



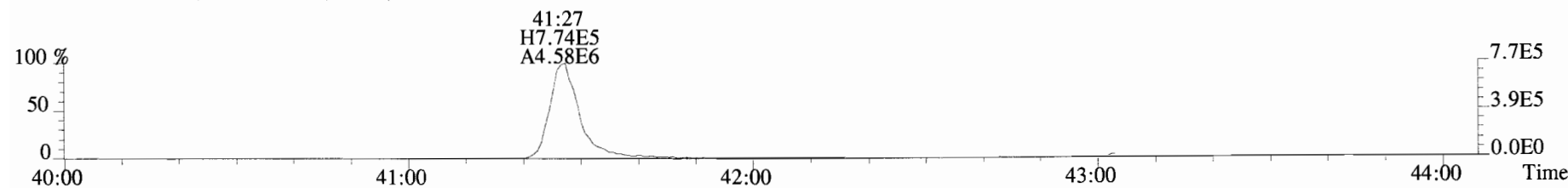
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



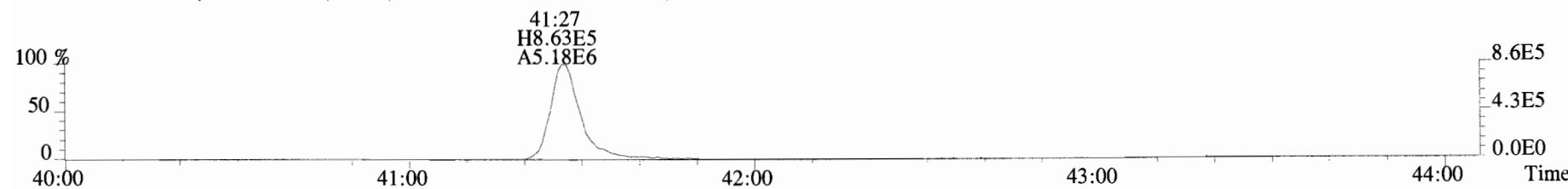
459.7348 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



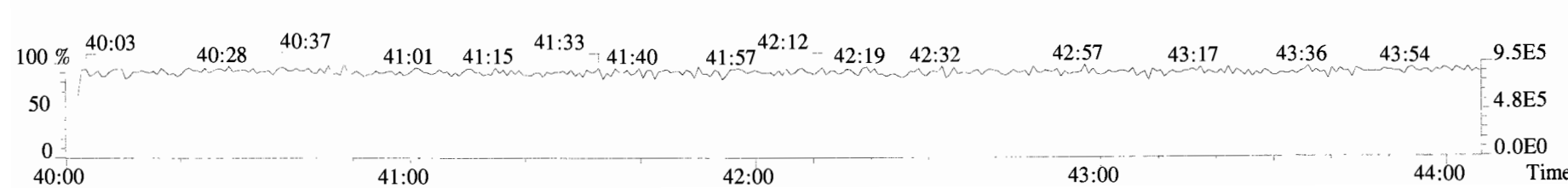
469.7780 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



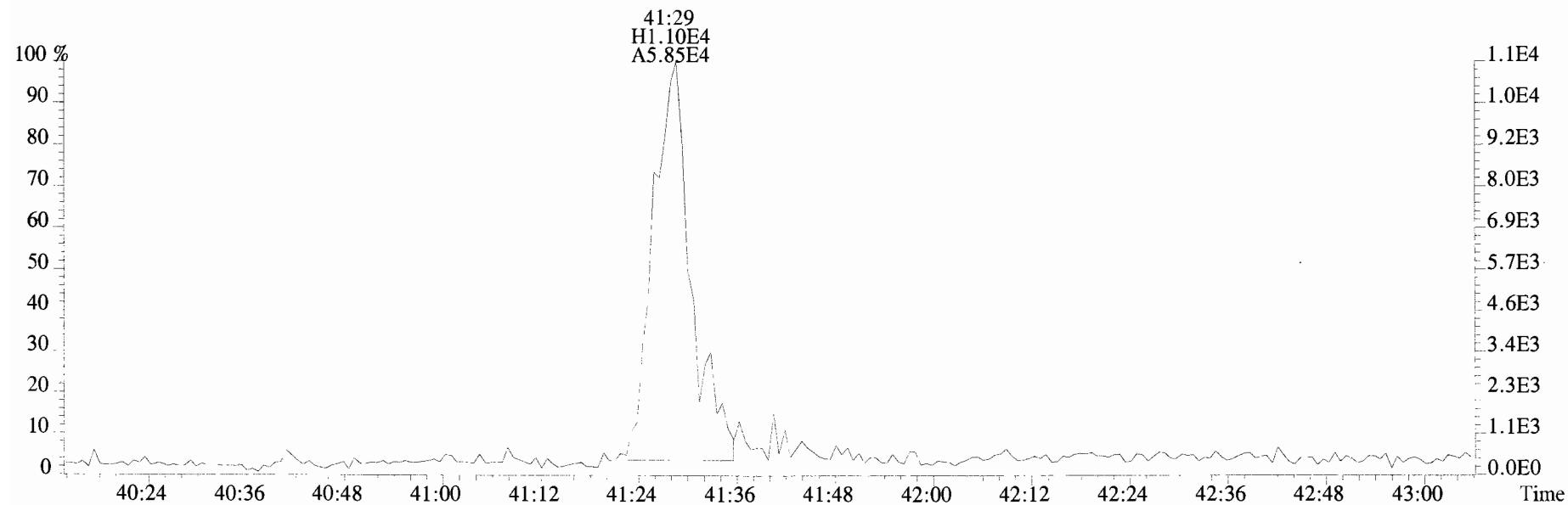
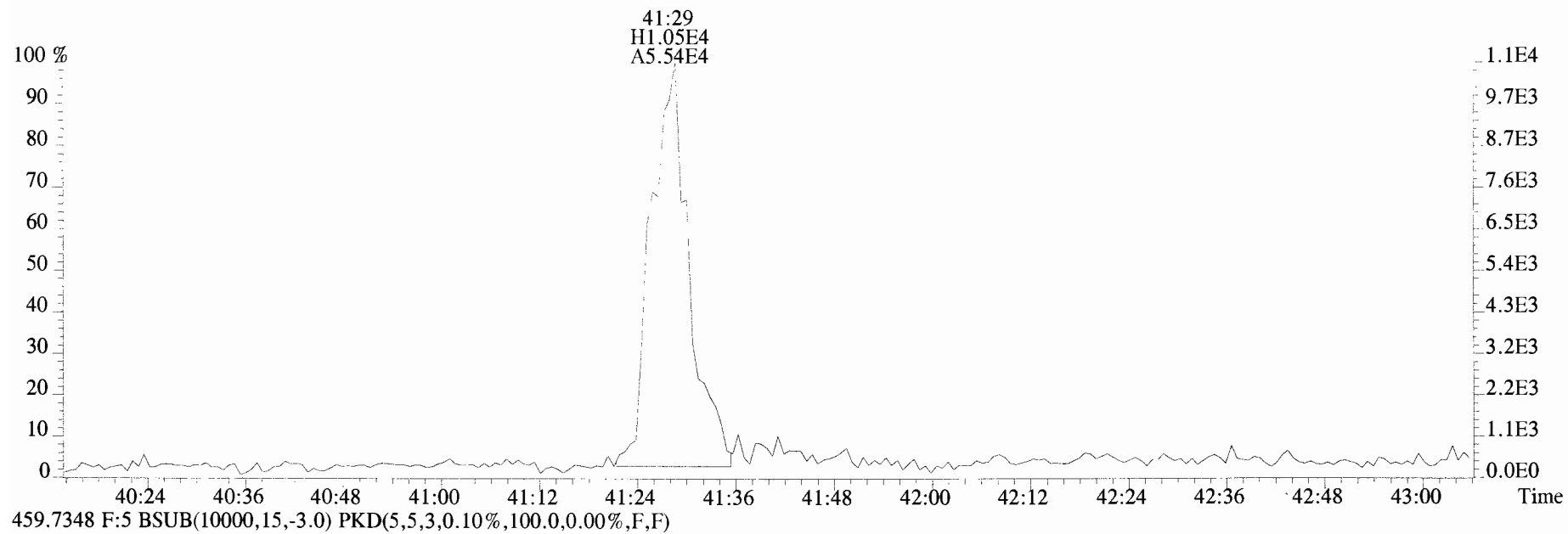
471.7750 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



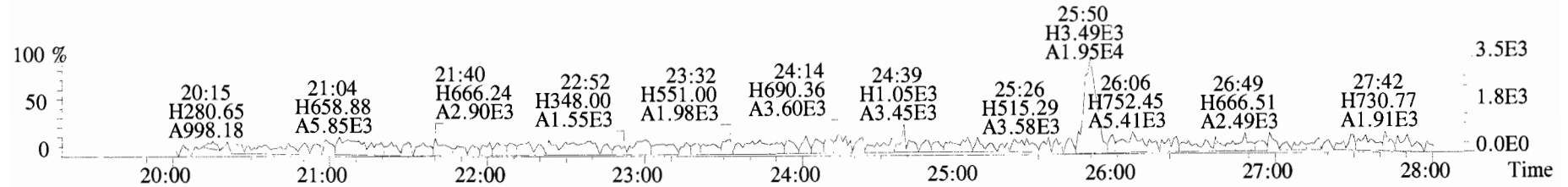
454.9728 F:5



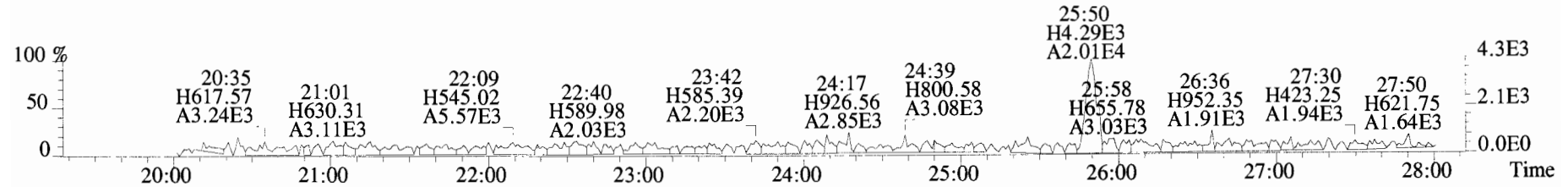
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



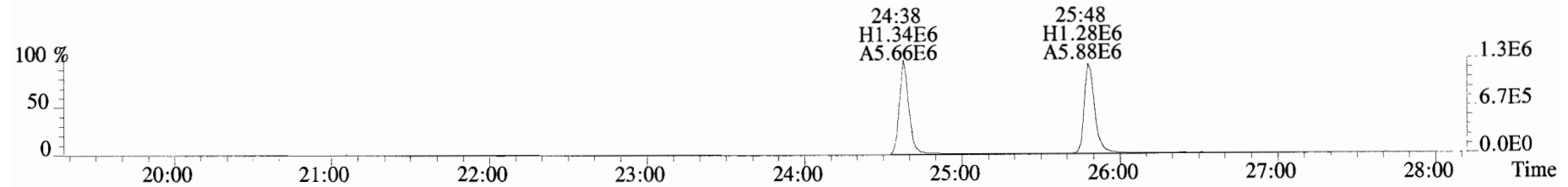
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



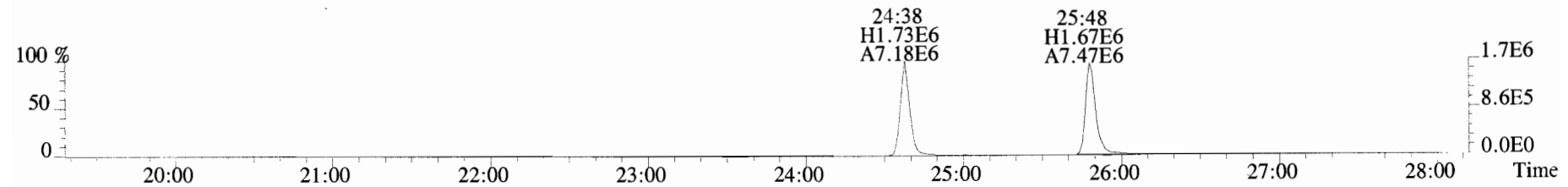
305.8987 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



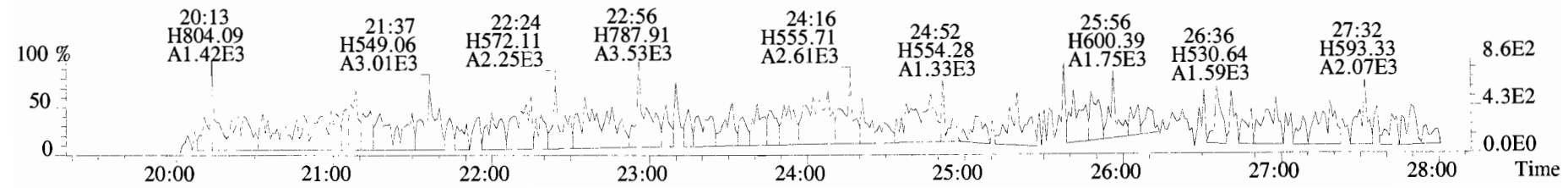
315.9419 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



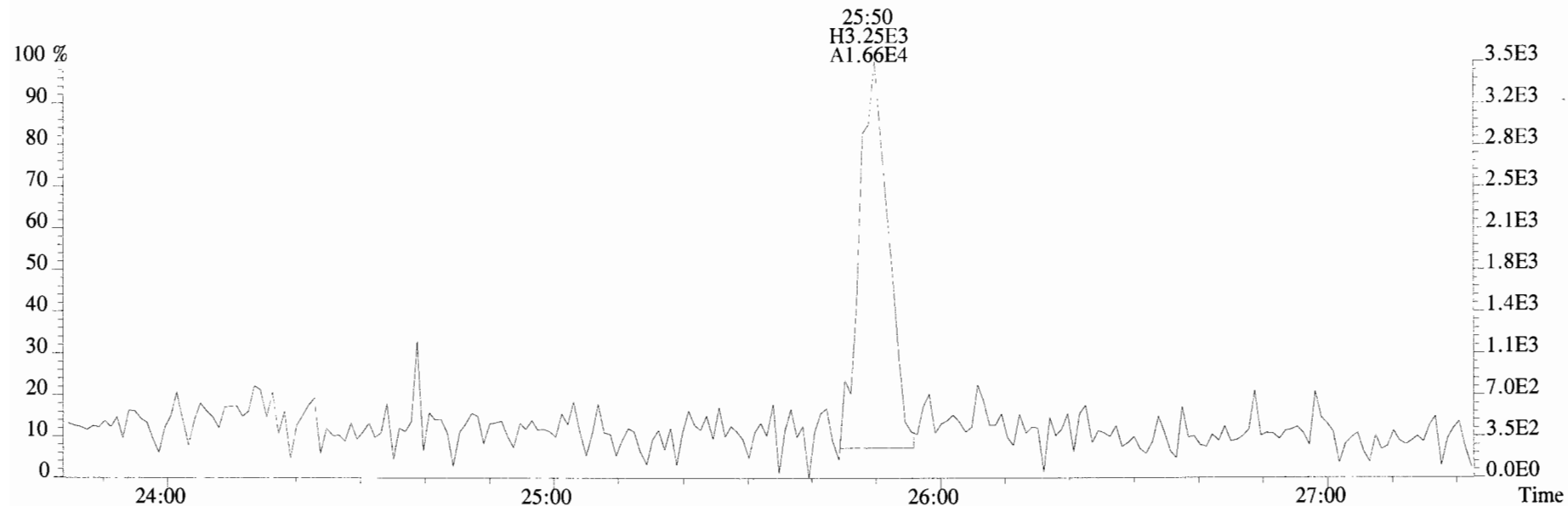
317.9389 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



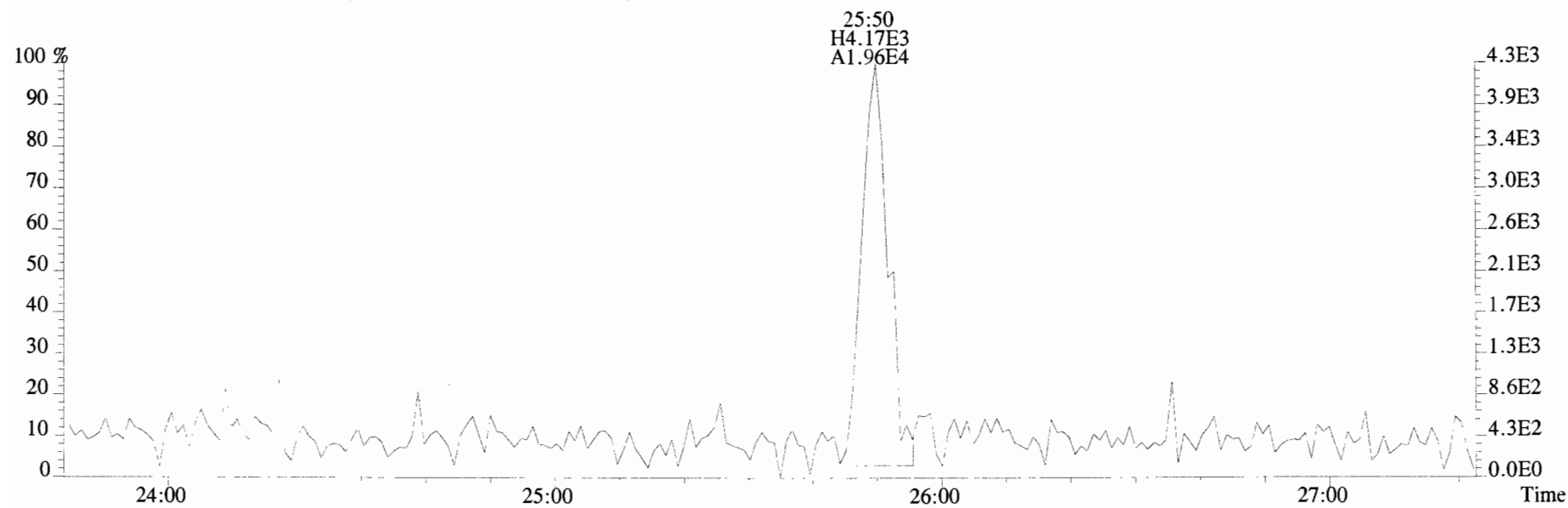
375.8364 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



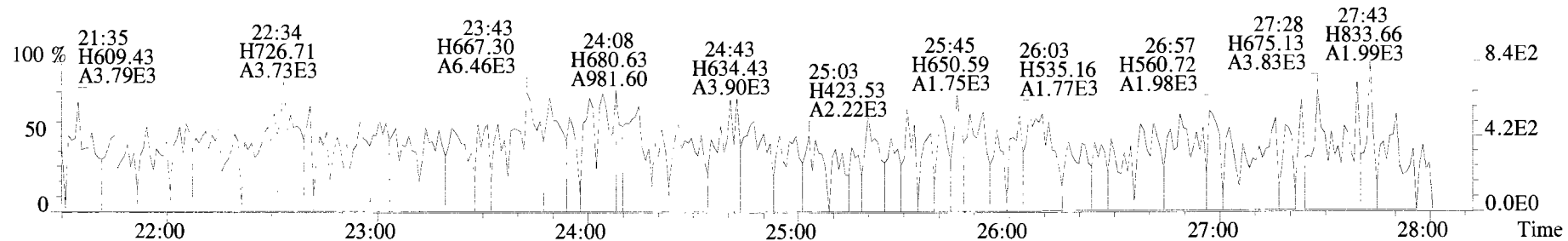
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



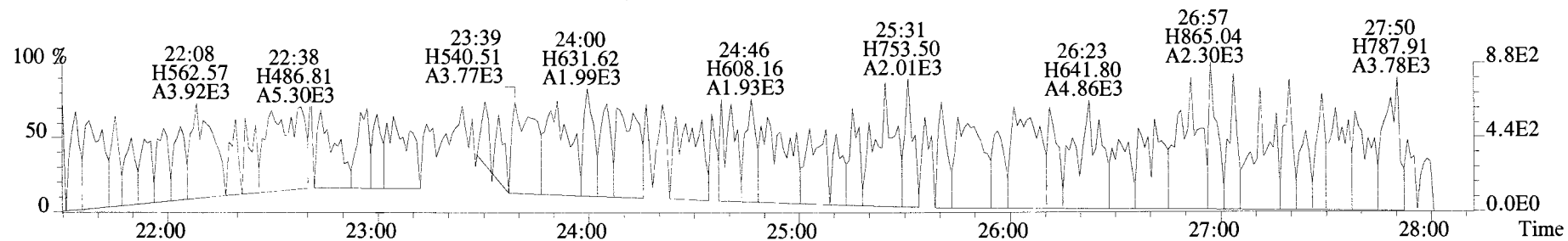
305.8987 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



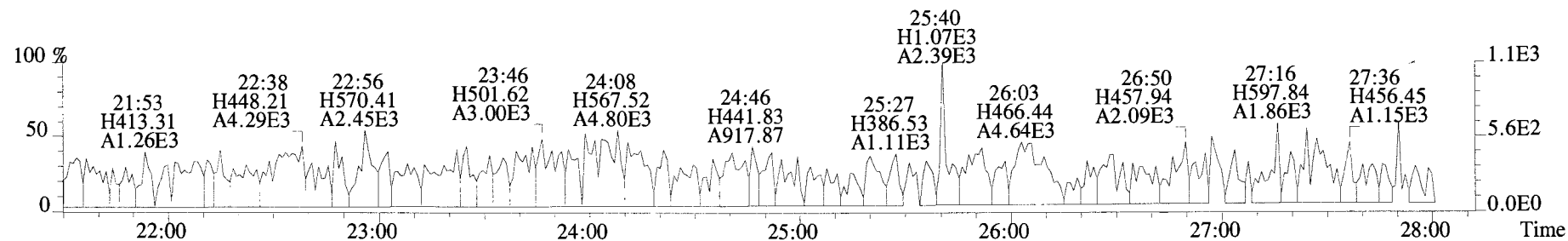
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
 339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



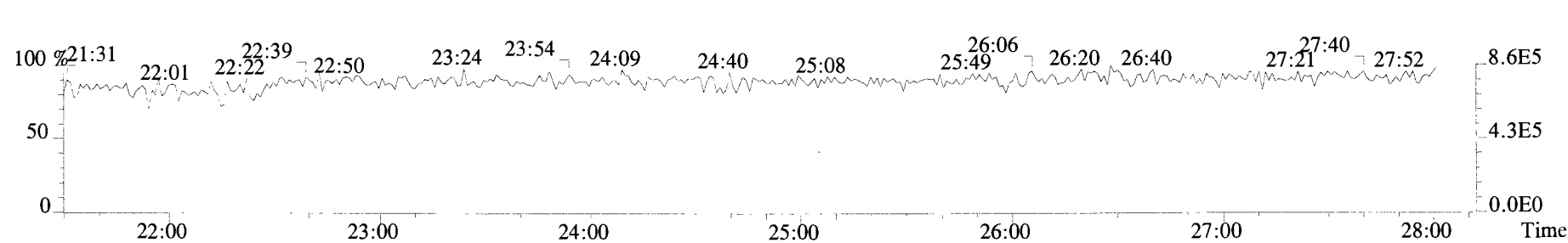
341.8568 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



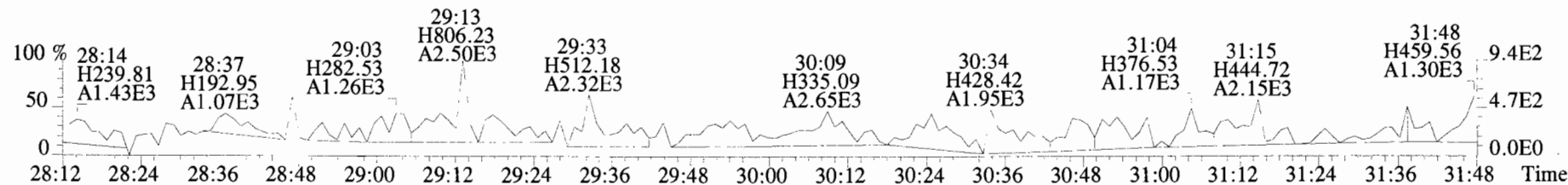
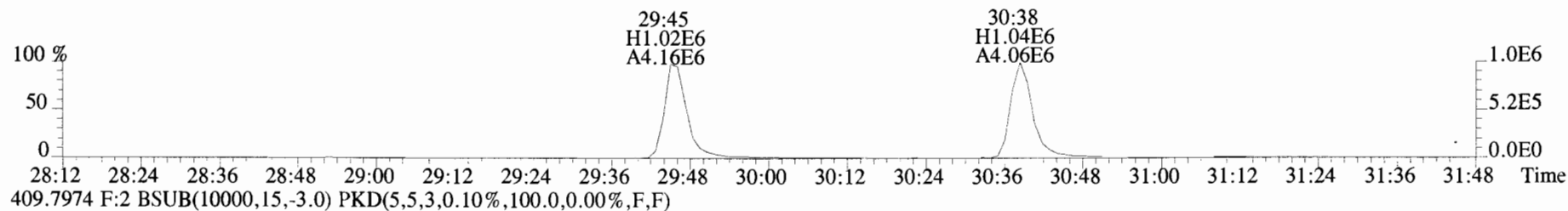
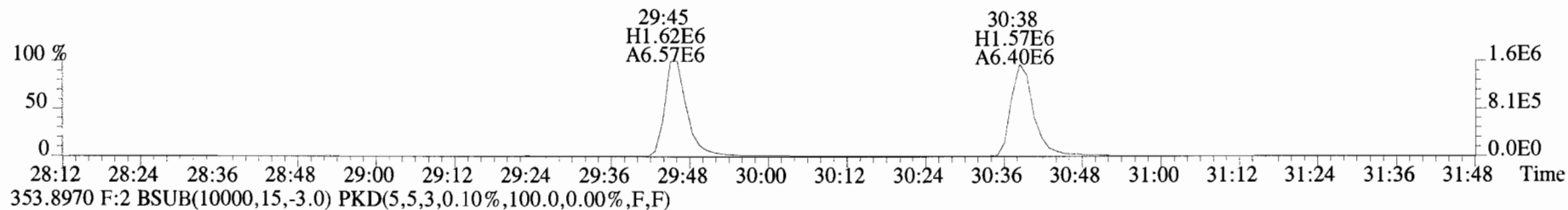
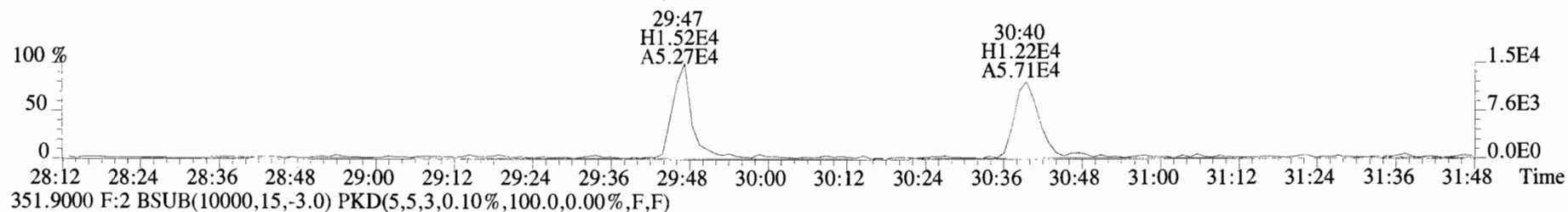
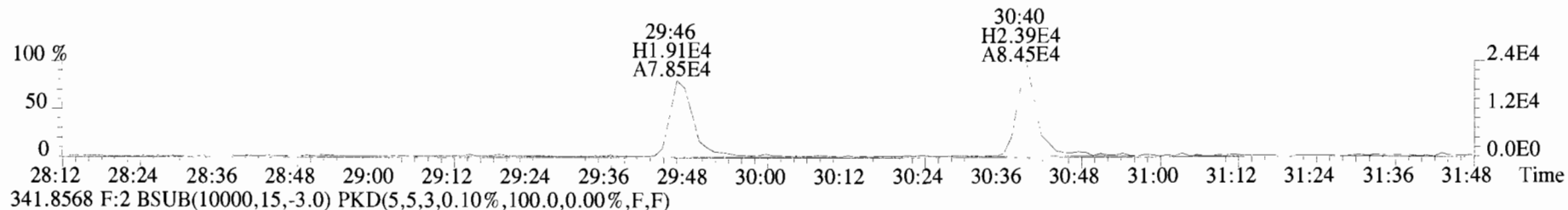
409.7974 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



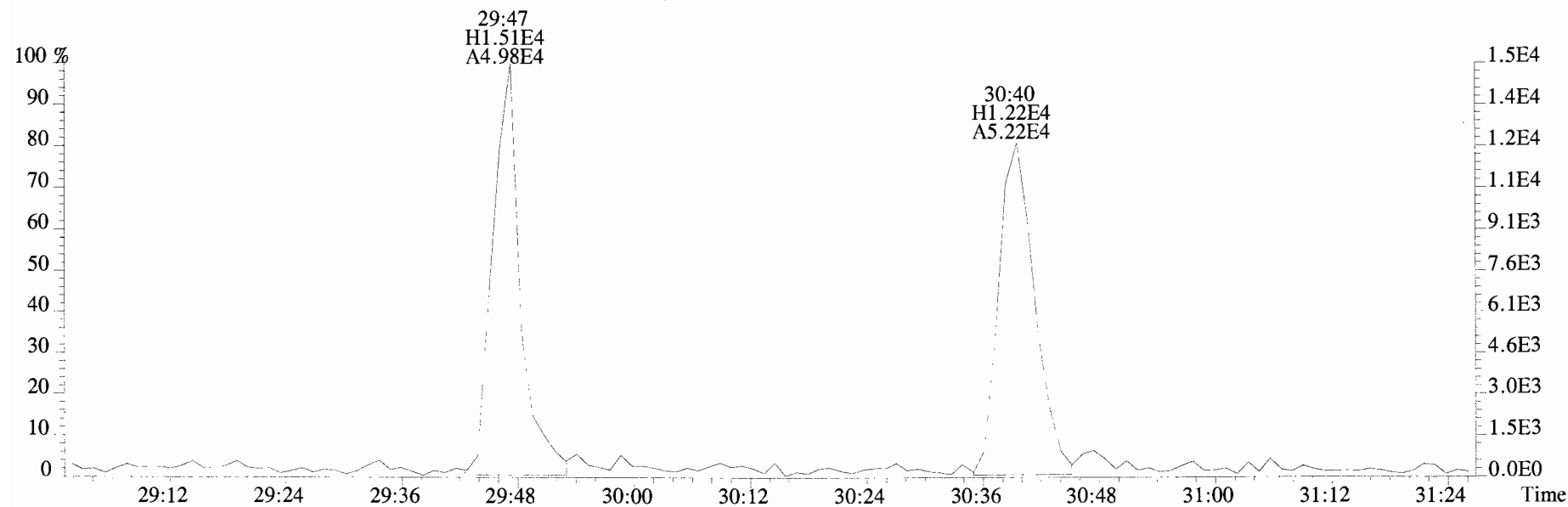
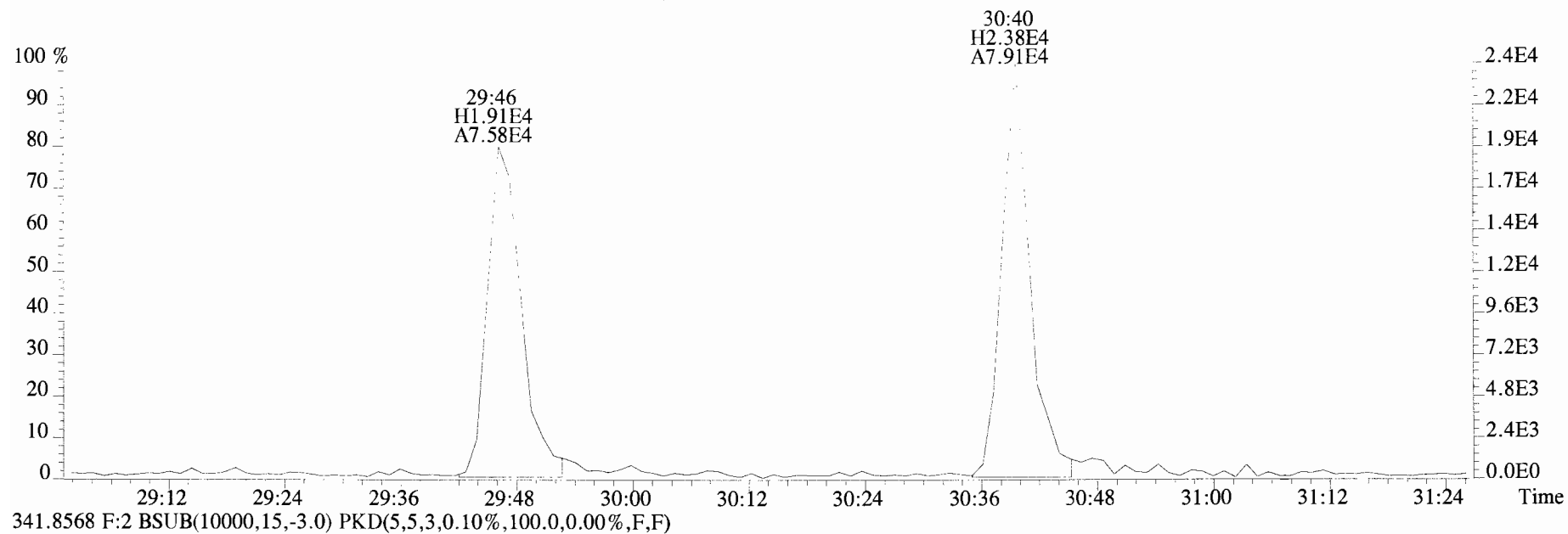
316.9824



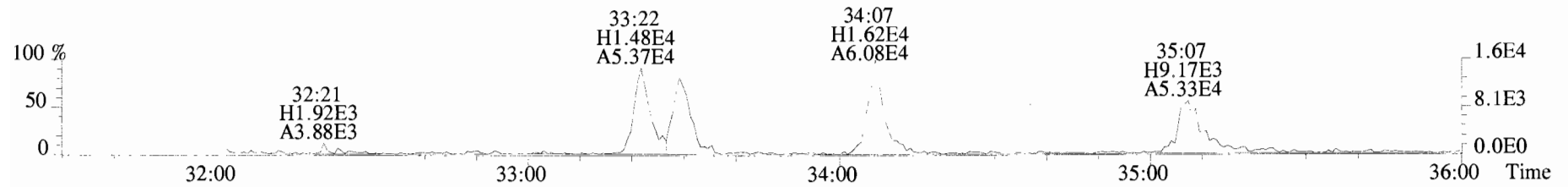
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



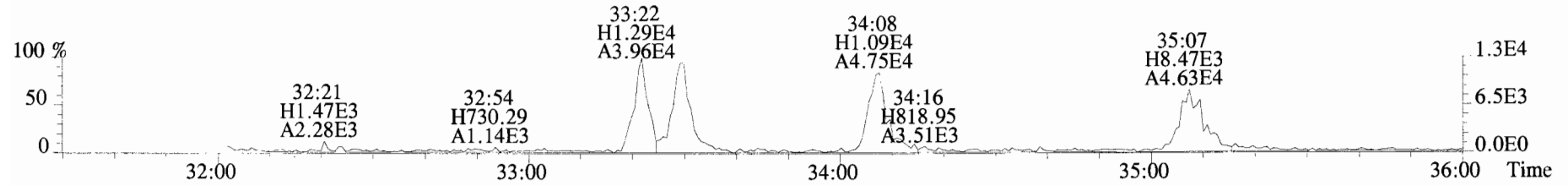
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



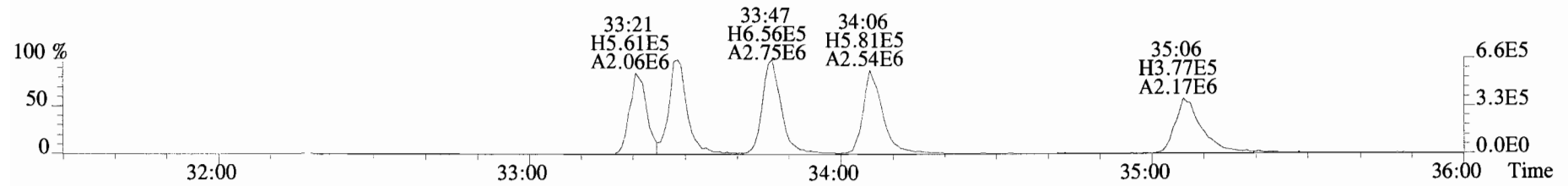
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



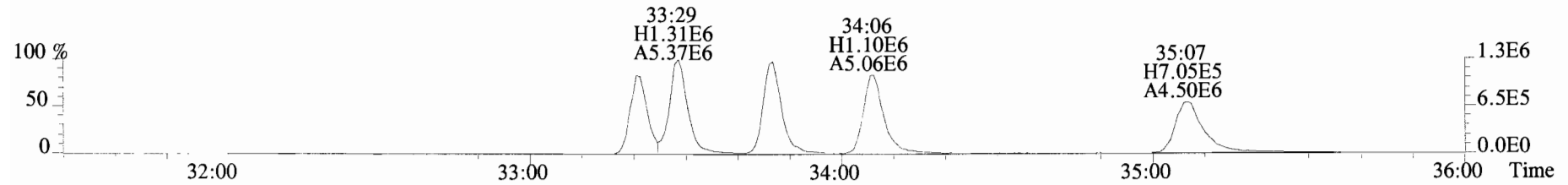
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



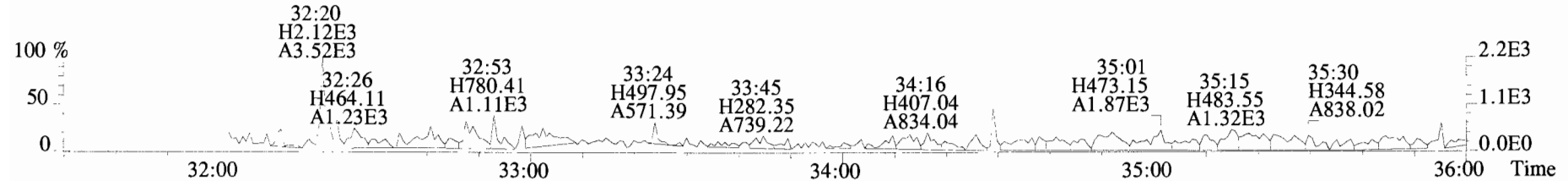
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



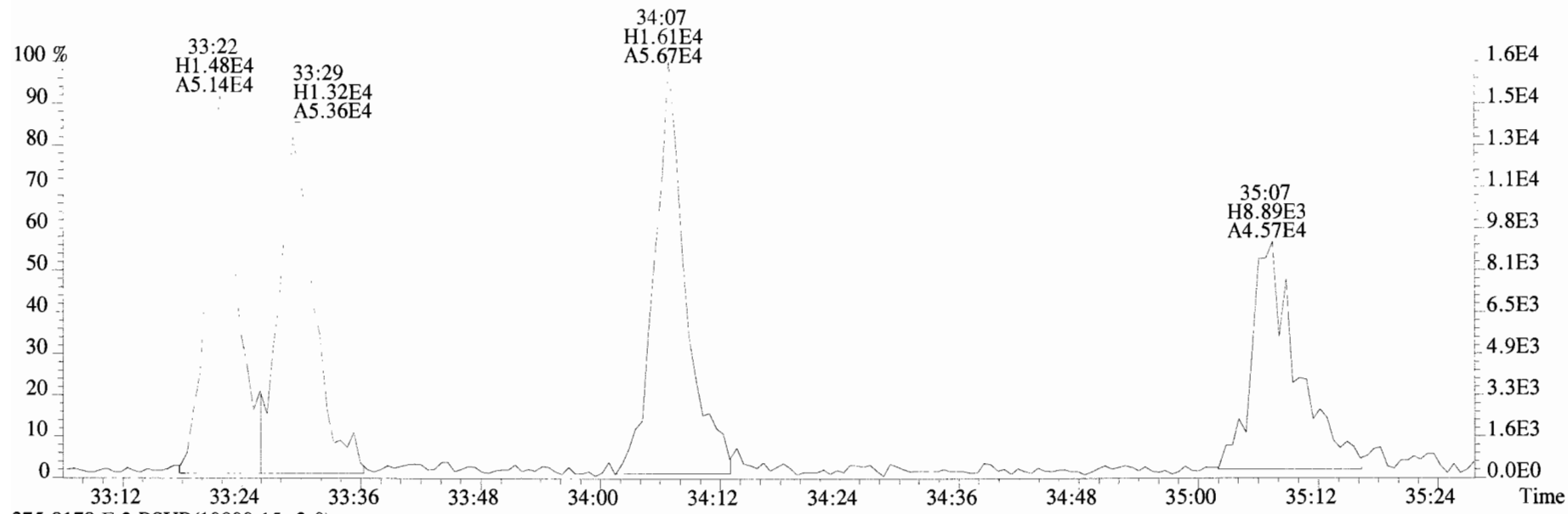
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



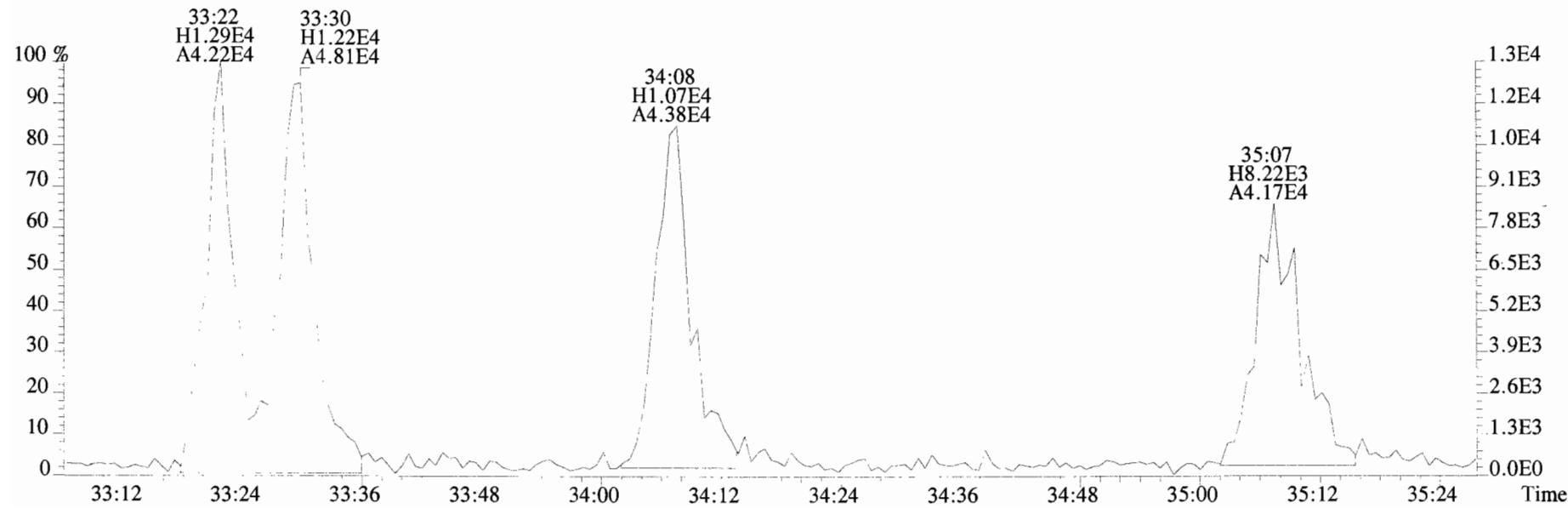
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



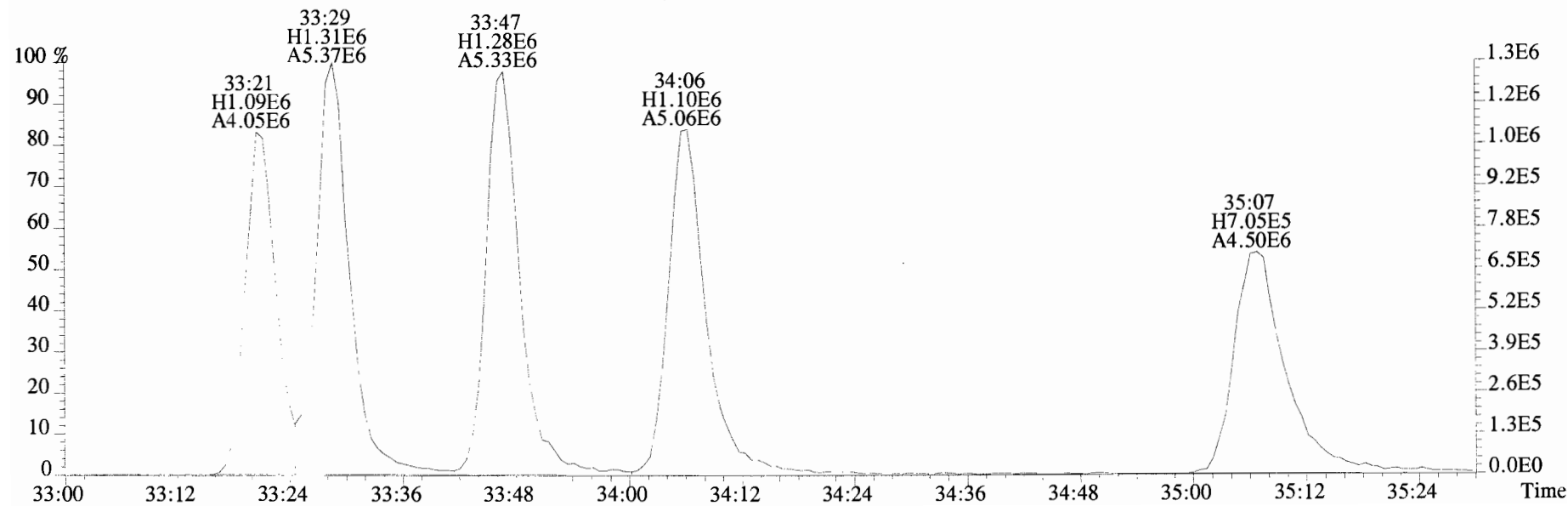
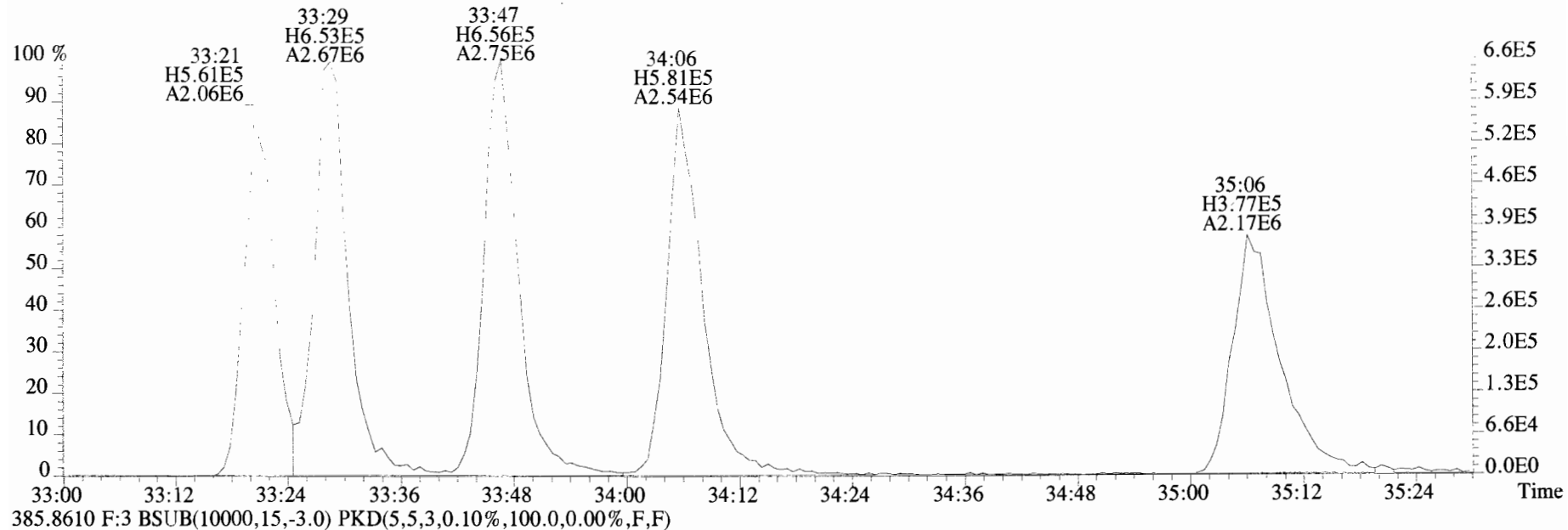
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
373.8207 F:3 BSUB(10000,15,-3.0)



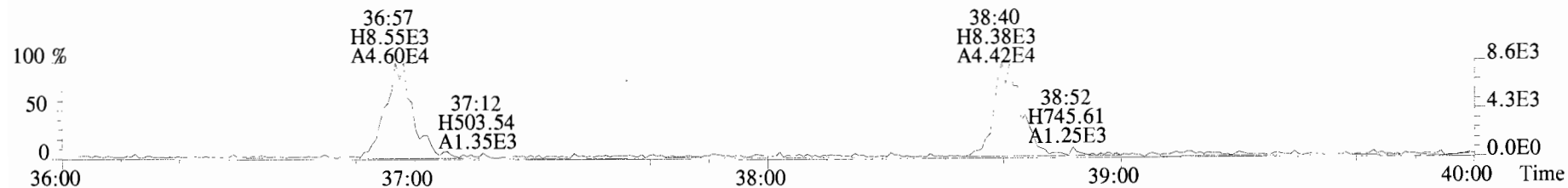
375.8178 F:3 BSUB(10000,15,-3.0)



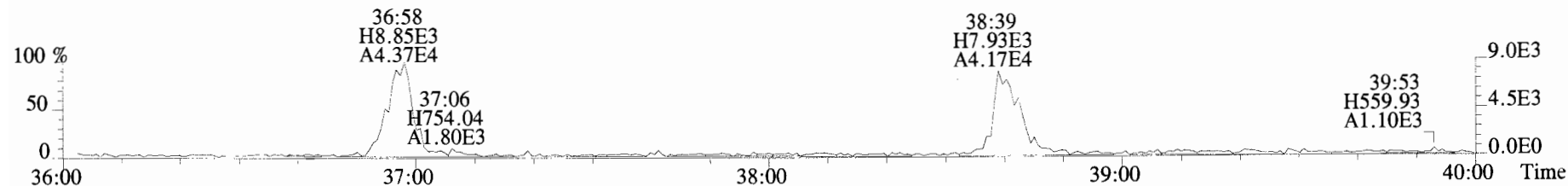
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



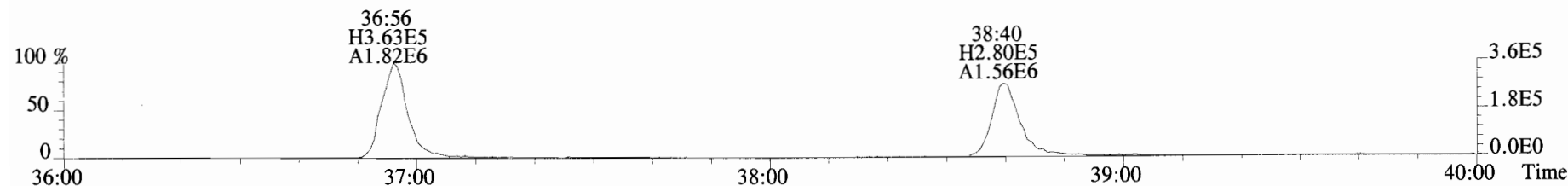
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



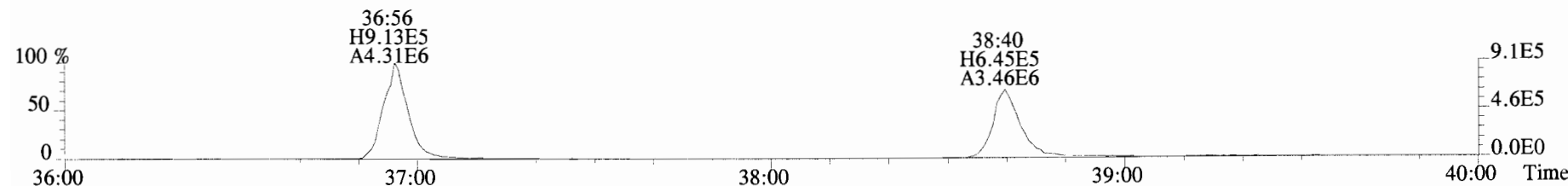
409.7788 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



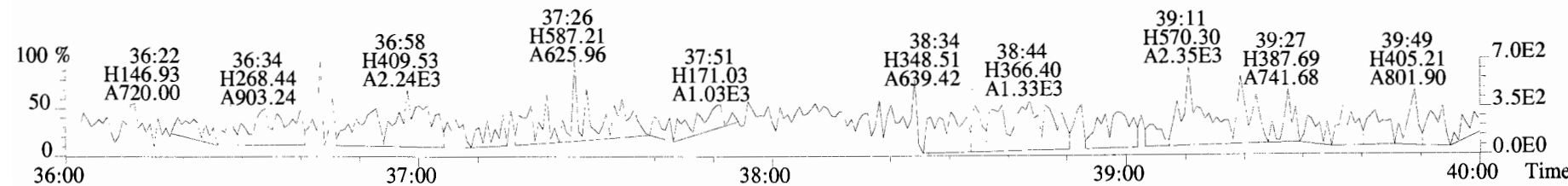
417.8253 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



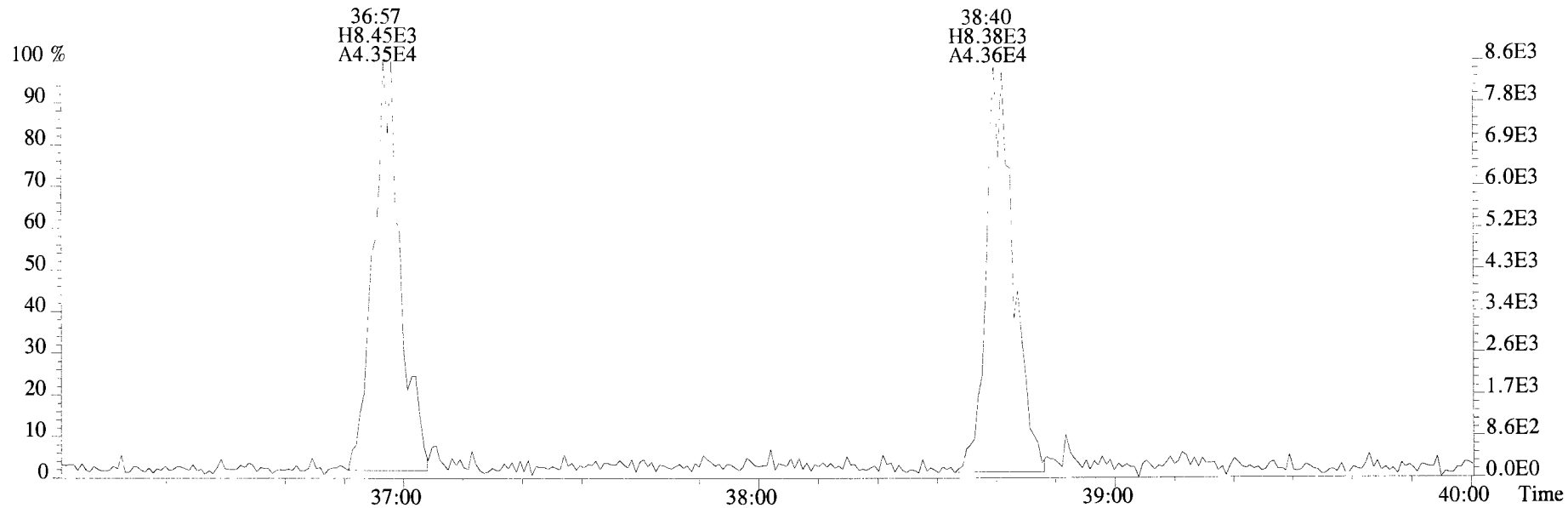
419.8220 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



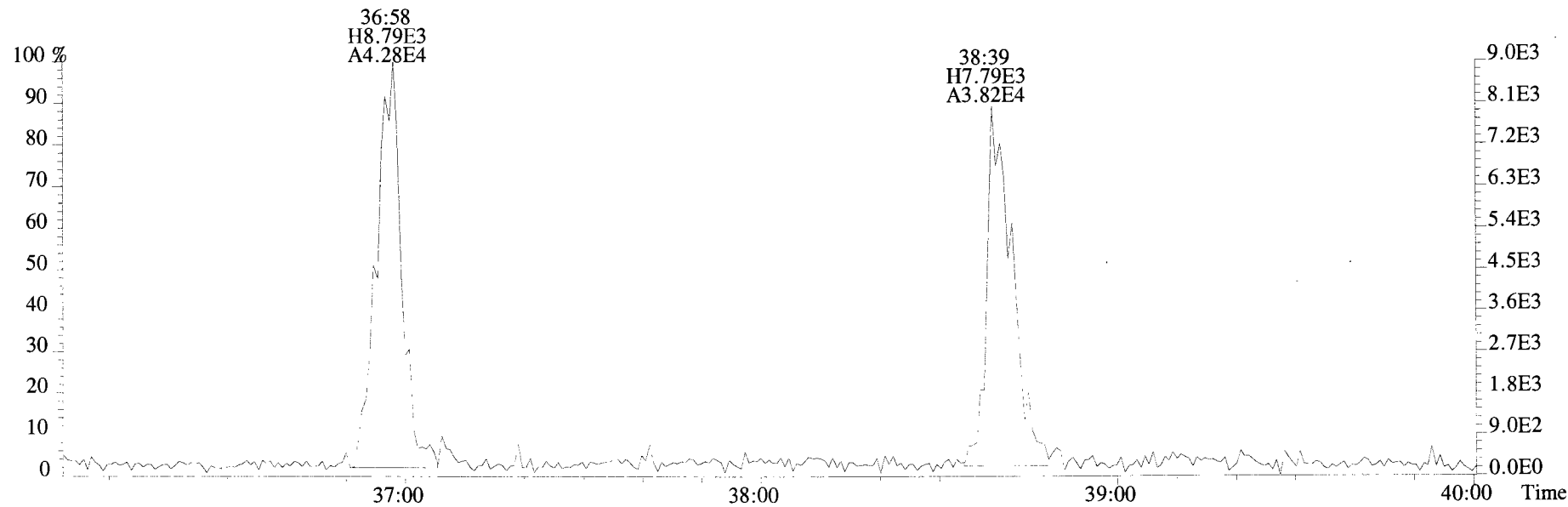
479.7165 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



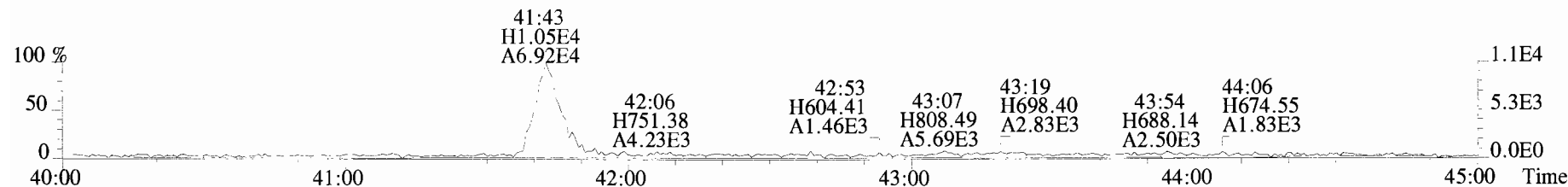
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



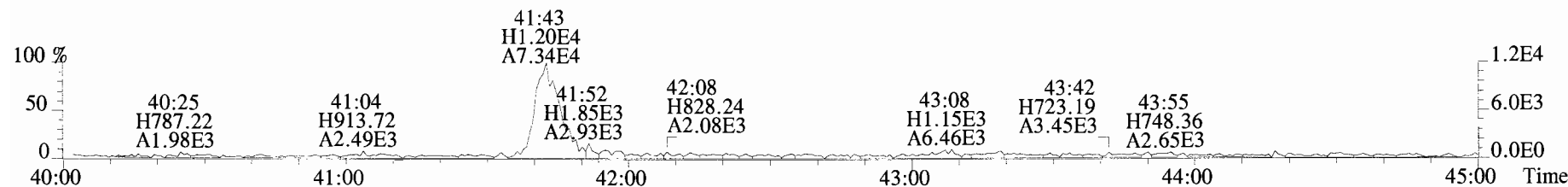
409.7788 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



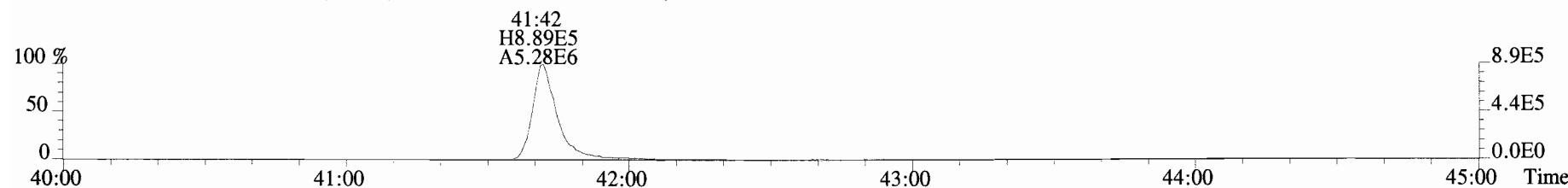
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



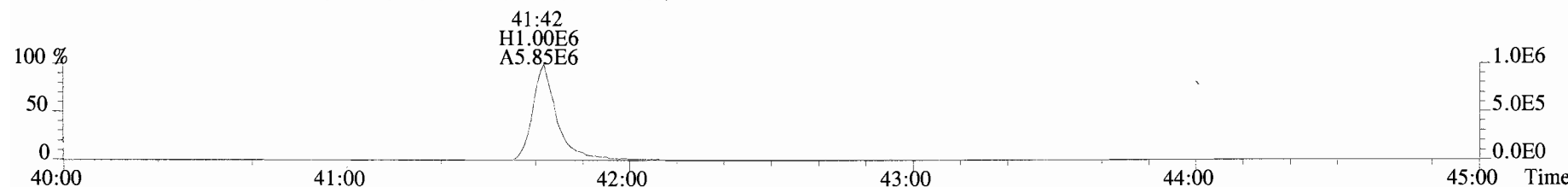
443.7398 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



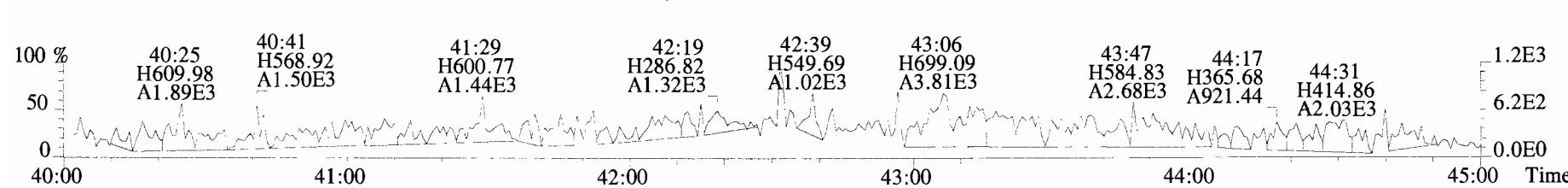
453.7831 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



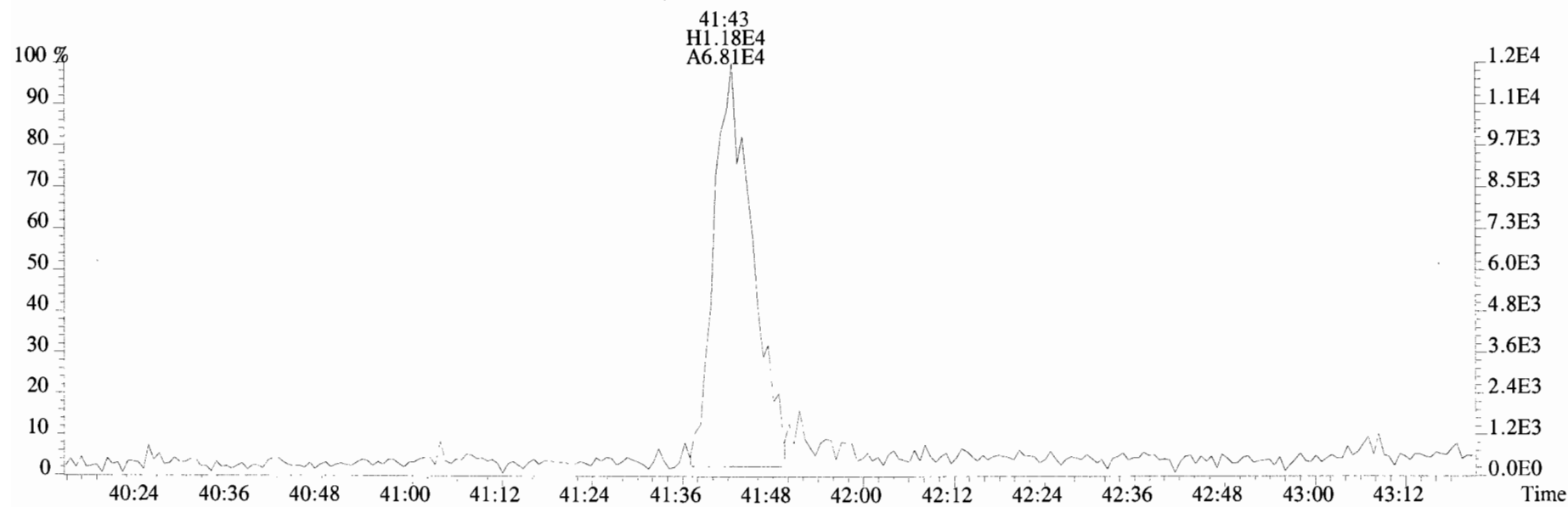
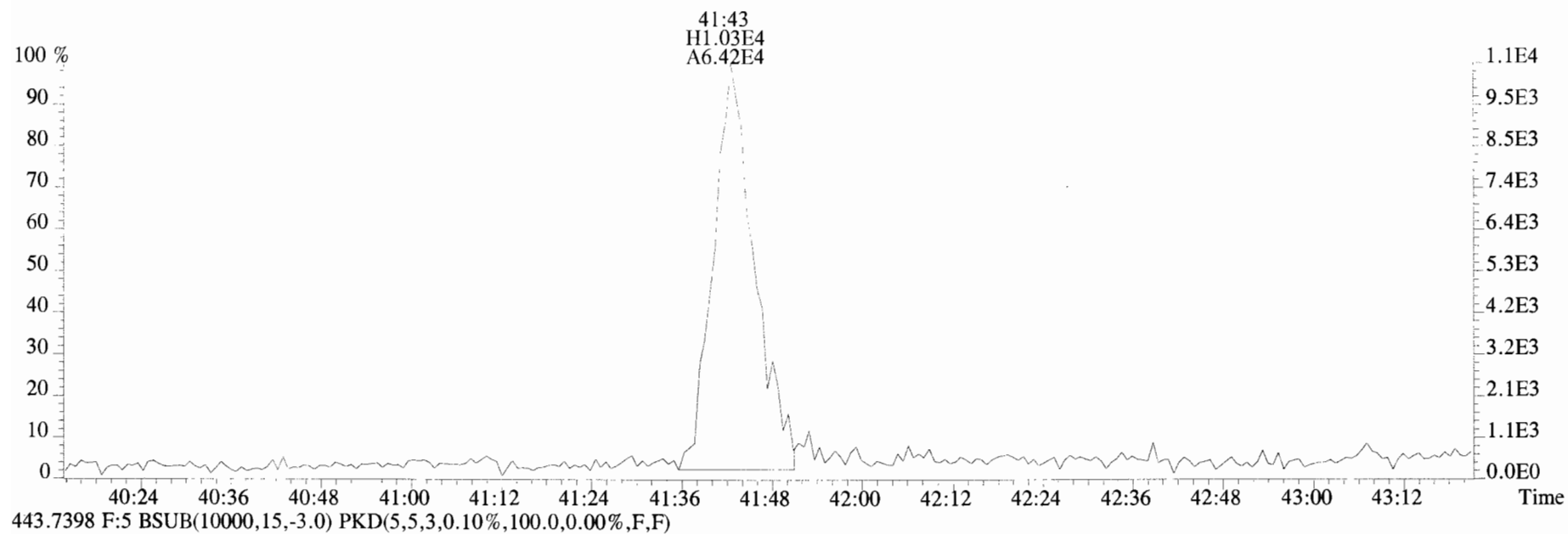
455.7801 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



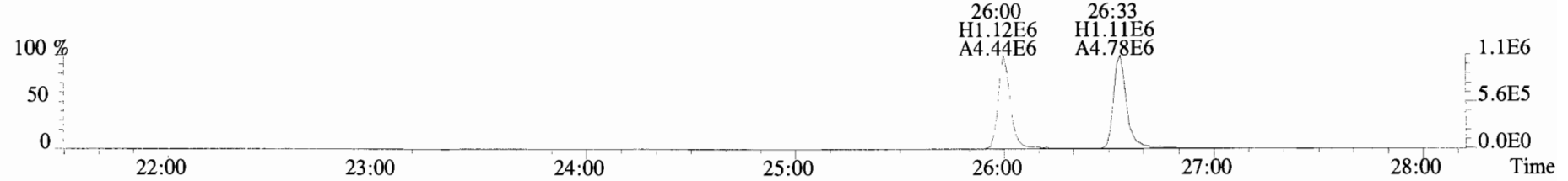
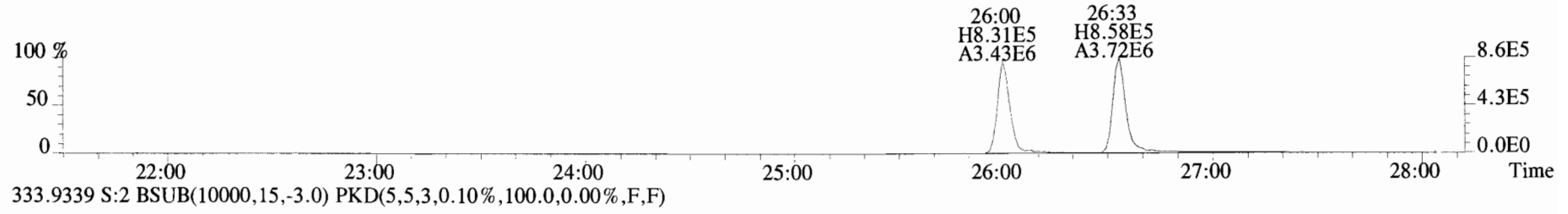
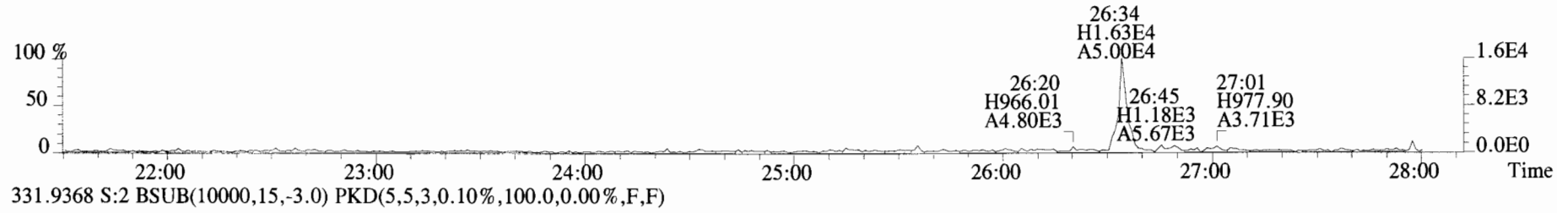
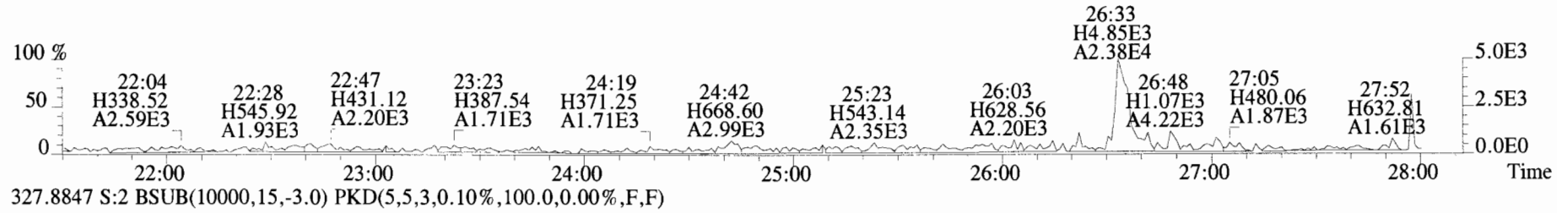
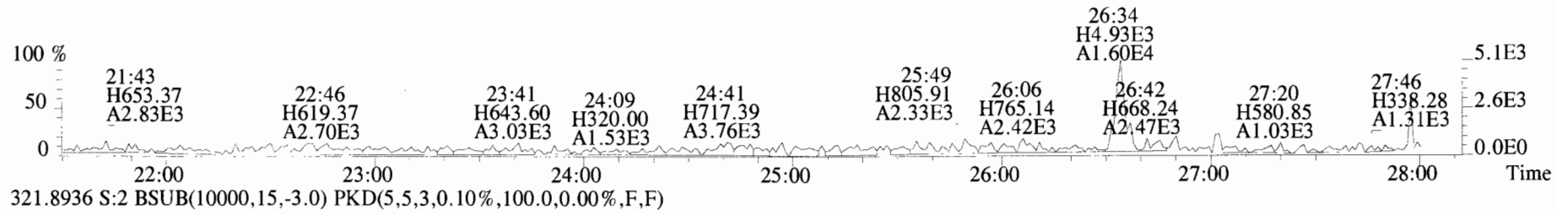
513.6775 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



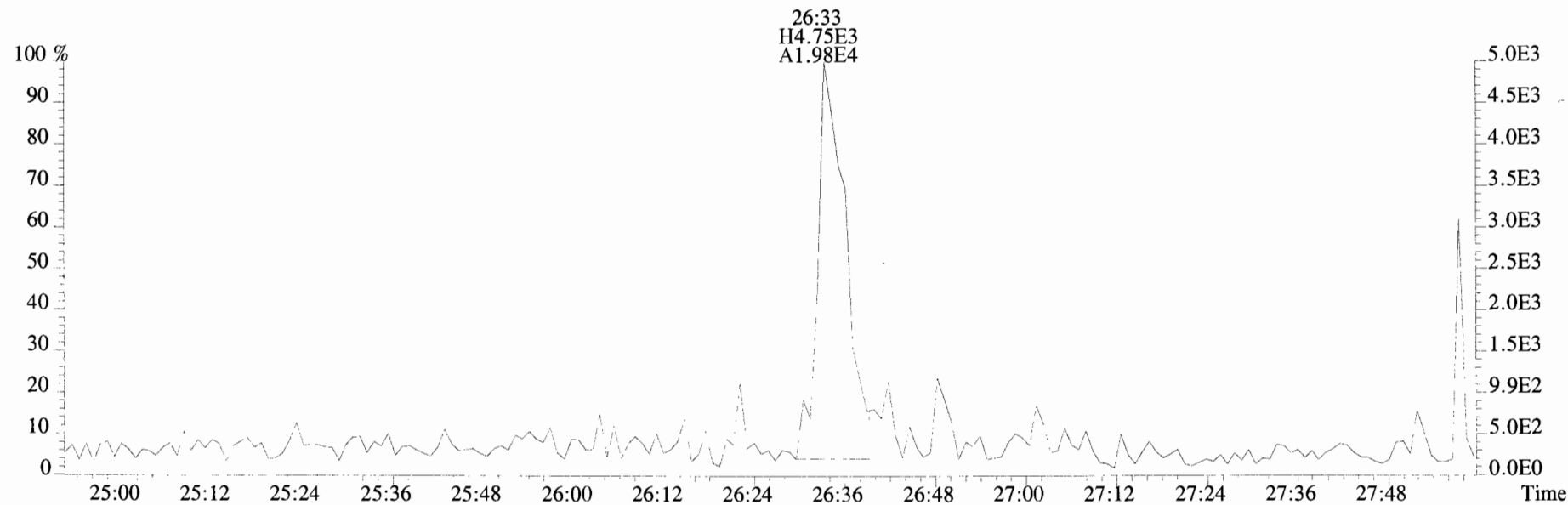
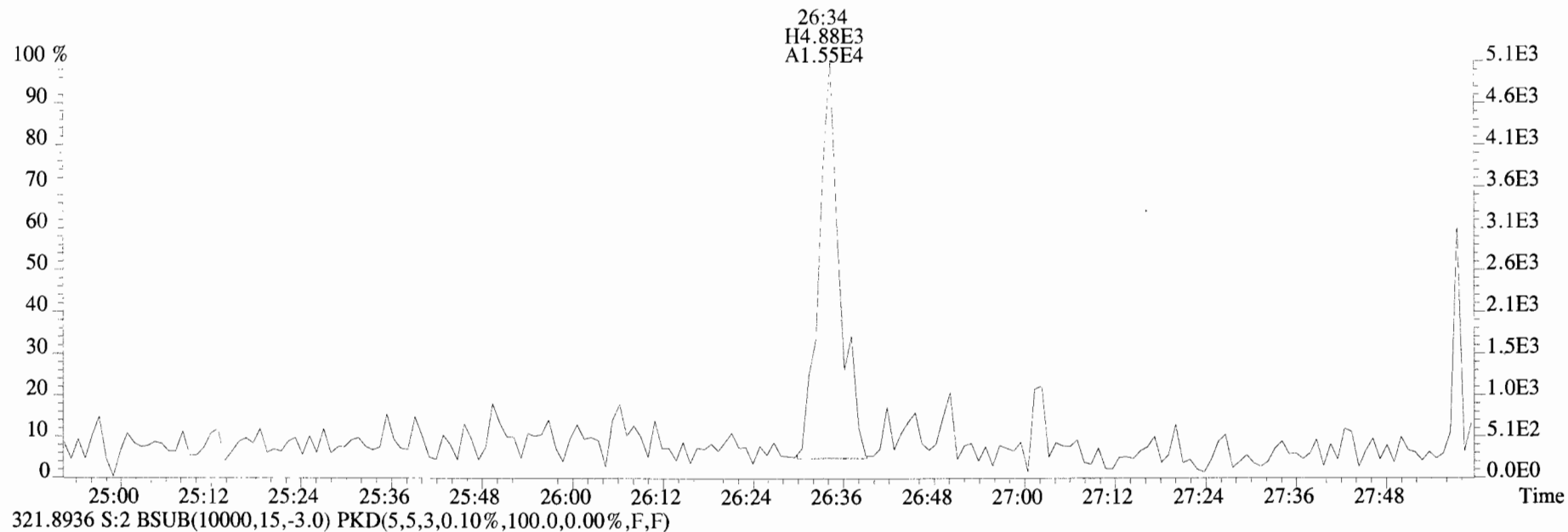
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



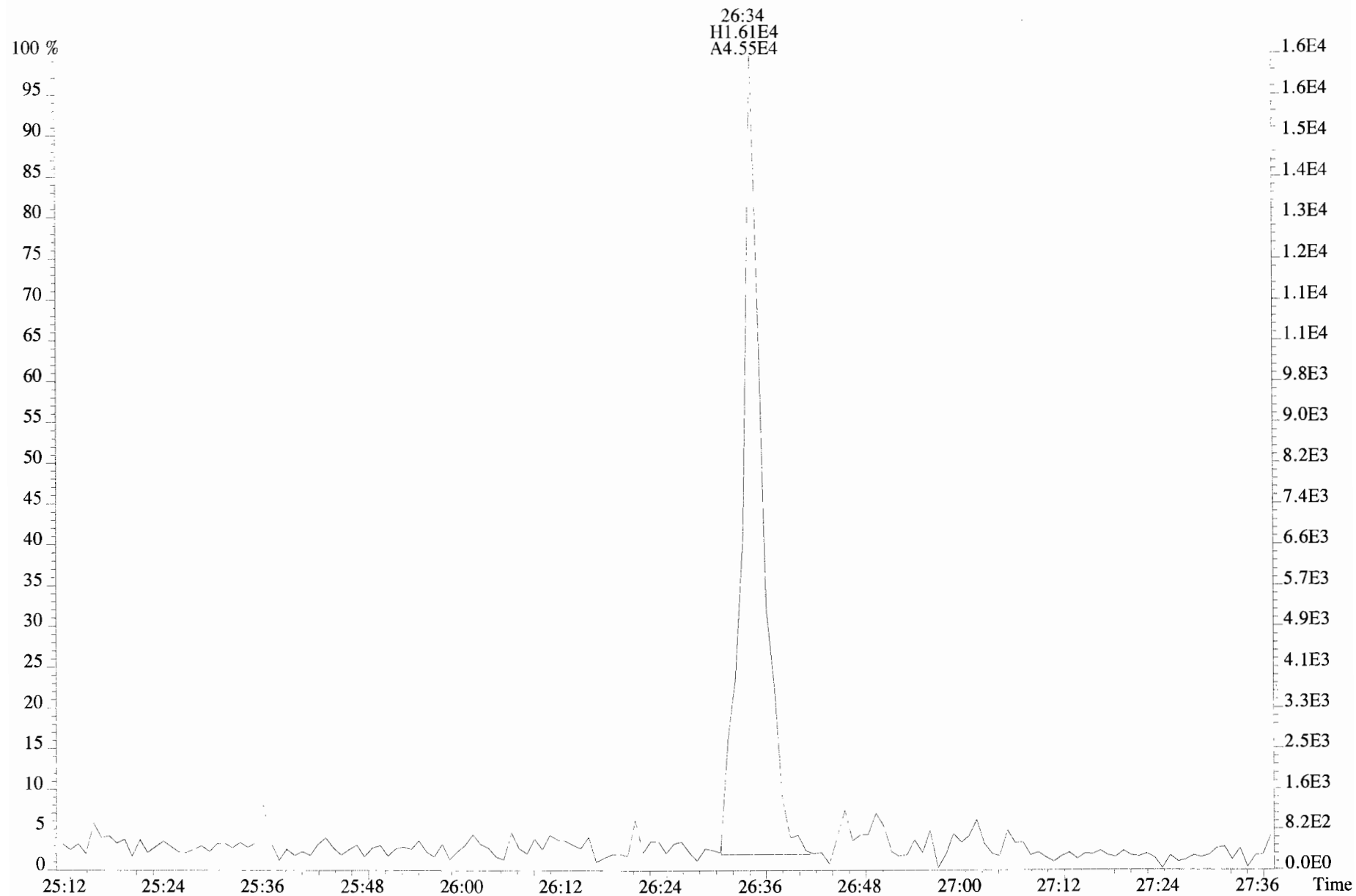
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
319.8965 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



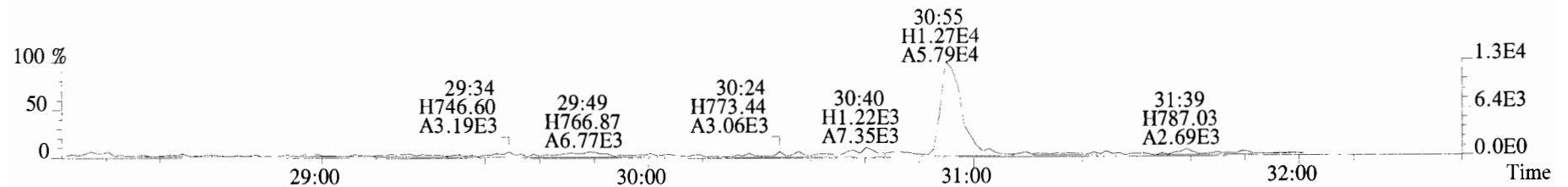
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
319.8965 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



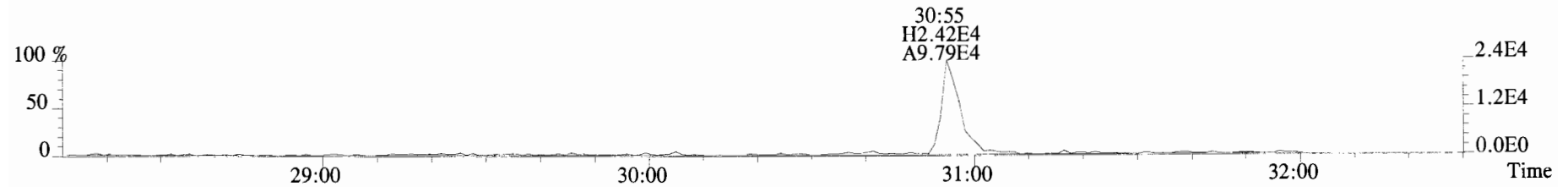
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
327.8847 S:2 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



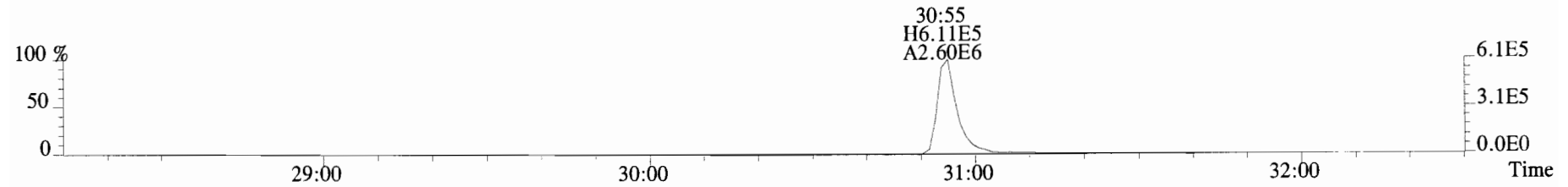
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
353.8576 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



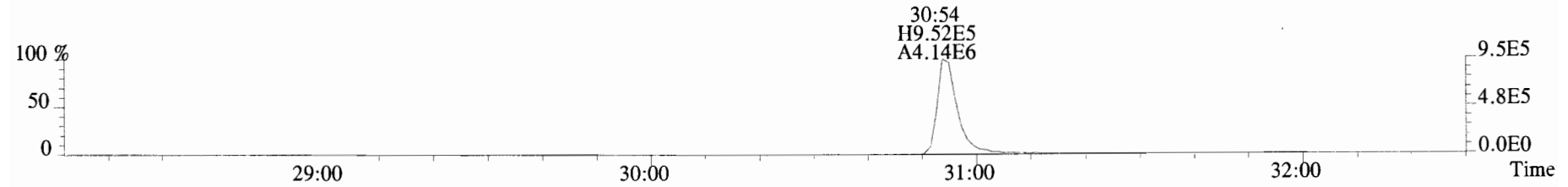
355.8546 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



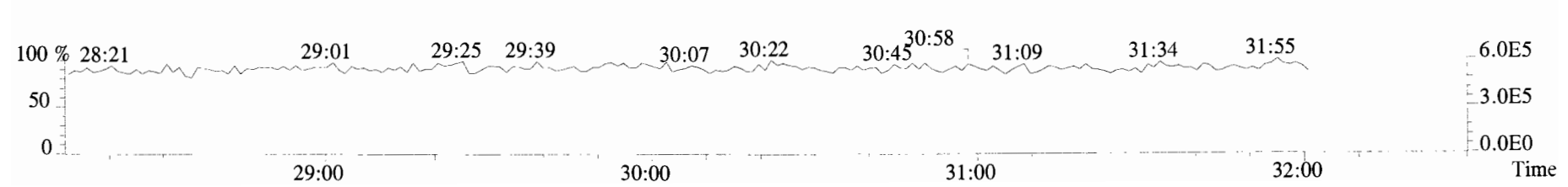
365.8978 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



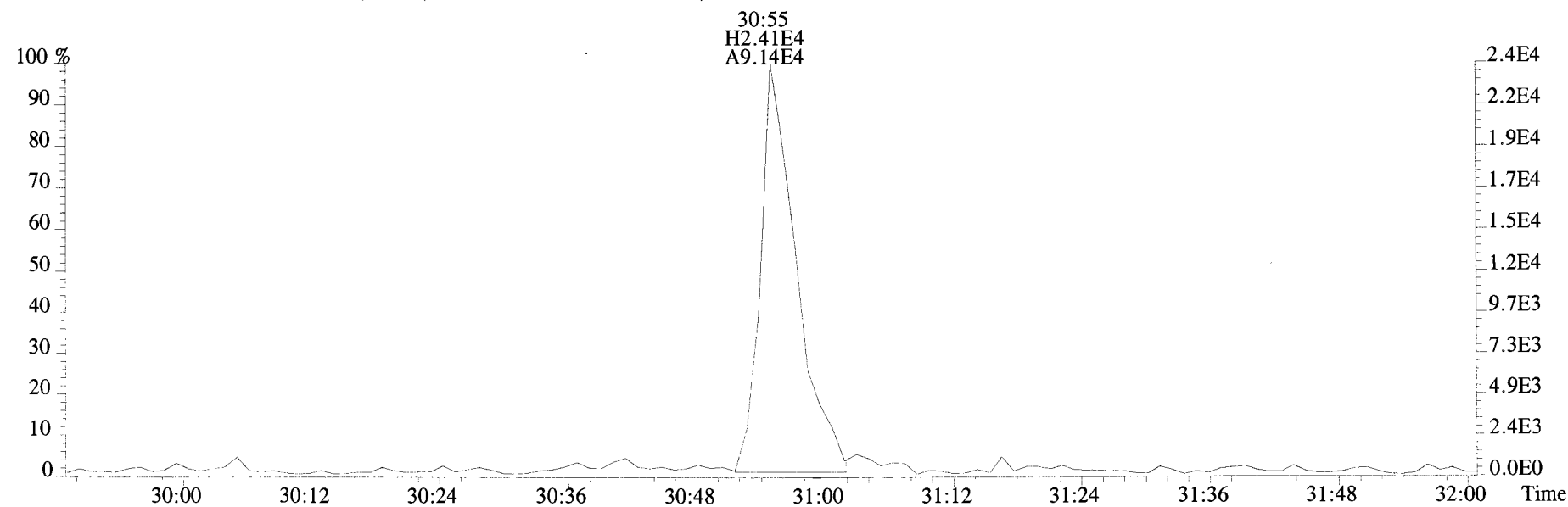
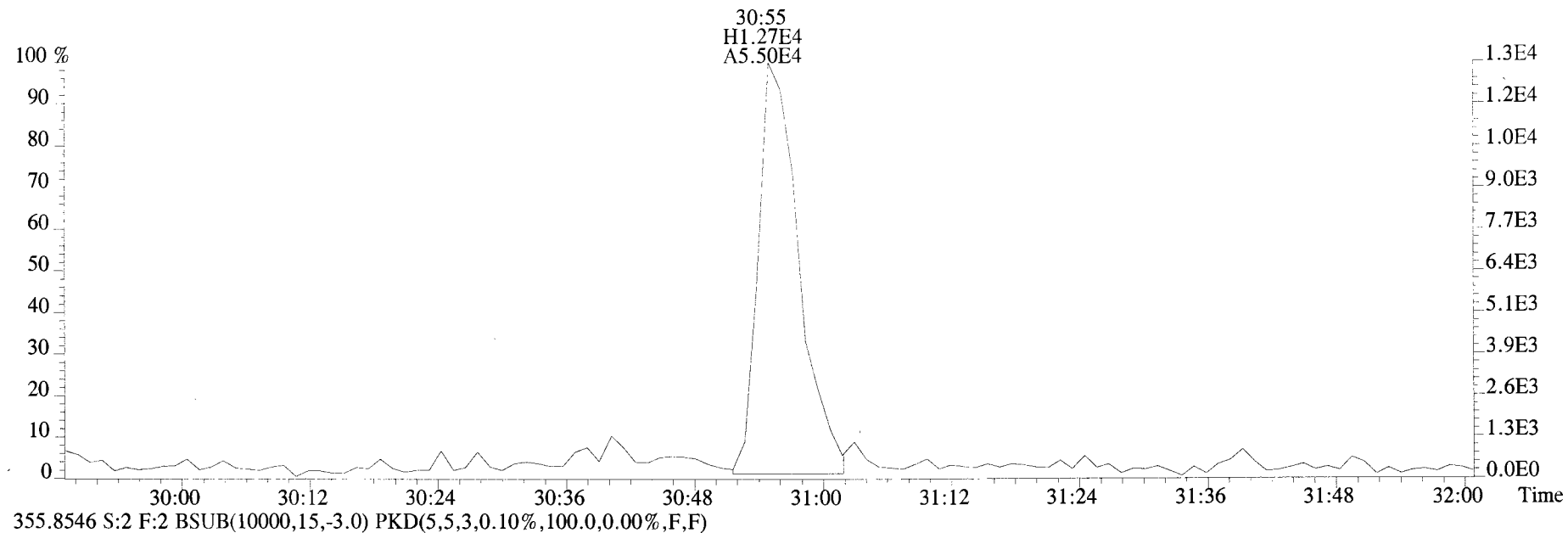
367.8949 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



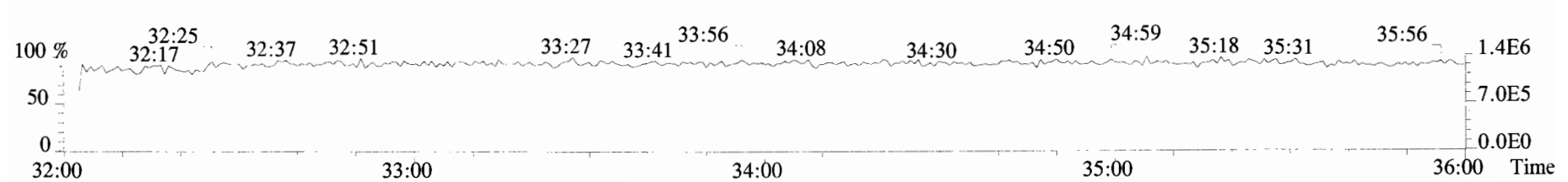
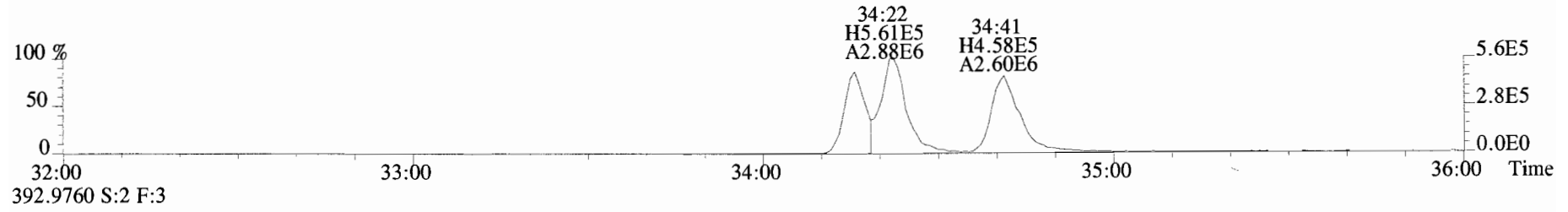
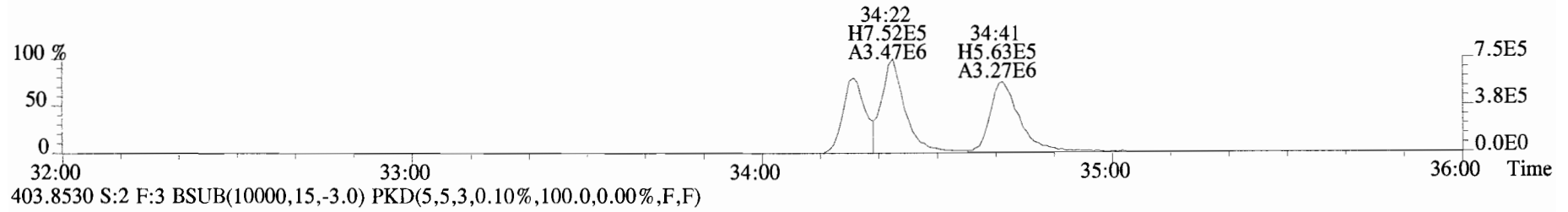
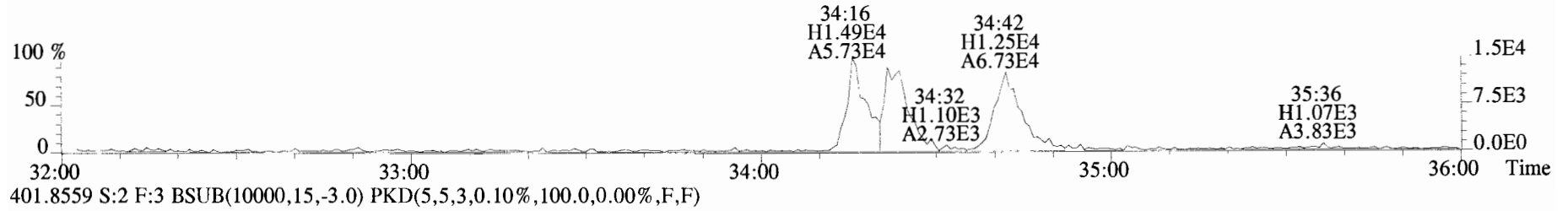
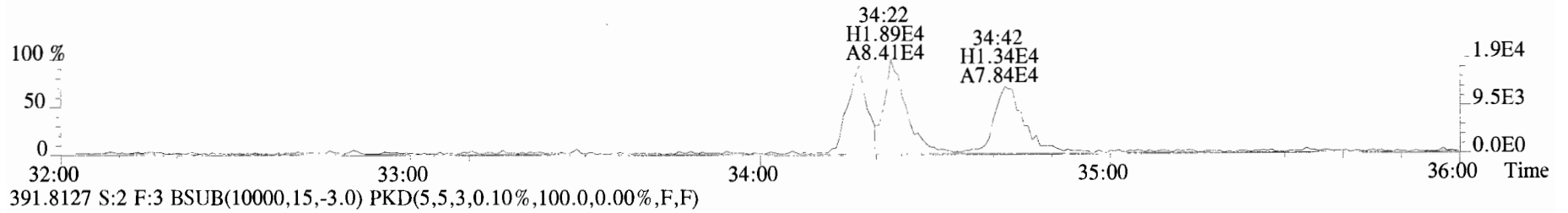
366.9792 S:2 F:2



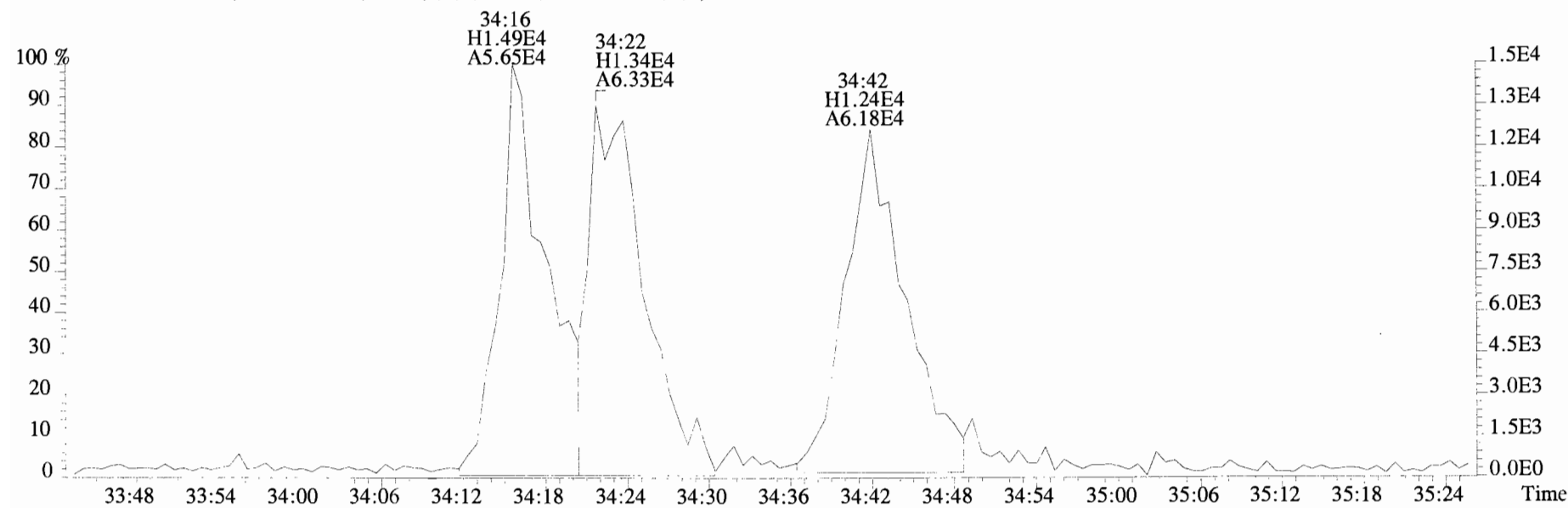
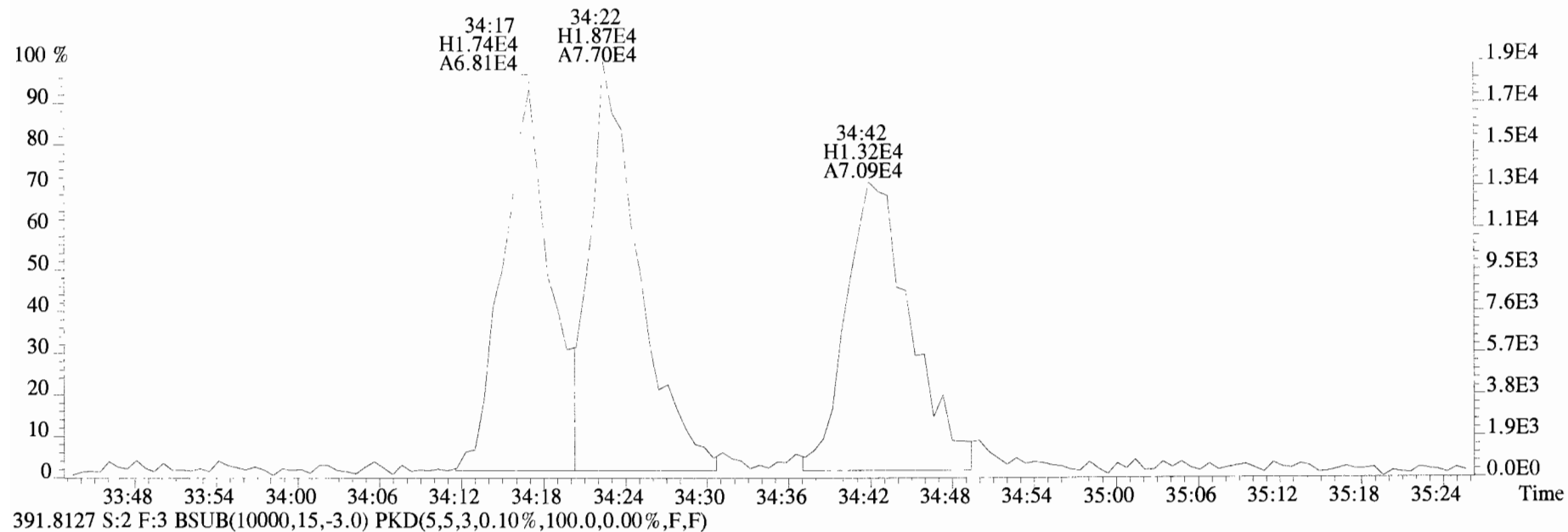
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
353.8576 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



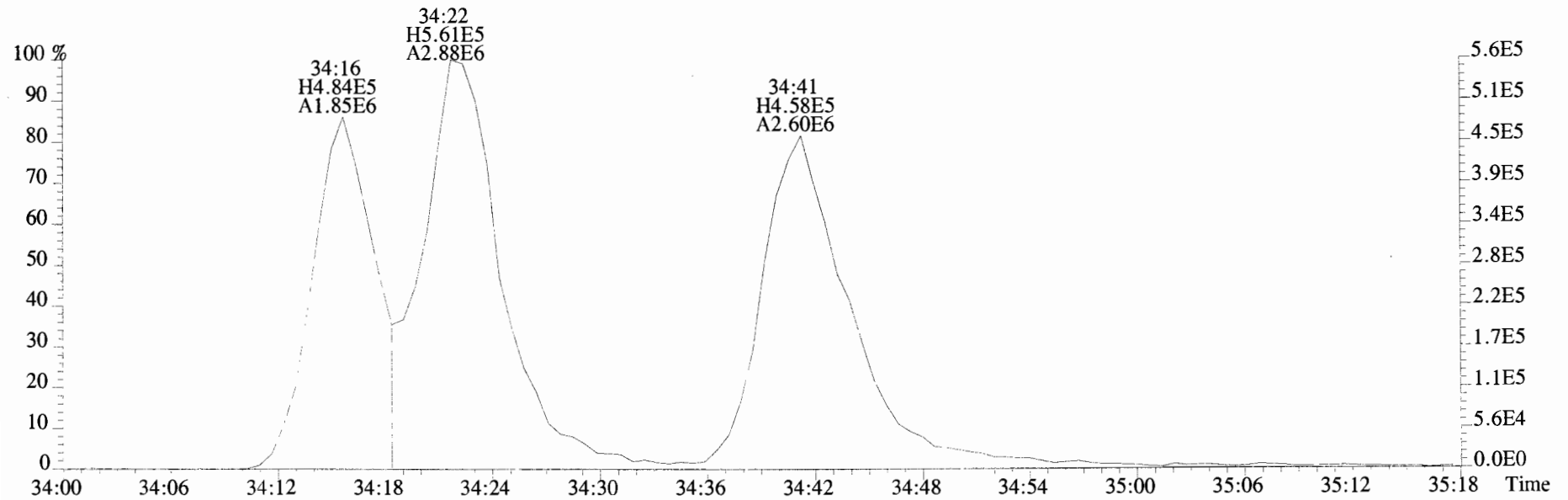
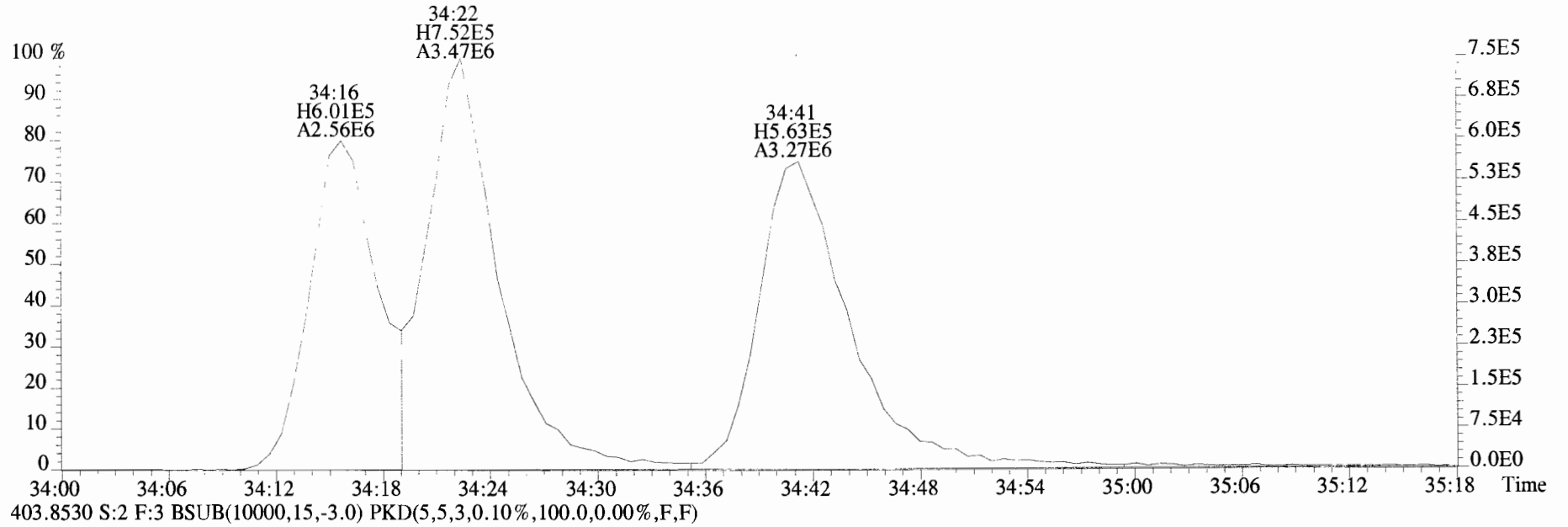
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
389.8156 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



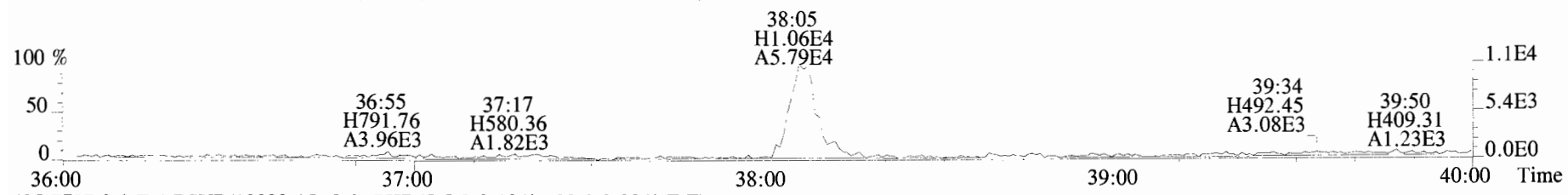
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
389.8156 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



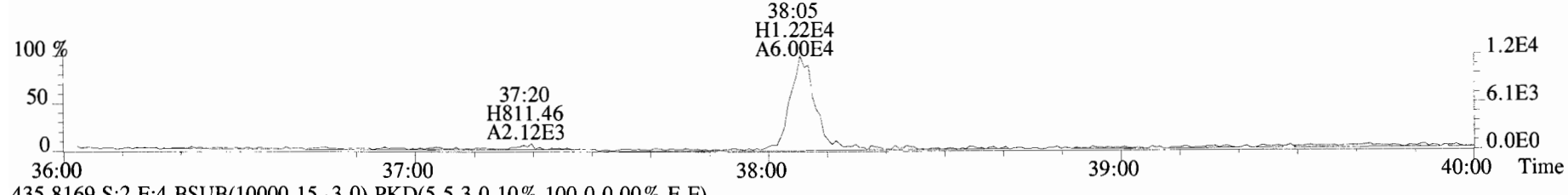
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
401.8559 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



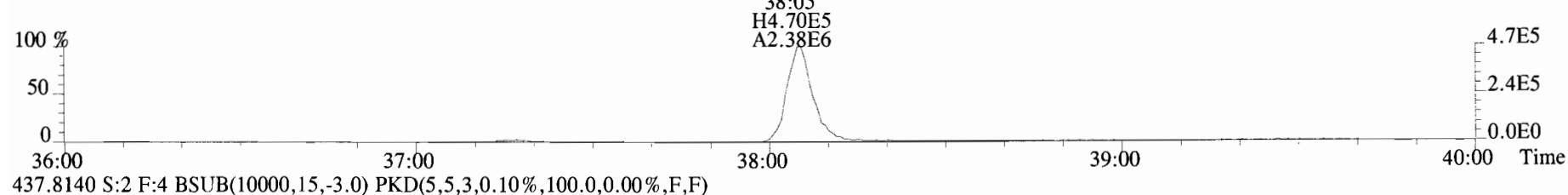
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
423.7767 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



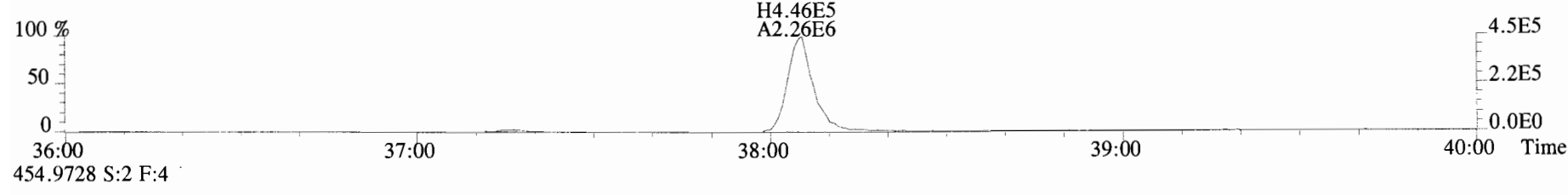
425.7737 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



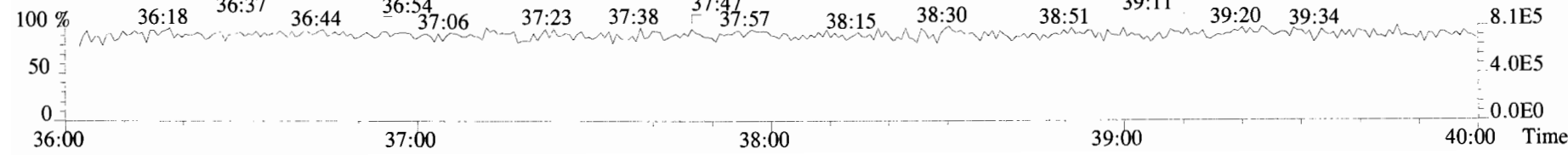
435.8169 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



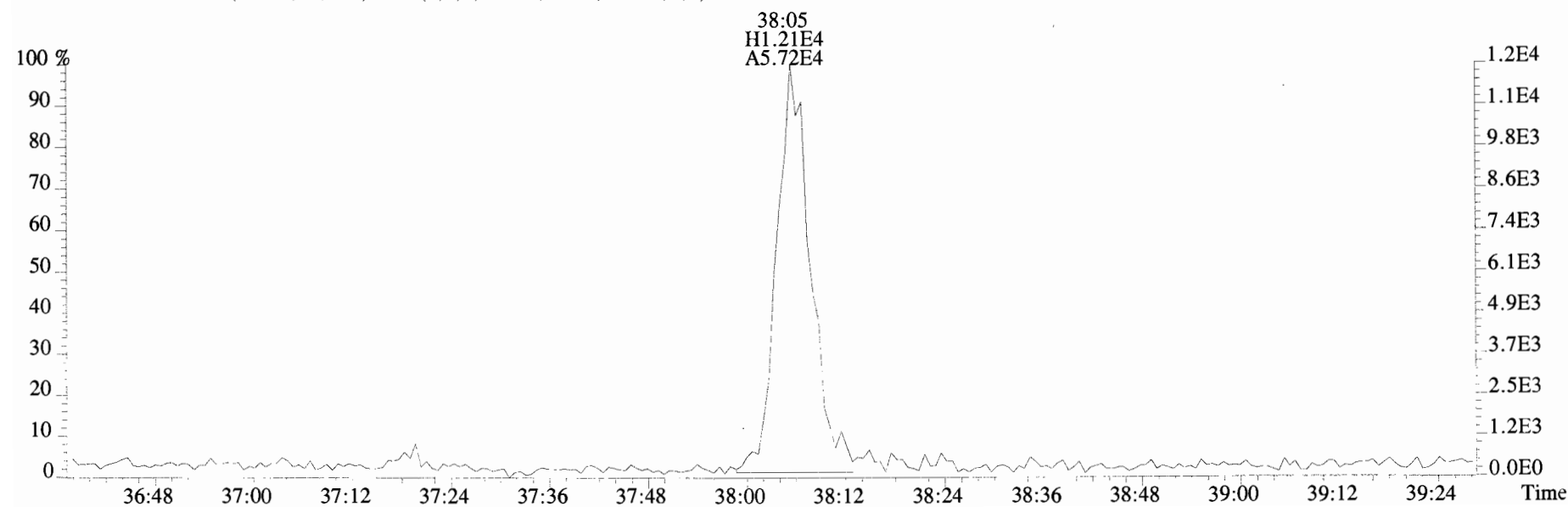
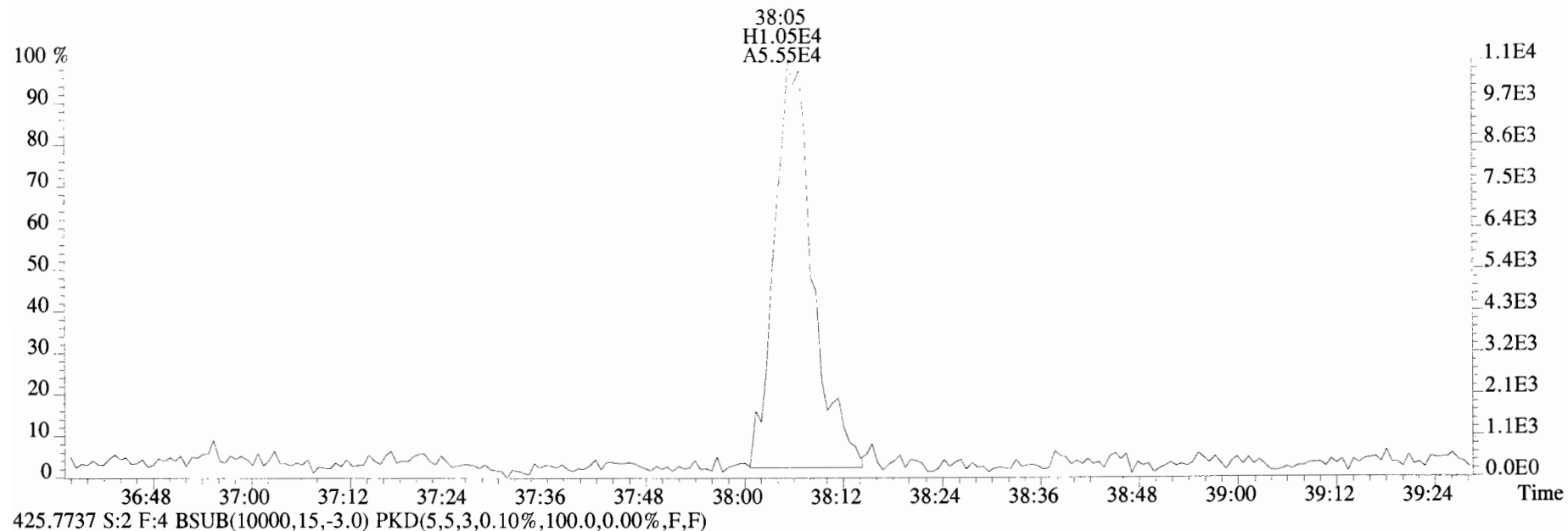
437.8140 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



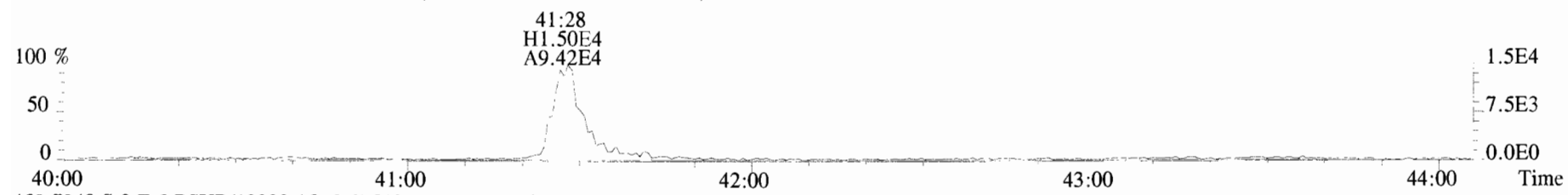
454.9728 S:2 F:4



File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
423.7767 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



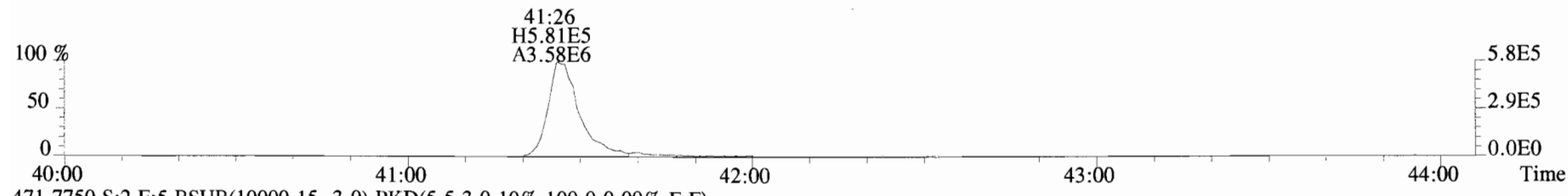
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
457.7377 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



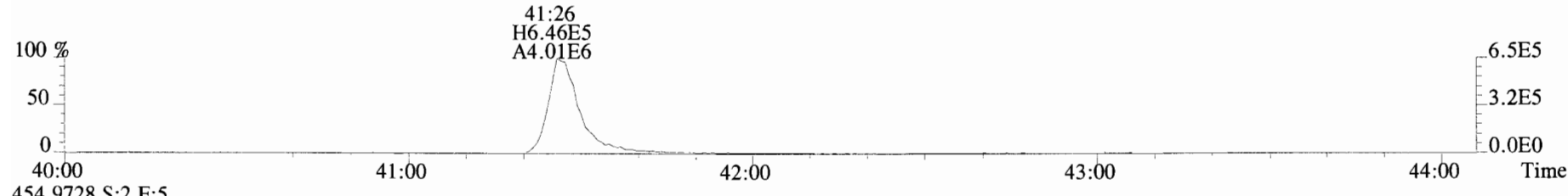
459.7348 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



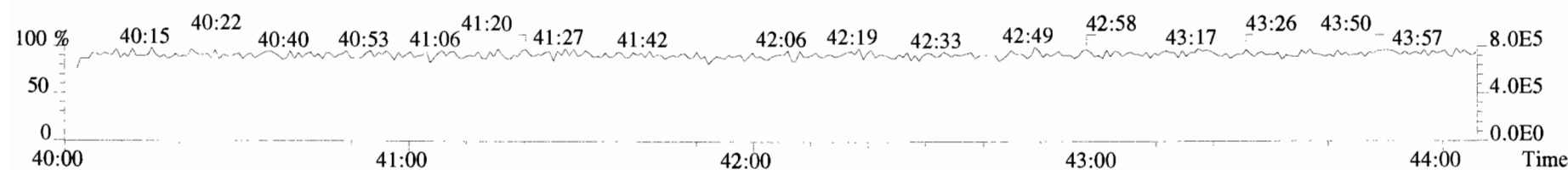
469.7780 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



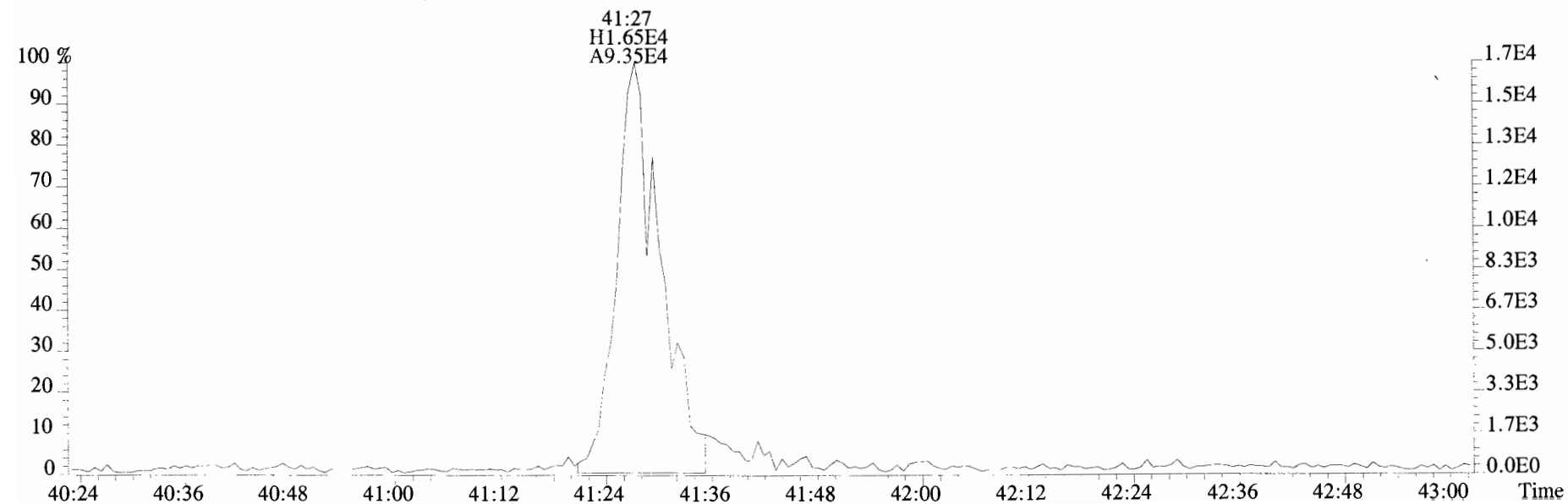
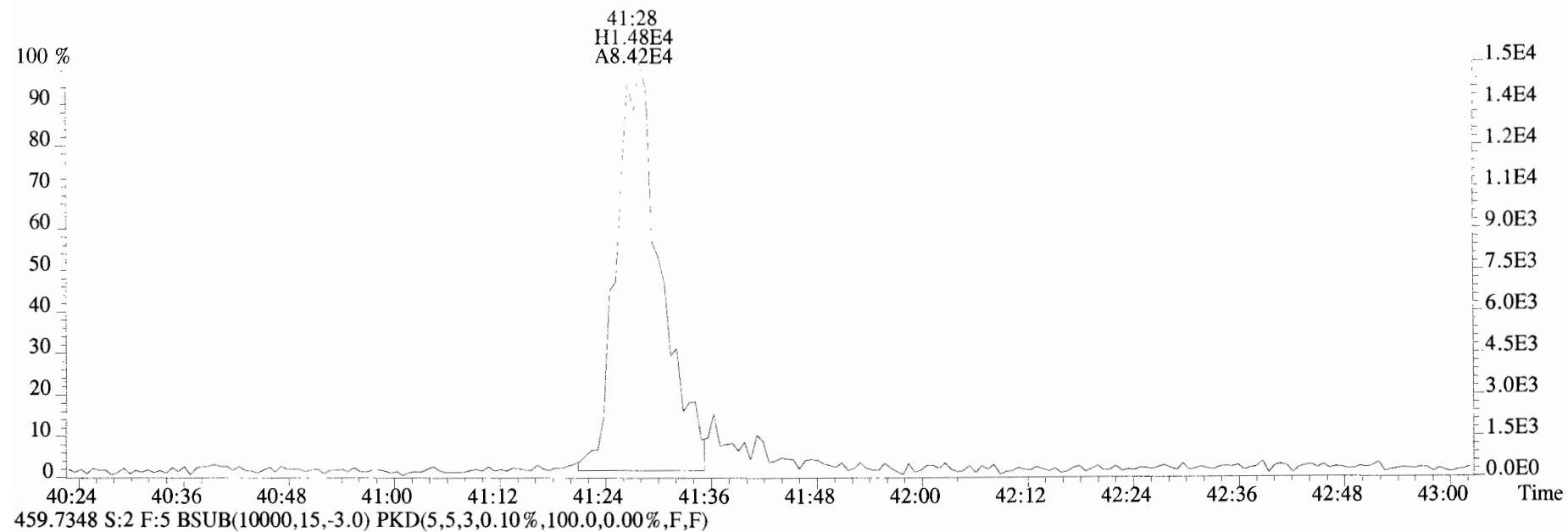
471.7750 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



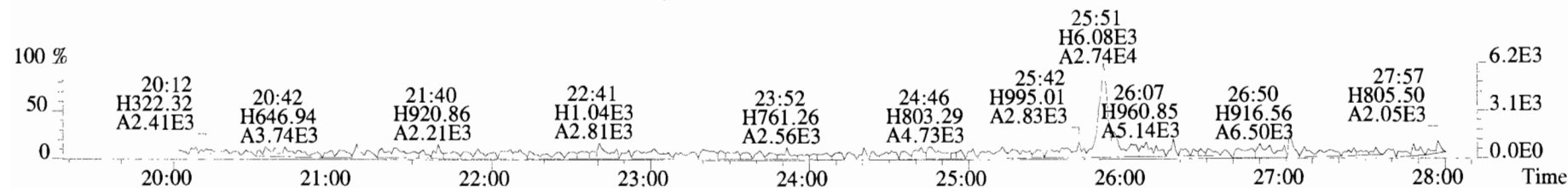
454.9728 S:2 F:5



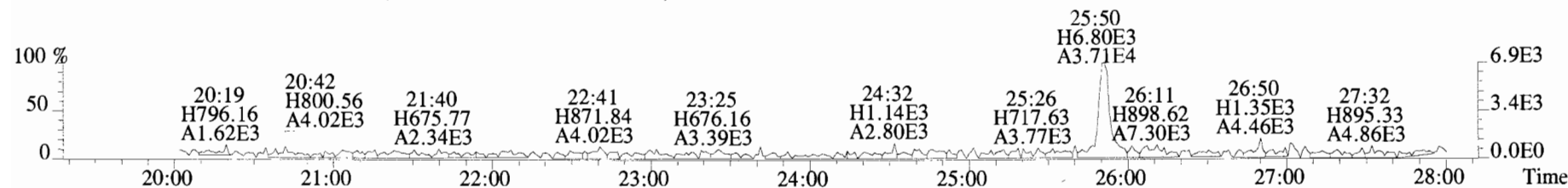
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
457.7377 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



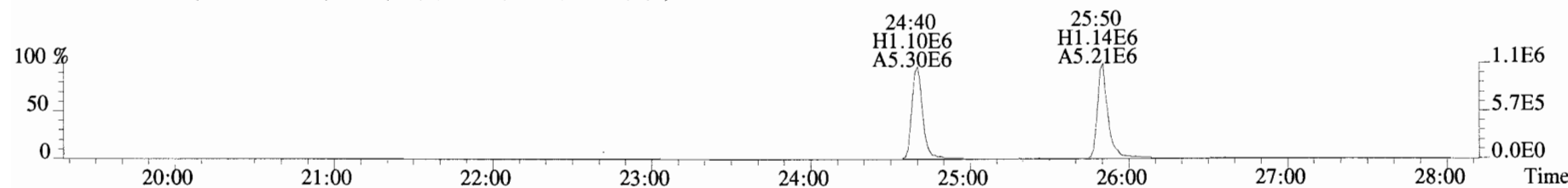
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
303.9016 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



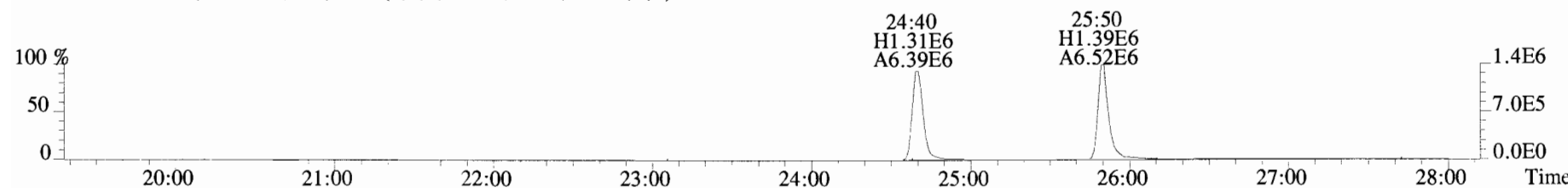
305.8987 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



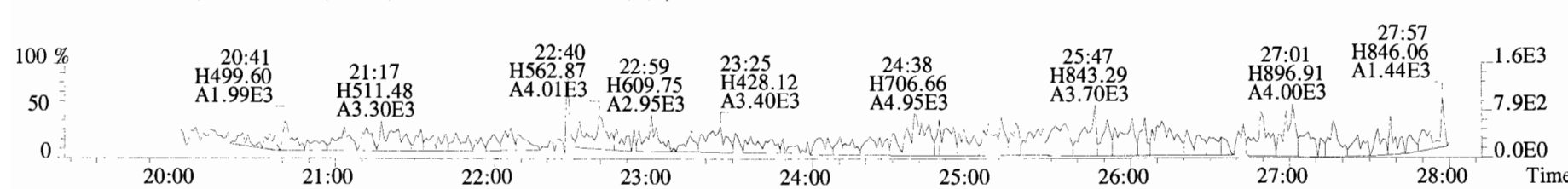
315.9419 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



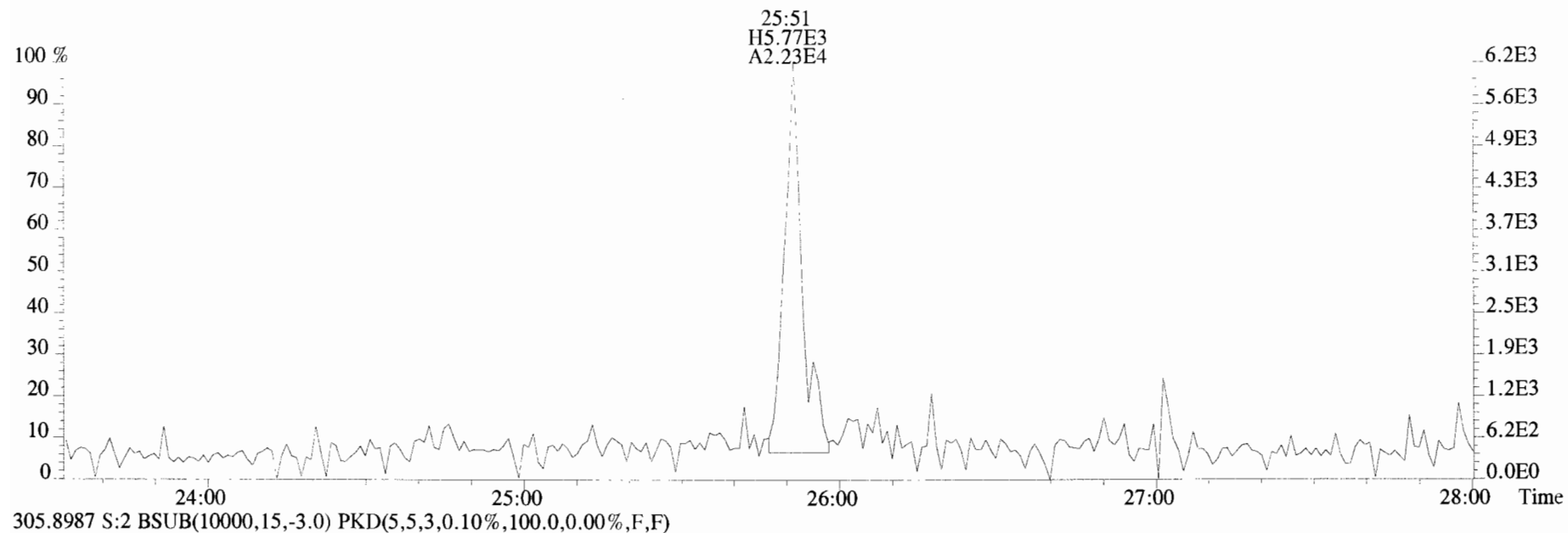
317.9389 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



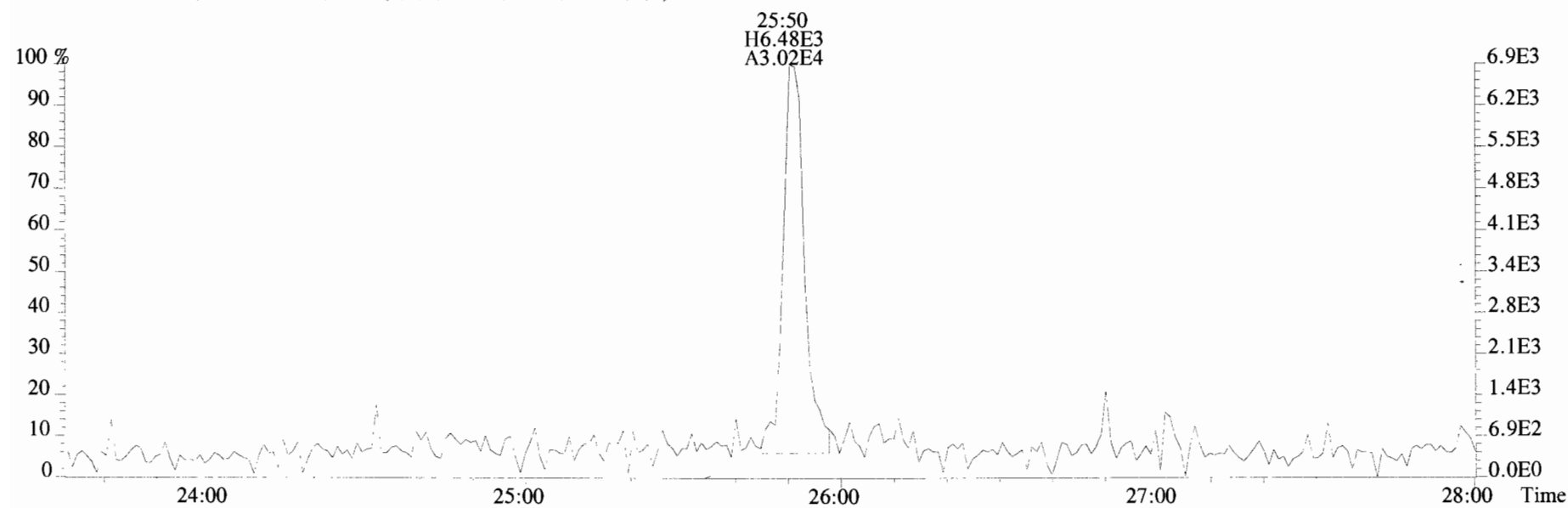
375.8364 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



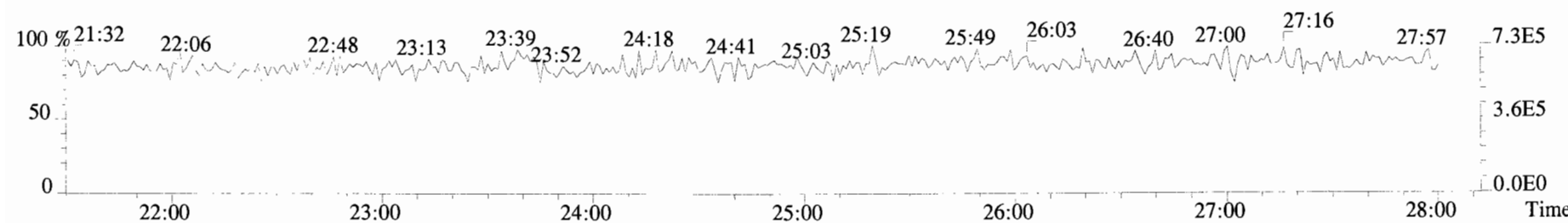
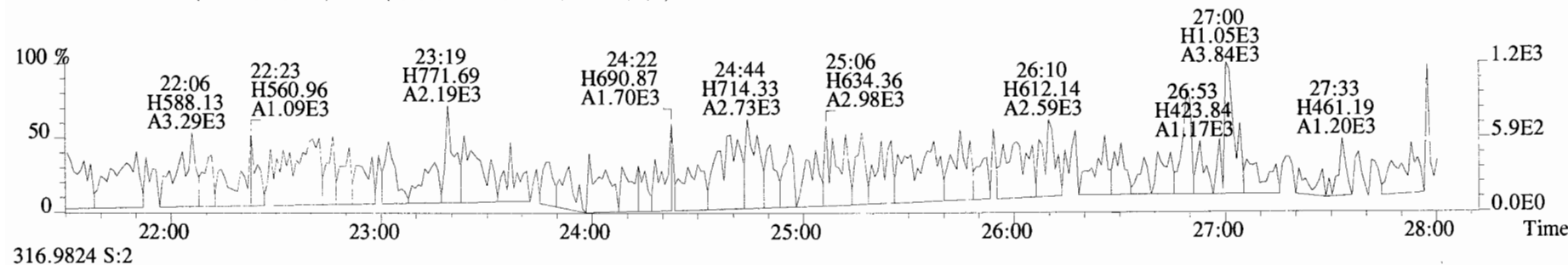
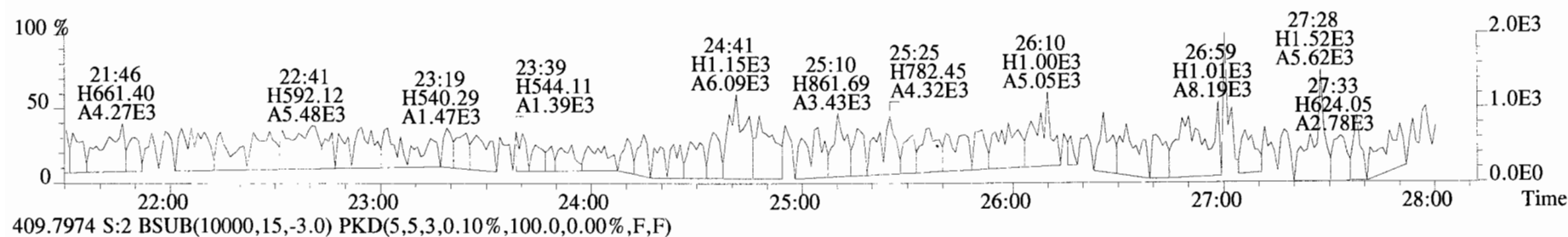
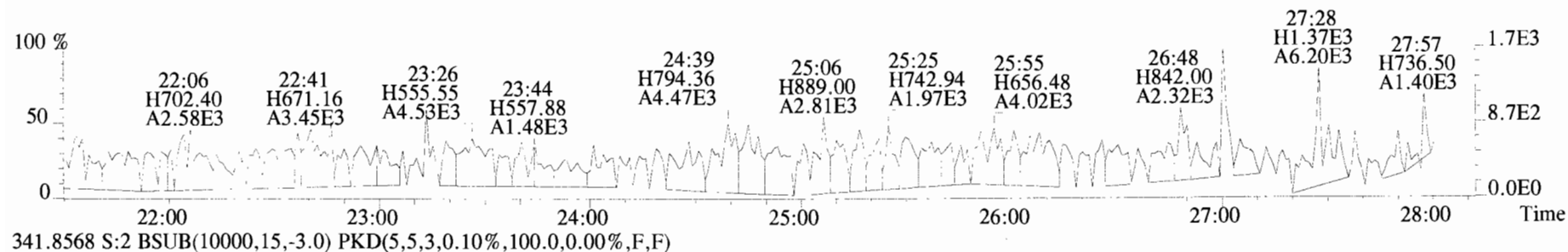
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
303.9016 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



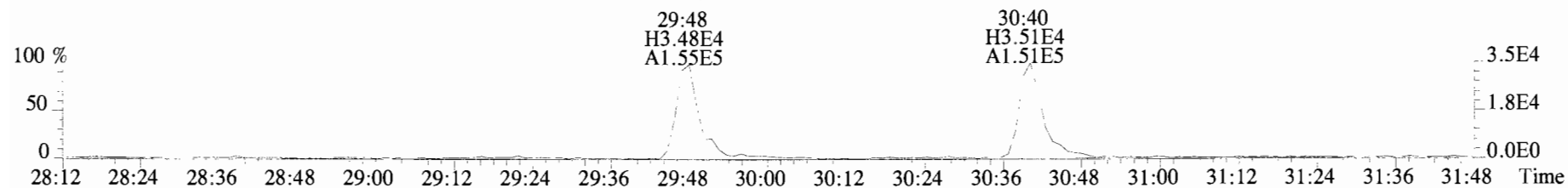
305.8987 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



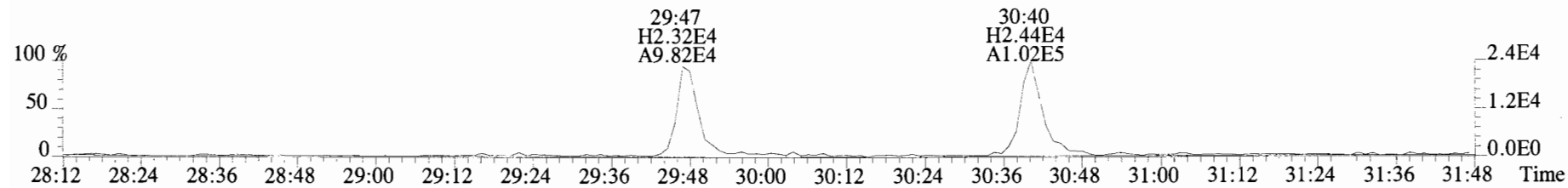
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
 339.8597 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



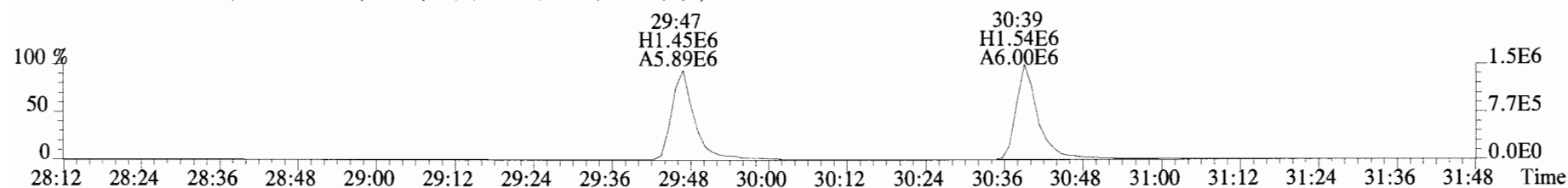
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
339.8597 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



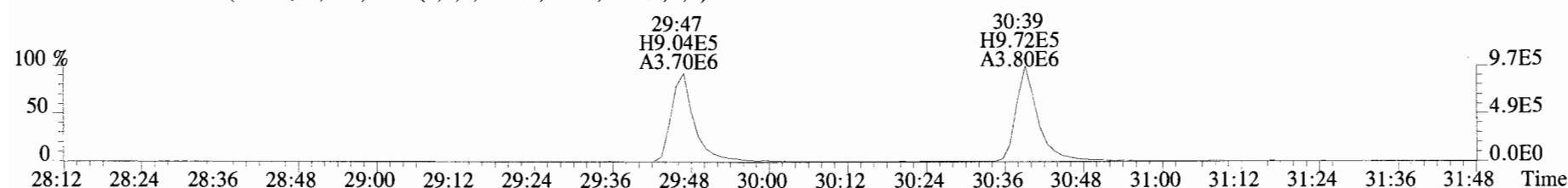
341.8568 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



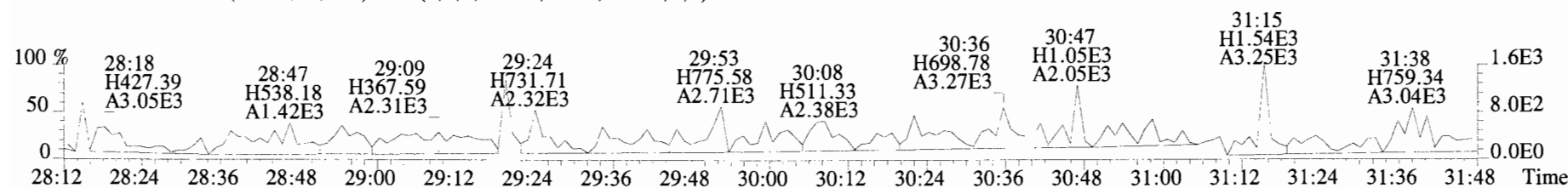
351.9000 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



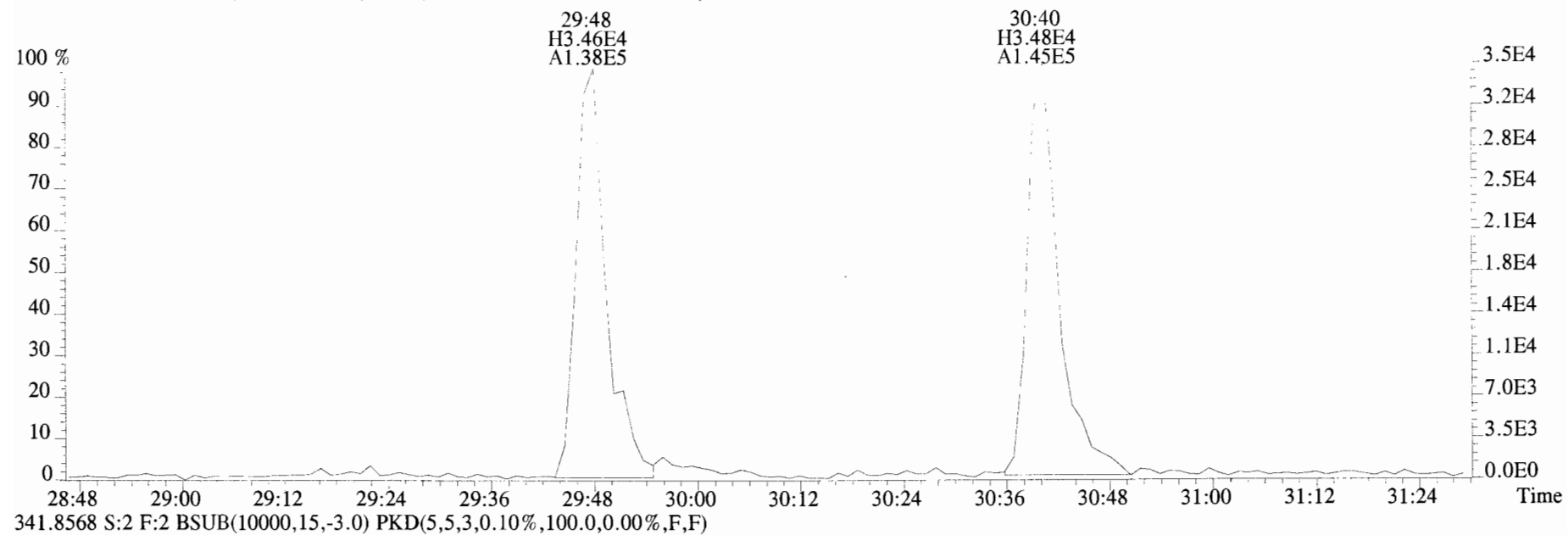
353.8970 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



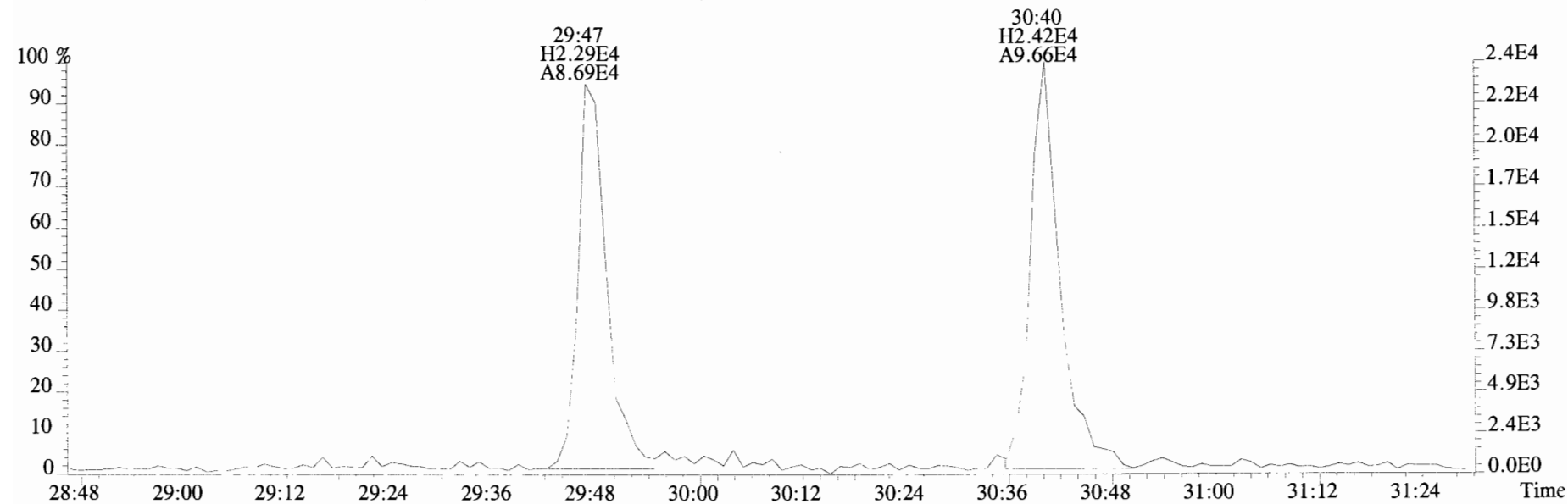
409.7974 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



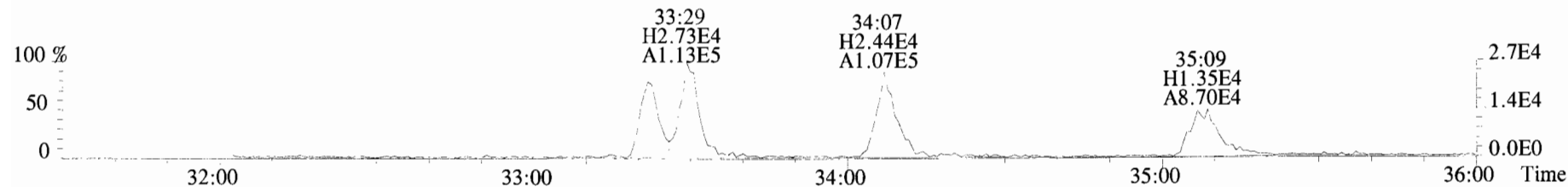
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
339.8597 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



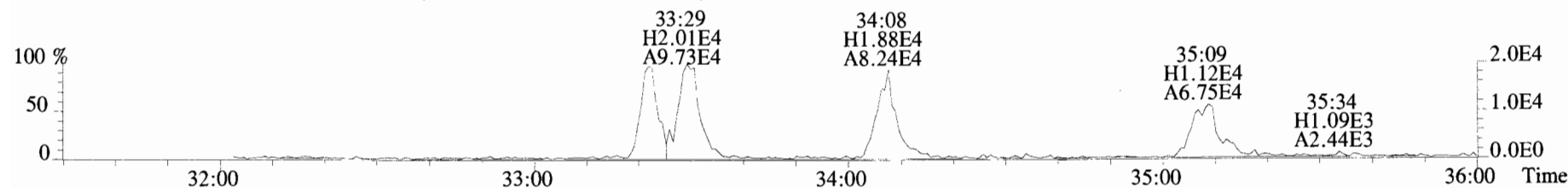
341.8568 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



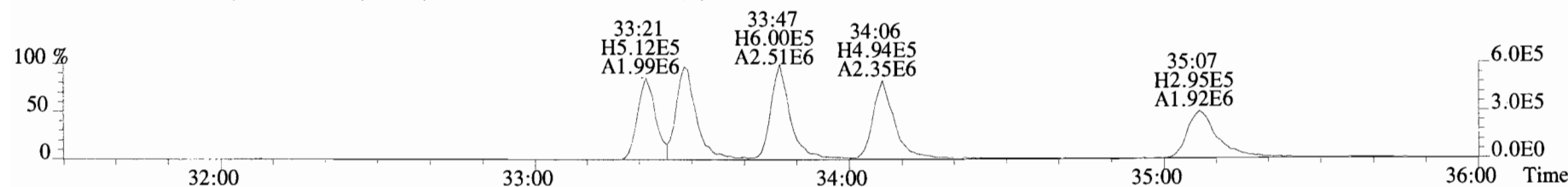
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
 373.8207 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



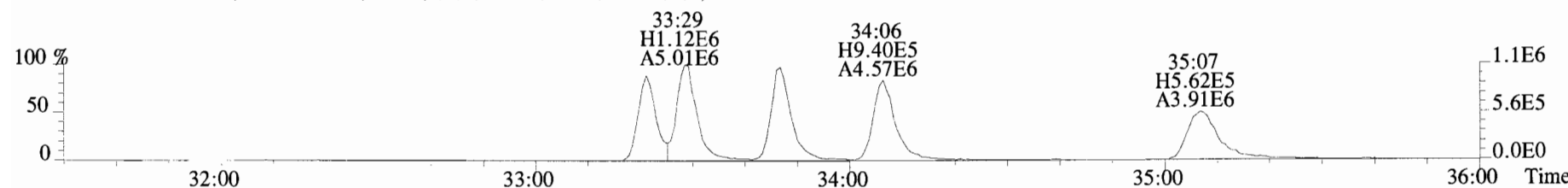
375.8178 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



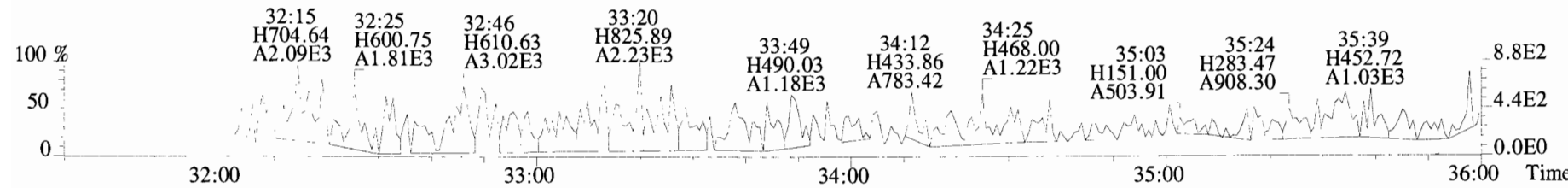
383.8639 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



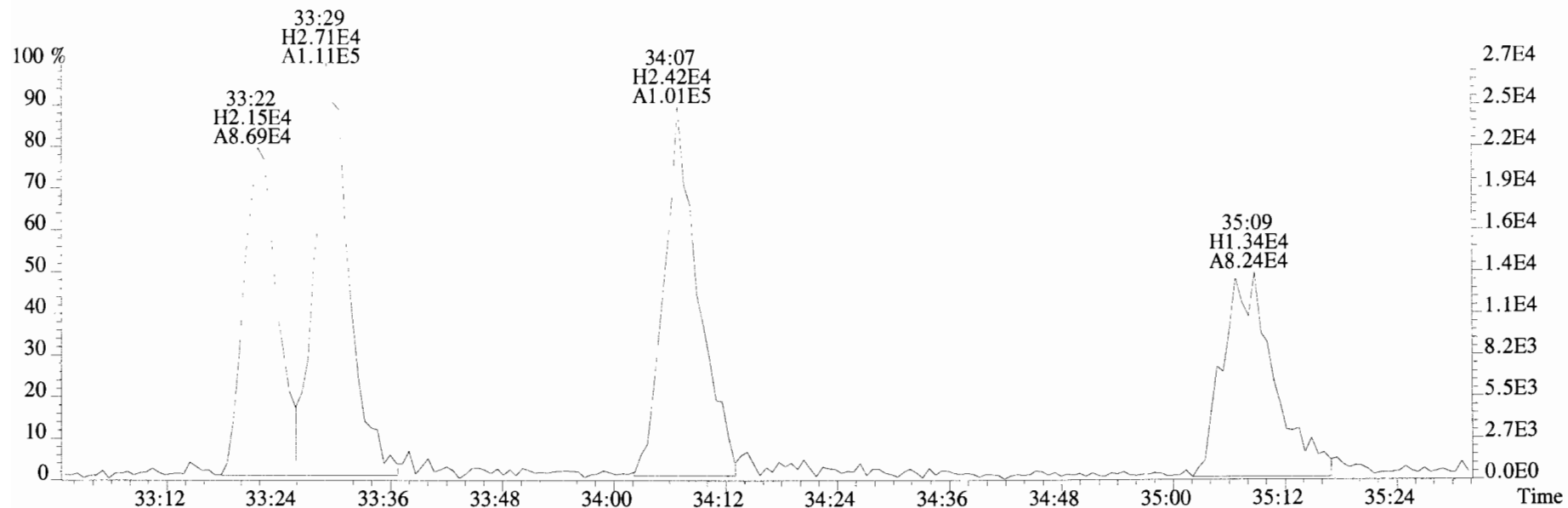
385.8610 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



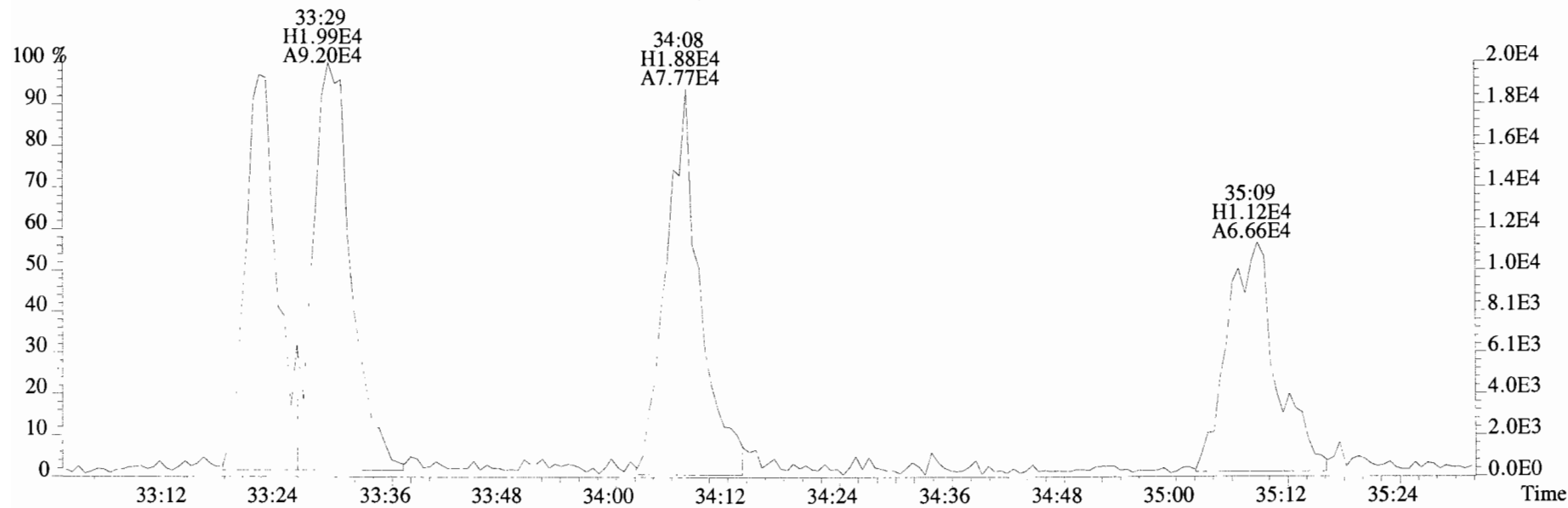
445.7555 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



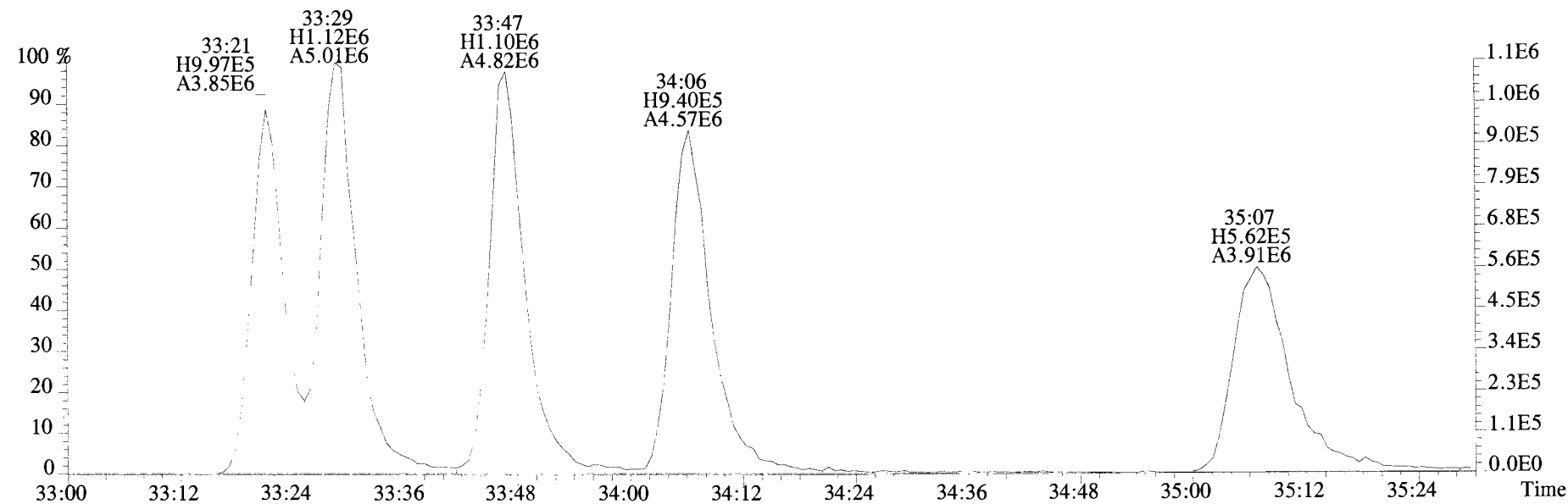
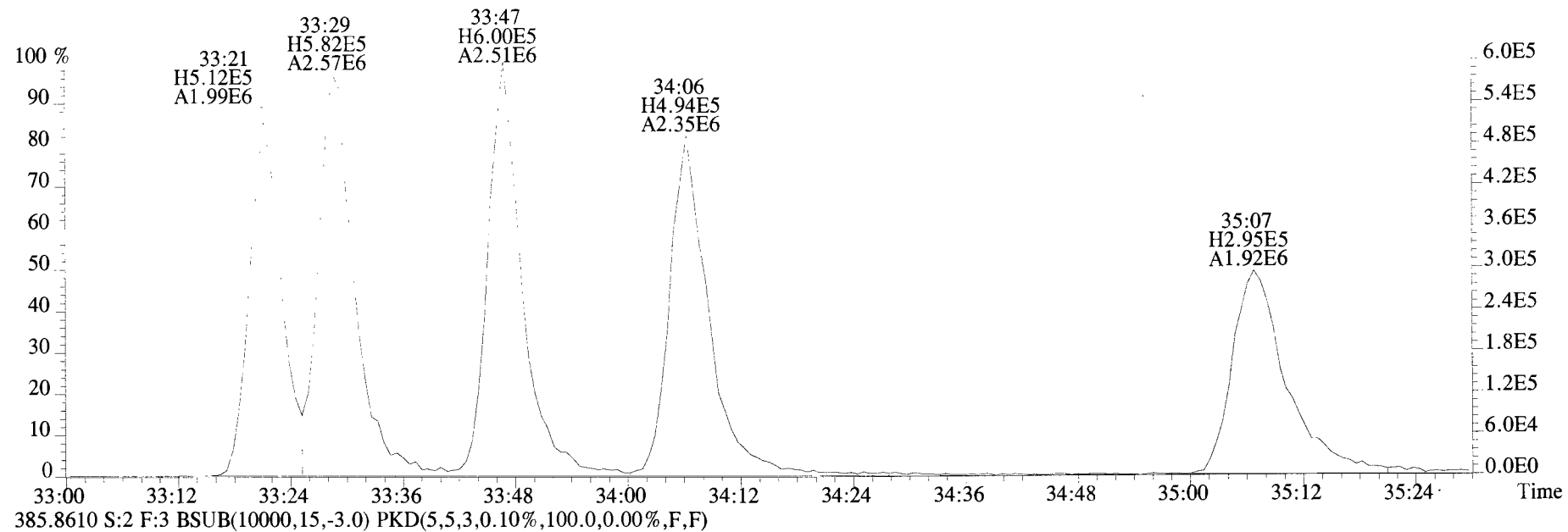
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
373.8207 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



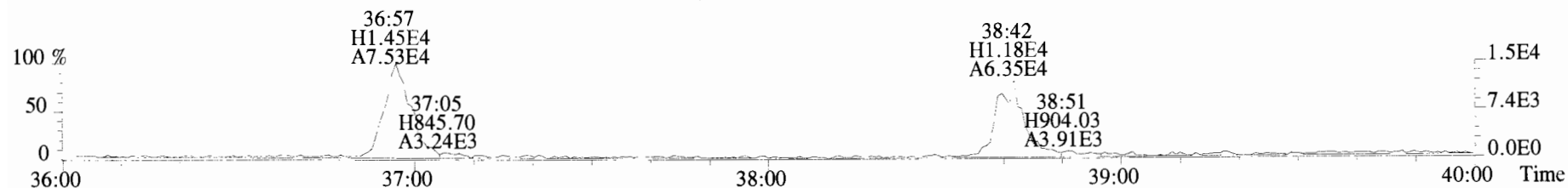
375.8178 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



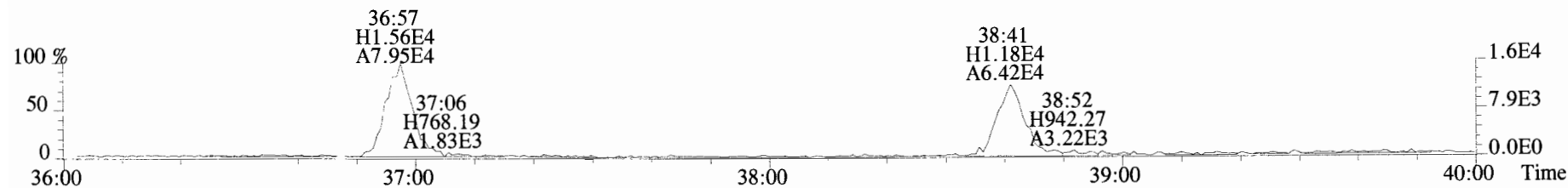
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
383.8639 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



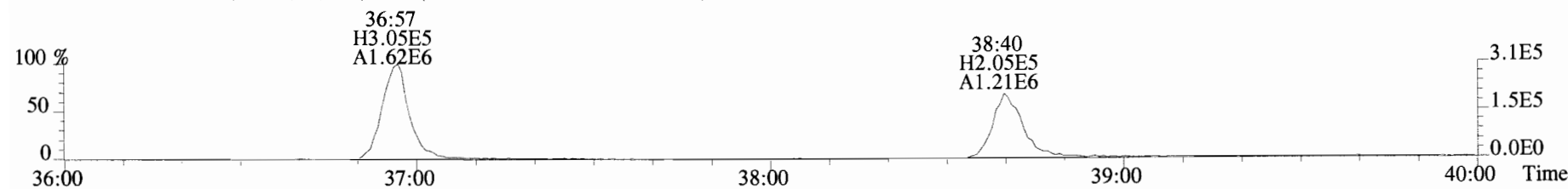
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
407.7818 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



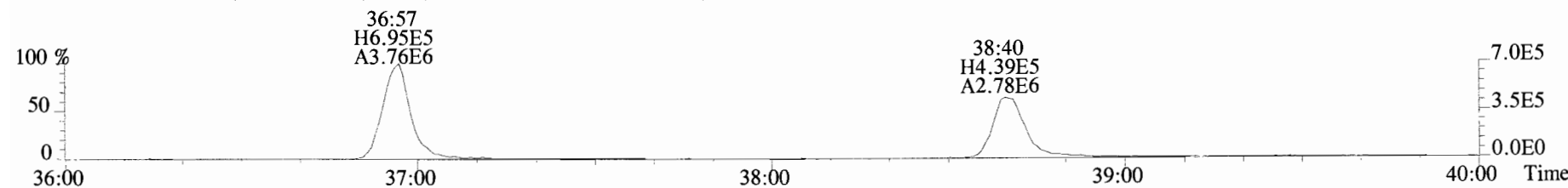
409.7788 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



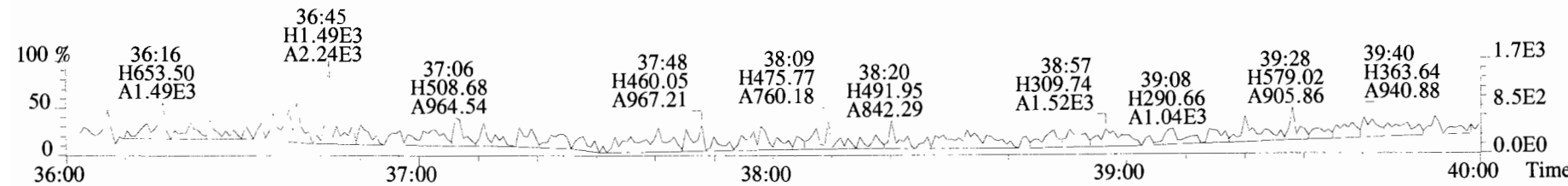
417.8253 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



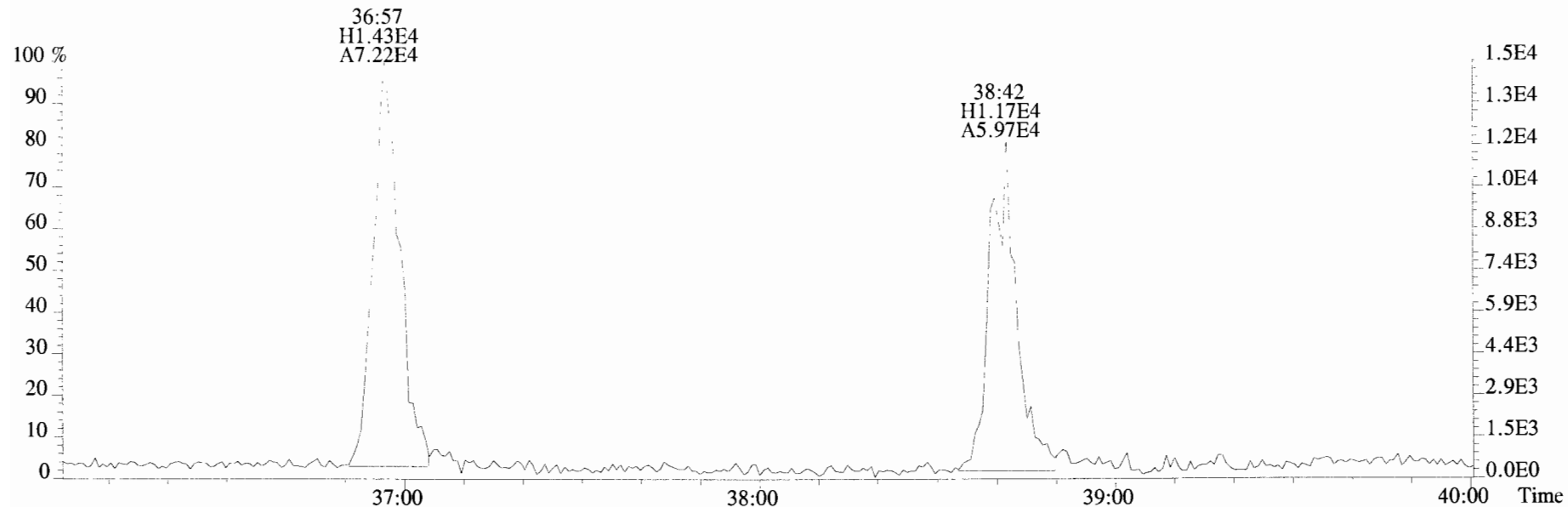
419.8220 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



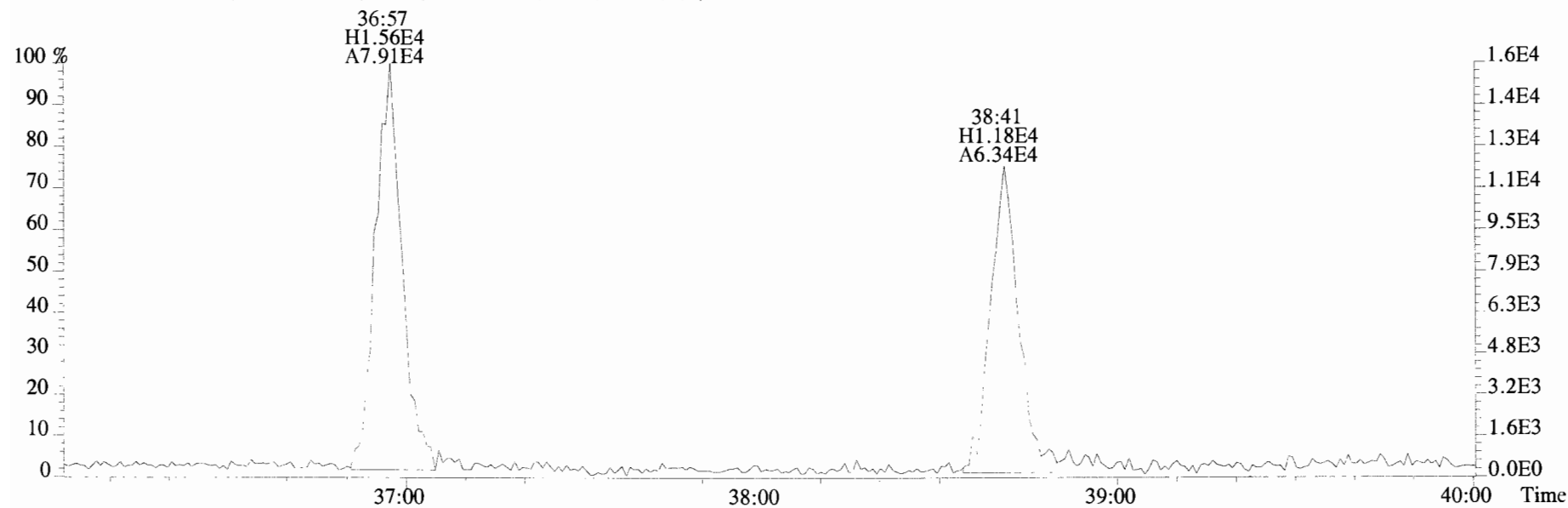
479.7165 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



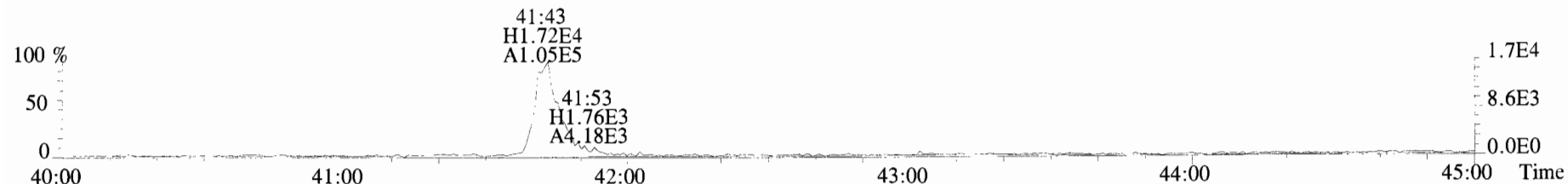
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
407.7818 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



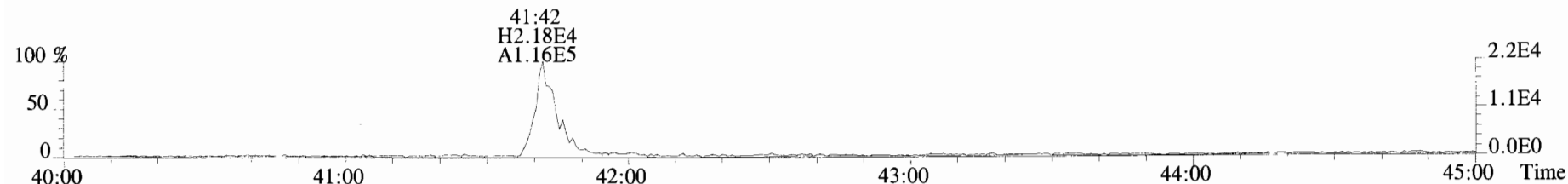
409.7788 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



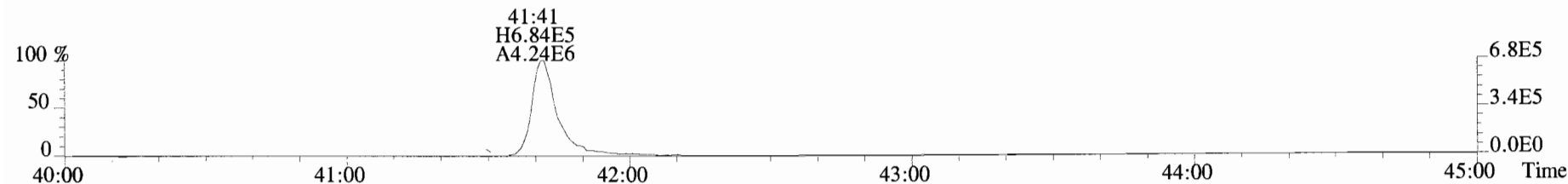
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
 441.7428 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



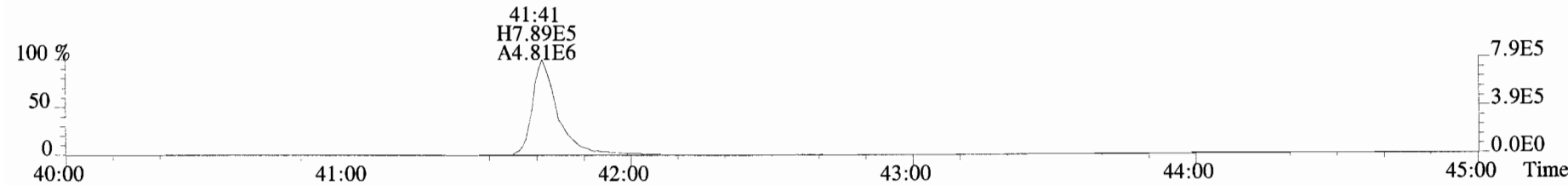
443.7398 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



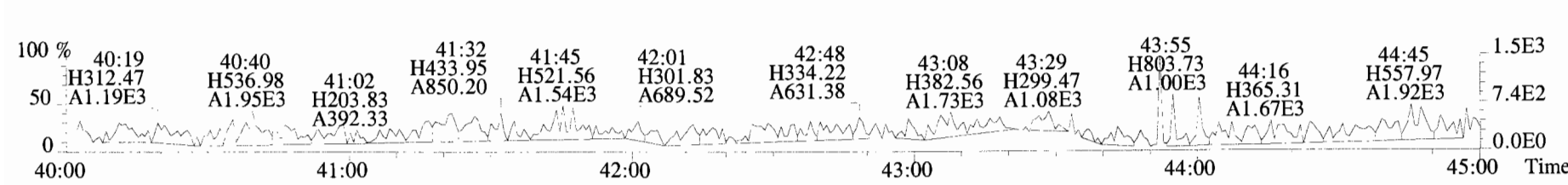
453.7831 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



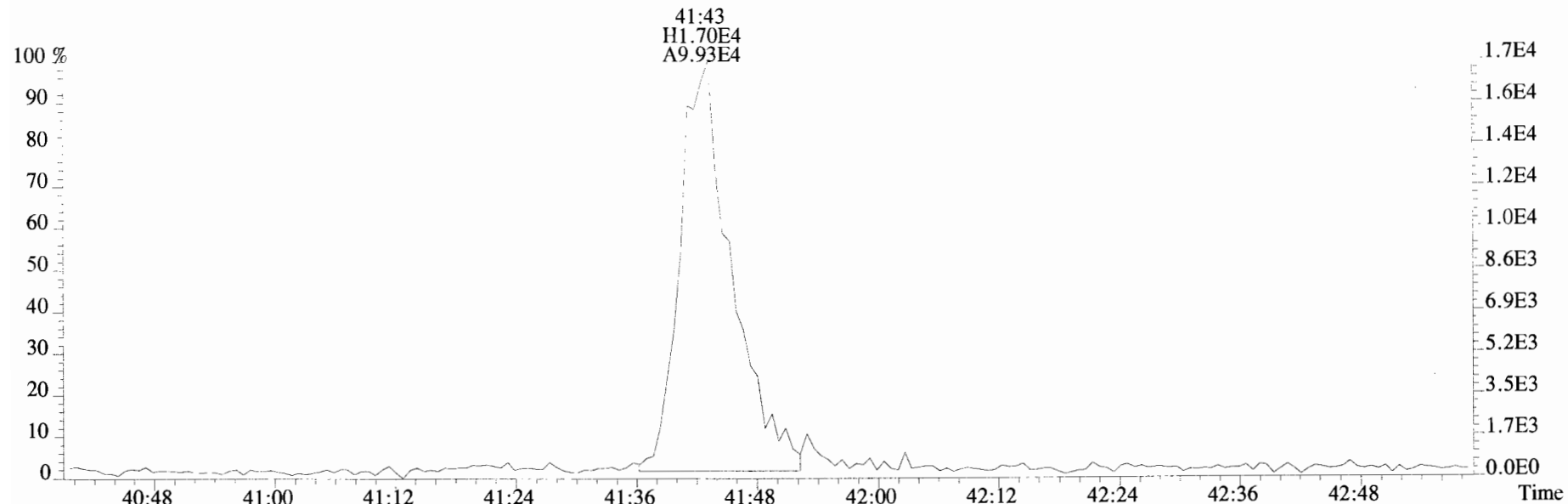
455.7801 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



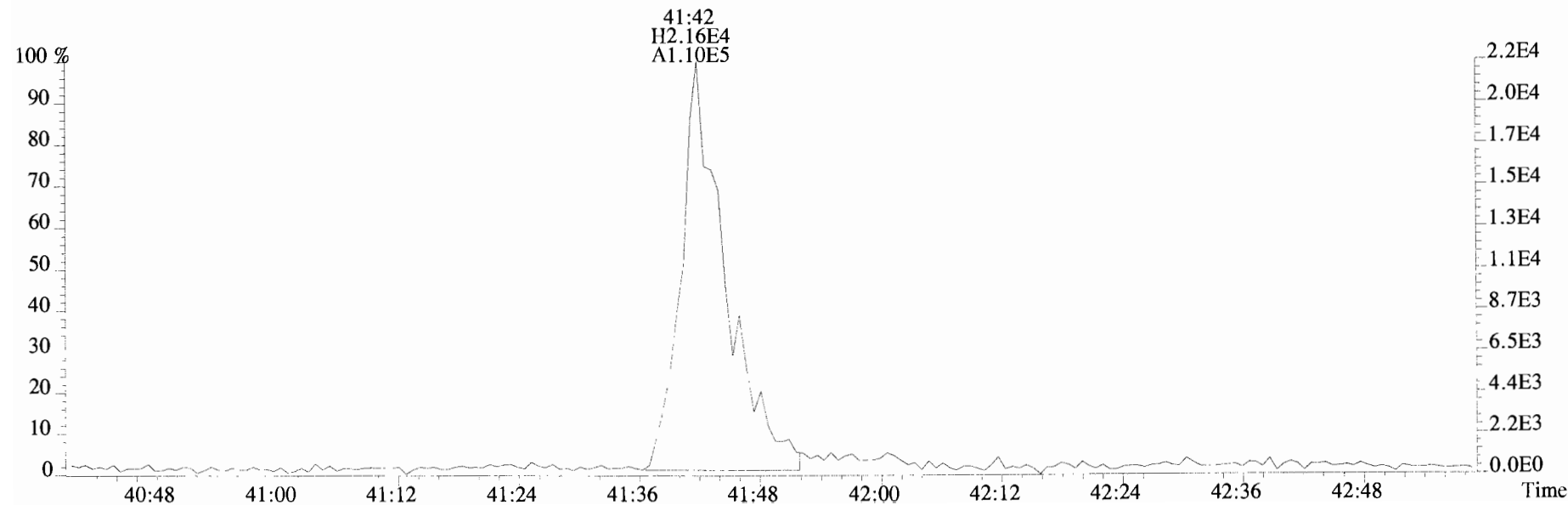
513.6775 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



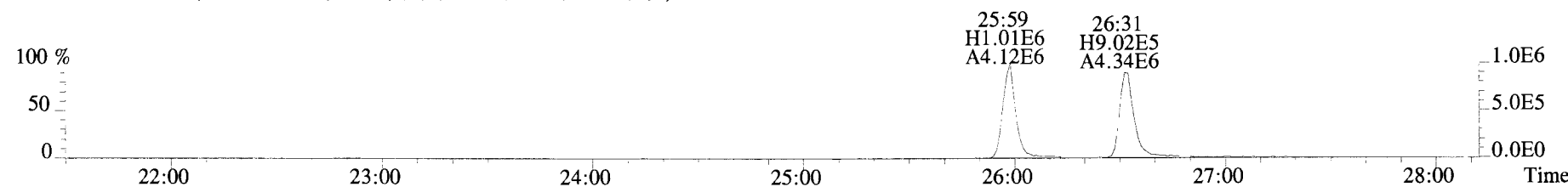
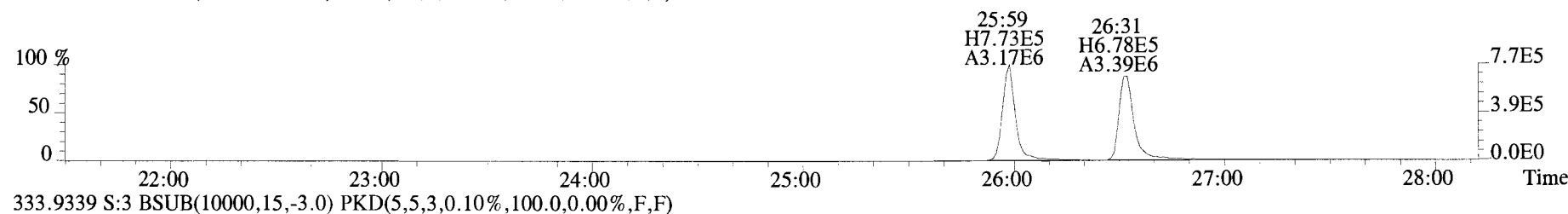
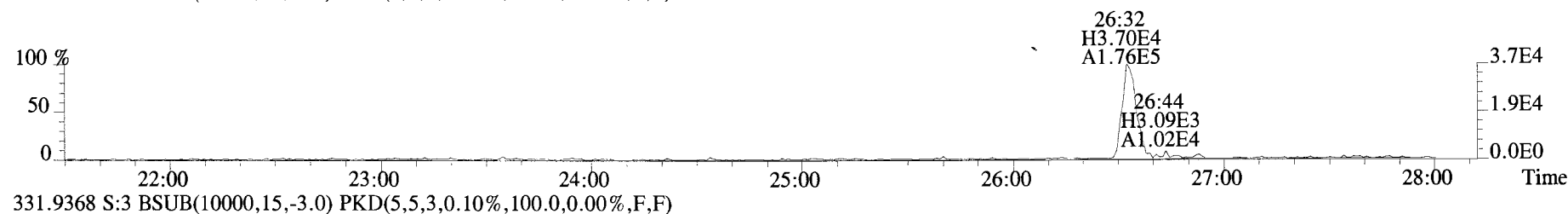
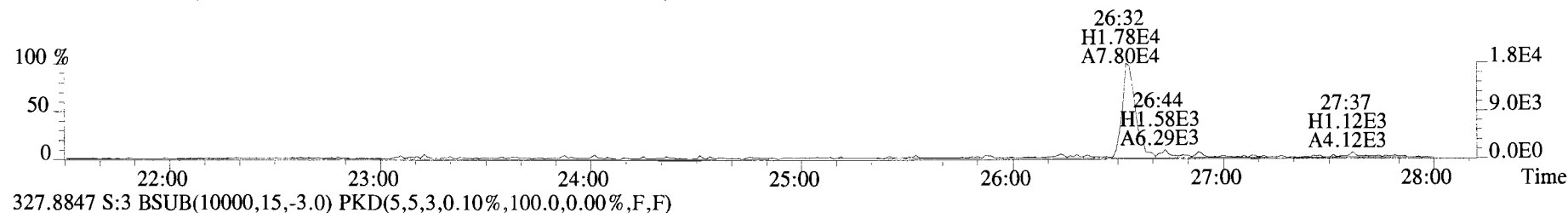
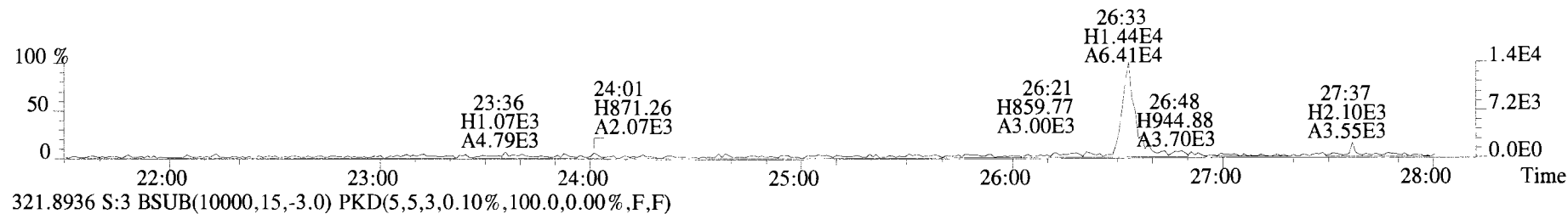
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
441.7428 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



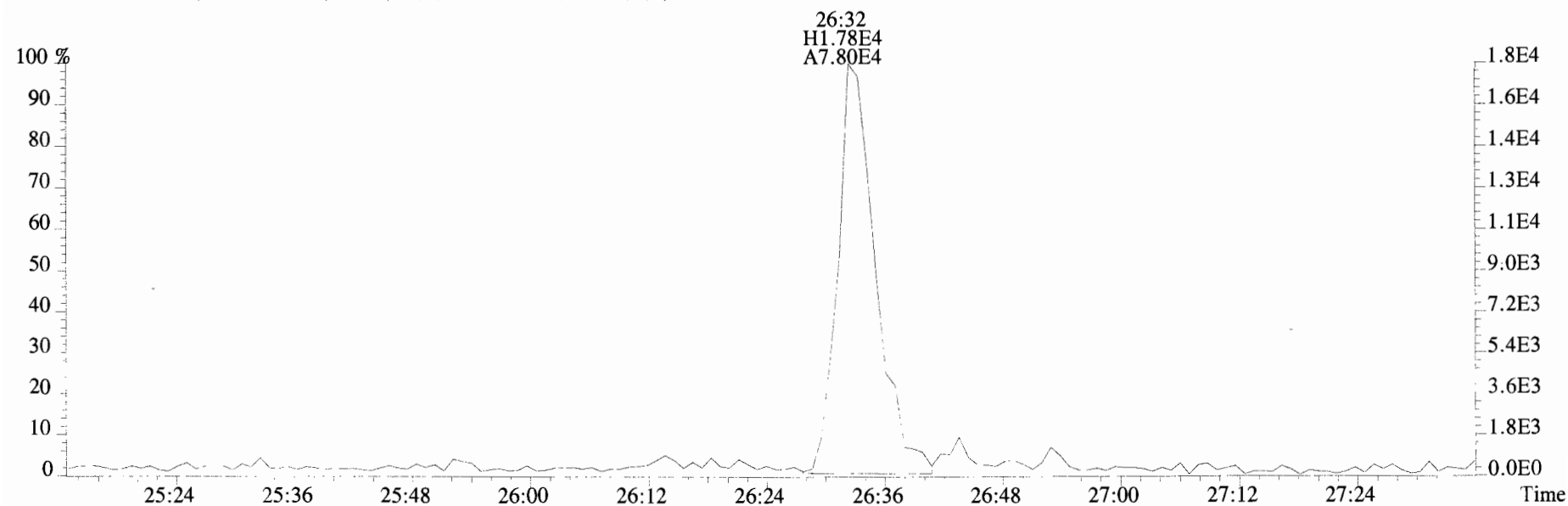
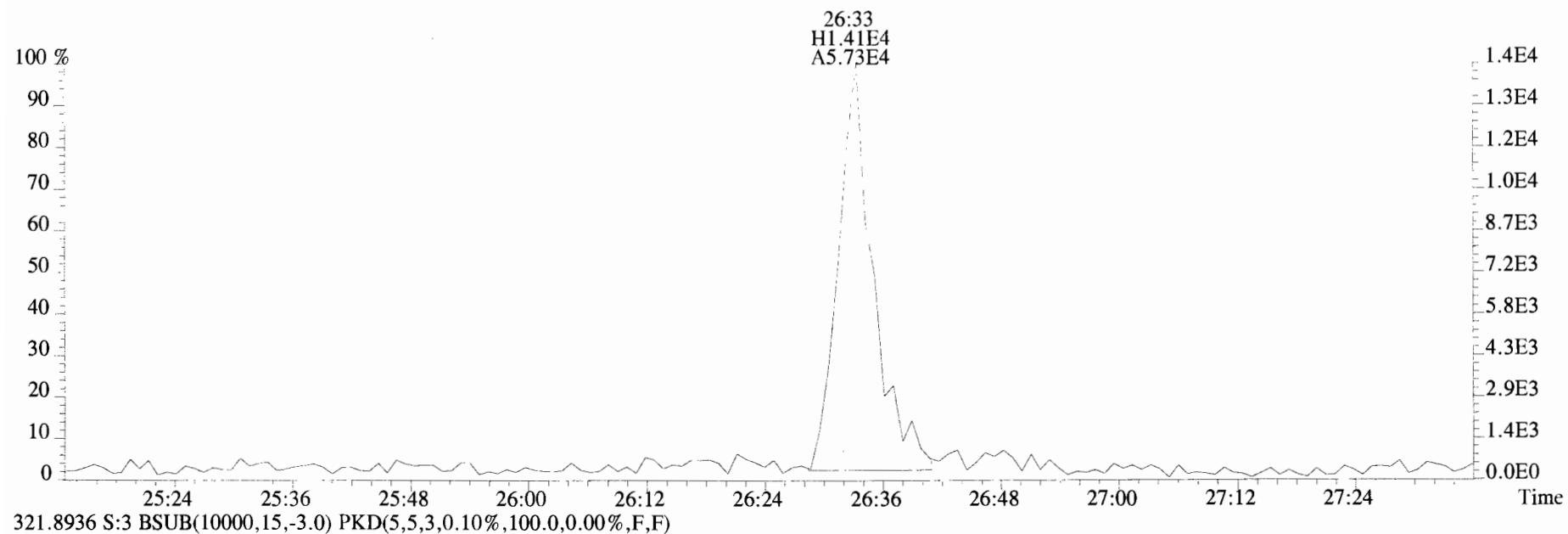
443.7398 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



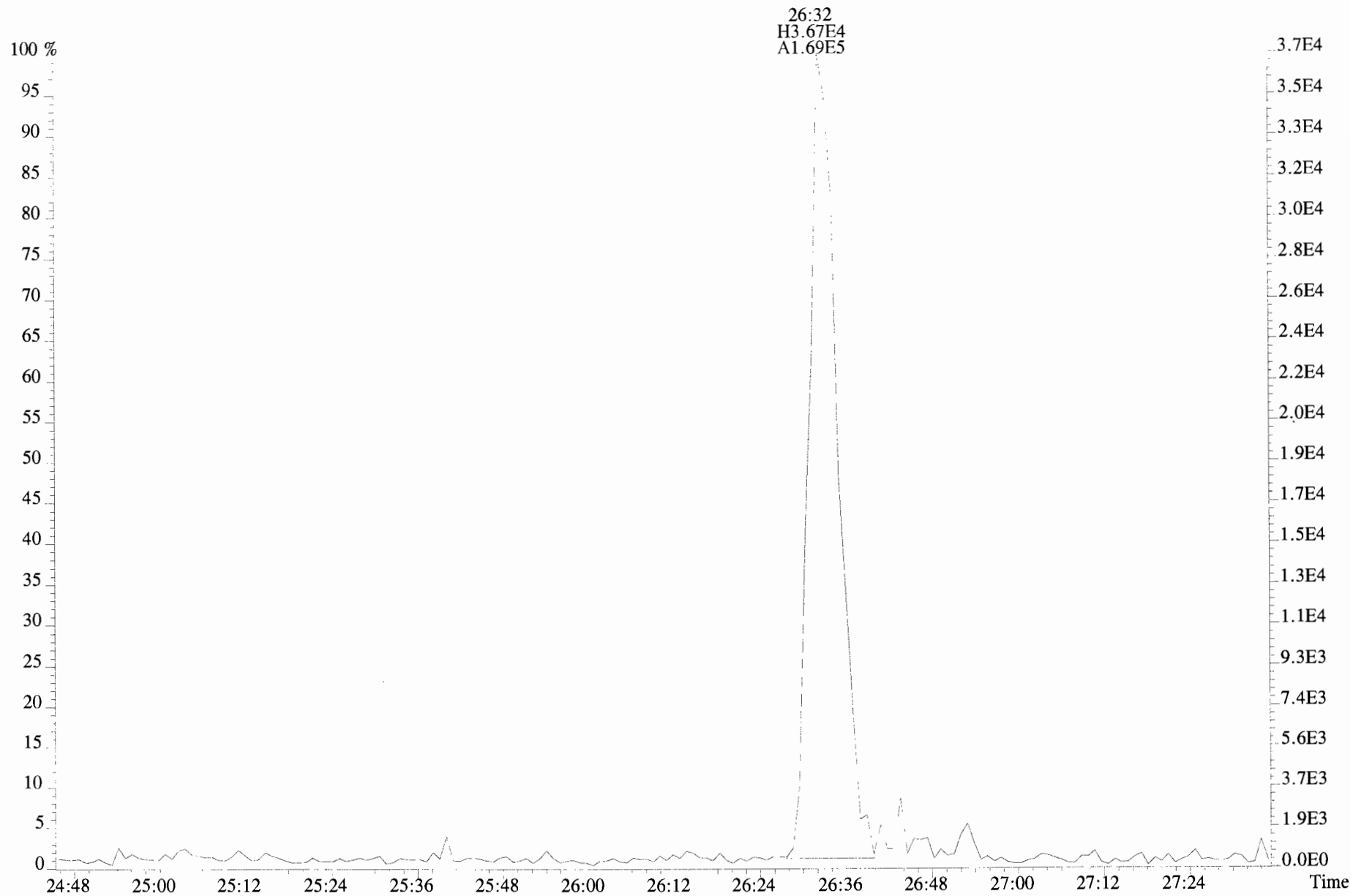
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
319.8965 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



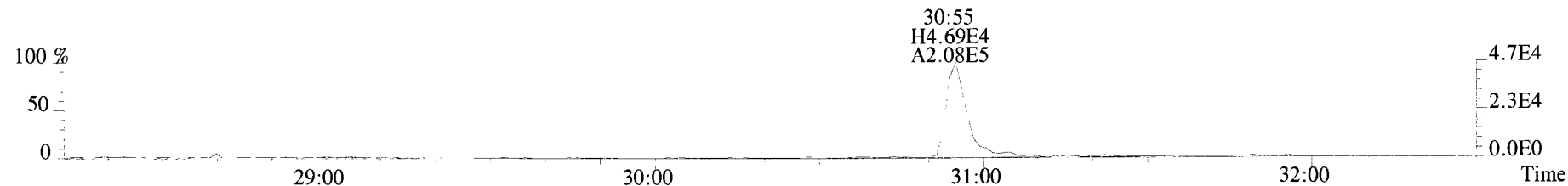
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
319.8965 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



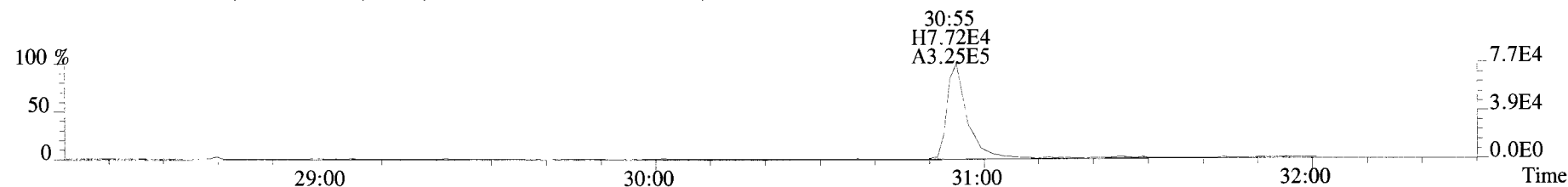
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
327.8847 S:3 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



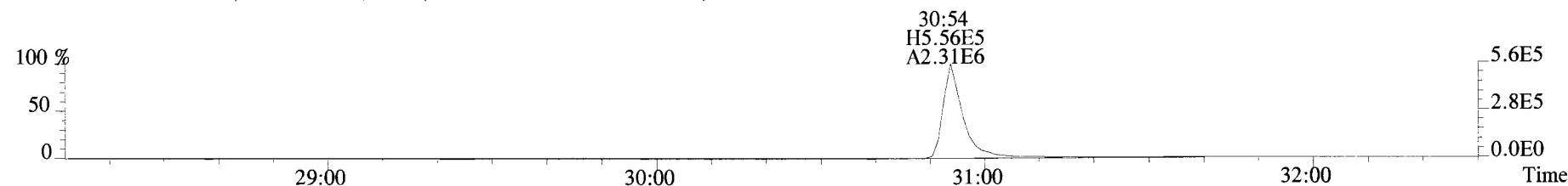
File:191009D1 #1-211 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
353.8576 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



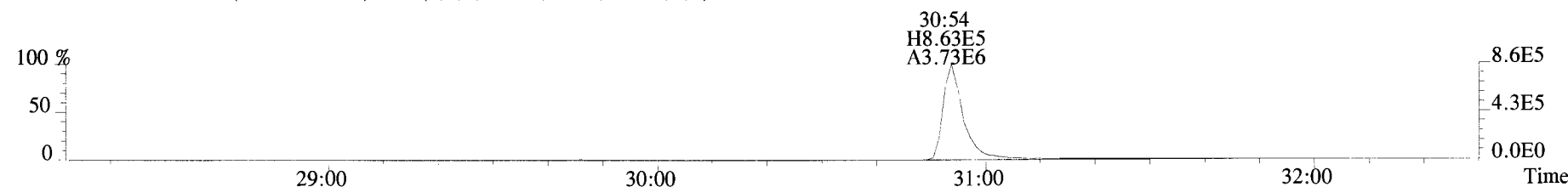
355.8546 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



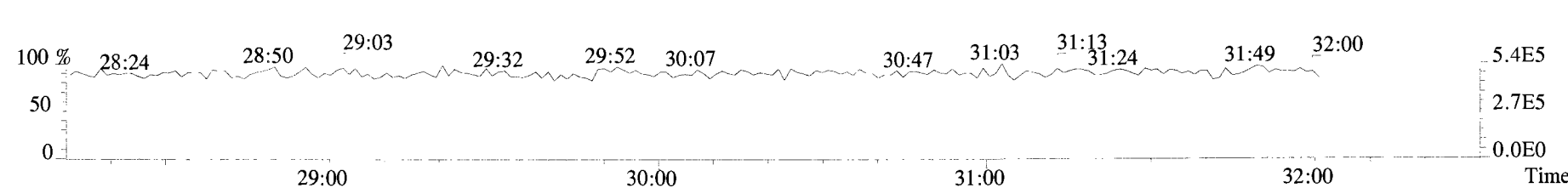
365.8978 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



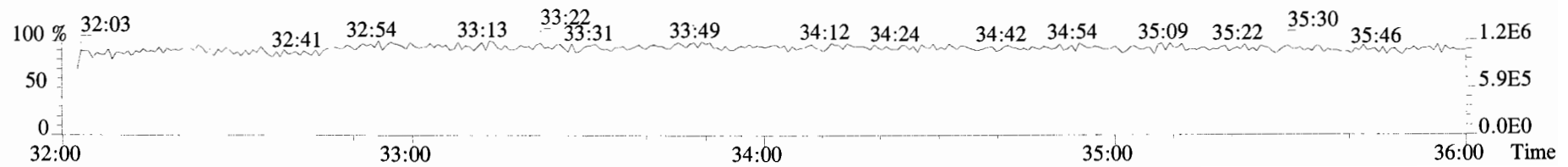
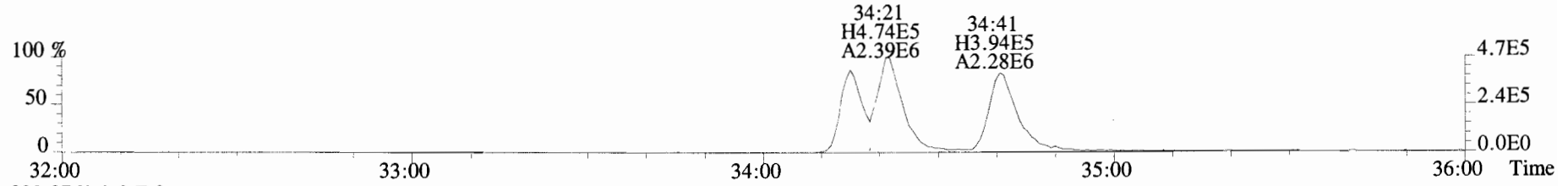
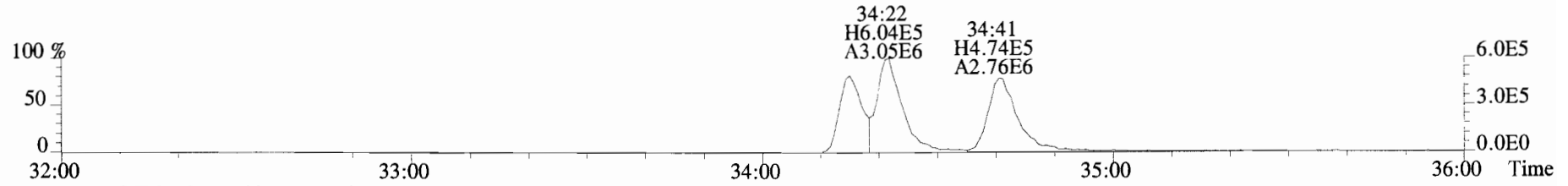
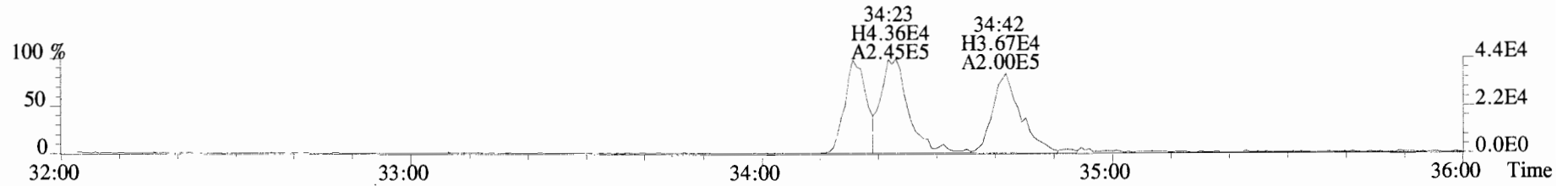
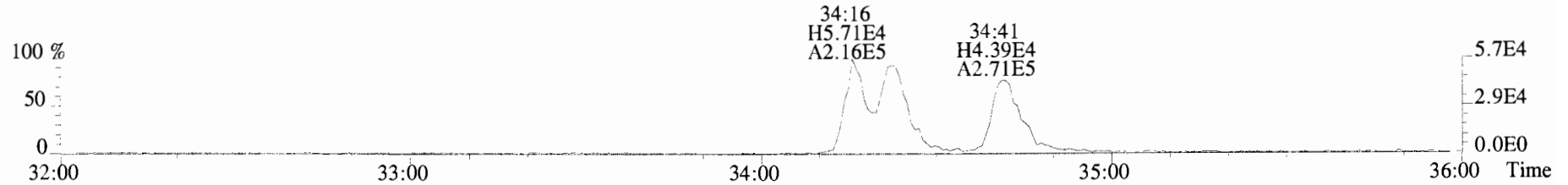
367.8949 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



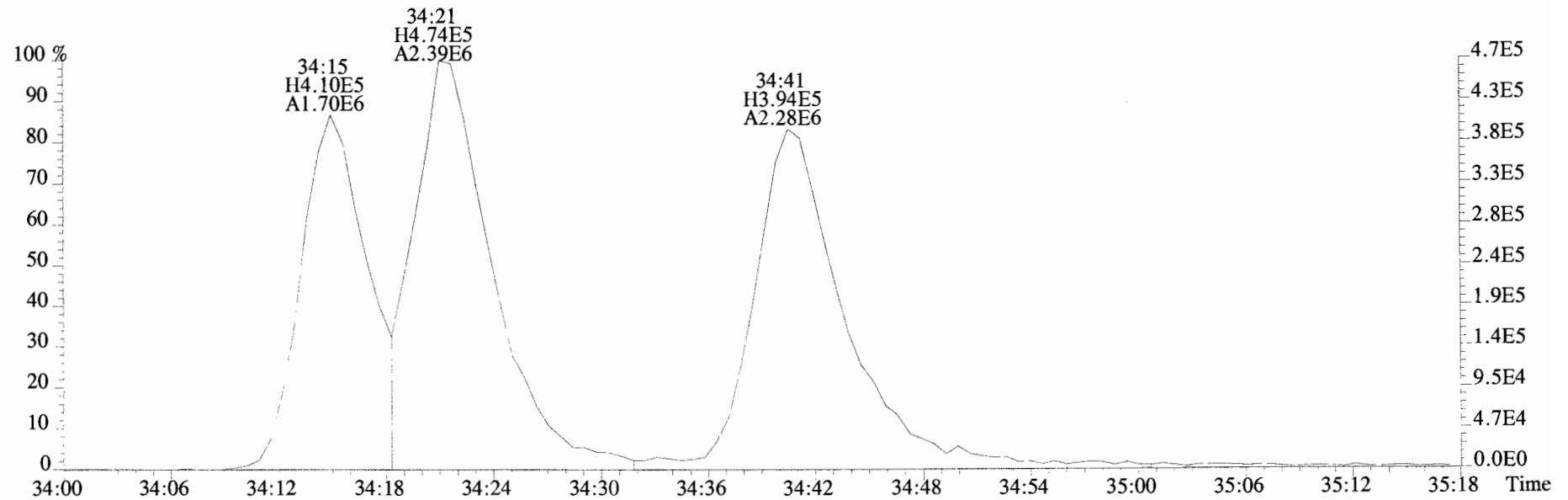
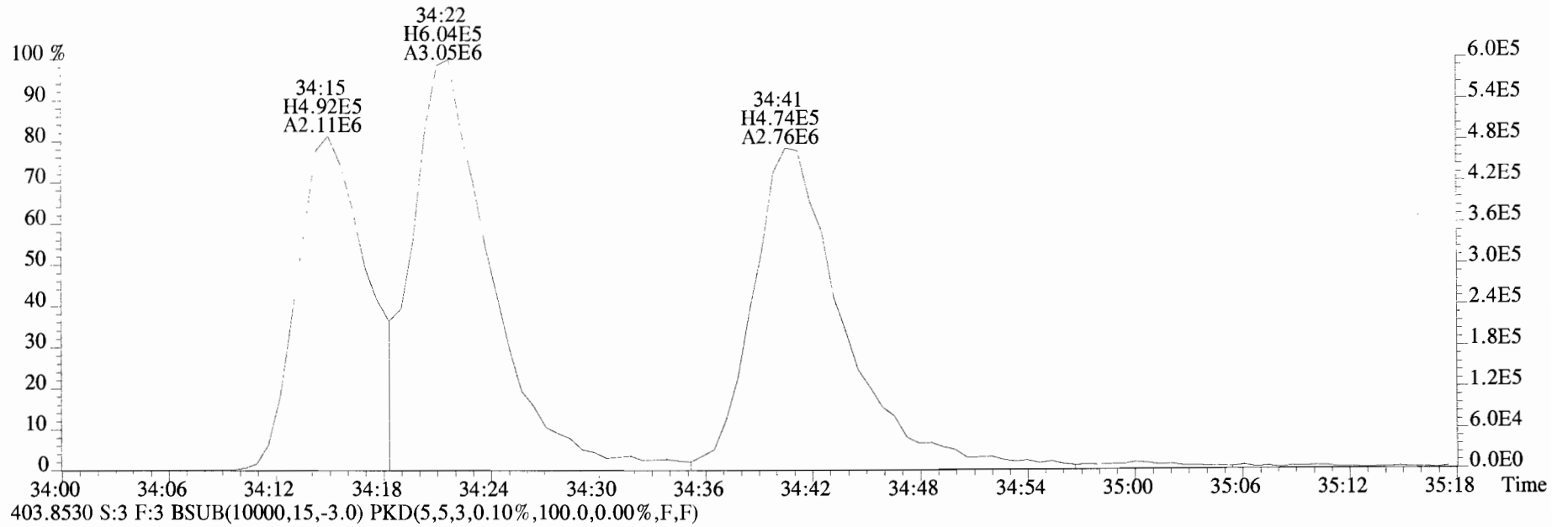
366.9792 S:3 F:2



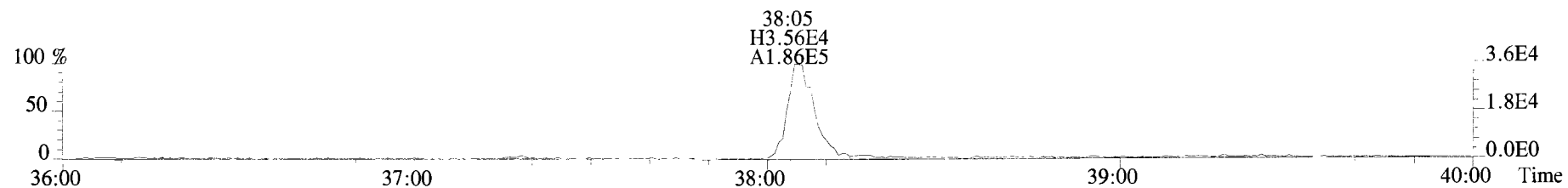
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
389.8156 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



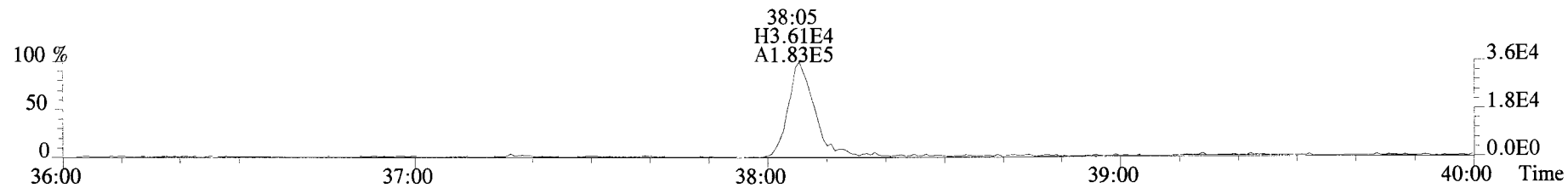
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text: Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
401.8559 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



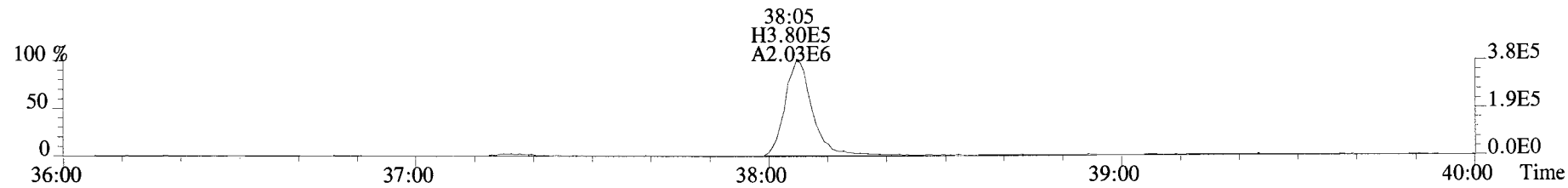
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
423.7767 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



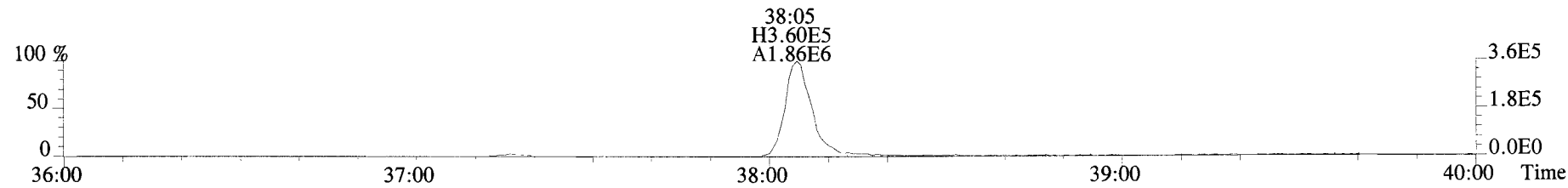
425.7737 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



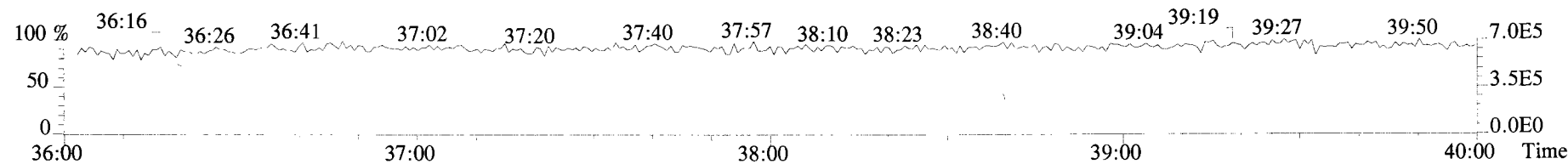
435.8169 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



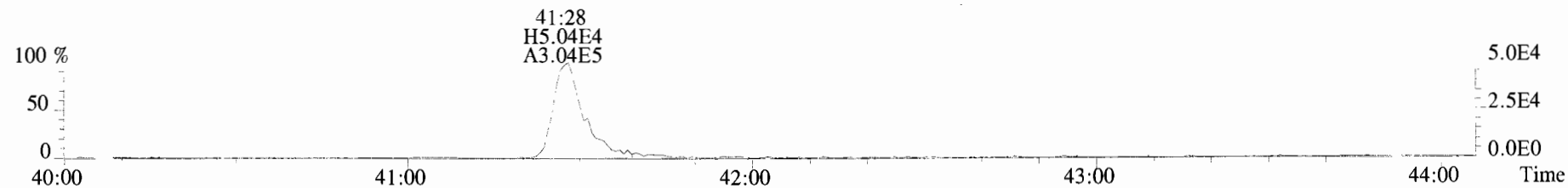
437.8140 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



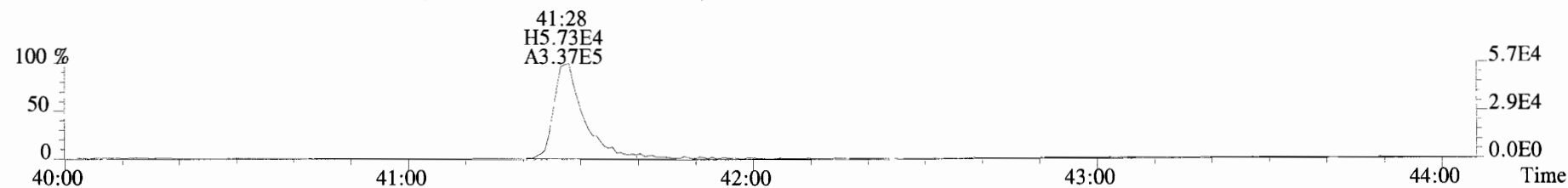
454.9728 S:3 F:4



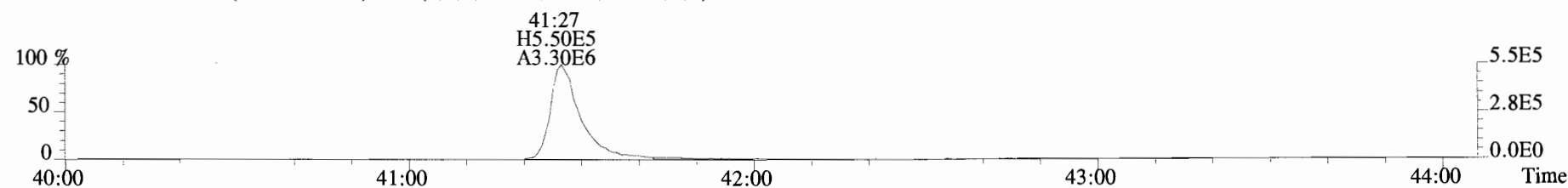
File:191009D1 #1-432 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
457.7377 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



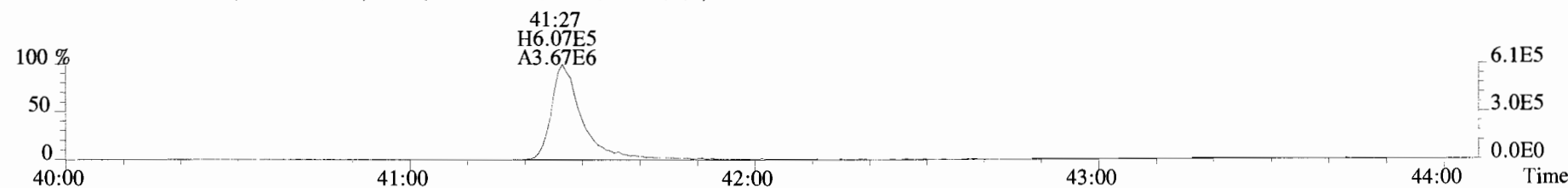
459.7348 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



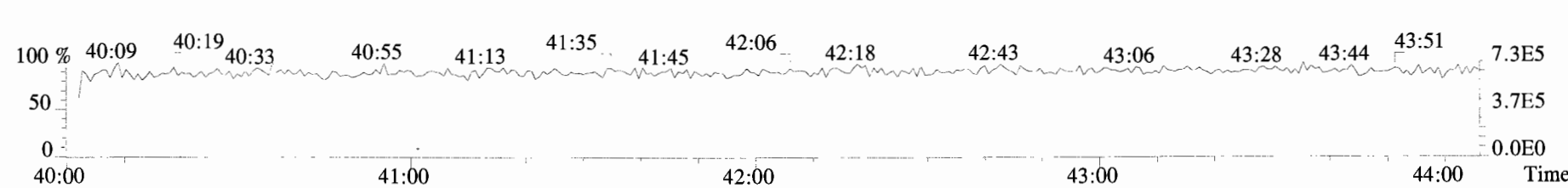
469.7780 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



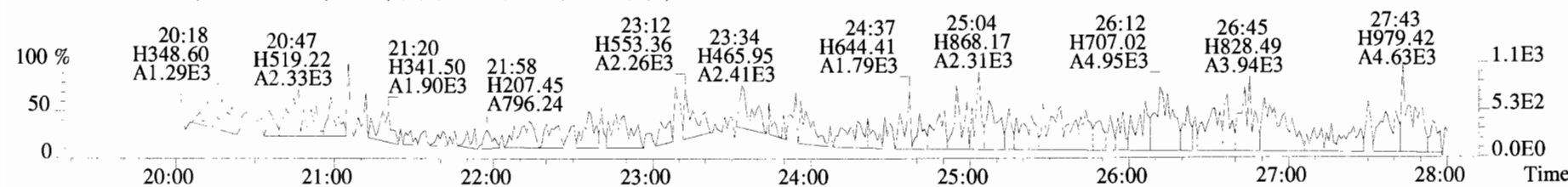
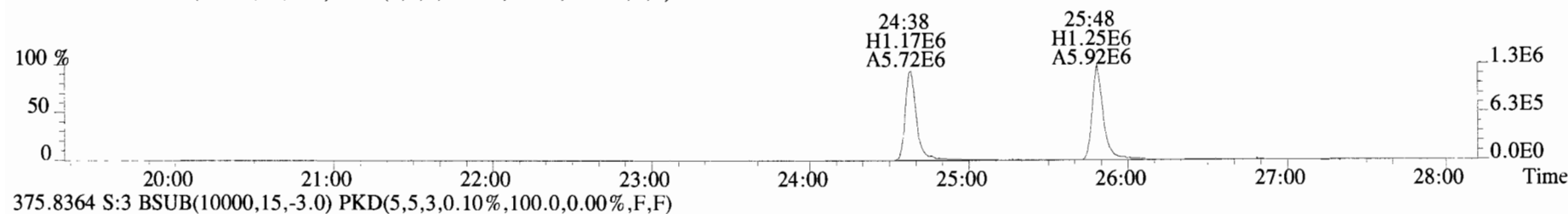
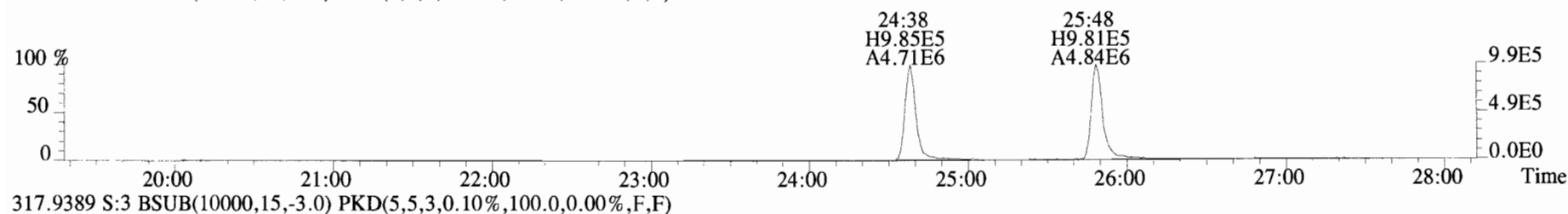
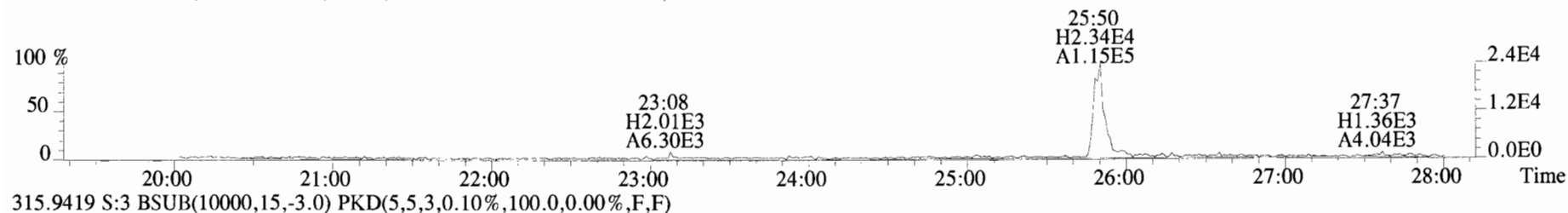
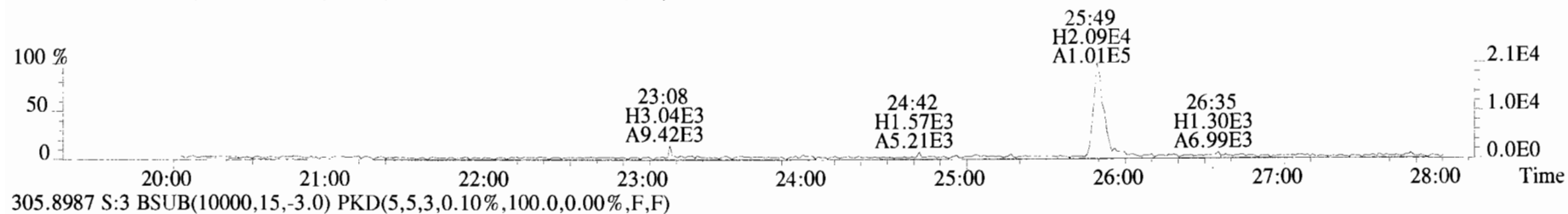
471.7750 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



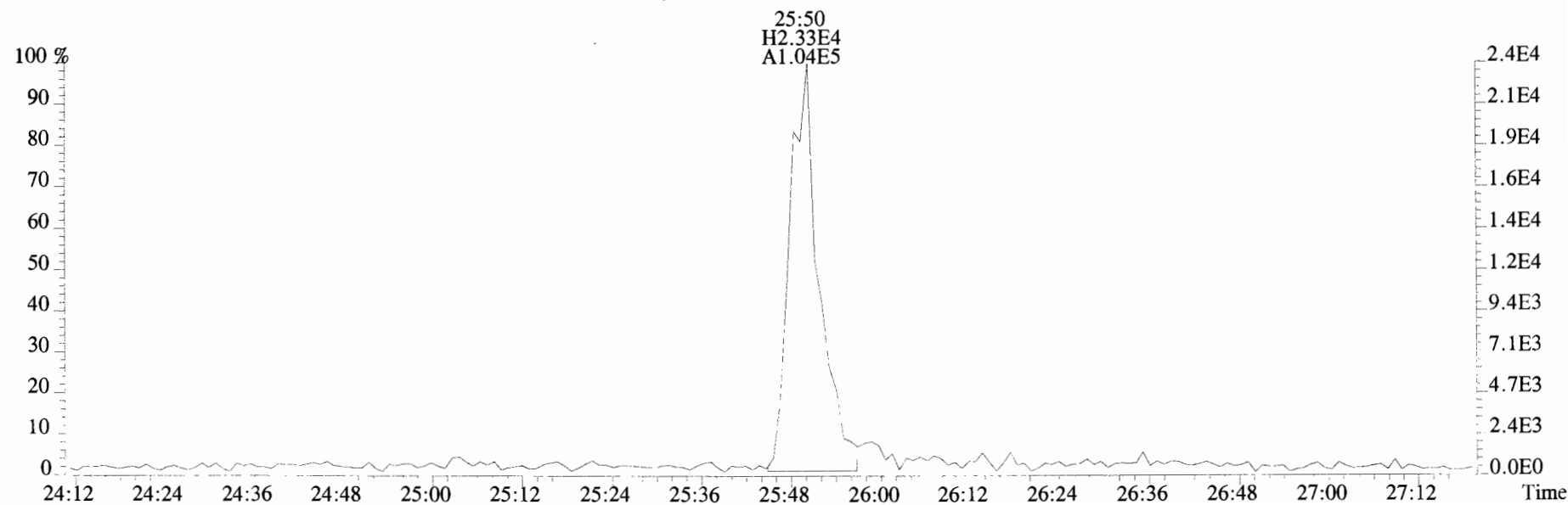
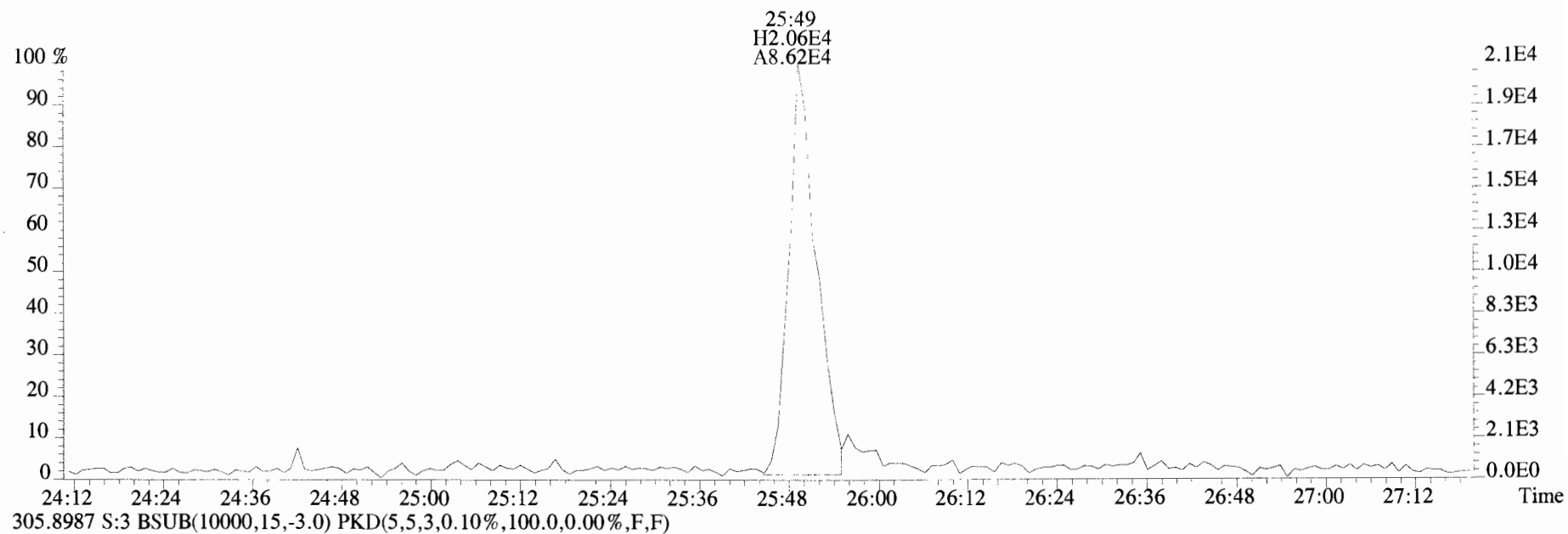
454.9728 S:3 F:5



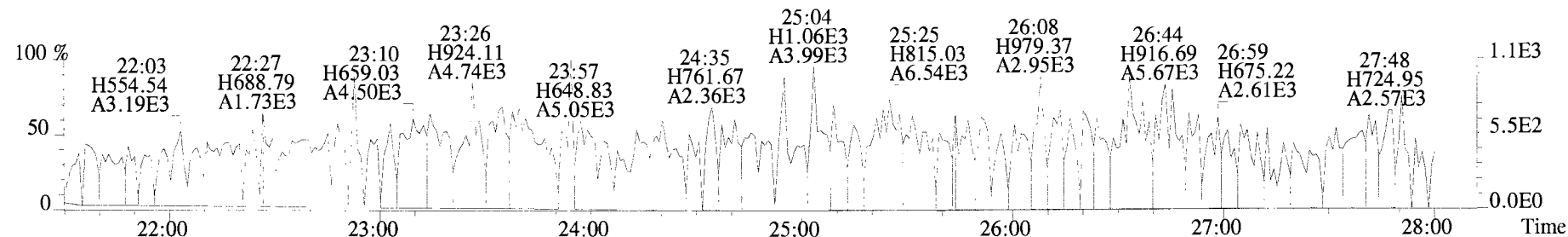
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



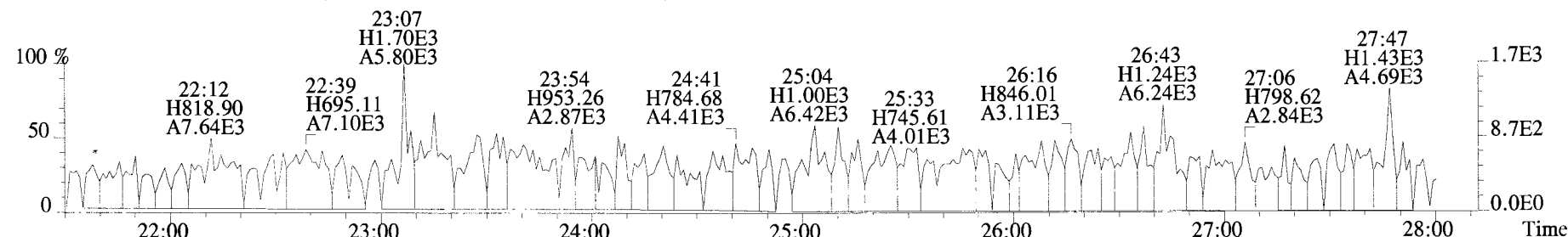
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



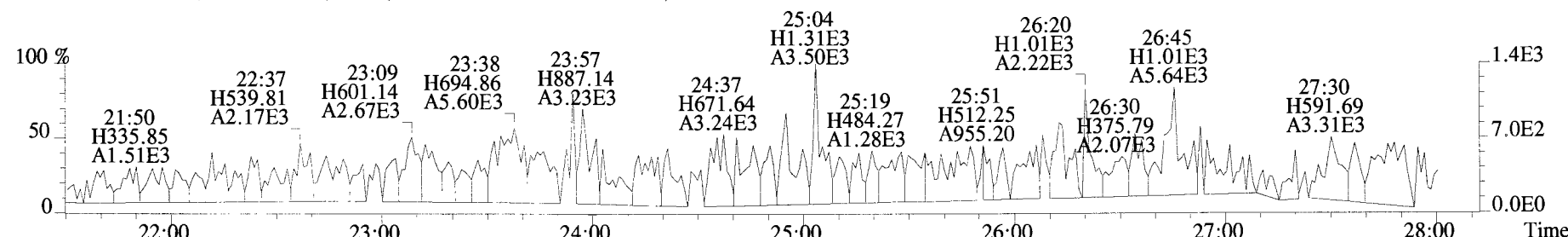
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
339.8597 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



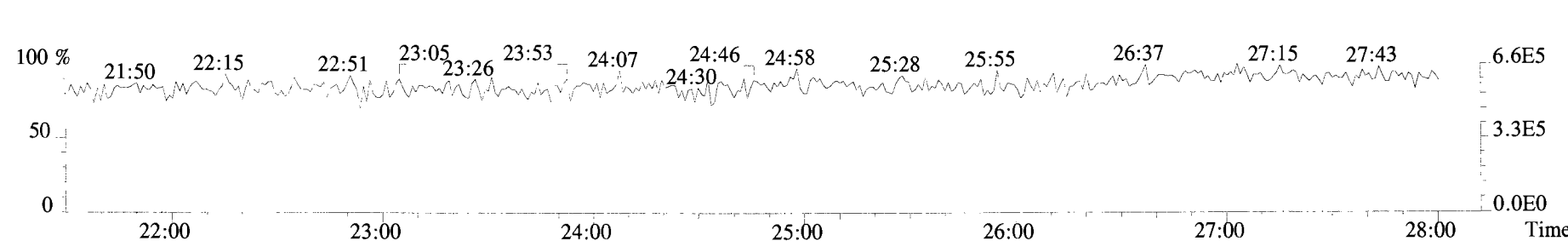
341.8568 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



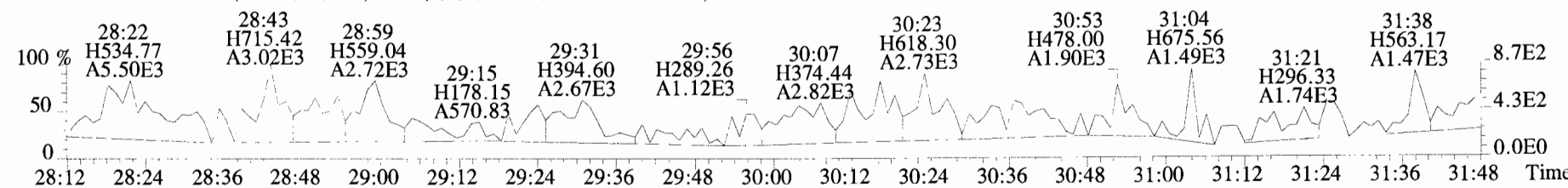
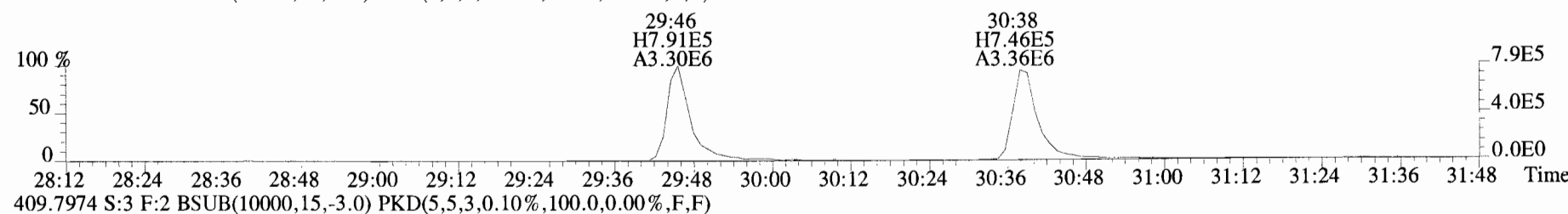
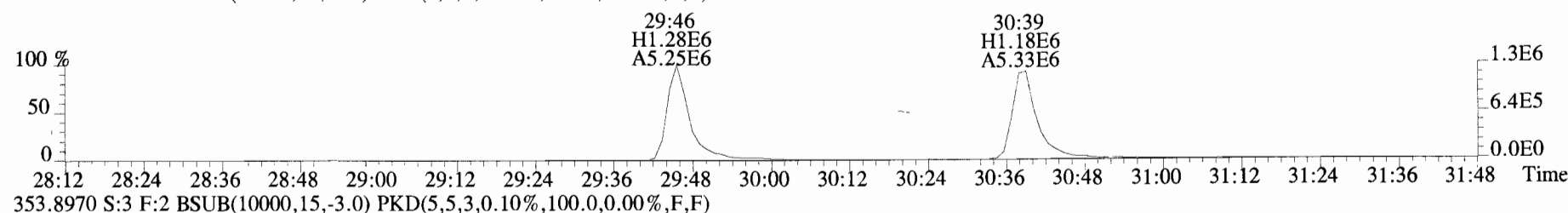
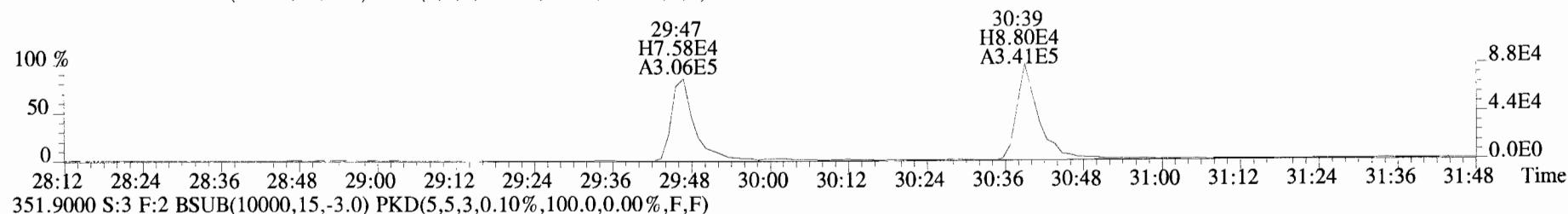
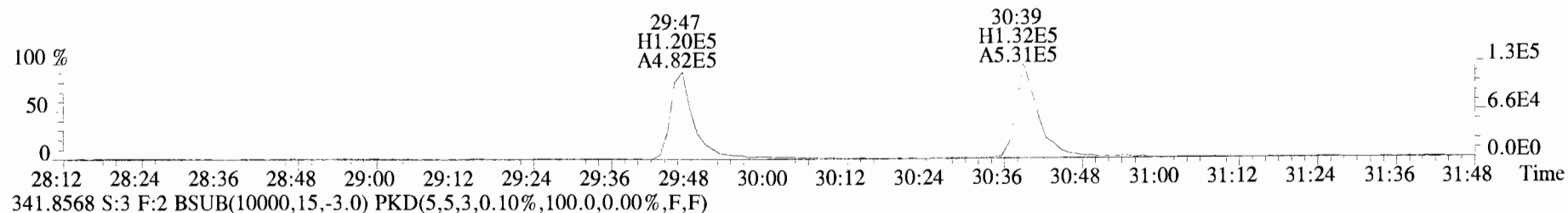
409.7974 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



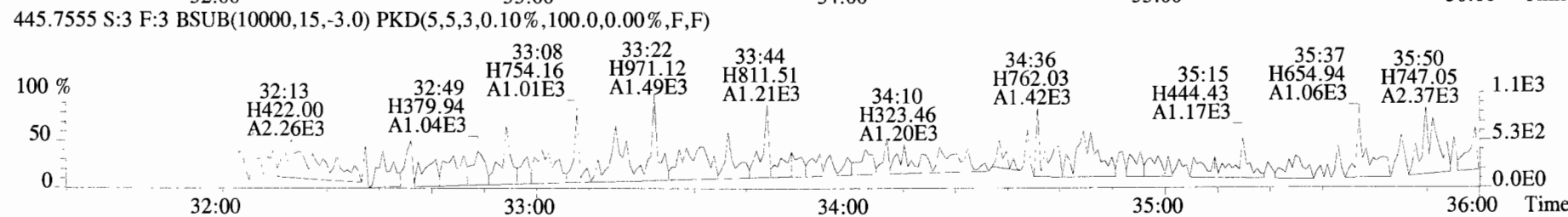
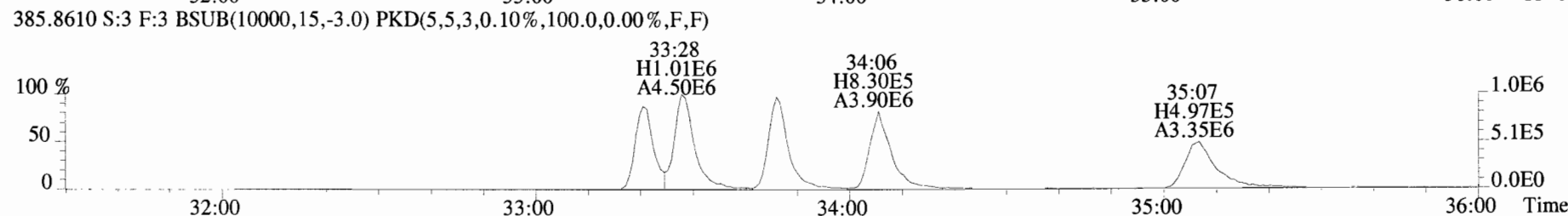
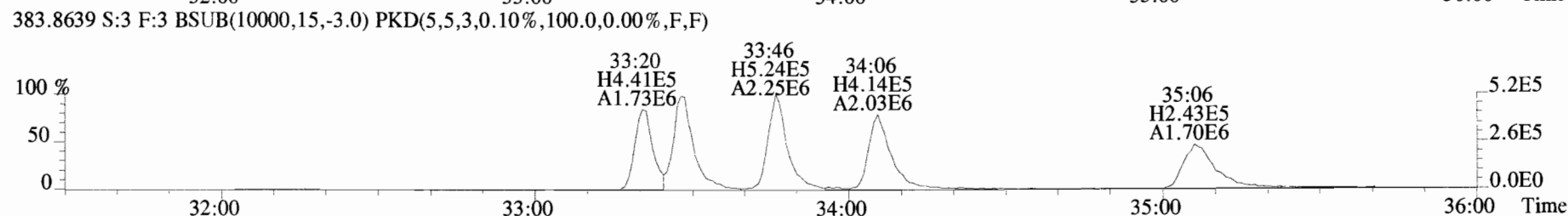
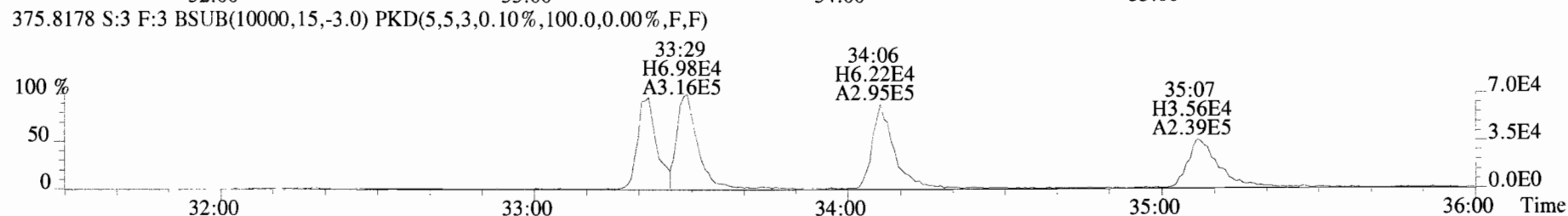
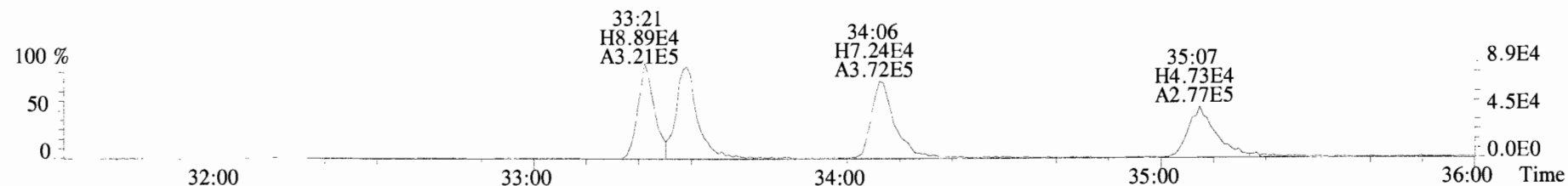
316.9824 S:3



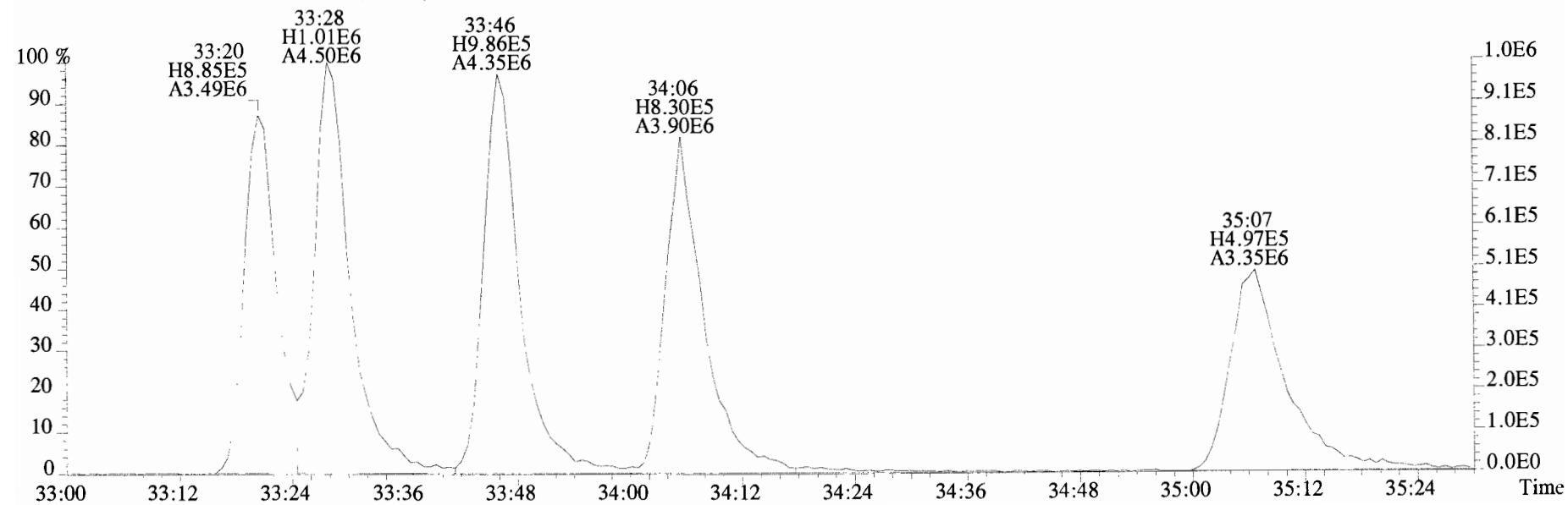
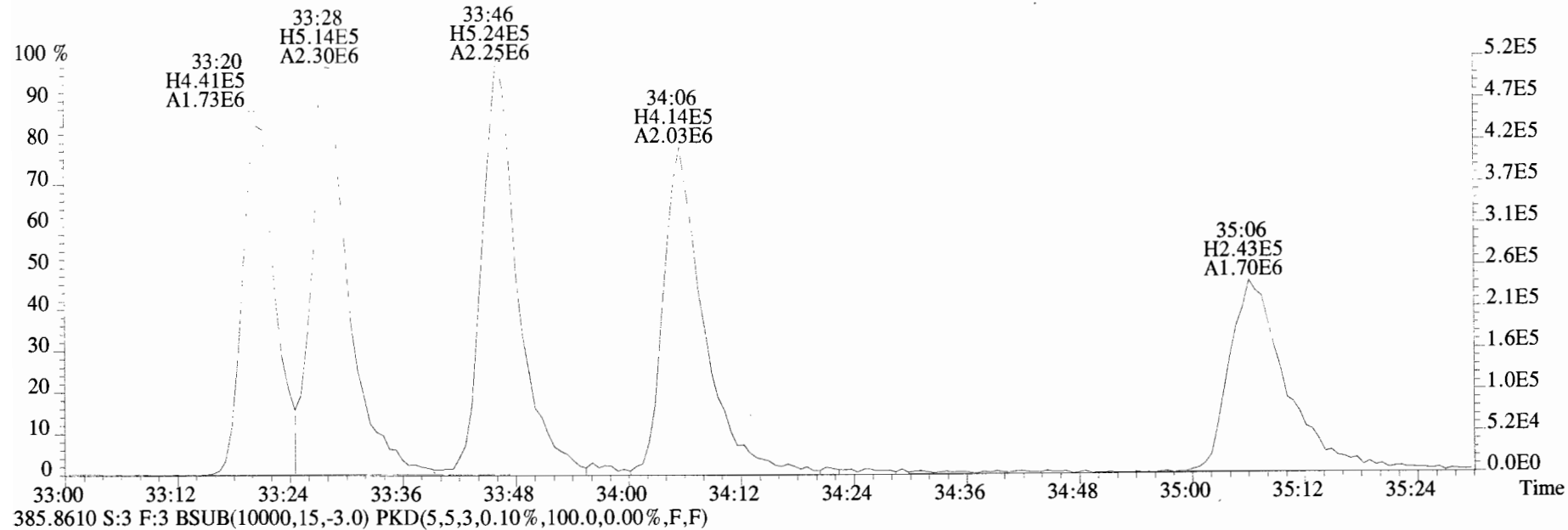
File:191009D1 #1-211 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
339.8597 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



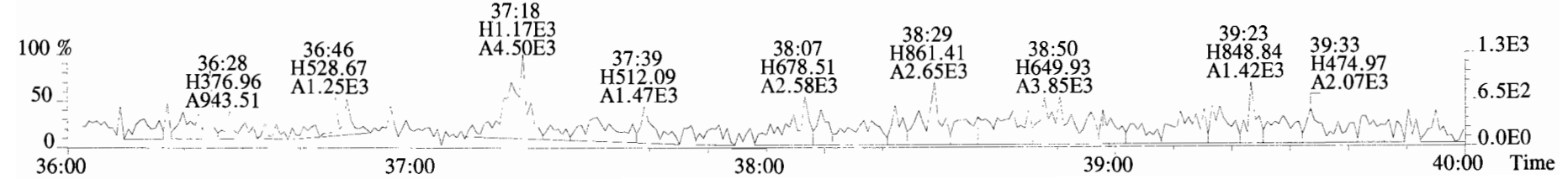
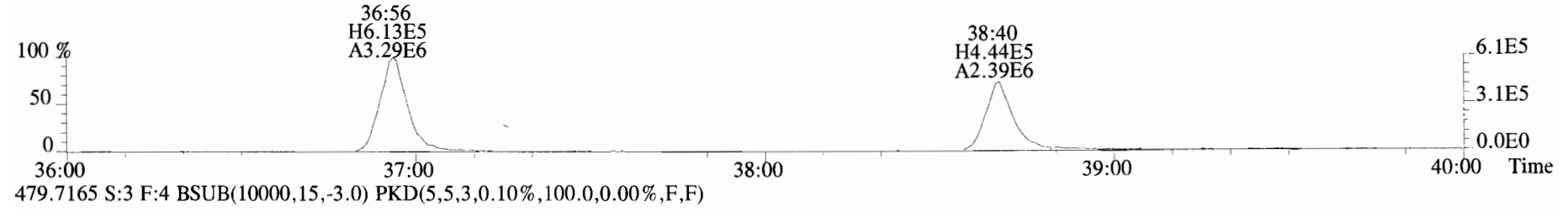
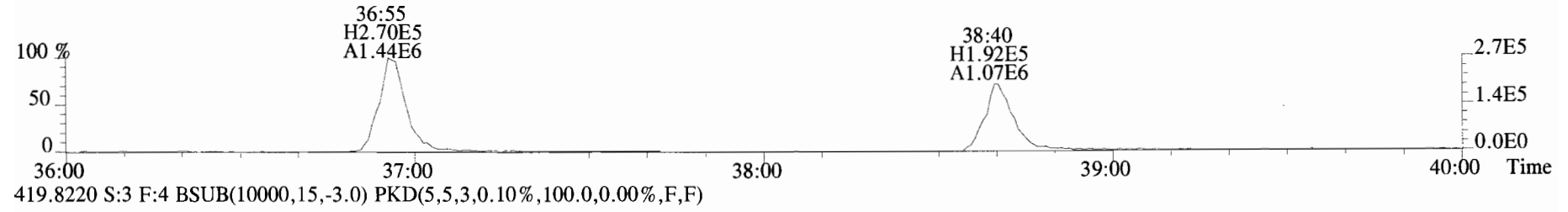
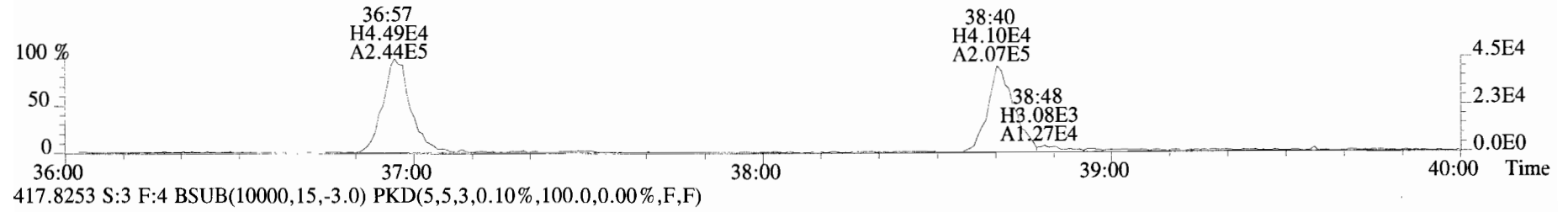
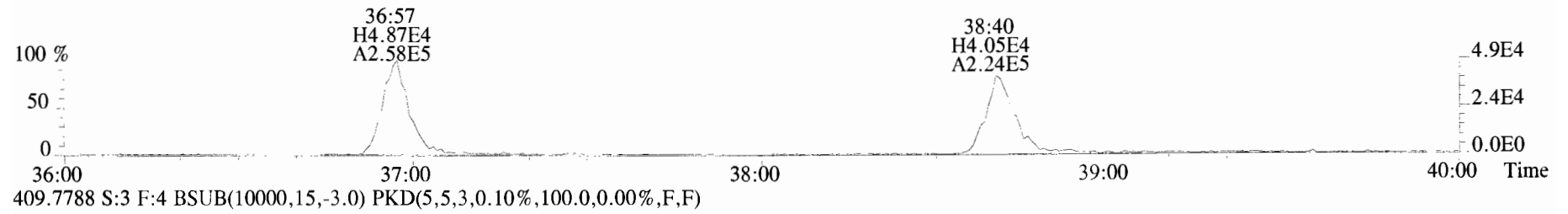
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
 373.8207 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



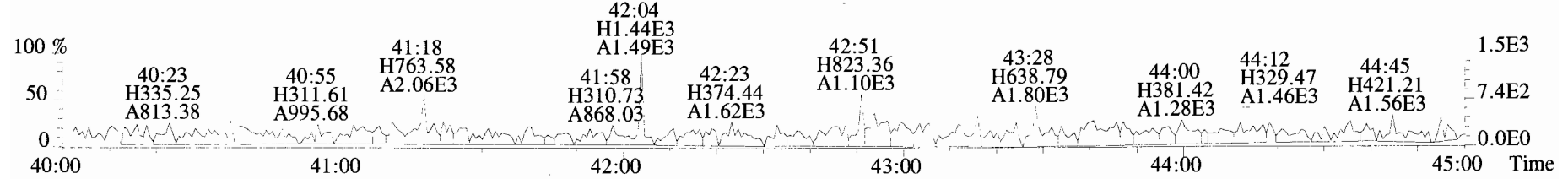
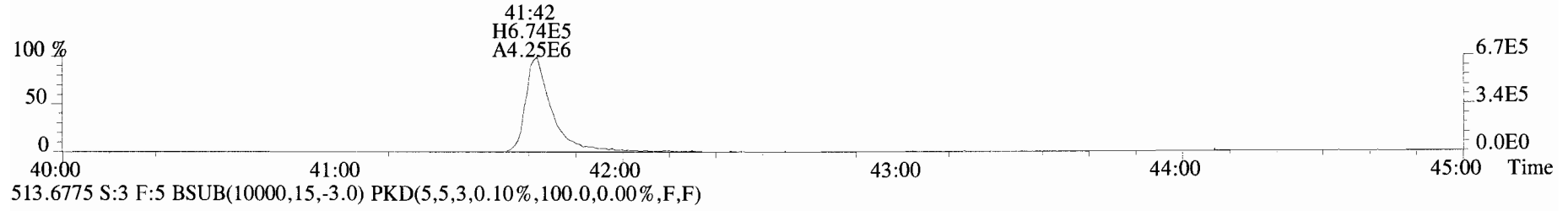
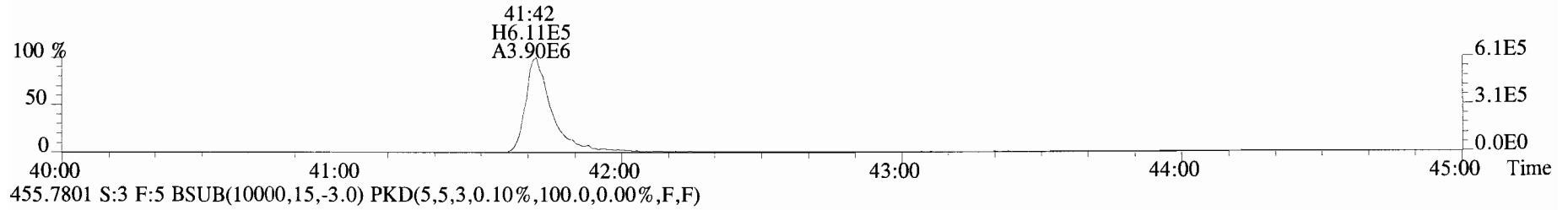
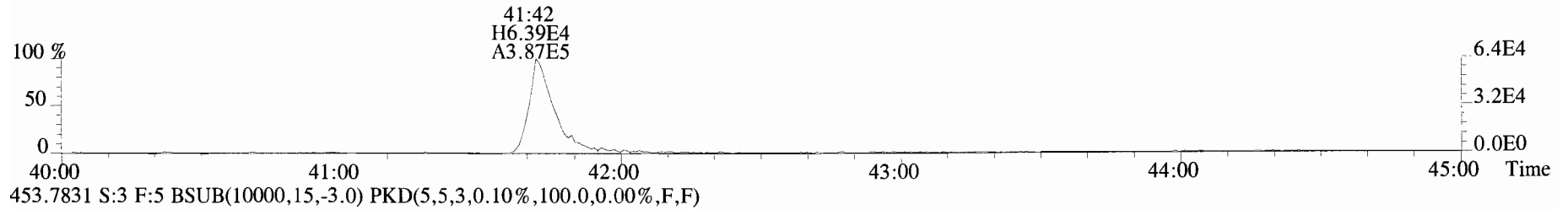
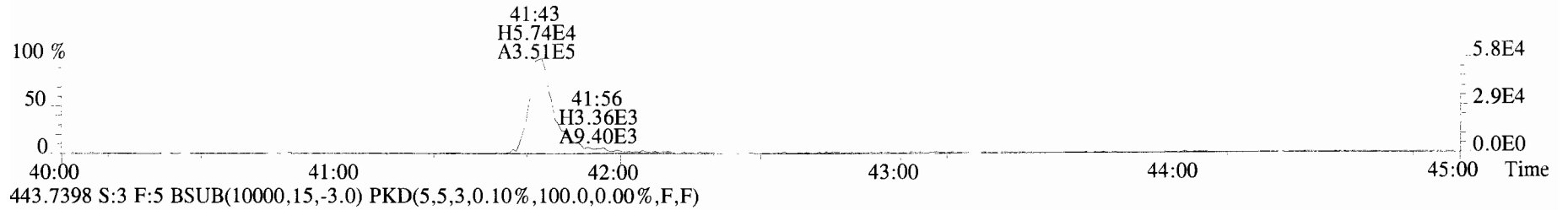
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
383.8639 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



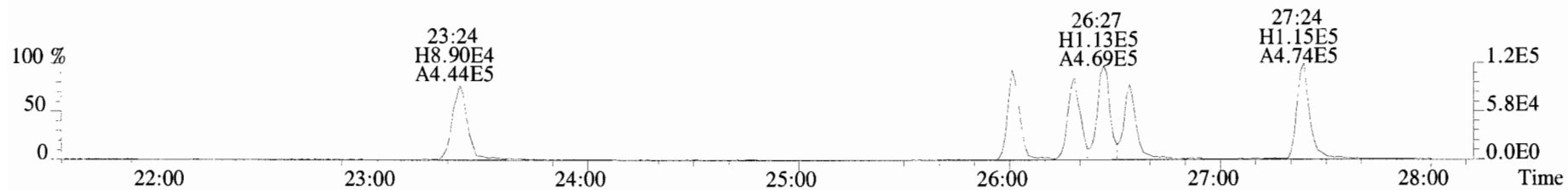
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
407.7818 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



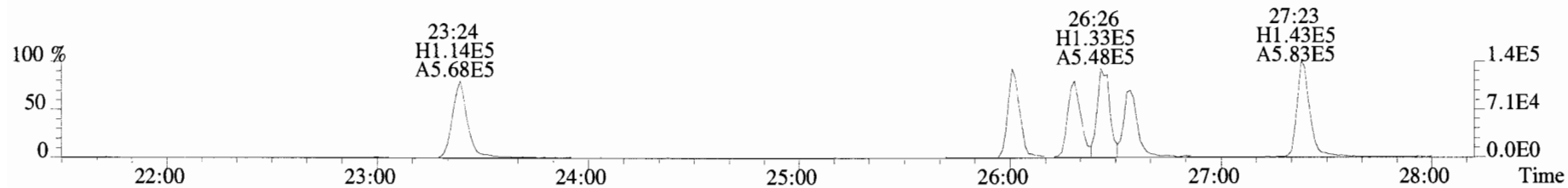
File:191009D1 #1-432 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
441.7428 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



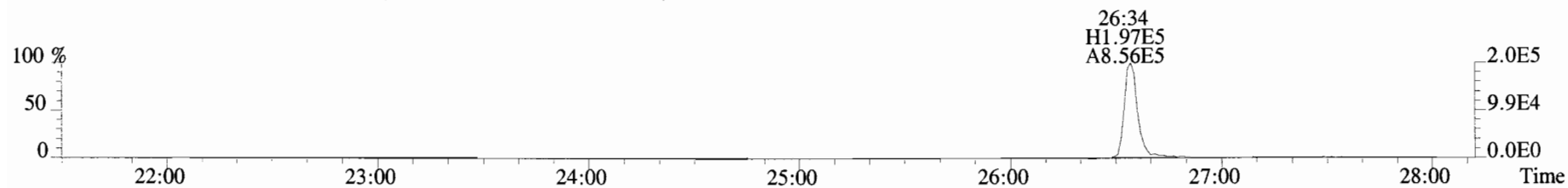
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



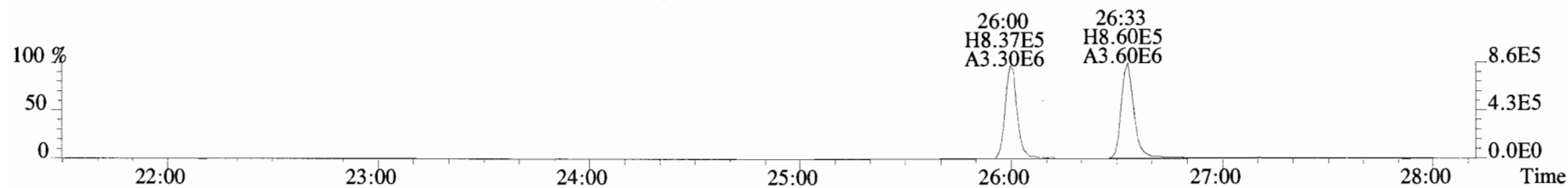
321.8936 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



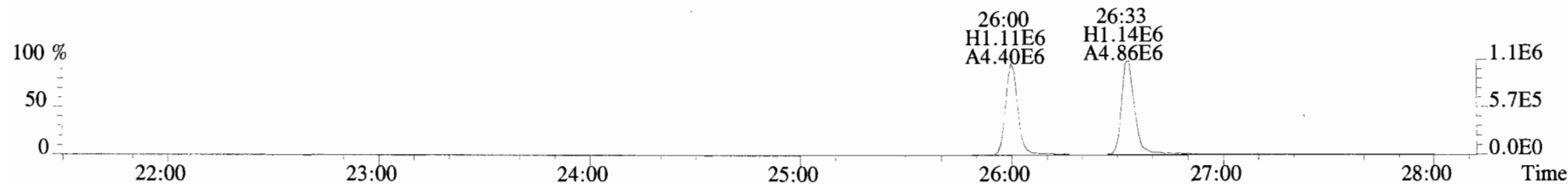
327.8847 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



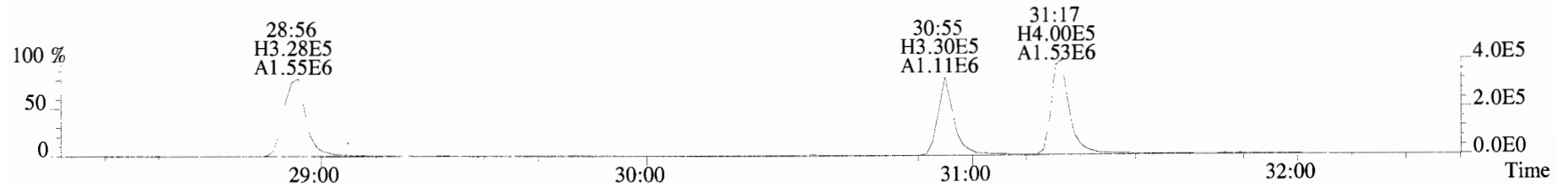
331.9368 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



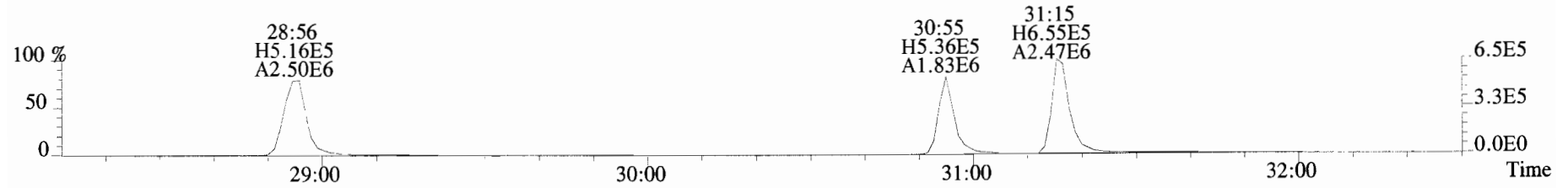
333.9339 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



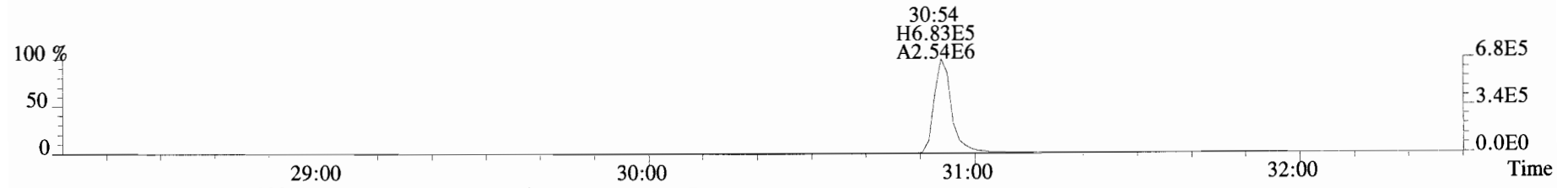
File:191009D1 #1-211 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



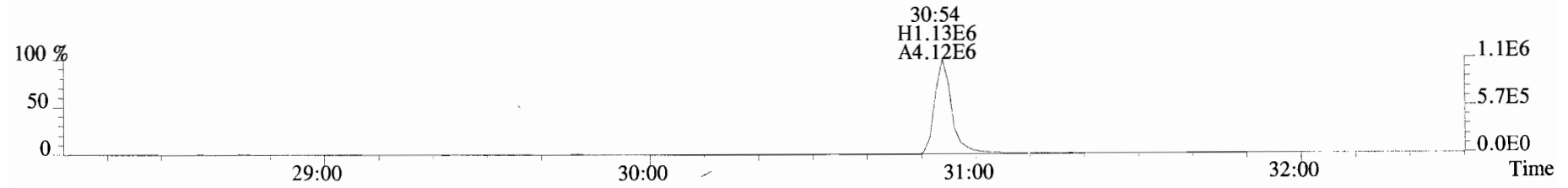
355.8546 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



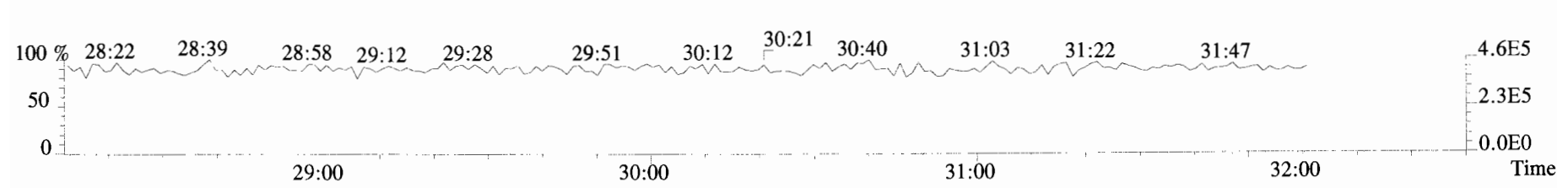
365.8978 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



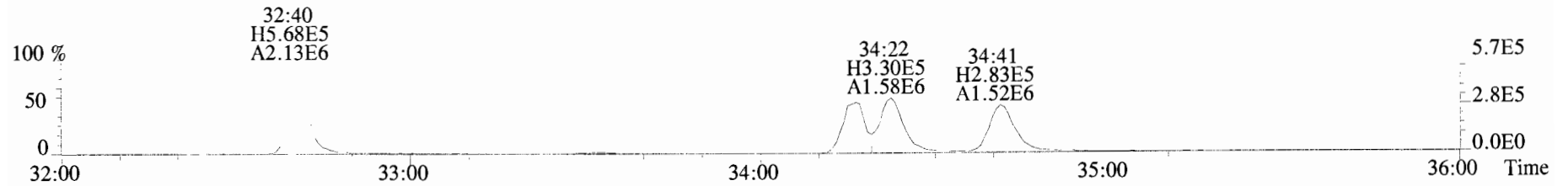
367.8949 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



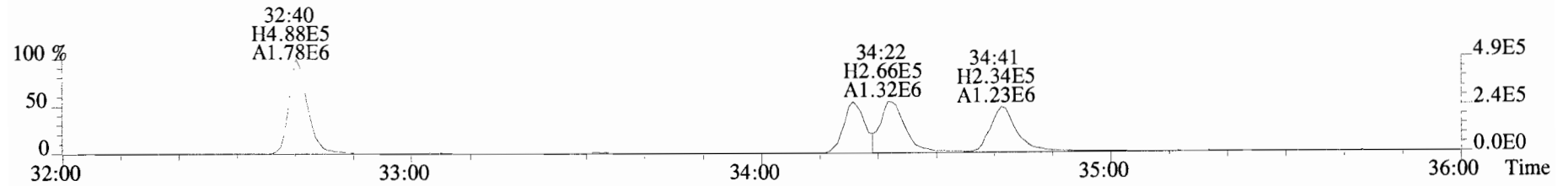
366.9792 S:4 F:2



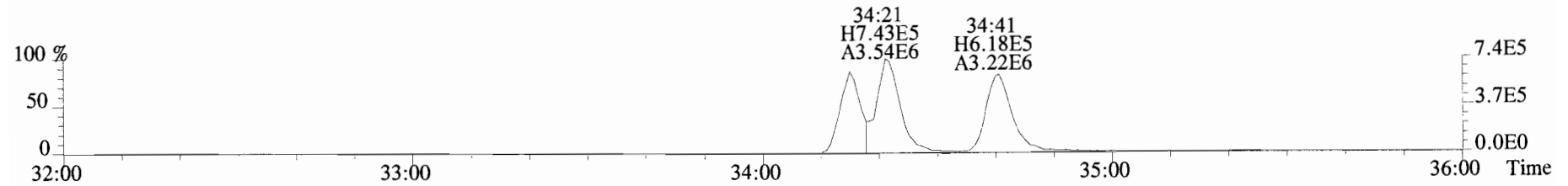
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
389.8156 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



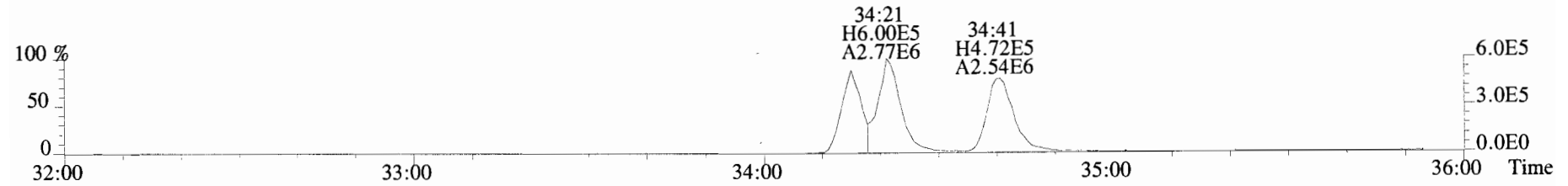
391.8127 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



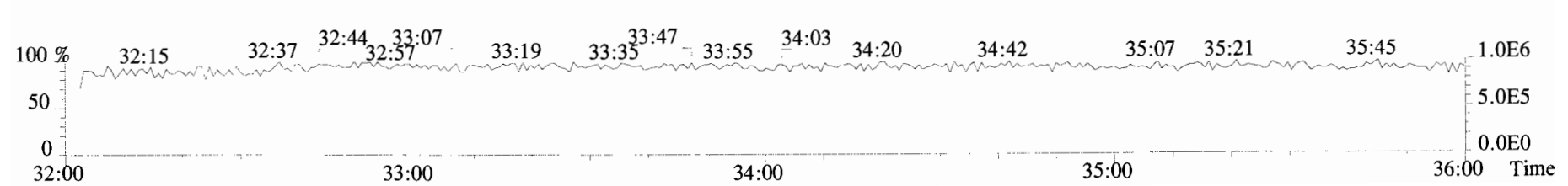
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



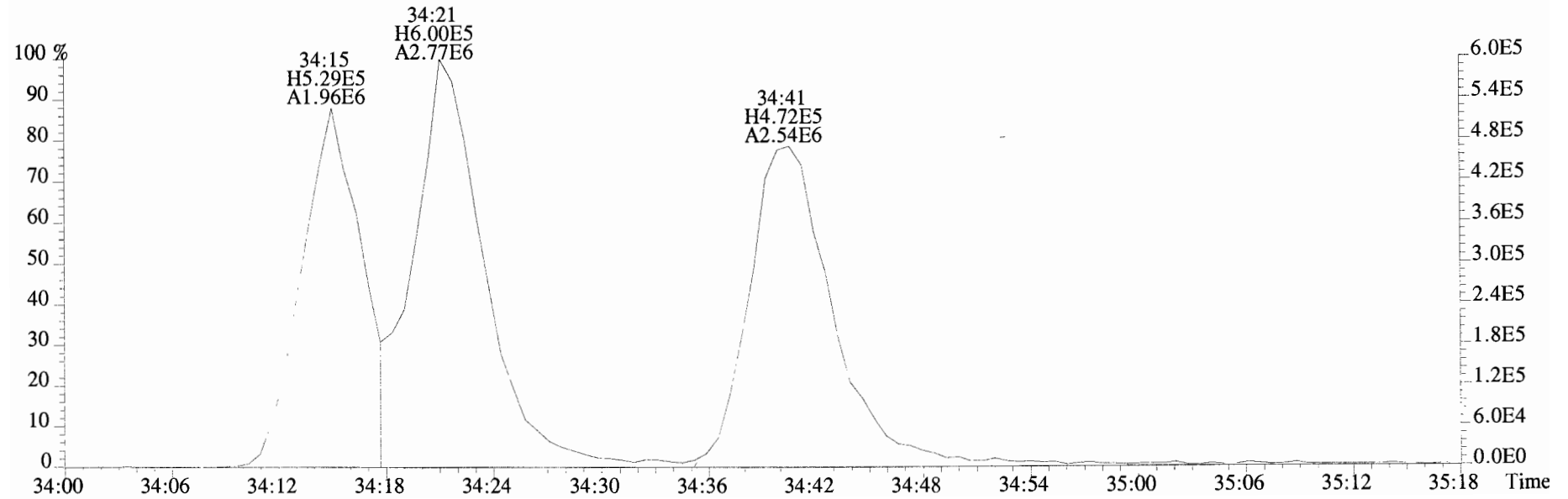
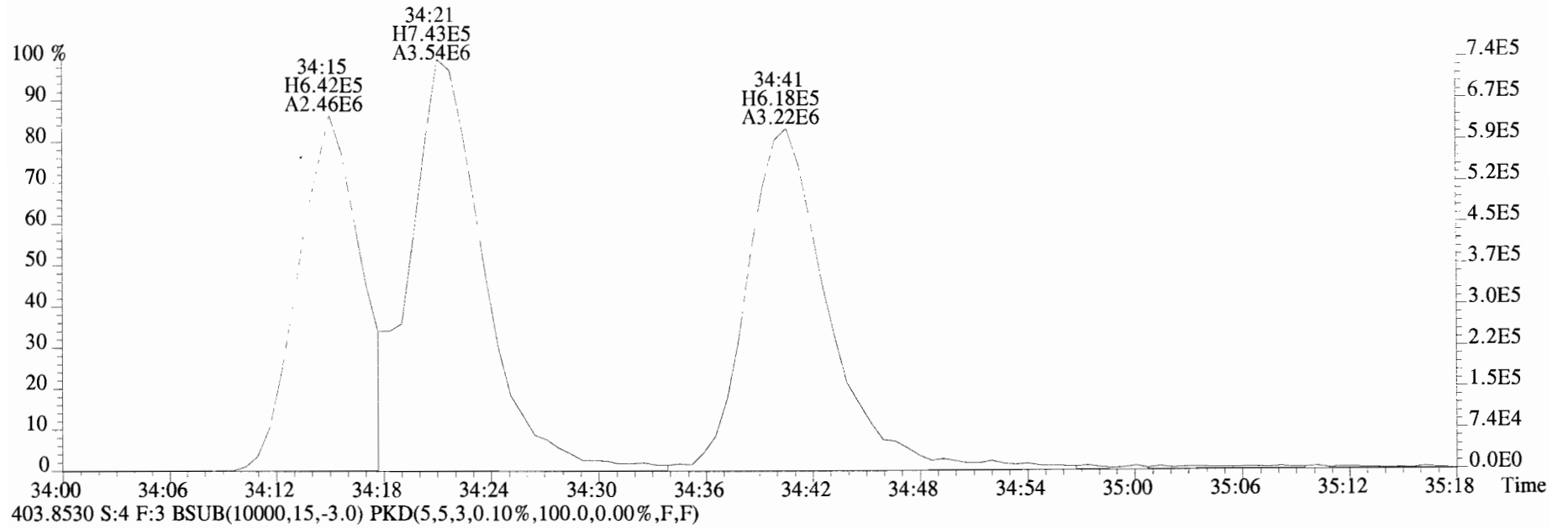
403.8530 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



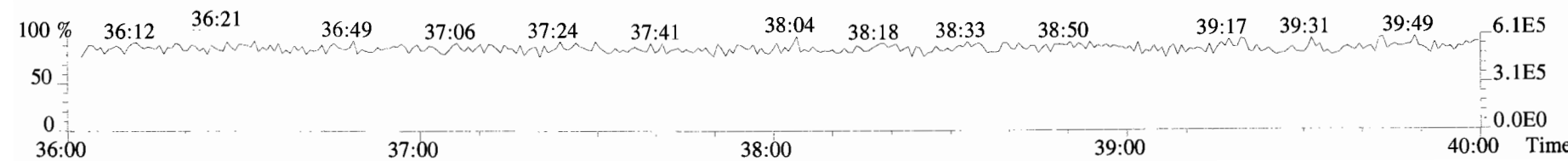
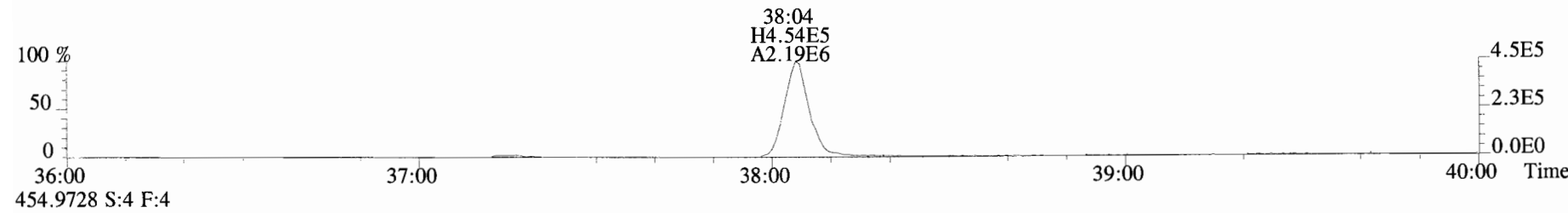
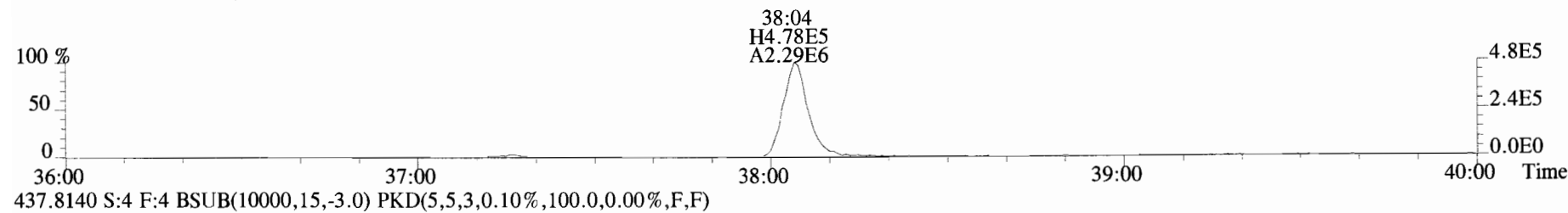
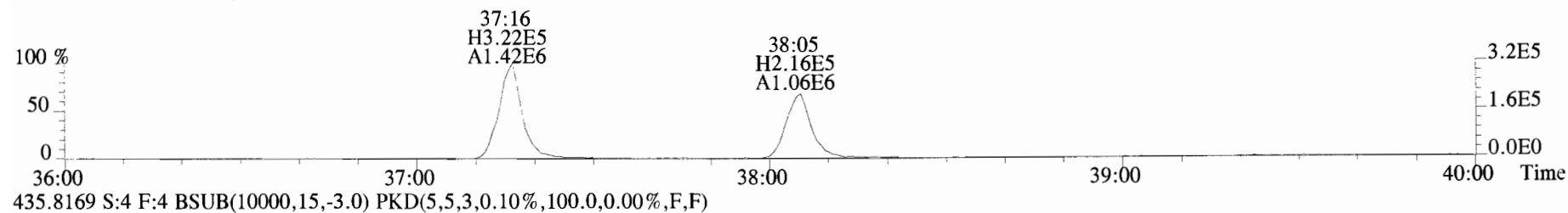
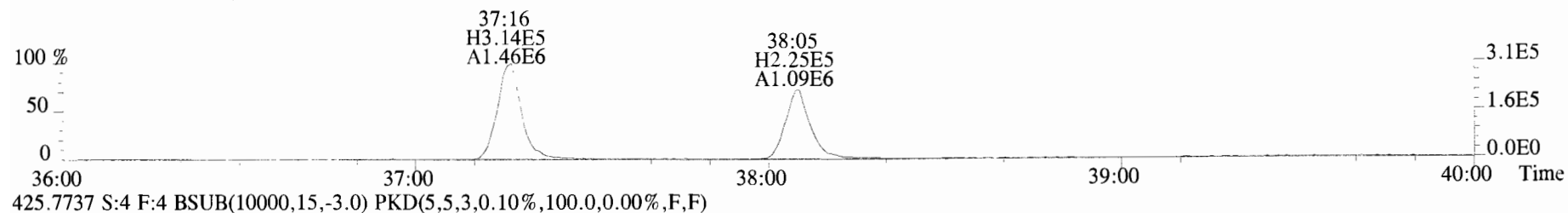
392.9760 S:4 F:3



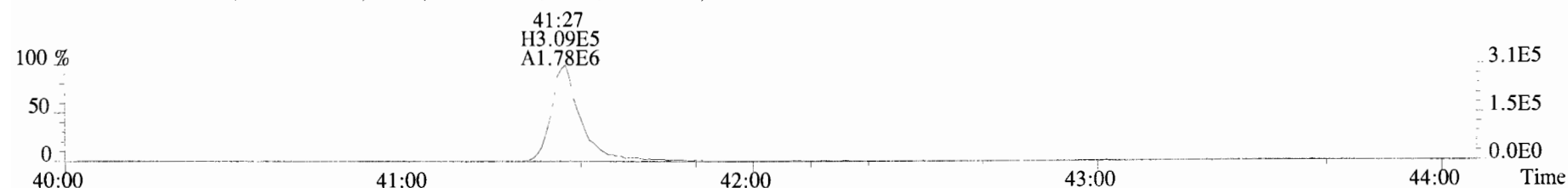
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



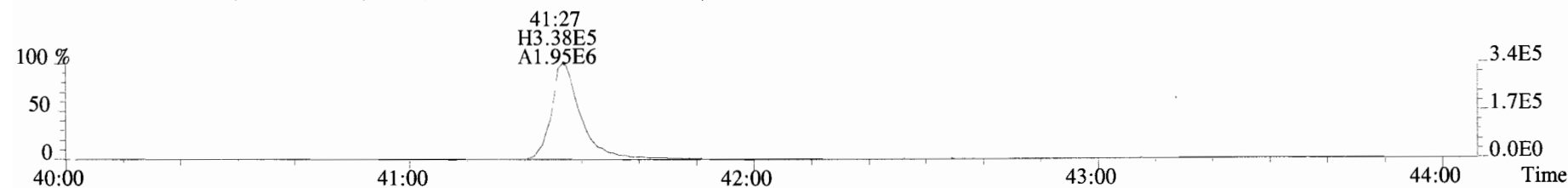
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



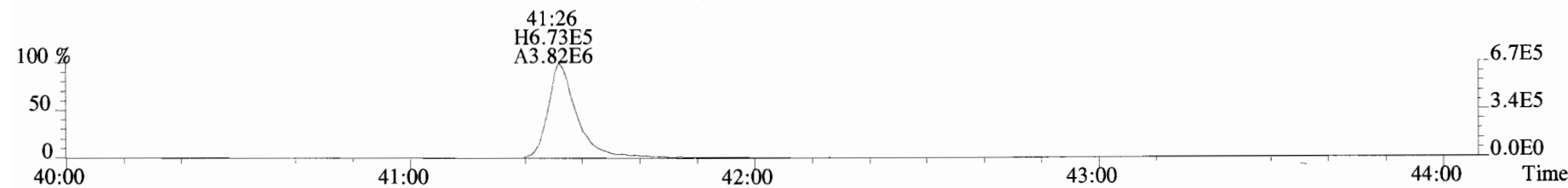
File:191009D1 #1-432 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



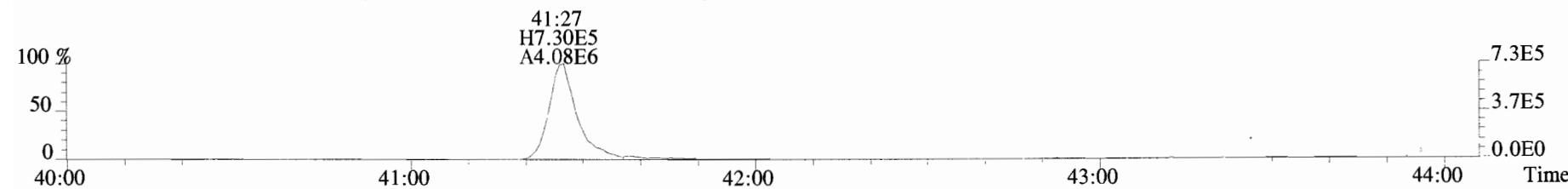
459.7348 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



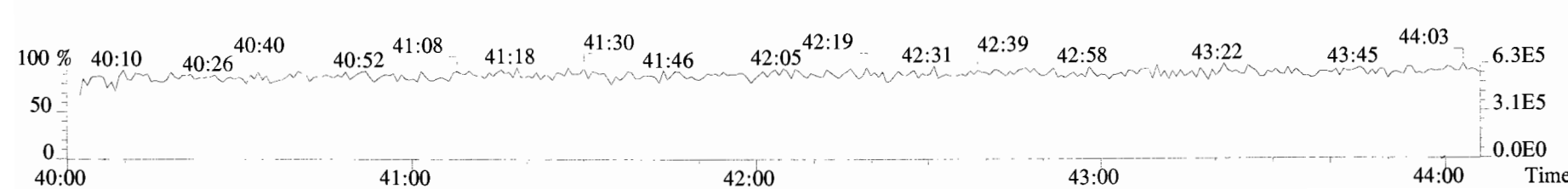
469.7780 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



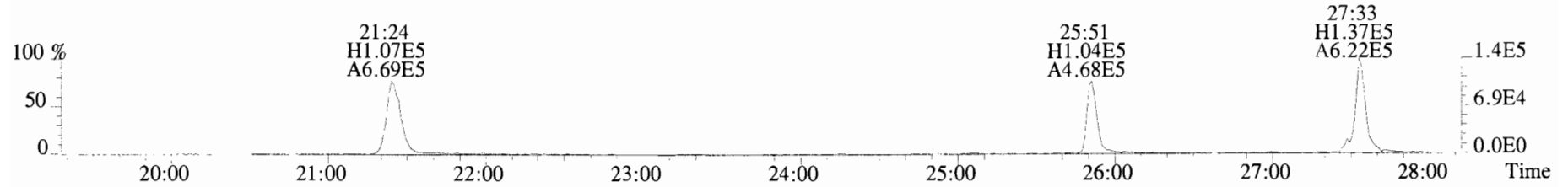
471.7750 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



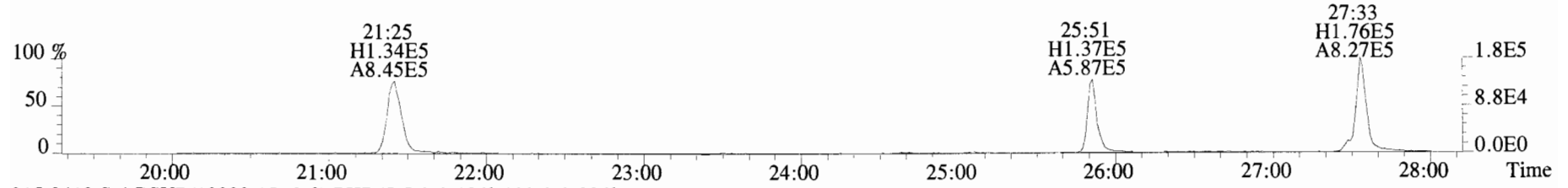
454.9728 S:4 F:5



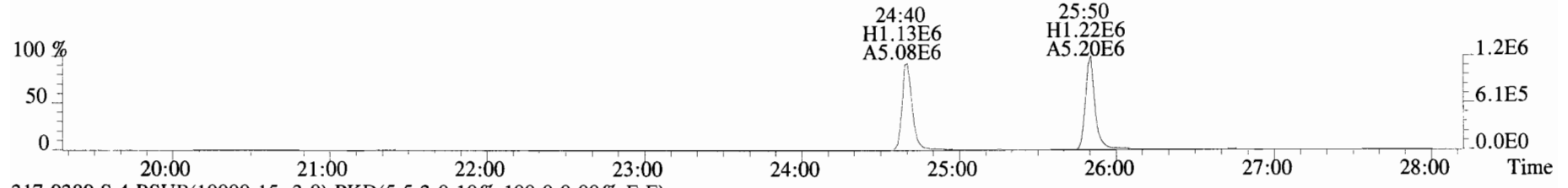
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
303.9016 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



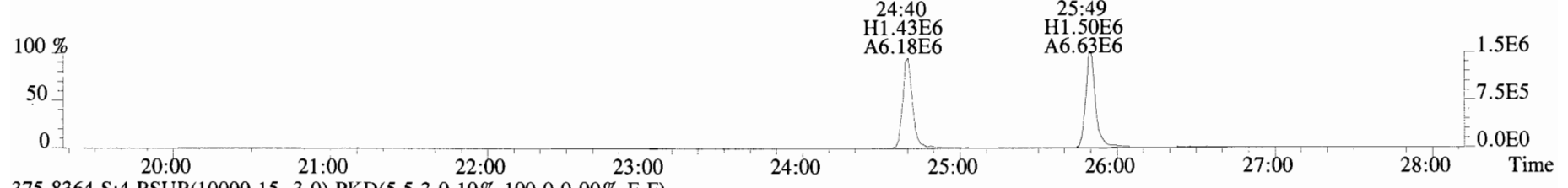
305.8987 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



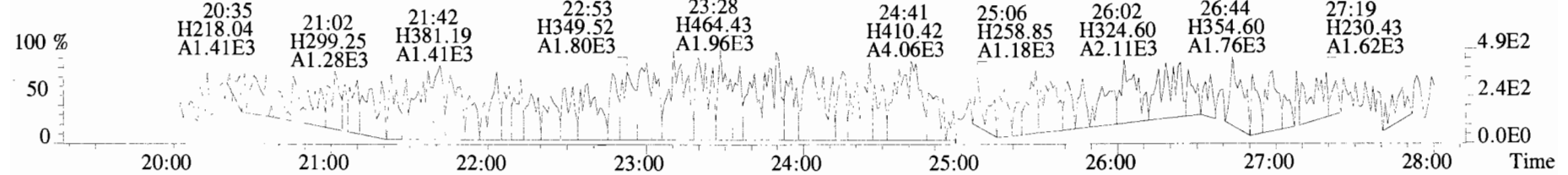
315.9419 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



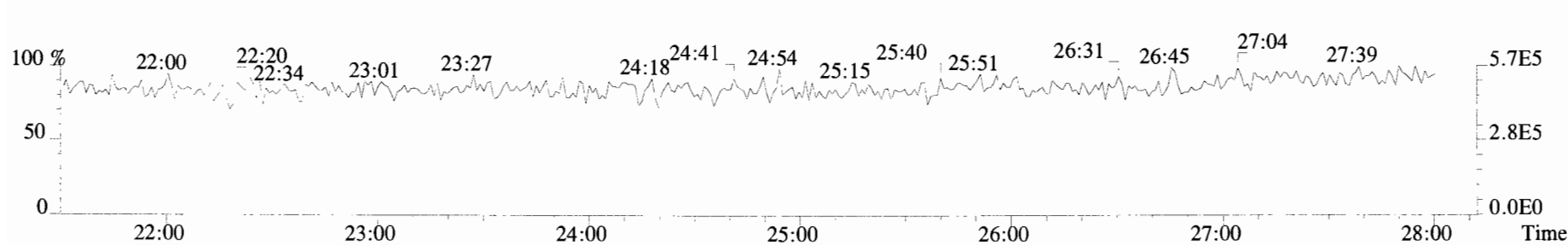
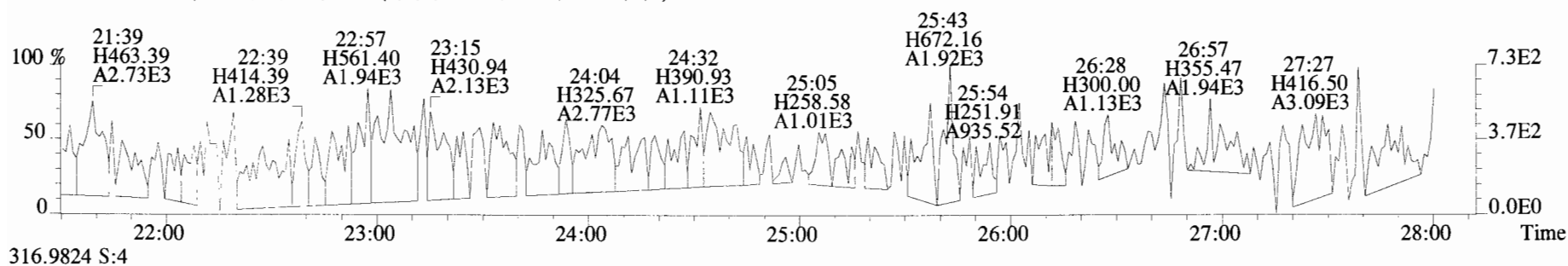
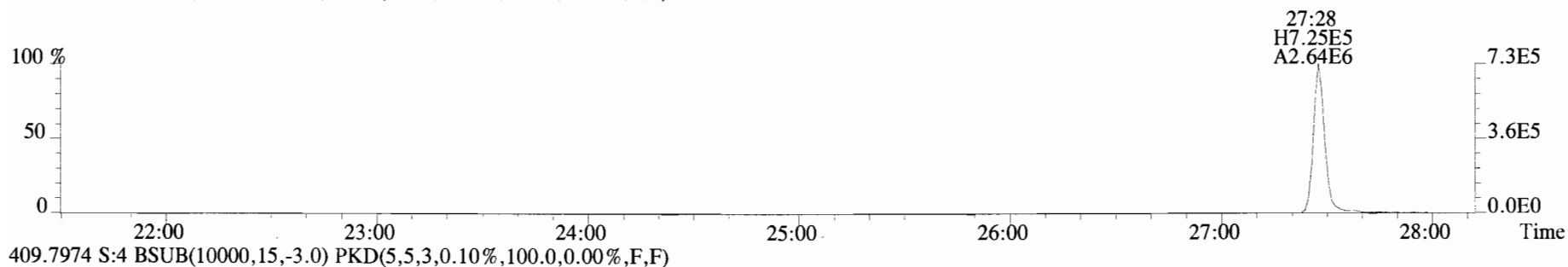
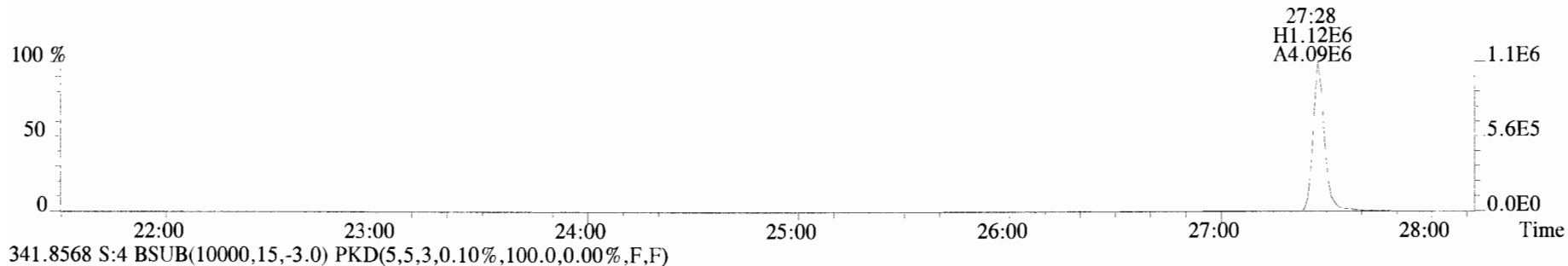
317.9389 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



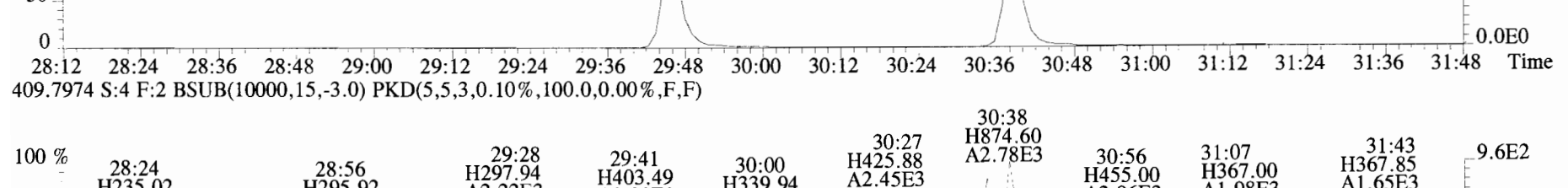
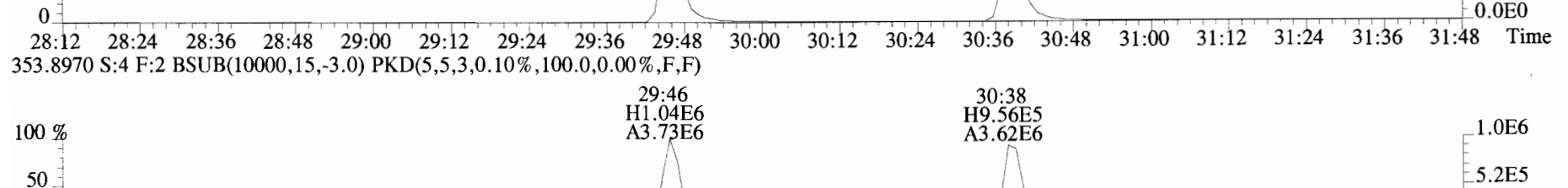
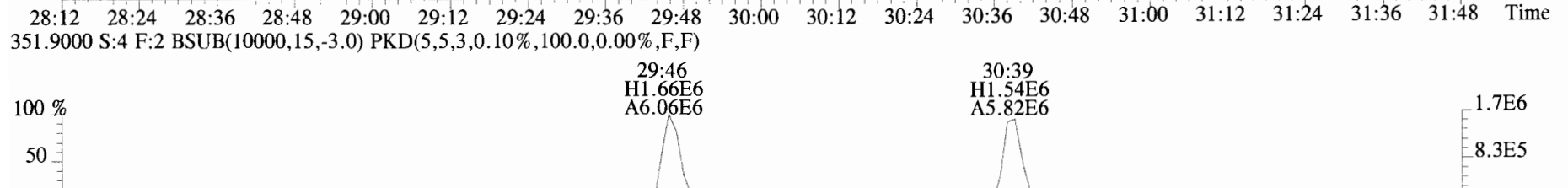
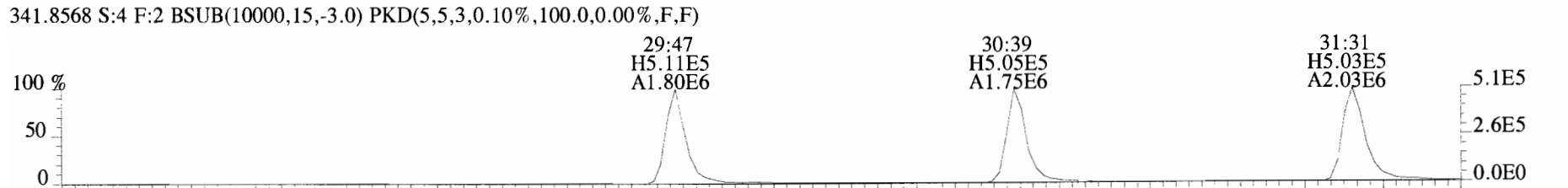
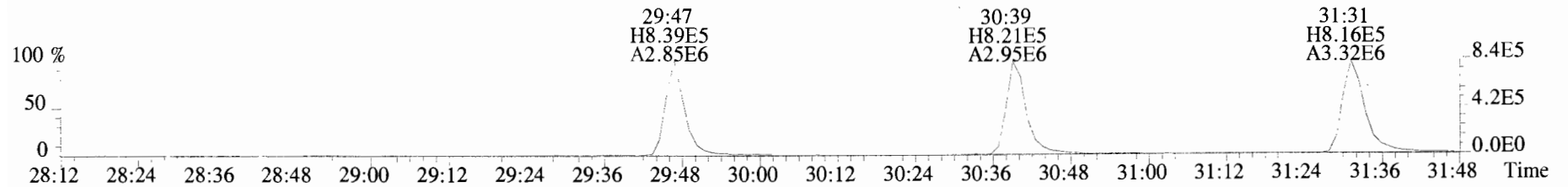
375.8364 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



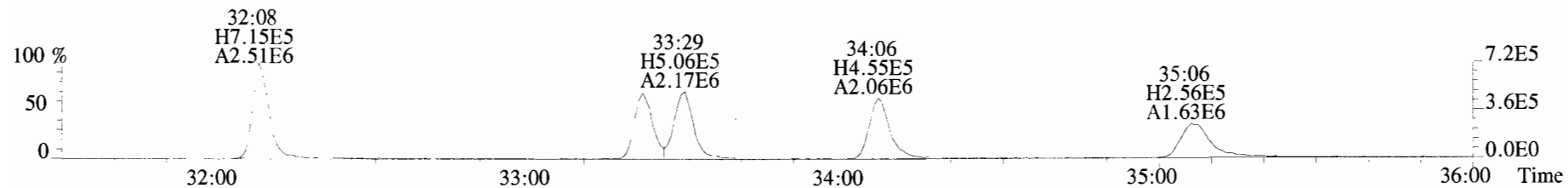
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



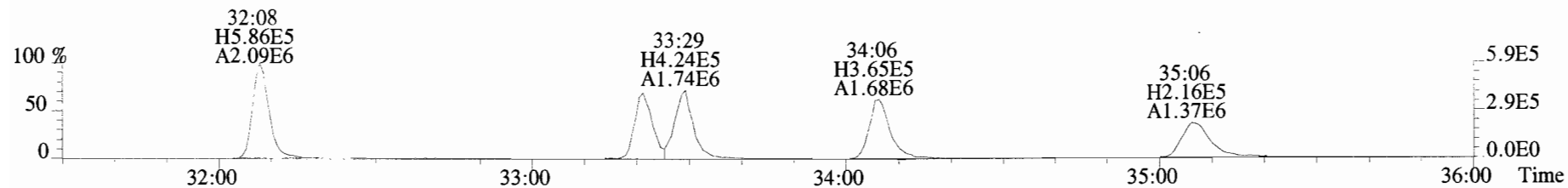
File:191009D1 #1-211 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



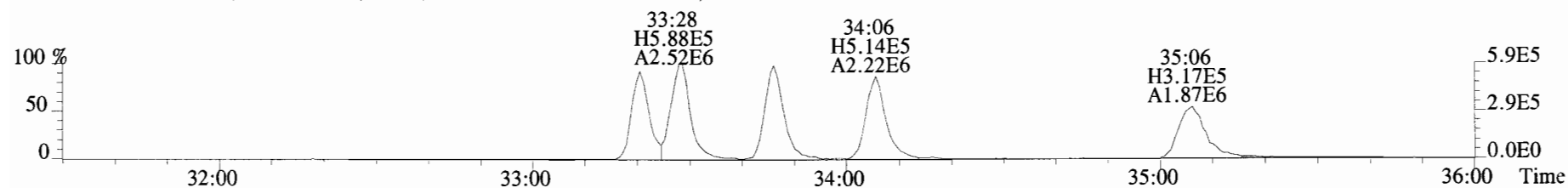
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
373.8207 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



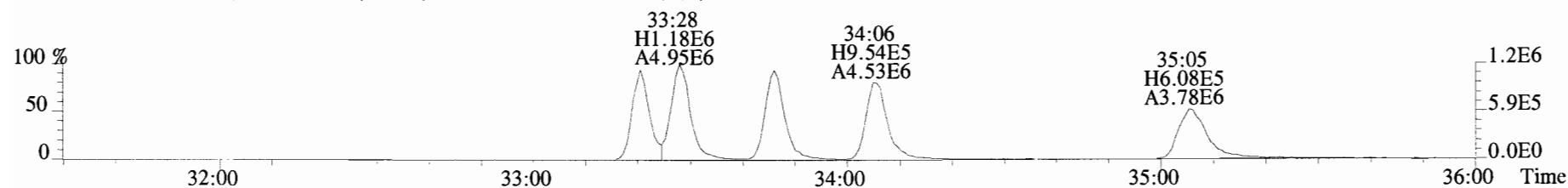
375.8178 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



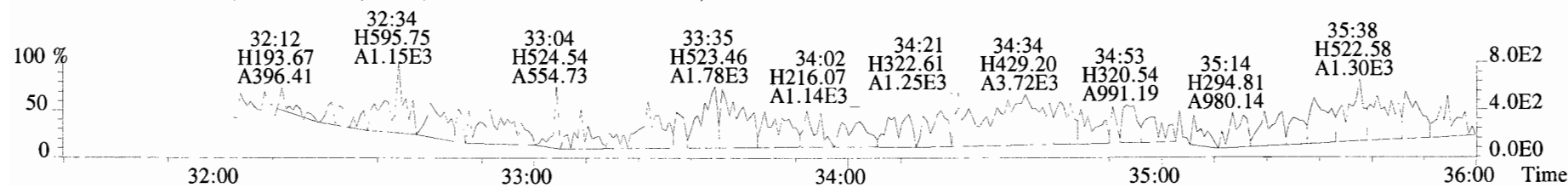
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



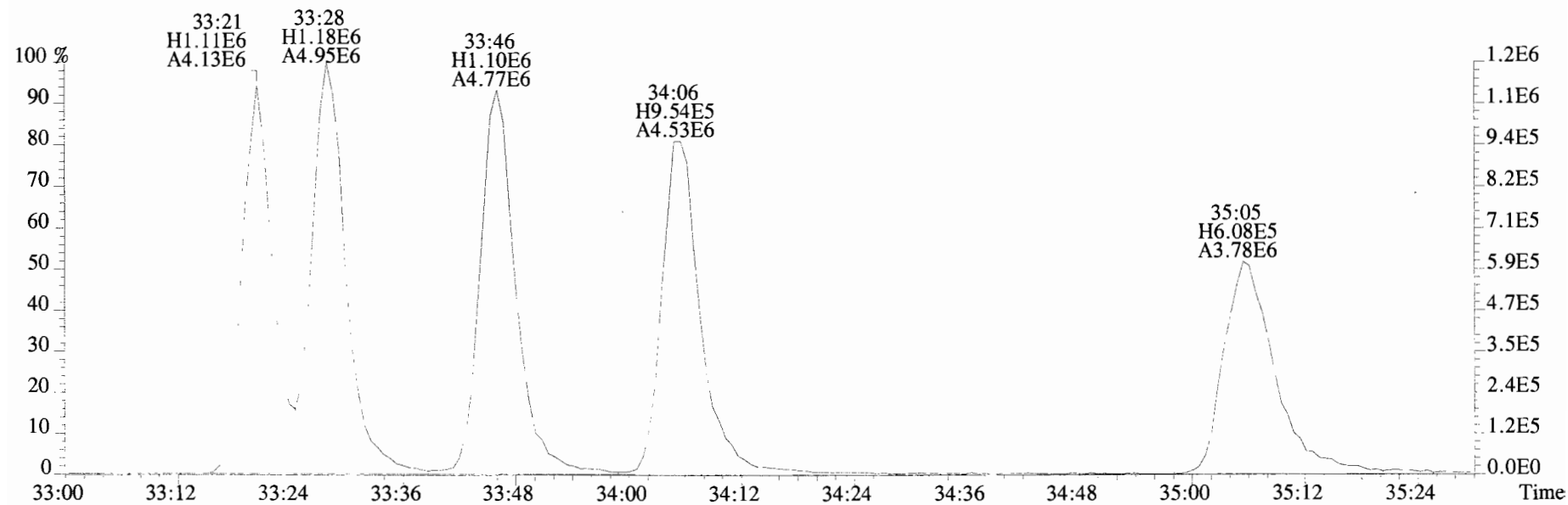
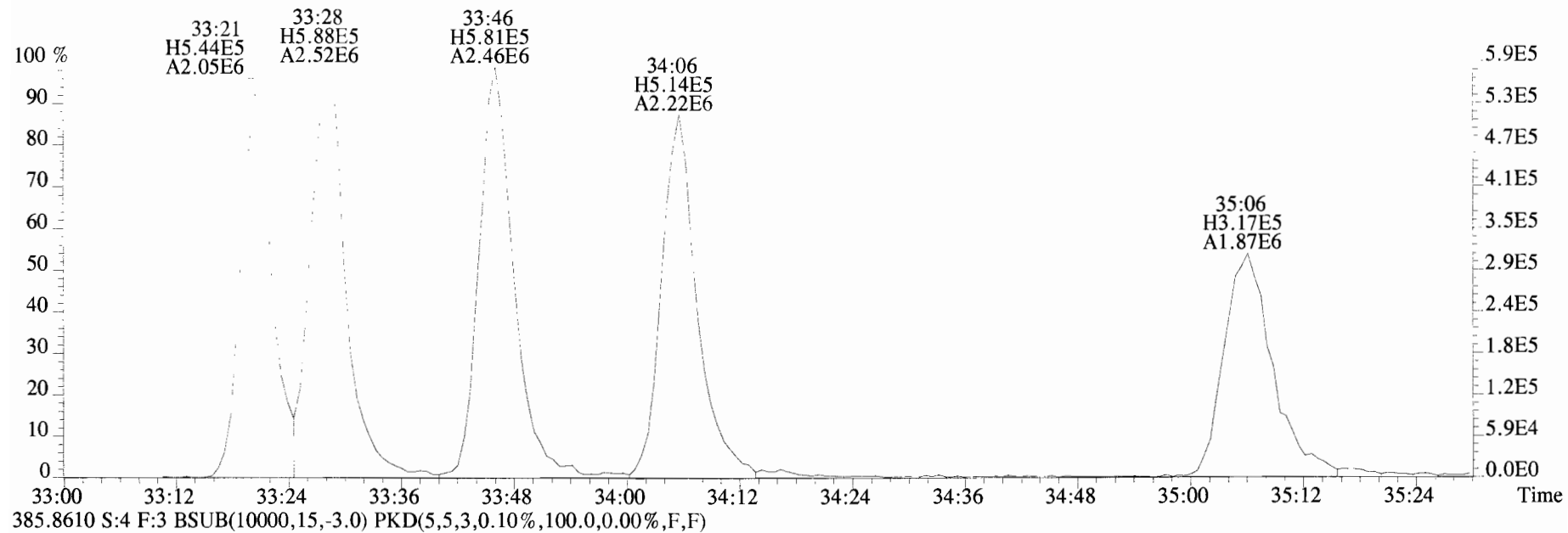
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



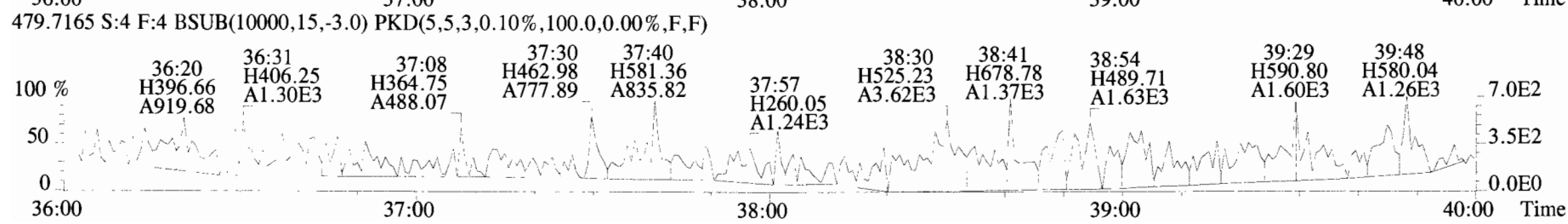
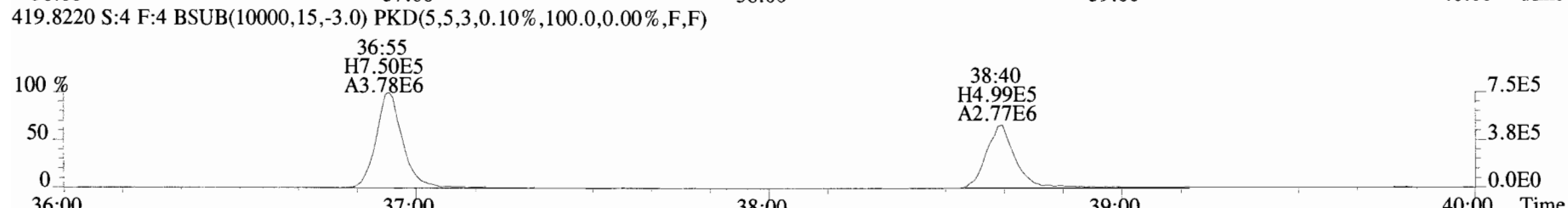
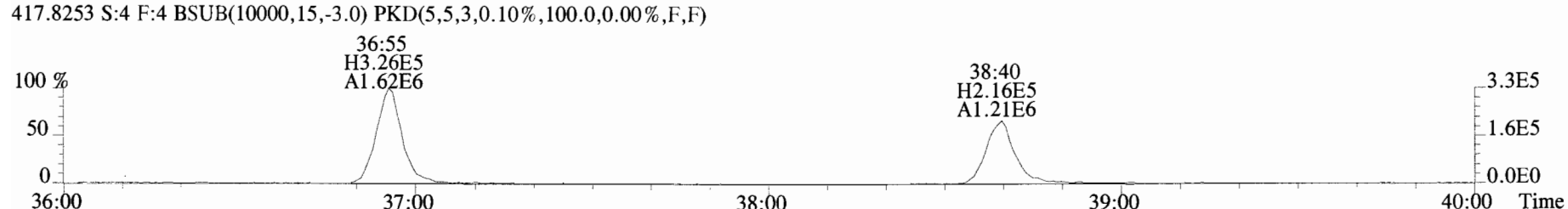
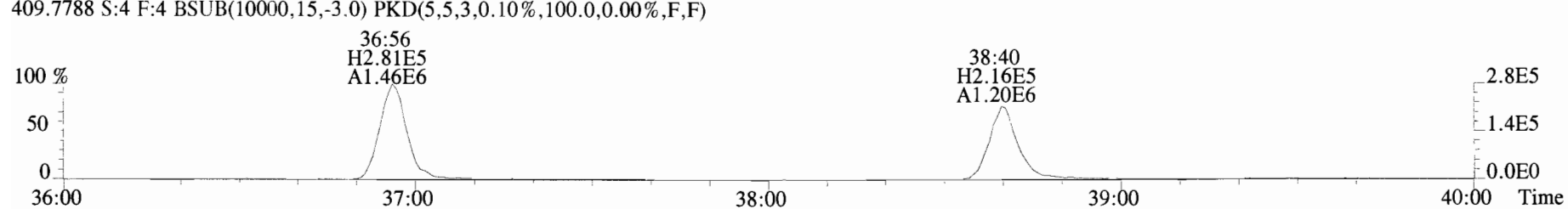
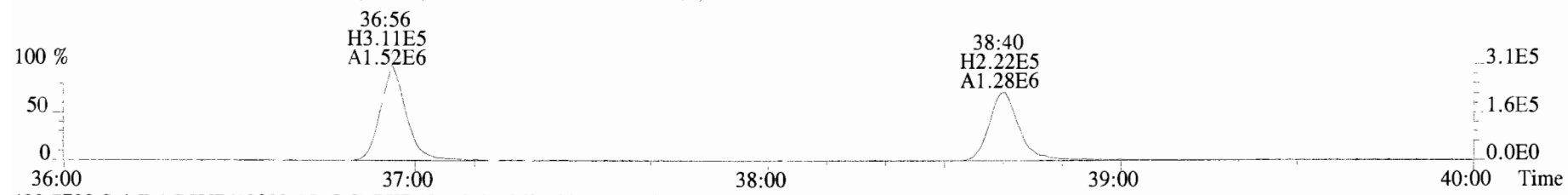
445.7555 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



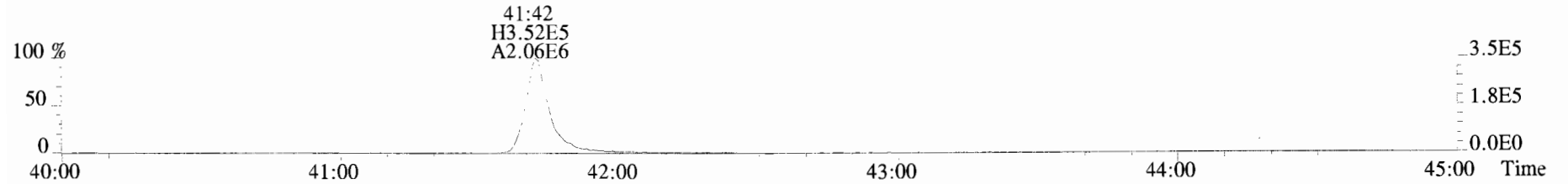
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



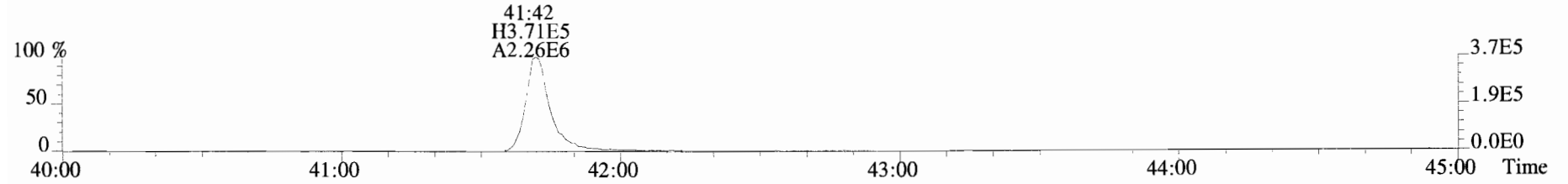
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
 407.7818 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



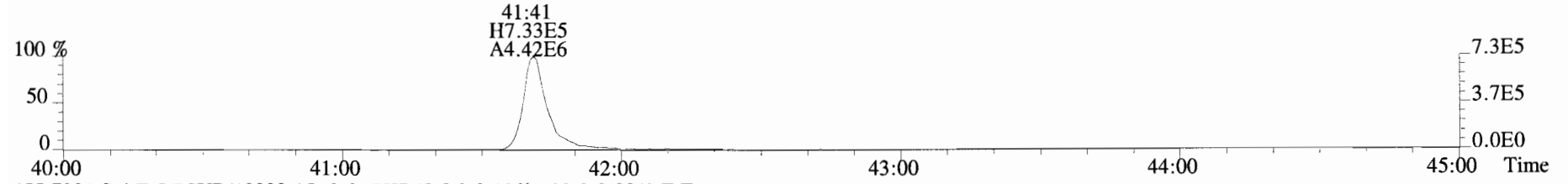
File:191009D1 #1-432 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
441.7428 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



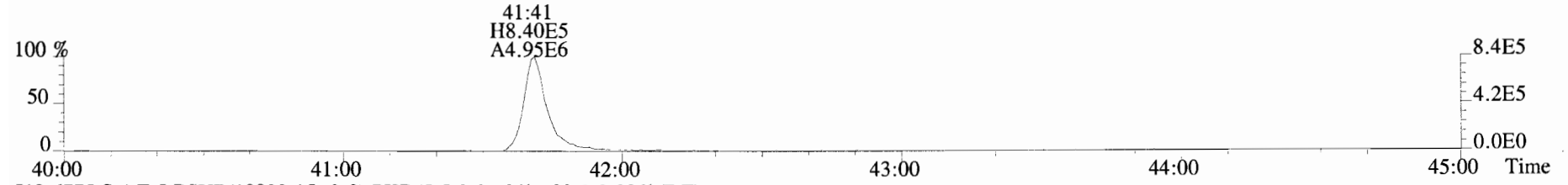
443.7398 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



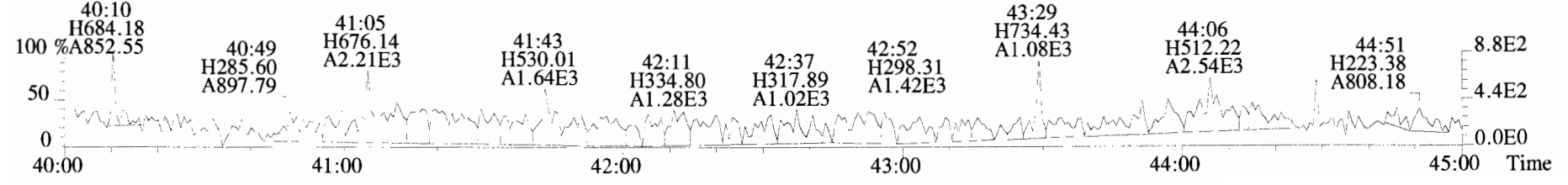
453.7831 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



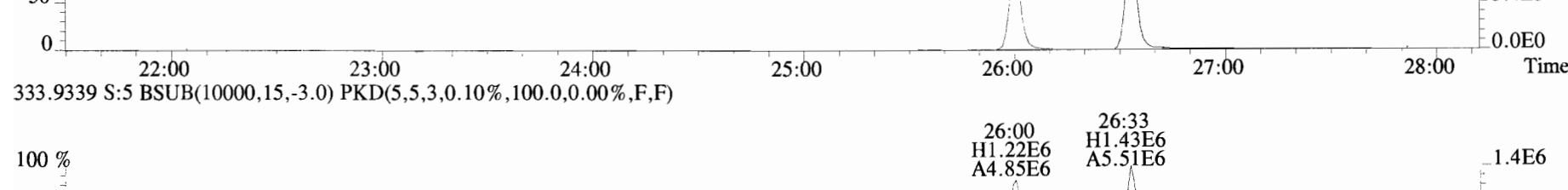
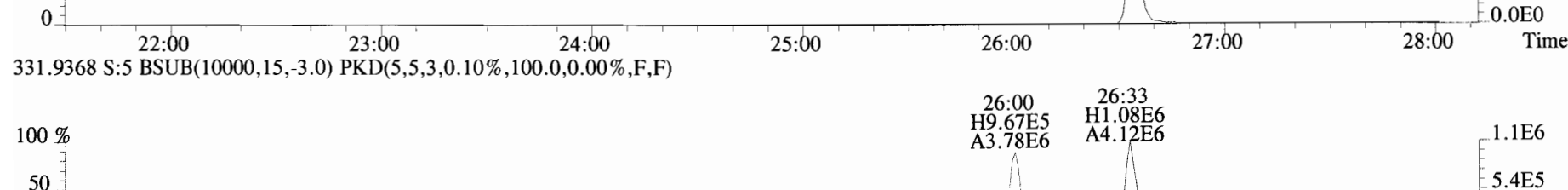
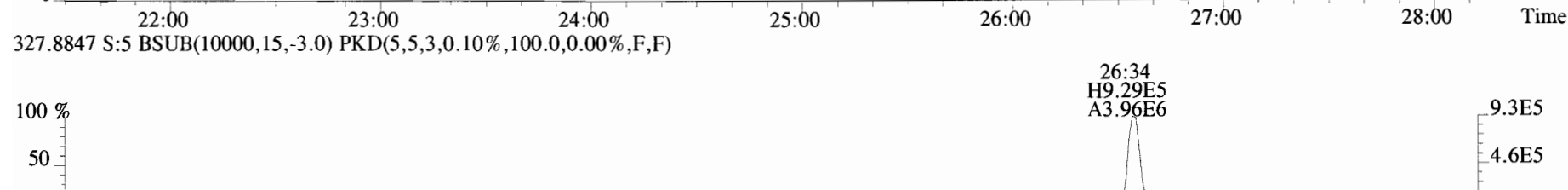
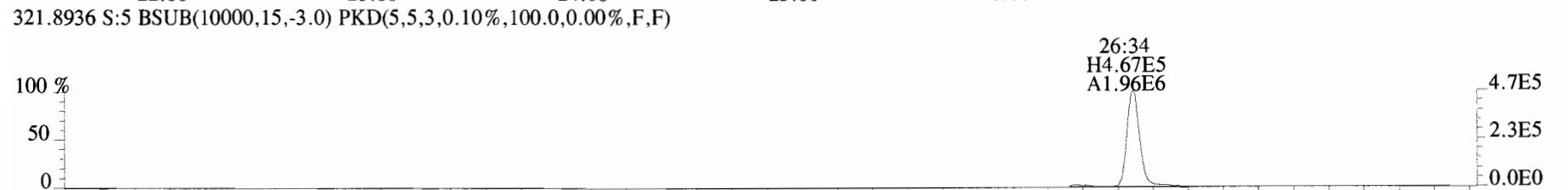
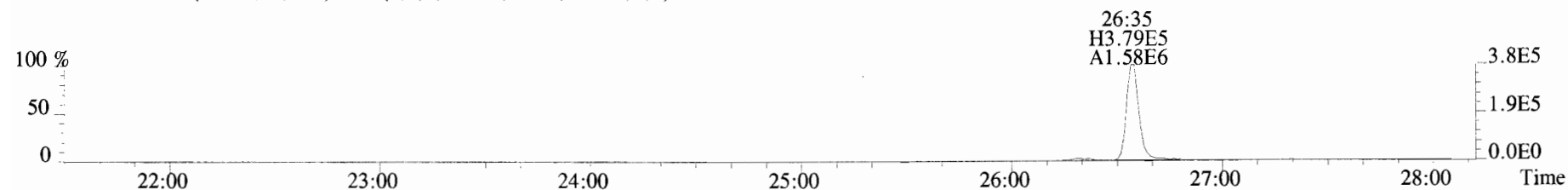
455.7801 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



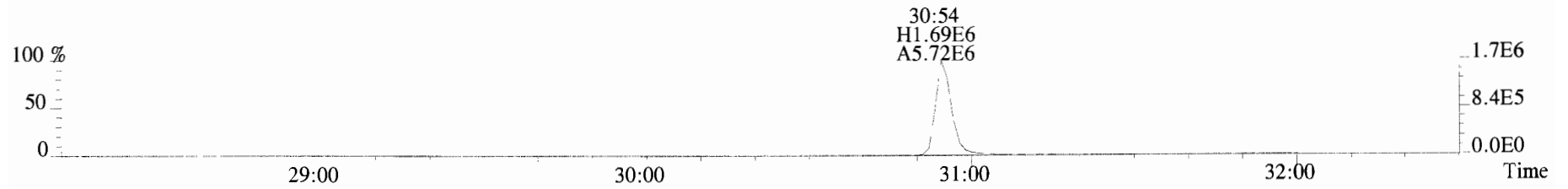
513.6775 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



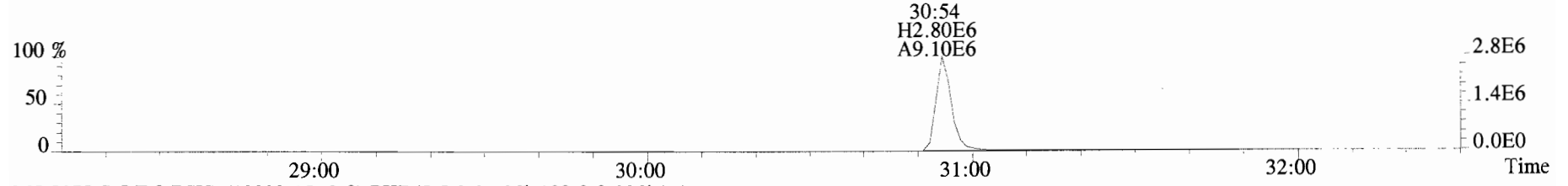
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
319.8965 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



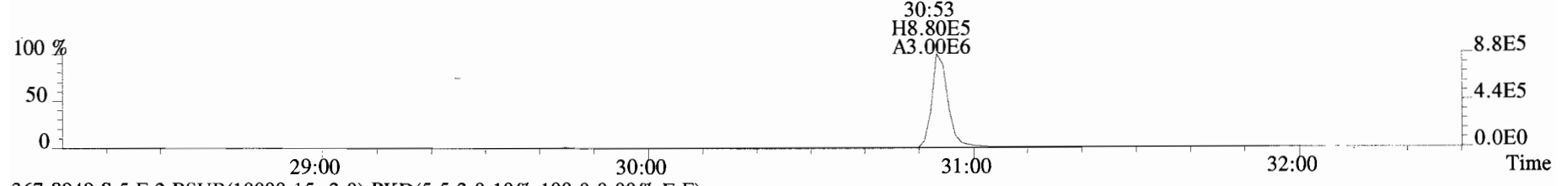
File:191009D1 #1-210 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
353.8576 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



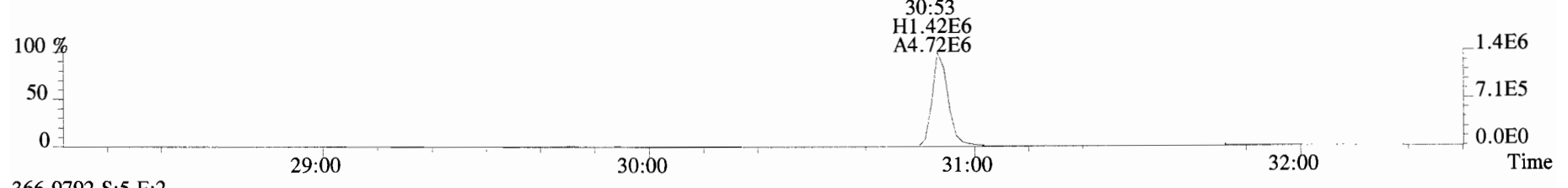
355.8546 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



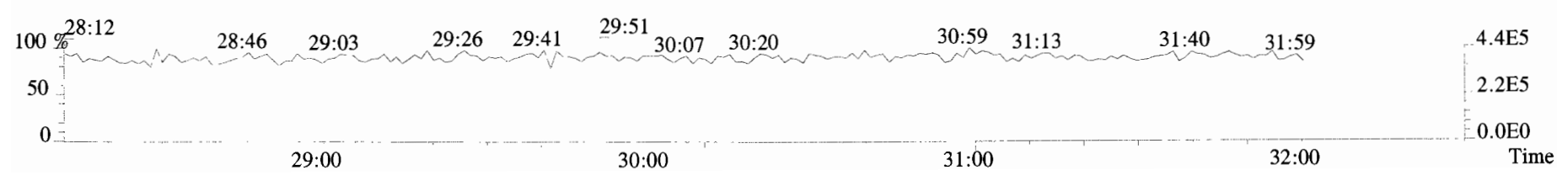
365.8978 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



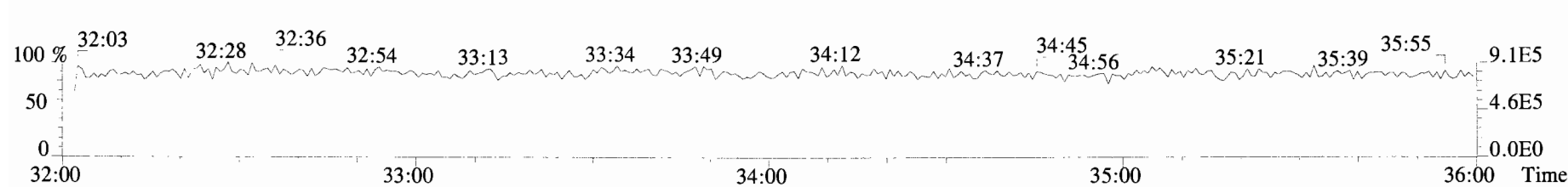
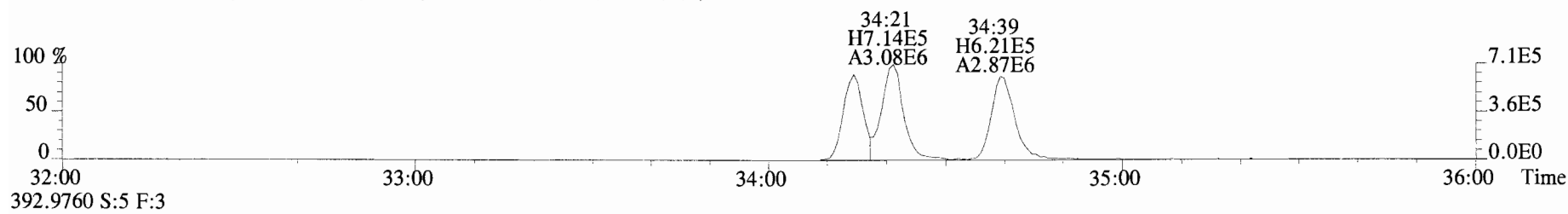
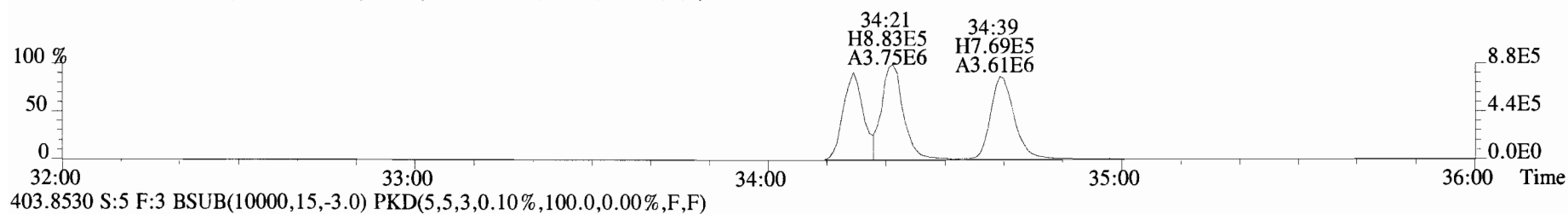
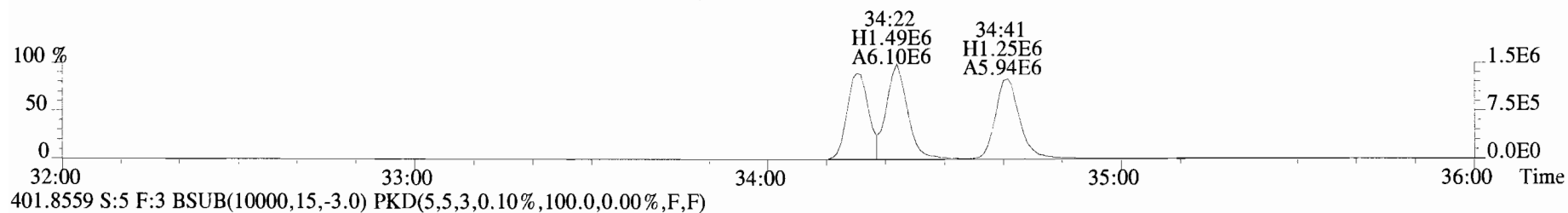
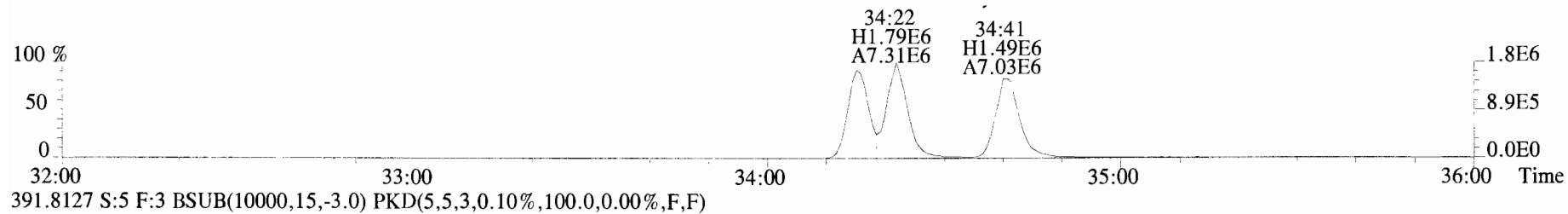
367.8949 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



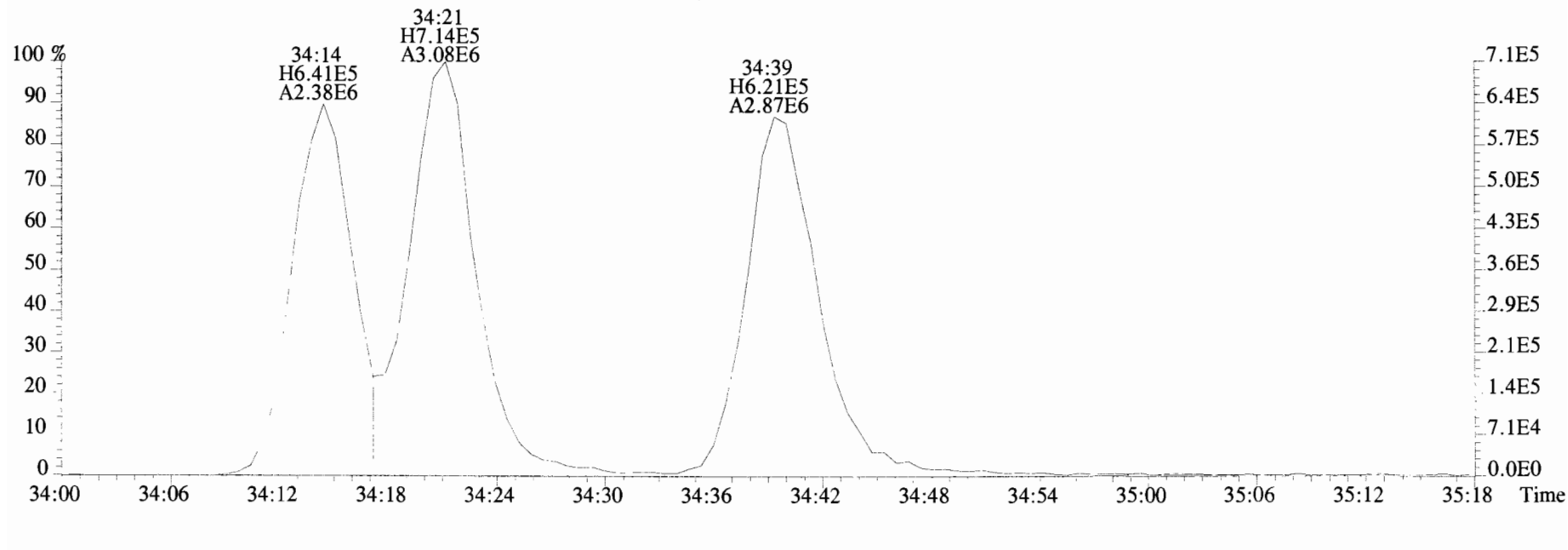
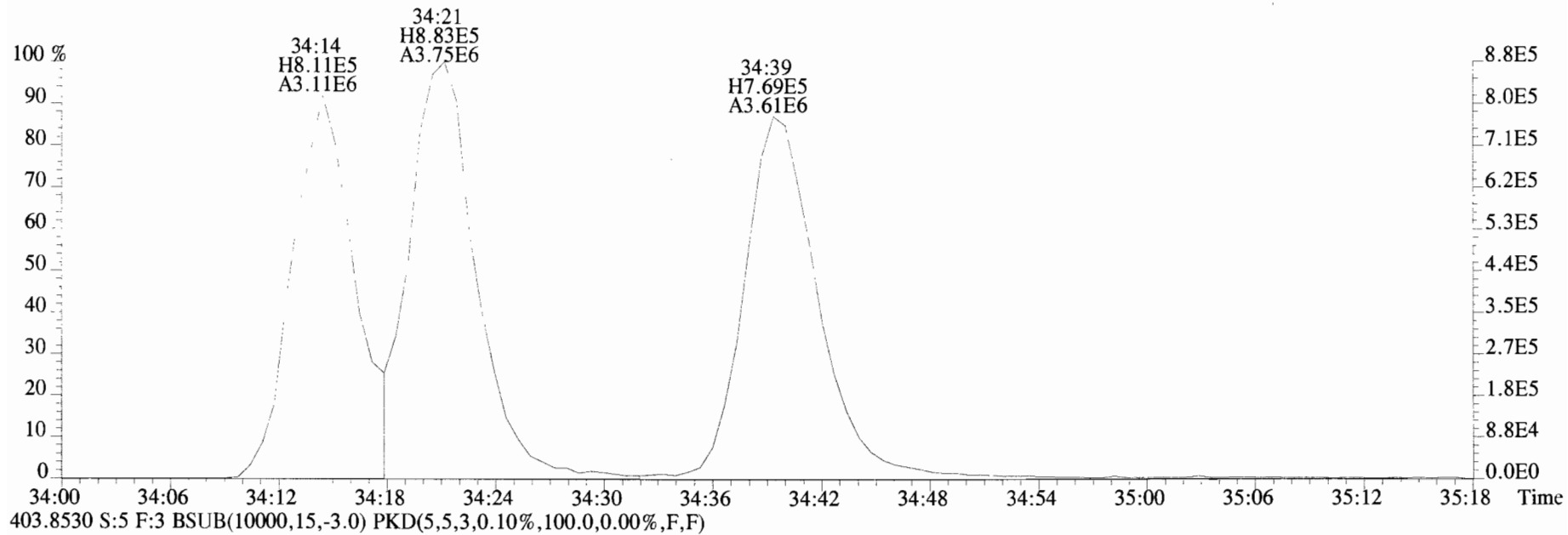
366.9792 S:5 F:2



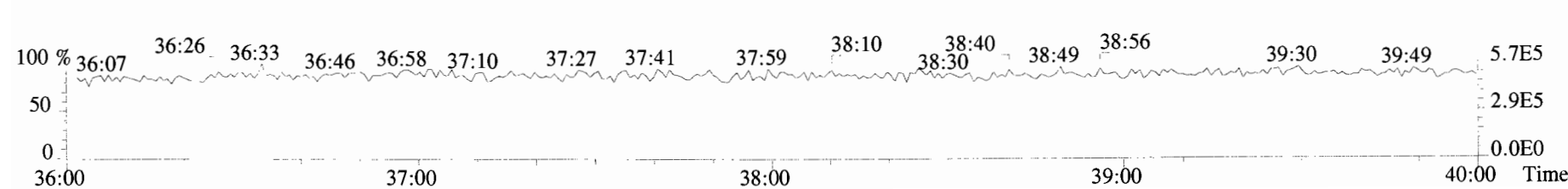
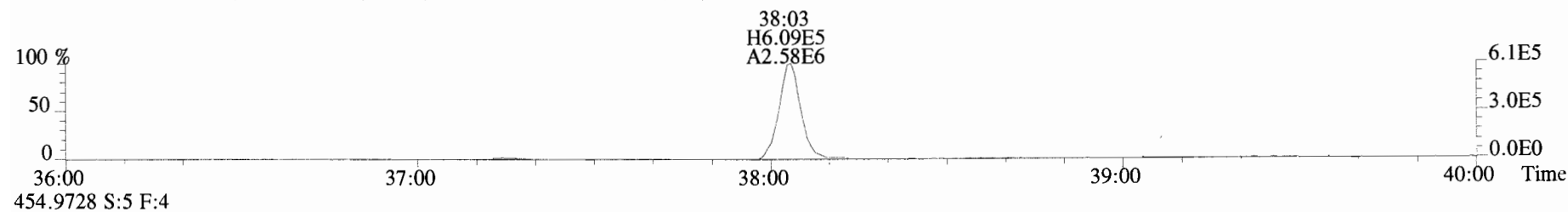
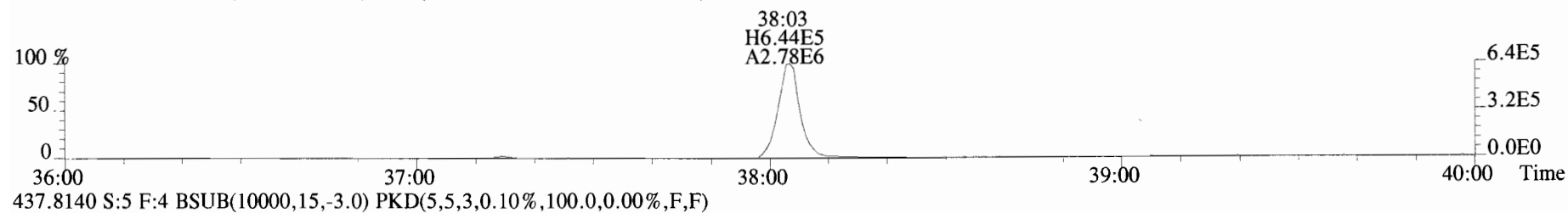
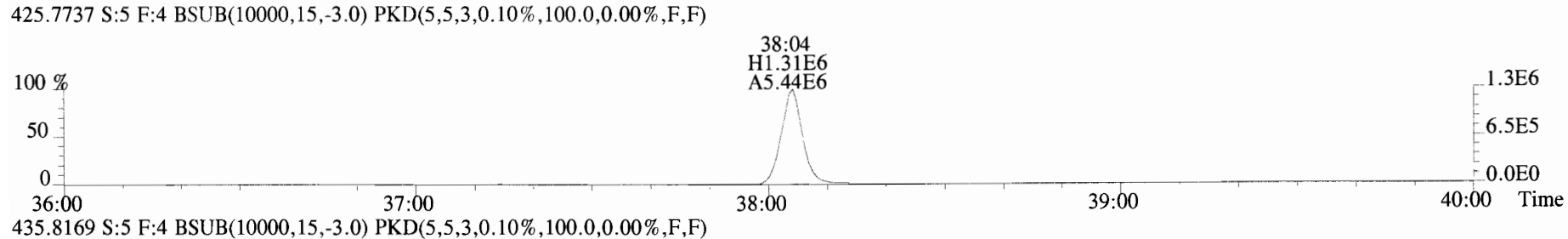
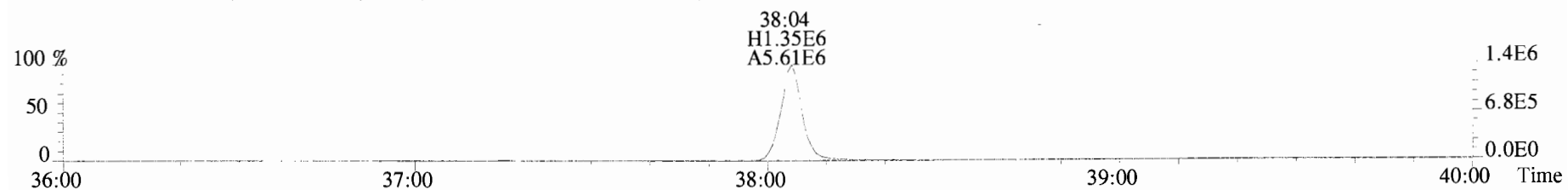
File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
389.8156 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



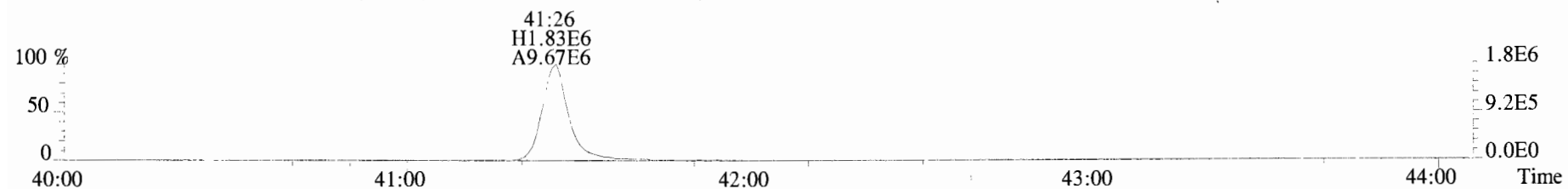
File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
401.8559 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



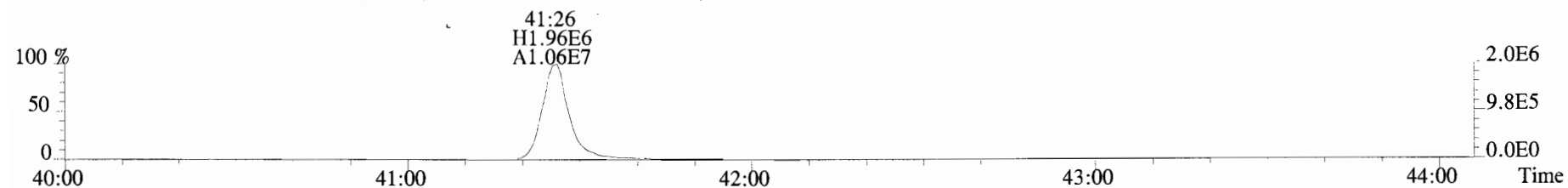
File:191009D1 #1-356 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
423.7767 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



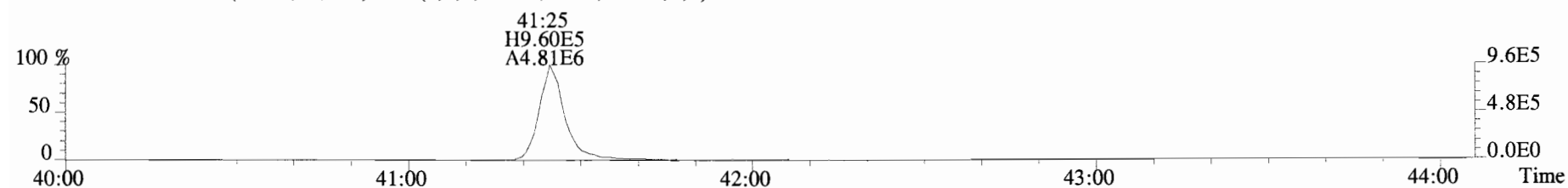
File:191009D1 #1-431 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
457.7377 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



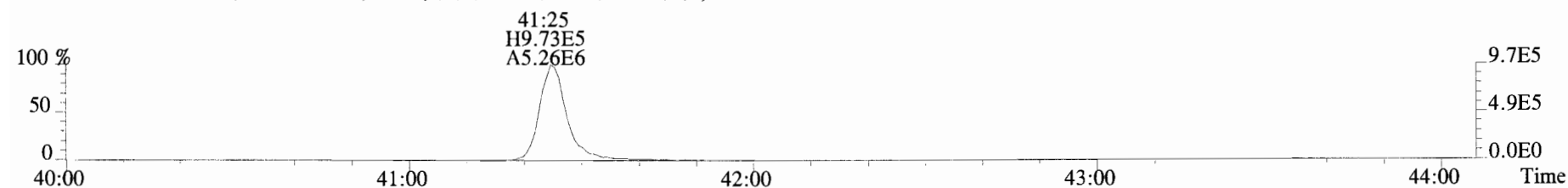
459.7348 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



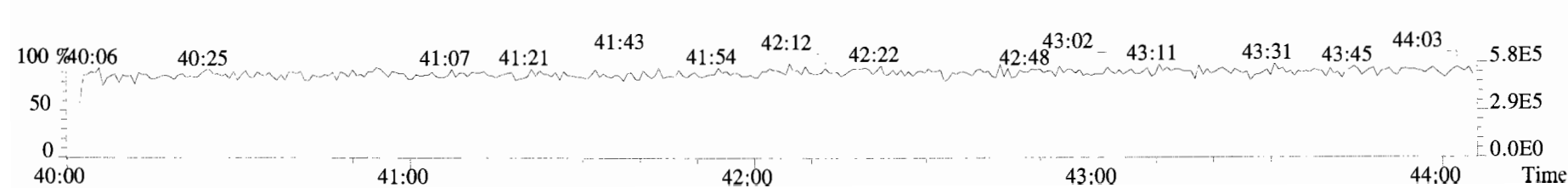
469.7780 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



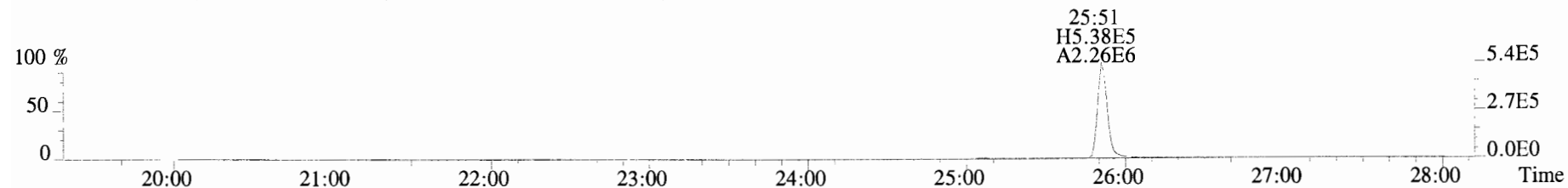
471.7750 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



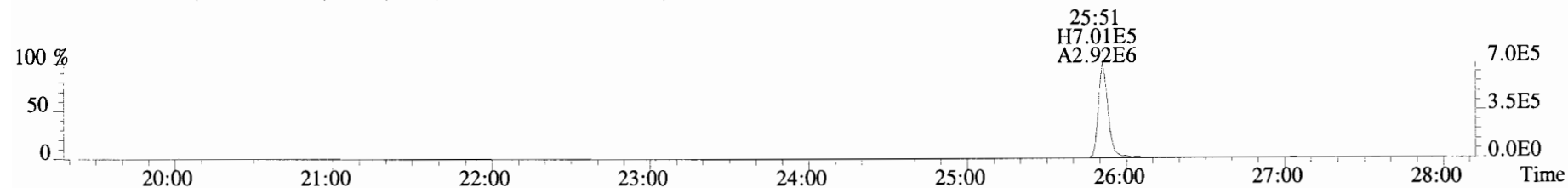
454.9728 S:5 F:5



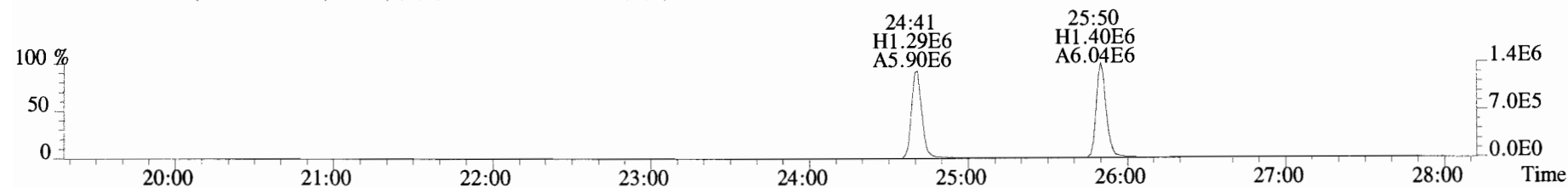
File: 191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text: Vista_Analytical_Laboratory_VG7 Text: ST191009D1-5 1613 CS4 19C2205 Exp: OCDD_DB5
 303.9016 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



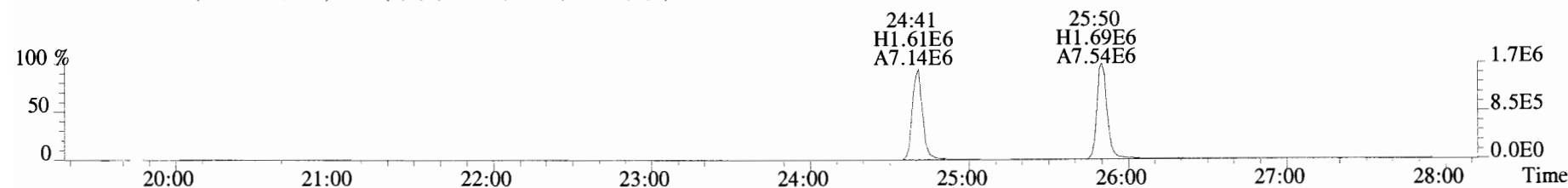
305.8987 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



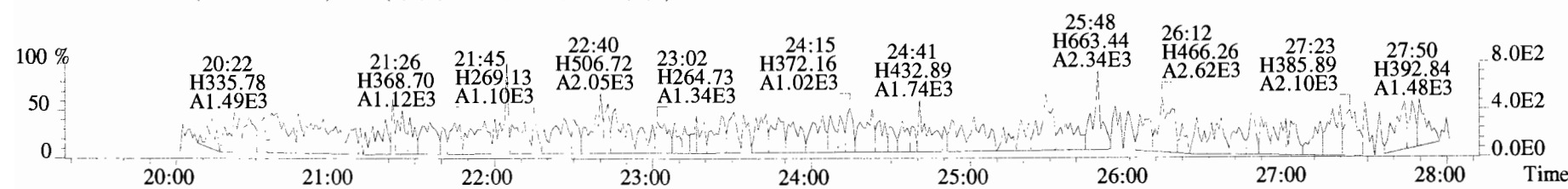
315.9419 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



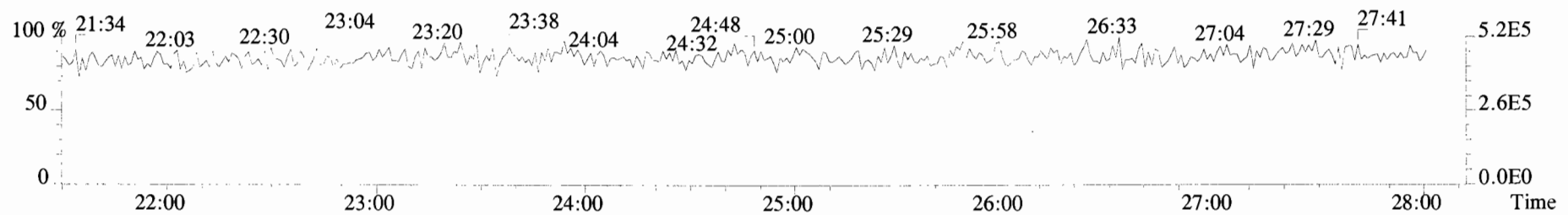
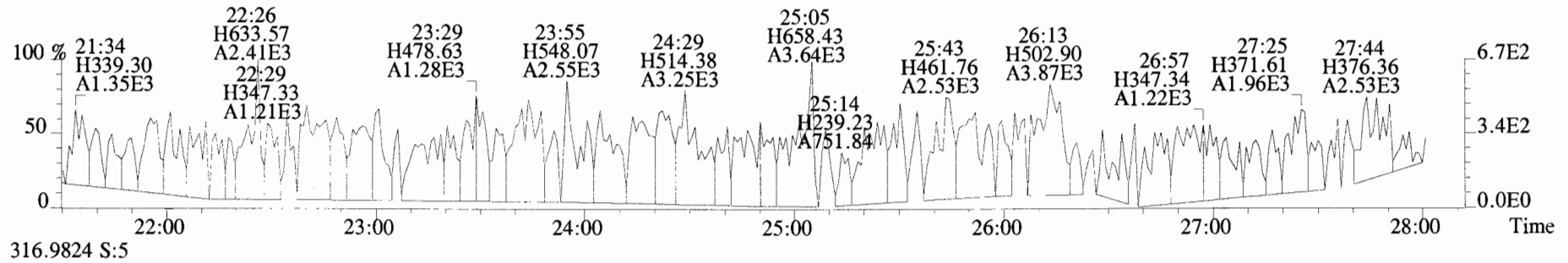
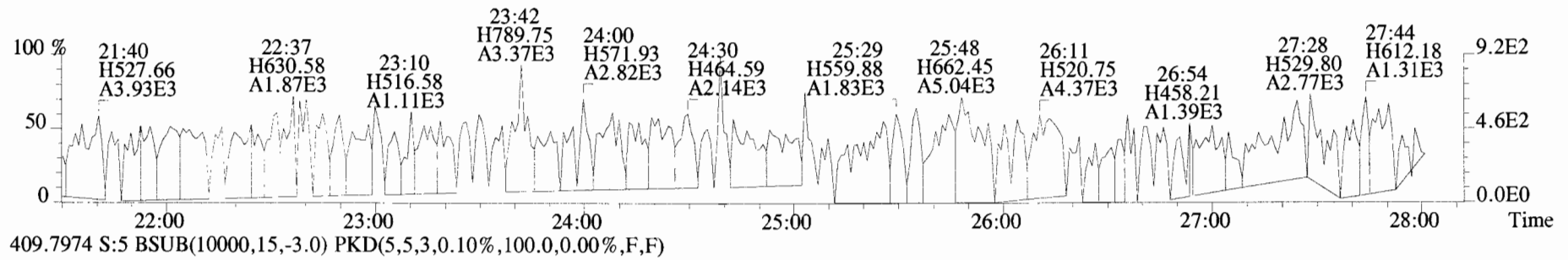
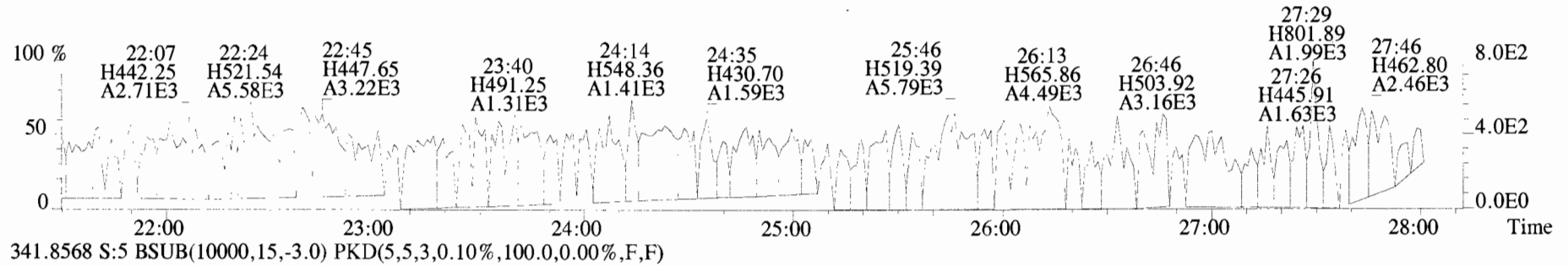
317.9389 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



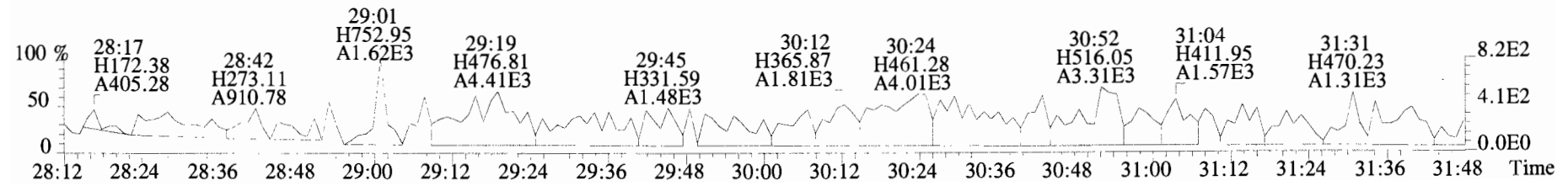
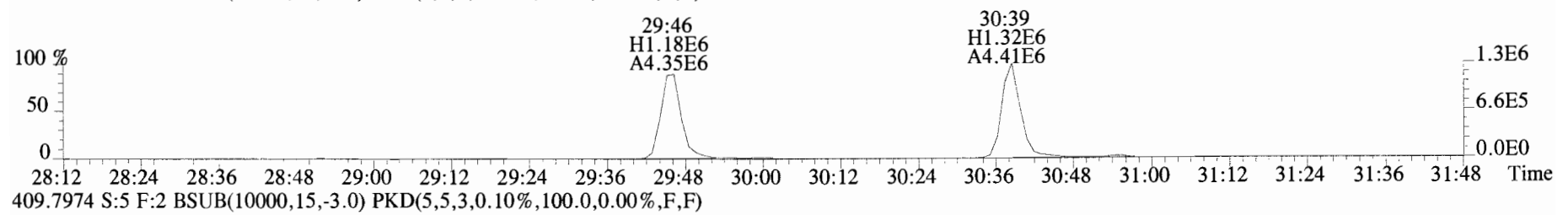
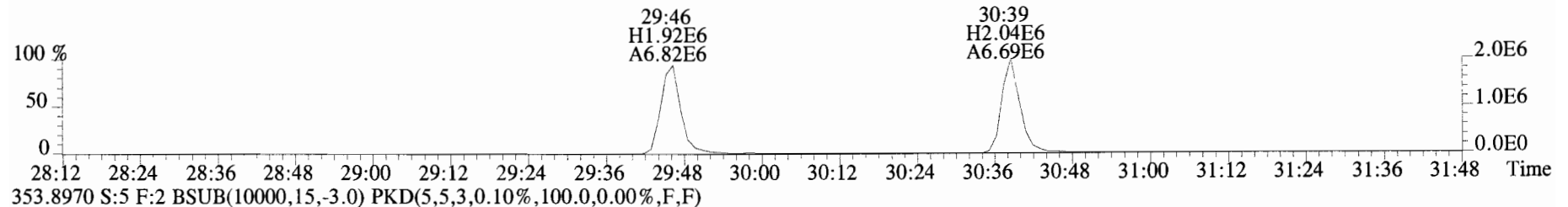
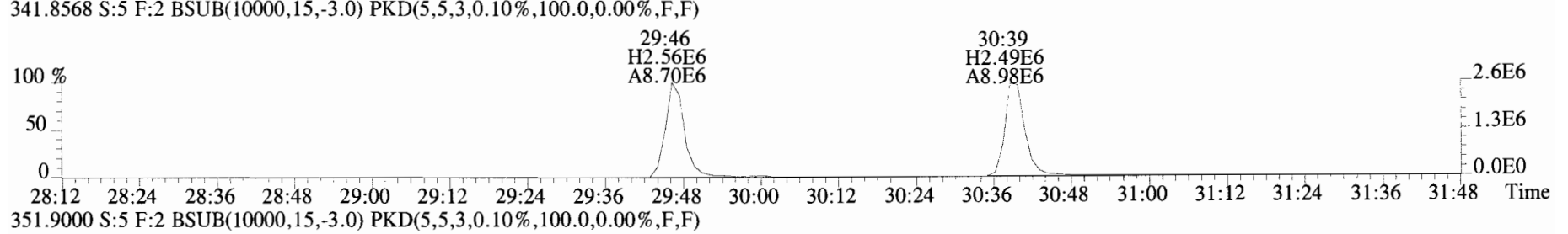
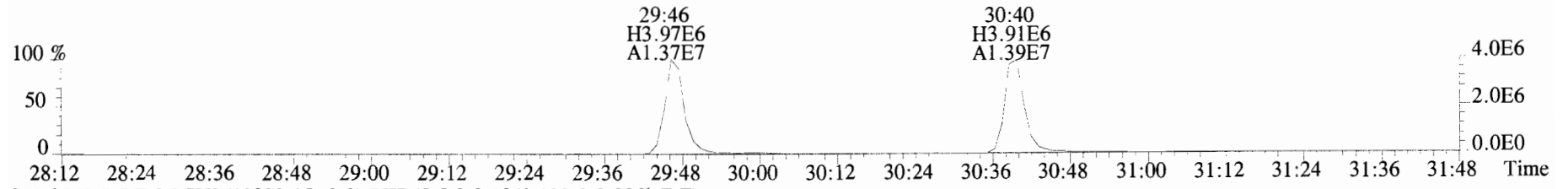
375.8364 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



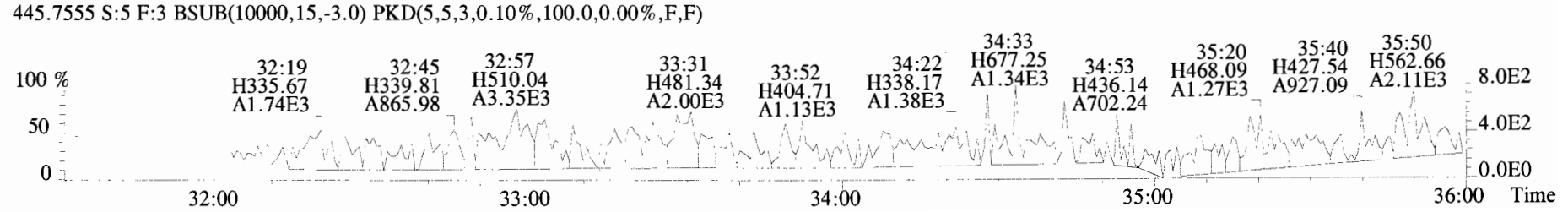
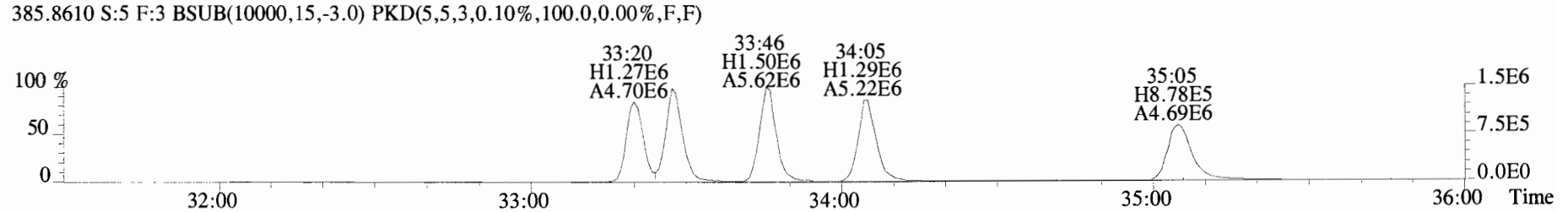
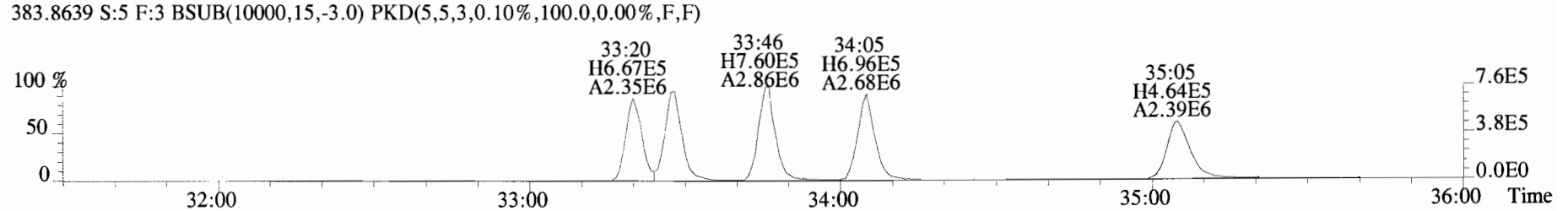
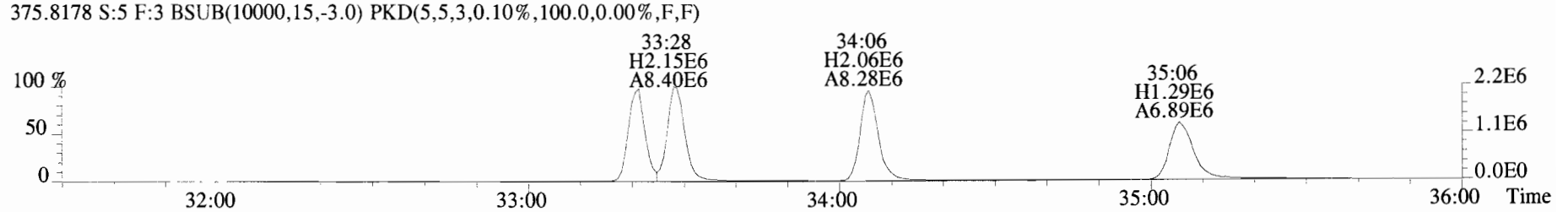
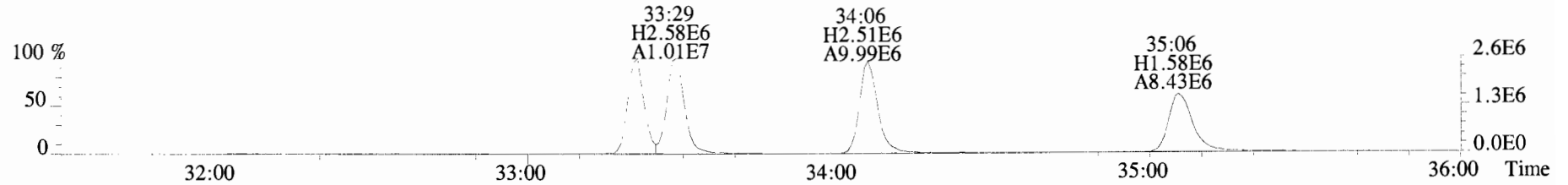
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
 339.8597 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



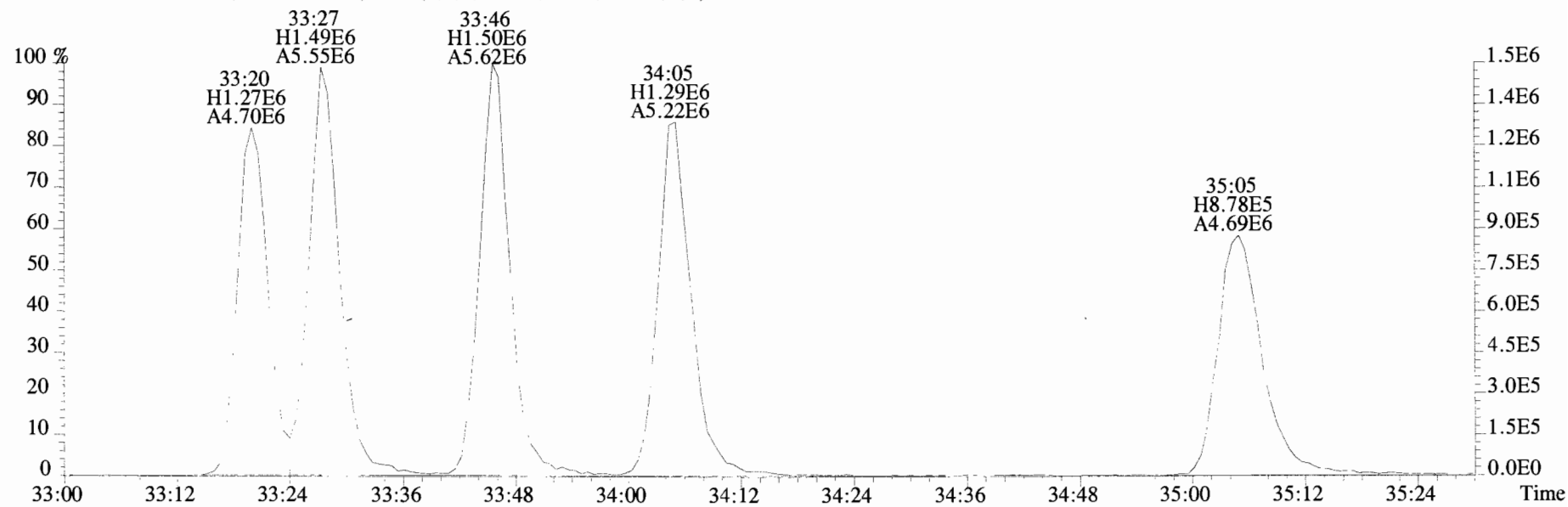
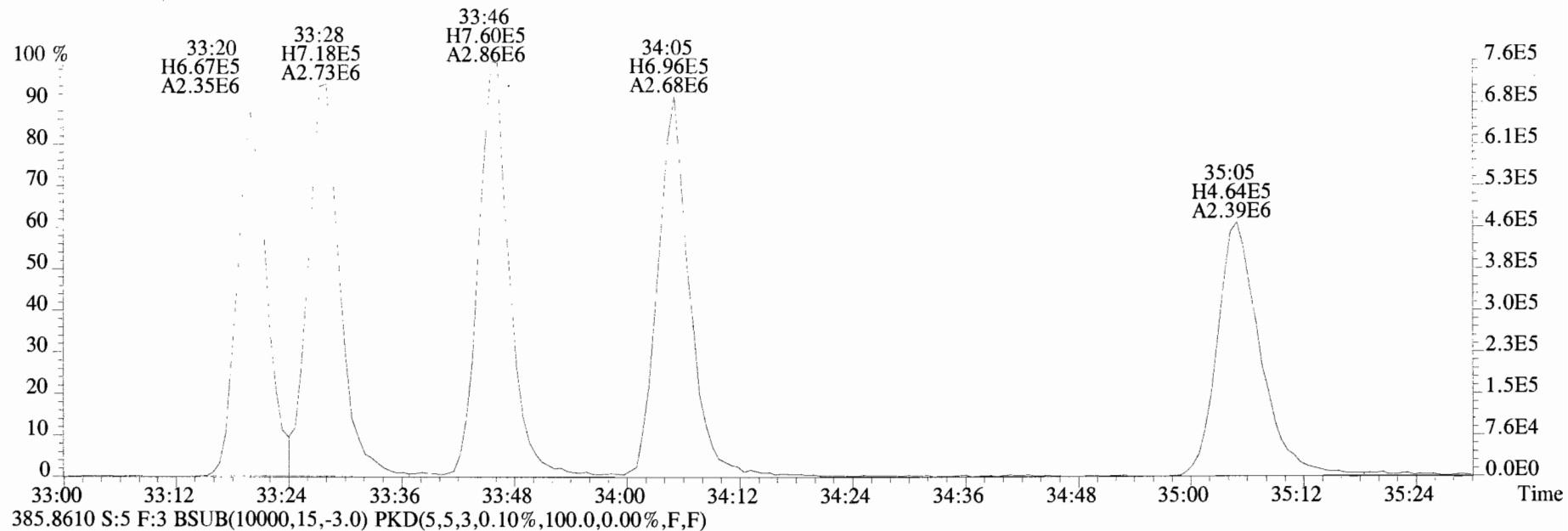
File:191009D1 #1-210 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
339.8597 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



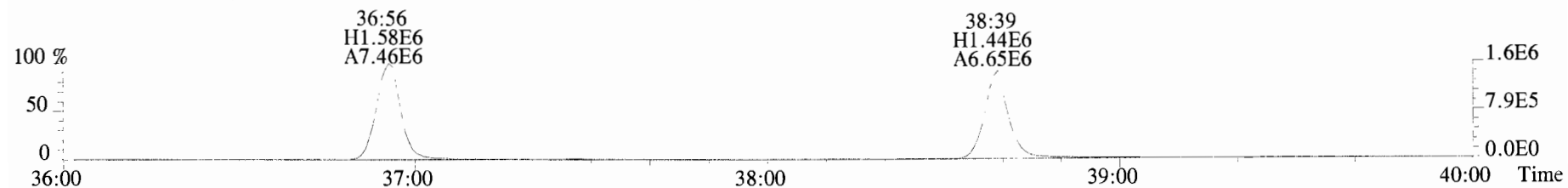
File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
 373.8207 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



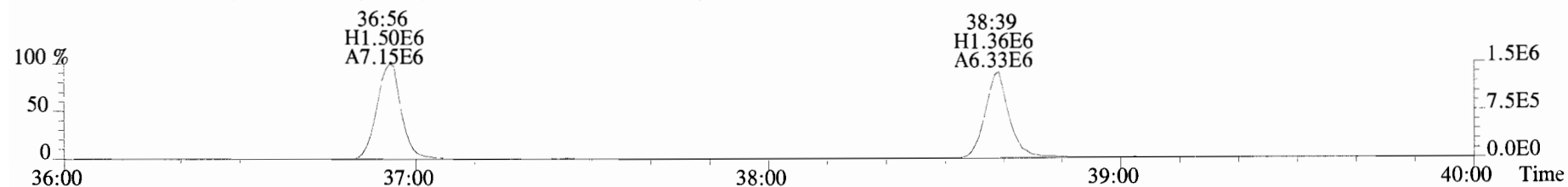
File: 191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory VG7 Text: ST191009D1-5 1613 CS4 19C2205 Exp: OCDD_DB5
383.8639 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



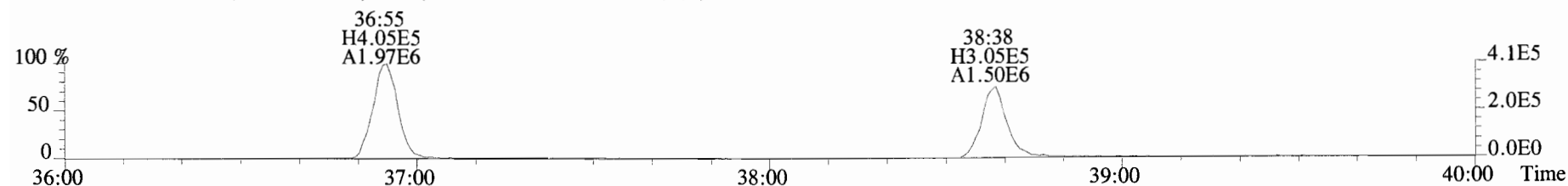
File:191009D1 #1-356 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
407.7818 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



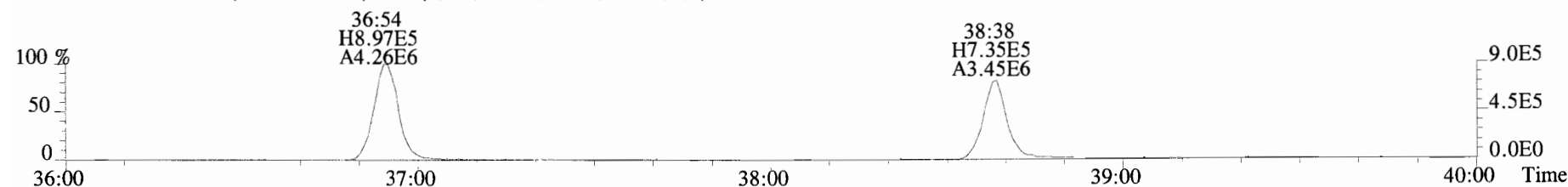
409.7788 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



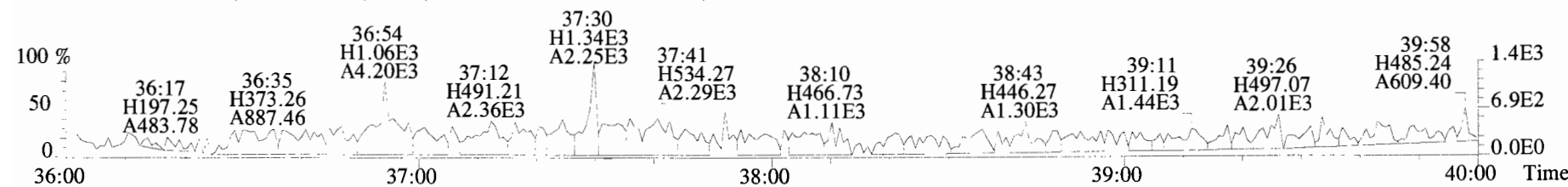
417.8253 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



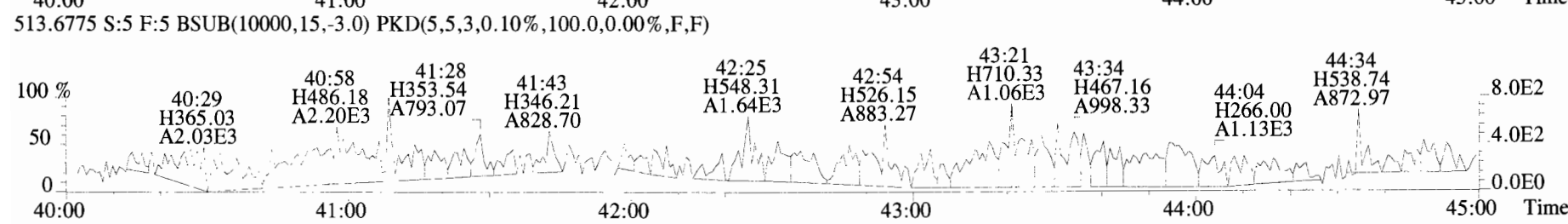
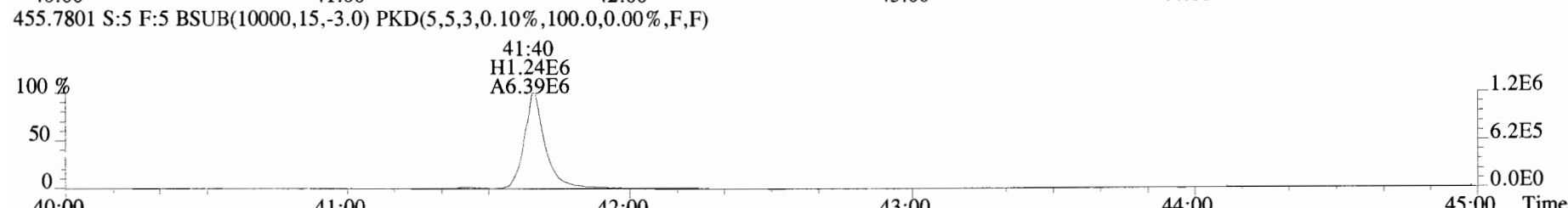
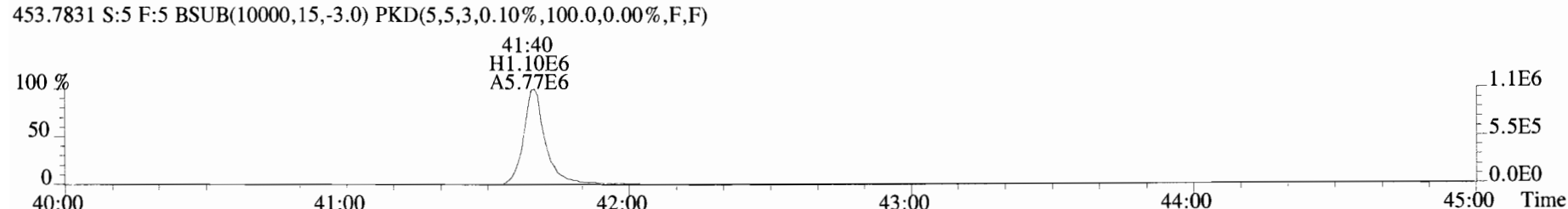
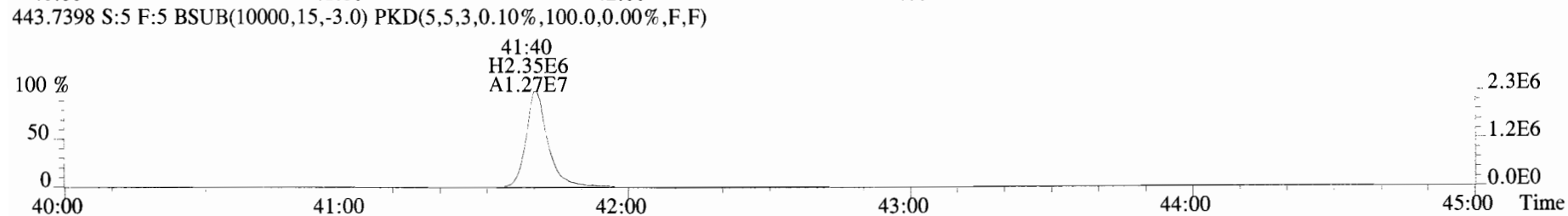
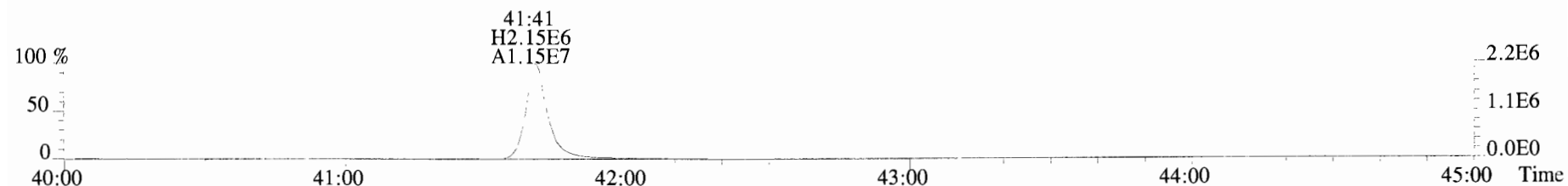
419.8220 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



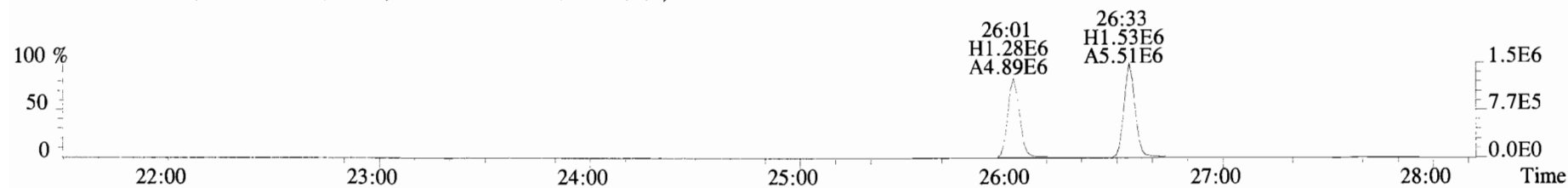
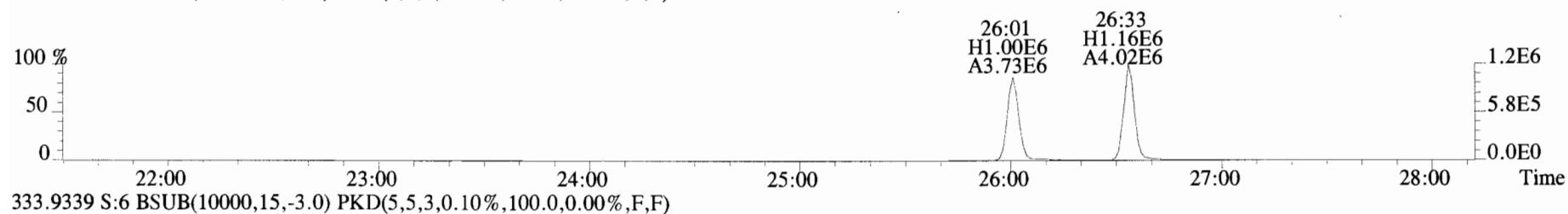
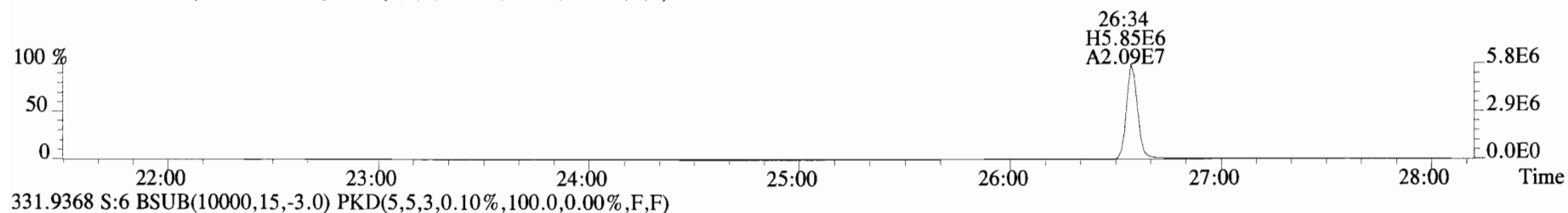
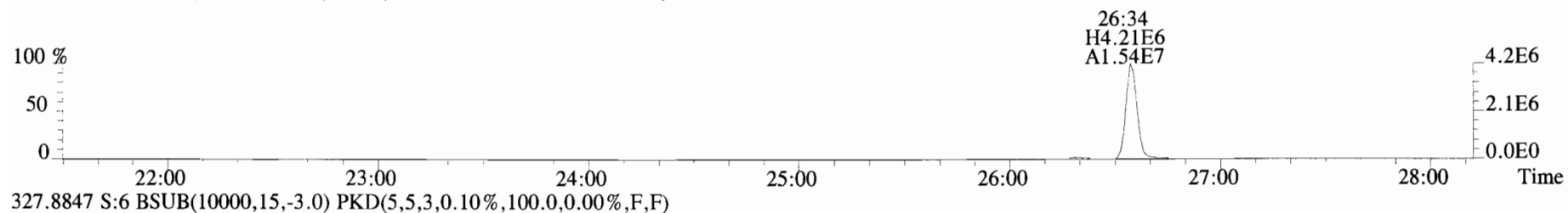
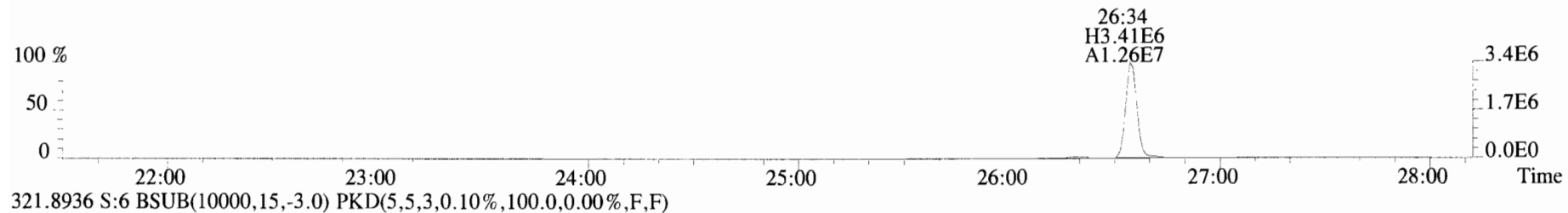
479.7165 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



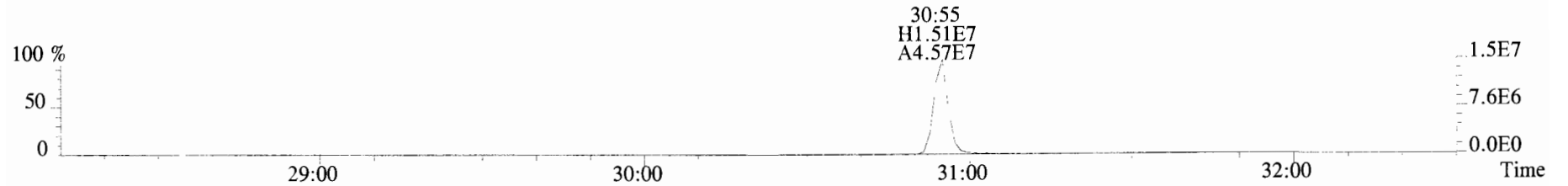
File:191009D1 #1-431 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
441.7428 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



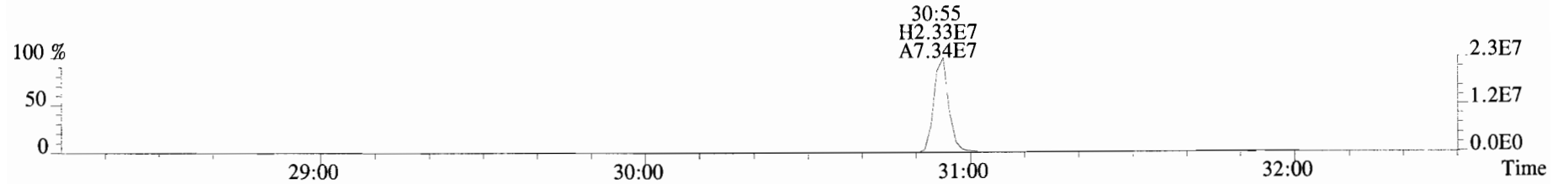
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
319.8965 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



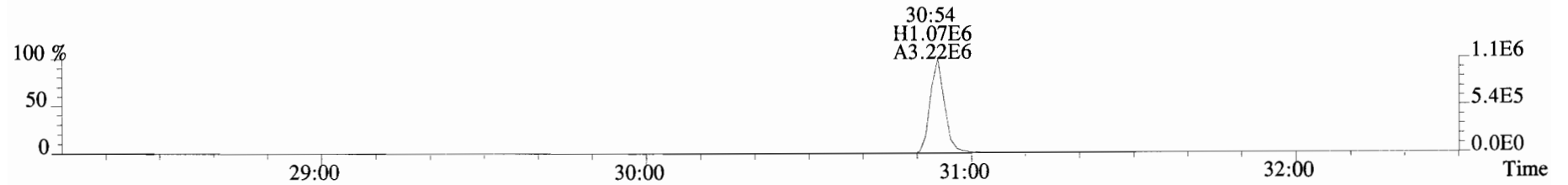
File:191009D1 #1-211 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
353.8576 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



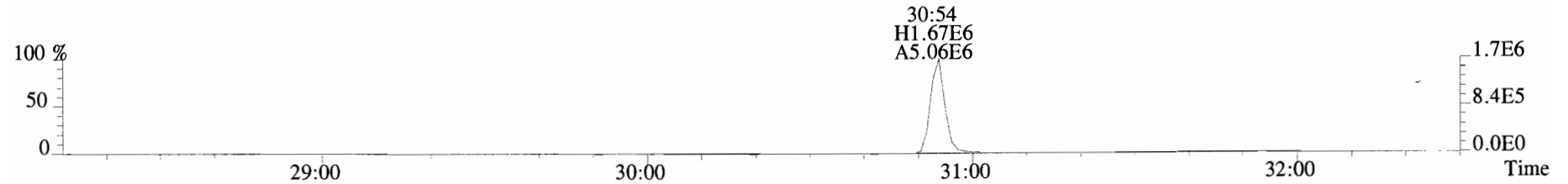
355.8546 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



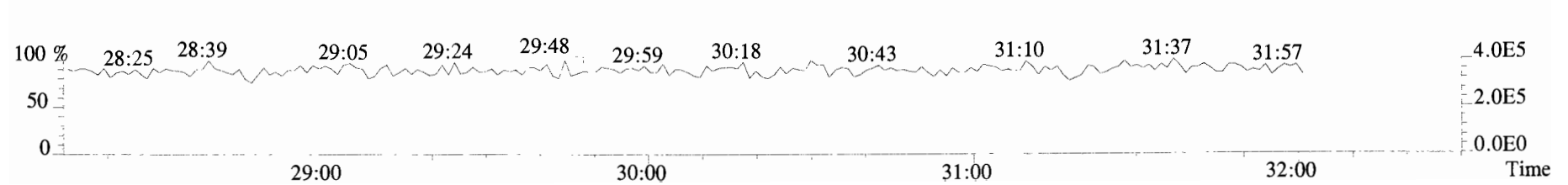
365.8978 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



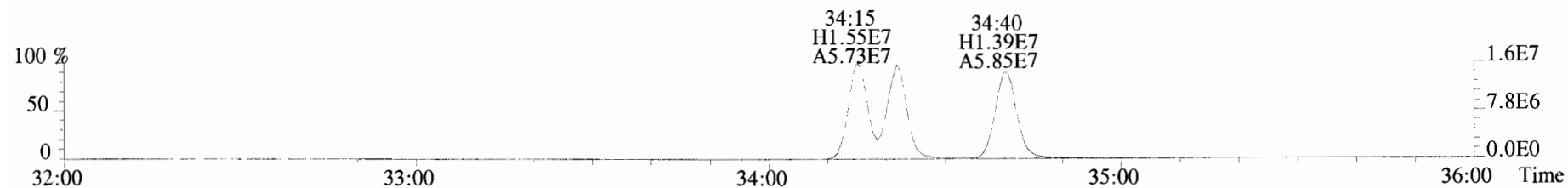
367.8949 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



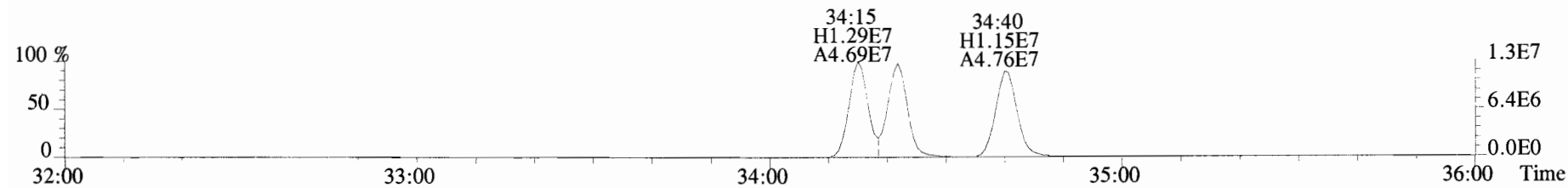
366.9792 S:6 F:2



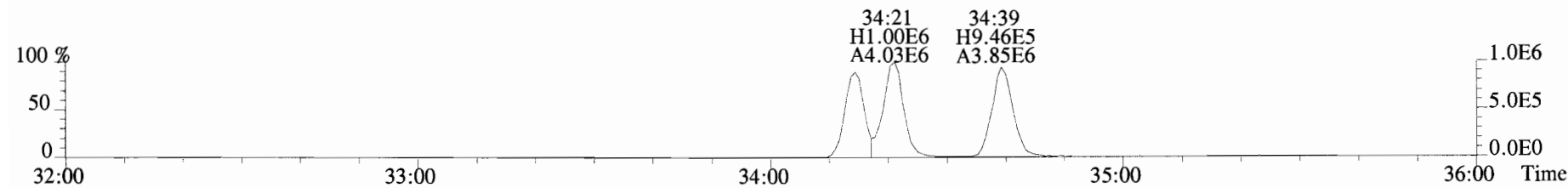
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
389.8156 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



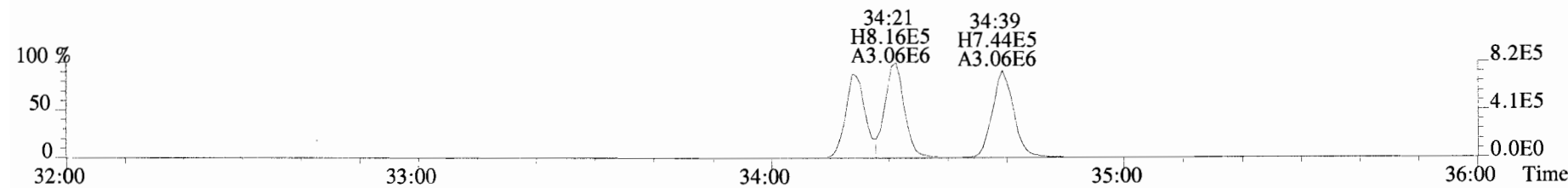
391.8127 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



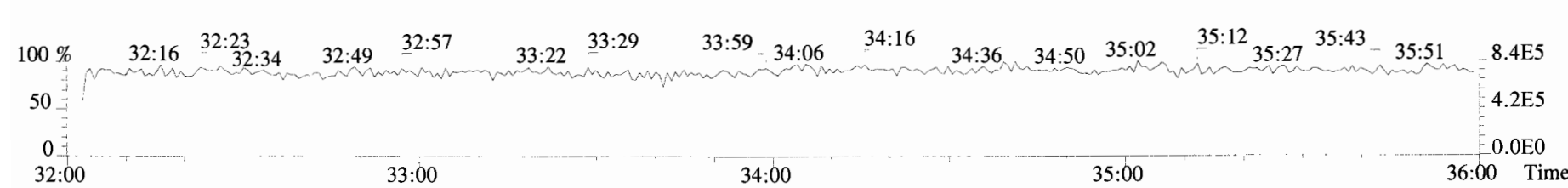
401.8559 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



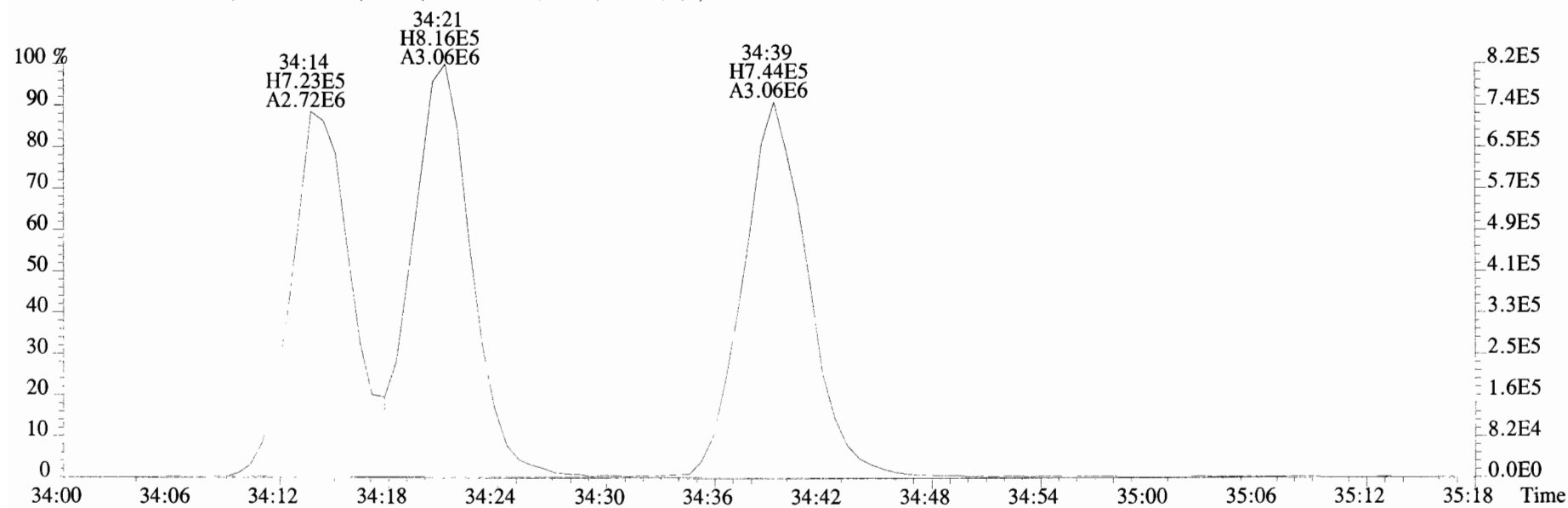
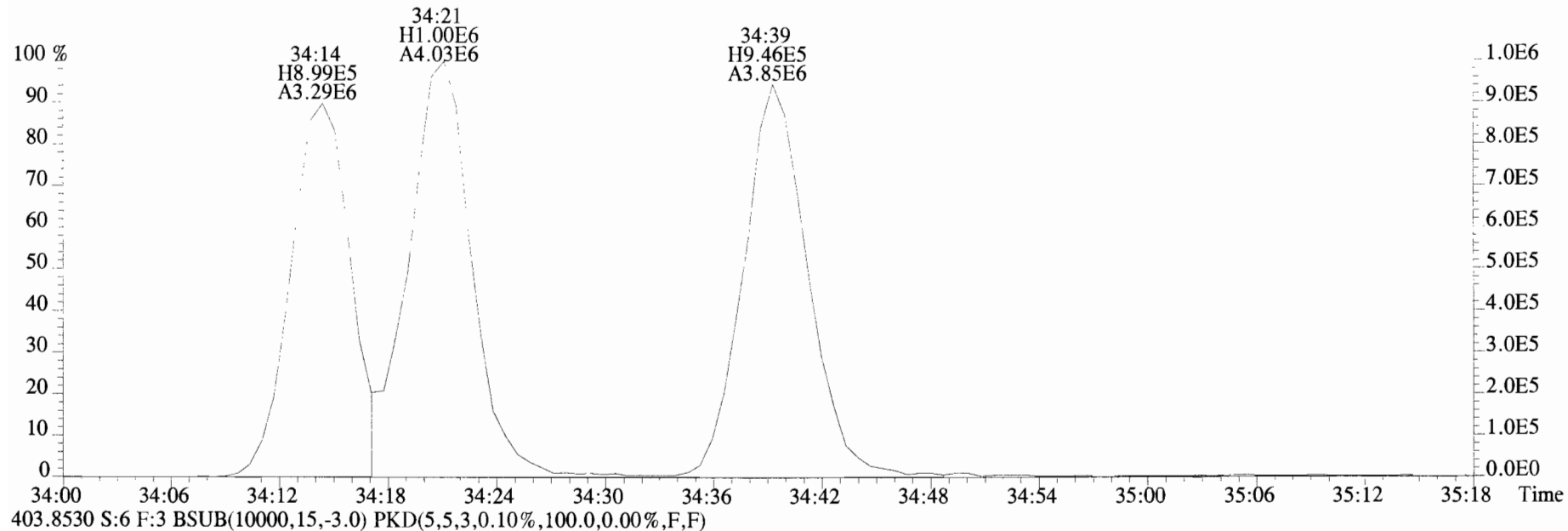
403.8530 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



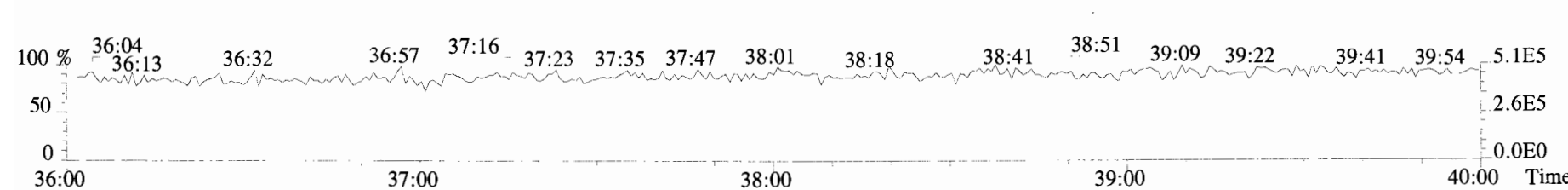
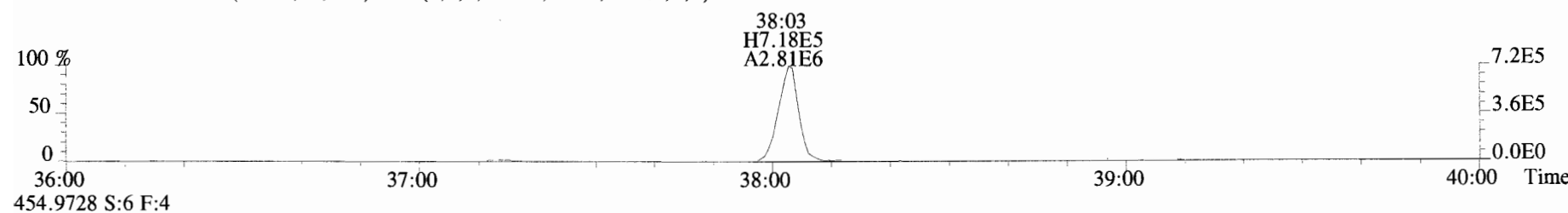
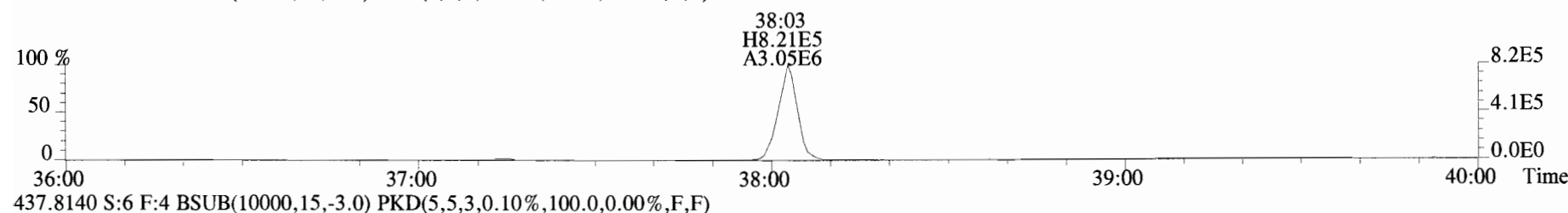
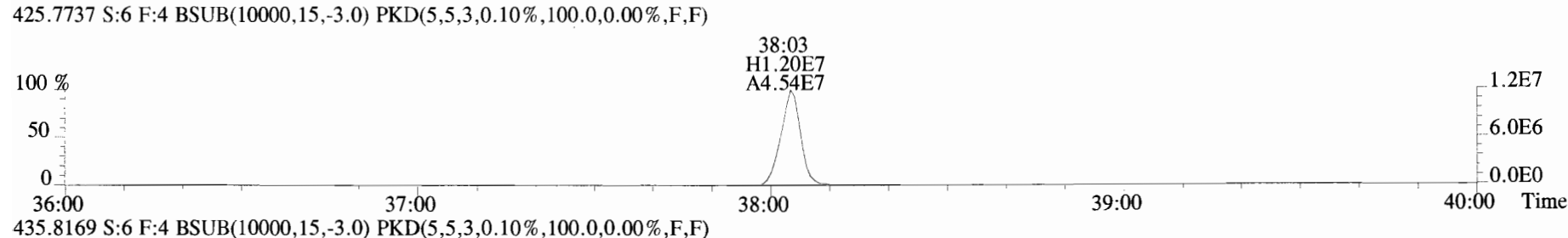
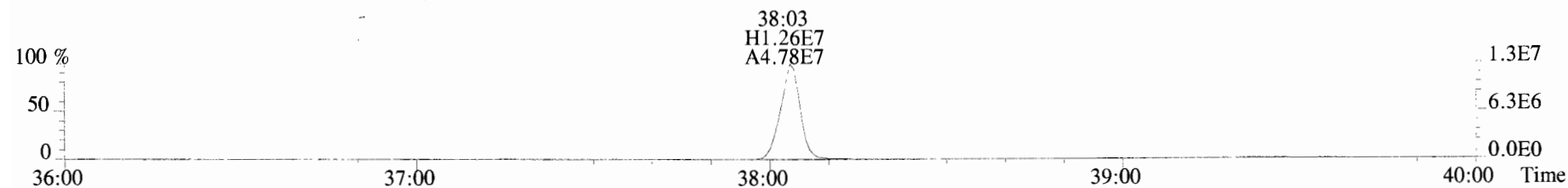
392.9760 S:6 F:3



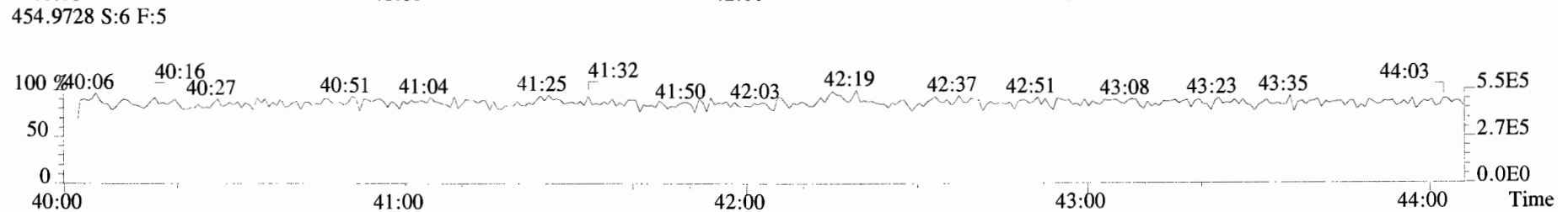
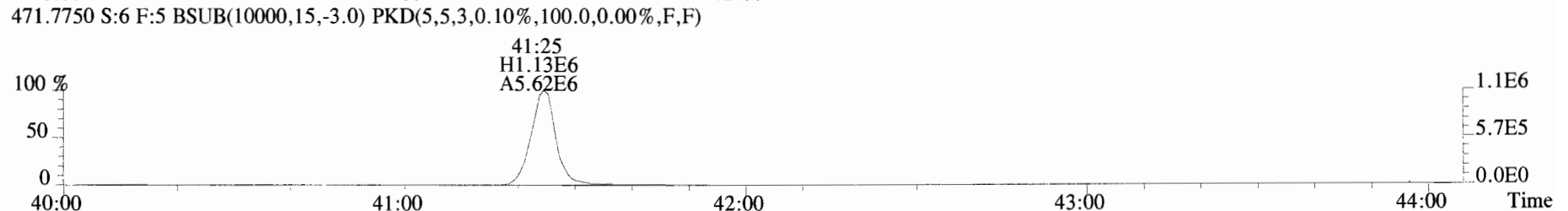
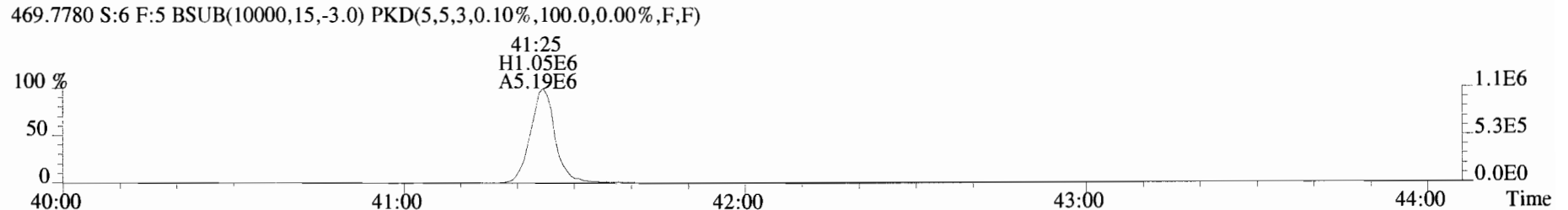
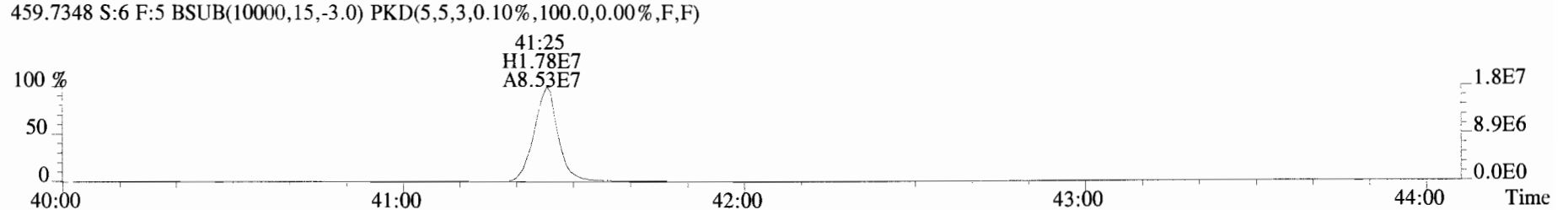
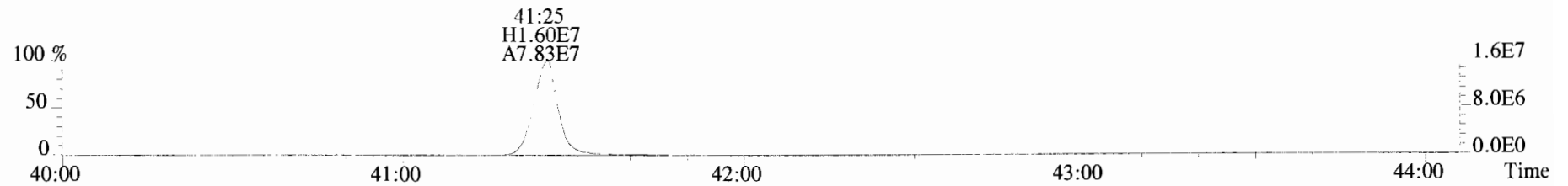
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
401.8559 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



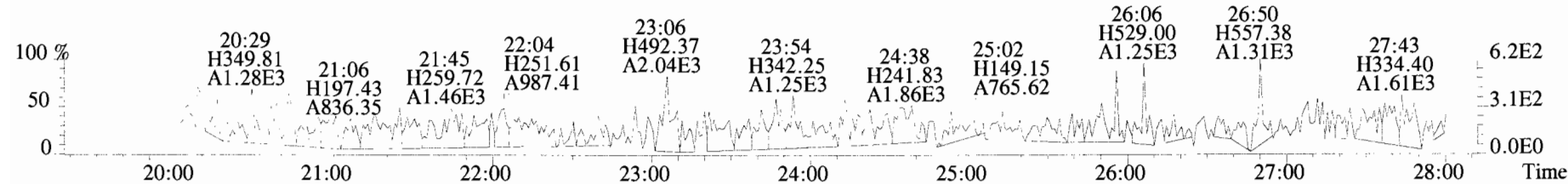
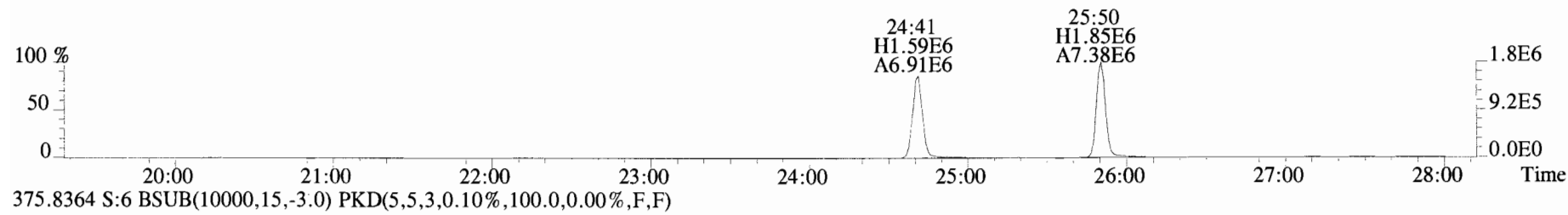
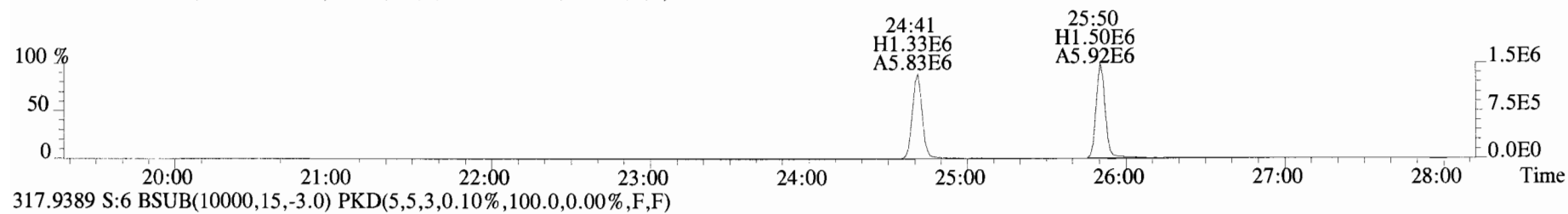
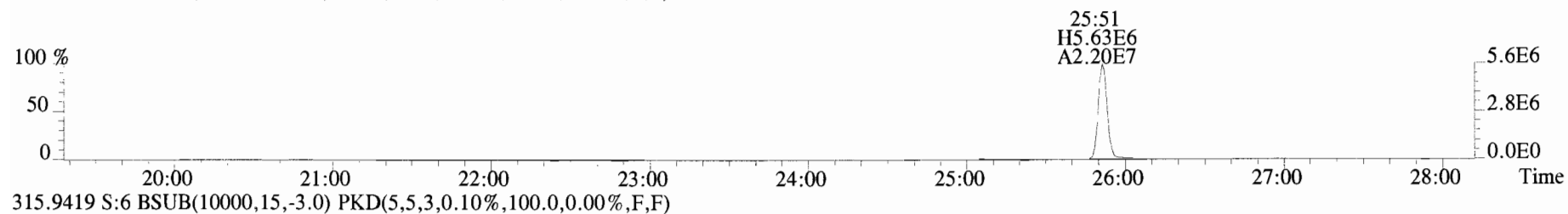
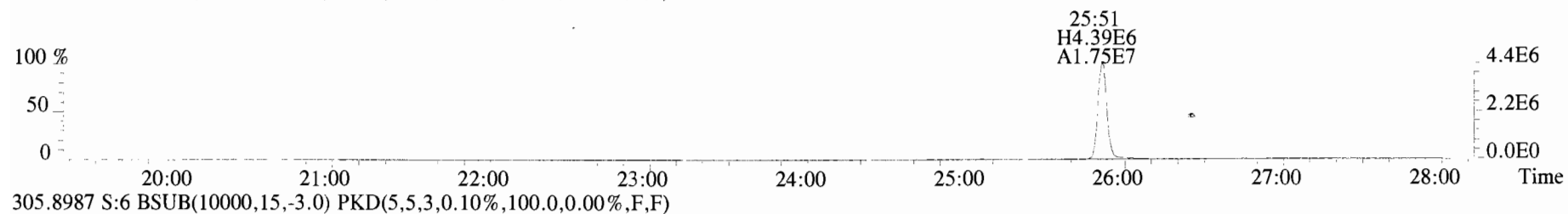
File:191009D1 #1-356 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
423.7767 S:6 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



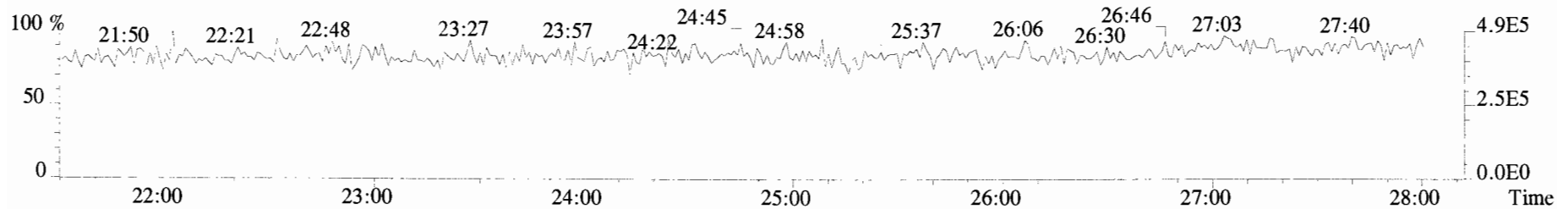
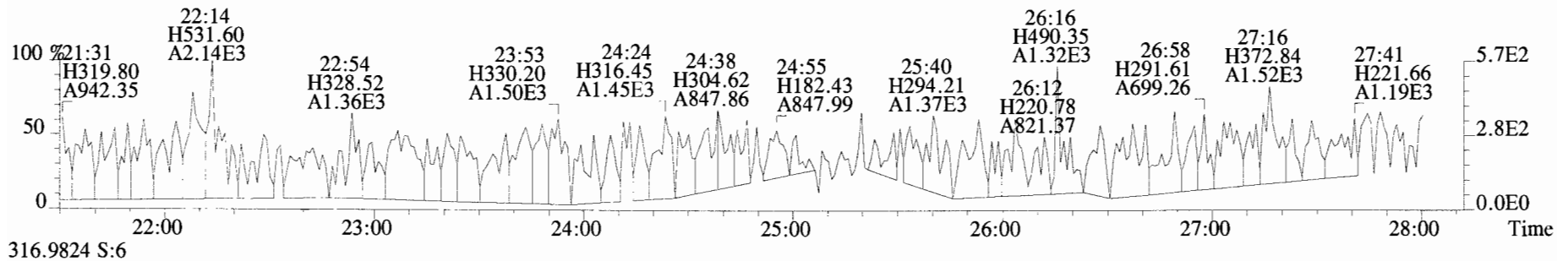
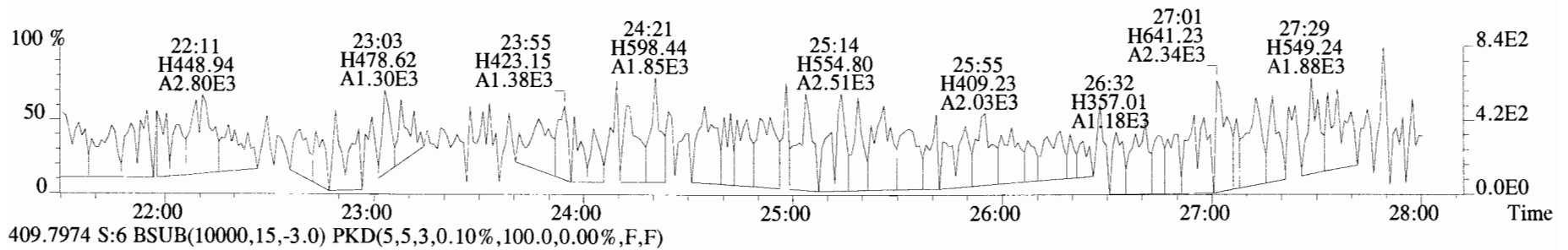
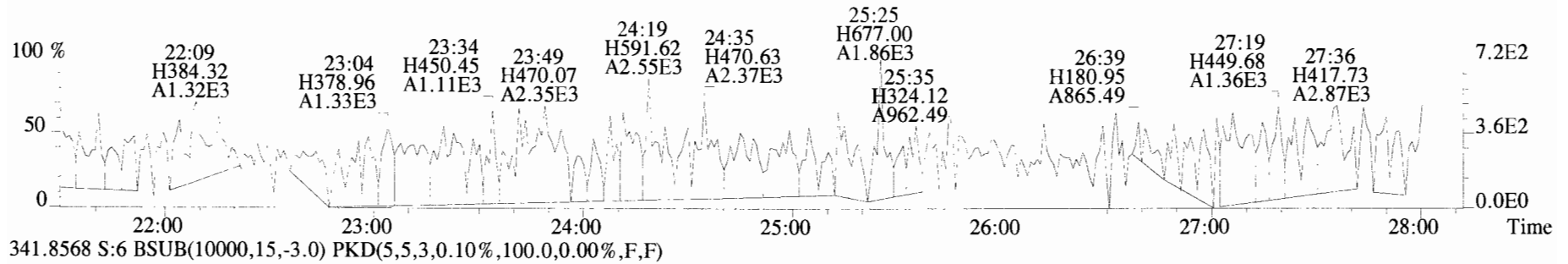
File:191009D1 #1-431 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
457.7377 S:6 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



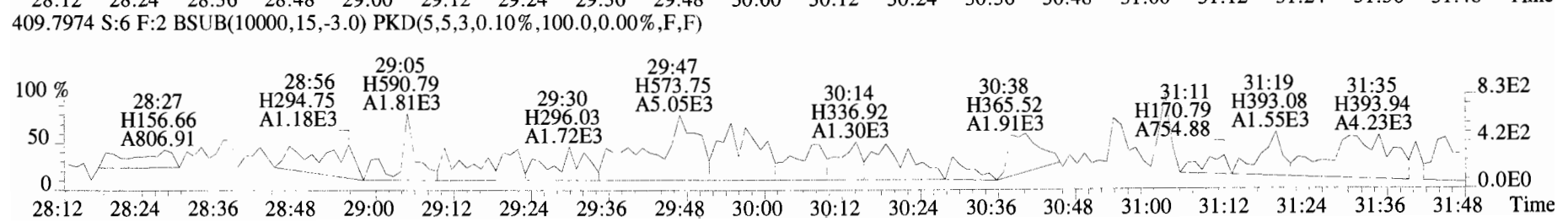
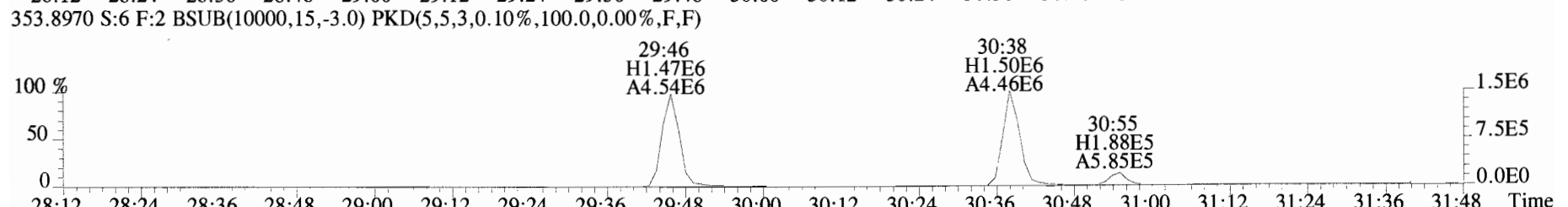
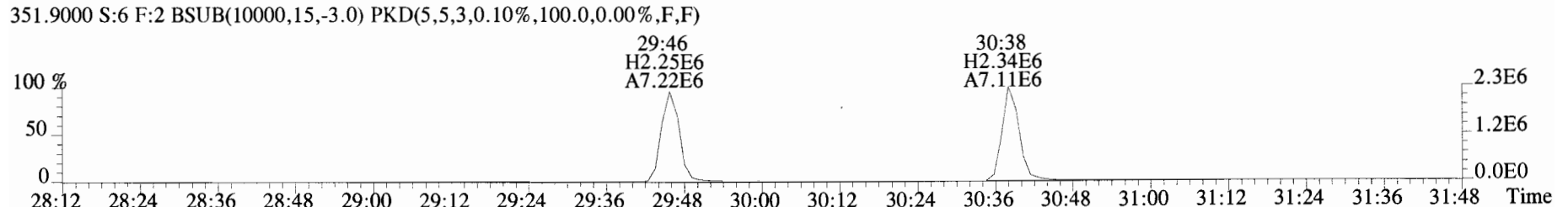
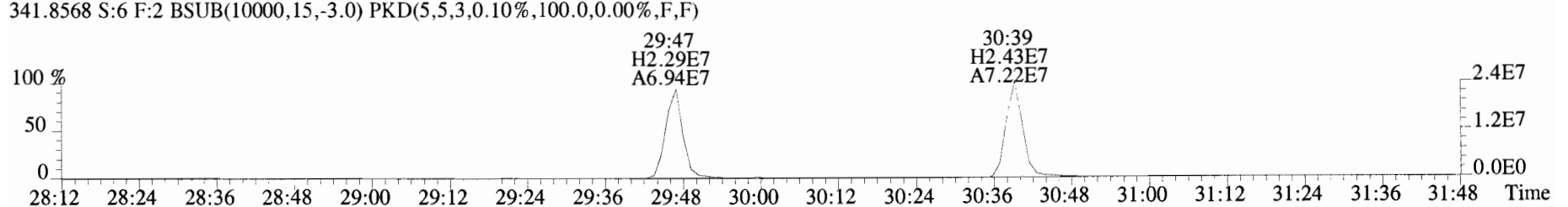
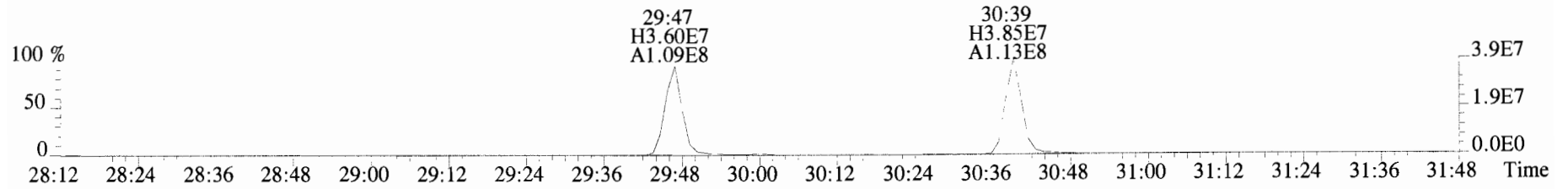
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
303.9016 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



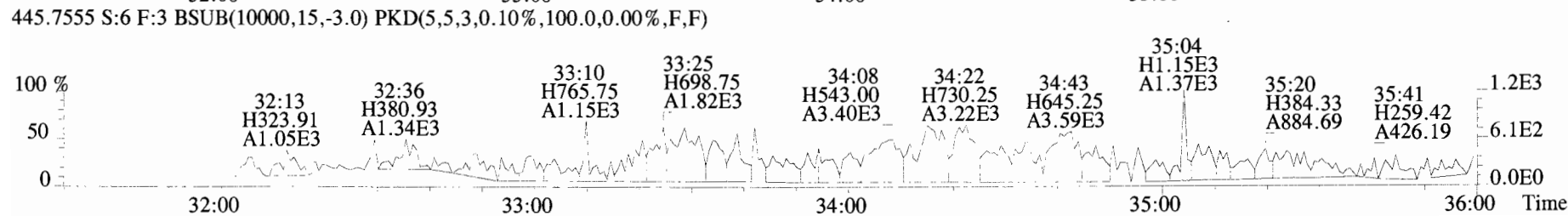
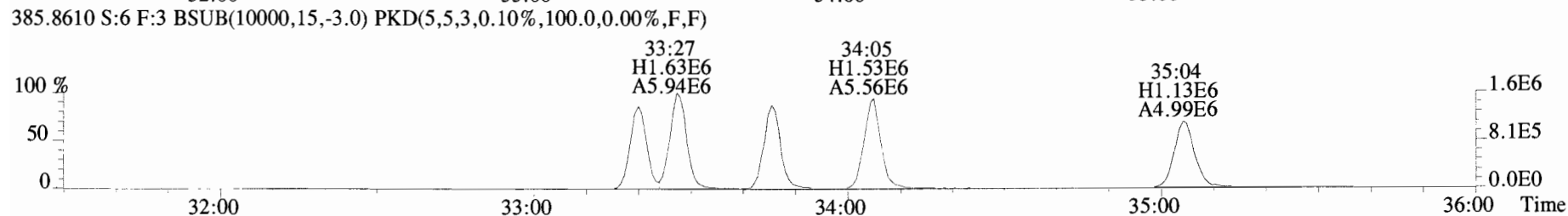
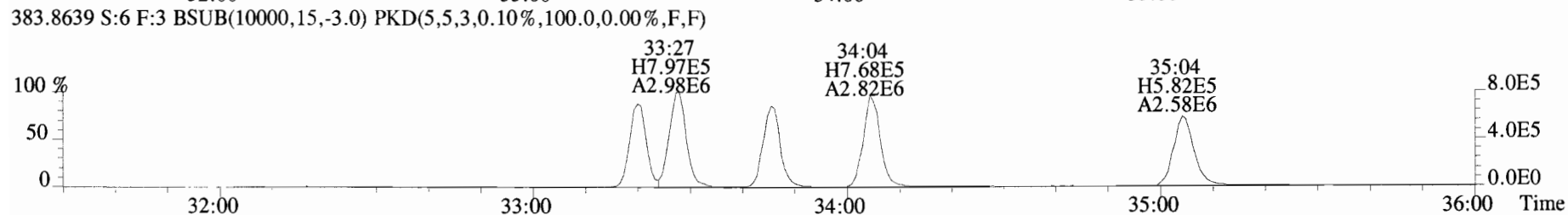
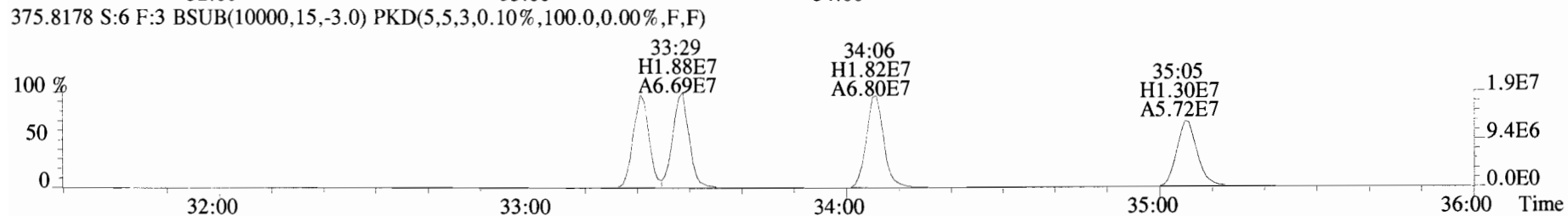
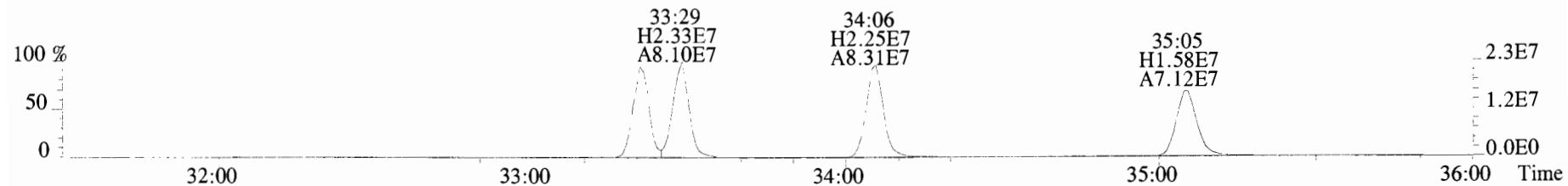
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
 339.8597 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



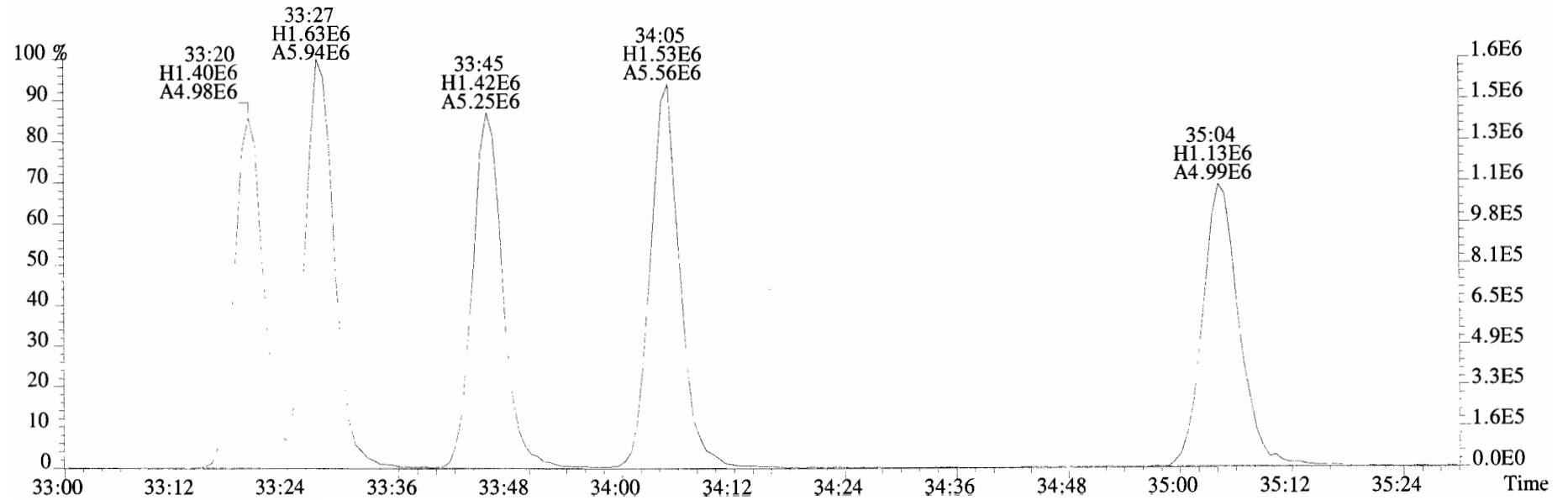
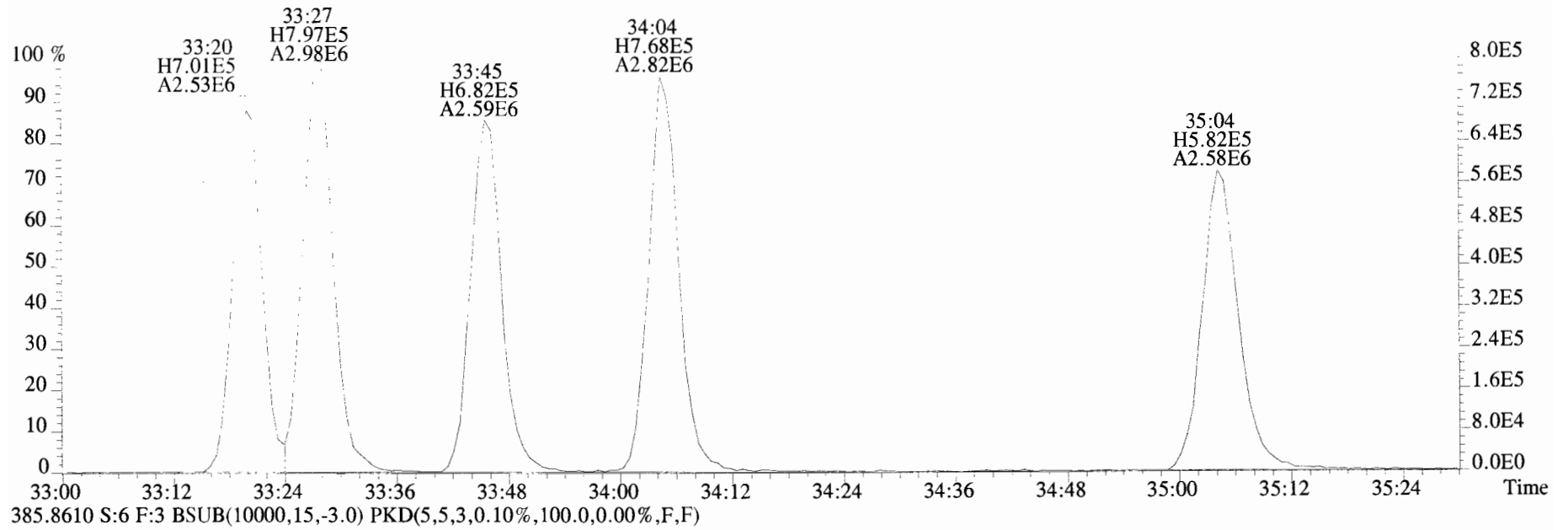
File:191009D1 #1-211 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
339.8597 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



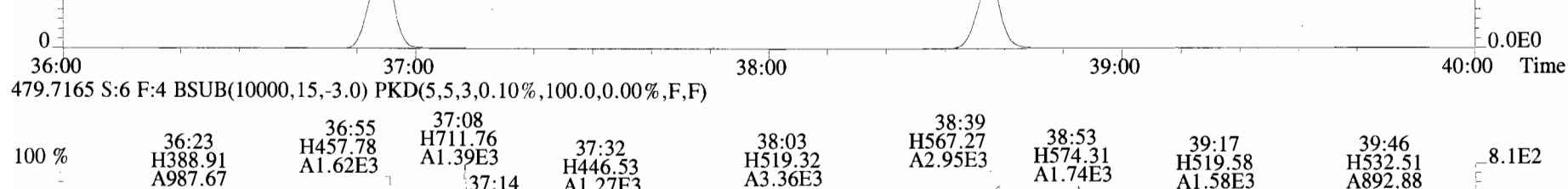
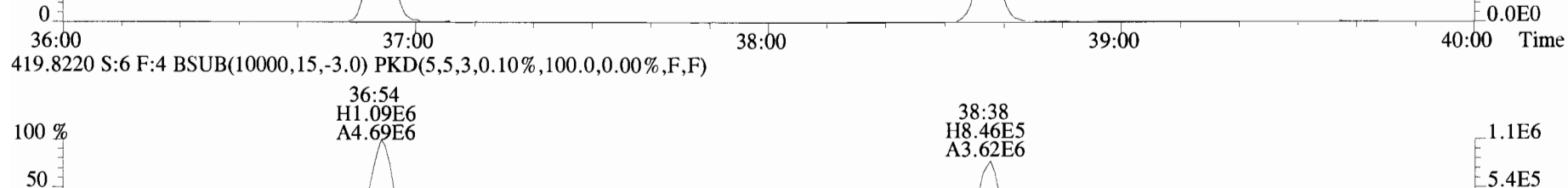
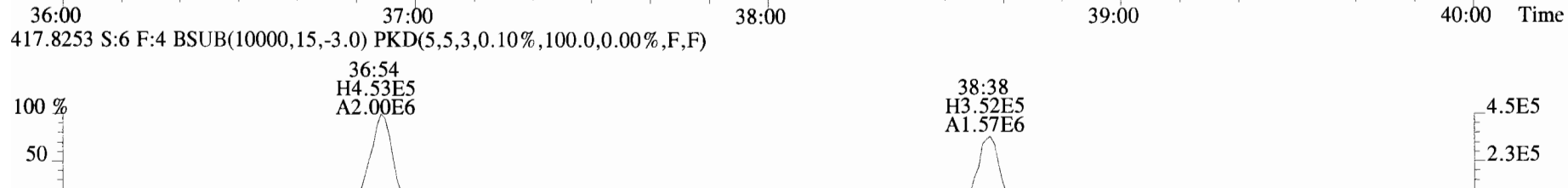
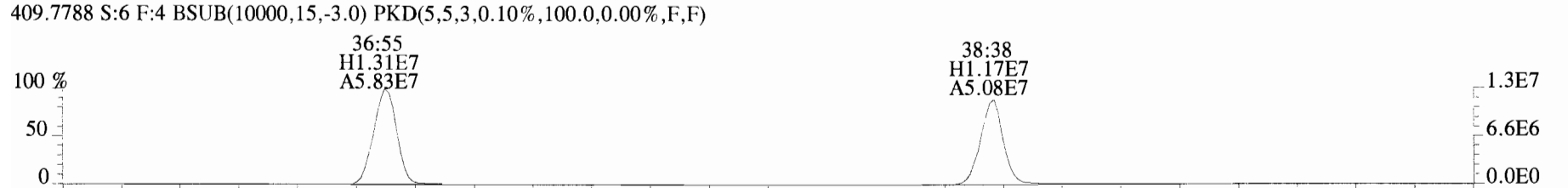
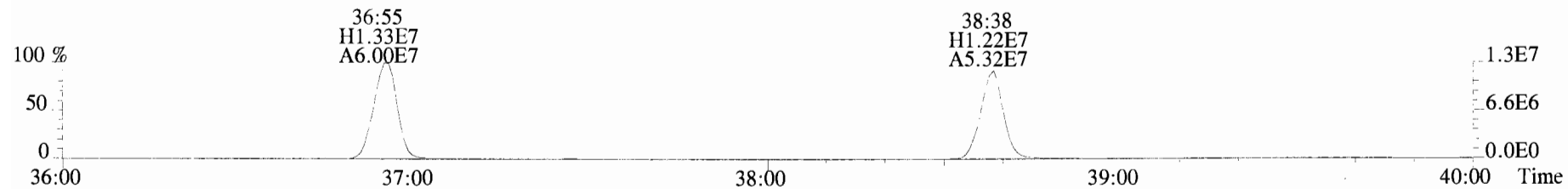
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
 373.8207 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



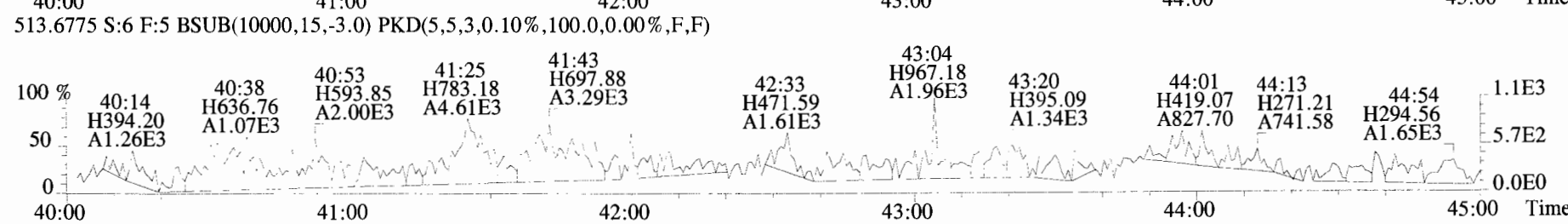
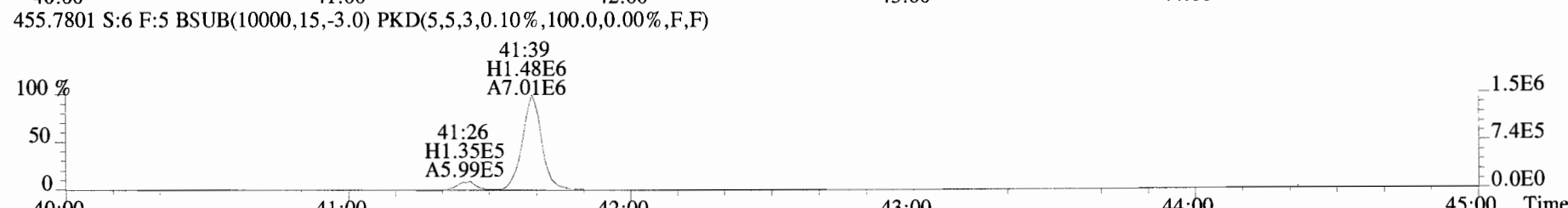
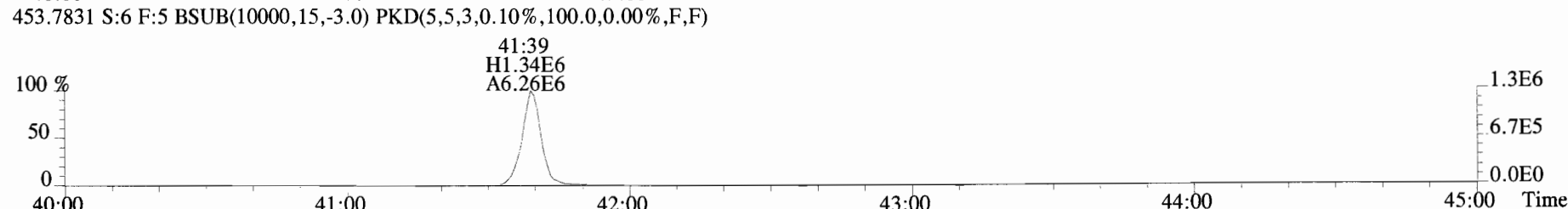
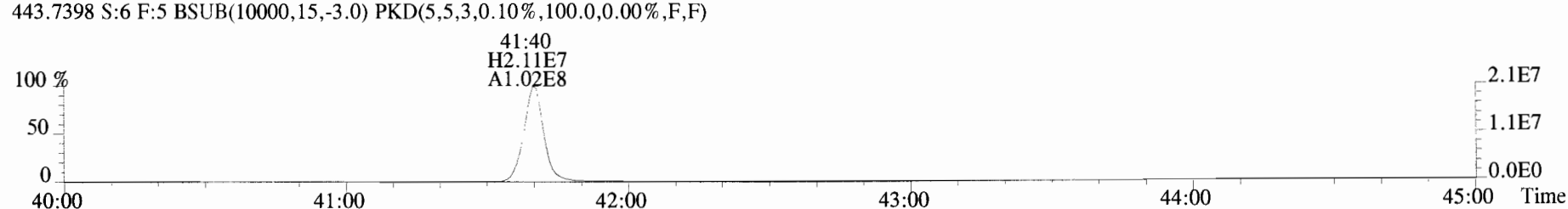
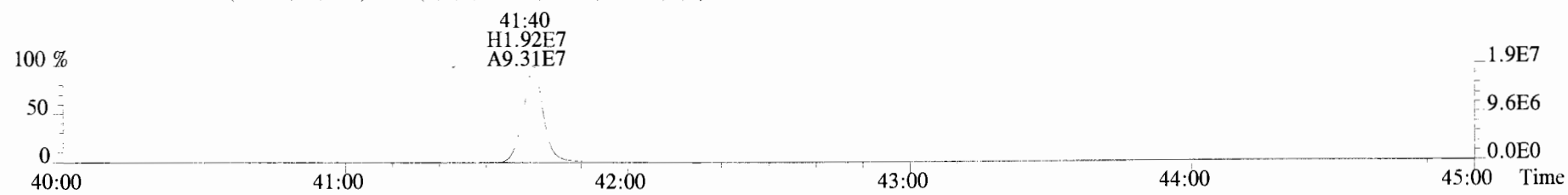
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
383.8639 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191009D1 #1-356 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
 407.7818 S:6 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

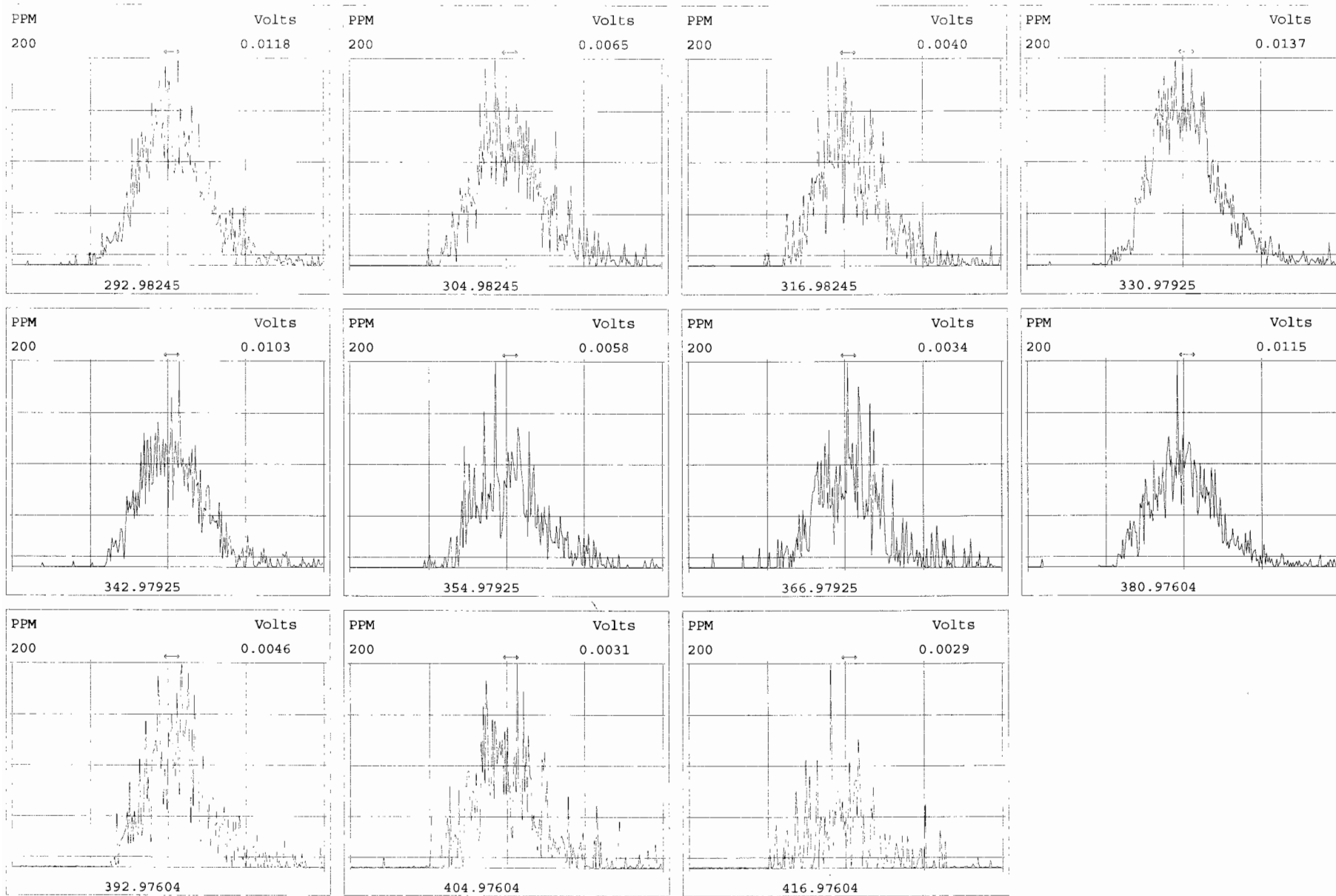


File:191009D1 #1-431 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
 441.7428 S:6 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



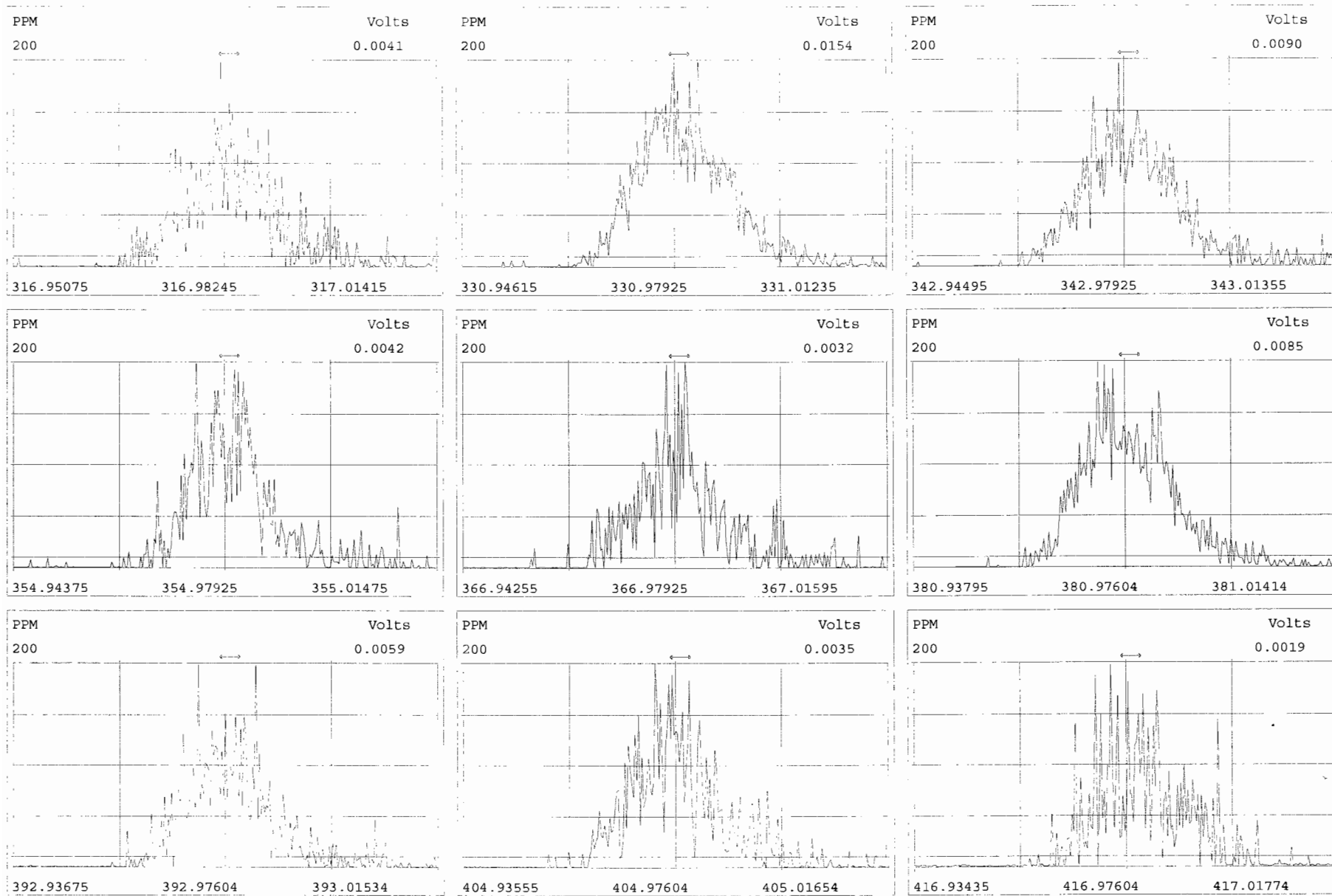
Peak Locate Examination:10-OCT-2019:06:40 File:RES_CHECK

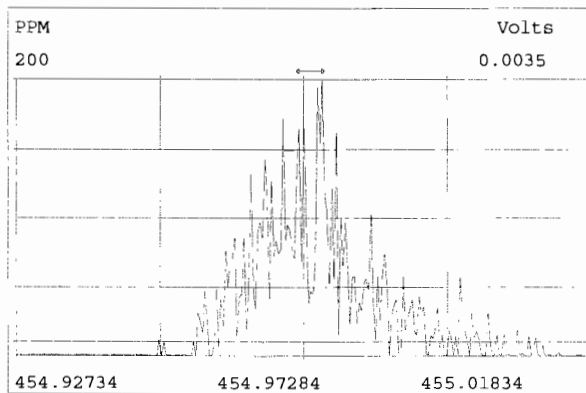
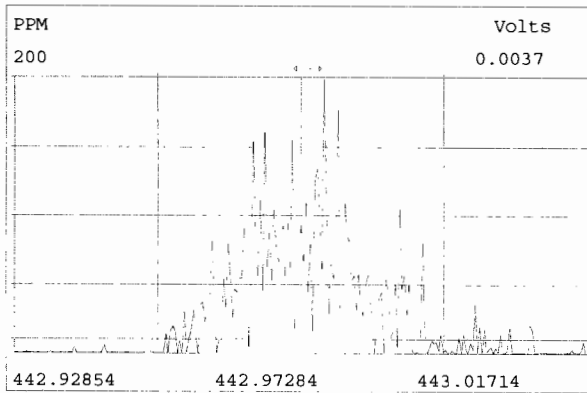
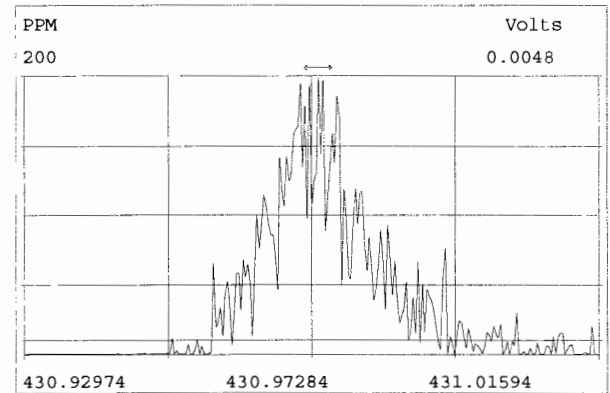
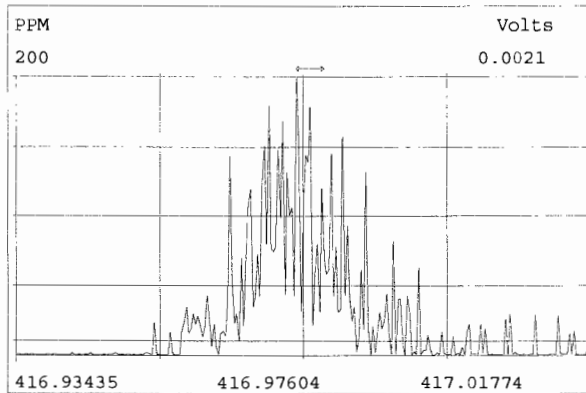
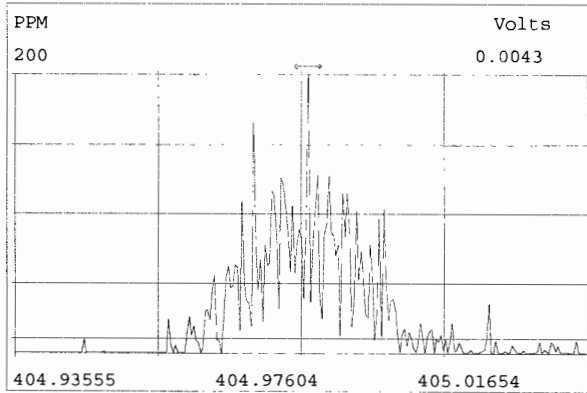
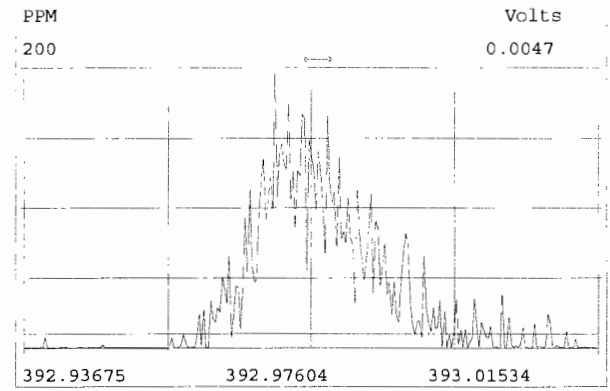
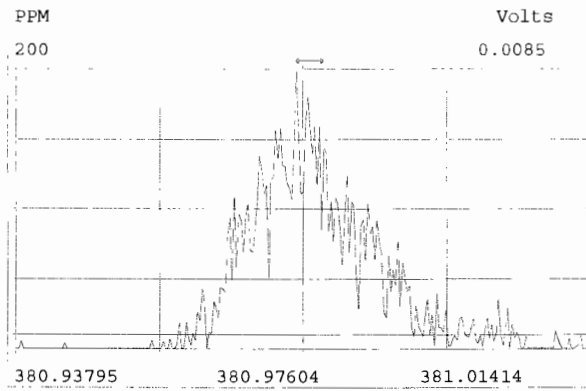
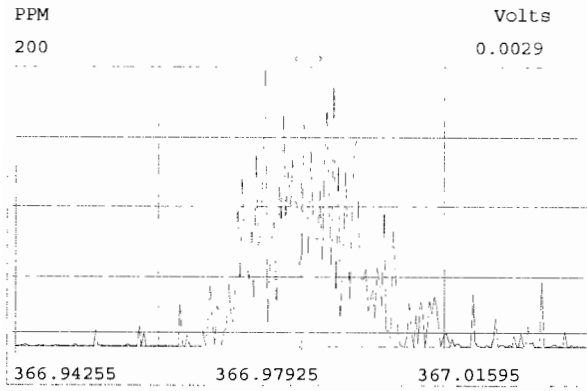
Experiment:OCDD_DB5 Function:1 Reference:PFK

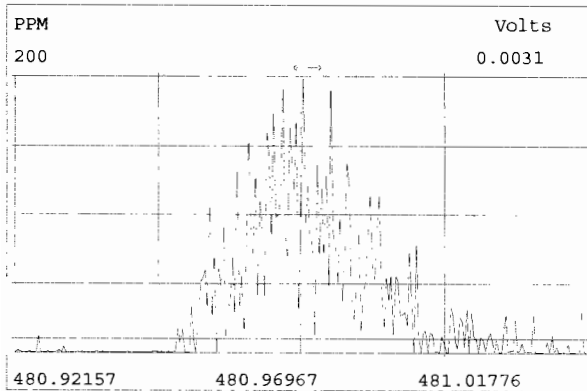
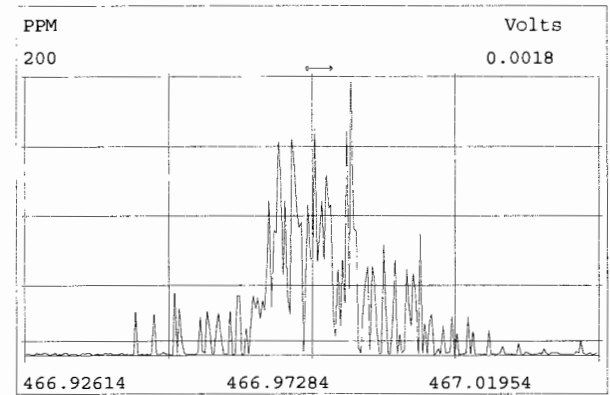
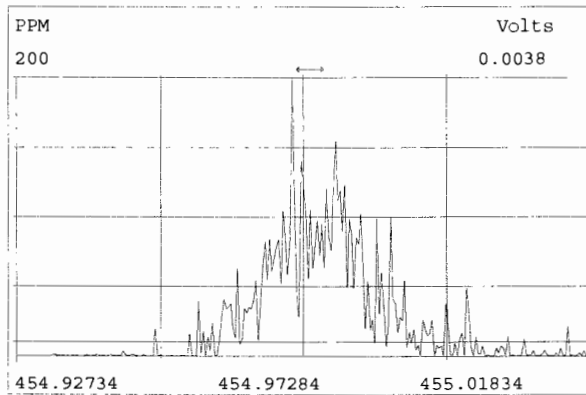
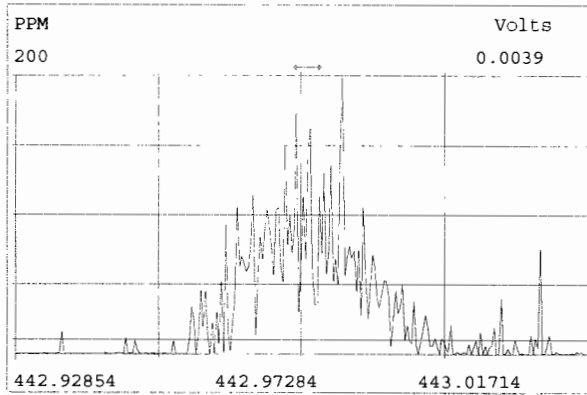
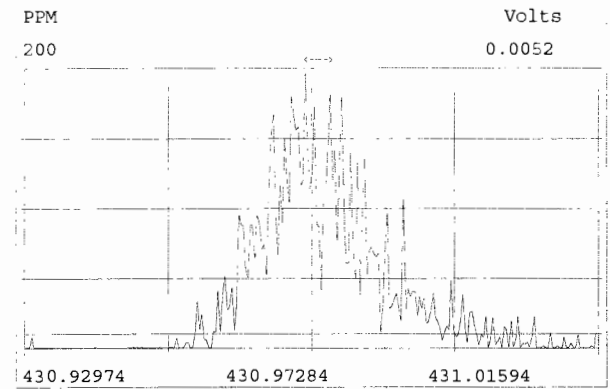
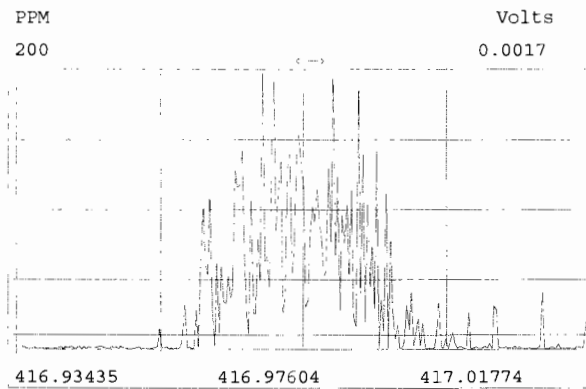
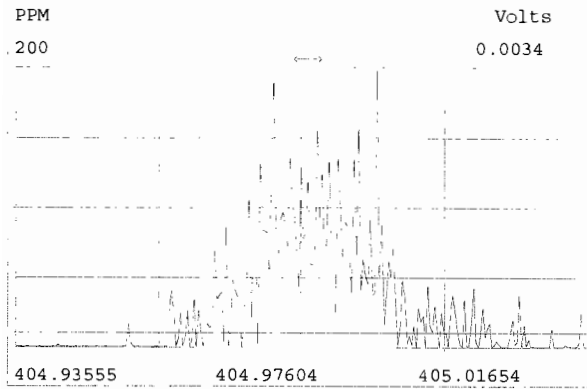


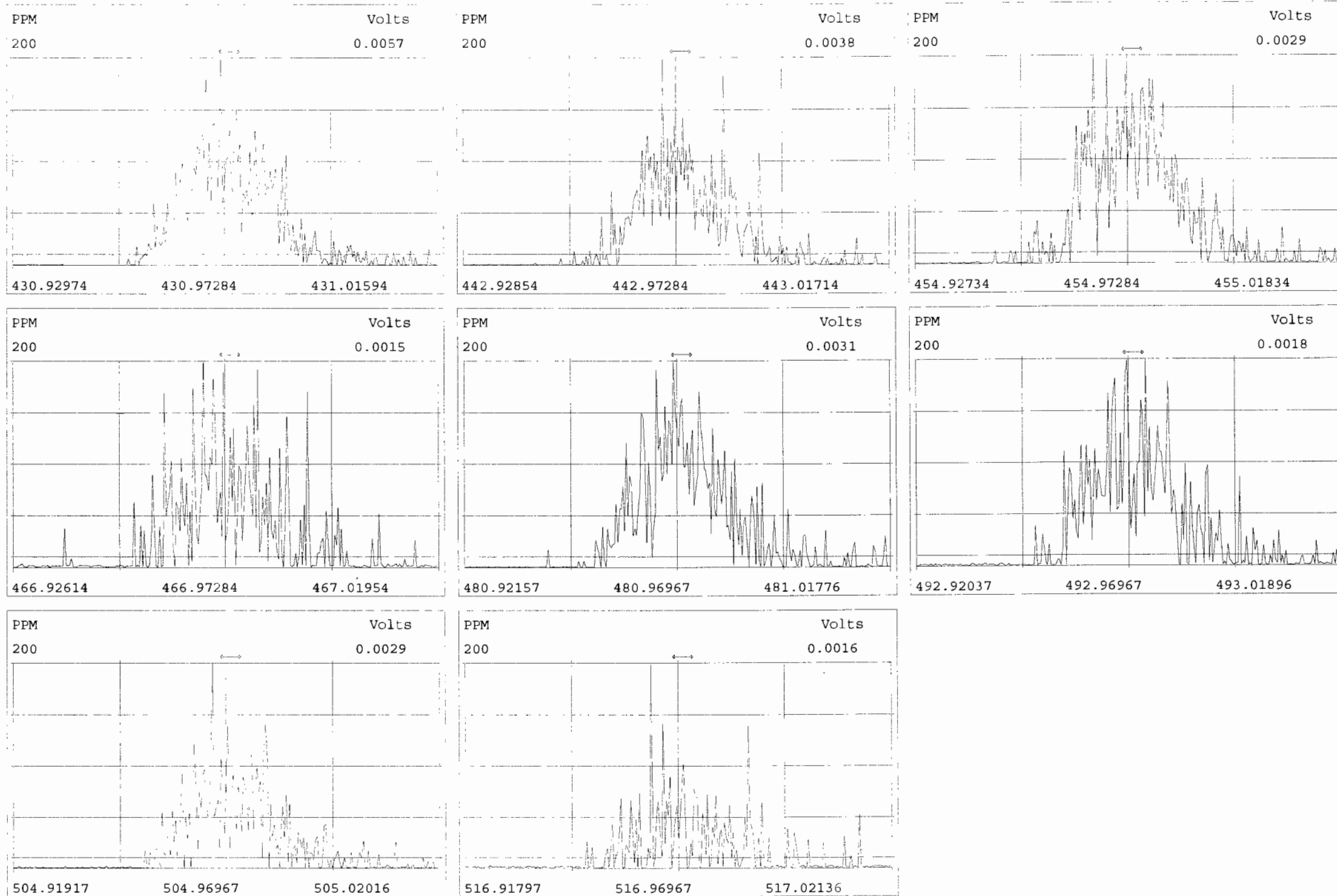
Peak Locate Examination:10-OCT-2019:06:41 File:RES_CHECK

Experiment:OCDD_DB5 Function:2 Reference:PFK









FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: SS191009D1-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

NATIVE ANALYTES	M/Z'S	ION	QC	Pass	CONC.	CONC.
	FORMING	ABUND.	LIMITS		FOUND	RANGE (3)
	RATIO (1)	RATIO	(2)		FOUND	(ng/mL)
2,3,7,8-TCDD	M/M+2	0.83	0.65-0.89	y	10.2	7.8 - 12.9
						8.2 - 12.3 (4)
1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	51.3	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	y	48.9	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.18	1.05-1.43	y	52.4	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.17	1.05-1.43	y	50.4	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	y	51.9	43.0 - 58.0
OCDD	M+2/M+4	0.92	0.76-1.02	y	105	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	y	10.3	8.4 - 12.0
						8.6 - 11.6 (4)
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	y	50.2	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	y	56.7	41.0 - 61.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	51.1	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	y	51.5	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	y	51.5	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	y	50.9	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	y	53.0	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	y	50.2	43.0 - 58.0
OCDF	M+2/M+4	0.92	0.76-1.02	y	102	63.0 - 159.0

(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) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DB

Date: 10/10/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

LABELLED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC. FOUND	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.72	0.65-0.89	y	100	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.64	0.54-0.72	y	101	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	y	95.9	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	y	95.6	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	y	94.3	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	y	91.7	72.0 - 138.0
13C-OCDD	M/M+2	0.92	0.76-1.02	y	190	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.78	0.65-0.89	y	97.2	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	y	97.4	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	y	96.6	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	102	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	101	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	97.1	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	y	99.0	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.43	0.37-0.51	y	96.6	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.44	0.37-0.51	y	102	77.0 - 129.0
13C-OCDF	M+2/M+4	0.88	0.76-1.02	y	197	96.0 - 415.0
CLEANUP STANDARD (3)						
37Cl-2,3,7,8-TCDD					9.08	7.9 - 12.7

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

(2) Ion Abundance Ratio Control Limits as specified

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

Analyst: DB

Date: 10/10/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME	RRT	RRT
	REFERENCE		QC LIMITS (1)
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	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-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	1.000	0.999-1.002
LABELED COMPOUNDS			
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.976-1.043
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.189	1.000-1.567
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.994	0.923-1.103
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.145	1.000-1.425
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.179	1.011-1.526
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052

Analyst: DB

Date: 10/10/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

NATIVE ANALYTES	RETENTION TIME	RRT	RRT
	REFERENCE		QC LIMITS (1)
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	1.000	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.000	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
1,2,3,4,7,8-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-1,2,3,7,8,9-HxCDD	1.001	0.998-1.004
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	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	1.000	0.999-1.001
OCDF	13C-OCDF	1.000	0.999-1.001

LABELED COMPOUNDS

13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.987	0.975-1.001
13C-1,2,3,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.991	0.979-1.005
13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.010	1.001-1.020
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.040	1.002-1.072
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.014	1.002-1.026
13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.018	1.007-1.029
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.027	1.014-1.038
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.093	1.069-1.111
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.145	1.098-1.192
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.127	1.117-1.141
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.227	1.085-1.365
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.235	1.091-1.371

Analyst: DB

Date: 10/10/19

Client ID: 1613 SSS 19C2207
Lab ID: SS191009D1-1

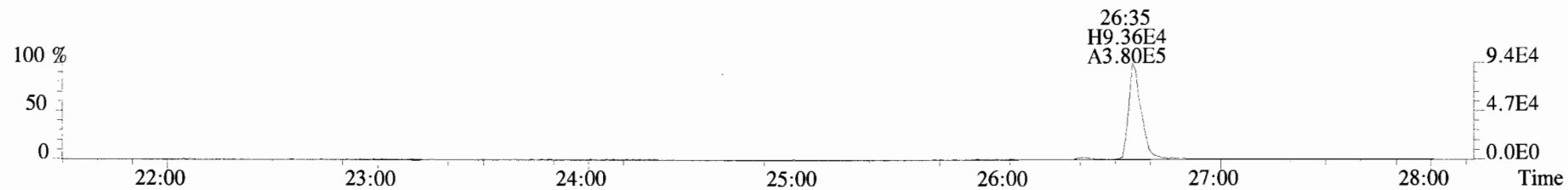
Filename: 191009D1 S:8 Acq: 9-OCT-19 21:46:34
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191009D1-4
EndCAL: NA

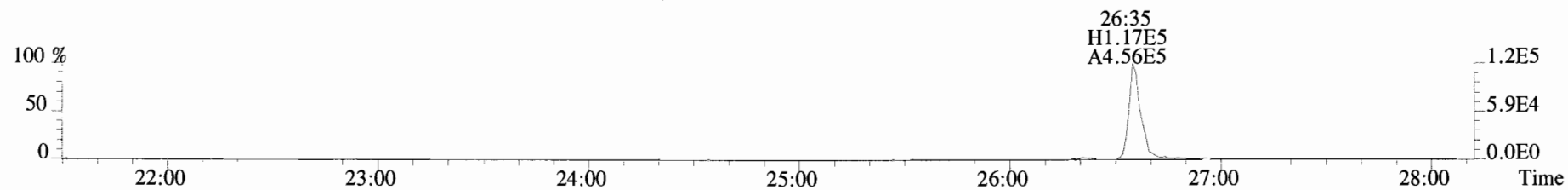
Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	8.36e+05	0.83 y	0.91	26:36	10.234		* 2.5		*	Total Tetra-Dioxins	10.4	11.4		*	*
1,2,3,7,8-PeCDD	3.38e+06	0.63 y	0.90	30:57	51.323		* 2.5		*	Total Penta-Dioxins	51.4	51.7		*	*
1,2,3,4,7,8-HxCDD	2.55e+06	1.31 y	1.10	34:18	48.909		* 2.5		*	Total Hexa-Dioxins	153	153		*	*
1,2,3,6,7,8-HxCDD	3.09e+06	1.18 y	0.94	34:24	52.378		* 2.5		*	Total Hepta-Dioxins	53.5	54.4		*	*
1,2,3,7,8,9-HxCDD	2.83e+06	1.17 y	0.96	34:44	50.434		* 2.5		*	Total Tetra-Furans	10.7	11.4		*	*
1,2,3,4,6,7,8-HpCDD	2.34e+06	1.02 y	0.98	38:07	51.915		* 2.5		*	Total Penta-Furans	110.38	111.73		*	*
OCDD	4.27e+06	0.92 y	0.96	41:30	105.37		* 2.5		*	Total Hexa-Furans	205	207		*	*
										Total Hepta-Furans	104	106		*	*
2,3,7,8-TCDF	1.24e+06	0.78 y	0.95	25:53	10.342		* 2.5		*						
1,2,3,7,8-PeCDF	5.03e+06	1.54 y	0.96	29:48	50.200		* 2.5		*						
2,3,4,7,8-PeCDF	5.90e+06	1.60 y	1.01	30:42	56.719		* 2.5		*						
1,2,3,4,7,8-HxCDF	3.94e+06	1.22 y	1.18	33:23	51.086		* 2.5		*						
1,2,3,6,7,8-HxCDF	4.44e+06	1.23 y	1.07	33:31	51.491		* 2.5		*						
2,3,4,6,7,8-HxCDF	4.08e+06	1.20 y	1.11	34:08	51.474		* 2.5		*						
1,2,3,7,8,9-HxCDF	3.40e+06	1.24 y	1.06	35:10	50.903		* 2.5		*						
1,2,3,4,6,7,8-HpCDF	3.36e+06	1.05 y	1.13	36:58	53.010		* 2.5		*						
1,2,3,4,7,8,9-HpCDF	2.94e+06	1.05 y	1.28	38:42	50.216		* 2.5		*						
OCDF	5.04e+06	0.92 y	0.95	41:45	102.23		* 2.5		*						
IS	13C-2,3,7,8-TCDD	9.02e+06	0.72 y	1.10	26:35	100.49				Rec	Qual				
IS	13C-1,2,3,7,8-PeCDD	7.29e+06	0.64 y	0.88	30:56	100.87				100					
IS	13C-1,2,3,4,7,8-HxCDD	4.73e+06	1.23 y	0.64	34:16	95.948				101					
IS	13C-1,2,3,6,7,8-HxCDD	6.28e+06	1.25 y	0.86	34:24	95.558				95.9					
IS	13C-1,2,3,7,8,9-HxCDD	5.85e+06	1.26 y	0.81	34:43	94.306				95.6					
IS	13C-1,2,3,4,6,7,8-HpCDD	4.61e+06	1.06 y	0.65	38:06	91.680				94.3					
IS	13C-OCDD	8.45e+06	0.92 y	0.58	41:29	189.68				91.7					
IS	13C-2,3,7,8-TCDF	1.26e+07	0.78 y	1.03	25:52	97.199				94.8					
IS	13C-1,2,3,7,8-PeCDF	1.04e+07	1.62 y	0.85	29:48	97.425				97.2					
IS	13C-2,3,4,7,8-PeCDF	1.03e+07	1.59 y	0.85	30:41	96.649				97.4					
IS	13C-1,2,3,4,7,8-HxCDF	6.55e+06	0.51 y	0.83	33:22	102.43				96.6					
IS	13C-1,2,3,6,7,8-HxCDF	8.06e+06	0.51 y	1.03	33:30	101.42				102					
IS	13C-2,3,4,6,7,8-HxCDF	7.11e+06	0.51 y	0.95	34:08	97.073				101					
IS	13C-1,2,3,7,8,9-HxCDF	6.30e+06	0.51 y	0.83	35:09	98.999				97.1					
IS	13C-1,2,3,4,6,7,8-HpCDF	5.62e+06	0.43 y	0.76	36:57	96.588				99.0					
IS	13C-1,2,3,4,7,8,9-HpCDF	4.58e+06	0.44 y	0.58	38:42	102.46				96.6					
IS	13C-OCDF	1.04e+07	0.88 y	0.69	41:44	196.65				102					
C/Up	37Cl-2,3,7,8-TCDD	8.91e+05		1.20	26:36	9.0817				98.3					
RS/RT	13C-1,2,3,4-TCDD	8.20e+06	0.76 y	1.00	26:01	100.00									
RS	13C-1,2,3,4-TCDF	1.25e+07	0.82 y	1.00	24:42	100.00									
RS/RT	13C-1,2,3,4,6,9-HxCDF	7.68e+06	0.50 y	1.00	33:48	100.00									

Integrations Reviewed
by DB
Analyst: DB Analyst: CT
Date: 10/10/19 Date: 10/10/19

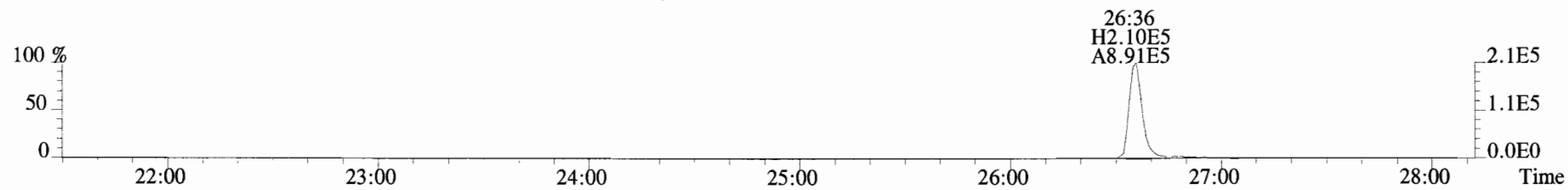
File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
319.8965 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



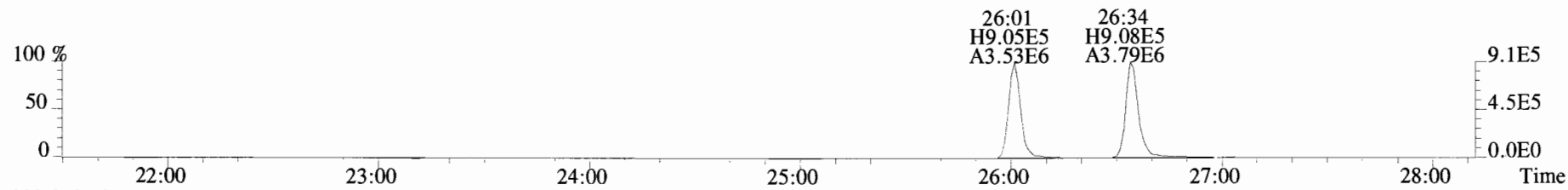
321.8936 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



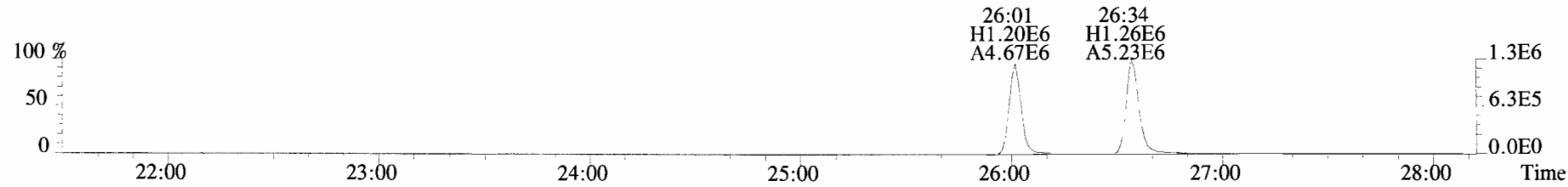
327.8847 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



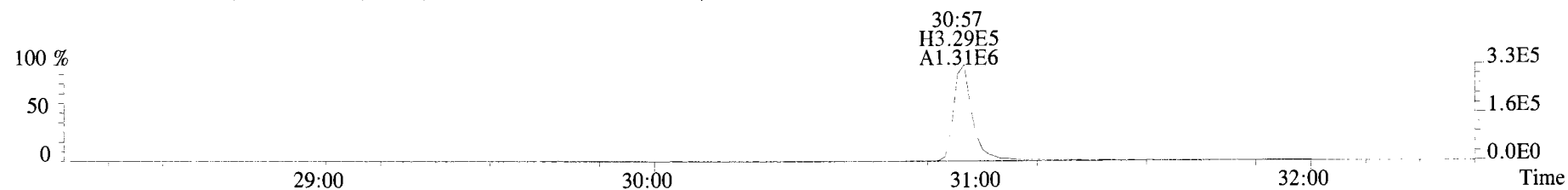
331.9368 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



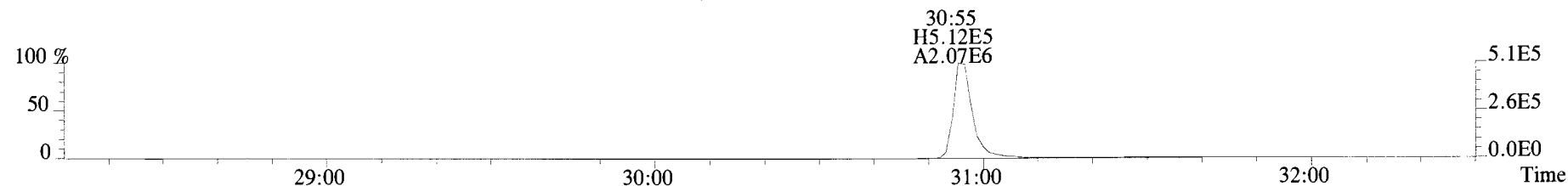
333.9339 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



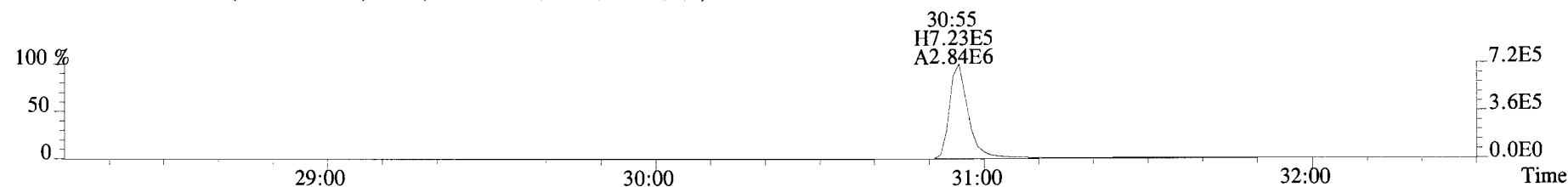
File:191009D1 #1-210 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Vista Analytical Laboratory VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
353.8576 S:8 F:2 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



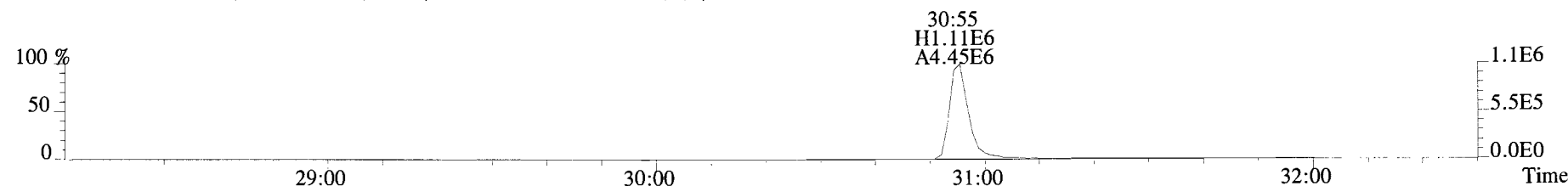
355.8546 S:8 F:2 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



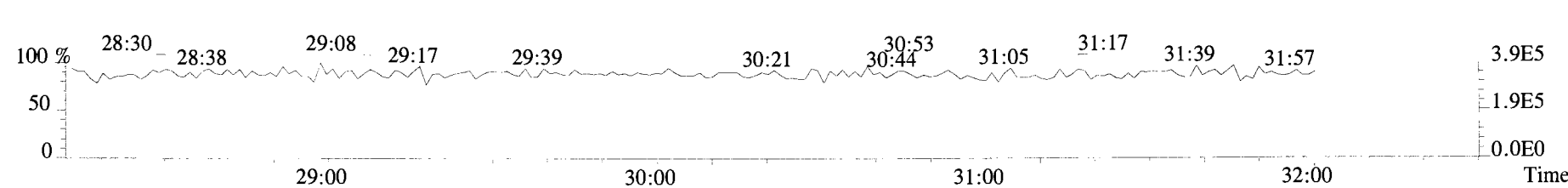
365.8978 S:8 F:2 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



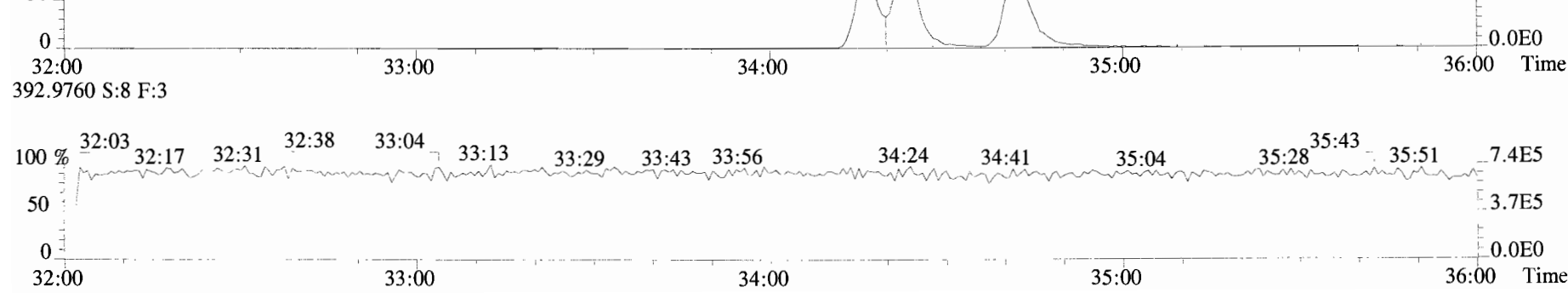
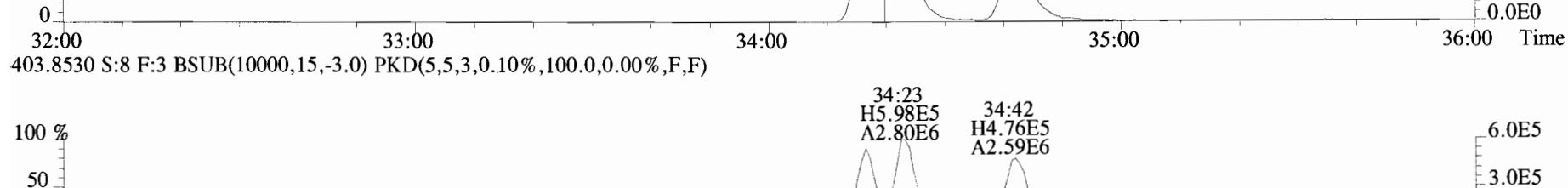
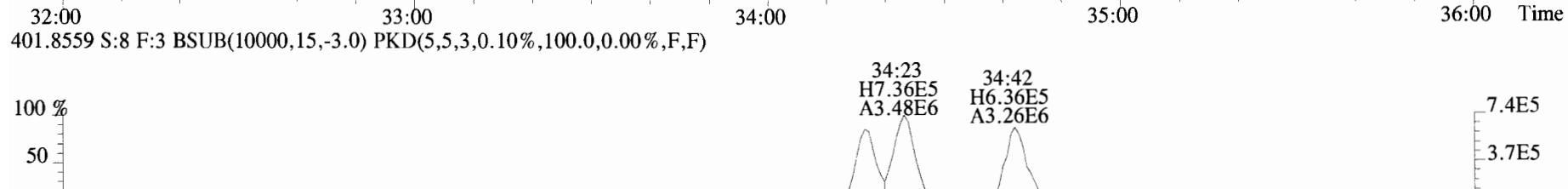
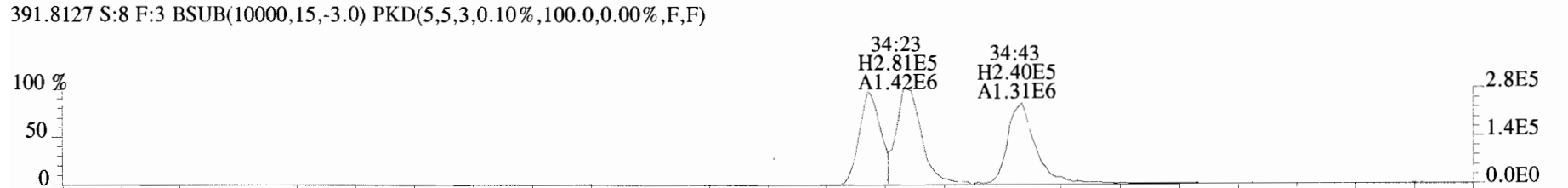
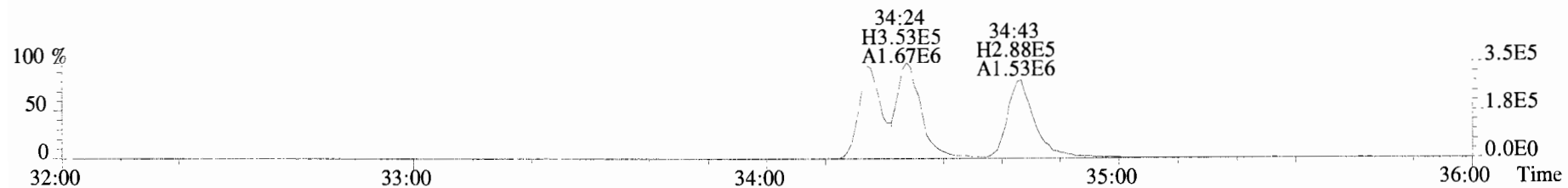
367.8949 S:8 F:2 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



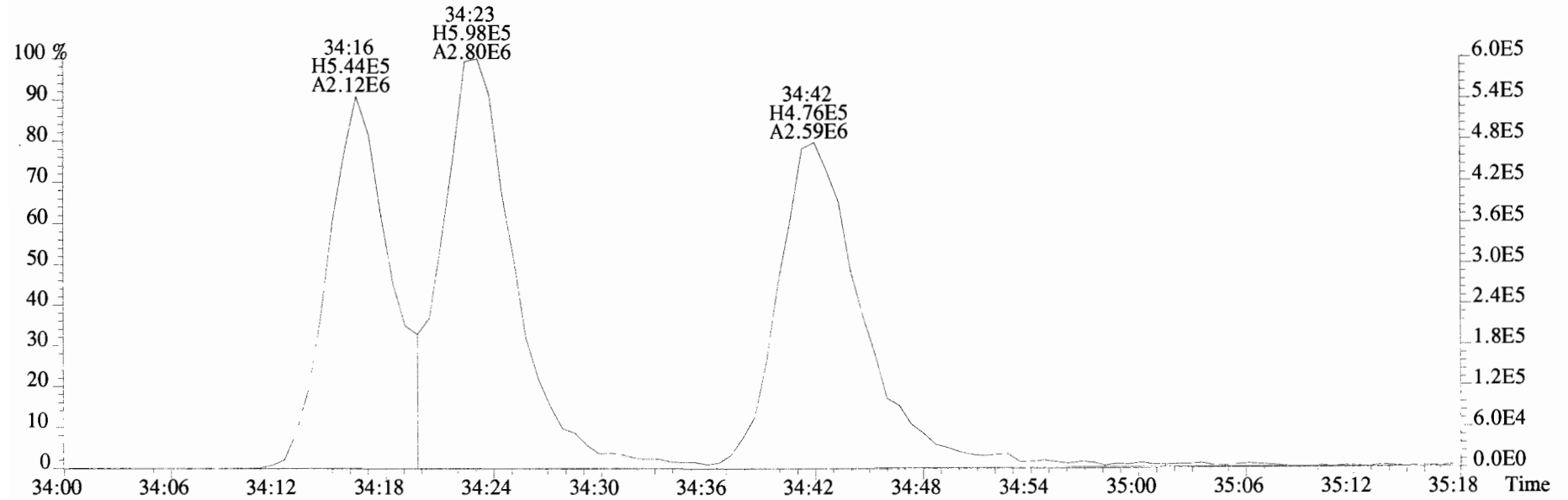
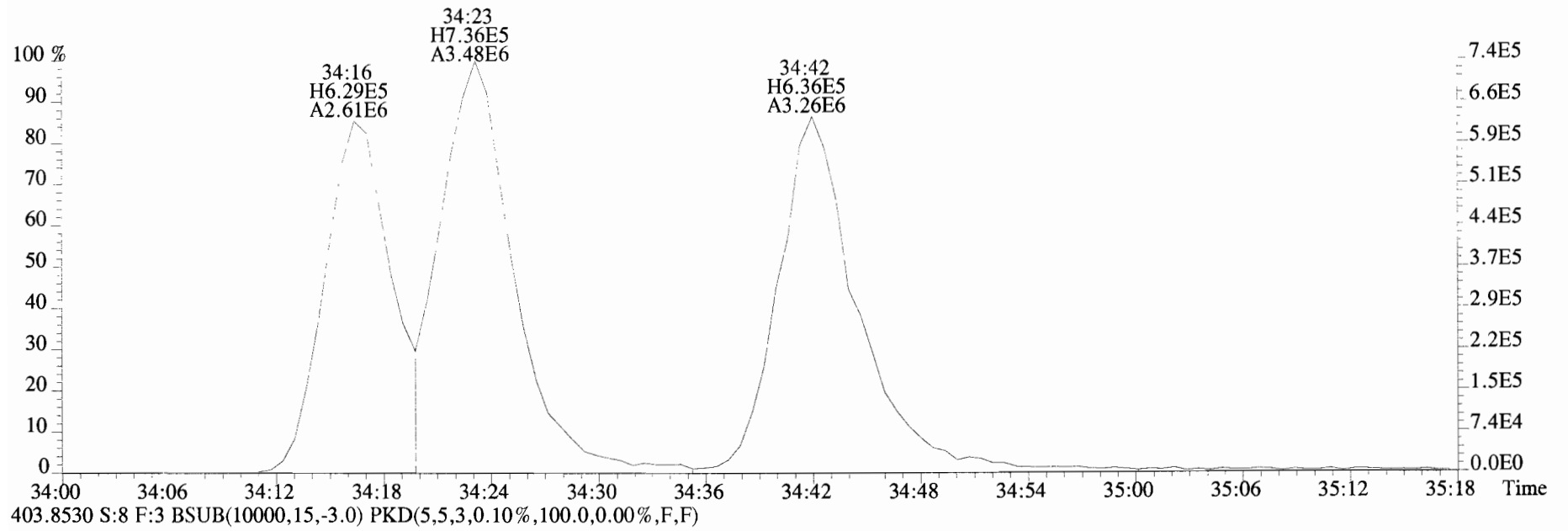
366.9792 S:8 F:2



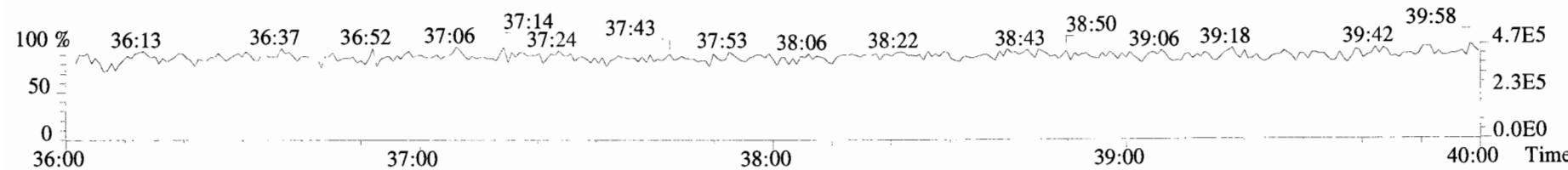
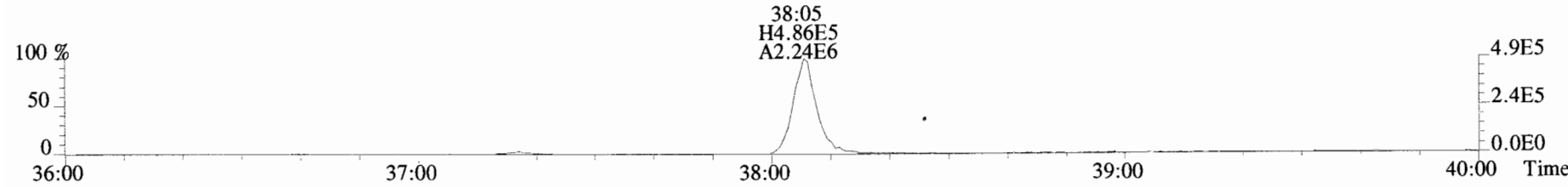
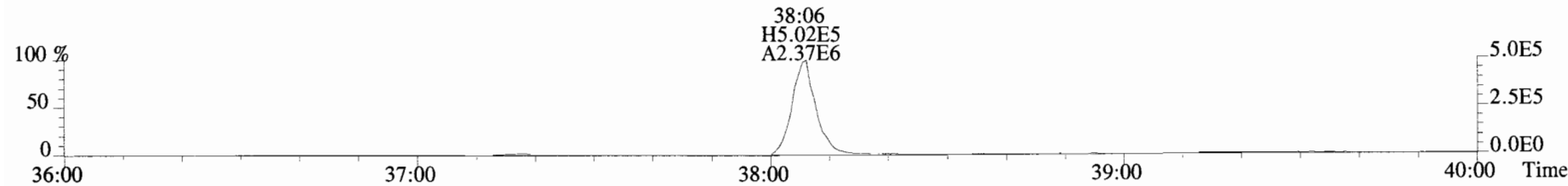
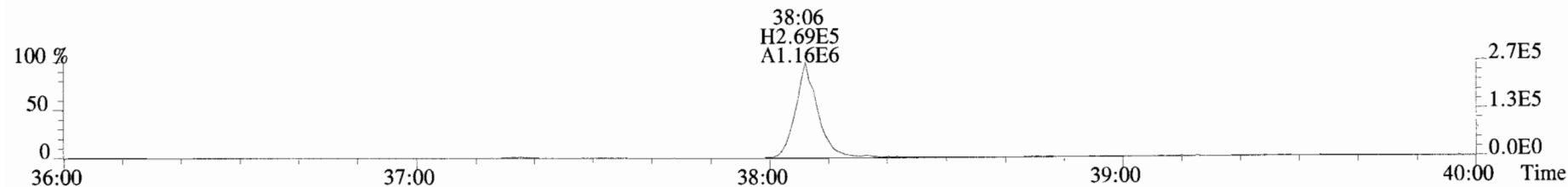
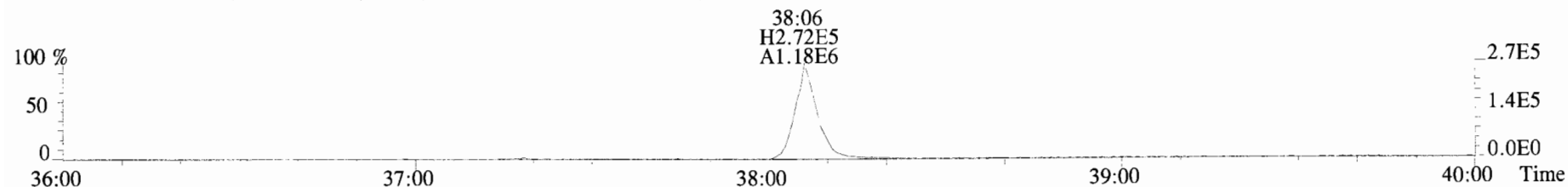
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
389.8156 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



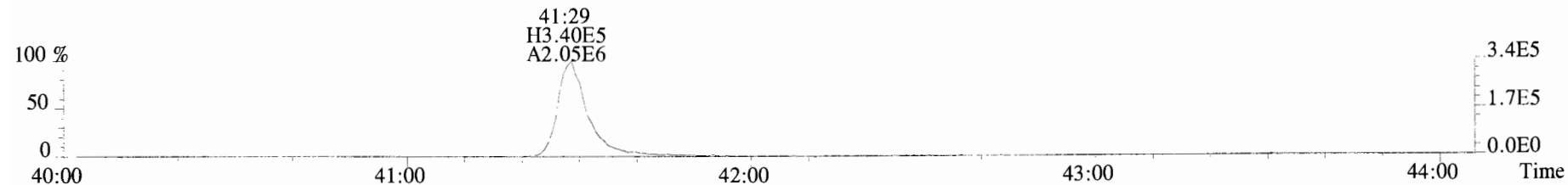
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
401.8559 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



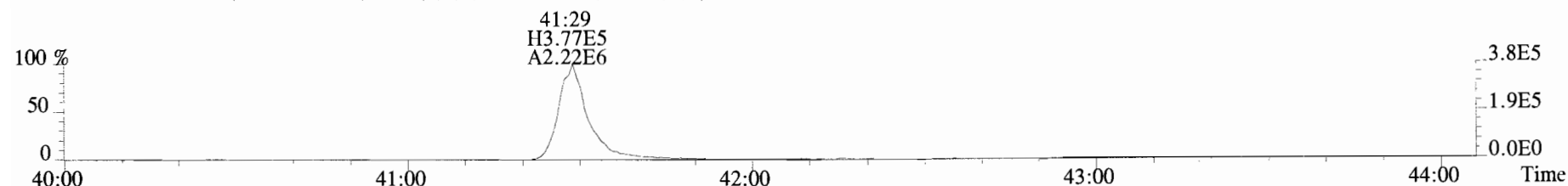
File:191009D1 #1-356 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
423.7767 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



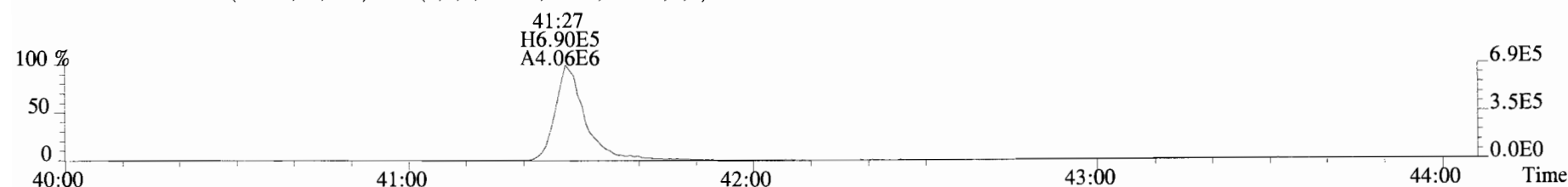
File:191009D1 #1-431 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
457.7377 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



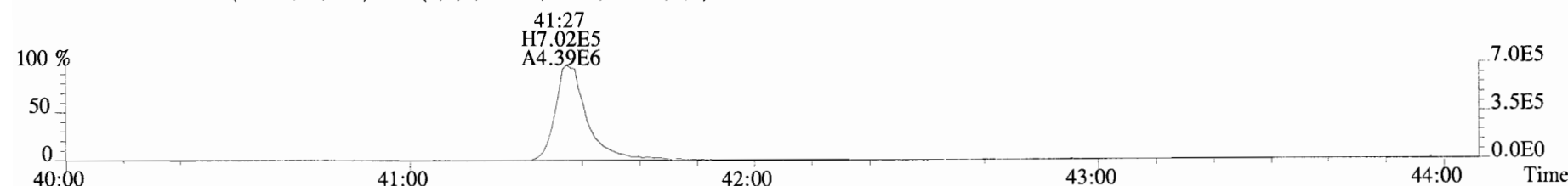
459.7348 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



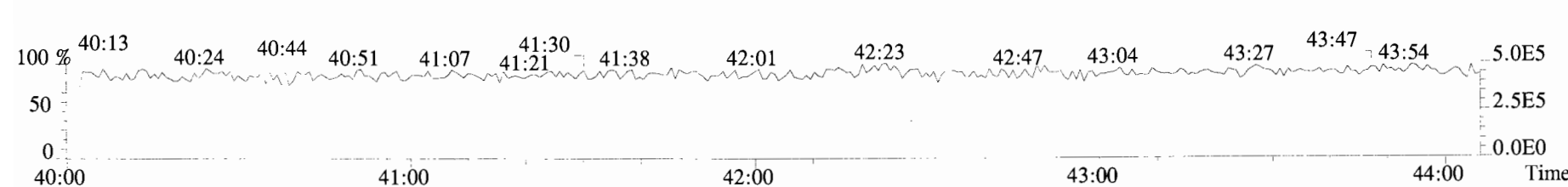
469.7780 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



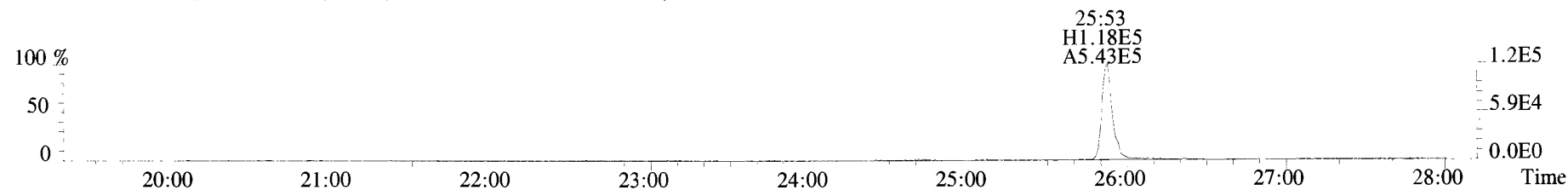
471.7750 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



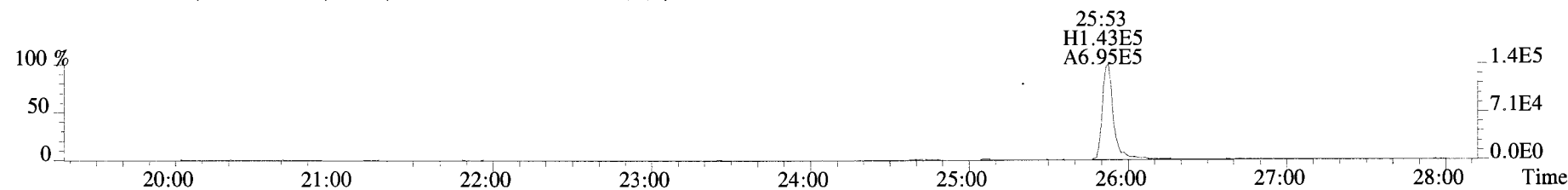
454.9728 S:8 F:5



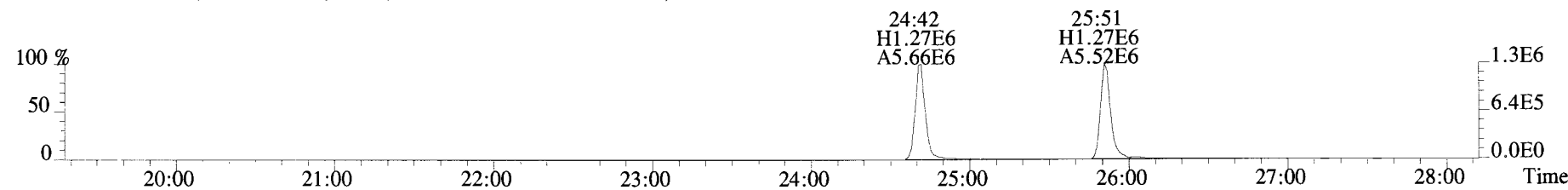
File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
303.9016 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



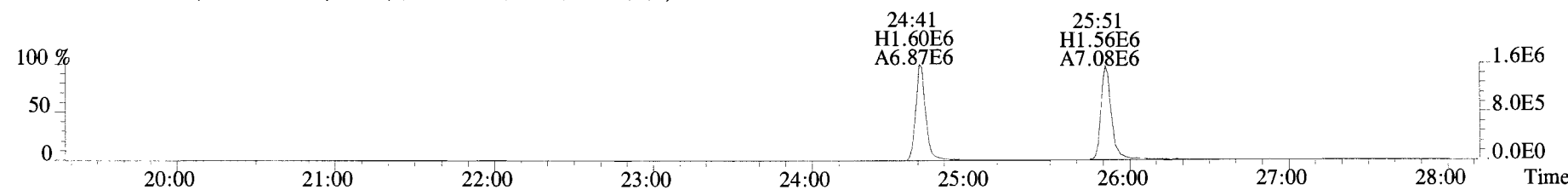
305.8987 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



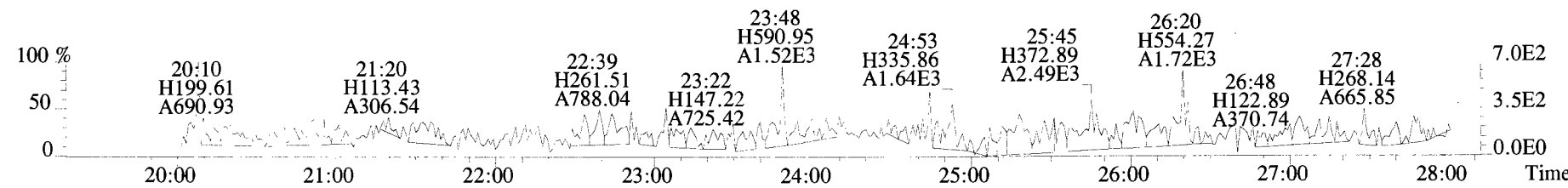
315.9419 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



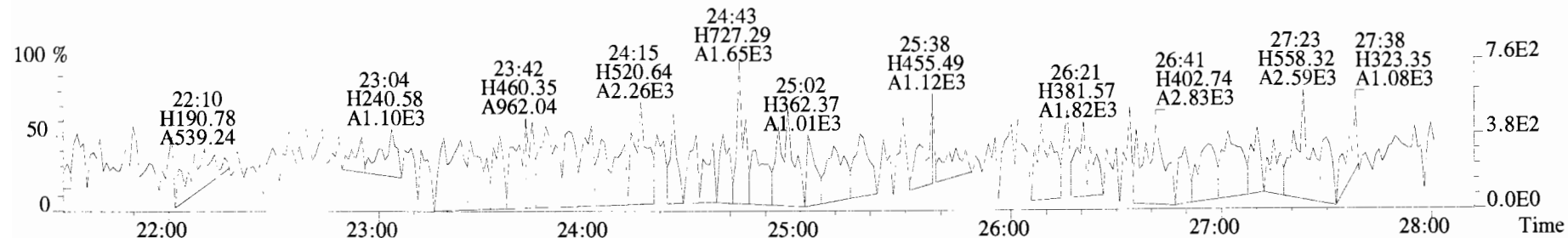
317.9389 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



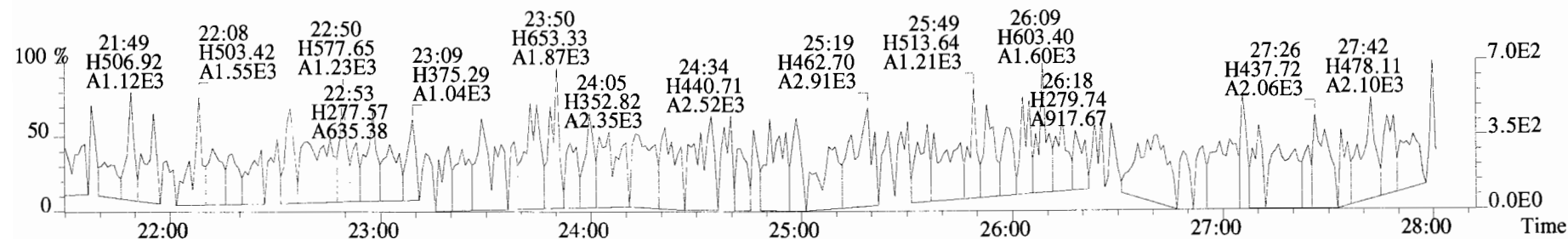
375.8364 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



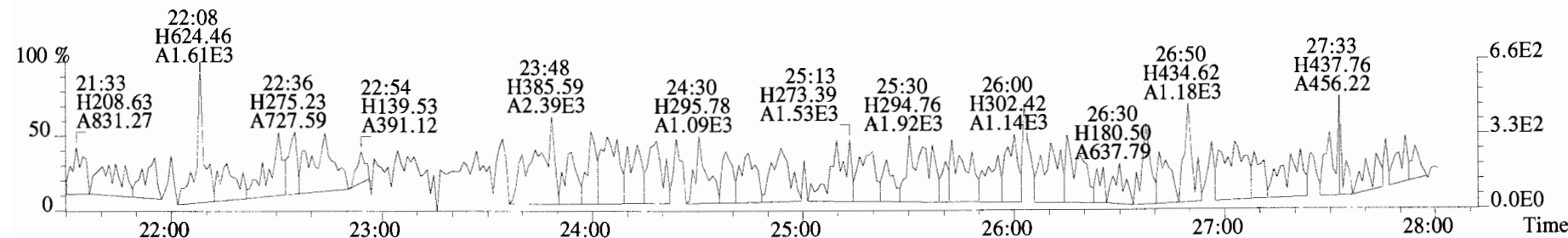
File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
 339.8597 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



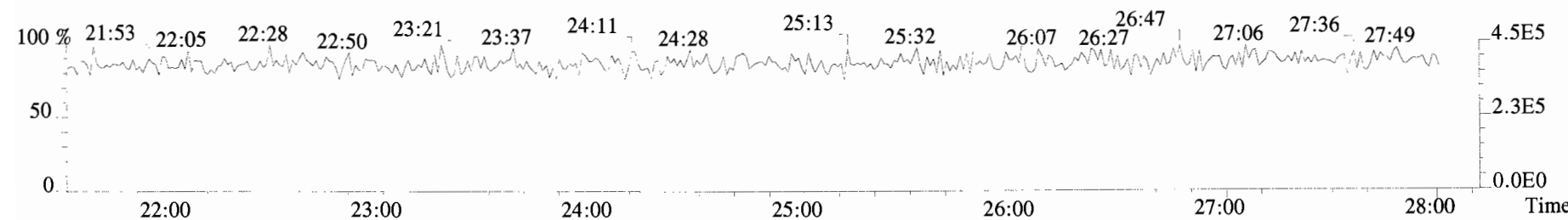
341.8568 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



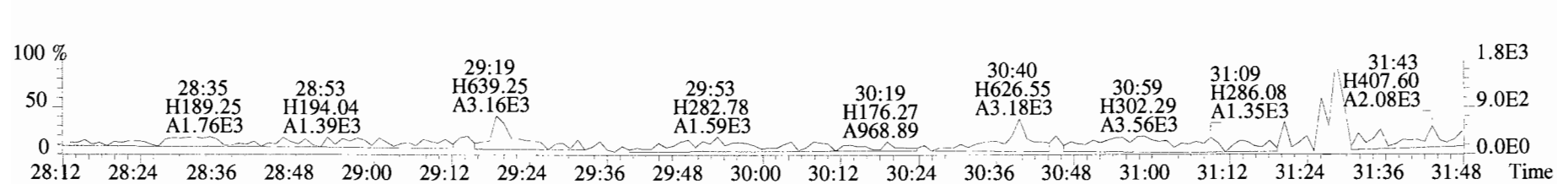
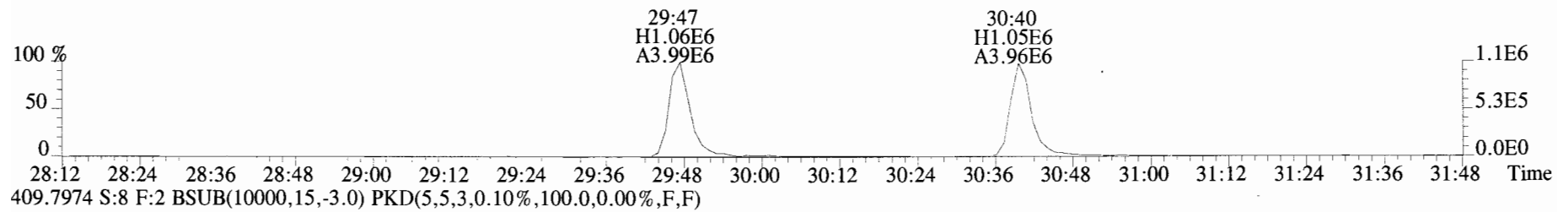
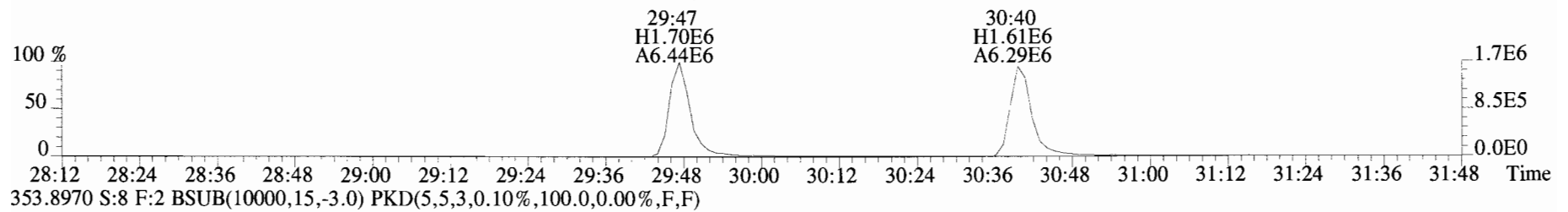
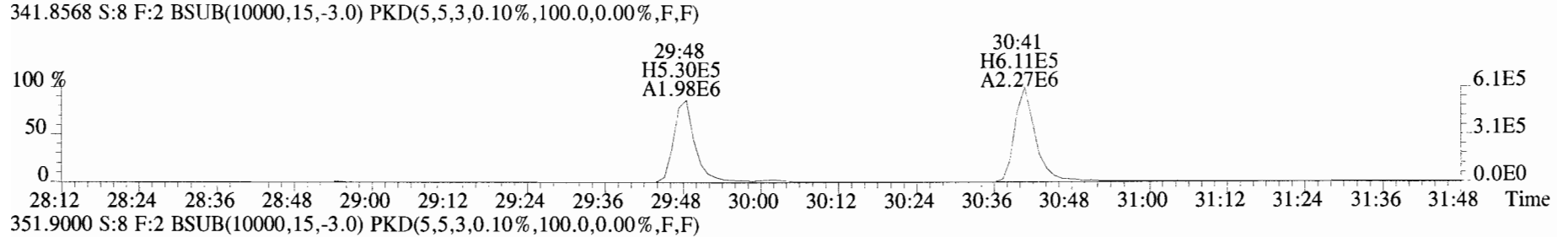
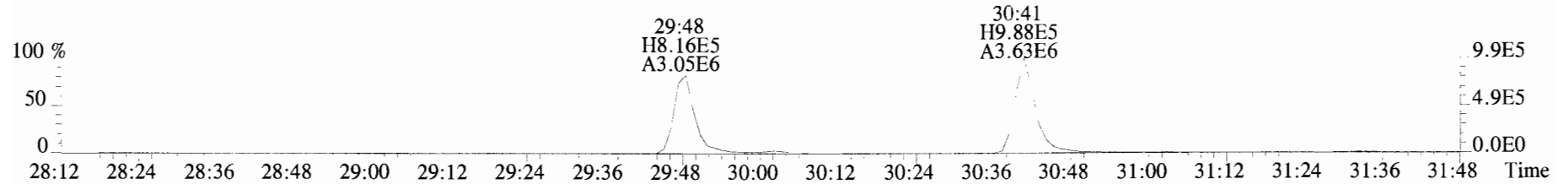
409.7974 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



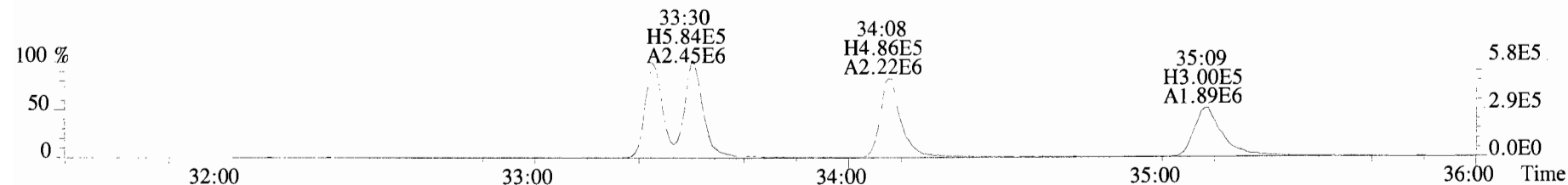
316.9824 S:8



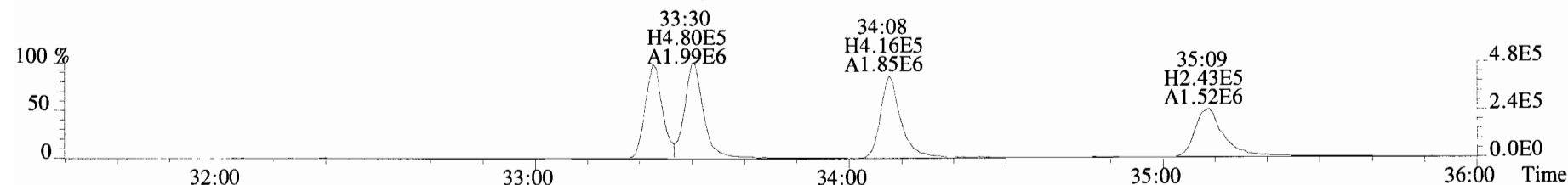
File:191009D1 #1-210 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
339.8597 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



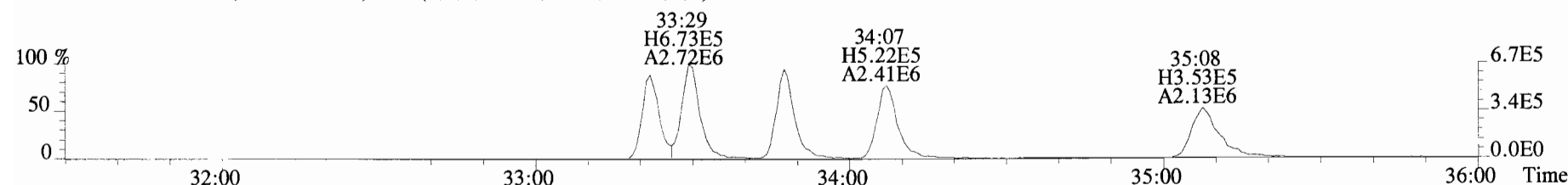
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
373.8207 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



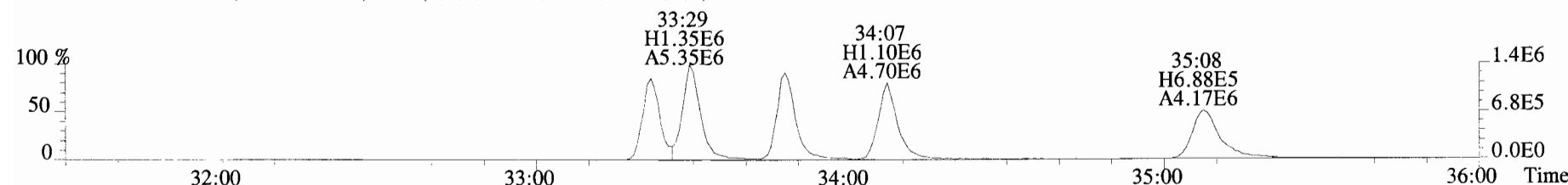
375.8178 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



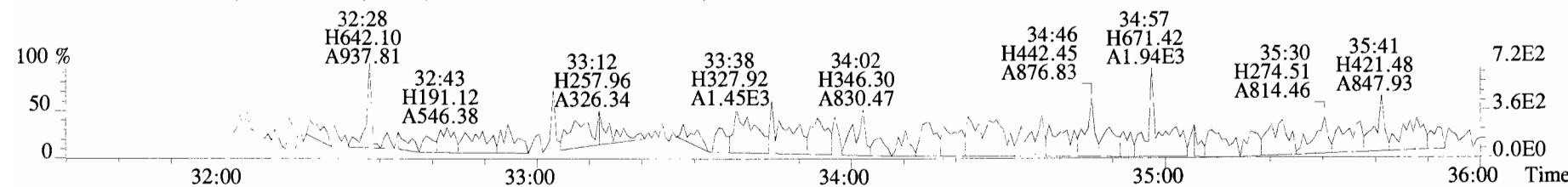
383.8639 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



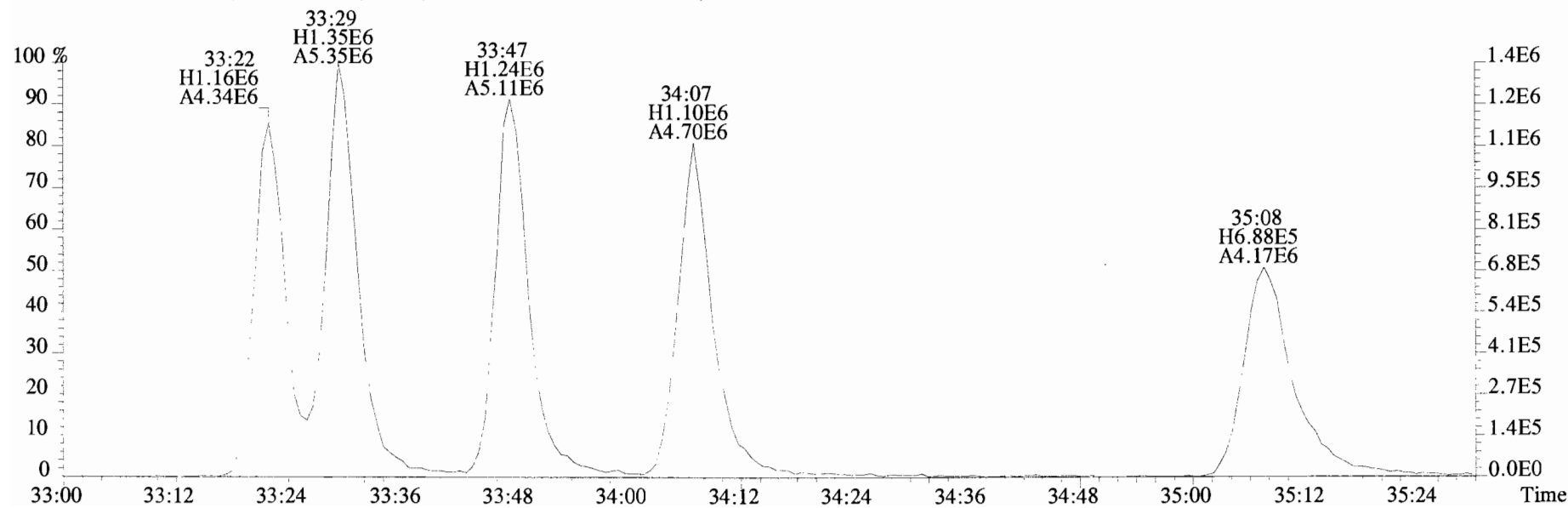
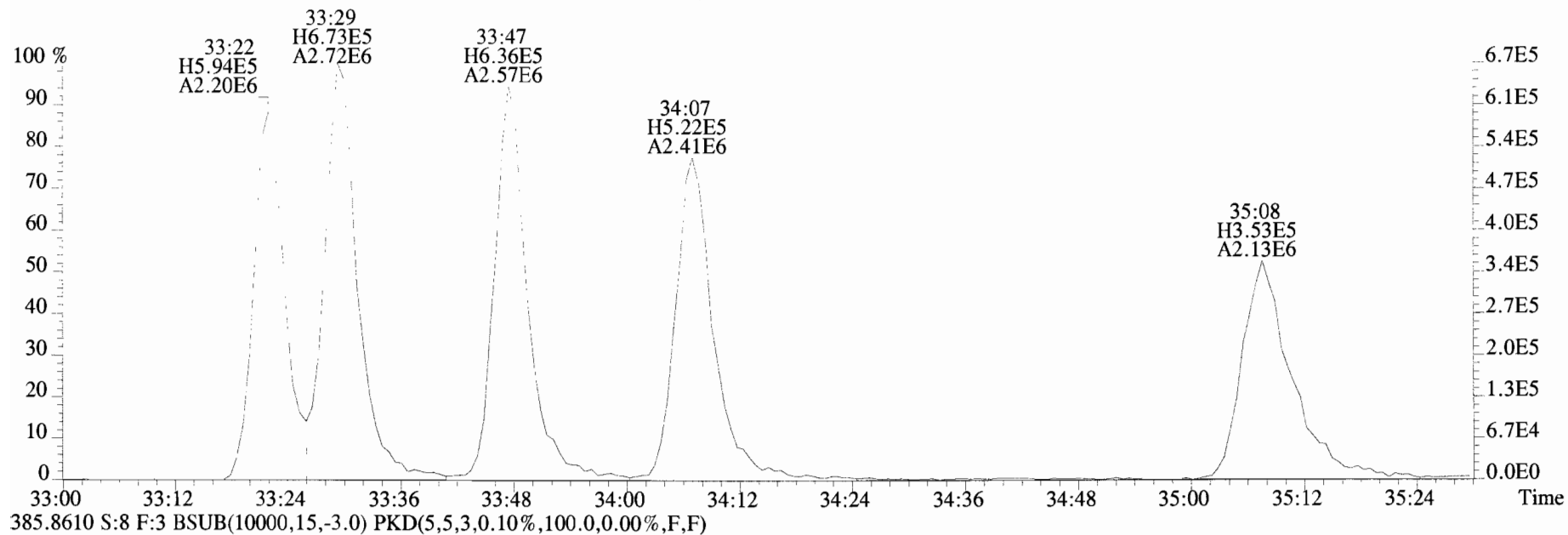
385.8610 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



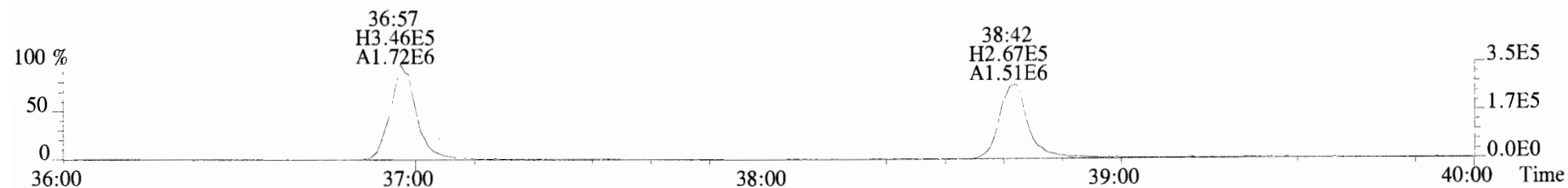
445.7555 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



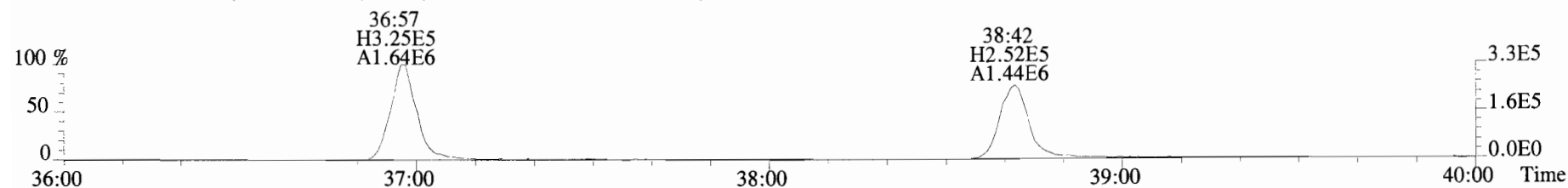
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
383.8639 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



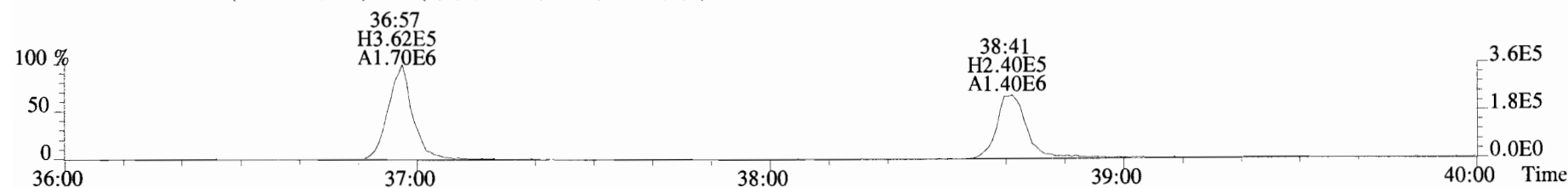
File:191009D1 #1-356 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
407.7818 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



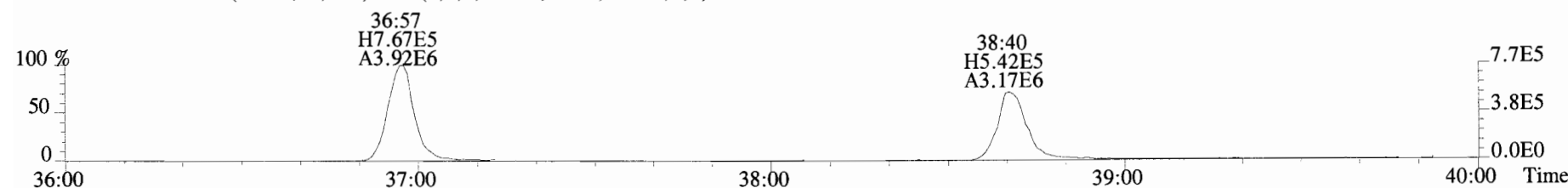
409.7788 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



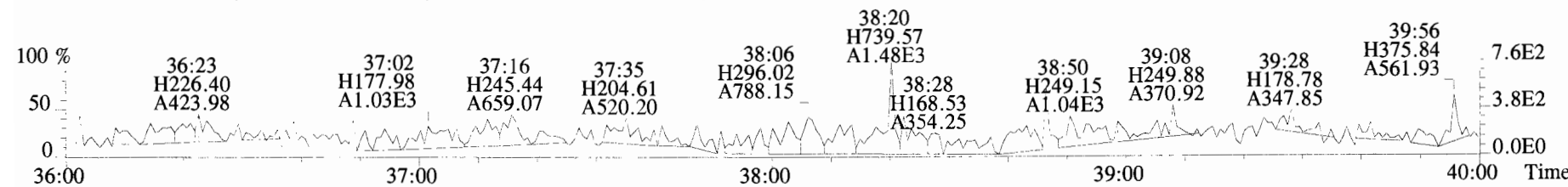
417.8253 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



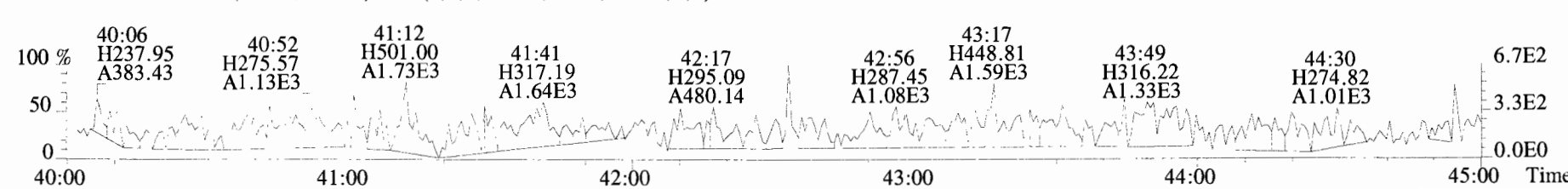
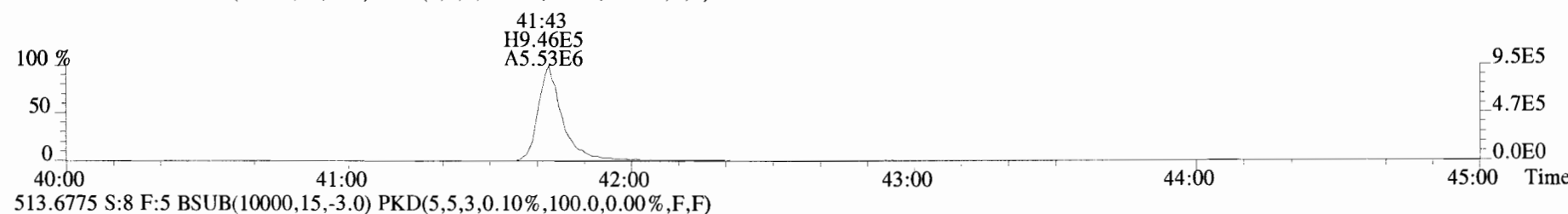
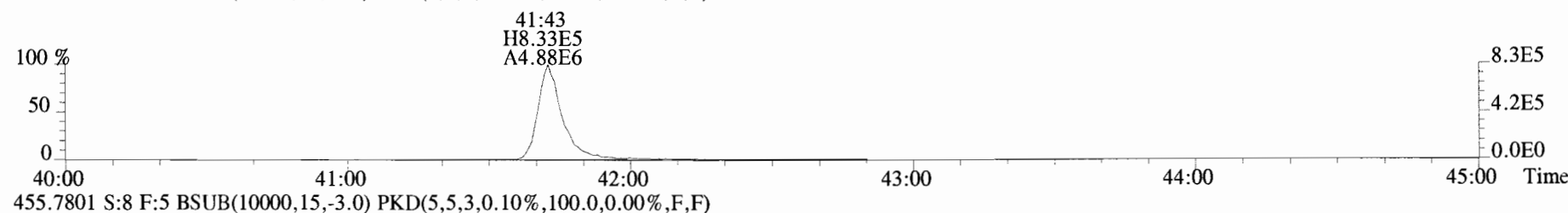
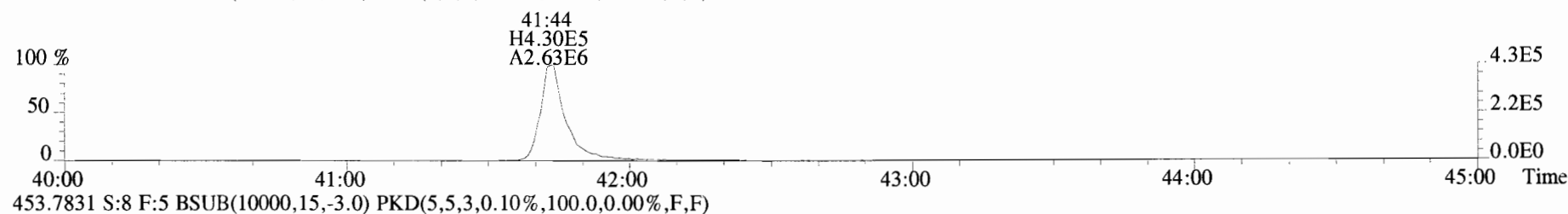
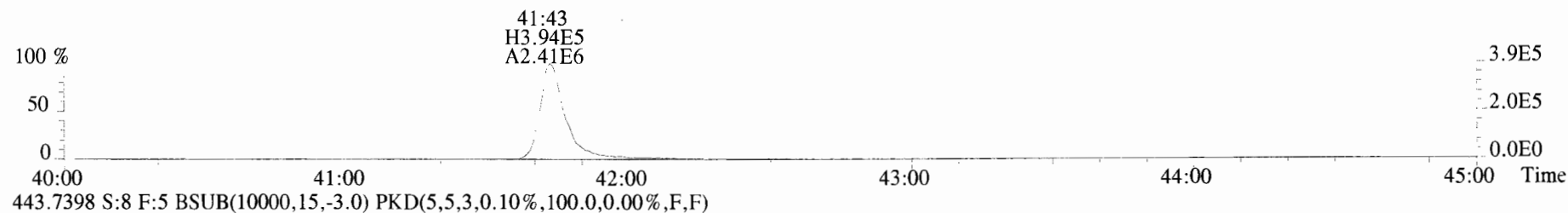
419.8220 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



479.7165 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191009D1 #1-431 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
441.7428 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Initial Calibration RRF Summary (ICAL)

Vista Analytical Laboratory

Run: Analyte: TCDF

Cal: 1613TCDFVG7-5-30-19

Inst. ID. VG-7

Data filename: 190530D1

Samp# 3	Samp# 4	Samp# 5	Samp# 6	Samp# 7	Samp# 8
100	100	100	100	100	100

Name	Mean RRF	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6
13C-1,2,3,4-TCDF	1.0000	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00
13C-2,3,7,8-TCDF	1.0212	4.27 %	1.07	1.04	1.03	1.05	0.98	0.96
2,3,7,8-TCDF	0.9476	9.58 %	1.12	0.93	0.88	0.87	0.97	0.92

DB
5/30/19
OT
05/31/19

Filename: 190530D1 S: 3 Acquired: 30-MAY-19 12:05:38
Run: Analyte: TCDF Cal: 1613TCDFVG7-5-30-19Results:
Sample text: ST190530D1-1 1613 CS0 19C2201

Name	Amount	Resp	RA	RT	RF	RRF
13C-1,2,3,4-TCDF	100	1.38e+07	0.80 y	15:49	-	1.00
13C-2,3,7,8-TCDF	100	1.47e+07	0.81 y	18:05	-	1.07
2,3,7,8-TCDF	0.250	4.11e+04	0.87 y	18:06	-	1.12

DB
5/30/19

Filename: 190530D1 S: 4 Acquired: 30-MAY-19 12:37:29
Run: Analyte: TCDF Cal: 1613TCDFVG7-5-30-19Results:
Sample text: ST190530D1-2 1613 CS1 19C2202

Name	Amount	Resp	RA	RT	RF	RRF
13C-1,2,3,4-TCDF	100	1.24e+07	0.82 y	15:49	-	1.00
13C-2,3,7,8-TCDF	100	1.30e+07	0.78 y	18:05	-	1.04
2,3,7,8-TCDF	0.500	6.06e+04	0.67 y	18:05	-	0.93

DB
5/30/19

Filename: 190530D1 S: 5 Acquired: 30-MAY-19 13:09:20
Run: Analyte: TCDF Cal: 1613TCDFVG7-5-30-19Results:
Sample text: ST190530D1-3 1613 CS2 19C2203

Name	Amount	Resp	RA	RT	RF	RRF
13C-1,2,3,4-TCDF	100	1.21e+07	0.82 y	15:48	-	1.00
13C-2,3,7,8-TCDF	100	1.24e+07	0.80 y	18:04	-	1.03
2,3,7,8-TCDF	2.00	2.18e+05	0.74 y	18:05	-	0.88

DB
5/30/19

Filename: 190530D1 S: 6 Acquired: 30-MAY-19 13:41:11
Run: Analyte: TCDF Cal: 1613TCDFVG7-5-30-19Results:
Sample text: ST190530D1-4 1613 CS3 19C2204

Name	Amount	Resp	RA	RT	RF	RRF
13C-1,2,3,4-TCDF	100	1.28e+07	0.81 y	15:49	-	1.00
13C-2,3,7,8-TCDF	100	1.34e+07	0.80 y	18:05	-	1.05
2,3,7,8-TCDF	10.0	1.17e+06	0.73 y	18:06	-	0.87

DB
5/30/19

Filename: 190530D1 S: 7 Acquired: 30-MAY-19 14:13:01
Run: Analyte: TCDF Cal: 1613TCDFVG7-5-30-19Results:
Sample text: ST190530D1-5 1613 CS4 19C2205

Name	Amount	Resp	RA	RT	RF	RRF
13C-1,2,3,4-TCDF	100	1.30e+07	0.81 y	15:49	-	1.00
13C-2,3,7,8-TCDF	100	1.28e+07	0.80 y	18:05	-	0.98
2,3,7,8-TCDF	40.0	4.95e+06	0.77 y	18:06	-	0.97

DB
5/30/19

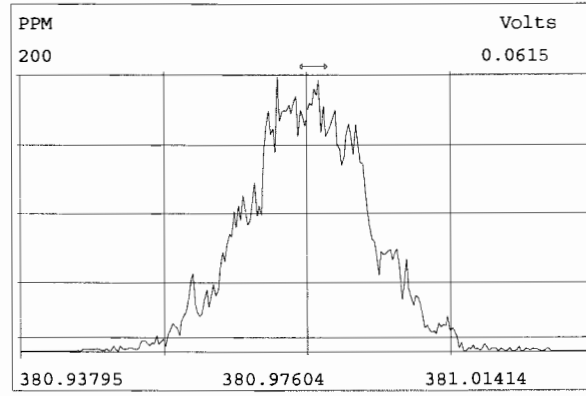
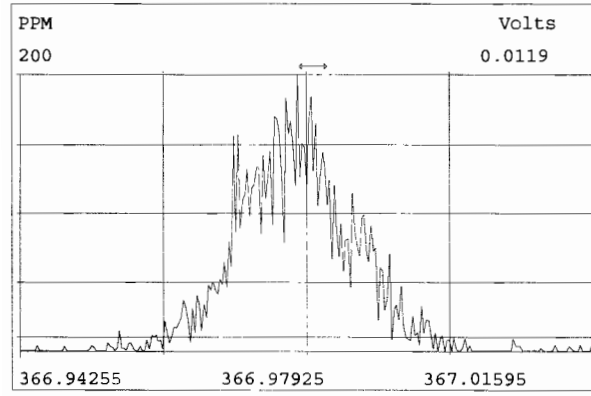
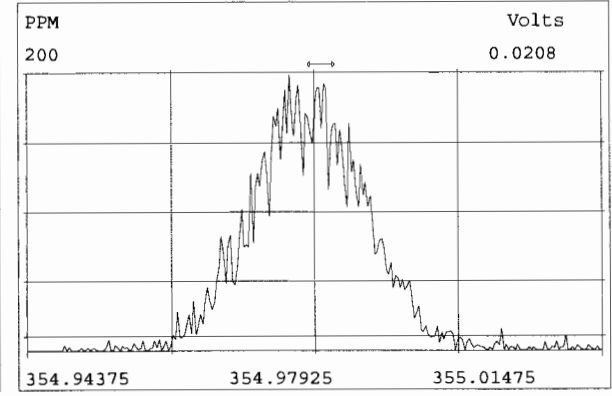
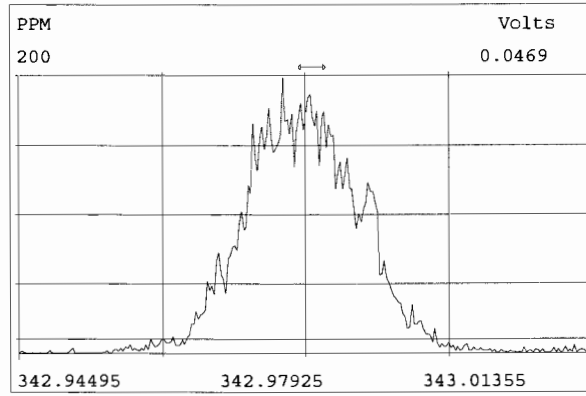
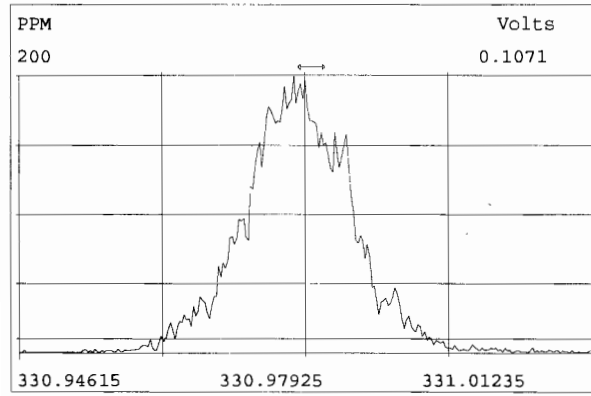
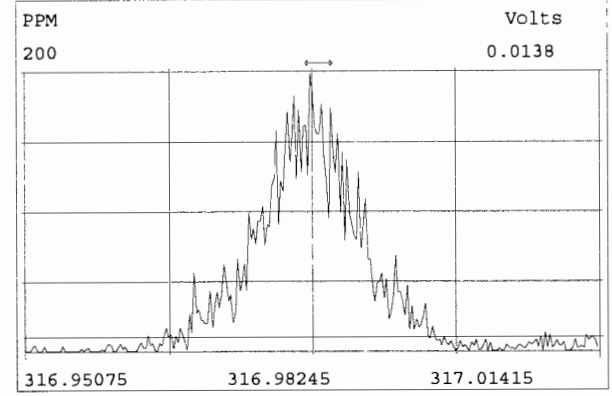
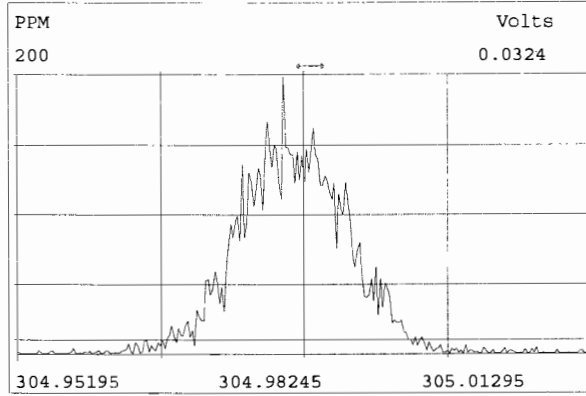
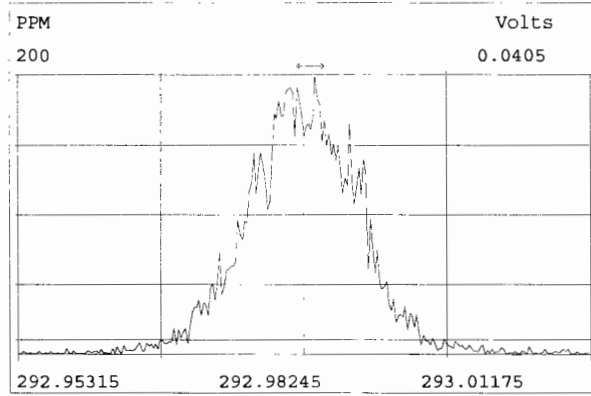
Filename: 190530D1 S: 8 Acquired: 30-MAY-19 14:44:52
Run: Analyte: TCDF Cal: 1613TCDFVG7-5-30-19Results:
Sample text: ST190530D1-6 1613 CS5 19C2206

Name	Amount	Resp	RA	RT	RF	RRF
13C-1,2,3,4-TCDF	100	1.29e+07	0.80 y	15:48	-	1.00
13C-2,3,7,8-TCDF	100	1.24e+07	0.80 y	18:05	-	0.96
2,3,7,8-TCDF	300	3.42e+07	0.74 y	18:06	-	0.92

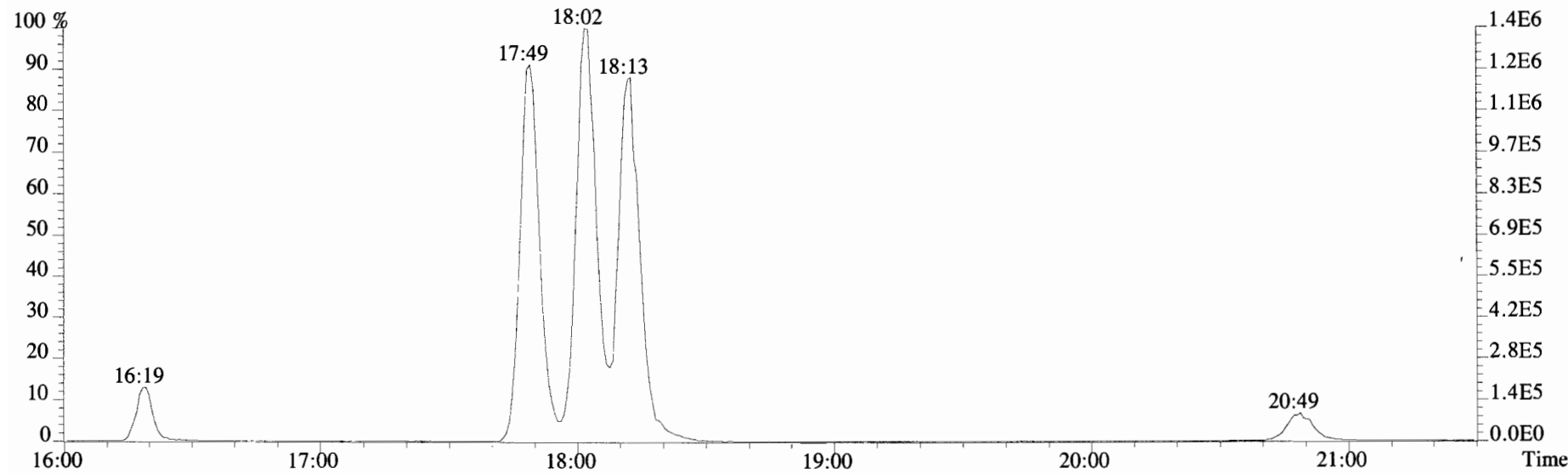
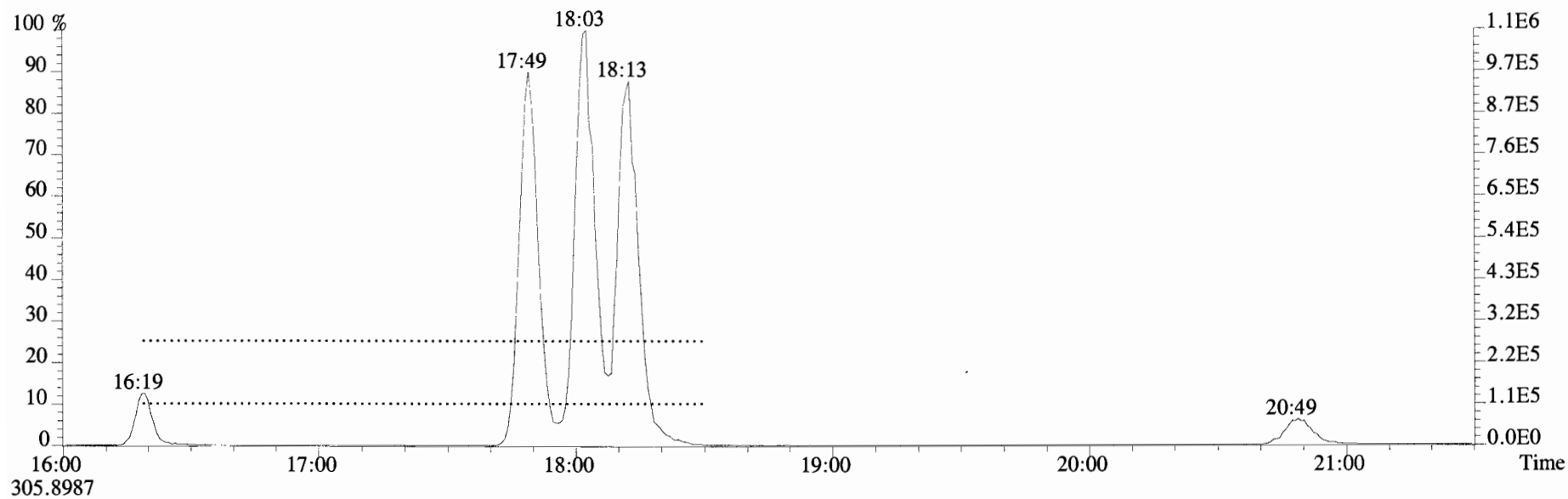
DB
5/30/19

Vista Analytical Laboratory - Injection Log Run file: 190530D1 Instrument ID: VG-7 GC Column ID: DB-225

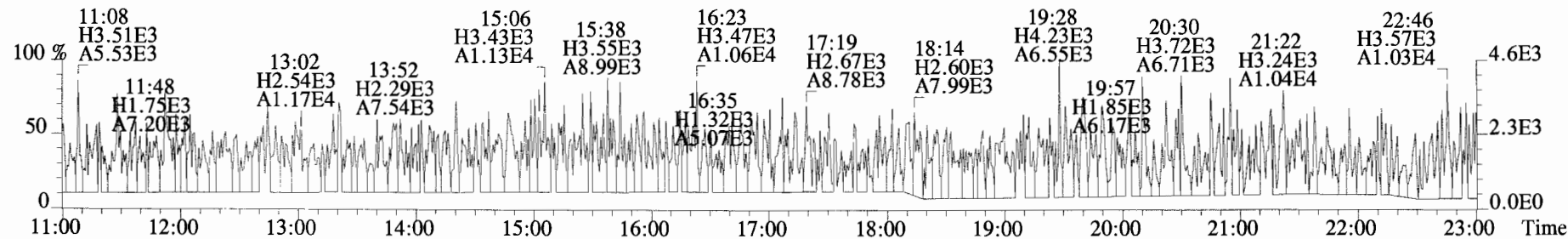
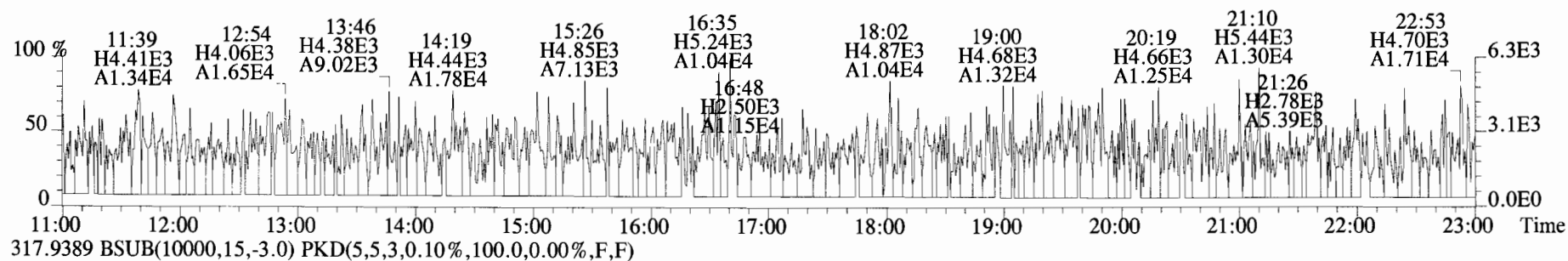
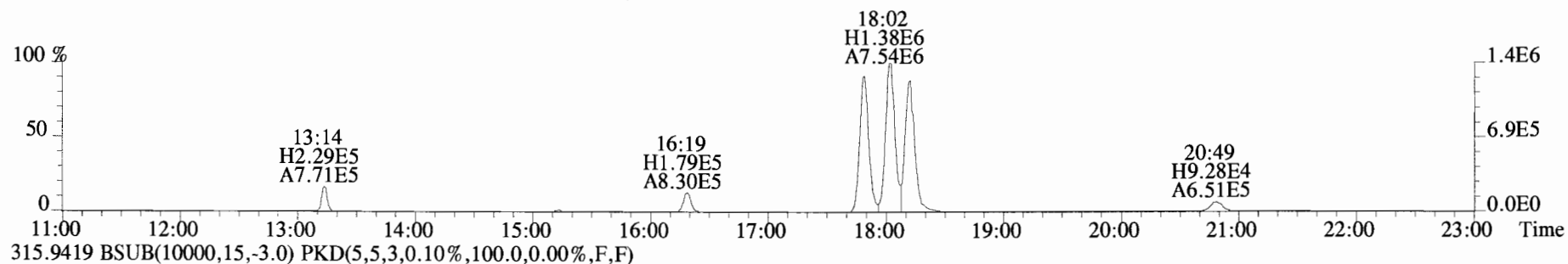
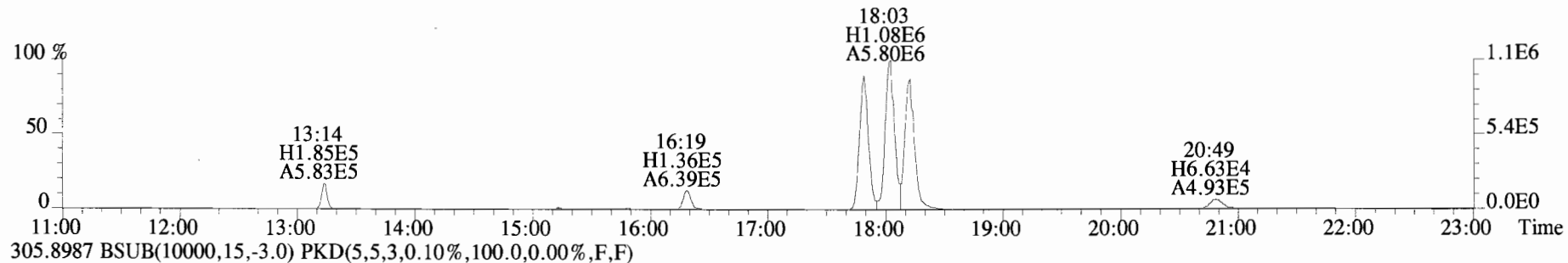
Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
190530D1	1	CP190530D1-1	DB	30-MAY-19	11:02:08	ST190530D1-4	NA
190530D1	2	SOLVENT BLANK	DB	30-MAY-19	11:33:52	ST190530D1-4	NA
190530D1	3	ST190530D1-1	DB	30-MAY-19	12:05:38	ST190530D1-4	NA
190530D1	4	ST190530D1-2	DB	30-MAY-19	12:37:29	ST190530D1-4	NA
190530D1	5	ST190530D1-3	DB	30-MAY-19	13:09:20	ST190530D1-4	NA
190530D1	6	ST190530D1-4	DB	30-MAY-19	13:41:11	ST190530D1-4	NA
190530D1	7	ST190530D1-5	DB	30-MAY-19	14:13:01	ST190530D1-4	NA
190530D1	8	ST190530D1-6	DB	30-MAY-19	14:44:52	ST190530D1-4	NA
190530D1	9	SOLVENT BLANK	DB	30-MAY-19	15:16:42	ST190530D1-4	NA
190530D1	10	SS190528D1-1	DB	30-MAY-19	15:48:32	ST190530D1-4	NA
190530D1	11	SOLVENT BLANK	DB	30-MAY-19	16:20:23	ST190530D1-4	NA
190530D1	12	1901028-05RE1	DB	30-MAY-19	16:52:12	ST190530D1-4	NA
190530D1	13	1901028-07RE1	DB	30-MAY-19	17:24:02	ST190530D1-4	NA
190530D1	14	1901028-08RE1	DB	30-MAY-19	17:55:52	ST190530D1-4	NA
190530D1	15	1901028-09RE1	DB	30-MAY-19	18:27:41	ST190530D1-4	NA



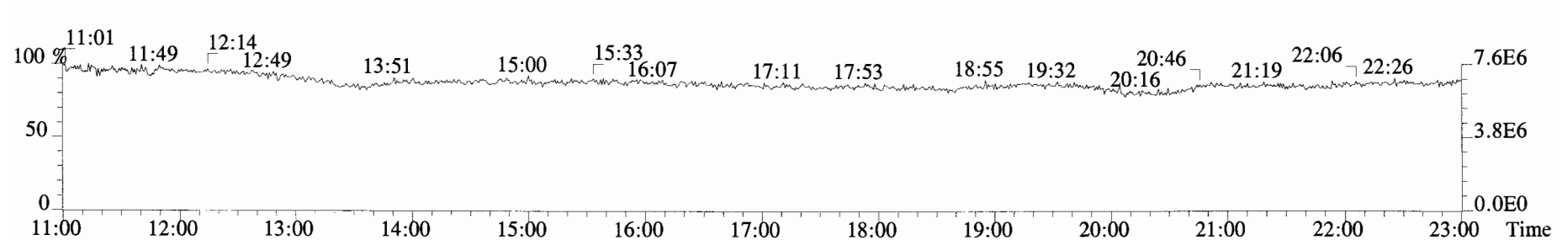
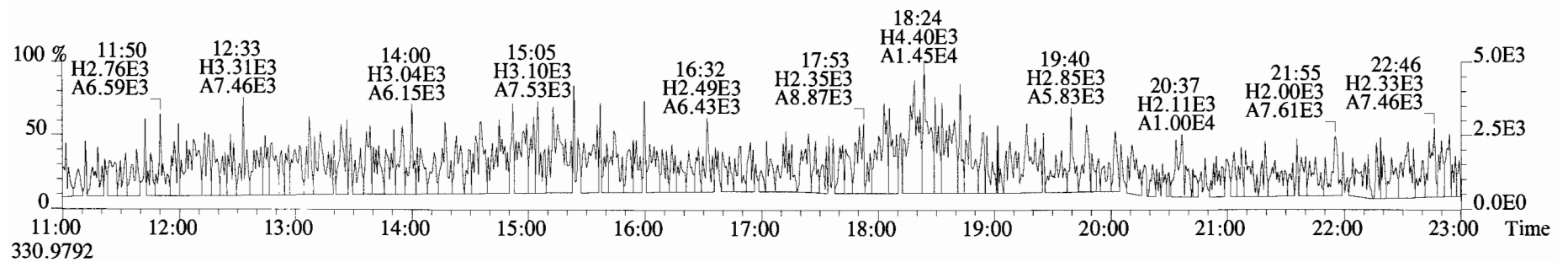
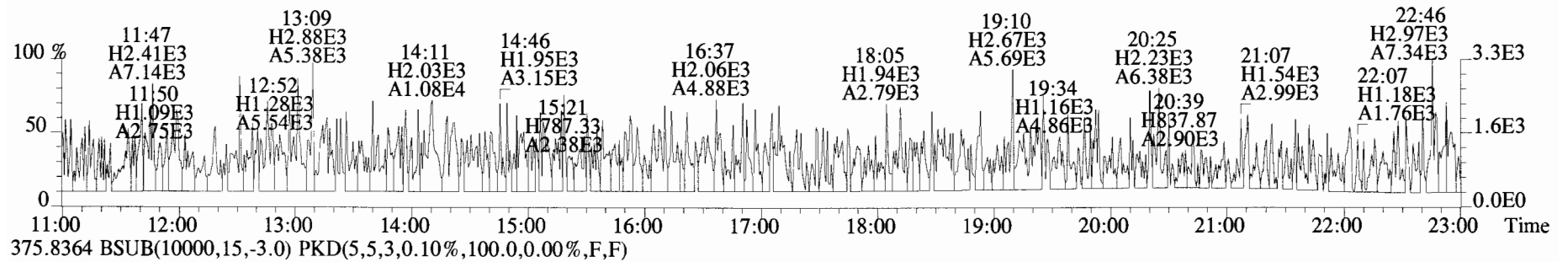
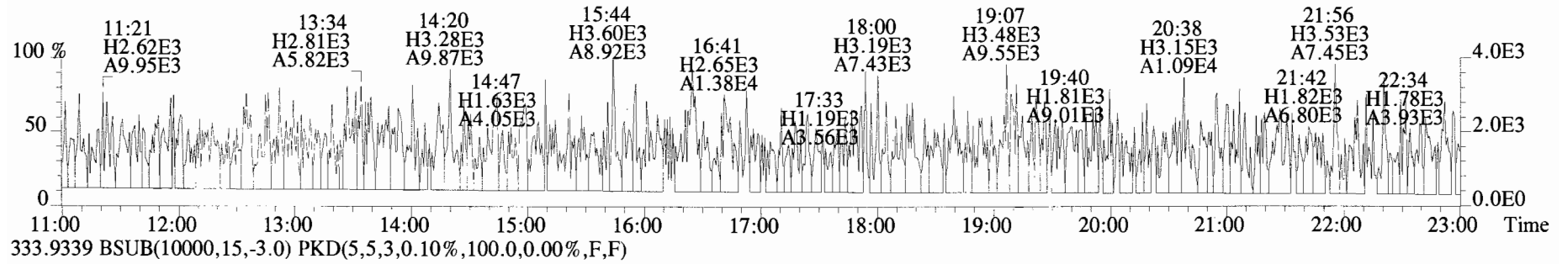
File:190530D1 #1-1559 Acq:30-MAY-2019 11:02:08 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:CP190530D1-1 DB225 CPSM Exp:TCDF_DB225
303.9016



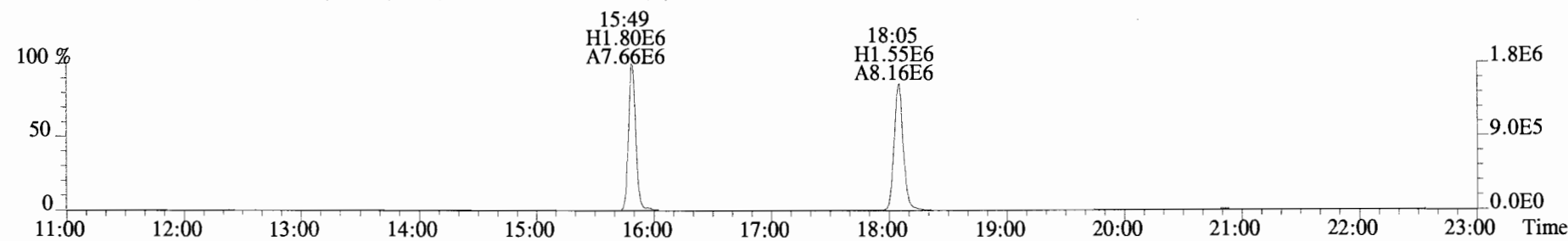
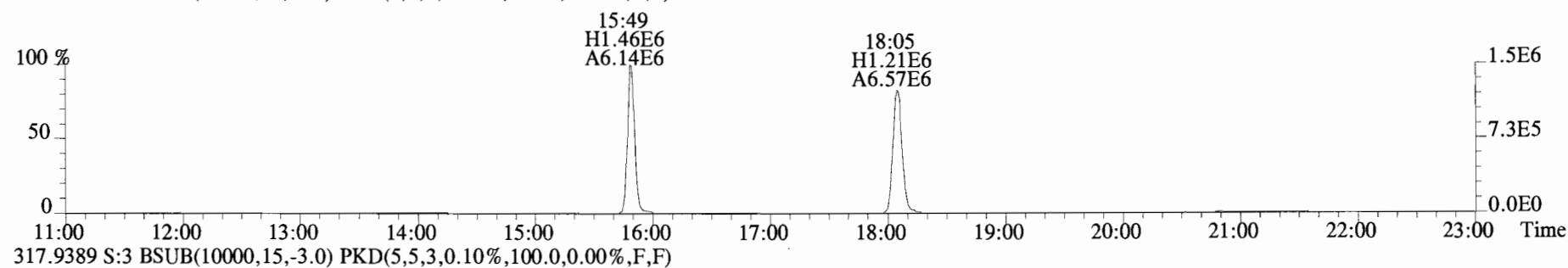
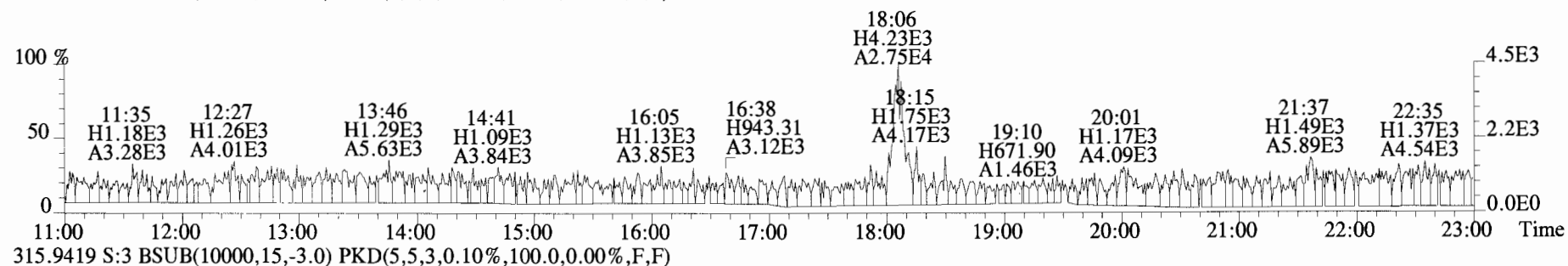
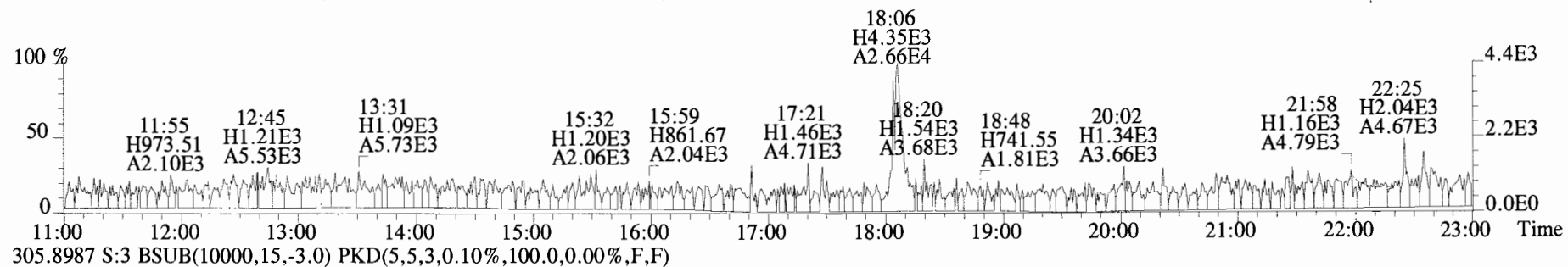
File:190530D1 #1-1682 Acq:30-MAY-2019 11:02:08 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:CP190530D1-1 DB225 CPSM Exp:TCDF_DB225
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



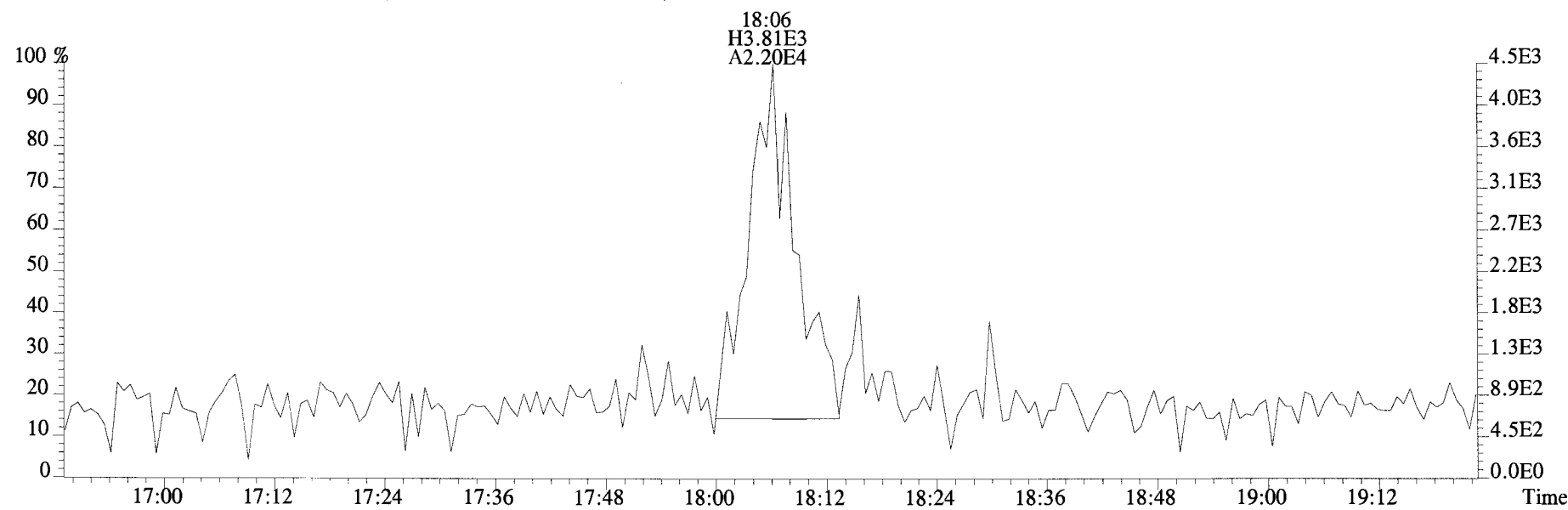
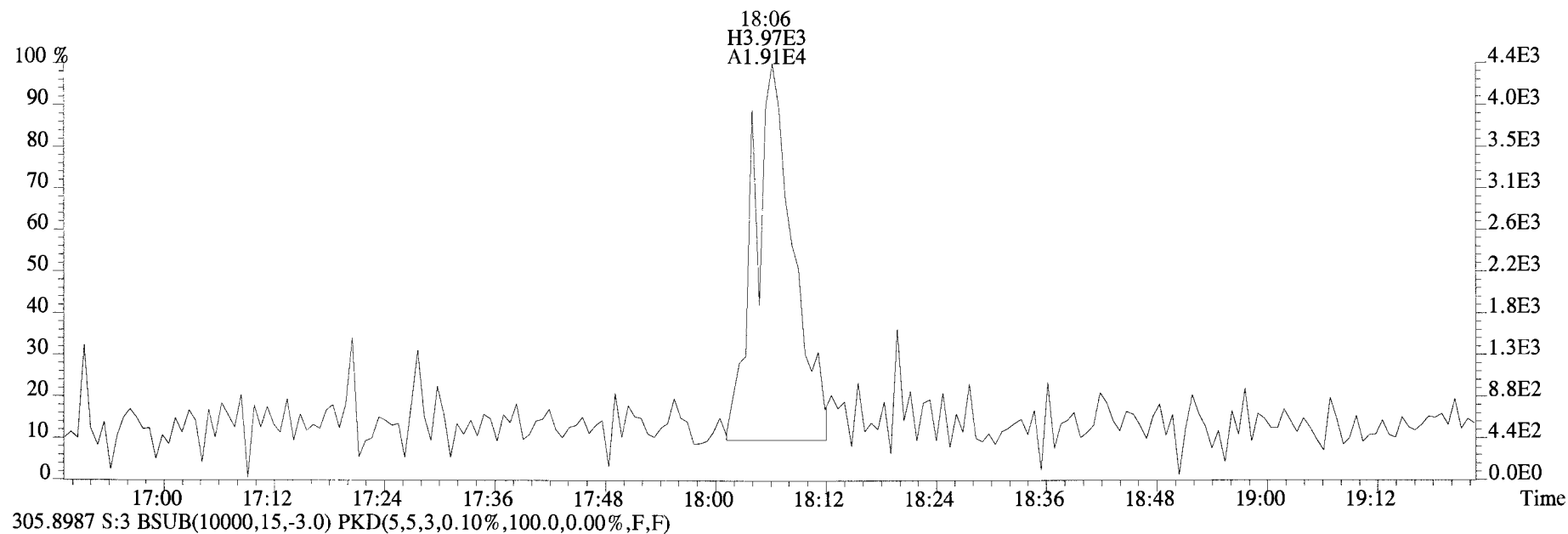
File:190530D1 #1-1682 Acq:30-MAY-2019 11:02:08 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:CP190530D1-1 DB225 CPSM Exp:TCDF_DB225
331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



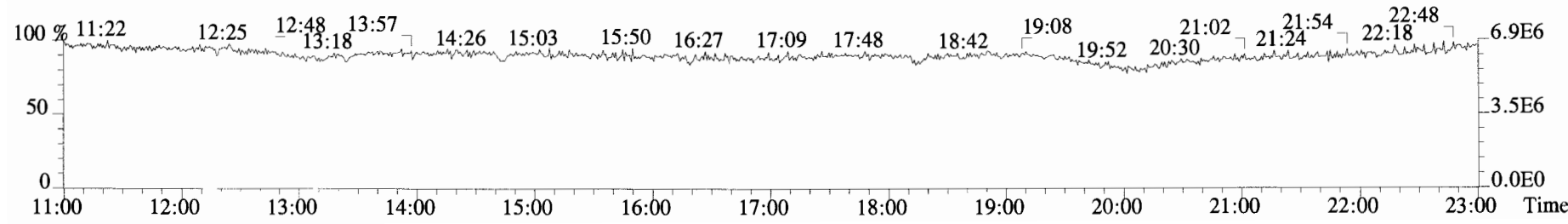
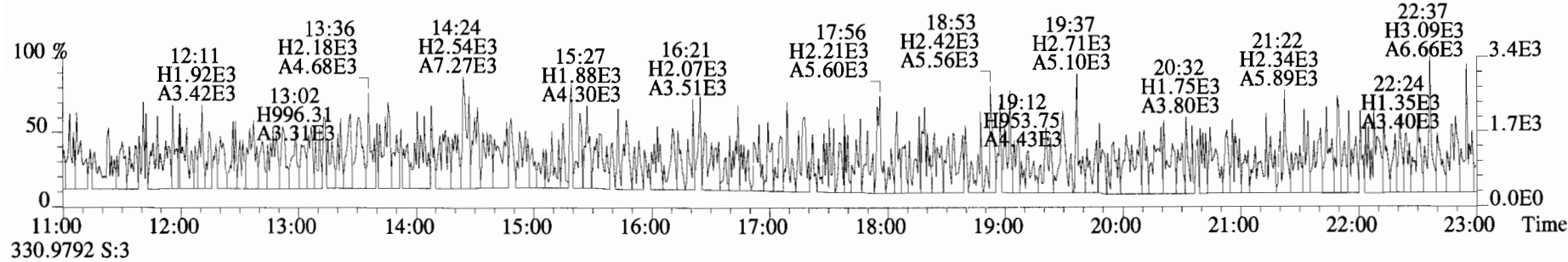
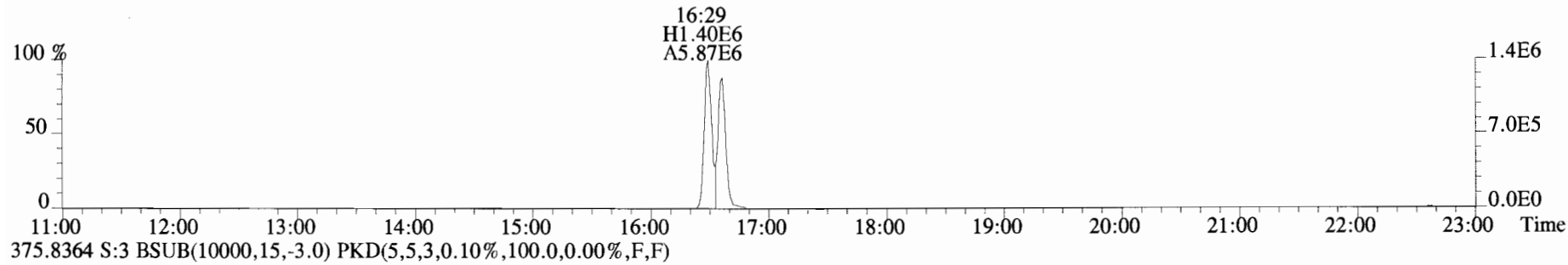
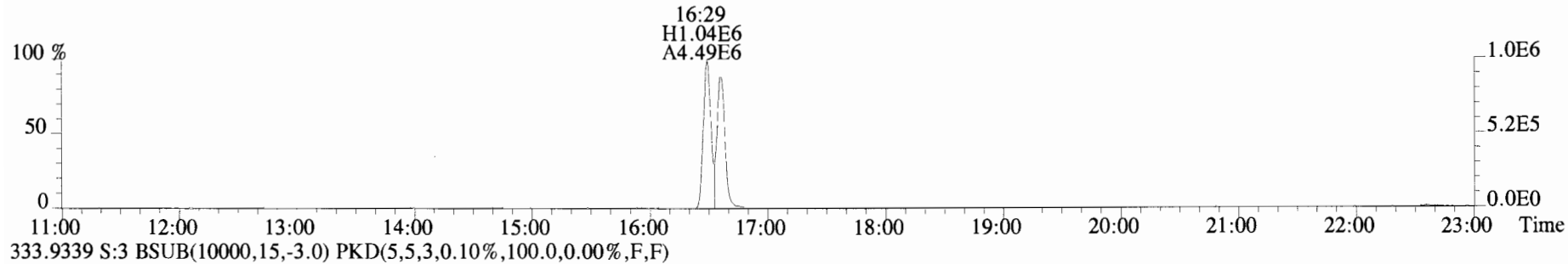
File:190530D1 #1-1682 Acq:30-MAY-2019 12:05:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-1 1613 CS0 19C2201 Exp:TCDF_DB225
303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



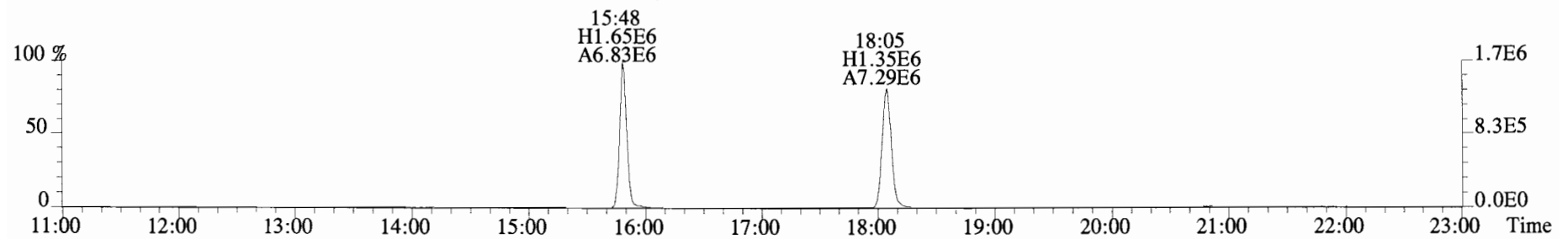
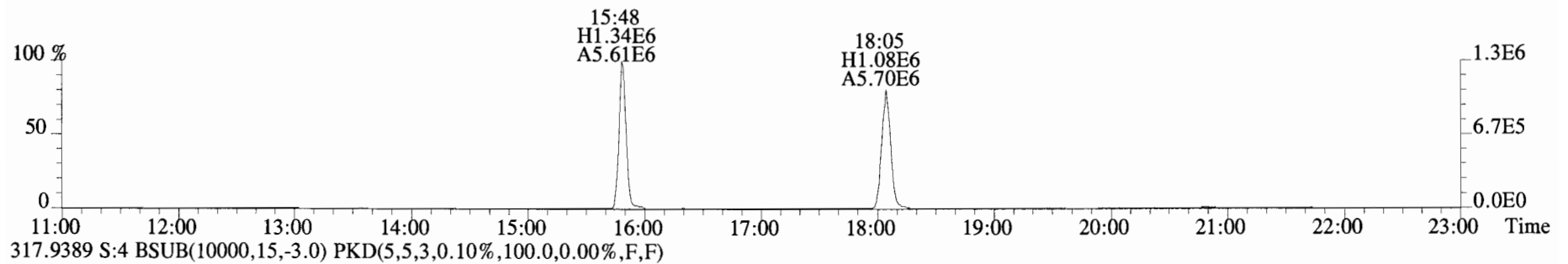
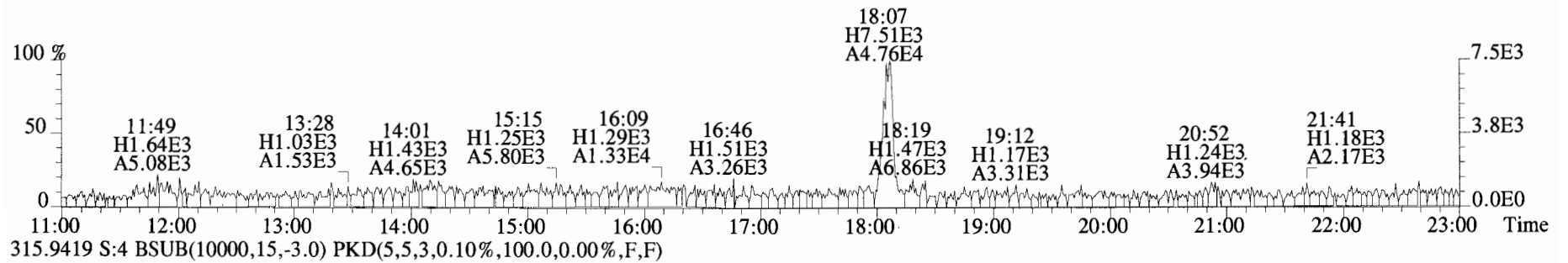
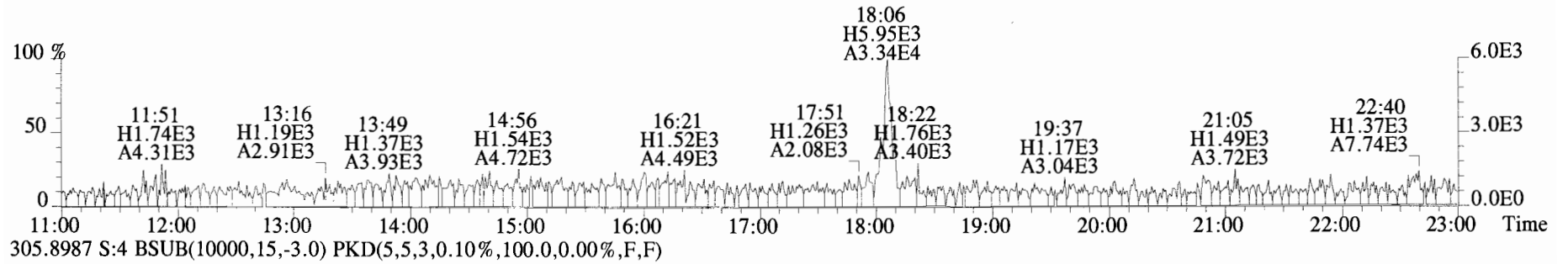
File:190530D1 #1-1682 Acq:30-MAY-2019 12:05:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-1 1613 CS0 19C2201 Exp:TCDF_DB225
303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



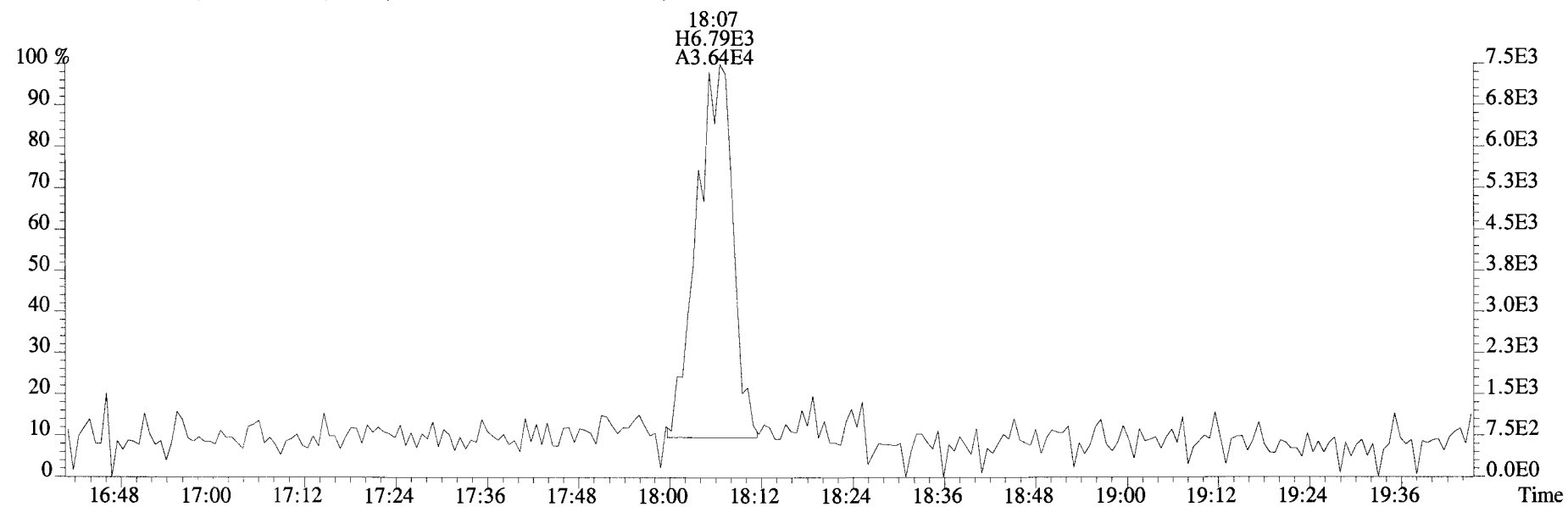
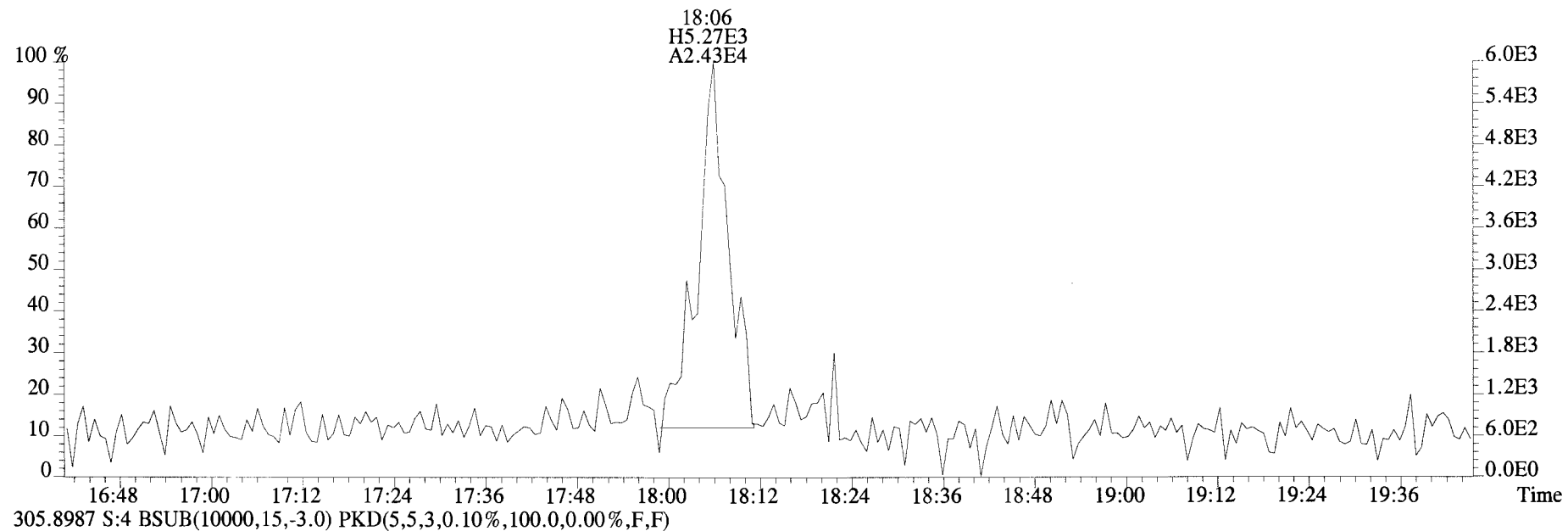
File:190530D1 #1-1682 Acq:30-MAY-2019 12:05:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST190530D1-1 1613 CS0 19C2201 Exp:TCDF_DB225
331.9368 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



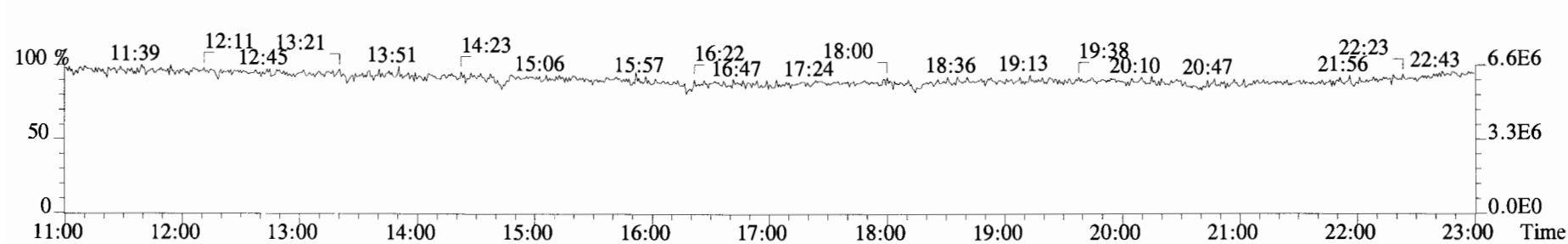
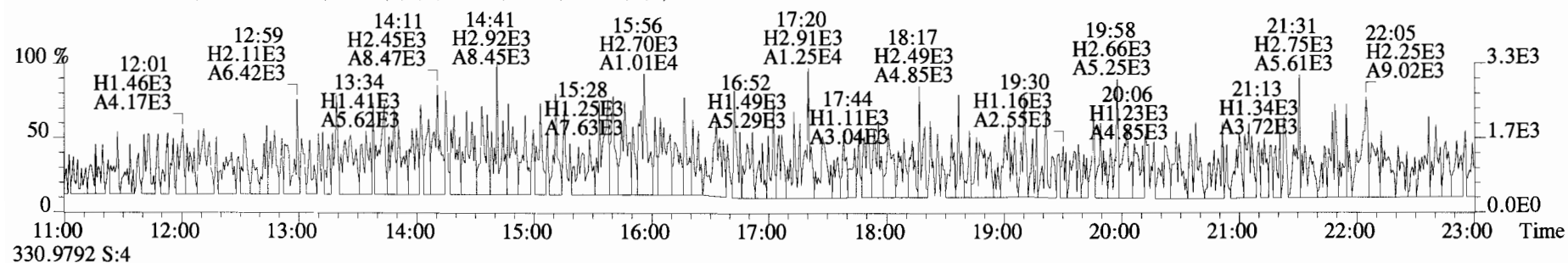
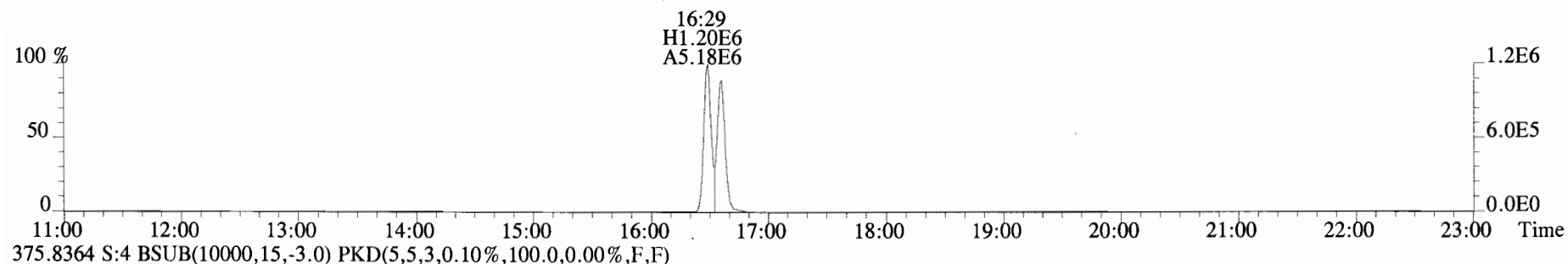
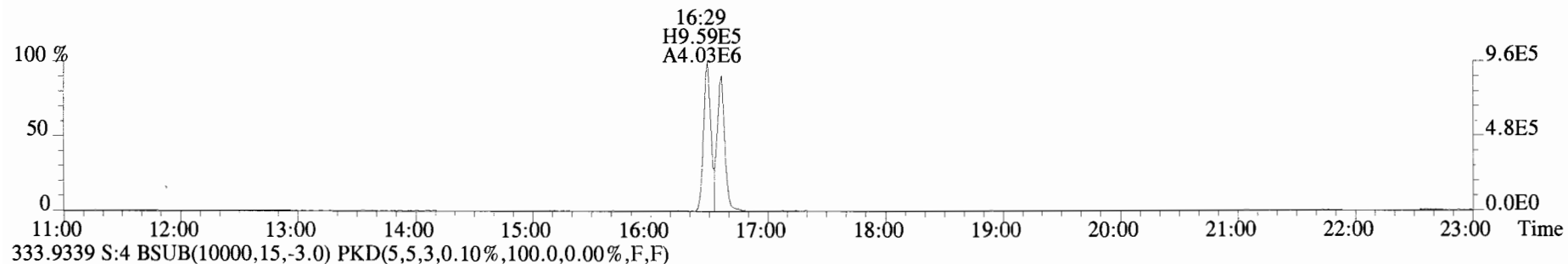
File:190530D1 #1-1683 Acq:30-MAY-2019 12:37:29 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-2 1613 CS1 19C2202 Exp:TCDF_DB225
303.9016 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



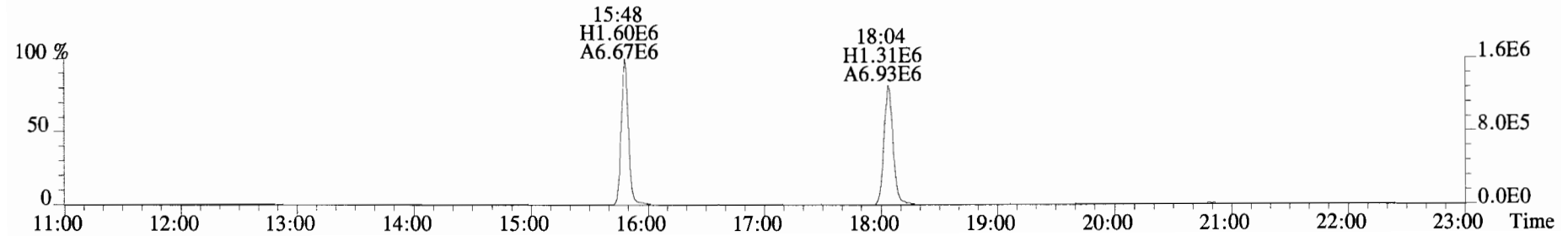
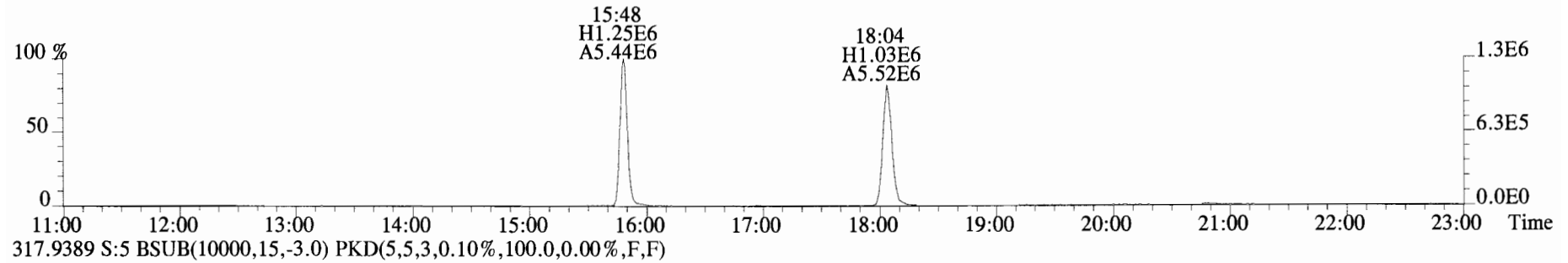
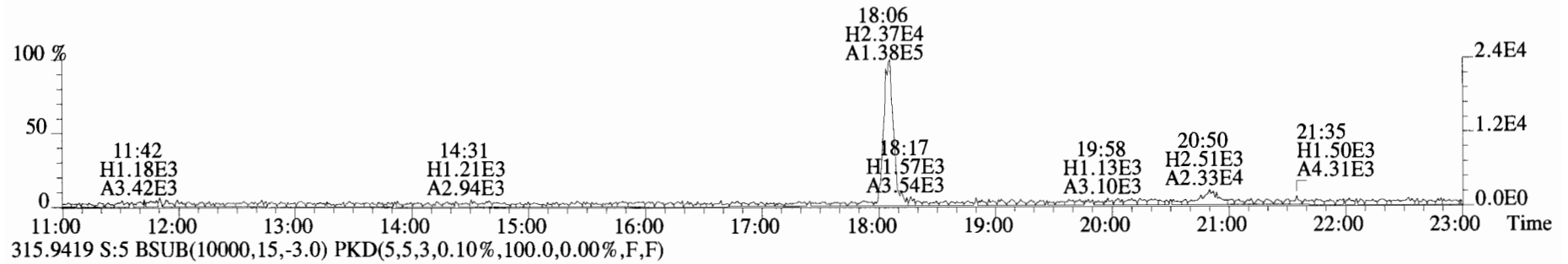
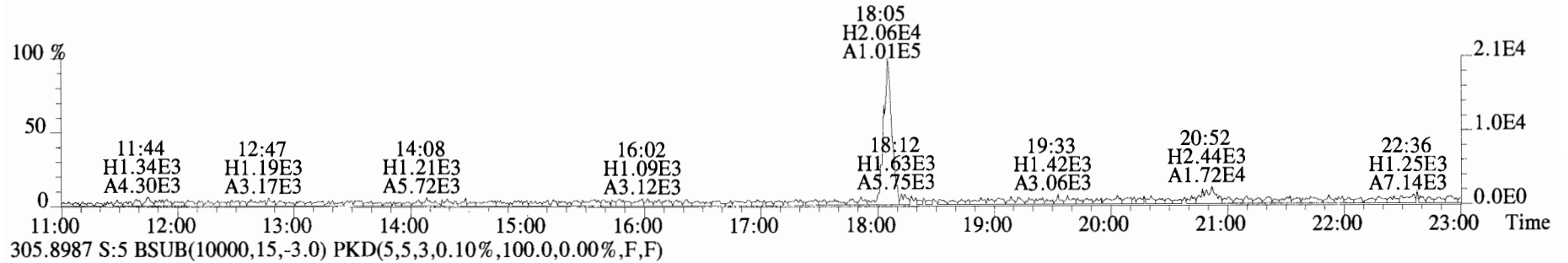
File:190530D1 #1-1683 Acq:30-MAY-2019 12:37:29 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-2 1613 CS1 19C2202 Exp:TCDF_DB225
303.9016 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



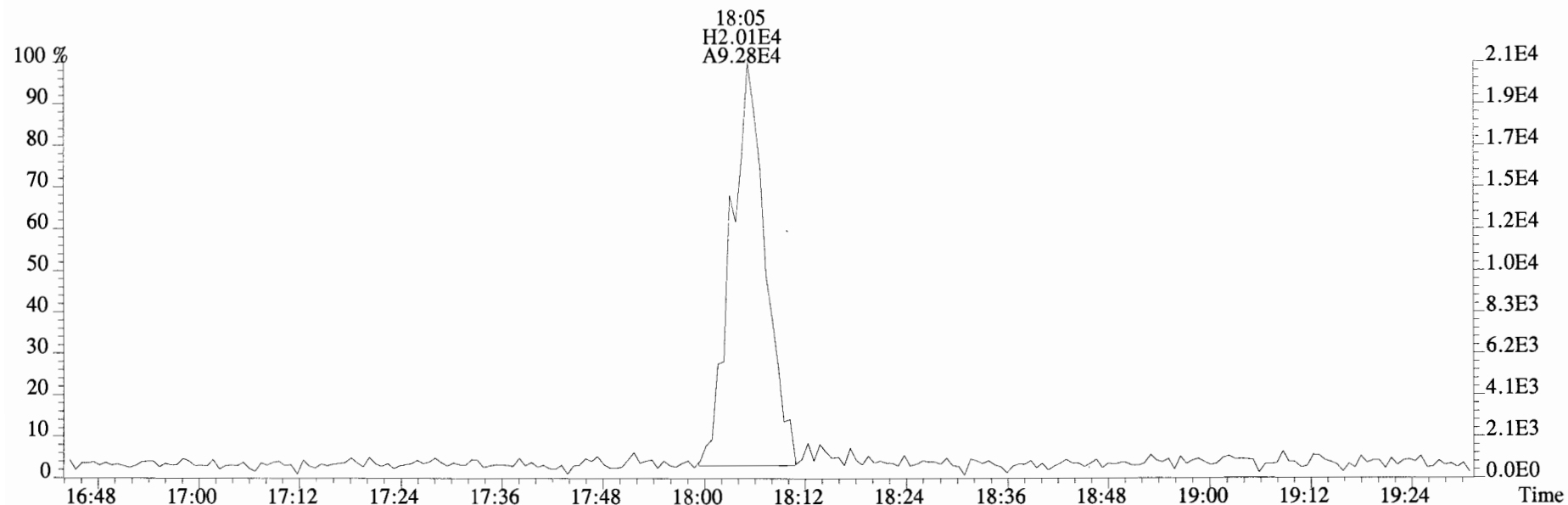
File:190530D1 #1-1683 Acq:30-MAY-2019 12:37:29 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST190530D1-2 1613 CS1 19C2202 Exp:TCDF_DB225
331.9368 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



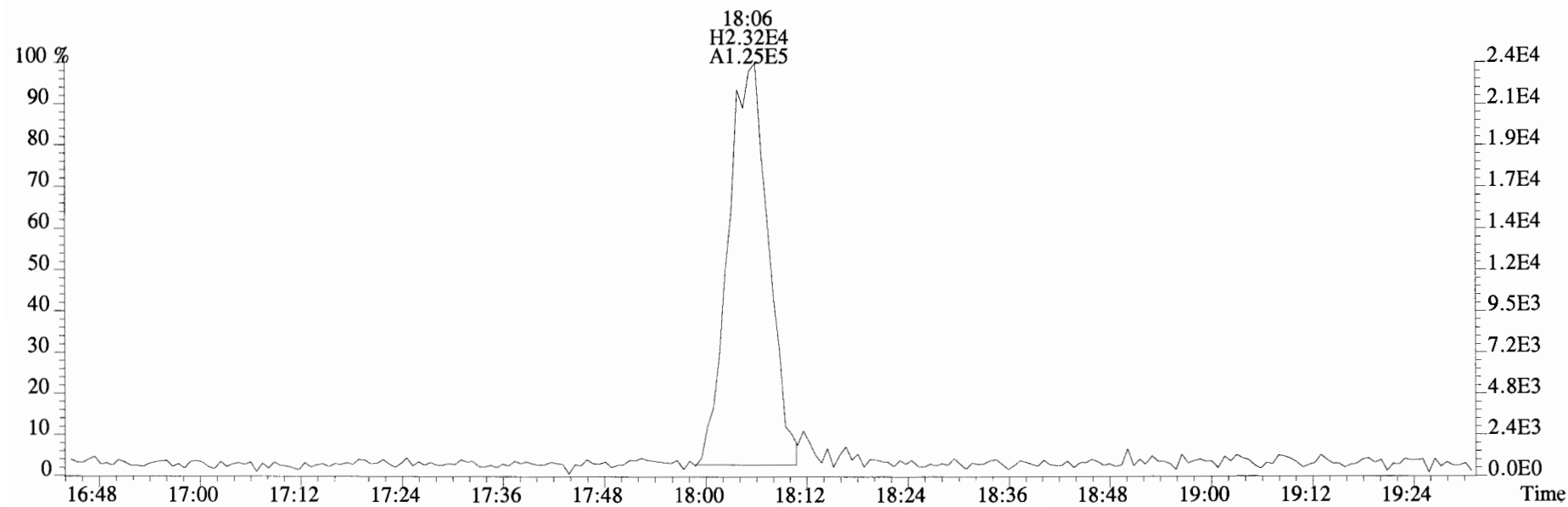
File:190530D1 #1-1683 Acq:30-MAY-2019 13:09:20 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-3 1613 CS2 19C2203 Exp:TCDF_DB225
303.9016 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



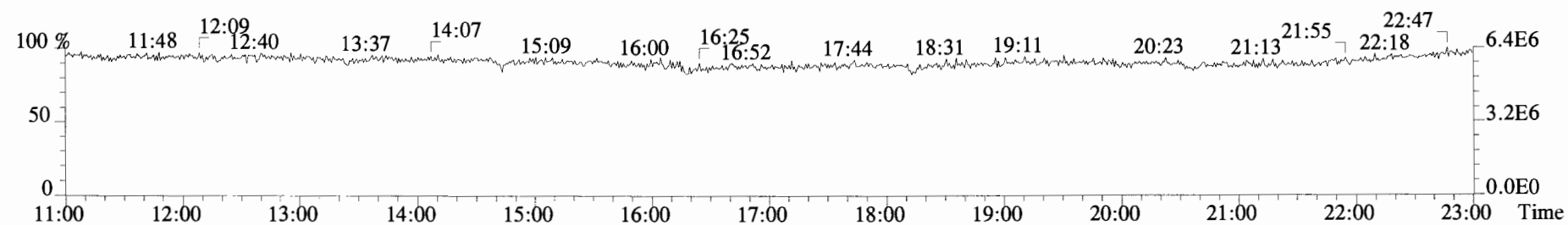
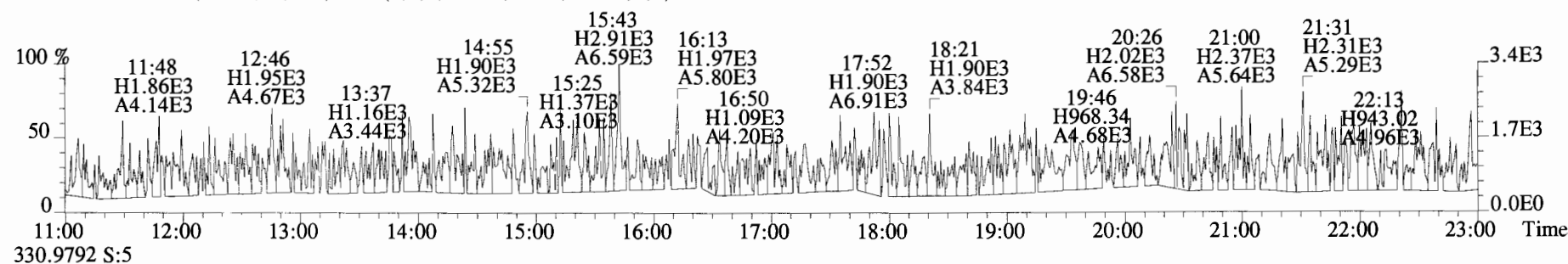
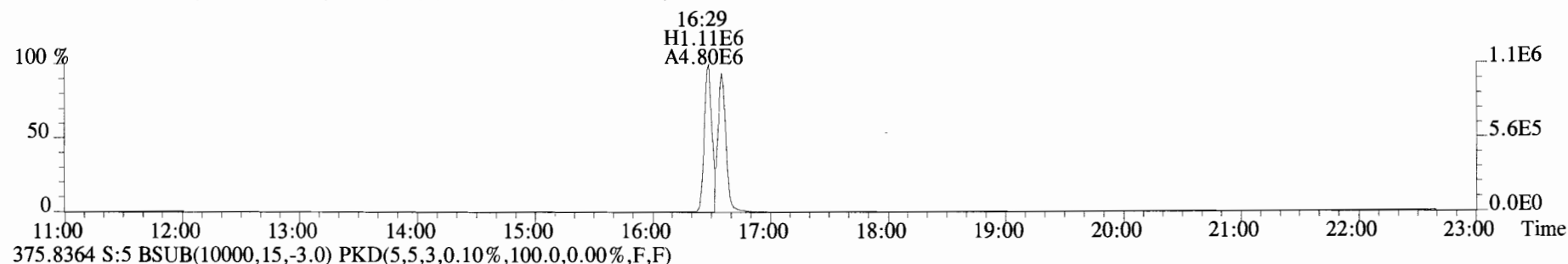
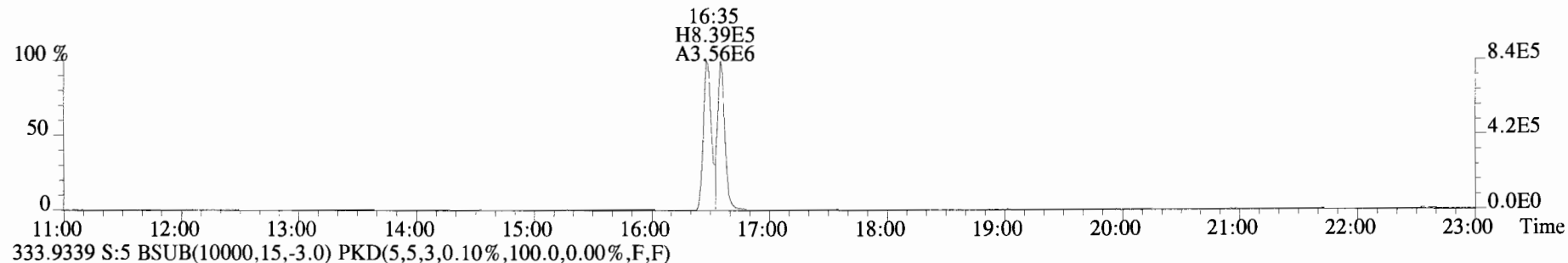
File:190530D1 #1-1683 Acq:30-MAY-2019 13:09:20 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-3 1613 CS2 19C2203 Exp:TCDF_DB225
303.9016 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



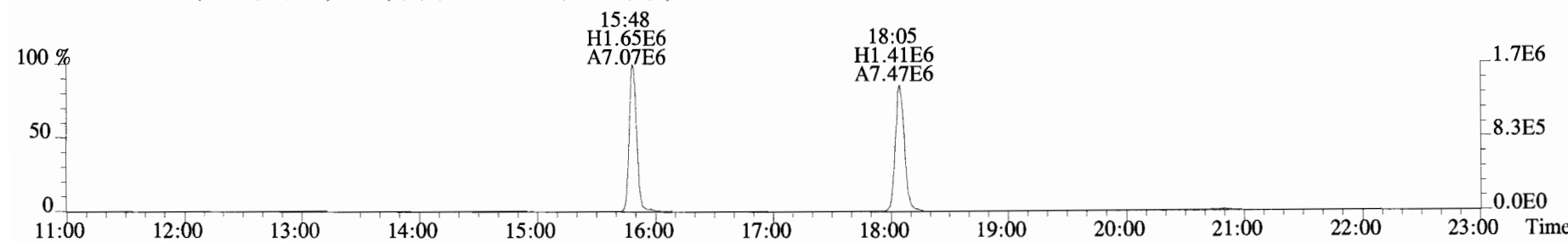
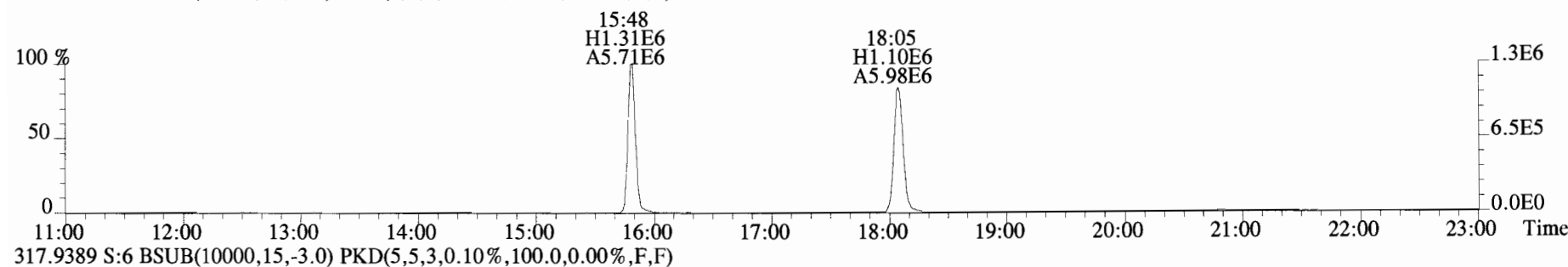
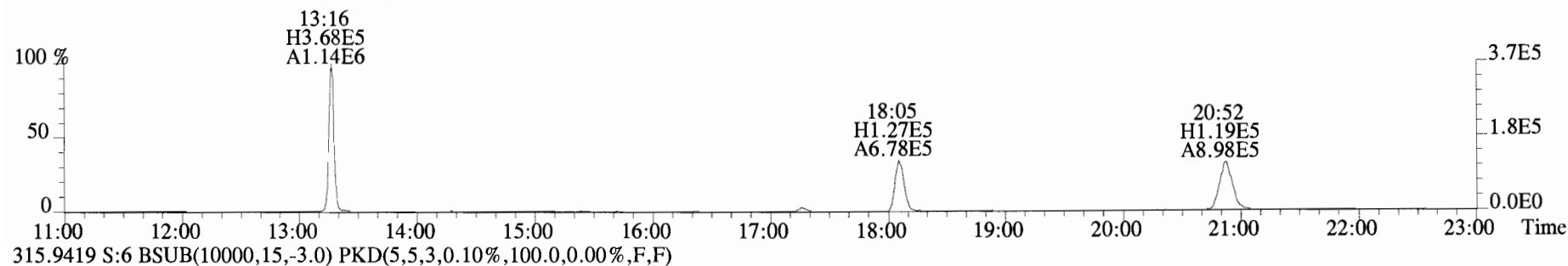
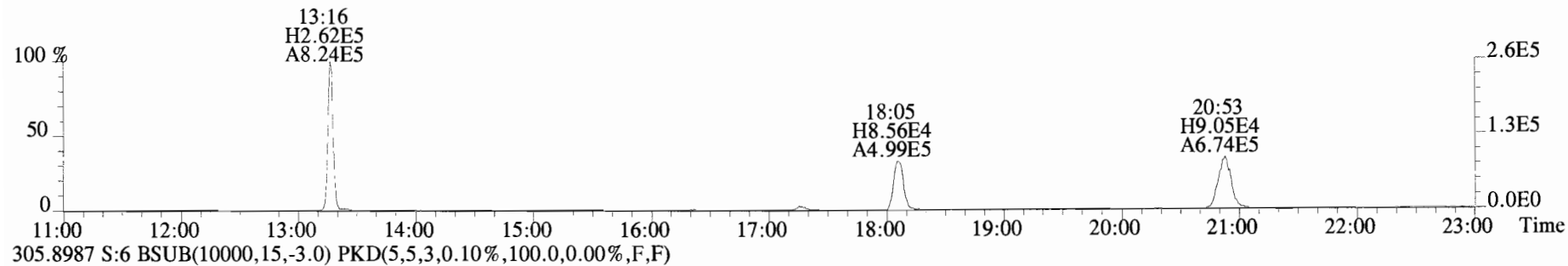
305.8987 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



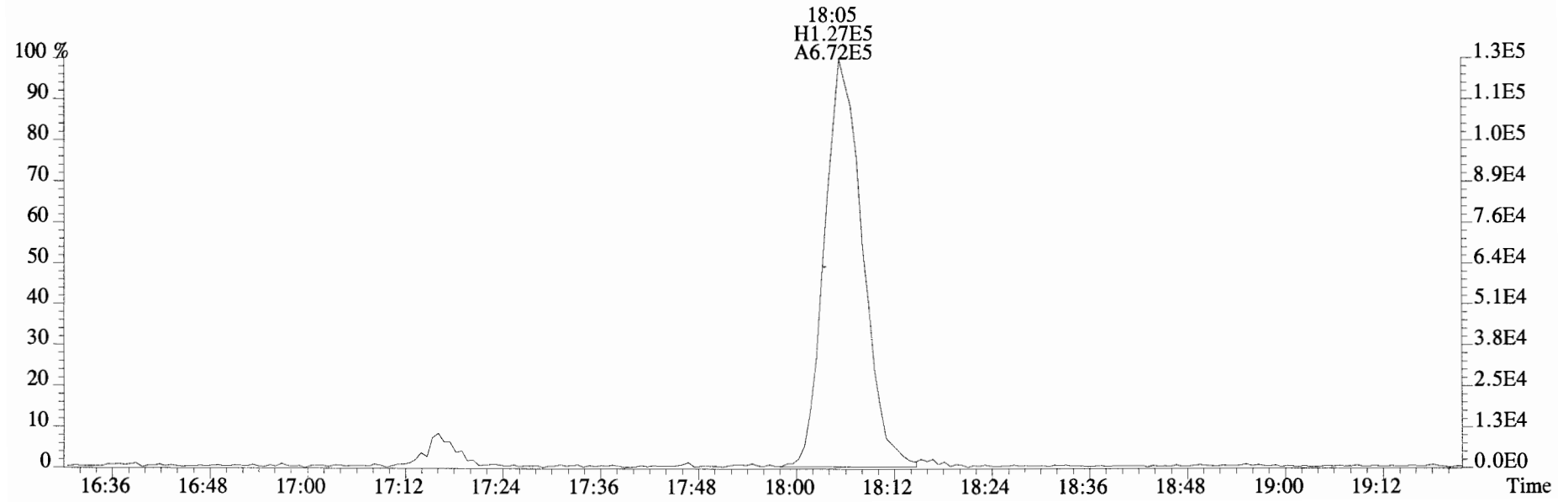
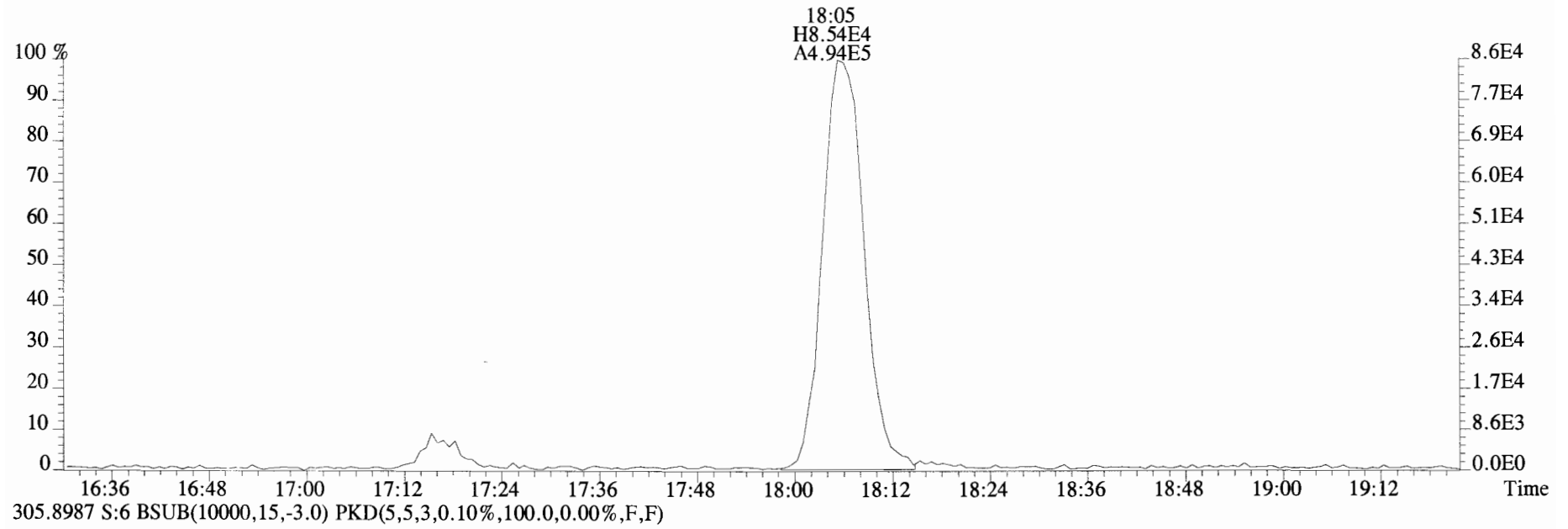
File:190530D1 #1-1683 Acq:30-MAY-2019 13:09:20 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-3 1613 CS2 19C2203 Exp:TCDF_DB225
 331.9368 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



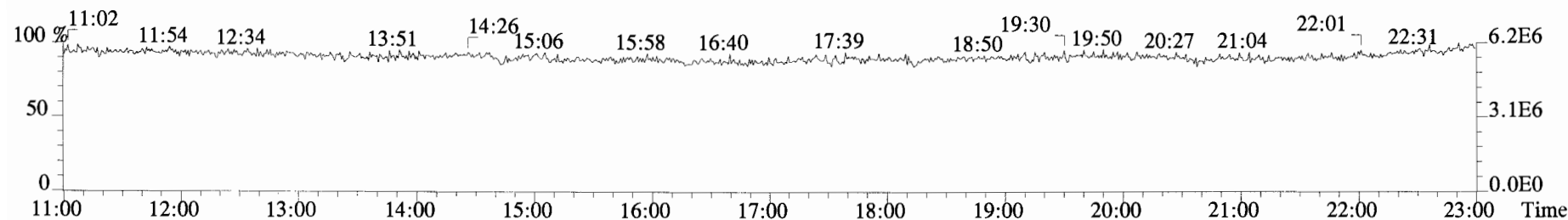
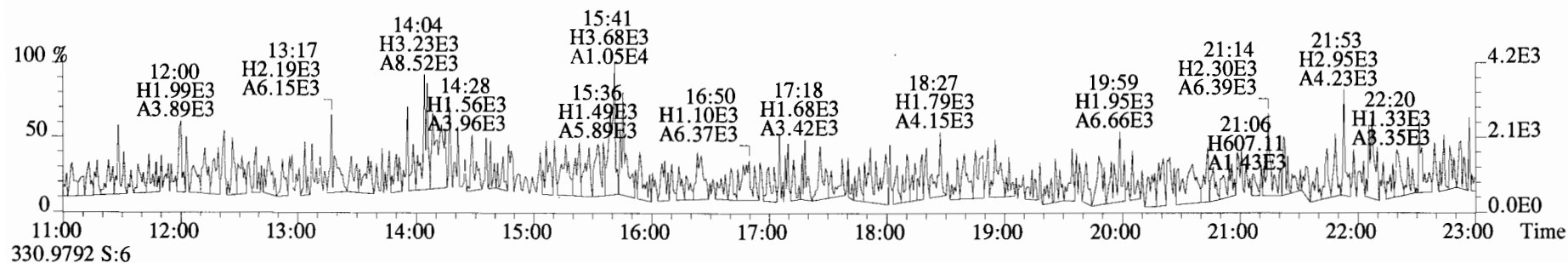
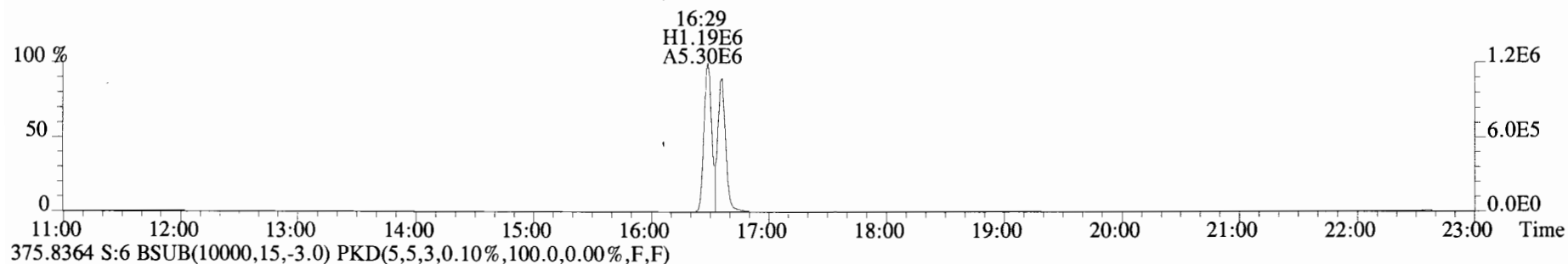
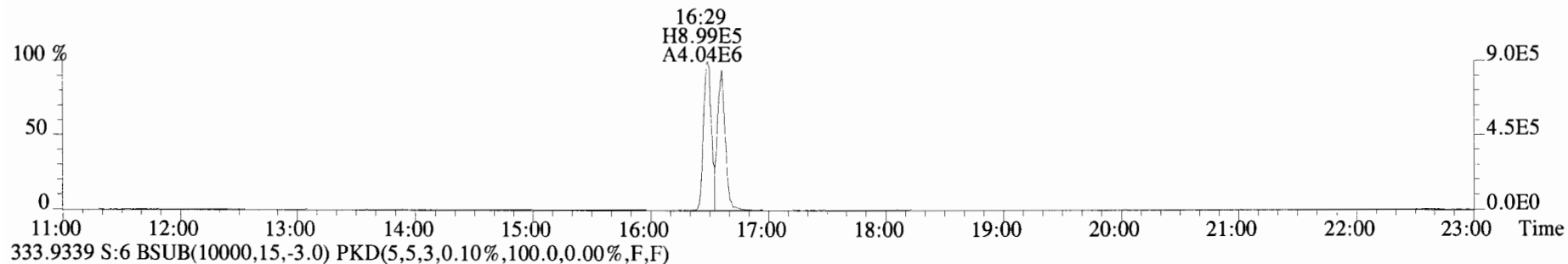
File:190530D1 #1-1682 Acq:30-MAY-2019 13:41:11 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-4 1613 CS3 19C2204 Exp:TCDF_DB225
303.9016 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



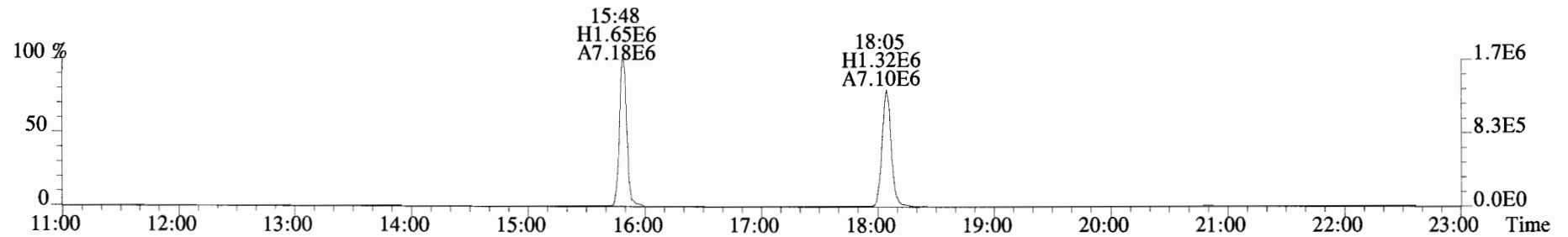
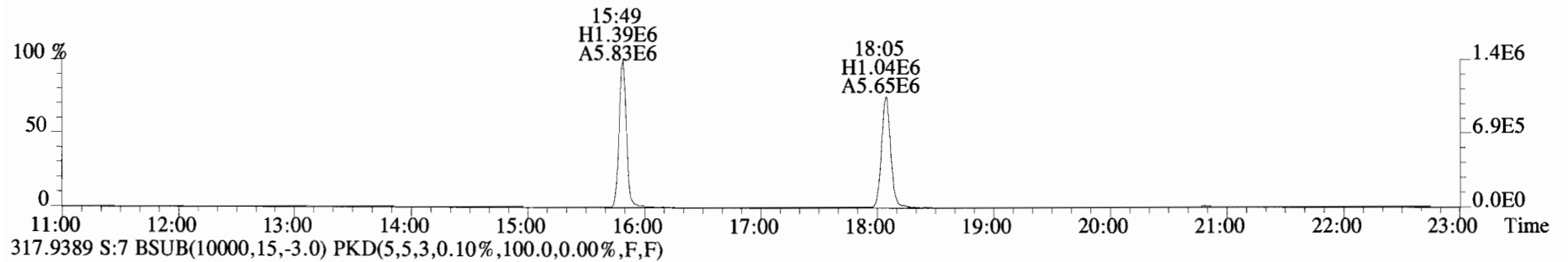
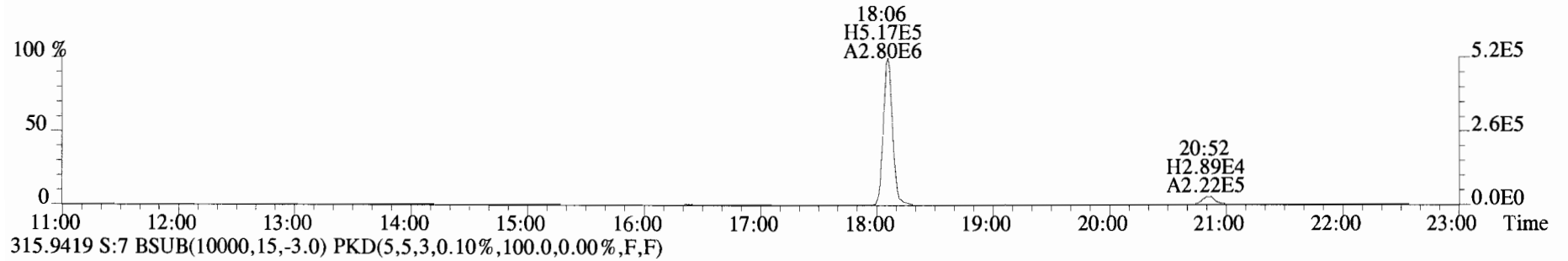
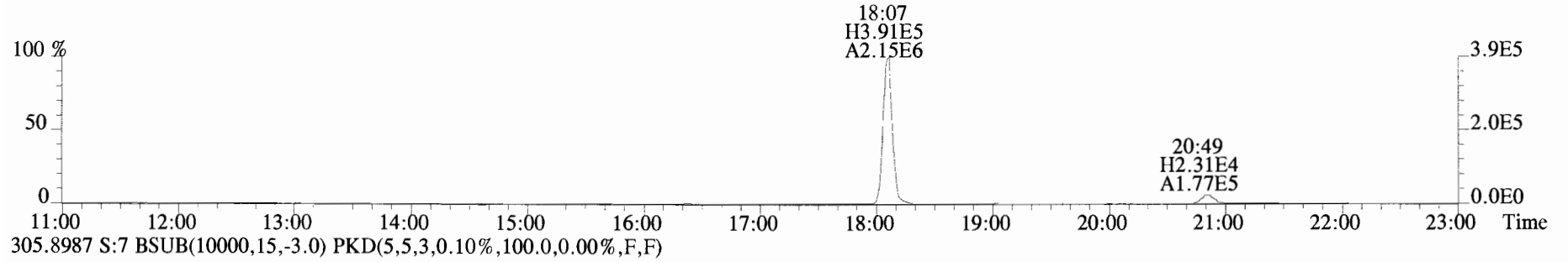
File:190530D1 #1-1682 Acq:30-MAY-2019 13:41:11 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST190530D1-4 1613 CS3 19C2204 Exp:TCDF_DB225
303.9016 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



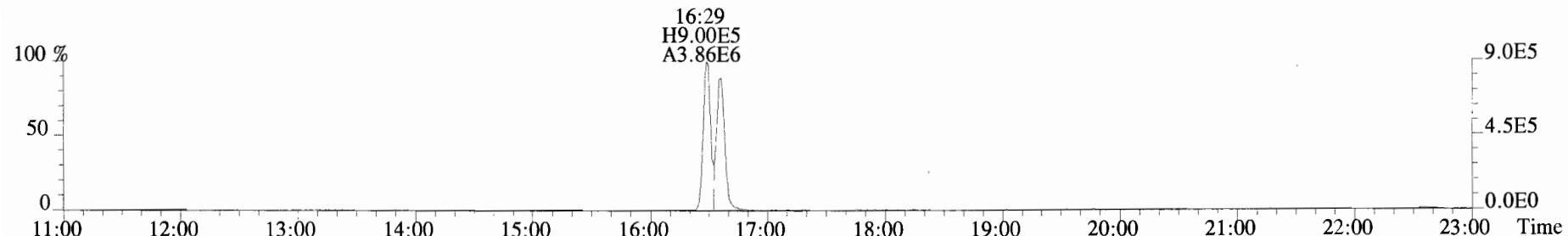
File:190530D1 #1-1682 Acq:30-MAY-2019 13:41:11 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-4 1613 CS3 19C2204 Exp:TCDF_DB225
331.9368 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



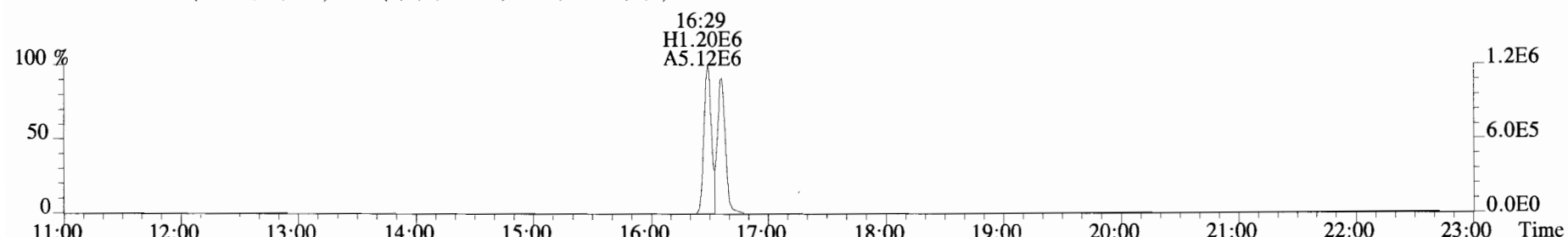
File:190530D1 #1-1682 Acq:30-MAY-2019 14:13:01 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-5 1613 CS4 19C2205 Exp:TCDF_DB225
303.9016 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



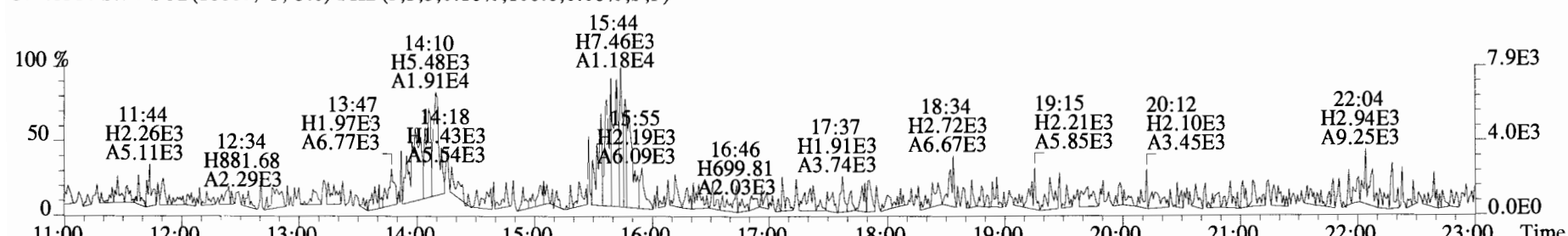
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 Sample#7 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-5 1613 CS4 19C2205 Exp:TCDF_DB225
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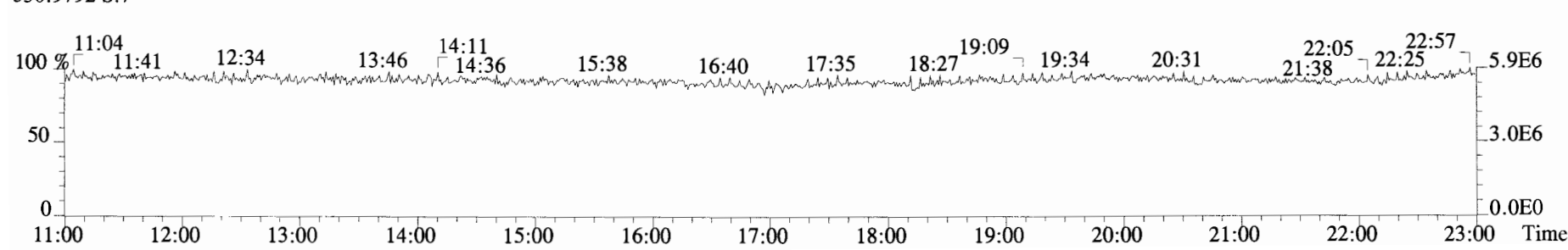
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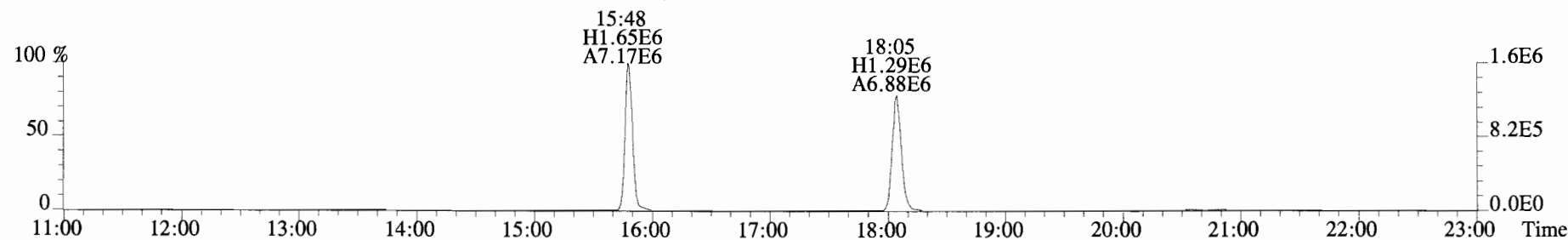
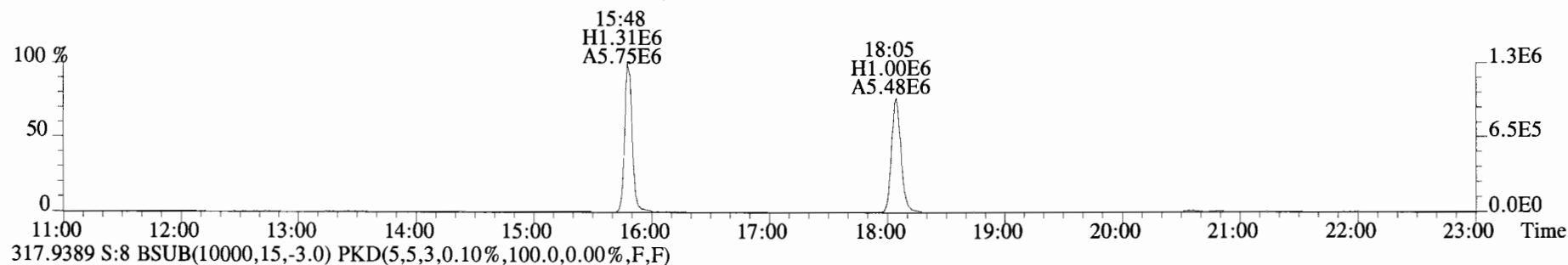
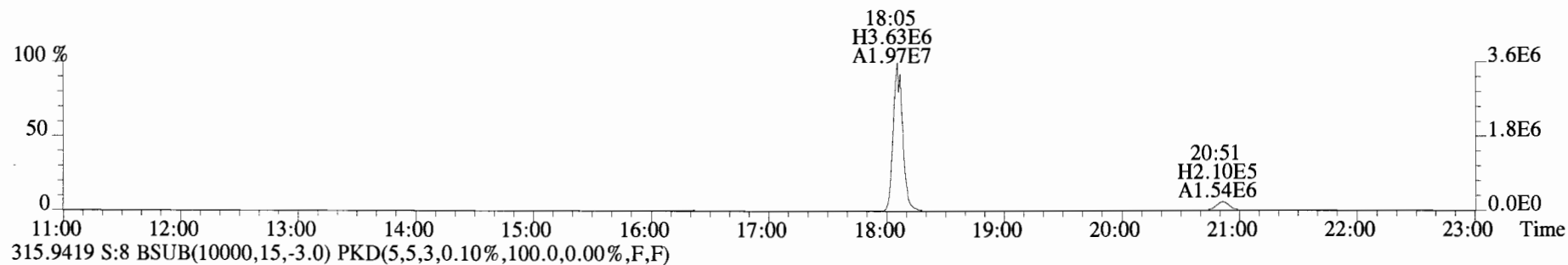
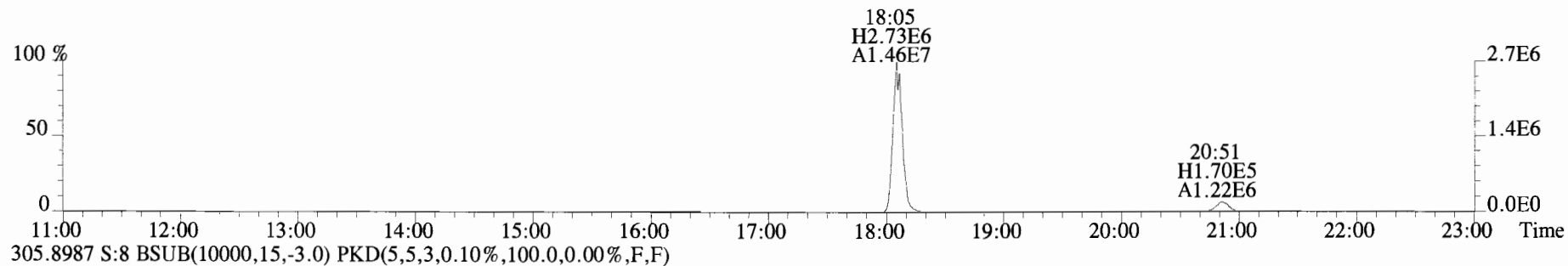
375.8364 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



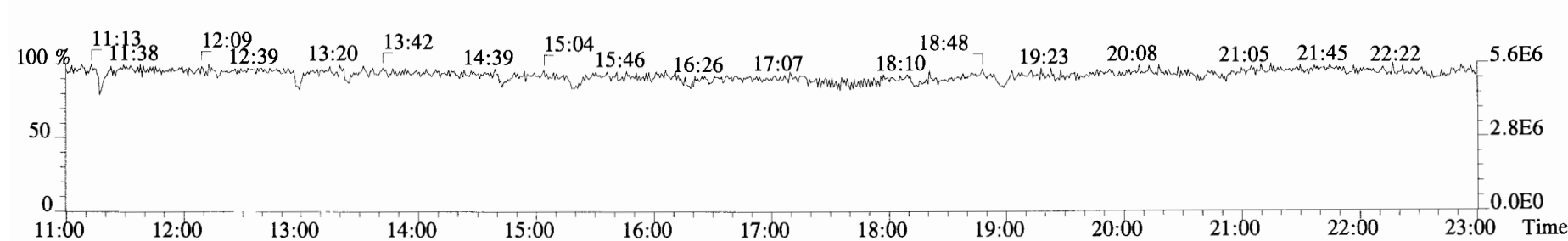
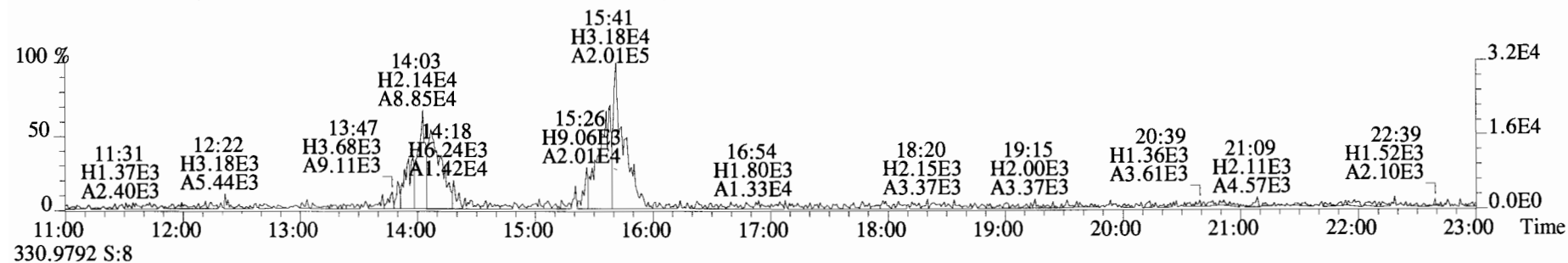
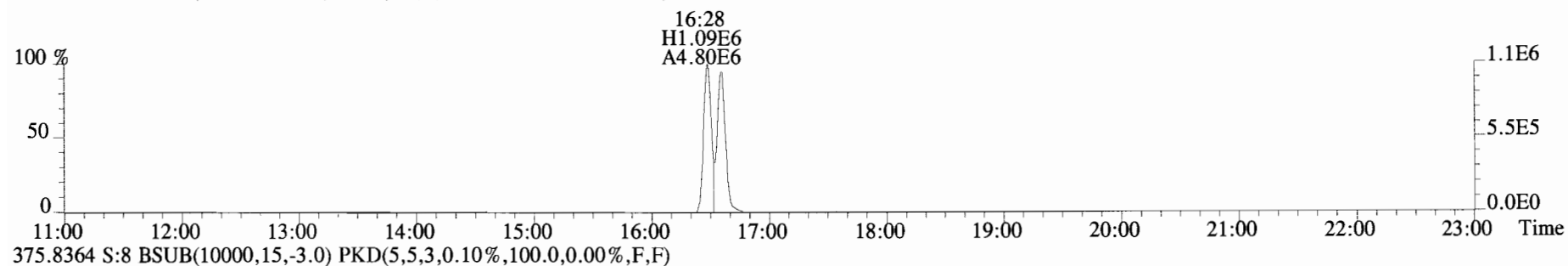
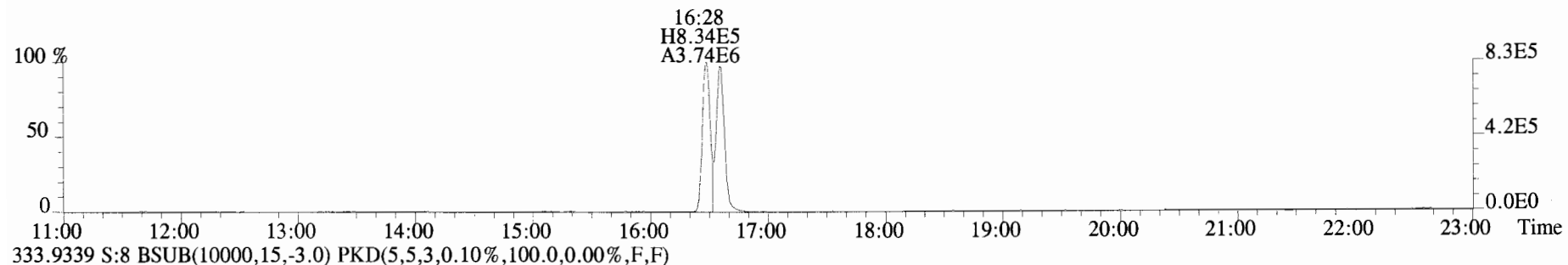
330.9792 S:7

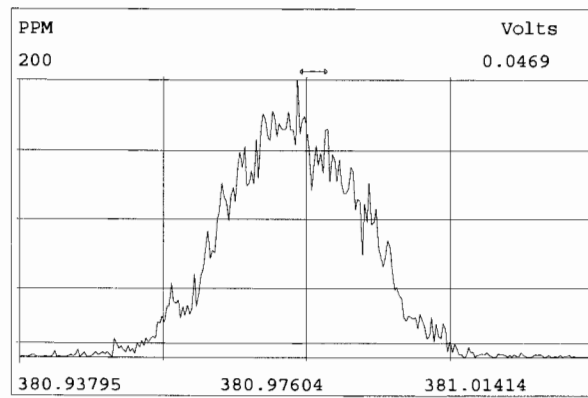
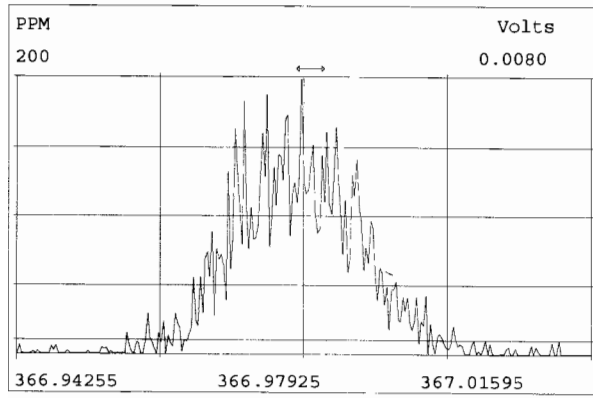
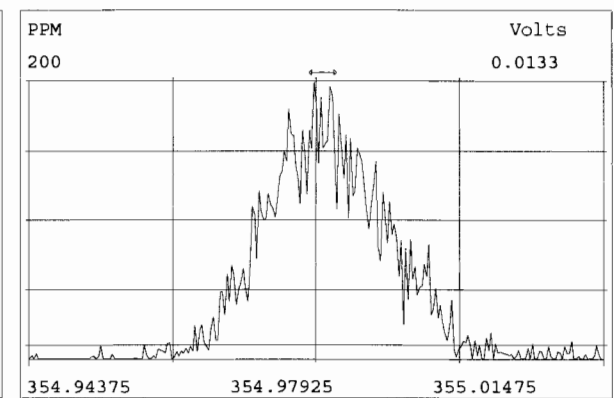
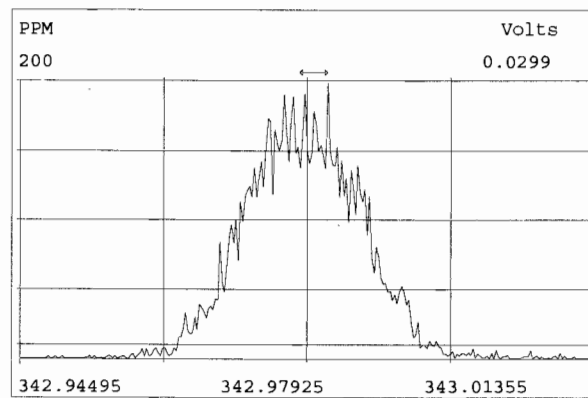
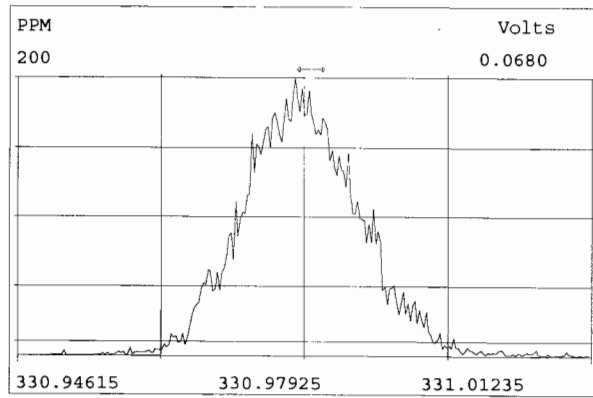
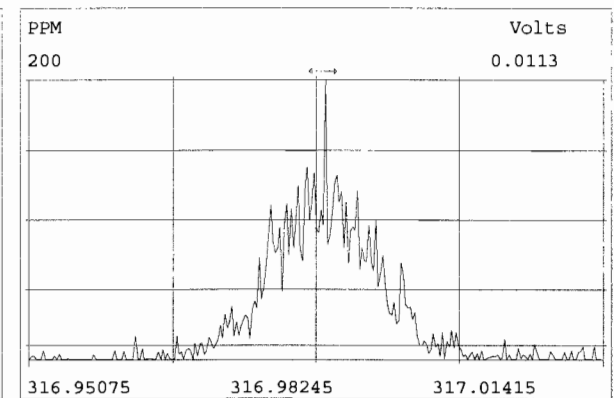
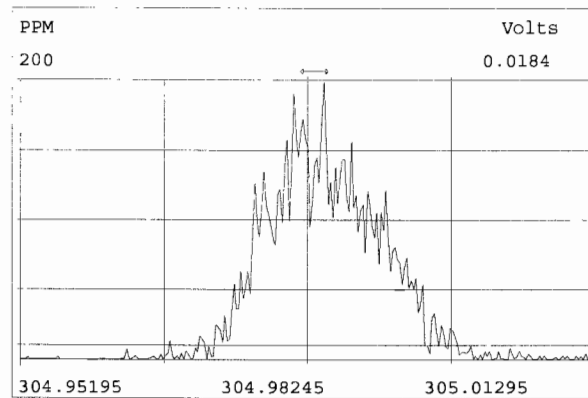
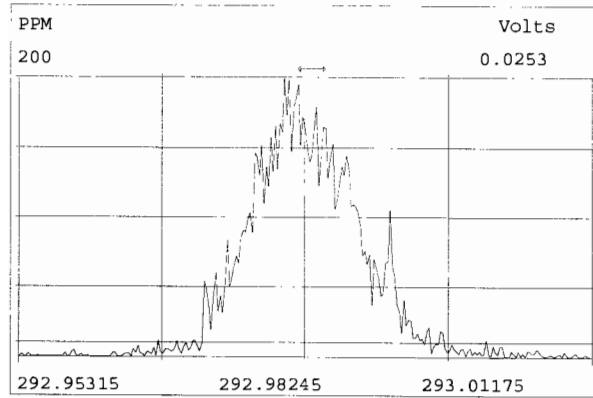


File:190530D1 #1-1682 Acq:30-MAY-2019 14:44:52 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-6 1613 CS5 19C2206 Exp:TCDF_DB225
303.9016 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:190530D1 #1-1682 Acq:30-MAY-2019 14:44:52 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory VG7 Text:ST190530D1-6 1613 CS5 19C2206 Exp:TCDF_DB225
331.9368 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)





Client ID: 1613 SSS 19C2207
Lab ID: SS190528D1-1

Filename: 190530D1 S:10 Acq:30-MAY-19 15:48:32
GC Column ID: DB-225 ICal: 1613TCDFVG7-5-30-19 wt/vol: 1.000

ConCal: ST190530D1-4
EndCAL: NA

Name	Resp	RA	RT	RRF	Conc	Rec
13C-1,2,3,4-TCDF	1.15e+07	0.82 y	15:48	1.00	100.0	-
13C-2,3,7,8-TCDF	1.18e+07	0.80 y	18:04	1.02	100.0	100.0
2,3,7,8-TCDF	1.08e+06	0.74 y	18:05	0.95	9.628	

Integrations

by
Analyst: DB

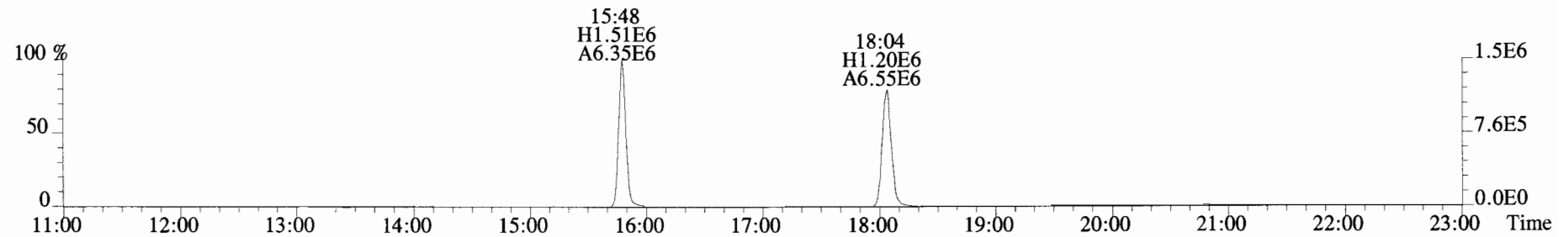
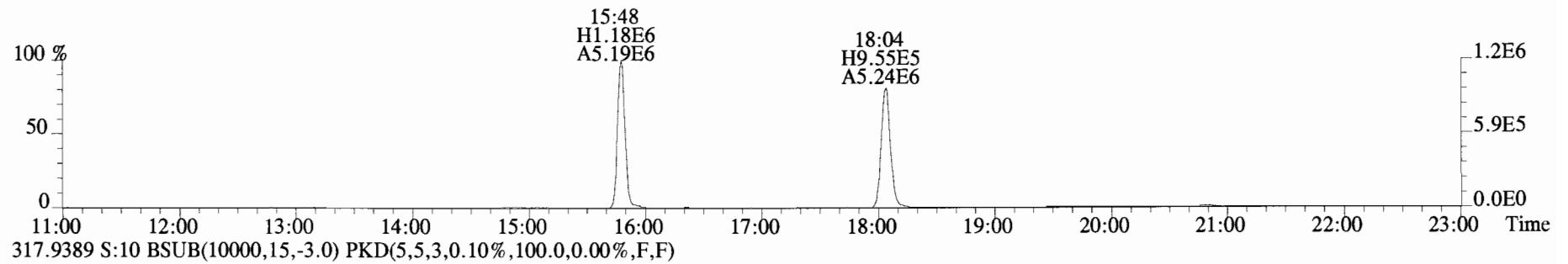
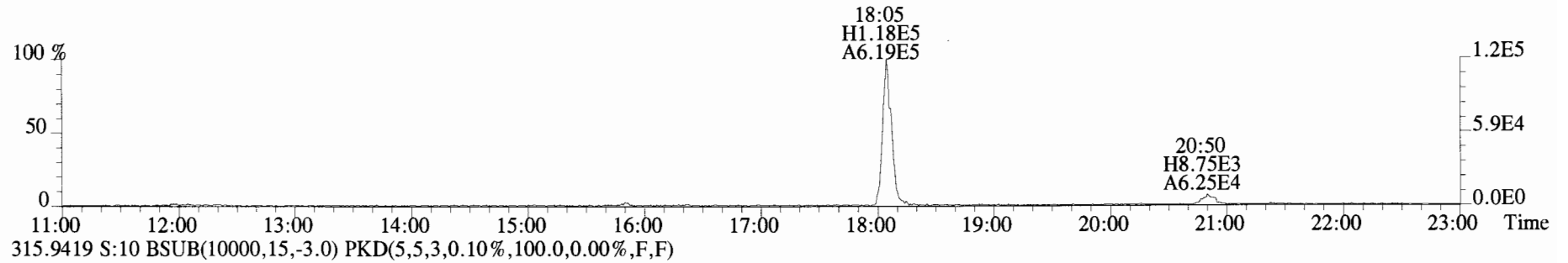
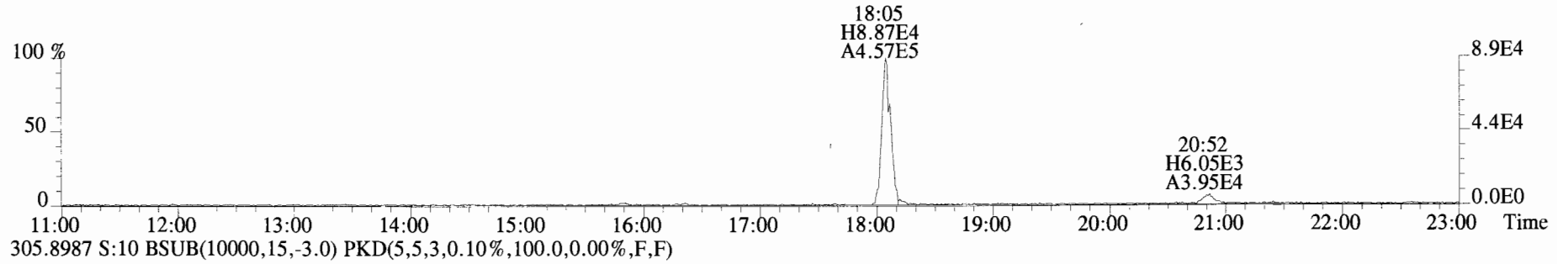
Date: 5/31/19

Reviewed

by
Analyst: CT

Date: 05/31/19

File:190530D1 #1-1682 Acq:30-MAY-2019 15:48:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text:Vista Analytical Laboratory_VG7 Text:SS190528D1-1 1613 SSS 19C2207 Exp:TCDF_DB225
303.9016 S:10 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:190530D1 #1-1682 Acq:30-MAY-2019 15:48:32 GC EI+ Voltage SIR Autospec-UltimaE
Sample#10 File Text:Vista Analytical Laboratory VG7 Text:SS190528D1-1 1613 SSS 19C2207 Exp:TCDF_DB225
331.9368 S:10 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

