



December 20, 2019

**Vista Work Order No. 1903646**

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 15, 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](mailto: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 Work Order No. 1903646**

**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-029SC-A-13-13.7-191009". The RPDs were within acceptance criteria.

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

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# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1903646-01	PDI-016SC-A-14-15-191009	09-Oct-19 09:48	15-Oct-19 08:51	Amber Glass, 120 mL
1903646-02	PDI-016SC-A-15-16-191009	09-Oct-19 09:48	15-Oct-19 08:51	Amber Glass, 120 mL
1903646-03	PDI-023SC-A-11-12-191009	09-Oct-19 12:14	15-Oct-19 08:51	Amber Glass, 120 mL
1903646-04	PDI-023SC-A-12-12.5-191009	09-Oct-19 12:14	15-Oct-19 08:51	Amber Glass, 120 mL
1903646-05	PDI-029SC-A-12-13-191009	09-Oct-19 14:39	15-Oct-19 08:51	Amber Glass, 120 mL
1903646-06	PDI-029SC-A-13-13.7-191009	DUP09-Oct-19 14:39	15-Oct-19 08:51	Amber Glass, 120 mL Amber Glass, 120 mL
1903646-07	PDI-1029SC-A-12-13-191009	09-Oct-19 00:00	15-Oct-19 08:51	Amber Glass, 120 mL
1903646-08	PDI-038SC-A-12-13-191009	09-Oct-19 16:08	15-Oct-19 08:51	Amber Glass, 120 mL
1903646-09	PDI-038SC-A-13-13.7-191009	09-Oct-19 16:08	15-Oct-19 08:51	Amber Glass, 120 mL

## **ANALYTICAL RESULTS**

Sample ID: Method Blank					EPA Method 1613B				
Matrix: Solid Sample Size: 10.0 g		QC Batch: B9J0315 Date Extracted: 29-Oct-2019 9:52		Lab Sample: B9J0315-BLK1 Date Analyzed: 06-Dec-19 20:17 Column: ZB-5MS					
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers	
2,3,7,8-TCDD	ND	0.247			IS 13C-2,3,7,8-TCDD	62.9	25 - 164		
1,2,3,7,8-PeCDD	ND	0.236			13C-1,2,3,7,8-PeCDD	75.7	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.419			13C-1,2,3,4,7,8-HxCDD	76.6	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.461			13C-1,2,3,6,7,8-HxCDD	62.0	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.639			13C-1,2,3,7,8,9-HxCDD	50.2	32 - 141		
1,2,3,4,6,7,8-HpCDD	ND	0.471			13C-1,2,3,4,6,7,8-HpCDD	61.6	23 - 140		
OCDD	ND	0.864			13C-OCDD	44.7	17 - 157		
2,3,7,8-TCDF	ND	0.160			13C-2,3,7,8-TCDF	76.9	24 - 169		
1,2,3,7,8-PeCDF	ND	0.166			13C-1,2,3,7,8-PeCDF	71.2	24 - 185		
2,3,4,7,8-PeCDF	ND	0.135			13C-2,3,4,7,8-PeCDF	86.0	21 - 178		
1,2,3,4,7,8-HxCDF	ND	0.171			13C-1,2,3,4,7,8-HxCDF	91.9	26 - 152		
1,2,3,6,7,8-HxCDF	ND	0.178			13C-1,2,3,6,7,8-HxCDF	75.7	26 - 123		
2,3,4,6,7,8-HxCDF	ND	0.203			13C-2,3,4,6,7,8-HxCDF	73.7	28 - 136		
1,2,3,7,8,9-HxCDF	ND	0.464			13C-1,2,3,7,8,9-HxCDF	43.4	29 - 147		
1,2,3,4,6,7,8-HpCDF	ND	0.317			13C-1,2,3,4,6,7,8-HpCDF	65.6	28 - 143		
1,2,3,4,7,8,9-HpCDF	ND	0.309			13C-1,2,3,4,7,8,9-HpCDF	64.9	26 - 138		
OCDF	ND	0.430			13C-OCDF	56.2	17 - 157		
					CRS 37Cl-2,3,7,8-TCDD	61.1	35 - 197		
					<b>Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)</b>				
					TEQMinWHO2005Dioxin		0.00		
<b>TOTALS</b>									
Total TCDD	ND	0.247							
Total PeCDD	ND	0.236							
Total HxCDD	ND	0.639							
Total HpCDD	ND	0.471							
Total TCDF	ND	0.160							
Total PeCDF	ND	0.166							
Total HxCDF	ND	0.464							
Total HpCDF	ND	0.317							

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 Sample Size: 10.0 g		QC Batch: B9J0315 Date Extracted: 29-Oct-2019 9:52		Lab Sample: B9J0315-BS1 Date Analyzed: 06-Dec-19 18:42 Column: ZB-5MS			
Analyte	Amt Found (pg/g)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	22.4	20.0	112	67 - 158	IS 13C-2,3,7,8-TCDD	93.0	20 - 175
1,2,3,7,8-PeCDD	112	100	112	70 - 142	13C-1,2,3,7,8-PeCDD	103	21 - 227
1,2,3,4,7,8-HxCDD	105	100	105	70 - 164	13C-1,2,3,4,7,8-HxCDD	94.5	21 - 193
1,2,3,6,7,8-HxCDD	114	100	114	76 - 134	13C-1,2,3,6,7,8-HxCDD	78.2	25 - 163
1,2,3,7,8,9-HxCDD	110	100	110	64 - 162	13C-1,2,3,7,8,9-HxCDD	81.9	21 - 193
1,2,3,4,6,7,8-HpCDD	105	100	105	70 - 140	13C-1,2,3,4,6,7,8-HpCDD	89.1	26 - 166
OCDD	213	200	107	78 - 144	13C-OCDD	87.7	13 - 199
2,3,7,8-TCDF	18.9	20.0	94.3	75 - 158	13C-2,3,7,8-TCDF	95.0	22 - 152
1,2,3,7,8-PeCDF	108	100	108	80 - 134	13C-1,2,3,7,8-PeCDF	96.8	21 - 192
2,3,4,7,8-PeCDF	109	100	109	68 - 160	13C-2,3,4,7,8-PeCDF	98.6	13 - 328
1,2,3,4,7,8-HxCDF	98.6	100	98.6	72 - 134	13C-1,2,3,4,7,8-HxCDF	113	19 - 202
1,2,3,6,7,8-HxCDF	103	100	103	84 - 130	13C-1,2,3,6,7,8-HxCDF	93.8	21 - 159
2,3,4,6,7,8-HxCDF	106	100	106	70 - 156	13C-2,3,4,6,7,8-HxCDF	91.0	22 - 176
1,2,3,7,8,9-HxCDF	104	100	104	78 - 130	13C-1,2,3,7,8,9-HxCDF	88.7	17 - 205
1,2,3,4,6,7,8-HpCDF	99.1	100	99.1	82 - 122	13C-1,2,3,4,6,7,8-HpCDF	85.4	21 - 158
1,2,3,4,7,8,9-HpCDF	100	100	100	78 - 138	13C-1,2,3,4,7,8,9-HpCDF	93.7	20 - 186
OCDF	205	200	103	63 - 170	13C-OCDF	96.9	13 - 199
					CRS 37Cl-2,3,7,8-TCDD	90.2	31 - 191

LCL-UCL - Lower control limit - upper control limit

**Sample ID: PDI-016SC-A-14-15-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-01      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 14.9 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 9:48	% Solids: 68.7	Date Analyzed : 07-Dec-19 02:40      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.210			IS 13C-2,3,7,8-TCDD	88.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.183			13C-1,2,3,7,8-PeCDD	97.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.380			13C-1,2,3,4,7,8-HxCDD	88.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.392			13C-1,2,3,6,7,8-HxCDD	72.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.439			13C-1,2,3,7,8,9-HxCDD	77.3	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.07			J	13C-1,2,3,4,6,7,8-HpCDD	83.6	23 - 140	
OCDD	7.36				13C-OCDD	88.9	17 - 157	
2,3,7,8-TCDF	ND	0.136			13C-2,3,7,8-TCDF	97.0	24 - 169	
1,2,3,7,8-PeCDF	ND	0.107			13C-1,2,3,7,8-PeCDF	100	24 - 185	
2,3,4,7,8-PeCDF	ND	0.111			13C-2,3,4,7,8-PeCDF	95.5	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.122			13C-1,2,3,4,7,8-HxCDF	105	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.140			13C-1,2,3,6,7,8-HxCDF	85.1	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.140			13C-2,3,4,6,7,8-HxCDF	84.1	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.204			13C-1,2,3,7,8,9-HxCDF	86.4	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.304			13C-1,2,3,4,6,7,8-HpCDF	81.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.267			13C-1,2,3,4,7,8,9-HpCDF	94.2	26 - 138	
OCDF	ND	0.238			13C-OCDF	94.1	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	91.8	35 - 197	

**Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)**  
 TEQMinWHO2005Dioxin      0.0129

<b>TOTALS</b>				
Total TCDD	0.409			
Total PeCDD	ND	0.183		
Total HxCDD	1.05			
Total HpCDD	2.78			
Total TCDF	ND	0.136		
Total PeCDF	ND	0.111		
Total HxCDF	ND	0.204		
Total HpCDF	ND	0.304		

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-016SC-A-15-16-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-02      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 14.9 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 9:48	% Solids: 72.4	Date Analyzed: 07-Dec-19 03:28      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.200			IS 13C-2,3,7,8-TCDD	87.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.263			13C-1,2,3,7,8-PeCDD	99.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.344			13C-1,2,3,4,7,8-HxCDD	81.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.373			13C-1,2,3,6,7,8-HxCDD	69.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.405			13C-1,2,3,7,8,9-HxCDD	68.1	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND		0.540		13C-1,2,3,4,6,7,8-HpCDD	73.9	23 - 140	
OCDD	5.10				13C-OCDD	79.7	17 - 157	
2,3,7,8-TCDF	ND	0.136			13C-2,3,7,8-TCDF	96.1	24 - 169	
1,2,3,7,8-PeCDF	ND	0.115			13C-1,2,3,7,8-PeCDF	95.9	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0965			13C-2,3,4,7,8-PeCDF	96.3	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.115			13C-1,2,3,4,7,8-HxCDF	95.2	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.123			13C-1,2,3,6,7,8-HxCDF	80.7	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.142			13C-2,3,4,6,7,8-HxCDF	80.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.217			13C-1,2,3,7,8,9-HxCDF	71.6	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.219			13C-1,2,3,4,6,7,8-HpCDF	75.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.185			13C-1,2,3,4,7,8,9-HpCDF	82.3	26 - 138	
OCDF	ND	0.219			13C-OCDF	85.8	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	84.3	35 - 197	

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

TEQMinWHO2005Dioxin	0.00153
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<b>TOTALS</b>								
Total TCDD	ND		0.428					
Total PeCDD	ND	0.263						
Total HxCDD	ND		0.598					
Total HpCDD	1.26		1.80					
Total TCDF	ND	0.136						
Total PeCDF	ND	0.115						
Total HxCDF	ND	0.217						
Total HpCDF	ND	0.219						

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-023SC-A-11-12-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-03      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 14.2 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 12:14	% Solids: 69.6	Date Analyzed: 07-Dec-19 07:41      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.245			IS 13C-2,3,7,8-TCDD	105	25 - 164	
1,2,3,7,8-PeCDD	ND	0.307			13C-1,2,3,7,8-PeCDD	107	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.565			13C-1,2,3,4,7,8-HxCDD	105	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.626			13C-1,2,3,6,7,8-HxCDD	82.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.645			13C-1,2,3,7,8,9-HxCDD	87.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND		1.35		13C-1,2,3,4,6,7,8-HpCDD	96.6	23 - 140	
OCDD	12.6				13C-OCDD	95.9	17 - 157	
2,3,7,8-TCDF	ND	0.156			13C-2,3,7,8-TCDF	111	24 - 169	
1,2,3,7,8-PeCDF	ND	0.116			13C-1,2,3,7,8-PeCDF	103	24 - 185	
2,3,4,7,8-PeCDF	ND	0.121			13C-2,3,4,7,8-PeCDF	106	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.295			13C-1,2,3,4,7,8-HxCDF	120	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.317			13C-1,2,3,6,7,8-HxCDF	101	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.355			13C-2,3,4,6,7,8-HxCDF	99.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.545			13C-1,2,3,7,8,9-HxCDF	96.7	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.232			13C-1,2,3,4,6,7,8-HpCDF	92.8	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.233			13C-1,2,3,4,7,8,9-HpCDF	103	26 - 138	
OCDF	ND	0.316			13C-OCDF	104	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	94.8	35 - 197	

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

TEQMinWHO2005Dioxin	0.00378
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<b>TOTALS</b>								
Total TCDD	ND	0.245						
Total PeCDD	ND	0.307						
Total HxCDD	ND		0.970					
Total HpCDD	ND		3.93					
Total TCDF	ND	0.156						
Total PeCDF	ND	0.121						
Total HxCDF	ND	0.545						
Total HpCDF	ND	0.233						

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-023SC-A-12-12.5-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-04      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 14.9 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 12:14	% Solids: 67.3	Date Analyzed : 07-Dec-19 08:29      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.275			IS 13C-2,3,7,8-TCDD	97.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.263			13C-1,2,3,7,8-PeCDD	107	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.440			13C-1,2,3,4,7,8-HxCDD	87.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.494			13C-1,2,3,6,7,8-HxCDD	72.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.482			13C-1,2,3,7,8,9-HxCDD	83.6	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.47			J	13C-1,2,3,4,6,7,8-HpCDD	85.3	23 - 140	
OCDD	11.3				13C-OCDD	83.9	17 - 157	
2,3,7,8-TCDF	ND	0.177			13C-2,3,7,8-TCDF	108	24 - 169	
1,2,3,7,8-PeCDF	ND	0.132			13C-1,2,3,7,8-PeCDF	112	24 - 185	
2,3,4,7,8-PeCDF	ND	0.123			13C-2,3,4,7,8-PeCDF	102	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.184			13C-1,2,3,4,7,8-HxCDF	103	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.208			13C-1,2,3,6,7,8-HxCDF	86.4	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.213			13C-2,3,4,6,7,8-HxCDF	86.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.194			13C-1,2,3,7,8,9-HxCDF	137	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.254			13C-1,2,3,4,6,7,8-HpCDF	84.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.243			13C-1,2,3,4,7,8,9-HpCDF	105	26 - 138	
OCDF	ND	0.369			13C-OCDF	93.0	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	93.5	35 - 197	

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

TEQMinWHO2005Dioxin      0.0181

<b>TOTALS</b>			
Total TCDD	ND	0.275	
Total PeCDD	ND	0.263	
Total HxCDD	1.46		
Total HpCDD	4.39		
Total TCDF	ND	0.177	
Total PeCDF	ND	0.132	
Total HxCDF	ND	0.213	
Total HpCDF	ND	0.254	

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-029SC-A-12-13-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-05      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 13.1 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 14:39	% Solids: 81.2	Date Analyzed : 07-Dec-19 09:17      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.377			IS 13C-2,3,7,8-TCDD	102	25 - 164	
1,2,3,7,8-PeCDD	ND	0.221			13C-1,2,3,7,8-PeCDD	109	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.278			13C-1,2,3,4,7,8-HxCDD	89.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.311			13C-1,2,3,6,7,8-HxCDD	71.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.303			13C-1,2,3,7,8,9-HxCDD	77.0	32 - 141	
1,2,3,4,6,7,8-HpCDD	2.22			J	13C-1,2,3,4,6,7,8-HpCDD	83.2	23 - 140	
OCDD	16.9				13C-OCDD	92.1	17 - 157	
2,3,7,8-TCDF	ND	0.190			13C-2,3,7,8-TCDF	107	24 - 169	
1,2,3,7,8-PeCDF	ND	0.161			13C-1,2,3,7,8-PeCDF	106	24 - 185	
2,3,4,7,8-PeCDF	ND	0.145			13C-2,3,4,7,8-PeCDF	103	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.154			13C-1,2,3,4,7,8-HxCDF	104	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.157			13C-1,2,3,6,7,8-HxCDF	86.4	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.174			13C-2,3,4,6,7,8-HxCDF	86.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.249			13C-1,2,3,7,8,9-HxCDF	84.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.236			13C-1,2,3,4,6,7,8-HpCDF	79.9	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.210			13C-1,2,3,4,7,8,9-HpCDF	92.4	26 - 138	
OCDF	ND		0.708		13C-OCDF	101	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	97.5	35 - 197	

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

TEQMinWHO2005Dioxin      0.0273

<b>TOTALS</b>								
Total TCDD	ND	0.377						
Total PeCDD	ND	0.221						
Total HxCDD	0.653							
Total HpCDD	5.18							
Total TCDF	ND	0.190						
Total PeCDF	ND	0.161						
Total HxCDF	ND	0.249						
Total HpCDF	ND		0.349					

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-029SC-A-13-13.7-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-06      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 13.7 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 14:39	% Solids: 76.4	Date Analyzed: 07-Dec-19 10:05      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.257			IS 13C-2,3,7,8-TCDD	96.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.216			13C-1,2,3,7,8-PeCDD	101	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.486			13C-1,2,3,4,7,8-HxCDD	85.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.541			13C-1,2,3,6,7,8-HxCDD	71.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.558			13C-1,2,3,7,8,9-HxCDD	75.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	8.75				13C-1,2,3,4,6,7,8-HpCDD	79.3	23 - 140	
OCDD	69.3				13C-OCDD	84.6	17 - 157	
2,3,7,8-TCDF	0.540				13C-2,3,7,8-TCDF	105	24 - 169	
1,2,3,7,8-PeCDF	ND		0.389		13C-1,2,3,7,8-PeCDF	99.5	24 - 185	
2,3,4,7,8-PeCDF	ND	0.134			13C-2,3,4,7,8-PeCDF	99.2	21 - 178	
1,2,3,4,7,8-HxCDF	0.675			J	13C-1,2,3,4,7,8-HxCDF	95.5	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.179			13C-1,2,3,6,7,8-HxCDF	83.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.176			13C-2,3,4,6,7,8-HxCDF	84.2	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.245			13C-1,2,3,7,8,9-HxCDF	86.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.808			J	13C-1,2,3,4,6,7,8-HpCDF	74.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.317			13C-1,2,3,4,7,8,9-HpCDF	89.3	26 - 138	
OCDF	2.84			J	13C-OCDF	92.5	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	94.6	35 - 197	

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

TEQMinWHO2005Dioxin      0.239

<b>TOTALS</b>								
Total TCDD	ND	0.257						
Total PeCDD	ND	0.216						
Total HxCDD	ND		1.38					
Total HpCDD	20.8							
Total TCDF	0.540							
Total PeCDF	0.433		0.822					
Total HxCDF	1.06							
Total HpCDF	0.808		2.57					

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-029SC-A-13-13.7-191009		QC Batch: B9J0315		Lab Sample: B9J0315-DUP1					
Source LabNumber: 1903646-06		Date Extracted: 29-Oct-2019 9:52		Date Analyzed: 07-Dec-19 10:53 Column: ZB-5MS					
Matrix: Solid									
Sample Size: 13.7 g									
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers	
2,3,7,8-TCDD	ND	0.203			IS 13C-2,3,7,8-TCDD	93.2	25 - 164		
1,2,3,7,8-PeCDD	ND	0.290			13C-1,2,3,7,8-PeCDD	92.8	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.420			13C-1,2,3,4,7,8-HxCDD	81.7	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.506			13C-1,2,3,6,7,8-HxCDD	66.5	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.470			13C-1,2,3,7,8,9-HxCDD	72.0	32 - 141		
1,2,3,4,6,7,8-HpCDD	9.69				13C-1,2,3,4,6,7,8-HpCDD	73.7	23 - 140		
OCDD	77.5				13C-OCDD	81.9	17 - 157		
2,3,7,8-TCDF	0.551				13C-2,3,7,8-TCDF	98.0	24 - 169		
1,2,3,7,8-PeCDF	0.610			J	13C-1,2,3,7,8-PeCDF	95.5	24 - 185		
2,3,4,7,8-PeCDF	ND	0.143			13C-2,3,4,7,8-PeCDF	94.6	21 - 178		
1,2,3,4,7,8-HxCDF	0.646			J	13C-1,2,3,4,7,8-HxCDF	91.3	26 - 152		
1,2,3,6,7,8-HxCDF	ND	0.250			13C-1,2,3,6,7,8-HxCDF	78.3	26 - 123		
2,3,4,6,7,8-HxCDF	ND	0.278			13C-2,3,4,6,7,8-HxCDF	79.3	28 - 136		
1,2,3,7,8,9-HxCDF	ND	0.388			13C-1,2,3,7,8,9-HxCDF	77.3	29 - 147		
1,2,3,4,6,7,8-HpCDF	0.896			J	13C-1,2,3,4,6,7,8-HpCDF	73.6	28 - 143		
1,2,3,4,7,8,9-HpCDF	ND	0.362			13C-1,2,3,4,7,8,9-HpCDF	83.9	26 - 138		
OCDF	3.07			J	13C-OCDF	86.9	17 - 157		
					CRS 37Cl-2,3,7,8-TCDD	91.9	35 - 197		
					<b>Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)</b>				
					TEQMinWHO2005Dioxin		0.268		
<b>TOTALS</b>									
Total TCDD	ND	0.203							
Total PeCDD	ND	0.290							
Total HxCDD	1.52								
Total HpCDD	23.6								
Total TCDF	0.972		1.08						
Total PeCDF	1.25								
Total HxCDF	1.43								
Total HpCDF	2.84								

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-029SC-A-13-13.7-191009					Duplicate Lab Sample: B9J0315-DUP1				
Source LabNumber: 1903646-06									
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	93.2	96.8	25 - 164	
1,2,3,7,8-PeCDD	ND	ND	NA	25	13C-1,2,3,7,8-PeCDD	92.8	101	25 - 181	
1,2,3,4,7,8-HxCDD	ND	ND	NA	25	13C-1,2,3,4,7,8-HxCDD	81.7	85.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	ND	NA	25	13C-1,2,3,6,7,8-HxCDD	66.5	71.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	ND	NA	25	13C-1,2,3,7,8,9-HxCDD	72.0	75.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	9.69	8.75	10.2	25	13C-1,2,3,4,6,7,8-HpCDD	73.7	79.3	23 - 140	
OCDD	77.5	69.3	11.2	25	13C-OCDD	81.9	84.6	17 - 157	
2,3,7,8-TCDF	0.551	0.540	2.08	25	13C-2,3,7,8-TCDF	98.0	105	24 - 169	
1,2,3,7,8-PeCDF	0.610	ND	#	25	13C-1,2,3,7,8-PeCDF	95.5	99.5	24 - 185	
2,3,4,7,8-PeCDF	ND	ND	NA	25	13C-2,3,4,7,8-PeCDF	94.6	99.2	21 - 178	
1,2,3,4,7,8-HxCDF	0.646	0.675	4.47	25	13C-1,2,3,4,7,8-HxCDF	91.3	95.5	26 - 152	
1,2,3,6,7,8-HxCDF	ND	ND	NA	25	13C-1,2,3,6,7,8-HxCDF	78.3	83.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	ND	NA	25	13C-2,3,4,6,7,8-HxCDF	79.3	84.2	28 - 136	
1,2,3,7,8,9-HxCDF	ND	ND	NA	25	13C-1,2,3,7,8,9-HxCDF	77.3	86.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.896	0.808	10.3	25	13C-1,2,3,4,6,7,8-HpCDF	73.6	74.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	ND	NA	25	13C-1,2,3,4,7,8,9-HpCDF	83.9	89.3	26 - 138	
OCDF	3.07	2.84	7.63	25	13C-OCDF	86.9	92.5	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	91.9	94.6	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-1029SC-A-12-13-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-07      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 12.7 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 0:00	% Solids: 80.7	Date Analyzed: 07-Dec-19 11:40      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.244			IS 13C-2,3,7,8-TCDD	98.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.351			13C-1,2,3,7,8-PeCDD	103	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.375			13C-1,2,3,4,7,8-HxCDD	90.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.344			13C-1,2,3,6,7,8-HxCDD	82.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.388			13C-1,2,3,7,8,9-HxCDD	81.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	5.03				13C-1,2,3,4,6,7,8-HpCDD	81.9	23 - 140	
OCDD	38.1				13C-OCDD	87.8	17 - 157	
2,3,7,8-TCDF	ND	0.180			13C-2,3,7,8-TCDF	98.7	24 - 169	
1,2,3,7,8-PeCDF	ND	0.172			13C-1,2,3,7,8-PeCDF	96.1	24 - 185	
2,3,4,7,8-PeCDF	ND	0.169			13C-2,3,4,7,8-PeCDF	94.0	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.159			13C-1,2,3,4,7,8-HxCDF	98.5	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.163			13C-1,2,3,6,7,8-HxCDF	82.8	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.169			13C-2,3,4,6,7,8-HxCDF	89.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.216			13C-1,2,3,7,8,9-HxCDF	101	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.247			13C-1,2,3,4,6,7,8-HpCDF	83.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.202			13C-1,2,3,4,7,8,9-HpCDF	91.4	26 - 138	
OCDF	ND		0.980		13C-OCDF	93.4	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	93.7	35 - 197	

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

TEQMinWHO2005Dioxin      0.0617

<b>TOTALS</b>								
Total TCDD	ND	0.244						
Total PeCDD	ND	0.351						
Total HxCDD	ND		0.800					
Total HpCDD	12.8							
Total TCDF	ND	0.180						
Total PeCDF	ND	0.172						
Total HxCDF	ND	0.216						
Total HpCDF	0.805							

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-038SC-A-12-13-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-08      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 12.8 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 16:08	% Solids: 80.5	Date Analyzed: 07-Dec-19 12:28      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	88.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.192			13C-1,2,3,7,8-PeCDD	92.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.279			13C-1,2,3,4,7,8-HxCDD	81.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.306			13C-1,2,3,6,7,8-HxCDD	67.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.326			13C-1,2,3,7,8,9-HxCDD	67.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.413			13C-1,2,3,4,6,7,8-HpCDD	73.3	23 - 140	
OCDD	ND		0.754		13C-OCDD	80.3	17 - 157	
2,3,7,8-TCDF	ND	0.163			13C-2,3,7,8-TCDF	89.8	24 - 169	
1,2,3,7,8-PeCDF	ND	0.145			13C-1,2,3,7,8-PeCDF	86.6	24 - 185	
2,3,4,7,8-PeCDF	ND	0.117			13C-2,3,4,7,8-PeCDF	89.6	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.142			13C-1,2,3,4,7,8-HxCDF	90.5	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.158			13C-1,2,3,6,7,8-HxCDF	76.4	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.165			13C-2,3,4,6,7,8-HxCDF	80.6	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.270			13C-1,2,3,7,8,9-HxCDF	72.2	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.258			13C-1,2,3,4,6,7,8-HpCDF	68.9	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.209			13C-1,2,3,4,7,8,9-HpCDF	79.6	26 - 138	
OCDF	ND	0.240			13C-OCDF	85.1	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	93.6	35 - 197	

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

TEQMinWHO2005Dioxin      0.00

<b>TOTALS</b>								
Total TCDD	ND	0.222						
Total PeCDD	ND	0.192						
Total HxCDD	ND	0.326						
Total HpCDD	ND	0.413						
Total TCDF	ND	0.163						
Total PeCDF	ND	0.145						
Total HxCDF	ND	0.270						
Total HpCDF	ND	0.258						

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-038SC-A-13-13.7-191009** **EPA Method 1613B**

<b>Client Data</b>	<b>Sample Data</b>	<b>Laboratory Data</b>
Name: Anchor QEA, LLC	Matrix: Sediment	Lab Sample: 1903646-09      Date Received: 15-Oct-2019 8:51
Project: Gasco PDI	Sample Size: 13.9 g	QC Batch: B9J0315      Date Extracted: 29-Oct-2019 9:52
Date Collected: 09-Oct-2019 16:08	% Solids: 73.3	Date Analyzed : 07-Dec-19 13:16      Column: ZB-5MS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.212			IS 13C-2,3,7,8-TCDD	91.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.208			13C-1,2,3,7,8-PeCDD	96.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.309			13C-1,2,3,4,7,8-HxCDD	79.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.352			13C-1,2,3,6,7,8-HxCDD	68.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.358			13C-1,2,3,7,8,9-HxCDD	72.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.58			J	13C-1,2,3,4,6,7,8-HpCDD	79.4	23 - 140	
OCDD	12.1				13C-OCDD	83.3	17 - 157	
2,3,7,8-TCDF	ND	0.156			13C-2,3,7,8-TCDF	94.7	24 - 169	
1,2,3,7,8-PeCDF	ND	0.134			13C-1,2,3,7,8-PeCDF	88.9	24 - 185	
2,3,4,7,8-PeCDF	ND	0.125			13C-2,3,4,7,8-PeCDF	90.2	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.132			13C-1,2,3,4,7,8-HxCDF	90.2	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.143			13C-1,2,3,6,7,8-HxCDF	78.3	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.162			13C-2,3,4,6,7,8-HxCDF	80.7	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.201			13C-1,2,3,7,8,9-HxCDF	82.5	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.212			13C-1,2,3,4,6,7,8-HpCDF	76.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.176			13C-1,2,3,4,7,8,9-HpCDF	89.1	26 - 138	
OCDF	ND	1.91			13C-OCDF	87.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	94.0	35 - 197	

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

TEQMinWHO2005Dioxin      0.0194

<b>TOTALS</b>		
Total TCDD	ND	0.212
Total PeCDD	ND	0.208
Total HxCDD	1.24	
Total HpCDD	3.98	
Total TCDF	ND	0.156
Total PeCDF	ND	0.134
Total HxCDF	ND	0.201
Total HpCDF	ND	0.212

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**

1903648<sup>6</sup>  
 of 10/16/19 38°C, 2.5°C  
**COC ID:**

VISTA-20191009-171243

**POC: #** Delaney Peterson (360-715-2707)

**Project:** Gasco PDI

**Sample Custodian:**

CO, SN, BJ, DL

1605 Cornwall Avenue, Bellingham, WA 98225

**Client:** NW Natural

**Lab:**

VISTA

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected		Containers #	Lab QC*	Test Request	Method	TAT**	Preservative
				Date	Time						
001	PDI-016SC-A-14-15-191009	N	SE	10/09/2019	9:48	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
002	PDI-016SC-A-15-16-191009	N	SE	10/09/2019	9:48	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
003	PDI-023SC-A-11-12-191009	N	SE	10/09/2019	12:14	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
004	PDI-023SC-A-12-12.5-191009	N	SE	10/09/2019	12:14	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
005	PDI-029SC-A-12-13-191009	N	SE	10/09/2019	14:39	1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
006	PDI-029SC-A-13-13.7-191009	N	SE	10/09/2019	14:39	2	<input checked="" type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
007	PDI-1029SC-A-12-13-191009	FD	SE	10/09/2019		1	<input type="checkbox"/>	Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
008	PDI-038SC-A-12-13-191009	N	SE	10/09/2019	16:08	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 <i>[Signature]</i>	Signature <i>[Signature]</i>	Signature	Signature	Signature	Signature
Print Name C. OBEIRO	Print Name Hayden Canas	Print Name	Print Name	Print Name	Print Name
Company AQ	Company VAL	Company	Company	Company	Company
Date/Time 10/14/19 07:55	Date/Time 10/15/19 08:51	Date/Time	Date/Time	Date/Time	Date/Time

**ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY**

1903648<sup>6</sup>  
 in 10/16/19

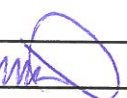

**POC:** # Delaney Peterson (360-715-2707)  
 1605 Cornwall Avenue, Bellingham, WA 98225

**Project:** Gasco PDI  
**Client:** NW Natural

**COC ID:** VISTA-20191009-171243  
**Sample Custodian:** CO, SN, BJ, DL  
**Lab:** VISTA

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected		Containers #	Lab QC*	Test Request	Method	TAT**	Preservative
				Date	Time						
008	PDI-038SC-A-12-13-191009	N	SE	10/09/2019	16:08	1	<input type="checkbox"/>				
								Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
009	PDI-038SC-A-13-13.7-191009	N	SE	10/09/2019	16:08	1	<input type="checkbox"/>				
								Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C

Comment:

Relinquished By: Signature 	Received By: Signature 	Relinquished By: Signature	Received By: Signature	Relinquished By: Signature	Received By: Signature
Print Name C. O'REIRO	Print Name Hayden Gasco	Print Name	Print Name	Print Name	Print Name
Company AQ	Company VAL	Company	Company	Company	Company
Date/Time 10/14/19 07:55	Date/Time 10/15/19 08:51	Date/Time	Date/Time	Date/Time	Date/Time



# Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1903646 TAT Std

Samples Arrival:	Date/Time		Initials:		Location: <u>WR-2</u>		
	<u>10/15/19 08:51</u>		<u>HOG</u>		Shelf/Rack: <u>NA</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>3.8</u>	<u>(uncorrected)</u>		Probe used: <u>Y</u> / <u>N</u>		Thermometer ID: <u>IR-4</u>		
Temp °C: <u>3.8</u>	<u>(corrected)</u>						

	YES	NO	NA
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Airbill <u>2 of 4</u>	Trk # <u>7767 1463 7379</u>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipping Container	<input type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain
	<input type="checkbox"/>	<input checked="" type="checkbox"/> Return	<input type="checkbox"/> Dispose
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chain of Custody / Sample Documentation Complete?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Holding Time Acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Logged In:	Date/Time		Initials:		Location: <u>WR-2</u>		
	<u>10/16/19 0904</u>		<u>ajm</u>		Shelf/Rack: <u>A-1</u>		
COC Anomaly/Sample Acceptance Form completed?				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Comments:

# Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1903646

TAT std

Samples Arrival:	Date/Time <u>10/15/19 08:51</u>		Initials: <u>HOG</u>		Location: <u>WR-2</u>		
	Shelf/Rack: <u>NA</u>						
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> On Trac	<input type="radio"/> GSO	<input type="radio"/> DHL	<input type="radio"/> Hand Delivered	<input type="radio"/> Other
Preservation:	<input type="radio"/> Ice		<input type="radio"/> Blue Ice		<input type="radio"/> Dry Ice		<input type="radio"/> None
Temp °C: <u>2.5</u>	<u>(uncorrected)</u>		Probe used: Y / <input checked="" type="radio"/> N			Thermometer ID: <u>IR-3</u>	
Temp °C: <u>2.5</u>	<u>(corrected)</u>						

	YES	NO	NA		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Airbill <u>3 of 4</u> Trk # <u>7767 1463 8102</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Shipping Container	<input type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain	<input checked="" type="checkbox"/> Return	<input type="checkbox"/> Dispose
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Chain of Custody / Sample Documentation Complete?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Logged In:	Date/Time <u>10/16/19 0904</u>	Initials:	Location: <u>WR-2</u>		
			Shelf/Rack: <u>2-1</u>		
COC Anomaly/Sample Acceptance Form completed?			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Comments:

# CoC/Label Reconciliation Report WO# 1903646

LabNumber	CoC Sample ID	Label ID matches COCID	Label ID doesn't match COCID	SampleAlias	Sampled	Label Sampled matches	Sampled doesn't match	Container	Container Correct	BaseMatrix	Sample Comments
2	1903646-01 A PDI-016SC-A-14-15-191009	<input checked="" type="checkbox"/>		001	09-Oct-19 09:48	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	
2	1903646-02 A PDI-016SC-A-15-16-191009	<input checked="" type="checkbox"/>		002	09-Oct-19 09:48	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	
2	1903646-03 A PDI-023SC-A-11-12-191009	<input checked="" type="checkbox"/>		003	09-Oct-19 12:14	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	
2	1903646-04 A PDI-023SC-A-12-12.5-191009	<input checked="" type="checkbox"/>		004	09-Oct-19 12:14	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	
2	1903646-05 A PDI-029SC-A-12-13-191009	<input checked="" type="checkbox"/>		005	09-Oct-19 14:39	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	
2	1903646-06 A PDI-029SC-A-13-13.7-191009	<input checked="" type="checkbox"/>		006	09-Oct-19 14:39	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	DUP
2	1903646-06 B PDI-029SC-A-13-13.7-191009	<input checked="" type="checkbox"/>		006	09-Oct-19 14:39	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	DUP
2	1903646-07 A PDI-1029SC-A-12-13-191009	<input checked="" type="checkbox"/>		007	✗ 09-Oct-19 00:00	<input checked="" type="checkbox"/>	HOG 10/17/19	Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	
3	1903646-08 A PDI-038SC-A-12-13-191009	<input checked="" type="checkbox"/>		008	09-Oct-19 16:08	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	
3	1903646-09 A PDI-038SC-A-13-13.7-191009	<input checked="" type="checkbox"/>		009	09-Oct-19 16:08	<input checked="" type="checkbox"/>		Amber Glass, 120 mL	<input checked="" type="checkbox"/>	Solid	

	Yes	No	NA
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Adequate Sample Volume?	<input checked="" type="checkbox"/>		
Preservation Documented: Na2S2O3 Trizma <u>None</u> Other		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			<input checked="" type="checkbox"/>

Comments: ✗ time on bottle says "14:43"

"2" = Cooler 2  
"3" = Cooler 3

Verified by/Date: HOG 10/17/19

## **EXTRACTION INFORMATION**

Process Sheet

Workorder: 1903646

05-Nov-19

Prep Expiration: 2020-10-08  
Client: Anchor QEA, LLC

Workorder Due: 12-Nov-19 00:00

TAT: 21 @ 10/18/19

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

Prep Batch: B9J0315

Prep Data Entered: *MA* 11/05/19  
Date and Initials

Initial Sequence: 59L0012

LabSampleID	Recon	ClientSampleID	Date Received	Location	Comments
1903646-01	A <input checked="" type="checkbox"/>	PDI-016SC-A-14-15-191009	15-Oct-19 08:51	WR-2 A-1	
1903646-02	<input checked="" type="checkbox"/>	PDI-016SC-A-15-16-191009	15-Oct-19 08:51	WR-2 A-1	
1903646-03	<input checked="" type="checkbox"/>	PDI-023SC-A-11-12-191009	15-Oct-19 08:51	WR-2 A-1	
1903646-04	<input checked="" type="checkbox"/>	PDI-023SC-A-12-12.5-191009	15-Oct-19 08:51	WR-2 A-1	
1903646-05	<input checked="" type="checkbox"/>	PDI-029SC-A-12-13-191009	15-Oct-19 08:51	WR-2 A-1	
1903646-06	<input checked="" type="checkbox"/>	PDI-029SC-A-13-13.7-191009	15-Oct-19 08:51	WR-2 A-1	DUP
1903646-07	<input checked="" type="checkbox"/>	PDI-1029SC-A-12-13-191009	15-Oct-19 08:51	WR-2 A-1	
1903646-08	<input checked="" type="checkbox"/>	PDI-038SC-A-12-13-191009	15-Oct-19 08:51	WR-2 A-1	
1903646-09	<input checked="" type="checkbox"/>	PDI-038SC-A-13-13.7-191009	15-Oct-19 08:51	WR-2 A-1	

WO Comments: ~~Rest 4g extraction (dry weight)~~  
Dioxin - 10g (dry weight)  
~~Rest 5g extraction (dry weight)~~

Pre-Prep Check Out: AO 10/22/19 Prep Check Out: N/A  
Pre-Prep Check In: AO 10/22/19 Prep Check In: N/A

Prep Reconciled Initials/Date: AO 10/22/19  
Spike Reconciled Initials/Date: AL 10/24/19  
VialBoxID: Giali

\* 11/05/19 *MA*

PREPARATION BENCH SHEET

Matrix: Solid

B9J0315

Chemist: AO

Method: 1613 Full List

Prepared using: HRMS - Soxhlet

Prep Date/Time: 29-Oct-19 09:52

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"/>	B9J0315-BLK1	NA	(10.00)	00 2L 10/29/19 <sup>DF</sup>	00 2L 10/30/19	NA	10/31/19 <sup>DF</sup>	10/31/19 <sup>DF</sup>	10/31/19 <sup>DF</sup>	11/04/19
<input type="checkbox"/>	B9J0315-BS1	↓	(10.00)	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	B9J0315-DUP1 1903646-06	13.09	13.73 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-01	14.56	14.85 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-02	13.81	14.92 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-03	14.37	14.22 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-04	14.86	14.93 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-05	12.31	13.06 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-06	13.09	13.66 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-07	12.39	12.67 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-08	12.43	12.83 ✓	↓	↓	↓	↓	↓	↓	↓
<input type="checkbox"/>	1903646-09	13.65	13.92 ✓	↓	↓	↓	↓	↓	↓	↓

IS Name <u>V3</u>	NS Name <u>V6</u>	CRS Name <u>V7</u>	RS Name <u>V7</u>	Cycle Time	APP: SEFUN SOX <u>SDS</u>	Check Out: Chemist/Date: <u>AO 10/29/19</u>
PCDD/F <u>19C1902, 10µL</u>	PCDD/F <u>18F1913, 10µL</u>	PCDD/F <u>19I1602, 10µL</u>	PCDD/F <u>19I1603, 10µL</u>	Start Date/Time <u>10/29/19</u>	SOLV: <u>Toluene</u>	Check In: Chemist/Date: _____
PCB _____	PCB _____	PCB _____	PCB _____	<u>1356</u>	Other <u>NA</u>	Balance ID: <u>HRMS-9</u>
PAH _____	PAH _____	PAH _____	PAH _____	Stop Date/Time <u>10/30/19</u>	Final Volume(s) <u>C14</u>	
				<u>0615</u>	<u>20µL</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 B9J0194

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

Inst HRMS-8 Date/Time IN: 10/22/19 Date/Time OUT: 10/24/19  
10:50 14:05

Particle Size	SampID	SampType	Intial and Date:		Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	Visual Inspection	pH Before	pH After	Acid Added	SampID Homogenized*
			Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)								
	1903646-01	A Sample	1.29	11.12	8.04		NET SAND					X
	1903646-02	T Sample	1.28	8.85	6.76							X
	1903646-03	Sample	1.28	5.49	4.21							X
	1903646-04	Sample	1.27	6.53	4.81							X
	1903646-05	Sample	1.30	5.93	5.06							X
	1903646-06	Sample	1.29	6.97	5.63							X
	1903646-07	Sample	1.28	6.21	5.26							X
	1903646-08	Sample	1.29	7.74	6.48							X
	1903646-09	Sample	1.28	6.14	4.84							X

\*Sample homogenized in sample container unless otherwise noted.




Batch: B9J0315

Matrix: Solid

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1903646-01	14.85 ✓	68.66734	10.1971	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-02	14.92 ✓	72.39101	10.8007	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-03	14.22 ✓	69.59621	9.8966	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-04	14.93 ✓	67.30038	10.0479	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-05	13.06 ✓	81.2095	10.6060	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-06	13.66 ✓	76.40845	10.4374	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-07	12.67 ✓	80.73022	10.2285	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-08	12.83 ✓	80.46512	10.3237	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
1903646-09	13.92 ✓	73.25104	10.1965	20	29-Oct-19 09:52	ACO			Sediment	1613 Full List
B9J0315-BLK1	10 ✓			20	29-Oct-19 09:52	ACO				QC
B9J0315-BS1	10 ✓			20	29-Oct-19 09:52	ACO	18F1913 ✓	10 ✓		QC
B9J0315-DUP1	13.73 ✓			20	29-Oct-19 09:52	ACO				QC

All bolded data on report verified against written benchsheet by (initial/date)

 11/05/19

Printed: 11/5/2019 11:28:54AM  
Page 1 of 1

SAMPLE DATA – EPA METHOD 1613

Quantify Sample Summary Report

MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-4.qld

Last Altered: Tuesday, December 10, 2019 15:44:51 Pacific Standard Time

Printed: Tuesday, December 10, 2019 15:46:02 Pacific Standard Time

ea 12/10/19

ca 12/10/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 14:45:52

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,

Description: B9J0315-BLK1 Method Blank 10 Vista\_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		7.23e4	10.0000	0.905			1.001		26.12					0.247
2	1,2,3,7,8-PeCDD		7.01e4	10.0000	0.903			1.001		30.62					0.236
3	1,2,3,4,7,8-HxCDD		5.43e4	10.0000	1.101			1.000		33.92					0.419
4	1,2,3,6,7,8-HxCDD		5.86e4	10.0000	0.939			1.000		34.02					0.461
5	1,2,3,7,8,9-HxCDD		4.48e4	10.0000	0.961			1.001		34.34					0.639
6	1,2,3,4,6,7,8-HpCDD		4.45e4	10.0000	0.979			1.000		37.79					0.471
7	OCDD		5.73e4	10.0000	0.959			1.000		41.03					0.864
8	2,3,7,8-TCDF		1.42e5	10.0000	0.950			1.001		25.33					0.160
9	1,2,3,7,8-PeCDF		1.09e5	10.0000	0.960			1.001		29.45					0.166
10	2,3,4,7,8-PeCDF		1.30e5	10.0000	1.015			1.001		30.35					0.135
11	1,2,3,4,7,8-HxCDF		8.45e4	10.0000	1.177			1.000		33.02					0.171
12	1,2,3,6,7,8-HxCDF		8.66e4	10.0000	1.069			1.000		33.16					0.178
13	2,3,4,6,7,8-HxCDF		7.77e4	10.0000	1.114			1.001		33.78					0.203
14	1,2,3,7,8,9-HxCDF		3.97e4	10.0000	1.062			1.000		34.69					0.464
15	1,2,3,4,6,7,8-HpCDF		5.49e4	10.0000	1.128			1.001		36.55					0.317
16	1,2,3,4,7,8,9-HpCDF		4.17e4	10.0000	1.280			1.000		38.30					0.309
17	OCDF		8.56e4	10.0000	0.947			1.000		41.25					0.430
18	13C-2,3,7,8-TCDD	7.23e4	1.05e5	10.0000	1.095	0.792	NO	1.021	1.022	26.06	26.08	125.77	62.9		0.524
19	13C-1,2,3,7,8-PeCDD	7.01e4	1.05e5	10.0000	0.881	0.631	NO	1.187	1.199	30.29	30.60	151.43	75.7		0.426
20	13C-1,2,3,4,7,8-Hx...	5.43e4	1.11e5	10.0000	0.642	1.347	NO	1.014	1.014	33.90	33.91	153.12	76.6		0.915
21	13C-1,2,3,6,7,8-Hx...	5.86e4	1.11e5	10.0000	0.856	1.255	NO	1.017	1.017	34.02	34.02	123.97	62.0		0.687
22	13C-1,2,3,7,8,9-Hx...	4.48e4	1.11e5	10.0000	0.807	1.236	NO	1.026	1.026	34.31	34.31	100.46	50.2		0.728
23	13C-1,2,3,4,6,7,8-H...	4.45e4	1.11e5	10.0000	0.654	1.086	NO	1.126	1.130	37.65	37.78	123.14	61.6		0.889
24	13C-OCDD	5.73e4	1.11e5	10.0000	0.580	0.924	NO	1.226	1.227	40.99	41.03	178.84	44.7		0.778
25	13C-2,3,7,8-TCDF	1.42e5	1.79e5	10.0000	1.035	0.790	NO	0.992	0.991	25.31	25.31	153.79	76.9		0.538
26	13C-1,2,3,7,8-PeCDF	1.09e5	1.79e5	10.0000	0.854	1.581	NO	1.154	1.153	29.45	29.43	142.48	71.2		0.843
27	13C-2,3,4,7,8-PeCDF	1.30e5	1.79e5	10.0000	0.847	1.653	NO	1.189	1.188	30.35	30.32	172.04	86.0		0.850
28	13C-1,2,3,4,7,8-Hx...	8.45e4	1.11e5	10.0000	0.832	0.507	NO	0.987	0.988	33.01	33.02	183.89	91.9		1.08
29	13C-1,2,3,6,7,8-Hx...	8.66e4	1.11e5	10.0000	1.034	0.497	NO	0.991	0.992	33.13	33.15	151.46	75.7		0.872
30	13C-2,3,4,6,7,8-Hx...	7.77e4	1.11e5	10.0000	0.953	0.514	NO	1.009	1.009	33.74	33.75	147.45	73.7		0.946
31	13C-1,2,3,7,8,9-Hx...	3.97e4	1.11e5	10.0000	0.828	0.535	NO	1.039	1.038	34.73	34.69	86.736	43.4		1.09

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-4.qld

Last Altered: Tuesday, December 10, 2019 15:44:51 Pacific Standard Time

Printed: Tuesday, December 10, 2019 15:46:02 Pacific Standard Time

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,  
 Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Area	IS Area	WL/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...	5.49e4	1.11e5	10.0000	0.757	0.438	NO	1.093	1.092	36.54	36.51	131.29	65.6		1.01
33	33 13C-1,2,3,4,7,8,9-H...	4.17e4	1.11e5	10.0000	0.581	0.443	NO	1.143	1.146	38.22	38.30	129.82	64.9		1.32
34	34 13C-OCDF	8.56e4	1.11e5	10.0000	0.689	0.919	NO	1.233	1.234	41.23	41.25	224.90	56.2		0.704
35	35 37Cl-2,3,7,8-TCDD	3.08e4	1.05e5	10.0000	1.198			1.022	1.023	26.09	26.10	48.906	61.1		0.187
36	36 13C-1,2,3,4-TCDD	1.05e5	1.05e5	10.0000	1.000	0.817	NO	1.000	1.000	25.50	25.52	200.00	100.0		0.574
37	37 13C-1,2,3,4-TCDF	1.79e5	1.79e5	10.0000	1.000	0.803	NO	1.000	1.000	24.06	24.08	200.00	100.0		0.557
38	38 13C-1,2,3,4,6,9-Hx...	1.11e5	1.11e5	10.0000	1.000	0.528	NO	1.000	1.000	33.42	33.43	200.00	100.0		0.902
39	39 Total Tetra-Dioxins		7.23e4	10.0000	0.901			0.000		25.50					0.139
40	40 Total Penta-Dioxins		7.01e4	10.0000	0.872			0.000		30.00					0.104
41	41 Total Hexa-Dioxins		0.00e0	10.0000	0.976			0.000		33.80					0.299
42	42 Total Hepta-Dioxins		4.45e4	10.0000	0.989			0.000		37.75					0.246
43	43 Total Tetra-Furans		1.42e5	10.0000	0.943			0.000		24.00					0.0821
44	44 1st Func. Penta-Fur...		0.00e0	10.0000	0.940			0.000		27.63					0.0447
45	45 Total Penta-Furans		0.00e0	10.0000	0.940			0.000		30.00					0.0597
46	46 Total Hexa-Furans		0.00e0	10.0000	1.078			0.000		33.00					0.116
47	47 Total Hepta-Furans		0.00e0	10.0000	1.135			0.000		37.75					0.159

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-4.qld

Last Altered: Tuesday, December 10, 2019 15:44:51 Pacific Standard Time

Printed: Tuesday, December 10, 2019 15:46:02 Pacific Standard Time

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 14:45:52

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,

Description: B9J0315-BLK1 Method Blank 10 Vista\_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									

Hepta-Dioxins

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

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\191205D3\191205D3-4.qld  
Last Altered: Tuesday, December 10, 2019 15:44:51 Pacific Standard Time  
Printed: Tuesday, December 10, 2019 15:46:02 Pacific Standard Time

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,  
Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Hexa-Furans

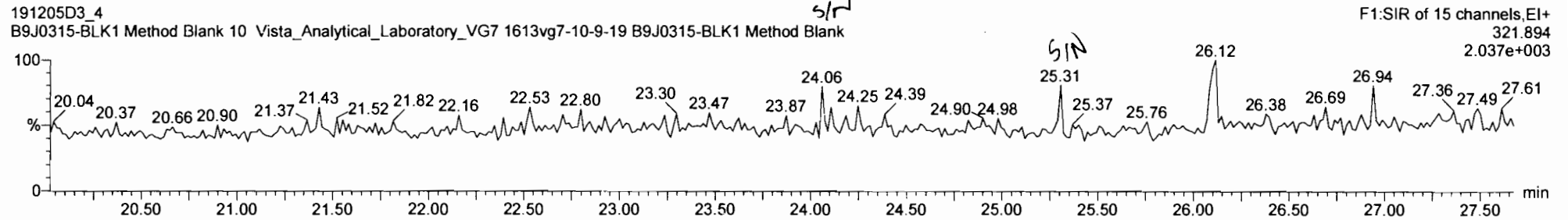
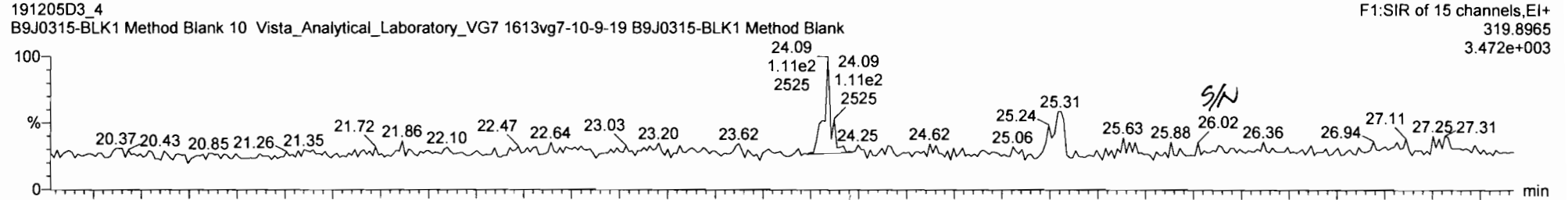
#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hepta-Furans

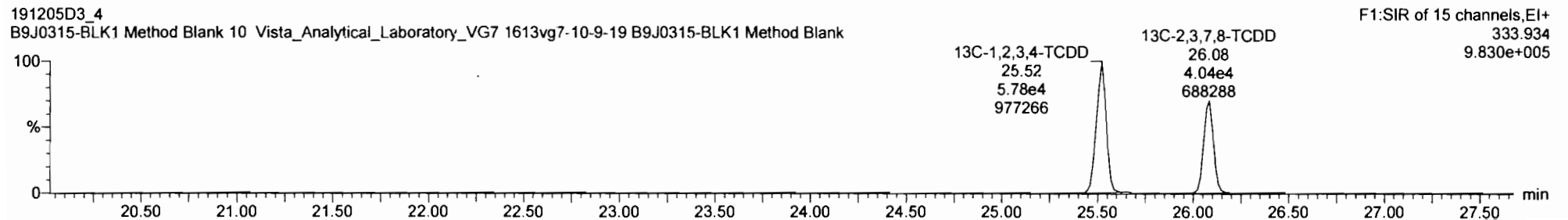
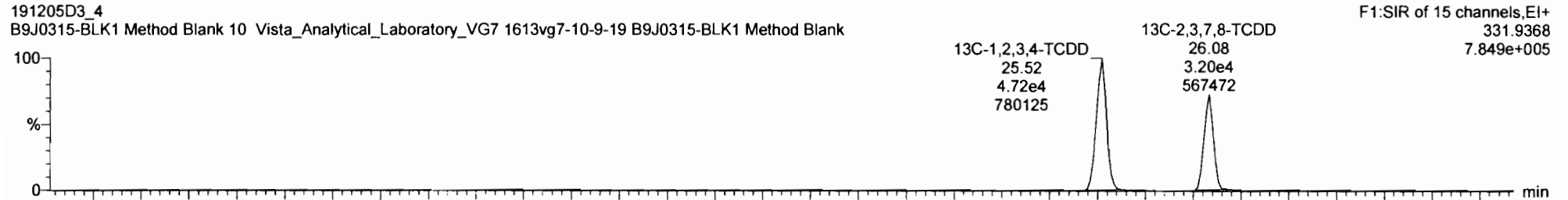
#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,  
 Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Total Tetra-Dioxins**

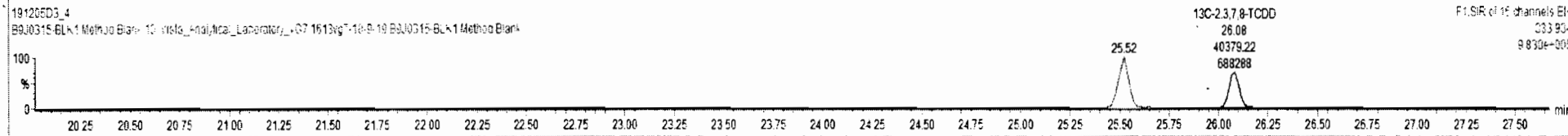
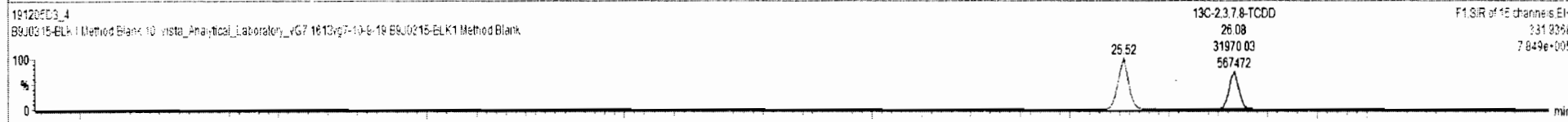
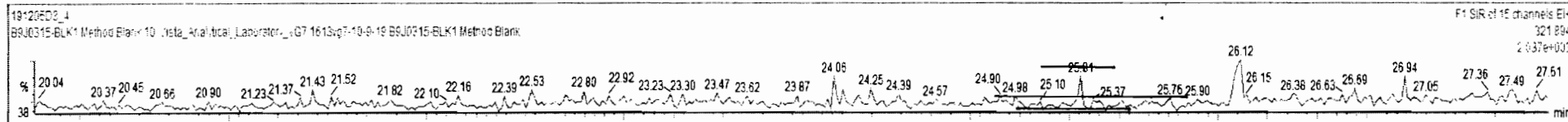
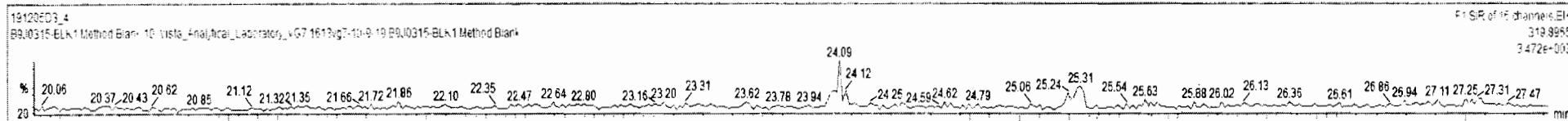


**13C-2,3,7,8-TCDD**



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wrtvol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	4.17e4	1.11e5	38	0.44	NO	0.581	10.000	38.22	38.30	1.146	1.143	NO	129.8	64.9	1.32	
34	13C-OCDF	8.56e4	1.11e5	38	0.92	NO	0.689	10.000	41.23	41.25	1.234	1.233	NO	224.8	56.2	0.704	
35	37C-2,3,7,8-TCDD	3.08e4	1.35e5	36			1.198	10.000	26.09	26.10	1.023	1.022	NO	48.91	61.1	0.187	
36	13C-1,2,3,4-TCDD	1.05e5	1.05e5	36	0.82	NO	1.000	10.000	25.50	25.52	1.000	1.000	NO	200.0	100	0.574	
37	13C-1,2,3,4-TCDF	1.79e5	1.79e5	37	0.80	NO	1.000	10.000	24.08	24.08	1.000	1.000	NO	200.0	100	0.557	
38	13C-1,2,3,4,6,9-HxCDF	1.11e5	1.11e5	38	0.53	NO	1.000	10.000	33.42	33.43	1.000	1.000	NO	200.0	100	0.902	
39	<b>Total Tetra-Dioxins</b>		<b>7.23e4</b>				<b>0.901</b>	<b>10.000</b>	<b>25.50</b>			<b>0.900</b>	NO			<b>0.136</b>	
40	<b>Total Penta-Dioxins</b>		<b>7.01e4</b>				<b>0.872</b>	<b>10.000</b>	<b>30.00</b>			<b>0.900</b>	NO	<b>0.0300</b>		<b>0.104</b>	<b>0.9820</b>
41	<b>Total Hexa-Dioxins</b>		<b>0.06e0</b>				<b>0.976</b>	<b>10.000</b>	<b>33.80</b>			<b>0.900</b>	NO	<b>0.0300</b>		<b>0.295</b>	<b>0.4360</b>
42	<b>Total Hepta-Dioxins</b>		<b>4.45e4</b>				<b>0.989</b>	<b>10.000</b>	<b>37.75</b>			<b>0.900</b>	NO			<b>0.246</b>	
43	<b>Total Tetra-Furans</b>		<b>1.42e5</b>				<b>0.943</b>	<b>10.000</b>	<b>24.00</b>			<b>0.900</b>	NO			<b>0.0621</b>	
44	<b>1st Func. Penta-Furans</b>		<b>0.06e0</b>				<b>0.940</b>	<b>10.000</b>	<b>27.63</b>			<b>0.900</b>	NO			<b>0.0447</b>	
45	<b>Total Penta-Furans</b>		<b>0.06e0</b>				<b>0.940</b>	<b>10.000</b>	<b>30.00</b>			<b>0.900</b>	NO			<b>0.0597</b>	
46	<b>Total Hexa-Furans</b>		<b>0.06e0</b>				<b>1.078</b>	<b>10.000</b>	<b>33.00</b>			<b>0.900</b>	NO			<b>0.116</b>	
47	<b>Total Hepta-Furans</b>		<b>0.06e0</b>				<b>1.135</b>	<b>10.000</b>	<b>37.75</b>			<b>0.900</b>	NO			<b>0.159</b>	

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



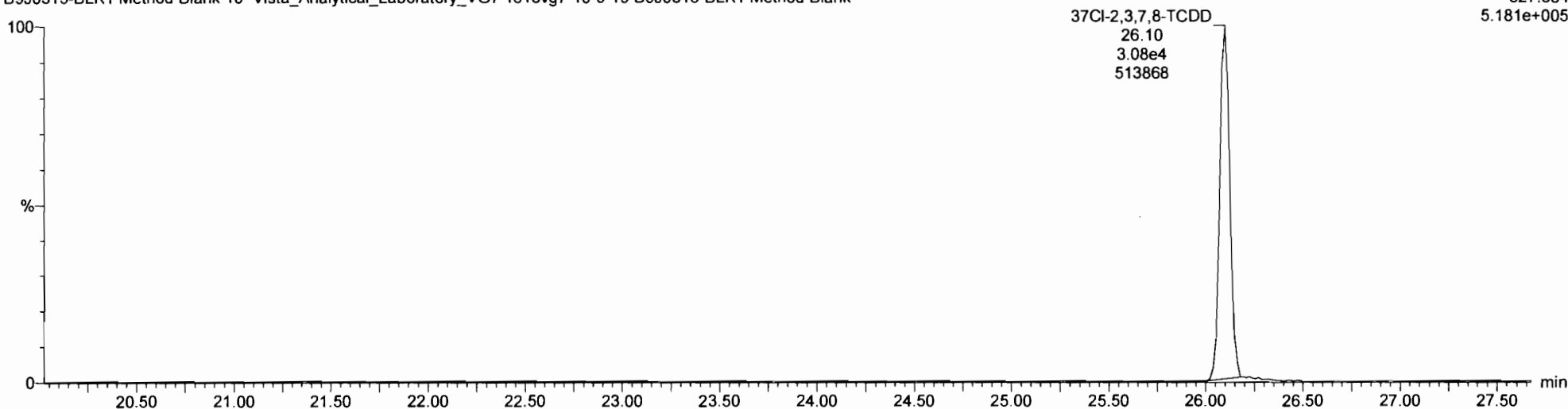


Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,  
Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

191205D3\_4  
B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BLK1 Method Blank

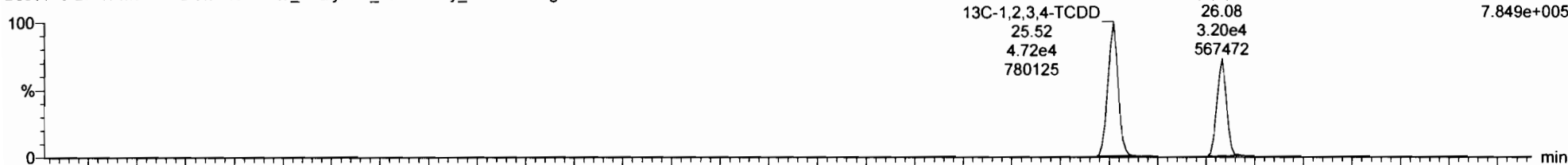
F1:SIR of 15 channels,EI+  
327.884  
5.181e+005



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

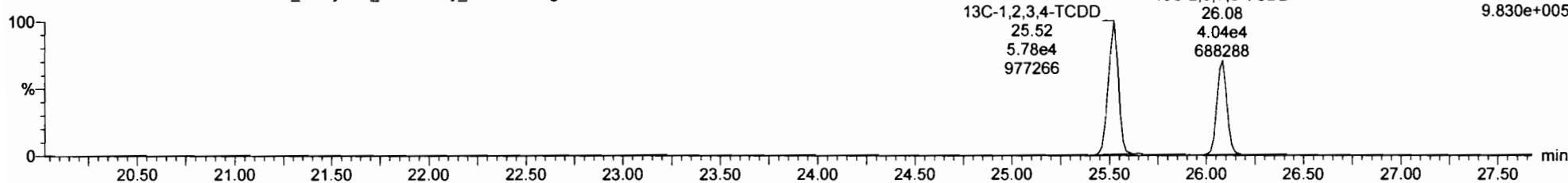
191205D3\_4  
B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BLK1 Method Blank

F1:SIR of 15 channels,EI+  
331.9368  
7.849e+005



191205D3\_4  
B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BLK1 Method Blank

F1:SIR of 15 channels,EI+  
333.934  
9.830e+005



Vista Analytical Laboratory

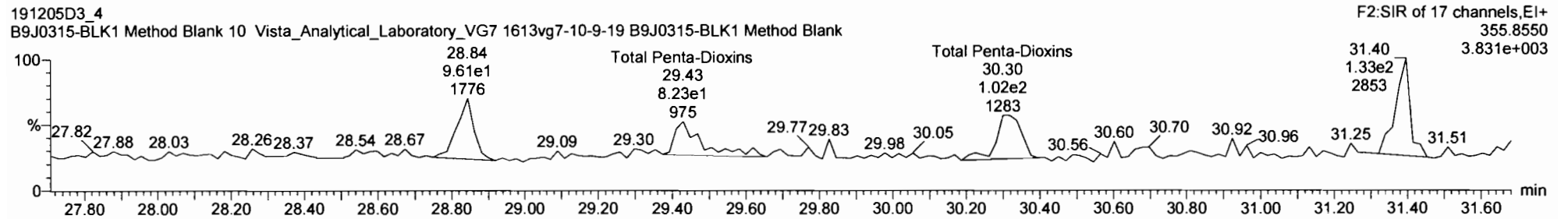
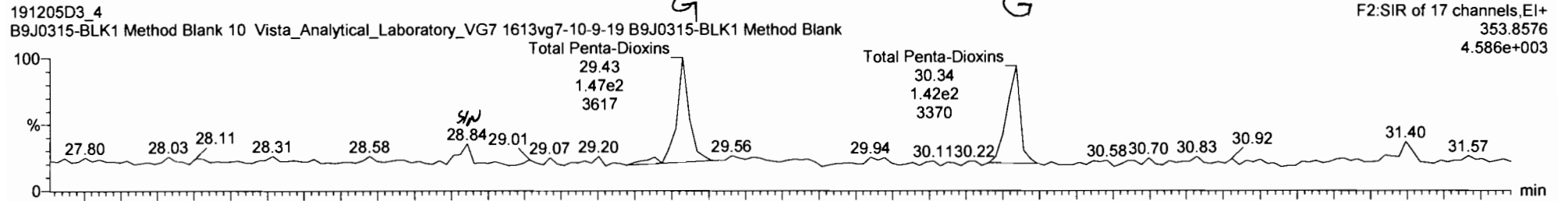
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Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

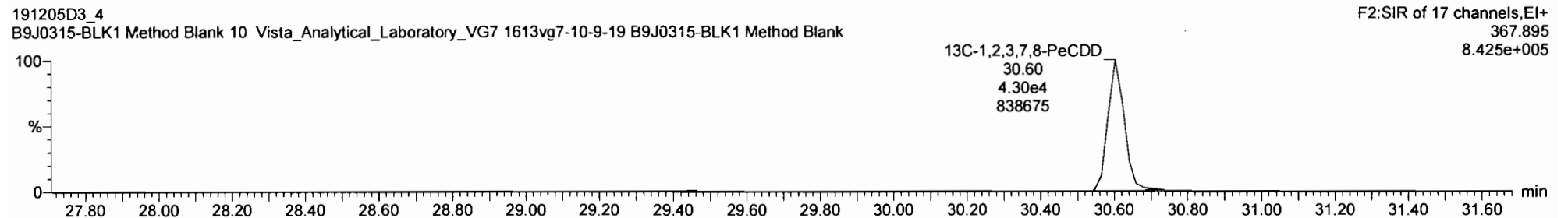
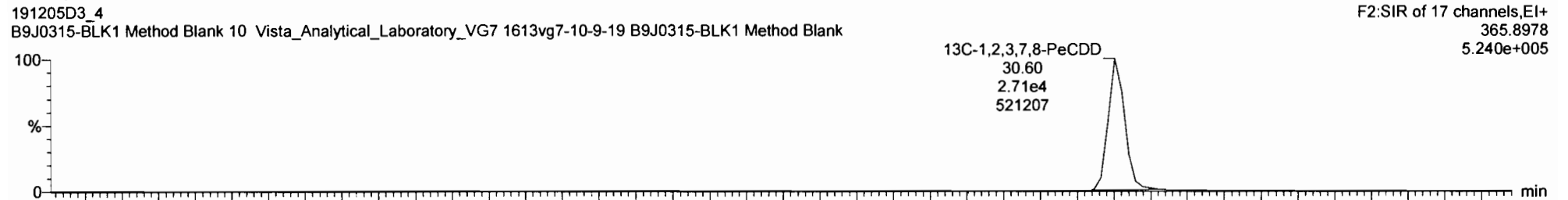
Printed: Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

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Total Penta-Dioxins



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



Vista Analytical Laboratory

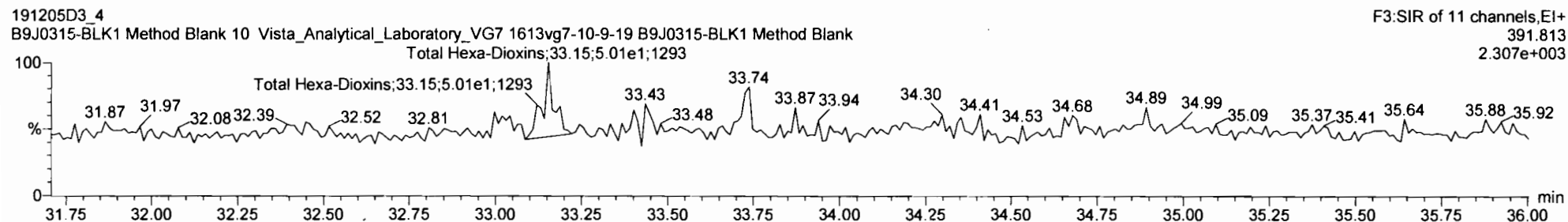
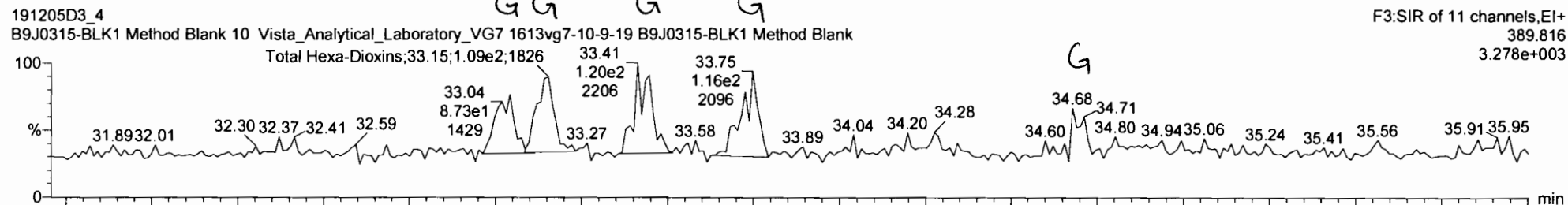
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Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

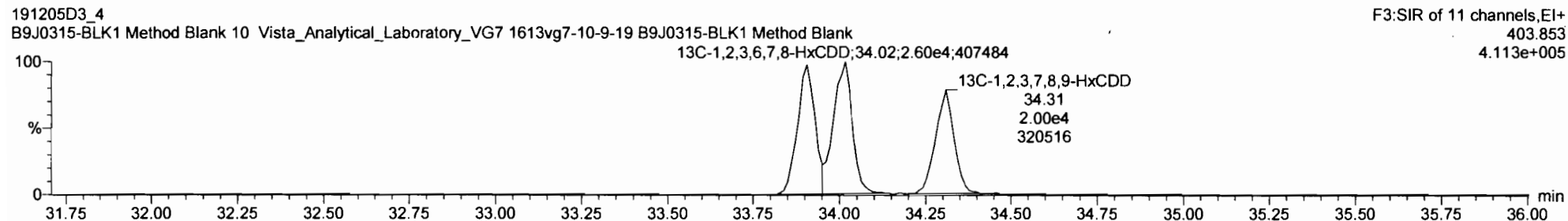
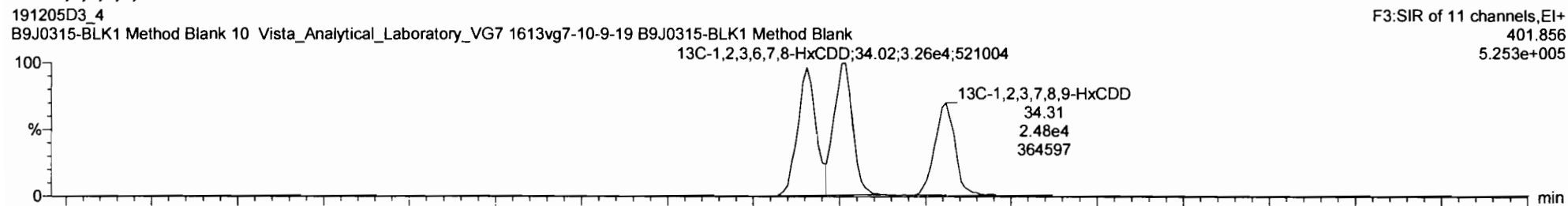
Printed: Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

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Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Hexa-Dioxins



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



Vista Analytical Laboratory

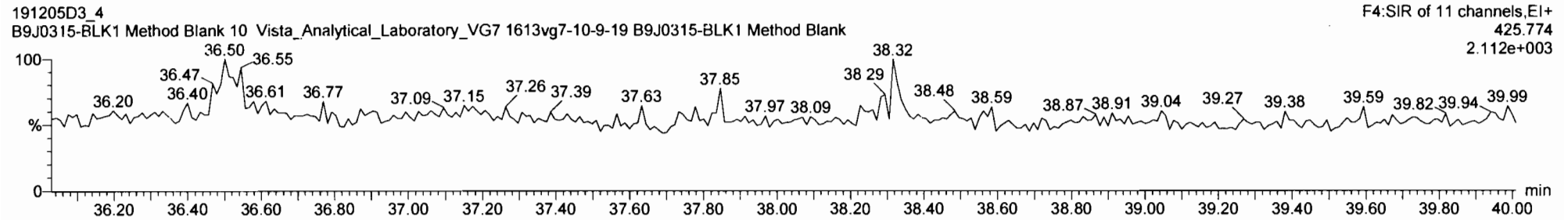
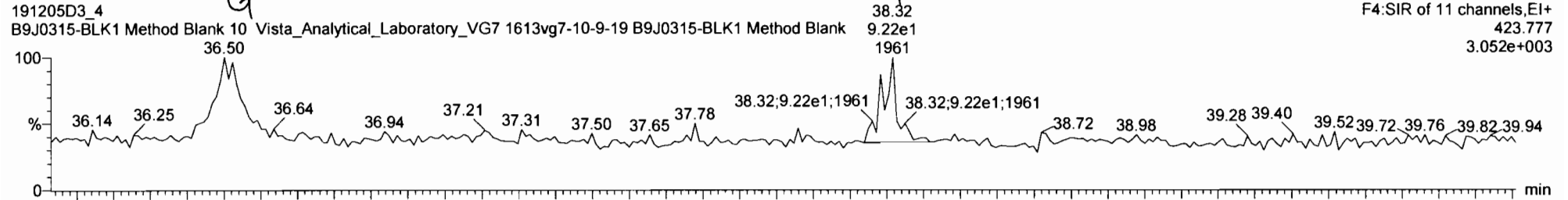
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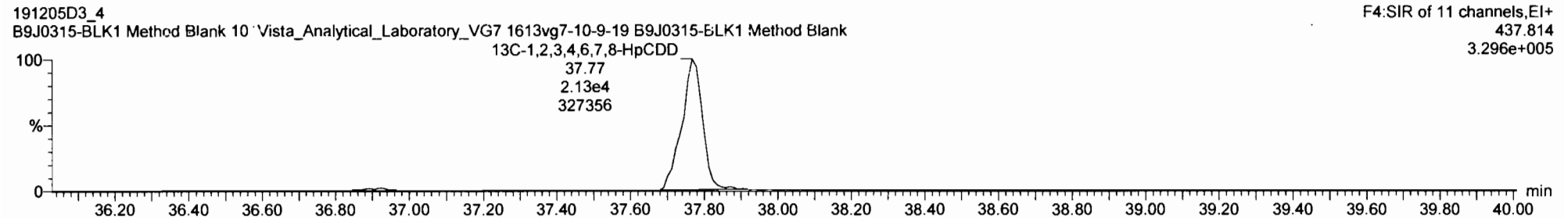
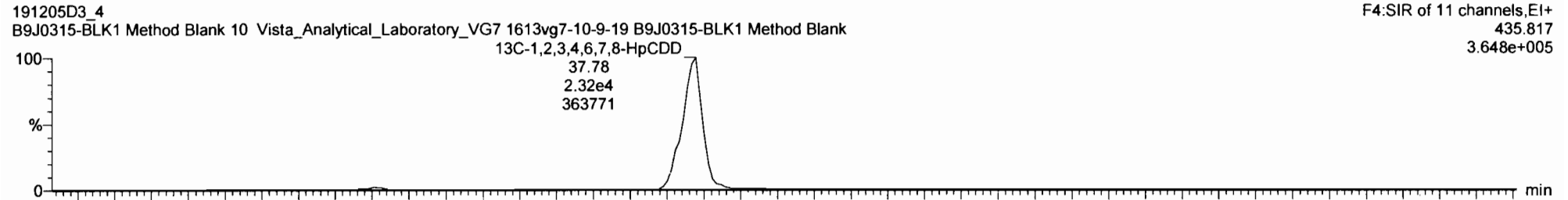
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Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Hepta-Dioxins



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





Vista Analytical Laboratory

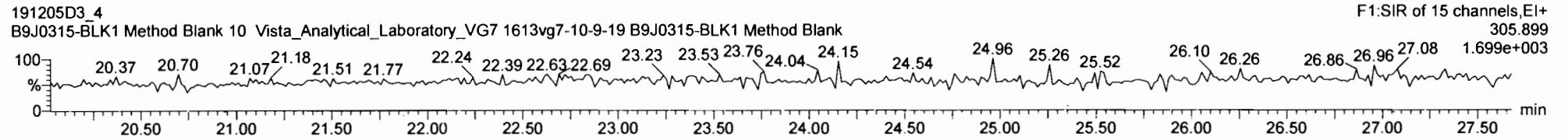
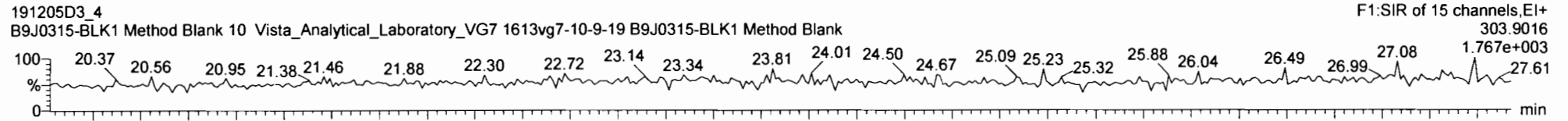
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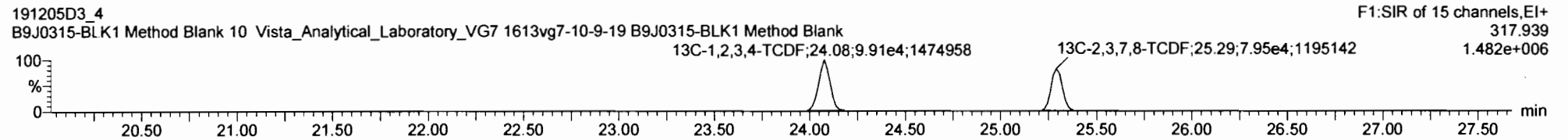
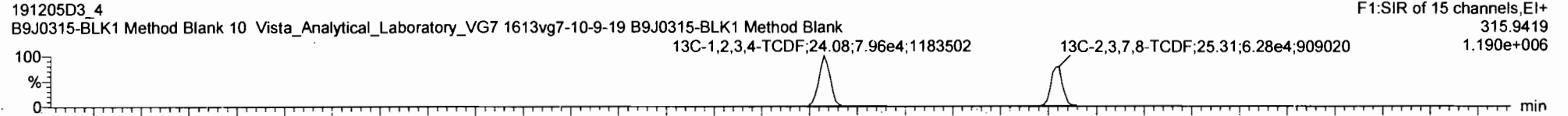
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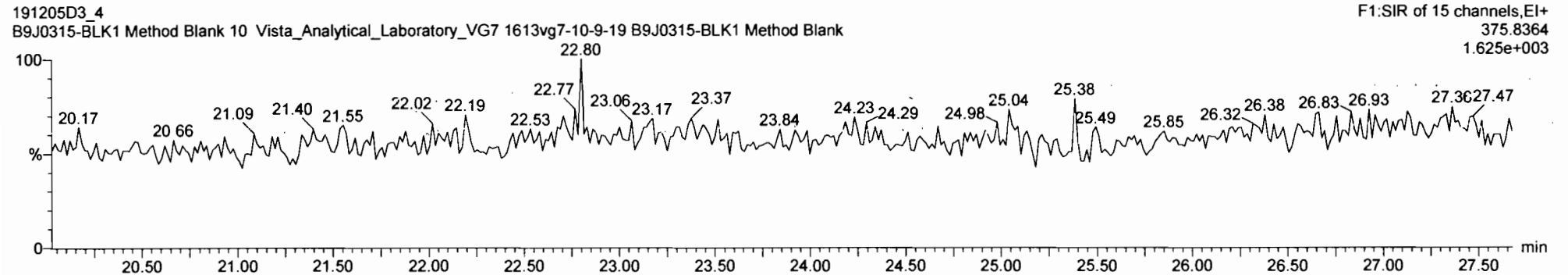
Total Tetra-Furans



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



DPE1



Vista Analytical Laboratory

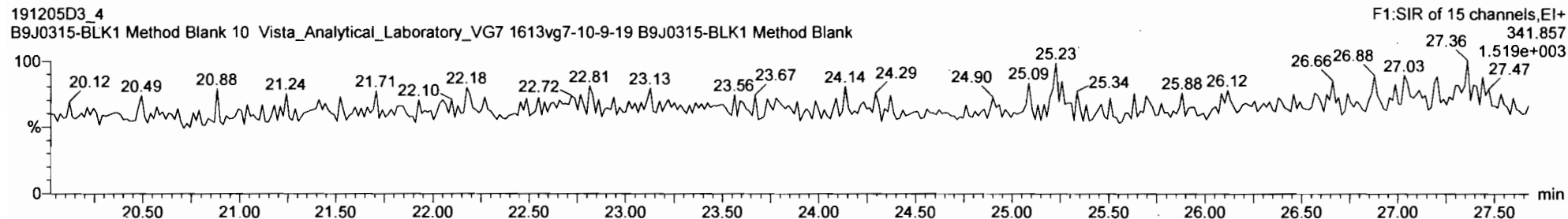
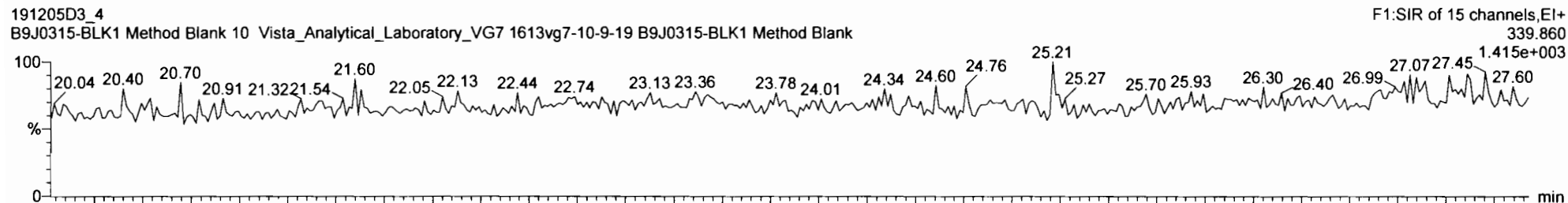
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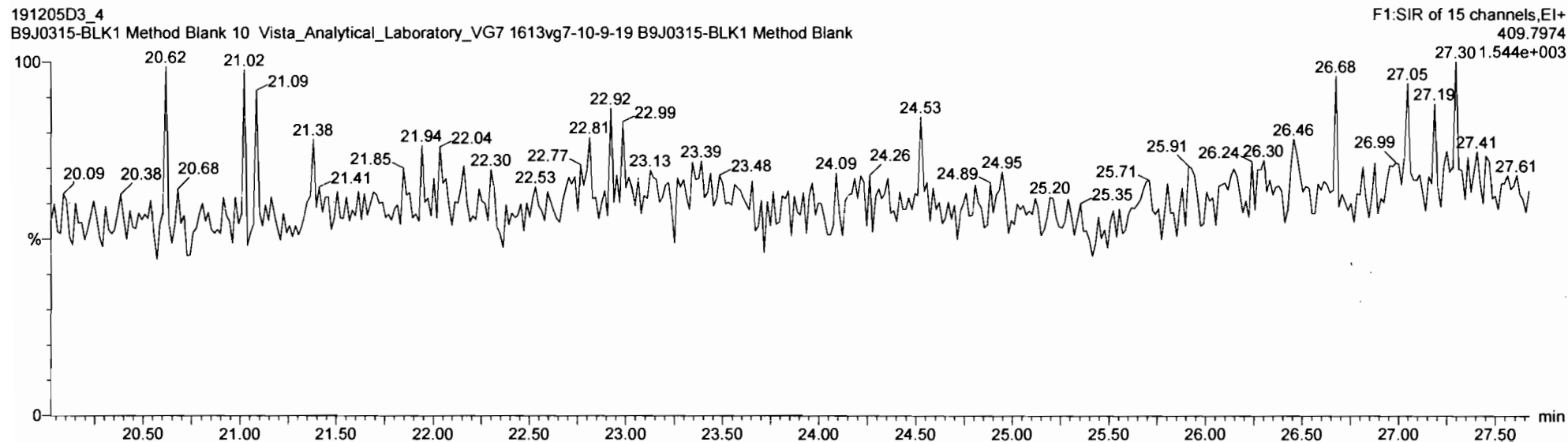
Printed: Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,  
Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

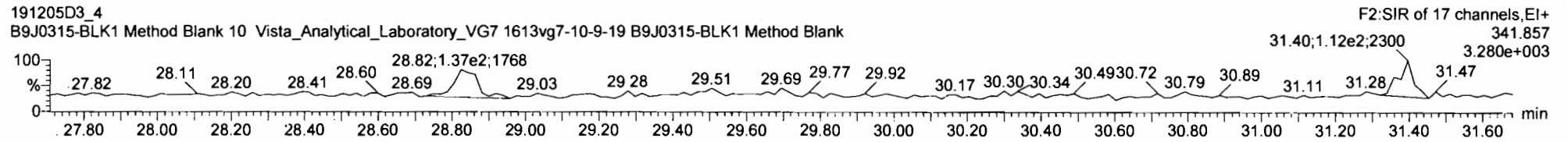
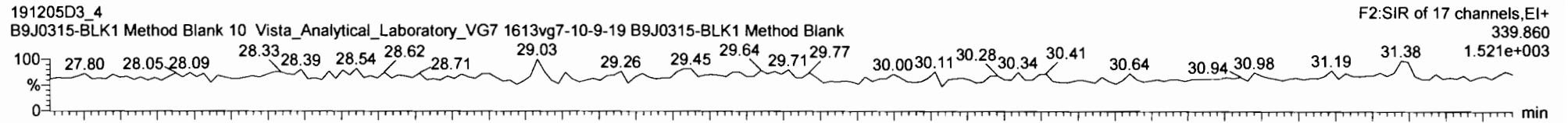
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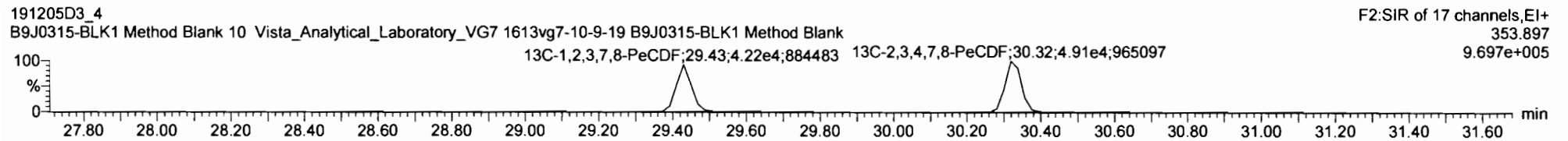
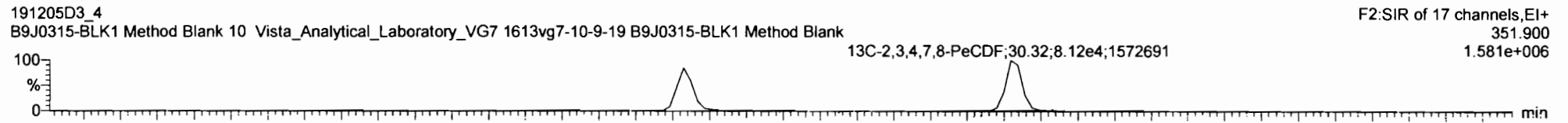
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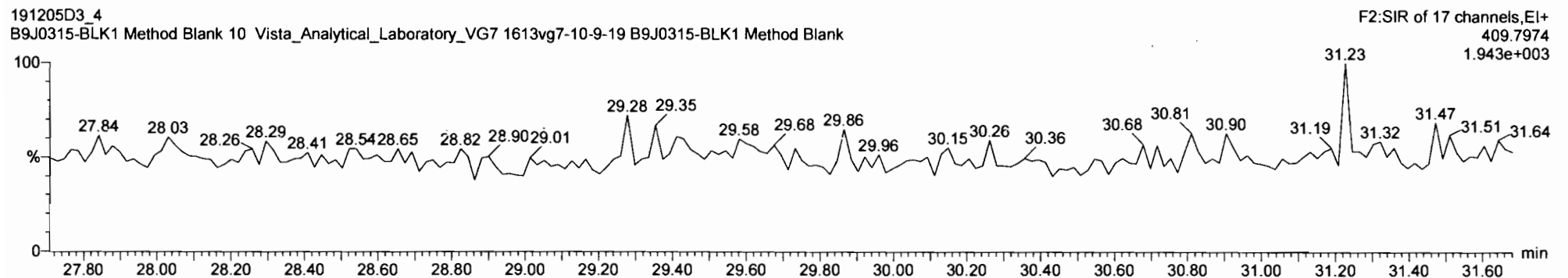
Total Penta-Furans



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



DPE2





Vista Analytical Laboratory

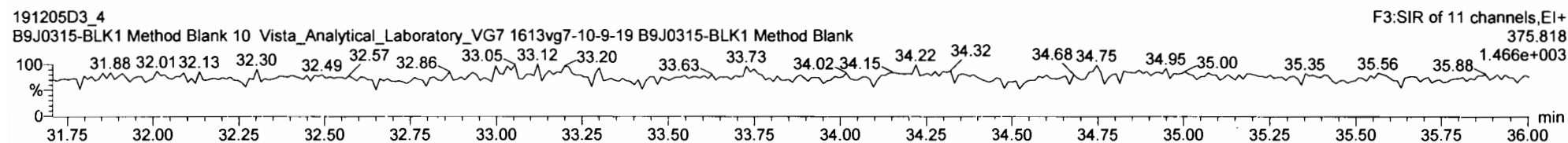
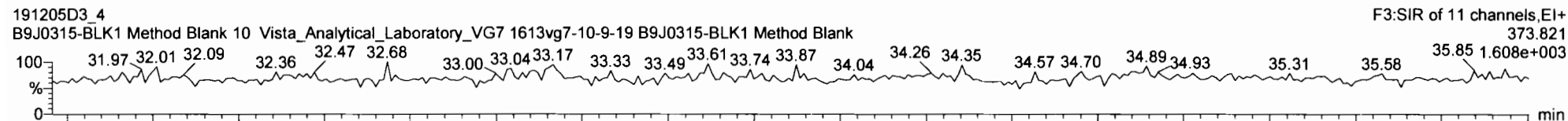
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Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

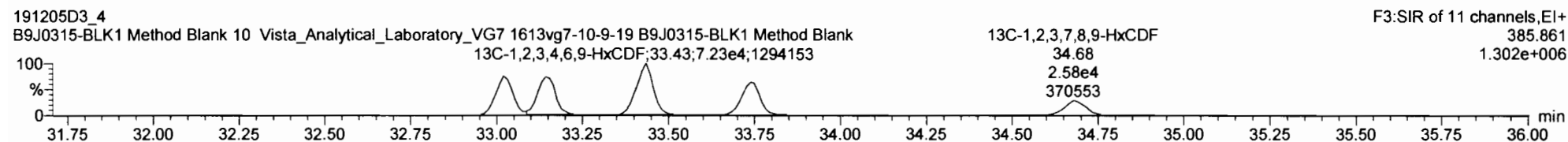
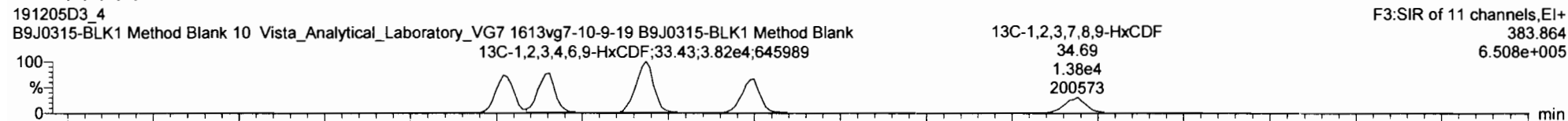
Printed: Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,  
Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

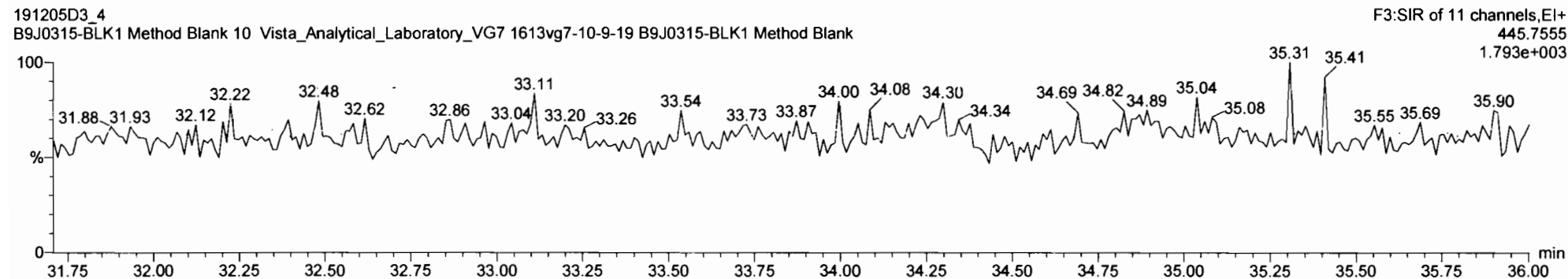
### Total Hexa-Furans



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

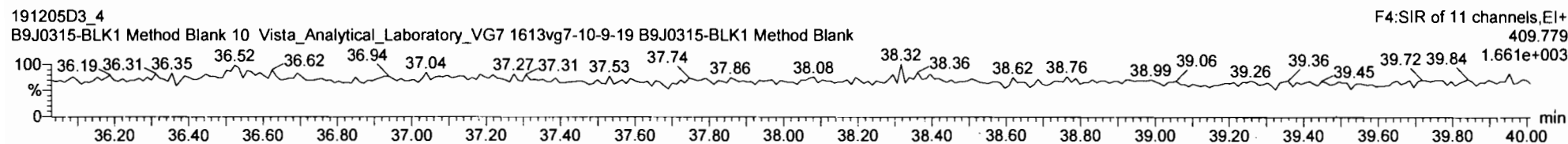
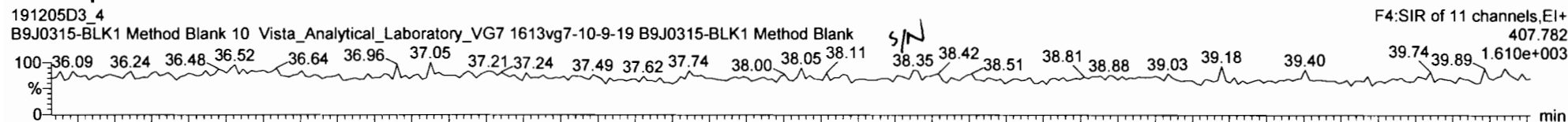


### DPE3

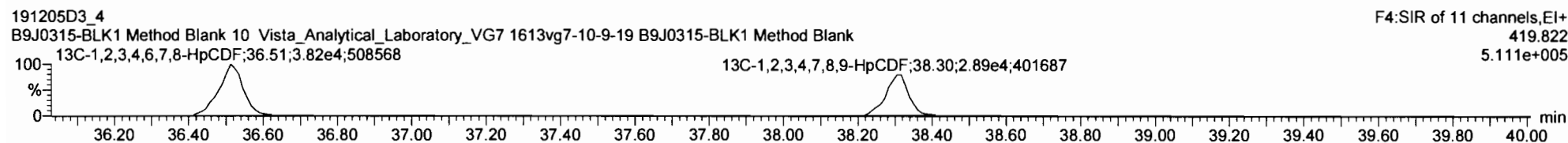
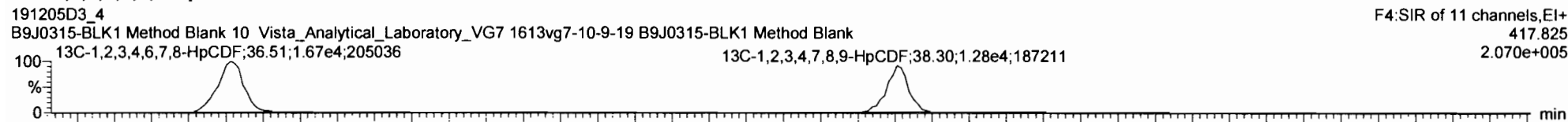


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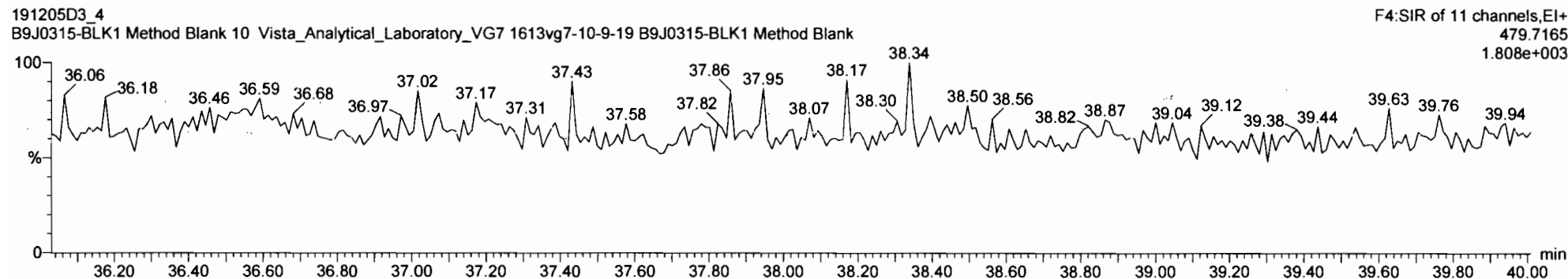
Total Hepta-Furans



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

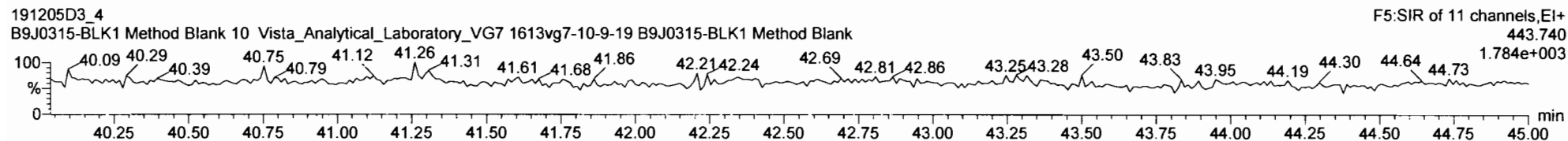
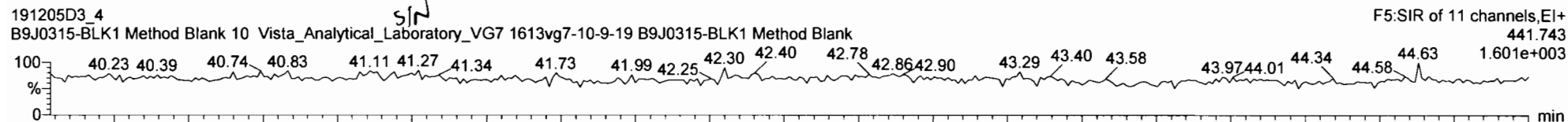


DPE4

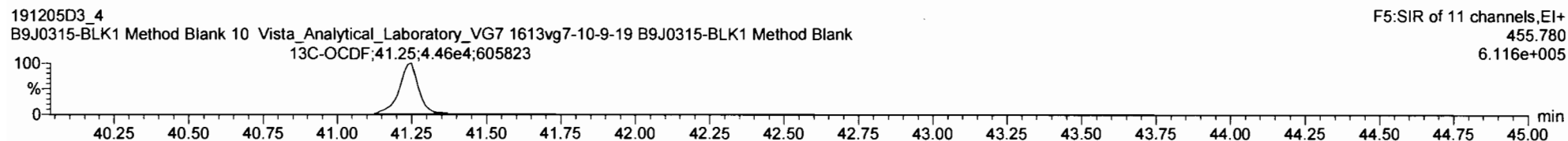
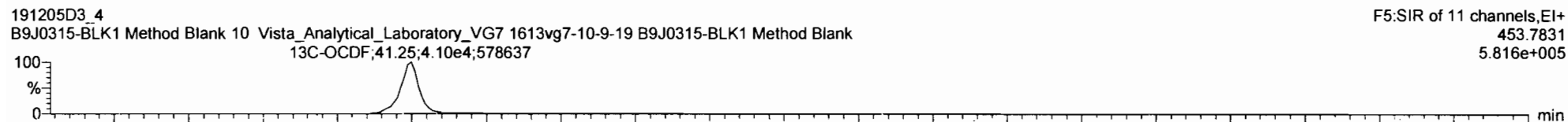


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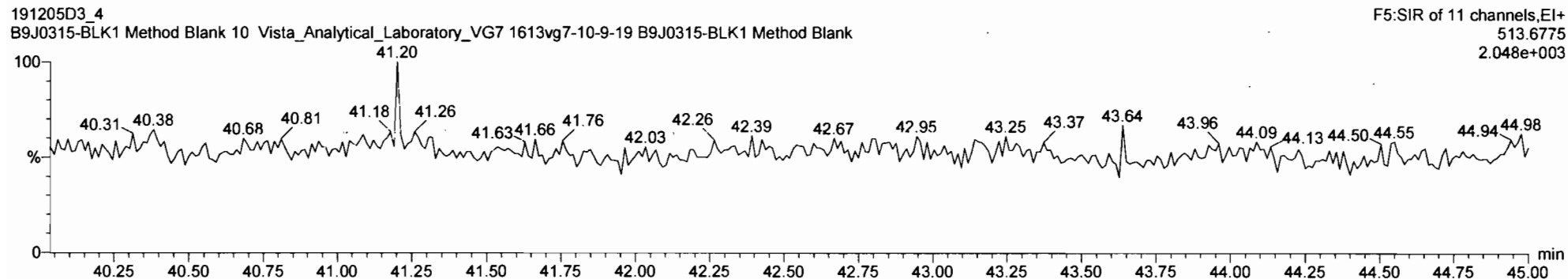
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

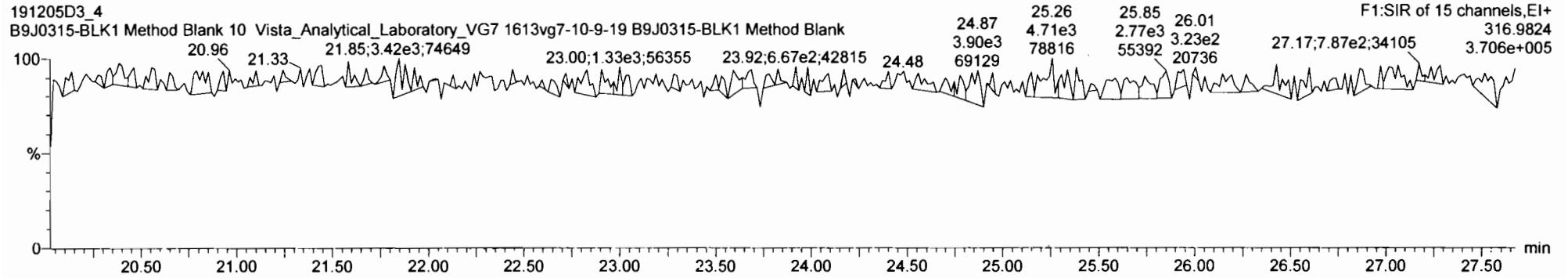
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Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

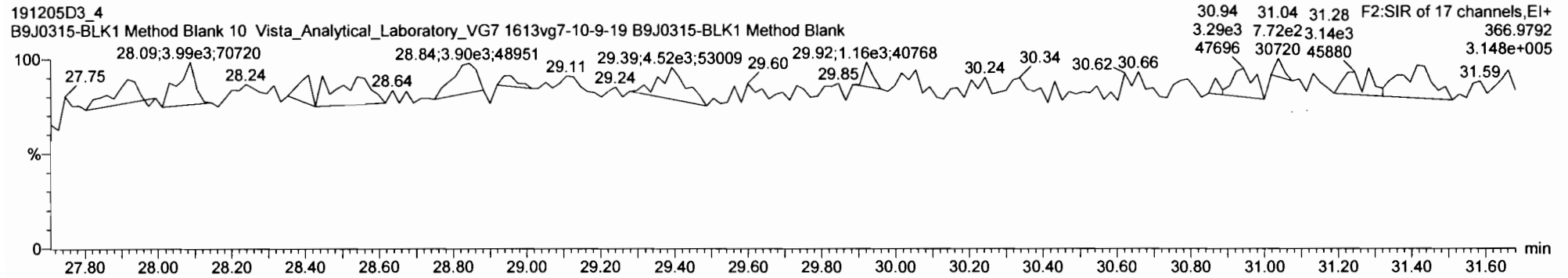
Printed: Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank, Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

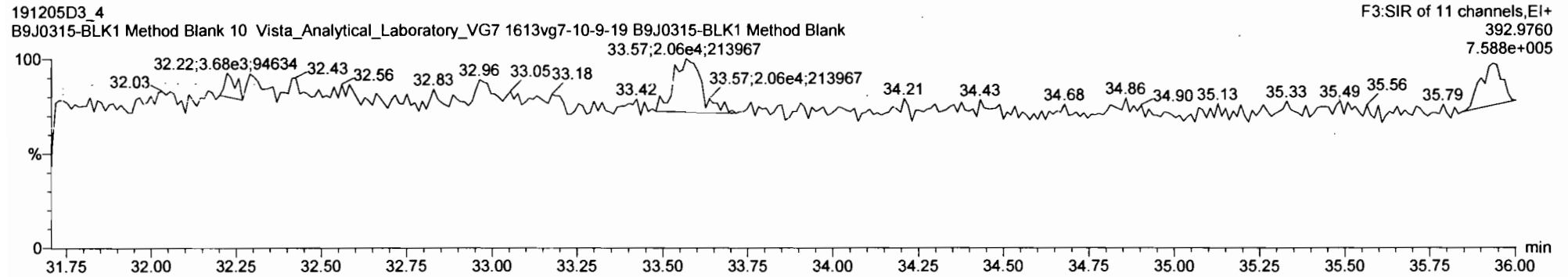
PFK1



PFK2

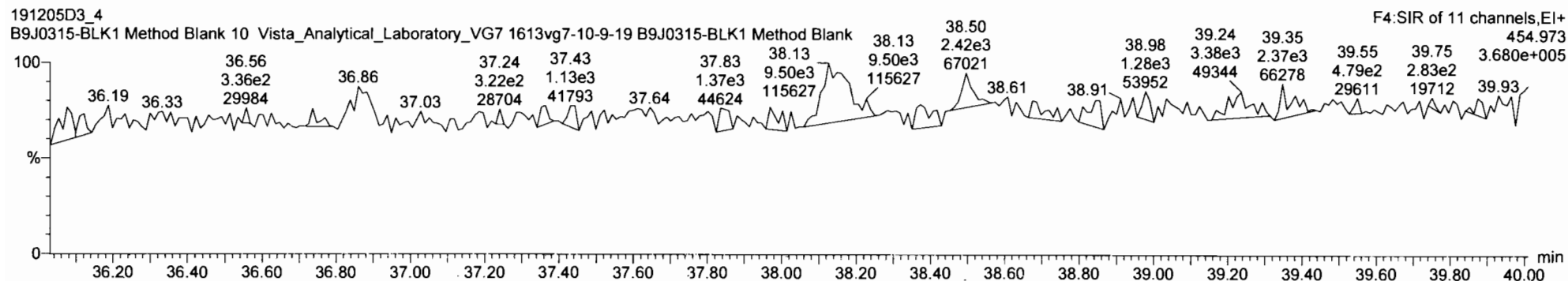


PFK3

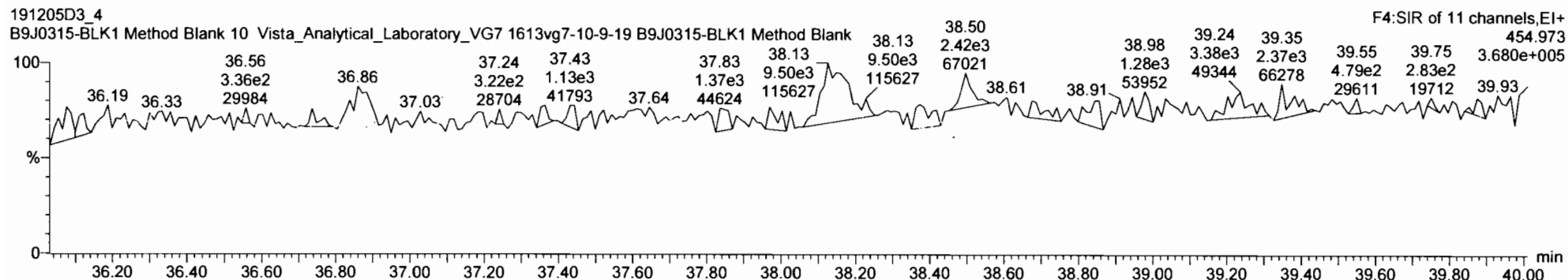


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Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset:      Untitled

Last Altered:    Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

Printed:        Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

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**Name: 191205D3\_4, Date: 6-DEC-2019, Time: 20:17:54, ID: B9J0315-BLK1 Method Blank,  
Description: B9J0315-BLK1 Method Blank 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19**

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-2.qld  
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 Printed: Tuesday, December 10, 2019 15:34:40 Pacific Standard Time

EL 12/10/19

C 12/18/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59  
 Calibration: 10 Dec 2019 14:45:01

Name: 191205D3\_2, Date: 6-DEC-2019, Time: 18:42:17, ID: B9J0315-BS1 OPR,  
 Description: B9J0315-BS1 OPR 10 Vista\_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	2,3,7,8-TCDD	1.01e4	9.94e4	10.0000	0.905	0.759	NO	1.001	1.001	26.12	26.12	22.351		22.4	0.211
2	1,2,3,7,8-PeCDD	4.50e4	8.88e4	10.0000	0.903	0.613	NO	1.001	1.001	30.62	30.62	112.21		112	0.385
3	1,2,3,4,7,8-HxCDD	3.88e4	6.72e4	10.0000	1.101	1.233	NO	1.000	1.001	33.90	33.92	104.96		105	0.545
4	1,2,3,6,7,8-HxCDD	3.97e4	7.41e4	10.0000	0.939	1.230	NO	1.000	1.001	34.01	34.03	114.10		114	0.565
5	1,2,3,7,8,9-HxCDD	3.87e4	7.31e4	10.0000	0.961	1.266	NO	1.001	1.000	34.33	34.31	109.99		110	0.587
6	1,2,3,4,6,7,8-HpCDD	3.32e4	6.45e4	10.0000	0.979	1.018	NO	1.000	1.000	37.78	37.78	105.05		105	0.613
7	OCDD	5.76e4	1.13e5	10.0000	0.959	0.877	NO	1.000	1.001	41.02	41.04	213.49		213	0.559
8	2,3,7,8-TCDF	1.51e4	1.69e5	10.0000	0.950	0.744	NO	1.001	1.001	25.33	25.32	18.861		18.9	0.183
9	1,2,3,7,8-PeCDF	7.38e4	1.42e5	10.0000	0.960	1.602	NO	1.001	1.001	29.45	29.45	108.32		108	0.445
10	2,3,4,7,8-PeCDF	7.92e4	1.43e5	10.0000	1.015	1.544	NO	1.001	1.001	30.35	30.34	108.88		109	0.406
11	1,2,3,4,7,8-HxCDF	6.03e4	1.04e5	10.0000	1.177	1.244	NO	1.000	1.001	33.01	33.03	98.605		98.6	0.528
12	1,2,3,6,7,8-HxCDF	5.94e4	1.07e5	10.0000	1.069	1.221	NO	1.000	1.000	33.15	33.15	103.49		103	0.555
13	2,3,4,6,7,8-HxCDF	5.70e4	9.61e4	10.0000	1.114	1.205	NO	1.001	1.000	33.76	33.74	106.47		106	0.602
14	1,2,3,7,8,9-HxCDF	4.50e4	8.13e4	10.0000	1.062	1.250	NO	1.000	1.000	34.68	34.69	104.35		104	0.935
15	1,2,3,4,6,7,8-HpCDF	4.00e4	7.16e4	10.0000	1.128	1.006	NO	1.001	1.000	36.56	36.53	99.148		99.1	0.826
16	1,2,3,4,7,8,9-HpCDF	3.86e4	6.03e4	10.0000	1.280	1.006	NO	1.000	1.000	38.32	38.32	100.17		100	0.702
17	OCDF	7.19e4	1.48e5	10.0000	0.947	0.905	NO	1.000	1.000	41.25	41.26	205.25		205	0.529
18	13C-2,3,7,8-TCDD	9.94e4	9.76e4	10.0000	1.095	0.816	NO	1.021	1.022	26.06	26.08	185.92	93.0		0.587
19	13C-1,2,3,7,8-PeCDD	8.88e4	9.76e4	10.0000	0.881	0.638	NO	1.187	1.199	30.29	30.60	206.35	103.2		0.555
20	13C-1,2,3,4,7,8-Hx...	6.72e4	1.11e5	10.0000	0.642	1.324	NO	1.014	1.014	33.89	33.89	188.95	94.5		0.987
21	13C-1,2,3,6,7,8-Hx...	7.41e4	1.11e5	10.0000	0.856	1.279	NO	1.017	1.017	34.00	34.01	156.49	78.2		0.741
22	13C-1,2,3,7,8,9-Hx...	7.31e4	1.11e5	10.0000	0.807	1.288	NO	1.026	1.026	34.30	34.30	163.75	81.9		0.786
23	13C-1,2,3,4,6,7,8-H...	6.45e4	1.11e5	10.0000	0.654	1.056	NO	1.126	1.130	37.64	37.77	178.24	89.1		1.02
24	13C-OCDD	1.13e5	1.11e5	10.0000	0.580	0.878	NO	1.226	1.227	40.98	41.02	350.99	87.7		0.838
25	13C-2,3,7,8-TCDF	1.69e5	1.72e5	10.0000	1.035	0.786	NO	0.992	0.991	25.31	25.31	190.08	95.0		0.491
26	13C-1,2,3,7,8-PeCDF	1.42e5	1.72e5	10.0000	0.854	1.646	NO	1.154	1.153	29.45	29.43	193.67	96.8		0.699
27	13C-2,3,4,7,8-PeCDF	1.43e5	1.72e5	10.0000	0.847	1.593	NO	1.189	1.188	30.35	30.32	197.21	98.6		0.705
28	13C-1,2,3,4,7,8-Hx...	1.04e5	1.11e5	10.0000	0.832	0.502	NO	0.987	0.988	33.00	33.01	225.52	112.8		1.26
29	13C-1,2,3,6,7,8-Hx...	1.07e5	1.11e5	10.0000	1.034	0.518	NO	0.991	0.992	33.12	33.14	187.59	93.8		1.01
30	13C-2,3,4,6,7,8-Hx...	9.61e4	1.11e5	10.0000	0.953	0.512	NO	1.009	1.009	33.73	33.73	182.08	91.0		1.10
31	13C-1,2,3,7,8,9-Hx...	8.13e4	1.11e5	10.0000	0.828	0.528	NO	1.039	1.038	34.72	34.68	177.46	88.7		1.26

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-2.qld

Last Altered: Tuesday, December 10, 2019 15:33:19 Pacific Standard Time

Printed: Tuesday, December 10, 2019 15:34:40 Pacific Standard Time

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 Description: B9J0315-BS1 OPR 10 Vista\_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	13C-1,2,3,4,6,7,8-H...	7.16e4	1.11e5	10.0000	0.757	0.434	NO	1.093	1.093	36.52	36.52	170.76	85.4		1.06
33	13C-1,2,3,4,7,8,9-H...	6.03e4	1.11e5	10.0000	0.581	0.453	NO	1.143	1.146	38.21	38.32	187.31	93.7		1.38
34	13C-OCDF	1.48e5	1.11e5	10.0000	0.689	0.909	NO	1.233	1.234	41.22	41.25	387.69	96.9		0.837
35	37Cl-2,3,7,8-TCDD	4.22e4	9.76e4	10.0000	1.198			1.022	1.023	26.09	26.10	72.181	90.2		0.212
36	13C-1,2,3,4-TCDD	9.76e4	9.76e4	10.0000	1.000	0.813	NO	1.000	1.000	25.50	25.52	200.00	100.0		0.643
37	13C-1,2,3,4-TCDF	1.72e5	1.72e5	10.0000	1.000	0.808	NO	1.000	1.000	24.06	24.09	200.00	100.0		0.508
38	13C-1,2,3,4,6,9-Hx...	1.11e5	1.11e5	10.0000	1.000	0.514	NO	1.000	1.000	33.42	33.42	200.00	100.0		1.05
39	Total Tetra-Dioxins		9.94e4	10.0000	0.901			0.000		25.50		22.351		22.4	0.212
40	Total Penta-Dioxins		8.88e4	10.0000	0.872			0.000		30.00		112.21		112	0.399
41	Total Hexa-Dioxins		0.00e0	10.0000	0.976			0.000		33.80		329.05		329	0.578
42	Total Hepta-Dioxins		6.45e4	10.0000	0.989			0.000		37.75		105.05		105	0.608
43	Total Tetra-Furans		1.69e5	10.0000	0.943			0.000		24.00		18.861		18.9	0.184
44	1st Func. Penta-Fur...		0.00e0	10.0000	0.940			0.000		27.63					0.0425
45	Total Penta-Furans		0.00e0	10.0000	0.940			0.000		30.00		217.20		217	0.447
46	Total Hexa-Furans		0.00e0	10.0000	1.078			0.000		33.00		413.30		413	0.653
47	Total Hepta-Furans		0.00e0	10.0000	1.135			0.000		37.75		199.32		199	0.808



**Quantify Totals Report MassLynx MassLynx V4.1 SCN 945**

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-2.qld

Last Altered: Tuesday, December 10, 2019 15:33:19 Pacific Standard Time

Printed: Tuesday, December 10, 2019 15:34:40 Pacific Standard Time

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 14:45:01

Name: 191205D3\_2, Date: 6-DEC-2019, Time: 18:42:17, ID: B9J0315-BS1 OPR,  
 Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Tetra-Dioxins**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	1 2,3,7,8-TCDD	NO	26.12	4339.229	44669.434	202.346	MM	22.3513	22.35

**Penta-Dioxins**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	2 1,2,3,7,8-PeCDD	NO	30.62	17095.826	34570.090	1012.914	MM	112.2094	112.21

**Hexa-Dioxins**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
	5 1,2,3,7,8,9-HxCDD	NO	34.31	21603.037	41166.156	1057.363	MM	109.9931	109.99
	4 1,2,3,6,7,8-HxCDD	NO	34.03	21894.307	41605.699	1070.985	MM	114.1045	114.10
	3 1,2,3,4,7,8-HxCDD	NO	33.92	21435.672	38274.949	1155.893	bd	104.9571	104.96

**Hepta-Dioxins**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
	6 1,2,3,4,6,7,8-HpCDD	NO	37.78	16746.068	33149.285	1028.876	MM	105.0516	105.05

**Tetra-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
	8 2,3,7,8-TCDF	NO	25.32	6451.651	74270.531	179.203	bb	18.8615	18.86

**Penta-Furans function 1**

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

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-2.qld

Last Altered: Tuesday, December 10, 2019 15:33:19 Pacific Standard Time

Printed: Tuesday, December 10, 2019 15:34:40 Pacific Standard Time

Name: 191205D3\_2, Date: 6-DEC-2019, Time: 18:42:17, ID: B9J0315-BS1 OPR,  
 Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Penta-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	10 2,3,4,7,8-PeCDF	NO	30.34	48060.984	88056.273	1104.948	MM	108.8833	108.88
2	9 1,2,3,7,8-PeCDF	NO	29.45	45445.406	88289.852	1040.262	MM	108.3155	108.32

**Hexa-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	14 1,2,3,7,8,9-HxCDF	NO	34.69	25022.020	28096.428	1107.788	bb	104.3507	104.35
2	13 2,3,4,6,7,8-HxCDF	NO	33.74	31139.211	32566.977	1185.650	bb	106.4700	106.47
3	12 1,2,3,6,7,8-HxCDF	NO	33.15	32663.059	36643.254	1106.179	db	103.4876	103.49
4	11 1,2,3,4,7,8-HxCDF	NO	33.03	33404.797	34723.160	1160.387	bd	98.6053	98.61
5	46 Total Hexa-Furans	NO	32.03	109.270	33007.455	4.142	bb	0.3844	0.38

**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	38.32	19382.289	18793.408	1282.077	bb	100.1701	100.17
2	15 1,2,3,4,6,7,8-HpCDF	NO	36.53	20075.064	21671.762	1117.992	bb	99.1479	99.15

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

Printed: Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

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Calibration: 10 Dec 2019 14:44:25

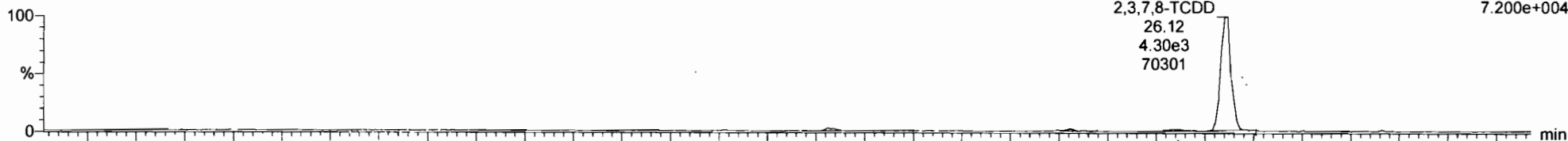
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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Tetra-Dioxins

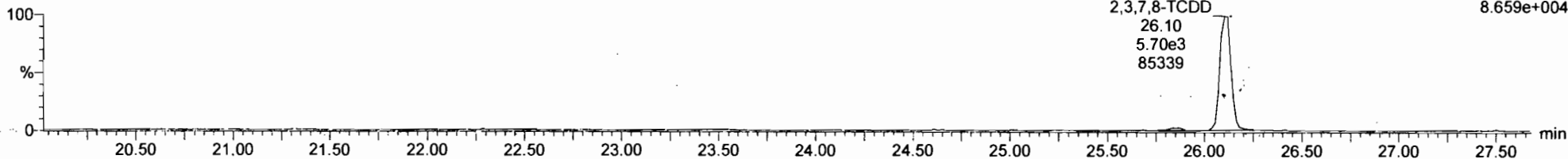
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F1:SIR of 15 channels,EI+  
319.8965  
7.200e+004



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

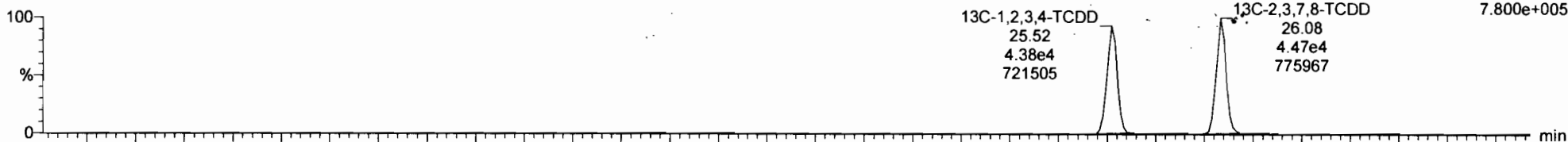
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321.894  
8.659e+004



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

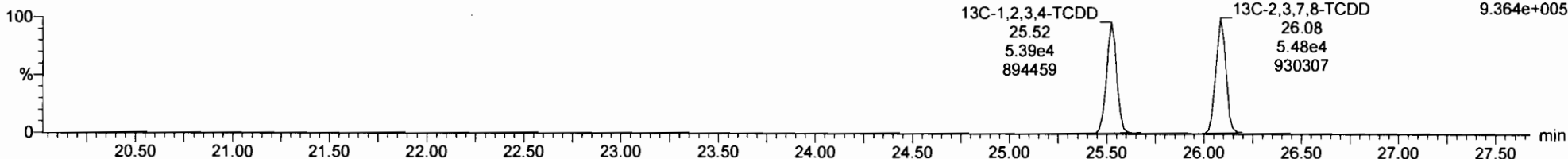
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F1:SIR of 15 channels,EI+  
331.9368  
7.800e+005



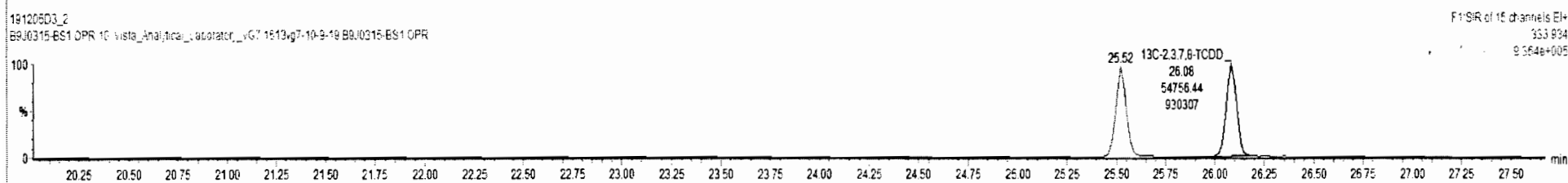
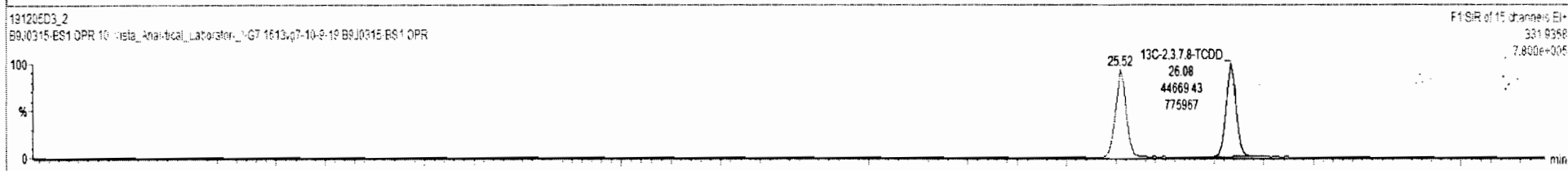
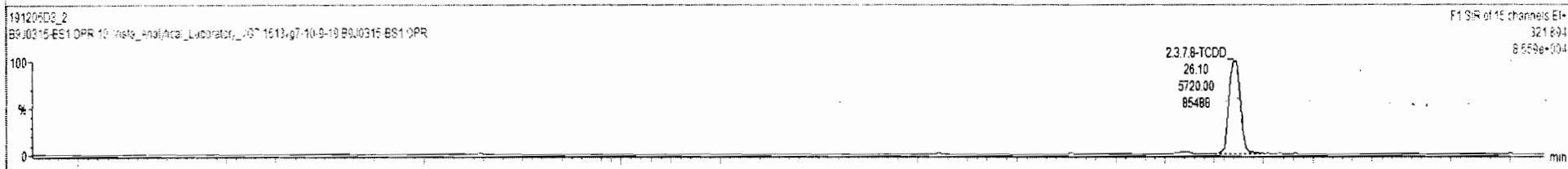
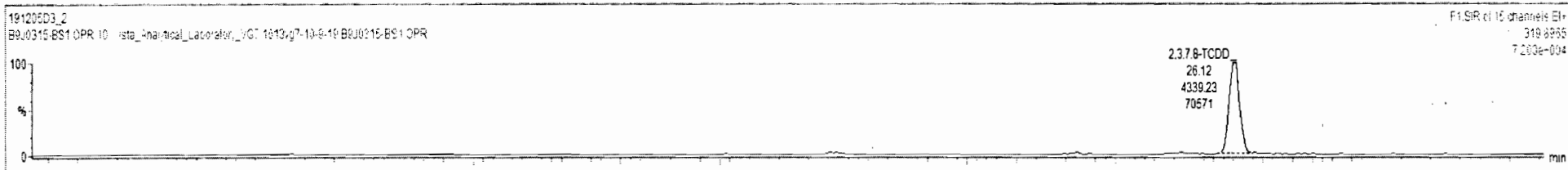
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F1:SIR of 15 channels,EI+  
333.934  
9.364e+005



#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
35	35 2,3,7,8-TCDD	4.22e4	9.76e4	35			1.198	10.000	26.09	26.10	1.023	1.022	NO	72.18	90.2	0.212	
36	36 1,2,3,4-TCDD	9.76e4	9.76e4	36	0.81	NO	1.000	10.000	25.50	25.52	1.000	1.000	NO	200.0	100	0.643	
37	37 1,2,3,4-TCDF	1.72e5	1.72e5	37	0.81	NO	1.000	10.000	24.06	24.09	1.000	1.000	NO	200.0	100	0.508	
38	38 1,2,3,4,6,8-HxCDF	1.11e5	1.11e5	38	0.51	NO	1.000	10.000	33.42	33.42	1.000	1.000	NO	200.0	100	1.05	
39	39 Total Tetra-Dioxins	9.94e4					0.901	10.000	25.50			0.000	NO	22.35		0.212	22.35
40	40 Total Penta-Dioxins	8.08e4					0.872	10.000	30.00			0.000	NO	110.3		0.399	111.0
41	41 Total Hexa-Dioxins	0.00e0					0.976	10.000	33.00			0.000	NO	327.6		0.576	327.6
42	42 Total Hepta-Dioxins	6.45e4					0.989	10.000	37.75			0.000	NO	103.2		0.606	103.9
43	43 Total Tetra-Furans	1.65e5					0.943	10.000	24.00			0.000	NO	18.88		0.184	18.88
44	44 1st Furc. Penta-Furans	0.00e0					0.940	10.000	27.63			0.000	NO			0.0425	
45	45 Total Penta-Furans	0.00e0					0.940	10.000	30.00			0.000	NO	215.71		0.447	216.81

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	1 2,3,7,8-TCDD	26.12	26.12	4.339e3	5.729e3	0.770	0.76	NO	22.351	22.351



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

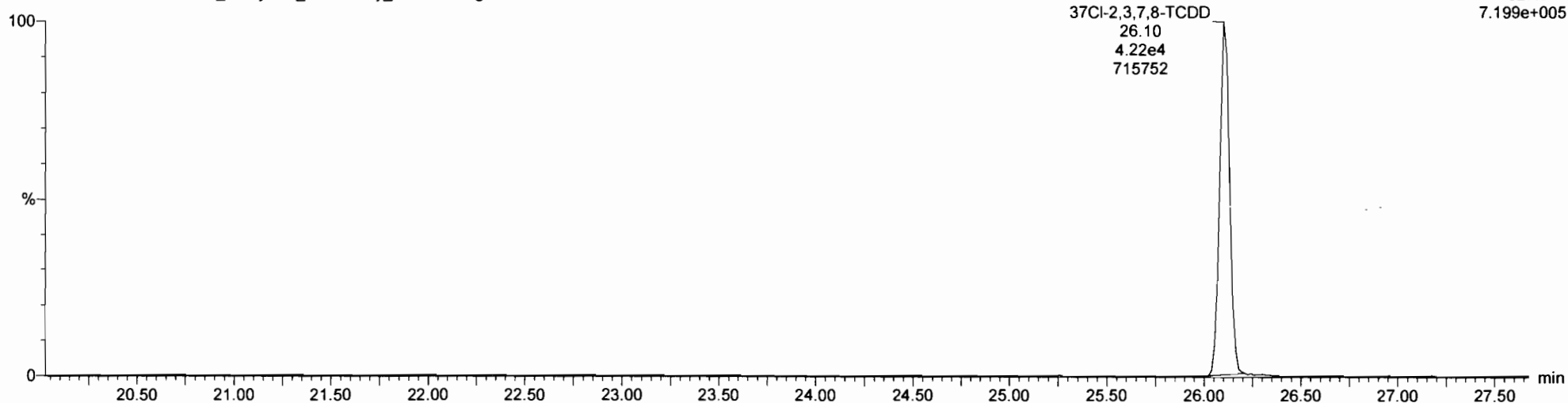
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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

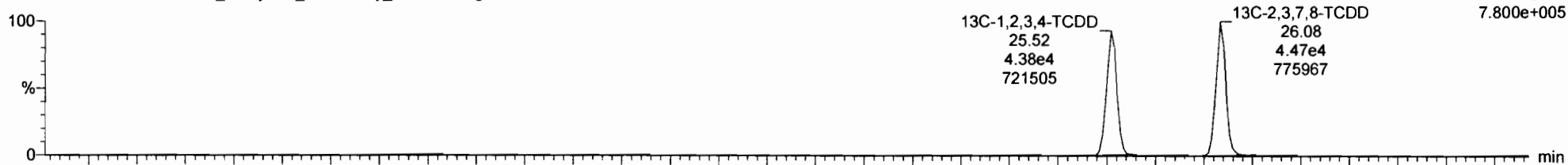
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327.884  
7.199e+005



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

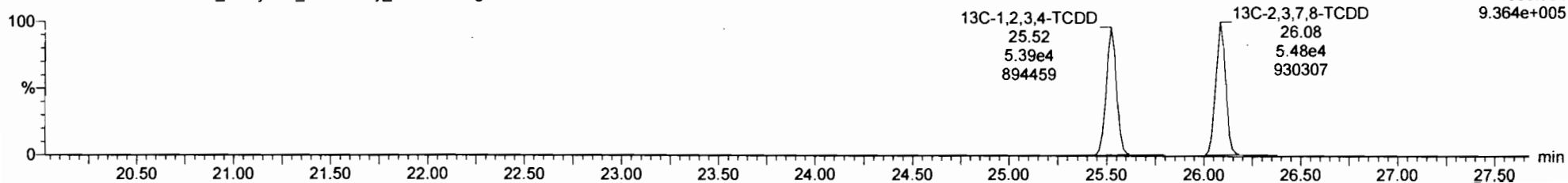
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F1:SIR of 15 channels,EI+  
331.9368  
7.800e+005



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

F1:SIR of 15 channels,EI+  
333.934  
9.364e+005



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

Printed: Tuesday, December 10, 2019 14:44:43 Pacific Standard Time

Name: 191205D3\_2, Date: 6-DEC-2019, Time: 18:42:17, ID: B9J0315-BS1 OPR,  
Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Penta-Dioxins

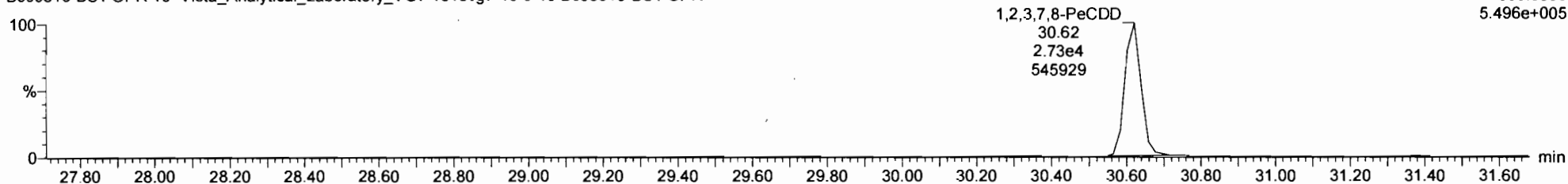
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F2:SIR of 17 channels,EI+  
353.8576  
3.434e+005



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

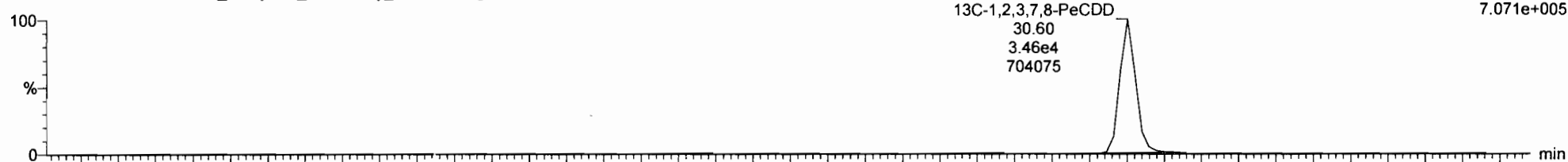
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355.8550  
5.496e+005



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

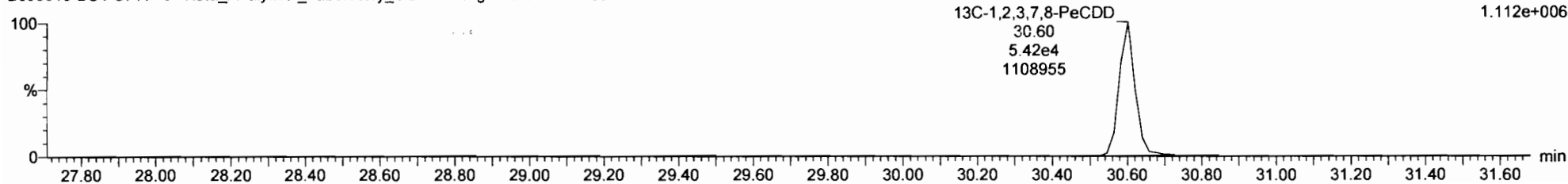
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F2:SIR of 17 channels,EI+  
365.8978  
7.071e+005



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

F2:SIR of 17 channels,EI+  
367.895  
1.112e+006

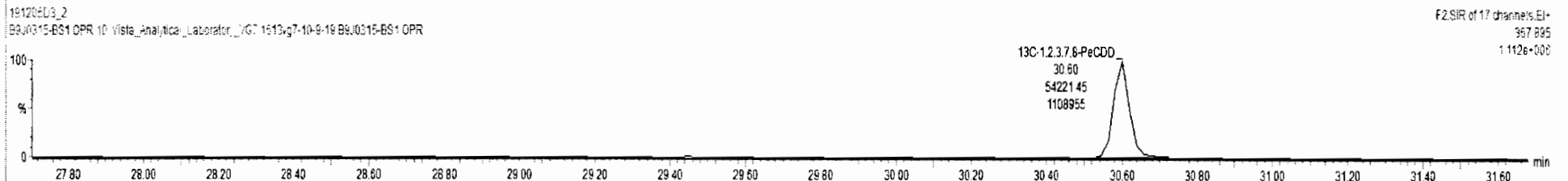
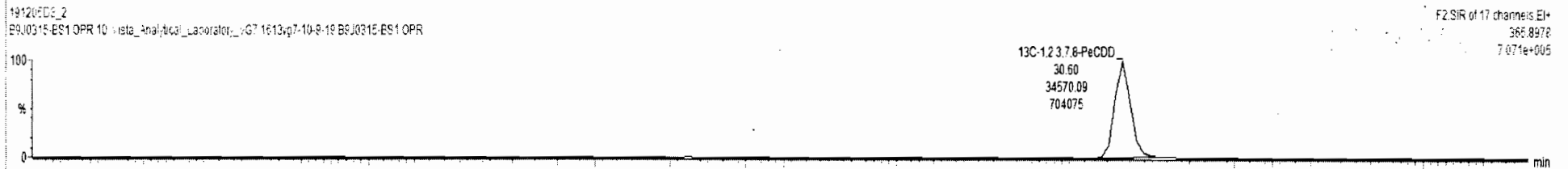
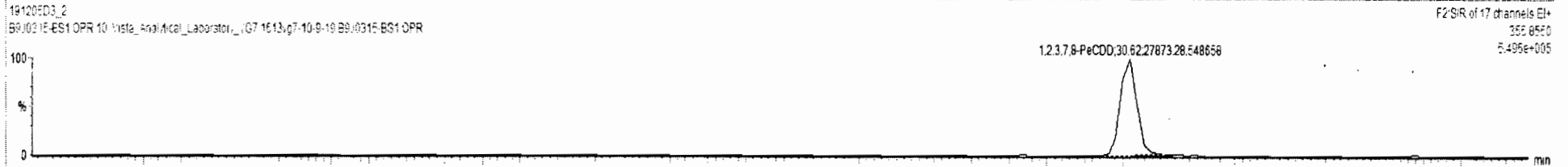
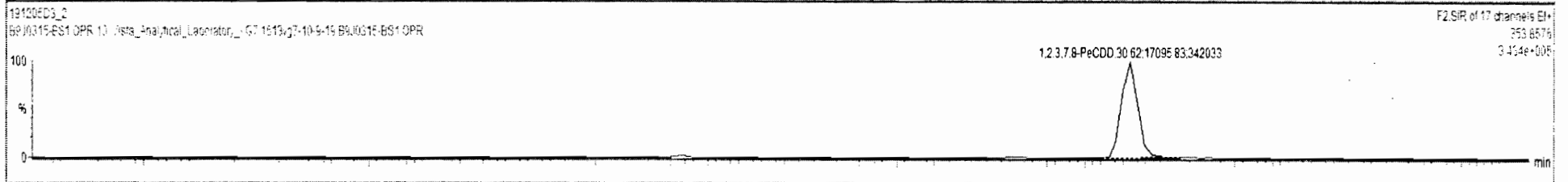




191205D3\_2 - B9J0315-BS1 OPR - B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
35	35 37Cl-2,3,7,8-TCDD	4.22e4	9.76e4	36			1.198	10.000	26.09	26.10	1.023	1.022	NO	72.18	90.2	0.212	
36	36 13C-1,2,3,4-TCDD	9.76e4	9.76e4	36	0.81	NO	1.000	10.000	25.50	25.52	1.000	1.000	NO	200.0	100	0.643	
37	37 13C-1,2,3,4-TCDF	1.72e5	1.72e5	37	0.81	NO	1.000	10.000	24.06	24.09	1.000	1.000	NO	200.0	100	0.508	
38	38 13C-1,2,3,4,6,8-HxCDF	1.11e5	1.11e5	38	0.51	NO	1.000	10.000	33.42	33.42	1.000	1.000	NO	200.0	100	1.05	
39	39 Total Tetra-Dioxins		9.94e4				0.901	10.000	25.50			0.000	NO	22.35		0.212	22.35
40	40 Total Penta-Dioxins		8.88e4				0.872	10.000	30.00			0.000	NO	112.2		0.398	112.2
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.000	33.80			0.000	NO	327.6		0.576	327.6
42	42 Total Hepta-Dioxins		6.45e4				0.989	10.000	37.75			0.000	NO	103.2		0.608	103.9
43	43 Total Tetra-Furans		1.66e5				0.943	10.000	24.00			0.000	NO	16.86		0.184	16.86
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.000	27.63			0.000	NO			0.0425	
45	45 Total Penta-Furans		0.00e0				0.940	10.000	27.63			0.000	NO	215.91		0.4471	216.81

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	2 1,2,3,7,8-PeCDD	30.62	30.62	1.710e4	2.787e4	0.630	0.61	NO	112.21	112.21



Vista Analytical Laboratory

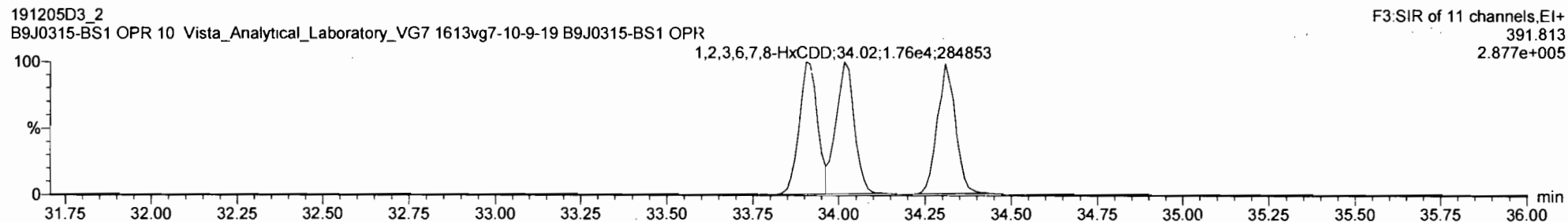
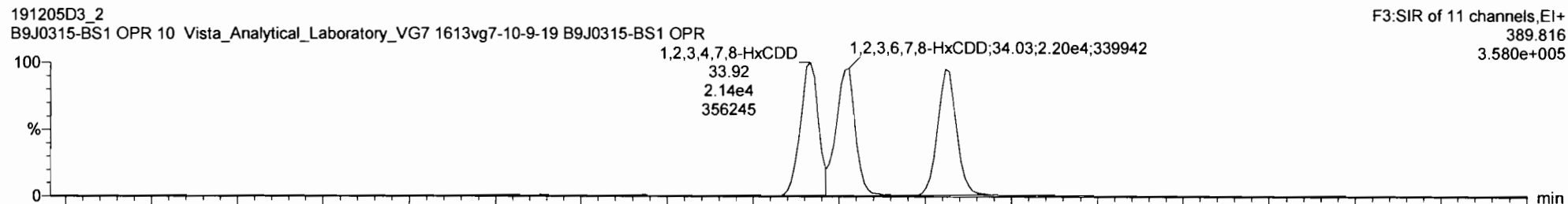
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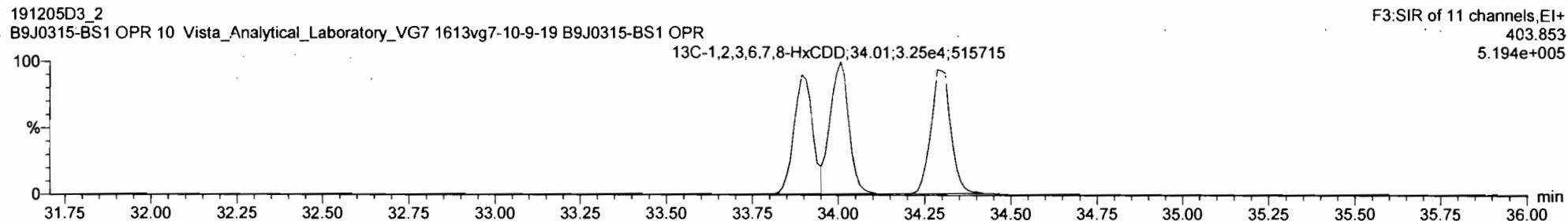
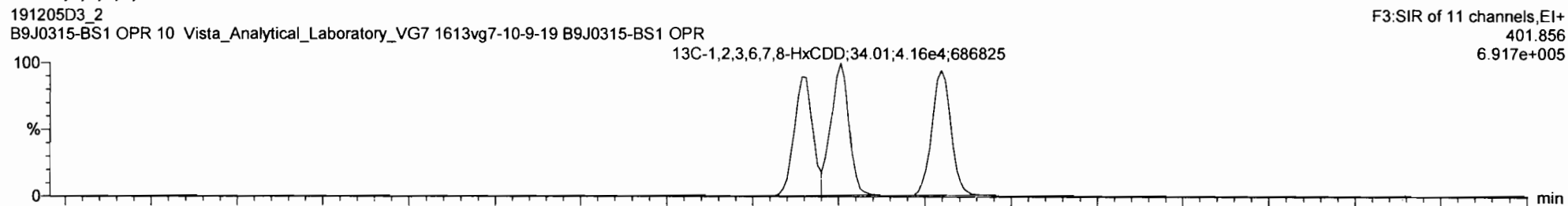
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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

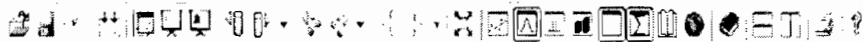
Total Hexa-Dioxins



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



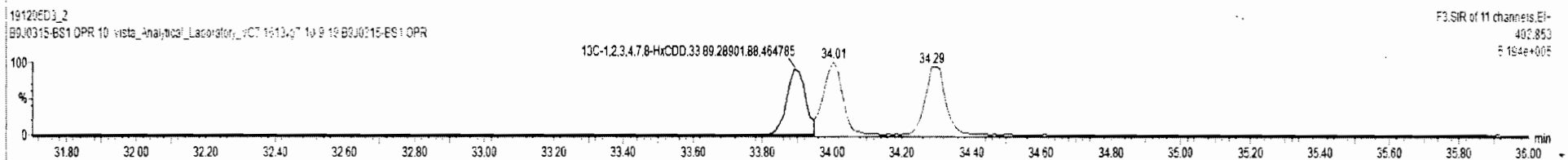
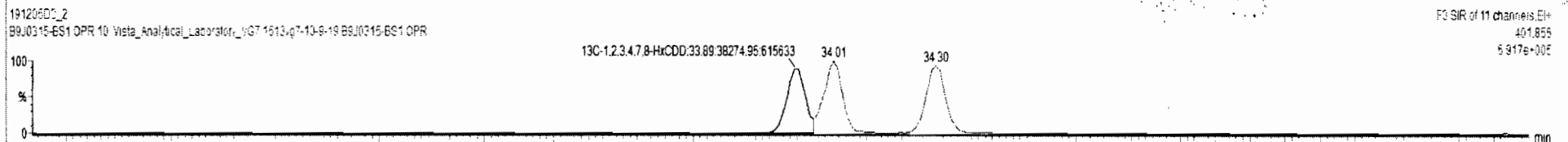
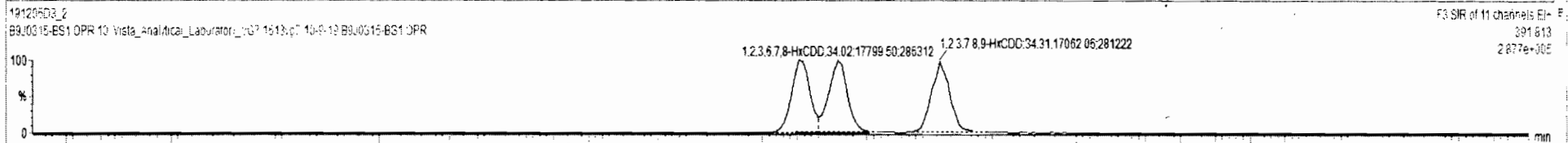
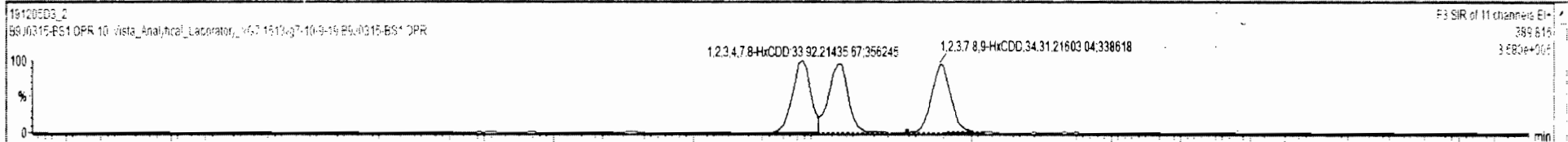




191205D3\_2 - B9J0315-BS1 OPR - B9J0315-BS1 OPR 10 Vista Analytical Laboratory\_VG7 1613vg7-10-9-19

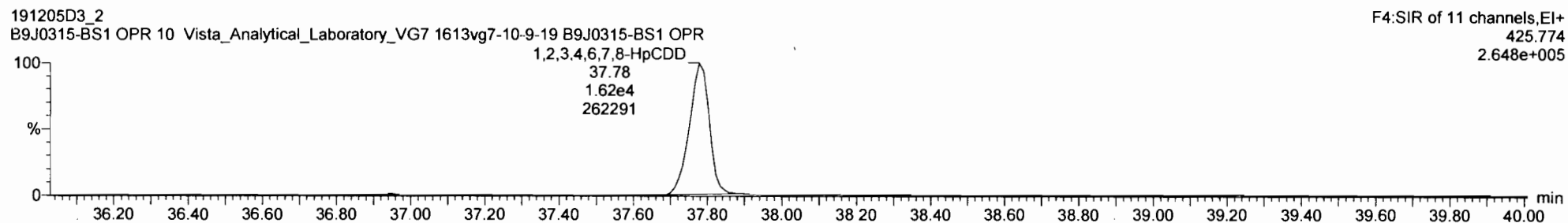
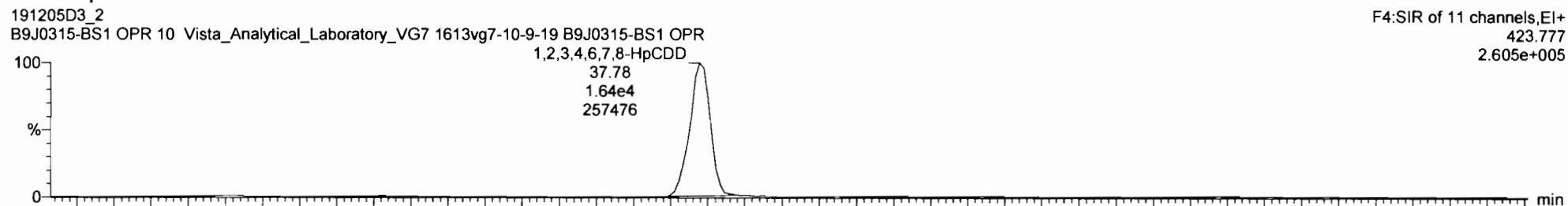
#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wtVol	Pred RT	RT	RRT	Pred_RRT	Check RRT	Conc.	%Rec	DL	EMPC
35	37C-1,2,3,7,8-TCDD	4.22e4	9.76e4	36			1.198	10.000	26.09	26.10	1.023	1.022	NO	72.18	96.2	0.212	
36	13C-1,2,3,4-TCDD	9.76e4	9.76e4	36	0.81	NO	1.000	10.000	26.50	25.52	1.000	1.000	NO	200.0	100	0.643	
37	13C-1,2,3,4-TCDF	1.72e5	1.72e5	37	0.81	NO	1.000	10.000	24.06	24.09	1.000	1.000	NO	200.0	100	0.508	
38	13C-1,2,3,4,6,9-HxCDF	1.11e5	1.11e5	38	0.51	NO	1.000	10.000	33.42	33.42	1.000	1.000	NO	200.0	100	1.05	
39	Total Tetra-Dioxins		9.94e4				0.901	10.000	26.50			0.000	NO	22.35		0.212	22.35
40	Total Penta-Dioxins		8.88e4				0.872	10.000	30.00			0.000	NO	112.2		0.399	112.2
41	Total Hexa-Dioxins		0.00e0				0.976	10.000	33.80			0.000	NO	325.1		0.578	325.1
42	Total Hepta-Dioxins		6.45e4				0.989	10.000	37.75			0.000	NO	103.2		0.606	103.9
43	Total Tetra-Furans		1.66e5				0.943	10.000	24.00			0.000	NO	18.86		0.184	18.86
44	1st Func. Penta-Furans		0.00e0				0.940	10.000	27.63			0.000	NO			0.0425	
45	Total Penta-Furans		0.00e0				0.940	10.000	27.63			0.000	NO			0.447	718.8

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	3 1,2,3,4,7,8-HxCDD	33.90	33.92	2.144e4	1.739e4	1.240	1.23	NO	104.96	104.96
2	4 1,2,3,6,7,8-HxCDD	34.01	34.02	2.169e4	1.780e4	1.240	1.23	NO	114.10	114.10
3	5 1,2,3,7,8,9-HxCDD	34.33	34.31	2.160e4	1.706e4	1.240	1.27	NO	109.99	109.99

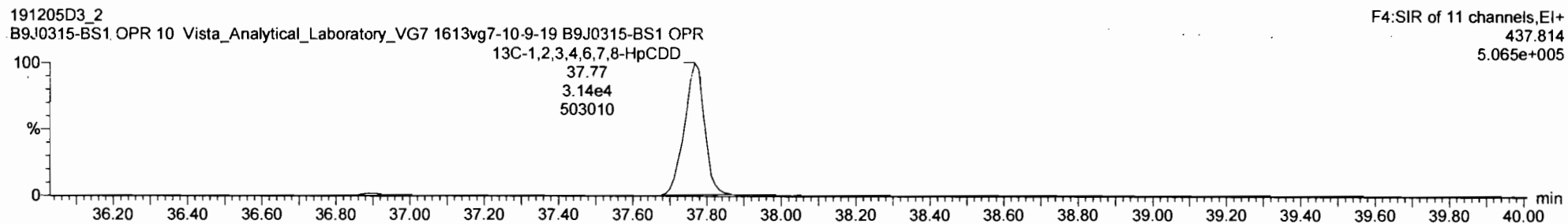
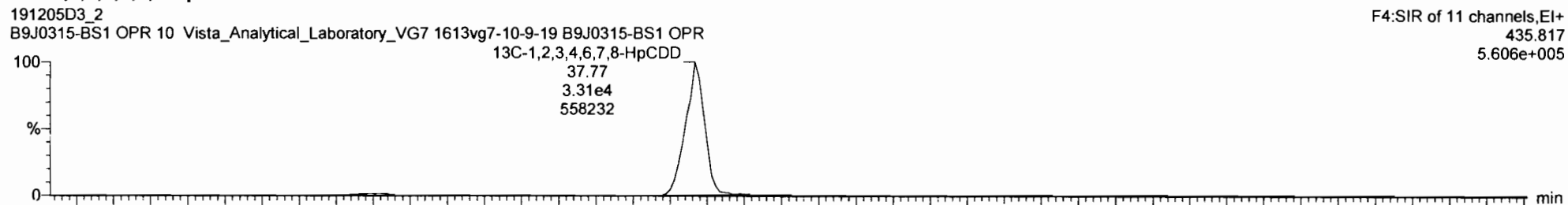


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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Total Hepta-Dioxins**

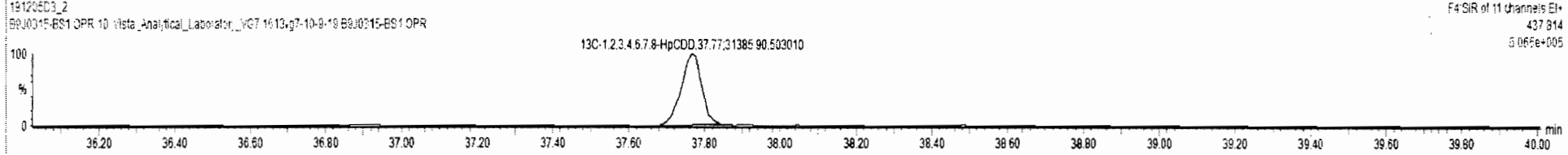
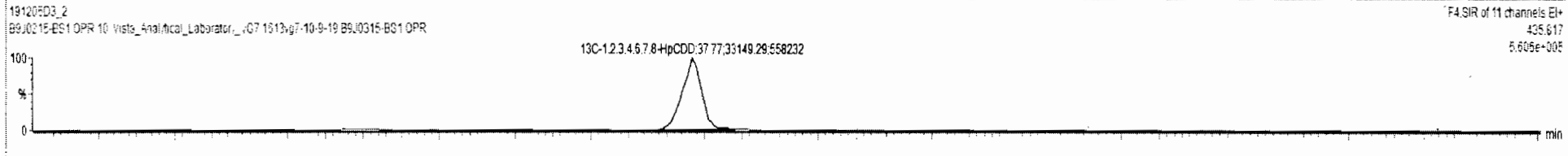
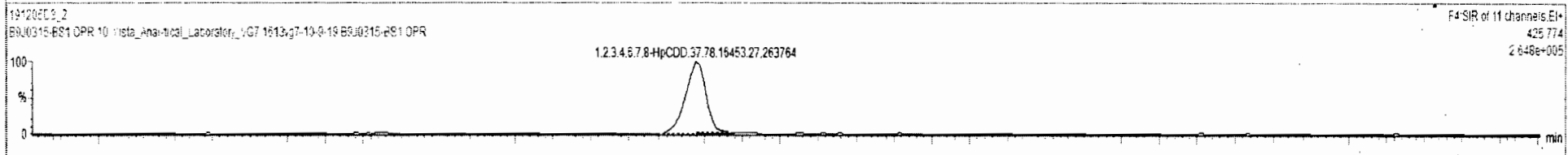
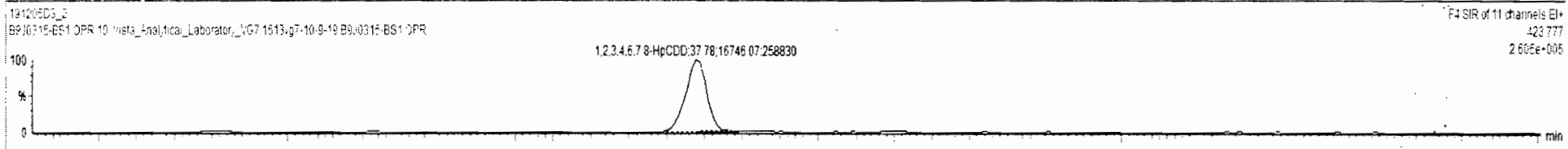


**13C-1,2,3,4,6,7,8-HpCDD**



#	Name	Resp	IS Resp	ISF	RA	nly	RRF	w/wof	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
35	37C-1,2,3,7,8-TCDD	4.22e4	9.76e4	36			1.198	10.000	26.09	26.10	1.023	1.022	NO	72.16	99.2	0.212	
36	13C-1,2,3,4-TCDD	9.76e4	9.76e4	36	0.81	NO	1.000	10.000	25.50	25.52	1.000	1.000	NO	200.0	100	0.643	
37	13C-1,2,3,4-TCDF	1.72e5	1.72e5	37	0.81	NO	1.000	10.000	24.96	24.95	1.000	1.000	NO	200.0	100	0.508	
38	13C-1,2,3,4,6,8-HxCDF	1.11e5	1.11e5	38	0.51	NO	1.000	10.000	33.42	33.42	1.000	1.000	NO	200.0	100	1.05	
39	Total Tetra-Dioxins		9.94e4				0.901	10.000	25.50			0.900	NO	22.05		0.212	22.05
40	Total Penta-Dioxins		8.86e4				0.872	10.000	30.00			0.900	NO	112.2		0.395	112.2
41	Total Hexa-Dioxins		0.00e0				0.976	10.000	33.00			0.900	NO	329.1		0.576	329.1
42	Total Hepta-Dioxins		6.45e4				0.909	10.000	37.75			0.900	NO	105.1		0.608	105.1
43	Total Tetra-Furans		1.69e5				0.943	10.000	24.00			0.900	NO	16.86		0.184	16.86
44	1st Func. Penta-Furans		0.00e0				0.940	10.000	27.63			0.900	NO			0.0425	
45	Total Penta-Furans		0.00e0				0.940	10.000	27.63			0.900	NO			0.0427	27.63

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	6 1,2,3,4,6,7,8-HpCDD	37.78	37.78	1.675e4	1.645e4	1.040	1.02	NO	105.05	105.05

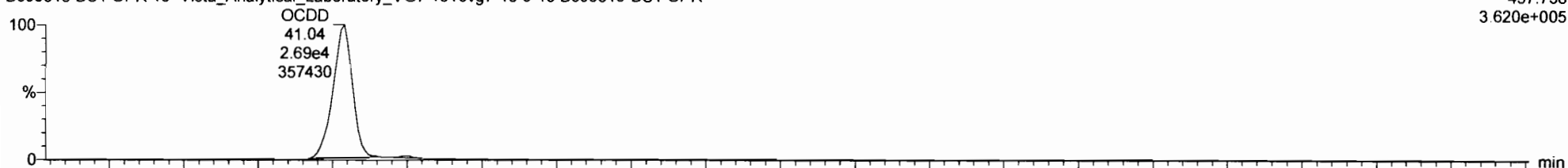


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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**OCDD**

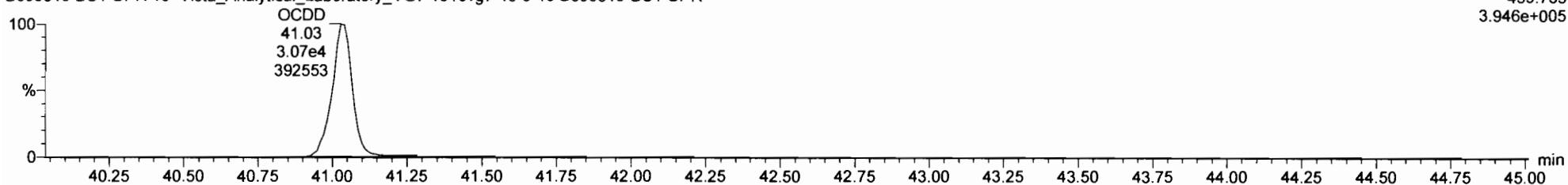
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B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

F5:SIR of 11 channels,EI+  
457.738  
3.620e+005



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

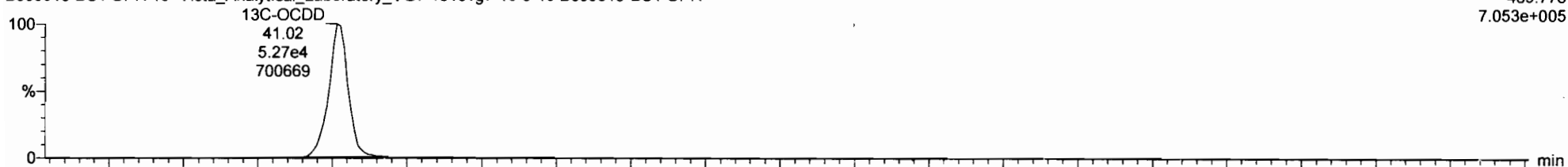
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**13C-OCDD**

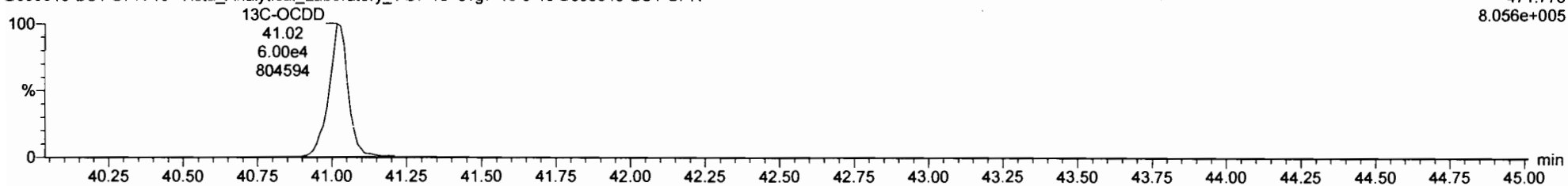
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F5:SIR of 11 channels,EI+  
469.778  
7.053e+005



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

F5:SIR of 11 channels,EI+  
471.775  
8.056e+005

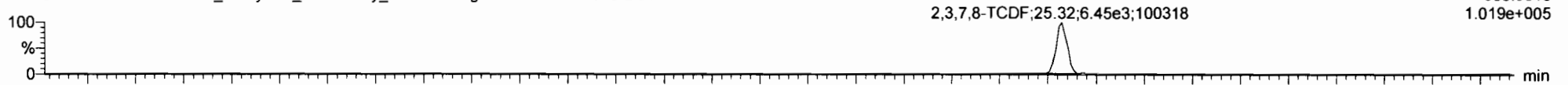


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**Total Tetra-Furans**

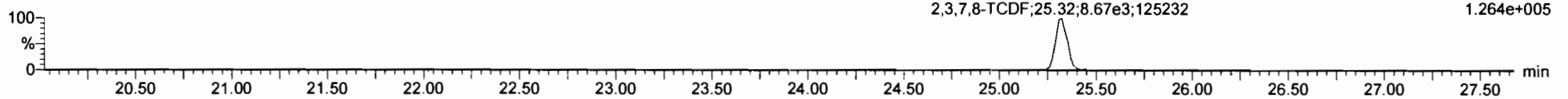
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F1:SIR of 15 channels,EI+  
303.9016  
1.019e+005



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

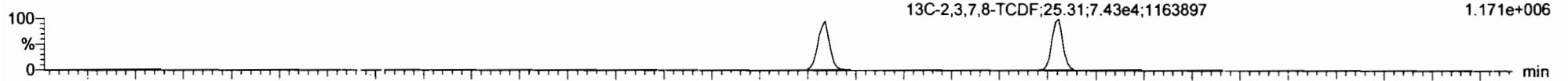
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305.899  
1.264e+005



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

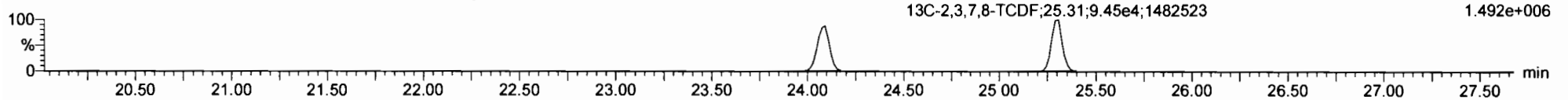
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F1:SIR of 15 channels,EI+  
315.9419  
1.171e+006



191205D3\_2  
B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-BS1 OPR

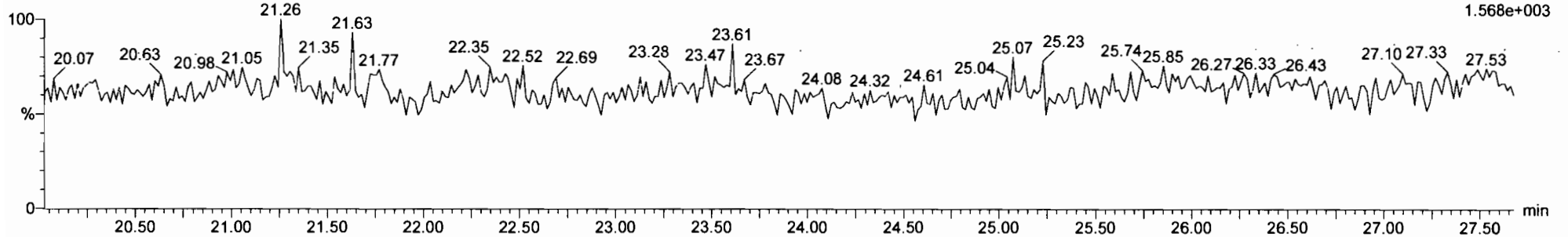
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1.492e+006



**DPE1**

191205D3\_2  
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F1:SIR of 15 channels,EI+  
375.8364  
1.568e+003



Vista Analytical Laboratory

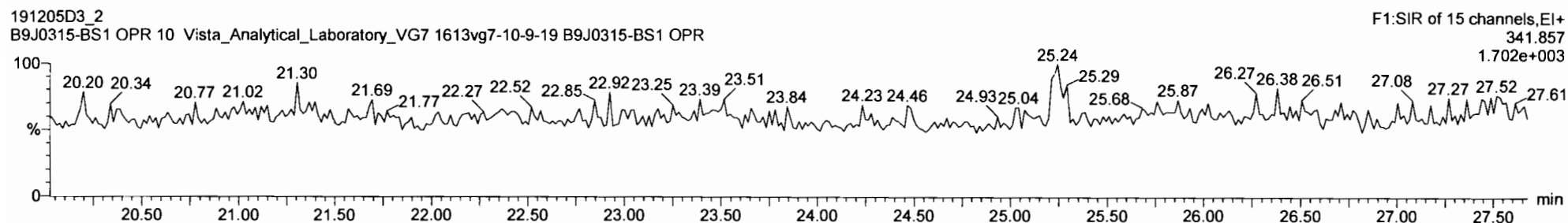
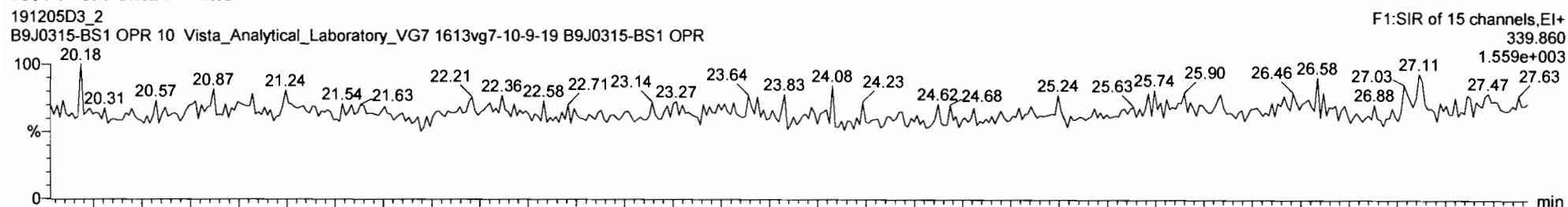
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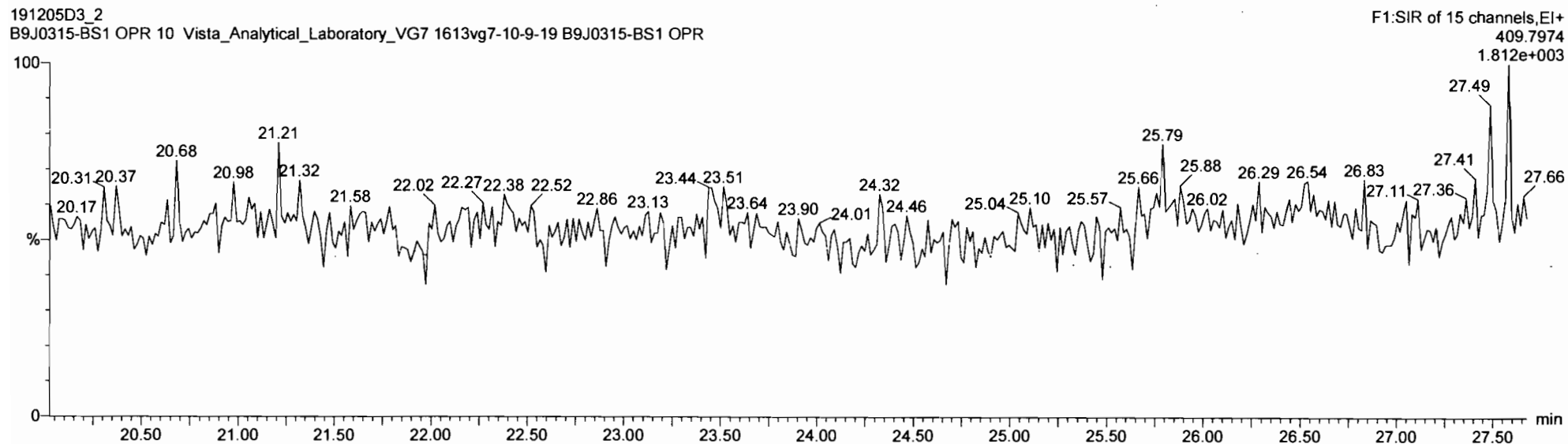
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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

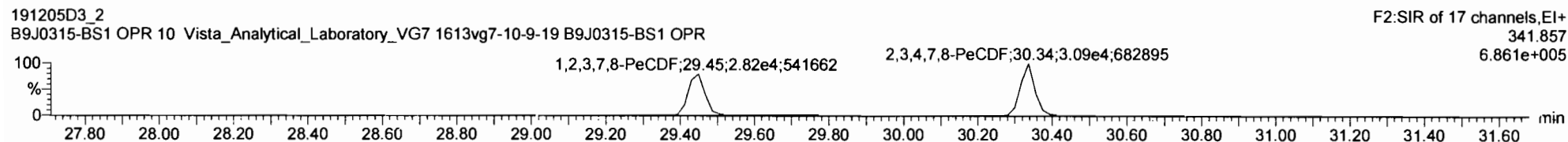
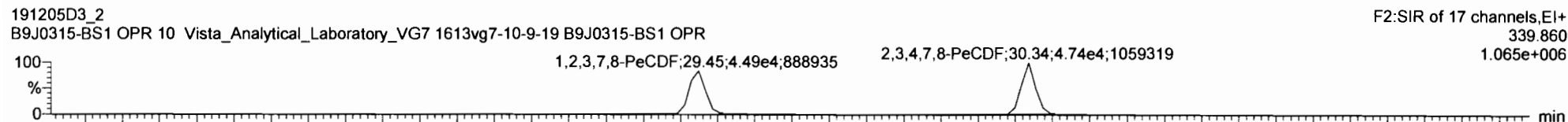
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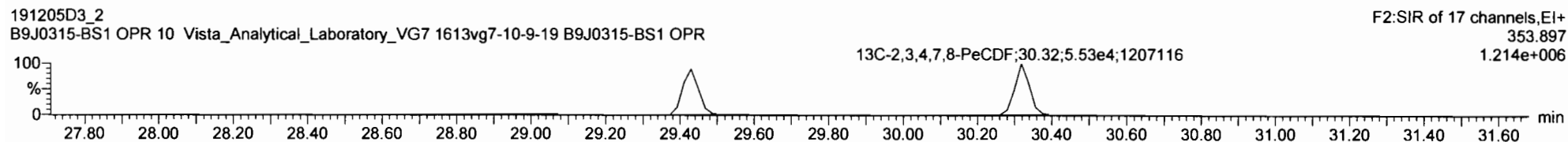
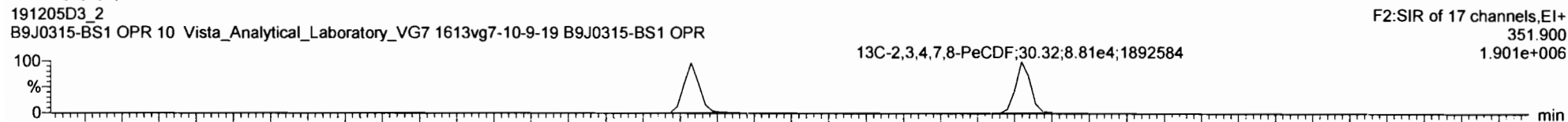
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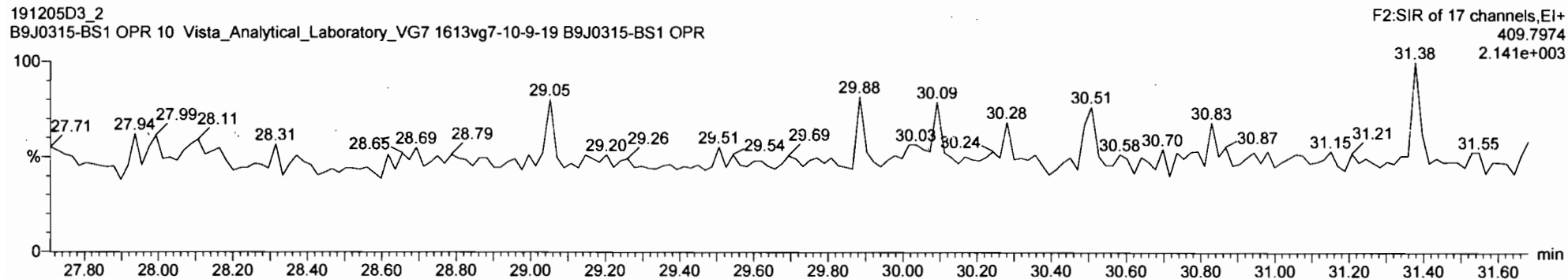
Total Penta-Furans

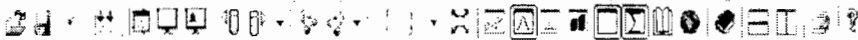


13C-1,2,3,7,8-PeCDF



DPE2

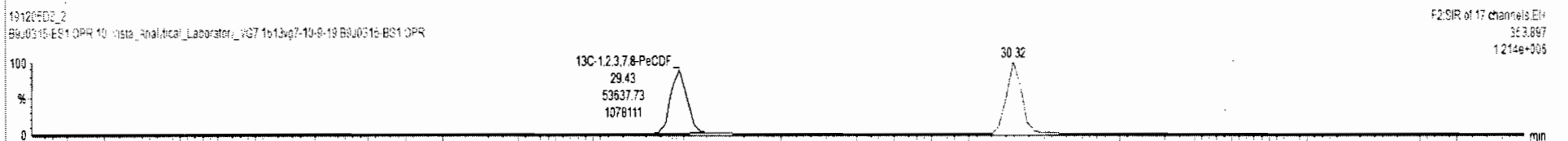
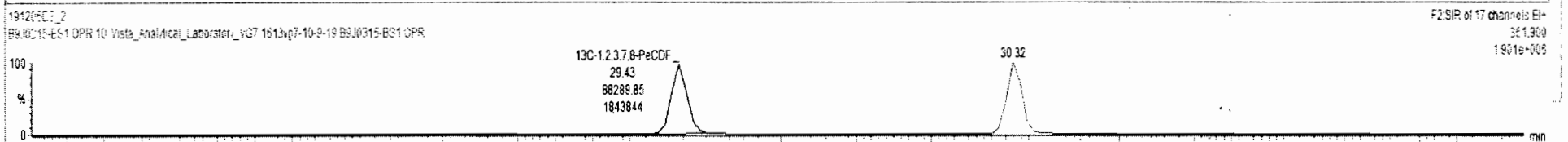
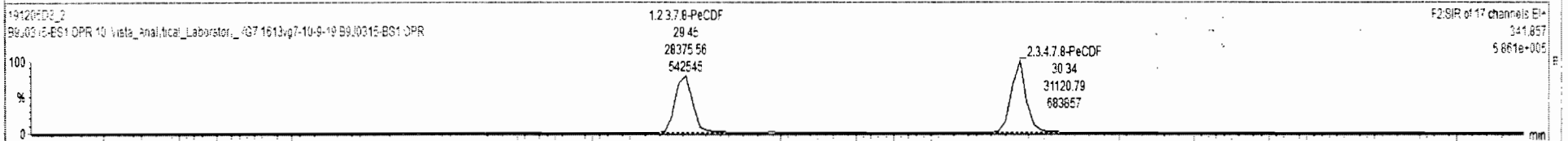




191205D3\_2 - B9J0315-BS1 OPR - B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	S Resp	IS#	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
35	35 37C-2,3,7,8-TCDD	4.22e4	9.76e4	36			1.198	10.960	26.09	26.10	1.023	1.022	NO	72.18	96.2	0.212	
36	36 13C-1,2,3,4-TCDD	9.76e4	9.76e4	36	0.81	NO	1.000	10.960	25.50	25.52	1.000	1.000	NO	200.0	100	0.643	
37	37 13C-1,2,3,4-TCDF	1.72e5	1.72e5	37	0.61	NO	1.000	10.960	24.06	24.09	1.000	1.000	NO	200.0	100	0.506	
38	38 13C-1,2,3,4,6,8-HxCDF	1.11e5	1.11e5	38	0.51	NO	1.000	10.960	33.42	33.42	1.000	1.000	NO	200.0	100	1.05	
39	39 Total Tetra-Dioxins	9.94e4					0.901	10.960	25.50			0.000	NO	22.35		0.212	22.35
40	40 Total Penta-Dioxins	8.88e4					0.872	10.960	30.00			0.000	NO	112.2		0.399	112.2
41	41 Total Hexa-Dioxins	0.96e0					0.975	10.960	33.80			0.000	NO	326.1		0.578	326.1
42	42 Total Hepta-Dioxins	6.45e4					0.989	10.960	37.75			0.000	NO	105.1		0.608	105.1
43	43 Total Tetra-Furans	1.89e5					0.943	10.960	24.00			0.000	NO	18.86		0.184	18.86
44	44 1st Func. Penta-Furans	0.06e0					0.940	10.960	27.63			0.000	NO			0.0425	
45	45 Total Dioxins/Furans	0.00e0					0.940	10.960	30.00			0.000	NO	217.7		0.447	217.7

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	9 1,2,3,7,8-PeCDF	29.45	29.45	4.545e4	2.838e4	1.550	1.60	NO	106.32	108.32
2	10 2,3,4,7,8-PeCDF	30.35	30.34	4.805e4	3.112e4	1.550	1.54	NO	108.88	108.88





Vista Analytical Laboratory

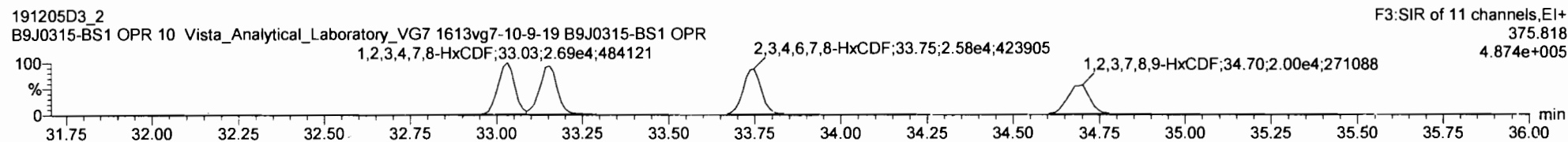
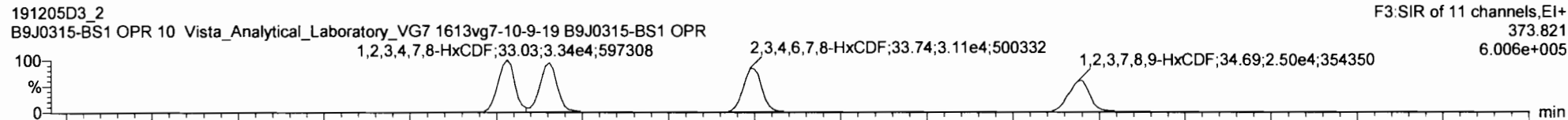
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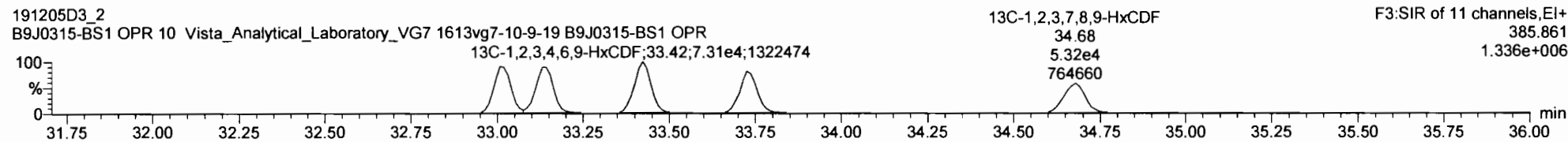
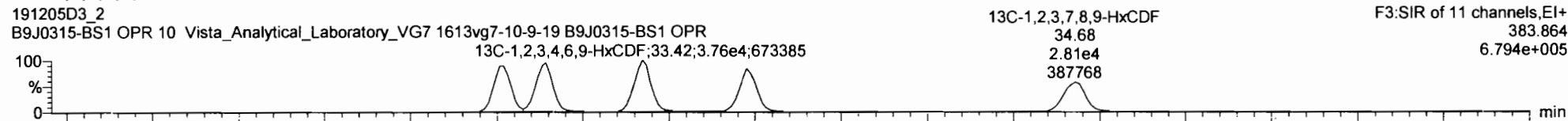
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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

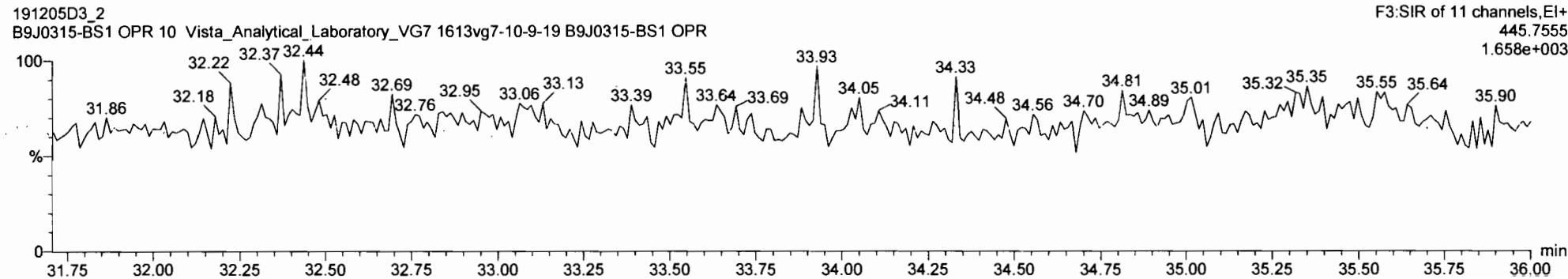
Total Hexa-Furans



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



DPE3



Vista Analytical Laboratory

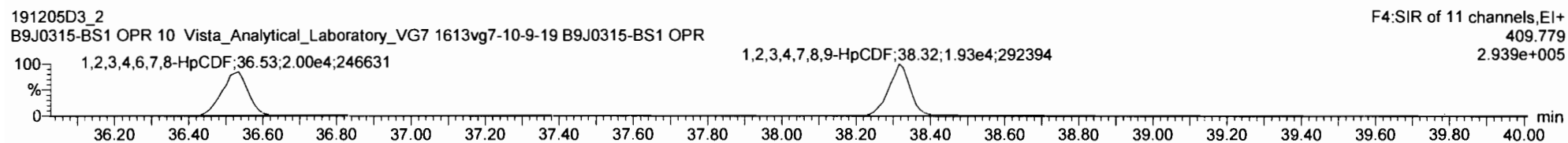
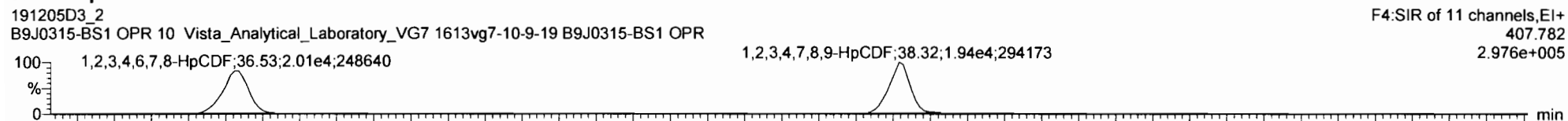
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Last Altered: Tuesday, December 10, 2019 14:44:25 Pacific Standard Time

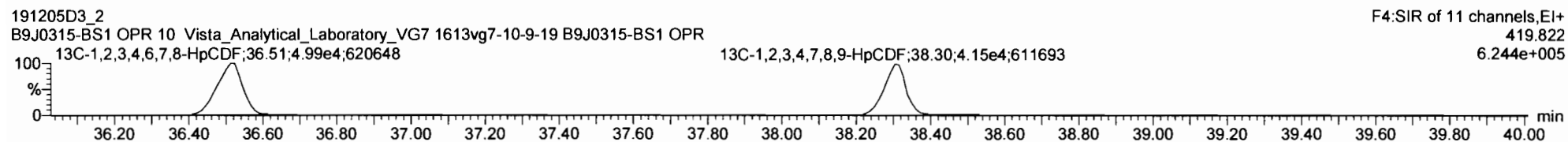
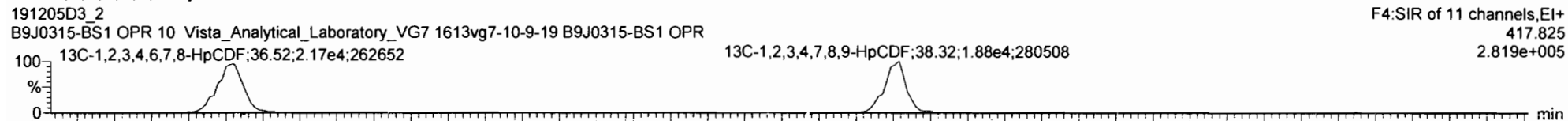
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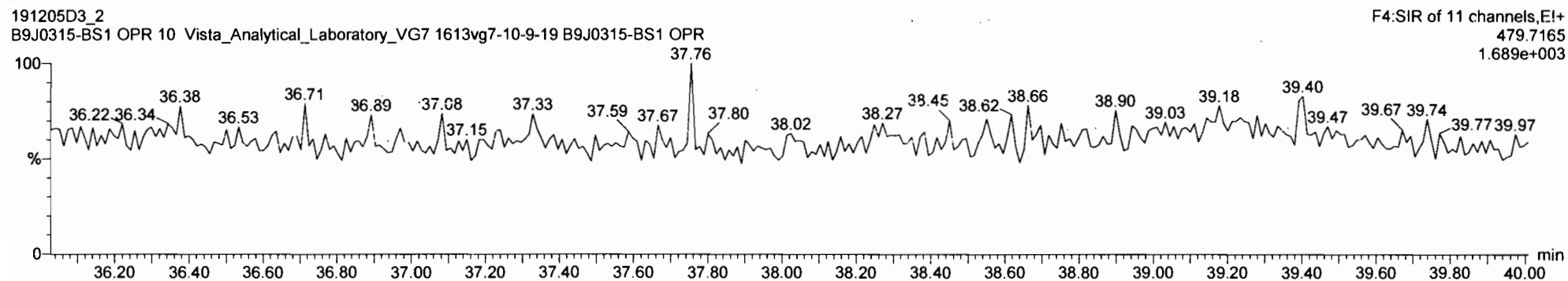
Total Hepta-Furans



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



DPE4



Vista Analytical Laboratory

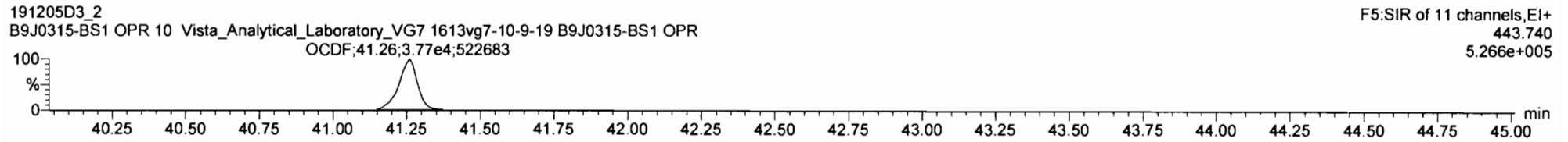
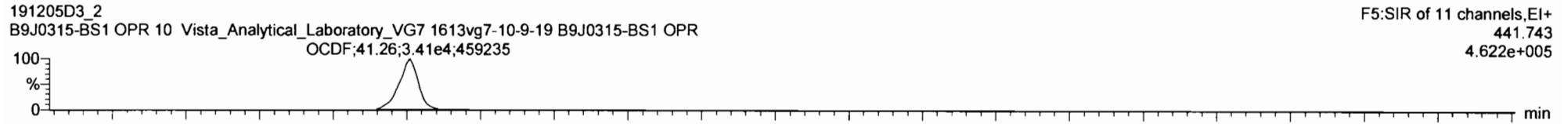
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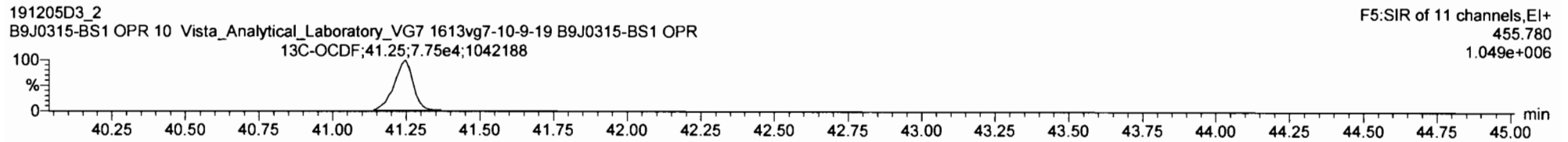
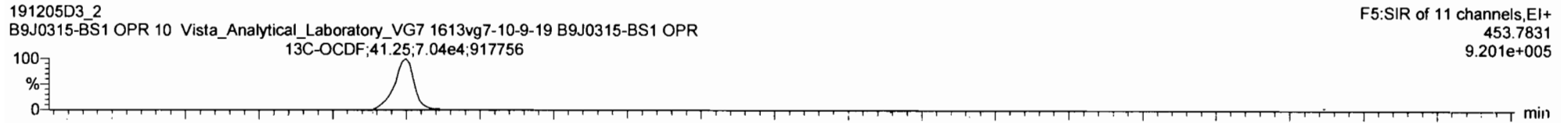
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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

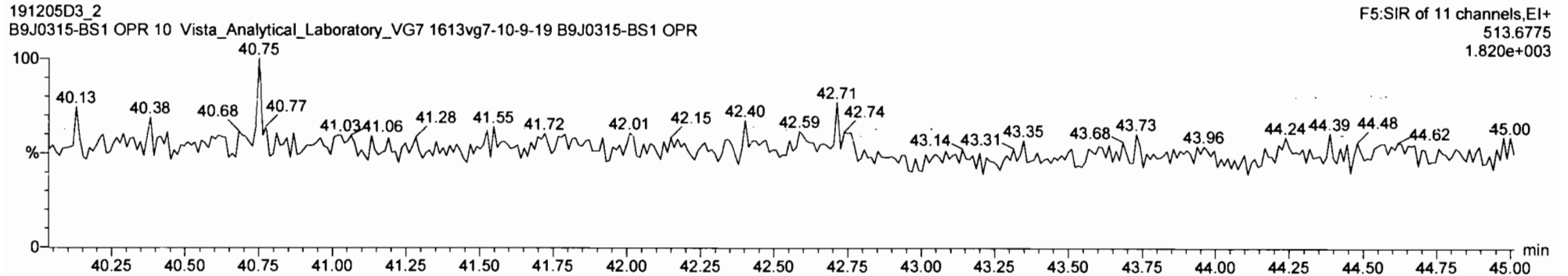
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

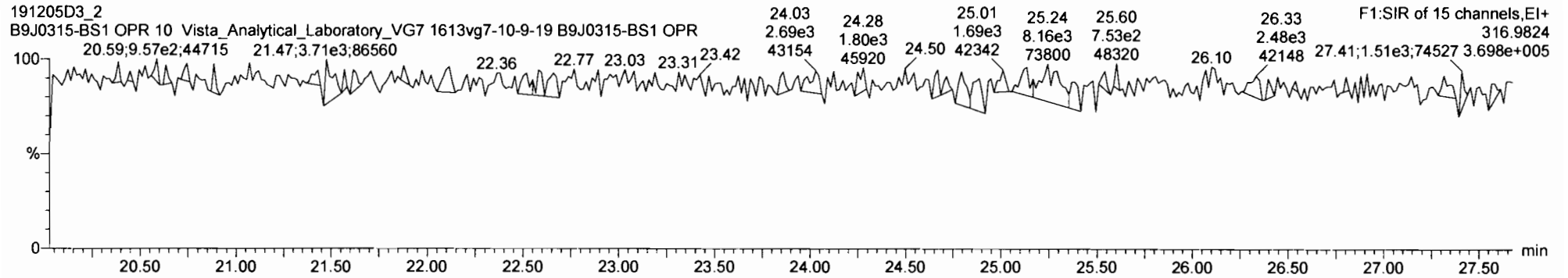
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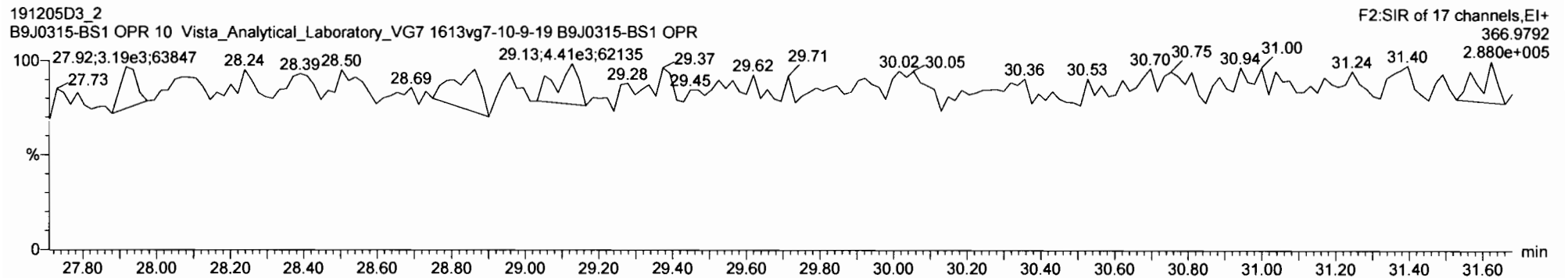
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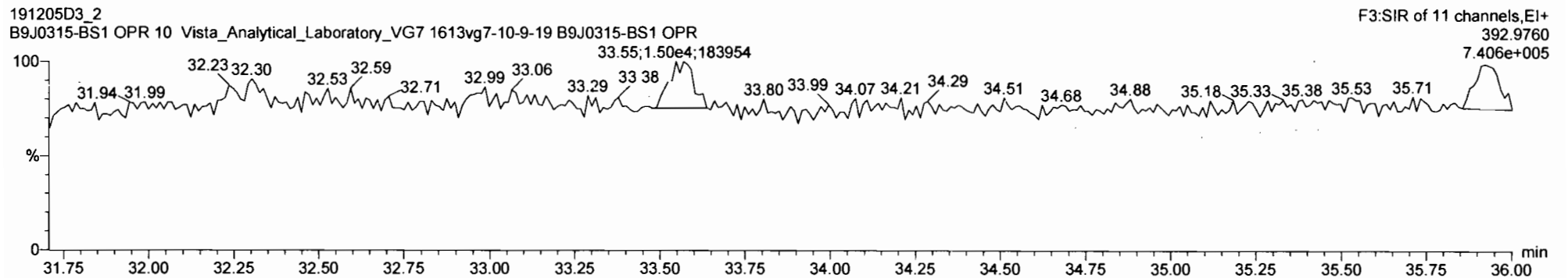
PFK1



PFK2



PFK3



Vista Analytical Laboratory

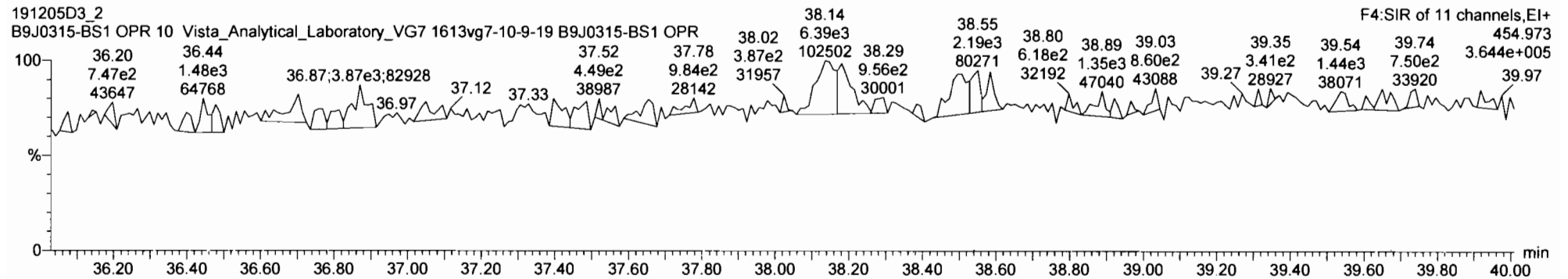
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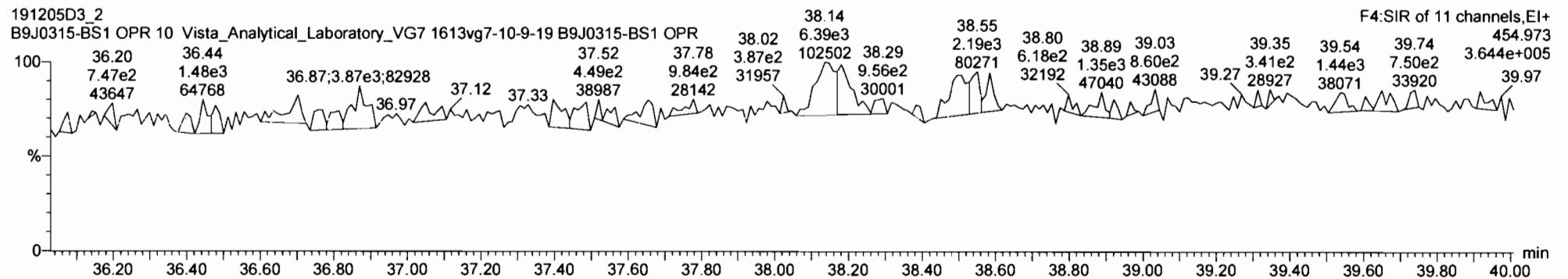
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Description: B9J0315-BS1 OPR 10 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4



PFK5



Quantify Sample Summary Report

MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-12.qld

Last Altered: Wednesday, December 11, 2019 08:20:47 Pacific Standard Time

Printed: Wednesday, December 11, 2019 08:29:33 Pacific Standard Time

EL 12/11/19

CT 12/12/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 10 Dec 2019 16:21:14

Calibration: 10 Dec 2019 16:20:20

Name: 191205D3\_12, Date: 7-DEC-2019, Time: 02:40:25, ID: 1903646-01 PDI-016SC-A-14-15-191009,

Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_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	2,3,7,8-TCDD		1.02e5	10.1971	0.905			1.001		26.11					0.210
2	1,2,3,7,8-PeCDD		9.12e4	10.1971	0.903			1.001		30.62					0.183
3	1,2,3,4,7,8-HxCDD		7.11e4	10.1971	1.101			1.000		33.90					0.380
4	1,2,3,6,7,8-HxCDD		7.74e4	10.1971	0.939			1.000		34.01					0.392
5	1,2,3,7,8,9-HxCDD		7.77e4	10.1971	0.961			1.001		34.34					0.439
6	1,2,3,4,6,7,8-HpCDD	3.62e2	6.81e4	10.1971	0.979	0.998	NO	1.000	1.000	37.78	37.77	1.0665		1.07	0.469
7	OCDD	2.31e3	1.28e5	10.1971	0.959	0.947	NO	1.000	1.001	41.02	41.04	7.3569		7.36	0.370
8	2,3,7,8-TCDF		1.78e5	10.1971	0.950			1.001		25.31					0.136
9	1,2,3,7,8-PeCDF		1.52e5	10.1971	0.960			1.001		29.45					0.107
10	2,3,4,7,8-PeCDF		1.43e5	10.1971	1.015			1.001		30.35					0.111
11	1,2,3,4,7,8-HxCDF		1.09e5	10.1971	1.177			1.000		33.01					0.122
12	1,2,3,6,7,8-HxCDF		1.10e5	10.1971	1.069			1.000		33.15					0.140
13	2,3,4,6,7,8-HxCDF		9.99e4	10.1971	1.114			1.001		33.77					0.140
14	1,2,3,7,8,9-HxCDF		8.90e4	10.1971	1.062			1.000		34.68					0.204
15	1,2,3,4,6,7,8-HpCDF		7.71e4	10.1971	1.128			1.001		36.55					0.304
16	1,2,3,4,7,8,9-HpCDF		6.82e4	10.1971	1.280			1.000		38.30					0.267
17	OCDF		1.62e5	10.1971	0.947			1.000		41.24					0.238
18	13C-2,3,7,8-TCDD	1.02e5	1.06e5	10.1971	1.095	0.782	NO	1.021	1.022	26.06	26.08	172.81	88.1		0.472
19	13C-1,2,3,7,8-PeCDD	9.12e4	1.06e5	10.1971	0.881	0.640	NO	1.187	1.199	30.29	30.60	191.73	97.8		0.350
20	13C-1,2,3,4,7,8-Hx...	7.11e4	1.25e5	10.1971	0.642	1.273	NO	1.014	1.014	33.89	33.89	174.26	88.8		0.807
21	13C-1,2,3,6,7,8-Hx...	7.74e4	1.25e5	10.1971	0.856	1.250	NO	1.017	1.017	34.00	34.01	142.48	72.6		0.605
22	13C-1,2,3,7,8,9-Hx...	7.77e4	1.25e5	10.1971	0.807	1.266	NO	1.026	1.026	34.30	34.31	151.69	77.3		0.642
23	13C-1,2,3,4,6,7,8-H...	6.81e4	1.25e5	10.1971	0.654	1.045	NO	1.126	1.130	37.64	37.77	163.91	83.6		1.17
24	13C-OCDD	1.28e5	1.25e5	10.1971	0.580	0.894	NO	1.226	1.227	40.98	41.02	348.64	88.9		0.855
25	13C-2,3,7,8-TCDF	1.78e5	1.77e5	10.1971	1.035	0.789	NO	0.992	0.991	25.31	25.29	190.25	97.0		0.613
26	13C-1,2,3,7,8-PeCDF	1.52e5	1.77e5	10.1971	0.854	1.595	NO	1.154	1.153	29.45	29.43	196.80	100.3		1.02
27	13C-2,3,4,7,8-PeCDF	1.43e5	1.77e5	10.1971	0.847	1.594	NO	1.189	1.188	30.35	30.32	187.39	95.5		1.03
28	13C-1,2,3,4,7,8-Hx...	1.09e5	1.25e5	10.1971	0.832	0.523	NO	0.987	0.988	33.00	33.01	205.53	104.8		1.16
29	13C-1,2,3,6,7,8-Hx...	1.10e5	1.25e5	10.1971	1.034	0.498	NO	0.991	0.992	33.12	33.14	166.96	85.1		0.935
30	13C-2,3,4,6,7,8-Hx...	9.99e4	1.25e5	10.1971	0.953	0.515	NO	1.009	1.009	33.73	33.74	164.99	84.1		1.01
31	13C-1,2,3,7,8,9-Hx...	8.90e4	1.25e5	10.1971	0.828	0.506	NO	1.039	1.038	34.72	34.68	169.36	86.4		1.17

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-12.qld

Last Altered: Wednesday, December 11, 2019 08:20:47 Pacific Standard Time

Printed: Wednesday, December 11, 2019 08:29:33 Pacific Standard Time

Name: 191205D3\_12, Date: 7-DEC-2019, Time: 02:40:25, ID: 1903646-01 PDI-016SC-A-14-15-191009,  
 Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_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...	7.71e4	1.25e5	10.1971	0.757	0.443	NO	1.093	1.092	36.52	36.51	160.19	81.7		1.14
33	33 13C-1,2,3,4,7,8,9-H...	6.82e4	1.25e5	10.1971	0.581	0.437	NO	1.143	1.146	38.21	38.30	184.67	94.2		1.49
34	34 13C-OCDF	1.62e5	1.25e5	10.1971	0.689	0.869	NO	1.233	1.234	41.22	41.24	369.24	94.1		0.625
35	35 37Cl-2,3,7,8-TCDD	4.66e4	1.06e5	10.1971	1.198			1.022	1.023	26.08	26.10	72.030	91.8		0.163
36	36 13C-1,2,3,4-TCDD	1.06e5	1.06e5	10.1971	1.000	0.808	NO	1.000	1.000	25.50	25.52	196.13	100.0		0.517
37	37 13C-1,2,3,4-TCDF	1.77e5	1.77e5	10.1971	1.000	0.786	NO	1.000	1.000	24.06	24.09	196.13	100.0		0.634
38	38 13C-1,2,3,4,6,9-Hx...	1.25e5	1.25e5	10.1971	1.000	0.516	NO	1.000	1.000	33.42	33.42	196.13	100.0		0.968
39	39 Total Tetra-Dioxins		1.02e5	10.1971	0.901			0.000		25.50		0.40899		0.409	0.211
40	40 Total Penta-Dioxins		9.12e4	10.1971	0.872			0.000		30.00					0.0880
41	41 Total Hexa-Dioxins		0.00e0	10.1971	0.976			0.000		33.80		1.0493		1.05	0.412
42	42 Total Hepta-Dioxins		6.81e4	10.1971	0.989			0.000		37.75		2.7750		2.77	0.465
43	43 Total Tetra-Furans		1.78e5	10.1971	0.943			0.000		24.00					0.0604
44	44 1st Func. Penta-Fur...		0.00e0	10.1971	0.940			0.000		27.63					0.0338
45	45 Total Penta-Furans		0.00e0	10.1971	0.940			0.000		30.00					0.0459
46	46 Total Hexa-Furans		0.00e0	10.1971	1.078			0.000		33.00					0.0789
47	47 Total Hepta-Furans		0.00e0	10.1971	1.135			0.000		37.75					0.141

**Quantify Totals Report MassLynx MassLynx V4.1 SCN 945**

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-12.qld

Last Altered: Wednesday, December 11, 2019 08:20:47 Pacific Standard Time

Printed: Wednesday, December 11, 2019 08:29:33 Pacific Standard Time

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Calibration: 10 Dec 2019 16:20:20

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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_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	NO	24.18	85.505	44847.164	3.757	MM	0.4090	0.41

**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	32.38	219.717	42068.663	10.442	MM	1.0493	1.05

**Hepta-Dioxins**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
6	1,2,3,4,6,7,8-HpCDD	NO	37.77	181.056	34785.504	10.651	MM	1.0665	1.07
42	Total Hepta-Dioxins	NO	36.91	276.691	34785.504	17.226	MM	1.7086	1.71

**Tetra-Furans**

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

**Penta-Furans function 1**

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



**Quantify Totals Report MassLynx MassLynx V4.1 SCN 945**

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-12.qld

Last Altered: Wednesday, December 11, 2019 08:20:47 Pacific Standard Time

Printed: Wednesday, December 11, 2019 08:29:33 Pacific Standard Time

Name: 191205D3\_12, Date: 7-DEC-2019, Time: 02:40:25, ID: 1903646-01 PDI-016SC-A-14-15-191009,  
Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_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										

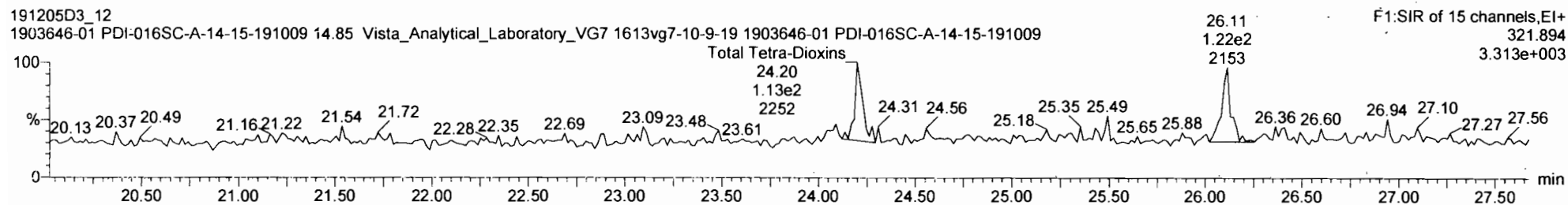
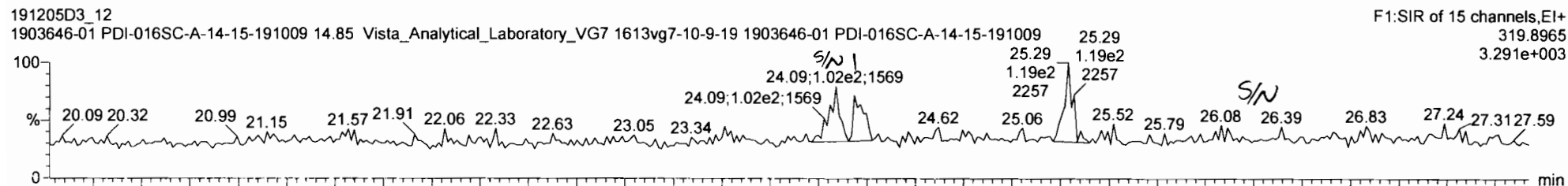
**Hepta-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary	Flags	Conc.	EMPC
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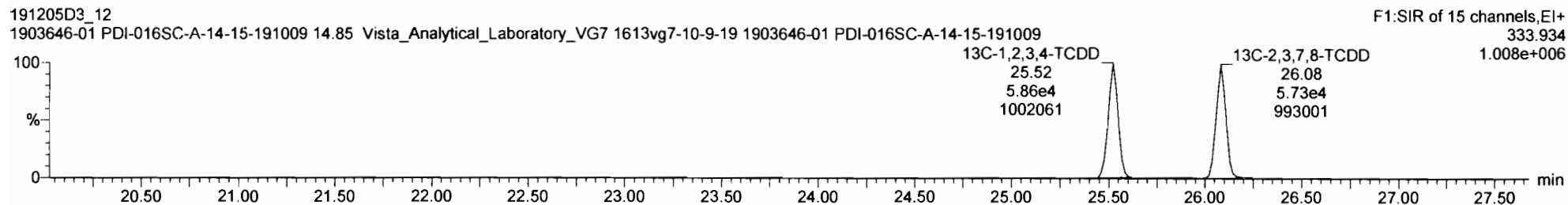
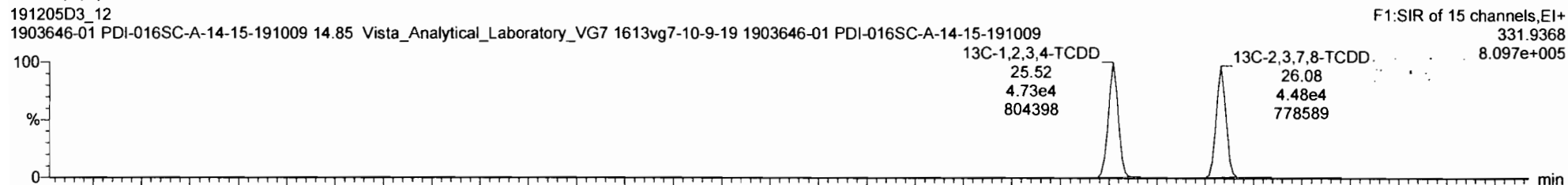
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 Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Total Tetra-Dioxins**

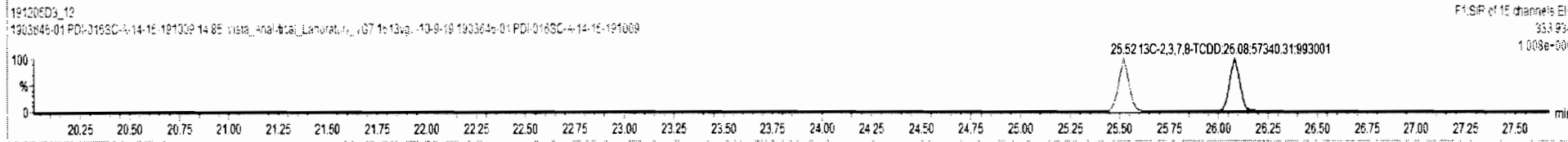
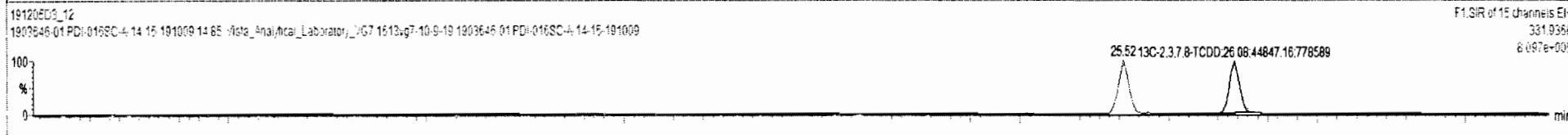
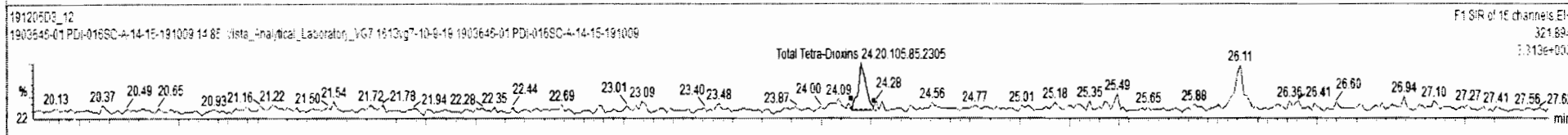
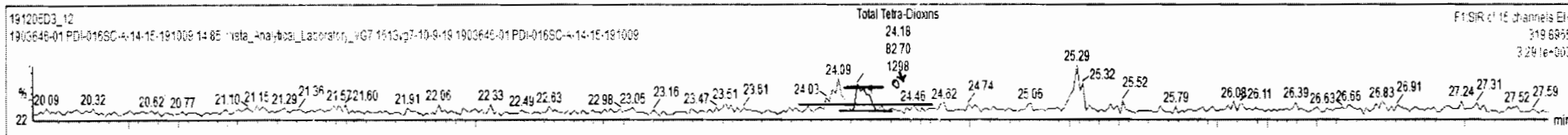


**13C-2,3,7,8-TCDD**



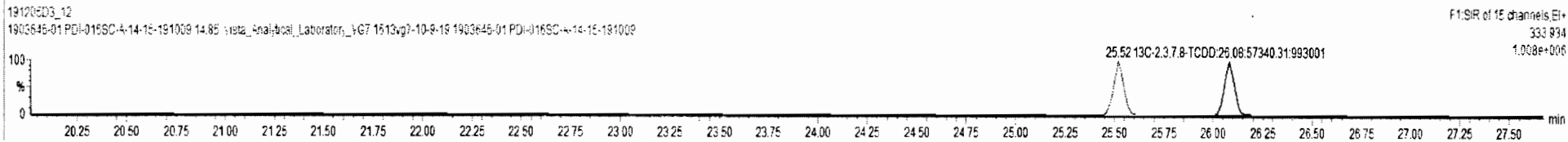
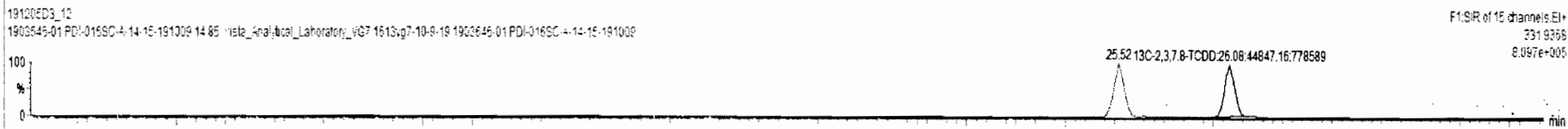
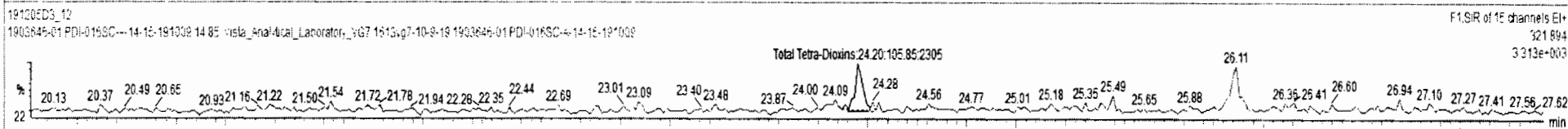
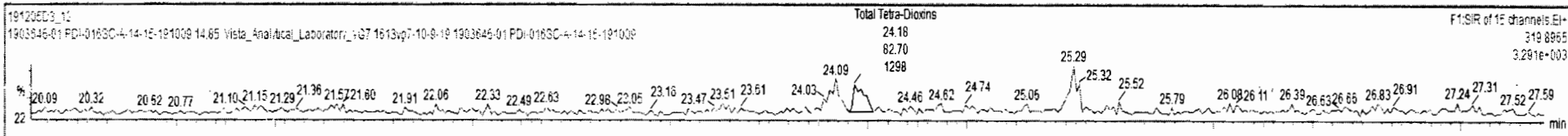
#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
39	39 Total Tetra-Dioxins		1.02e5				0.901	10.197	25.50			0.000	NO	0.4017		0.211	0.4017
40	40 Total Penta-Dioxins		9.12e4				0.872	10.197	30.00			0.000	NO	0.0000		0.0830	0.6374
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.197	33.80			0.000	NO	0.0000		0.236	0.3420
42	42 Total Hepta-Dioxins		6.81e4				0.989	10.197	37.75			0.000	NO	1.046		0.465	2.226
43	43 Total Tetra-Furans		1.76e5				0.943	10.197	24.00			0.000	NO			0.0604	
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.197	27.83			0.000	NO			0.0338	
45	45 Total Penta-Furans		0.00e0				0.940	10.197	30.00			0.000	NO			0.0459	
46	46 Total Hexa-Furans		0.00e0				1.078	10.197	33.00			0.000	NO			0.0789	
47	47 Total Hepta-Furans		0.00e0				1.135	10.197	37.75			0.000	NO			0.141	
48	48 PFK1																
49	49 PFK2																
50	50 PFK3																
51	51 PFK4																
52	52 PFK5																
53	53 DPE1																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	24.18	8.210e1	1.059e2	0.770	0.78	NO	0.40170	0.40170



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
39	39 Total Tetra-Dioxins		1.02e5				0.901	10.197	25.50			0.000	NO	0.4017		0.211	0.4017
40	40 Total Penta-Dioxins		9.12e4				0.872	10.197	30.00			0.000	NO	0.0000		0.0880	0.6374
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.197	33.80			0.000	NO	0.0000		0.236	0.3426
42	42 Total Hepta-Dioxins		6.81e4				0.989	10.197	37.75			0.000	NO	1.046		0.425	2.226
43	43 Total Tetra-Furans		1.78e5				0.943	10.197	24.00			0.000	NO			0.0604	
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.197	27.63			0.000	NO			0.0338	
45	45 Total Penta-Furans		0.00e0				0.940	10.197	30.00			0.000	NO			0.0459	
46	46 Total Hexa-Furans		0.00e0				1.078	10.197	33.00			0.000	NO			0.0789	
47	47 Total Hepta-Furans		0.00e0				1.135	10.197	37.75			0.000	NO			0.141	
48	48 PFK1																
49	49 PFK2																
50	50 PFK3																
51	51 PFK4																
52	52 PFK5																
53	53 DPE1																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	24.18	8.270e1	1.058e2	0.770	0.78	NO	0.40170	0.40170



Vista Analytical Laboratory

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Printed: Wednesday, December 11, 2019 08:09:01 Pacific Standard Time

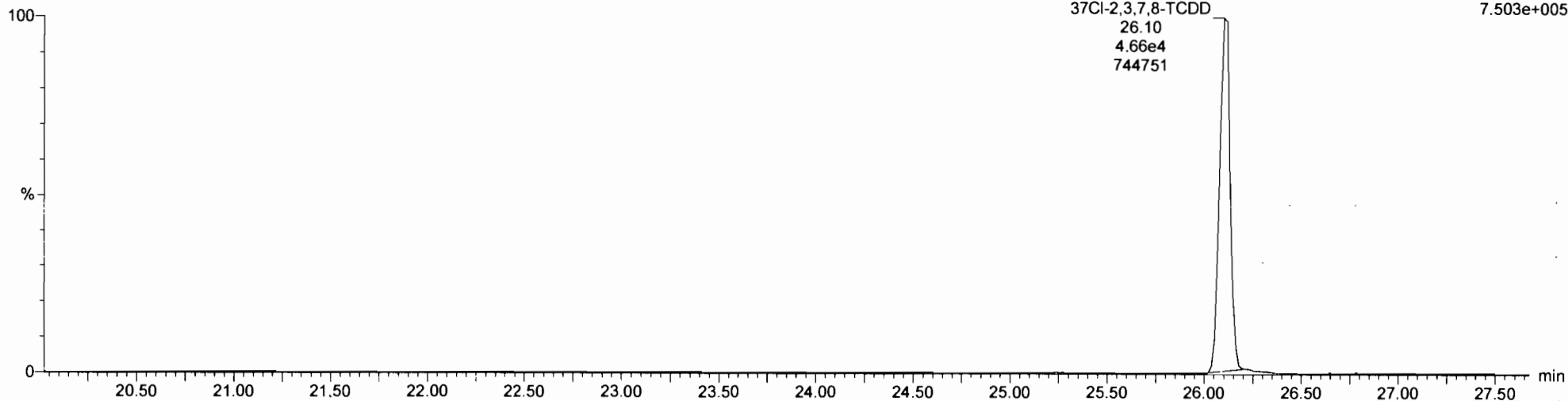
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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

191205D3\_12

1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-01 PDI-016SC-A-14-15-191009

F1:SIR of 15 channels,EI+  
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7.503e+005

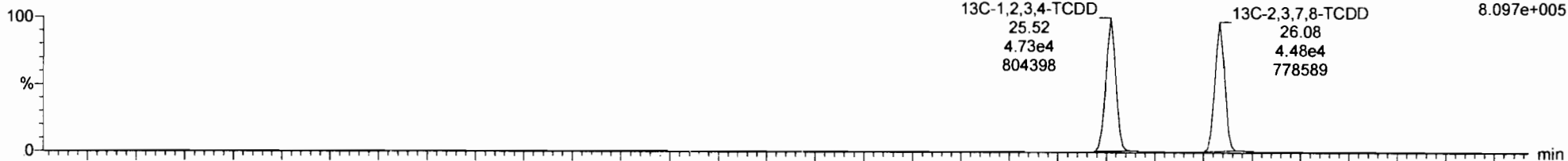


**13C-1,2,3,4-TCDD**

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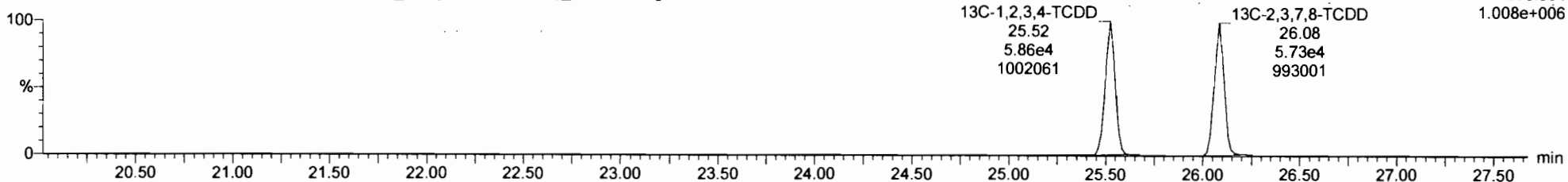
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F1:SIR of 15 channels,EI+  
333.934  
1.008e+006



Vista Analytical Laboratory

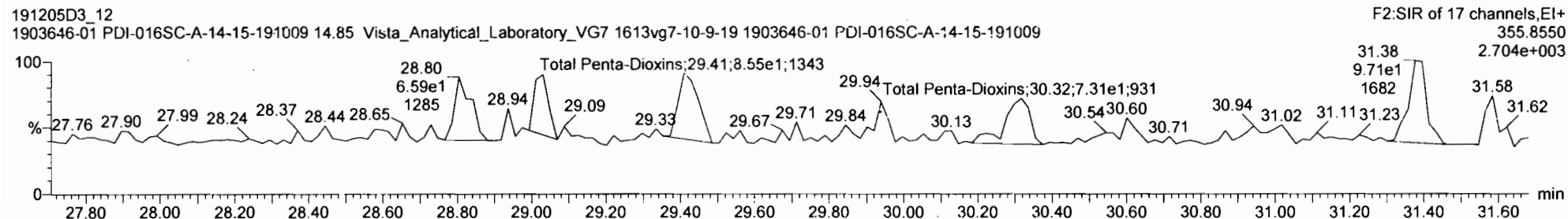
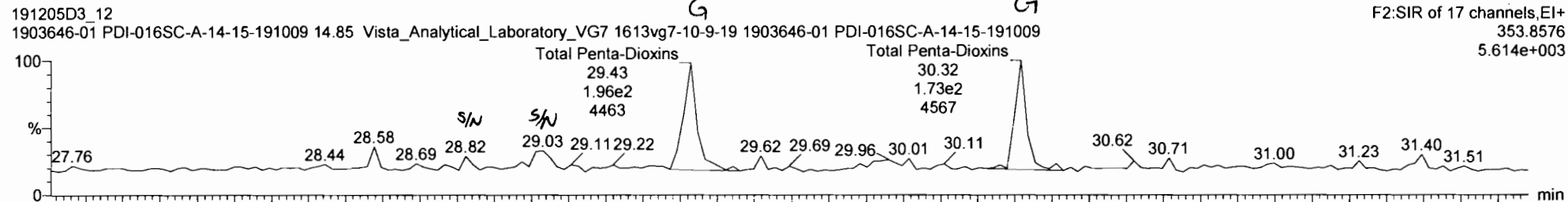
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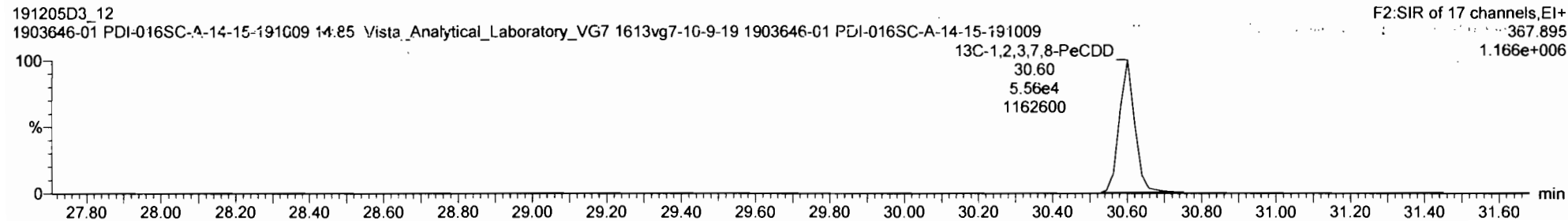
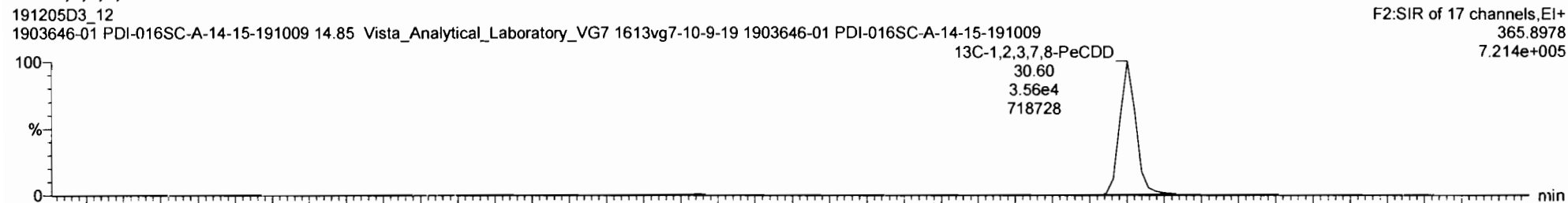
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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Penta-Dioxins



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



Vista Analytical Laboratory

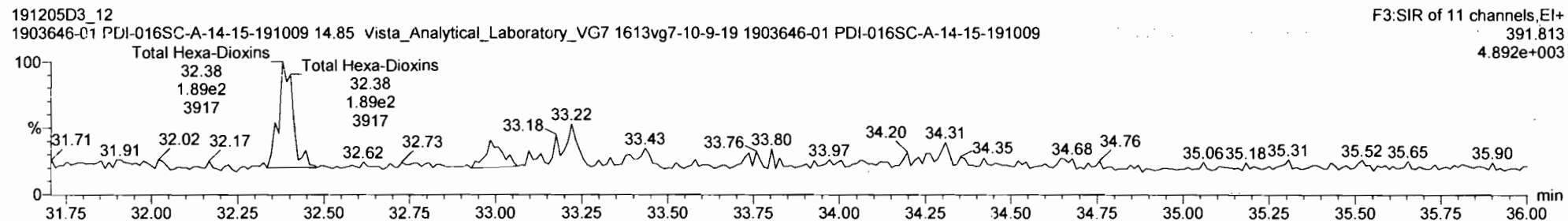
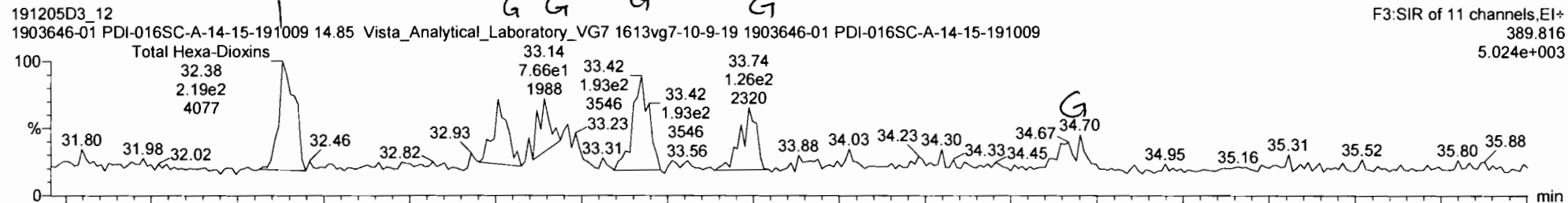
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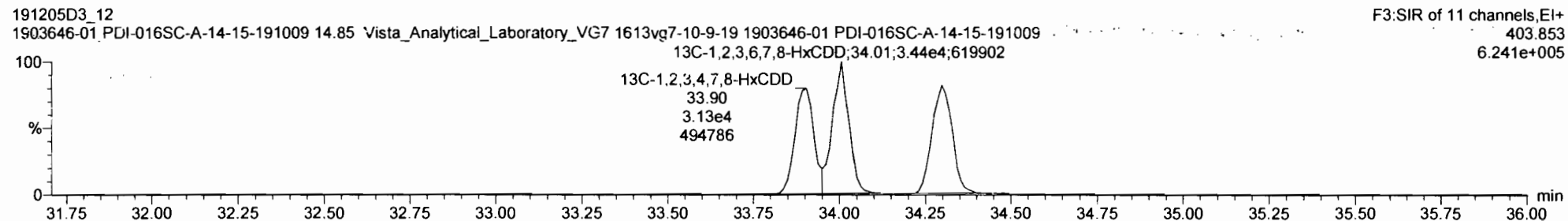
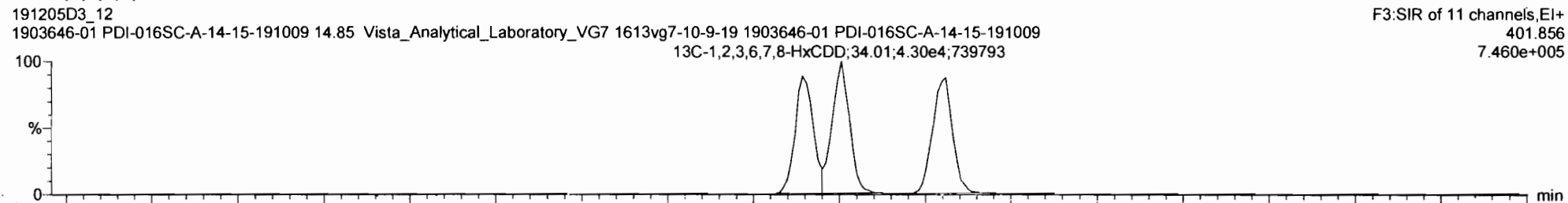
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Total Hexa-Dioxins



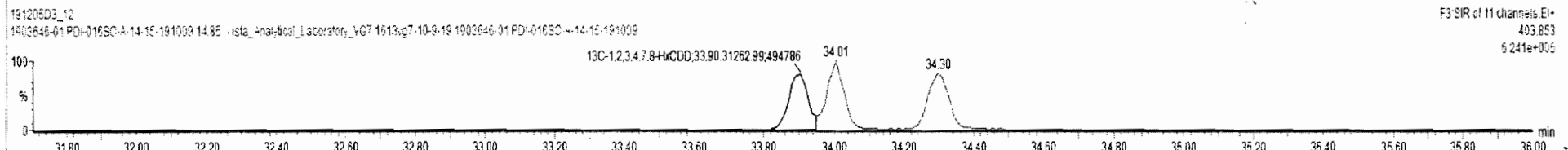
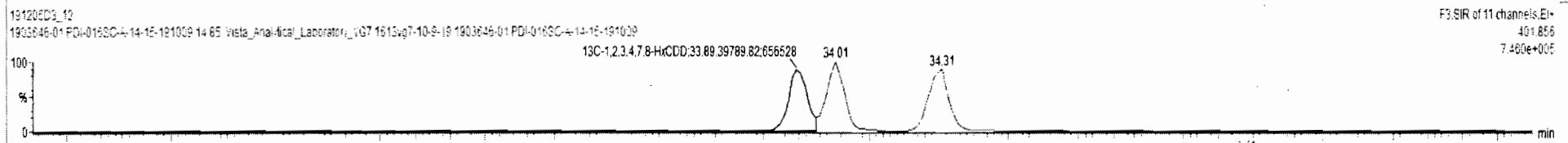
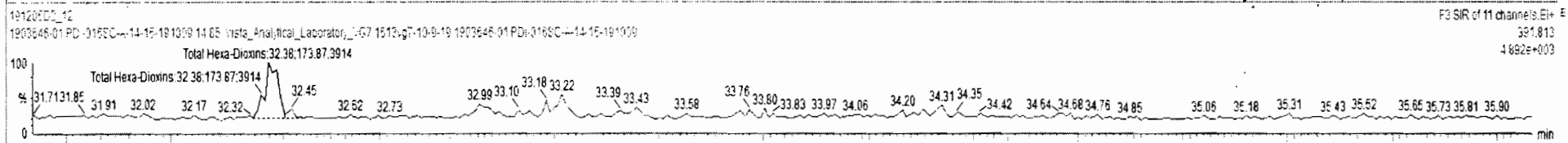
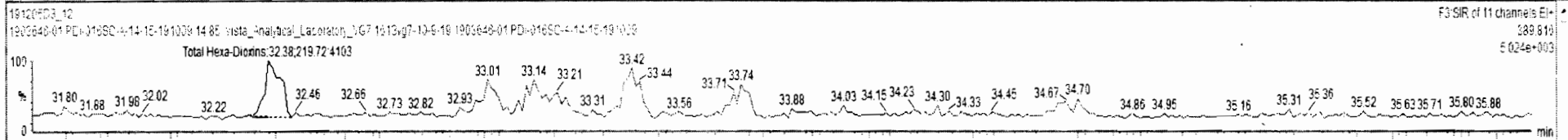
13C-1,2,3,4,7,8-HxCDD



191205D3\_12 - 1903646-01 PDI-016SC-A-14-15-191009 - 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Name	Resp	RA	n/y	RRF	wVol	RT	RRT	Conc.	%Rec	DL	EMPC
34 13C-OCDF	1.62e5	0.87	NO		10.197	41.24	1.234	369	94.1	0.62E	
35 37Cl-2,3,7,8-TCDD	4.86e4				10.197	26.10	1.023	72.0	91.8	0.163	
36 13C-1,2,3,4-TCDD	1.06e5	0.81	NO		10.197	25.52	1.000	196	100	0.517	
37 13C-1,2,3,4-TCDF	1.77e5	0.79	NO		10.197	24.09	1.000	196	100	0.634	
38 13C-1,2,3,4,6,9-HxCDF	1.25e5	0.52	NO		10.197	33.42	1.000	196	100	0.968	
39 Total Tetra-Dioxins					10.197			0.409		0.211	0.409
40 Total Penta-Dioxins					10.197					0.3680	
41 Total Hexa-Dioxins					10.197			1.05		0.412	1.05
42 Total Hepta-Dioxins					10.197			2.78		0.465	2.78
43 Total Tetra-Furans					10.197					0.0694	
44 1st Func. Penta-Furans					10.197					0.0338	
45 Total Penta-Furans					10.197					0.0459	
46 Total Hexa-Furans					10.197					0.0796	

Name	RT	m1 Resp	m2 Resp	RA	n/y	EMPC	Conc.
1 Total Hexa-Dioxins	32.36	2.197e2	1.739e2	1.2E	NO	1.0493	1.0493





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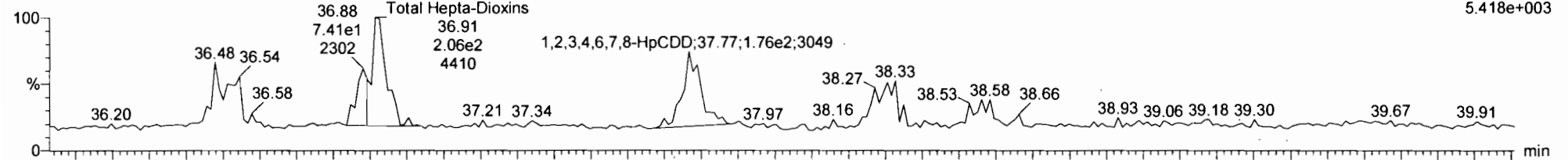
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Total Hepta-Dioxins

191205D3\_12

1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-01 PDI-016SC-A-14-15-191009

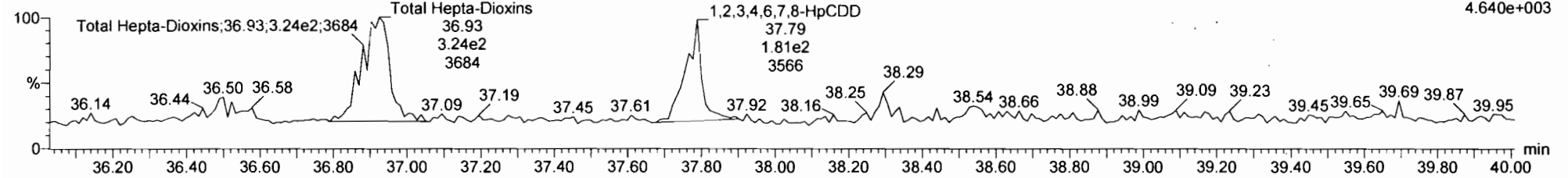
F4:SIR of 11 channels,EI+  
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5.418e+003



191205D3\_12

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F4:SIR of 11 channels,EI+  
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4.640e+003

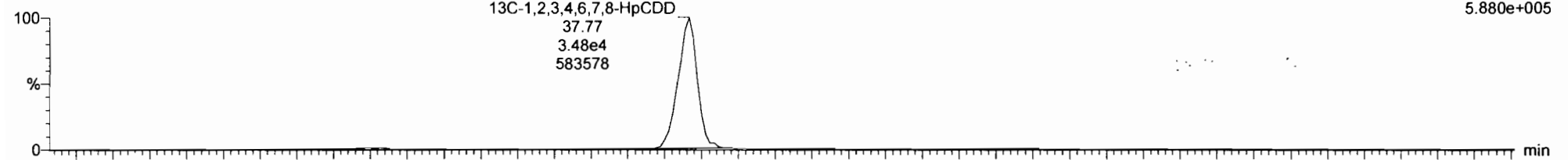


13C-1,2,3,4,6,7,8-HpCDD

191205D3\_12

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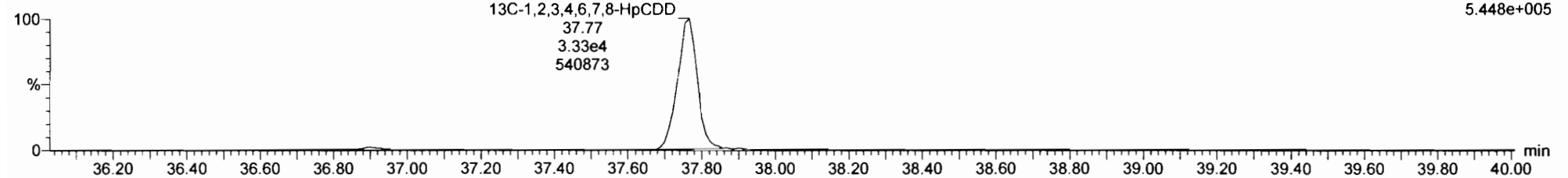
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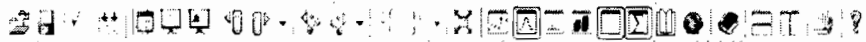


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437.814  
5.448e+005

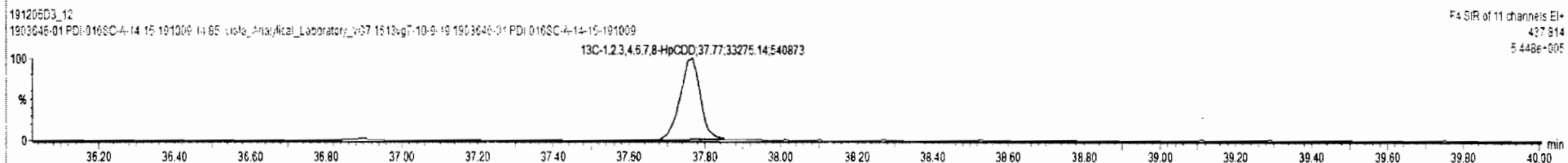
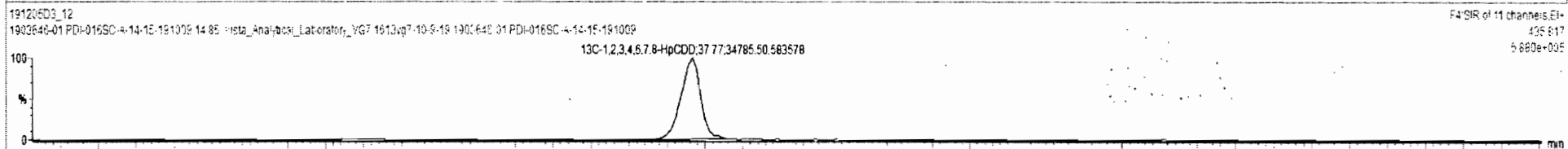
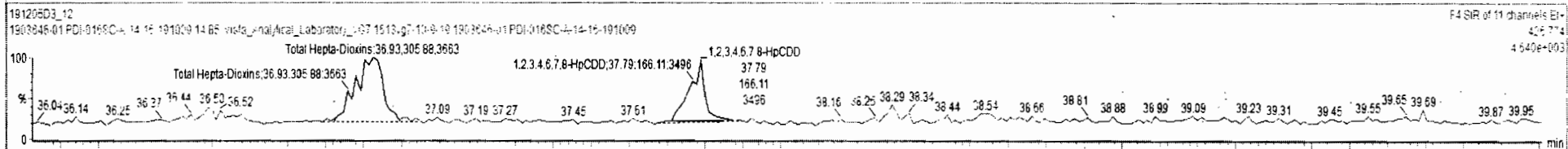
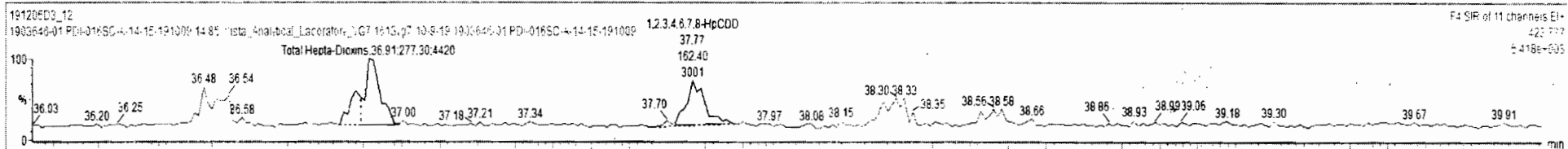




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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wtVol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
38	38 13C-1,2,3,4,6,8-HxCDF	1.25e5	1.25e5	38	0.52	NO	1.600	10.197	33.42	33.42	1.000	1.000	NO	196.1	100	0.968	
39	39 Total Tetra-Dioxins		1.02e5				0.901	10.197	25.50			0.000	NO	6.4050	0.211	0.4050	
40	40 Total Penta-Dioxins		9.12e4				0.872	10.197	30.00			0.000	NO		0.0880		
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.197	33.80			0.000	NO	1.069	0.412	1.069	
42	42 Total Hepta-Dioxins		6.81e4				0.908	10.197	37.75			0.000	NO	2.666	0.485	2.666	
43	43 Total Tetra-Furans		1.78e5				0.943	10.197	24.00			0.000	NO		0.604		
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.197	27.63			0.000	NO		0.0336		
45	45 Total Penta-Furans		0.00e0				0.940	10.197	30.00			0.000	NO		0.0459		
46	46 Total Hexa-Furans		0.00e0				1.078	10.197	33.00			0.000	NO		0.0726		
47	47 Total Hepta-Furans		0.00e0				1.125	10.197	37.75			0.000	NO		0.141		

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	36.91	2.773e2	3.059e2	1.040	0.91	NO	1.6998	1.6998
2	6 1,2,3,4,6,7,8-HpCDD	37.78	37.77	1.624e2	1.661e2	1.040	0.98	NO	0.96659	0.96659



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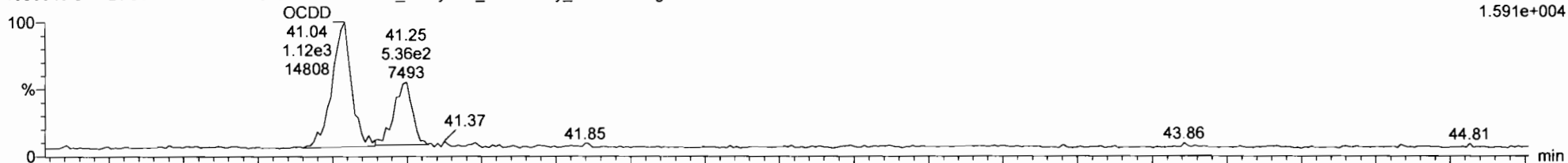
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OCDD

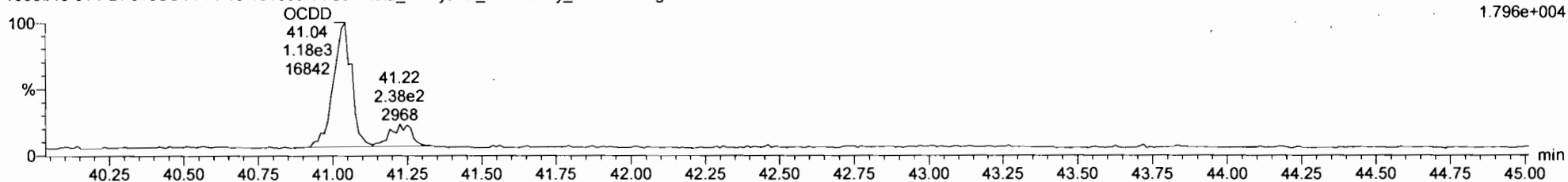
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F5:SIR of 11 channels,EI+  
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1.591e+004



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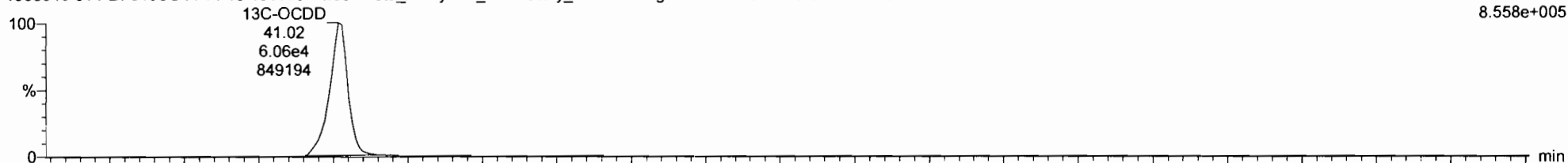
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13C-OCDD

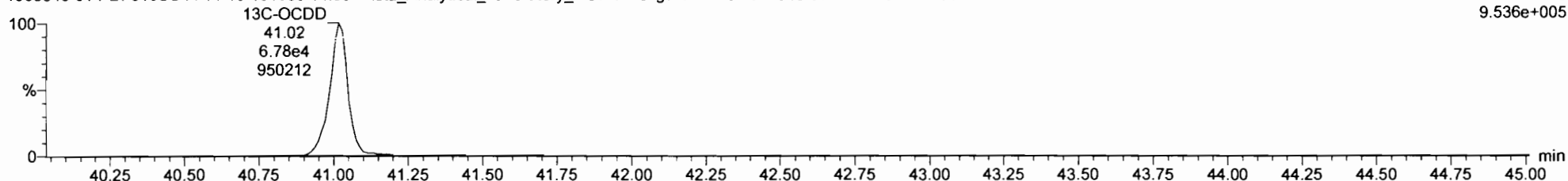
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469.778  
8.558e+005



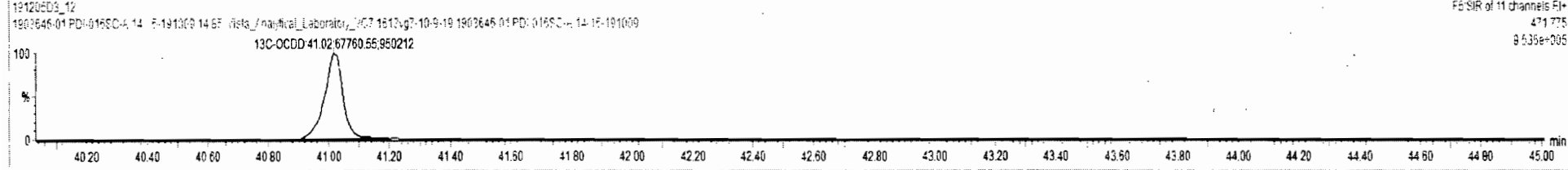
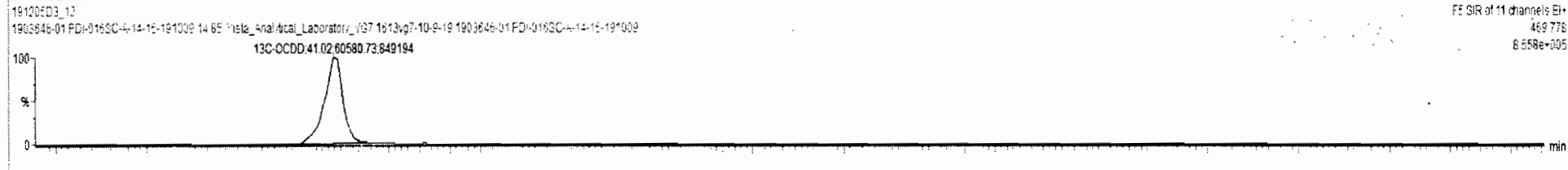
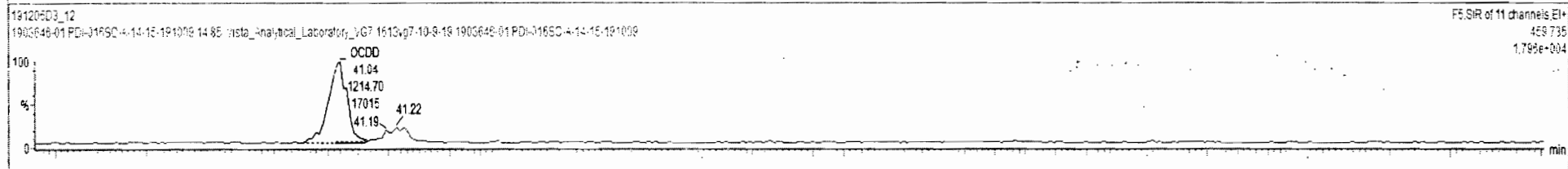
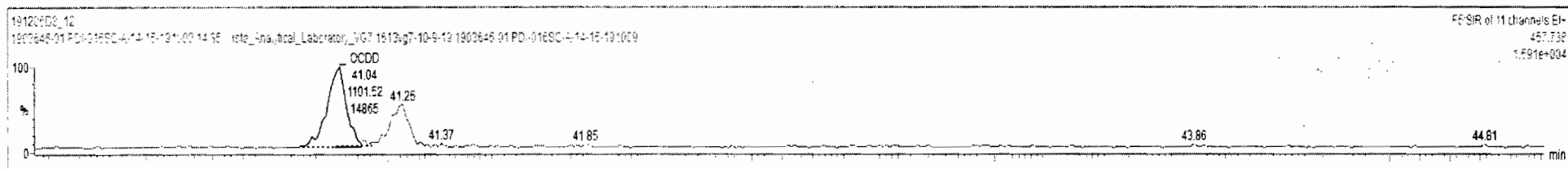
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F5:SIR of 11 channels,EI+  
471.775  
9.536e+005



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	w/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
5	1,2,3,7,8,9-HxCDD		7.77e4	22			0.961	10.197	34.34			1.001	NO			0.439	
6	1,2,3,4,6,7,8-HpCDD	3.29e2	6.61e4	23	0.96	NO	0.979	10.197	37.78	37.77	1.000	1.000	NO	0.9666		0.469	0.9666
7	OCDD	2.32e3	1.28e5	24	0.91	NO	0.959	10.197	41.02	41.04	1.001	1.000	NO	7.386		0.370	7.386
8	2,3,7,8-TCDF		1.76e5	25			0.950	10.197	25.31			1.001	NO			0.136	
9	1,2,3,7,8-PeCDF		1.52e5	26			0.960	10.197	29.45			1.001	NO			0.107	
10	2,3,4,7,8-PeCDF		1.43e5	27			1.015	10.197	30.95			1.001	NO			0.111	
11	1,2,3,4,7,8-HxCDF		1.09e5	28			1.177	10.197	33.01			1.000	NO			0.122	
12	1,2,3,6,7,8-HxCDF		1.10e5	29			1.069	10.197	33.15			1.000	NO			0.140	
13	2,3,4,6,7,8-HxCDF		9.96e4	30			1.114	10.197	33.77			1.001	NO			0.140	
14	1,2,3,7,8,9-HxCDF		8.96e4	31			1.062	10.197	34.68			1.000	NO			0.204	

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



Vista Analytical Laboratory

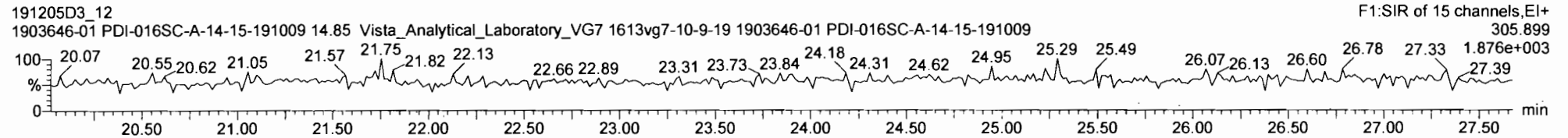
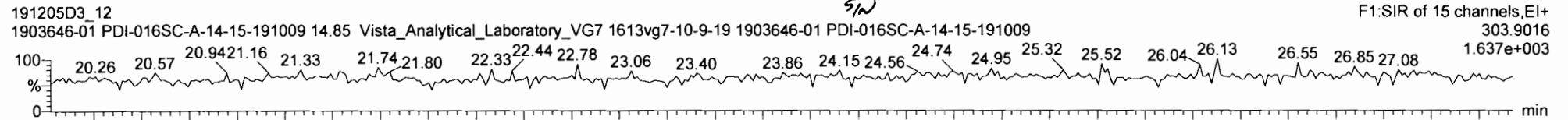
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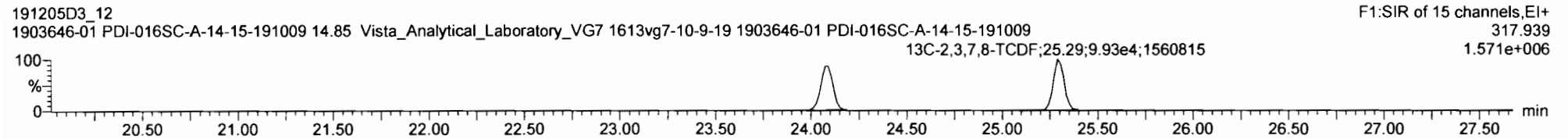
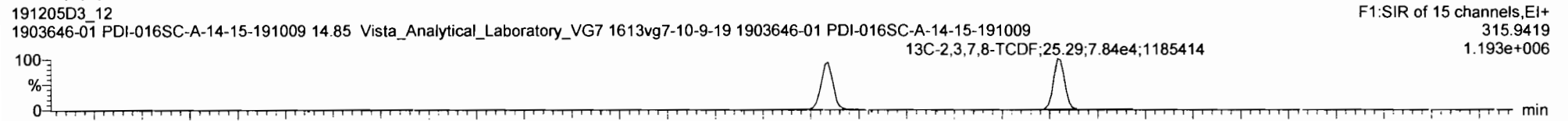
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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

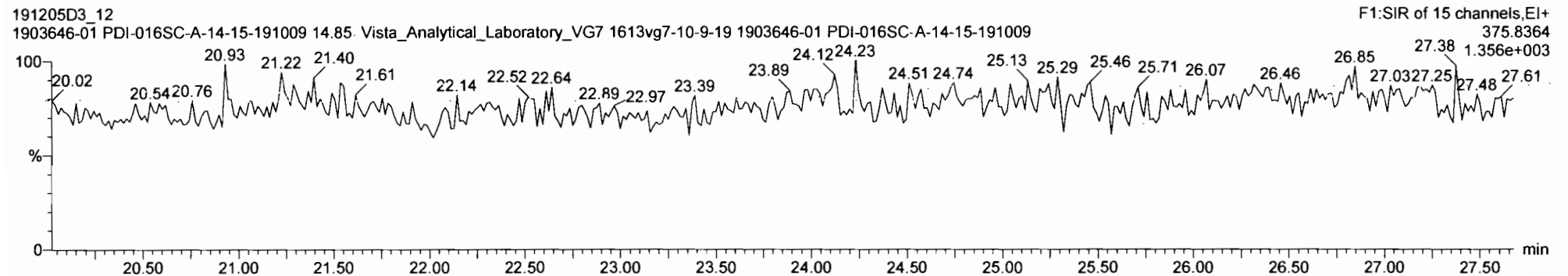
**Total Tetra-Furans**



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



**DPE1**



Vista Analytical Laboratory

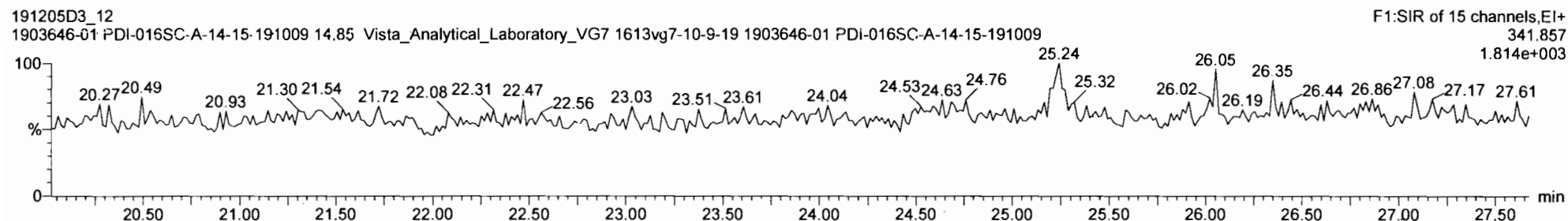
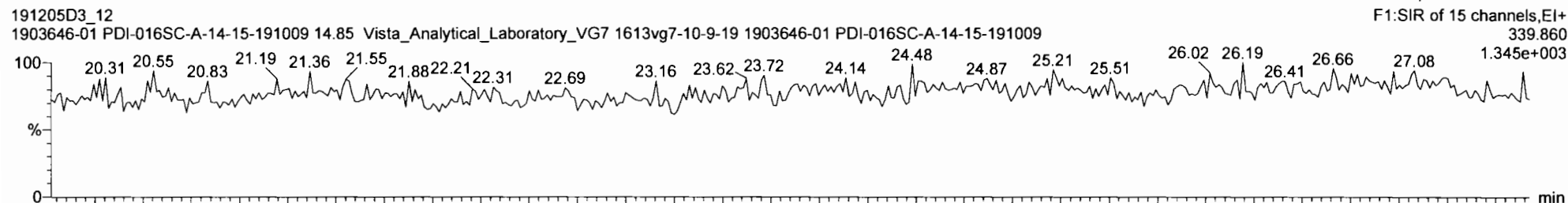
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Last Altered: Wednesday, December 11, 2019 08:08:16 Pacific Standard Time

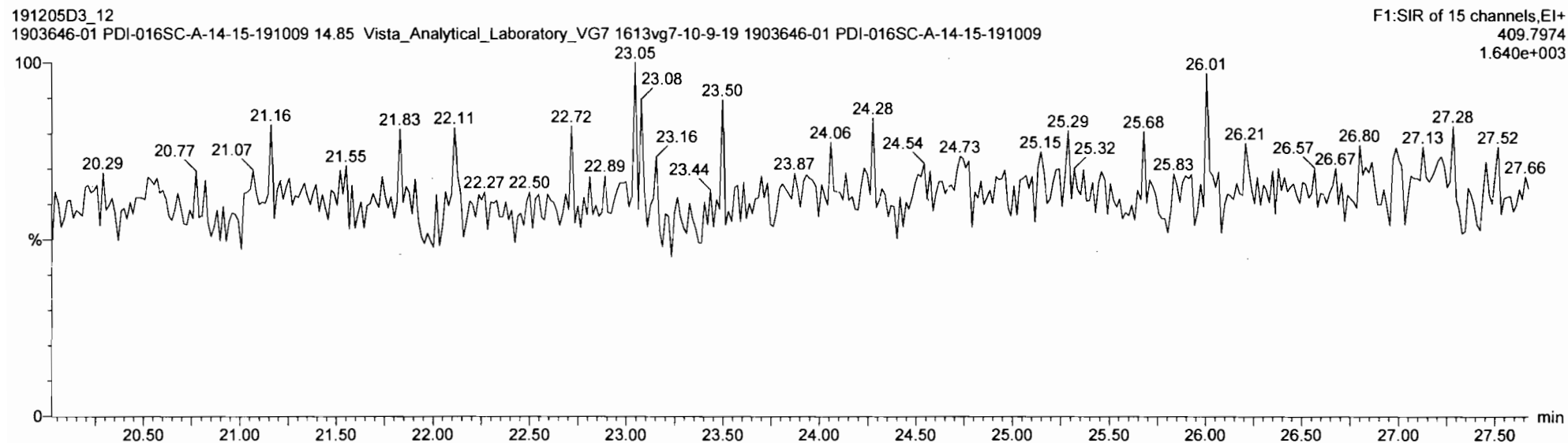
Printed: Wednesday, December 11, 2019 08:09:01 Pacific Standard Time

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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

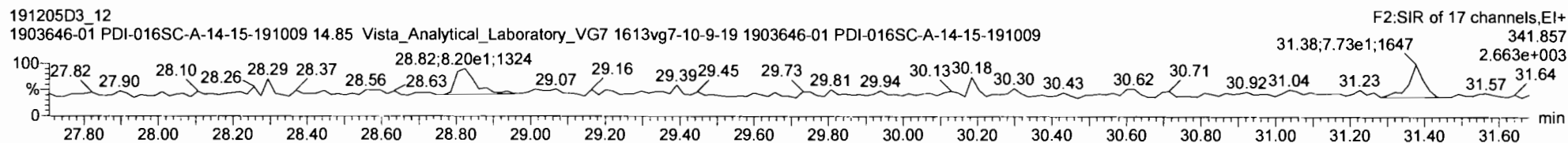
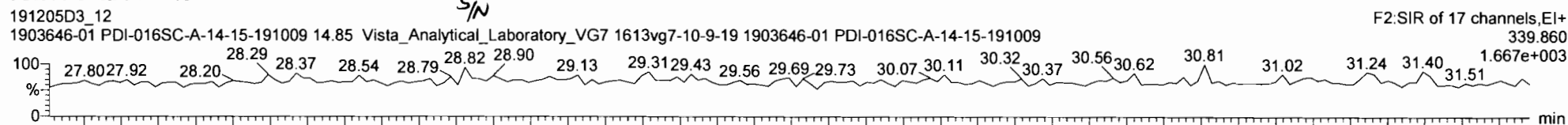
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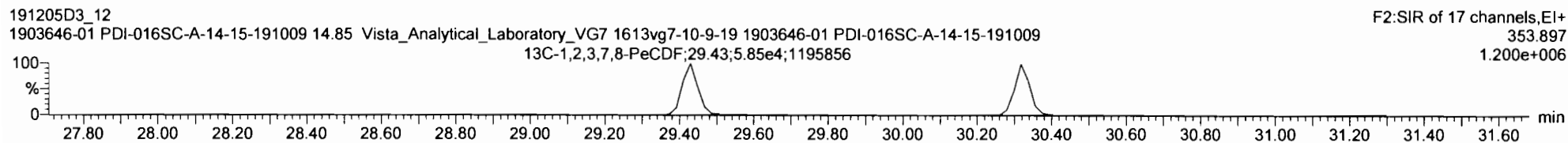
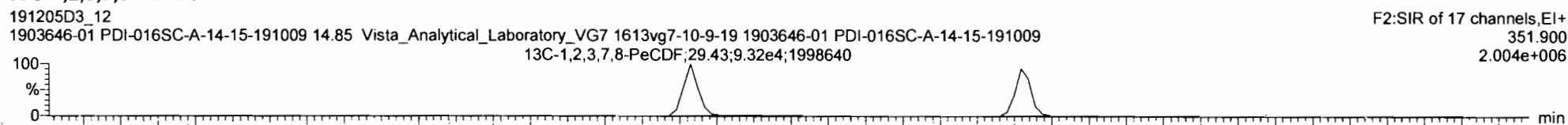
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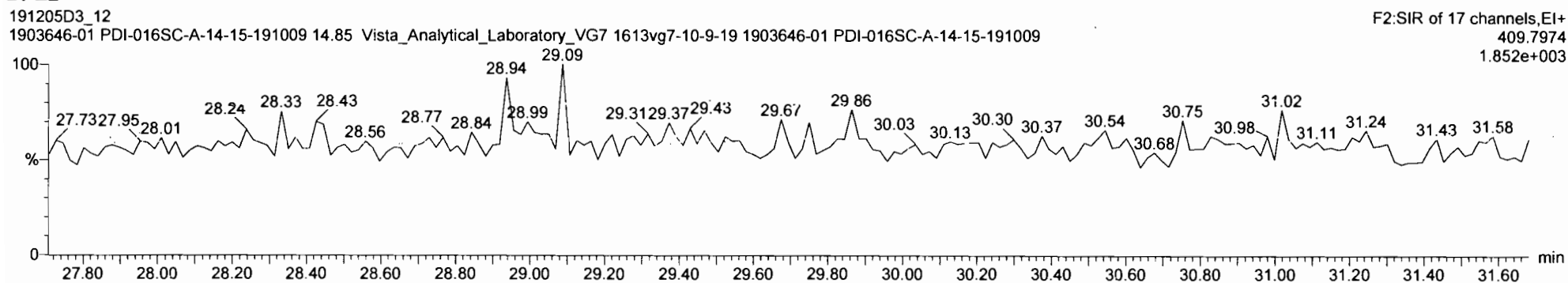
Total Penta-Furans



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



DPE2



Vista Analytical Laboratory

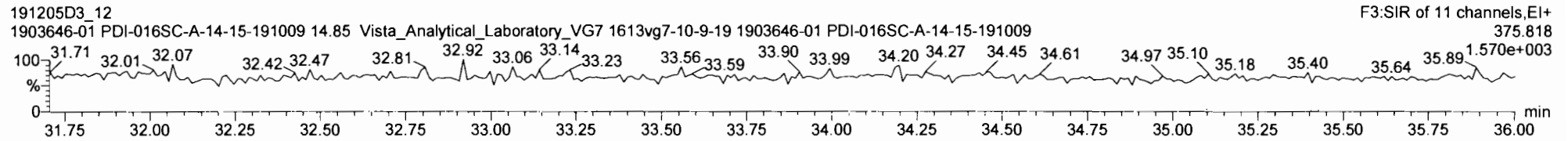
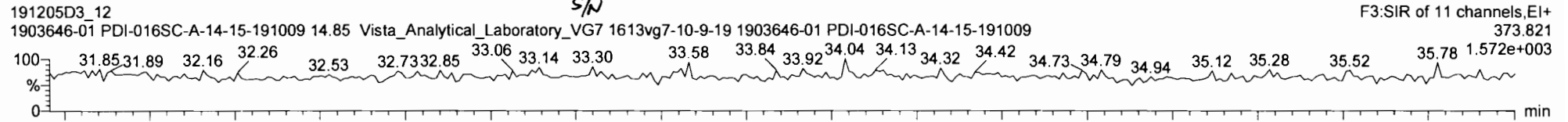
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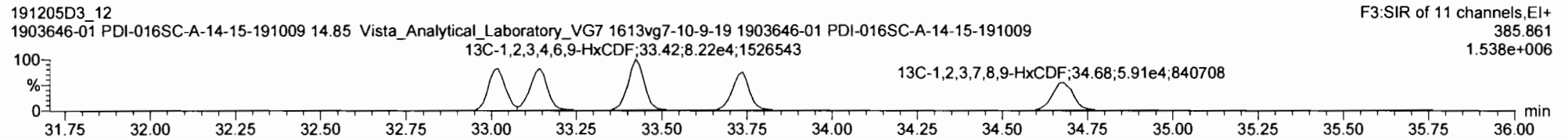
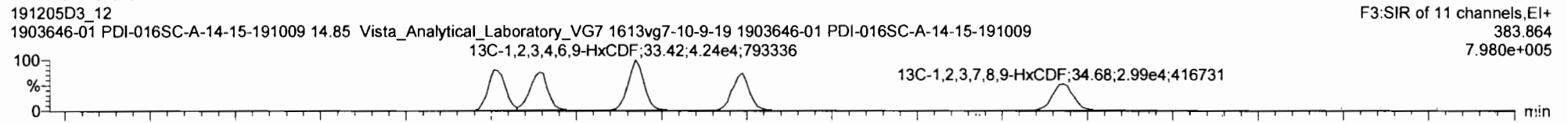
Printed: Wednesday, December 11, 2019 08:09:01 Pacific Standard Time

Name: 191205D3\_12, Date: 7-DEC-2019, Time: 02:40:25, ID: 1903646-01 PDI-016SC-A-14-15-191009,  
Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

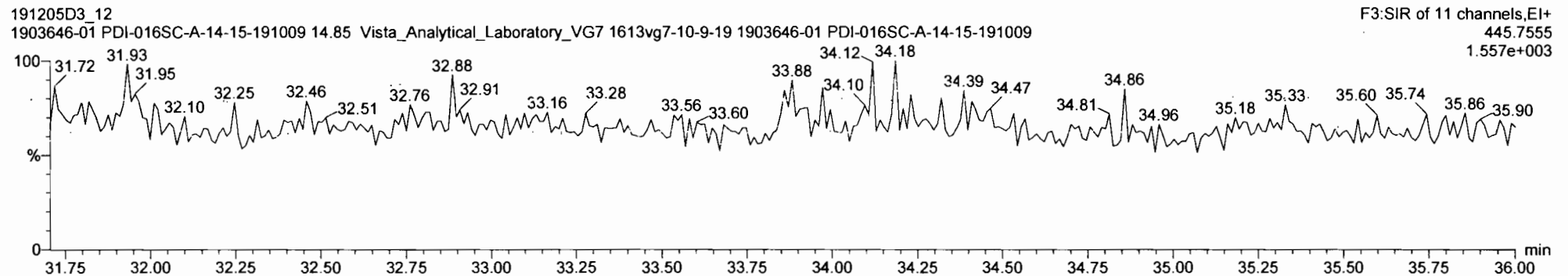
Total Hexa-Furans



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



DPE3





Vista Analytical Laboratory

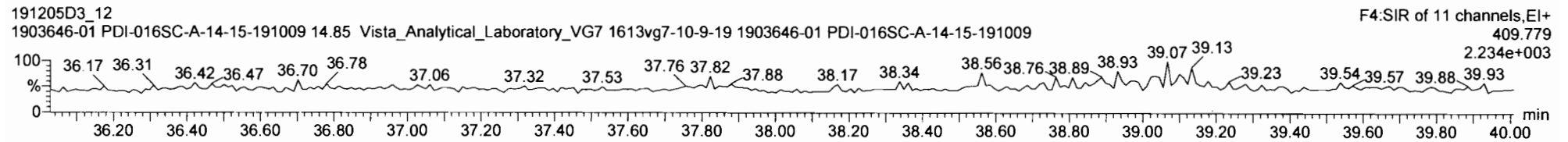
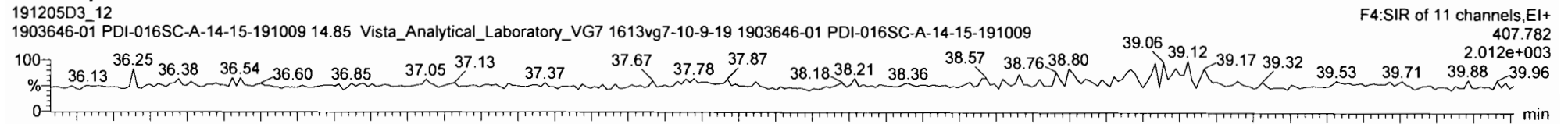
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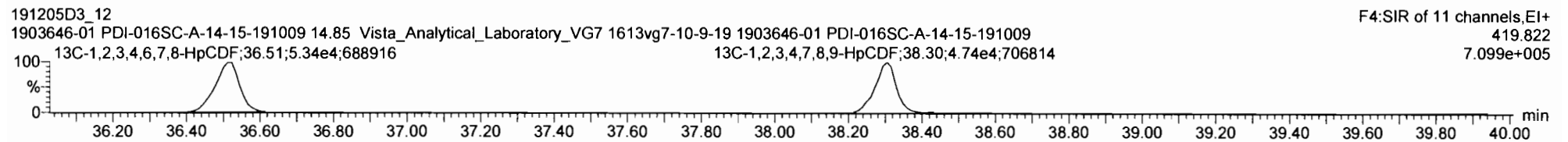
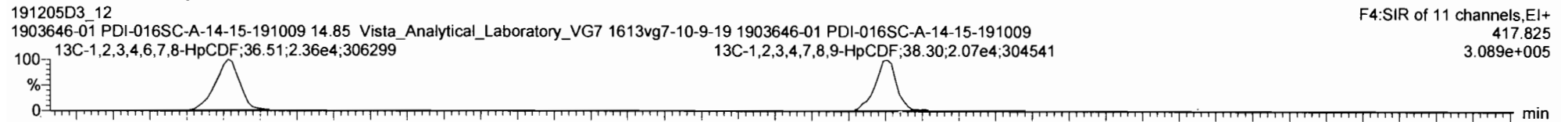
Printed: Wednesday, December 11, 2019 08:09:01 Pacific Standard Time

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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

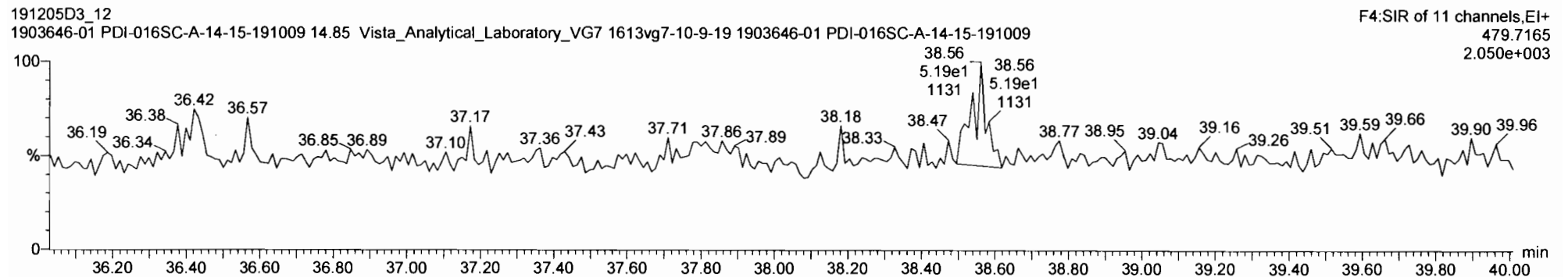
**Total Hepta-Furans**



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



**DPE4**



Vista Analytical Laboratory

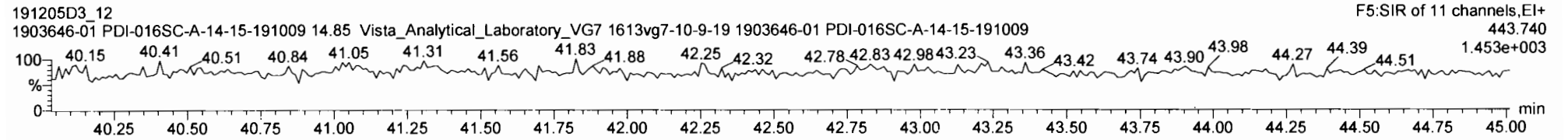
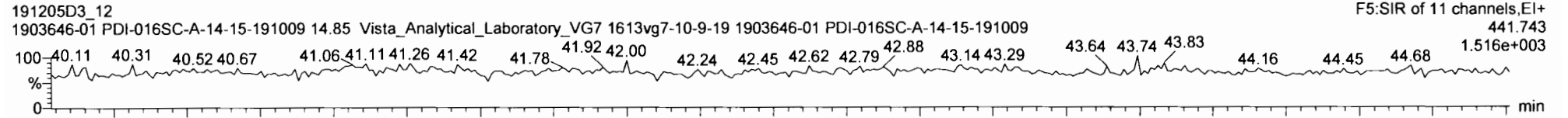
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Last Altered: Wednesday, December 11, 2019 08:08:16 Pacific Standard Time

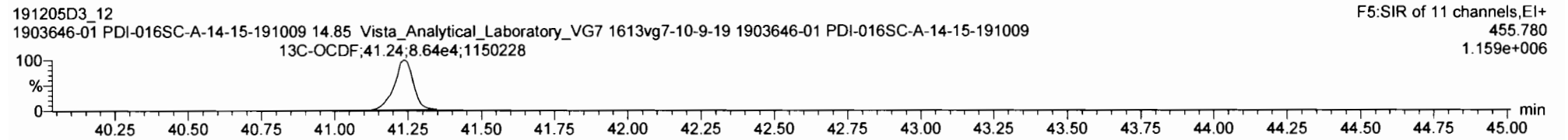
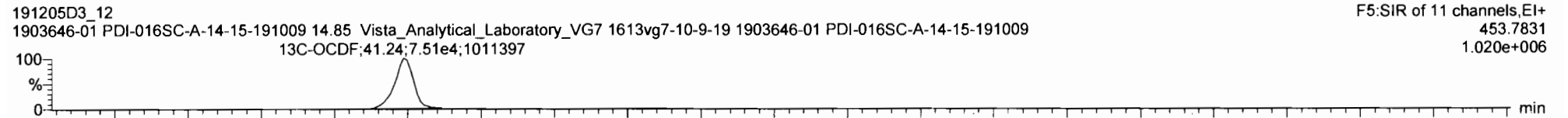
Printed: Wednesday, December 11, 2019 08:09:01 Pacific Standard Time

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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

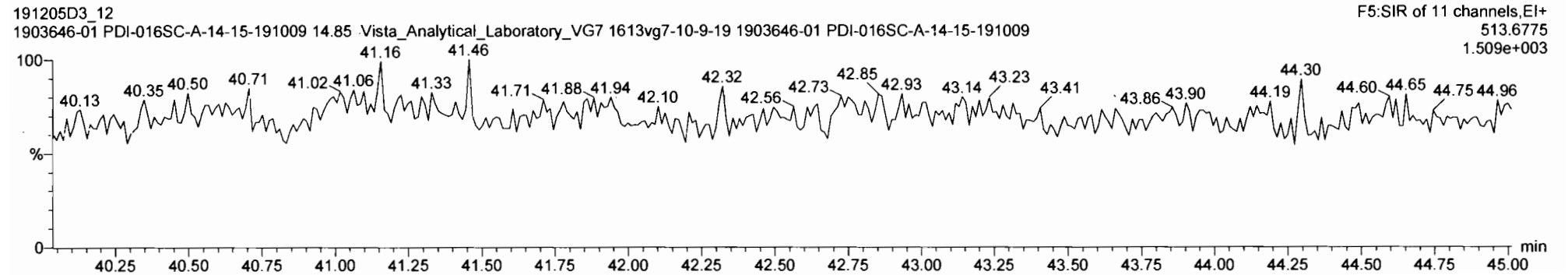
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

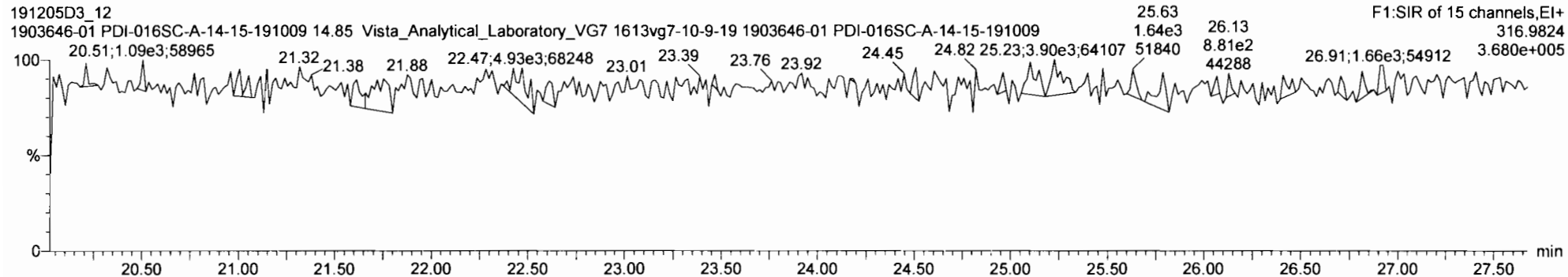
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Last Altered: Wednesday, December 11, 2019 08:08:16 Pacific Standard Time

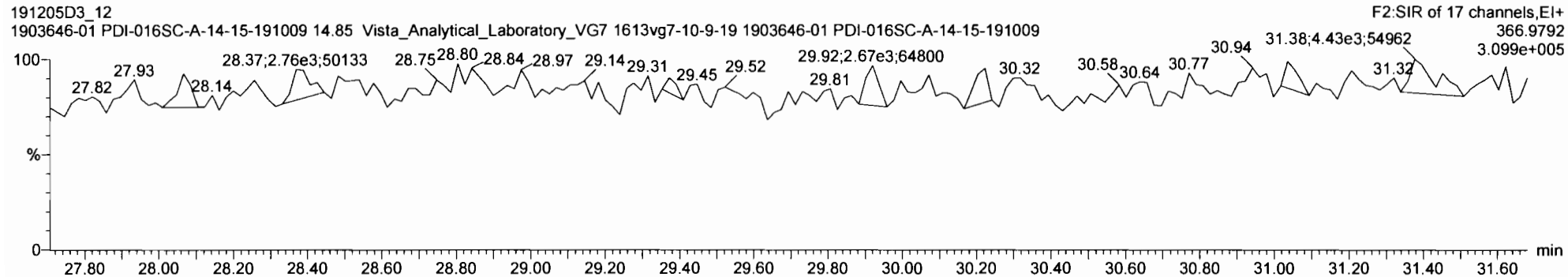
Printed: Wednesday, December 11, 2019 08:09:01 Pacific Standard Time

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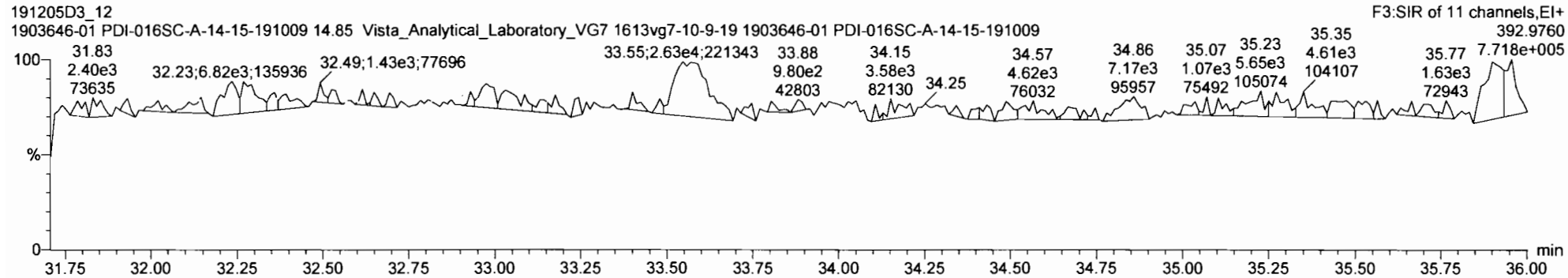
PFK1



PFK2



PFK3



Vista Analytical Laboratory

Dataset: Untitled

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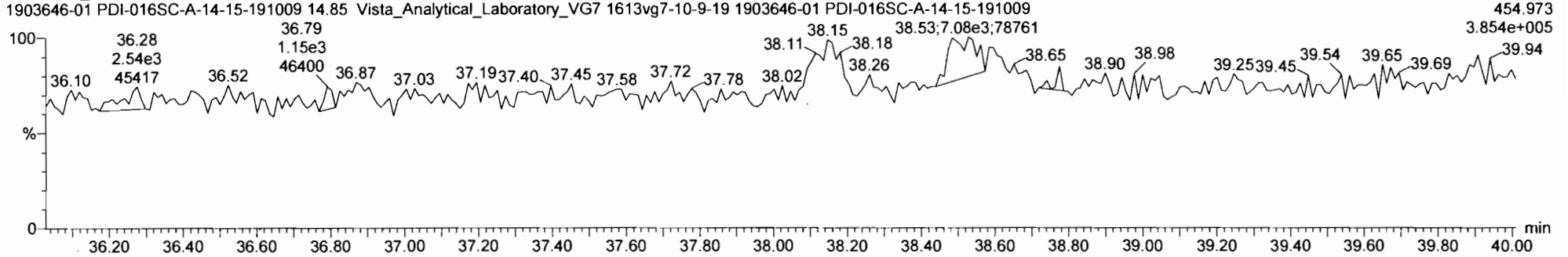
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Description: 1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4

191205D3\_12

1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-01 PDI-016SC-A-14-15-191009

F4:SIR of 11 channels,EI+

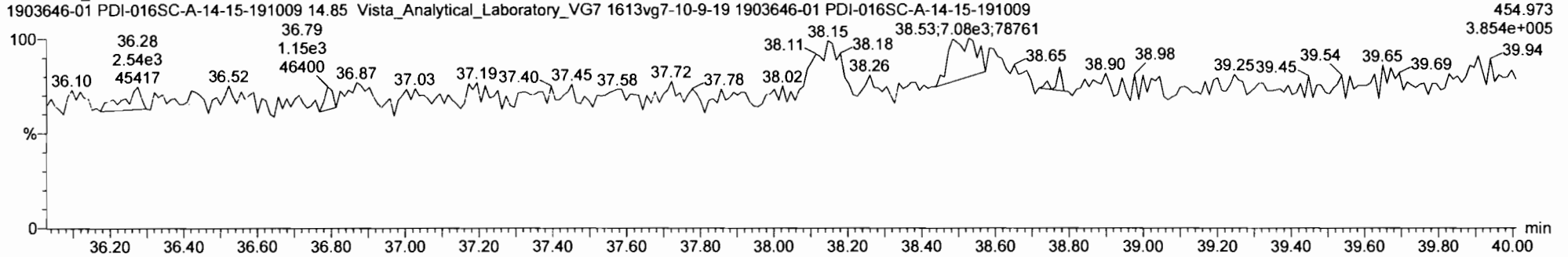


PFK5

191205D3\_12

1903646-01 PDI-016SC-A-14-15-191009 14.85 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-01 PDI-016SC-A-14-15-191009

F4:SIR of 11 channels,EI+



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-13.qld

Last Altered: Thursday, December 19, 2019 13:12:49 Pacific Standard Time

Printed: Thursday, December 19, 2019 13:13:59 Pacific Standard Time

EL 12/19/19

CT 12/20/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 10 Dec 2019 16:21:14

Calibration: 10 Dec 2019 16:25:11

Name: 191205D3\_13, Date: 7-DEC-2019, Time: 03:28:12, ID: 1903646-02 PDI-016SC-A-15-16-191009,

Description: 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_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		9.85e4	10.8007	0.905			1.001		26.13					0.200
2	2 1,2,3,7,8-PeCDD		8.95e4	10.8007	0.903			1.001		30.65					0.263
3	3 1,2,3,4,7,8-HxCDD		6.78e4	10.8007	1.101			1.000		33.92					0.344
4	4 1,2,3,6,7,8-HxCDD		7.70e4	10.8007	0.939			1.000		34.02					0.373
5	5 1,2,3,7,8,9-HxCDD		7.09e4	10.8007	0.961			1.001		34.35					0.405
6	6 1,2,3,4,6,7,8-HpCDD	2.22e2	6.24e4	10.8007	0.979	1.536	YES	1.000	1.001	37.79	37.80	0.67183		0.540	0.481
7	7 OCDD	1.58e3	1.19e5	10.8007	0.959	0.969	NO	1.000	1.001	41.04	41.07	5.0993		5.10	0.262
8	8 2,3,7,8-TCDF		1.67e5	10.8007	0.950			1.001		25.33					0.136
9	9 1,2,3,7,8-PeCDF		1.38e5	10.8007	0.960			1.001		29.47					0.115
10	10 2,3,4,7,8-PeCDF		1.37e5	10.8007	1.015			1.001		30.37					0.0965
11	11 1,2,3,4,7,8-HxCDF		1.02e5	10.8007	1.177			1.000		33.03					0.115
12	12 1,2,3,6,7,8-HxCDF		1.08e5	10.8007	1.069			1.000		33.17					0.123
13	13 2,3,4,6,7,8-HxCDF		9.90e4	10.8007	1.114			1.001		33.78					0.142
14	14 1,2,3,7,8,9-HxCDF		7.66e4	10.8007	1.062			1.000		34.69					0.217
15	15 1,2,3,4,6,7,8-HpCDF		7.40e4	10.8007	1.128			1.001		36.57					0.219
16	16 1,2,3,4,7,8,9-HpCDF		6.17e4	10.8007	1.280			1.000		38.32					0.185
17	17 OCDF		1.53e5	10.8007	0.947			1.000		41.26					0.219
18	18 13C-2,3,7,8-TCDD	9.85e4	1.02e5	10.8007	1.095	0.790	NO	1.021	1.022	26.08	26.10	162.80	87.9		0.524
19	19 13C-1,2,3,7,8-PeCDD	8.95e4	1.02e5	10.8007	0.881	0.598	NO	1.187	1.199	30.31	30.62	183.72	99.2		0.325
20	20 13C-1,2,3,4,7,8-Hx...	6.78e4	1.29e5	10.8007	0.642	1.251	NO	1.014	1.014	33.90	33.91	151.46	81.8		0.944
21	21 13C-1,2,3,6,7,8-Hx...	7.70e4	1.29e5	10.8007	0.856	1.288	NO	1.017	1.017	34.02	34.02	129.02	69.7		0.709
22	22 13C-1,2,3,7,8,9-Hx...	7.09e4	1.29e5	10.8007	0.807	1.255	NO	1.026	1.026	34.32	34.31	126.09	68.1		0.752
23	23 13C-1,2,3,4,6,7,8-H...	6.24e4	1.29e5	10.8007	0.654	1.057	NO	1.126	1.130	37.66	37.78	136.81	73.9		0.906
24	24 13C-OCDD	1.19e5	1.29e5	10.8007	0.580	0.886	NO	1.226	1.227	41.00	41.04	295.22	79.7		0.653
25	25 13C-2,3,7,8-TCDF	1.67e5	1.68e5	10.8007	1.035	0.775	NO	0.992	0.991	25.33	25.31	177.87	96.1		0.489
26	26 13C-1,2,3,7,8-PeCDF	1.38e5	1.68e5	10.8007	0.854	1.579	NO	1.154	1.153	29.47	29.45	177.64	95.9		0.791
27	27 13C-2,3,4,7,8-PeCDF	1.37e5	1.68e5	10.8007	0.847	1.562	NO	1.189	1.188	30.37	30.34	178.31	96.3		0.797
28	28 13C-1,2,3,4,7,8-Hx...	1.02e5	1.29e5	10.8007	0.832	0.512	NO	0.987	0.988	33.01	33.03	176.37	95.2		1.09
29	29 13C-1,2,3,6,7,8-Hx...	1.08e5	1.29e5	10.8007	1.034	0.521	NO	0.991	0.992	33.13	33.16	149.52	80.7		0.873
30	30 13C-2,3,4,6,7,8-Hx...	9.90e4	1.29e5	10.8007	0.953	0.531	NO	1.009	1.009	33.74	33.75	148.92	80.4		0.948
31	31 13C-1,2,3,7,8,9-Hx...	7.66e4	1.29e5	10.8007	0.828	0.513	NO	1.039	1.038	34.73	34.69	132.65	71.6		1.09

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-13.qld

Last Altered: Thursday, December 19, 2019 13:12:49 Pacific Standard Time

Printed: Thursday, December 19, 2019 13:13:59 Pacific Standard Time

Name: 191205D3\_13, Date: 7-DEC-2019, Time: 03:28:12, ID: 1903646-02 PDI-016SC-A-15-16-191009,  
 Description: 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_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...	7.40e4	1.29e5	10.8007	0.757	0.442	NO	1.093	1.093	36.54	36.54	140.08	75.7		0.997
33	33 13C-1,2,3,4,7,8,9-H...	6.17e4	1.29e5	10.8007	0.581	0.430	NO	1.143	1.146	38.22	38.32	152.31	82.3		1.30
34	34 13C-OCDF	1.53e5	1.29e5	10.8007	0.689	0.892	NO	1.233	1.234	41.23	41.26	317.64	85.8		0.512
35	35 37Cl-2,3,7,8-TCDD	4.13e4	1.02e5	10.8007	1.198			1.022	1.023	26.10	26.12	62.406	84.3		0.176
36	36 13C-1,2,3,4-TCDD	1.02e5	1.02e5	10.8007	1.000	0.807	NO	1.000	1.000	25.50	25.54	185.17	100.0		0.574
37	37 13C-1,2,3,4-TCDF	1.68e5	1.68e5	10.8007	1.000	0.790	NO	1.000	1.000	24.06	24.09	185.17	100.0		0.506
38	38 13C-1,2,3,4,6,9-Hx...	1.29e5	1.29e5	10.8007	1.000	0.495	NO	1.000	1.000	33.42	33.44	185.17	100.0		0.903
39	39 Total Tetra-Dioxins		9.85e4	10.8007	0.901			0.000		25.50		0.00000		0.428	0.105
40	40 Total Penta-Dioxins		8.95e4	10.8007	0.872			0.000		30.00					0.126
41	41 Total Hexa-Dioxins		0.00e0	10.8007	0.976			0.000		33.80		0.00000		0.598	0.226
42	42 Total Hepta-Dioxins		6.24e4	10.8007	0.989			0.000		37.75		1.2564		1.80	0.476
43	43 Total Tetra-Furans		1.67e5	10.8007	0.943			0.000		24.00					0.0654
44	44 1st Func. Penta-Fur...		0.00e0	10.8007	0.940			0.000		27.63					0.0354
45	45 Total Penta-Furans		0.00e0	10.8007	0.940			0.000		30.00					0.0509
46	46 Total Hexa-Furans		0.00e0	10.8007	1.078			0.000		33.00					0.0783
47	47 Total Hepta-Furans		0.00e0	10.8007	1.135			0.000		37.75					0.111

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-13.qld

Last Altered: Thursday, December 19, 2019 13:12:49 Pacific Standard Time

Printed: Thursday, December 19, 2019 13:13:59 Pacific Standard Time

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 10 Dec 2019 16:21:14

Calibration: 10 Dec 2019 16:25:11

Name: 191205D3\_13, Date: 7-DEC-2019, Time: 03:28:12, ID: 1903646-02 PDI-016SC-A-15-16-191009,

Description: 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_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	24.23	129.668	43499.164	0.000	MM	0.0000	0.43

**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	32.42	125.471	40163.737	0.000	MM	0.0000	0.60

**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	37.80	134.271	32061.988	0.000	MM	0.0000	0.54
2	42 Total Hepta-Dioxins	NO	36.95	223.366	32061.988	13.417	MM	1.2564	1.26

**Tetra-Furans**

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

**Penta-Furans function 1**

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

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D3\191205D3-13.qld

Last Altered: Thursday, December 19, 2019 13:12:49 Pacific Standard Time

Printed: Thursday, December 19, 2019 13:13:59 Pacific Standard Time

Name: 191205D3\_13, Date: 7-DEC-2019, Time: 03:28:12, ID: 1903646-02 PDI-016SC-A-15-16-191009,  
Description: 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_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

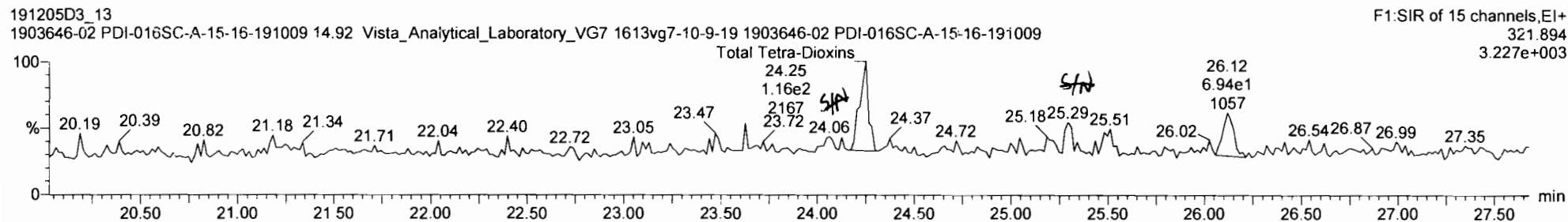
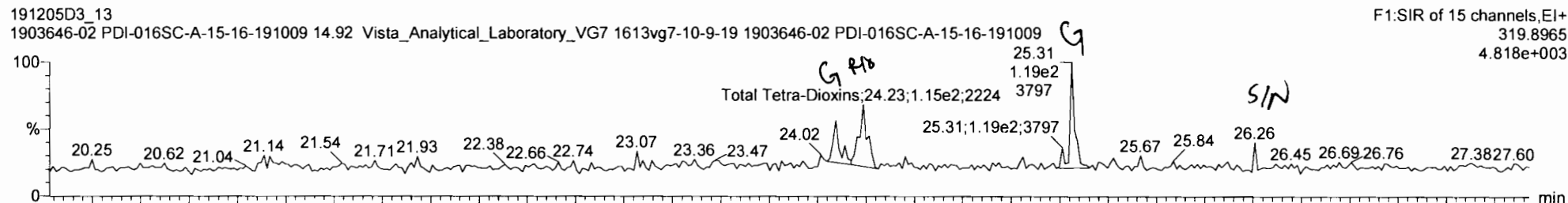
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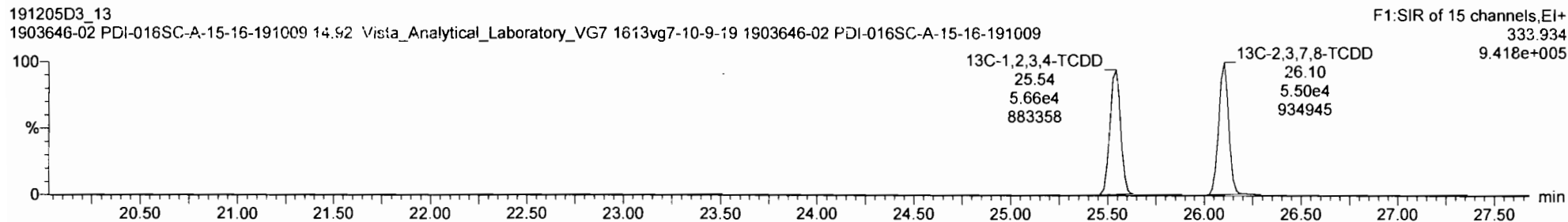
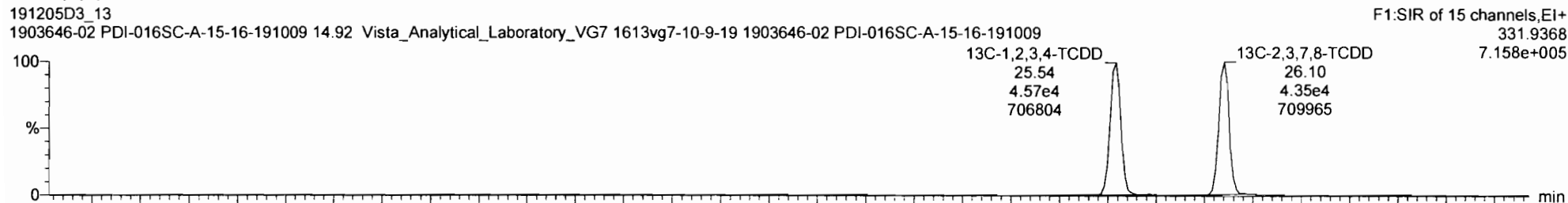
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Total Tetra-Dioxins



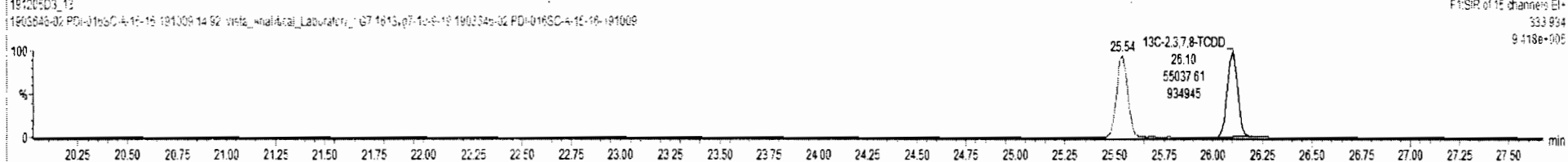
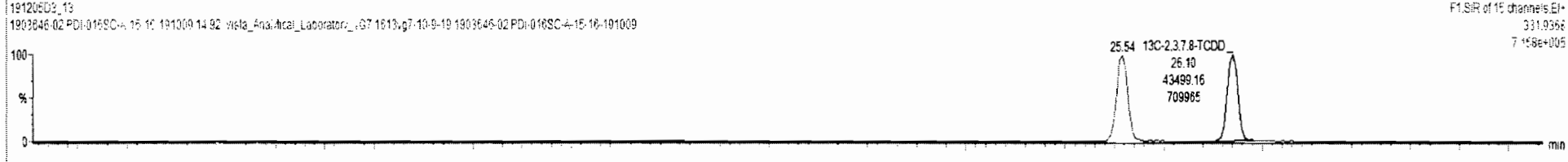
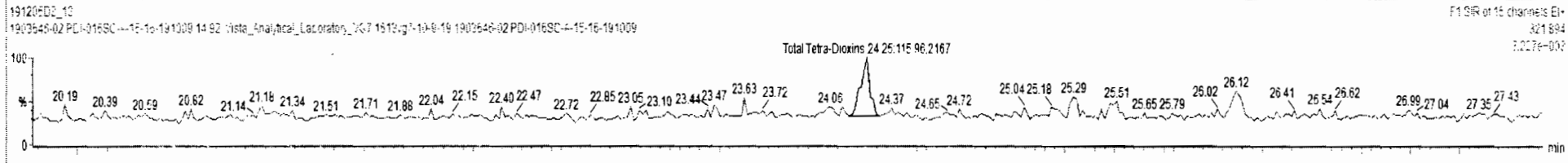
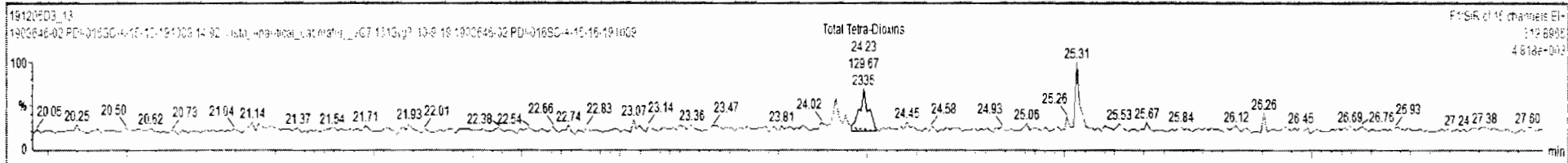
13C-2,3,7,8-TCDD



191205D3-13 - 1903646-02 PDI-016SC-A-15-16-191009 - 1903646-02 PDI-016SC-A-15-16-191009 14 92 Vista Analytical Laboratory\_VG7 1613vg7-10-9-19

Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chr.Noise	D	Sample Text	Factor1	SW1	Cal.File
34	13C-DCCDF	317.642	0.512	85.759	1.52E5		41.26	34	38	0.892	NO	1.234	7-DEC-29	03:28:12	720.465	1903646-02	1903646-02 PDI...	0.0	10.8	
36	37C-2,3,7,8-TCDD	62.4060	0.176	84.254	4.120E4		26.12	35	36			1.023	7-DEC-29	03:28:12		1903646-02	1903646-02 PDI...	0.0	10.8	
36	13C-1,2,3,4-TCDD	165.173	0.574	100.000	1.023E5		25.54	36	36	0.807	NO	1.000	7-DEC-29	03:28:12	521.366	1903646-02	1903646-02 PDI...	0.0	10.8	
37	13C-1,2,3,4-TCDF	165.173	0.506	100.000	1.662E5		24.09	37	37	0.790	NO	1.000	7-DEC-29	03:28:12	1075.058	1903646-02	1903646-02 PDI...	0.0	10.8	
38	13C-1,2,3,4,6,9-HxCDF	165.173	0.903	100.000	1.291E5		32.44	38	38	0.496	NO	1.000	7-DEC-29	03:28:12	1830.403	1903646-02	1903646-02 PDI...	0.0	10.8	
39	Total Tetra-Dioxins	0.000000	0.105		0.428134			39					7-DEC-29	03:28:12		1903646-02	1903646-02 PDI...	0.0	10.8	
40	Total Penta-Dioxins	0.000000	0.126		0.521387			40					7-DEC-29	03:28:12		1903646-02	1903646-02 PDI...	0.0	10.8	
41	Total Hexa-Dioxins	0.711625	0.381		0.711625			41					7-DEC-29	03:28:12		1903646-02	1903646-02 PDI...	0.0	10.8	
42	Total Hepta-Dioxins	0.000000	0.296		1.90189			42					7-DEC-29	03:28:12		1903646-02	1903646-02 PDI...	0.0	10.8	
43	Total Tetra-Furans	0.0054						43					7-DEC-29	03:28:12		1903646-02	1903646-02 PDI...	0.0	10.8	

Name	RT	m1 Height	m2 Height	m1 Resp	m2 Resp	RA	nly	Resp	Conc.	EMPC
1 Total Tetra-Dioxins	24.23	2.335e2	2.167e2	1.297e2	1.160e2	1.12	YES	0.000e0	0.000	0.428



Vista Analytical Laboratory

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Last Altered: Wednesday, December 11, 2019 08:08:16 Pacific Standard Time

Printed: Wednesday, December 11, 2019 08:09:01 Pacific Standard Time

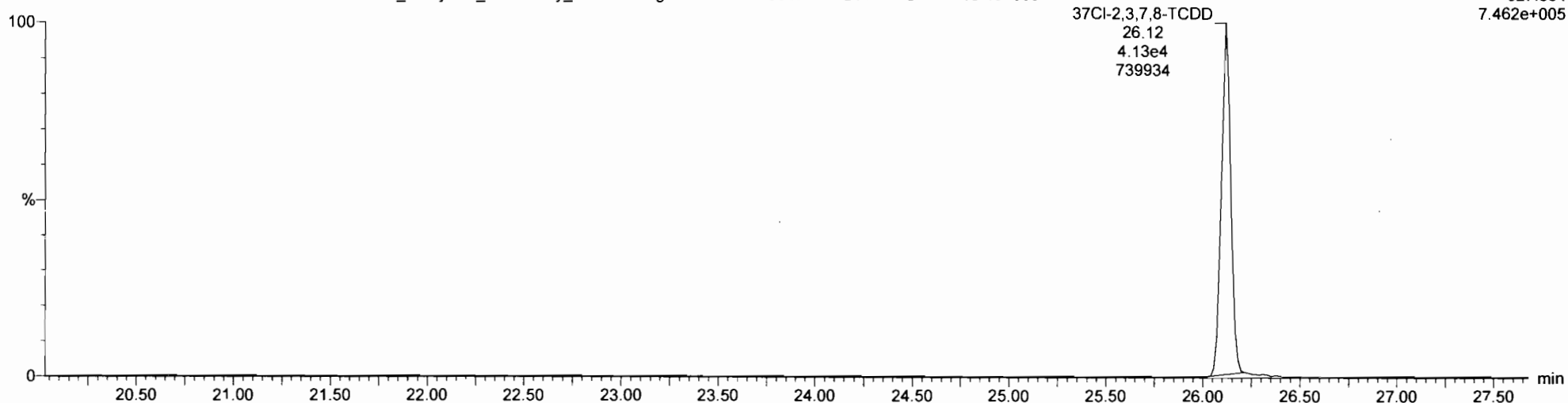
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37Cl-2,3,7,8-TCDD

191205D3\_13

1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-02 PDI-016SC-A-15-16-191009

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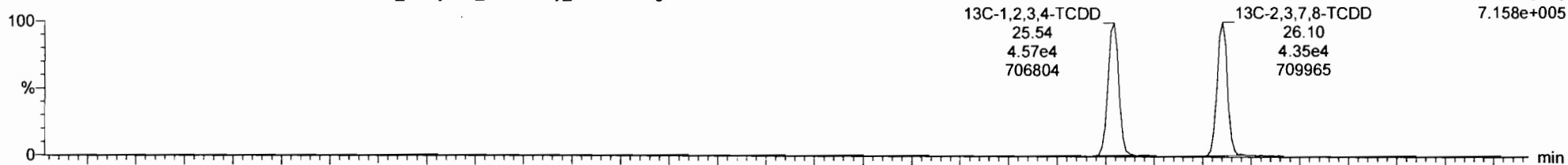


13C-1,2,3,4-TCDD

191205D3\_13

1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-02 PDI-016SC-A-15-16-191009

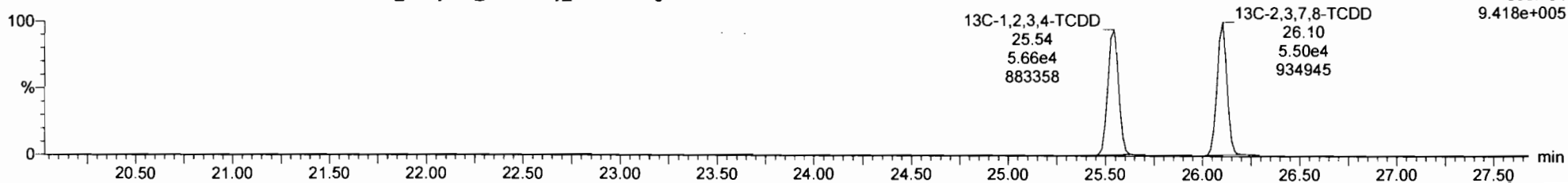
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191205D3\_13

1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-02 PDI-016SC-A-15-16-191009

F1:SIR of 15 channels,EI+  
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9.418e+005



Vista Analytical Laboratory

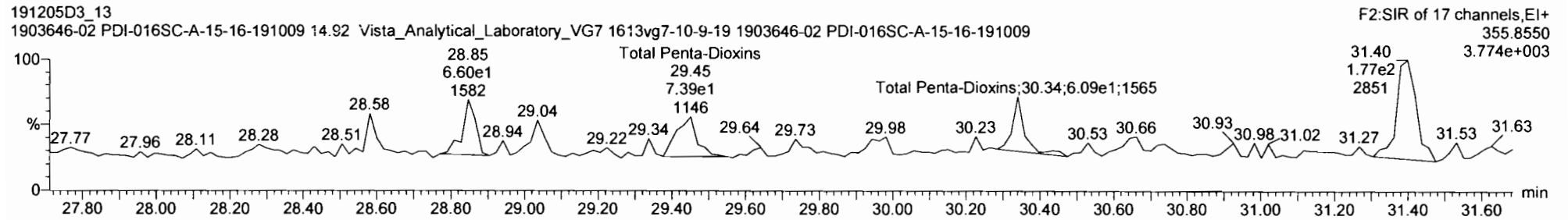
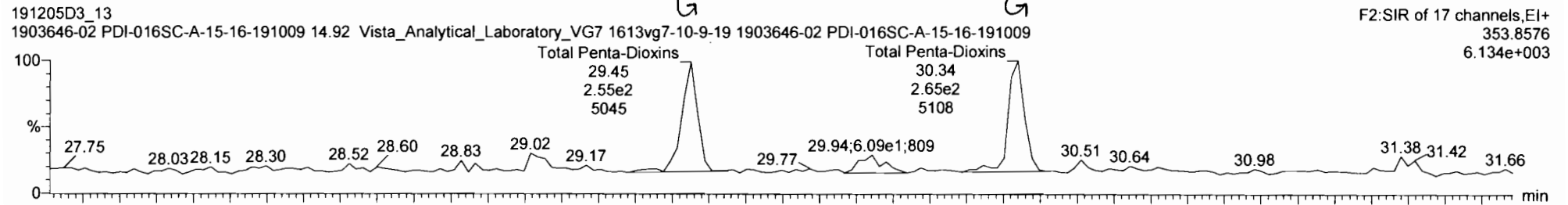
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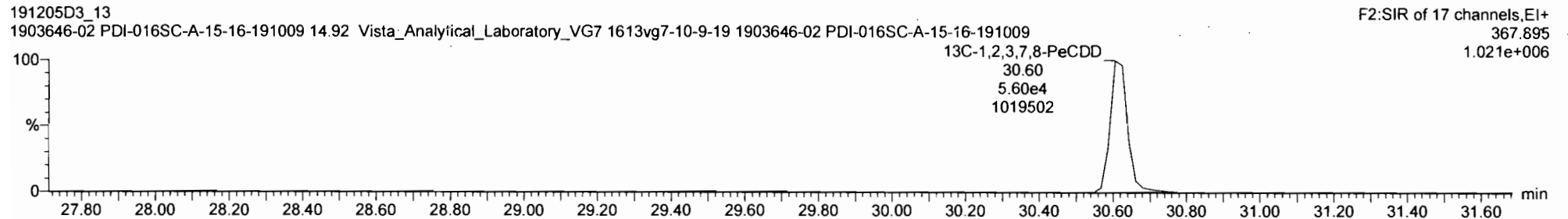
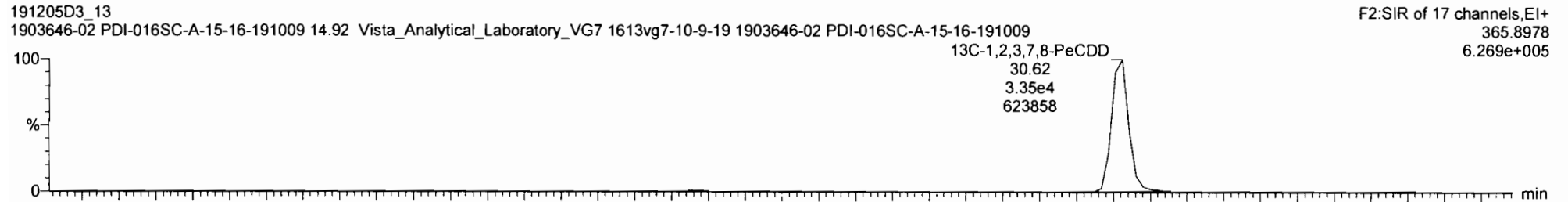
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Total Penta-Dioxins



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



Vista Analytical Laboratory

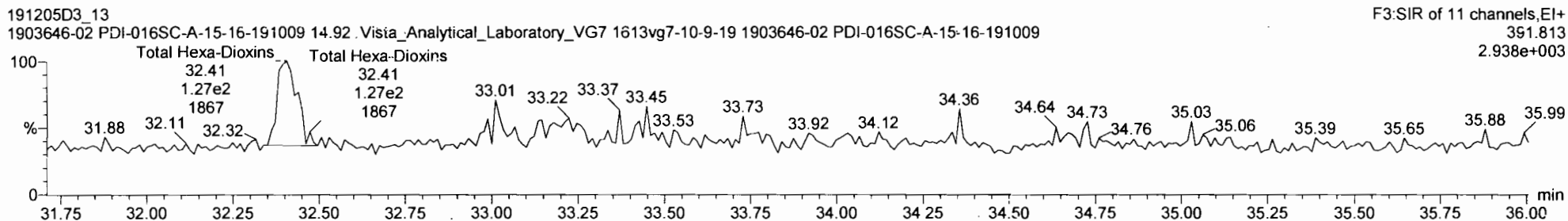
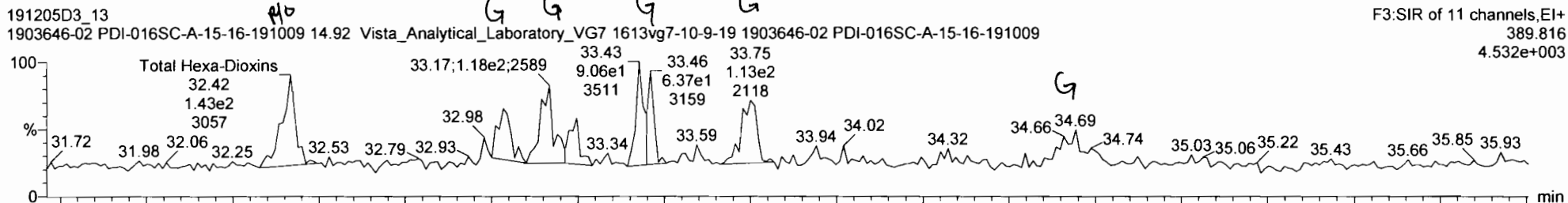
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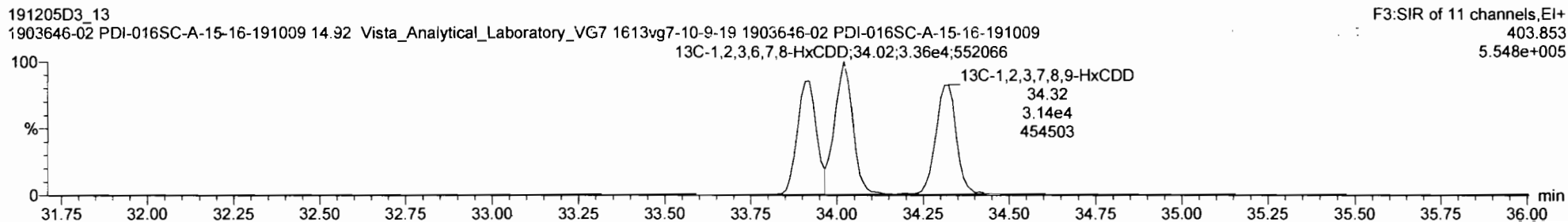
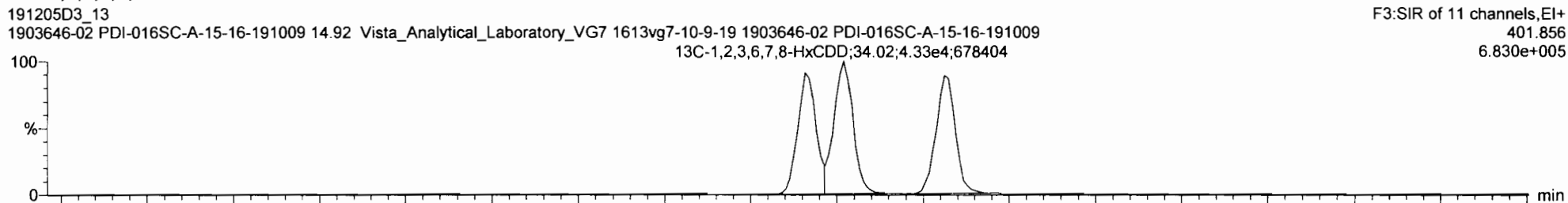
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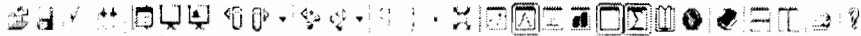
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Total Hexa-Dioxins



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

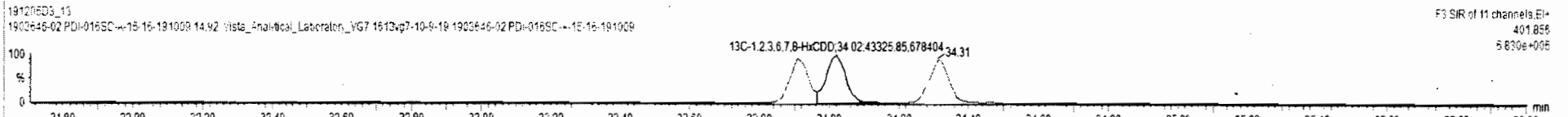
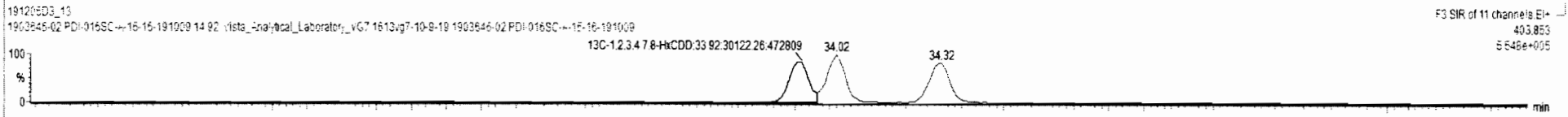
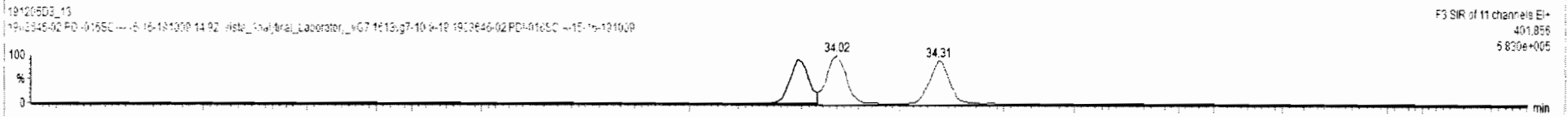
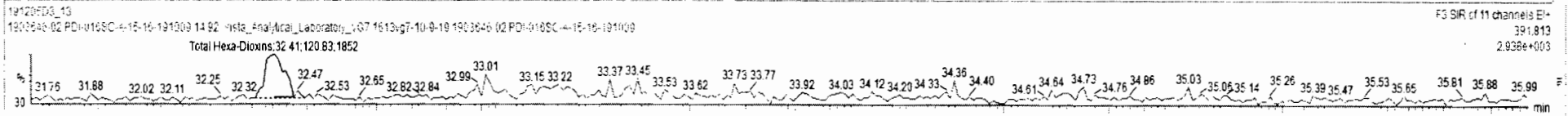
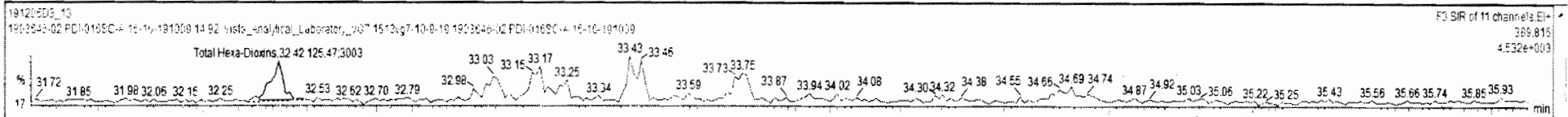




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Name	Conc.	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	SI	RA	YN	RRT	Acq.Date	Acq.Time	1° Chr.Holds	D	Sample Text	Factor1	SWI	Cal.File
34 13C-OCDF	317.642	0.512	85.769		1.526e5		41.26	34	38	0.892	NO	1.234	7-DEC-28	03:26:12	720	466	1903646-02_1903646-02 PDI...	0.0	10.8	
35 37Cl-2,3,7,8-TCDD	62.4060	0.176	84.254		4.135e4		26.12	35	36			1.023	7-DEC-29	03:28:12			1903646-02_1903646-02 PDI...	0.0	10.8	
36 13C-1,2,3,4-TCDD	185.173	0.574	100.000		1.023e5		25.54	36	36	0.807	NO	1.000	7-DEC-28	03:26:12	521	366	1903646-02_1903646-02 PDI...	0.0	10.8	
37 13C-1,2,3,4-TCDF	185.173	0.596	100.000		1.682e5		24.09	37	37	0.790	NO	1.000	7-DEC-29	03:28:12	1075	058	1903646-02_1903646-02 PDI...	0.0	10.8	
38 13C-1,2,3,4,6,8-HxCDF	185.173	0.603	100.000		1.291e5		33.44	38	38	0.495	NO	1.000	7-DEC-29	03:28:12	1030	403	1903646-02_1903646-02 PDI...	0.0	10.8	
39 Total Tetra-Dioxins	0.000000	0.195		0.428134				39					7-DEC-29	03:28:12			1903646-02_1903646-02 PDI...	0.0	10.8	
40 Total Penta-Dioxins		0.126						40					7-DEC-29	03:28:12			1903646-02_1903646-02 PDI...	0.0	10.8	
41 Total Hexa-Dioxins	0.000000	0.228		0.598131				41					7-DEC-29	03:28:12			1903646-02_1903646-02 PDI...	0.0	10.8	
42 Total Hepta-Dioxins	0.000000	0.296		1.90189				42					7-DEC-29	03:28:12			1903646-02_1903646-02 PDI...	0.0	10.8	
43 Total Tetra-Furans		0.0554						43					7-DEC-29	03:28:12			1903646-02_1903646-02 PDI...	0.0	10.8	

Name	RT	m1 Height	m2 Height	m1 Resp	m2 Resp	RA	n/y	Resp	Conc.	EMPC
1 Total Hexa-Dioxins	32.42	3.003e3	1.652e3	1.255e2	1.206e2	1.04	YES	0.000e0	0.000	0.596



Custom Reporting: Select reports to generate

19120503\_13

CAP NUM

Vista Analytical Laboratory

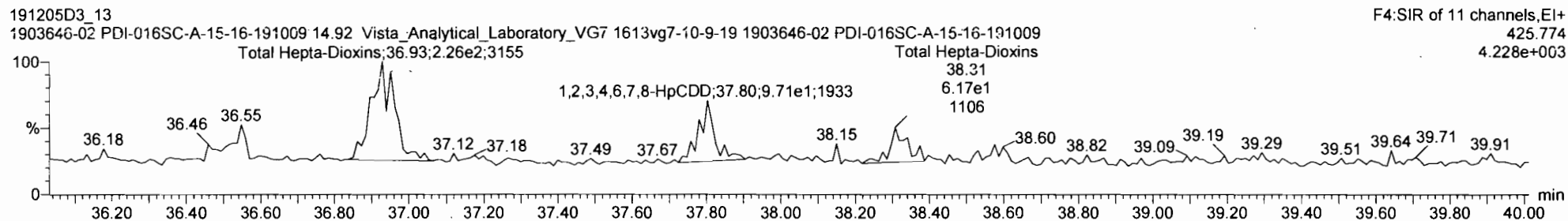
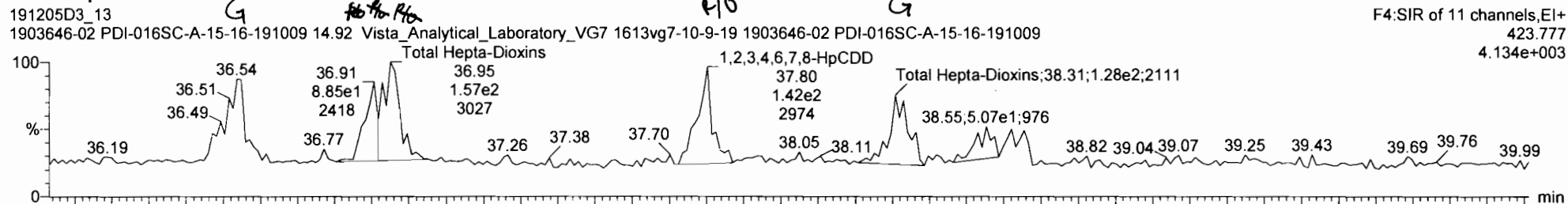
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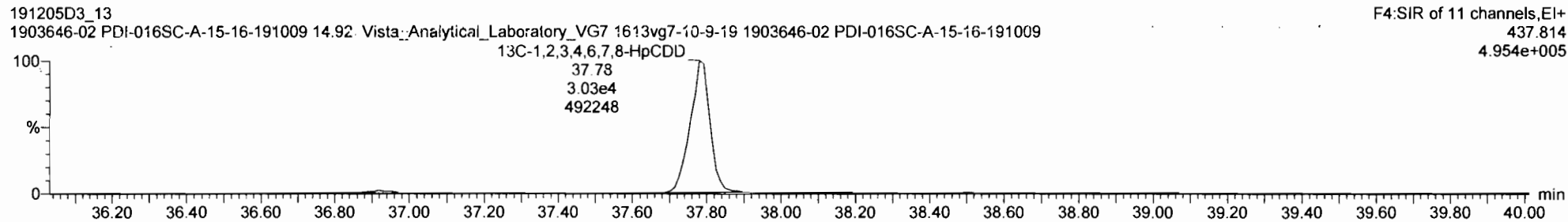
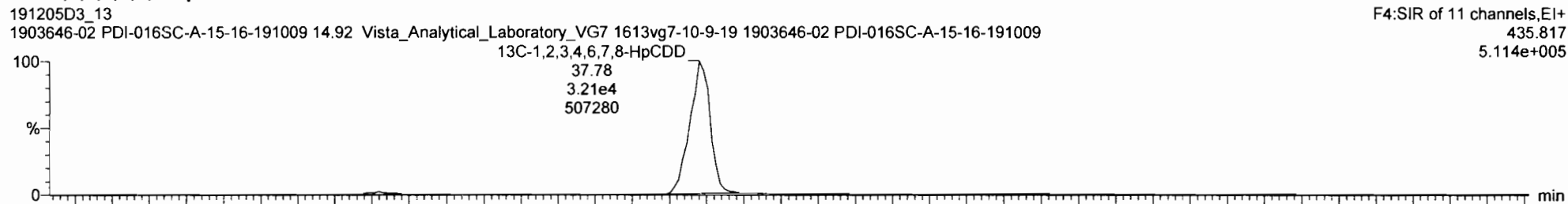
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Total Hepta-Dioxins



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

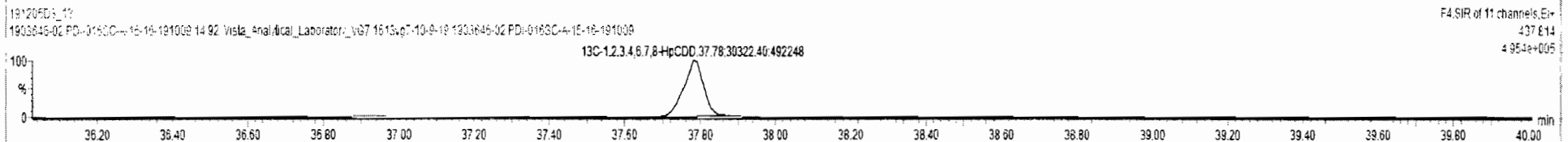
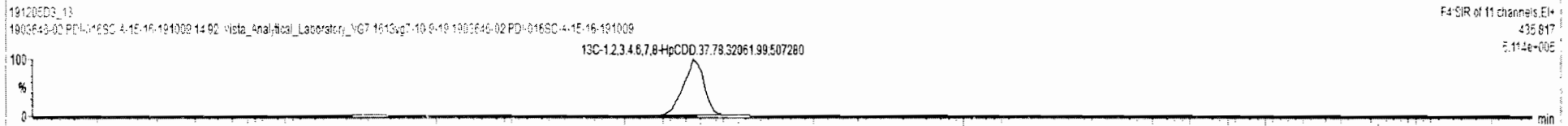
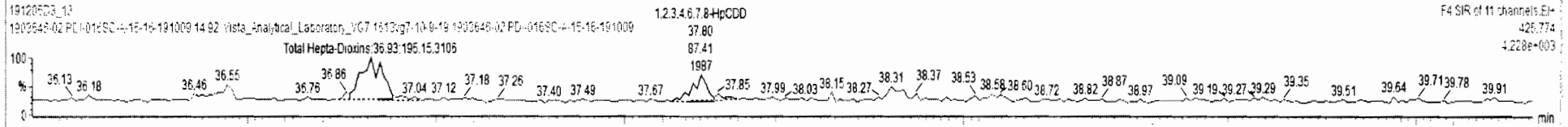
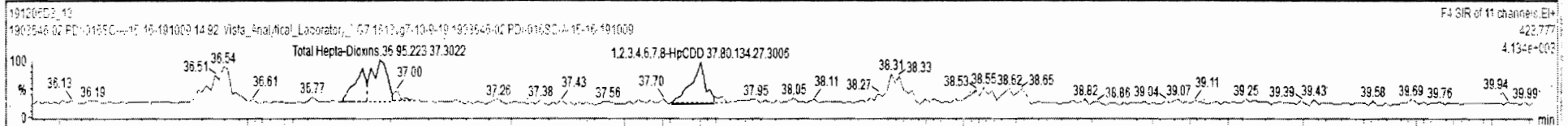




191205D3\_13 - 1903646-02 PDI-016SC-A-15-16-191009 - 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	w/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
36	13C-1,2,3,4-TCDD	1.02e5	1.02e5	36	0.81	NO	1.000	10.801	26.50	26.54	1.000	1.000	NO	185.2	100	0.574	
37	13C-1,2,3,4-TCDF	1.68e5	1.68e5	37	0.79	NO	1.000	10.801	24.0E	24.09	1.000	1.000	NO	185.2	100	0.506	
38	13C-1,2,3,4,6,8-HxCDF	1.29e5	1.29e5	38	0.50	NO	1.000	10.801	33.42	33.44	1.000	1.000	NO	185.2	100	0.503	
39	Total Tetra-Dioxins	9.85e4					0.801	10.801	26.50			0.000	NO	0.0000		0.105	0.4261
40	Total Penta-Dioxins	8.95e4					0.872	10.801	30.00			0.000	NO			0.126	
41	Total Hexa-Dioxins	0.00e0					0.976	10.801	33.80			0.000	NO	0.0000		0.226	0.5961
42	Total Hepta-Dioxins	6.24e4					0.989	10.801	37.75			0.000	NO	1.256		0.476	1.787
43	Total Tetra-Furans	1.67e5					0.943	10.801	24.00			0.000	NO			0.0654	
44	1st Func. Penta-Furans	0.00e0					0.940	10.801	27.00			0.000	NO			0.0354	
45	Total Penta-Furans	0.00e0					0.940	10.801	30.00			0.000	NO			0.0509	
46	Total Hexa-Furans	0.00e0					1.078	10.801	33.00			0.000	NO			0.0783	
47	Total Hepta-Furans	0.00e0					1.135	10.801	37.75			0.000	NO			0.111	
48	PFK1																

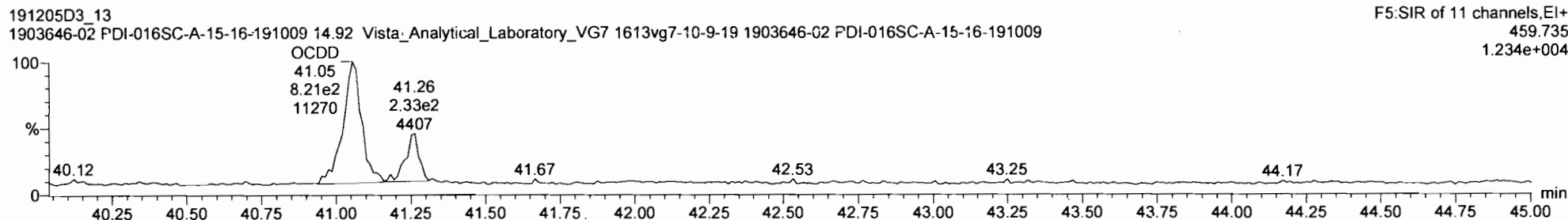
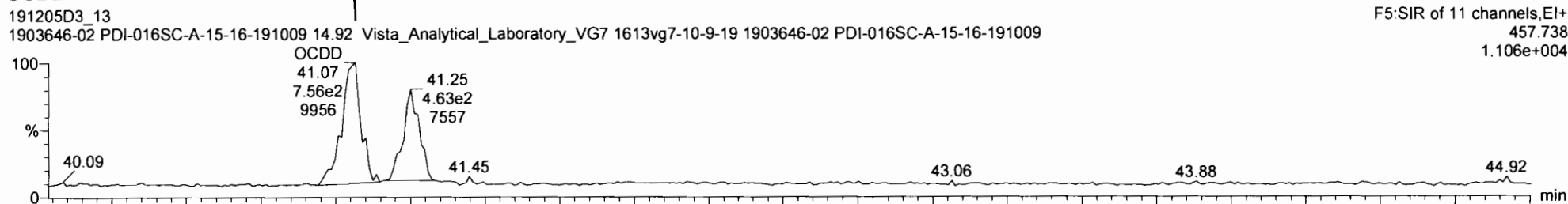
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	36.95	2.234e2	1.951e2	1.040	1.14	NO	1.2564	1.2564
2	6 1,2,3,4,6,7,8-HpCDD	37.79	37.80	1.343e2	8.741e1	1.640	1.54	YES	0.54040	0.60000



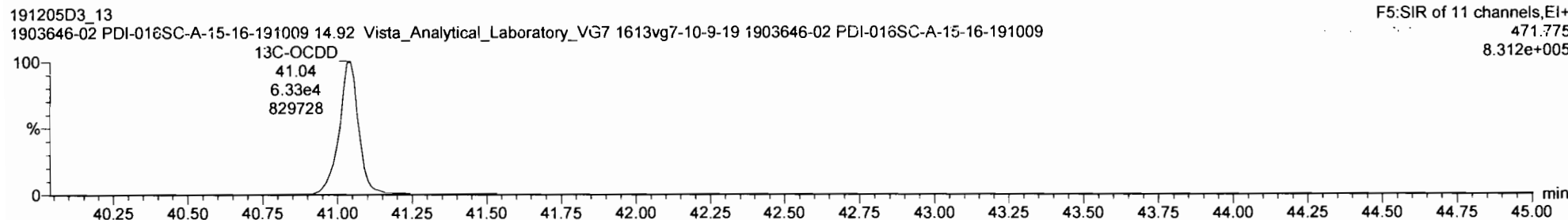
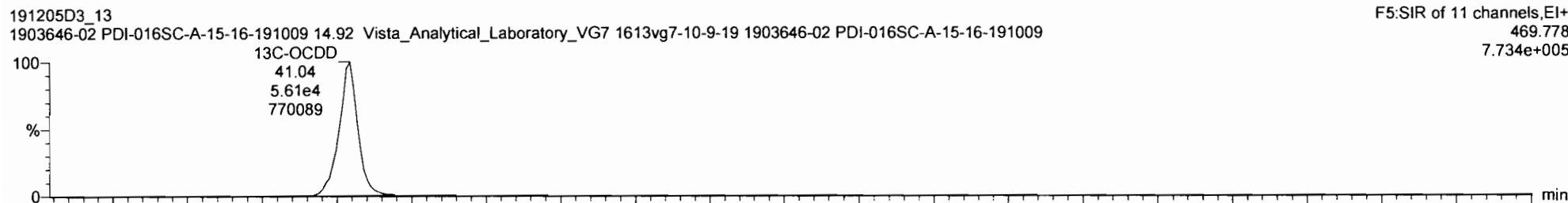


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**OCDD**

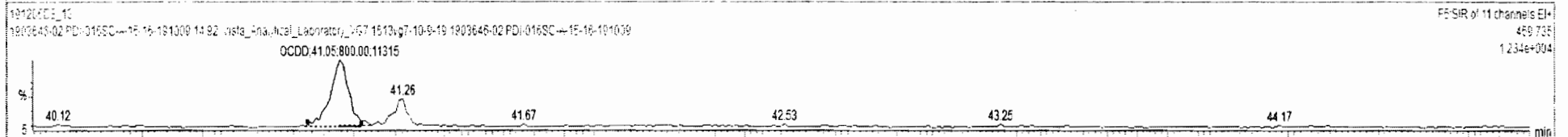
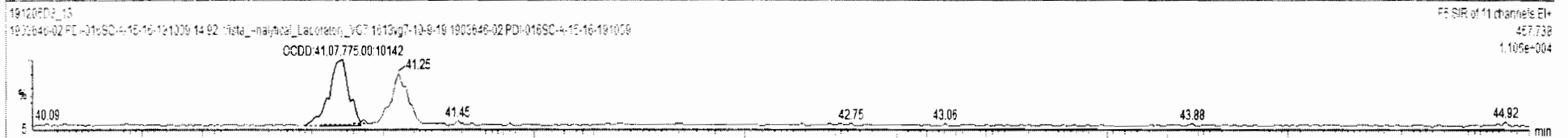


**13C-OCDD**



#	Name	Resp	IS Resp	IS	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
4	1,2,3,6,7,8-HxCDD		7.70e4	21			0.939	10.801	34.02			1.000	NO			0.373	
5	1,2,3,7,8,9-HxCDD		7.09e4	22			0.961	10.801	34.35			1.001	NO			0.405	
6	1,2,3,4,6,7,8-HpCDD	2.16e2	6.24e4	23	1.62	YES	0.979	10.801	37.79	37.80	1.001	1.000	NO	0.6560		0.481	0.5101
7	OCDD	1.58e3	1.19e5	24	0.97	NO	0.958	10.801	41.04	41.07	1.001	1.000	NO	5.999		0.282	5.099
8	2,3,7,8-TCDF		1.57e5	25			0.950	10.801	25.33			1.001	NO			0.136	
9	1,2,3,7,8-PeCDF		1.38e5	26			0.960	10.801	29.47			1.001	NO			0.115	
10	2,3,4,7,8-PeCDF		1.37e5	27			1.015	10.801	30.37			1.001	NO			0.0965	
11	1,2,3,4,7,8-HxCDF		1.32e5	28			1.177	10.801	32.03			1.000	NO			0.115	
12	1,2,3,6,7,8-HxCDF		1.08e5	29			1.069	10.801	33.17			1.000	NO			0.123	
13	2,3,4,6,7,8-HxCDF		9.90e4	30			1.114	10.801	33.78			1.001	NO			0.142	
14	1,2,3,7,8,9-HxCDF		7.68e4	31			1.082	10.801	34.69			1.000	NO			0.217	
15	1,2,3,4,6,7,8-HpCDF		7.40e4	32			1.128	10.801	36.57			1.001	NO			0.219	
16	1,2,3,4,7,8,9-HpCDF		6.17e4	33			1.200	10.801	38.33			1.000	NO			0.194	

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



Vista Analytical Laboratory

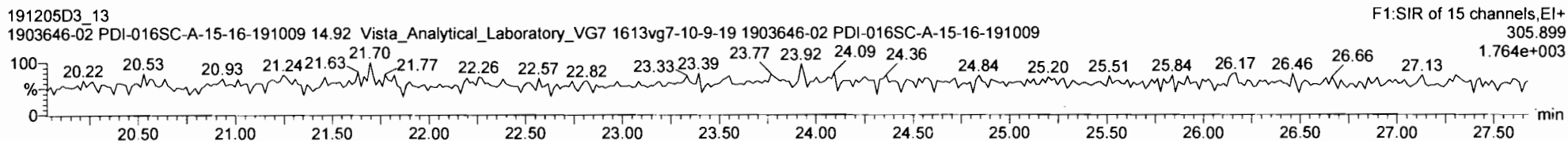
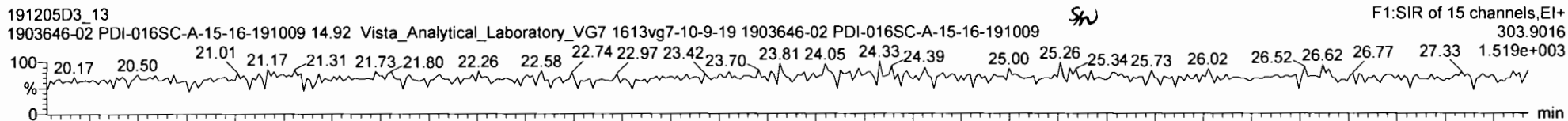
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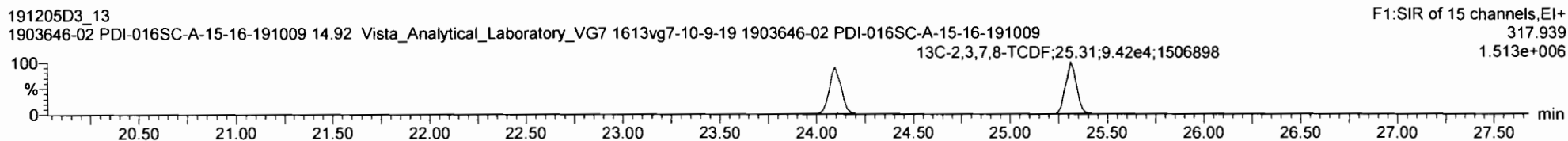
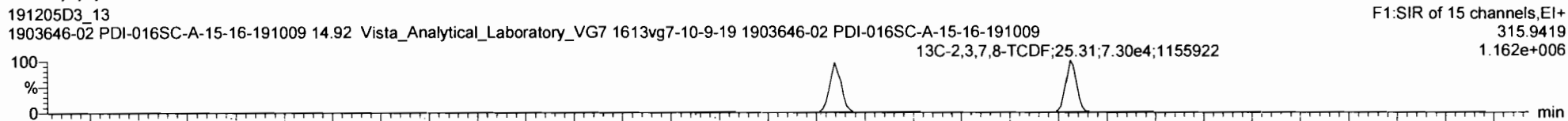
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Description: 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

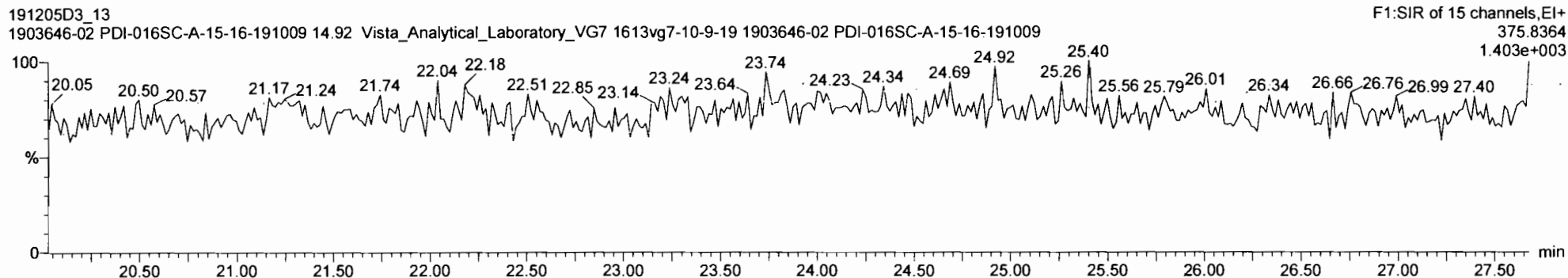
Total Tetra-Furans



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



DPE1



Vista Analytical Laboratory

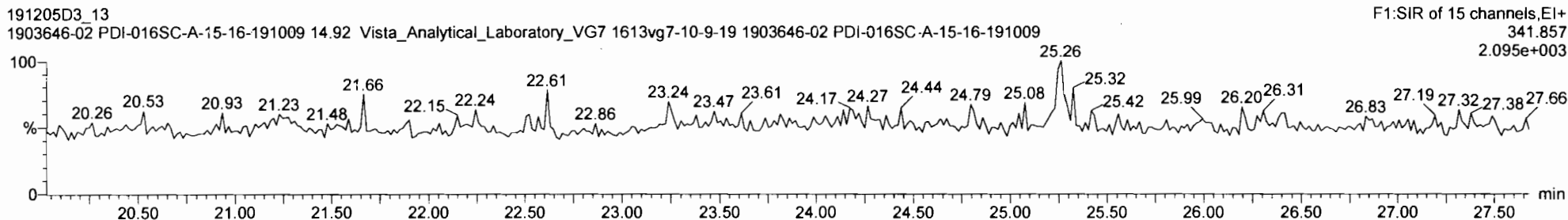
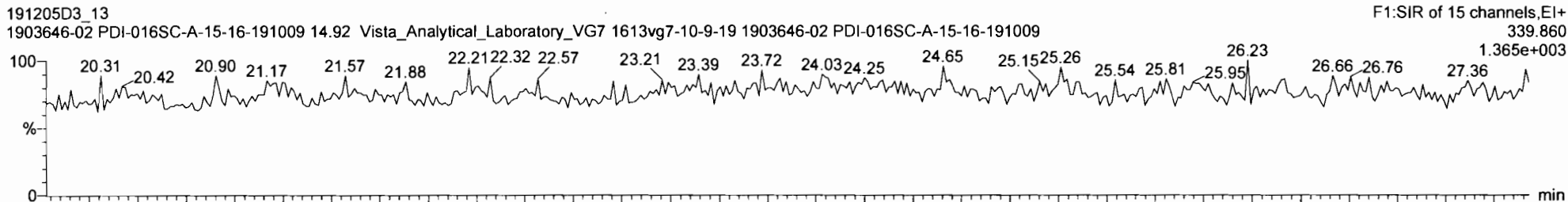
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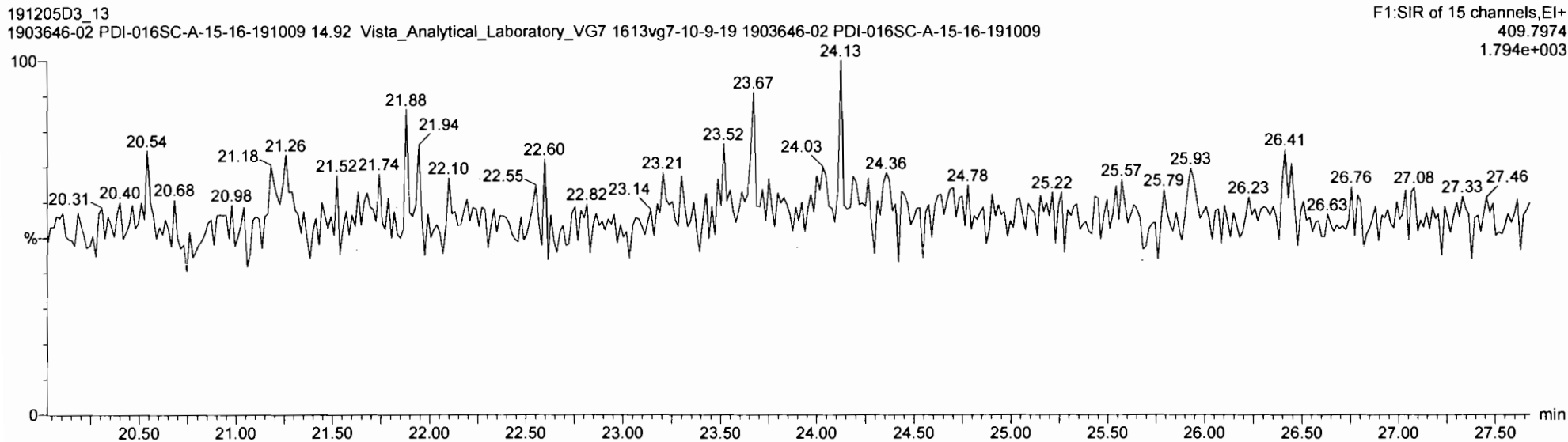
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Description: 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

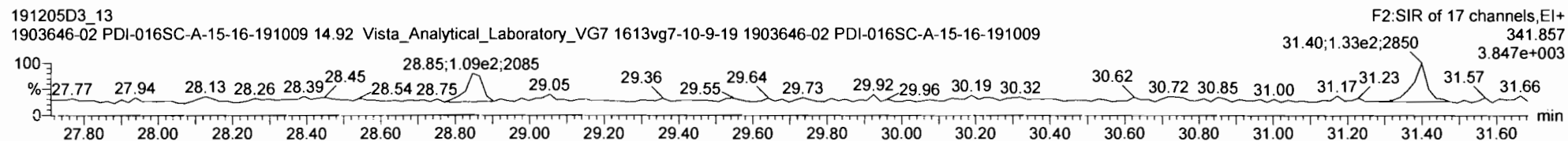
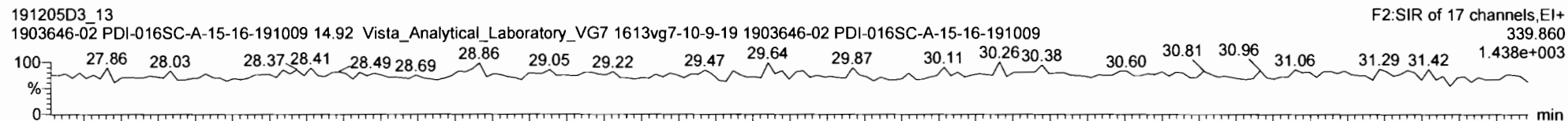
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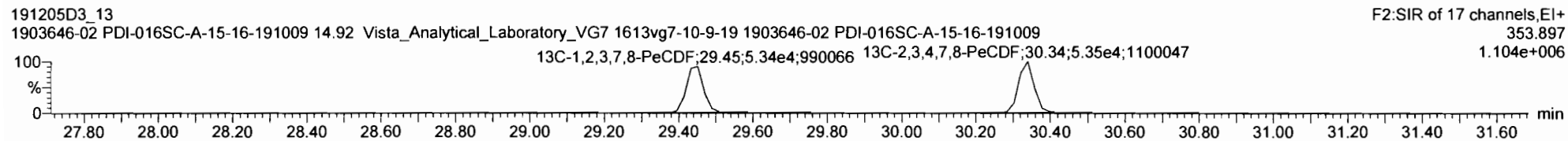
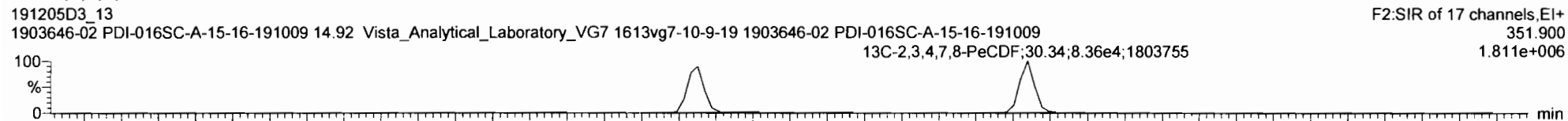
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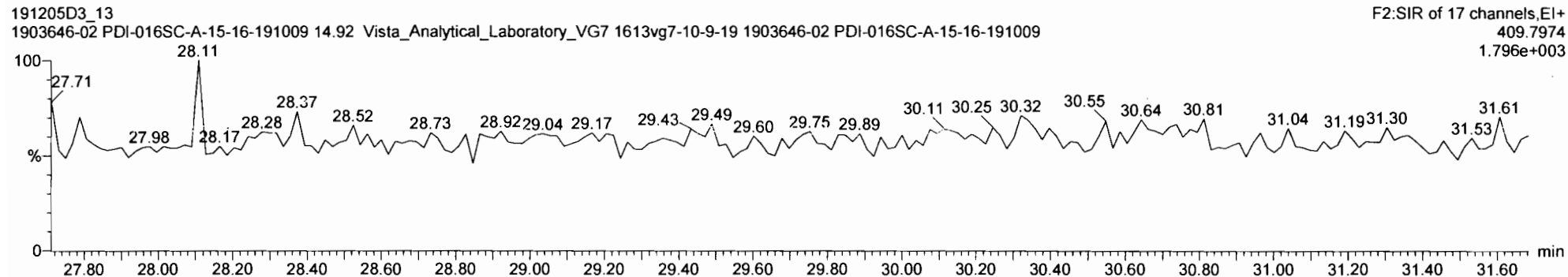
Total Penta-Furans



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



DPE2



Vista Analytical Laboratory

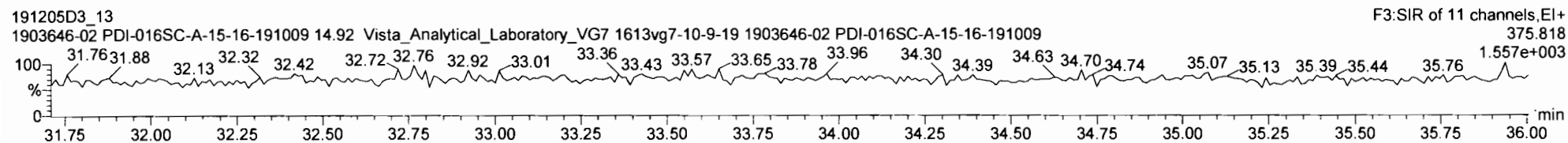
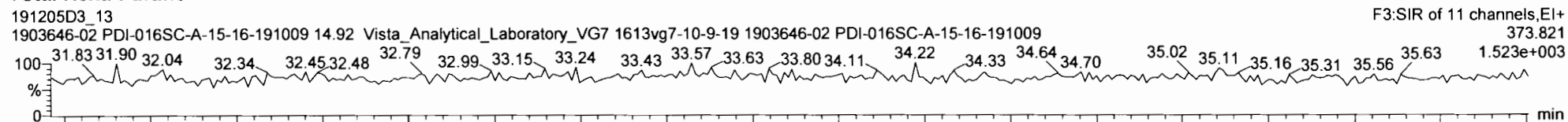
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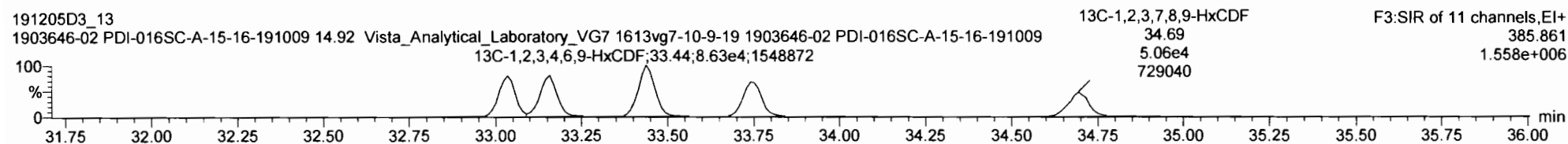
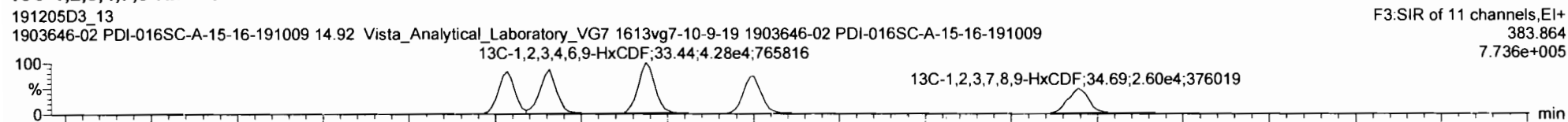
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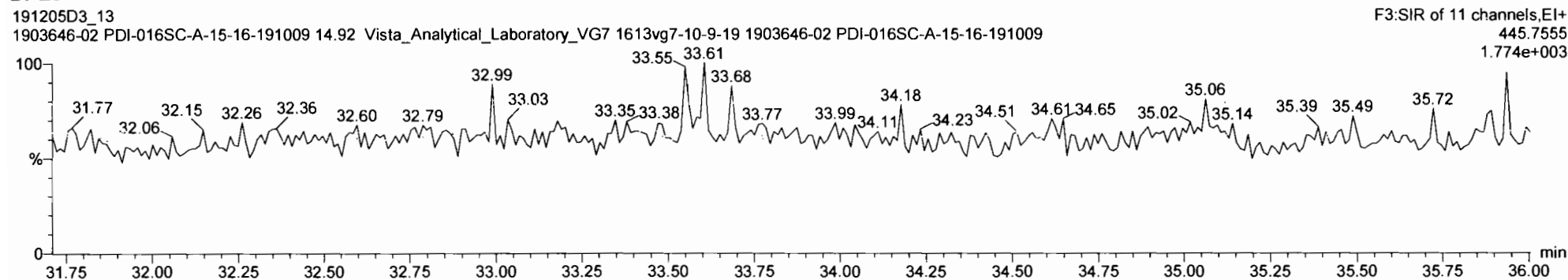
**Total Hexa-Furans**



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



**DPE3**



Vista Analytical Laboratory

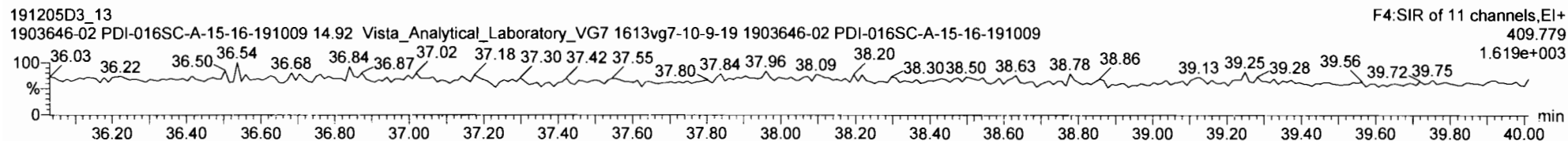
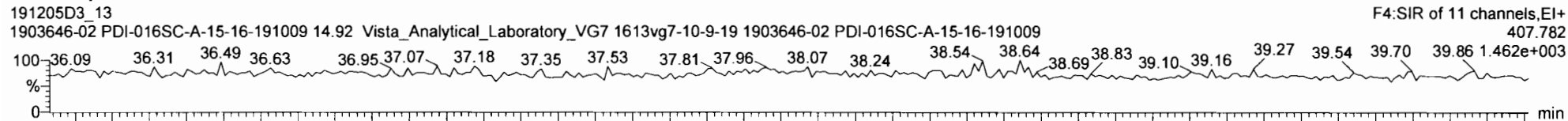
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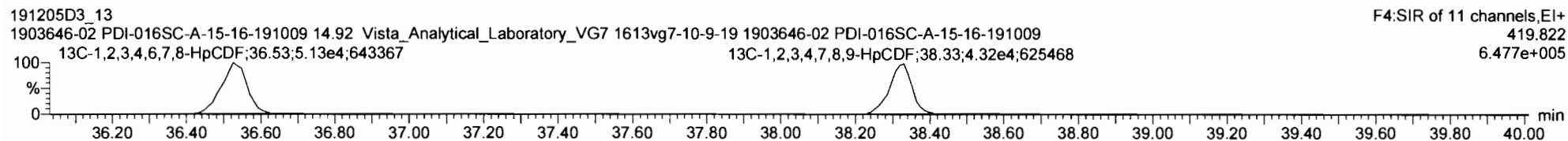
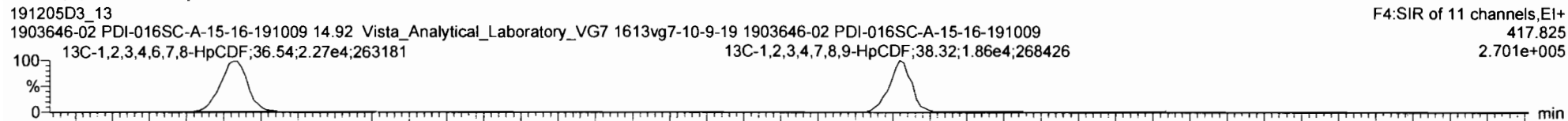
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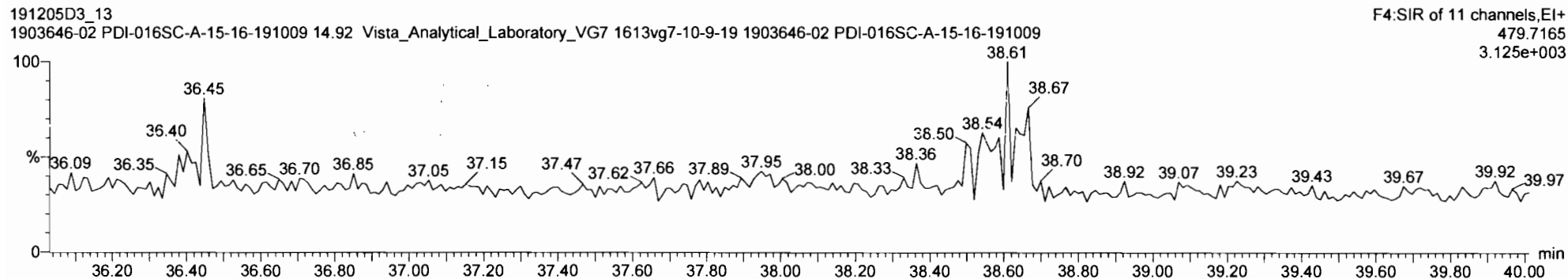
Total Hepta-Furans



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



DPE4



Vista Analytical Laboratory

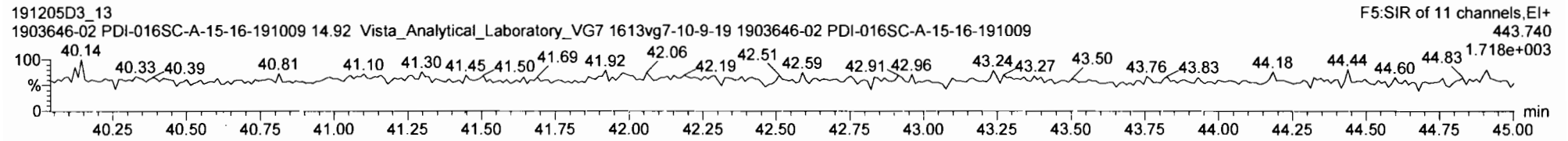
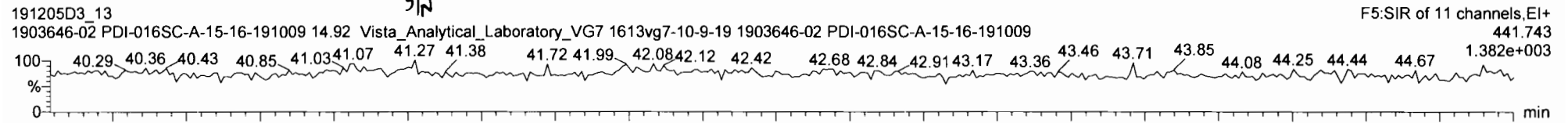
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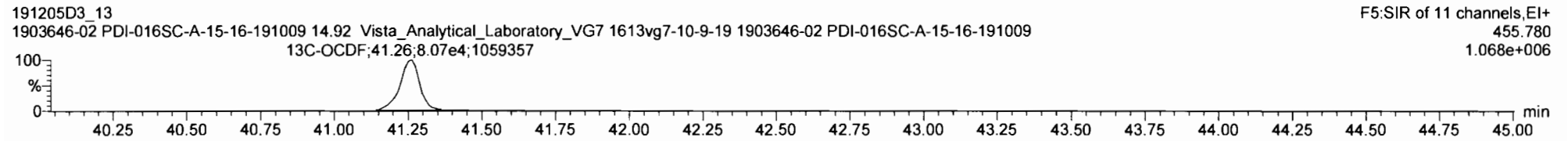
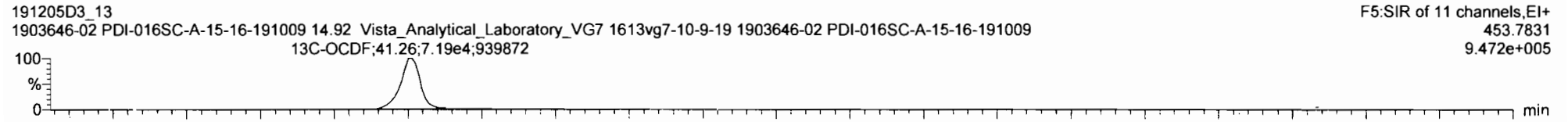
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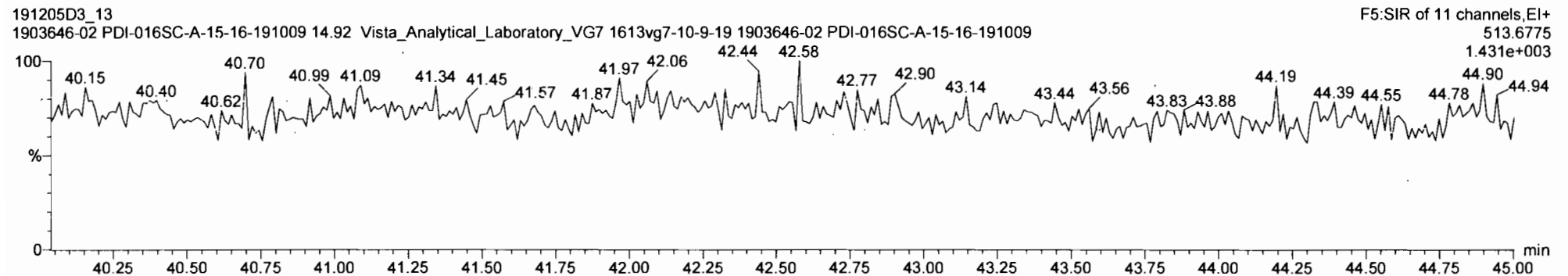
OCDF



13C-OCDF



DPE5





Vista Analytical Laboratory

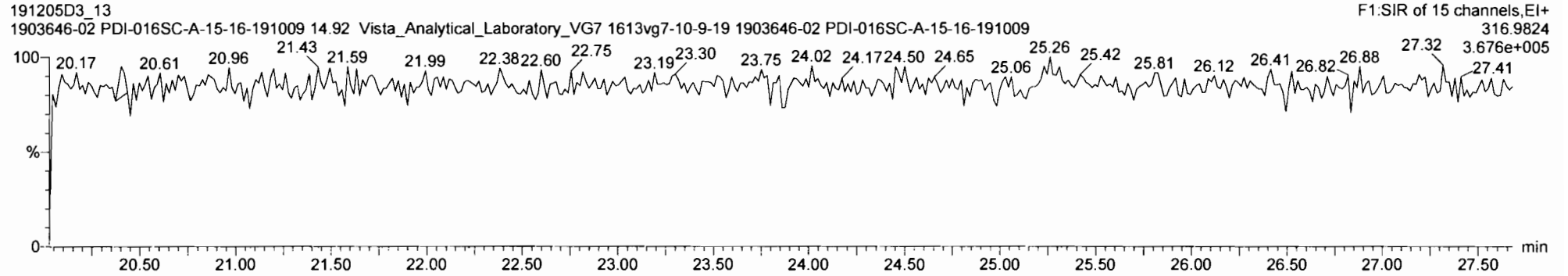
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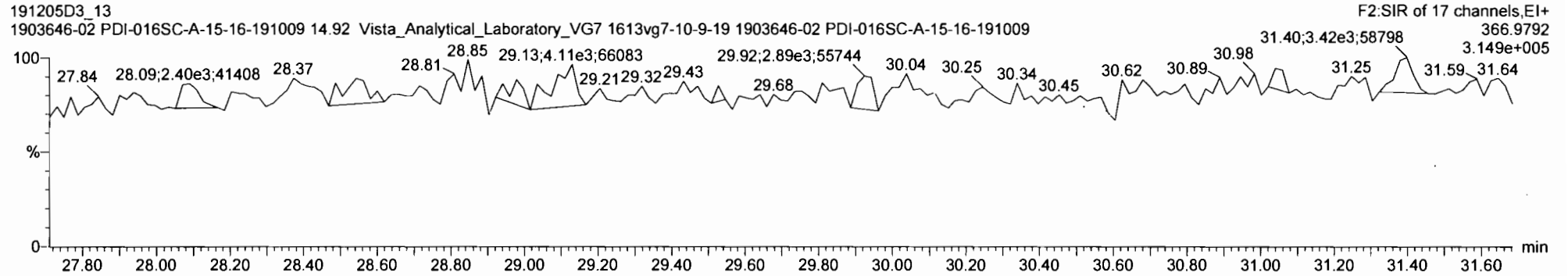
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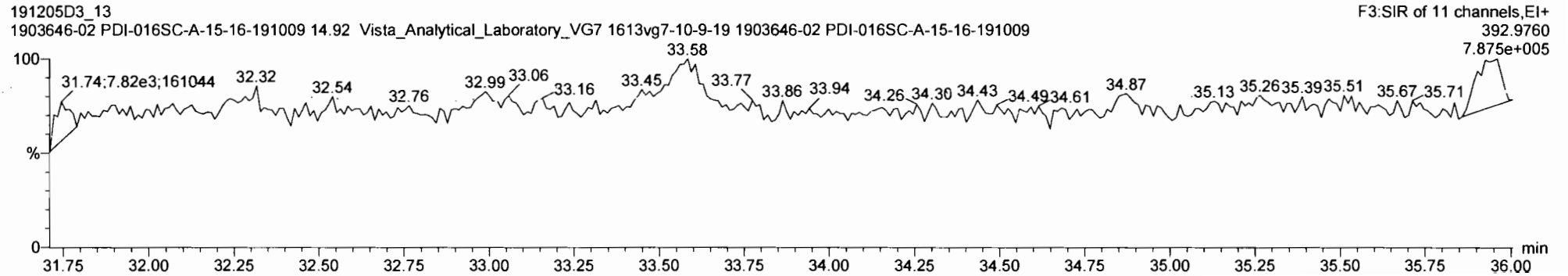
PFK1



PFK2



PFK3



Vista Analytical Laboratory

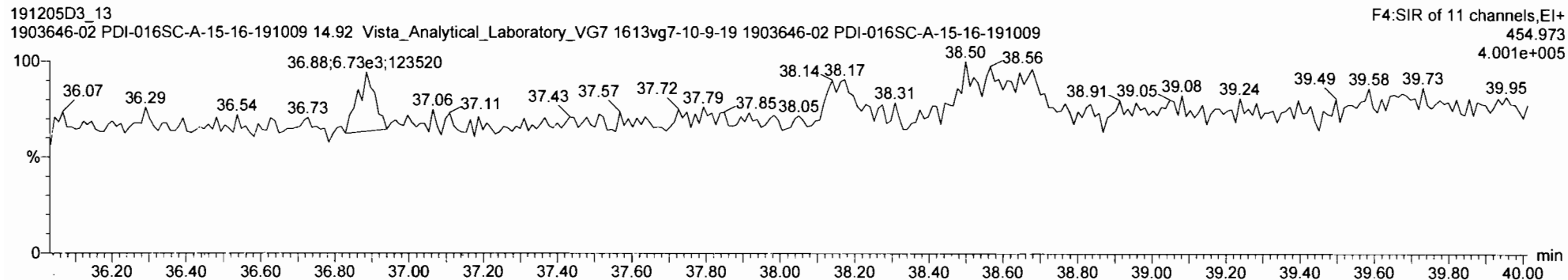
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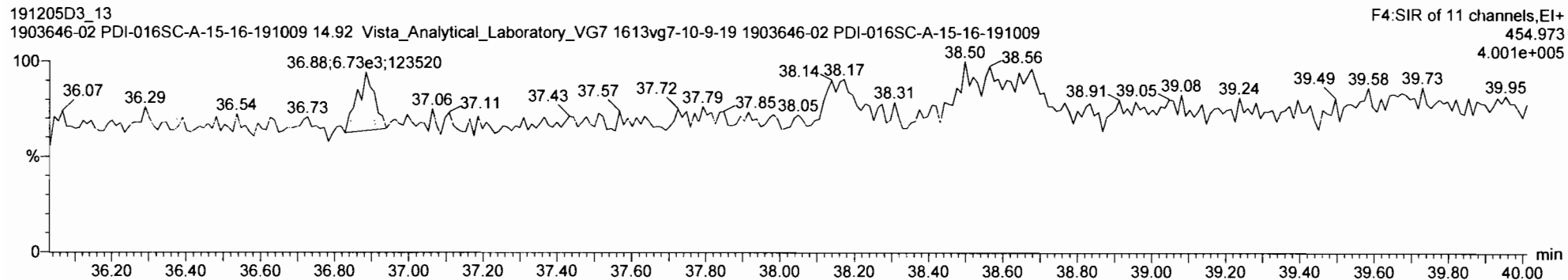
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Description: 1903646-02 PDI-016SC-A-15-16-191009 14.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-3.qld

Last Altered: Wednesday, December 11, 2019 09:10:51 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:12:19 Pacific Standard Time

EL 12/11/19

CT 12/18/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 15:14:28

Name: 191205D4\_3, Date: 7-DEC-2019, Time: 07:41:24, ID: 1903646-03 PDI-023SC-A-11-12-191009,

Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_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		1.07e5	9.8966	0.905			1.001		26.12					0.245
2	2 1,2,3,7,8-PeCDD		8.80e4	9.8966	0.903			1.001		30.62					0.307
3	3 1,2,3,4,7,8-HxCDD		7.03e4	9.8966	1.101			1.000		33.91					0.565
4	4 1,2,3,6,7,8-HxCDD		7.28e4	9.8966	0.939			1.000		34.02					0.626
5	5 1,2,3,7,8,9-HxCDD		7.35e4	9.8966	0.961			1.001		34.34					0.645
6	6 1,2,3,4,6,7,8-HpCDD	4.90e2	6.56e4	9.8966	0.979	1.328	YES	1.000	1.001	37.79	37.80	1.5305		1.35	0.277
7	7 OCDD	3.44e3	1.16e5	9.8966	0.959	0.858	NO	1.000	1.000	41.04	41.05	12.563		12.6	0.406
8	8 2,3,7,8-TCDF		1.83e5	9.8966	0.950			1.001		25.32					0.156
9	9 1,2,3,7,8-PeCDF		1.40e5	9.8966	0.960			1.001		29.45					0.116
10	10 2,3,4,7,8-PeCDF		1.44e5	9.8966	1.015			1.001		30.37					0.121
11	11 1,2,3,4,7,8-HxCDF		1.03e5	9.8966	1.177			1.000		33.03					0.295
12	12 1,2,3,6,7,8-HxCDF		1.08e5	9.8966	1.069			1.000		33.15					0.317
13	13 2,3,4,6,7,8-HxCDF		9.84e4	9.8966	1.114			1.001		33.78					0.355
14	14 1,2,3,7,8,9-HxCDF		8.31e4	9.8966	1.062			1.000		34.69					0.545
15	15 1,2,3,4,6,7,8-HpCDF		7.30e4	9.8966	1.128			1.001		36.56					0.232
16	16 1,2,3,4,7,8,9-HpCDF		6.21e4	9.8966	1.280			1.000		38.32					0.233
17	17 OCDF		1.48e5	9.8966	0.947			1.000		41.26					0.316
18	18 13C-2,3,7,8-TCDD	1.07e5	9.35e4	9.8966	1.095	0.785	NO	1.021	1.022	26.06	26.08	212.12	105.0		0.570
19	19 13C-1,2,3,7,8-PeCDD	8.80e4	9.35e4	9.8966	0.881	0.630	NO	1.187	1.199	30.29	30.60	215.92	106.8		0.435
20	20 13C-1,2,3,4,7,8-Hx...	7.03e4	1.04e5	9.8966	0.642	1.314	NO	1.014	1.014	33.90	33.90	212.96	105.4		1.24
21	21 13C-1,2,3,6,7,8-Hx...	7.28e4	1.04e5	9.8966	0.856	1.292	NO	1.017	1.017	34.01	34.02	165.63	82.0		0.929
22	22 13C-1,2,3,7,8,9-Hx...	7.35e4	1.04e5	9.8966	0.807	1.258	NO	1.026	1.026	34.31	34.31	177.34	87.8		0.985
23	23 13C-1,2,3,4,6,7,8-H...	6.56e4	1.04e5	9.8966	0.654	1.049	NO	1.126	1.130	37.65	37.78	195.28	96.6		1.18
24	24 13C-OCDD	1.16e5	1.04e5	9.8966	0.580	0.898	NO	1.226	1.227	40.99	41.04	387.78	95.9		1.00
25	25 13C-2,3,7,8-TCDF	1.83e5	1.60e5	9.8966	1.035	0.791	NO	0.992	0.991	25.32	25.29	223.35	110.5		0.517
26	26 13C-1,2,3,7,8-PeCDF	1.40e5	1.60e5	9.8966	0.854	1.618	NO	1.154	1.153	29.45	29.43	207.21	102.5		1.01
27	27 13C-2,3,4,7,8-PeCDF	1.44e5	1.60e5	9.8966	0.847	1.642	NO	1.189	1.189	30.35	30.34	214.25	106.0		1.02
28	28 13C-1,2,3,4,7,8-Hx...	1.03e5	1.04e5	9.8966	0.832	0.519	NO	0.987	0.988	33.01	33.03	241.72	119.6		1.24
29	29 13C-1,2,3,6,7,8-Hx...	1.08e5	1.04e5	9.8966	1.034	0.514	NO	0.991	0.991	33.13	33.14	203.97	100.9		0.996
30	30 13C-2,3,4,6,7,8-Hx...	9.84e4	1.04e5	9.8966	0.953	0.528	NO	1.009	1.009	33.74	33.75	200.96	99.4		1.08
31	31 13C-1,2,3,7,8,9-Hx...	8.31e4	1.04e5	9.8966	0.828	0.520	NO	1.039	1.038	34.73	34.69	195.44	96.7		1.25

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-3.qld

Last Altered: Wednesday, December 11, 2019 09:10:51 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:12:19 Pacific Standard Time

Name: 191205D4\_3, Date: 7-DEC-2019, Time: 07:41:24, ID: 1903646-03 PDI-023SC-A-11-12-191009,  
 Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Area	IS Area	WL/Vol.	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
32	13C-1,2,3,4,6,7,8-H...	7.30e4	1.04e5	9.8966	0.757	0.451	NO	1.093	1.092	36.54	36.52	187.50	92.8		1.20
33	13C-1,2,3,4,7,8,9-H...	6.21e4	1.04e5	9.8966	0.581	0.459	NO	1.143	1.146	38.22	38.32	208.06	103.0		1.57
34	13C-OCDF	1.48e5	1.04e5	9.8966	0.689	0.865	NO	1.233	1.234	41.23	41.26	419.14	103.7		1.17
35	37Cl-2,3,7,8-TCDD	4.24e4	9.35e4	9.8966	1.198			1.022	1.023	26.09	26.10	76.634	94.8		0.225
36	13C-1,2,3,4-TCDD	9.35e4	9.35e4	9.8966	1.000	0.820	NO	1.000	1.000	25.50	25.52	202.09	100.0		0.624
37	13C-1,2,3,4-TCDF	1.60e5	1.60e5	9.8966	1.000	0.797	NO	1.000	1.000	24.06	24.08	202.09	100.0		0.536
38	13C-1,2,3,4,6,9-Hx...	1.04e5	1.04e5	9.8966	1.000	0.493	NO	1.000	1.000	33.42	33.43	202.09	100.0		1.03
39	Total Tetra-Dioxins		1.07e5	9.8966	0.901			0.000		25.50					0.129
40	Total Penta-Dioxins		8.80e4	9.8966	0.872			0.000		30.00					0.150
41	Total Hexa-Dioxins		0.00e0	9.8966	0.976			0.000		33.80		0.00000		0.970	0.348
42	Total Hepta-Dioxins		6.56e4	9.8966	0.989			0.000		37.75		0.00000		3.93	0.129
43	Total Tetra-Furans		1.83e5	9.8966	0.943			0.000		24.00					0.0740
44	1st Func. Penta-Fur...		0.00e0	9.8966	0.940			0.000		27.63					0.0472
45	Total Penta-Furans		0.00e0	9.8966	0.940			0.000		30.00					0.0539
46	Total Hexa-Furans		0.00e0	9.8966	1.078			0.000		33.00					0.202
47	Total Hepta-Furans		0.00e0	9.8966	1.135			0.000		37.75					0.124

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-3.qld

Last Altered: Wednesday, December 11, 2019 09:10:51 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:12:19 Pacific Standard Time

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Calibration: 10 Dec 2019 15:14:28

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Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_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	YES	32.38	87.675	40635.872	0.000	MM	0.0000	0.45
2	41 Total Hexa-Dioxins	YES	32.40	149.628	40635.872	0.000	MM	0.0000	0.52

**Hepta-Dioxins**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
	42 Total Hepta-Dioxins	YES	36.94	496.044	33595.539	0.000	MM	0.0000	2.58
	6 1,2,3,4,6,7,8-HpCDD	YES	37.80	279.257	33595.539	0.000	MM	0.0000	1.35

**Tetra-Furans**

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

**Penta-Furans function 1**

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

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-3.qld  
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Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_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

Hepta-Furans

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

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

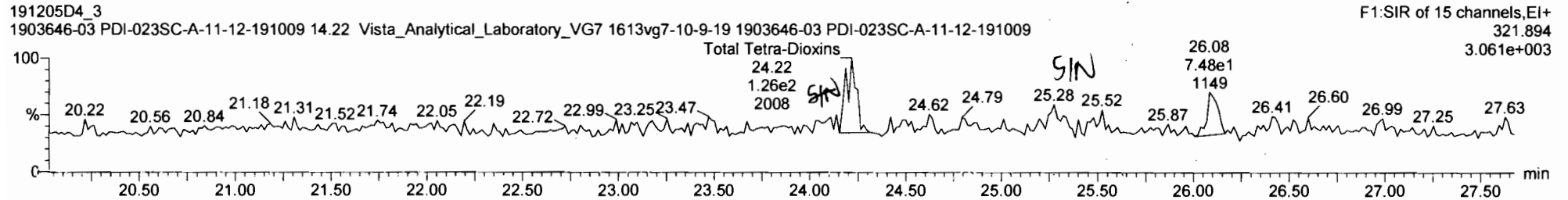
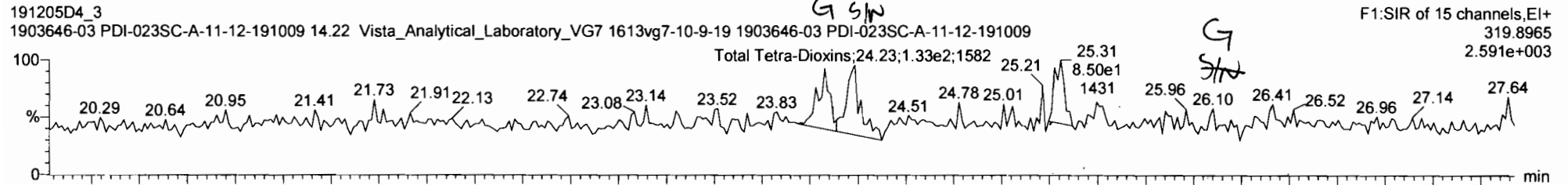
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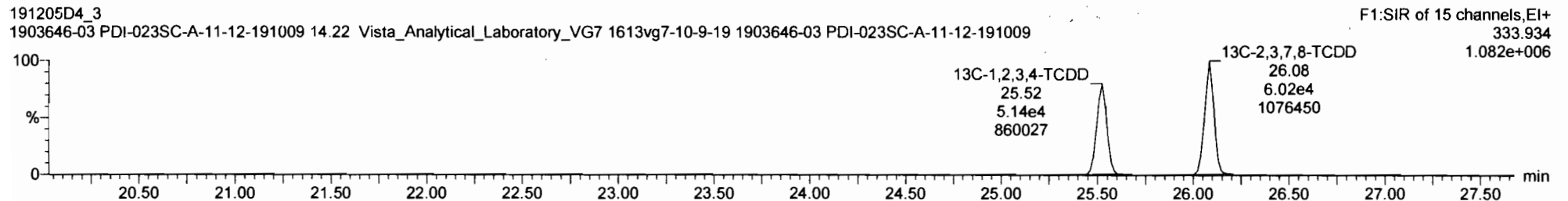
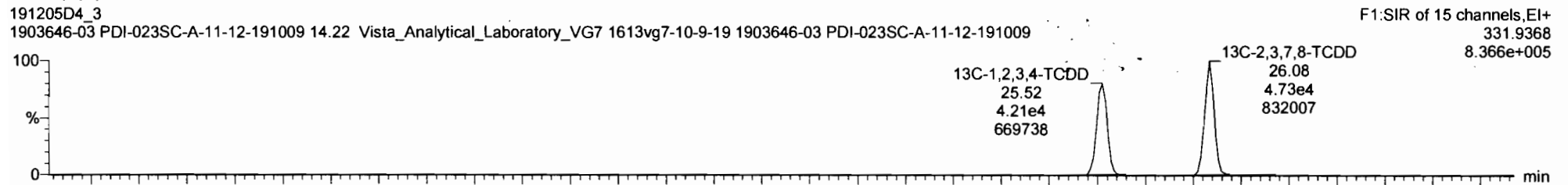
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Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Tetra-Dioxins



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

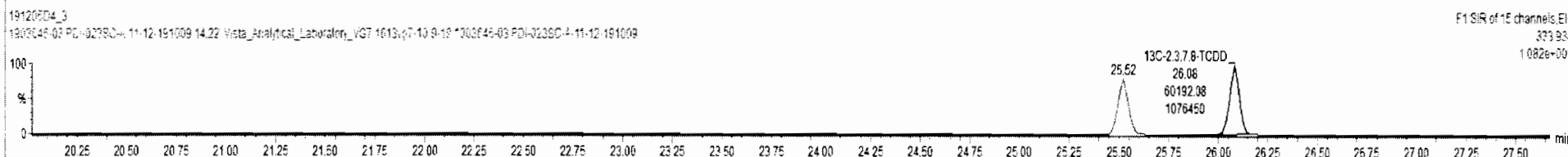
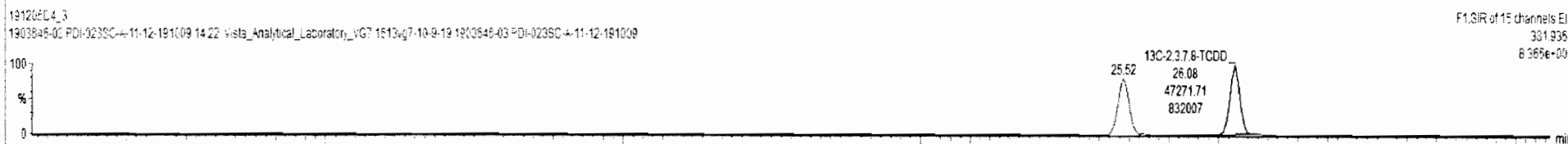
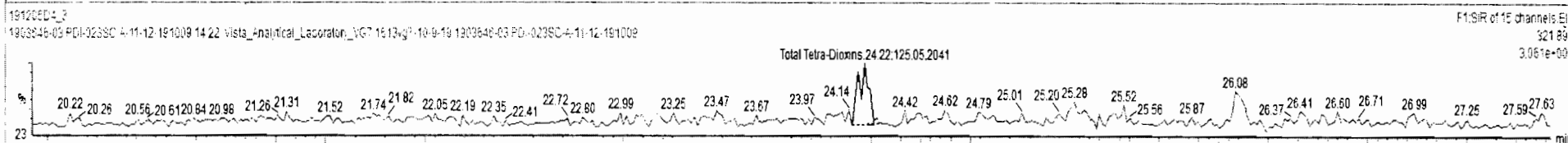
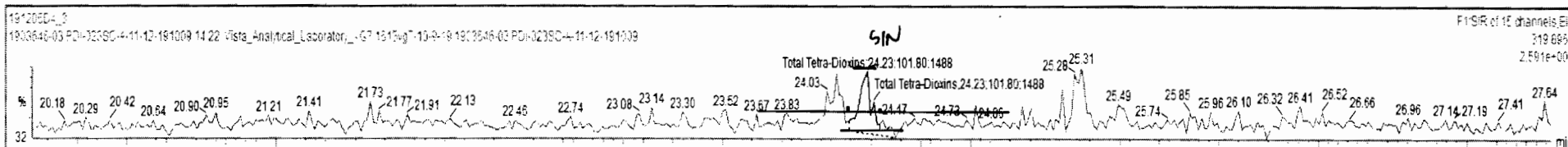




191205D4\_3 - 1903646-03 PDI-023SC-A-11-12-191009 - 1903646-03 PDI-023SC-A-11-12-191009 14 22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	S Resp	IS#	RA	nly	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
36	13C-1,2,3,4-TCDD	9.35e4	9.35e4	36	0.82	NO	1.000	9.897	25.50	25.52	1.000	1.000	NO	202.1	100	0.624	
37	13C-1,2,3,4-TCDF	1.60e5	1.60e5	37	0.80	NO	1.000	9.897	24.06	24.08	1.000	1.000	NO	202.1	100	0.536	
38	13C-1,2,3,4,6,8-HxCDF	1.04e5	1.04e5	38	0.49	NO	1.000	9.897	33.42	33.43	1.000	1.000	NO	202.1	100	1.03	
39	Total Tetra-Dioxins	1.07e5					0.901	9.897	25.50			0.000	NO	0.4735		0.247	0.4735
40	Total Penta-Dioxins	8.90e4					0.872	9.897	30.00			0.000	NO	0.0300		0.150	1.119
41	Total Hexa-Dioxins	0.00e0					0.976	9.897	33.80			0.000	NO	0.0300		0.348	0.4653
42	Total Hepta-Dioxins	6.56e4					0.389	9.897	37.75			0.000	NO	0.0300		0.129	4.071
43	Total Tetra-Furans	1.83e5					0.942	9.897	24.00			0.000	NO			0.0740	
44	1st Func. Penta-Furans	0.00e0					0.940	9.897	27.63			0.000	NO			0.0472	
45	Total Penta-Furans	0.00e0					0.940	9.897	30.00			0.000	NO			0.0539	
46	Total Hexa-Furans	0.00e0					1.073	9.897	33.00			0.000	NO			0.202	
47	Total Hepta-Furans	0.00e0					1.135	9.897	37.75			0.000	NO			0.124	
48	SRDFK1																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	24.23	1.015e2	1.250e2	0.770	0.81	NO	0.47353	0.47353





Vista Analytical Laboratory

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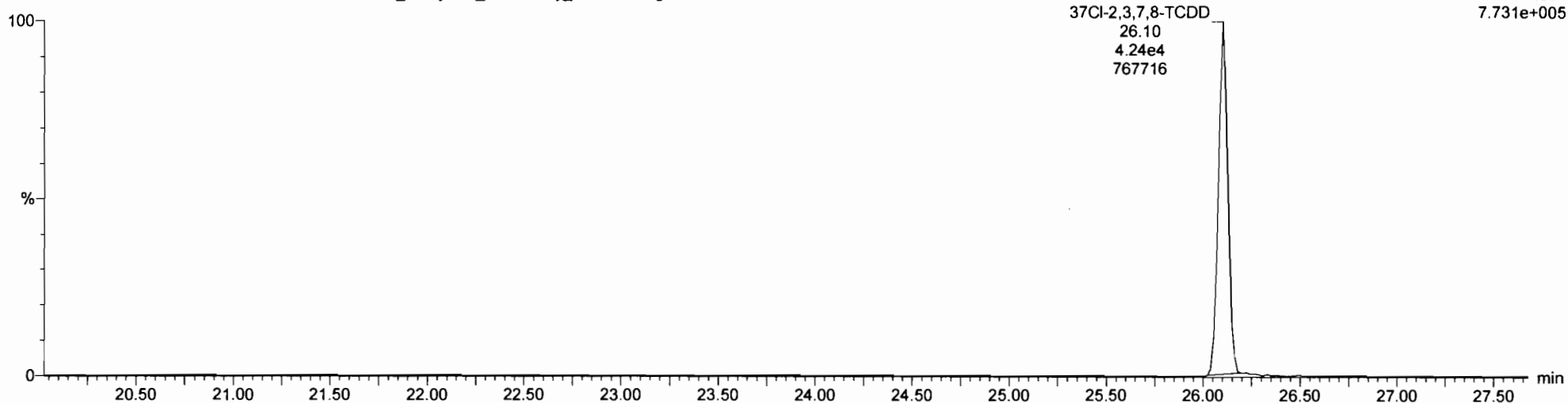
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Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

191205D4\_3  
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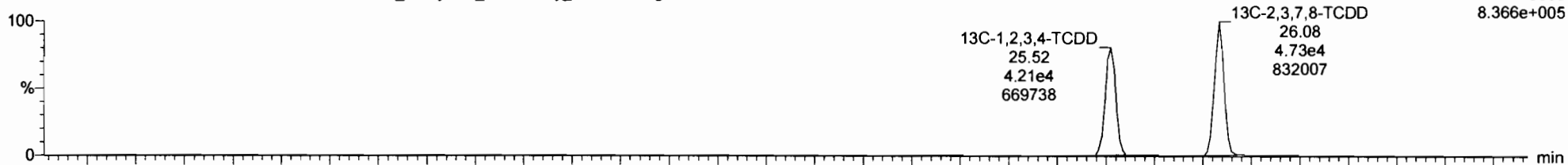
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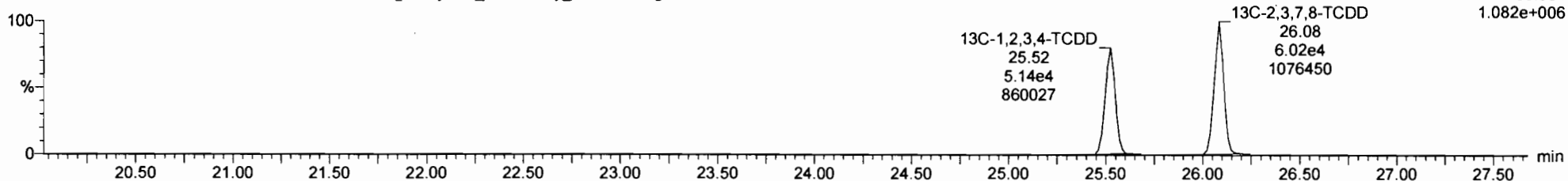
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F1:SIR of 15 channels,EI+  
331.9368  
8.366e+005



191205D4\_3  
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Vista Analytical Laboratory

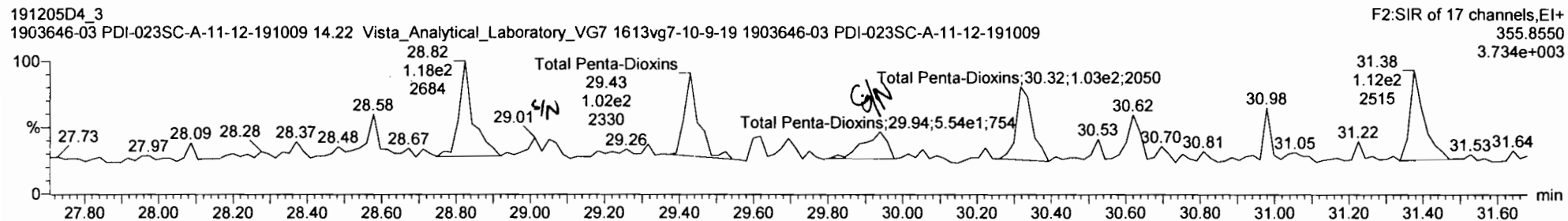
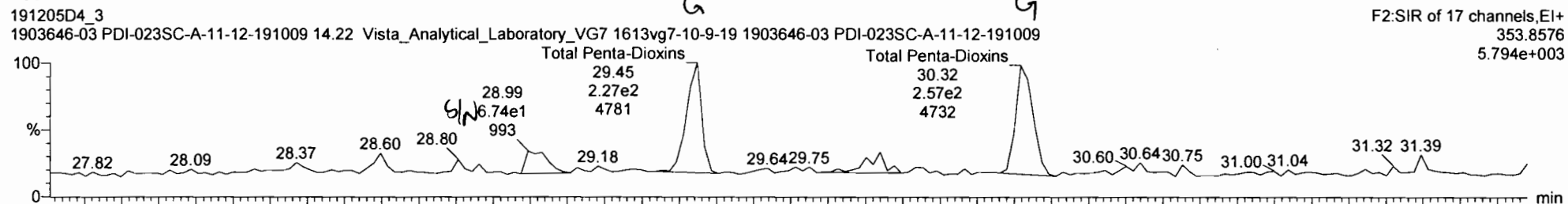
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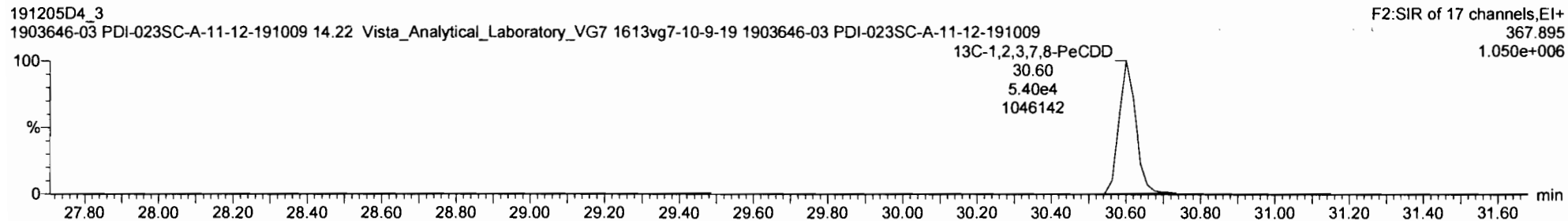
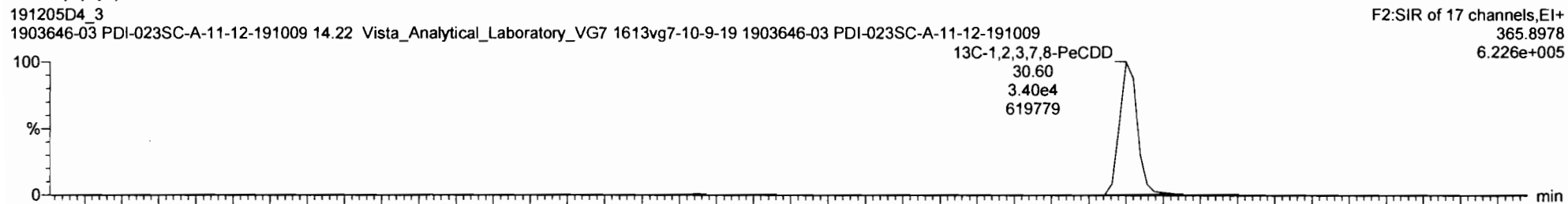
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Total Penta-Dioxins



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



Vista Analytical Laboratory

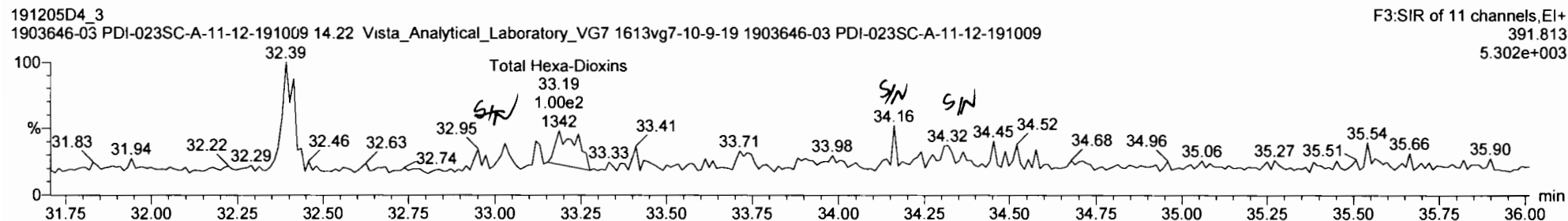
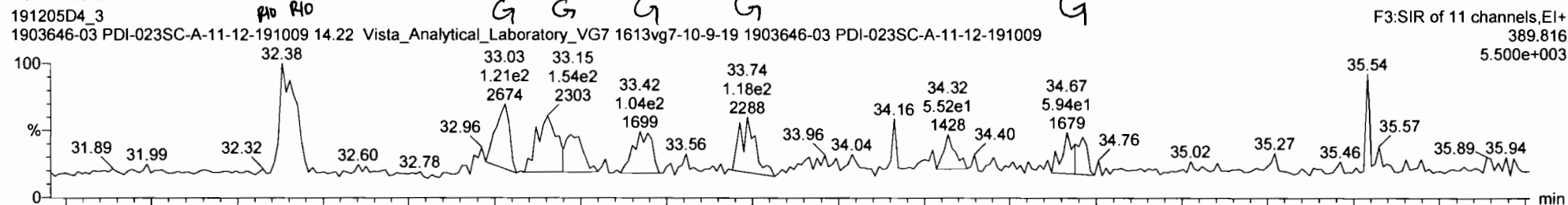
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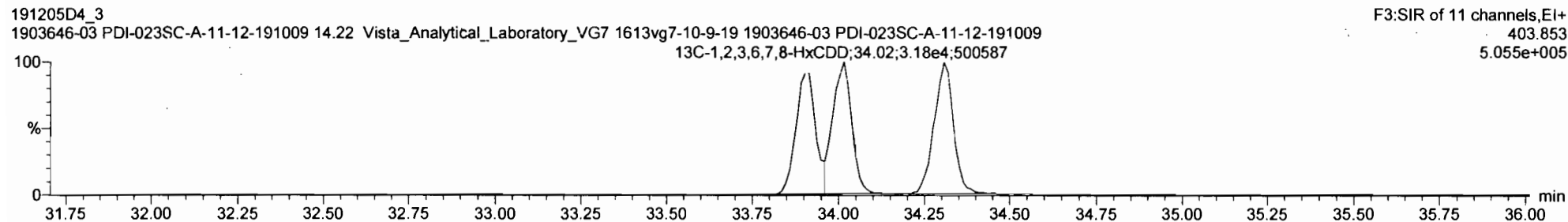
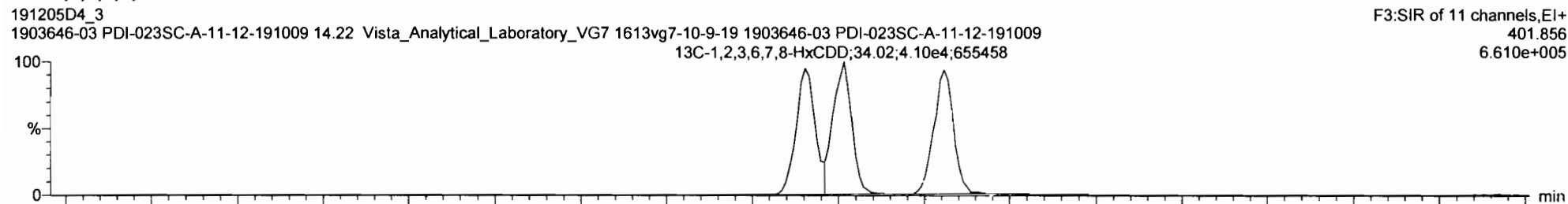
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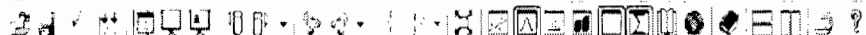
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Total Hexa-Dioxins



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

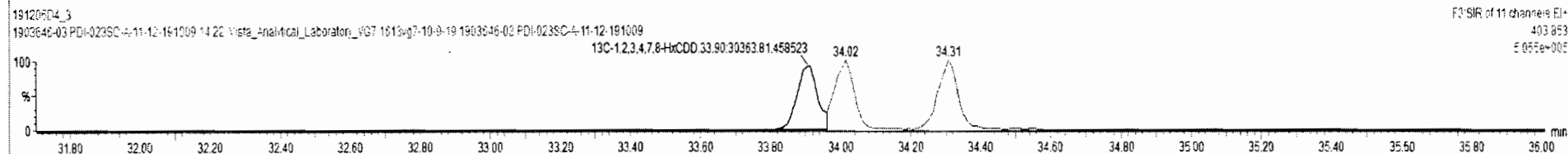
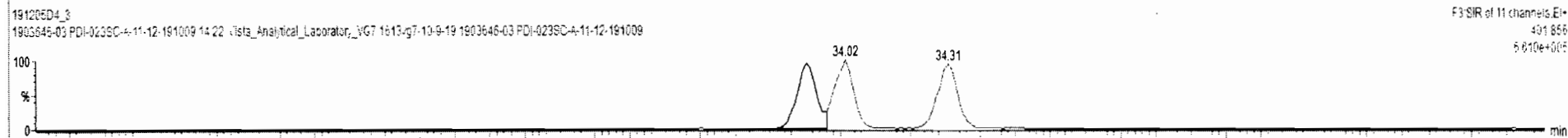
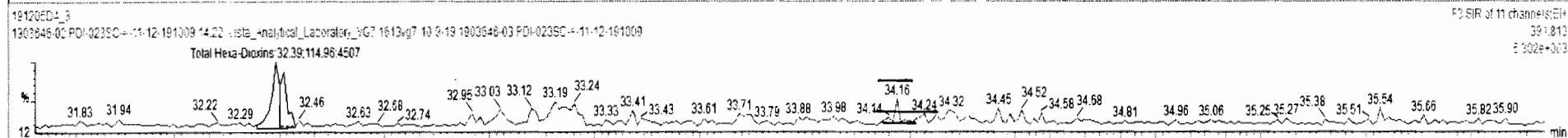
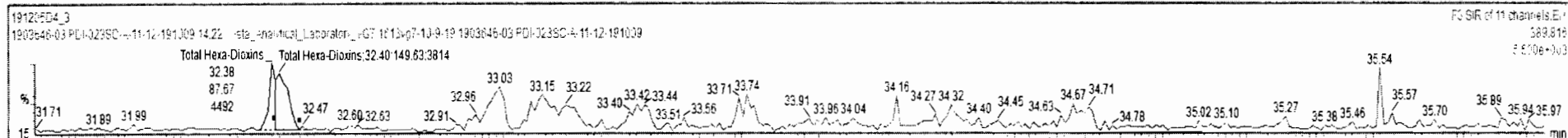




191205D4\_3 - 1903646-03 PDI-023SC-A-11-12-191009 - 1903646-03 PDI-023SC-A-11-12-191009 14 22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
30	13C-1,2,3,4,6,7,8-HxCDF	9.84e4	1.04e5	38	0.53	NO	0.953	6.897	33.74	33.75	1.009	1.009	NO	261.0	99.4	1.08	
31	13C-1,2,3,7,8,9-HxCDF	8.31e4	1.04e5	38	0.52	NO	0.828	6.897	34.73	34.69	1.038	1.039	NO	195.4	96.7	1.25	
32	13C-1,2,3,4,6,7,8-HpCDF	7.30e4	1.04e5	38	0.45	NO	0.757	6.897	36.54	36.52	1.092	1.093	NO	187.5	92.8	1.20	
33	13C-1,2,3,4,7,8,9-HpCDF	6.21e4	1.04e5	38	0.46	NO	0.581	6.897	38.22	38.32	1.146	1.143	NO	208.1	103	1.57	
34	13C-OCDF	1.48e5	1.04e5	38	0.87	NO	0.689	6.897	41.23	41.26	1.234	1.233	NO	419.1	104	1.17	
35	37C-1,2,3,7,8-TCDF	4.24e4	9.35e4	36			1.198	6.897	26.09	26.10	1.023	1.022	NO	76.63	94.8	0.225	
36	13C-1,2,3,4-TCDF	9.35e4	9.35e4	38	0.82	NO	1.000	6.897	25.50	25.52	1.000	1.000	NO	202.1	100	0.624	
37	13C-1,2,3,4-TCDF	1.60e5	1.60e5	37	0.80	NO	1.000	6.897	24.06	24.08	1.000	1.000	NO	202.1	100	0.536	
38	13C-1,2,3,4,6,8-HxCDF	1.04e5	1.04e5	38	0.49	NO	1.000	6.897	33.42	33.43	1.000	1.000	NO	202.1	100	1.03	
39	Total Tetra-Dioxins		1.07e5				0.901	6.897	25.50			0.906	NO			0.129	
40	Total Penta-Dioxins		8.80e4				0.872	6.897	30.00			0.900	NO			0.150	
41	Total Hexa-Dioxins		0.00e0				0.976	0.897	33.80			0.000	NO	0.0000		0.348	0.9701
42	Total Hepta-Dioxins		6.66e2				0.880	6.897	37.78			0.900	NO	0.0000		0.176	4.071

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	41 Total Hexa-Dioxins	33.80	32.38	6.767e1	1.159e2	1.240	0.76	YES	0.45426	0.00000
2	41 Total Hexa-Dioxins	33.60	32.40	1.496e2	6.029e1	1.240	1.86	YES	0.51583	0.00000



Vista Analytical Laboratory

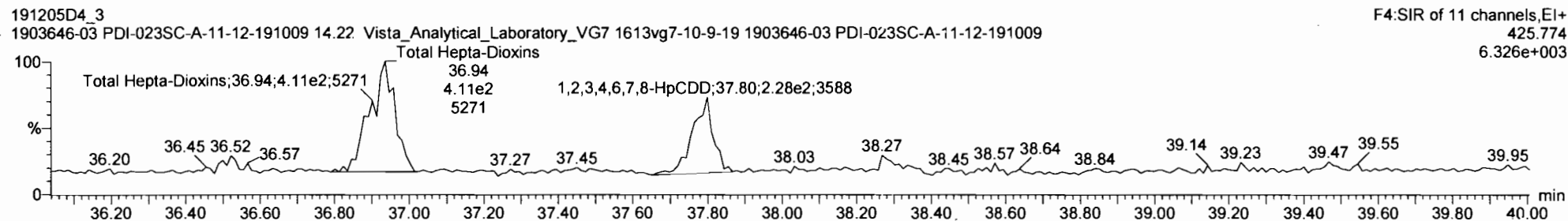
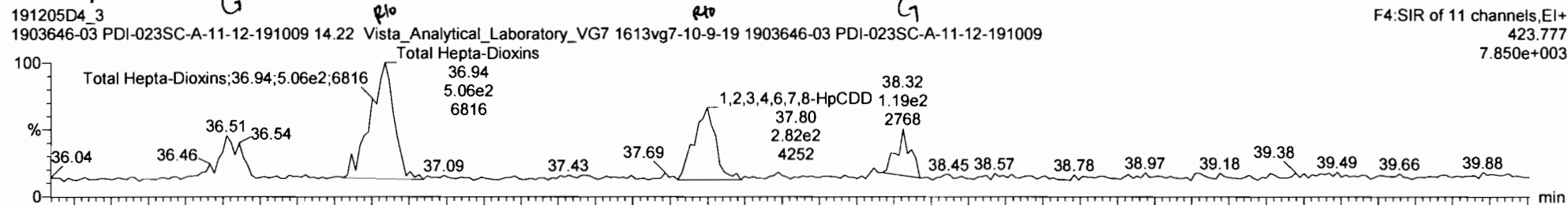
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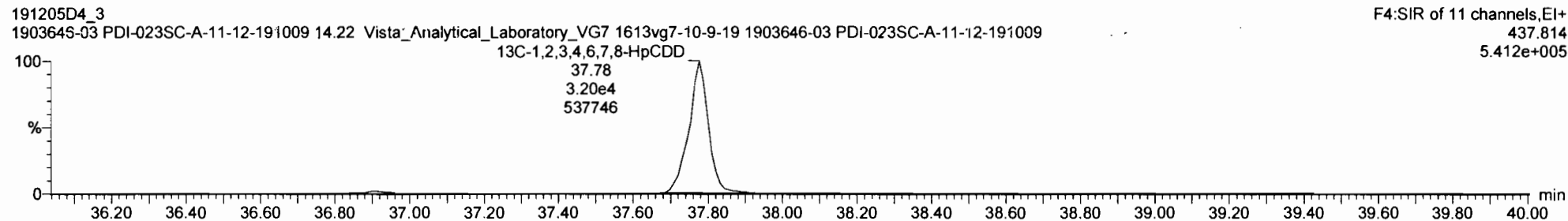
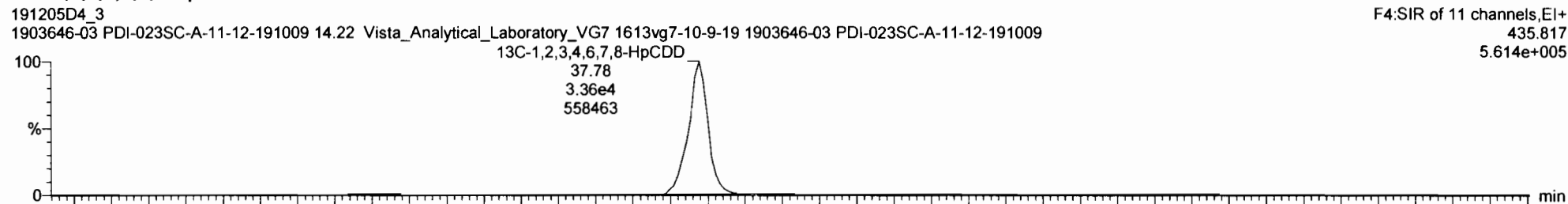
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Total Hepta-Dioxins



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

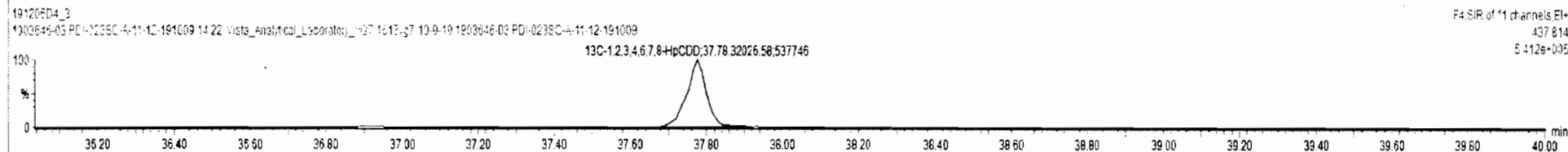
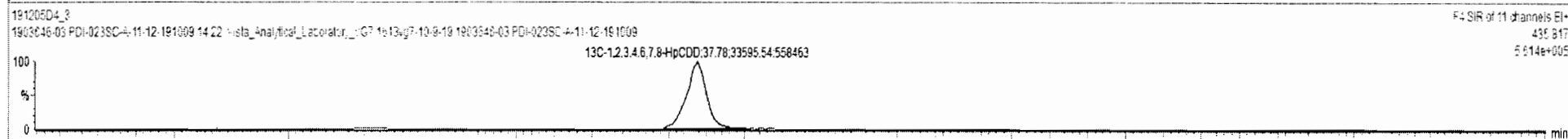
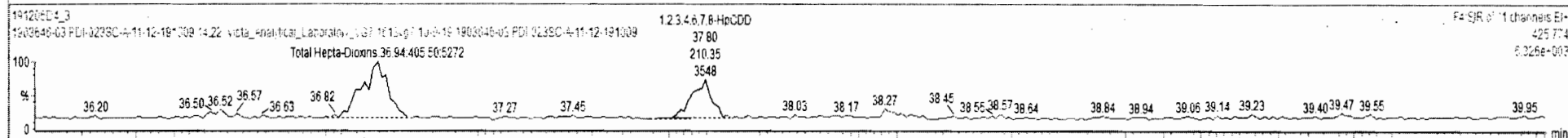
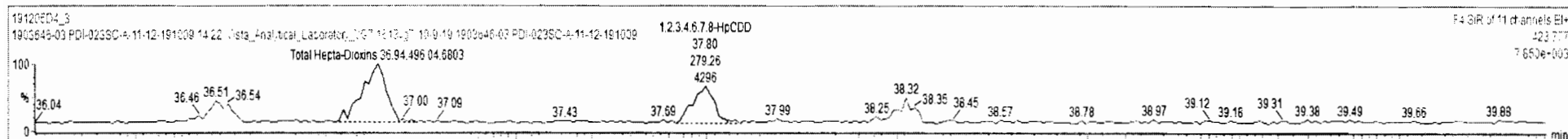




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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
30	13C-1,2,3,4,6,7,8-HxCDF	9.84e4	1.04e5	38	0.53	NO	0.953	6.697	33.74	33.75	1.009	1.009	NO	201.0	99.4	1.08	
31	13C-1,2,3,7,8-HxCDF	8.21e4	1.04e5	38	0.52	NO	0.828	6.697	34.73	34.69	1.038	1.039	NO	195.4	96.7	1.25	
32	13C-1,2,3,4,6,7,8-HpCDF	7.30e4	1.04e5	38	0.45	NO	0.757	6.697	36.54	36.52	1.092	1.093	NO	187.5	92.8	1.28	
33	13C-1,2,3,4,7,8,9-HpCDF	6.21e4	1.04e5	38	0.46	NO	0.581	6.697	38.22	38.32	1.146	1.143	NO	208.1	103	1.57	
34	13C-OCDF	1.48e5	1.04e5	38	0.87	NO	0.689	6.697	41.23	41.26	1.234	1.233	NO	419.1	104	1.17	
35	37Cl-2,3,7,8-TCDD	4.24e4	9.35e4	36			1.158	6.697	26.09	26.10	1.023	1.022	NO	76.63	94.8	0.225	
36	13C-1,2,3,4-TCDD	9.25e4	9.35e4	36	0.82	NO	1.038	6.697	25.50	25.52	1.000	1.000	NO	202.1	100	0.624	
37	13C-1,2,3,4-TCDF	1.66e5	1.60e5	37	0.80	NO	1.000	6.697	24.06	24.08	1.000	1.000	NO	202.1	100	0.536	
38	13C-1,2,3,4,6,8-HxCDF	1.04e5	1.04e5	38	0.49	NO	1.000	6.697	33.42	33.43	1.000	1.000	NO	202.1	100	1.03	
39	Total Tetra-Dioxins		1.07e5				0.901	6.697	25.50			0.900	NO			0.129	
40	Total Penta-Dioxins		8.80e4				0.872	6.697	30.00			0.900	NO			0.150	
41	Total Hexa-Dioxins		0.06e5				0.976	6.697	33.80			0.900	NO	0.0000		0.348	0.9761
42	Total Hepta-Dioxins		0.46e5				0.988	6.697	37.75			0.900	NO	0.0000		0.490	0.9861

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	36.94	4.963e2	4.055e2	1.040	1.22	YES	2.5766	0.00000
2	6 1,2,3,4,6,7,8-HpCDD	37.78	37.80	2.793e2	2.103e2	1.040	1.33	YES	1.3493	0.00000



Vista Analytical Laboratory

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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

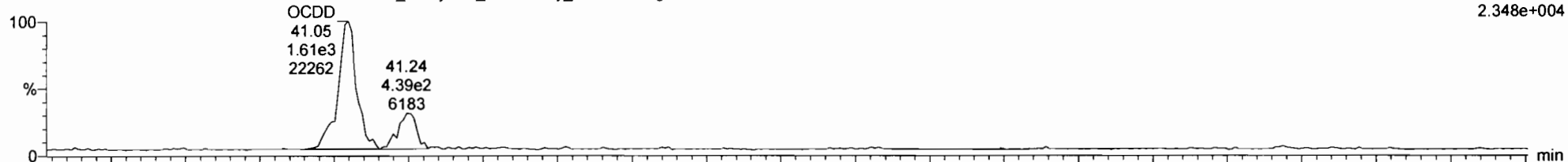
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OCDD

191205D4\_3

1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-03 PDI-023SC-A-11-12-191009

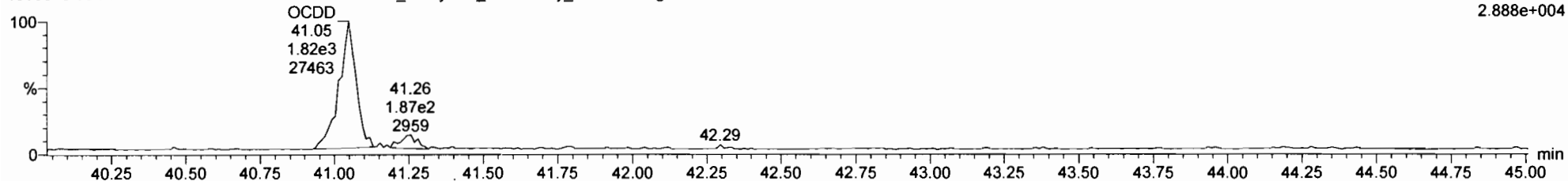
F5:SIR of 11 channels, EI+  
457.738  
2.348e+004



191205D4\_3

1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-03 PDI-023SC-A-11-12-191009

F5:SIR of 11 channels, EI+  
459.735  
2.888e+004

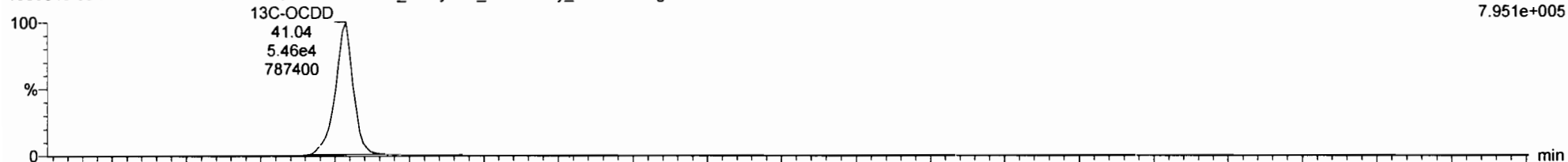


13C-OCDD

191205D4\_3

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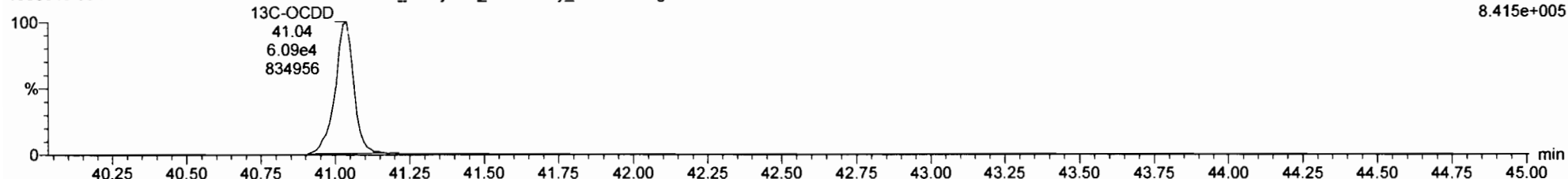
F5:SIR of 11 channels, EI+  
469.778  
7.951e+005



191205D4\_3

1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-03 PDI-023SC-A-11-12-191009

F5:SIR of 11 channels, EI+  
471.775  
8.415e+005

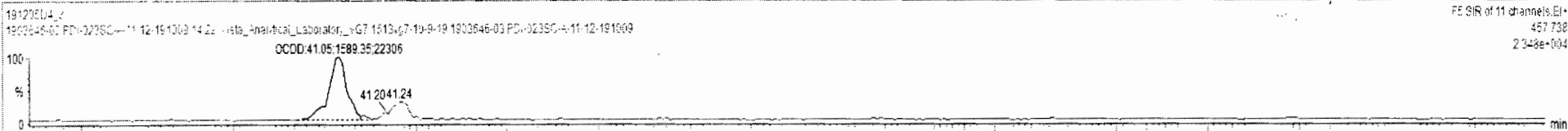




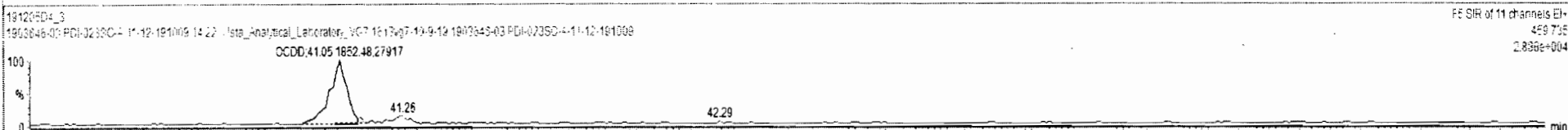
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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
6	1,2,3,4,6,7,8-HpCDD	4.90e2	6.56e4	23	1.33	YES	0.879	9.897	37.79	37.80	1.001	1.000	NO	1.536		0.277	1.349
7	OCDD	3.44e3	1.16e5	24	0.86	NO	0.959	9.897	41.04	41.05	1.000	1.000	NO	12.56		0.406	12.56
8	2,3,7,8-TCDF		1.63e5	25			0.950	9.897	25.32			1.001	NO			0.156	
9	1,2,3,7,8-PeCDF		1.40e5	26			0.960	9.897	29.45			1.001	NO			0.116	
10	2,3,4,7,8-PeCDF		1.44e5	27			1.015	9.897	30.37			1.001	NO			0.121	
11	1,2,3,4,7,8-HxCDF		1.03e5	28			1.177	9.897	33.03			1.000	NO			0.295	
12	1,2,3,6,7,8-HxCDF		1.08e5	29			1.069	9.897	33.15			1.000	NO			0.317	
13	2,3,4,6,7,8-HxCDF		9.84e4	30			1.114	9.897	33.78			1.001	NO			0.355	
14	1,2,3,7,8,9-HxCDF		8.31e4	31			1.062	9.897	34.69			1.000	NO			0.545	
15	1,2,3,4,6,7,8-HpCDF		7.30e4	32			1.128	9.897	36.56			1.001	NO			0.232	
16	1,2,3,4,7,8,9-HpCDF		6.21e4	33			1.280	9.897	38.32			1.000	NO			0.233	
17	OCDF		1.48e5	34			0.947	9.897	41.26			1.000	NO			0.316	
18	1,2,3,7,8,9-HxCDF	1.07e5	9.75e4	35	0.79	NO	1.096	9.897	36.06	36.08	1.002	1.001	NO	242.1	105	0.570	

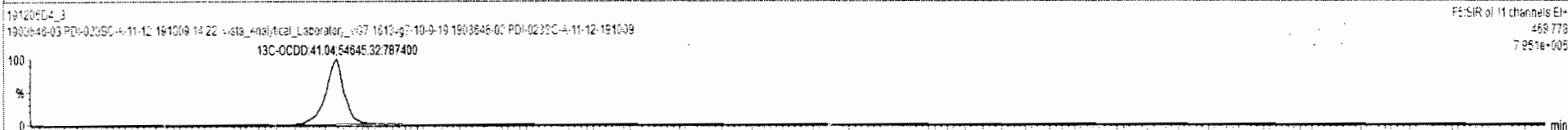
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1										



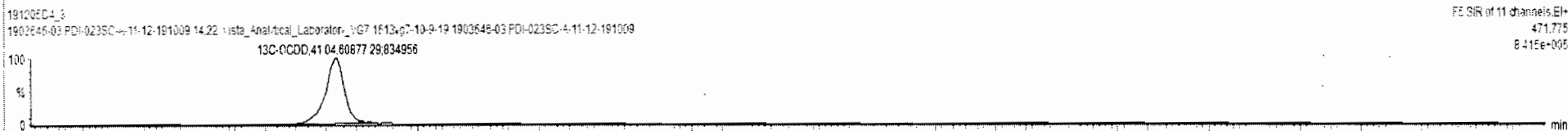
FE: SIR of 11 channels: EI+  
459.736  
2.349e+004



FE: SIR of 11 channels: EI+  
459.736  
2.836e+004



FE: SIR of 11 channels: EI+  
458.773  
7.951e+005



FE: SIR of 11 channels: EI+  
471.775  
8.415e+005



Vista Analytical Laboratory

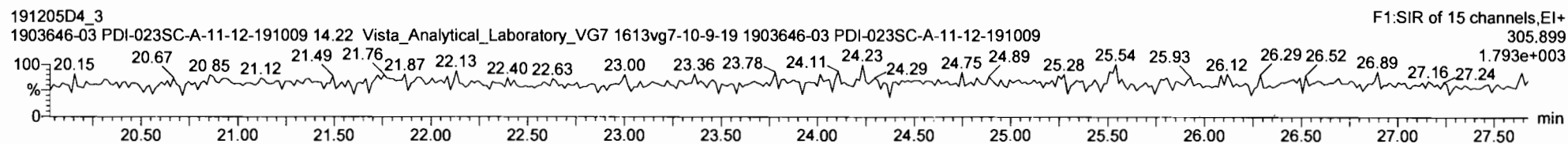
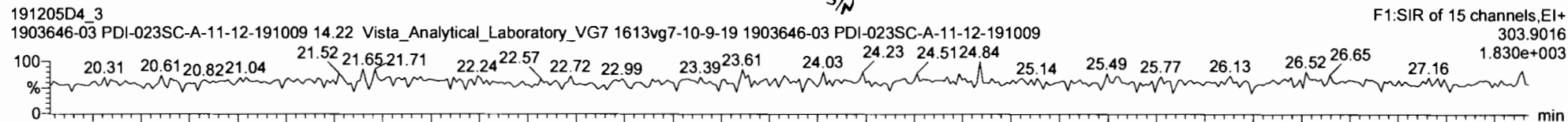
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

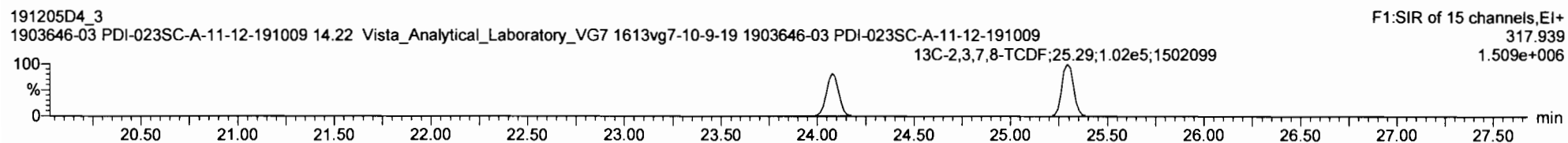
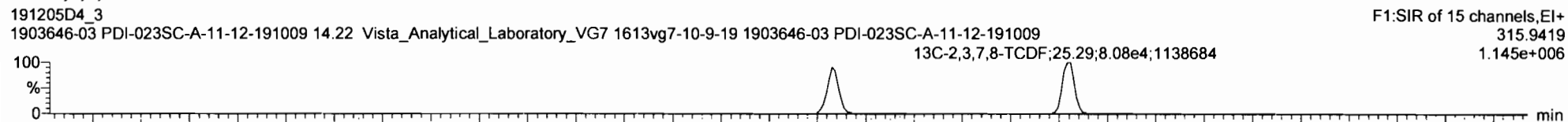
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Name: 191205D4\_3, Date: 7-DEC-2019, Time: 07:41:24, ID: 1903646-03 PDI-023SC-A-11-12-191009,  
Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

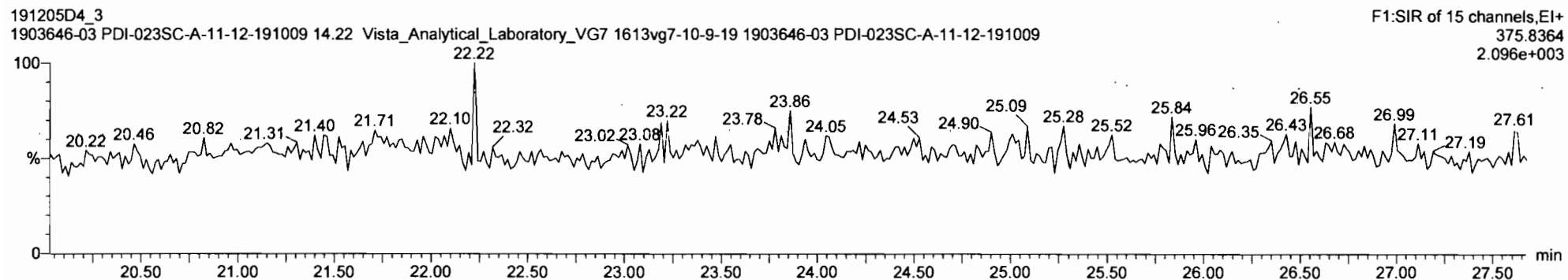
**Total Tetra-Furans**



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



**DPE1**



Vista Analytical Laboratory

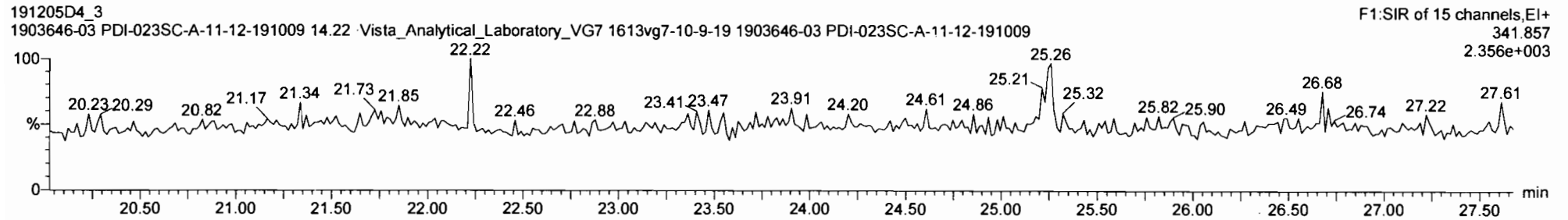
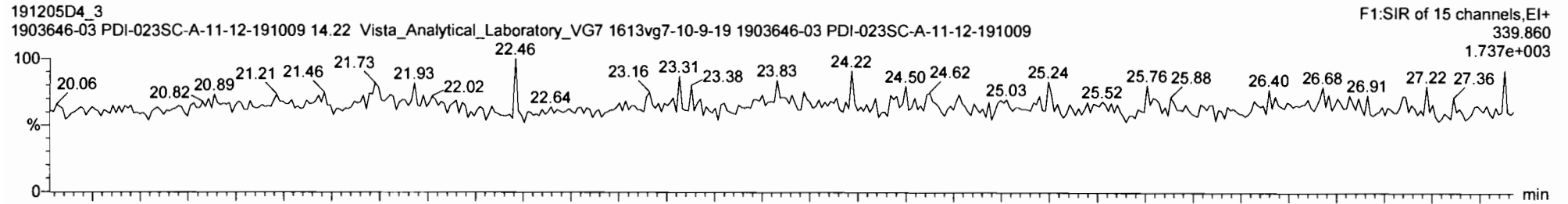
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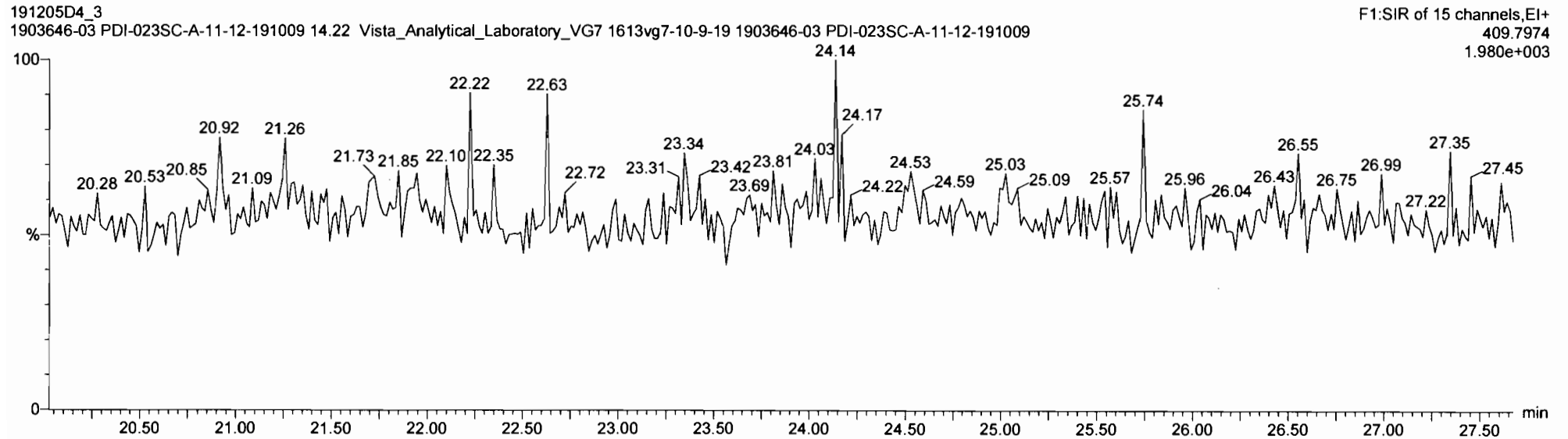
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Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans

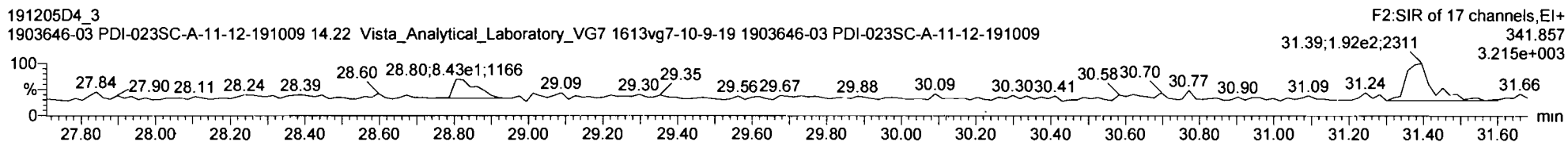
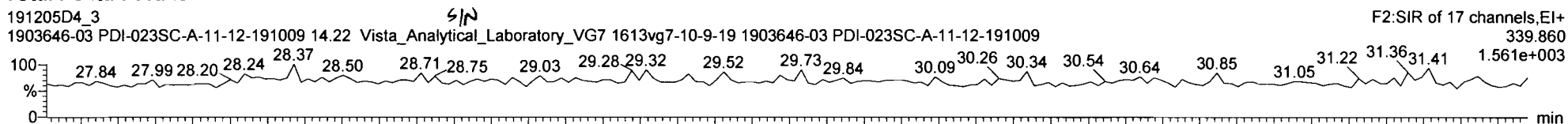


DPE6

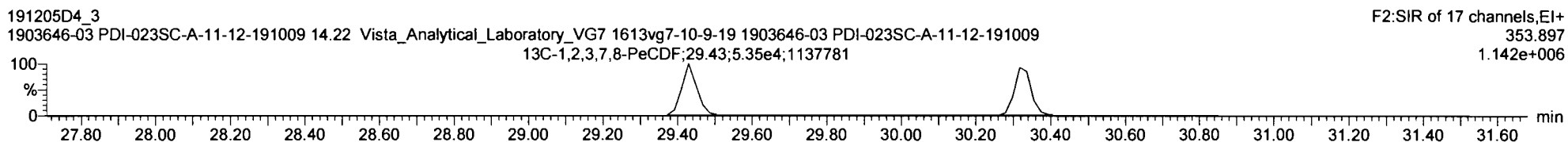
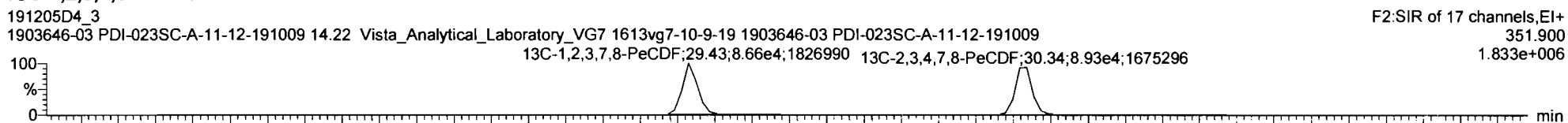


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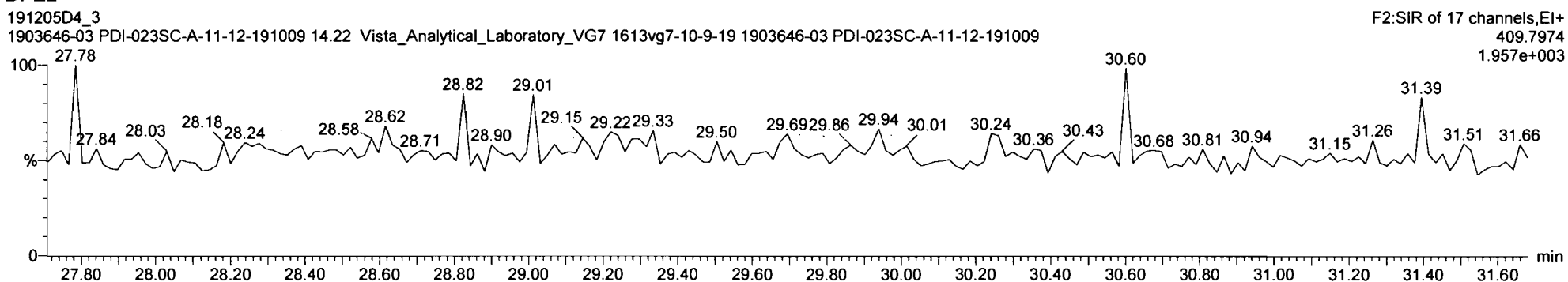
**Total Penta-Furans**



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



**DPE2**



Vista Analytical Laboratory

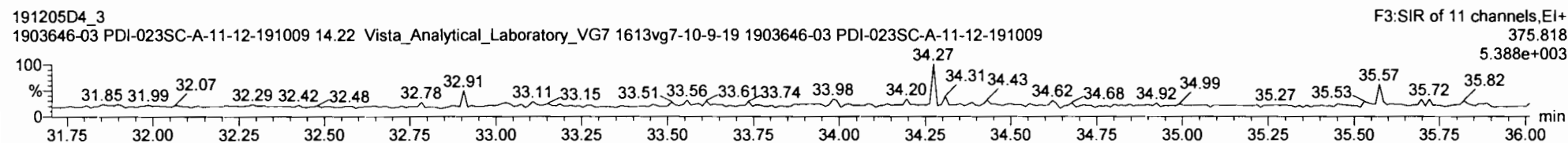
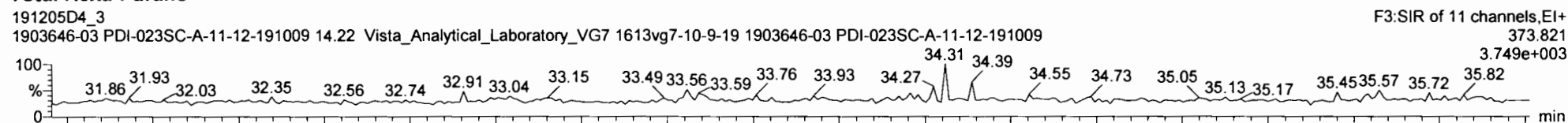
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

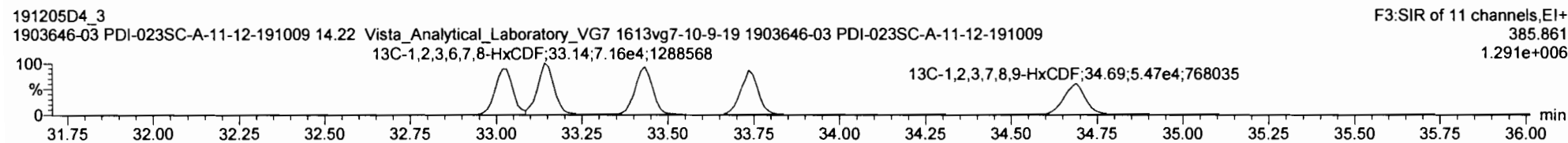
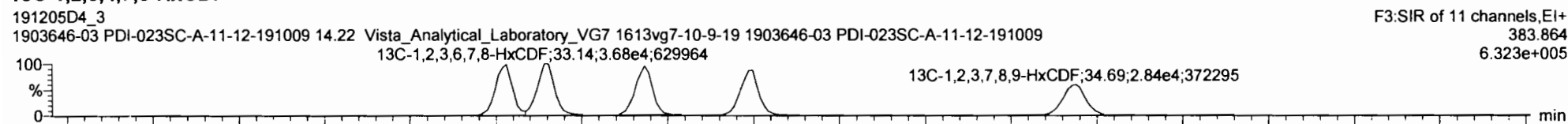
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

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Description: 1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

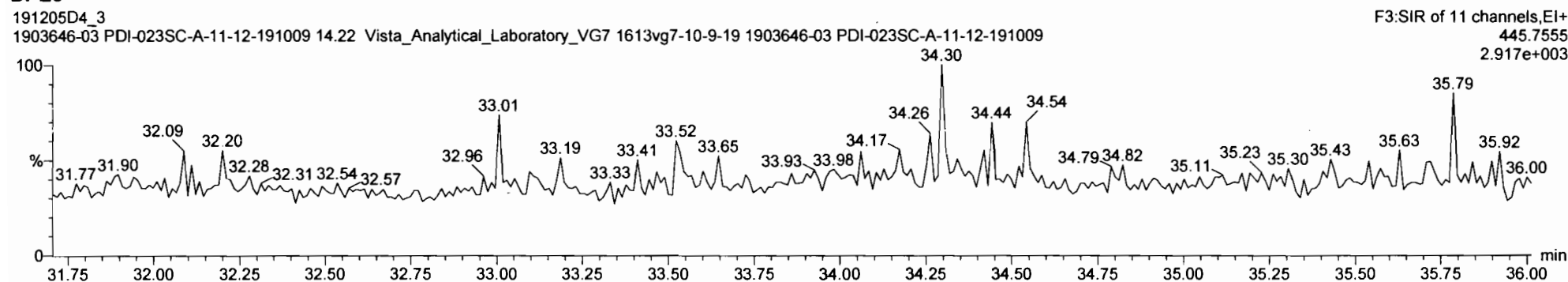
Total Hexa-Furans



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

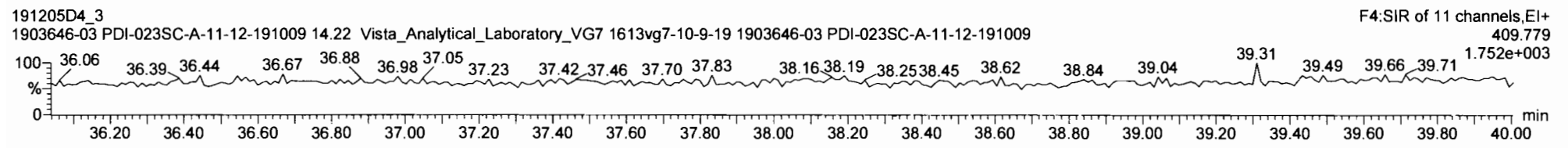
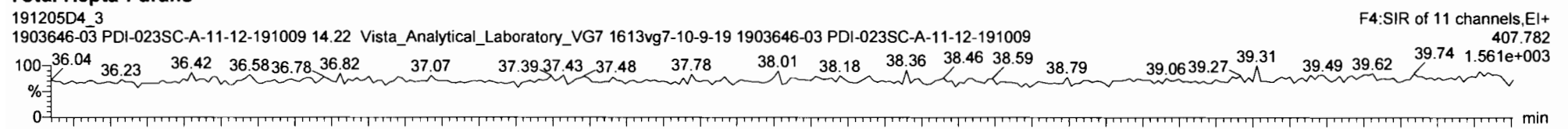


DPE3

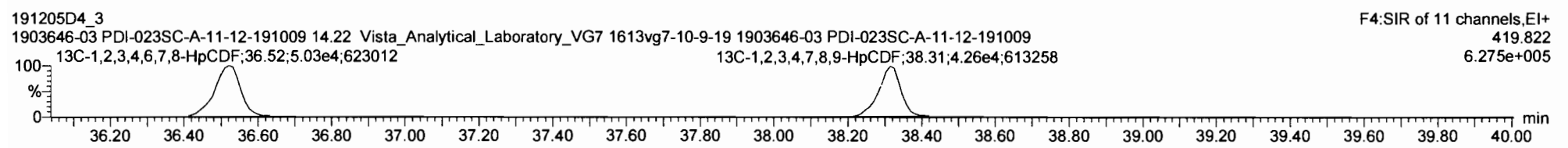
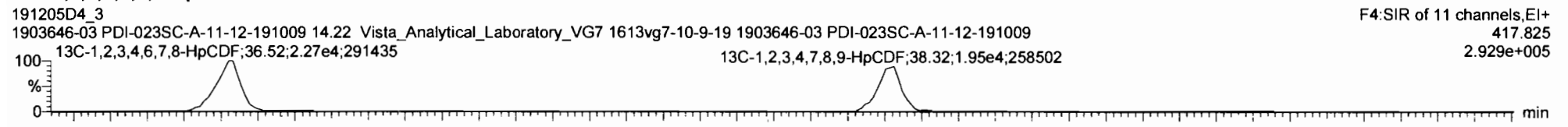


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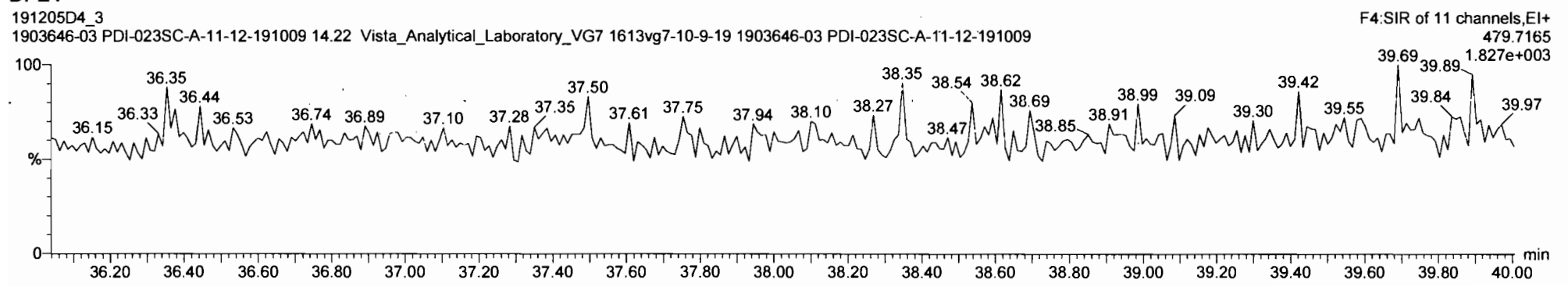
**Total Hepta-Furans**



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



**DPE4**



Vista Analytical Laboratory

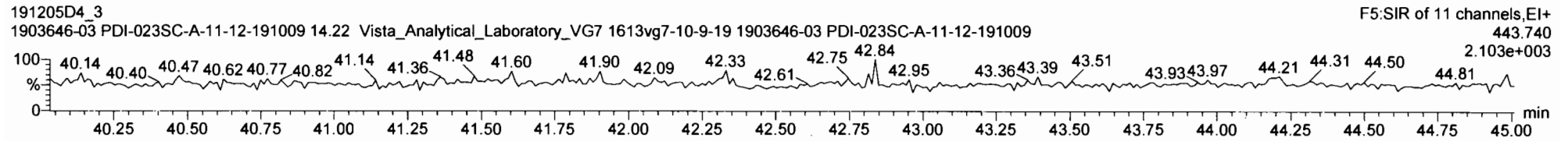
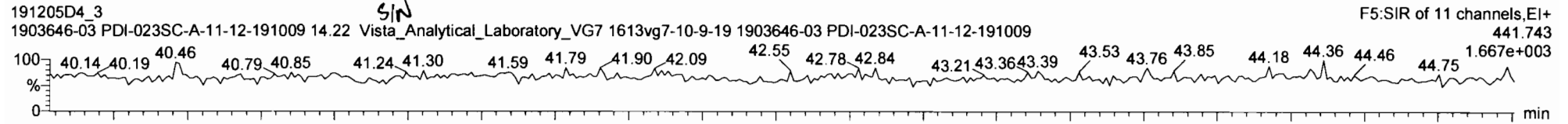
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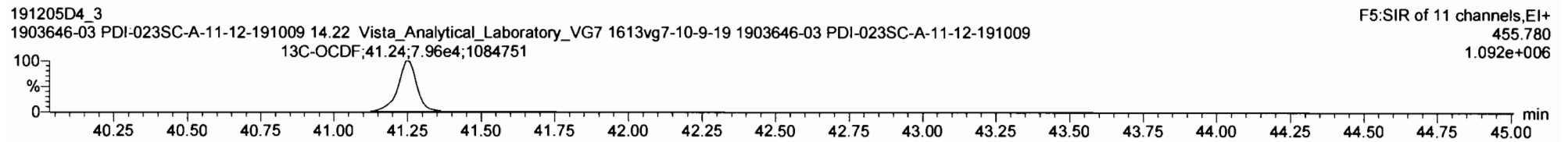
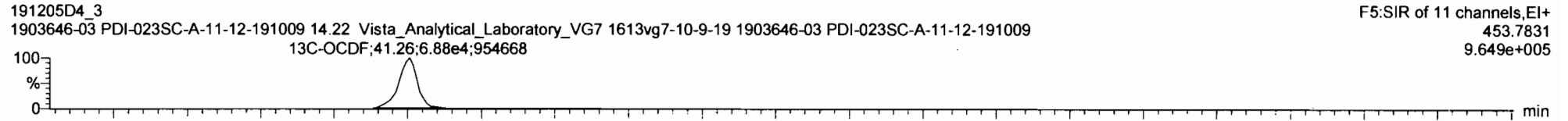
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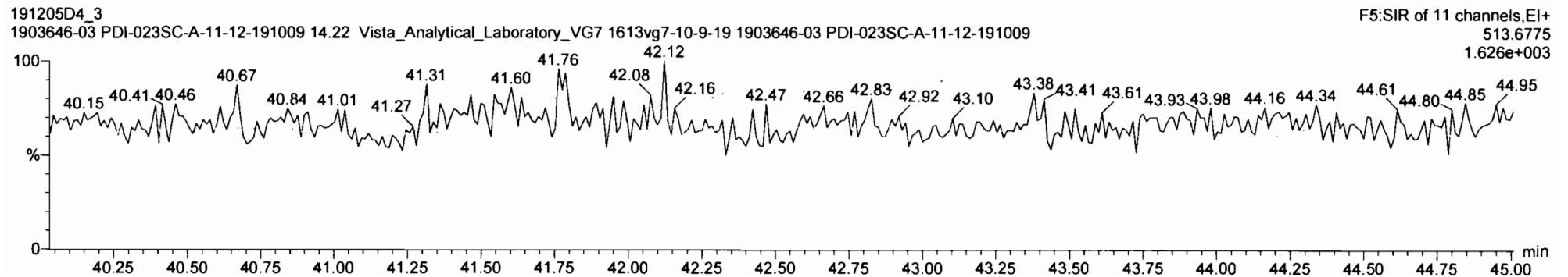
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

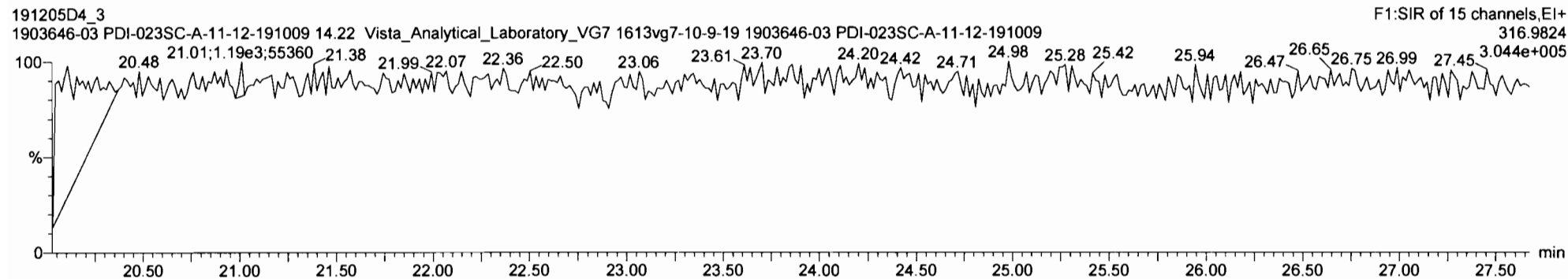
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

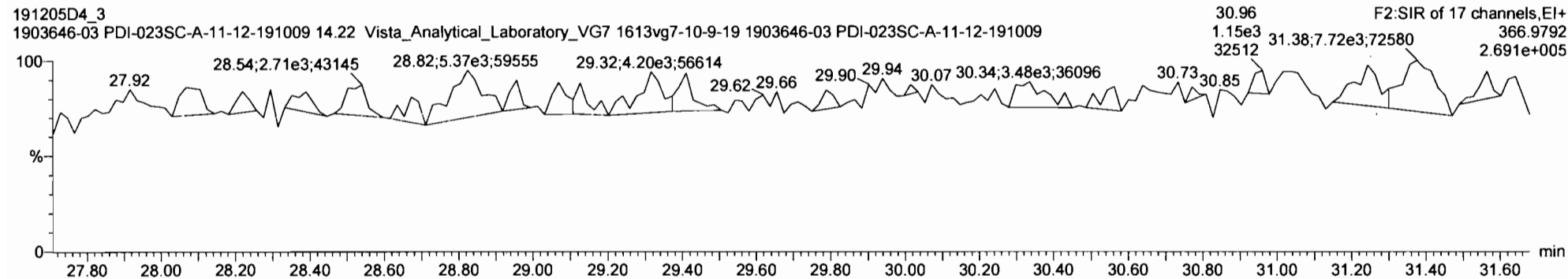
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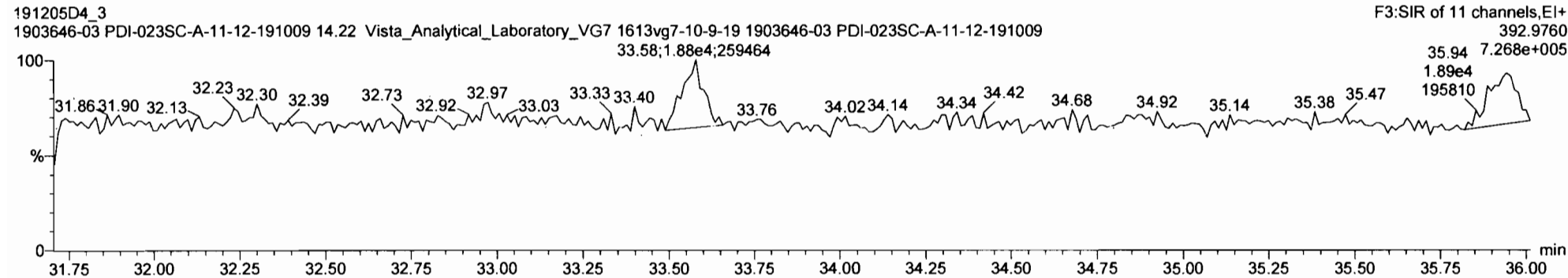
PFK1



PFK2



PFK3



Vista Analytical Laboratory

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PFK4

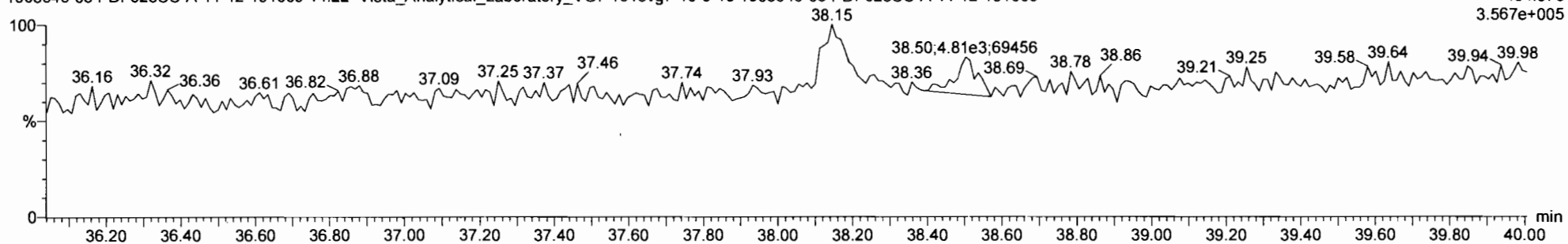
191205D4\_3

1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-03 PDI-023SC-A-11-12-191009

F4:SIR of 11 channels,EI+

454.973

3.567e+005



PFK5

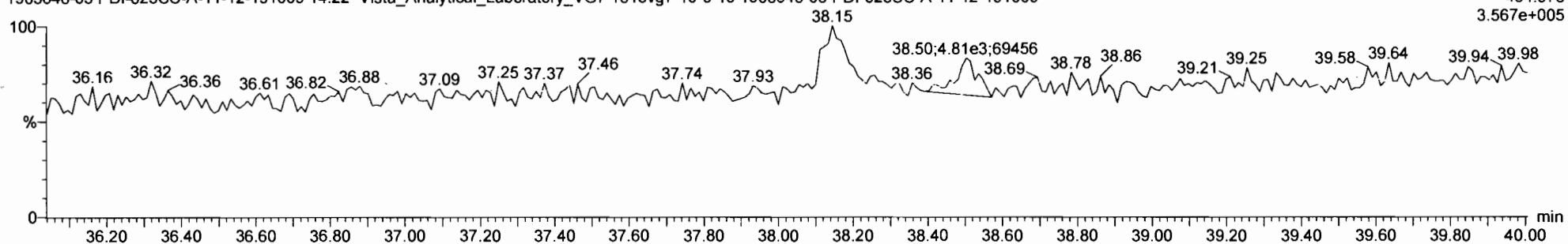
191205D4\_3

1903646-03 PDI-023SC-A-11-12-191009 14.22 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-03 PDI-023SC-A-11-12-191009

F4:SIR of 11 channels,EI+

454.973

3.567e+005





Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-4.qld

Last Altered: Wednesday, December 11, 2019 09:25:21 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:27:35 Pacific Standard Time

EL 12/11/19

CT 12/18/19

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Calibration: 10 Dec 2019 15:15:09

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Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_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		1.03e5	10.0479	0.905			1.001		26.10					0.275
2	2 1,2,3,7,8-PeCDD		9.09e4	10.0479	0.903			1.001		30.62					0.263
3	3 1,2,3,4,7,8-HxCDD		6.72e4	10.0479	1.101			1.000		33.92					0.440
4	4 1,2,3,6,7,8-HxCDD		7.42e4	10.0479	0.939			1.000		34.01					0.494
5	5 1,2,3,7,8,9-HxCDD		8.04e4	10.0479	0.961			1.001		34.33					0.482
6	6 1,2,3,4,6,7,8-HpCDD	4.79e2	6.65e4	10.0479	0.979	0.970	NO	1.000	1.000	37.78	37.78	1.4652		1.47	0.450
7	7 OCDD	3.16e3	1.16e5	10.0479	0.959	0.901	NO	1.000	1.000	41.03	41.04	11.335		11.3	0.397
8	8 2,3,7,8-TCDF		1.85e5	10.0479	0.950			1.001		25.32					0.177
9	9 1,2,3,7,8-PeCDF		1.58e5	10.0479	0.960			1.001		29.45					0.132
10	10 2,3,4,7,8-PeCDF		1.43e5	10.0479	1.015			1.001		30.35					0.123
11	11 1,2,3,4,7,8-HxCDF		1.02e5	10.0479	1.177			1.000		33.02					0.184
12	12 1,2,3,6,7,8-HxCDF		1.06e5	10.0479	1.069			1.000		33.15					0.208
13	13 2,3,4,6,7,8-HxCDF		9.86e4	10.0479	1.114			1.001		33.77					0.213
14	14 1,2,3,7,8,9-HxCDF		1.35e5	10.0479	1.062			1.000		34.68					0.194
15	15 1,2,3,4,6,7,8-HpCDF		7.60e4	10.0479	1.128			1.001		36.56					0.254
16	16 1,2,3,4,7,8,9-HpCDF		7.28e4	10.0479	1.280			1.000		38.30					0.243
17	17 OCDF		1.53e5	10.0479	0.947			1.000		41.24					0.369
18	18 13C-2,3,7,8-TCDD	1.03e5	9.64e4	10.0479	1.095	0.789	NO	1.021	1.022	26.05	26.07	194.88	97.9		0.638
19	19 13C-1,2,3,7,8-PeCDD	9.09e4	9.64e4	10.0479	0.881	0.616	NO	1.187	1.200	30.27	30.60	212.98	107.0		0.504
20	20 13C-1,2,3,4,7,8-Hx...	6.72e4	1.19e5	10.0479	0.642	1.319	NO	1.014	1.014	33.90	33.91	174.66	87.7		1.09
21	21 13C-1,2,3,6,7,8-Hx...	7.42e4	1.19e5	10.0479	0.856	1.278	NO	1.017	1.017	34.02	34.01	144.78	72.7		0.819
22	22 13C-1,2,3,7,8,9-Hx...	8.04e4	1.19e5	10.0479	0.807	1.283	NO	1.026	1.026	34.31	34.30	166.40	83.6		0.869
23	23 13C-1,2,3,4,6,7,8-H...	6.65e4	1.19e5	10.0479	0.654	1.053	NO	1.126	1.130	37.65	37.77	169.79	85.3		1.17
24	24 13C-OCDD	1.16e5	1.19e5	10.0479	0.580	0.890	NO	1.226	1.227	40.99	41.03	333.95	83.9		1.05
25	25 13C-2,3,7,8-TCDF	1.85e5	1.65e5	10.0479	1.035	0.787	NO	0.992	0.991	25.30	25.29	214.64	107.8		0.552
26	26 13C-1,2,3,7,8-PeCDF	1.58e5	1.65e5	10.0479	0.854	1.607	NO	1.154	1.154	29.43	29.43	223.09	112.1		0.788
27	27 13C-2,3,4,7,8-PeCDF	1.43e5	1.65e5	10.0479	0.847	1.563	NO	1.189	1.189	30.33	30.32	203.67	102.3		0.795
28	28 13C-1,2,3,4,7,8-Hx...	1.02e5	1.19e5	10.0479	0.832	0.528	NO	0.987	0.988	33.01	33.02	204.77	102.9		1.30
29	29 13C-1,2,3,6,7,8-Hx...	1.06e5	1.19e5	10.0479	1.034	0.529	NO	0.991	0.991	33.13	33.14	171.90	86.4		1.05
30	30 13C-2,3,4,6,7,8-Hx...	9.86e4	1.19e5	10.0479	0.953	0.517	NO	1.009	1.009	33.74	33.74	172.67	86.8		1.14
31	31 13C-1,2,3,7,8,9-Hx...	1.35e5	1.19e5	10.0479	0.828	0.488	NO	1.039	1.037	34.73	34.68	272.52	136.9		1.31

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-4.qld

Last Altered: Wednesday, December 11, 2019 09:25:21 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:27:35 Pacific Standard Time

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 Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_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	13C-1,2,3,4,6,7,8-H...	7.60e4	1.19e5	10.0479	0.757	0.453	NO	1.093	1.092	36.54	36.52	167.61	84.2		0.933
33	13C-1,2,3,4,7,8,9-H...	7.28e4	1.19e5	10.0479	0.581	0.461	NO	1.143	1.146	38.22	38.30	209.33	105.2		1.22
34	13C-OCDF	1.53e5	1.19e5	10.0479	0.689	0.870	NO	1.233	1.233	41.23	41.24	370.28	93.0		0.593
35	37Cl-2,3,7,8-TCDD	4.32e4	9.64e4	10.0479	1.198			1.022	1.023	26.07	26.10	74.478	93.5		0.206
36	13C-1,2,3,4-TCDD	9.64e4	9.64e4	10.0479	1.000	0.782	NO	1.000	1.000	25.50	25.51	199.05	100.0		0.699
37	13C-1,2,3,4-TCDF	1.65e5	1.65e5	10.0479	1.000	0.784	NO	1.000	1.000	24.06	24.08	199.05	100.0		0.572
38	13C-1,2,3,4,6,9-Hx...	1.19e5	1.19e5	10.0479	1.000	0.509	NO	1.000	1.000	33.42	33.43	199.05	100.0		1.08
39	Total Tetra-Dioxins		1.03e5	10.0479	0.901			0.000		25.50					0.153
40	Total Penta-Dioxins		9.09e4	10.0479	0.872			0.000		30.00					0.152
41	Total Hexa-Dioxins		0.00e0	10.0479	0.976			0.000		33.80		1.4586		1.46	0.255
42	Total Hepta-Dioxins		6.65e4	10.0479	0.989			0.000		37.75		4.3930		4.39	0.446
43	Total Tetra-Furans		1.85e5	10.0479	0.943			0.000		24.00					0.0831
44	1st Func. Penta-Fur...		0.00e0	10.0479	0.940			0.000		27.63					0.0569
45	Total Penta-Furans		0.00e0	10.0479	0.940			0.000		30.00					0.0617
46	Total Hexa-Furans		0.00e0	10.0479	1.078			0.000		33.00					0.119
47	Total Hepta-Furans		0.00e0	10.0479	1.135			0.000		37.75					0.119

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-4.qld

Last Altered: Wednesday, December 11, 2019 09:25:21 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:27:35 Pacific Standard Time

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Calibration: 10 Dec 2019 15:15:09

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Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_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	32.39	271.923	41658.154	14.303	MM	1.4586	1.46

Hepta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	42 Total Hepta-Dioxins	NO	36.94	506.126	34097.375	29.086	MM	2.9278	2.93
2	6 1,2,3,4,6,7,8-HpCDD	NO	37.78	235.978	34097.375	14.419	bb	1.4652	1.47

Tetra-Furans

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

Penta-Furans function 1

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

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-4.qld

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Printed: Wednesday, December 11, 2019 09:27:35 Pacific Standard Time

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Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_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

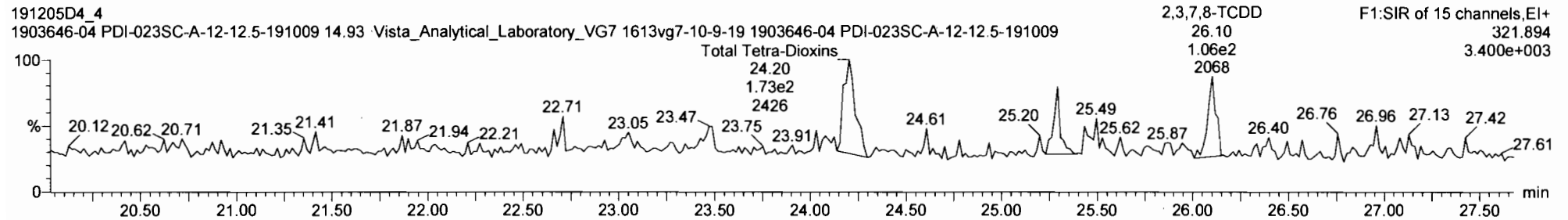
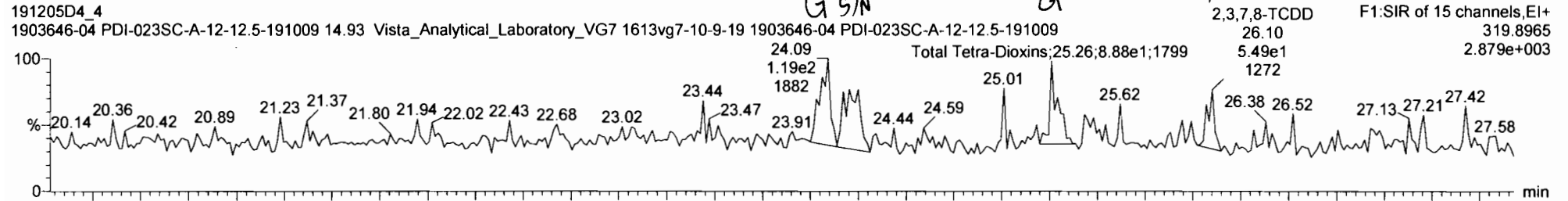
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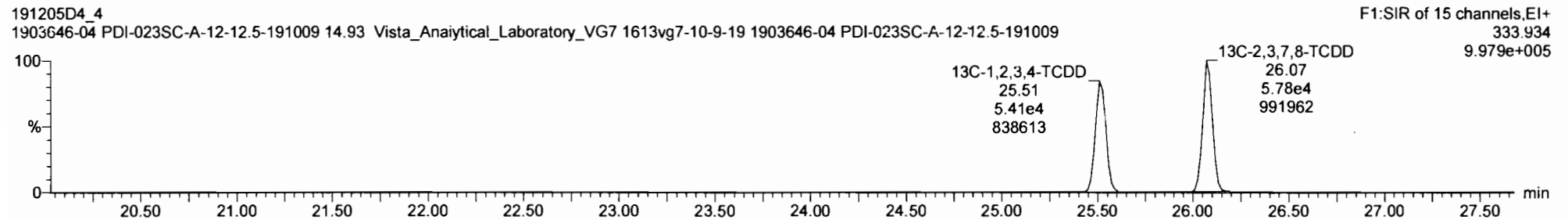
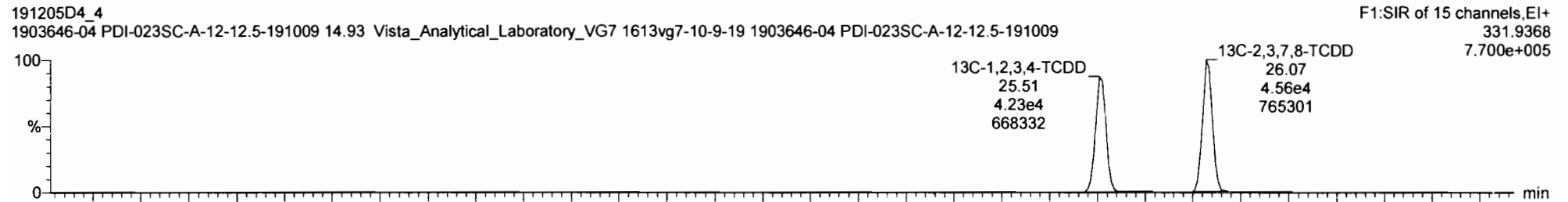
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Total Tetra-Dioxins



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

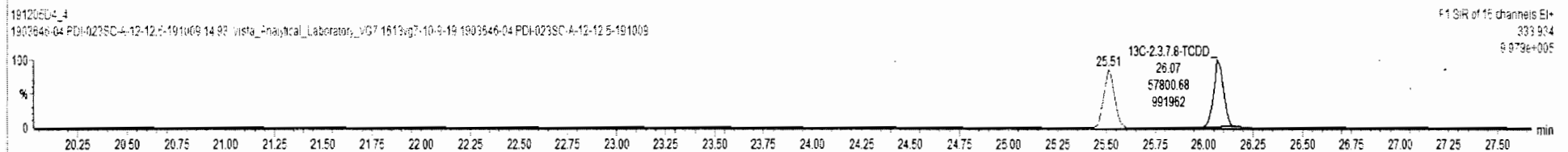
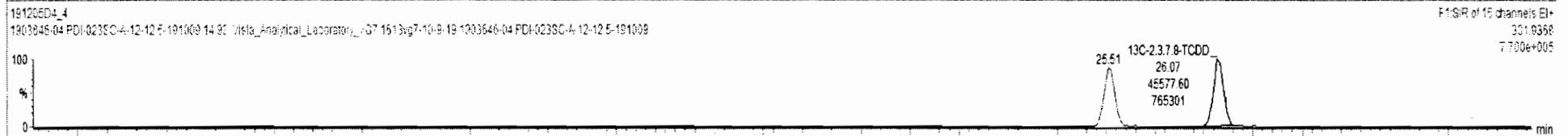
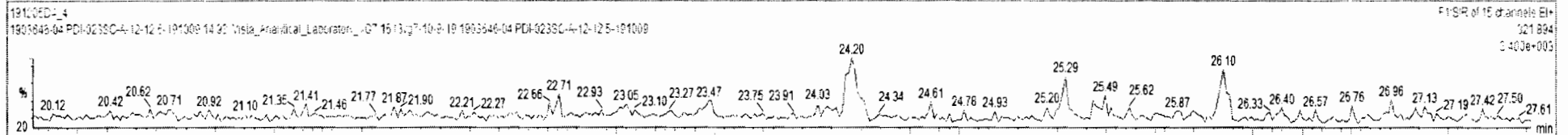
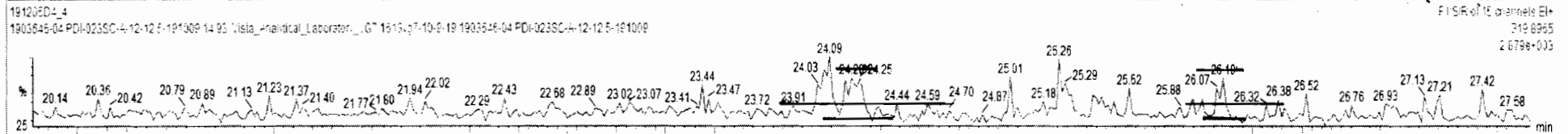




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#	Name	Resp	IS Resp	ES#	RA	n/y	RRF	wfVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	7.28e4	1.19e5	38	0.46	NO	0.581	10.048	38.22	38.30	1.146	1.143	NO	209.3	105	1.22	
34	13C-OCDF	1.53e5	1.19e5	38	0.87	NO	0.689	10.048	41.22	41.24	1.233	1.233	NO	370.3	93.0	0.552	
35	37C-2,3,7,8-TCDD	4.32e4	9.64e4	38			1.158	10.048	26.07	26.10	1.023	1.022	NO	74.48	92.5	0.206	
36	13C-1,2,3,4-TCDF	5.84e4	9.64e4	38	0.78	NO	1.000	10.048	25.50	25.51	1.000	1.000	NO	199.0	100	0.696	
37	13C-1,2,3,4-TCDF	1.65e5	1.65e5	37	0.78	NO	1.000	10.048	24.08	24.08	1.000	1.000	NO	199.0	100	0.572	
38	13C-1,2,3,4,6,8-HxCDF	1.19e5	1.19e5	38	0.51	NO	1.000	10.048	33.42	33.43	1.000	1.000	NO	199.0	100	1.00	
39	38 Total Tetra-Dioxins	1.03e5					0.901	10.048	25.50			0.900	NO			0.153	
40	40 Total Penta-Dioxins	9.09e4					0.872	10.048	30.90			0.900	NO	0.0000		0.152	1.613
41	41 Total Hexa-Dioxins	0.00e0					0.976	10.048	33.60			0.900	NO	0.0000		0.255	0.5044
42	42 Total Hepta-Dioxins	6.85e4					0.989	10.048	37.75			0.900	NO	4.371		0.446	4.371
43	43 Total Tetra-Furans	1.85e5					0.943	10.048	24.00			0.900	NO			0.0831	
44	44 1st Func. Penta-Furans	0.00e0					0.940	10.048	27.63			0.900	NO			0.0529	
45	45 Total Penta-Furans	0.00e0					0.940	10.048	27.63			0.900	NO			0.0517	

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



Vista Analytical Laboratory

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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

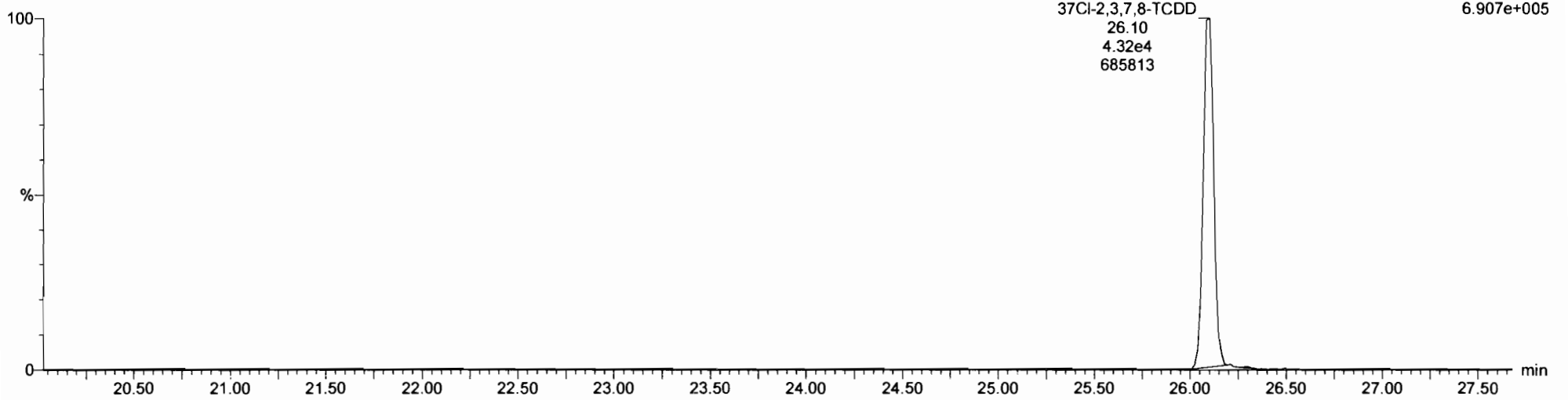
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Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

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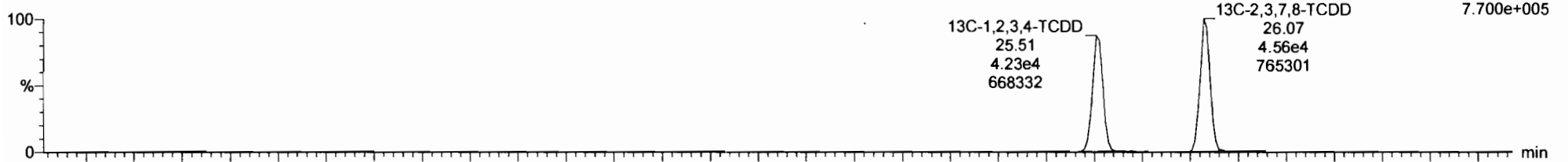
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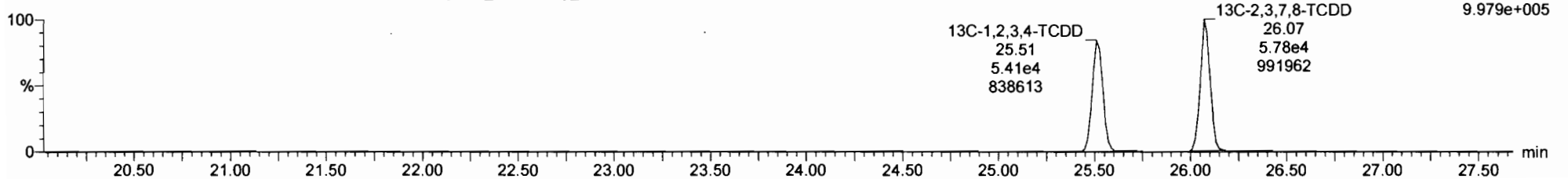
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F1:SIR of 15 channels,EI+  
331.9368  
7.700e+005



191205D4\_4  
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F1:SIR of 15 channels,EI+  
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9.979e+005



Vista Analytical Laboratory

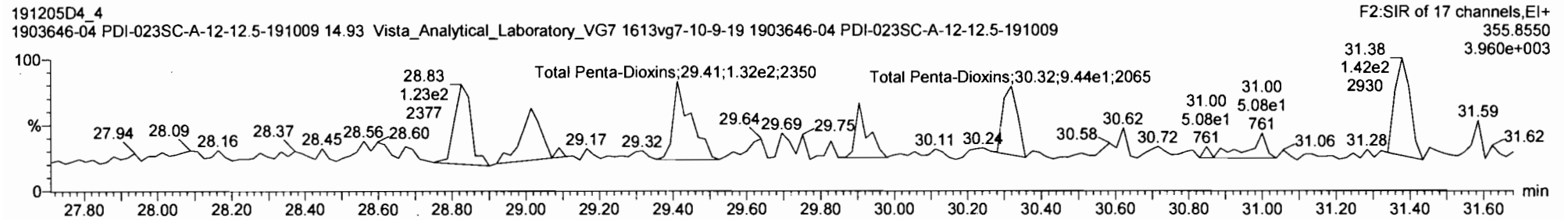
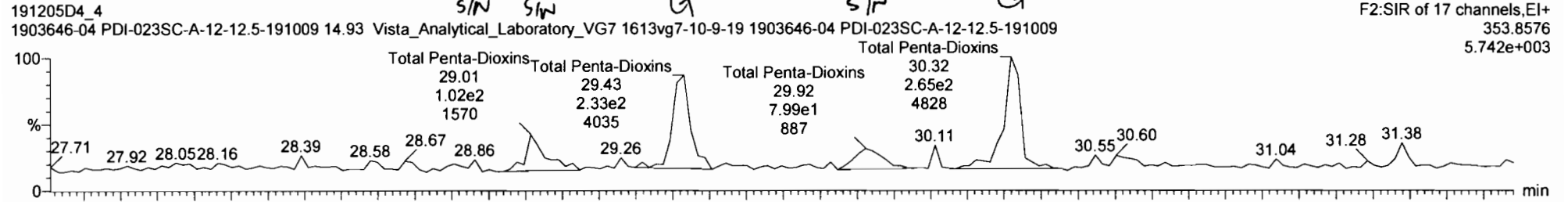
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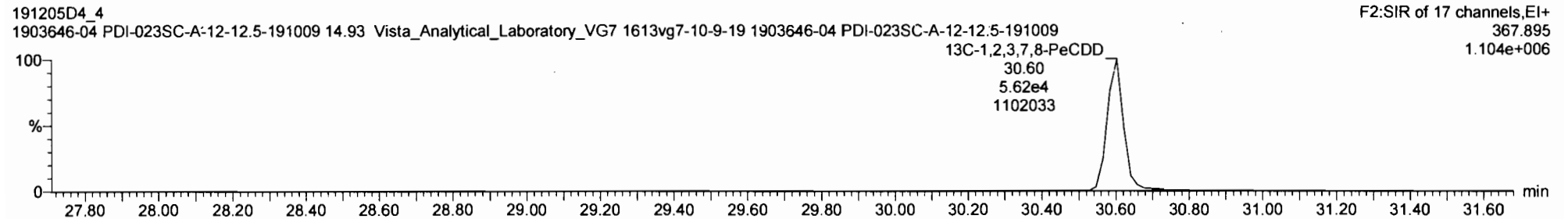
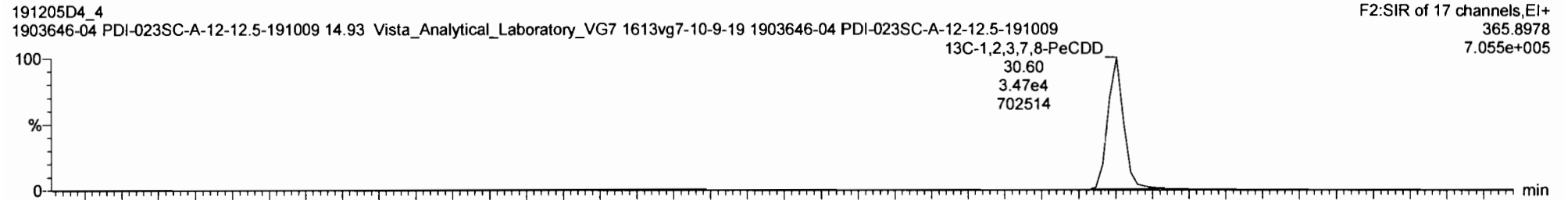
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Total Penta-Dioxins



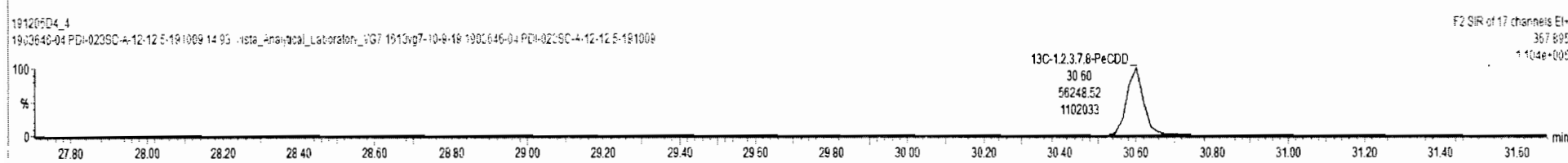
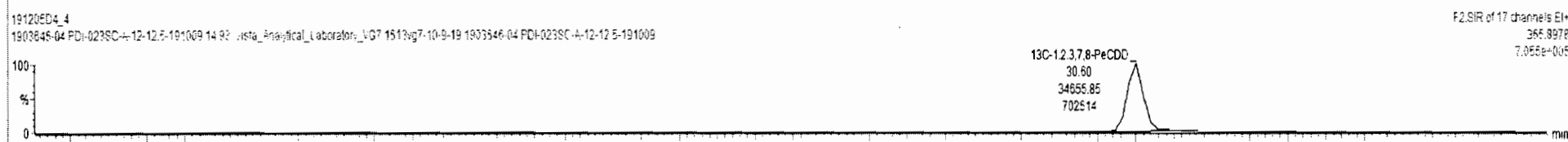
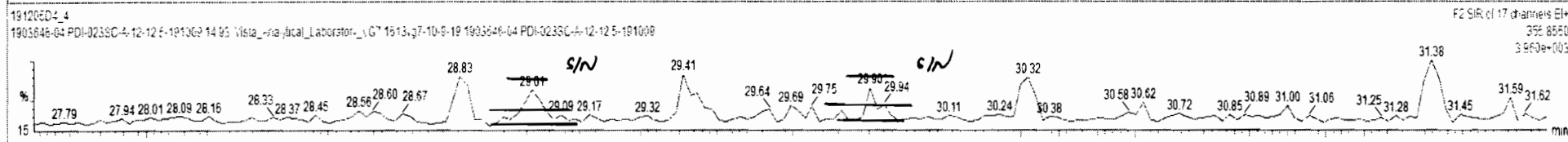
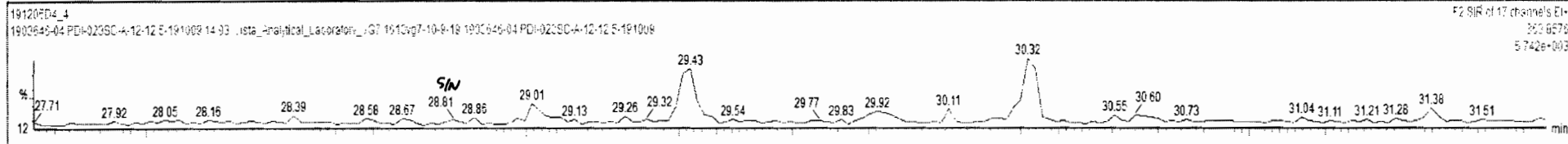
13C-1,2,3,7,8-PeCDD





#	Name	Resp	IS Resp	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	7.28e4	1.19e5	38	0.46	NO	0.581	10.048	38.22	39.30	1.146	1.143	NO	209.3	105	1.22	
34	13C-OCDF	1.53e5	1.19e5	38	0.87	NO	0.689	10.048	41.23	41.24	1.233	1.233	NO	370.3	93.0	0.593	
35	37C-2,3,7,8-TCDD	4.32e4	9.84e4	38			1.198	10.048	26.07	26.10	1.023	1.022	NO	74.48	93.5	0.296	
36	13C-1,2,3,4-TCDD	9.64e4	9.64e4	38	0.78	NO	1.000	10.048	25.50	25.51	1.000	1.000	NO	198.0	100	0.690	
37	13C-1,2,3,4-TCDF	1.65e5	1.65e5	37	0.78	NO	1.000	10.048	24.06	24.08	1.000	1.000	NO	199.0	100	0.572	
38	13C-1,2,3,4,6,8-HxCDF	1.19e5	1.19e5	38	0.51	NO	1.000	10.048	33.42	33.43	1.000	1.000	NO	199.0	100	1.08	
39	Total Tetra-Dioxins		1.03e5				0.901	10.048	25.50			0.000	NO			0.150	
40	Total Penta-Dioxins		9.09e4				0.872	10.048	30.00			0.000	NO			0.182	
41	Total Hexa-Dioxins		0.00e0				0.576	10.048	32.80			0.000	NO	0.0000		0.255	0.5044
42	Total Hepta-Dioxins		6.65e4				0.869	10.048	37.75			0.000	NO	4.371		0.446	4.371
43	Total Tetra-Furans		1.85e5				0.843	10.048	24.00			0.000	NO			0.0831	
44	1st Func. Penta-Furans		0.00e0				0.840	10.048	27.63			0.000	NO			0.0589	
45	Total Penta-Furans		0.00e0				0.840	10.048	30.00			0.000	NO			0.0617	

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



Vista Analytical Laboratory

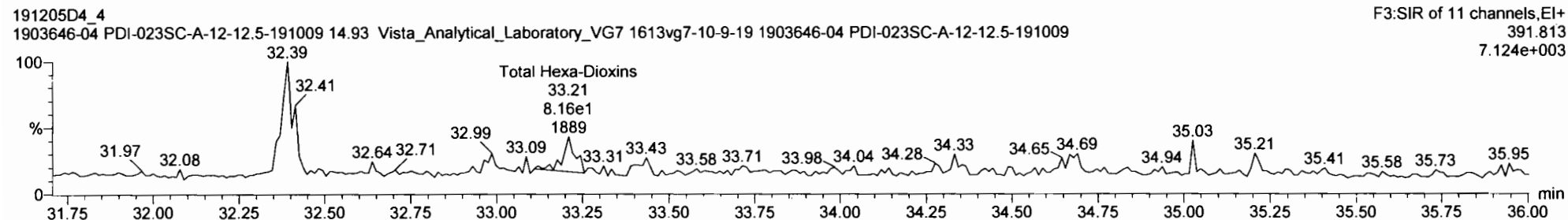
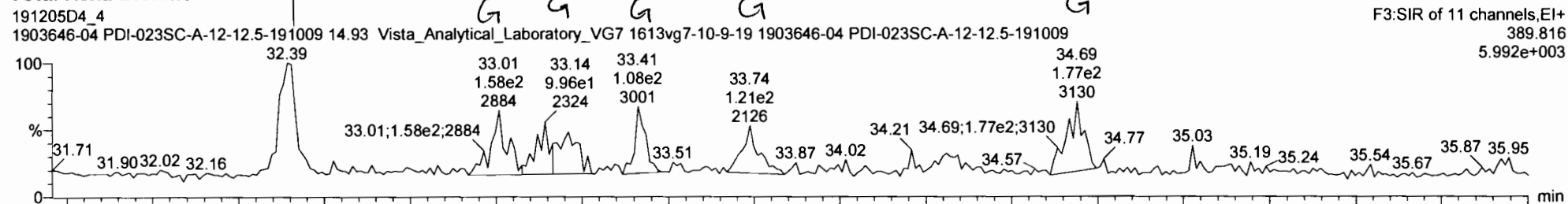
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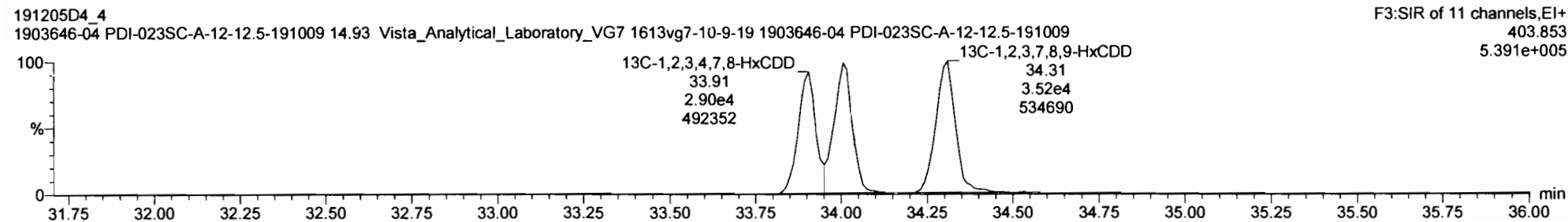
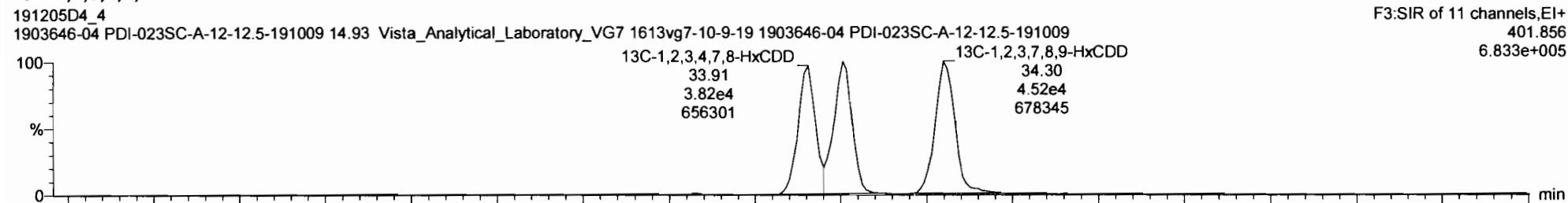
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Total Hexa-Dioxins



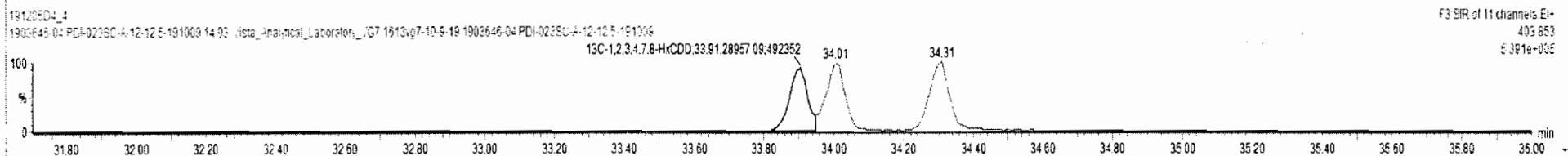
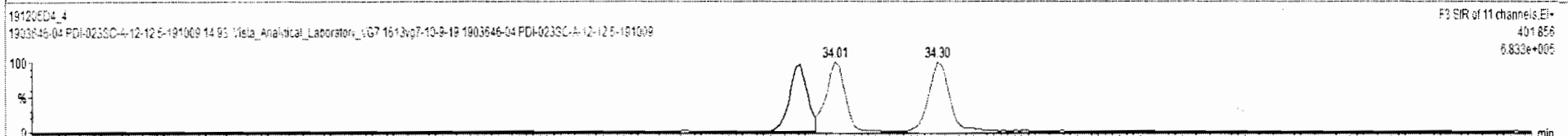
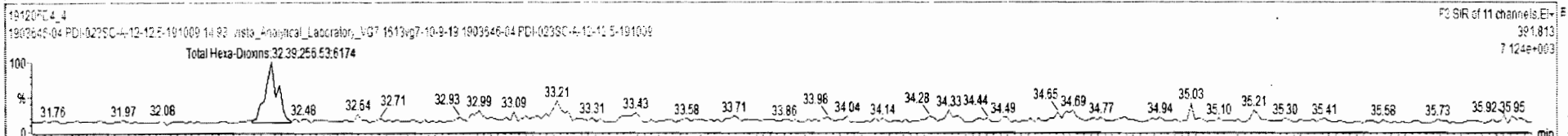
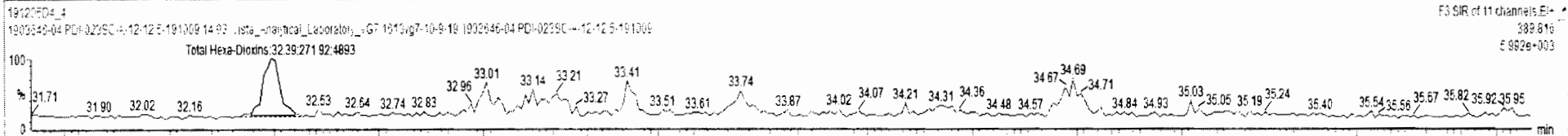
13C-1,2,3,4,7,8-HxCDD





#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wtvol	Pred.RT	RT	RRT	Pred.RRT	Check.RRT	Conc	%Rec	DL	EMPC
35	37C-2,3,7,8-TCDD	4.32e4	9.64e4	36			1.198	10.048	26.07	26.10	1.023	1.022	NO	74.46	93.5	0.206	
36	13C-1,2,3,4-TCDD	9.64e4	9.64e4	36	0.78	NO	1.000	10.048	26.50	26.51	1.000	1.000	NO	199.0	100	0.699	
37	13C-1,2,3,4-TCDF	1.65e5	1.65e5	37	0.78	NO	1.000	10.048	24.06	24.08	1.000	1.000	NO	199.0	100	0.572	
38	13C-1,2,3,4,6,8-HxCDF	1.19e5	1.19e5	38	0.51	NO	1.000	10.048	33.42	33.43	1.000	1.000	NO	199.0	100	1.08	
39	Total Tetra-Dioxins		1.03e5				0.901	10.048	26.50			0.000	NO			0.153	
40	Total Penta-Dioxins		9.05e4				0.872	10.048	30.00			0.000	NO			0.152	
41	Total Hexa-Dioxins		0.00e0				0.976	10.048	33.80			0.000	NO	1.459		0.255	1.459
42	Total Hepta-Dioxins		6.65e4				0.989	10.048	37.75			0.000	NO	4.371		0.446	4.371
43	Total Tetra-Furans		1.85e5				0.943	10.048	24.00			0.000	NO			0.0831	
44	1st Func. Penta-Furans		0.00e0				0.940	10.048	27.63			0.000	NO			0.0569	
45	Total Penta-Furans		0.00e0				0.940	10.048	30.00			0.000	NO			0.0617	
46	Total Hexa-Furans		0.00e0				1.076	10.048	33.00			0.000	NO			0.119	
47	Total Hepta-Furans		0.00e0				1.134	10.048	37.74			0.000	NO			0.110	

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred.RA	RA	nly	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.39	2.719e2	2.565e2	1.240	1.36	NO	1.4586	1.4586



Vista Analytical Laboratory

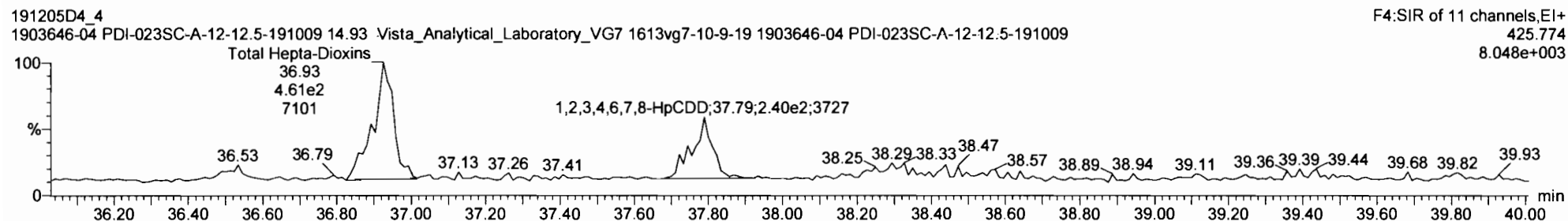
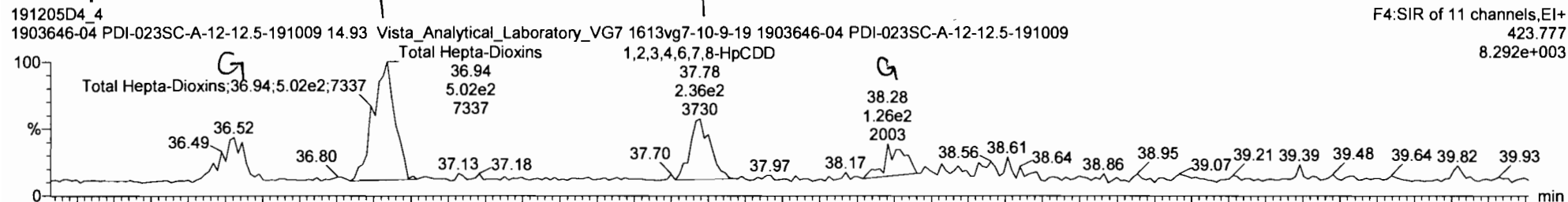
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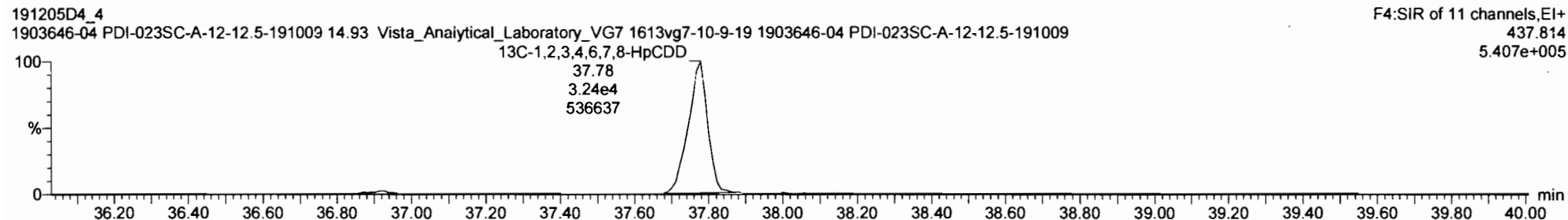
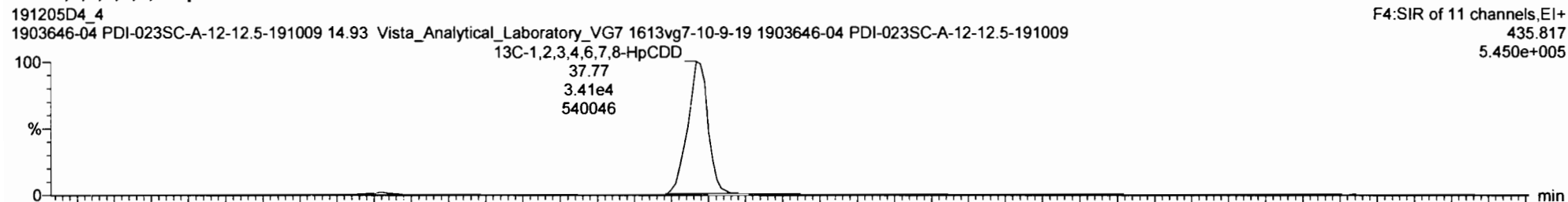
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Name: 191205D4\_4, Date: 7-DEC-2019, Time: 08:29:10, ID: 1903646-04 PDI-023SC-A-12-12.5-191009, Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Hepta-Dioxins



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

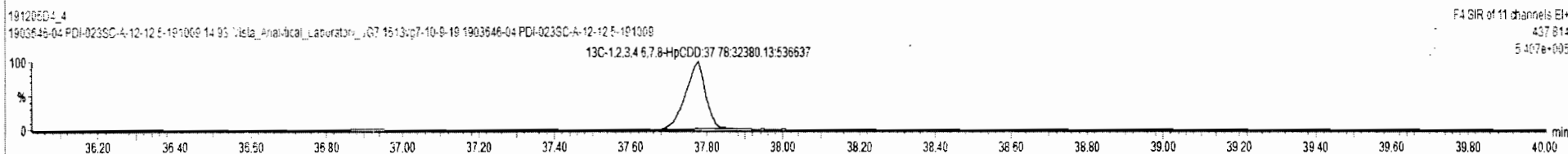
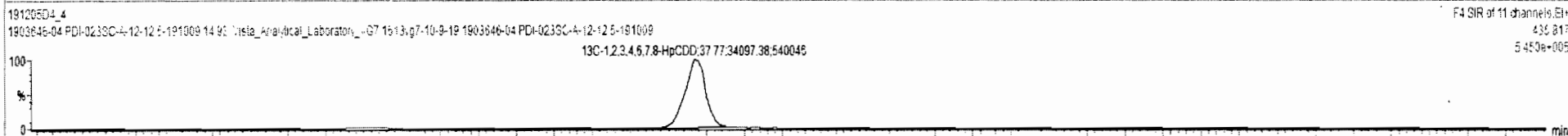
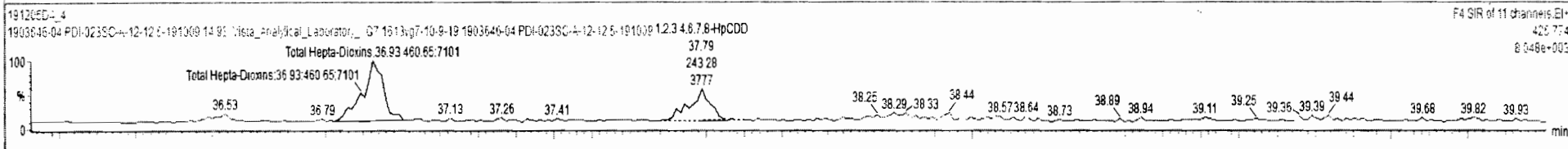
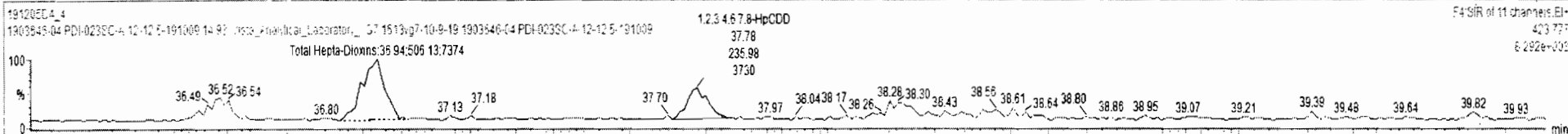




191205D4\_4 - 1903646-04 PDI-023SC-A-12-12-5-191009 - 1903646-04 PDI-023SC-A-12-12-5-191009 14.93 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
35	37C-1,2,3,7,8-TCDD	4.32e4	9.64e4	36			1.158	10.048	26.07	26.10	1.023	1.022	NO	74.48	93.5	0.296	
36	13C-1,2,3,4-TCDD	9.54e4	9.64e4	35	0.78	NO	1.000	10.048	25.50	25.51	1.000	1.000	NO	199.0	100	0.699	
37	13C-1,2,3,4-TCDF	1.65e5	1.65e5	37	0.78	NO	1.000	10.048	24.08	24.08	1.000	1.000	NO	199.0	100	0.572	
38	13C-1,2,3,4,6,9-HxCDF	1.15e5	1.15e5	38	0.51	NO	1.000	10.048	33.42	33.43	1.000	1.000	NO	199.0	100	1.08	
39	39 Total Tetra-Dioxins		1.03e5				0.801	10.048	25.50			0.000	NO			0.153	
40	40 Total Penta-Dioxins		9.09e4				0.872	10.048	30.00			0.000	NO			0.152	
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.048	33.80			0.000	NO	1.459	0.255	1.459	
42	42 Total Hepta-Dioxins		6.65e4				0.989	10.048	37.75			0.000	NO	4.393	0.446	4.393	
43	43 Total Tetra-Furans		1.85e5				0.942	10.048	24.00			0.000	NO			0.0821	
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.048	27.63			0.000	NO			0.0529	
45	45 Total Penta-Furans		0.00e0				0.940	10.048	30.00			0.000	NO			0.0617	
46	46 Total Hexa-Furans		0.00e0				1.078	10.048	33.00			0.000	NO			0.119	
47	47 Total Hepta-Furane		0.00e0				1.136	10.048	37.75			0.000	NO			0.110	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	36.94	5.061e2	4.607e2	1.040	1.10	NO	2.9278	2.9278
2	6 1,2,3,4,6,7,8-HpCDD	37.78	37.78	2.360e2	2.433e2	1.040	0.97	NO	1.4652	1.4652



Vista Analytical Laboratory

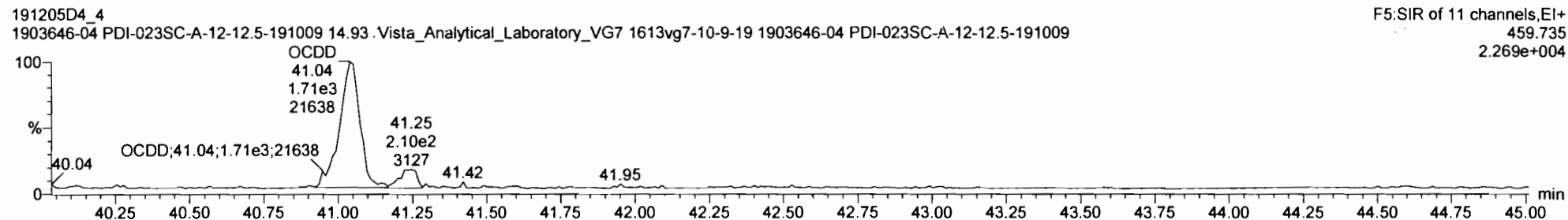
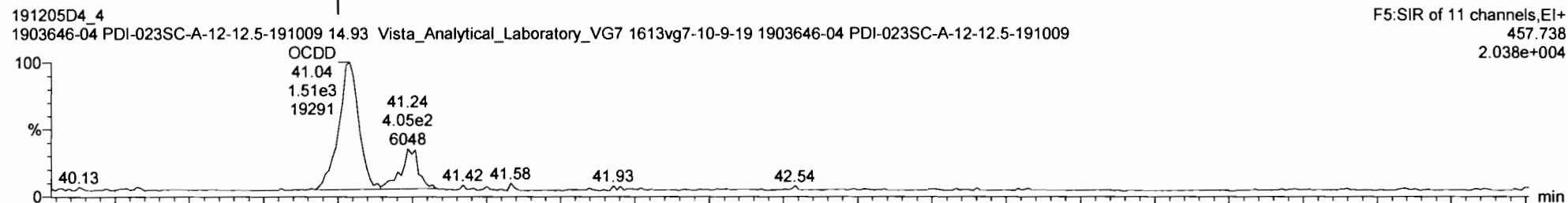
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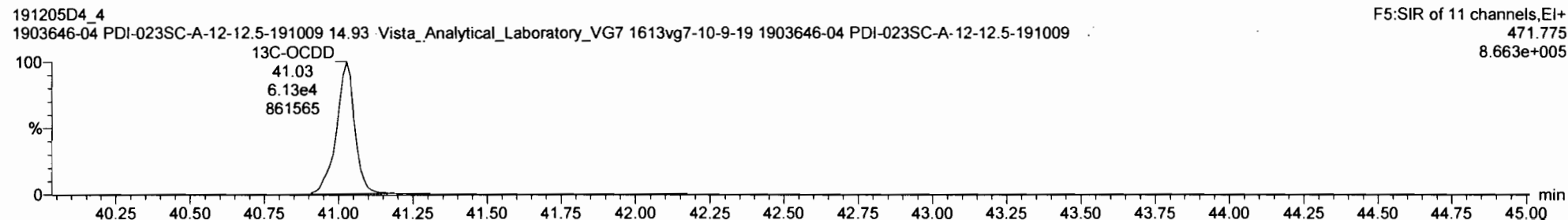
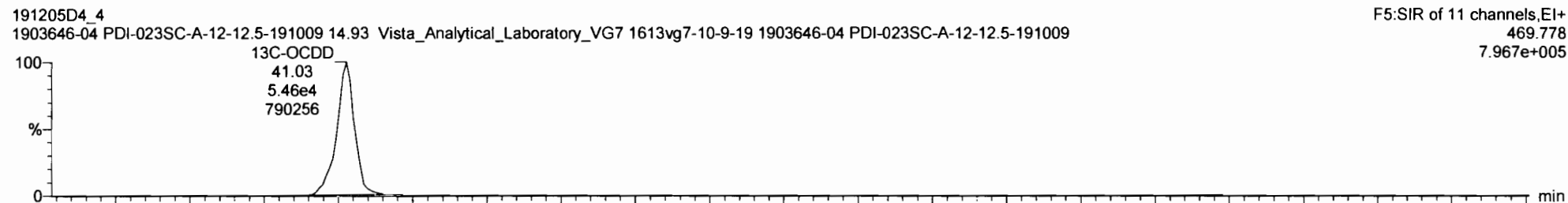
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OCDD

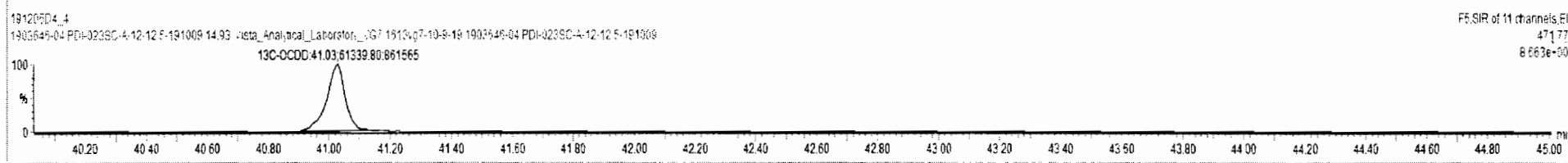
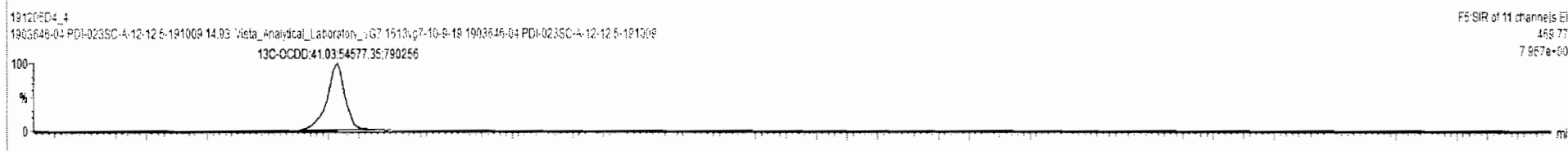
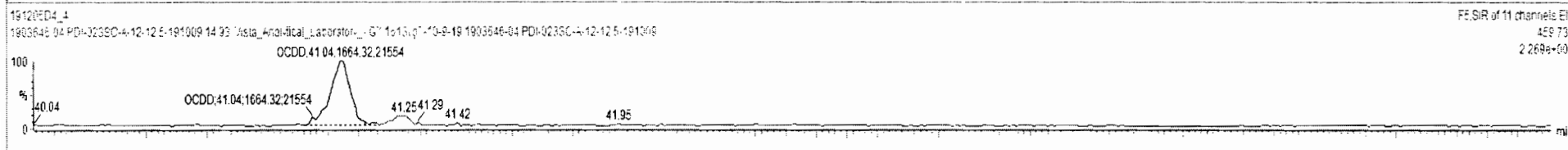
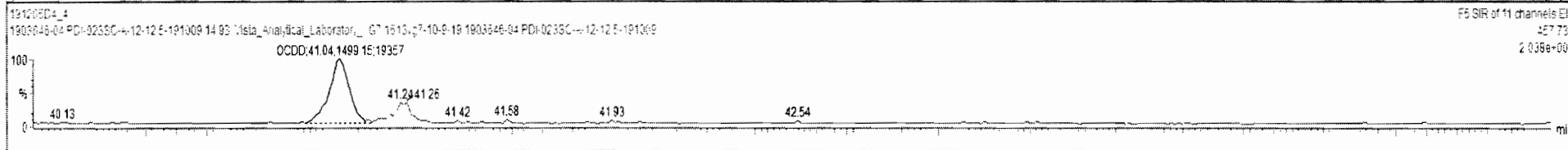


13C-OCDD



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	w/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
3	1,2,3,4,7,8-HxCDD		6.72e4	20			1.101	10.048	33.92			1.000	NO			0.440	
4	1,2,3,6,7,8-HxCDD		7.42e4	21			0.939	10.048	34.01			1.000	NO			0.494	
5	1,2,3,7,8,9-HxCDD		8.04e4	22			0.961	10.048	34.33			1.001	NO			0.482	
6	1,2,3,4,6,7,8-HpCDD	4.79e2	6.65e4	23	0.97	NO	0.679	10.048	37.78	37.78	1.000	1.000	NO	1.465		0.450	1.465
7	OCDD	3.16e3	1.16e5	24	0.90	NO	0.959	10.048	41.03	41.04	1.000	1.000	NO	11.33		0.397	11.33
8	2,3,7,8-TCDF		1.85e5	25			0.950	10.048	26.32			1.001	NO			0.177	
9	1,2,3,7,8-PeCDF		1.58e5	26			0.960	10.048	26.45			1.001	NO			0.132	
10	2,3,4,7,8-PeCDF		1.43e5	27			1.015	10.048	29.35			1.001	NO			0.123	
11	1,2,3,4,7,8-HxCDF		1.02e5	28			1.177	10.048	33.02			1.000	NO			0.184	
12	1,2,3,6,7,8-HxCDF		1.06e5	29			1.069	10.048	33.15			1.000	NO			0.208	
13	2,3,4,6,7,8-HxCDF		9.86e4	30			1.114	10.048	33.77			1.001	NO			0.213	
14	1,2,3,7,8,9-HxCDF		1.35e5	31			1.062	10.048	34.68			1.000	NO			0.194	
15	1,2,3,4,6,7,8,9-HpCDF		7.60e4	32			1.120	10.048	36.60			1.001	NO			0.254	

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



Vista Analytical Laboratory

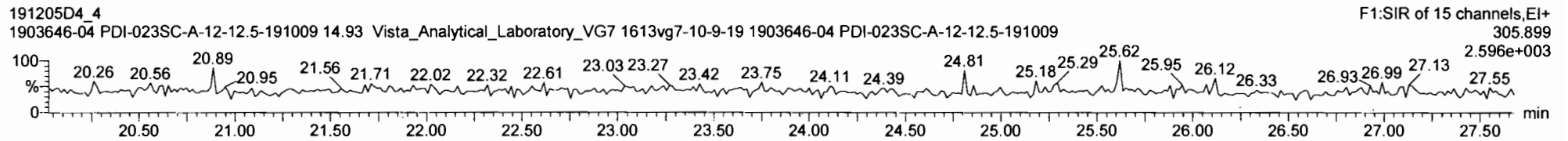
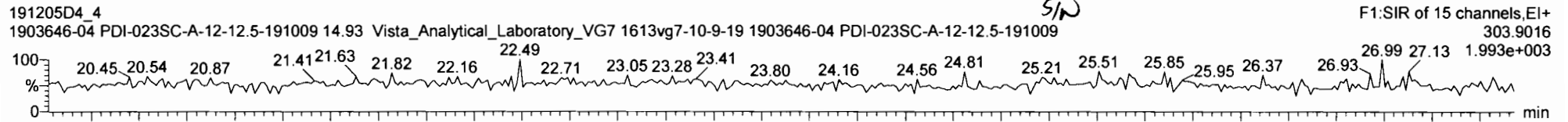
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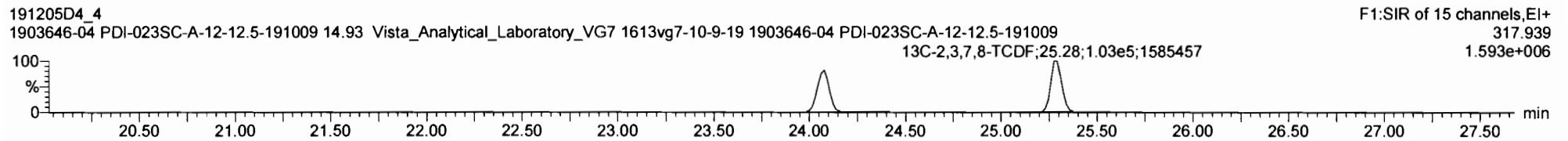
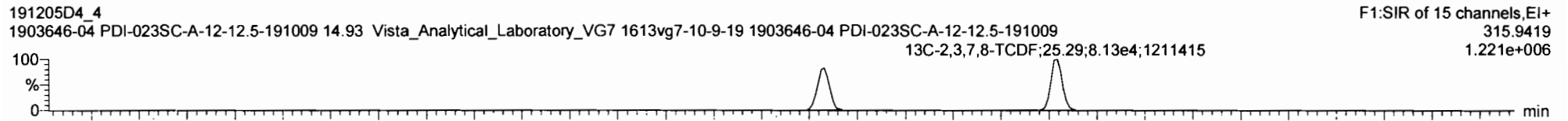
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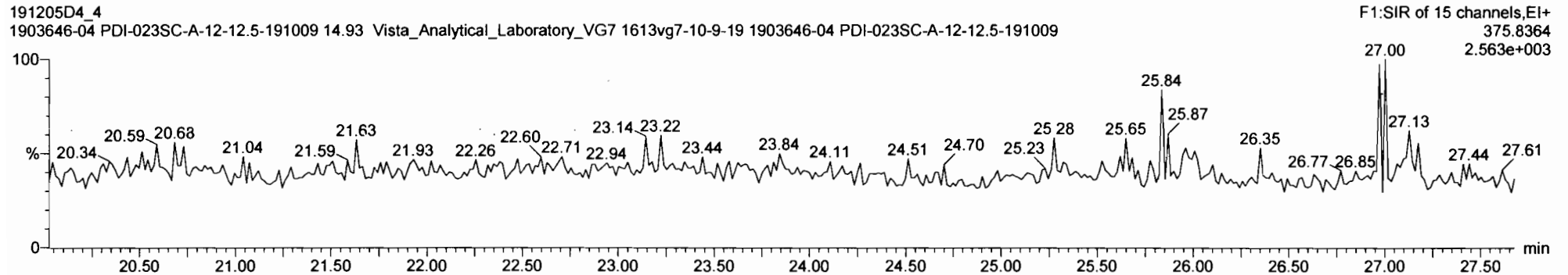
Total Tetra-Furans



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



DPE1





Vista Analytical Laboratory

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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

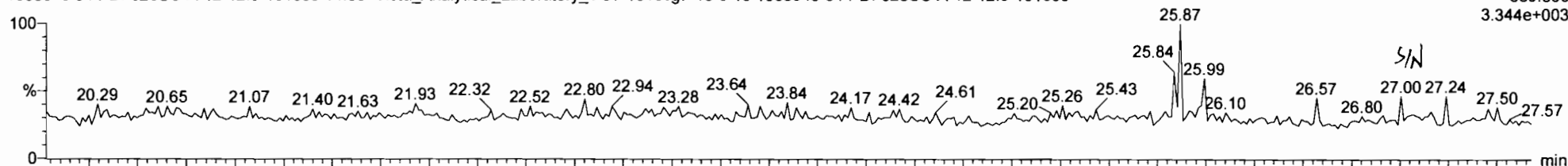
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1st Func. Penta-Furans

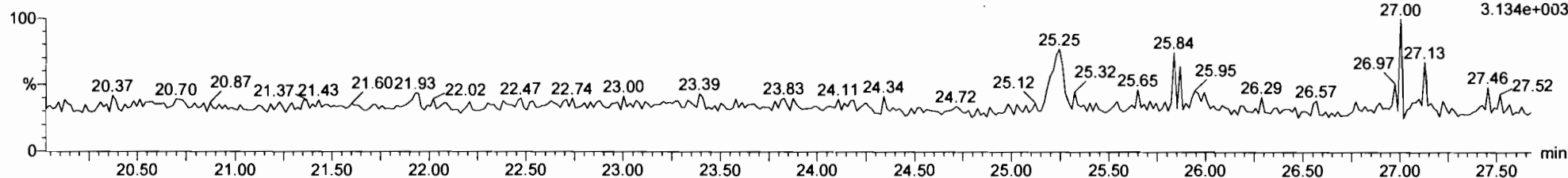
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F1:SIR of 15 channels,EI+  
339.860  
3.344e+003



191205D4\_4  
1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-04 PDI-023SC-A-12-12.5-191009

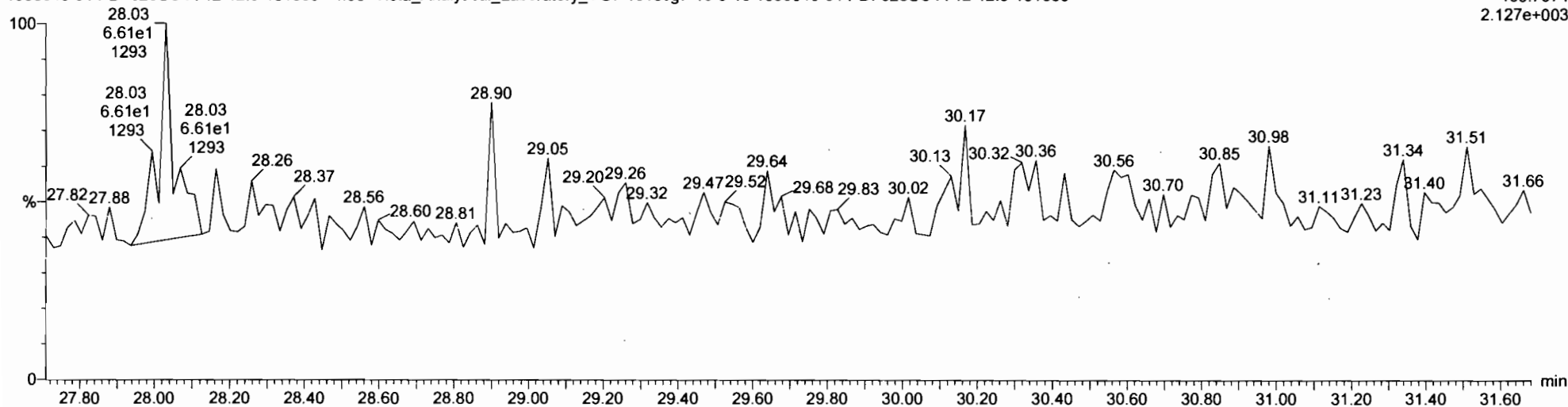
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DPE6

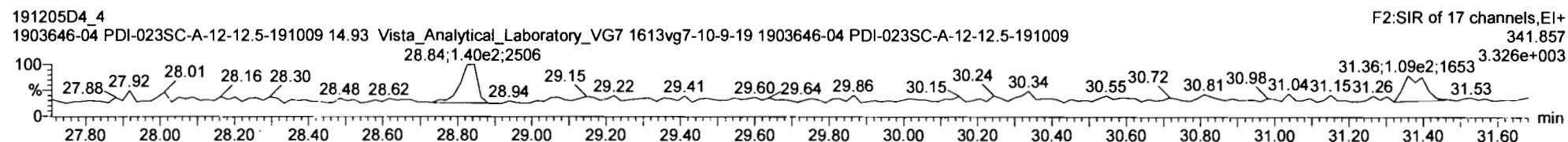
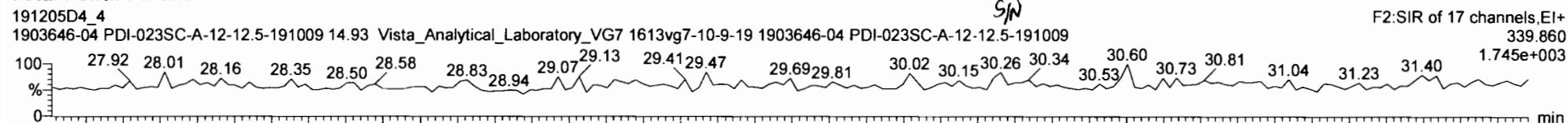
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F2:SIR of 17 channels,EI+  
409.7974  
2.127e+003

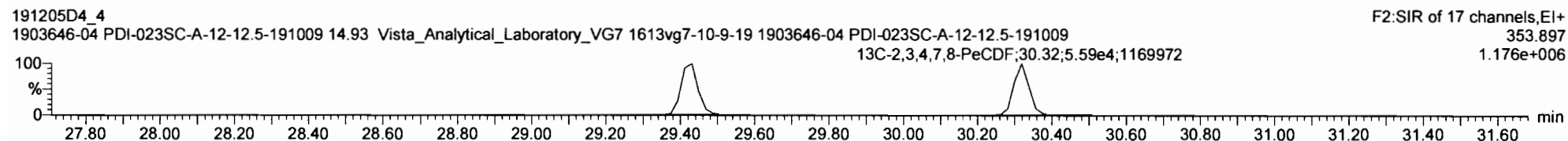
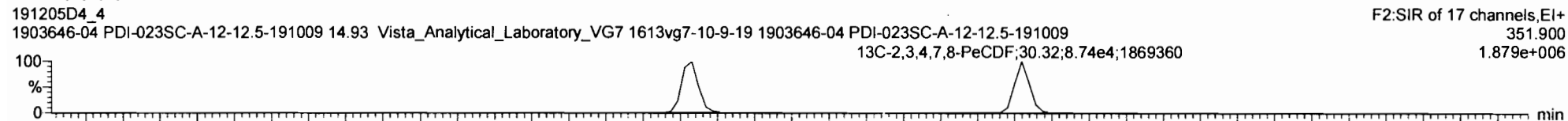


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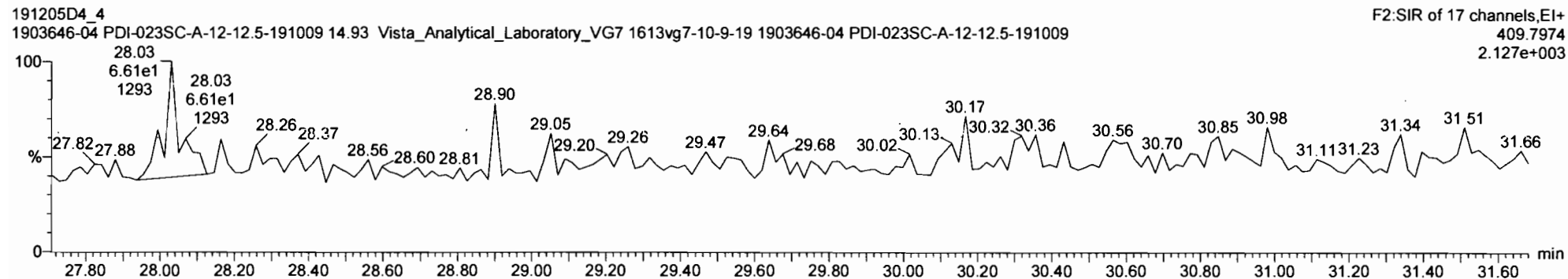
### Total Penta-Furans



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



### DPE2



Vista Analytical Laboratory

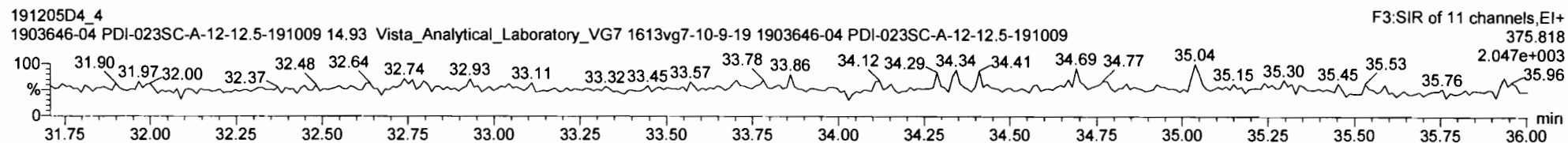
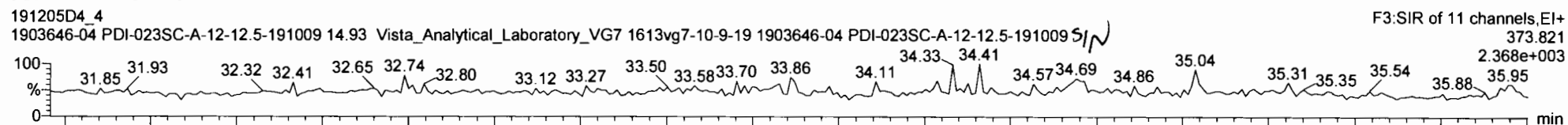
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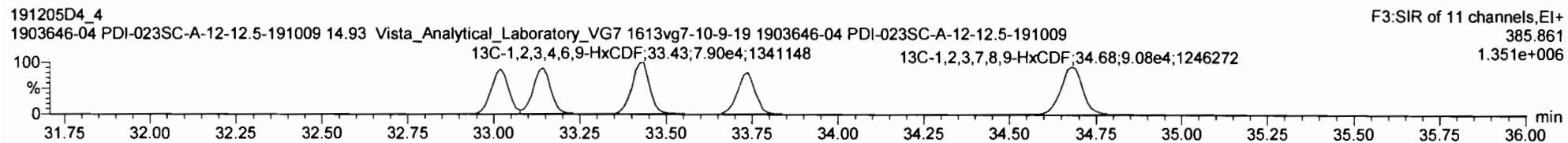
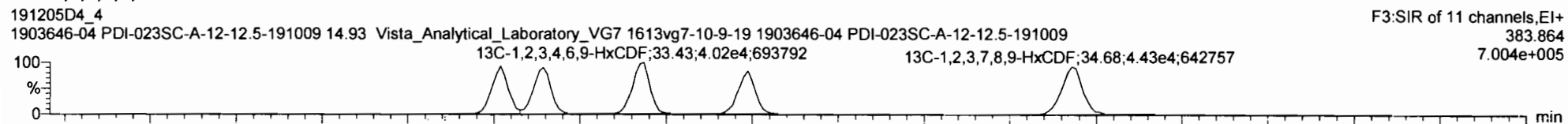
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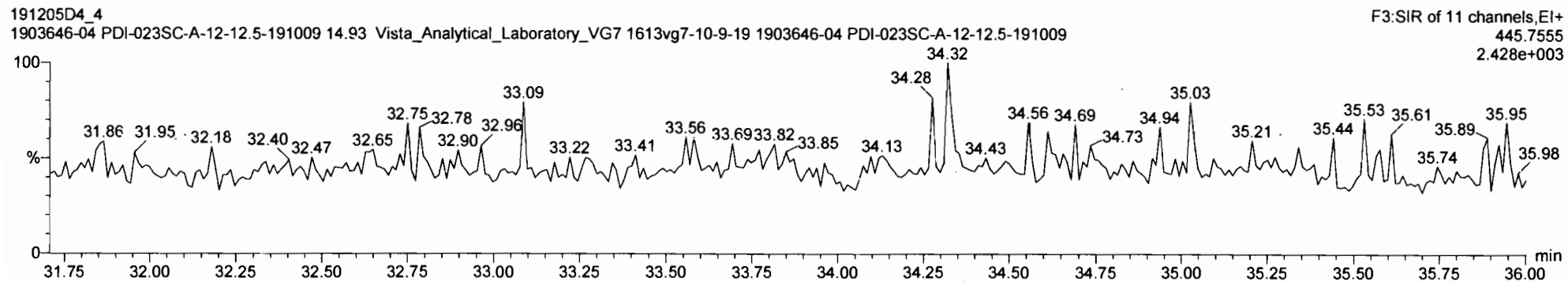
Total Hexa-Furans



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



DPE3



Vista Analytical Laboratory

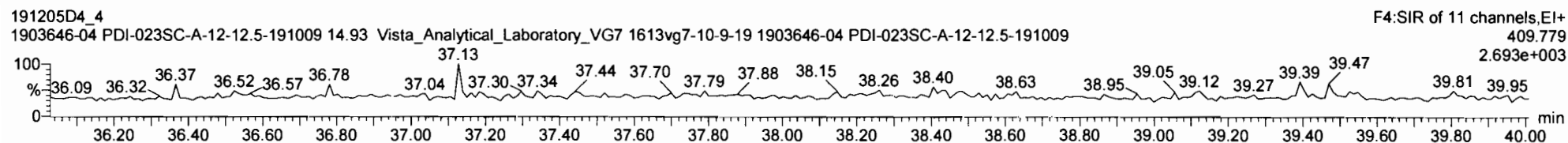
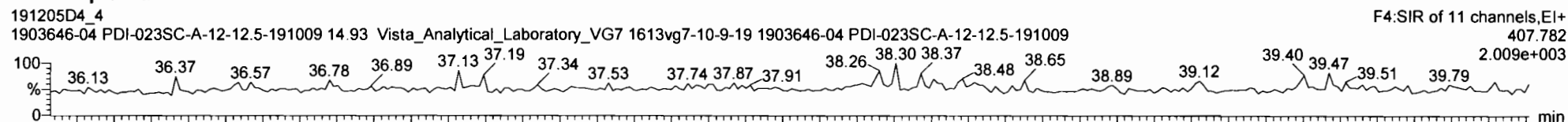
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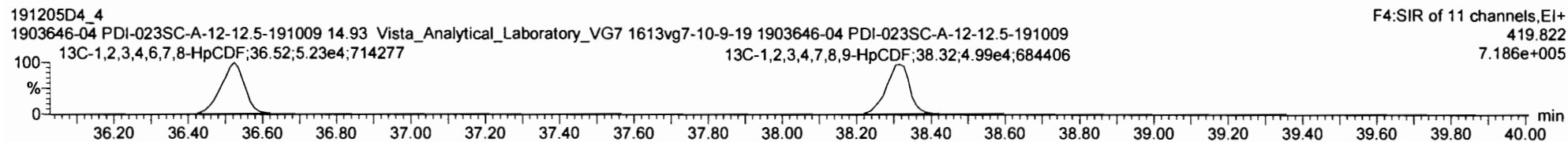
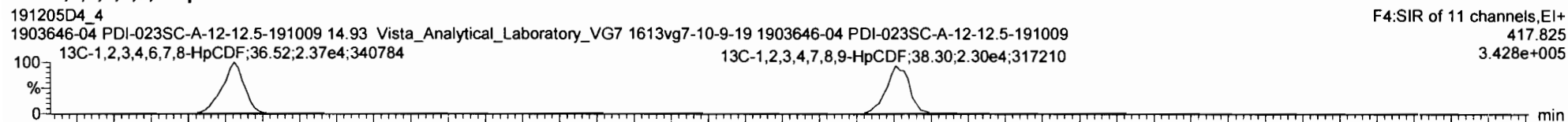
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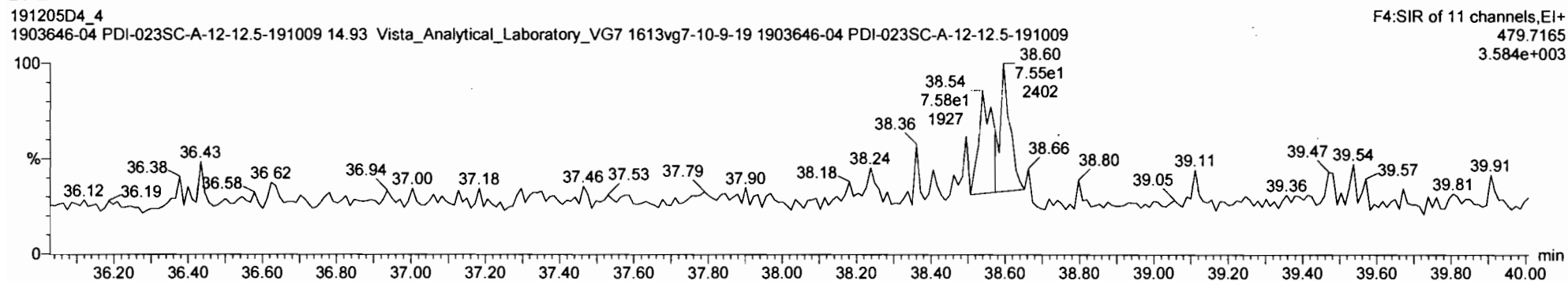
Total Hepta-Furans



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



DPE4



Vista Analytical Laboratory

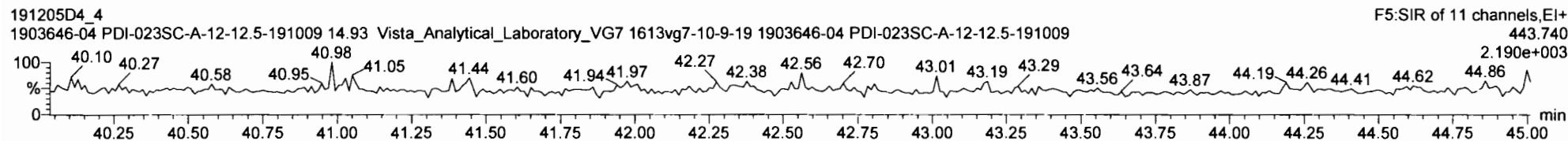
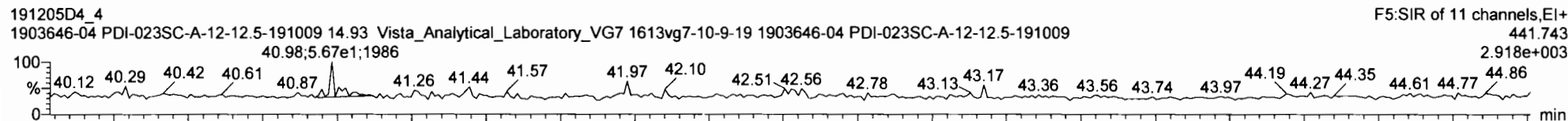
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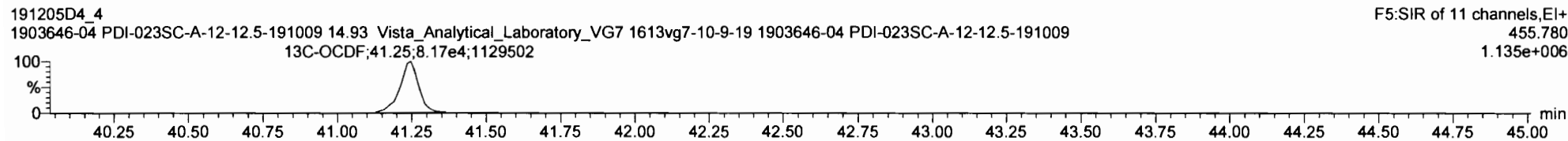
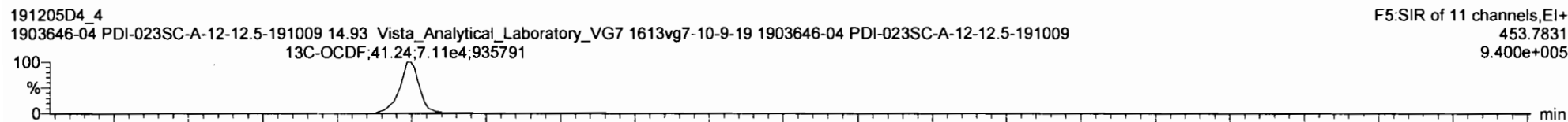
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Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

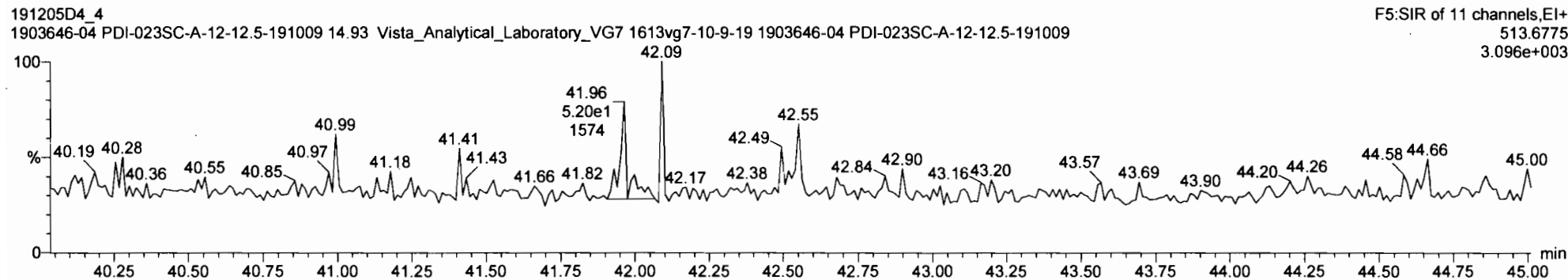
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

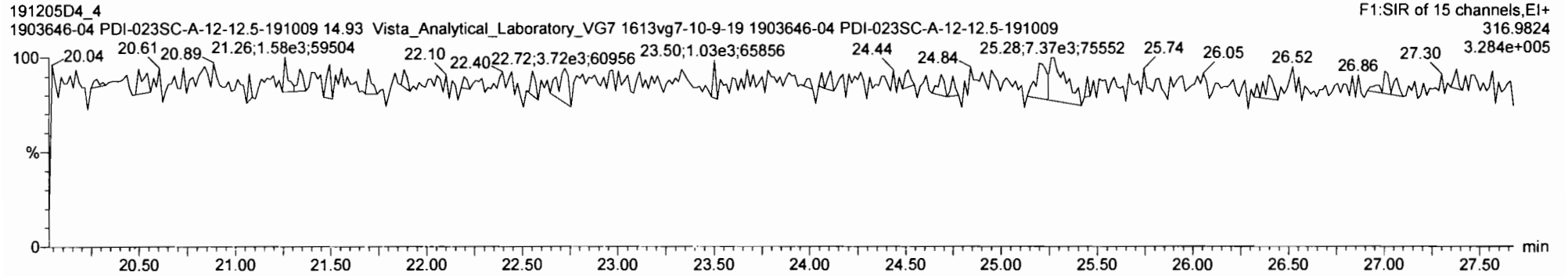
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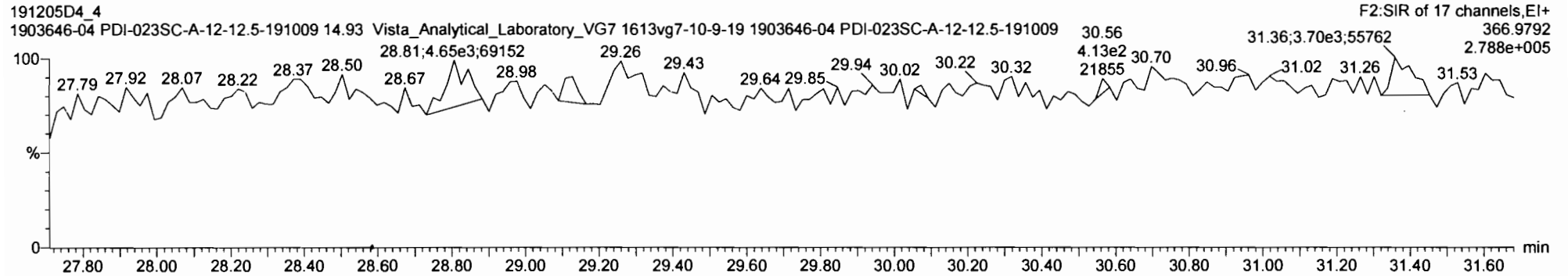
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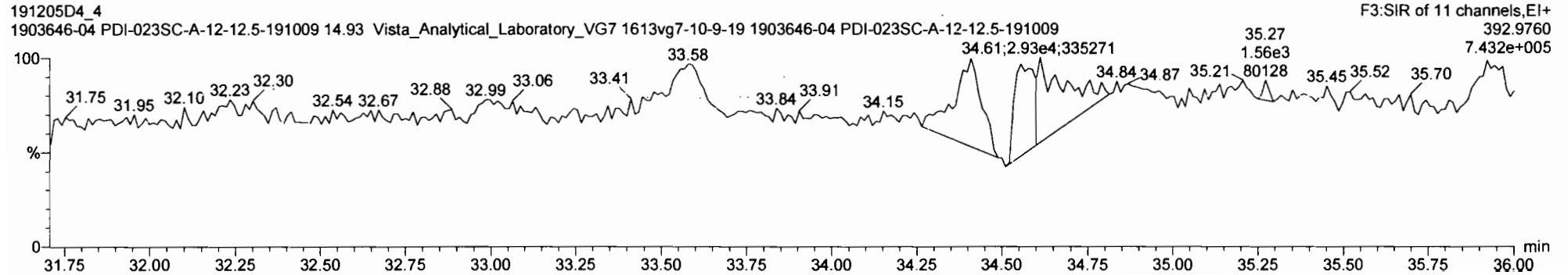
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PFK2



PFK3



Vista Analytical Laboratory

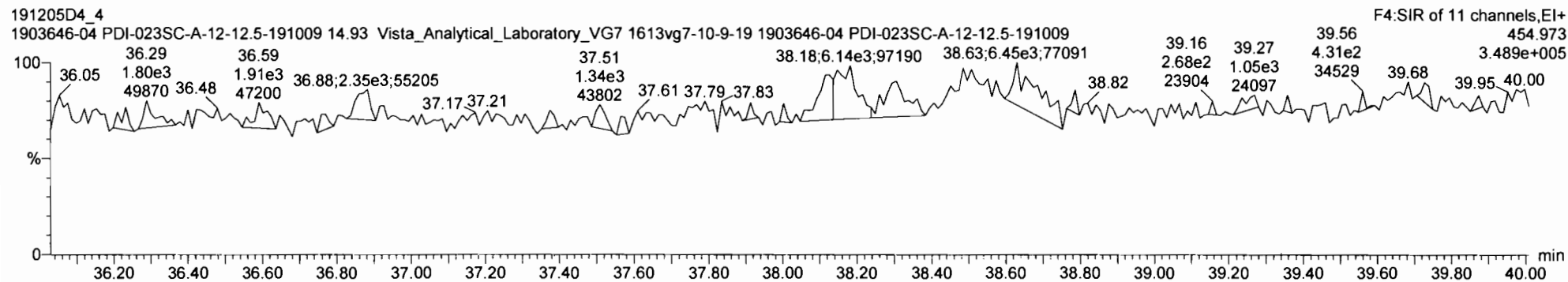
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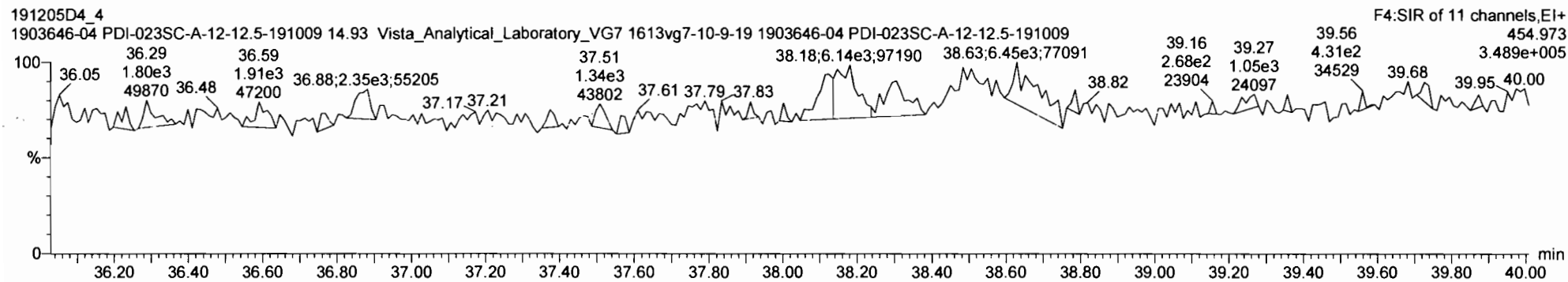
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Description: 1903646-04 PDI-023SC-A-12-12.5-191009 14.93 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4



PFK5



**Quantify Sample Summary Report**

**MassLynx MassLynx V4.1 SCN 945**

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-5.qld

Last Altered: Wednesday, December 11, 2019 09:51:49 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:53:33 Pacific Standard Time

EL 12/11/19

Cr 12/11/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 15:15:41

Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009,

Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_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		1.08e5	10.6060	0.905			1.001		26.11					0.377
2	2 1,2,3,7,8-PeCDD		9.35e4	10.6060	0.903			1.001		30.62					0.221
3	3 1,2,3,4,7,8-HxCDD		7.32e4	10.6060	1.101			1.000		33.90					0.278
4	4 1,2,3,6,7,8-HxCDD		7.83e4	10.6060	0.939			1.000		34.00					0.311
5	5 1,2,3,7,8,9-HxCDD		7.90e4	10.6060	0.961			1.001		34.33					0.303
6	6 1,2,3,4,6,7,8-HpCDD	7.96e2	6.92e4	10.6060	0.979	1.154	NO	1.000	1.000	37.77	37.77	2.2159		2.22	0.277
7	7 OCDD	5.83e3	1.36e5	10.6060	0.959	0.909	NO	1.000	1.001	41.01	41.03	16.887		16.9	0.248
8	8 2,3,7,8-TCDF		1.91e5	10.6060	0.950			1.001		25.31					0.190
9	9 1,2,3,7,8-PeCDF		1.57e5	10.6060	0.960			1.001		29.45					0.161
10	10 2,3,4,7,8-PeCDF		1.51e5	10.6060	1.015			1.001		30.35					0.145
11	11 1,2,3,4,7,8-HxCDF		1.10e5	10.6060	1.177			1.000		33.02					0.154
12	12 1,2,3,6,7,8-HxCDF		1.14e5	10.6060	1.069			1.000		33.14					0.157
13	13 2,3,4,6,7,8-HxCDF		1.05e5	10.6060	1.114			1.001		33.76					0.174
14	14 1,2,3,7,8,9-HxCDF		8.86e4	10.6060	1.062			1.000		34.67					0.249
15	15 1,2,3,4,6,7,8-HpCDF		7.70e4	10.6060	1.128			1.001		36.54					0.236
16	16 1,2,3,4,7,8,9-HpCDF		6.84e4	10.6060	1.280			1.000		38.30					0.210
17	17 OCDF	3.49e2	1.77e5	10.6060	0.947	0.737	YES	1.000	1.001	41.24	41.27	0.78570		0.708	0.325
18	18 13C-2,3,7,8-TCDD	1.08e5	9.75e4	10.6060	1.095	0.771	NO	1.021	1.022	26.06	26.08	191.41	101.5		0.577
19	19 13C-1,2,3,7,8-PeCDD	9.35e4	9.75e4	10.6060	0.881	0.632	NO	1.187	1.199	30.29	30.60	205.04	108.7		0.456
20	20 13C-1,2,3,4,7,8-Hx...	7.32e4	1.27e5	10.6060	0.642	1.274	NO	1.014	1.014	33.88	33.89	168.89	89.6		1.01
21	21 13C-1,2,3,6,7,8-Hx...	7.83e4	1.27e5	10.6060	0.856	1.283	NO	1.017	1.017	34.00	34.00	135.61	71.9		0.755
22	22 13C-1,2,3,7,8,9-Hx...	7.90e4	1.27e5	10.6060	0.807	1.266	NO	1.026	1.026	34.30	34.29	145.21	77.0		0.800
23	23 13C-1,2,3,4,6,7,8-H...	6.92e4	1.27e5	10.6060	0.654	1.100	NO	1.126	1.130	37.64	37.76	156.83	83.2		1.29
24	24 13C-OCDD	1.36e5	1.27e5	10.6060	0.580	0.885	NO	1.226	1.227	40.98	41.01	347.32	92.1		0.602
25	25 13C-2,3,7,8-TCDF	1.91e5	1.73e5	10.6060	1.035	0.772	NO	0.992	0.991	25.31	25.29	201.91	107.1		0.488
26	26 13C-1,2,3,7,8-PeCDF	1.57e5	1.73e5	10.6060	0.854	1.601	NO	1.154	1.153	29.44	29.43	200.40	106.3		0.630
27	27 13C-2,3,4,7,8-PeCDF	1.51e5	1.73e5	10.6060	0.847	1.593	NO	1.189	1.188	30.35	30.32	194.97	103.4		0.635
28	28 13C-1,2,3,4,7,8-Hx...	1.10e5	1.27e5	10.6060	0.832	0.521	NO	0.987	0.988	32.99	33.02	195.71	103.8		1.16
29	29 13C-1,2,3,6,7,8-Hx...	1.14e5	1.27e5	10.6060	1.034	0.525	NO	0.991	0.991	33.11	33.13	163.00	86.4		0.933
30	30 13C-2,3,4,6,7,8-Hx...	1.05e5	1.27e5	10.6060	0.953	0.532	NO	1.009	1.009	33.73	33.72	163.65	86.8		1.01
31	31 13C-1,2,3,7,8,9-Hx...	8.86e4	1.27e5	10.6060	0.828	0.504	NO	1.039	1.038	34.71	34.67	158.57	84.1		1.17



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-5.qld

Last Altered: Wednesday, December 11, 2019 09:51:49 Pacific Standard Time

Printed: Wednesday, December 11, 2019 09:53:33 Pacific Standard Time

Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009,  
 Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Area	IS Area	WL/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...	7.70e4	1.27e5	10.6060	0.757	0.449	NO	1.093	1.092	36.52	36.51	150.66	79.9		1.06
33	33 13C-1,2,3,4,7,8,9-H...	6.84e4	1.27e5	10.6060	0.581	0.453	NO	1.143	1.146	38.20	38.30	174.32	92.4		1.38
34	34 13C-OCDF	1.77e5	1.27e5	10.6060	0.689	0.881	NO	1.233	1.234	41.21	41.24	380.15	100.8		0.638
35	35 37Cl-2,3,7,8-TCDD	4.56e4	9.75e4	10.6060	1.198			1.022	1.023	26.08	26.10	73.558	97.5		0.249
36	36 13C-1,2,3,4-TCDD	9.75e4	9.75e4	10.6060	1.000	0.800	NO	1.000	1.000	25.50	25.52	188.57	100.0		0.632
37	37 13C-1,2,3,4-TCDF	1.73e5	1.73e5	10.6060	1.000	0.792	NO	1.000	1.000	24.06	24.07	188.57	100.0		0.505
38	38 13C-1,2,3,4,6,9-Hx...	1.27e5	1.27e5	10.6060	1.000	0.532	NO	1.000	1.000	33.42	33.42	188.57	100.0		0.965
39	39 Total Tetra-Dioxins		1.08e5	10.6060	0.901			0.000		25.50					0.201
40	40 Total Penta-Dioxins		9.35e4	10.6060	0.872			0.000		30.00					0.0984
41	41 Total Hexa-Dioxins		0.00e0	10.6060	0.976			0.000		33.80		0.65263		0.653	0.304
42	42 Total Hepta-Dioxins		6.92e4	10.6060	0.989			0.000		37.75		5.1798		5.18	0.274
43	43 Total Tetra-Furans		1.91e5	10.6060	0.943			0.000		24.00					0.0930
44	44 1st Func. Penta-Fur...		0.00e0	10.6060	0.940			0.000		27.63					0.0854
45	45 Total Penta-Furans		0.00e0	10.6060	0.940			0.000		30.00					0.0763
46	46 Total Hexa-Furans		0.00e0	10.6060	1.078			0.000		33.00					0.0753
47	47 Total Hepta-Furans		0.00e0	10.6060	1.135			0.000		37.75		0.00000		0.349	0.150

Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-5.qld

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Calibration: 10 Dec 2019 15:15:41

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Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_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
41	Total Hexa-Dioxins	NO	32.39	141.477	43052.950	6.755	MM	0.6526	0.65

Hepta-Dioxins

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
42	Total Hepta-Dioxins	NO	36.92	522.143	36257.805	31.079	MM	2.9639	2.96
6	1,2,3,4,6,7,8-HpCDD	NO	37.77	426.726	36257.805	23.018	MM	2.2159	2.22

Tetra-Furans

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

Penta-Furans function 1

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

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-5.qld  
Last Altered: Wednesday, December 11, 2019 09:51:49 Pacific Standard Time  
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Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_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

Hepta-Furans

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
47	Total Hepta-Furans	YES	37.13	77.925	22583.996	0.000	MM	0.0000	0.35

Vista Analytical Laboratory

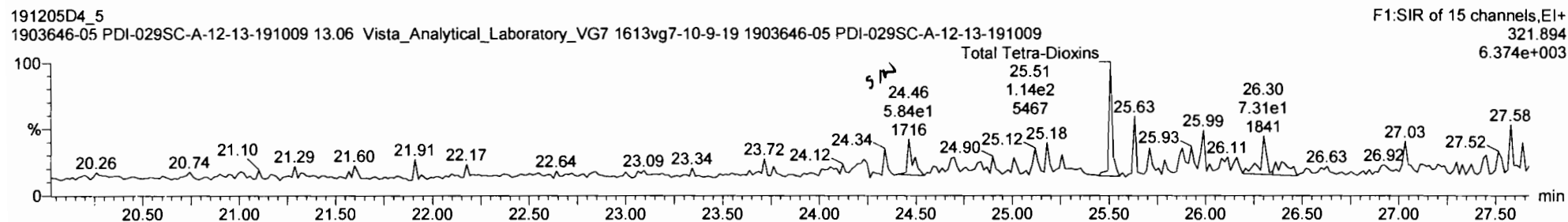
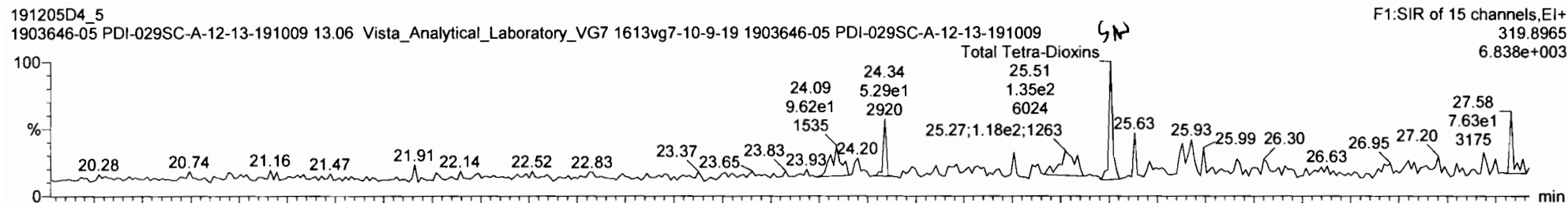
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

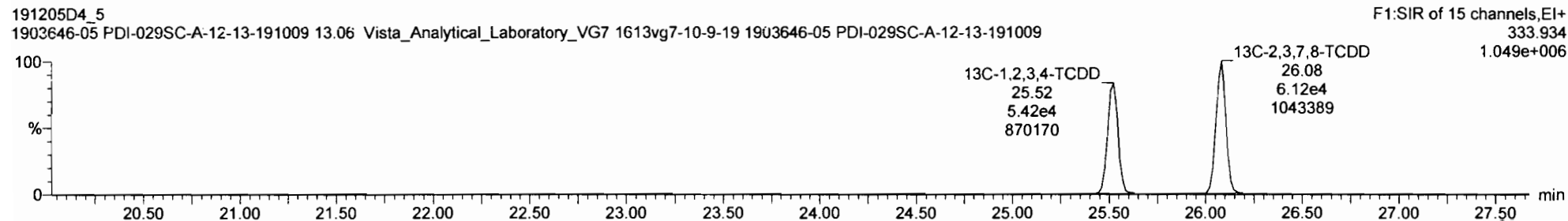
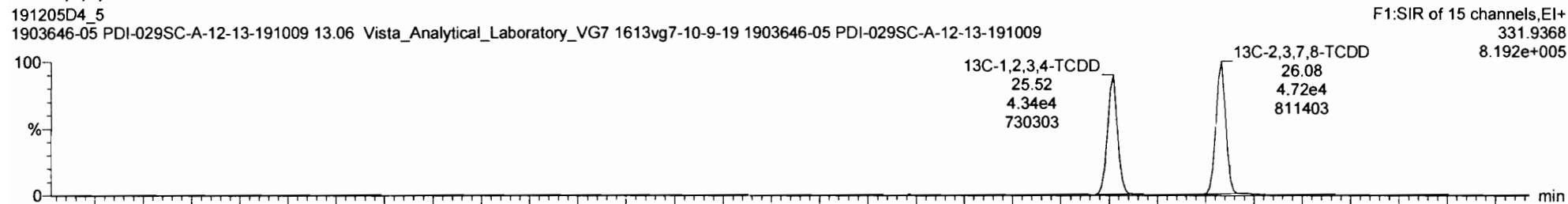
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Total Tetra-Dioxins



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

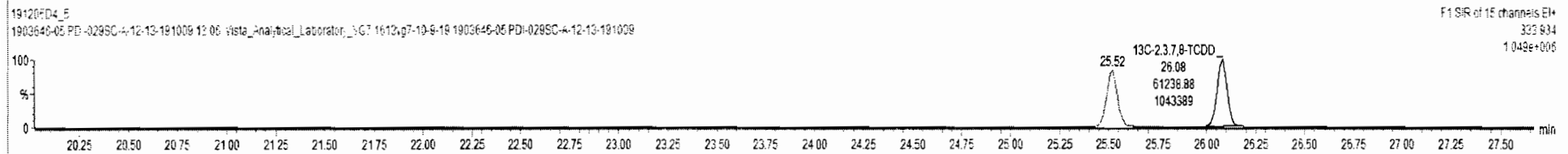
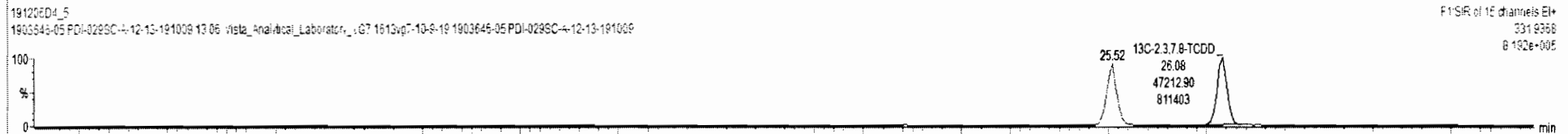
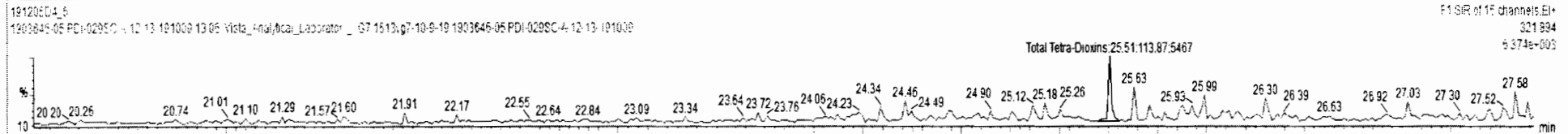
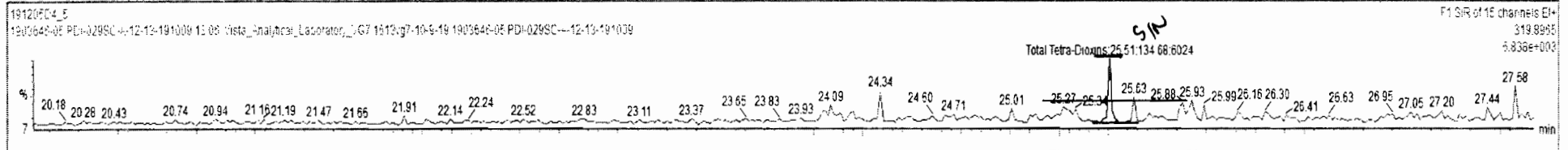




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#	Name	Resp	IS Resp	IS#	RA	n/y	R/R	w/w	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
37	37 13C-1,2,3,4-TCDF	1.73e5	1.73e5	37	0.79	NO	1.000	10.60E	24.06	24.07	1.000	1.000	NO	188.6	100	0.50E	
38	38 13C-1,2,3,4,6,8-TCDF	1.27e5	1.27e5	38	0.52	NO	1.000	10.60E	33.42	33.42	1.000	1.000	NO	188.6	100	0.96E	
39	39 Total Tetra-Dioxins	1.08e5					0.901	10.60E	25.50			0.000	NO	0.9000	0.201	0.3890	
40	40 Total Penta-Dioxins	9.25e4					0.872	10.60E	30.00			0.000	NO	0.0000	0.0894	0.8320	
41	41 Total Hexa-Dioxins	0.00e0					0.976	10.60E	33.80			0.000	NO		0.151		
42	42 Total Hepta-Dioxins	6.52e4					0.989	10.60E	37.75			0.000	NO	2.393	0.274	4.99E	
43	43 Total Tetra-Furans	1.91e5					0.943	10.60E	24.00			0.000	NO	0.1460	0.191	0.149E	
44	44 1st Func. Penta-Furans	0.00e0					0.940	10.60E	27.62			0.000	NO		0.0854		
45	45 Total Penta-Furans	0.00e0					0.940	10.60E	30.00			0.000	NO	0.1814	0.160	0.313E	
46	46 Total Hexa-Furans	0.00e0					1.078	10.60E	33.00			0.000	NO		0.0753		
47	47 Total Hepta-Furans	0.00e0					1.125	10.60E	37.75			0.000	NO	0.3914	0.235	0.391E	
48	48 PK1																
49	49 PK2																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	39 Total Tetra-Dioxins	25.50	25.51	1.347e2	1.139e2	0.770	1.16	YES	0.38900	0.00000



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

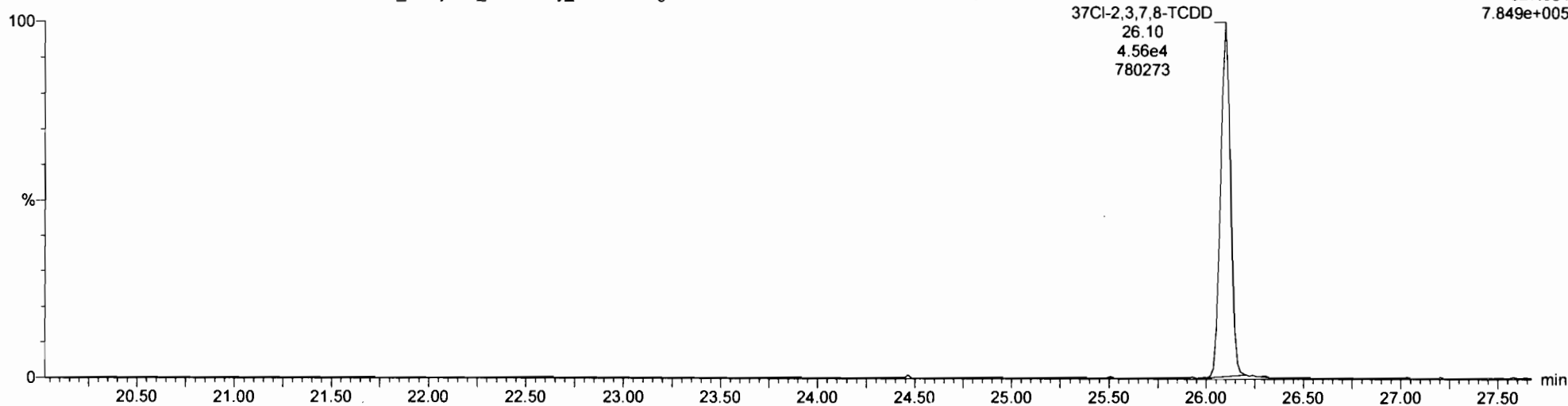
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Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

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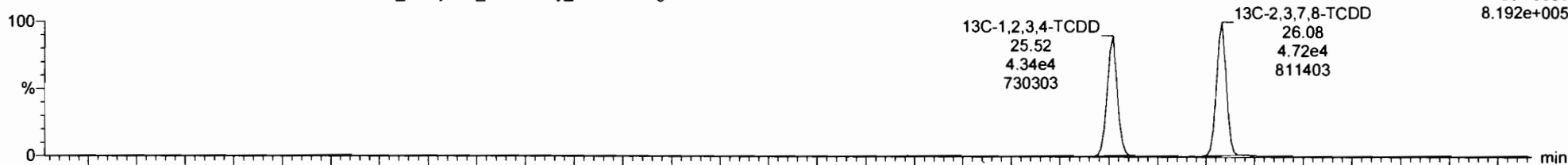
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**13C-1,2,3,4-TCDD**

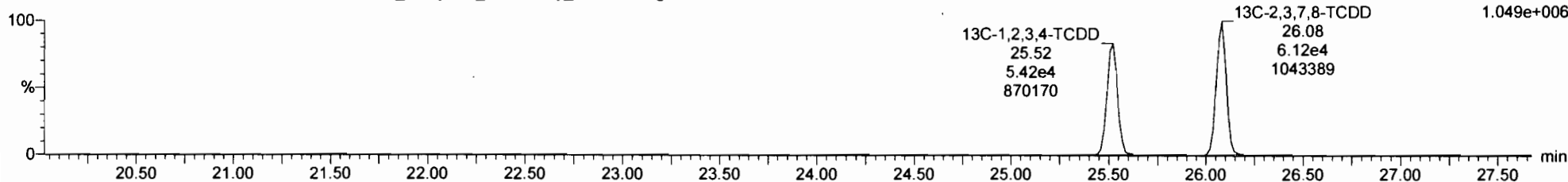
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F1:SIR of 15 channels,EI+  
331.9368  
8.192e+005



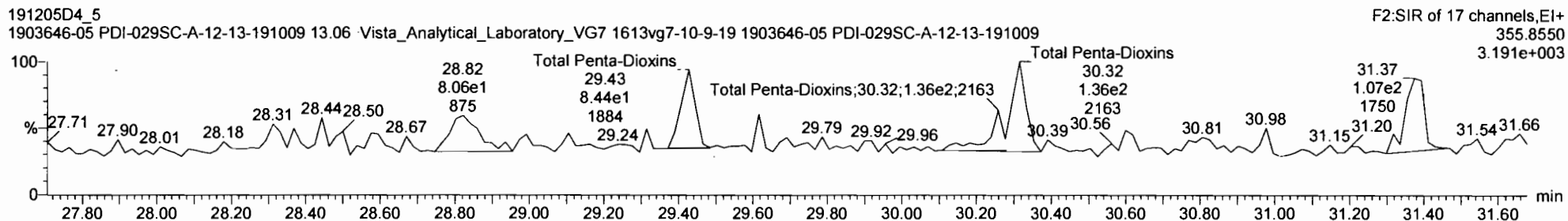
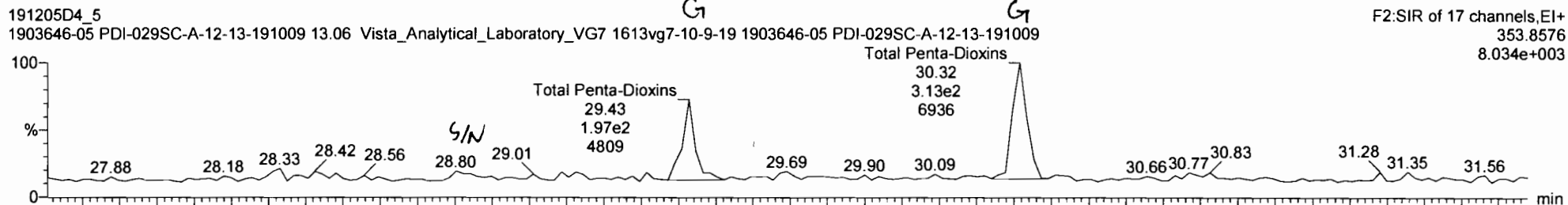
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1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-05 PDI-029SC-A-12-13-191009

F1:SIR of 15 channels,EI+  
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1.049e+006

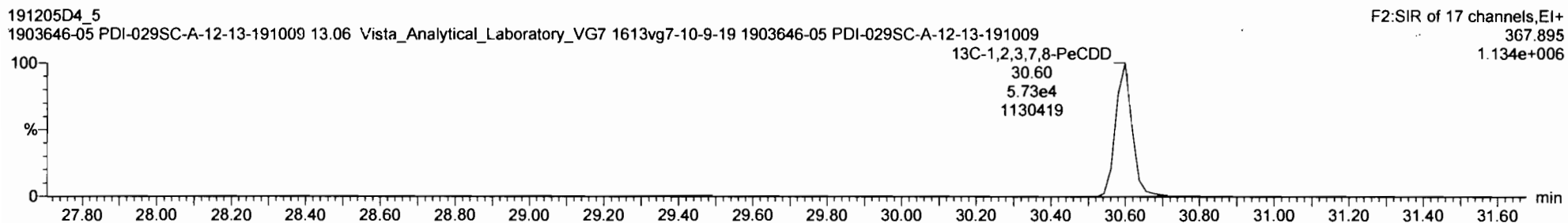
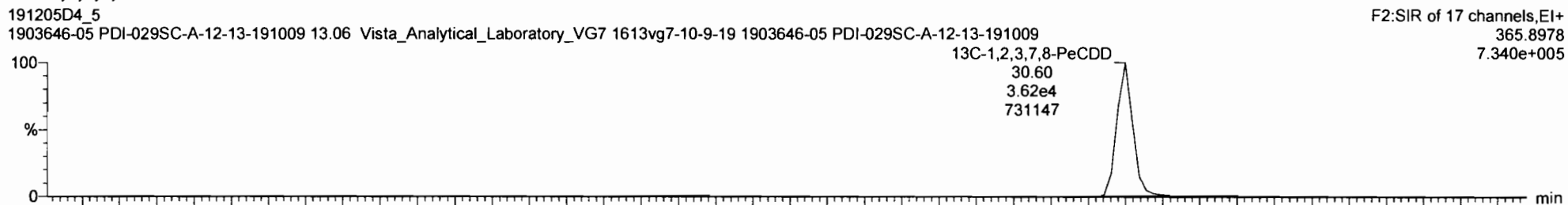


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 Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Total Penta-Dioxins**



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



Vista Analytical Laboratory

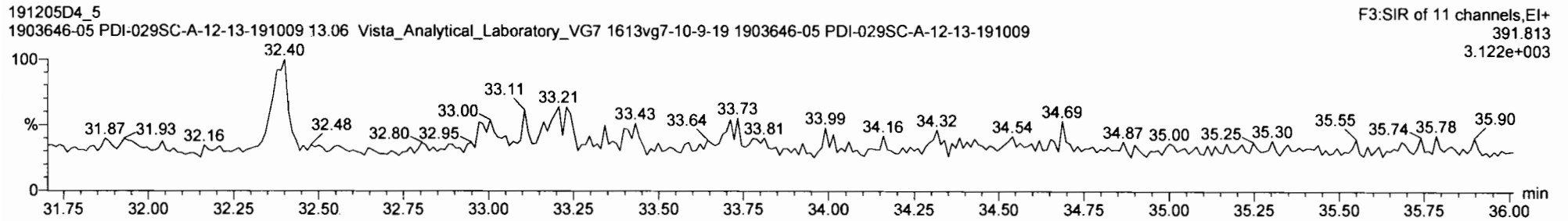
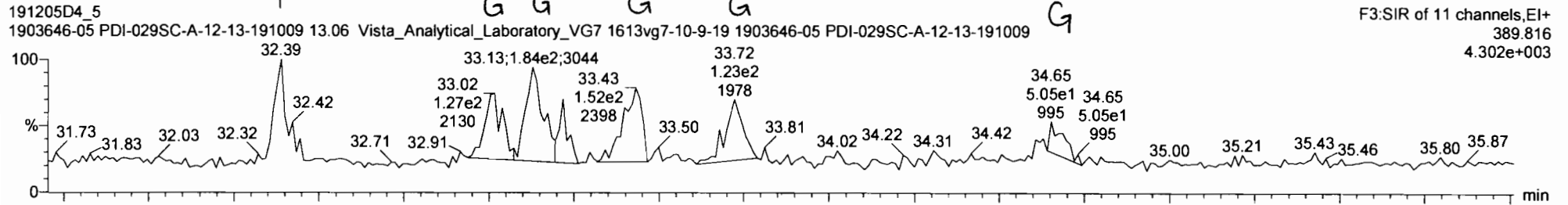
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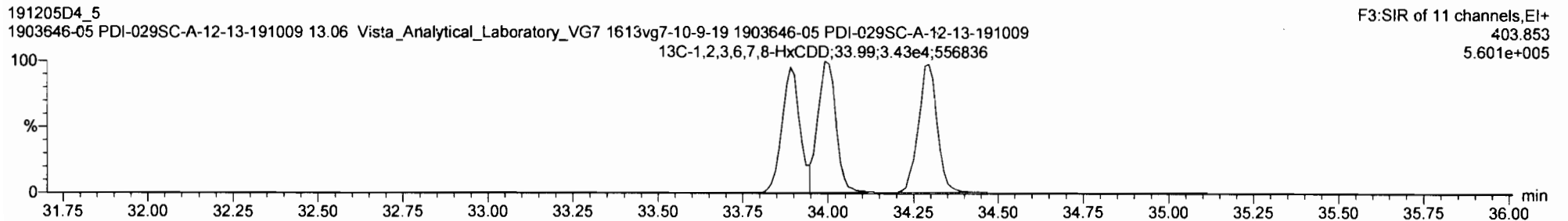
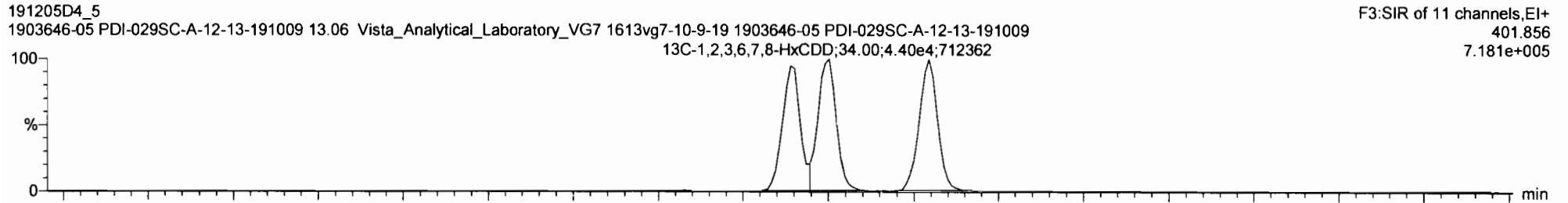
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Total Hexa-Dioxins



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



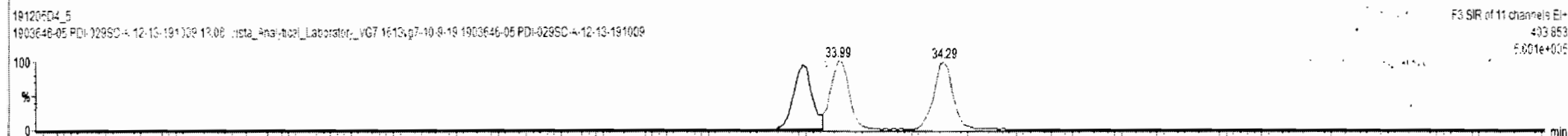
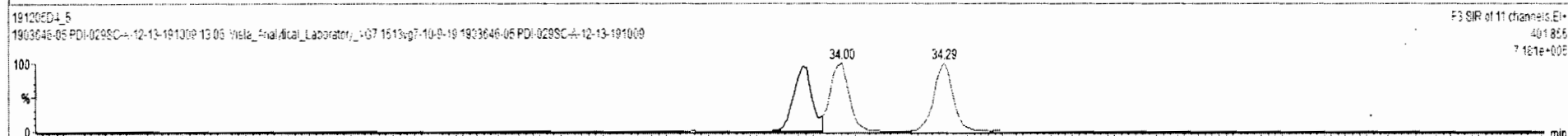
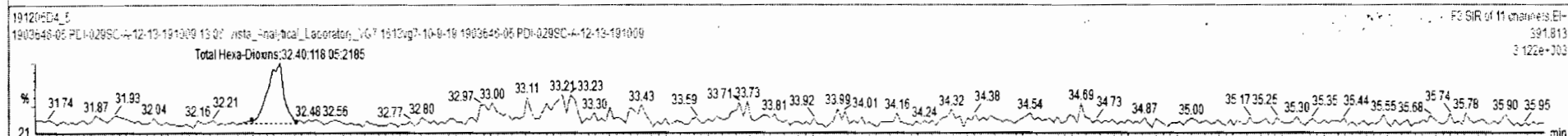
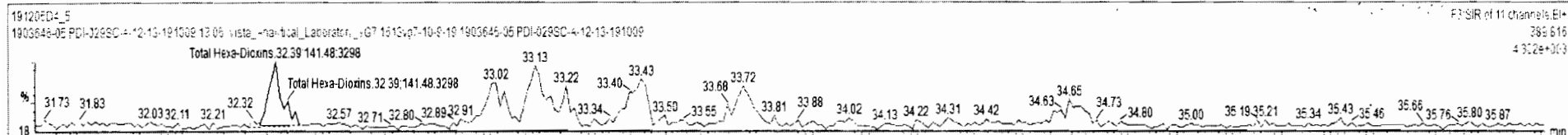




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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
34	34 13C-OCDF	1.77e5	1.27e5	38	0.88	NO	0.689	10.606	41.21	41.24	1.234	1.233	NO	380.2	101	0.638	
35	35 37C-2,3,7,8-TCDD	4.56e4	9.75e4	36			1.198	10.606	26.08	26.10	1.023	1.022	NO	73.56	97.5	0.249	
36	36 13C-1,2,3,4-TCDD	9.75e4	9.75e4	36	0.80	NO	1.000	10.606	25.50	25.52	1.000	1.000	NO	188.8	100	0.632	
37	37 13C-1,2,3,4-TCDF	1.73e5	1.73e5	37	0.79	NO	1.000	10.606	24.06	24.07	1.000	1.000	NO	188.8	100	0.505	
38	38 13C-1,2,3,4,6,8-hxCDF	1.27e5	1.27e5	38	0.53	NO	1.000	10.606	33.42	33.42	1.000	1.000	NO	188.8	100	0.965	
39	39 Total Tetra-Dioxins		1.08e5				0.901	10.606	25.50			0.000	NO			0.201	
40	40 Total Penta-Dioxins		9.35e4				0.872	10.606	30.00			0.000	NO			0.0984	
41	41 Total Hexa-Dioxins		0.00e0				0.976	10.606	33.80			0.000	NO	0.6526	0.304	0.6526	
42	42 Total Hepta-Dioxins		6.92e4				0.989	10.606	37.75			0.000	NO	2.993	0.274	4.995	
43	43 Total Tetra-Furans		1.91e5				0.943	10.606	24.00			0.000	NO	0.1490	0.151	0.1490	
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.606	27.62			0.000	NO			0.0854	
45	45 Total Penta-Furans		0.00e0				0.940	10.606	30.00			0.000	NO	0.1814	0.150	0.3121	
46	46 Total Hexa-Furans		0.00e0				1.078	10.606	33.00			0.000	NO			0.0753	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.39	1.415e2	1.180e2	1.240	1.20	NO	0.65263	0.65263



Vista Analytical Laboratory

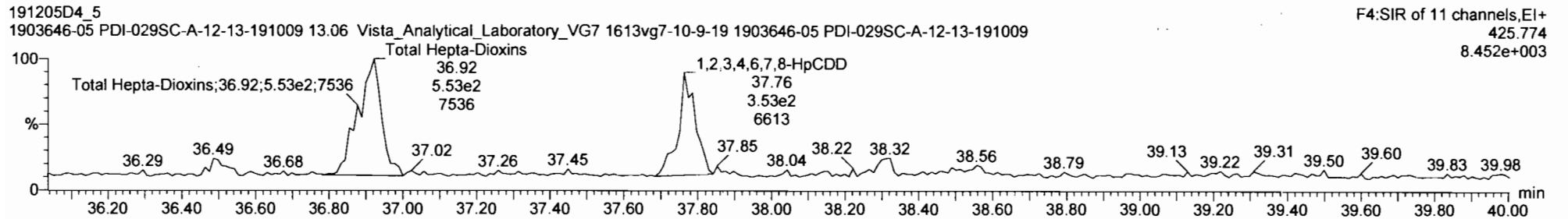
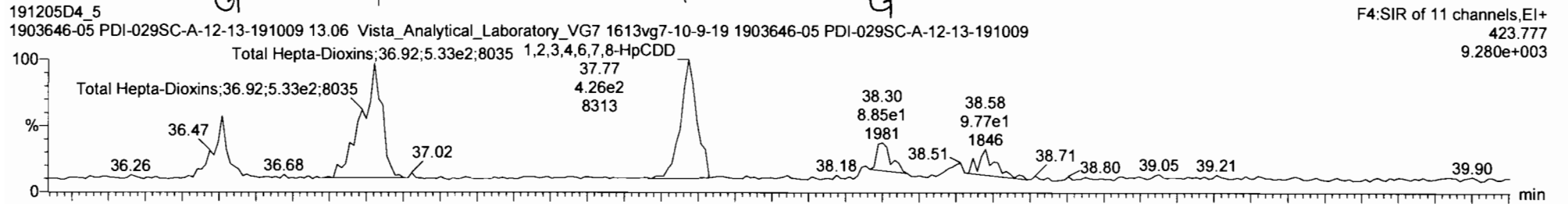
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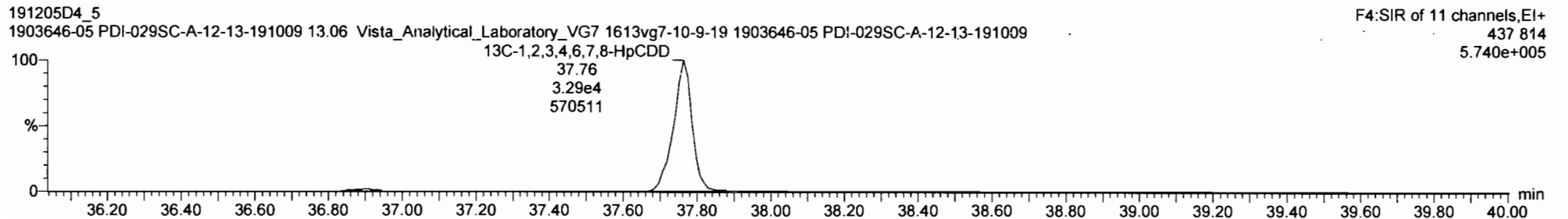
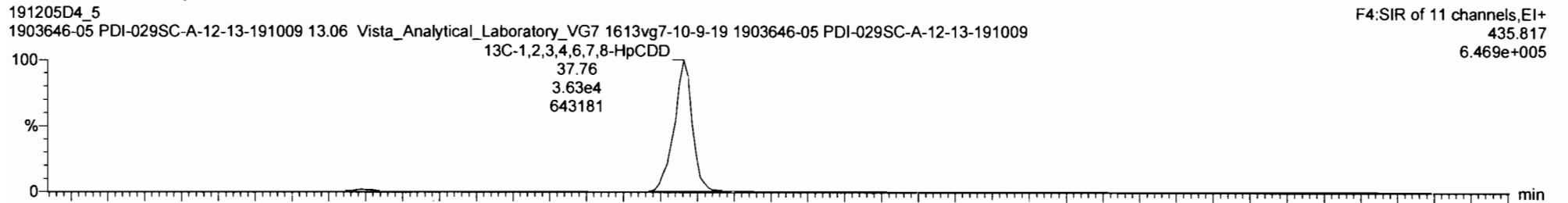
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Total Hepta-Dioxins

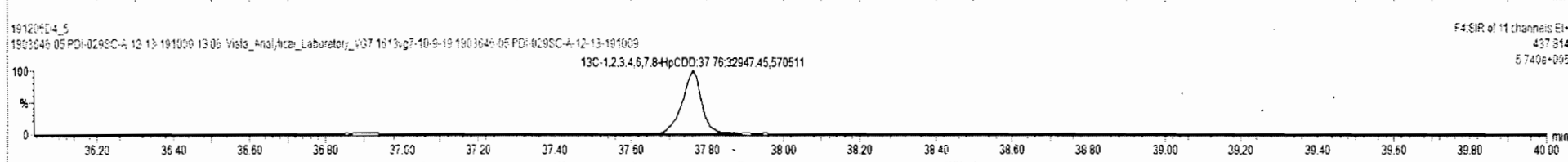
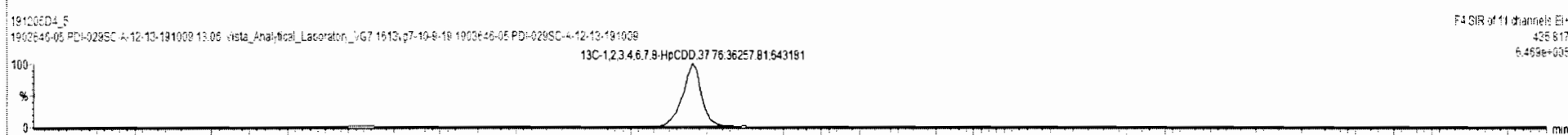
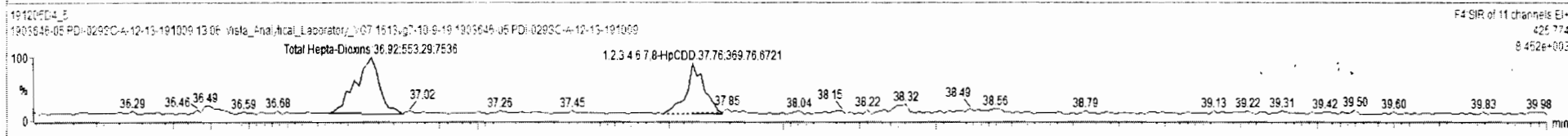
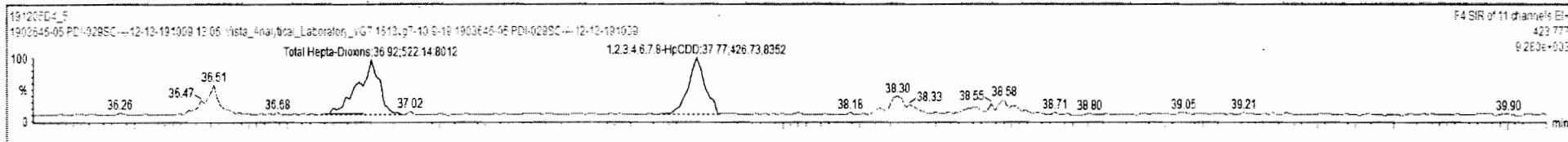


13C-1,2,3,4,6,7,8-HpCDD



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
34	13C-OCDF	1.77e5	1.27e5	36	0.82	NO	0.689	10.606	41.21	41.24	1.234	1.233	NO	380.2	101	0.638	
35	37C1,2,3,7,8-TCDD	4.56e4	9.75e2	36			1.196	10.606	26.08	26.10	1.023	1.022	NO	73.52	97.5	0.249	
36	13C-1,2,3,4-TCDD	9.75e4	9.75e4	36	0.80	NO	1.000	10.606	25.50	25.52	1.000	1.000	NO	188.6	100	0.632	
37	13C-1,2,3,4-TCDF	1.73e5	1.73e5	37	0.75	NO	1.000	10.606	24.06	24.07	1.000	1.000	NO	168.8	100	0.595	
38	13C-1,2,3,4,6,8-HxCDF	1.27e5	1.27e5	38	0.53	NO	1.000	10.606	33.42	33.42	1.000	1.000	NO	188.8	100	0.965	
39	Total Tetra-Dioxins	1.08e5					0.901	10.606	25.50			0.900	NO			0.291	
40	Total Penta-Dioxins	9.35e4					0.872	10.606	30.00			0.800	NO			0.0994	
41	Total Hexa-Dioxins	0.00e0					0.976	10.606	33.80			0.900	NO	0.6526		0.304	0.6526
42	Total Hepta-Dioxins	6.92e4					0.989	10.606	37.75			0.900	NO	5.180		0.274	5.180
43	Total Tetra-Furans	1.91e5					0.943	10.606	24.00			0.900	NO	0.1490		0.191	0.1490
44	1st Func. Penta-Furans	0.00e0					0.940	10.606	27.63			0.900	NO			0.0854	
45	Total Penta-Furans	0.00e0					0.940	10.606	30.00			0.900	NO	0.1814		0.160	0.3131
46	Total Hexa-Furans	0.00e0					1.076	10.606	33.00			0.900	NO			0.0759	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	36.92	5.221e2	5.533e2	1.040	0.94	NO	2.9639	2.9639
2	6 1,2,3,4,6,7,8-HpCDD	37.77	37.77	4.267e2	3.698e2	1.040	1.15	NO	2.2159	2.2159



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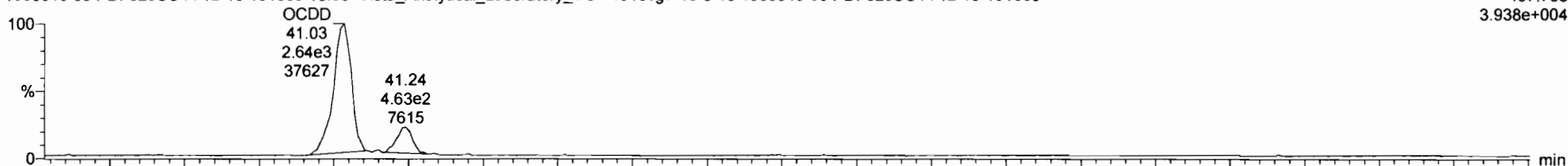
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OCDD

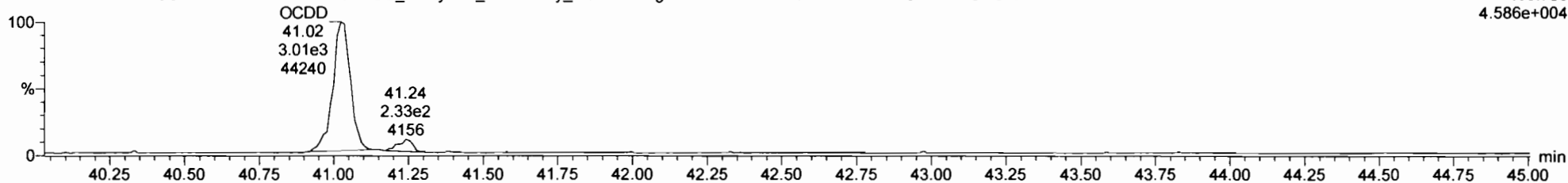
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F5:SIR of 11 channels,EI+  
457.738  
3.938e+004



191205D4\_5  
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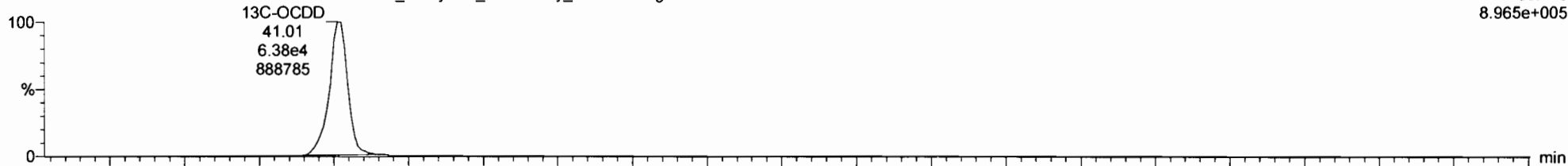
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13C-OCDD

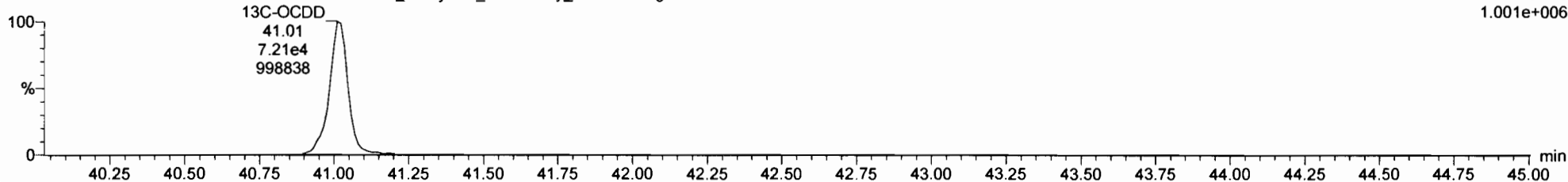
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F5:SIR of 11 channels,EI+  
469.778  
8.965e+005



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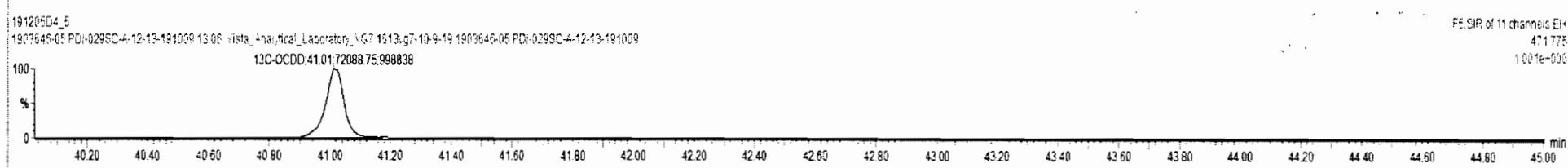
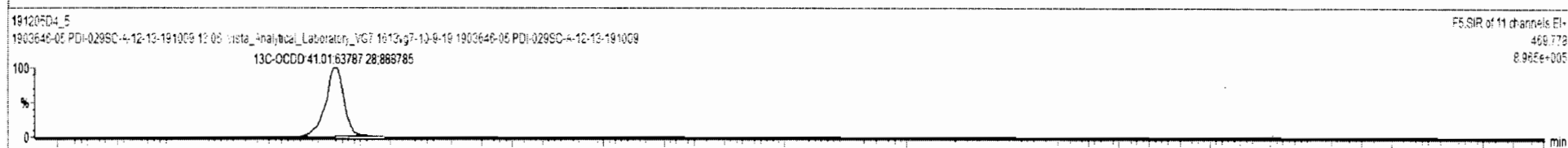
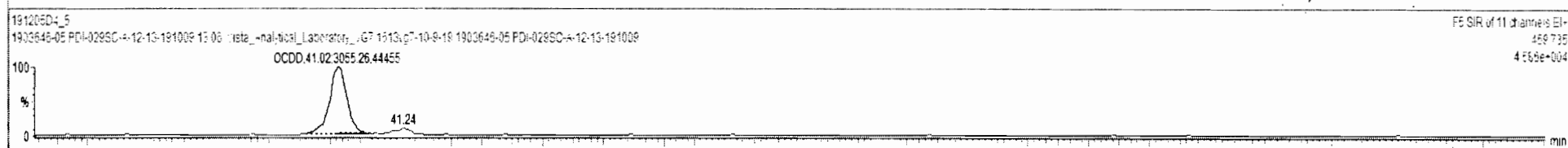
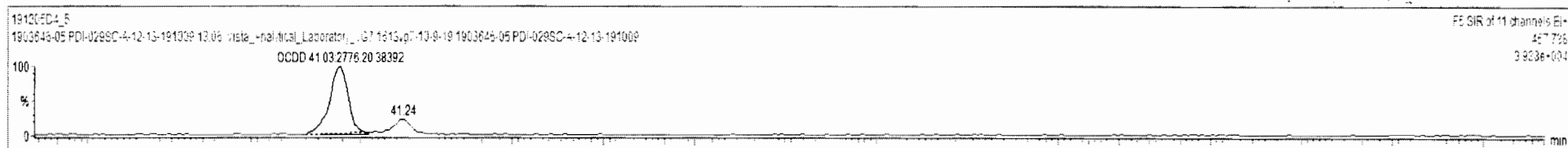
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191205D4\_5 - 1903646-05 PDI-029SC-A-12-13-191009 - 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	w/val	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
6	1,2,3,4,6,7,8-HpCDD	7.96e2	6.92e4	23	1.1E	NO	0.979	10.606	37.77	37.77	1.060	1.000	NO	2.216		0.277	2.216
7	OCDD	5.83e3	1.36e5	24	0.91	NO	0.950	10.606	41.01	41.03	1.001	1.000	NO	16.89		0.248	16.89
8	2,3,7,8-TCDF		1.91e5	25			0.950	10.606	29.31			1.001	NO				0.190
9	1,2,3,7,8-PeCDF		1.57e5	26			0.950	10.606	29.45			1.001	NO				0.161
10	2,3,4,7,8-PeCDF		1.51e5	27			1.015	10.606	30.35			1.001	NO				0.145
11	1,1,2,3,4,7,8-HxCDF		1.10e5	28			1.177	10.606	33.02			1.000	NO				0.154
12	1,2,3,6,7,8-HxCDF		1.14e5	29			1.069	10.606	33.14			1.000	NO				0.157
13	1,2,3,4,6,7,8-HxCDF		1.05e5	30			1.114	10.606	33.76			1.001	NO				0.174
14	1,1,2,3,7,8,9-HxCDF		8.86e4	31			1.052	10.606	34.67			1.000	NO				0.245
15	1,1,2,3,4,6,7,8-HpCDF		7.70e4	32			1.126	10.606	36.54			1.001	NO				0.236
16	1,1,2,3,4,7,8,9-HpCDF		6.94e4	33			1.280	10.606	38.30			1.000	NO				0.210
17	OCDF	3.61e2	1.77e4	34	0.75	YES	0.947	10.606	41.24	41.27	1.001	1.000	NO	0.8140		0.335	0.7368
18	1,1,2,3,7,8,9-HxCDF	1.06e5	0.75e6	35	0.77	NO	1.064	10.606	38.08	38.08	1.072	1.071	NO	101.21	107		0.4771

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



Vista Analytical Laboratory

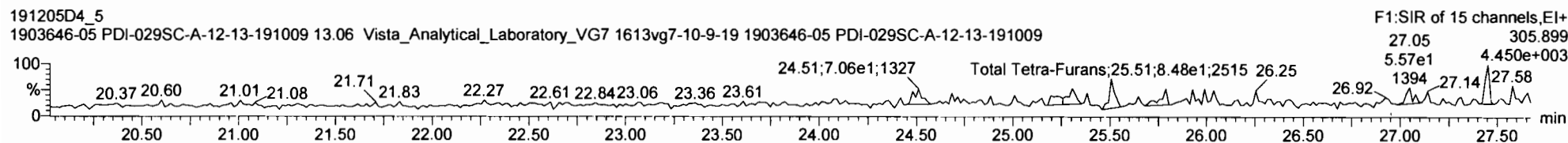
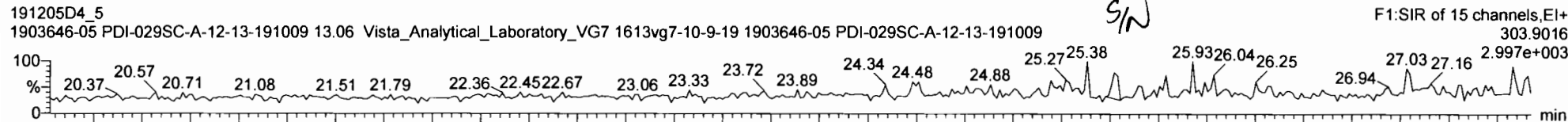
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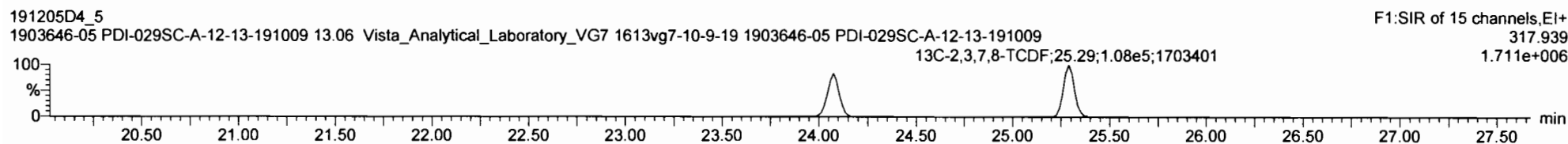
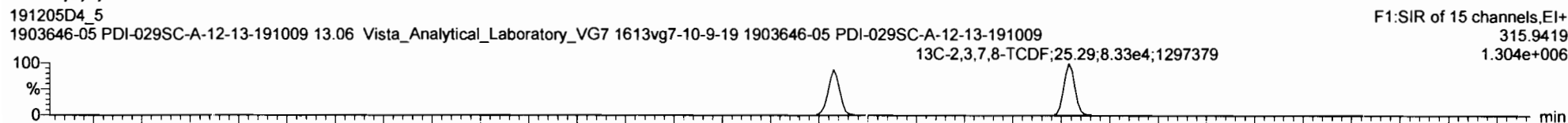
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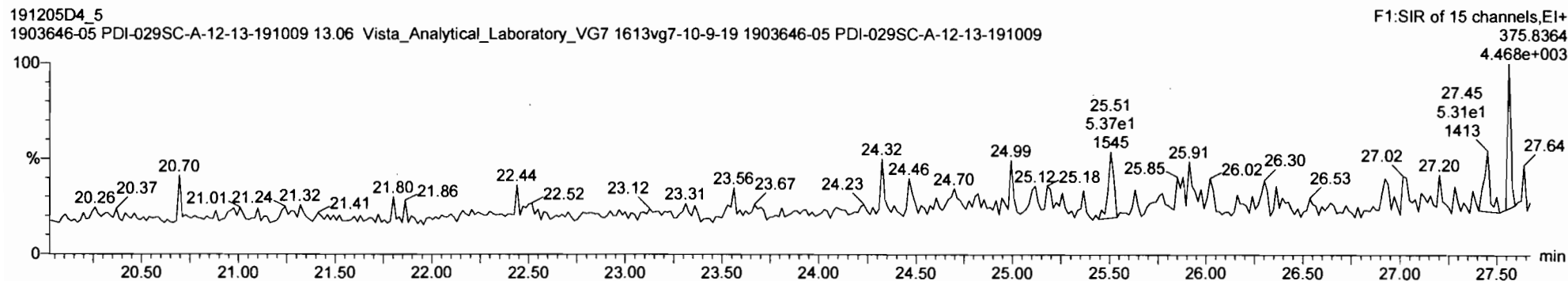
Total Tetra-Furans



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



DPE1



Vista Analytical Laboratory

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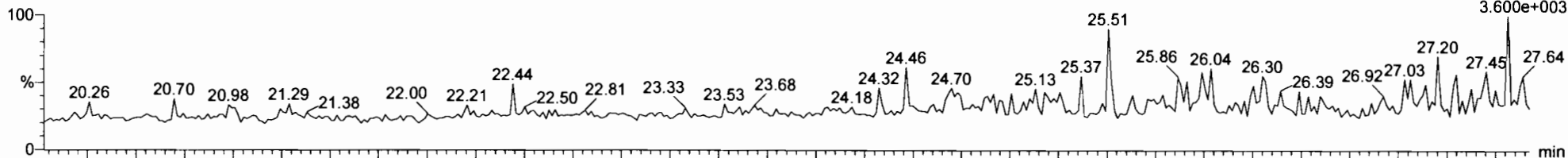
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1st Func. Penta-Furans

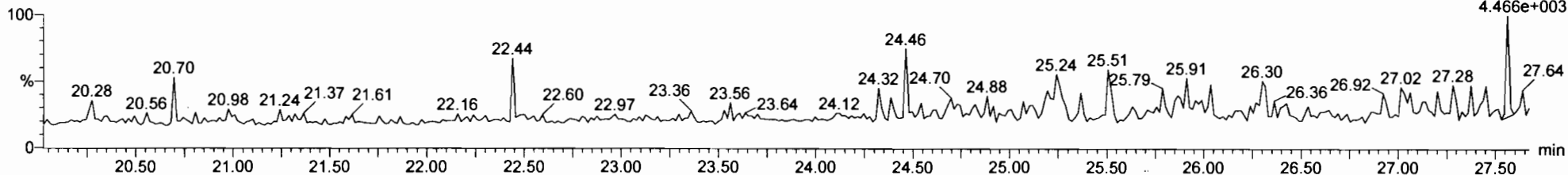
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F1:SIR of 15 channels,EI+  
339.860  
3.600e+003



191205D4\_5  
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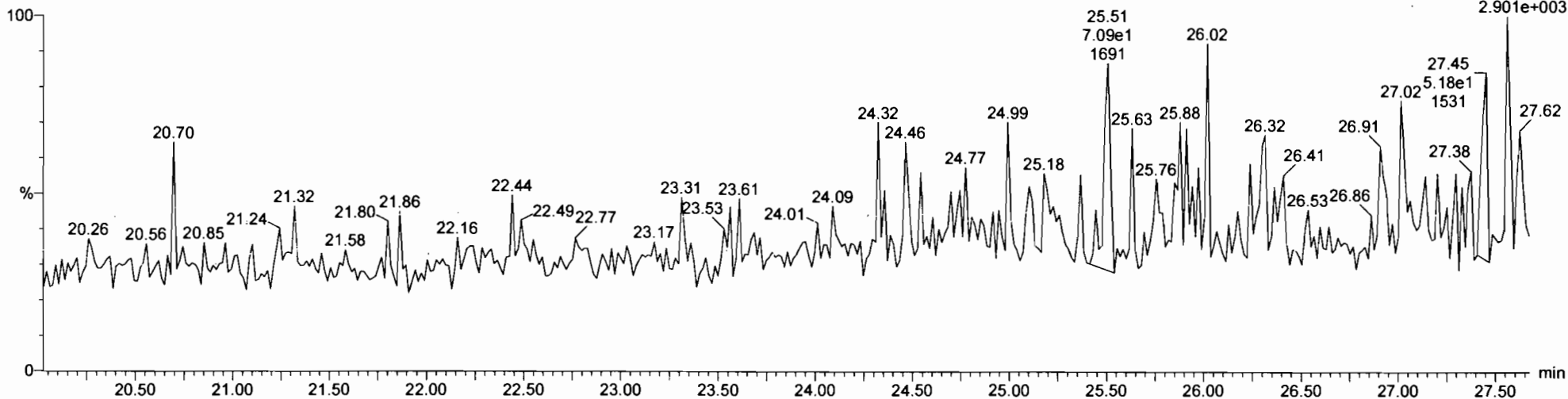
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DPE6

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F1:SIR of 15 channels,EI+  
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2.901e+003



Vista Analytical Laboratory

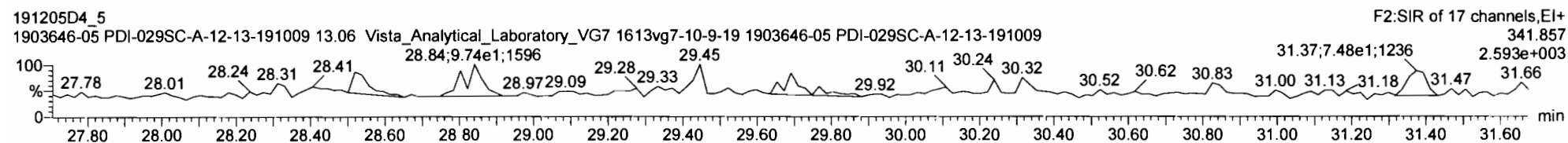
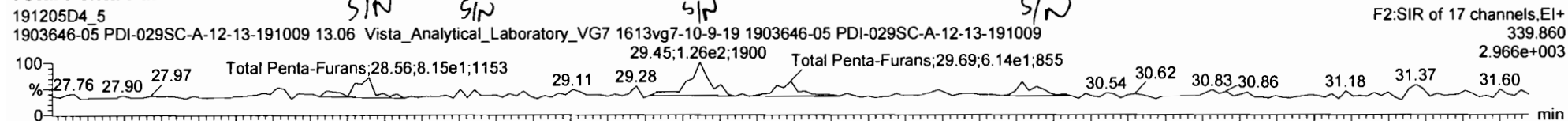
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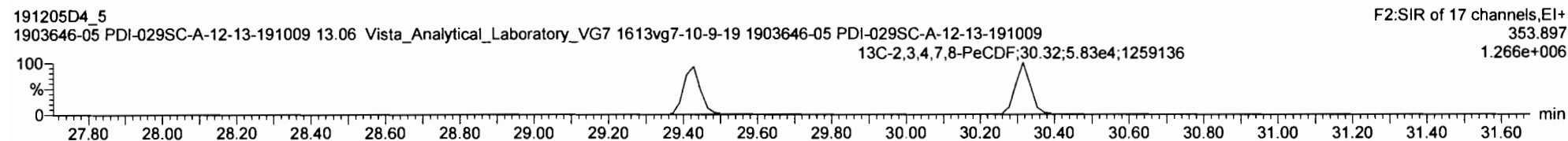
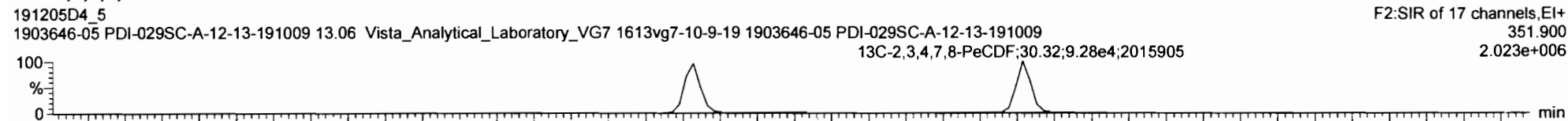
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Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009, Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

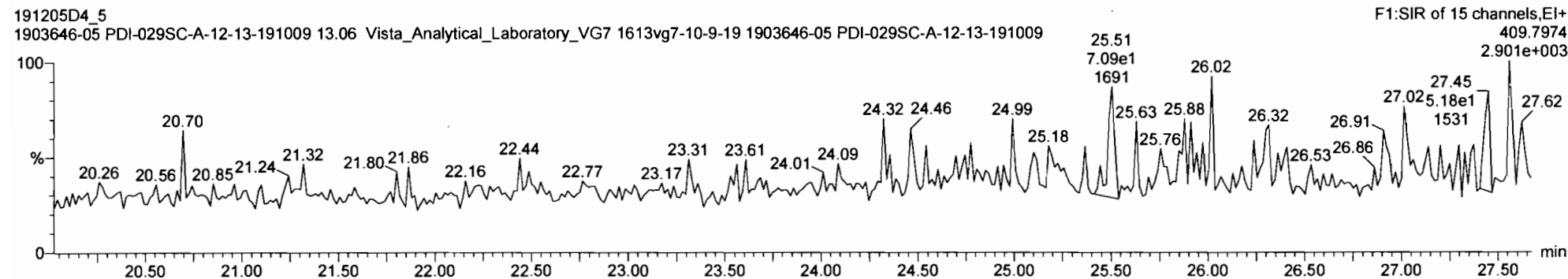
Total Penta-Furans



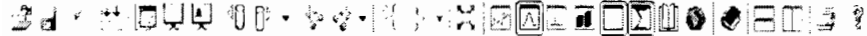
13C-1,2,3,7,8-PeCDF



DPE2



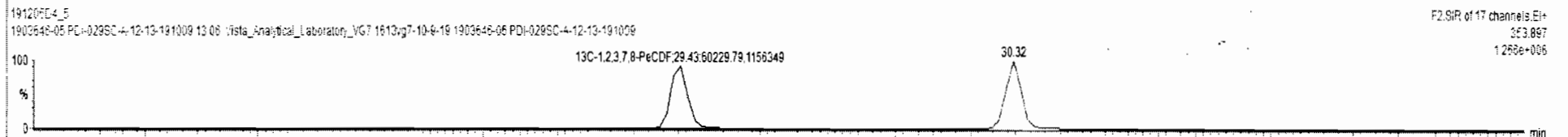
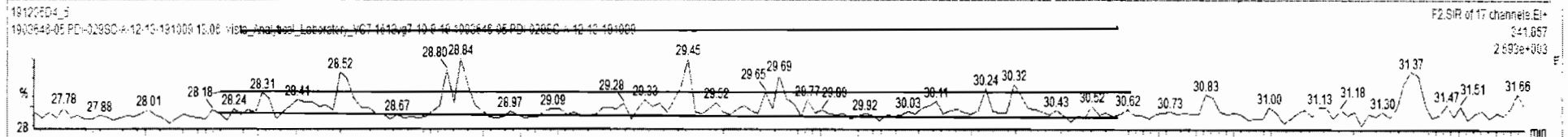
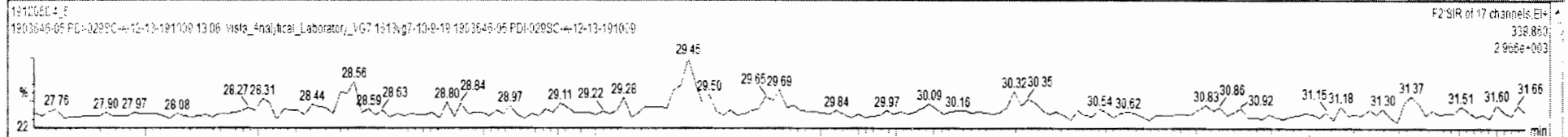




191205D4\_5 - 1903646-05 PDI-029SC-A-12-13-191009 - 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	ISF	RA	n/y	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check.RRT	Conc.	%Rec	DL	EMPC
34	13C-OCDF	1.77e5	1.27e5	36	0.88	NO	0.689	10.606	41.21	41.24	1.234	1.233	NO	380.2	101	0.638	
35	35 13C-2,3,7,8-TCDF	4.56e4	9.75e4	36			1.196	10.606	26.38	26.10	1.023	1.022	NO	73.56	97.5	0.245	
36	36 13C-1,2,3,4-TCDF	9.75e4	9.75e4	36	0.80	NO	1.000	10.606	25.50	25.52	1.000	1.000	NO	188.6	100	0.632	
37	37 13C-1,2,3,4-TCDF	1.73e5	1.73e5	37	0.79	NO	1.000	10.606	24.06	24.37	1.000	1.000	NO	188.6	100	0.505	
38	38 13C-1,2,3,4,6,8-HxCDF	1.27e5	1.27e5	38	0.53	NO	1.000	10.606	33.42	33.42	1.000	1.000	NO	188.6	100	0.965	
39	39 Total Tetra-Dioxins		1.06e5				0.801	10.606	25.50			0.000	NO			0.231	
40	40 Total Penta-Dioxins		9.35e4				0.872	10.606	30.00			0.000	NO			0.0584	
41	41 Total Hexa-Dioxins		0.00e0				0.978	10.606	33.80			0.000	NO	0.6526	0.304	0.6526	
42	42 Total Hepta-Dioxins		6.92e4				0.989	10.606	37.75			0.000	NO	5.180	0.274	5.180	
43	43 Total Tetra-Furans		1.91e5				0.943	10.606	24.00			0.000	NO			0.0930	
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.606	27.63			0.000	NO			0.0854	
45	45 Total Penta-Furans		0.00e0				0.940	10.606	30.00			0.000	NO			0.0763	
46	46 Total Hexa-Furans		0.00e0				1.078	10.606	37.00			0.000	NO			0.0749	

#	Name	Pred.RT	RT	nt Resp	nc Resp	Pred RA	RA	n/y	EMPC	Conc.
1										



Vista Analytical Laboratory

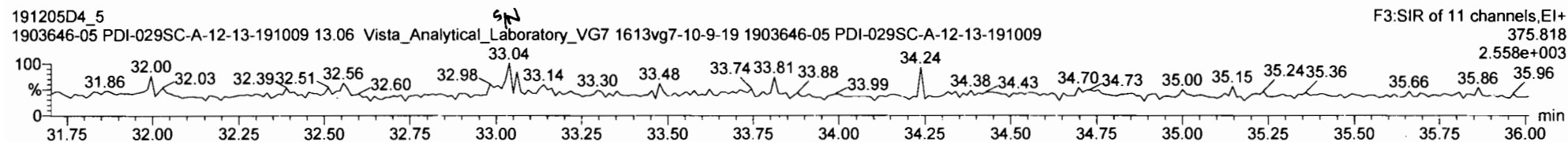
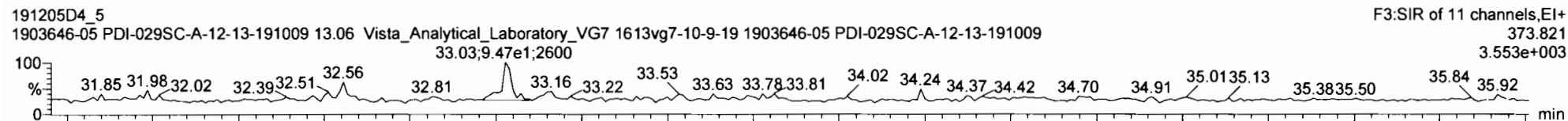
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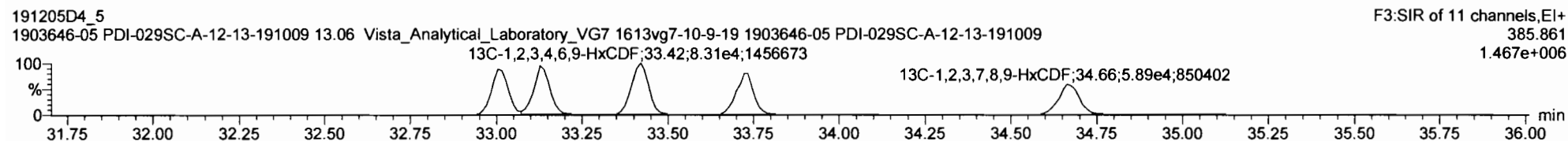
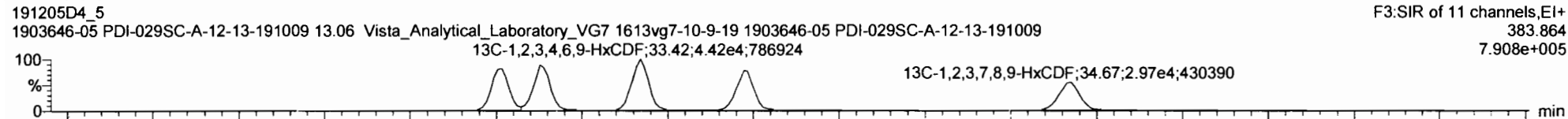
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009,  
Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

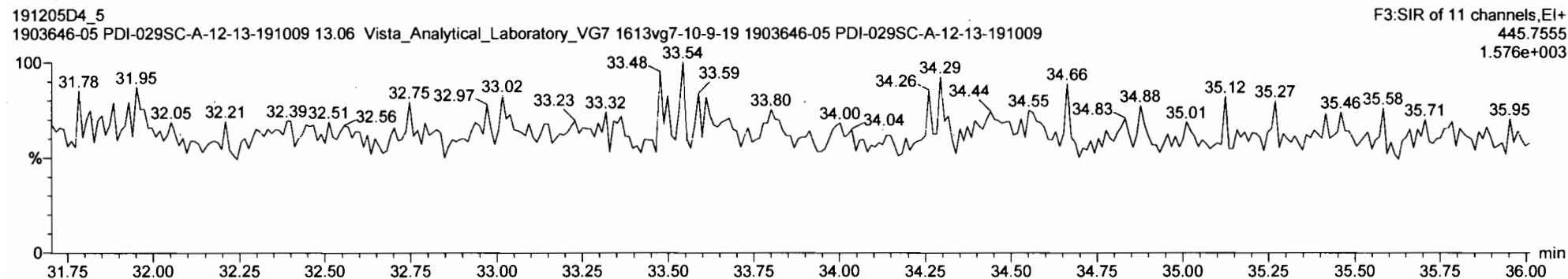
Total Hexa-Furans



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



DPE3



Vista Analytical Laboratory

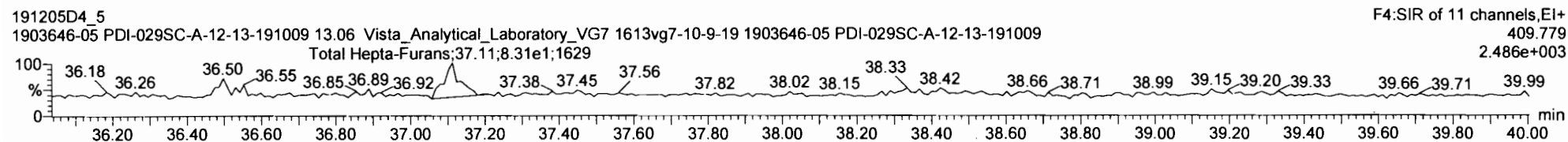
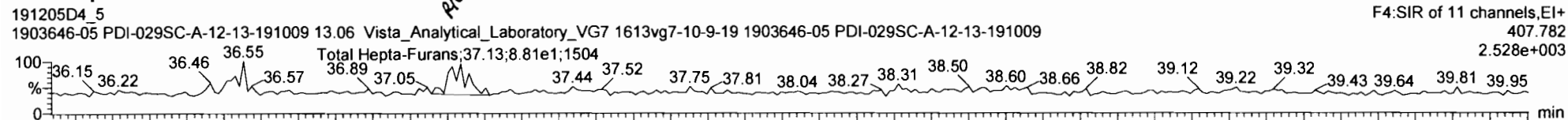
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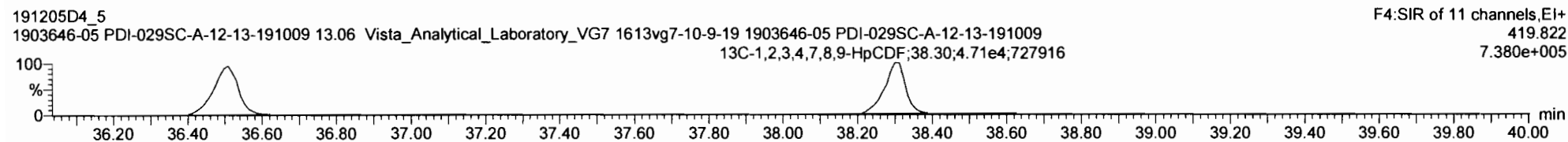
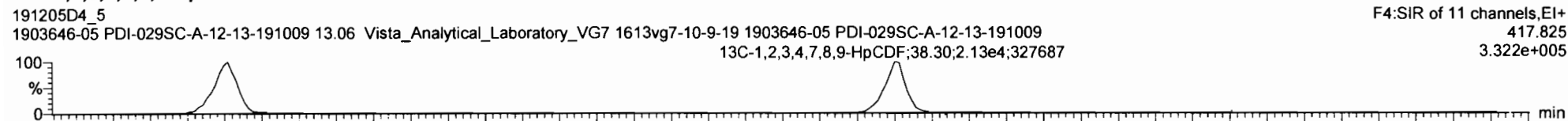
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Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009,  
Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

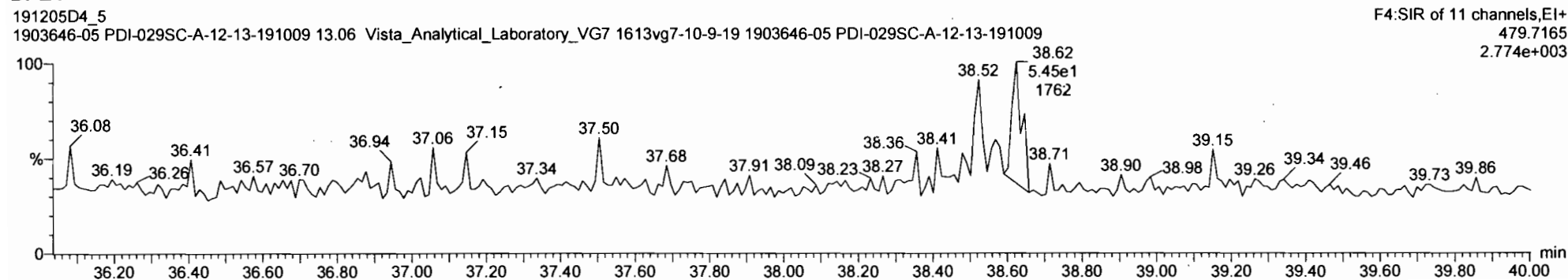
Total Hepta-Furans



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



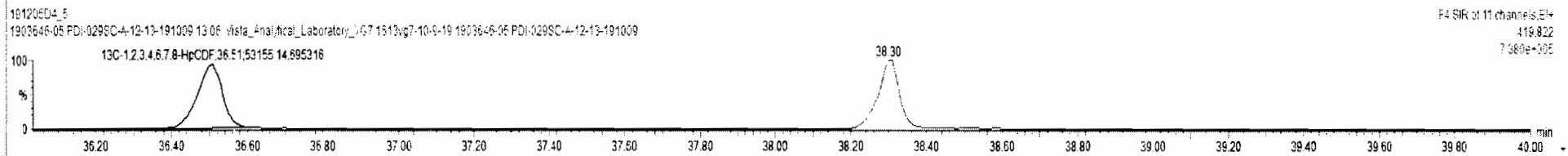
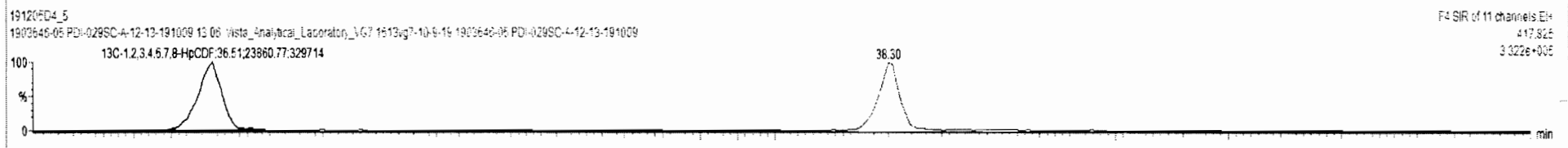
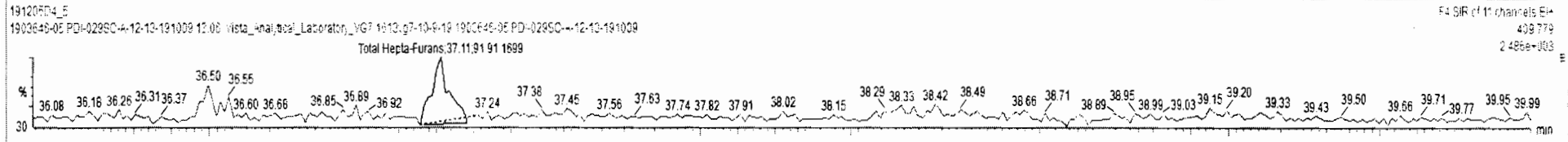
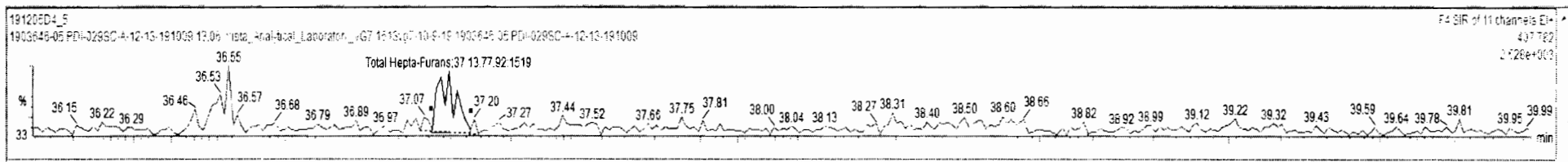
DPE4



191205D4\_5 - 1903646-05 PDI-029SC-A-12-13-191009 - 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

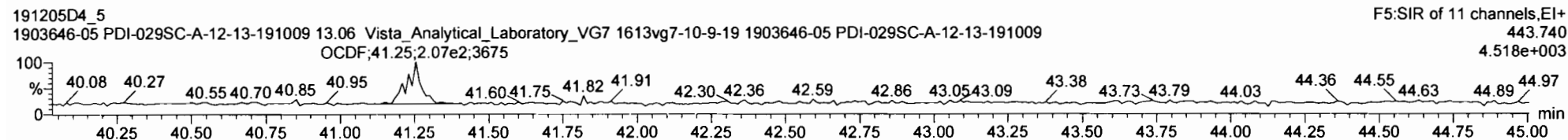
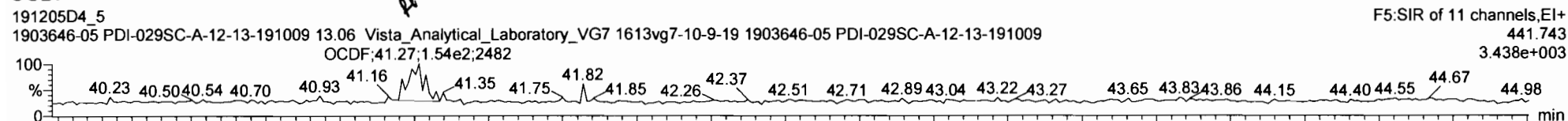
#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
47	Total Hepta-Furans		0.00e0				1.135	16.606	37.75			0.000	NO	0.0000		0.150	0.3494
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																
53	DPE1																
54	DPE2																
55	DPE3																
56	DPE4																
57	DPE5																
58	DPE6																

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	47 Total Hepta-Furans	37.75	37.13	7.792e1	9.191e1	1.040	0.85	YES	0.3494	0.00000

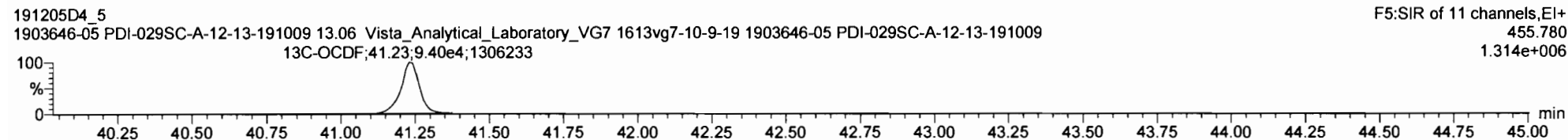
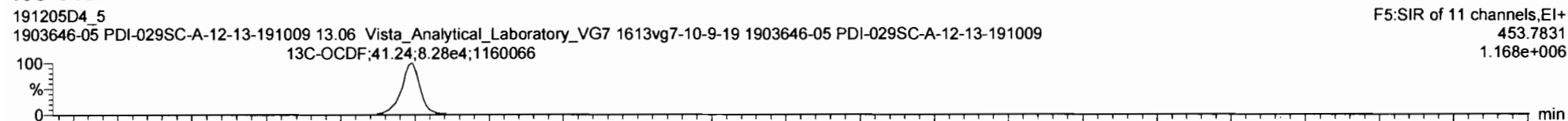


Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009,  
Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

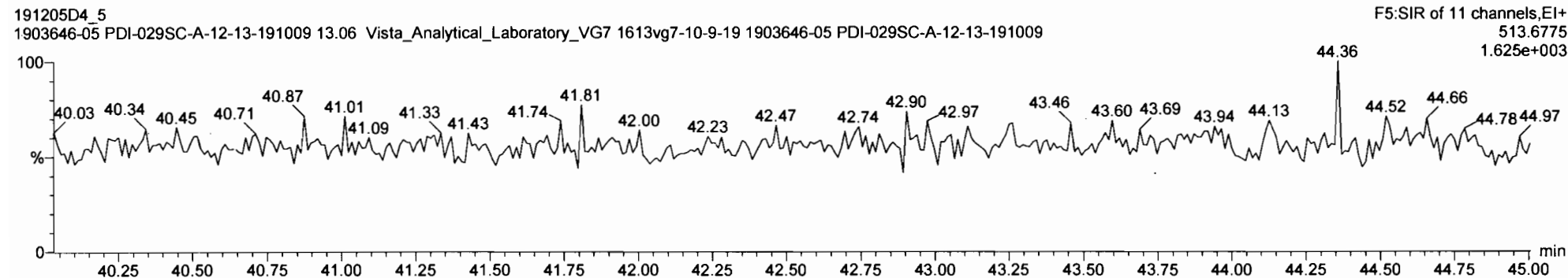
OCDF



13C-OCDF



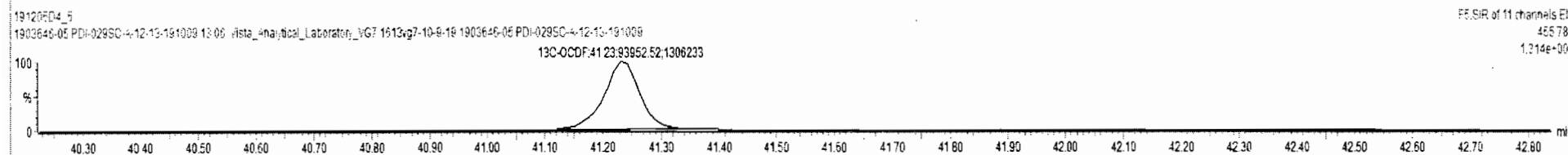
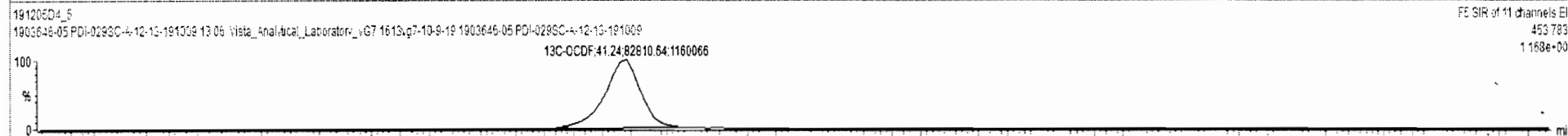
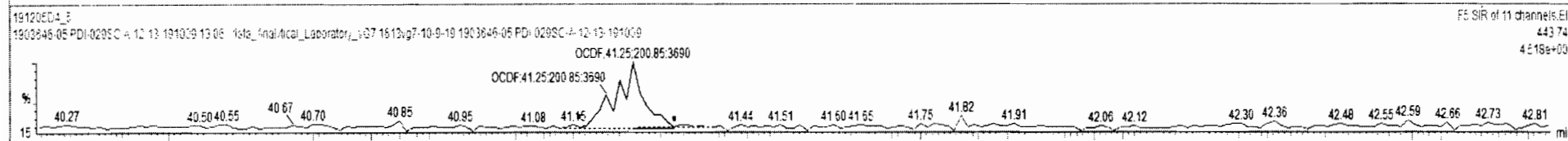
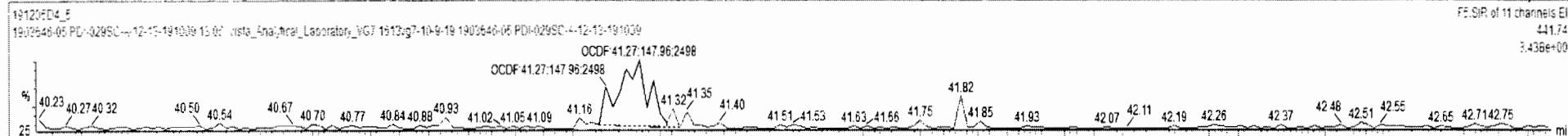
DPE5



191205D4\_5 - 1903646-05 PDI-029SC-A-12-13-191009 - 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

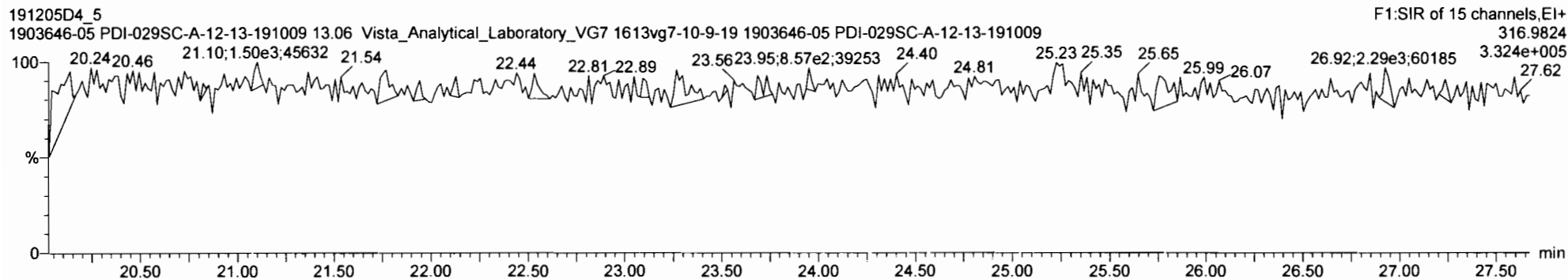
#	Name	Resp	IS Resp	IS#	RA	ny	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
12	1.2.3.6.7.8-HxCDF		1.14e5	29			1.069	10.606	33.14			1.000	NO				0.157
13	2.3.4.6.7.8-HxCDF		1.05e5	30			1.114	10.606	33.78			1.001	NO				0.174
14	1.2.3.7.8.9-HxCDF		8.86e4	31			1.062	10.606	34.67			1.000	NO				0.249
15	1.2.3.4.6.7.8-HpCDF		7.70e4	32			1.128	10.606	36.54			1.001	NO				0.236
16	1.2.3.4.7.8.9-HpCDF		8.84e4	33			1.280	10.606	38.30			1.000	NO				0.210
17	17 OCDF	3.49e2	1.77e5	34	0.74	YES	0.947	10.606	41.24	41.27	1.001	1.000	NO	0.7857		0.335	0.7078
18	13C-2.3.7.8-TCDD	1.08e5	9.75e4	36	0.77	NO	1.095	10.606	26.06	26.06	1.022	1.021	NO	191.4	102		0.577
19	19C-1.2.3.7.8-PeCDD	9.35e4	9.75e4	36	0.62	NO	0.881	10.606	30.29	30.60	1.189	1.187	NO	205.0	109		0.456
20	13C-1.2.3.4.7.8-HxCDD	7.32e4	1.27e5	38	1.27	NO	0.642	10.606	33.88	33.89	1.014	1.014	NO	168.9	68.6		1.01
21	13C-1.2.3.6.7.8-HxCDD	7.83e4	1.27e5	38	1.28	NO	0.858	10.606	34.00	34.00	1.017	1.017	NO	135.6	71.9		0.755
22	13C-1.2.3.7.8.9-HxCDD	7.96e4	1.27e5	38	1.27	NO	0.807	10.606	34.30	34.29	1.026	1.026	NO	145.2	77.0		0.800
23	13C-1.2.3.4.6.7.8-HpCDD	6.92e4	1.27e5	38	1.10	NO	0.654	10.606	37.64	37.76	1.130	1.126	NO	156.8	83.2		1.29
24	13C-TCDF	1.32e5	1.27e5	38	0.88	NO	0.580	10.606	40.84	41.01	1.227	1.226	NO	347.3	42.1		0.402

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	ny	EMPC	Conc
1										

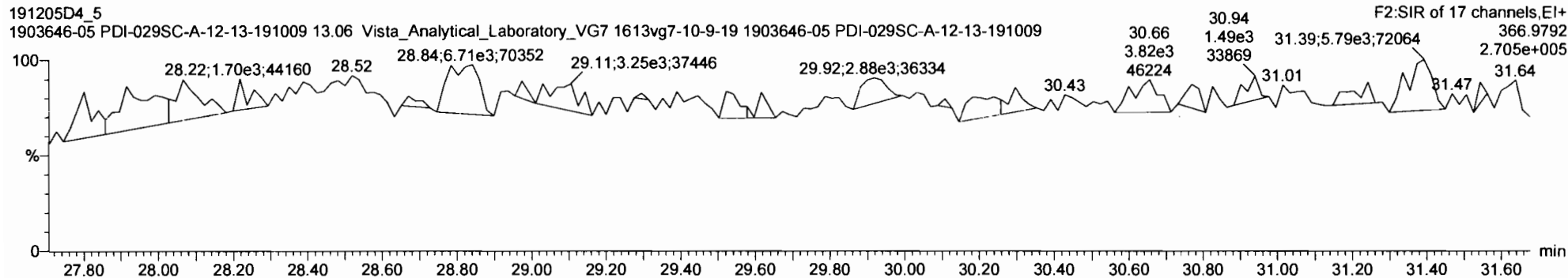


Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009,  
Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

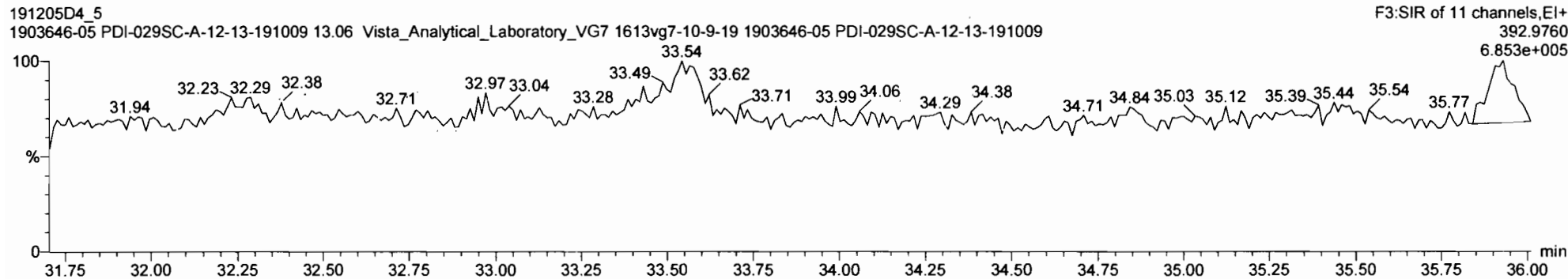
PFK1



PFK2



PFK3



Vista Analytical Laboratory

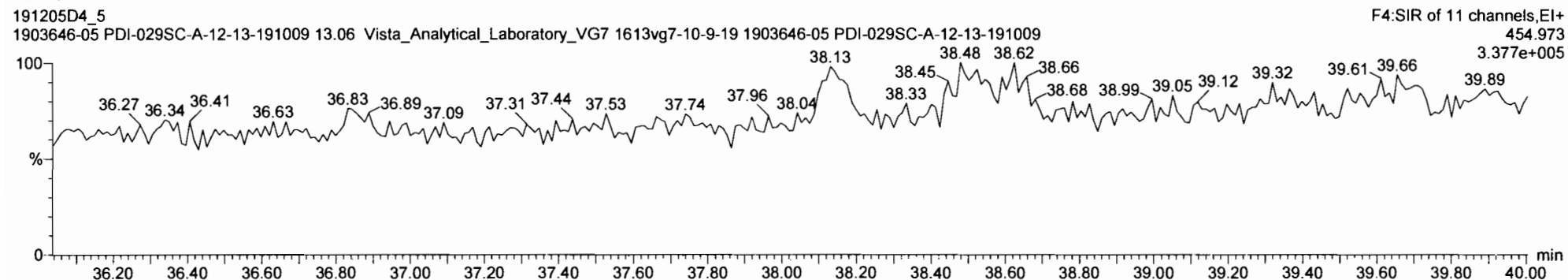
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

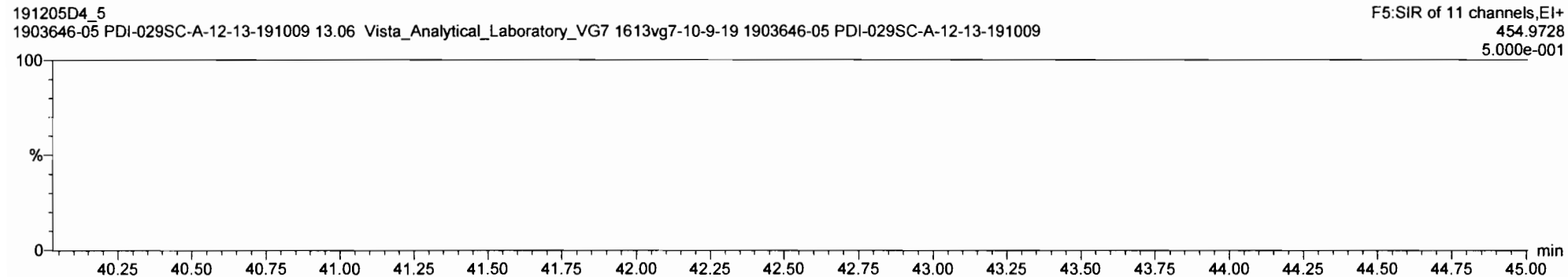
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Name: 191205D4\_5, Date: 7-DEC-2019, Time: 09:17:07, ID: 1903646-05 PDI-029SC-A-12-13-191009,  
Description: 1903646-05 PDI-029SC-A-12-13-191009 13.06 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4



PFK5





Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-6.qld

Last Altered: Thursday, December 19, 2019 12:49:00 Pacific Standard Time

Printed: Thursday, December 19, 2019 12:51:10 Pacific Standard Time

*EL 12/19/19*

*CT 12/20/19*

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 15:17:04

Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009,

Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_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		1.04e5	10.4374	0.905			1.001		26.10					0.257
2	2 1,2,3,7,8-PeCDD		8.66e4	10.4374	0.903			1.001		30.62					0.216
3	3 1,2,3,4,7,8-HxCDD		6.70e4	10.4374	1.101			1.000		33.91					0.486
4	4 1,2,3,6,7,8-HxCDD		7.52e4	10.4374	0.939			1.000		34.00					0.541
5	5 1,2,3,7,8,9-HxCDD		7.49e4	10.4374	0.961			1.001		34.34					0.558
6	6 1,2,3,4,6,7,8-HpCDD	2.84e3	6.35e4	10.4374	0.979	1.049	NO	1.000	1.000	37.78	37.78	8.7471		8.75	0.482
7	7 OCDD	2.08e4	1.20e5	10.4374	0.959	0.916	NO	1.000	1.000	41.01	41.02	69.324		69.3	0.346
8	8 2,3,7,8-TCDF	4.70e2	1.76e5	10.4374	0.950	0.660	NO	1.001	1.001	25.31	25.30	0.53950		0.540	0.164
9	9 1,2,3,7,8-PeCDF	3.01e2	1.38e5	10.4374	0.960	1.191	YES	1.001	1.001	29.45	29.44	0.43489		0.389 <i>OK</i>	0.0854
10	10 2,3,4,7,8-PeCDF		1.36e5	10.4374	1.015			1.001		30.34					0.134
11	11 1,2,3,4,7,8-HxCDF	4.03e2	9.73e4	10.4374	1.177	1.243	NO	1.000	1.000	33.01	33.01	0.67537		0.675	0.156
12	12 1,2,3,6,7,8-HxCDF		1.05e5	10.4374	1.069			1.000		33.15					0.179
13	13 2,3,4,6,7,8-HxCDF		9.83e4	10.4374	1.114			1.001		33.77					0.176
14	14 1,2,3,7,8,9-HxCDF		8.80e4	10.4374	1.062			1.000		34.69					0.245
15	15 1,2,3,4,6,7,8-HpCDF	3.29e2	6.93e4	10.4374	1.128	0.968	NO	1.001	1.000	36.55	36.53	0.80760		0.808	0.375
16	16 1,2,3,4,7,8,9-HpCDF		6.36e4	10.4374	1.280			1.000		38.31					0.317
17	17 OCDF	1.10e3	1.56e5	10.4374	0.947	0.951	NO	1.000	1.000	41.23	41.24	2.8431		2.84	0.265
18	18 13C-2,3,7,8-TCDD	1.04e5	9.77e4	10.4374	1.095	0.780	NO	1.021	1.022	26.04	26.07	185.46	96.8		0.656
19	19 13C-1,2,3,7,8-PeCDD	8.66e4	9.77e4	10.4374	0.881	0.644	NO	1.187	1.200	30.27	30.60	192.69	100.6		0.661
20	20 13C-1,2,3,4,7,8-Hx...	6.70e4	1.22e5	10.4374	0.642	1.284	NO	1.014	1.014	33.89	33.90	163.21	85.2		0.971
21	21 13C-1,2,3,6,7,8-Hx...	7.52e4	1.22e5	10.4374	0.856	1.311	NO	1.017	1.017	34.01	34.00	137.54	71.8		0.729
22	22 13C-1,2,3,7,8,9-Hx...	7.49e4	1.22e5	10.4374	0.807	1.264	NO	1.026	1.026	34.31	34.30	145.35	75.9		0.773
23	23 13C-1,2,3,4,6,7,8-H...	6.35e4	1.22e5	10.4374	0.654	1.074	NO	1.126	1.130	37.65	37.77	151.94	79.3		1.11
24	24 13C-OCDD	1.20e5	1.22e5	10.4374	0.580	0.903	NO	1.226	1.227	40.99	41.01	324.14	84.6		0.792
25	25 13C-2,3,7,8-TCDF	1.76e5	1.62e5	10.4374	1.035	0.784	NO	0.992	0.991	25.30	25.29	200.31	104.5		0.519
26	26 13C-1,2,3,7,8-PeCDF	1.38e5	1.62e5	10.4374	0.854	1.609	NO	1.154	1.154	29.43	29.43	190.73	99.5		0.856
27	27 13C-2,3,4,7,8-PeCDF	1.36e5	1.62e5	10.4374	0.847	1.637	NO	1.189	1.189	30.33	30.31	190.02	99.2		0.863
28	28 13C-1,2,3,4,7,8-Hx...	9.73e4	1.22e5	10.4374	0.832	0.510	NO	0.987	0.988	33.01	33.01	183.04	95.5		1.10
29	29 13C-1,2,3,6,7,8-Hx...	1.05e5	1.22e5	10.4374	1.034	0.532	NO	0.991	0.991	33.12	33.14	158.99	83.0		0.886
30	30 13C-2,3,4,6,7,8-Hx...	9.83e4	1.22e5	10.4374	0.953	0.533	NO	1.009	1.009	33.74	33.73	161.44	84.2		0.962
31	31 13C-1,2,3,7,8,9-Hx...	8.80e4	1.22e5	10.4374	0.828	0.516	NO	1.039	1.038	34.72	34.69	166.44	86.9		1.11

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-6.qld

Last Altered: Thursday, December 19, 2019 12:49:00 Pacific Standard Time

Printed: Thursday, December 19, 2019 12:51:10 Pacific Standard Time

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 Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_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	13C-1,2,3,4,6,7,8-H...	6.93e4	1.22e5	10.4374	0.757	0.449	NO	1.093	1.092	36.53	36.52	143.22	74.7		1.05
33	13C-1,2,3,4,7,8,9-H...	6.36e4	1.22e5	10.4374	0.581	0.434	NO	1.143	1.146	38.21	38.31	171.15	89.3		1.37
34	13C-OCDF	1.56e5	1.22e5	10.4374	0.689	0.911	NO	1.233	1.233	41.23	41.23	354.53	92.5		0.706
35	37Cl-2,3,7,8-TCDD	4.43e4	9.77e4	10.4374	1.198			1.022	1.023	26.07	26.10	72.518	94.6		0.229
36	13C-1,2,3,4-TCDD	9.77e4	9.77e4	10.4374	1.000	0.796	NO	1.000	1.000	25.50	25.51	191.62	100.0		0.718
37	13C-1,2,3,4-TCDF	1.62e5	1.62e5	10.4374	1.000	0.819	NO	1.000	1.000	24.06	24.07	191.62	100.0		0.537
38	13C-1,2,3,4,6,9-Hx...	1.22e5	1.22e5	10.4374	1.000	0.517	NO	1.000	1.000	33.42	33.43	191.62	100.0		0.917
39	Total Tetra-Dioxins		1.04e5	10.4374	0.901			0.000		25.50					0.125
40	Total Penta-Dioxins		8.66e4	10.4374	0.872			0.000		30.00					0.0958
41	Total Hexa-Dioxins		0.00e0	10.4374	0.976			0.000		33.80		0.00000		1.38	0.380
42	Total Hepta-Dioxins		6.35e4	10.4374	0.989			0.000		37.75		20.814		20.8	0.478
43	Total Tetra-Furans		1.76e5	10.4374	0.943			0.000		24.00		0.53950		0.540	0.166
44	1st Func. Penta-Fur...		0.00e0	10.4374	0.940			0.000		27.63		0.13846		0.138	0.0420
45	Total Penta-Furans		0.00e0	10.4374	0.940			0.000		30.00		0.29500		0.684	0.0540
46	Total Hexa-Furans		0.00e0	10.4374	1.078			0.000		33.00		1.0607		1.06	0.191
47	Total Hepta-Furans		0.00e0	10.4374	1.135			0.000		37.75		0.80760		2.57	0.365

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-6.qld

Last Altered: Thursday, December 19, 2019 12:49:00 Pacific Standard Time

Printed: Thursday, December 19, 2019 12:51:10 Pacific Standard Time

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Calibration: 10 Dec 2019 15:17:04

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Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_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	YES	32.39	282.040	40711.965	0.000	bb	0.0000	1.38

**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	37.78	1453.007	32885.051	89.416	MM	8.7471	8.75
2	42 Total Hepta-Dioxins	NO	36.92	2051.367	32885.051	124.520	bb	12.0665	12.07

**Tetra-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	8 2,3,7,8-TCDF	NO	25.30	186.791	77193.531	5.350	MM	0.5395	0.54

**Penta-Furans function 1**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	44 1st Func. Penta-Furans	NO	27.08	59.655	84913.336	1.358	MM	0.1385	0.14

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-6.qld

Last Altered: Thursday, December 19, 2019 12:49:00 Pacific Standard Time

Printed: Thursday, December 19, 2019 12:51:10 Pacific Standard Time

Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009,  
 Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Penta-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	9 1,2,3,7,8-PeCDF	YES	29.44	163.566	85151.438	0.000	MM	0.0000	0.39
2	45 Total Penta-Furans	NO	28.54	118.433	84913.336	2.893	MM	0.2950	0.30

**Hexa-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	11 1,2,3,4,7,8-HxCDF	NO	33.01	223.589	32852.105	8.295	MM	0.6754	0.68
2	46 Total Hexa-Furans	NO	32.57	108.322	33378.895	4.334	MM	0.3854	0.39

**Hepta-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	47 Total Hepta-Furans	YES	37.12	354.294	20350.186	0.000	MM	0.0000	1.77
2	15 1,2,3,4,6,7,8-HpCDF	NO	36.53	162.076	21470.418	9.505	MM	0.8076	0.81

Vista Analytical Laboratory

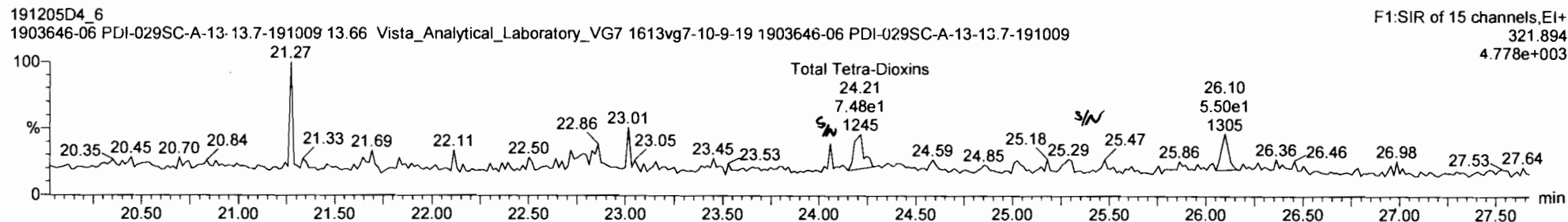
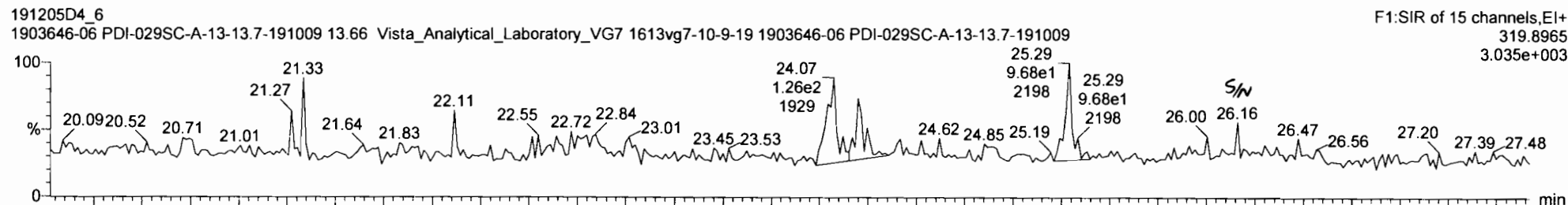
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

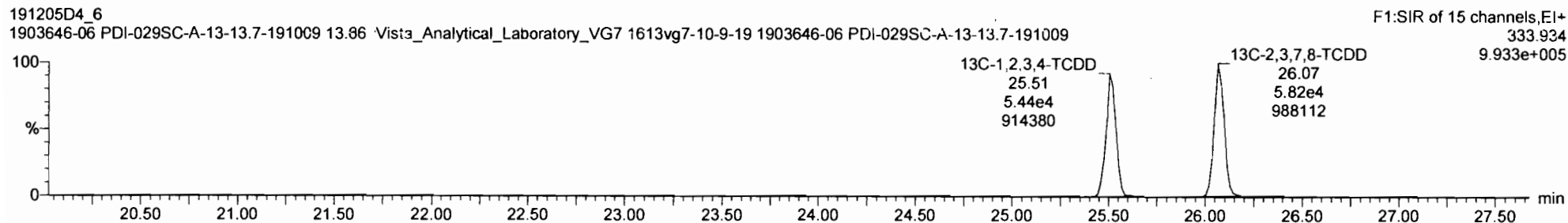
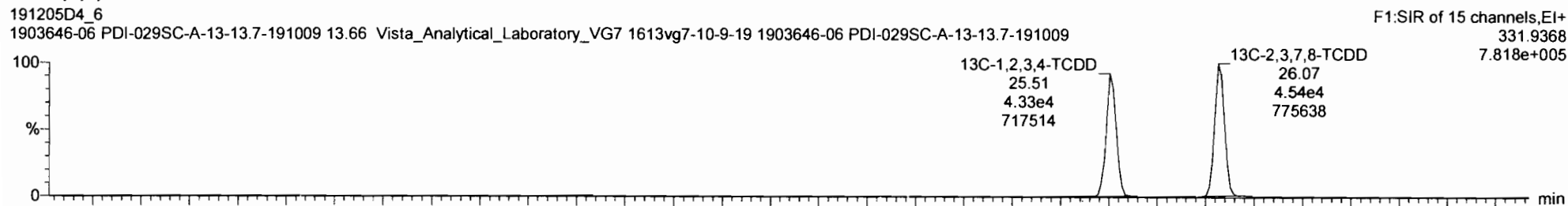
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Total Tetra-Dioxins



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



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

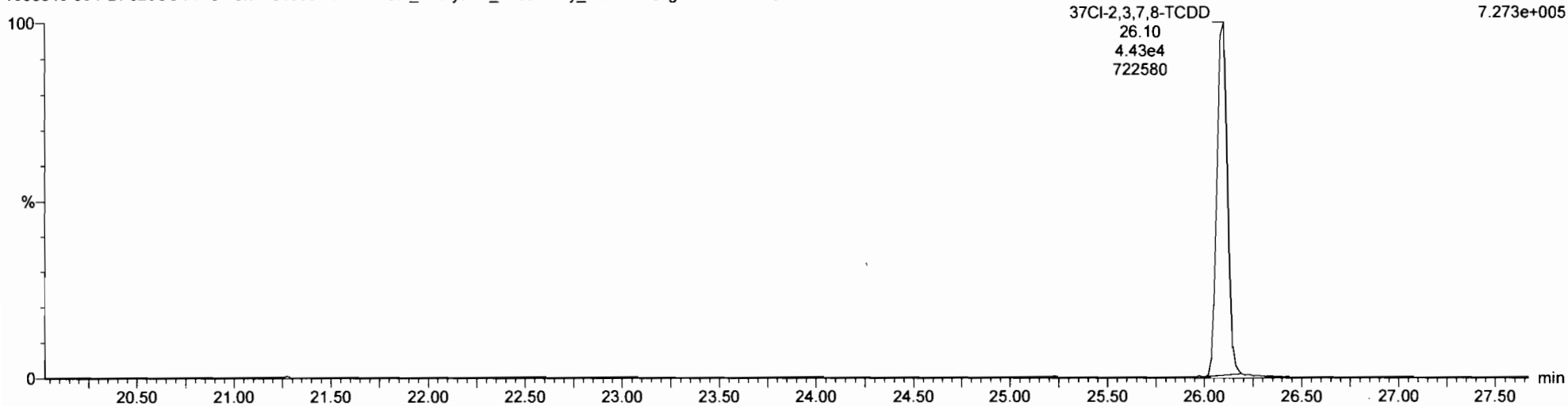
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37Cl-2,3,7,8-TCDD

191205D4\_6  
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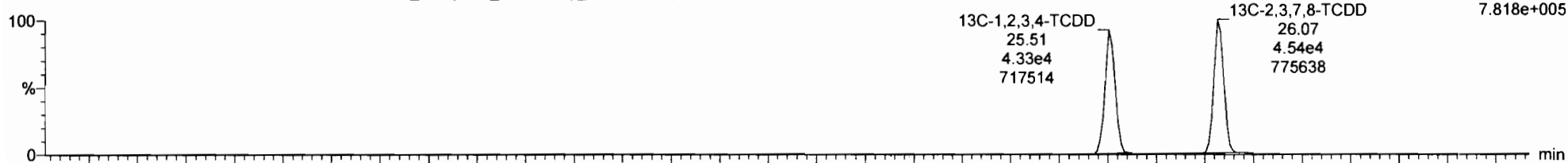
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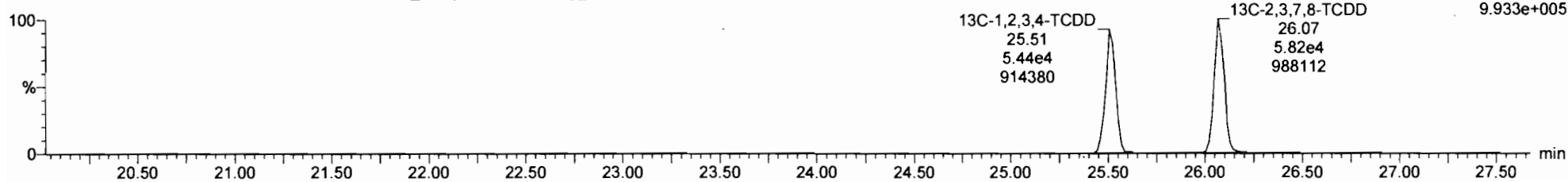
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F1:SIR of 15 channels,EI+  
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9.933e+005



Vista Analytical Laboratory

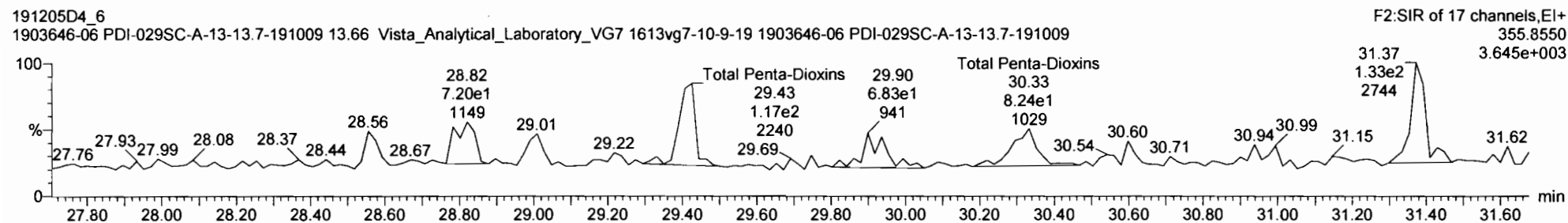
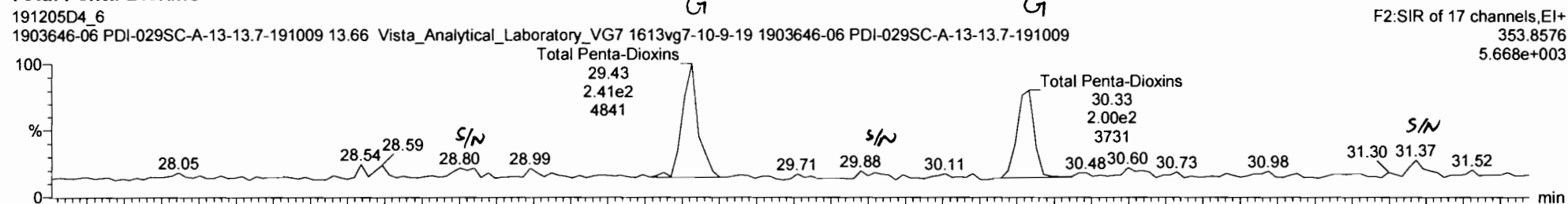
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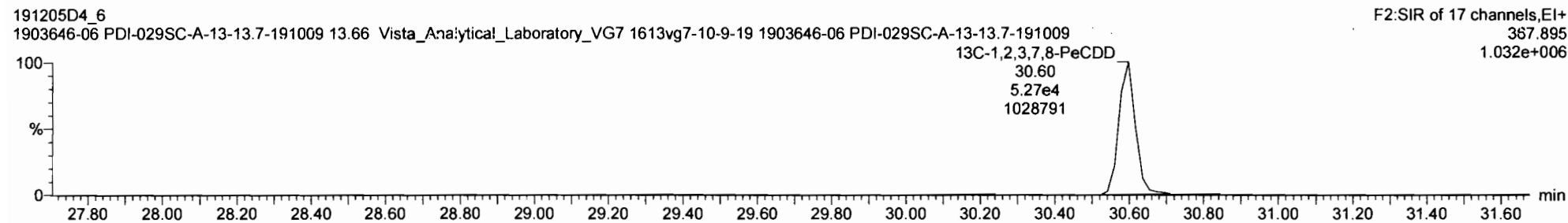
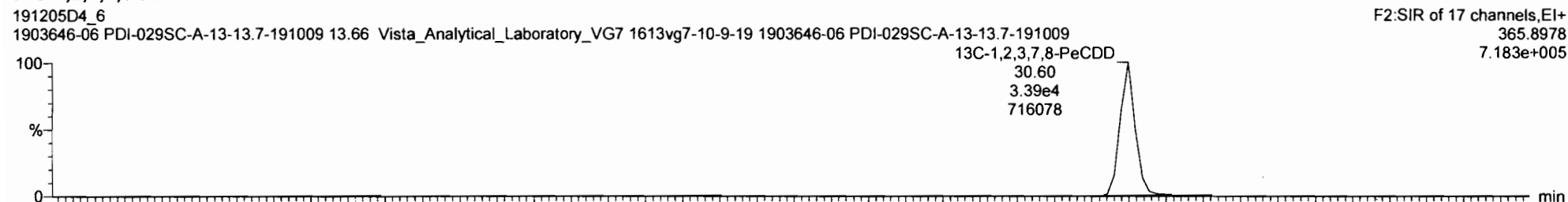
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Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Penta-Dioxins



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



Vista Analytical Laboratory

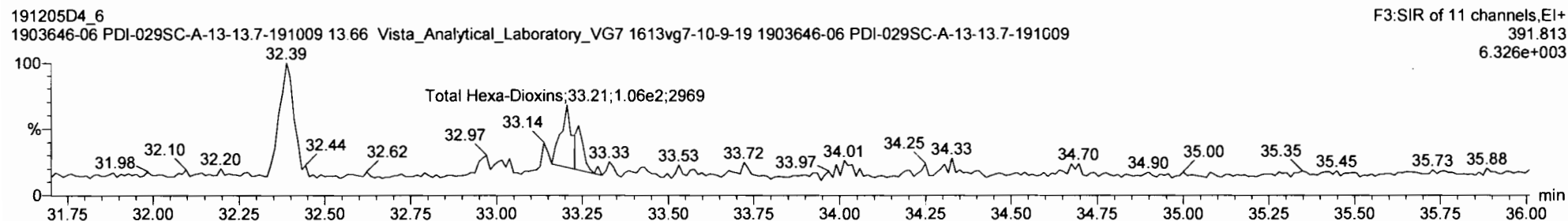
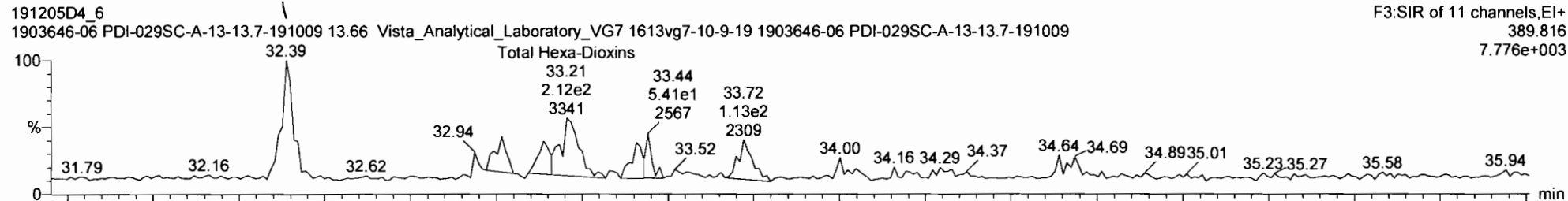
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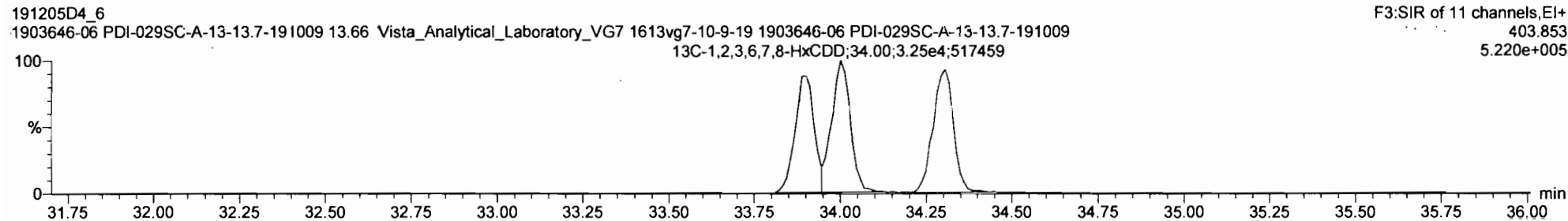
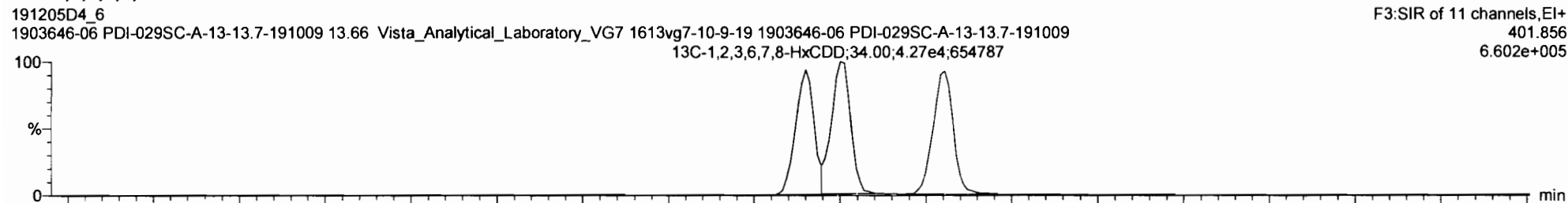
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Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Hexa-Dioxins



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



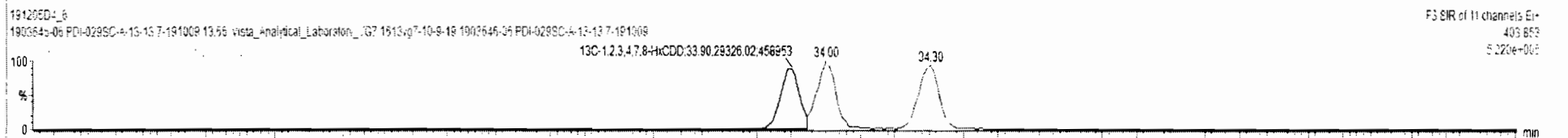
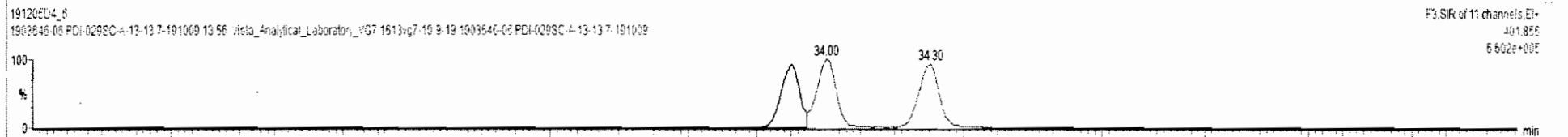
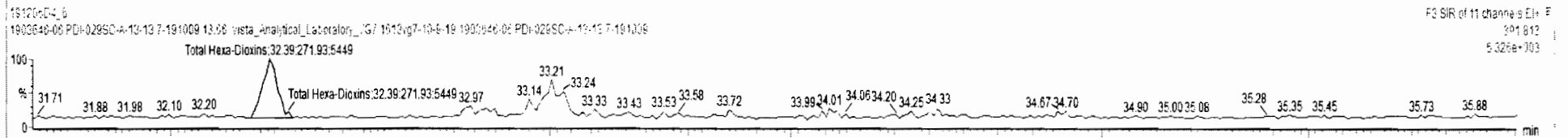
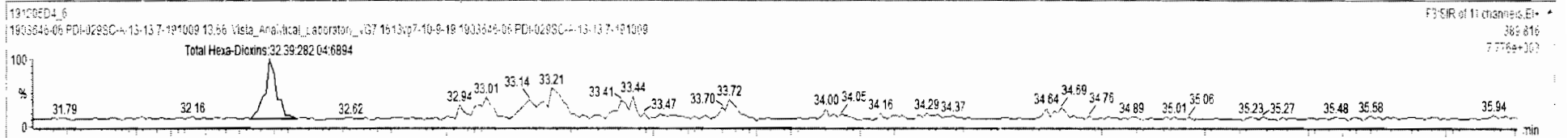




191205D4\_6 - 1903646-06 PDI-029SC-A-13-13 7-191009 - 1903646-06 PDI-029SC-A-13-13 7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	ISJ	RA	n/y	RPF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC	
37	13C-1,2,3,4-TCDF	1.62e5	1.62e5	37	0.82	NO	1.000	10.437	24.06	24.07	1.000	1.000	NO	191.6	100	0.537		
38	13C-1,2,3,4,6,9-HxCDF	1.22e5	1.22e5	38	0.52	NO	1.000	10.437	33.42	33.43	1.000	1.000	NO	191.6	100	0.917		
39	Total Tetra-Dioxins	1.04e5					0.901	10.437	25.50			0.000	NO			0.125		
40	Total Penta-Dioxins	6.66e4					0.872	10.437	30.00			0.000	NO			0.0958		
41	Total Hexa-Dioxins	0.00e0					0.976	10.437	33.80			0.000	NO	0.0000		0.380	1.383	
42	Total Hepta-Dioxins	6.35e4					0.989	10.437	27.75			0.000	NO	20.85		0.478	20.85	
43	Total Tetra-Furans	1.76e5					0.943	10.437	24.00			0.000	NO	0.0000		0.0817	1.097	
44	1st Func. Penta-Furans	0.00e0					0.940	10.437	27.63			0.000	NO			0.0420		
45	Total Penta-Furans	0.00e0					0.940	10.437	20.00			0.000	NO	0.0000		0.0540	1.194	
46	Total Hexa-Furans	0.00e0					1.078	10.437	33.00			0.000	NO	0.7010		0.191	1.051	
47	Total Hepta-Furans	0.00e0					1.135	10.437	37.75			0.000	NO	0.0000		0.142	2.528	
48	PFK1																	
49	zcl def?																	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.39	2.820e2	2.719e2	1.240	1.04	YES	1.3825	0.00000



Vista Analytical Laboratory

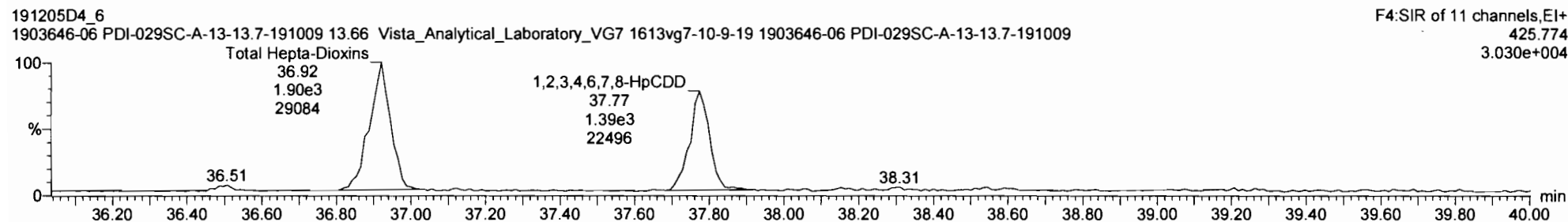
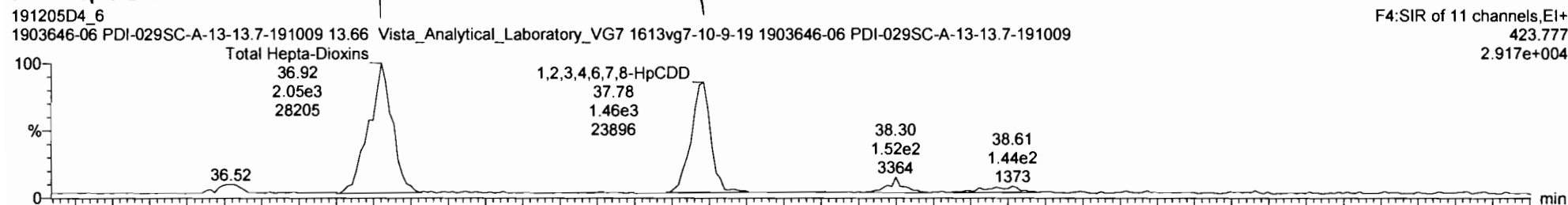
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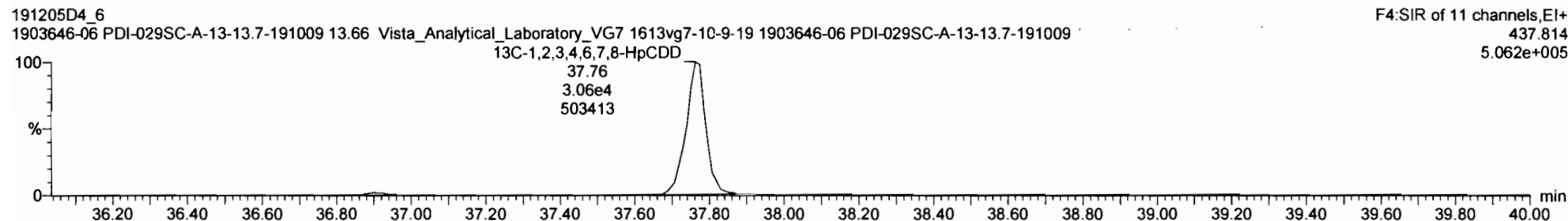
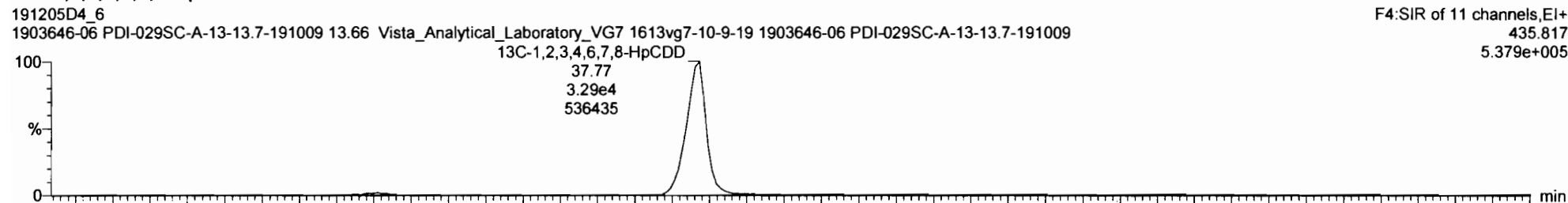
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Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Hepta-Dioxins



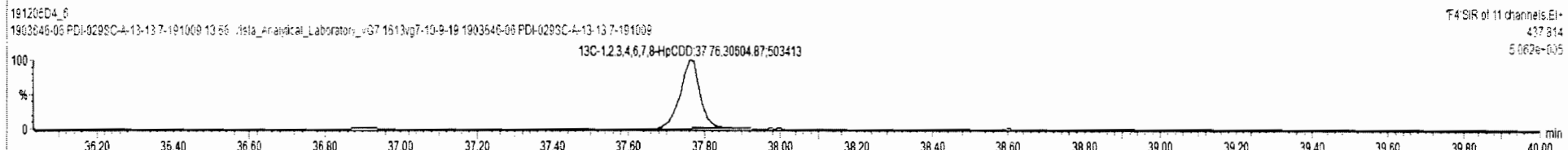
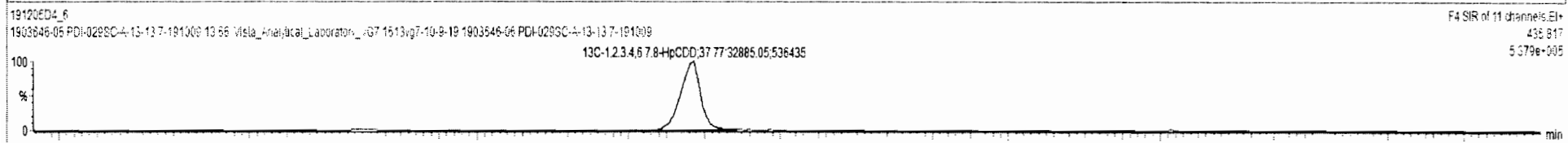
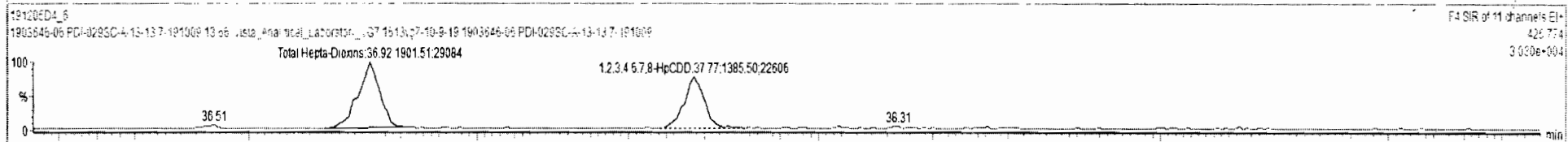
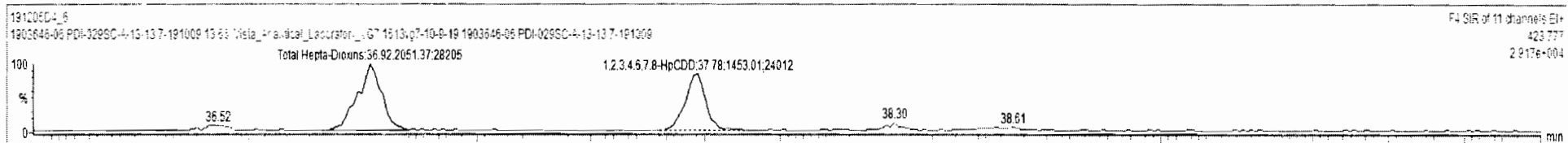
13C-1,2,3,4,6,7,8-HpCDD



191205D4\_6 - 1903646-06 PDI-029SC-A-13-13-7-191009 - 1903646-06 PDI-029SC-A-13-13-7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	nly	RRF	wtvol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
37	13C-1,2,3,4-TCDF	1.62e5	1.62e5	37	0.82	NO	1.000	10.437	24.06	24.07	1.000	1.000	NO	191.6	100	0.537	
38	13C-1,2,3,4,6,9-HxCDF	1.22e5	1.22e5	38	0.52	NO	1.000	10.437	33.42	33.43	1.000	1.000	NO	191.6	100	0.917	
39	Total Tetra-Dioxins		1.04e5				0.901	10.437	25.50			0.000	NO			0.125	
40	Total Penta-Dioxins		8.66e4				0.872	10.437	30.00			0.000	NO			0.0956	
41	Total Hexa-Dioxins		0.06e0				0.978	10.437	33.80			0.000	NO	0.0000		0.380	1.383
42	Total Hepta-Dioxins		6.35e4				0.989	10.437	37.75			0.000	NO	20.61		0.478	26.81
43	Total Tetra-Furans		1.76e5				0.942	10.437	24.00			0.000	NO	0.0000		0.0817	1.097
44	1st Func. Penta-Furans		0.06e0				0.940	10.437	27.63			0.000	NO			0.0420	
45	Total Penta-Furans		0.06e0				0.940	10.437	30.00			0.000	NO	0.0000		0.0540	1.154
46	Total Hexa-Furans		0.06e0				1.078	10.437	33.00			0.000	NO	0.7010		0.191	1.051
47	Total Hepta-Furans		0.06e0				1.135	10.437	37.75			0.000	NO	0.0300		0.142	2.528
48	PFK1																
49	PFK2																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	36.92	2.051e3	1.902e3	1.040	1.06	NO	12.067	12.067
2	6 1,2,3,4,6,7,8-HpCDD	37.75	37.78	1.453e3	1.385e3	1.040	1.06	NO	8.7471	8.7471



Vista Analytical Laboratory

Dataset: Untitled

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Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009,  
Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

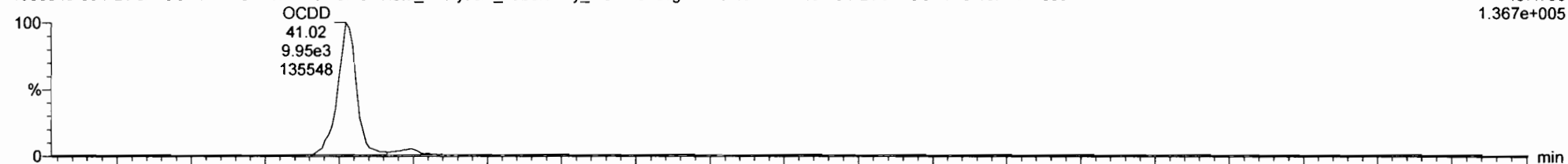
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191205D4\_6  
1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-06 PDI-029SC-A-13-13.7-191009

F5:SIR of 11 channels,EI+

457.738

1.367e+005

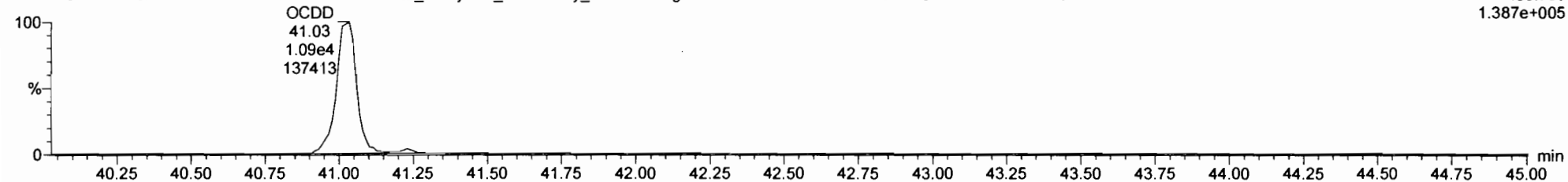


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F5:SIR of 11 channels,EI+

459.735

1.387e+005



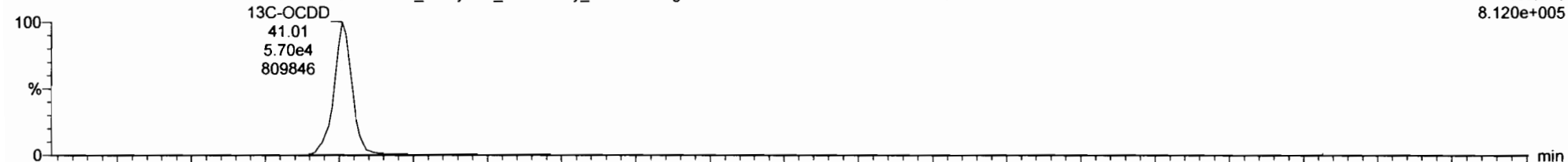
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191205D4\_6  
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F5:SIR of 11 channels,EI+

469.778

8.120e+005

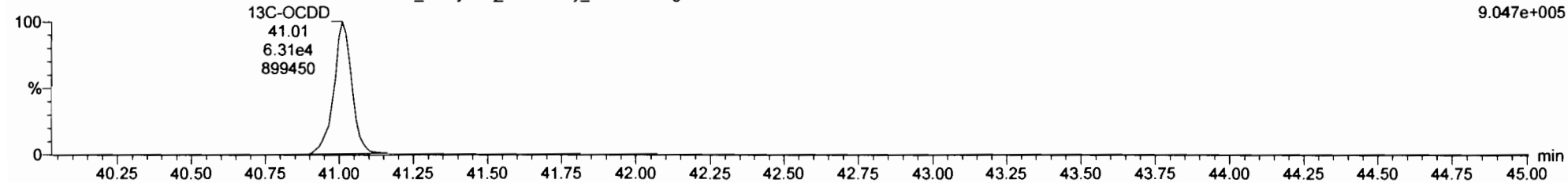


191205D4\_6  
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F5:SIR of 11 channels,EI+

471.775

9.047e+005



Vista Analytical Laboratory

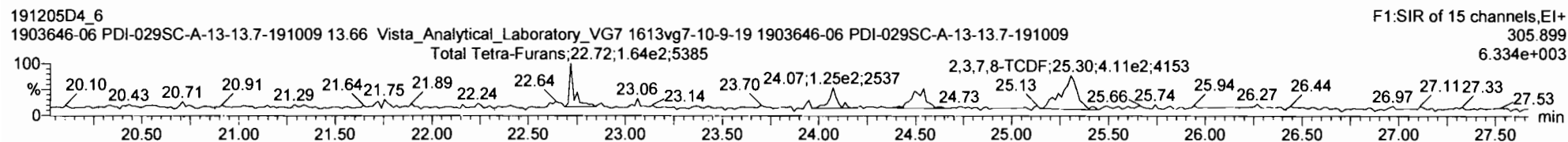
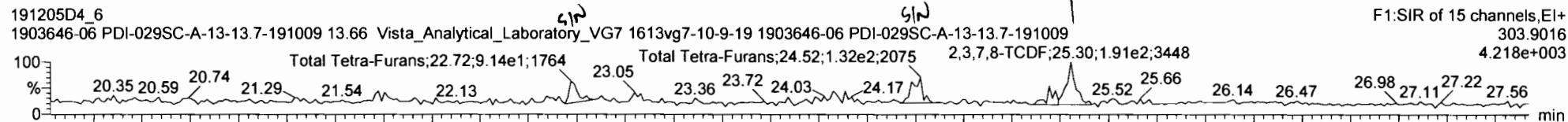
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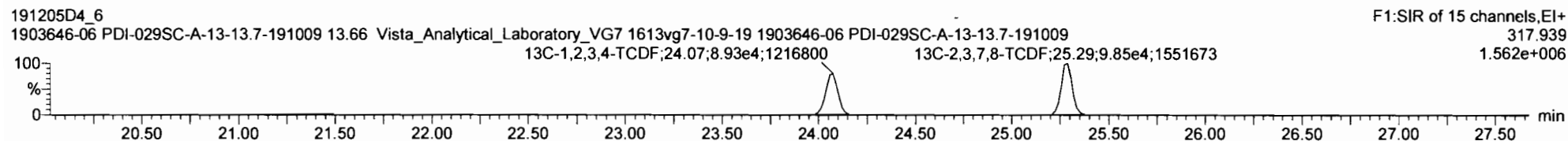
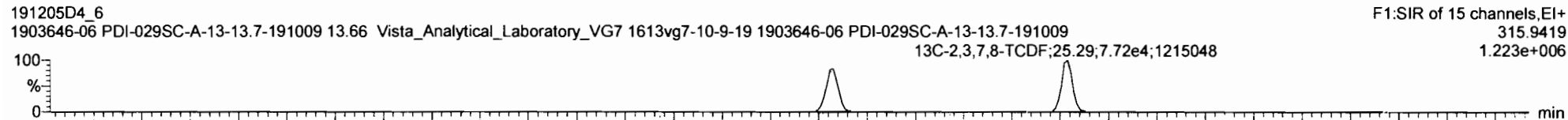
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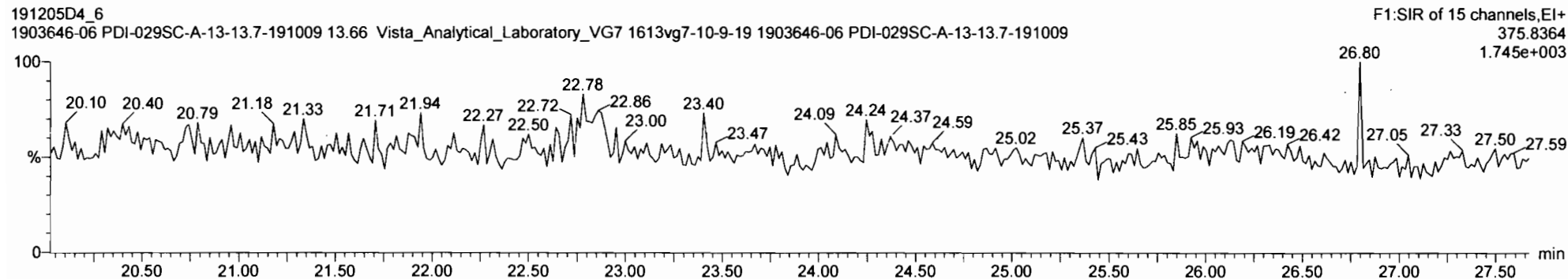
Total Tetra-Furans



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



DPE1

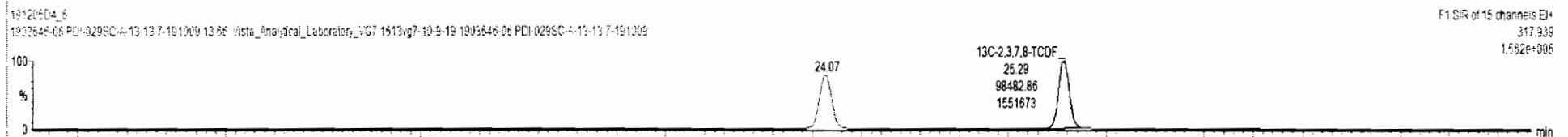
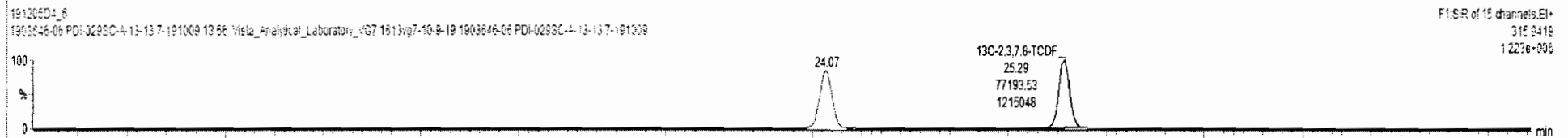
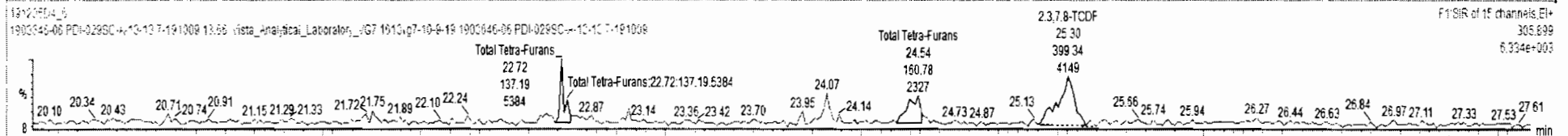
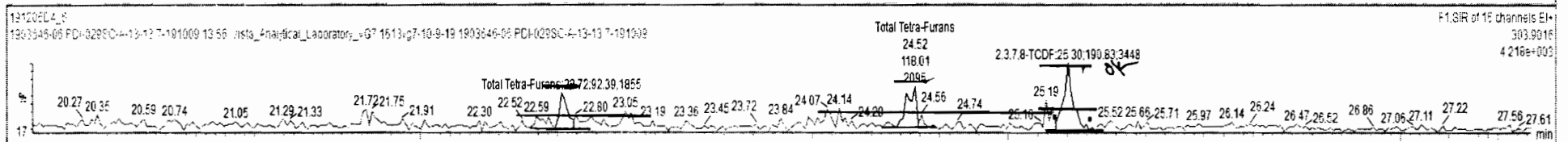




191205D4\_6 - 1903646-06 PDI-029SC-A-13-13 7-191009 - 1903646-06 PDI-029SC-A-13-13 7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

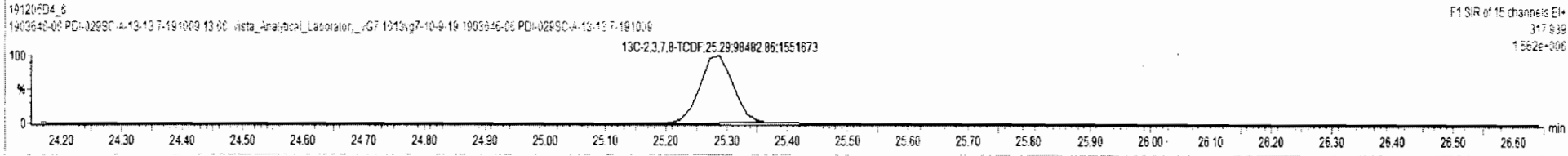
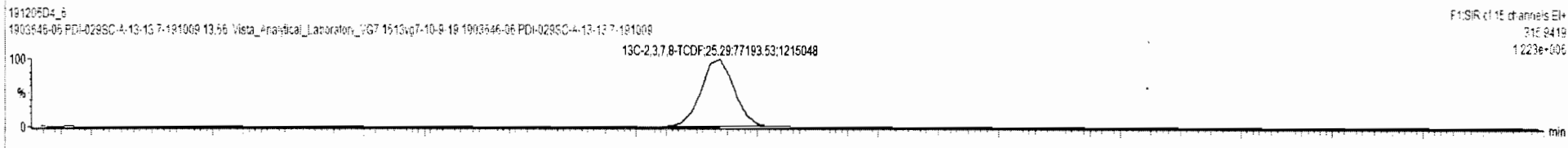
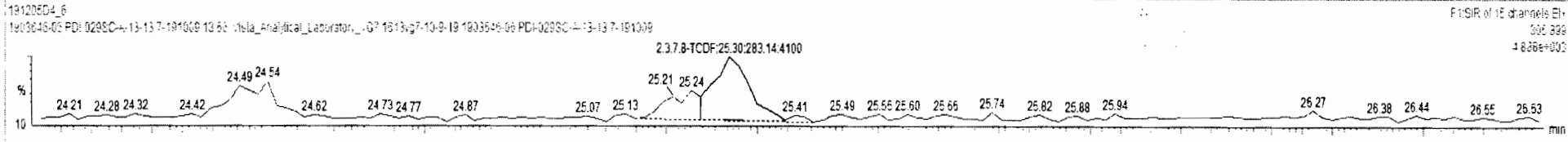
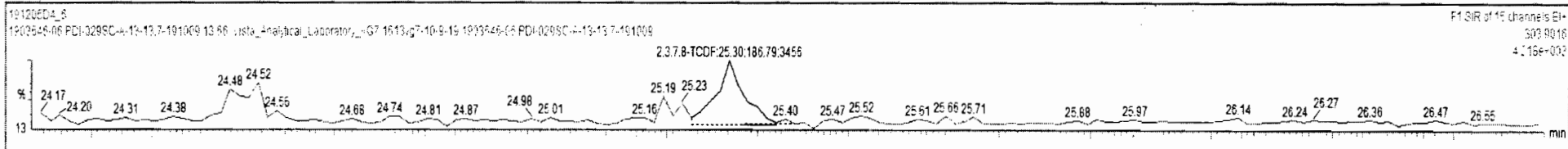
#	Name	Resp	S Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC	
38	38 13C-1,2,3,4,6,8-HxCDF	1.22e5	1.22e5	38	0.52	NO	1.000	10.437	33.42	33.43	1.000	1.000	NO	191.6	100	0.917		
39	39 Total Tetra-Dioxina		1.04e5				0.991	10.437	25.50			0.000	NO			0.125		
40	40 Total Penta-Dioxins		8.66e4				0.872	10.437	30.00			0.000	NO			0.0958		
41	41 Total Hexa-Dioxina		0.06e0				0.976	10.437	33.80			0.000	NO	0.0000		0.380	1.383	
42	42 Total Hepta-Dioxins		6.25e4				0.989	10.437	37.75			0.000	NO	20.81		0.478	20.81	
43	43 Total Tetra-Furans		1.76e5				0.943	10.437	24.00			0.000	NO	0.3225		0.186	1.092	
44	44 1st Func. Penta-Furans		0.00e0				0.940	10.437	27.62			0.000	NO			0.0420		
45	45 Total Penta-Furans		0.00e0				0.940	10.437	30.00			0.000	NO			0.0540		
46	46 Total Hexa-Furans		0.00e0				1.078	10.437	33.00			0.000	NO	0.7010		0.151	1.051	
47	47 Total Hepta-Furans		0.00e0				1.135	10.437	37.75			0.000	NO	0.0000		0.142	2.528	
48	48 PPK1																	
49	49 PPK2																	
50	50 PPK3																	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	22.72	9.239e1	1.372e2	0.770	0.67	NO	0.26563	0.00000
2	43 Total Tetra-Furans	24.00	24.52	1.150e2	1.668e2	0.770	0.73	NO	0.32253	0.32253
3	6 2,3,7,8-TCDF	25.31	25.30	1.909e2	3.993e2	0.770	0.46	YES	0.50359	0.00000



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC	
38	13C-1,2,3,4,6,9-HxCDF	1.22e5	1.22e5	38	0.52	NO	1.000	10.437	33.42	33.43	1.000	1.000	NO	191.8	100	0.917		
39	Total Tetra-Dioxins	1.04e5					0.901	10.437	25.50			0.000	NO			0.125		
40	Total Penta-Dioxins	8.66e4					0.872	10.437	30.00			0.000	NO			0.0958		
41	Total Hexa-Dioxins	0.00e0					0.976	10.437	33.80			0.000	NO	0.0000		0.380	1.383	
42	Total Hepta-Dioxins	6.35e4					0.989	10.437	37.75			0.000	NO	20.81		0.478	20.81	
43	Total Tetra-Furans	1.76e5					0.943	10.437	24.00			0.000	NO	0.5395		0.166	0.5395	
44	1st Func. Penta-Furans	0.00e0					0.940	10.437	27.63			0.000	NO			0.0420		
45	Total Penta-Furans	0.00e0					0.940	10.437	30.00			0.000	NO			0.0540		
46	Total Hexa-Furans	0.00e0					1.078	10.437	33.00			0.000	NO	0.7010		0.191	1.051	
47	Total Hepta-Furans	0.00e0					1.135	10.437	37.75			0.000	NO	0.0000		0.142	2.528	
48	PFK1																	
49	PFK2																	
50	PFK3																	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	2,3,7,8-TCDF	25.31	25.30	1.863e2	2.831e2	0.770	0.66	NO	0.53950	0.53950



Vista Analytical Laboratory

Dataset: Untitled

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Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009,  
Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans

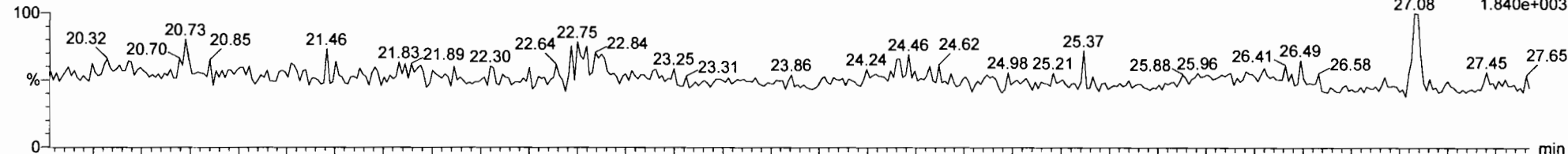
191205D4\_6

1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-06 PDI-029SC-A-13-13.7-191009

F1:SIR of 15 channels,EI+

339.860

1.840e+003



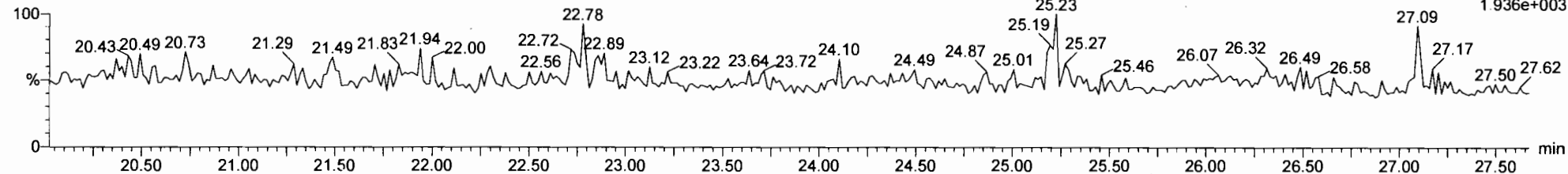
191205D4\_6

1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-06 PDI-029SC-A-13-13.7-191009

F1:SIR of 15 channels,EI+

341.857

1.936e+003



DPE6

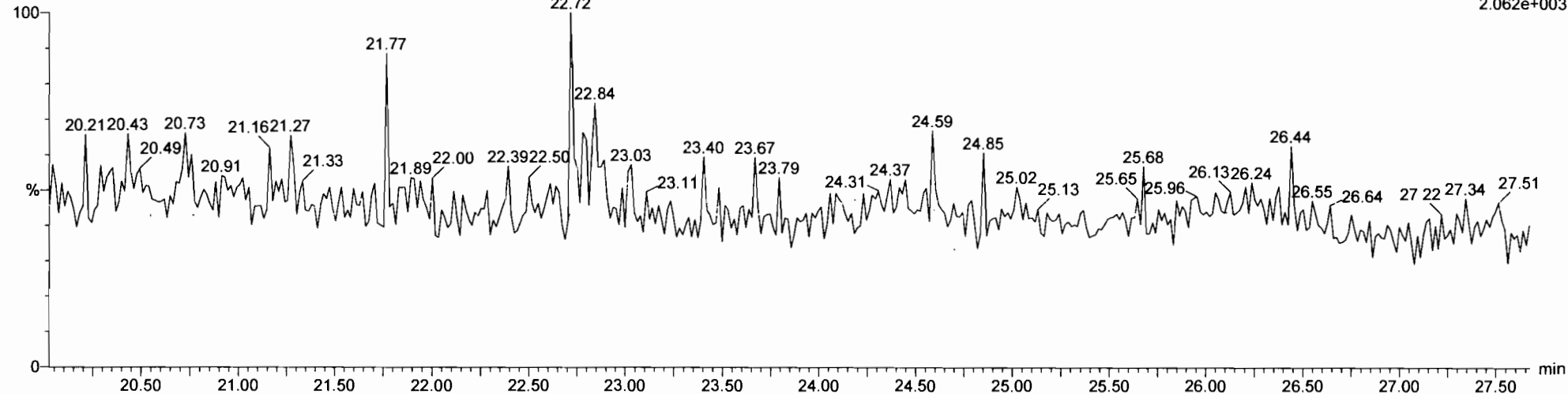
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1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-06 PDI-029SC-A-13-13.7-191009

F1:SIR of 15 channels,EI+

409.7974

2.062e+003



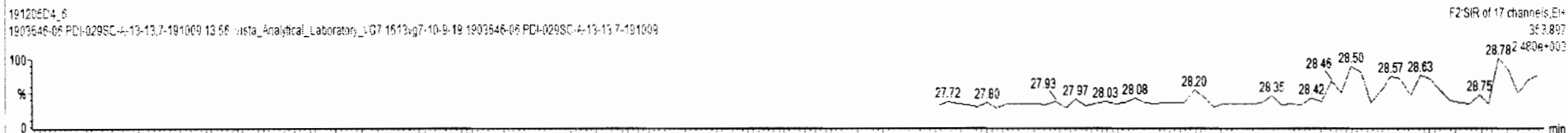
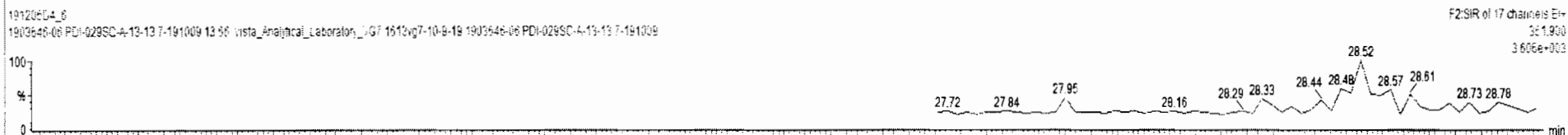
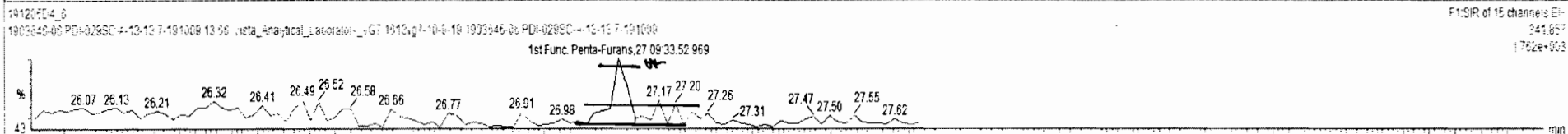
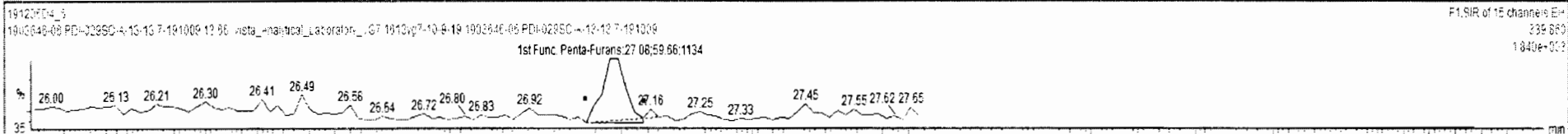




191205D4\_6 - 1903646-06 PDI-029SC-A-13-13 7-191009 - 1903646-06 PDI-029SC-A-13-13 7-191009 13 66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	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	6.36e4	1.22e5	38	0.43	NO	0.581	10.437	38.21	38.31	1.146	1.143	NO	171.2	89.3	1.37	
34	13C-OCDF	1.56e5	1.22e5	38	0.91	NO	0.689	10.437	41.23	41.23	1.233	1.233	NO	354.5	52.5	0.706	
35	37C-2,3,7,8-TCDD	4.43e4	9.77e4	36			1.198	10.437	26.07	26.10	1.023	1.022	NO	72.52	94.6	0.229	
36	13C-1,2,3,4-TCDD	9.77e4	9.77e4	36	0.80	NO	1.030	10.437	25.50	25.51	1.000	1.000	NO	191.6	100	0.718	
37	13C-1,2,3,4-TCDF	1.62e5	1.62e5	37	0.82	NO	1.000	10.437	24.06	24.07	1.000	1.000	NO	191.6	100	0.537	
38	13C-1,2,3,4,6,9-HxCDF	1.22e5	1.22e5	38	0.52	NO	1.000	10.437	33.42	33.43	1.000	1.000	NO	191.6	100	0.917	
39	Total Tetra-Dioxins		1.04e5				0.901	10.437	25.50			0.000	NO			0.125	
40	Total Penta-Dioxins		8.66e4				0.872	10.437	30.00			0.000	NO			0.0956	
41	Total Hexa-Dioxins		0.00e0				0.976	10.437	33.80			0.000	NO	0.0000		0.380	1.363
42	Total Hepta-Dioxins		6.35e4				0.969	10.437	37.75			0.000	NO	20.61		0.478	20.61
43	Total Tetra-Furans		1.76e5				0.943	10.437	24.00			0.000	NO	0.5395		0.156	0.5395
44	1st Func. Penta-Furans		0.00e0				0.940	10.437	27.63			0.000	NO	0.1385		0.0420	0.1385
45	Total Penta-Furans		0.00e0				0.940	10.437	27.63			0.000	NO			0.0420	

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	44 1st Func. Penta-Furans	27.63	27.08	5.966e1	3.352e1	1.550	1.76	NO	0.13846	0.13846

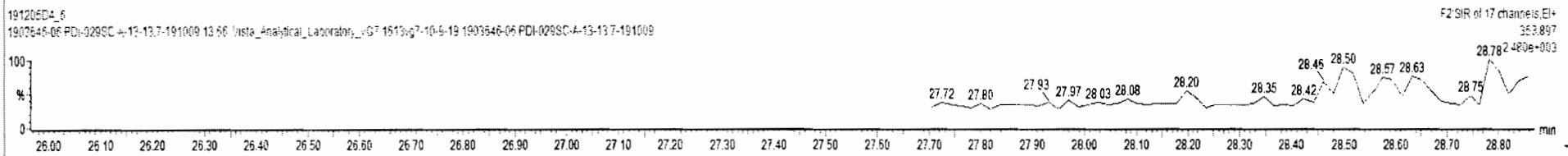
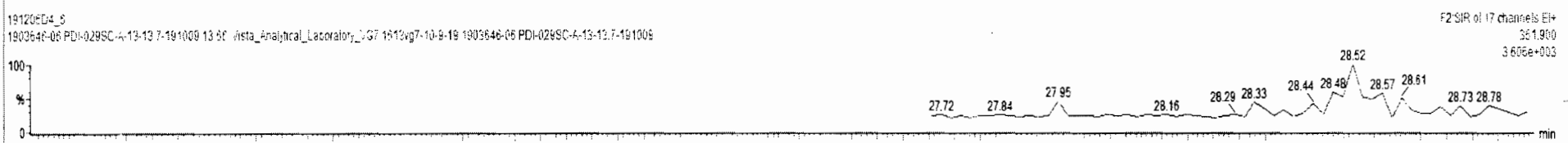
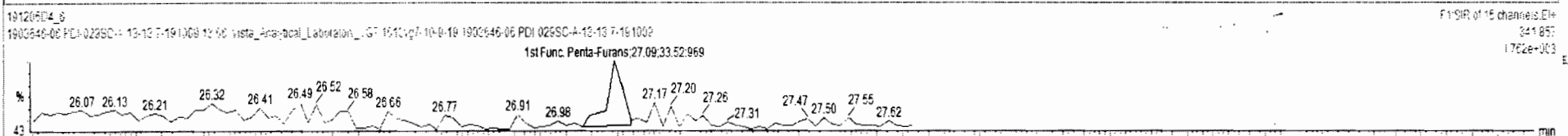
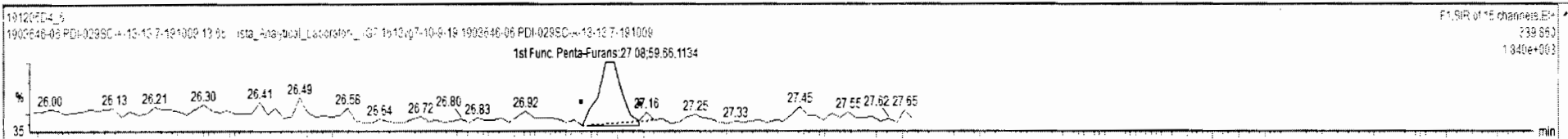




191205D4\_6 - 1903646-06 PDI-029SC-A-13-13-7-191009 - 1903646-06 PDI-029SC-A-13-13-7-191009 13:00 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS	RA	n/y	RRF	wt/wt	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
33	13C-1,2,3,4,7,8,9-HpCDF	6.36e4	1.22e5	38	0.43	NO	0.581	10.437	38.21	39.31	1.146	1.143	NO	171.2	89.3	1.37	
34	13C-OCDF	1.56e5	1.22e5	38	0.91	NO	0.689	10.437	41.23	41.23	1.233	1.233	NO	364.8	92.5	0.706	
35	37C-2,3,7,8-TCDF	4.43e4	9.77e4	36			1.198	10.437	26.07	26.10	1.023	1.022	NO	72.52	94.8	0.229	
36	13C-1,2,3,4-TCDF	9.77e4	9.77e4	36	0.80	NO	1.000	10.437	25.50	25.51	1.000	1.000	NO	191.6	100	0.718	
37	13C-1,2,3,4,7-TCDF	1.62e5	1.62e5	37	0.82	NO	1.000	10.437	24.08	24.07	1.000	1.000	NO	191.6	100	0.537	
38	13C-1,2,3,4,6,9-HxCDF	1.22e5	1.22e5	38	0.52	NO	1.000	10.437	33.42	33.43	1.000	1.000	NO	191.6	100	0.917	
39	Total Tetra-Dioxins		1.04e5				0.951	10.437	25.50			0.000	NO			0.125	
40	Total Penta-Dioxins		8.66e4				0.872	10.437	30.00			0.000	NO			0.0956	
41	Total Hexa-Dioxins		0.0600				0.976	10.437	33.90			0.000	NO	0.0000		0.380	1.383
42	Total Hepta-Dioxins		6.35e4				0.909	10.437	37.75			0.000	NO	20.61		0.478	26.81
43	Total Tetra-Furans		1.76e5				0.943	10.437	24.00			0.000	NO	0.5395		0.166	0.5395
44	1st Func. Penta-Furans		0.0000				0.940	10.437	27.63			0.000	NO	0.1385		0.0420	0.1385
45	Total Penta-Furans		0.0000				0.640	10.437	30.00			0.000	NO	0.0000		0.0000	

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	44 1st Func. Penta-Furans	27.63	27.08	5.966e1	3.352e1	1.550	1.78	NO	0.13846	0.13846



Custom Reporting: Select reports to generate

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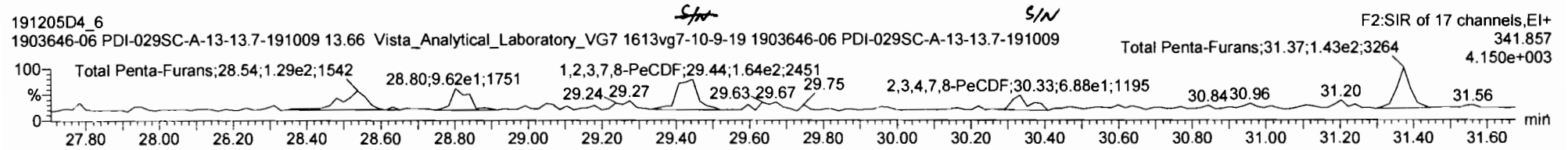
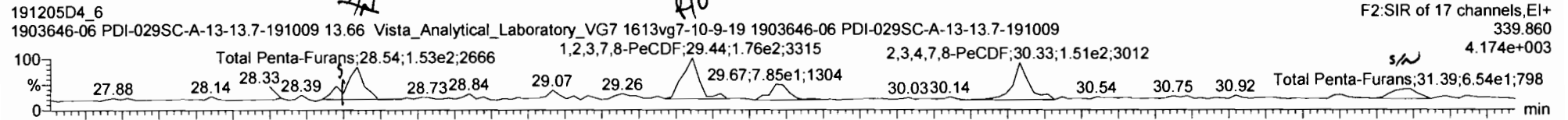
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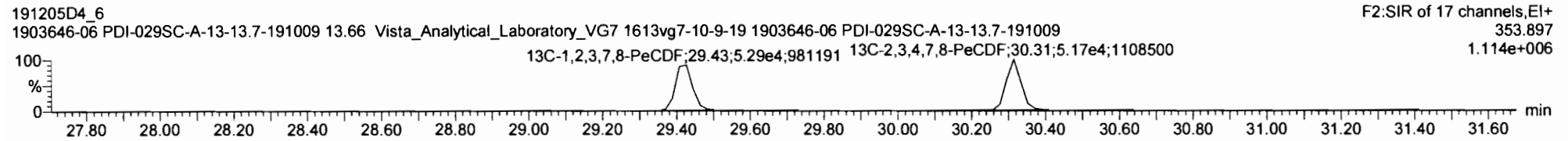
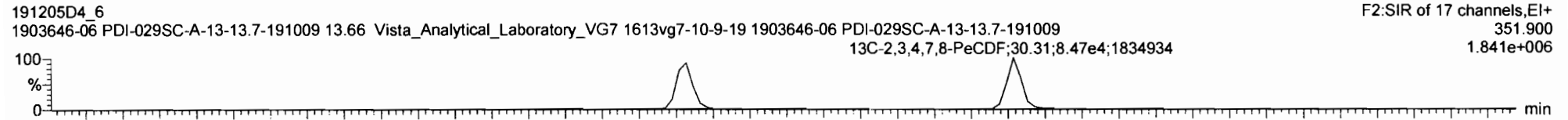
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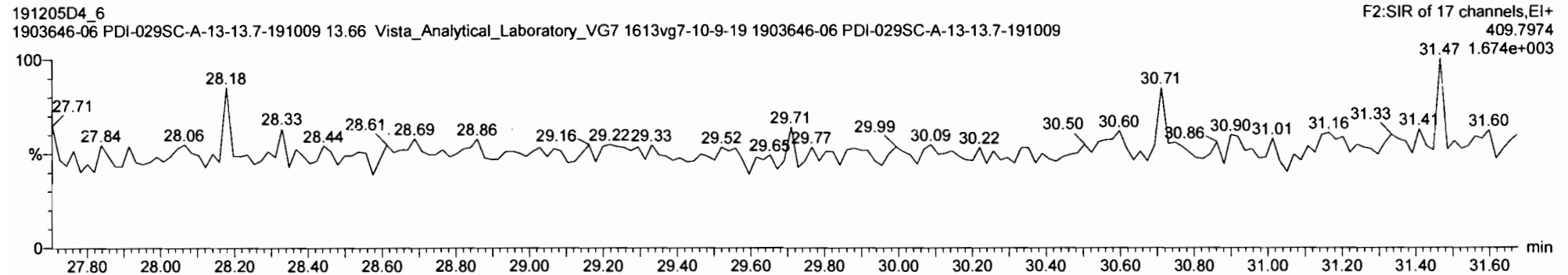
Total Penta-Furans



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



DPE2

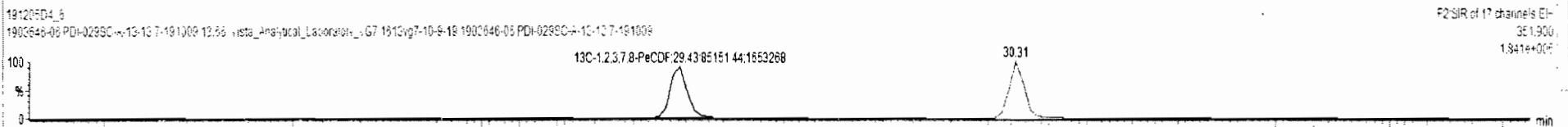
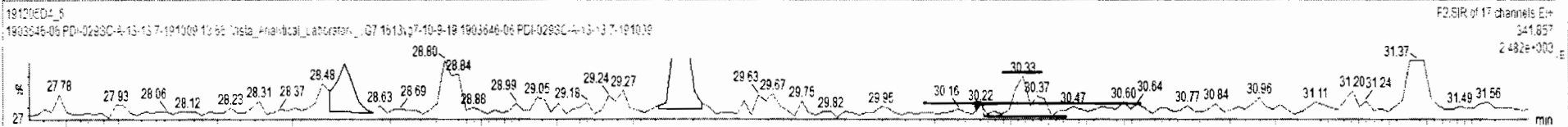
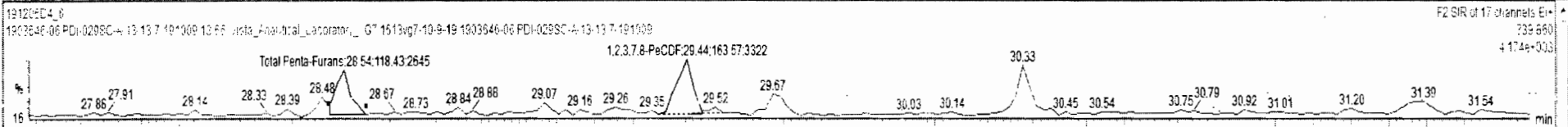




191205D4\_6 - 1903646-06 PDI-029SC-A-13-13-7-191009 - 1903646-06 PDI-029SC-A-13-13-7-191009 13:06 Vista\_Analytical\_Laboratory\_VG7 1613vg7.10.9.19

#	Name	Resp	IS Resp	IS#	RA	n/y	RPF	w/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
38	13C-1,2,3,4,6,8-HxCDF	1.22e5	1.22e5	36	0.52	NO	1.000	10.437	33.42	33.43	1.000	1.000	NO	191.5	100	0.917	
39	Total Tetra-Dioxins		1.04e5				0.901	10.437	25.50			0.000	NO			0.125	
40	Total Penta-Dioxins		8.66e4				0.872	10.437	30.00			0.000	NO			0.0958	
41	Total Hexa-Dioxins		0.00e0				0.976	10.437	33.80			0.000	NO	0.0000		0.300	1.383
42	Total Hepta-Dioxins		6.35e4				0.889	10.437	37.75			0.000	NO	20.81		0.476	20.81
43	Total Tetra-Furans		1.76e5				0.943	10.437	24.00			0.000	NO	0.5395		0.166	0.5395
44	1st Func. Penta-Furans		0.00e0				0.940	10.437	27.63			0.000	NO	0.1385		0.0420	0.1385
45	Total Penta-Furans		0.00e0				0.940	10.437	30.00			0.000	NO	0.2950		0.0540	0.6839
46	Total Hexa-Furans		0.00e0				1.078	10.437	33.00			0.000	NO	1.361		0.191	1.061
47	Total Hepta-Furans		0.00e0				1.135	10.437	37.75			0.000	NO	0.8076		0.365	2.574
48	PFK1																
49	PFK2																
50	PFK3																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	45 Total Penta-Furans	30.00	28.54	1.164e2	8.003e1	1.550	1.46	NO	0.29500	0.29500
2	9 1,2,3,7,8-PeCDF	29.45	29.44	1.636e2	1.374e2	1.550	1.19	YES	0.38838	0.00000



Vista Analytical Laboratory

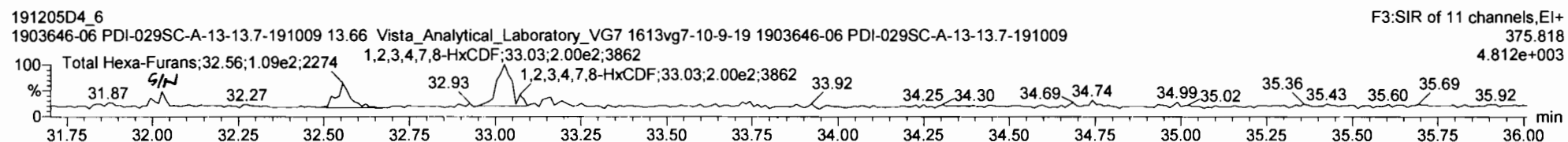
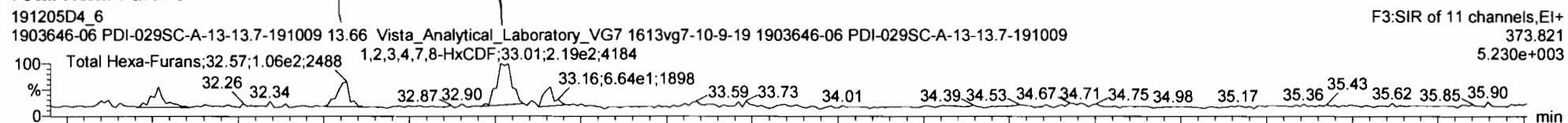
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

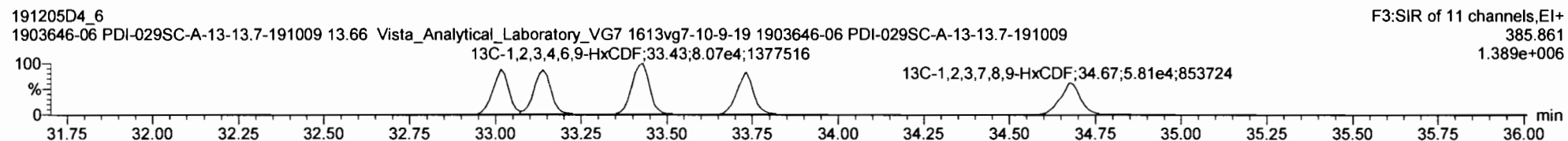
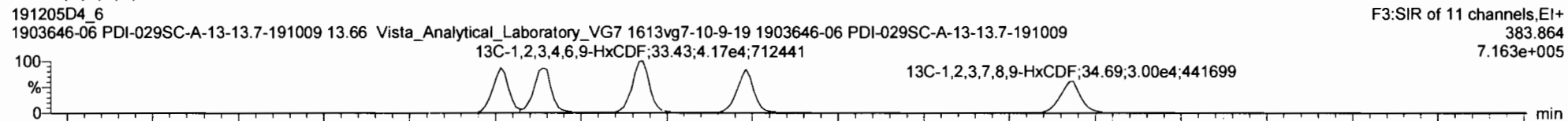
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Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009, Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

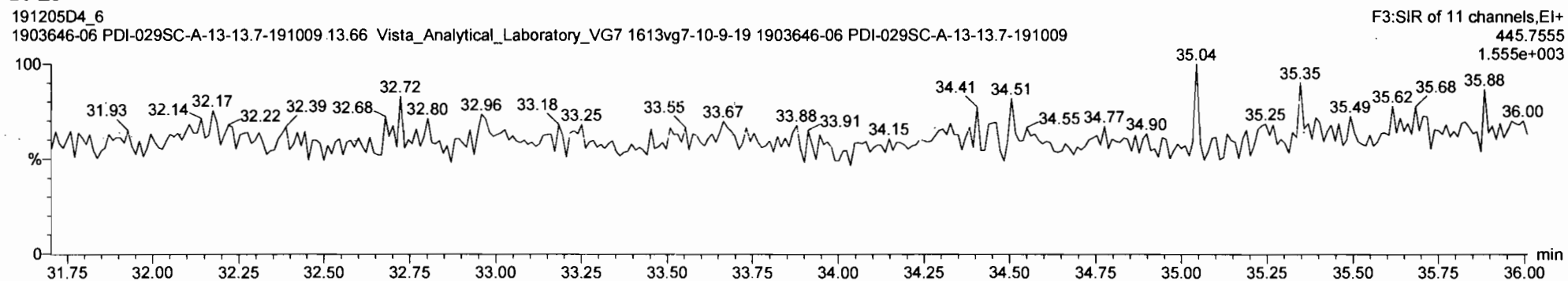
Total Hexa-Furans



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



DPE3

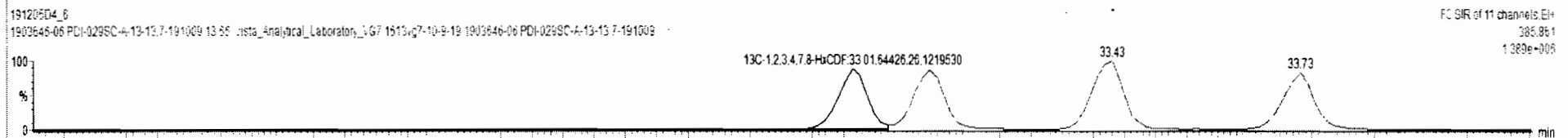
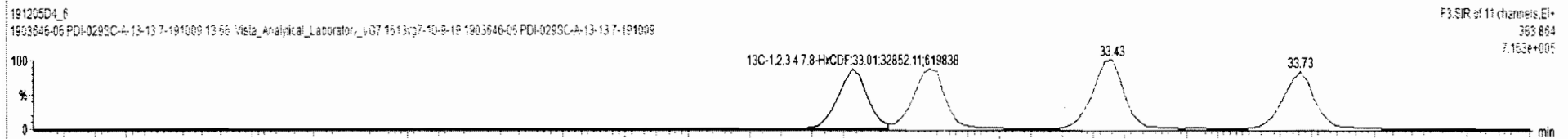
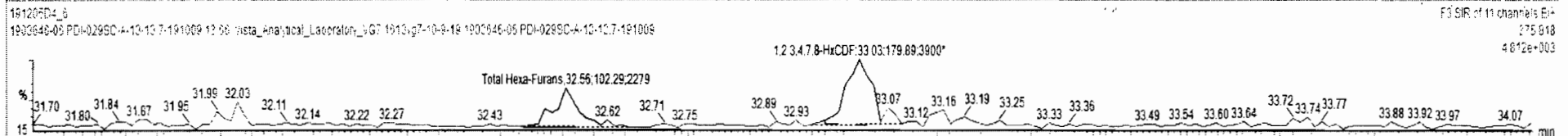
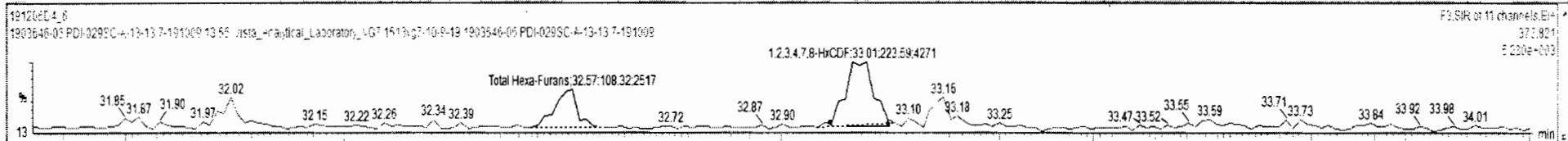




191205D4\_6 - 1903646-06 PDI-029SC-A-13-13 7-191009 - 1903646-06 PDI-029SC-A-13-13 7-191009 13 66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC	
46	Total Hexa-Furans		0.00e0				1.878	10.437	33.00			0.000	NO	1.047	0.191	1.047		
47	Total Hepta-Furans		0.00e0				1.135	10.437	37.75			0.000	NO	0.0000	0.142	2.528		
48	PFK1																	
49	PFK2																	
50	PFK3																	
51	PFK4																	
52	PFK5																	
53	DPE1																	
54	DPE2																	
55	DPE3																	
56	DPE4																	
57	DPE5																	
58	DPE6																	

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	46 Total Hexa-Furans	33.00	32.57	1.083e2	1.023e2	1.240	1.06	NO	0.38536	0.38536
2	11 1,2,3,4,7,8-HxCDF	33.01	33.01	2.236e2	1.719e2	1.240	1.30	NO	0.66153	0.66153



Vista Analytical Laboratory

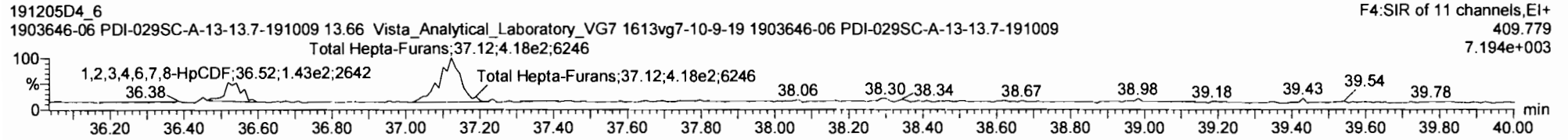
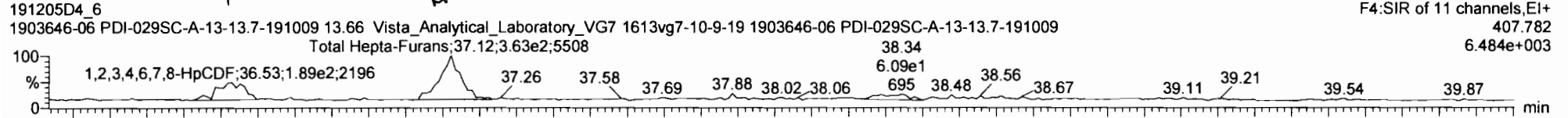
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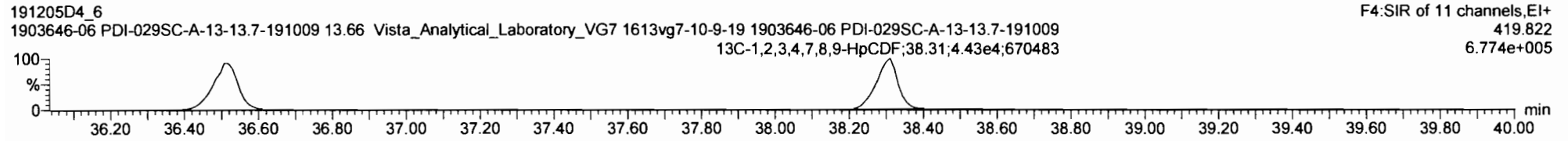
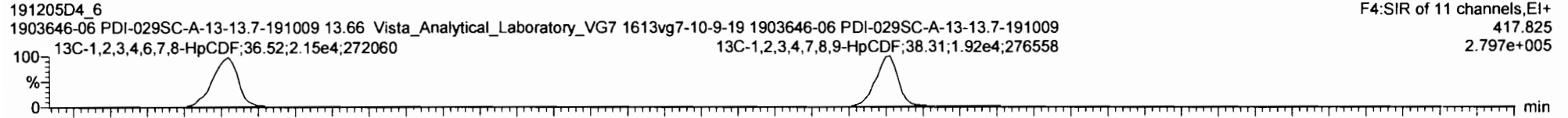
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009, Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

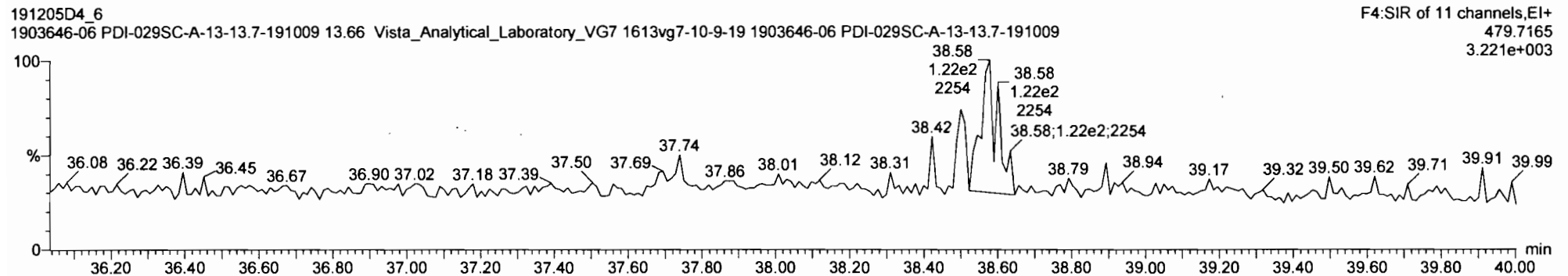
Total Hepta-Furans



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

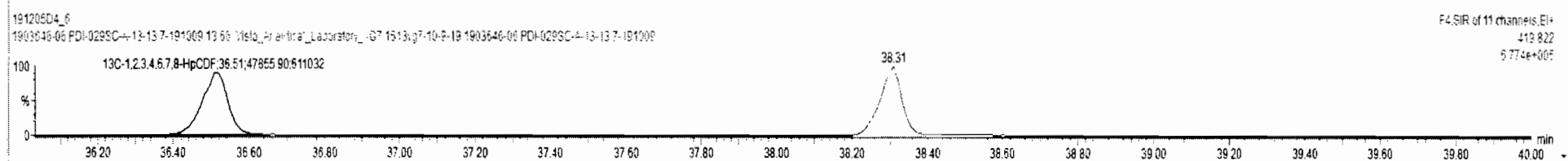
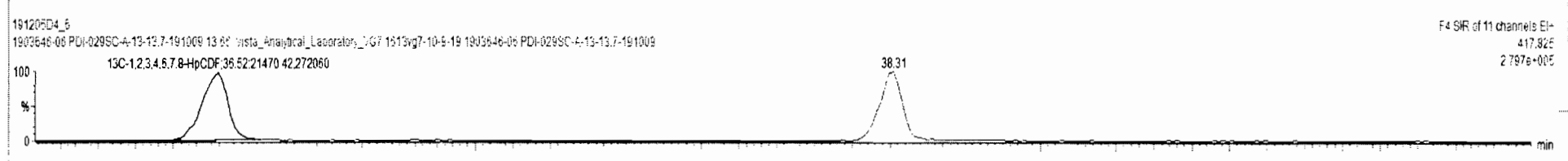
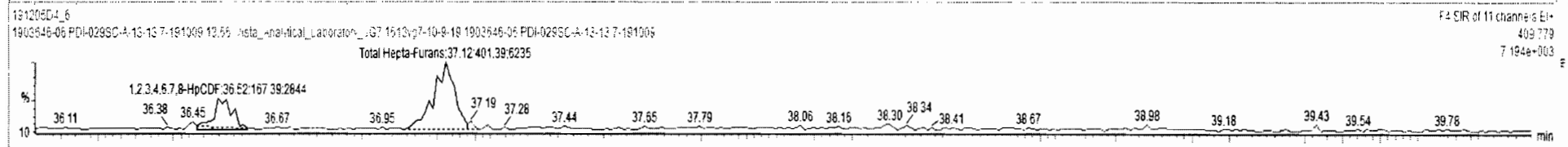
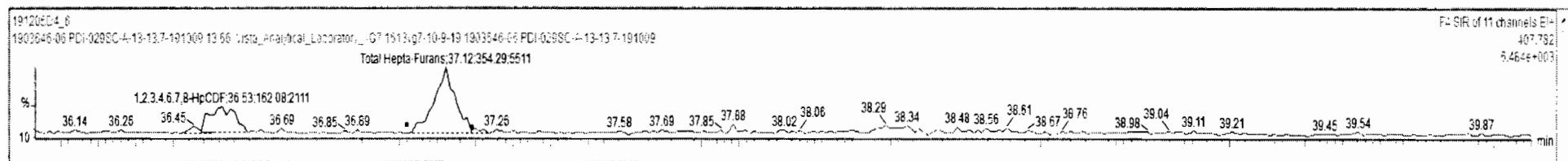


DPE4



#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	w/dvol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
46	Total Hexa-Furans		0.00e0				1.078	19.437	33.00			0.000	NO	1.061	0.151	1.061	
47	Total Hepta-Furans		0.00e0				1.135	19.437	37.75			0.000	NO	0.8076	0.365	2.574	
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																
53	DPE1																
54	DPE2																
55	DPE3																
56	DPE4																
57	DPE5																
58	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	36.55	36.53	1.621e2	1.674e2	1.040	0.97	NO	0.80760	0.80760
2	Total Hepta-Furans	37.75	37.12	3.543e2	4.014e2	1.040	0.86	YES	1.7662	0.00000





Vista Analytical Laboratory

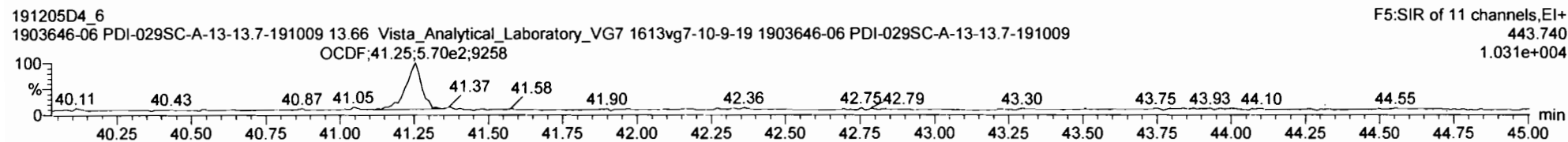
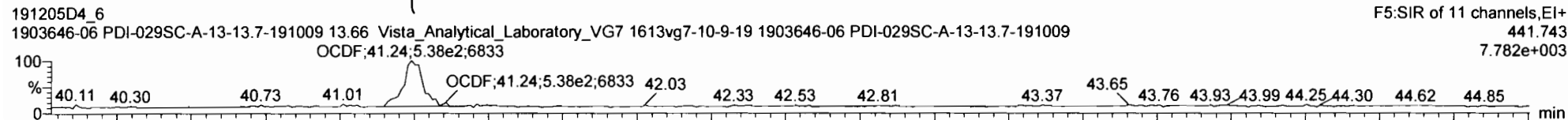
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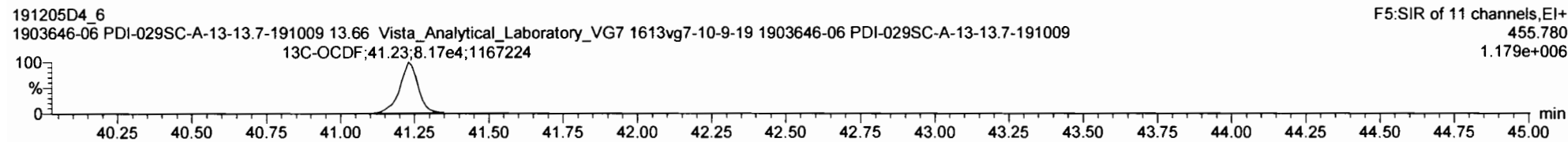
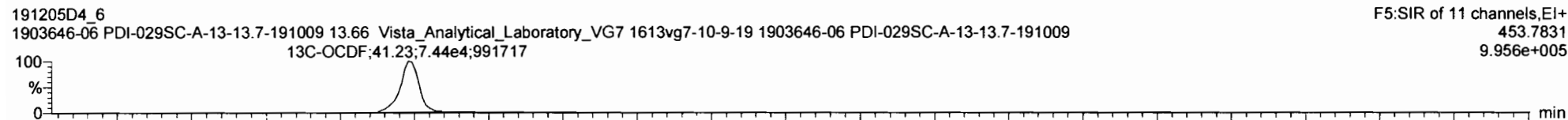
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Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009, Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

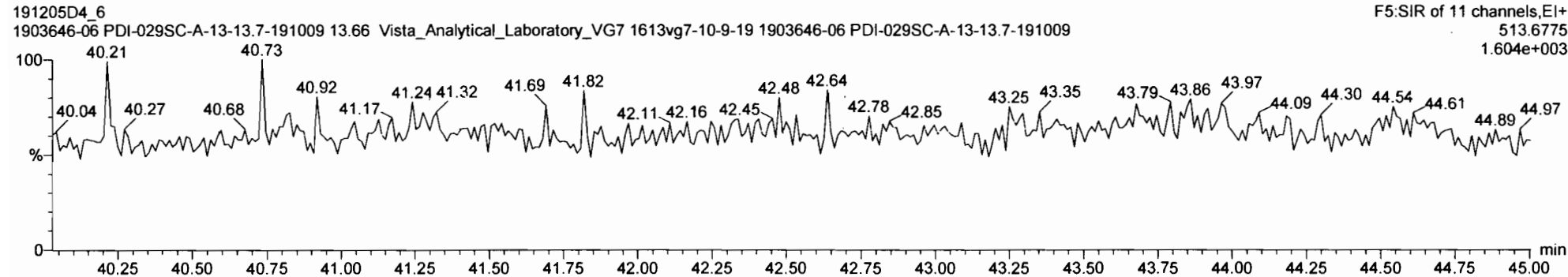
OCDF



13C-OCDF



DPE5

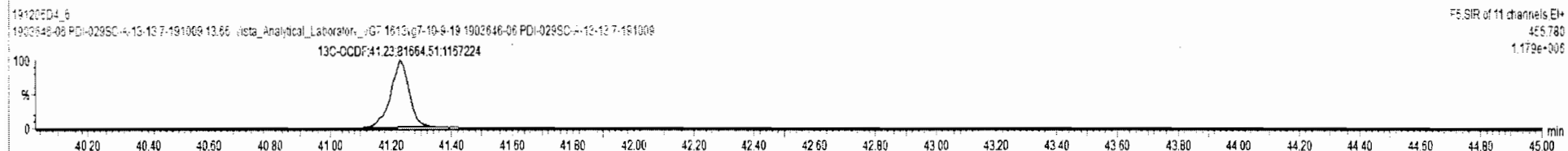
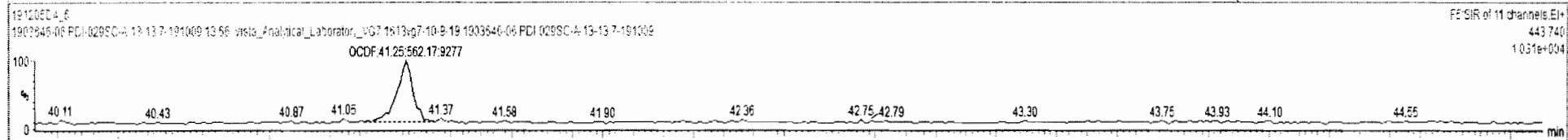
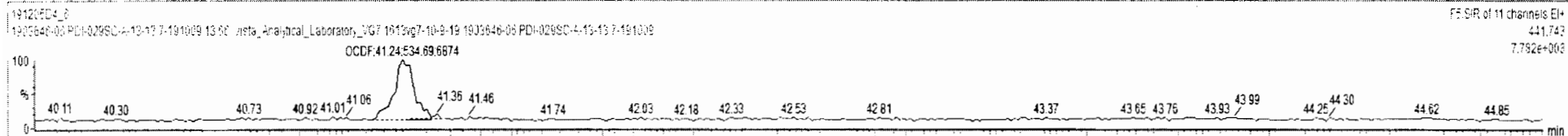




191205D4\_6 - 1903646-06 PDI-029SC-A-13-13 7-191009 - 1903646-06 PDI-029SC-A-13-13 7-191009 13.68 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/wt	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
7	OCDD	2.08e4	1.20e5	24	0.92	NO	0.959	10.437	41.01	41.02	1.000	1.000	NO	69.32		0.348	69.32
8	2,3,7,8-TCDF	4.70e2	1.78e5	25	0.68	NO	0.950	10.437	25.31	25.30	1.001	1.001	NO	0.6395		0.164	0.5395
9	1,2,3,7,8-PeCDF		1.38e5	26			0.960	10.437	29.45			1.001	NO			0.156	
10	2,3,4,7,8-PeCDF		1.36e5	27			1.015	10.437	30.34			1.001	NO			0.134	
11	1,2,3,4,7,8-HxCDF	4.03e2	9.73e4	28	1.24	NO	1.177	10.437	32.01	32.01	1.000	1.000	NO	0.6754		0.156	0.6754
12	1,2,3,6,7,8-HxCDF		1.05e5	29			1.069	10.437	33.15			1.000	NO			0.179	
13	2,3,4,6,7,8-HxCDF		9.53e4	30			1.114	10.437	33.77			1.001	NO			0.176	
14	1,2,3,7,8,9-HxCDF		8.80e4	31			1.052	10.437	34.69			1.000	NO			0.245	
15	1,2,3,4,6,7,8-HpCDF	3.25e2	6.93e4	32	0.97	NO	1.128	10.437	36.55	36.53	1.000	1.001	NO	0.8076		0.375	0.8076
16	1,2,3,4,7,8,9-HpCDF		6.35e4	33			1.280	10.437	38.21			1.000	NO			0.217	
17	OCDF	1.10e3	1.56e5	34	0.95	NO	0.947	10.437	41.23	41.24	1.000	1.000	NO	2.843		0.265	2.843
18	13C-2,3,7,8-TCDD	1.04e5	9.77e4	36	0.78	NO	1.095	10.437	25.04	26.07	1.022	1.021	NO	185.5	96.8	0.650	
19	13C-1,2,3,7,8-PeCDD	8.55e4	9.77e4	38	0.84	NO	0.881	10.437	30.27	30.60	1.265	1.187	NO	102.7	101	0.651	

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



Ready

191205D4\_6

NUM

Vista Analytical Laboratory

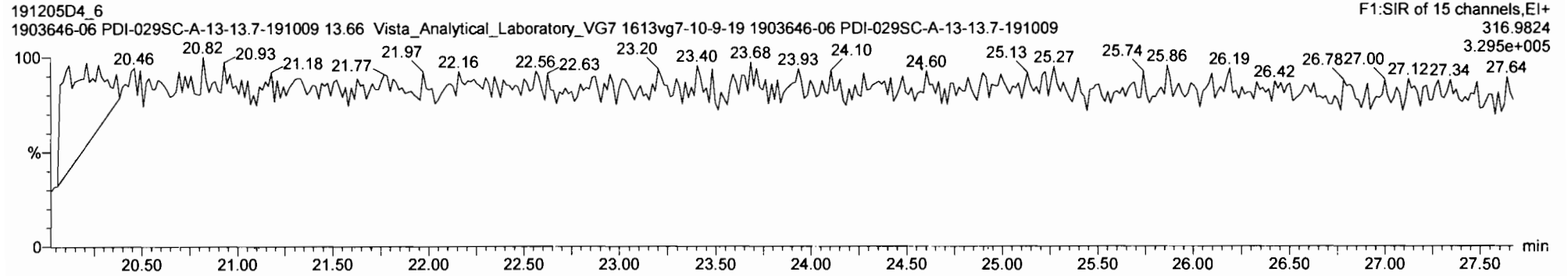
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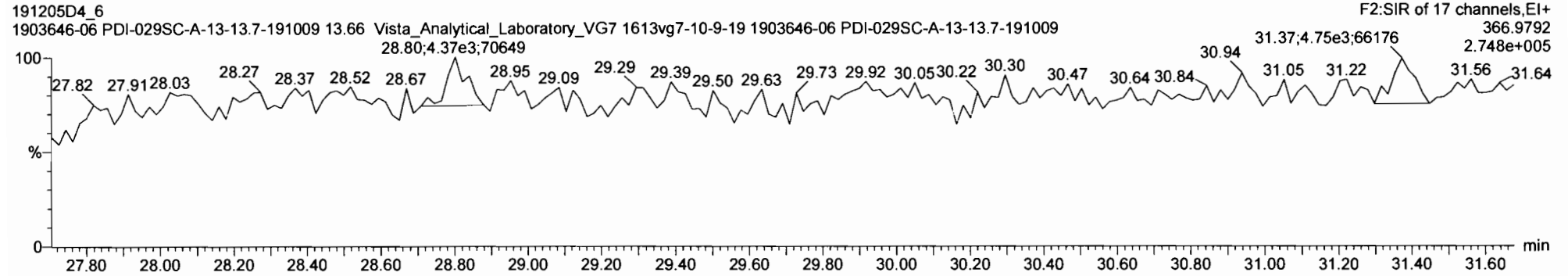
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Name: 191205D4\_6, Date: 7-DEC-2019, Time: 10:05:05, ID: 1903646-06 PDI-029SC-A-13-13.7-191009,  
Description: 1903646-06 PDI-029SC-A-13-13.7-191009 13.66 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

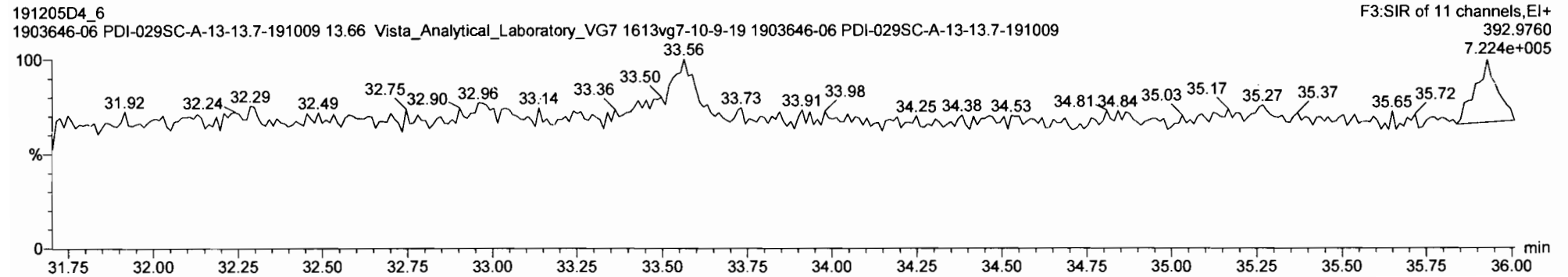
PFK1



PFK2

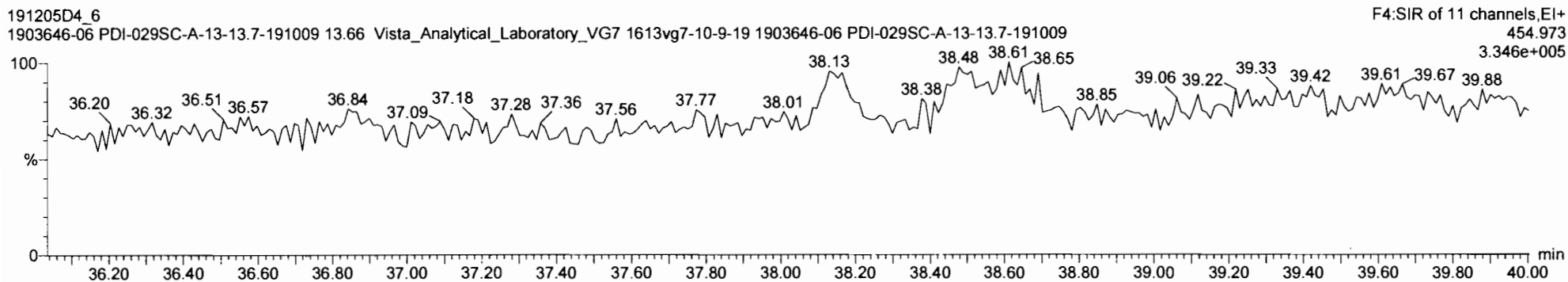


PFK3

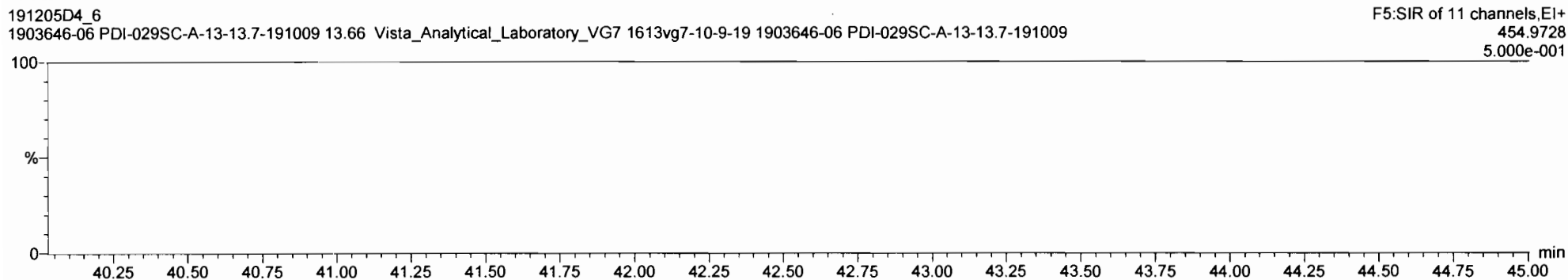


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**PFK4**



**PFK5**



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-7.qld  
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 Printed: Thursday, December 19, 2019 11:59:50 Pacific Standard Time

EL 12/19/19

CT 12/20/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 10 Dec 2019 16:21:14

Calibration: 19 Dec 2019 11:25:42

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 Description: B9J0315-DUP1 Duplicate 13.73 Vista\_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		1.00e5	10.4911	0.905			1.001		26.10					0.203
2	2 1,2,3,7,8-PeCDD		8.01e4	10.4911	0.903			1.001		30.62					0.290
3	3 1,2,3,4,7,8-HxCDD		6.66e4	10.4911	1.101			1.000		33.91					0.420
4	4 1,2,3,6,7,8-HxCDD		7.22e4	10.4911	0.939			1.000		34.01					0.506
5	5 1,2,3,7,8,9-HxCDD		7.37e4	10.4911	0.961			1.001		34.34					0.470
6	6 1,2,3,4,6,7,8-HpCDD	3.04e3	6.11e4	10.4911	0.979	1.100	NO	1.000	1.000	37.78	37.78	9.6876		9.69	0.749
7	7 OCDD	2.35e4	1.21e5	10.4911	0.959	0.902	NO	1.000	1.000	41.02	41.03	77.536		77.5	0.886
8	8 2,3,7,8-TCDF	4.54e2	1.65e5	10.4911	0.950	0.872	NO	1.001	1.001	25.31	25.30	0.55084		0.551	0.174
9	9 1,2,3,7,8-PeCDF	4.09e2	1.33e5	10.4911	0.960	1.372	NO	1.001	1.001	29.45	29.44	0.60995		0.610	0.161
10	10 2,3,4,7,8-PeCDF		1.31e5	10.4911	1.015			1.001		30.34					0.143
11	11 1,2,3,4,7,8-HxCDF	3.84e2	9.64e4	10.4911	1.177	1.089	NO	1.000	1.001	33.01	33.04	0.64584		0.646	0.237
12	12 1,2,3,6,7,8-HxCDF		1.03e5	10.4911	1.069			1.000		33.15					0.250
13	13 2,3,4,6,7,8-HxCDF		9.60e4	10.4911	1.114			1.001		33.77					0.278
14	14 1,2,3,7,8,9-HxCDF		8.12e4	10.4911	1.062			1.000		34.67					0.388
15	15 1,2,3,4,6,7,8-HpCDF	3.75e2	7.07e4	10.4911	1.128	1.079	NO	1.001	1.000	36.55	36.51	0.89550		0.896	0.453
16	16 1,2,3,4,7,8,9-HpCDF		6.19e4	10.4911	1.280			1.000		38.31					0.362
17	17 OCDF	1.16e3	1.52e5	10.4911	0.947	0.931	NO	1.000	1.000	41.24	41.25	3.0687		3.07	0.486
18	18 13C-2,3,7,8-TCDD	1.00e5	9.79e4	10.4911	1.095	0.829	NO	1.021	1.022	26.04	26.07	177.73	93.2		0.633
19	19 13C-1,2,3,7,8-PeCDD	8.01e4	9.79e4	10.4911	0.881	0.627	NO	1.187	1.200	30.27	30.60	176.91	92.8		0.392
20	20 13C-1,2,3,4,7,8-Hx...	6.66e4	1.27e5	10.4911	0.642	1.294	NO	1.014	1.014	33.88	33.90	155.83	81.7		0.881
21	21 13C-1,2,3,6,7,8-Hx...	7.22e4	1.27e5	10.4911	0.856	1.280	NO	1.017	1.018	34.00	34.01	126.80	66.5		0.661
22	22 13C-1,2,3,7,8,9-Hx...	7.37e4	1.27e5	10.4911	0.807	1.288	NO	1.026	1.027	34.30	34.30	137.30	72.0		0.701
23	23 13C-1,2,3,4,6,7,8-H...	6.11e4	1.27e5	10.4911	0.654	1.091	NO	1.126	1.130	37.64	37.77	140.44	73.7		1.11
24	24 13C-OCDD	1.21e5	1.27e5	10.4911	0.580	0.909	NO	1.226	1.228	40.97	41.02	312.34	81.9		0.848
25	25 13C-2,3,7,8-TCDF	1.65e5	1.63e5	10.4911	1.035	0.782	NO	0.992	0.991	25.30	25.29	186.86	98.0		0.611
26	26 13C-1,2,3,7,8-PeCDF	1.33e5	1.63e5	10.4911	0.854	1.570	NO	1.154	1.154	29.43	29.43	182.15	95.5		0.798
27	27 13C-2,3,4,7,8-PeCDF	1.31e5	1.63e5	10.4911	0.847	1.604	NO	1.189	1.189	30.33	30.31	180.26	94.6		0.804
28	28 13C-1,2,3,4,7,8-Hx...	9.64e4	1.27e5	10.4911	0.832	0.514	NO	0.987	0.988	32.99	33.01	174.12	91.3		1.20
29	29 13C-1,2,3,6,7,8-Hx...	1.03e5	1.27e5	10.4911	1.034	0.507	NO	0.991	0.992	33.11	33.14	149.31	78.3		0.966
30	30 13C-2,3,4,6,7,8-Hx...	9.60e4	1.27e5	10.4911	0.953	0.533	NO	1.009	1.009	33.73	33.73	151.23	79.3		1.05
31	31 13C-1,2,3,7,8,9-Hx...	8.12e4	1.27e5	10.4911	0.828	0.521	NO	1.039	1.038	34.71	34.67	147.42	77.3		1.21

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-7.qld

Last Altered: Thursday, December 19, 2019 11:59:10 Pacific Standard Time

Printed: Thursday, December 19, 2019 11:59:50 Pacific Standard Time

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 Description: B9J0315-DUP1 Duplicate 13.73 Vista\_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...	7.07e4	1.27e5	10.4911	0.757	0.429	NO	1.093	1.093	36.52	36.52	140.23	73.6		1.12
33	33 13C-1,2,3,4,7,8,9-H...	6.19e4	1.27e5	10.4911	0.581	0.446	NO	1.143	1.146	38.20	38.31	159.95	83.9		1.46
34	34 13C-OCDF	1.52e5	1.27e5	10.4911	0.689	0.876	NO	1.233	1.234	41.21	41.24	331.36	86.9		0.775
35	35 37Cl-2,3,7,8-TCDD	4.31e4	9.79e4	10.4911	1.198			1.022	1.023	26.07	26.10	70.076	91.9		0.176
36	36 13C-1,2,3,4-TCDD	9.79e4	9.79e4	10.4911	1.000	0.824	NO	1.000	1.000	25.50	25.51	190.64	100.0		0.693
37	37 13C-1,2,3,4-TCDF	1.63e5	1.63e5	10.4911	1.000	0.791	NO	1.000	1.000	24.06	24.07	190.64	100.0		0.633
38	38 13C-1,2,3,4,6,9-Hx...	1.27e5	1.27e5	10.4911	1.000	0.523	NO	1.000	1.000	33.42	33.42	190.64	100.0		0.999
39	39 Total Tetra-Dioxins		1.00e5	10.4911	0.901			0.000		25.50					0.0883
40	40 Total Penta-Dioxins		8.01e4	10.4911	0.872			0.000		30.00					0.117
41	41 Total Hexa-Dioxins		0.00e0	10.4911	0.976			0.000		33.80		1.5214		1.52	0.474
42	42 Total Hepta-Dioxins		6.11e4	10.4911	0.989			0.000		37.75		23.578		23.6	0.742
43	43 Total Tetra-Furans		1.65e5	10.4911	0.943			0.000		24.00		0.97192		1.08	0.176
44	44 1st Func. Penta-Fur...		0.00e0	10.4911	0.940			0.000		27.63		0.22558		0.226	0.0918
45	45 Total Penta-Furans		0.00e0	10.4911	0.940			0.000		30.00		1.0223		1.02	0.160
46	46 Total Hexa-Furans		0.00e0	10.4911	1.078			0.000		33.00		1.4347		1.43	0.290
47	47 Total Hepta-Furans		0.00e0	10.4911	1.135			0.000		37.75		2.8396		2.84	0.431

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-7.qld  
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 Calibration: 19 Dec 2019 11:25:42

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 Description: B9J0315-DUP1 Duplicate 13.73 Vista\_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	32.40	320.723	39867.235	15.577	bb	1.5214	1.52

**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	37.78	1593.271	31888.762	99.539	MM	9.6876	9.69
2	42 Total Hepta-Dioxins	NO	36.92	2261.960	31888.762	144.080	bb	13.8905	13.89

**Tetra-Furans**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	8 2,3,7,8-TCDF	NO	25.30	211.525	72563.383	5.491	MM	0.5508	0.55
2	43 Total Tetra-Furans	YES	25.21	65.646	72563.383	0.000	bd	0.0000	0.11
3	43 Total Tetra-Furans	NO	24.54	140.056	72563.383	4.165	MM	0.4211	0.42

**Penta-Furans function 1**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
44	1st Func. Penta-Furans	NO	27.09	83.516	80868.172	2.224	MM	0.2256	0.23

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-7.qld

Last Altered: Thursday, December 19, 2019 11:59:10 Pacific Standard Time

Printed: Thursday, December 19, 2019 11:59:50 Pacific Standard Time

Name: 191205D4\_7, Date: 7-DEC-2019, Time: 10:53:01, ID: B9J0315-DUP1 Duplicate,  
 Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Penta-Furans**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	9 1,2,3,7,8-PeCDF	NO	29.44	236.475	81288.578	6.146	MM	0.6100	0.61
2	45 Total Penta-Furans	NO	28.52	159.390	80868.172	4.065	MM	0.4123	0.41

**Hexa-Furans**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	46 Total Hexa-Furans	NO	32.03	102.034	32117.558	3.951	MM	0.3495	0.35
2	11 1,2,3,4,7,8-HxCDF	NO	33.04	200.285	32739.316	7.973	MM	0.6458	0.65
3	46 Total Hexa-Furans	NO	32.58	122.841	32117.558	4.968	MM	0.4394	0.44

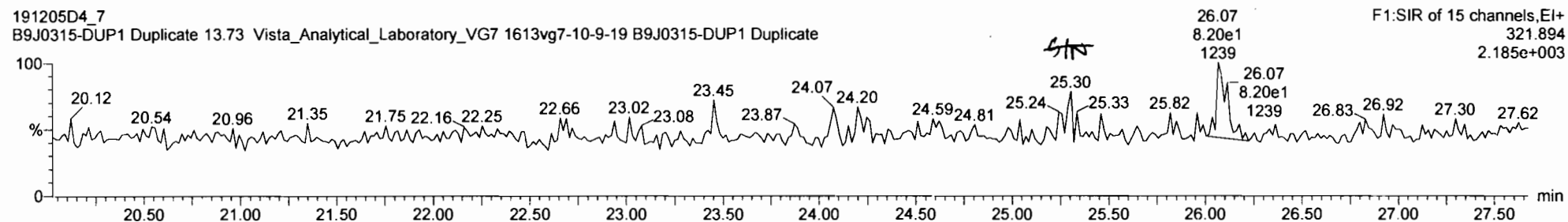
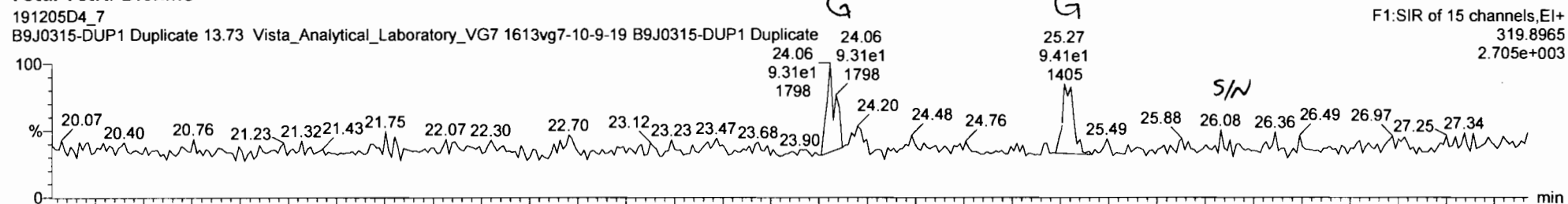
**Hepta-Furans**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	15 1,2,3,4,6,7,8-HpCDF	NO	36.51	194.346	21237.775	10.594	MM	0.8955	0.90
2	47 Total Hepta-Furans	NO	37.11	411.462	20163.469	23.143	MM	1.9441	1.94

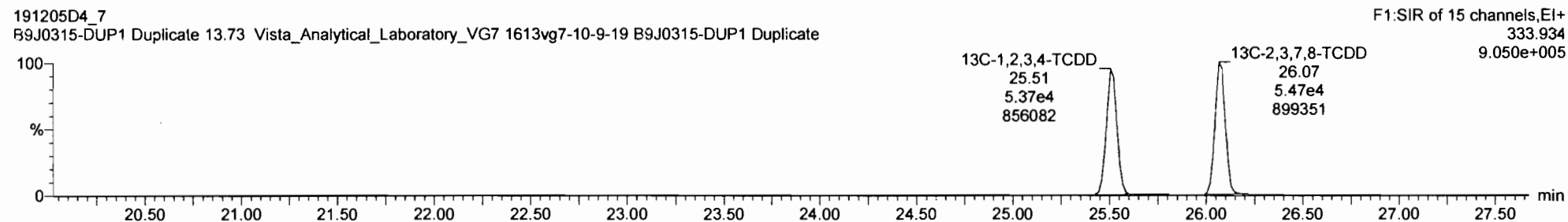
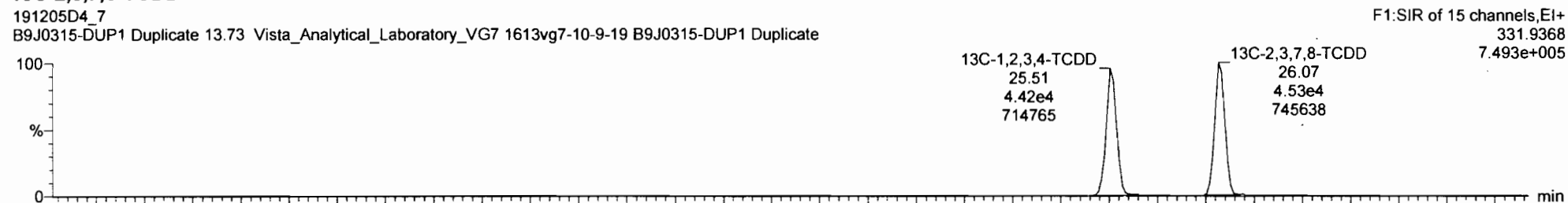


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**Total Tetra-Dioxins**



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



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

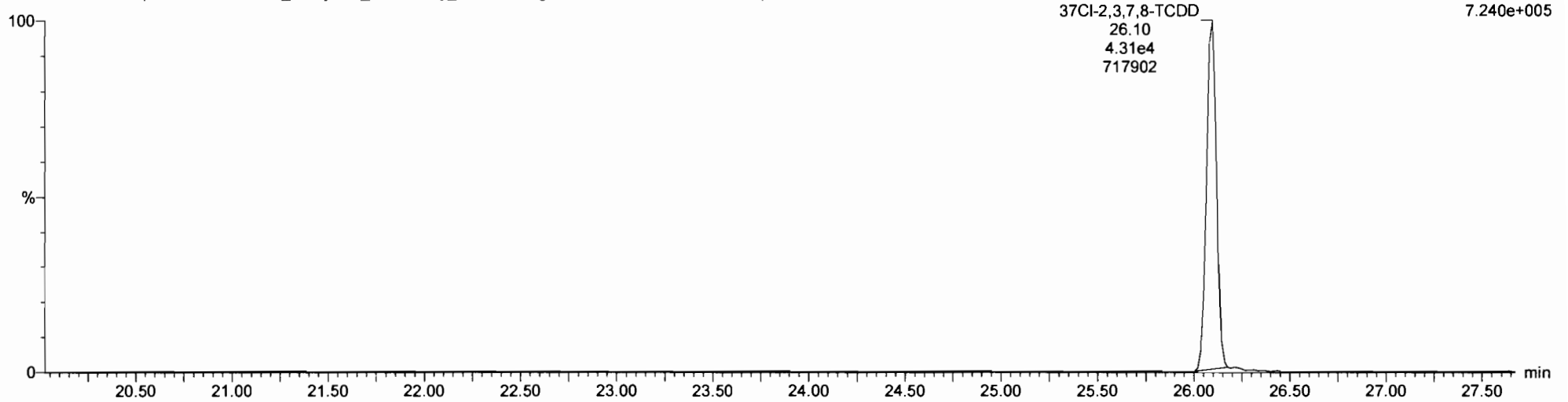
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Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

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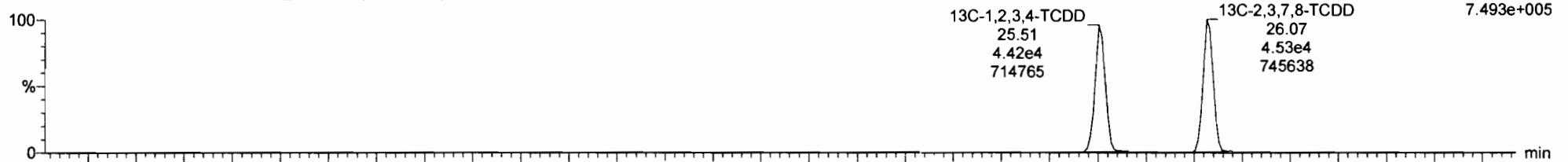
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**13C-1,2,3,4-TCDD**

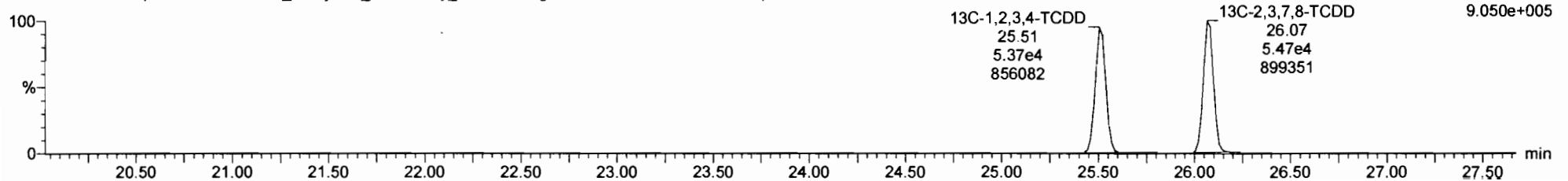
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F1:SIR of 15 channels,EI+  
331.9368  
7.493e+005



191205D4\_7  
B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate

F1:SIR of 15 channels,EI+  
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9.050e+005



Vista Analytical Laboratory

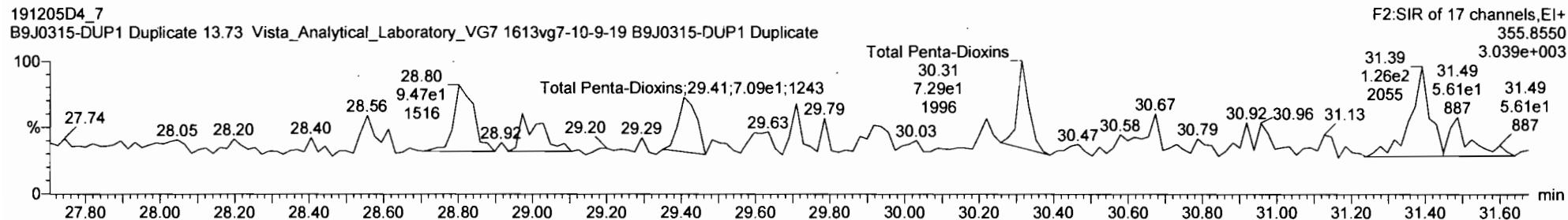
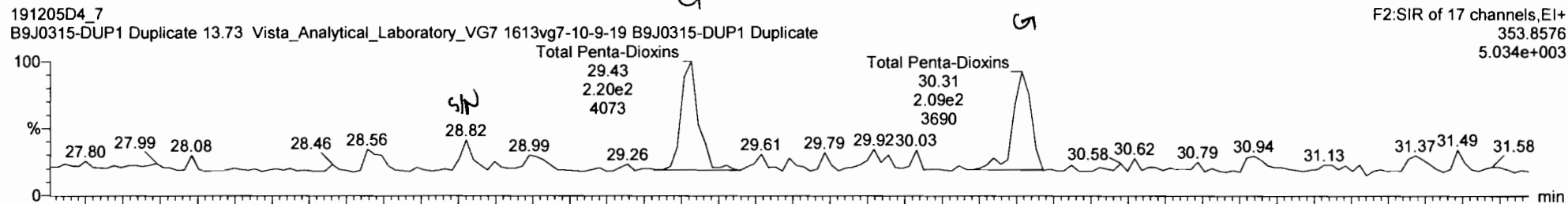
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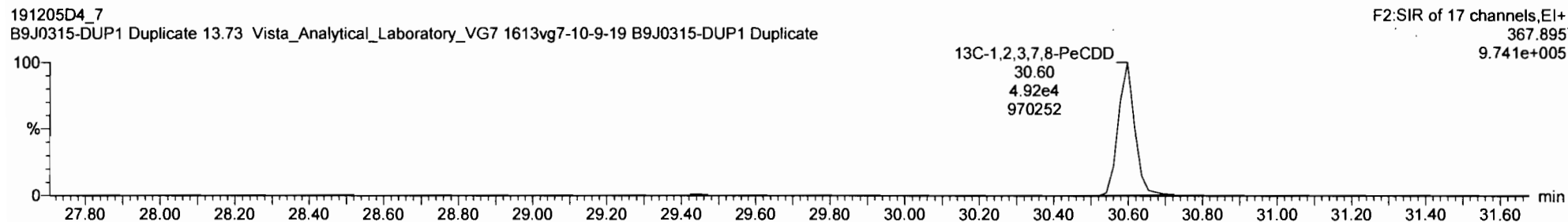
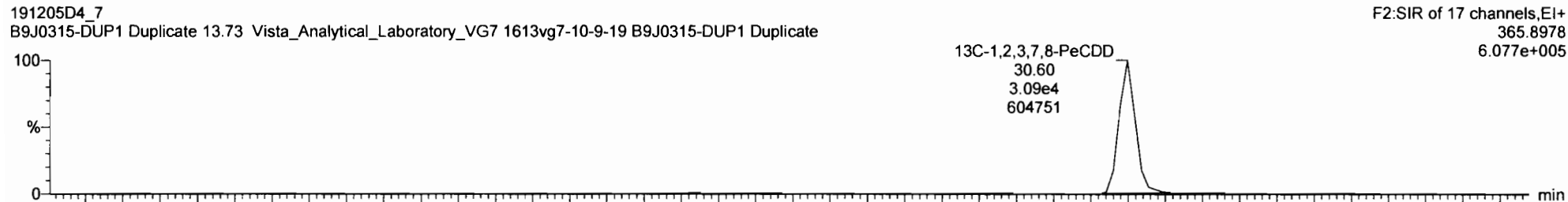
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Total Penta-Dioxins



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



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

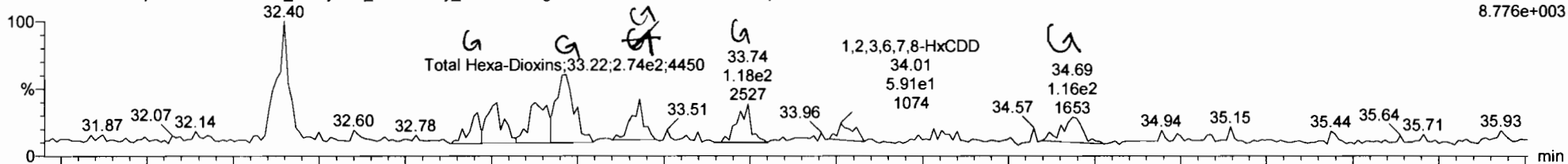
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Total Hexa-Dioxins

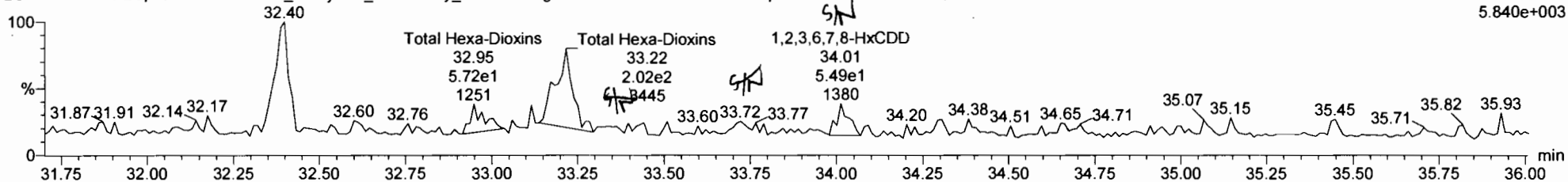
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F3:SIR of 11 channels,EI+ 389.816 8.776e+003



191205D4\_7 B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate

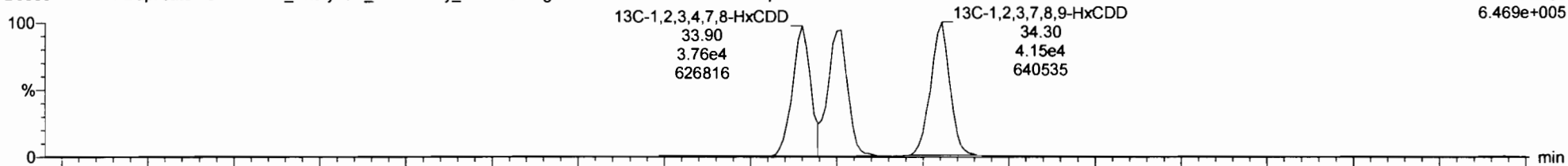
F3:SIR of 11 channels,EI+ 391.813 5.840e+003



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

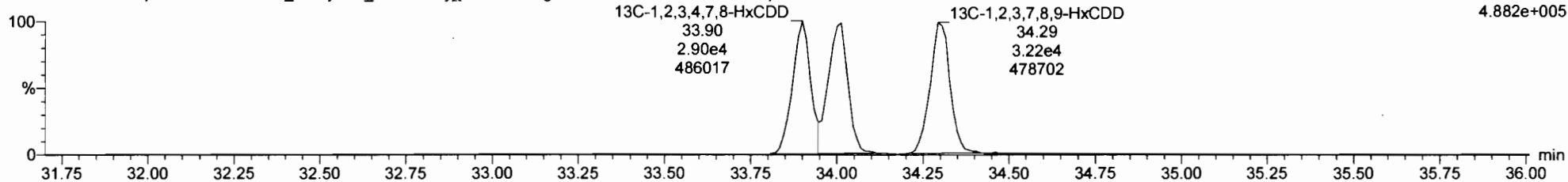
191205D4\_7 B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate

F3:SIR of 11 channels,EI+ 401.856 6.469e+005



191205D4\_7 B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate

F3:SIR of 11 channels,EI+ 403.853 4.882e+005

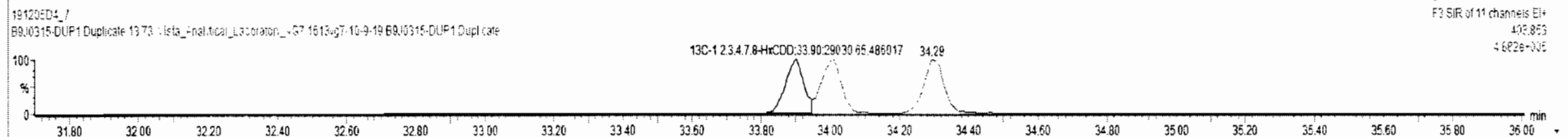
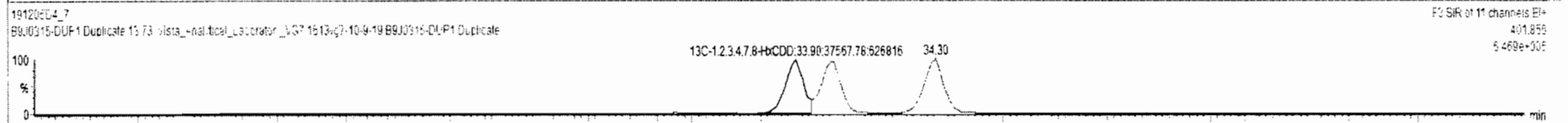
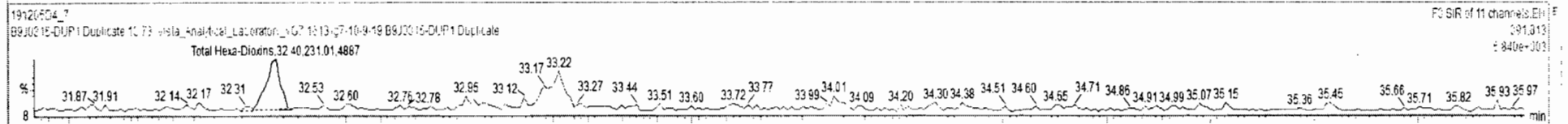
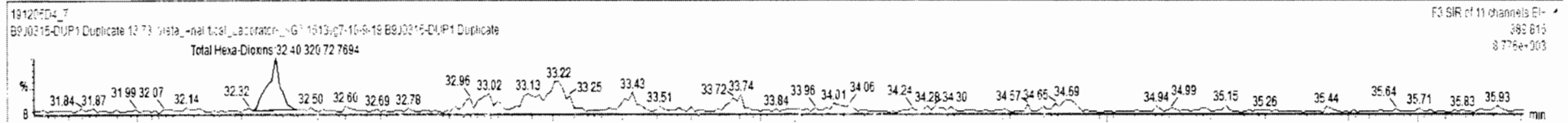




191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	R/F	w/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	1.27e5	38	0.43	NO	0.757	10.491	36.52	36.52	1.093	1.093	NO	140.2	73.6	1.12	
33	13C-1,2,3,4,6,8,9-HpCDF	6.19e4	1.27e5	38	0.45	NO	0.581	10.461	38.20	38.31	1.146	1.143	NO	159.6	63.9	1.46	
34	13C-OCDF	1.52e5	1.27e5	38	0.86	NO	0.689	10.491	41.21	41.24	1.234	1.233	NO	331.4	66.9	0.775	
35	37Cl-2,3,7,8-TCDD	4.31e4	9.79e4	36		NO	1.198	10.461	26.07	26.10	1.023	1.022	NO	70.05	91.9	0.176	
36	13C-1,2,3,4-TCDD	9.75e4	9.79e4	36	0.82	NO	1.000	10.491	25.50	25.51	1.000	1.000	NO	190.6	100	0.692	
37	13C-1,2,3,4-TCDF	1.63e5	1.63e5	27	0.79	NO	1.000	10.491	24.06	24.07	1.000	1.000	NO	190.6	100	0.633	
38	13C-1,2,3,4,6,9-HxCDF	1.27e5	1.27e5	38	0.52	NO	1.000	10.461	33.42	33.42	1.000	1.000	NO	190.6	100	0.999	
39	Total Tetra-Dioxins	1.00e5					0.801	10.461	25.50			0.000	NO			0.0883	
40	Total Penta-Dioxins	8.01e4					0.872	10.461	30.00			0.000	NO			0.117	
41	Total Hexa-Dioxins	0.00e0					0.976	10.461	33.80			0.000	NO	1.521		0.474	1.521
42	Total Hepta-Dioxins	6.11e4					0.669	10.461	37.75			0.000	NO	23.71		0.742	24.04
43	Total Tetra-Furans	1.65e5					0.943	10.461	24.00			0.000	NO	0.5414		0.176	1.145
44	1st Func Penta-Furans	0.00e0					0.940	10.461	27.63			0.000	NO	0.2563		0.0918	0.2563

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.60	32.40	3.207e2	2.310e2	1.240	1.39	NO	1.5214	1.5214



Vista Analytical Laboratory

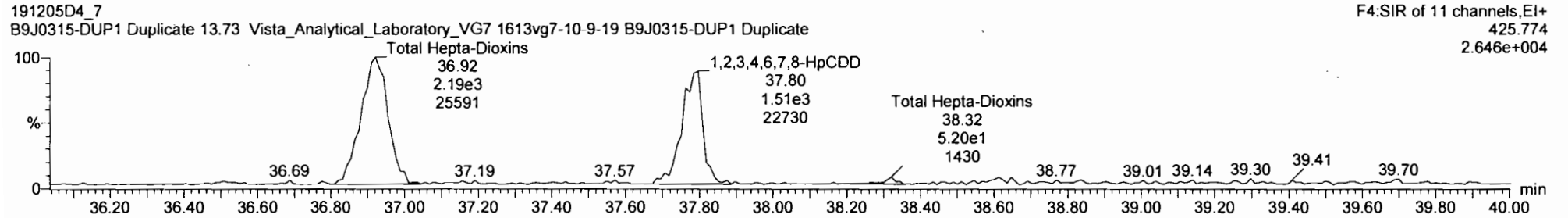
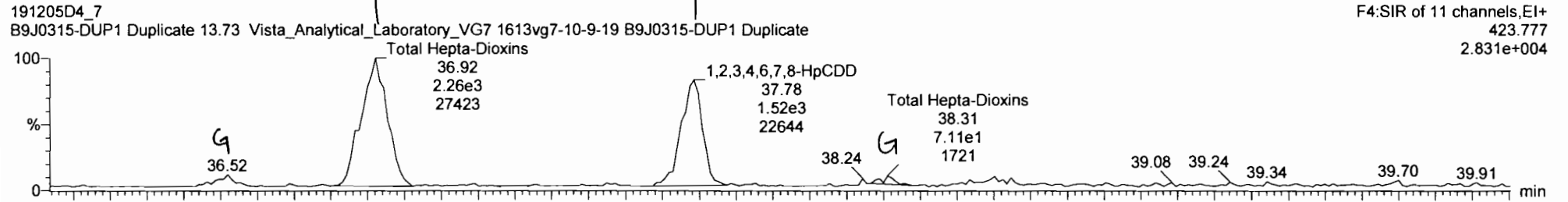
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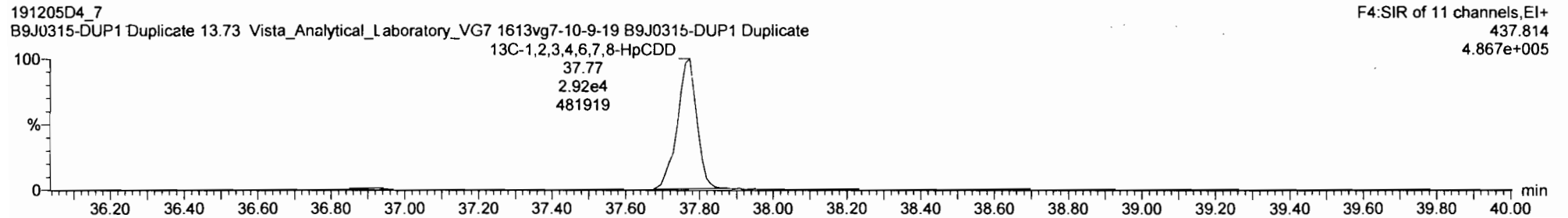
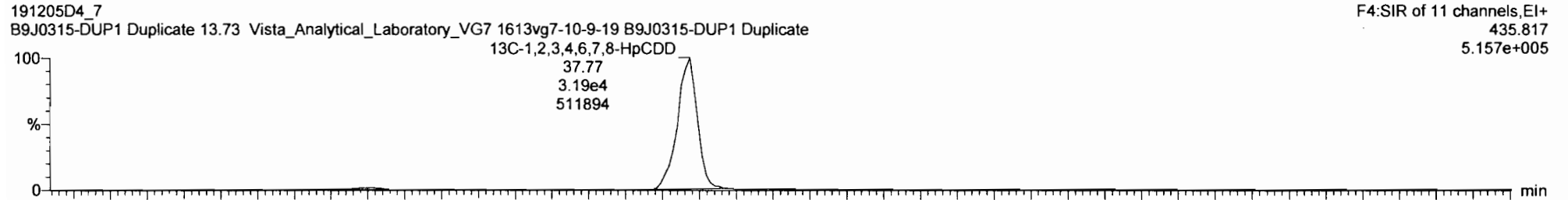
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Total Hepta-Dioxins



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

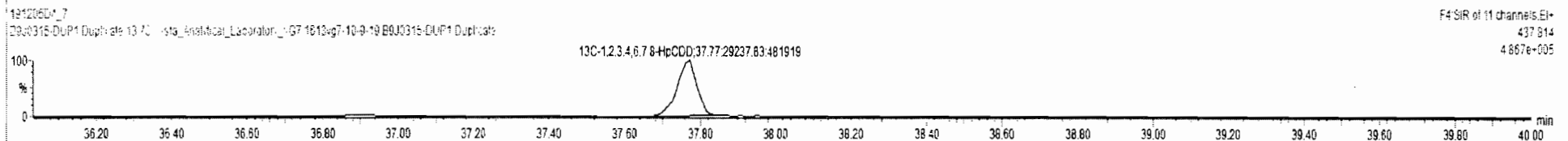
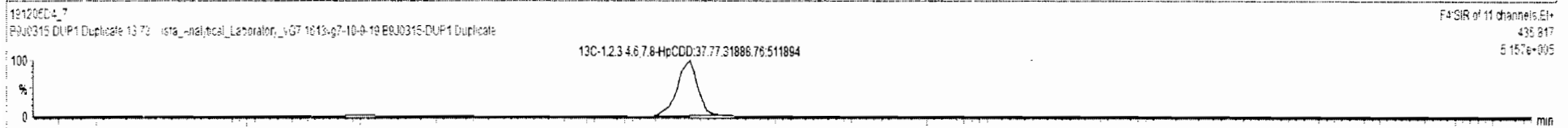
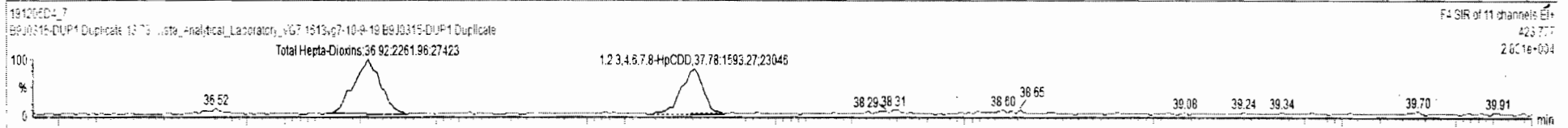




191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	1,2,3,4,6,7,8-HpCDF	7.07e4	1.27e5	38	0.43	NO	0.757	10.491	36.52	36.52	1.093	1.093	NO	140.2	73.6	1.12	
33	1,2,3,4,7,8,9-HpCDF	6.19e4	1.27e5	38	0.45	NO	0.581	10.491	36.20	38.31	1.146	1.143	NO	159.9	83.9	1.46	
34	1,3C-OCDF	1.52e5	1.27e5	38	0.88	NO	0.689	10.491	41.21	41.24	1.234	1.233	NO	231.4	86.9	0.775	
35	3TC-2,3,7,8-TCDD	4.31e4	5.79e4	36			1.156	10.491	26.07	26.10	1.023	1.022	NO	70.06	91.9	0.176	
36	1,3C-1,2,3,4-TCDD	9.79e4	9.79e4	36	0.82	NO	1.000	10.491	25.50	25.51	1.000	1.000	NO	150.6	100	0.693	
37	1,3C-1,2,3,4-TCDF	1.63e5	1.63e5	37	0.79	NO	1.000	10.491	24.06	24.07	1.000	1.000	NO	190.6	100	0.633	
38	1,3C-1,2,3,4,6,8-HxCDF	1.27e5	1.27e5	38	0.52	NO	1.000	10.491	33.42	33.42	1.000	1.000	NO	190.6	100	0.999	
39	Total Tetra-Dioxins						0.901	10.491	25.50				NO			0.0883	
40	Total Penta-Dioxins		8.01e4				0.872	10.491	30.00				NO			0.117	
41	Total Hexa-Dioxins		0.00e0				0.976	10.491	33.80				NO	1.521		0.474	1.521
42	Total Hepta-Dioxins		6.11e4				0.989	10.491	37.75				NO	23.58		0.742	23.58
43	Total Tetra-Furans		1.65e5				0.943	10.491	24.00				NO	0.5414		0.176	1.145
44	1st Func. Penta-Furans		0.00e0				0.940	10.491	27.63				NO	0.2553		0.0918	0.2553

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	38.92	2.262e3	2.142e3	1.040	1.06	NO	13.896	13.880
2	6 1,2,3,4,6,7,8-HpCDD	37.78	37.78	1.593e3	1.449e3	1.040	1.10	NO	9.687e	9.667e



Vista Analytical Laboratory

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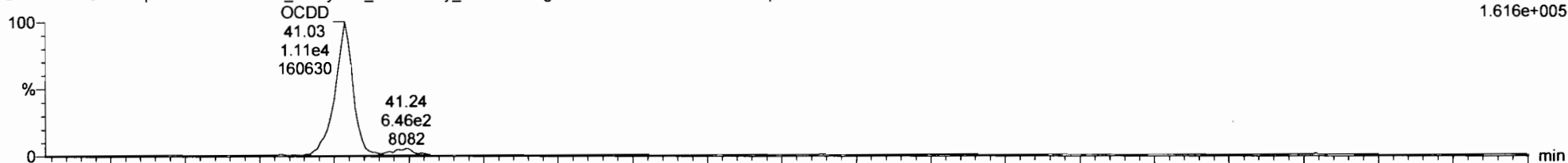
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OCDD

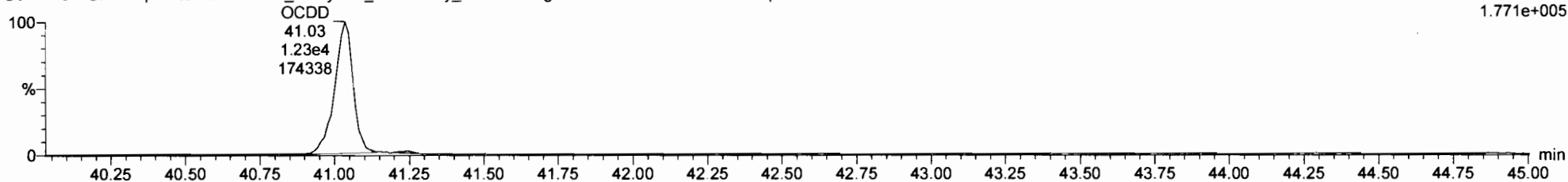
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F5:SIR of 11 channels,EI+  
457.738  
1.616e+005



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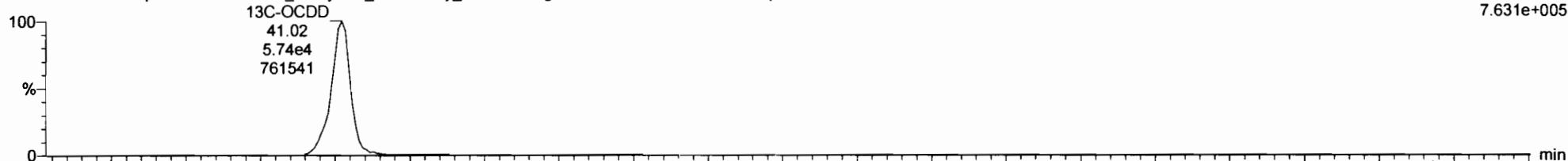
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13C-OCDD

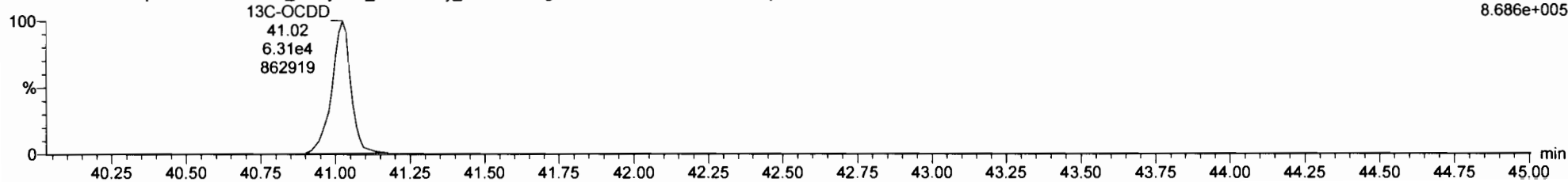
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F5:SIR of 11 channels,EI+  
469.778  
7.631e+005



191205D4\_7  
B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate

F5:SIR of 11 channels,EI+  
471.775  
8.686e+005





Vista Analytical Laboratory

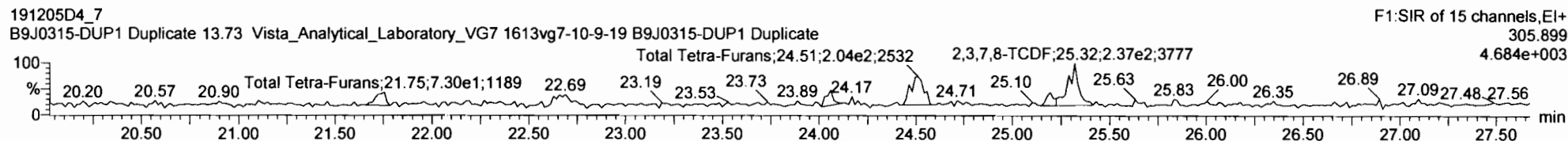
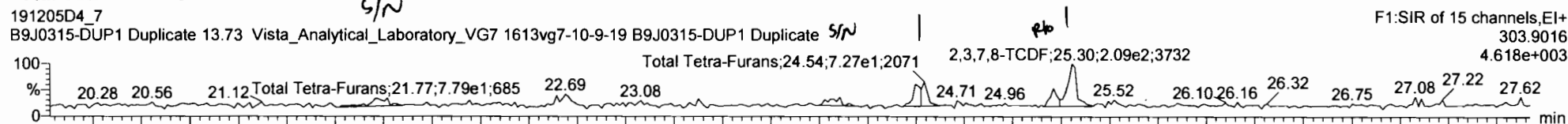
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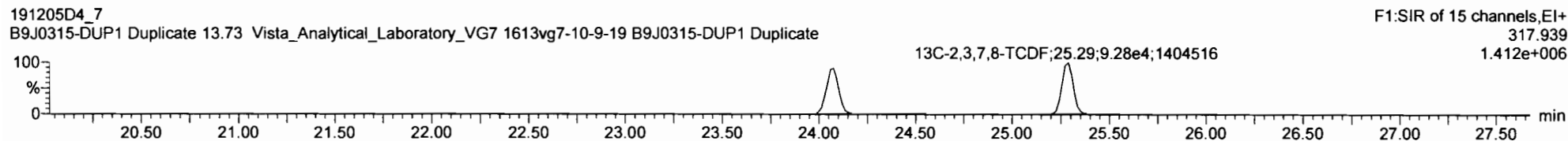
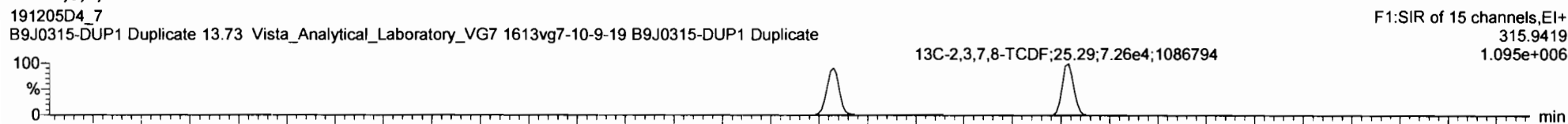
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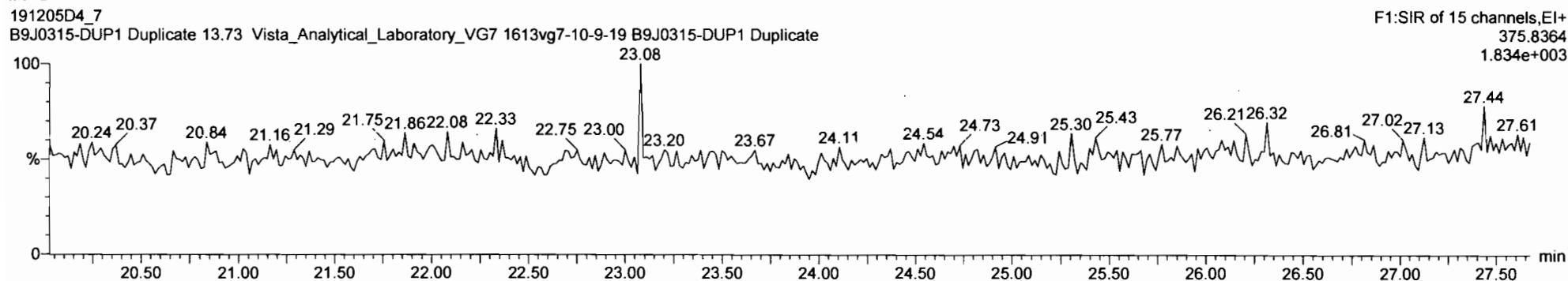
Total Tetra-Furans



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



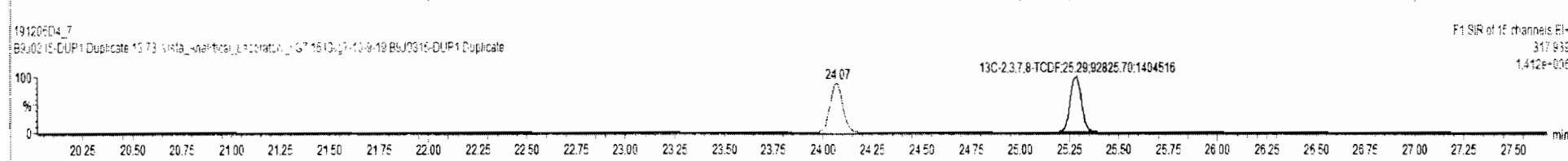
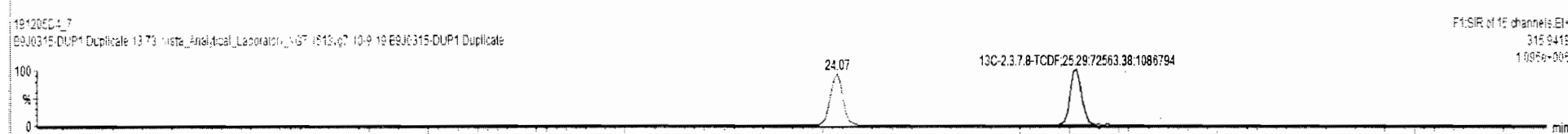
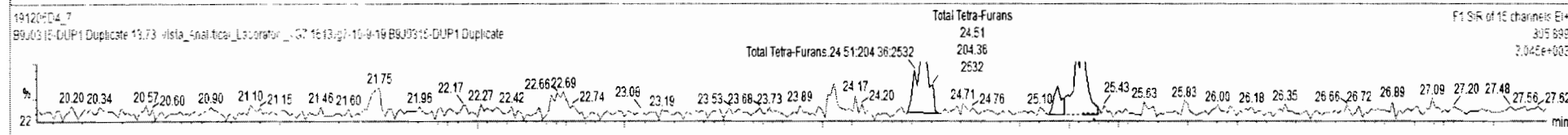
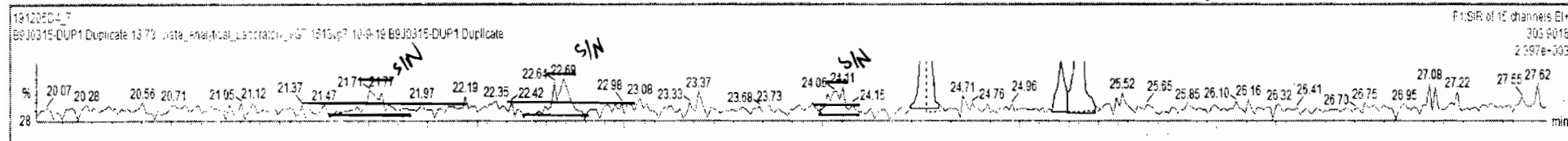
DPE1



191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	S Resp	IS#	RA	n/y	RF	w/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	1.27e5	38	0.42	NO	0.757	10.491	36.52	36.52	1.093	1.093	NO	140.2	73.6	1.12	
33	13C-1,2,3,4,6,8-HpCDF	6.19e4	1.27e5	38	0.45	NO	0.581	10.491	38.20	38.31	1.145	1.143	NO	159.8	83.9	1.46	
34	13C-OCDF	1.52e5	1.27e5	38	0.88	NO	0.689	10.491	41.21	41.24	1.234	1.233	NO	331.4	86.9	0.775	
35	37C-2,3,7,8-TCDF	4.31e4	9.79e4	38			1.198	10.491	26.07	26.10	1.023	1.022	NO	70.08	91.9	0.176	
36	13C-1,2,3,4-TCDF	9.79e4	9.79e4	38	0.82	NO	1.000	10.491	25.50	25.51	1.000	1.000	NO	190.6	100	0.693	
37	13C-1,2,3,4-TCDF	1.63e5	1.63e5	37	0.75	NO	1.000	10.451	24.06	24.07	1.000	1.000	NO	190.6	100	0.633	
38	13C-1,2,3,4,6,8-HxCDF	1.27e5	1.27e5	38	0.52	NO	1.000	10.491	33.42	33.42	1.000	1.000	NO	190.6	100	0.939	
39	Total Tetra-Dioxins		1.00e5				0.901	10.491	25.50			0.000	NO			0.0883	
40	Total Penta-Dioxins		8.01e4				0.872	10.491	30.00			0.000	NO			0.117	
41	Total Hexa-Dioxins		0.00e0				0.876	10.451	33.80			0.000	NO	1.521		0.474	1.521
42	Total Hepta-Dioxins		6.11e4				0.989	10.491	37.75			0.000	NO	23.58		0.742	23.58
43	Total Tetra-Furans		1.65e5				0.943	10.491	24.00			0.000	NO	0.9719		0.176	1.082
44	1st Func Penta-Furans		0.00e0				0.940	10.491	27.63			0.000	NO	0.2553		0.0918	0.2552

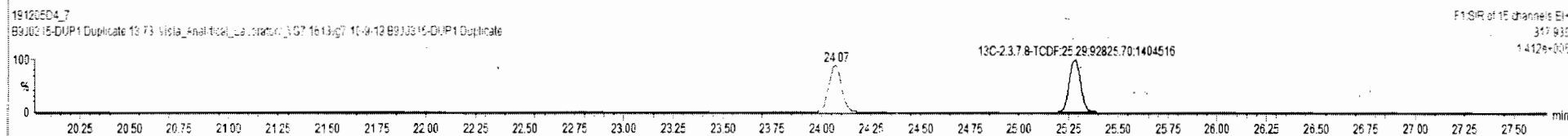
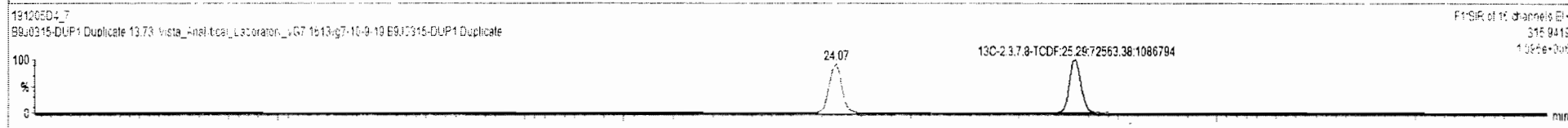
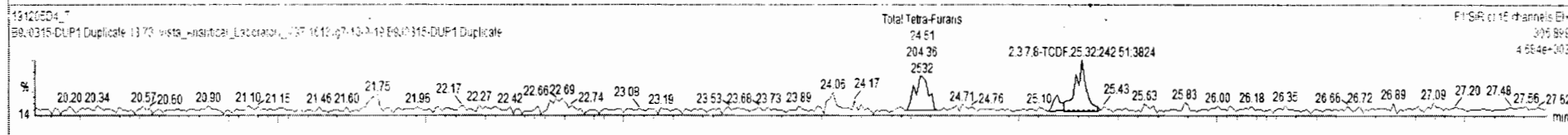
#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	24.54	1.401e2	2.044e2	0.770	0.68	NO	0.42108	0.42108
2	43 Total Tetra-Furans	24.00	25.21	6.555e1	5.056e1	0.770	1.30	YES	0.10563	0.00000
3	8 2,3,7,8-TCDF	25.31	25.30	2.115e2	2.425e2	0.770	0.87	NO	0.55084	0.55084



191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	SI	RA	n/y	RRF	wrtvol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
32	13C-1,2,3,4,6,7,8-HpCDF	7.07e4	1.27e5	38	0.42	NO	0.757	10.491	36.52	36.52	1.093	1.093	NO	140.2	73.8	1.12	
33	13C-1,2,3,4,7,8-HpCDF	6.19e4	1.27e5	38	0.45	NO	0.561	10.451	36.20	36.21	1.146	1.142	NO	159.9	60.9	1.46	
34	13C-OCDF	1.52e5	1.27e5	38	0.88	NO	0.689	10.451	41.21	41.24	1.234	1.232	NO	331.4	86.9	0.775	
35	37C-2,3,7,8-TCDD	4.31e4	9.79e4	36			1.196	10.491	26.07	26.10	1.023	1.022	NO	70.06	91.9	0.176	
36	13C-1,2,3,4-TCDD	9.79e4	9.79e4	36	0.82	NO	1.000	10.491	25.50	25.51	1.000	1.000	NO	190.6	100	0.693	
37	13C-1,2,3,4-TCDF	1.63e5	1.62e5	37	0.79	NO	1.000	10.491	24.06	24.07	1.000	1.000	NO	190.6	100	0.623	
38	13C-1,2,3,4,6,8-HxCDF	1.27e5	1.27e5	38	0.52	NO	1.000	10.491	33.42	33.42	1.000	1.000	NO	190.6	100	0.999	
39	Total Tetra-Dioxins		1.00e5				0.501	10.491	25.50			0.000	NO			0.0883	
40	Total Penta-Dioxins		8.01e4				0.872	10.491	30.00			0.000	NO			0.117	
41	Total Hexa-Dioxins		0.00e0				0.976	10.491	33.60			0.000	NO	1.521		0.474	1.521
42	Total Penta-Furans		6.11e4				0.969	10.491	37.75			0.000	NO	23.58		0.742	23.58
43	Total Tetra-Furans		1.65e5				0.943	10.491	24.00			0.000	NO	9.9719		0.176	1.082
44	1st Func. Penta-Furans		0.00e0				0.940	10.491	27.63			0.000	NO	0.2553		0.0918	0.2553

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	43 Total Tetra-Furans	24.00	24.54	1.401e2	2.944e2	0.770	0.69	NO	0.42108	0.42108
2	43 Total Tetra-Furans	24.00	25.21	6.565e1	5.056e1	0.770	1.30	YES	0.10963	0.00000
3	8 2,3,7,8-TCDF	25.31	25.30	2.115e2	2.425e2	0.770	0.87	NO	0.55084	0.55084



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191205D4\_7

NUM

Vista Analytical Laboratory

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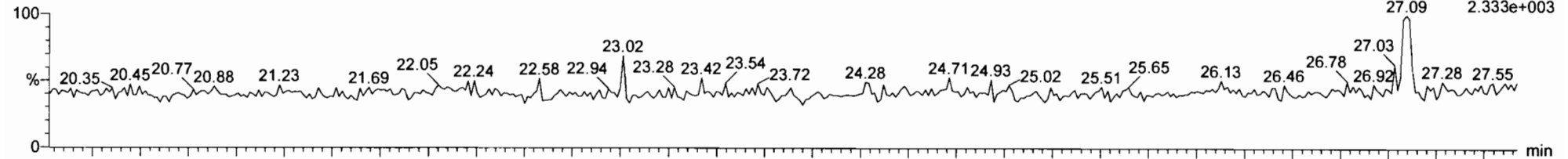
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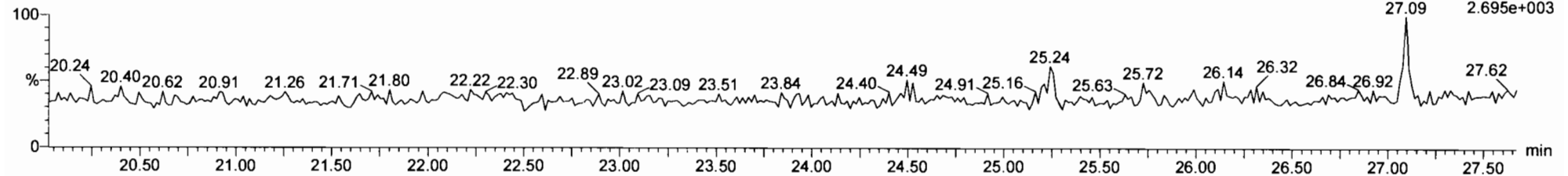
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Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans

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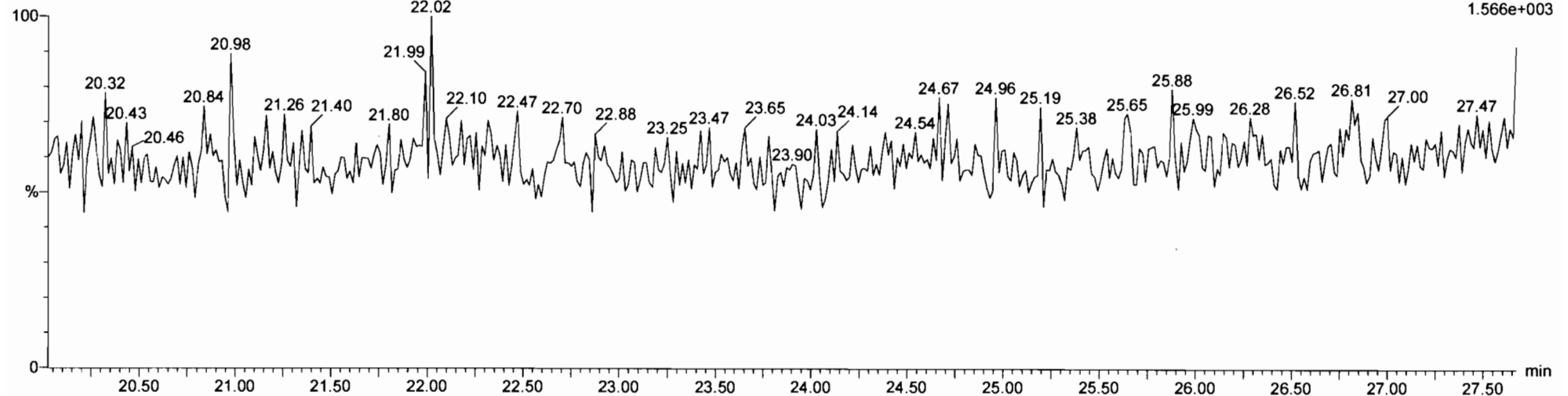


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B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate



DPE6

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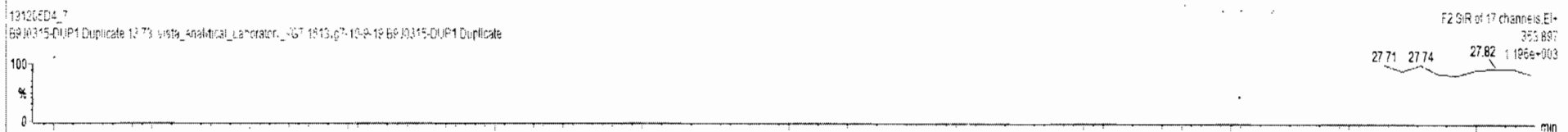
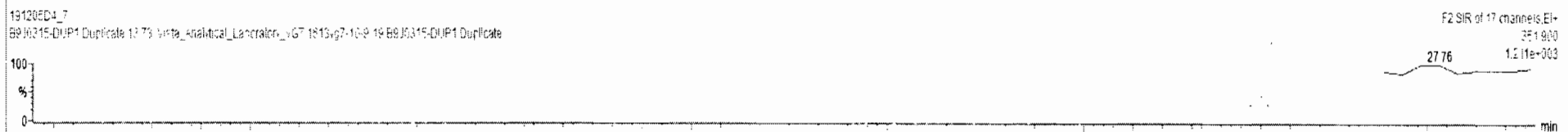
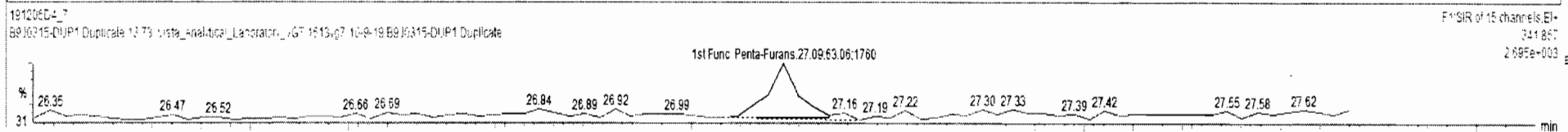
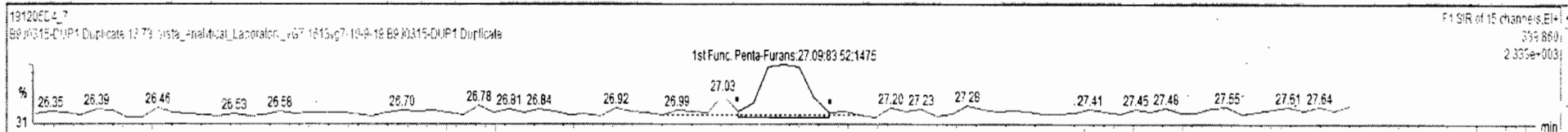




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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	w/voI	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
32	13C-1,2,3,4,6,7,8-HpCDF	7.07e4	1.27e5	38	0.43	NO	0.757	10.491	36.52	36.52	1.093	1.093	NO	140.2	73.6	1.12	
33	13C-1,2,3,4,7,8,9-HpCDF	6.19e4	1.27e5	38	0.45	NO	0.581	10.491	38.20	38.31	1.146	1.143	NO	159.8	83.9	1.46	
34	13C-OCDF	1.52e5	1.27e5	38	0.68	NO	0.689	10.491	41.21	41.24	1.234	1.233	NO	331.4	86.9	0.775	
35	37Cl-2,3,7,8-TCDD	4.31e4	9.79e4	36			1.198	10.491	26.07	26.10	1.023	1.022	NO	70.08	91.9	0.176	
36	13C-1,2,3,4-TCDD	9.79e4	9.79e4	36	0.82	NO	1.000	10.491	25.50	25.51	1.000	1.000	NO	190.8	100	0.693	
37	13C-1,2,3,4-TCDF	1.63e5	1.63e5	37	0.79	NO	1.000	10.491	24.06	24.07	1.000	1.000	NO	190.8	100	0.632	
38	13C-1,2,3,4,6,9-HxCDF	1.27e5	1.27e5	38	0.52	NO	1.000	10.491	33.42	33.42	1.000	1.000	NO	190.8	100	0.999	
39	Total Tetra-Dioxins		1.00e5				0.901	10.491	25.50			0.000	NO			0.0882	
40	Total Penta-Dioxins		8.01e4				0.672	10.491	30.00			0.000	NO			0.117	
41	Total Hexa-Dioxins		0.00e0				0.978	10.491	33.00			0.000	NO	1.521		0.474	1.521
42	Total Hepta-Dioxins		6.11e4				0.985	10.491	37.75			0.000	NO	23.58		0.742	23.58
43	Total Tetra-Furans		1.65e5				0.943	10.491	24.00			0.000	NO	0.9719		0.176	1.082
44	1st Func. Penta-Furans		0.00e0				0.940	10.491	27.63			0.000	NO	0.2256		0.0918	0.2256

#	Name	Pred RT	RT	mI Resp	mC Resp	Pred RA	RA	n/y	EMPC	Conc.
1	44 1st Func. Penta-Furans	27.63	27.09	6.352e1	6.306e1	1.550	1.32	NO	0.22558	0.22558



Vista Analytical Laboratory

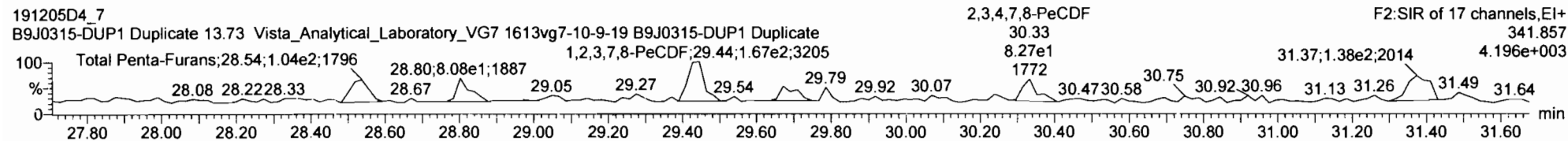
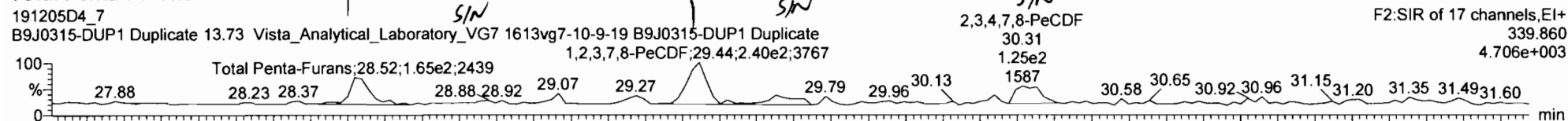
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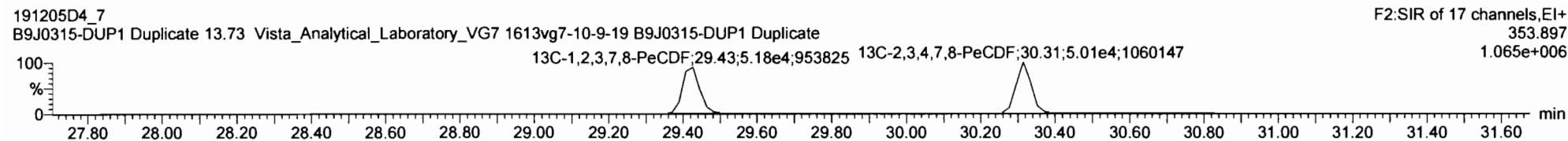
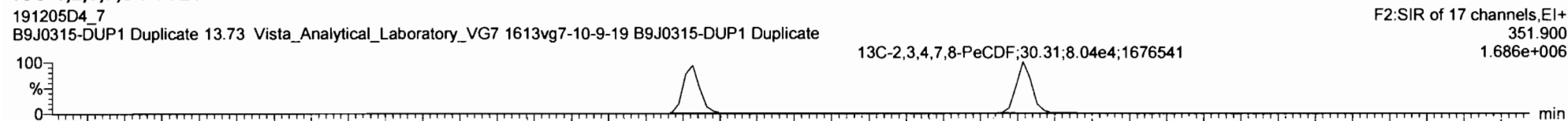
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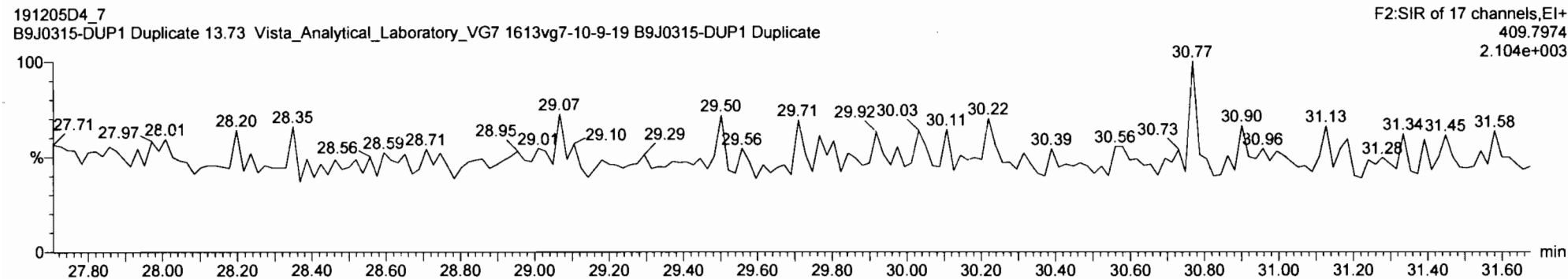
Total Penta-Furans



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



DPE2

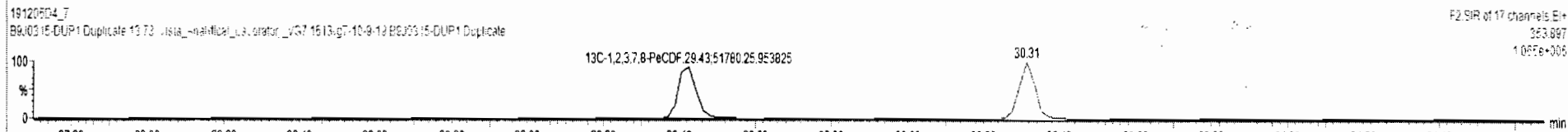
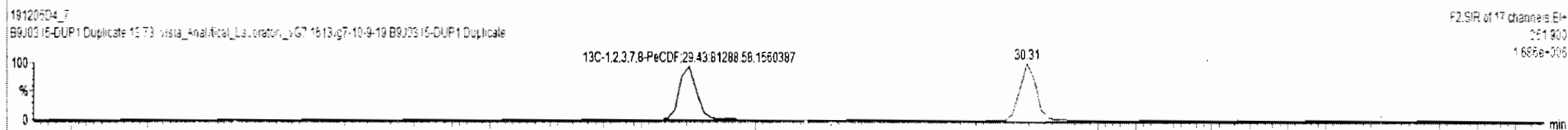
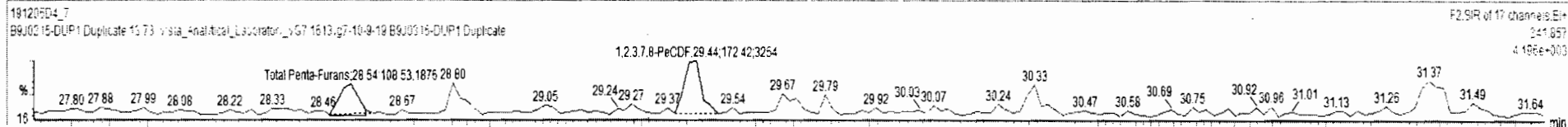
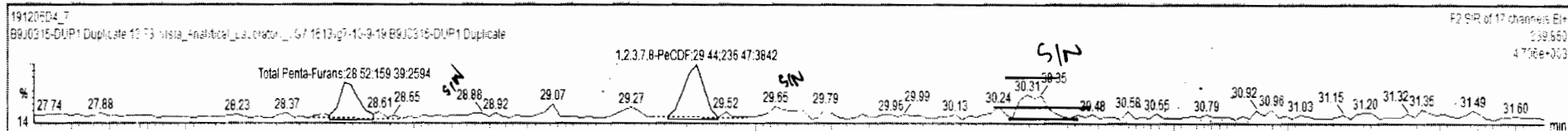




191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613ug7-10-9-19

#	Name	Resp	IS Resp	ES	RA	n/y	RRF	wfvol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
45	Total Penta-Furans		0.00e0				0.940	10.491	30.00			0.000	NO	1.022		0.160	1.022
46	Total Hexa-Furans		0.00e0				1.078	10.491	33.00			0.000	NO	0.3184		0.290	1.286
47	Total Hepta-Furans		0.00e0				1.135	10.491	27.75			0.000	NO	1.587		0.431	2.311
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																
53	DPE1																
54	DPE2																
55	DPE3																
56	DPE4																
57	DPE5																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	45 Total Penta-Furans	30.00	28.52	1.594e2	1.085e2	1.550	1.47	NO	0.41233	0.41233
2	9 1,2,3,7,8-PeCDF	29.45	29.44	2.365e2	1.724e2	1.550	1.37	NO	0.60995	0.60995



Vista Analytical Laboratory

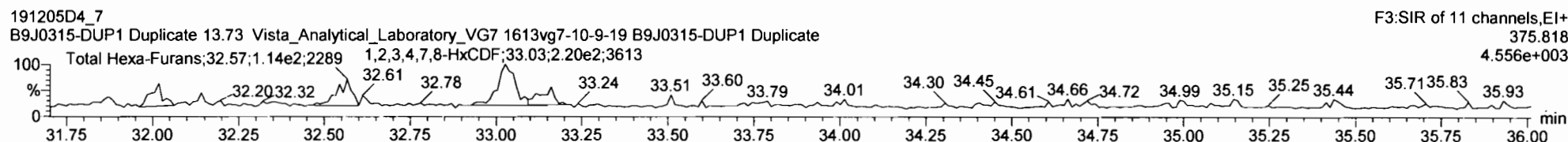
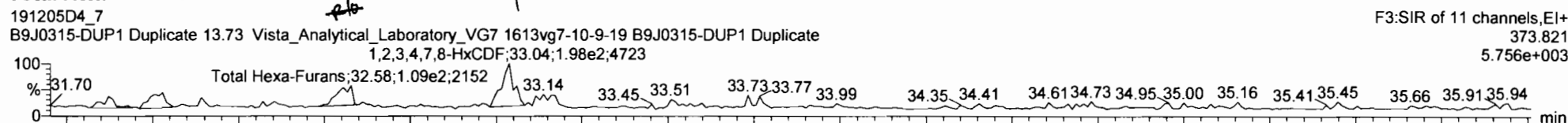
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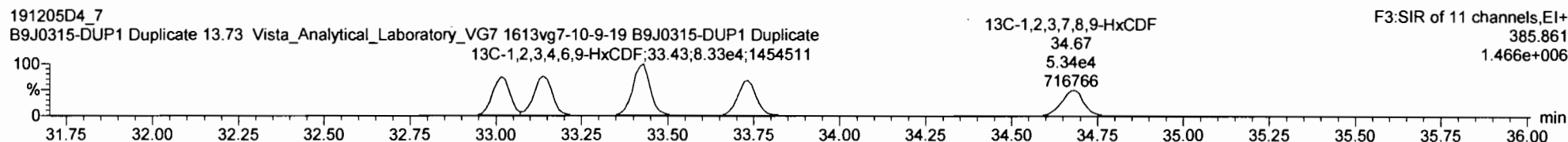
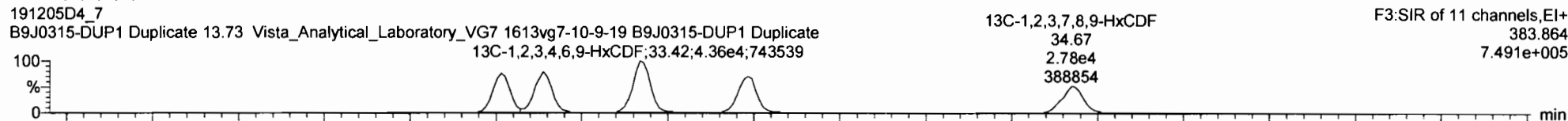
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_7, Date: 7-DEC-2019, Time: 10:53:01, ID: B9J0315-DUP1 Duplicate, Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

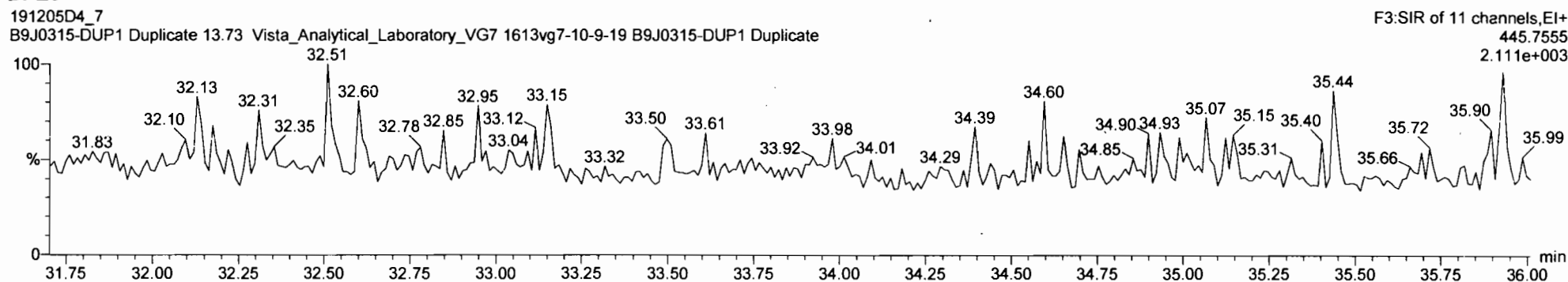
Total Hexa-Furans



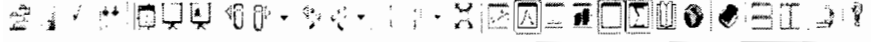
13C-1,2,3,4,7,8-HxCDF



DPE3



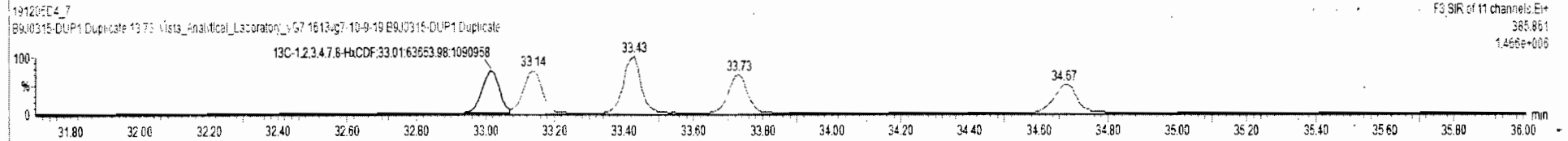
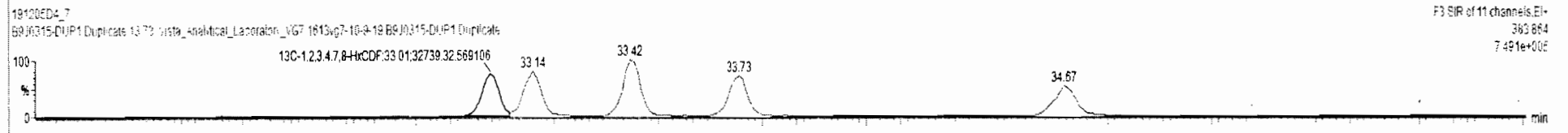
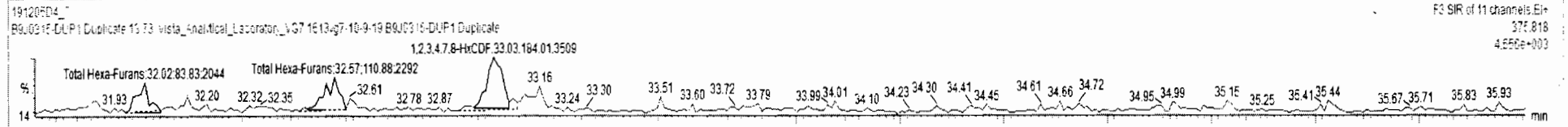
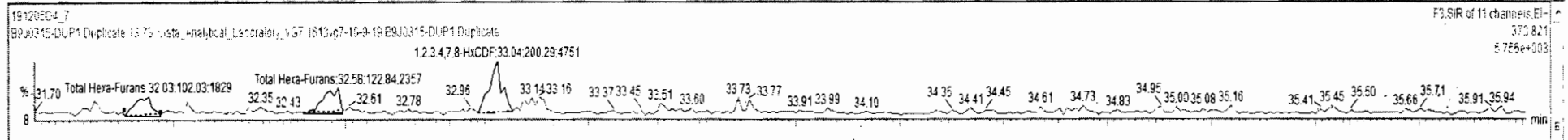




191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RPF	w/Vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
45	Total Penta-Furans		0.00e0				0.940	10.491	33.00			0.000	NO	1.022		0.100	1.022
46	Total Hexa-Furans		0.00e0				1.078	10.491	33.00			0.000	NO	1.435		0.290	1.435
47	Total Hepta-Furans		0.00e0				1.135	10.491	37.75			0.000	NO	1.567		0.431	2.311
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																
53	DPE1																
54	DPE2																
55	DPE3																
56	DPE4																
57	DPE5																

#	Name	Pred R.	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	Total Hexa-Furans	33.00	32.03	1.029e2	8.383e1	1.240	1.22	NO	0.34546	0.34546
2	Total Hexa-Furans	33.00	32.58	1.229e2	1.109e2	1.240	1.11	NO	0.43943	0.43943
3	1,2,3,4,7,8-HxCDF	33.01	33.04	2.003e2	1.649e2	1.240	1.09	NO	0.64584	0.64584



Vista Analytical Laboratory

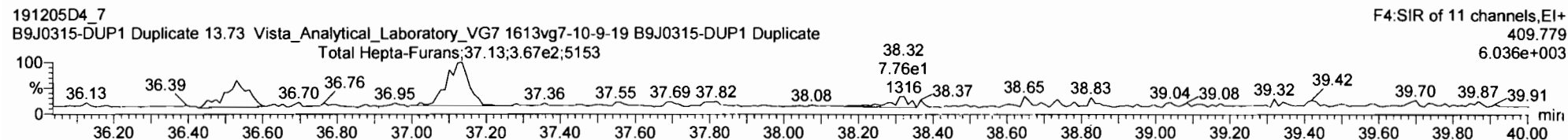
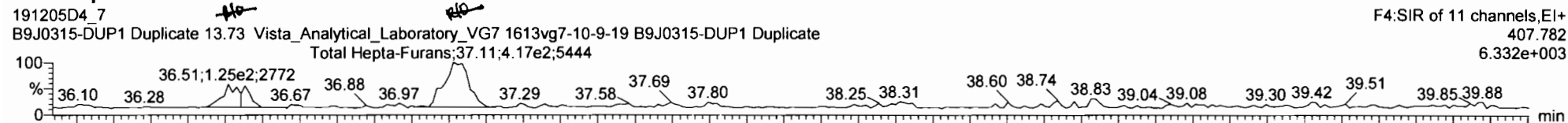
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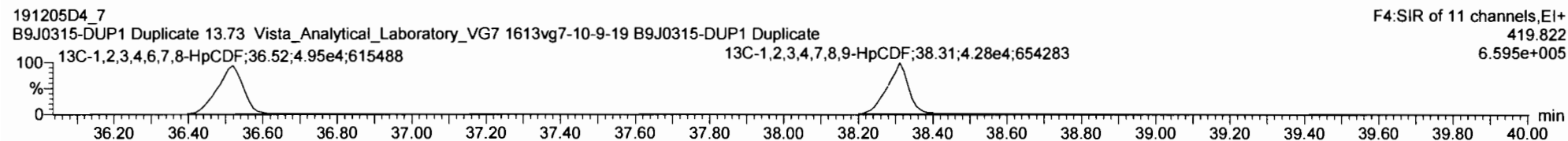
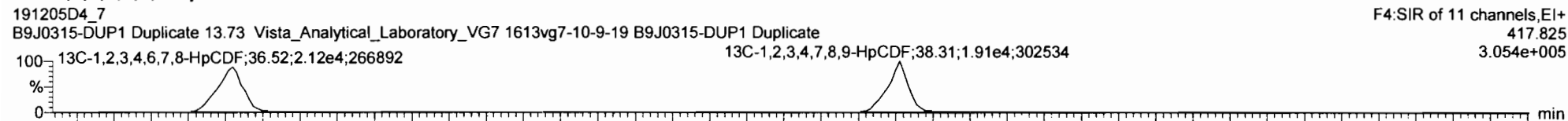
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Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

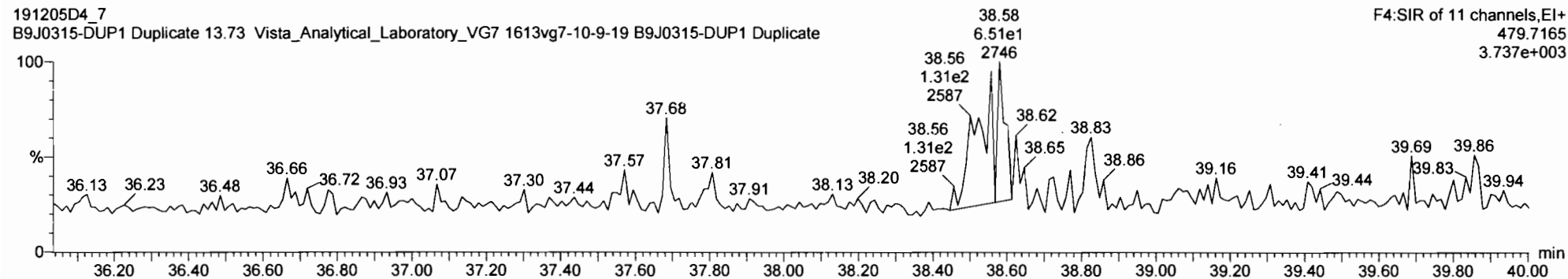
Total Hepta-Furans



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



DPE4

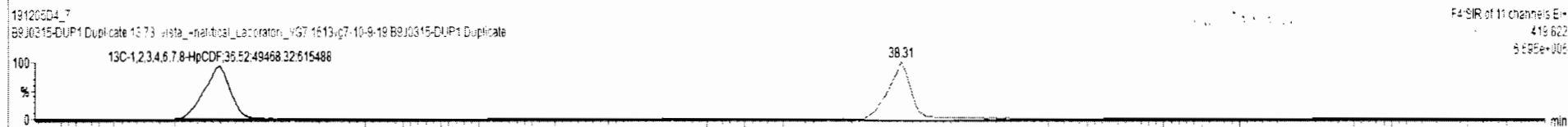
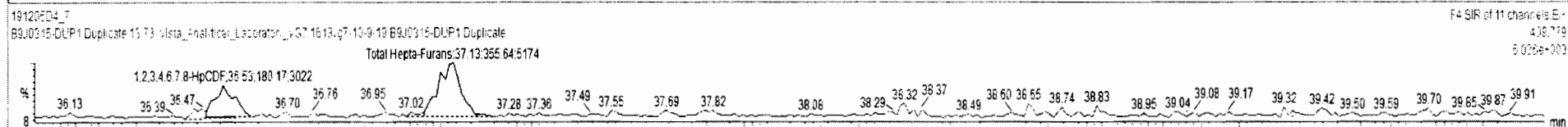
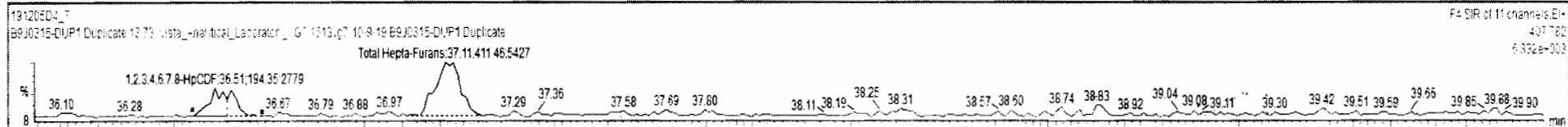




191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista Analytical Laboratory VG7 1613vg7 10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred.RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
45	Total Penta-Furans		0.00e0				0.940	10.491	30.00			0.000	NO	1.922		0.160	1.022
46	Total Hexa-Furans		0.00e0				1.078	10.491	33.00			0.000	NO	1.435		0.290	1.435
47	Total Hepta-Furans		0.00e0				1.135	10.401	37.75			0.000	NO	2.840		0.431	2.840
48	PFK1																
49	PFK2																
50	PFK3																
51	PFK4																
52	PFK5																
53	DPE1																
54	DPE2																
55	DPE3																
56	DPE4																
57	DPE5																

#	Name	Pred.R	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	15 1,2,3,4,6,7,8-HpCDF	36.55	36.51	1.943e2	1.802e2	1.040	1.08	NO	0.89550	0.89550
2	47 Total Hepta-Furans	37.75	37.11	4.115e2	3.556e2	1.040	1.16	NO	1.9441	1.9441



Vista Analytical Laboratory

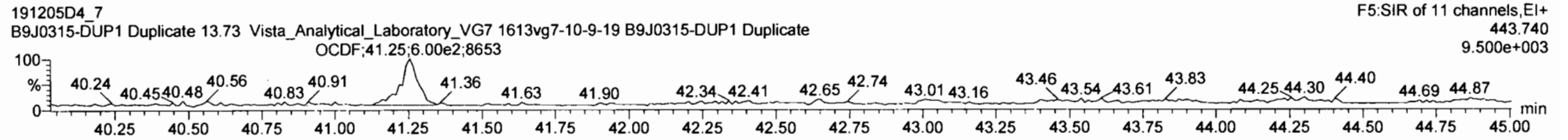
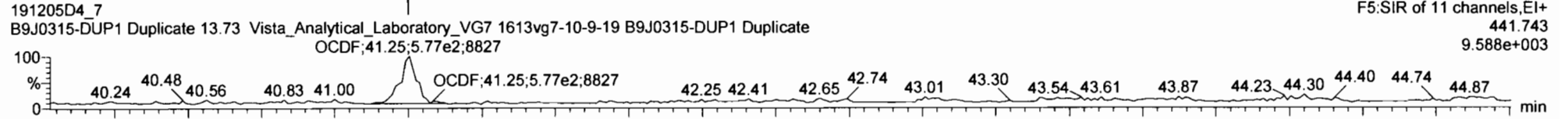
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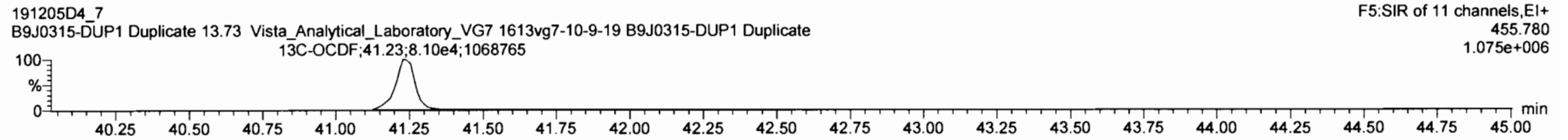
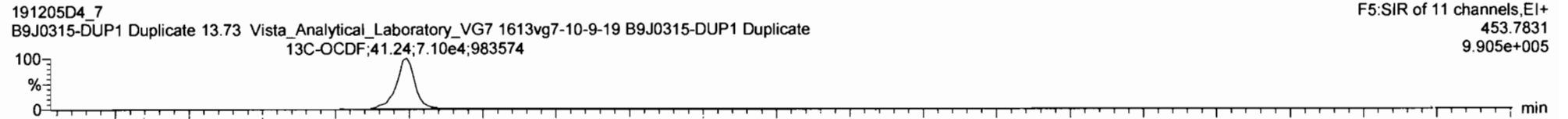
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Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

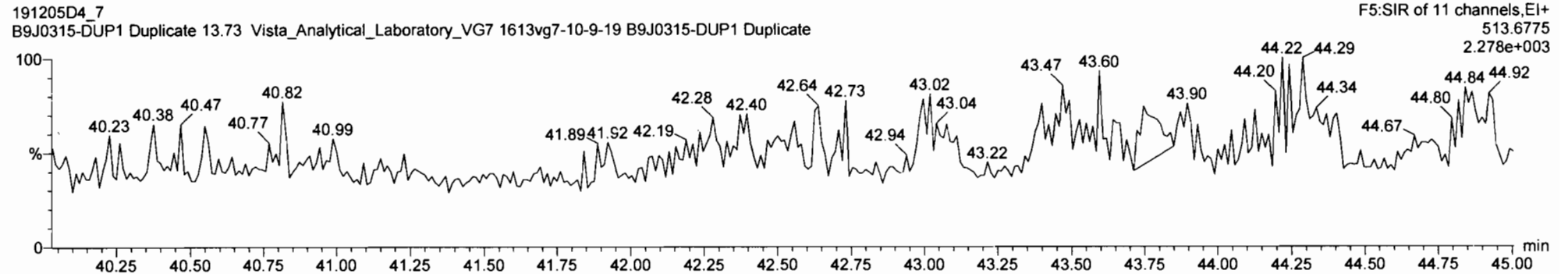
OCDF



13C-OCDF



DPE5

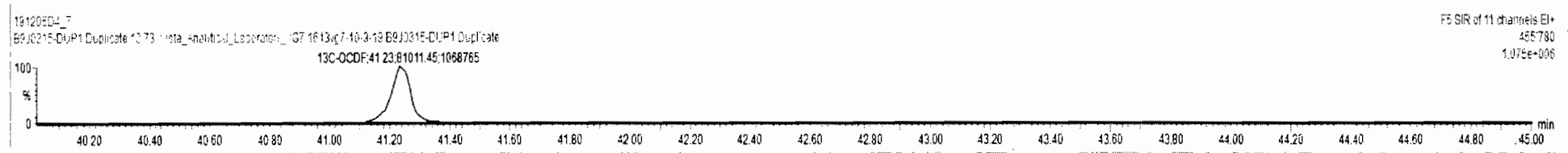
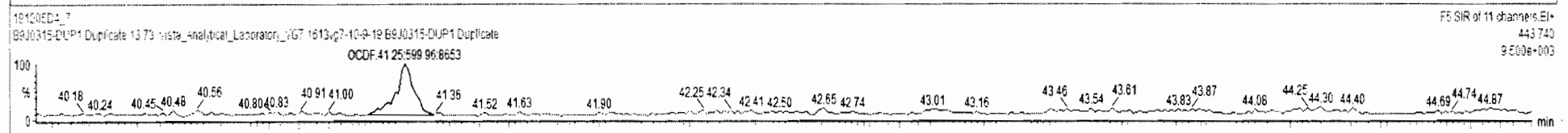
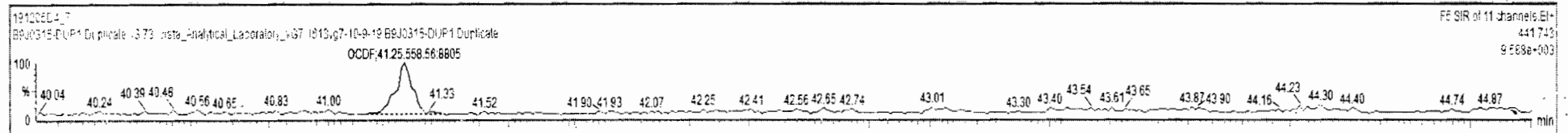




191205D4\_7 - B9J0315-DUP1 Duplicate - B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	ISF	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
11	11 1.2.3.4.7.8-HxCDF	3.84e2	9.64e4	26	1.09	NO	1.177	10.491	33.01	33.04	1.001	1.000	NO	0.6458		0.237	0.6458
12	12 1.2.3.6.7.8-HxCDF		1.02e5	29			1.099	10.491	32.15			1.000	NO			0.250	
13	13 2.3.4.6.7.8-HxCDF		9.60e4	30			1.114	10.491	33.77			1.001	NO			0.276	
14	14 1.2.3.7.8.9-HxCDF		8.12e4	31			1.062	10.491	34.67			1.000	NO			0.308	
15	15 1.2.3.4.6.7.8-HpCDF	3.75e2	7.07e4	32	1.08	NO	1.128	10.491	36.55	36.51	1.000	1.001	NO	0.8955		0.453	0.8955
16	16 1.2.3.4.7.8.9-HpCDF		6.19e4	33			1.280	10.491	38.31			1.000	NO			0.362	
17	17 OCDF	1.16e3	1.52e5	34	0.93	NO	0.947	10.491	41.24	41.25	1.000	1.000	NO	3.069		0.486	3.069
18	18 13C-2.3.7.8-TCDD	1.00e5	9.79e4	36	0.82	NO	1.095	10.491	26.04	26.07	1.022	1.021	NO	177.7	93.2	0.630	
19	19 13C-1.2.3.7.8-PeCDD	8.01e4	9.79e4	36	0.62	NO	0.881	10.491	30.27	30.60	1.200	1.167	NO	176.9	92.8	0.392	
20	20 13C-1.2.3.4.7.8-HxCDD	6.66e4	1.27e5	38	1.29	NO	0.642	10.491	33.88	33.90	1.014	1.014	NO	155.8	81.7	0.681	
21	21 13C-1.2.3.6.7.8-HxCDD	7.22e4	1.27e5	38	1.28	NO	0.856	10.491	34.00	34.01	1.018	1.017	NO	126.9	66.5	0.691	
22	22 13C-1.2.3.7.8.9-HxCDD	7.37e4	1.27e5	38	1.29	NO	0.807	10.491	34.30	34.30	1.027	1.026	NO	137.3	72.0	0.701	
23	23 13C-1.2.3.4.6.7.8-HpCDD	6.11e4	1.27e5	38	1.09	NO	0.654	10.491	37.64	37.77	1.130	1.126	NO	140.4	73.7	1.11	

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



Vista Analytical Laboratory

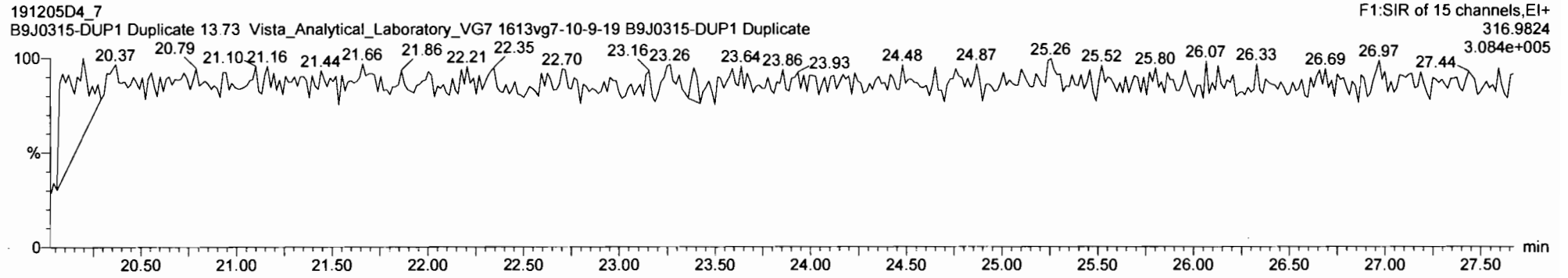
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

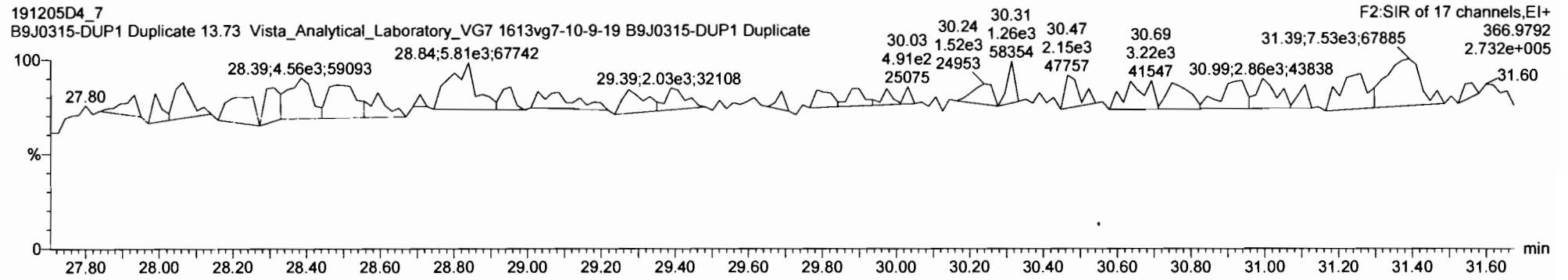
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Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

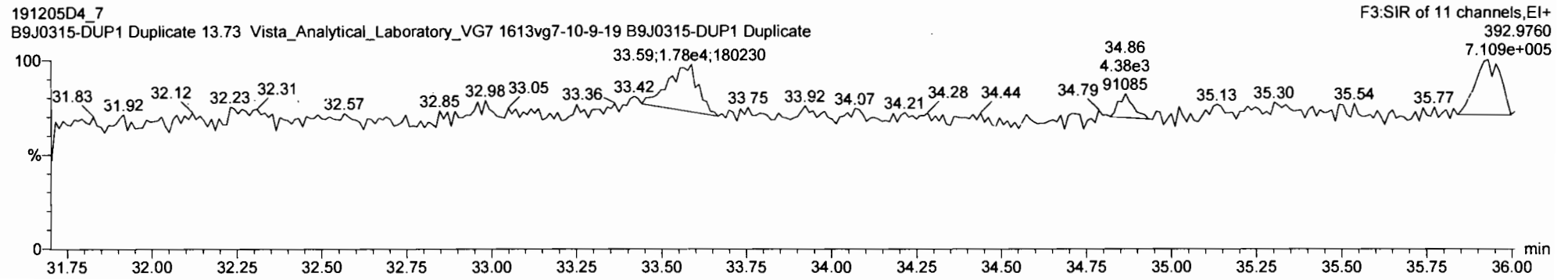
PFK1



PFK2



PFK3



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

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Description: B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

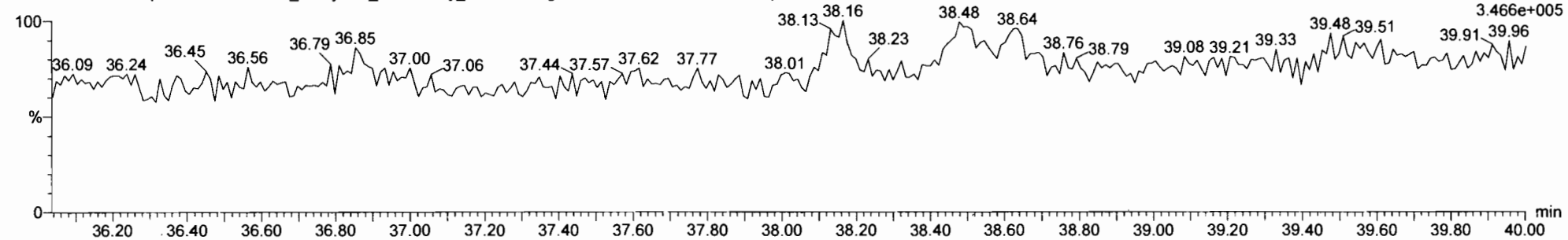
**PFK4**

191205D4\_7

B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate

F4:SIR of 11 channels,EI+

454.973



**PFK5**

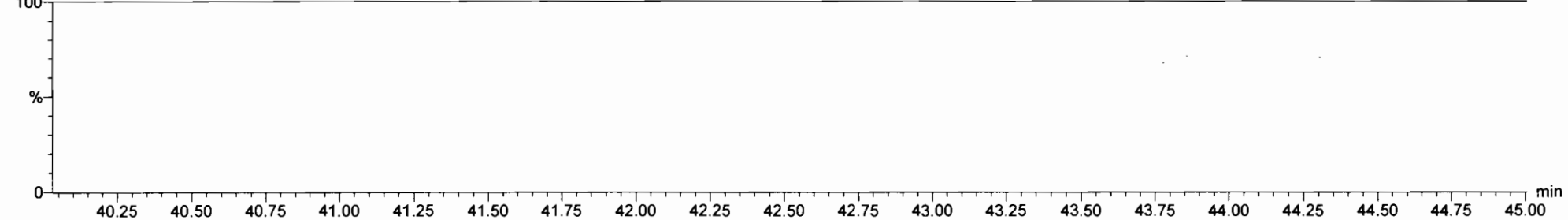
191205D4\_7

B9J0315-DUP1 Duplicate 13.73 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 B9J0315-DUP1 Duplicate

F5:SIR of 11 channels,EI+

454.9728

5.000e-001



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-8.qld

Last Altered: Thursday, December 19, 2019 13:20:01 Pacific Standard Time

Printed: Thursday, December 19, 2019 13:20:39 Pacific Standard Time

*EL 12/19/19*

*CT 12/20/19*

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 15:17:49

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Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_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		9.82e4	10.2285	0.905			1.001		26.10					0.244
2	2 1,2,3,7,8-PeCDD		8.28e4	10.2285	0.903			1.001		30.61					0.351
3	3 1,2,3,4,7,8-HxCDD		6.97e4	10.2285	1.101			1.000		33.89					0.375
4	4 1,2,3,6,7,8-HxCDD		8.52e4	10.2285	0.939			1.000		34.00					0.344
5	5 1,2,3,7,8,9-HxCDD		7.95e4	10.2285	0.961			1.001		34.32					0.388
6	6 1,2,3,4,6,7,8-HpCDD	1.62e3	6.44e4	10.2285	0.979	1.069	NO	1.000	1.000	37.77	37.77	5.0267		5.03	0.347
7	7 OCDD	1.14e4	1.22e5	10.2285	0.959	0.904	NO	1.000	1.000	41.01	41.02	38.136		38.1	0.482
8	8 2,3,7,8-TCDF		1.67e5	10.2285	0.950			1.001		25.30					0.180
9	9 1,2,3,7,8-PeCDF		1.34e5	10.2285	0.960			1.001		29.43					0.172
10	10 2,3,4,7,8-PeCDF		1.30e5	10.2285	1.015			1.001		30.33					0.169
11	11 1,2,3,4,7,8-HxCDF		9.86e4	10.2285	1.177			1.000		33.00					0.159
12	12 1,2,3,6,7,8-HxCDF		1.03e5	10.2285	1.069			1.000		33.13					0.163
13	13 2,3,4,6,7,8-HxCDF		1.03e5	10.2285	1.114			1.001		33.75					0.169
14	14 1,2,3,7,8,9-HxCDF		1.00e5	10.2285	1.062			1.000		34.66					0.216
15	15 1,2,3,4,6,7,8-HpCDF		7.58e4	10.2285	1.128			1.001		36.54					0.247
16	16 1,2,3,4,7,8,9-HpCDF		6.39e4	10.2285	1.280			1.000		38.29					0.202
17	17 OCDF	4.46e2	1.55e5	10.2285	0.947	0.633	YES	1.000	1.001	41.22	41.26	1.1905		0.980	0.242
18	18 13C-2,3,7,8-TCDD	9.82e4	9.13e4	10.2285	1.095	0.776	NO	1.021	1.022	26.05	26.07	192.06	98.2		0.687
19	19 13C-1,2,3,7,8-PeCDD	8.28e4	9.13e4	10.2285	0.881	0.614	NO	1.187	1.199	30.28	30.59	201.13	102.9		0.706
20	20 13C-1,2,3,4,7,8-Hx...	6.97e4	1.20e5	10.2285	0.642	1.292	NO	1.014	1.014	33.88	33.88	176.33	90.2		0.950
21	21 13C-1,2,3,6,7,8-Hx...	8.52e4	1.20e5	10.2285	0.856	1.265	NO	1.017	1.017	34.00	34.00	161.81	82.8		0.713
22	22 13C-1,2,3,7,8,9-Hx...	7.95e4	1.20e5	10.2285	0.807	1.275	NO	1.026	1.026	34.29	34.29	160.19	81.9		0.756
23	23 13C-1,2,3,4,6,7,8-H...	6.44e4	1.20e5	10.2285	0.654	1.066	NO	1.126	1.130	37.63	37.76	160.10	81.9		1.47
24	24 13C-OCDD	1.22e5	1.20e5	10.2285	0.580	0.925	NO	1.226	1.227	40.97	41.01	343.35	87.8		0.808
25	25 13C-2,3,7,8-TCDF	1.67e5	1.63e5	10.2285	1.035	0.768	NO	0.992	0.991	25.30	25.28	193.03	98.7		0.464
26	26 13C-1,2,3,7,8-PeCDF	1.34e5	1.63e5	10.2285	0.854	1.594	NO	1.154	1.153	29.43	29.41	187.91	96.1		0.644
27	27 13C-2,3,4,7,8-PeCDF	1.30e5	1.63e5	10.2285	0.847	1.593	NO	1.189	1.188	30.33	30.30	183.79	94.0		0.650
28	28 13C-1,2,3,4,7,8-Hx...	9.86e4	1.20e5	10.2285	0.832	0.510	NO	0.987	0.988	32.99	33.00	192.66	98.5		1.10
29	29 13C-1,2,3,6,7,8-Hx...	1.03e5	1.20e5	10.2285	1.034	0.532	NO	0.991	0.991	33.11	33.12	161.90	82.8		0.883
30	30 13C-2,3,4,6,7,8-Hx...	1.03e5	1.20e5	10.2285	0.953	0.518	NO	1.009	1.009	33.72	33.72	174.79	89.4		0.958
31	31 13C-1,2,3,7,8,9-Hx...	1.00e5	1.20e5	10.2285	0.828	0.524	NO	1.039	1.037	34.71	34.66	196.59	100.5		1.10



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-8.qld

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Printed: Thursday, December 19, 2019 13:20:39 Pacific Standard Time

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 Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_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...	7.58e4	1.20e5	10.2285	0.757	0.439	NO	1.093	1.092	36.51	36.50	162.72	83.2		0.938
33	33 13C-1,2,3,4,7,8,9-H...	6.39e4	1.20e5	10.2285	0.581	0.432	NO	1.143	1.146	38.20	38.29	178.65	91.4		1.22
34	34 13C-OCDF	1.55e5	1.20e5	10.2285	0.689	0.888	NO	1.233	1.234	41.21	41.22	365.12	93.4		0.639
35	35 37Cl-2,3,7,8-TCDD	4.10e4	9.13e4	10.2285	1.198			1.022	1.023	26.07	26.09	73.280	93.7		0.206
36	36 13C-1,2,3,4-TCDD	9.13e4	9.13e4	10.2285	1.000	0.797	NO	1.000	1.000	25.50	25.51	195.53	100.0		0.752
37	37 13C-1,2,3,4-TCDF	1.63e5	1.63e5	10.2285	1.000	0.786	NO	1.000	1.000	24.06	24.06	195.53	100.0		0.480
38	38 13C-1,2,3,4,6,9-Hx...	1.20e5	1.20e5	10.2285	1.000	0.495	NO	1.000	1.000	33.42	33.41	195.53	100.0		0.914
39	39 Total Tetra-Dioxins		9.82e4	10.2285	0.901			0.000		25.50					0.120
40	40 Total Penta-Dioxins		8.28e4	10.2285	0.872			0.000		30.00					0.167
41	41 Total Hexa-Dioxins		0.00e0	10.2285	0.976			0.000		33.80		0.00000		0.800	0.224
42	42 Total Hepta-Dioxins		6.44e4	10.2285	0.989			0.000		37.75		12.827		12.8	0.344
43	43 Total Tetra-Furans		1.67e5	10.2285	0.943			0.000		24.00					0.0844
44	44 1st Func. Penta-Fur...		0.00e0	10.2285	0.940			0.000		27.63					0.0618
45	45 Total Penta-Furans		0.00e0	10.2285	0.940			0.000		30.00					0.101
46	46 Total Hexa-Furans		0.00e0	10.2285	1.078			0.000		33.00					0.0991
47	47 Total Hepta-Furans		0.00e0	10.2285	1.135			0.000		37.75		0.80451		0.805	0.238

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-8.qld

Last Altered: Thursday, December 19, 2019 13:20:01 Pacific Standard Time

Printed: Thursday, December 19, 2019 13:20:39 Pacific Standard Time

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Calibration: 10 Dec 2019 15:17:49

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Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Tetra-Dioxins**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

**Penta-Dioxins**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

**Hexa-Dioxins**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1	41 Total Hexa-Dioxins	YES	32.37	206.172	43790.664	0.000	MM	0.0000	0.80

**Hepta-Dioxins**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
6	1,2,3,4,6,7,8-HpCDD	NO	37.77	837.990	33223.922	50.356	MM	5.0267	5.03
42	Total Hepta-Dioxins	NO	36.91	1367.377	33223.922	78.883	bb	7.8002	7.80

**Tetra-Furans**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC

**Penta-Furans function 1**

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-8.qld

Last Altered: Thursday, December 19, 2019 13:20:01 Pacific Standard Time

Printed: Thursday, December 19, 2019 13:20:39 Pacific Standard Time

Name: 191205D4\_8, Date: 7-DEC-2019, Time: 11:40:53, ID: 1903646-07 PDI-1029SC-A-12-13-191009,  
Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_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	47 Total Hepta-Furans	NO	37.13	158.929	21192.531	9.337	bb	0.8045	0.80

Vista Analytical Laboratory

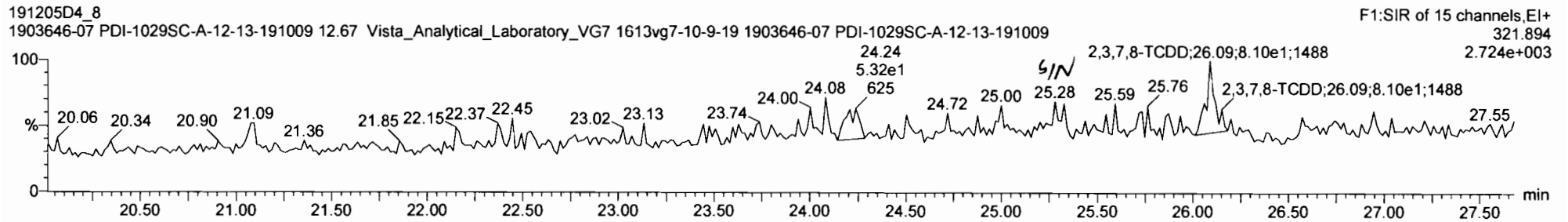
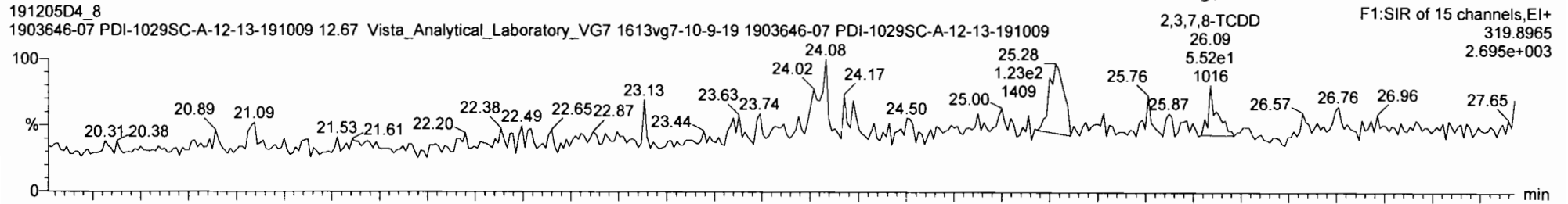
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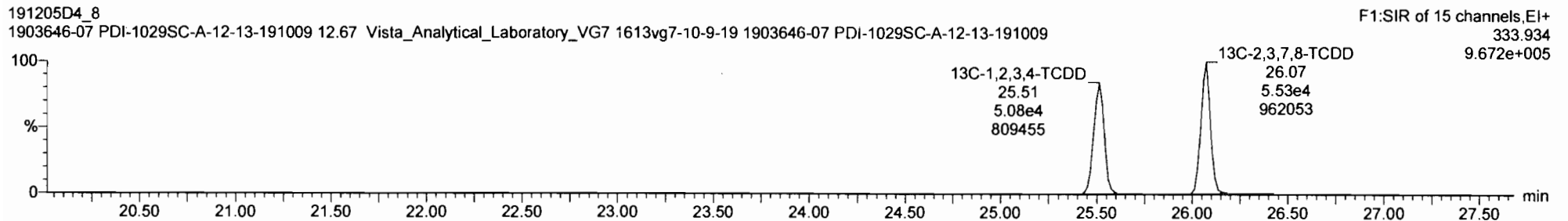
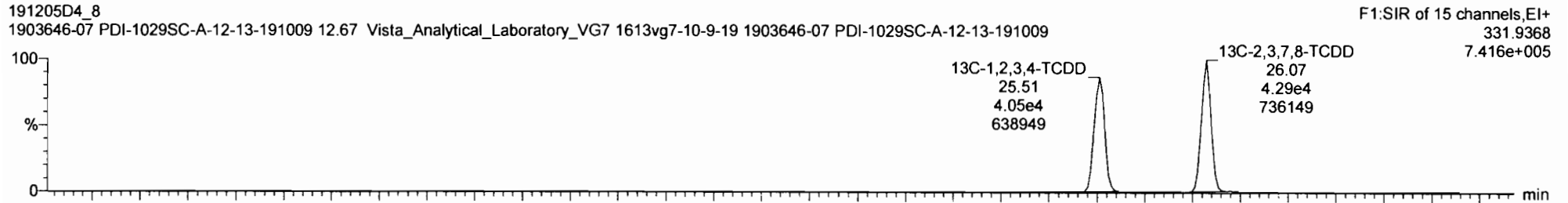
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Total Tetra-Dioxins



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

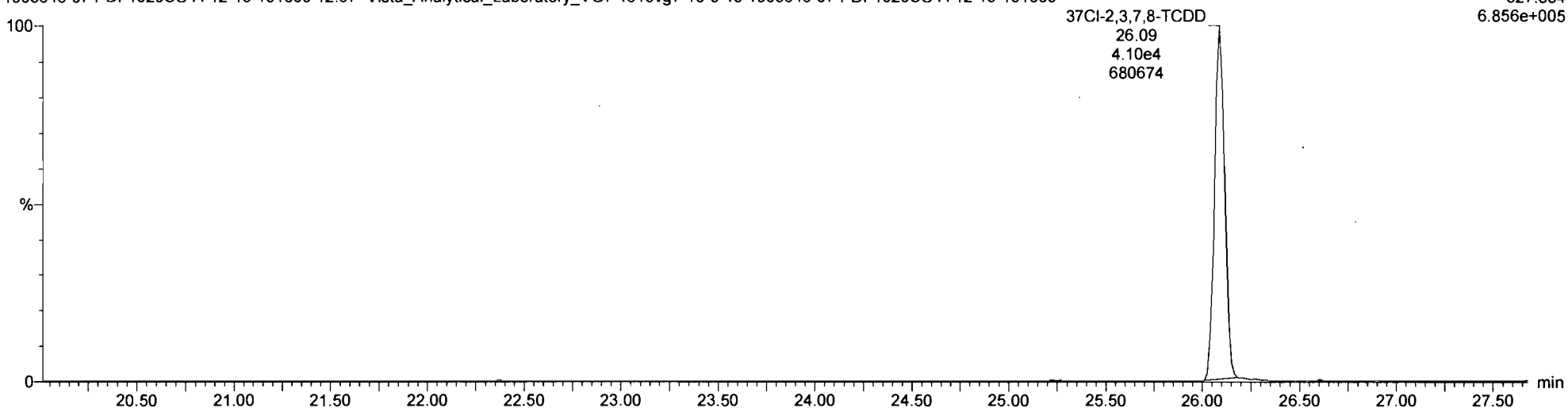


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**37Cl-2,3,7,8-TCDD**

191205D4\_8  
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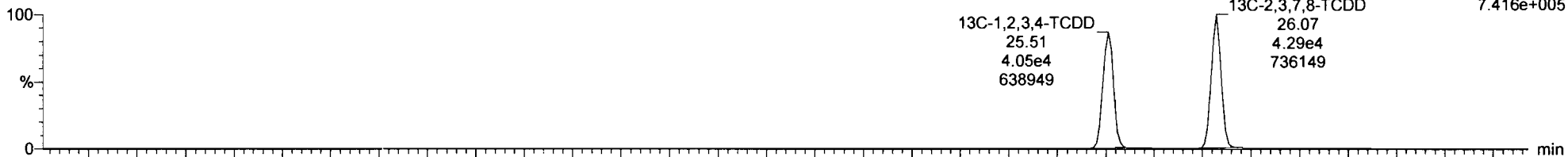
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**13C-1,2,3,4-TCDD**

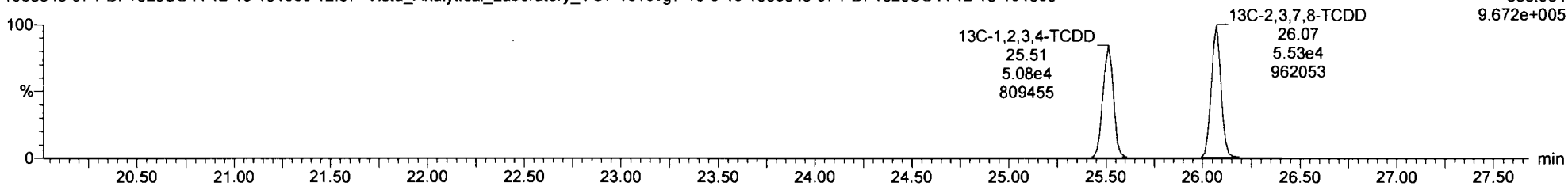
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F1:SIR of 15 channels,EI+  
331.9368  
7.416e+005



191205D4\_8  
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Vista Analytical Laboratory

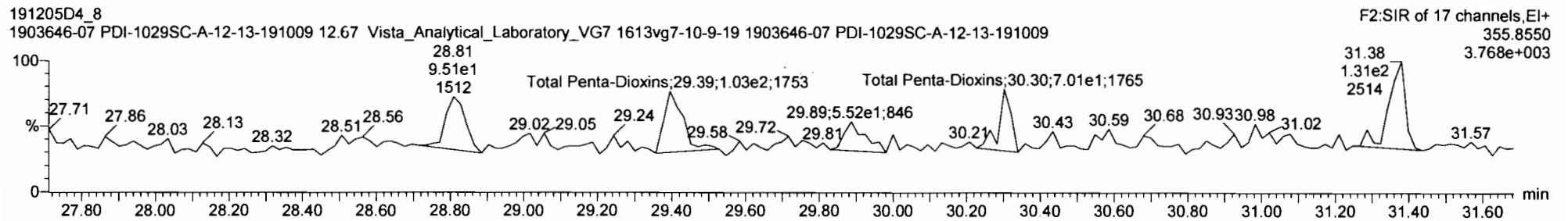
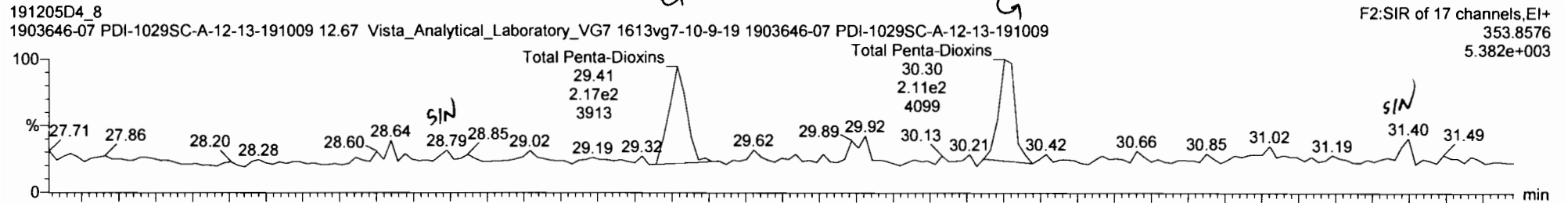
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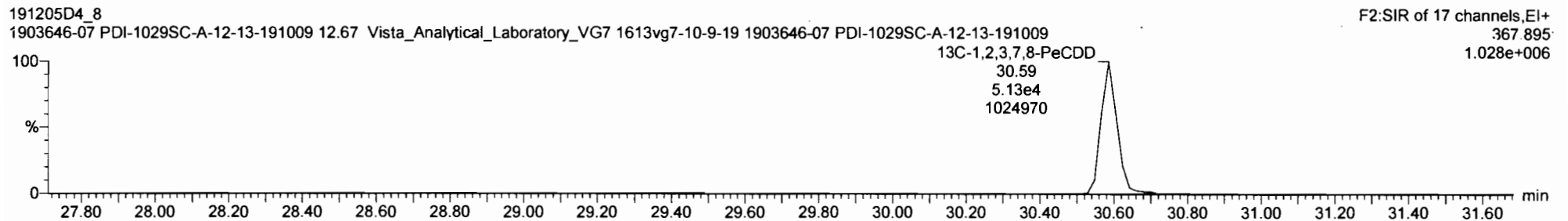
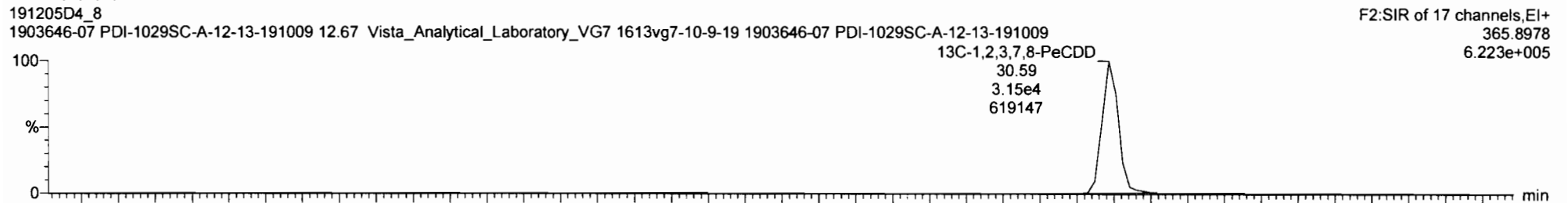
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Total Penta-Dioxins

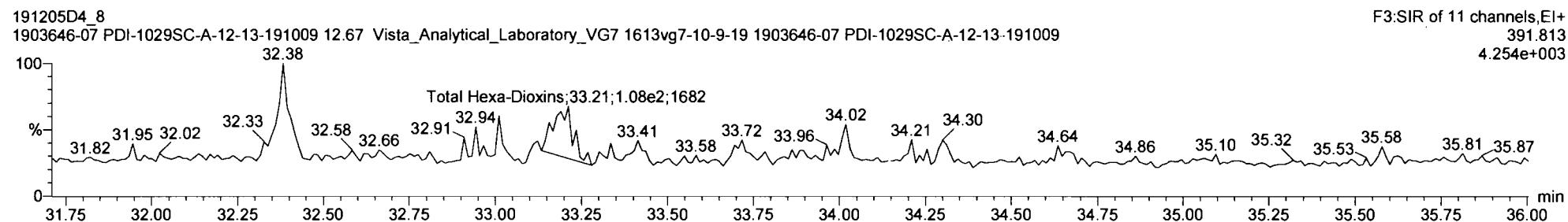
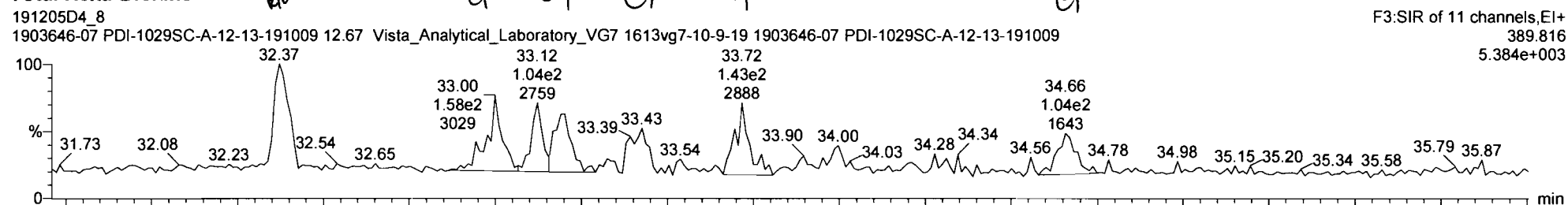


13C-1,2,3,7,8-PeCDD

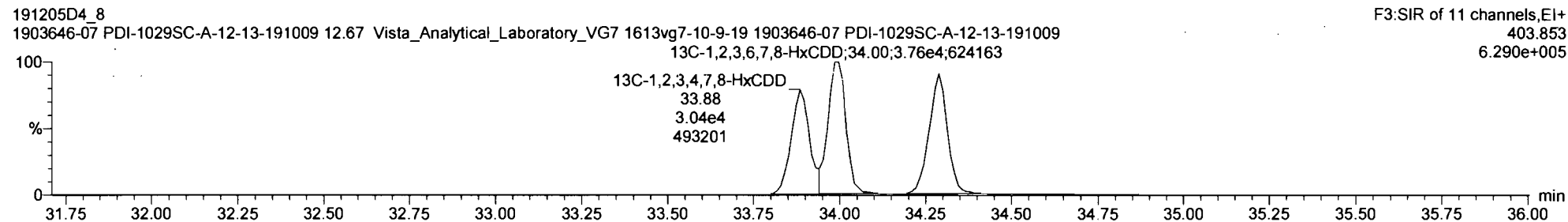
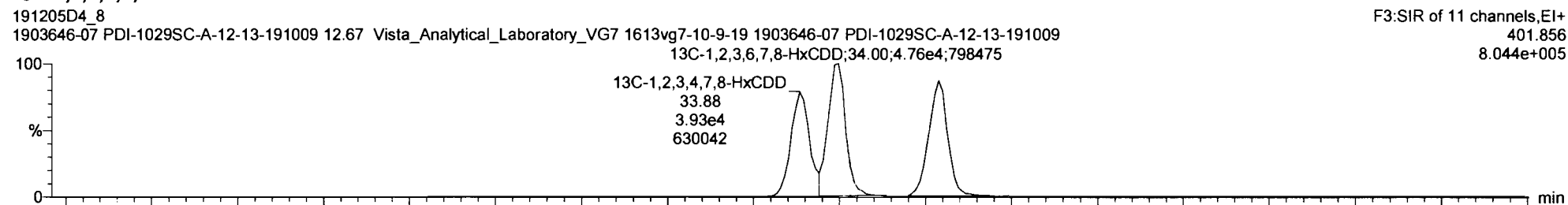


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 Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

**Total Hexa-Dioxins**



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

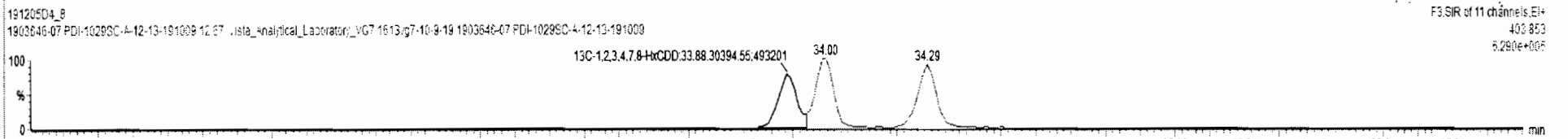
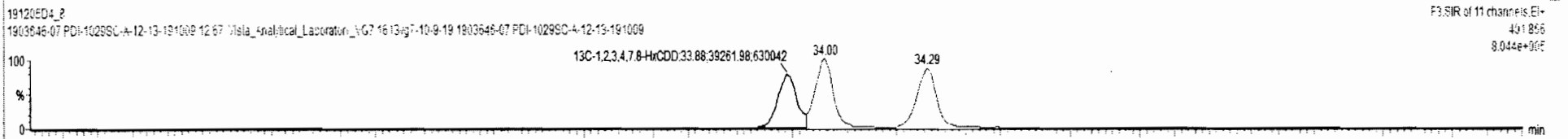
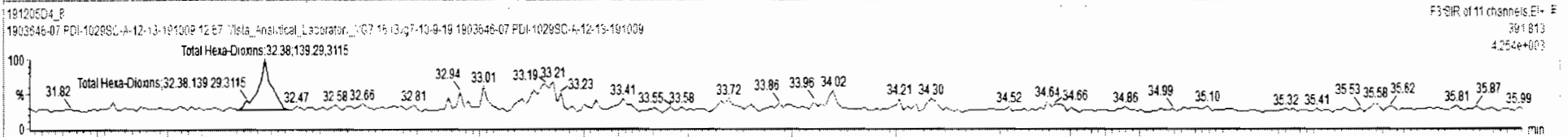
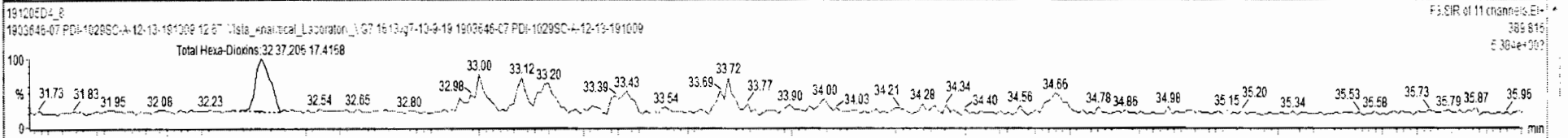




191205D4\_8 - 1903646-07 PDI-1029SC-A-12-13-191009 - 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	S Resp	IS#	RA	nly	RRF	wtvol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
36	13C-1,2,3,4-TCDD	9.13e4	9.13e4	36	0.86	NO	1.000	10.229	25.50	25.51	1.000	1.000	NO	199.5	100	0.752	
37	13C-1,2,3,4-TCDF	1.63e5	1.63e5	37	0.79	NO	1.000	10.229	24.06	24.06	1.000	1.000	NO	199.5	100	0.480	
38	13C-1,2,3,4,6,8-HxCDF	1.20e5	1.20e5	38	0.50	NO	1.000	10.229	33.42	33.41	1.000	1.000	NO	199.5	100	0.514	
39	Total Tetra-Dioxins		9.62e4				0.901	10.229	25.50			0.000	NO			0.120	
40	Total Penta-Dioxins		8.26e4				0.872	10.229	30.00			0.000	NO			0.167	
41	Total Hexa-Dioxins		0.00e0				0.976	10.229	33.80			0.000	NO	0.9000		0.224	0.8004
42	Total Hepta-Dioxins		6.44e4				0.989	10.229	37.75			0.000	NO	12.82		0.344	13.24
43	Total Tetra-Furans		1.67e5				0.943	10.229	24.00			0.000	NO			0.0844	
44	1st Func. Penta-Furans		0.00e0				0.940	10.229	27.63			0.000	NO			0.0616	
45	Total Penta-Furans		0.00e0				0.940	10.229	30.00			0.000	NO			0.101	
46	Total Hexa-Furans		0.00e0				1.078	10.229	33.00			0.000	NO	0.0000		0.0991	0.1965
47	Total Hepta-Furans		0.00e0				1.135	10.229	37.75			0.000	NO	0.6246		0.236	0.8248

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	nly	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.80	32.37	2.062e2	1.393e2	1.240	1.48	YES	0.80043	0.00000





Vista Analytical Laboratory

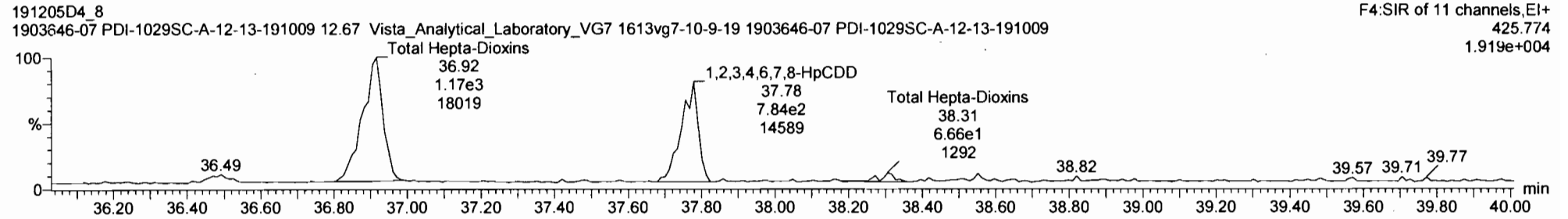
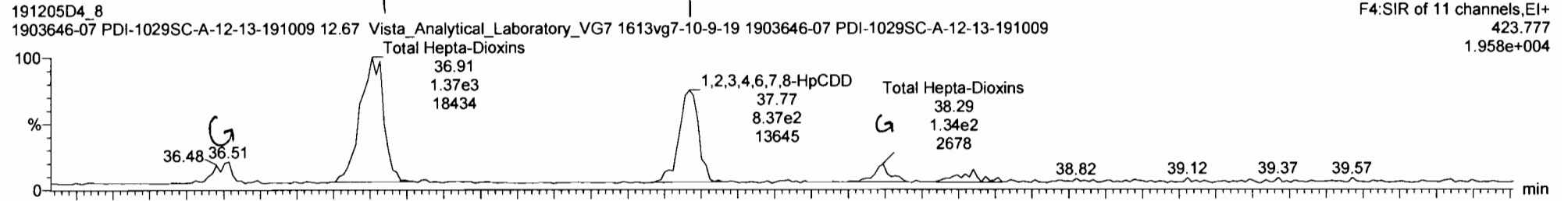
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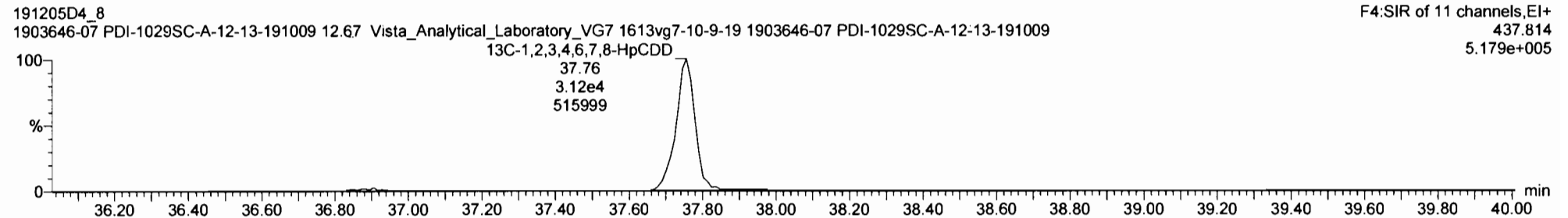
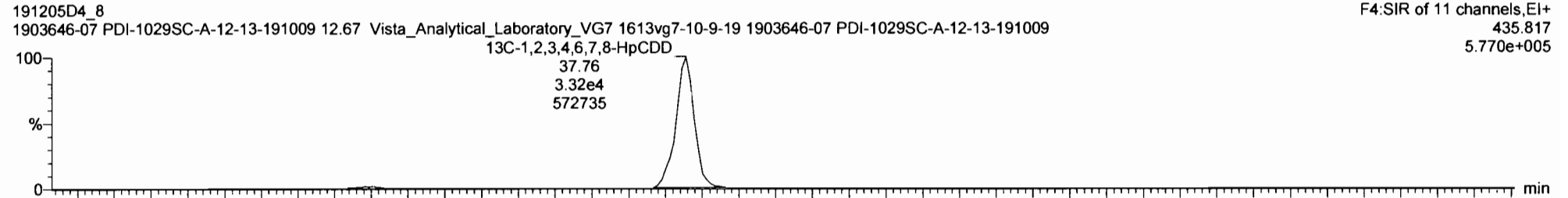
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Total Hepta-Dioxins



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

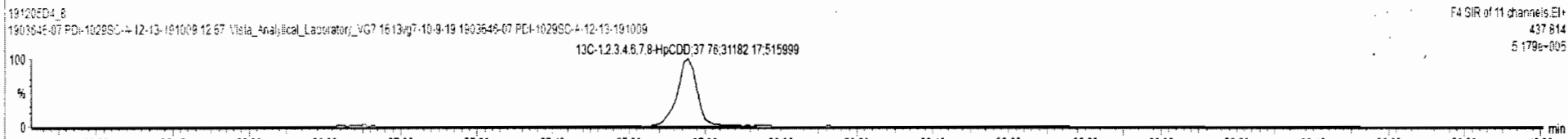
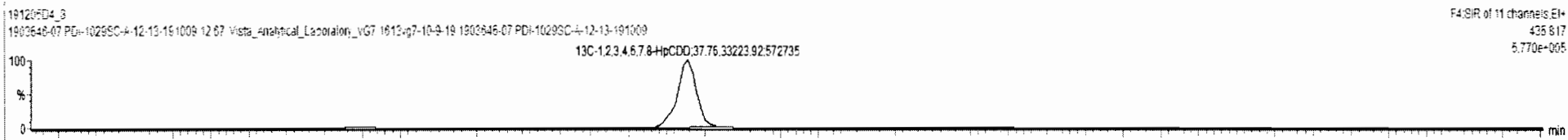
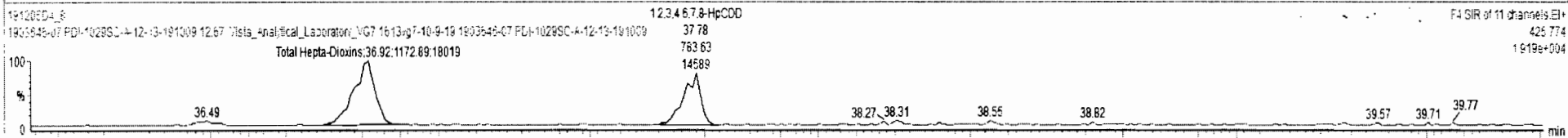
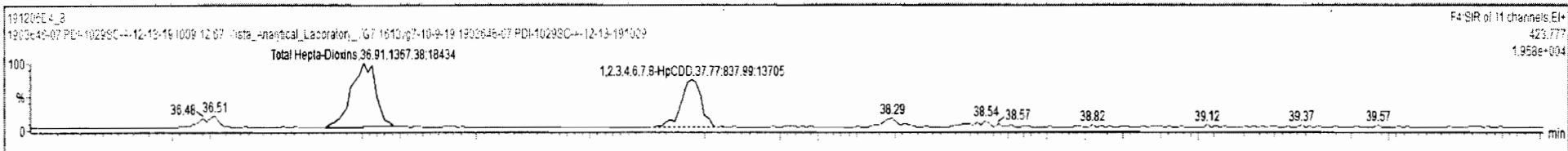




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#	Name	Resp	S Resp	IS#	RA	n/y	RF#	wVol	Pred.RT	RT	RRT	Pred.RRT	Check.RRT	Conc.	%Rec	DL	EMPC
36	13C-1,2,3,4-TCDD	9.13e4	9.13e4	36	0.80	NO	1.000	10.229	25.50	25.51	1.000	1.000	NO	195.5	100	0.752	
37	13C-1,2,3,4-TCDF	1.63e5	1.63e5	37	0.79	NO	1.000	10.228	24.06	24.05	1.000	1.000	NO	195.5	100	0.480	
38	13C-1,2,3,4,6,8-HxCDF	1.20e5	1.20e5	38	0.50	NO	1.000	10.228	33.42	33.41	1.000	1.000	NO	195.5	100	0.914	
39	Total Tetra-Dioxins	9.82e4					0.901	10.229	25.50			0.000	NO			0.120	
40	Total Penta-Dioxins	8.28e4					0.872	10.228	30.00			0.000	NO			0.157	
41	Total Hexa-Dioxins	0.00e0					0.976	10.229	33.80			0.000	NO	0.0000		0.224	0.8004
42	Total Hepta-Dioxins	6.44e4					0.989	10.229	37.75			0.000	NO	12.83		6.344	12.83
43	Total Tetra-Furans	1.67e5					0.943	10.229	24.00			0.000	NO			0.0844	
44	1st Func. Penta-Furans	0.00e0					0.940	10.229	27.63			0.000	NO			0.0616	
45	Total Penta-Furans	0.00e0					0.940	10.229	30.00			0.000	NO			0.101	
46	Total Hexa-Furans	0.00e0					1.078	10.229	33.00			0.000	NO	0.0000		0.0991	0.1965
47	Total Hepta-Furans	0.00e0					1.135	10.229	37.75			0.000	NO	0.8248		0.238	0.8248

#	Name	Pred.RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	42 Total Hepta-Dioxins	37.75	36.91	1.367e3	1.173e3	1.040	1.17	NO	7.8002	7.8002
2	6 1,2,3,4,6,7,8-HpCDD	37.77	37.77	8.369e2	7.836e2	1.040	1.07	NO	5.0267	5.0267



Vista Analytical Laboratory

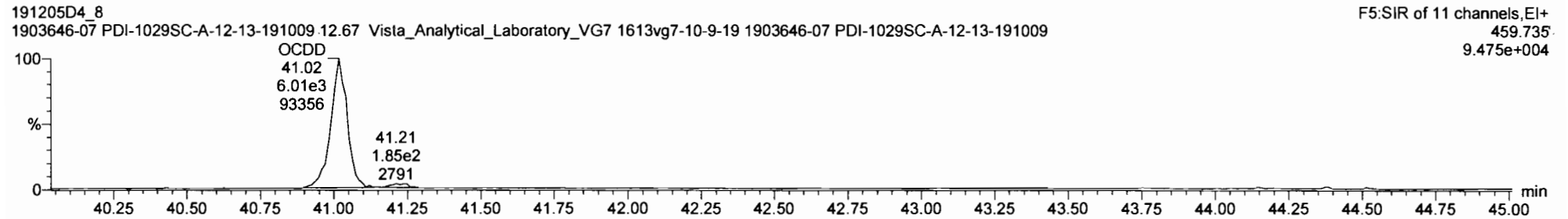
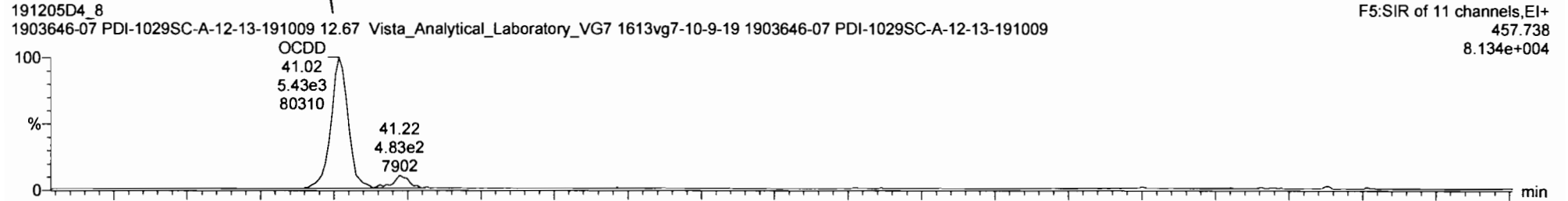
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

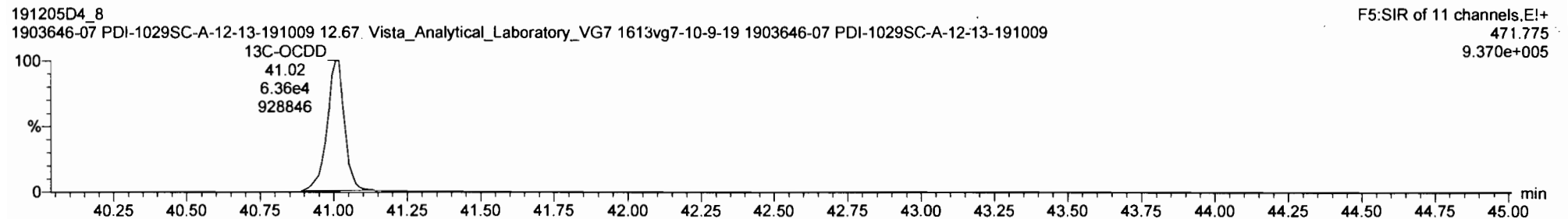
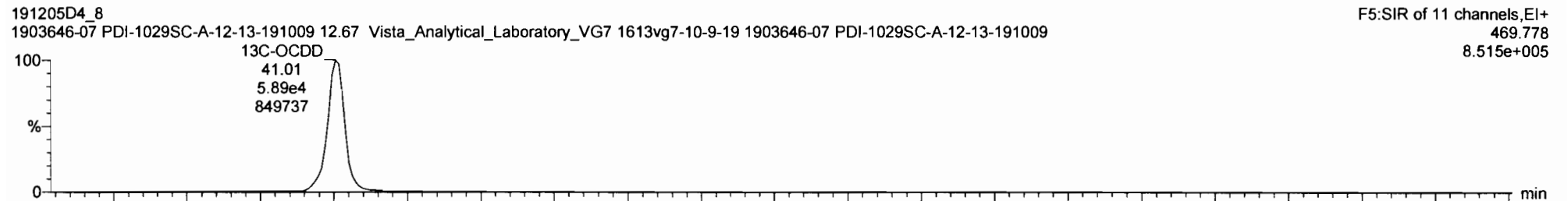
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_8, Date: 7-DEC-2019, Time: 11:40:53, ID: 1903646-07 PDI-1029SC-A-12-13-191009,  
Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

OCDD



13C-OCDD



Vista Analytical Laboratory

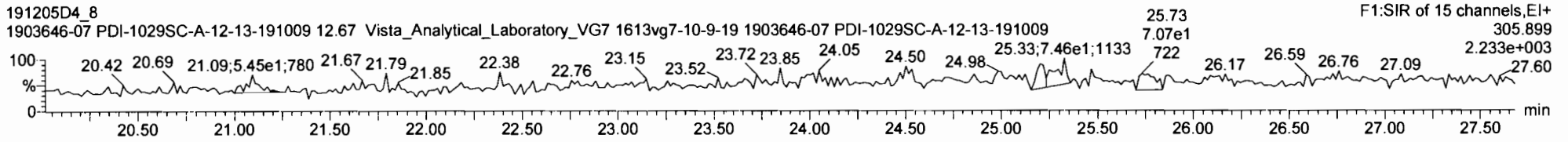
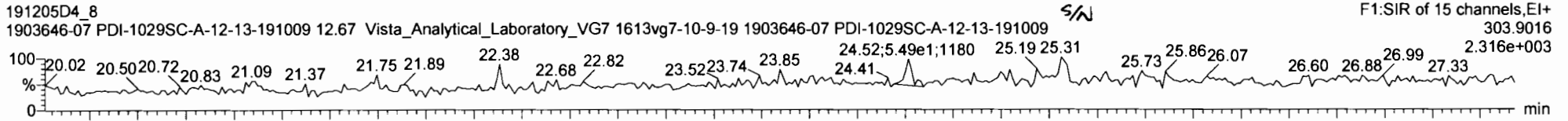
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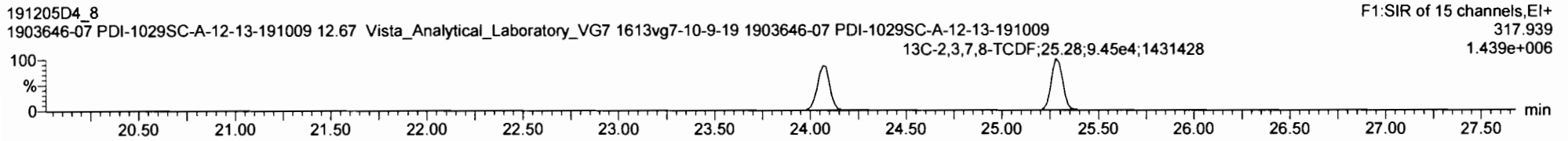
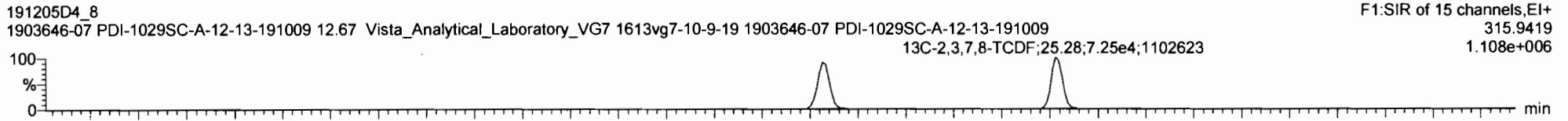
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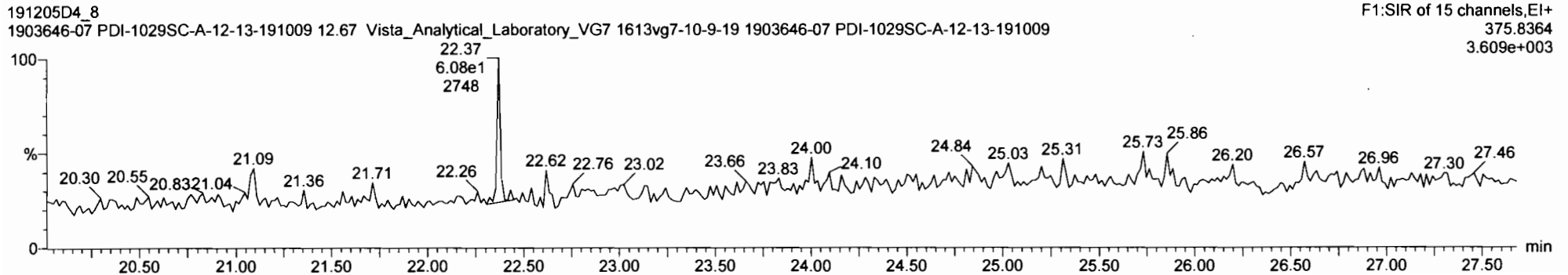
Total Tetra-Furans



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



DPE1



Vista Analytical Laboratory

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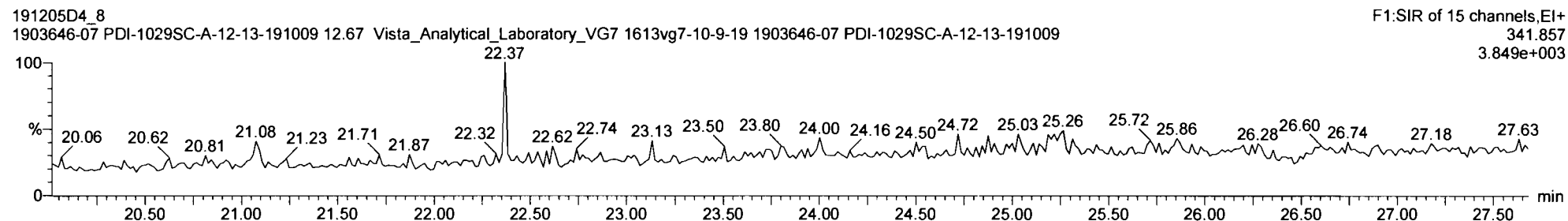
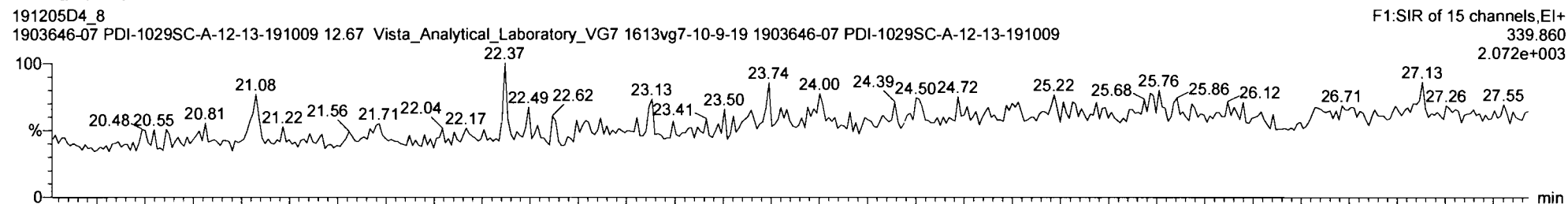
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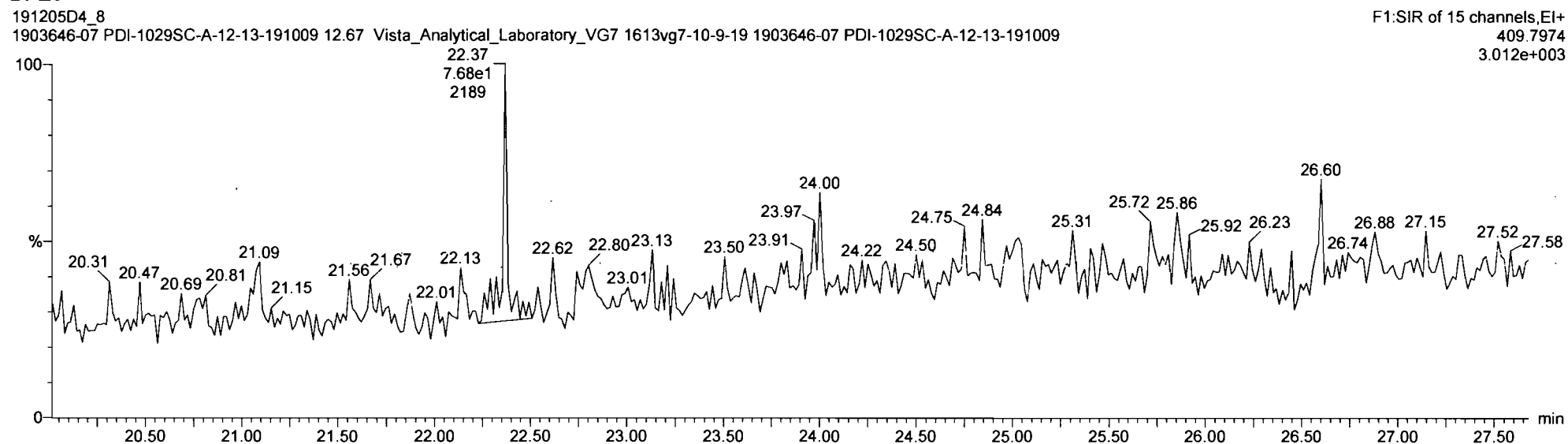
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Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans

S/N



DPE6



Vista Analytical Laboratory

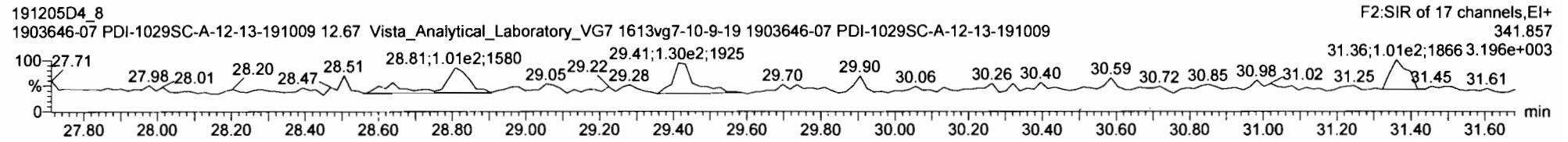
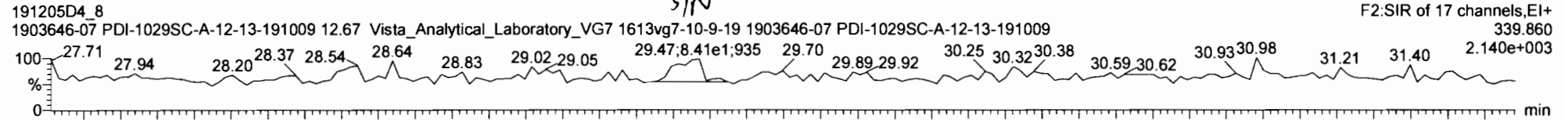
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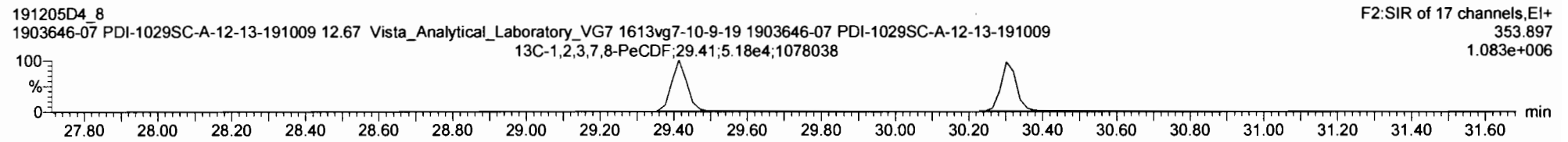
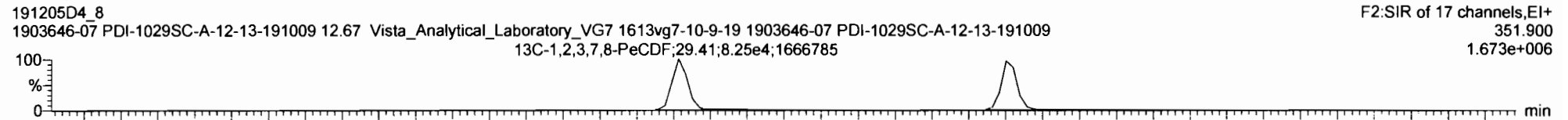
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Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

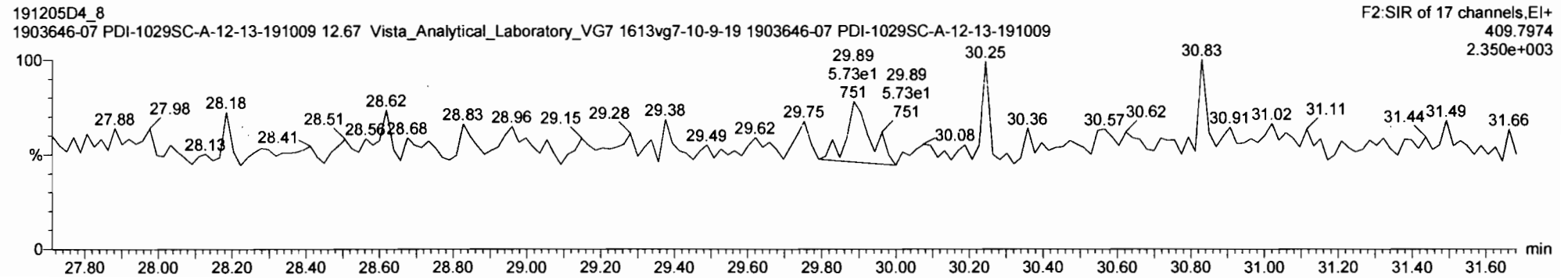
Total Penta-Furans



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



DPE2

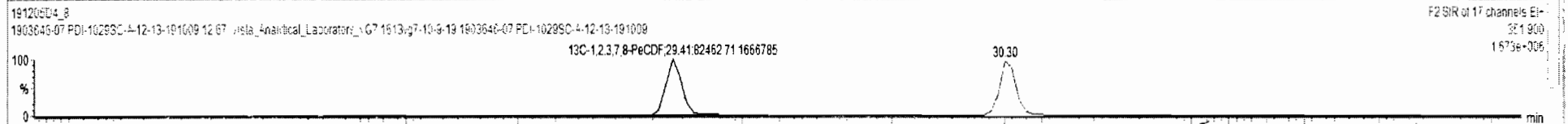
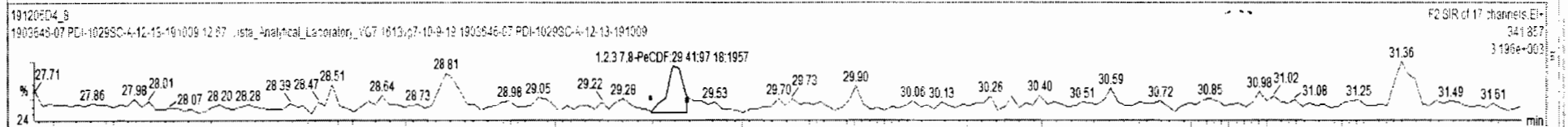
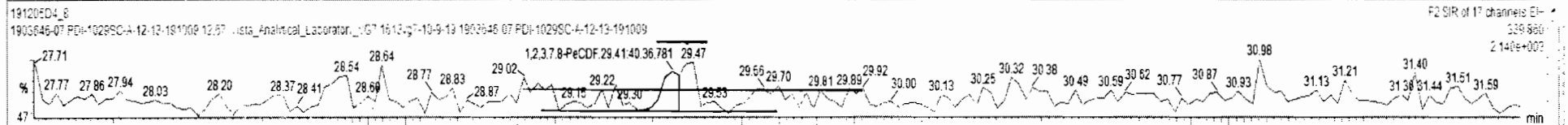




191205D4\_8\_1903646-07 PDI-1029SC-A-12-13-191009 - 1903646-07 PDI-1029SC-A-12-13-191009 12:67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
38	13C-1,2,3,4,6,8- <i>h</i> -CDF	1.20e5	1.20e5	38	0.50	NO	1.000	10.229	33.42	33.41	1.000	1.000	NO	155.5	100	0.914	
39	Total Tetra-Dioxins		9.82e4				0.901	10.229	26.50			0.000	NO			0.120	
40	Total Penta-Dioxins		8.26e4				0.872	10.229	30.00			0.000	NO			0.167	
41	Total Hexa-Dioxins		0.00e0				0.976	10.229	33.80			0.000	NO	0.0000		0.224	0.8004
42	Total Tetra-Dioxins		6.44e4				0.989	10.229	37.75			0.000	NO	12.83		0.344	12.83
43	Total Tetra-Furans		1.67e5				0.943	10.229	24.00			0.000	NO			0.0844	
44	1st Func. Penta-Furans		0.00e0				0.940	10.229	27.63			0.000	NO			0.0616	
45	Total Penta-Furans		0.00e0				0.940	10.229	30.00			0.000	NO	0.0000		0.101	0.1007
46	Total Hexa-Furans		0.00e0				1.078	10.229	33.00			0.000	NO			0.0391	
47	Total Hepta-Furans		0.00e0				1.135	10.229	37.75			0.000	NO	0.8045		0.230	0.8345
48	PFK1																
49	PFK2																
50	PFK3																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	9-1,2,3,7,8-PeCDF	29.43	29.41	4.035e1	9.713e1	1.550	0.42	YES	0.10672	0.00000



Vista Analytical Laboratory

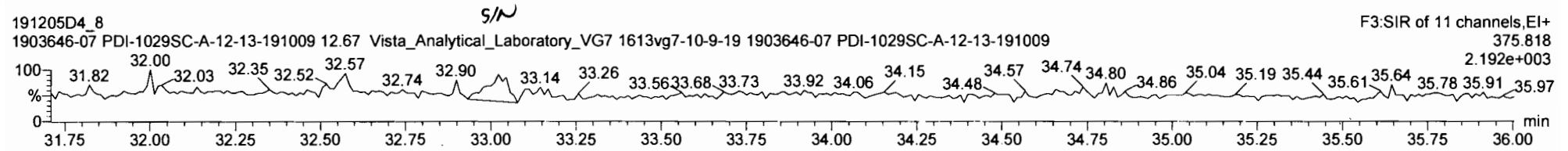
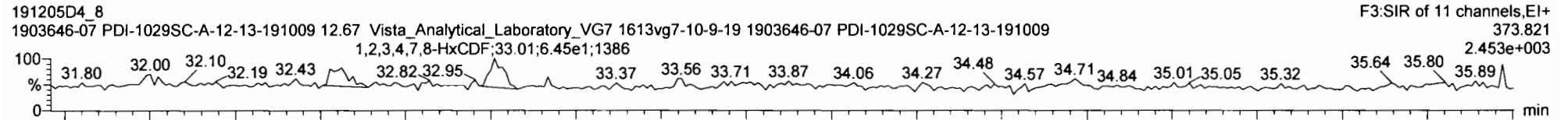
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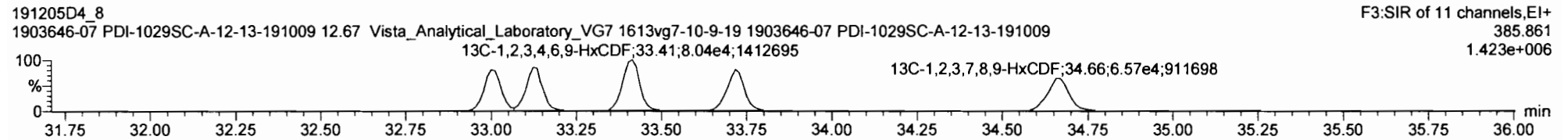
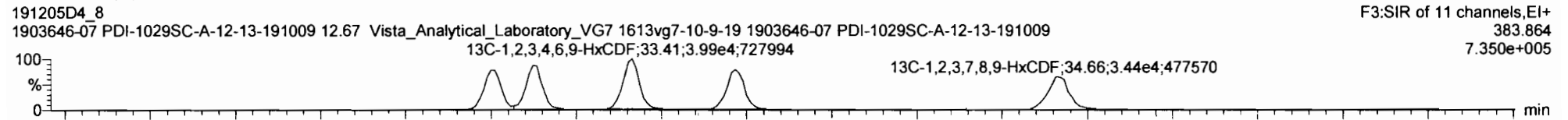
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_8, Date: 7-DEC-2019, Time: 11:40:53, ID: 1903646-07 PDI-1029SC-A-12-13-191009, Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

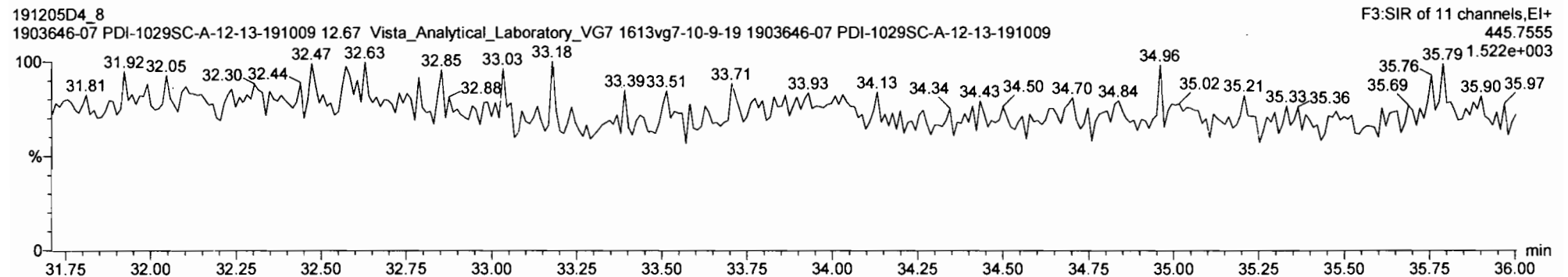
Total Hexa-Furans



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



DPE3





Vista Analytical Laboratory

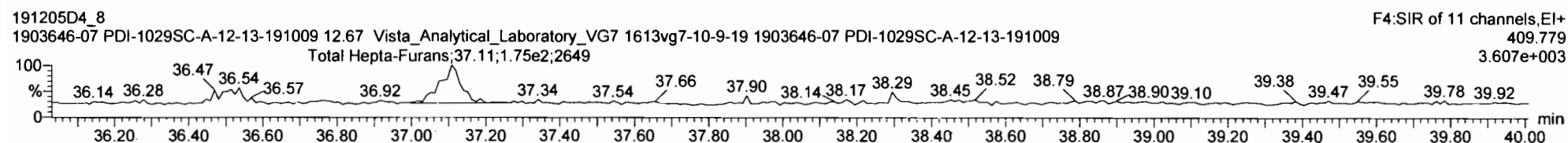
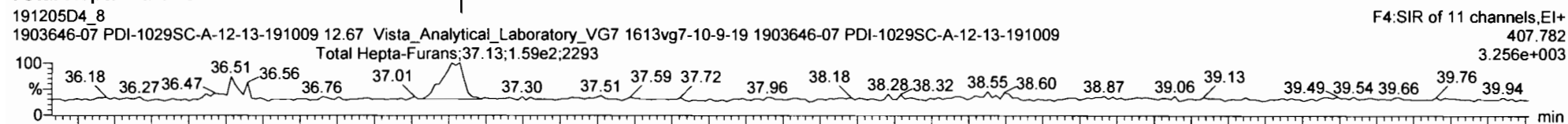
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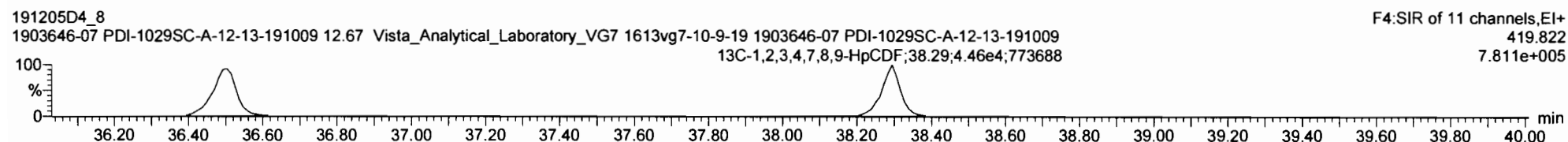
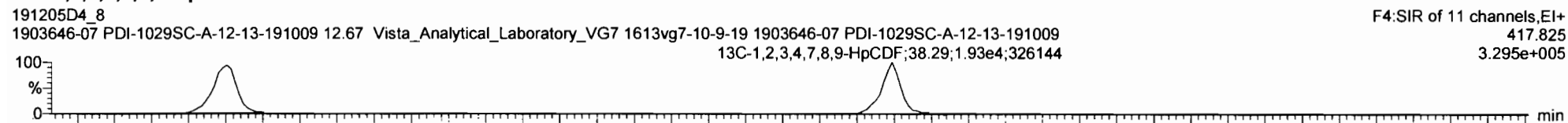
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Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

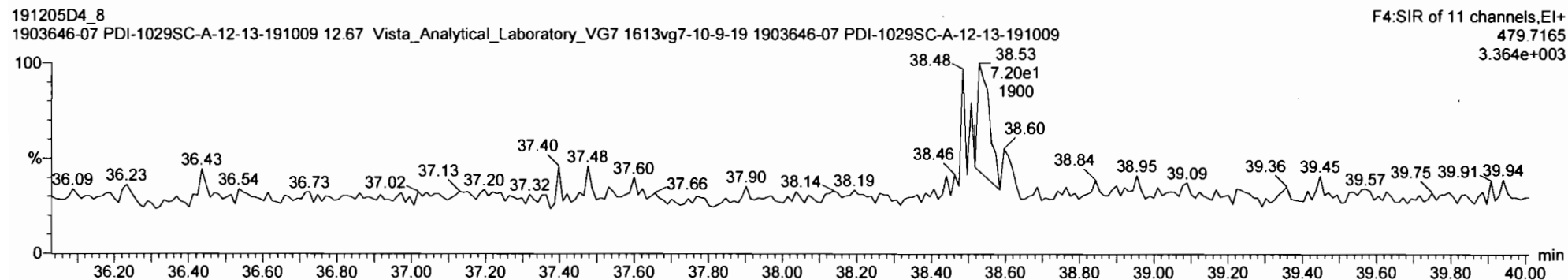
### Total Hepta-Furans



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



### DPE4

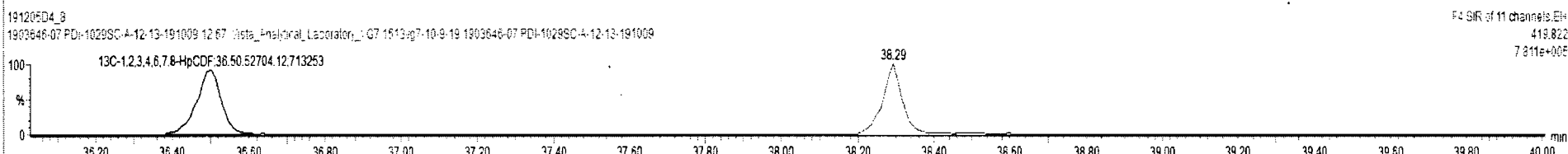
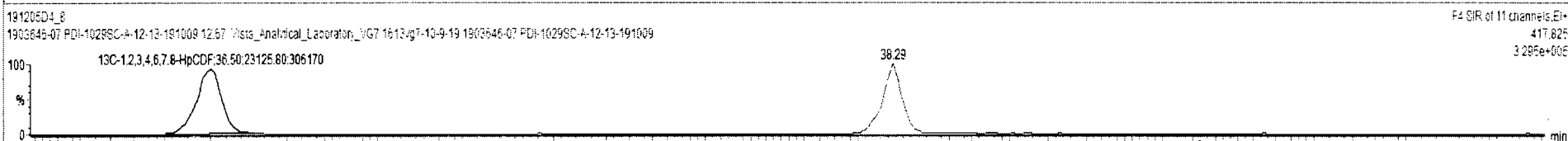
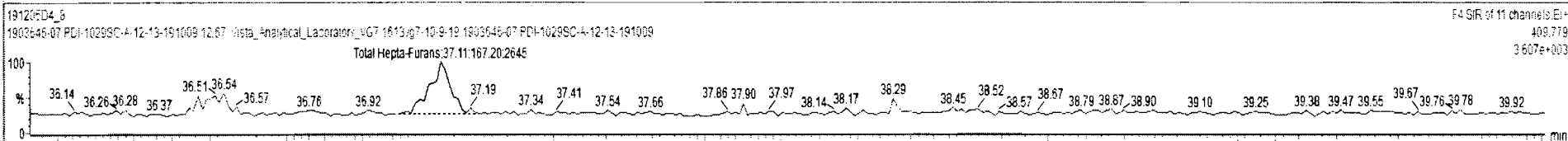
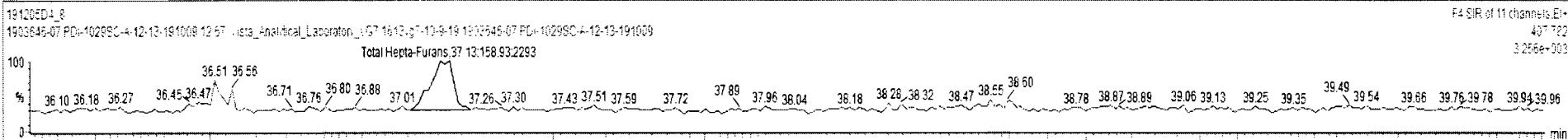




191205D4\_8 - 1903646-07 PDI-1029SC-A-12-13-191009 - 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RPF	wt/vol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc	%Rec	DL	EMPC
36	13C-1,2,3,4-TCDD	9.13e4	9.13e4	36	0.80	NO	1.000	10.229	25.50	25.51	1.000	1.000	NO	195.5	100	0.752	
37	13C-1,2,3,4-TCDF	1.63e5	1.63e5	37	0.79	NO	1.000	10.229	24.06	24.05	1.000	1.000	NO	195.5	100	0.480	
38	13C-1,2,3,4,6,9-HxCDF	1.20e5	1.20e5	38	0.50	NO	1.000	10.229	33.42	33.41	1.000	1.000	NO	195.5	100	0.914	
39	Total Tetra-Dioxins	8.82e4					0.991	10.229	25.50			0.000	NO			0.126	
40	Total Penta-Dioxins	8.28e4					0.872	10.229	30.00			0.000	NO			0.187	
41	Total Hexa-Dioxins	0.00e0					0.976	10.229	33.80			0.000	NO	0.0000		0.224	0.8004
42	Total Hepta-Dioxins	6.44e4					0.989	10.229	37.75			0.000	NO	12.83		0.344	12.83
43	Total Tetra-Furans	1.67e5					0.943	10.229	24.00			0.000	NO			0.0844	
44	1st Func. Penta-Furans	0.00e0					0.940	10.229	27.63			0.000	NO			0.0616	
45	Total Penta-Furans	0.00e0					0.940	10.229	30.00			0.000	NO			0.101	
46	Total Hexa-Furans	0.00e0					1.078	10.229	33.00			0.000	NO			0.0991	
47	Total Hepta-Furans	0.00e0					1.135	10.229	37.75			0.000	NO	0.8045		0.238	0.8045

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
47	Total Hepta-Furans	37.75	37.13	1.589e2	1.672e2	1.640	0.95	NO	0.80451	6.80451



Vista Analytical Laboratory

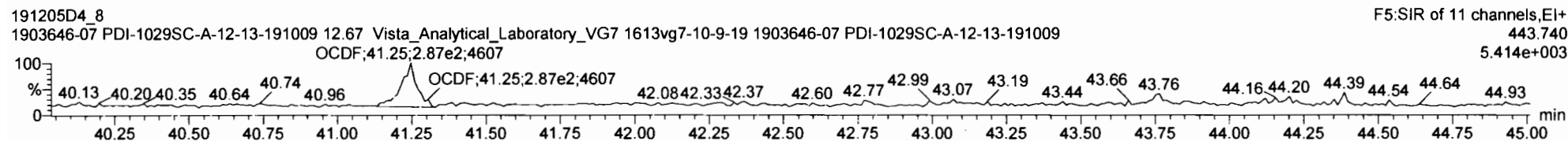
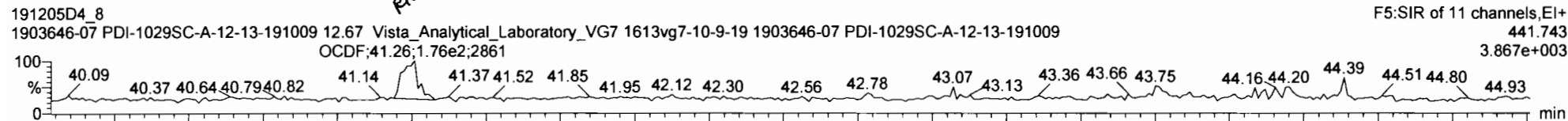
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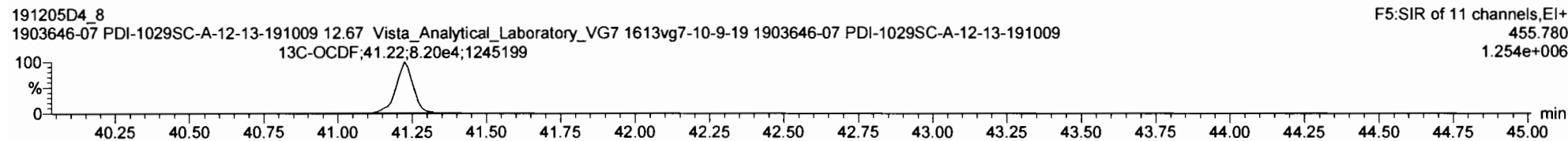
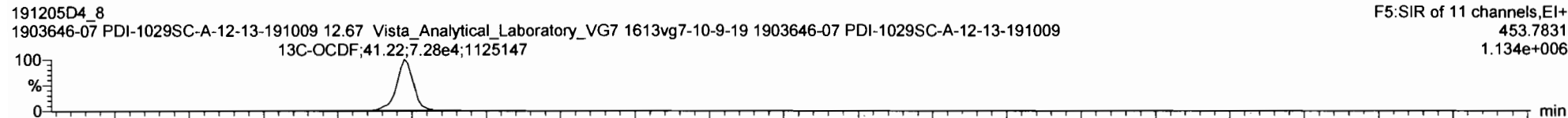
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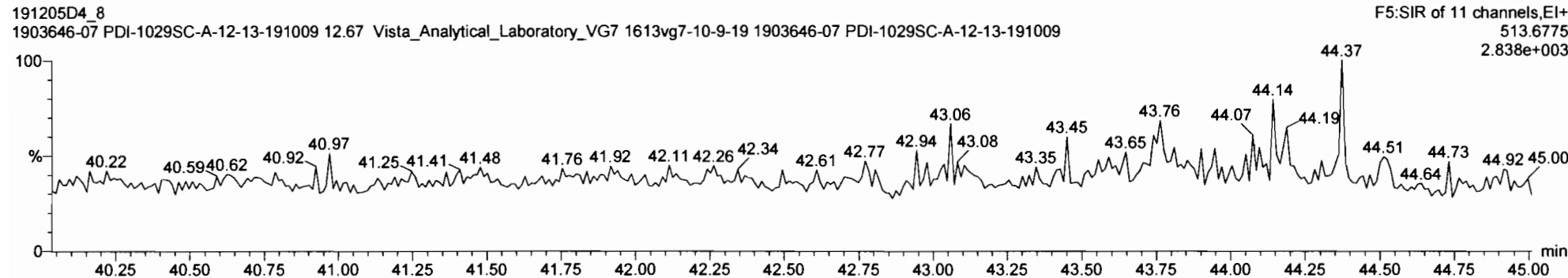
OCDF

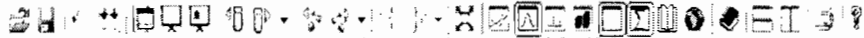


13C-OCDF



DPE5

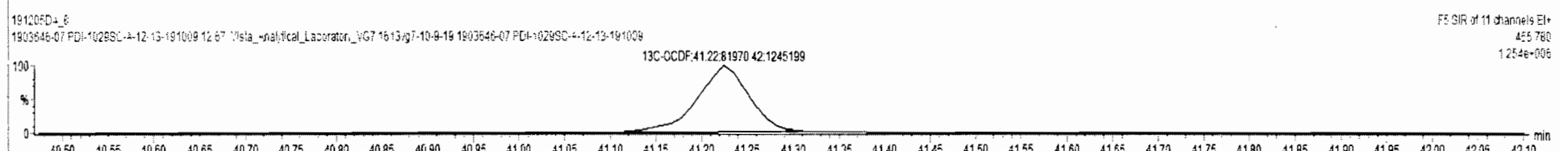
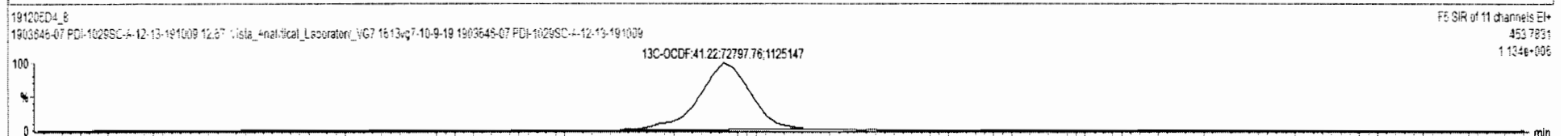
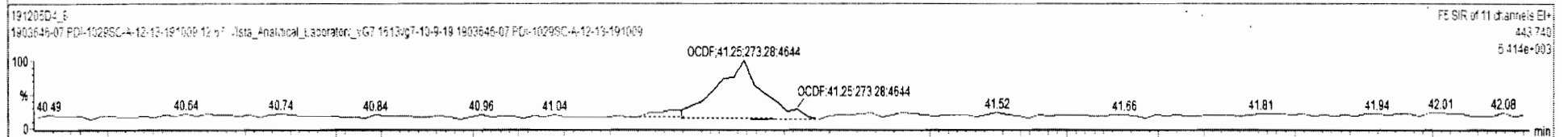
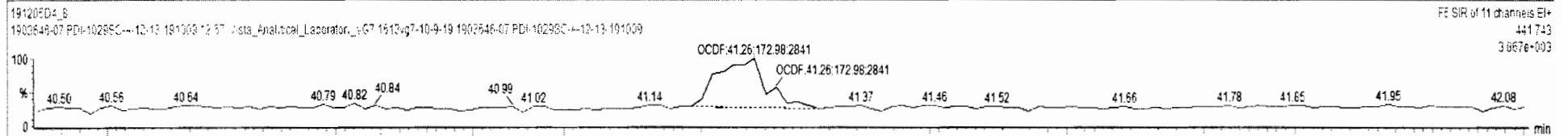




191205D4-8 - 1903646-07 PDI-1029SC-A-12-13-191009 - 1903646-07 PDI-1029SC-A-12-13-191009 12:67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
16	1,2,3,4,7,8,9-HpCDF		8.29e4	33			1.280	10.229	38.29			1.000	NO			0.202	
17	OCDF	4.46e2	1.55e5	34	0.63	YES	0.947	10.229	41.22	41.26	1.001	1.000	NO	1.190		0.342	0.9799
18	13C-2,3,7,8-TCDF	9.62e4	9.13e4	36	0.78	NO	1.095	10.229	26.05	26.07	1.022	1.021	NO	192.1	98.2	0.687	
19	13C-1,2,3,7,8-FeCDD	8.28e4	9.13e4	36	0.61	NO	0.881	10.229	30.28	30.59	1.199	1.187	NO	201.1	103	0.796	
20	13C-1,2,3,4,7,8-HxCDD	8.97e4	1.20e5	38	1.26	NO	0.642	10.229	33.88	33.88	1.014	1.014	NO	176.3	96.2	0.950	
21	13C-1,2,3,6,7,8-HxCDD	8.52e4	1.20e5	38	1.27	NO	0.856	10.229	34.00	34.90	1.017	1.017	NO	161.6	82.8	0.713	
22	13C-1,2,3,7,8,9-HxCDD	7.95e4	1.20e5	38	1.27	NO	0.807	10.229	34.29	34.29	1.026	1.026	NO	160.2	81.9	0.756	
23	13C-1,2,3,4,6,7,8-HpCDD	6.44e4	1.20e5	38	1.07	NO	0.654	10.229	37.63	37.76	1.130	1.126	NO	160.1	81.9	1.47	
24	13C-OCDD	1.22e5	1.20e5	38	0.93	NO	0.580	10.229	40.97	41.01	1.227	1.226	NO	343.4	67.8	0.898	
25	13C-2,3,7,8-TCDF	1.67e5	1.63e5	37	0.77	NO	1.035	10.229	25.30	25.28	0.991	0.992	NO	193.0	98.7	0.464	
26	13C-1,2,3,7,8-FeCDF	1.34e5	1.63e5	37	1.59	NO	0.854	10.229	29.43	28.41	1.153	1.154	NO	187.9	96.1	0.644	
27	13C-2,3,4,7,8-FeCDF	1.30e5	1.63e5	37	1.59	NO	0.847	10.229	30.33	30.30	1.168	1.168	NO	183.8	94.0	0.650	
28	13C-1,2,3,4,7,8,9-HxCDF	9.88e4	1.20e5	38	0.61	NO	0.830	10.229	32.96	32.98	0.988	0.987	NO	192.7	98.4	1.16	

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



Vista Analytical Laboratory

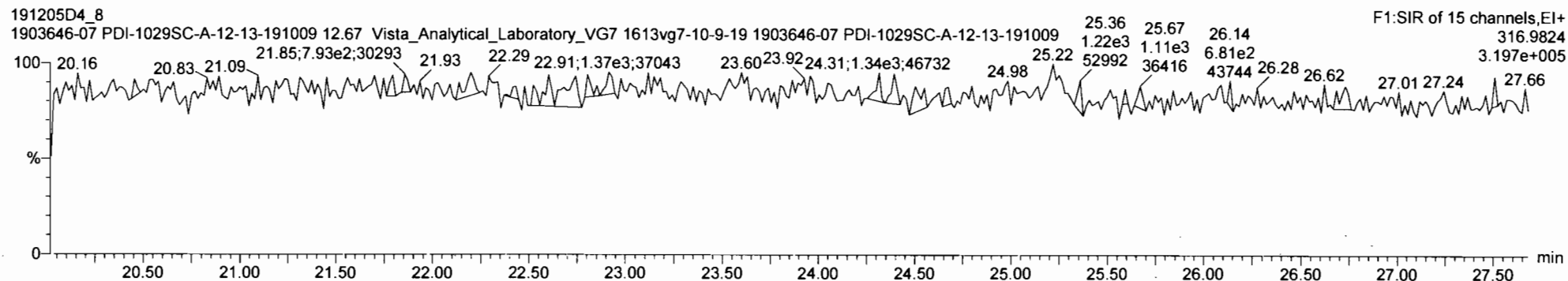
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

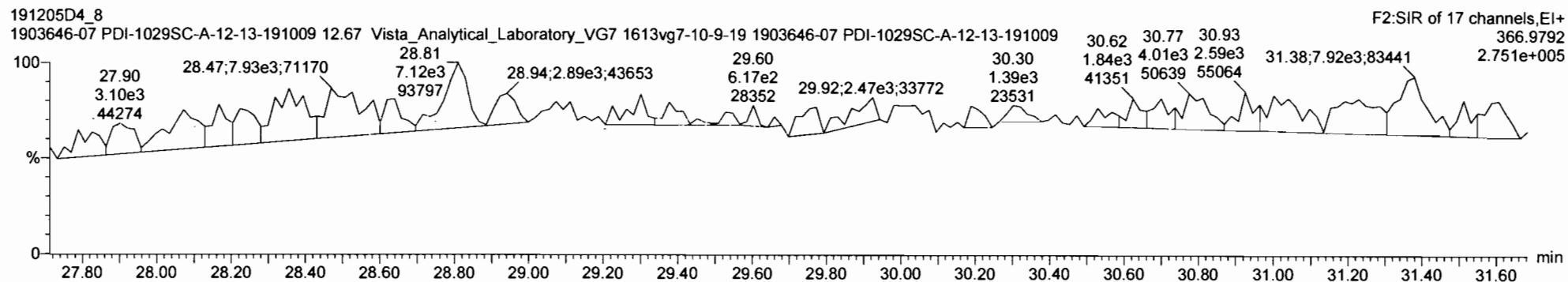
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Name: 191205D4\_8, Date: 7-DEC-2019, Time: 11:40:53, ID: 1903646-07 PDI-1029SC-A-12-13-191009, Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

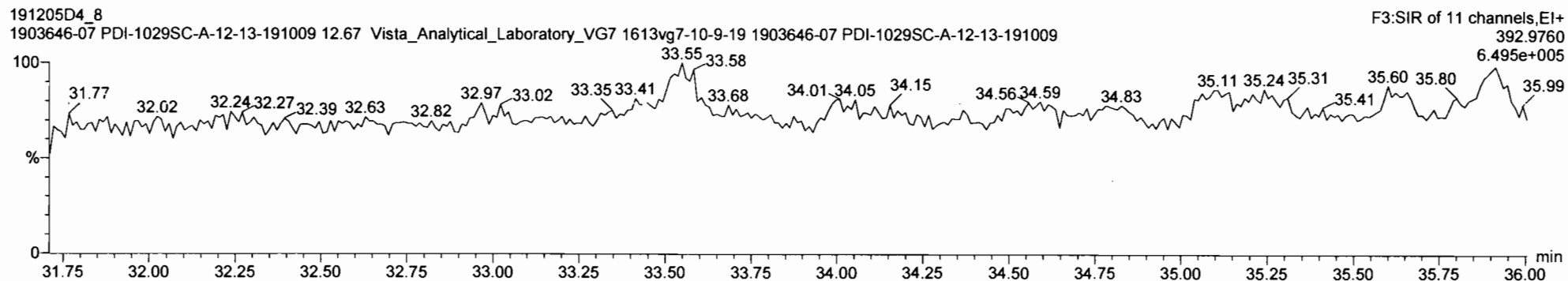
PFK1



PFK2



PFK3



Vista Analytical Laboratory

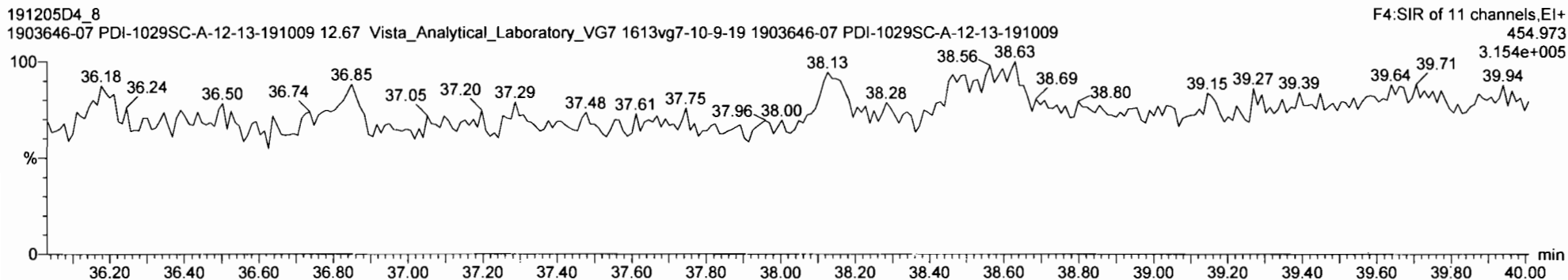
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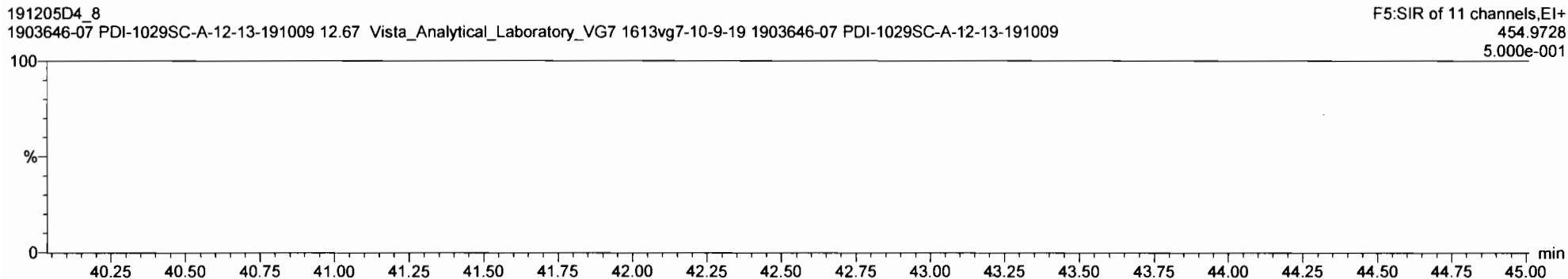
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Description: 1903646-07 PDI-1029SC-A-12-13-191009 12.67 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-9.qld

Last Altered: Wednesday, December 11, 2019 11:27:35 Pacific Standard Time

Printed: Wednesday, December 11, 2019 11:29:10 Pacific Standard Time

EL 12/12/19

CT 12/12/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 15:18:12

Name: 191205D4\_9, Date: 7-DEC-2019, Time: 12:28:50, ID: 1903646-08 PDI-038SC-A-12-13-191009,

Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Area	IS Area	WL/Vol	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	2,3,7,8-TCDD		8.47e4	10.3237	0.905			1.001		26.10					0.222
2	1,2,3,7,8-PeCDD		7.08e4	10.3237	0.903			1.001		30.62					0.192
3	1,2,3,4,7,8-HxCDD		5.96e4	10.3237	1.101			1.000		33.91					0.279
4	1,2,3,6,7,8-HxCDD		6.57e4	10.3237	0.939			1.000		34.00					0.306
5	1,2,3,7,8,9-HxCDD		6.22e4	10.3237	0.961			1.001		34.34					0.326
6	1,2,3,4,6,7,8-HpCDD		5.44e4	10.3237	0.979			1.000		37.78					0.413
7	OCDD	2.34e2	1.06e5	10.3237	0.959	1.244	YES	1.000	1.000	41.02	41.01	0.89554		0.754	0.204
8	2,3,7,8-TCDF		1.43e5	10.3237	0.950			1.001		25.31					0.163
9	1,2,3,7,8-PeCDF		1.14e5	10.3237	0.960			1.001		29.45					0.145
10	2,3,4,7,8-PeCDF		1.17e5	10.3237	1.015			1.001		30.34					0.117
11	1,2,3,4,7,8-HxCDF		8.55e4	10.3237	1.177			1.000		33.01					0.142
12	1,2,3,6,7,8-HxCDF		8.97e4	10.3237	1.069			1.000		33.15					0.158
13	2,3,4,6,7,8-HxCDF		8.73e4	10.3237	1.114			1.001		33.76					0.165
14	1,2,3,7,8,9-HxCDF		6.79e4	10.3237	1.062			1.000		34.68					0.270
15	1,2,3,4,6,7,8-HpCDF		5.93e4	10.3237	1.128			1.001		36.56					0.258
16	1,2,3,4,7,8,9-HpCDF		5.26e4	10.3237	1.280			1.000		38.31					0.209
17	OCDF		1.33e5	10.3237	0.947			1.000		41.24					0.240
18	13C-2,3,7,8-TCDD	8.47e4	8.70e4	10.3237	1.095	0.790	NO	1.021	1.022	26.04	26.07	172.17	88.9		0.638
19	13C-1,2,3,7,8-PeCDD	7.08e4	8.70e4	10.3237	0.881	0.630	NO	1.187	1.200	30.27	30.60	179.00	92.4		0.574
20	13C-1,2,3,4,7,8-Hx...	5.96e4	1.14e5	10.3237	0.642	1.313	NO	1.014	1.014	33.89	33.90	158.44	81.8		1.07
21	13C-1,2,3,6,7,8-Hx...	6.57e4	1.14e5	10.3237	0.856	1.289	NO	1.017	1.017	34.01	34.00	131.08	67.7		0.803
22	13C-1,2,3,7,8,9-Hx...	6.22e4	1.14e5	10.3237	0.807	1.271	NO	1.026	1.026	34.31	34.30	131.56	67.9		0.851
23	13C-1,2,3,4,6,7,8-H...	5.44e4	1.14e5	10.3237	0.654	1.071	NO	1.126	1.130	37.65	37.77	141.99	73.3		0.991
24	13C-OCDD	1.06e5	1.14e5	10.3237	0.580	0.915	NO	1.226	1.227	40.99	41.02	310.99	80.3		0.748
25	13C-2,3,7,8-TCDF	1.43e5	1.53e5	10.3237	1.035	0.798	NO	0.992	0.991	25.30	25.29	173.94	89.8		0.564
26	13C-1,2,3,7,8-PeCDF	1.14e5	1.53e5	10.3237	0.854	1.572	NO	1.154	1.154	29.43	29.42	167.77	86.6		0.624
27	13C-2,3,4,7,8-PeCDF	1.17e5	1.53e5	10.3237	0.847	1.659	NO	1.189	1.188	30.33	30.31	173.62	89.6		0.630
28	13C-1,2,3,4,7,8-Hx...	8.55e4	1.14e5	10.3237	0.832	0.516	NO	0.987	0.988	33.00	33.01	175.24	90.5		1.01
29	13C-1,2,3,6,7,8-Hx...	8.97e4	1.14e5	10.3237	1.034	0.516	NO	0.991	0.991	33.12	33.14	147.97	76.4		0.809
30	13C-2,3,4,6,7,8-Hx...	8.73e4	1.14e5	10.3237	0.953	0.506	NO	1.009	1.009	33.74	33.73	156.13	80.6		0.878
31	13C-1,2,3,7,8,9-Hx...	6.79e4	1.14e5	10.3237	0.828	0.544	NO	1.039	1.038	34.72	34.68	139.84	72.2		1.01

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-9.qld

Last Altered: Wednesday, December 11, 2019 11:27:35 Pacific Standard Time

Printed: Wednesday, December 11, 2019 11:29:10 Pacific Standard Time

Name: 191205D4\_9, Date: 7-DEC-2019, Time: 12:28:50, ID: 1903646-08 PDI-038SC-A-12-13-191009,  
 Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_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...	5.93e4	1.14e5	10.3237	0.757	0.463	NO	1.093	1.093	36.53	36.53	133.52	68.9		1.34
33	33 13C-1,2,3,4,7,8,9-H...	5.26e4	1.14e5	10.3237	0.581	0.440	NO	1.143	1.146	38.21	38.31	154.25	79.6		1.75
34	34 13C-OCDF	1.33e5	1.14e5	10.3237	0.689	0.876	NO	1.233	1.234	41.22	41.24	329.67	85.1		0.935
35	35 37Cl-2,3,7,8-TCDD	3.90e4	8.70e4	10.3237	1.198			1.022	1.023	26.07	26.10	72.565	93.6		0.242
36	36 13C-1,2,3,4-TCDD	8.70e4	8.70e4	10.3237	1.000	0.797	NO	1.000	1.000	25.50	25.51	193.73	100.0		0.699
37	37 13C-1,2,3,4-TCDF	1.53e5	1.53e5	10.3237	1.000	0.803	NO	1.000	1.000	24.06	24.07	193.73	100.0		0.584
38	38 13C-1,2,3,4,6,9-Hx...	1.14e5	1.14e5	10.3237	1.000	0.512	NO	1.000	1.000	33.42	33.43	193.73	100.0		0.837
39	39 Total Tetra-Dioxins		8.47e4	10.3237	0.901			0.000		25.50					0.124
40	40 Total Penta-Dioxins		7.08e4	10.3237	0.872			0.000		30.00					0.101
41	41 Total Hexa-Dioxins		0.00e0	10.3237	0.976			0.000		33.80					0.155
42	42 Total Hepta-Dioxins		5.44e4	10.3237	0.989			0.000		37.75					0.238
43	43 Total Tetra-Furans		1.43e5	10.3237	0.943			0.000		24.00					0.0763
44	44 1st Func. Penta-Fur...		0.00e0	10.3237	0.940			0.000		27.63					0.0434
45	45 Total Penta-Furans		0.00e0	10.3237	0.940			0.000		30.00					0.0484
46	46 Total Hexa-Furans		0.00e0	10.3237	1.078			0.000		33.00					0.0900
47	47 Total Hepta-Furans		0.00e0	10.3237	1.135			0.000		37.75					0.141



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-9.qld

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Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_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									

Hepta-Dioxins

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

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\191205D4\191205D4-9.qld  
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Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

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

Vista Analytical Laboratory

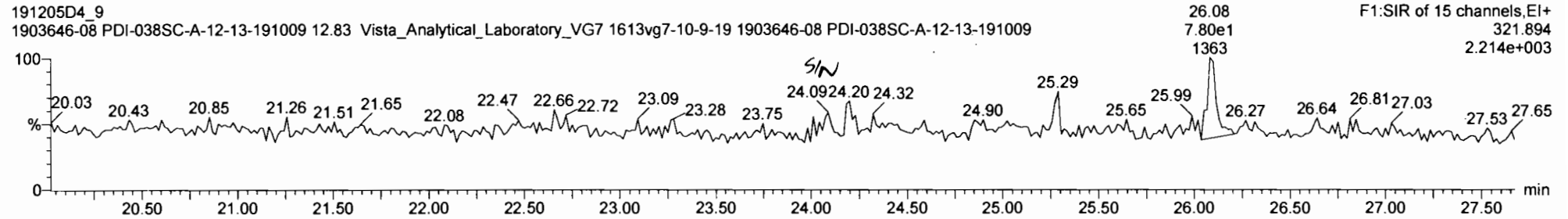
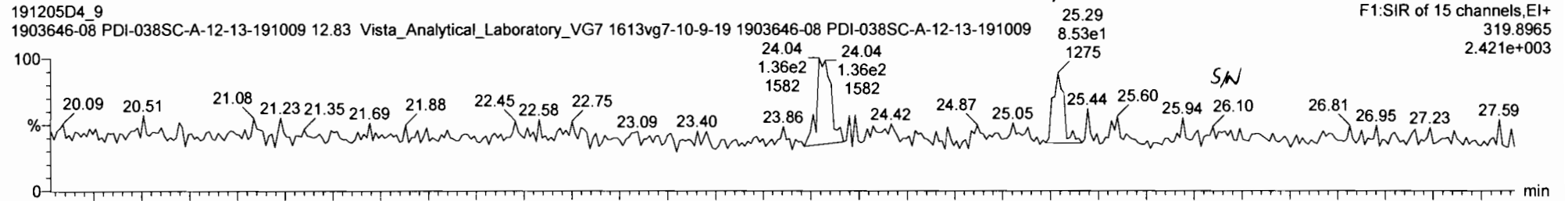
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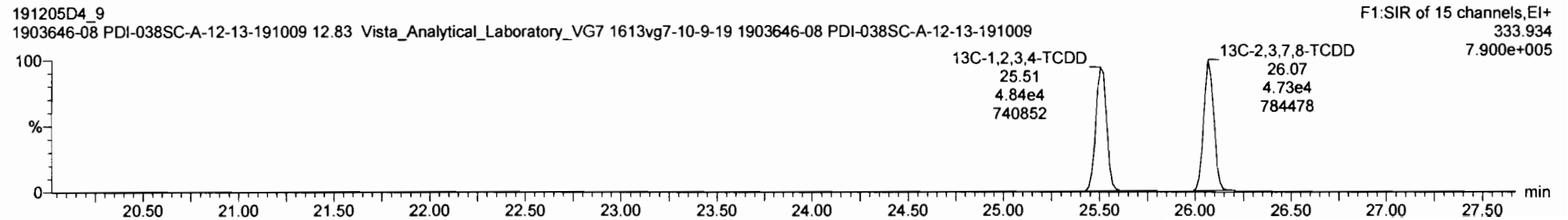
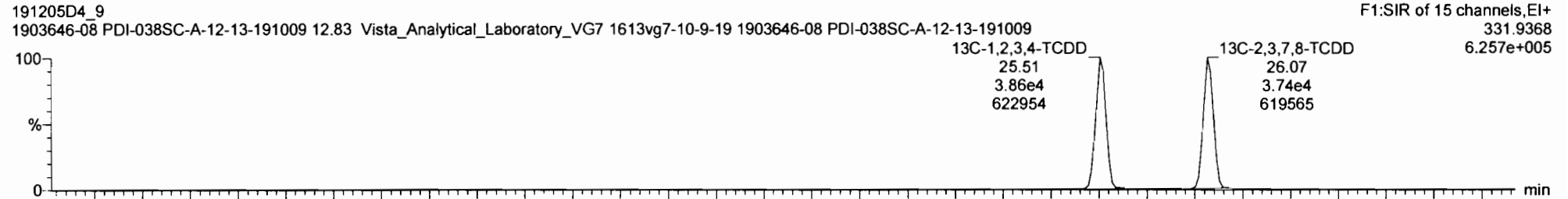
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Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Tetra-Dioxins



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



Vista Analytical Laboratory

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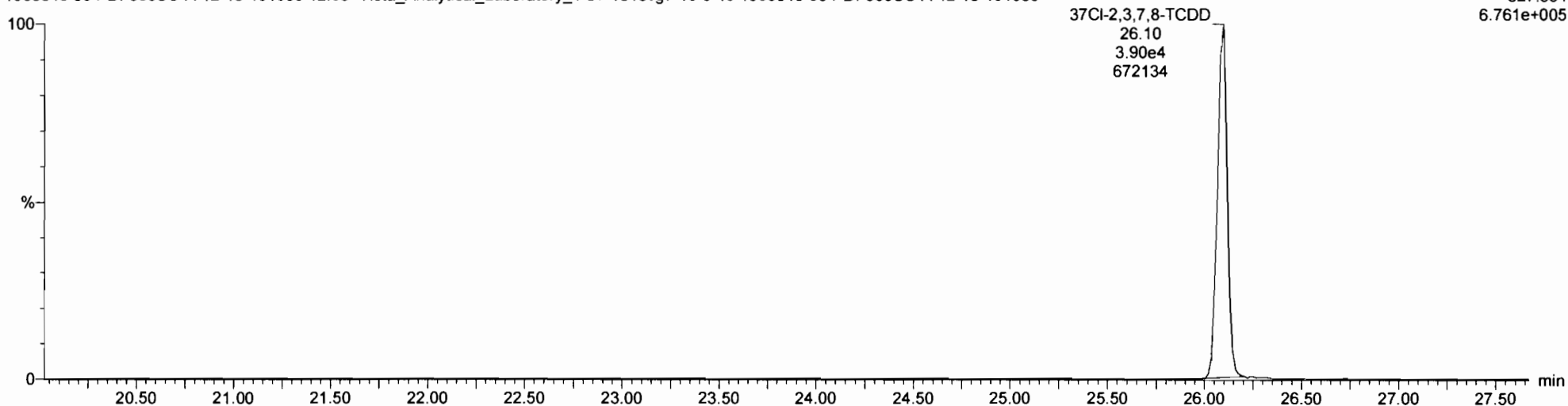
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**37Cl-2,3,7,8-TCDD**

191205D4\_9  
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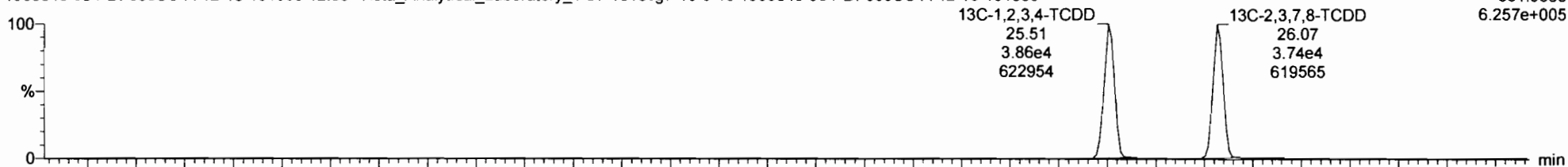
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6.761e+005



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

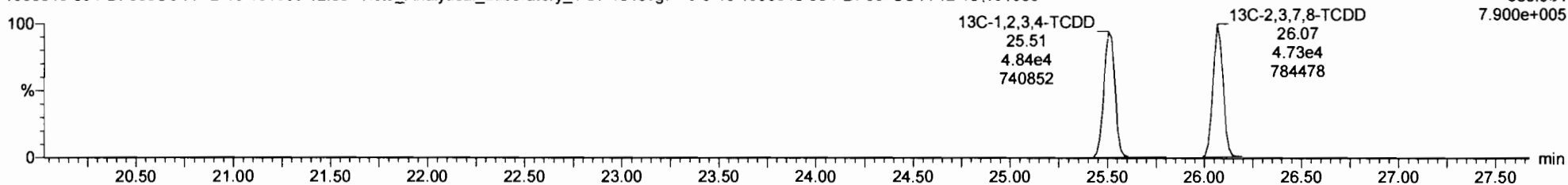
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F1:SIR of 15 channels,EI+  
331.9368  
6.257e+005



191205D4\_9  
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F1:SIR of 15 channels,EI+  
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7.900e+005



Vista Analytical Laboratory

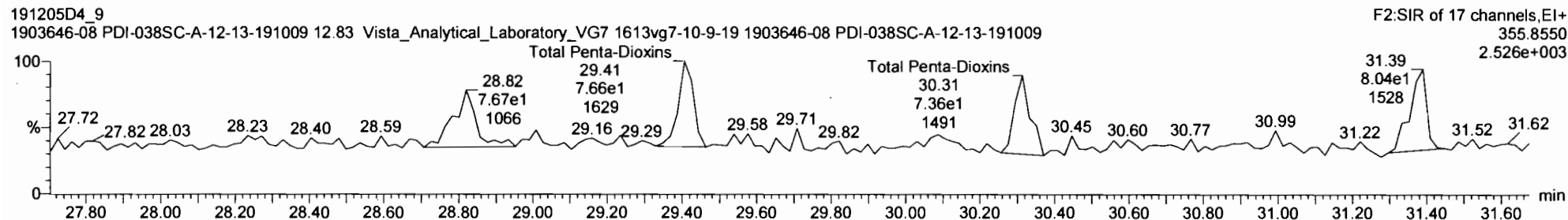
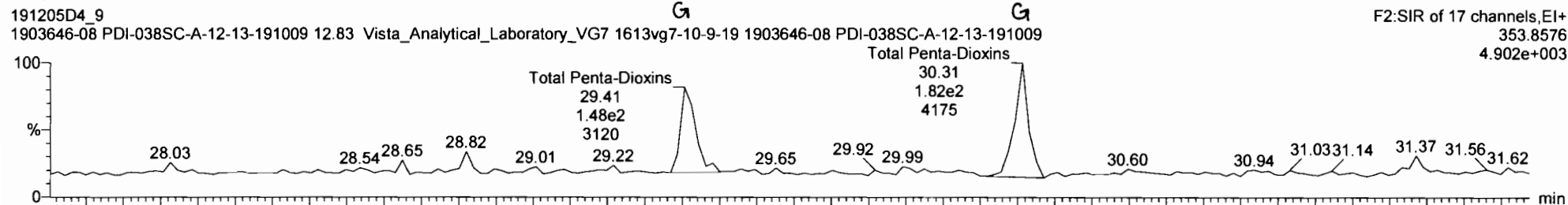
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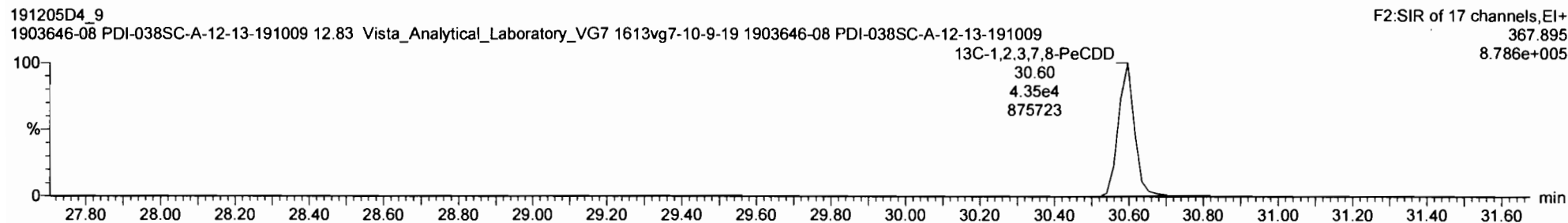
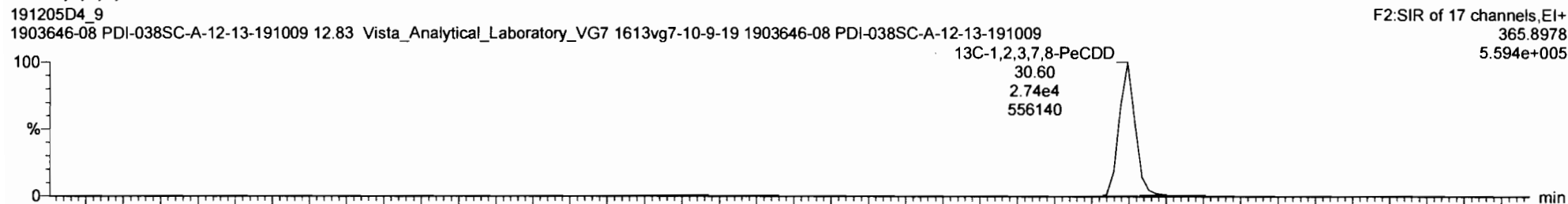
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Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Penta-Dioxins



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



Vista Analytical Laboratory

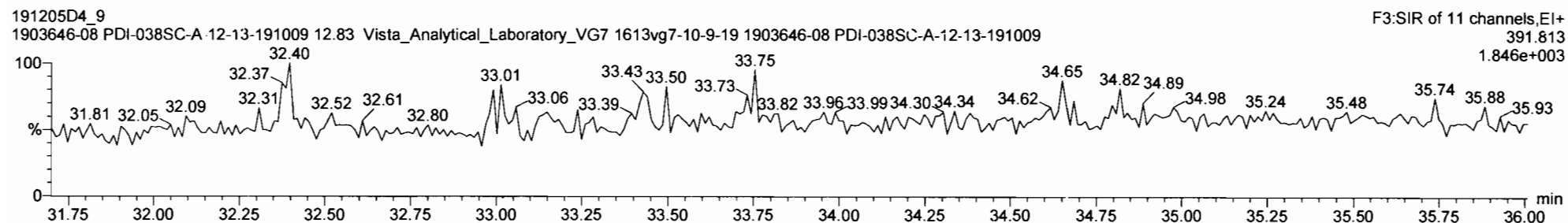
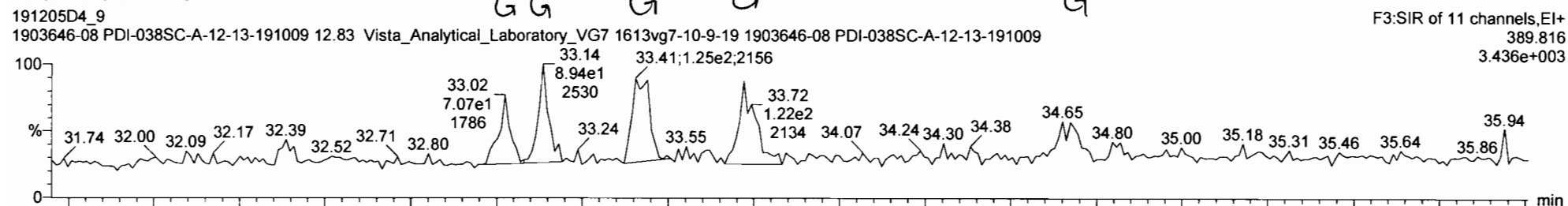
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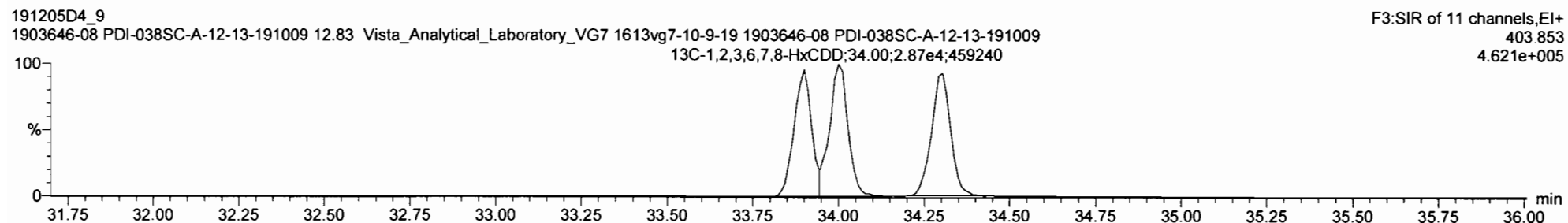
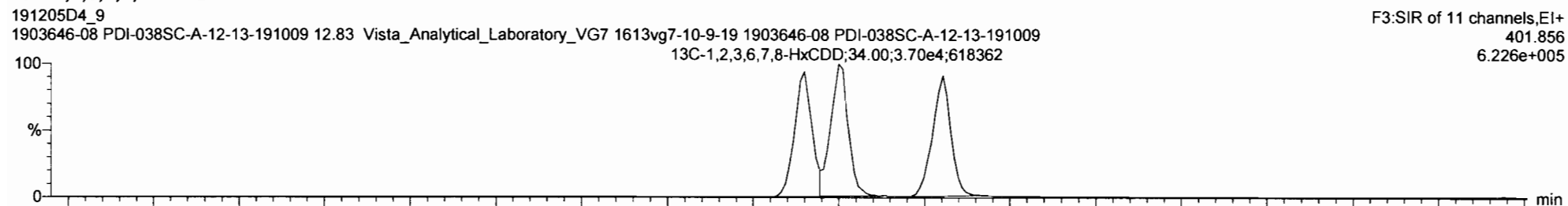
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Total Hexa-Dioxins



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



Vista Analytical Laboratory

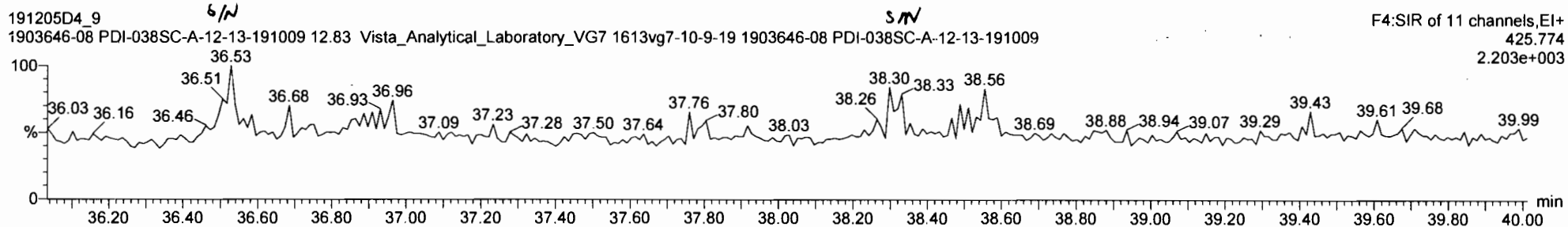
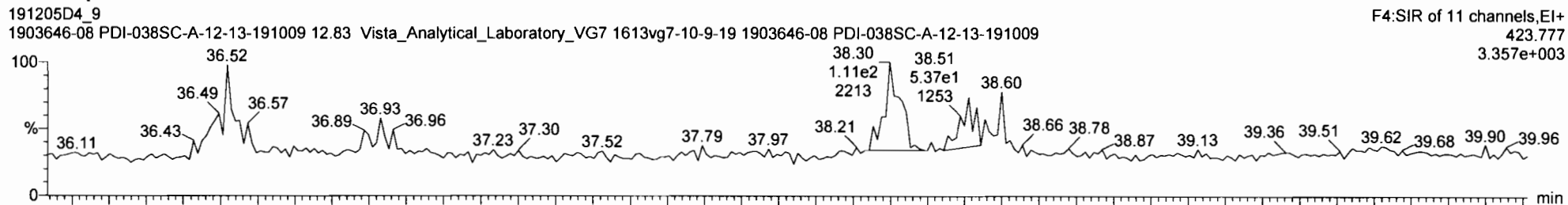
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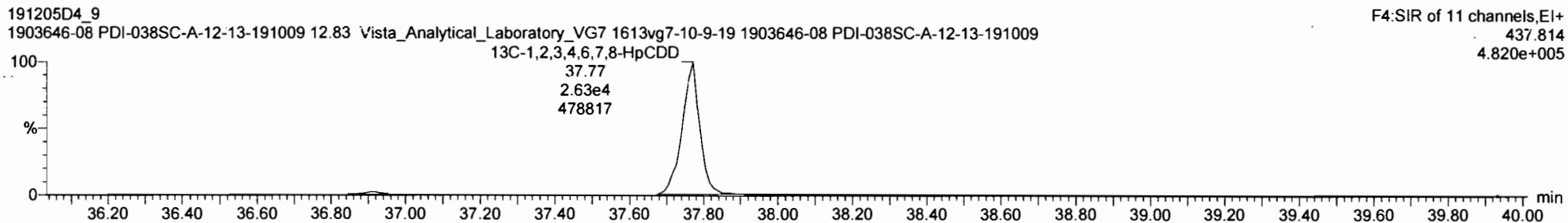
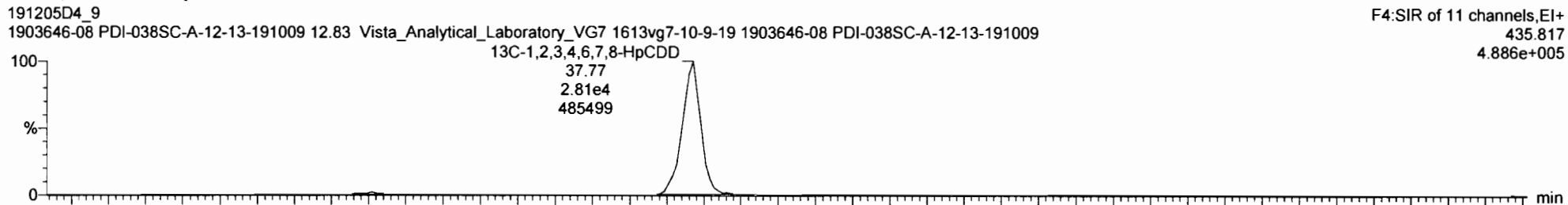
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Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Hepta-Dioxins



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



Vista Analytical Laboratory

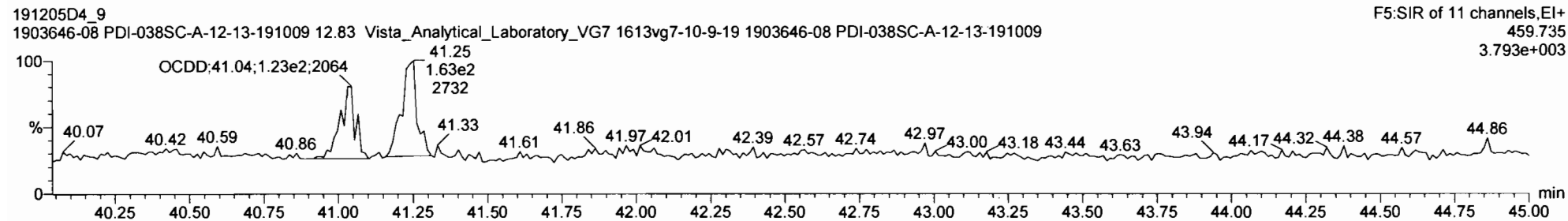
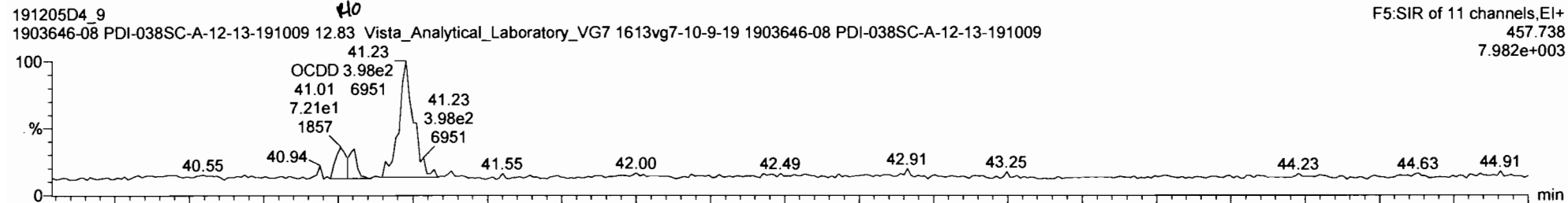
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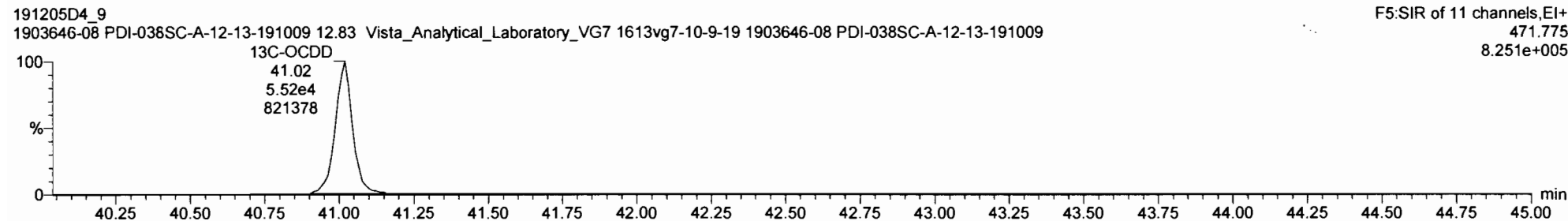
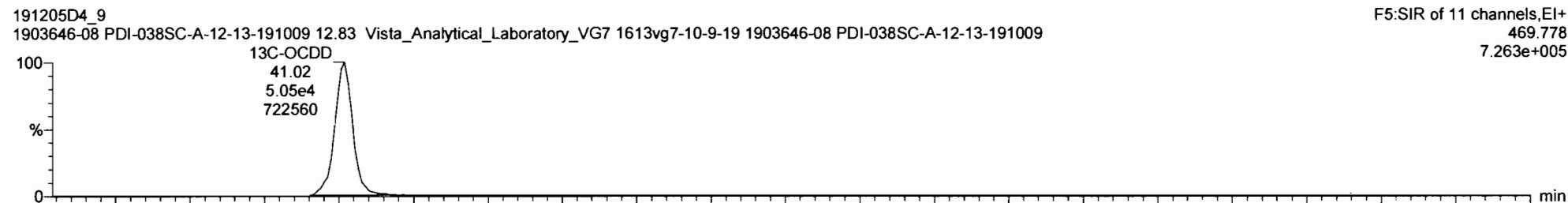
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OCDD



13C-OCDD



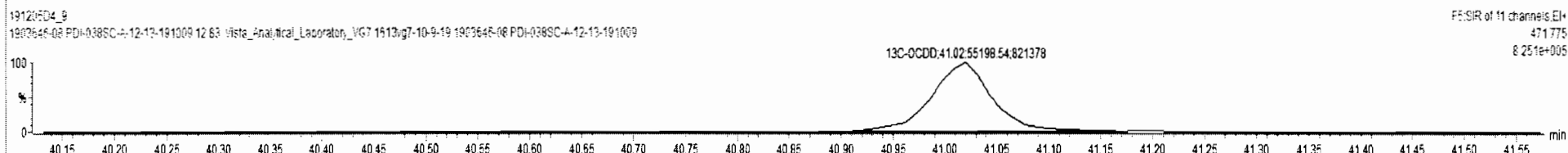
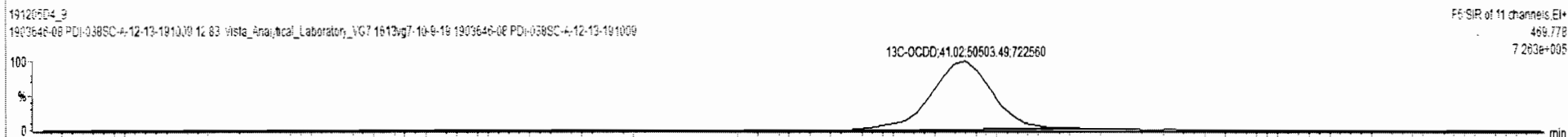
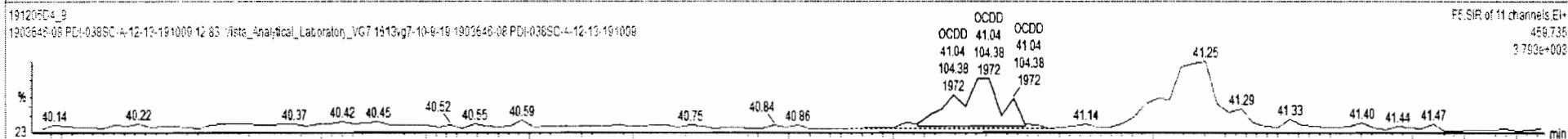
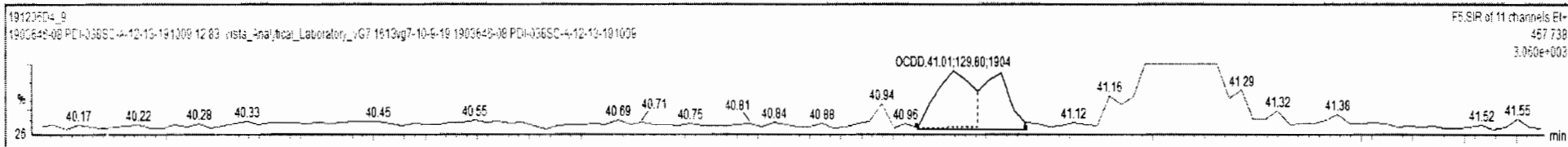




191205D4\_9 - 1903646-08 PDI-038SC-A-12-13-191009 - 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wrtVol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1,2,3,7,8-TCDD		8.47e4	18			0.905	10.324	26.10			1.001	NO			0.222	
2	1,2,3,7,8-PeCDD		7.06e4	19			0.903	10.324	30.62			1.001	NO			0.192	
3	1,2,3,4,7,8-HxCDD		5.96e4	20			1.101	10.324	33.91			1.006	NO			0.275	
4	1,2,3,6,7,8-HxCDD		6.57e4	21			0.939	10.324	34.00			1.006	NO			0.306	
5	1,2,3,7,8,9-HxCDD		6.22e4	22			0.961	10.324	34.34			1.001	NO			0.326	
6	1,2,3,4,6,7,8-HpCDD		5.44e4	23			0.979	10.324	37.78			1.006	NO			0.413	
7	OCDD	2.34e2	1.96e5	24	1.24	YES	0.959	10.324	41.02	41.01	1.000	1.000	NO	8.8955	0.294	0.7544	
8	1,2,3,7,8-TCDF		1.42e5	25			0.950	10.324	25.31			1.001	NO			0.163	
9	1,2,3,7,8-PeCDF		1.14e5	26			0.950	10.324	29.45			1.001	NO			0.145	
10	1,2,3,4,7,8-PeCDF		1.17e5	27			1.015	10.324	30.34			1.001	NO			0.117	
11	1,2,3,4,7,8-HxCDF		8.55e4	28			1.177	10.324	33.01			1.000	NO			0.142	
12	1,2,3,6,7,8-HxCDF		8.97e4	29			1.069	10.324	33.15			1.000	NO			0.158	
13	1,2,3,7,8,9-HxCDF		8.77e4	30			1.114	10.324	33.39			1.001	NO			0.164	

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



Vista Analytical Laboratory

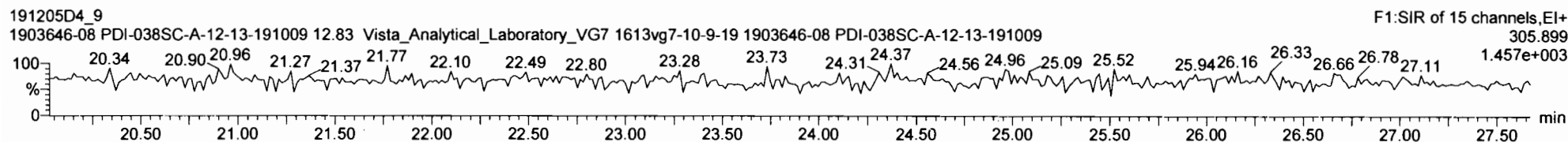
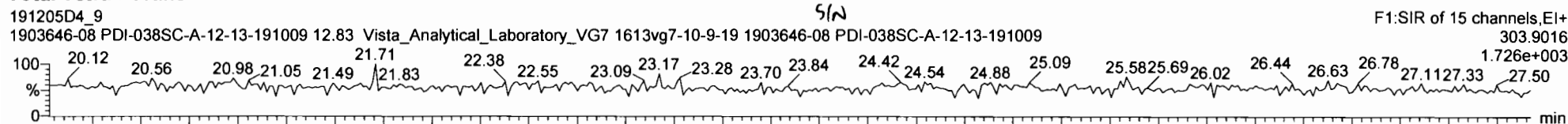
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

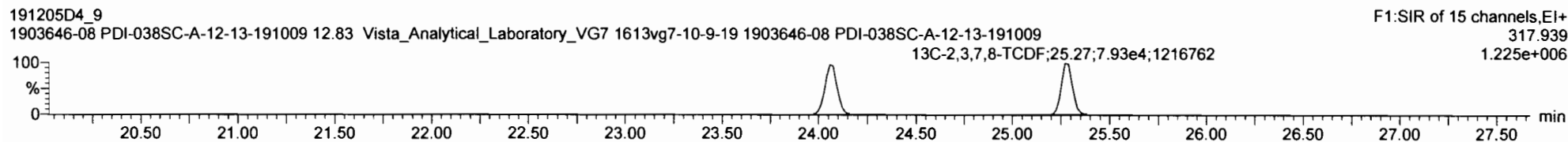
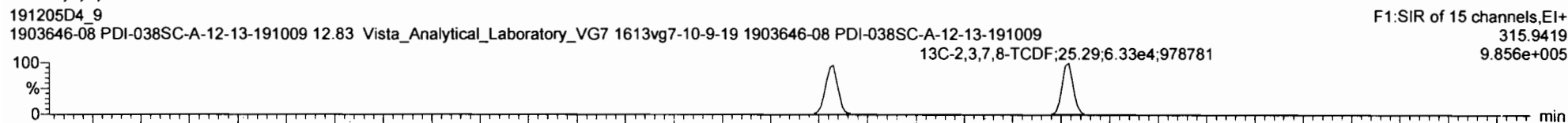
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Name: 191205D4\_9, Date: 7-DEC-2019, Time: 12:28:50, ID: 1903646-08 PDI-038SC-A-12-13-191009, Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

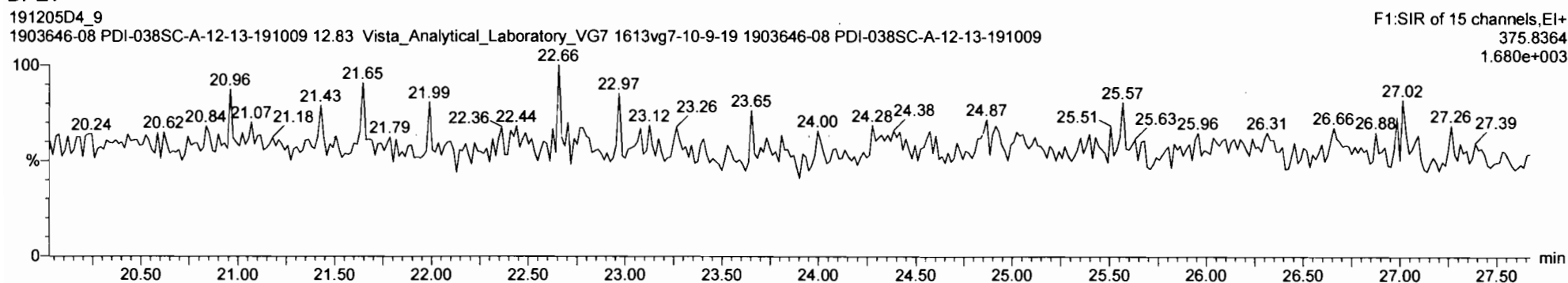
Total Tetra-Furans



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



DPE1



Vista Analytical Laboratory

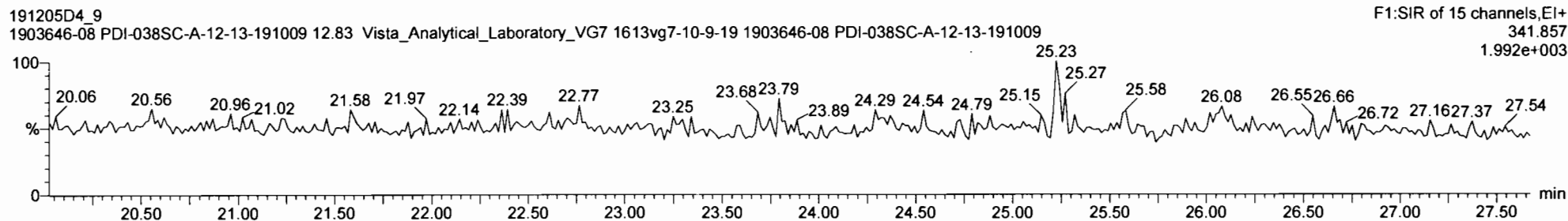
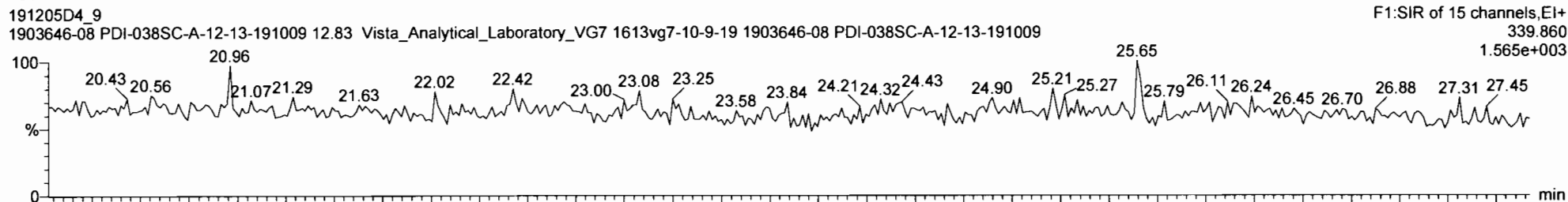
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

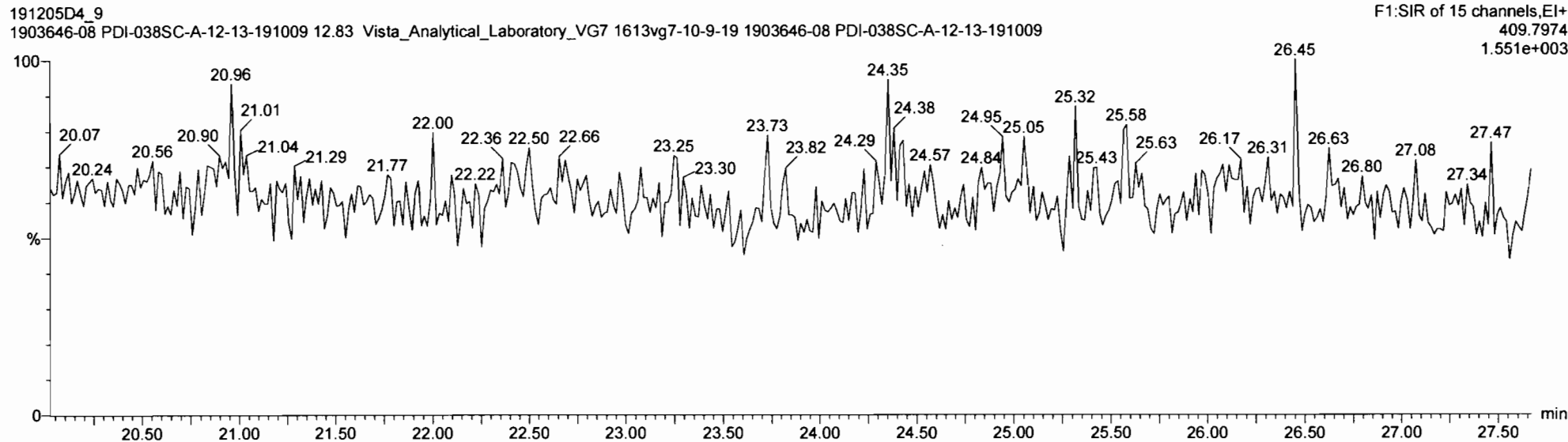
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_9, Date: 7-DEC-2019, Time: 12:28:50, ID: 1903646-08 PDI-038SC-A-12-13-191009,  
Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

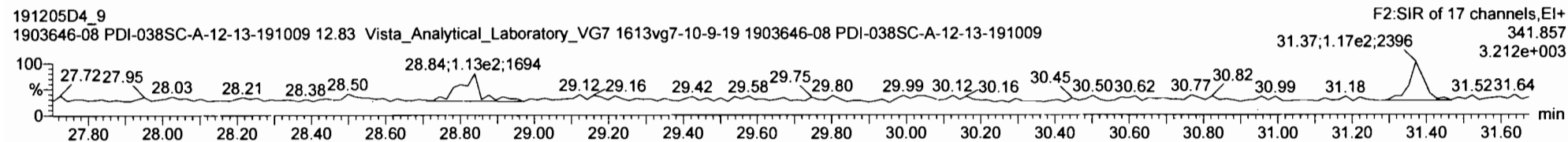
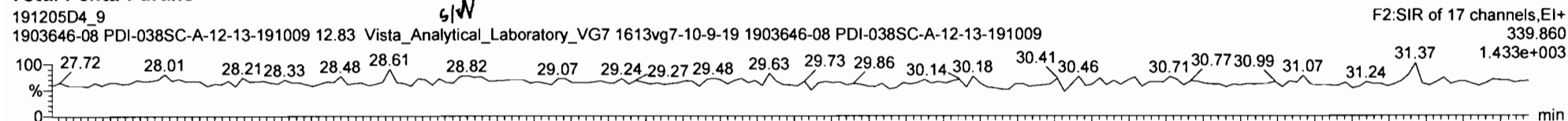
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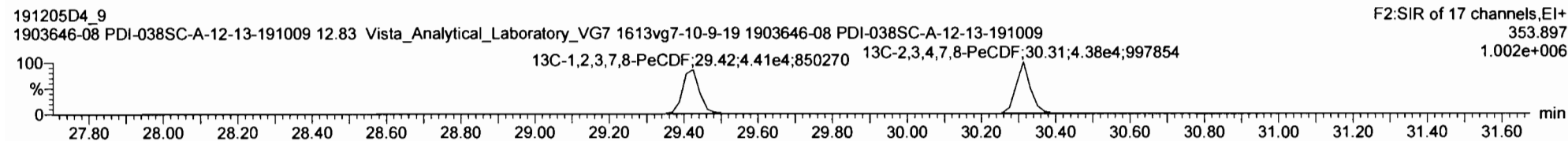
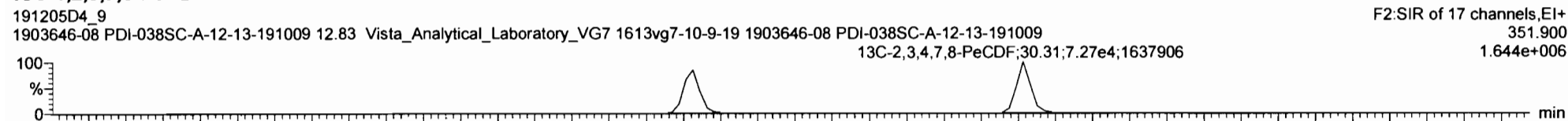
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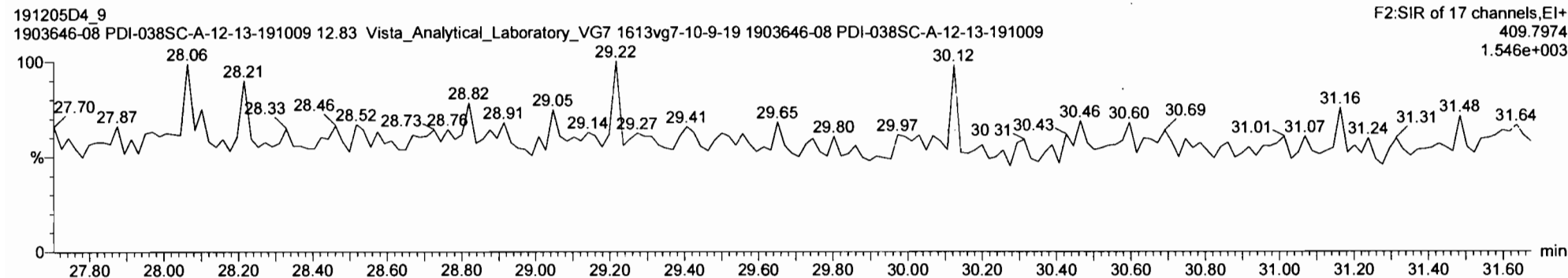
**Total Penta-Furans**



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



**DPE2**



Vista Analytical Laboratory

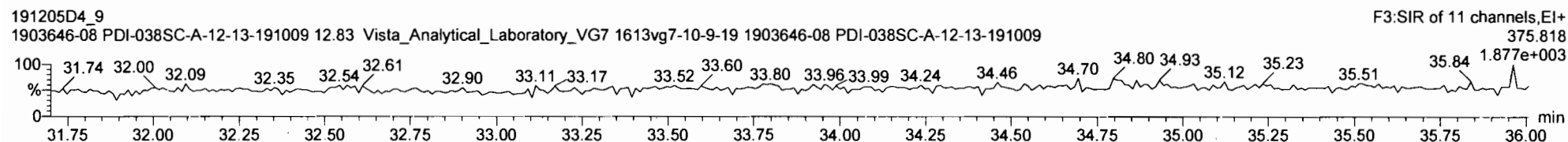
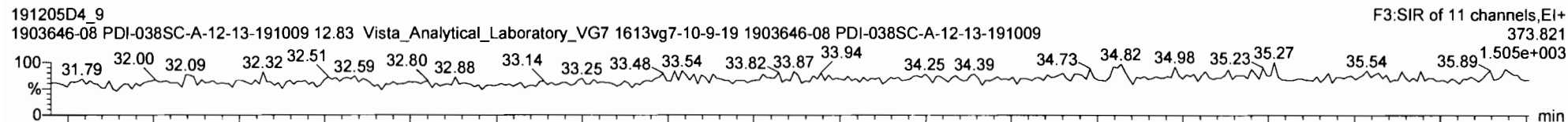
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

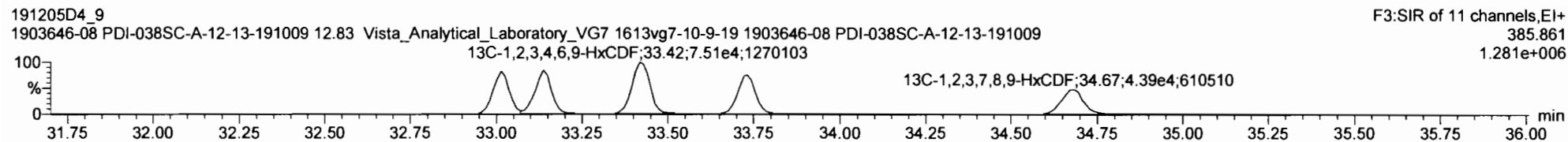
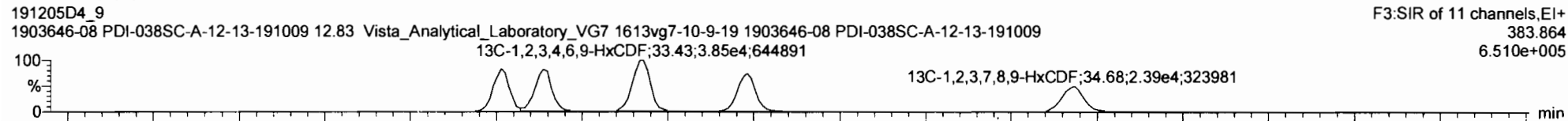
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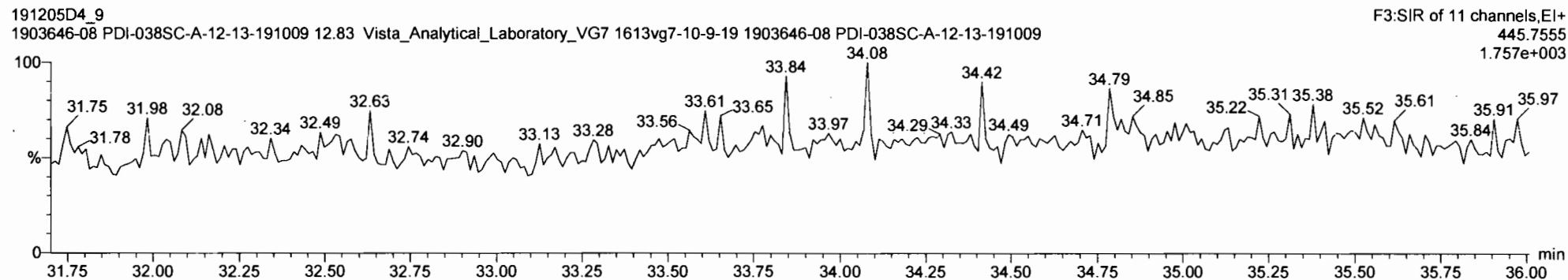
Total Hexa-Furans



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



DPE3



Vista Analytical Laboratory

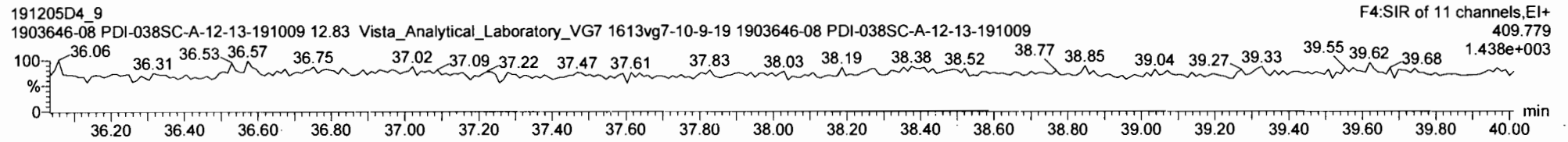
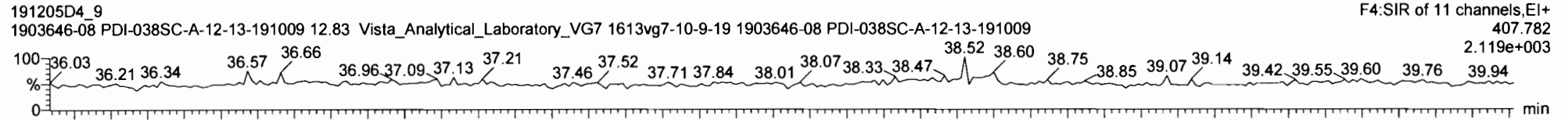
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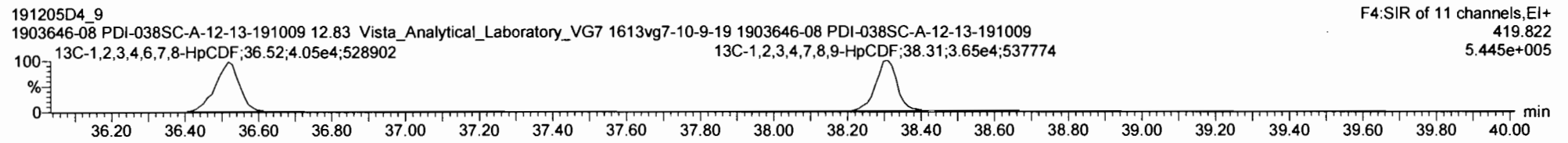
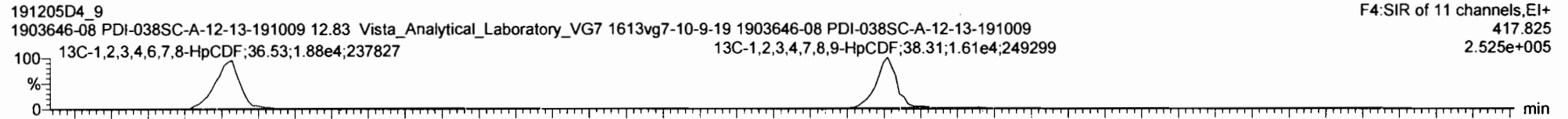
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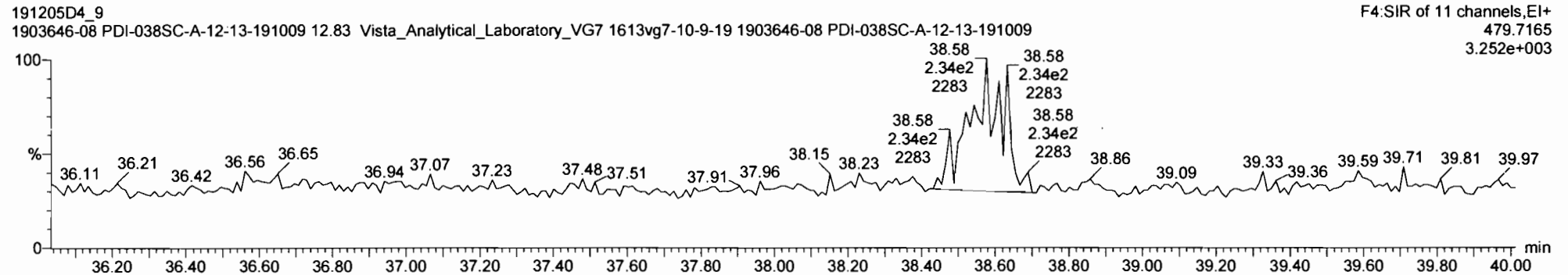
Total Hepta-Furans



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



DPE4



Vista Analytical Laboratory

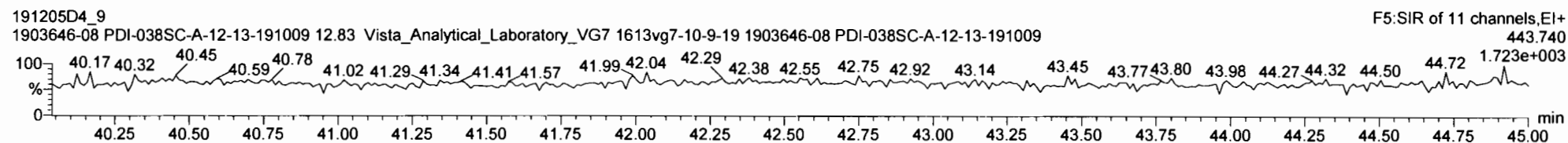
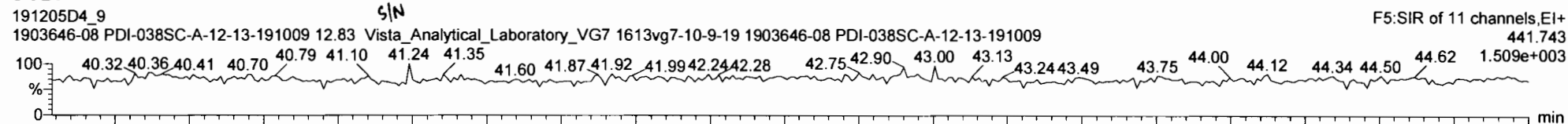
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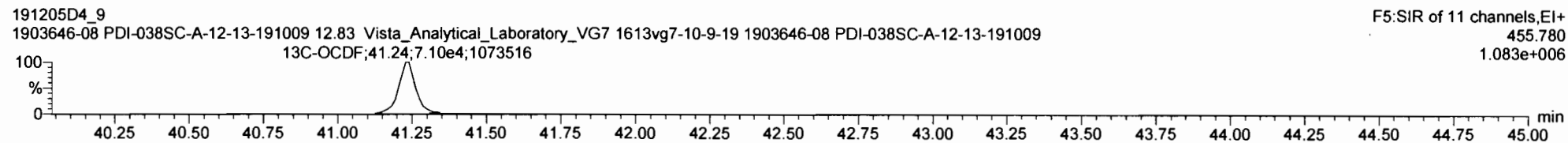
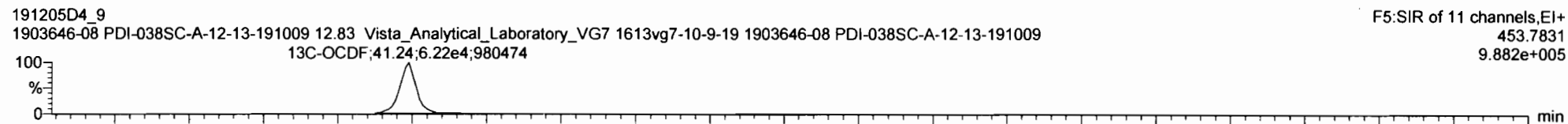
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Name: 191205D4\_9, Date: 7-DEC-2019, Time: 12:28:50, ID: 1903646-08 PDI-038SC-A-12-13-191009,  
Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

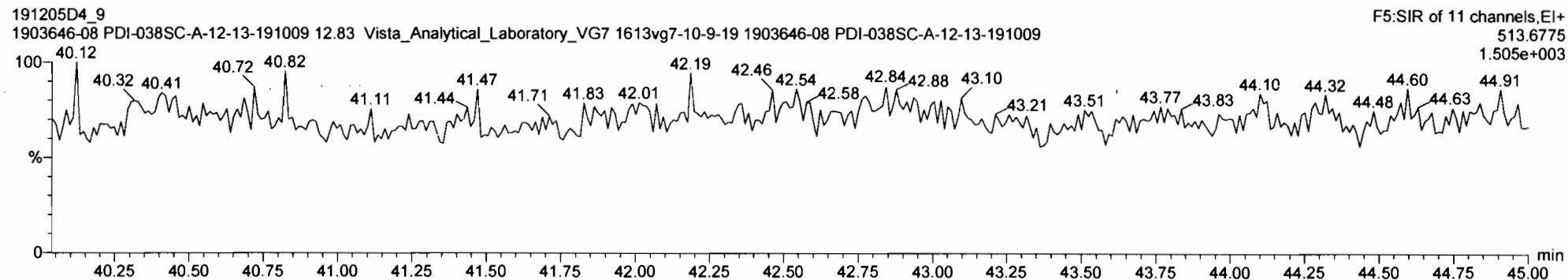
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

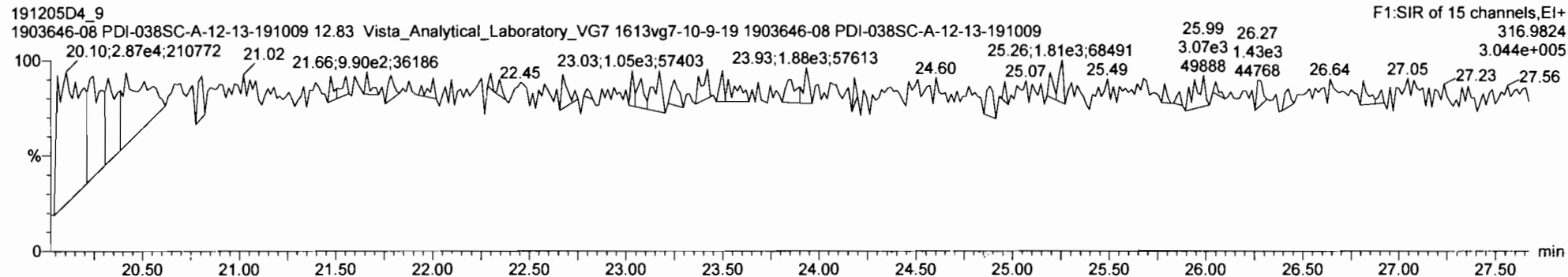
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

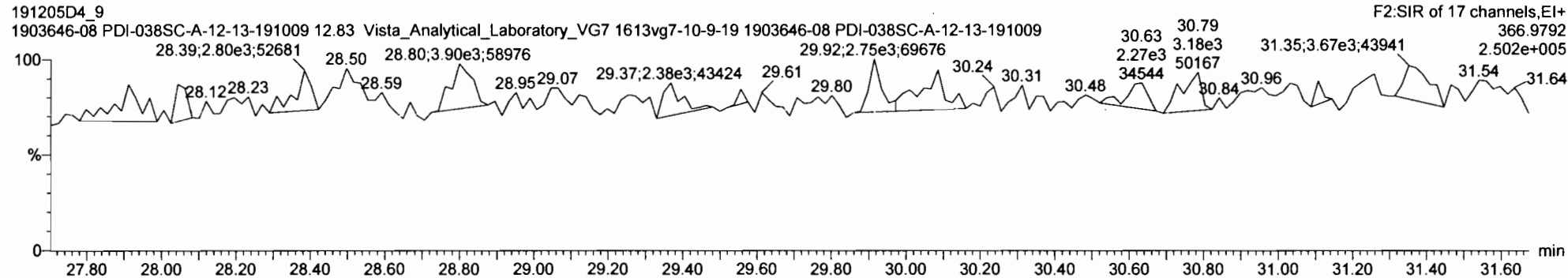
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Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

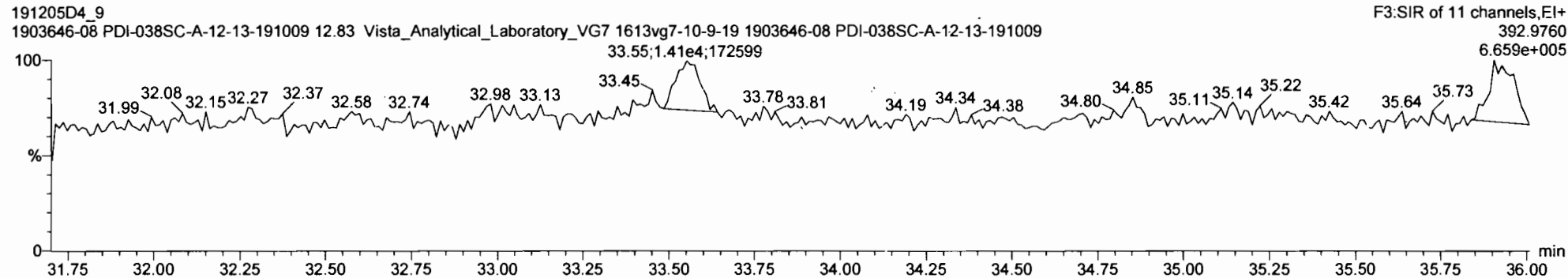
PFK1



PFK2



PFK3





Vista Analytical Laboratory

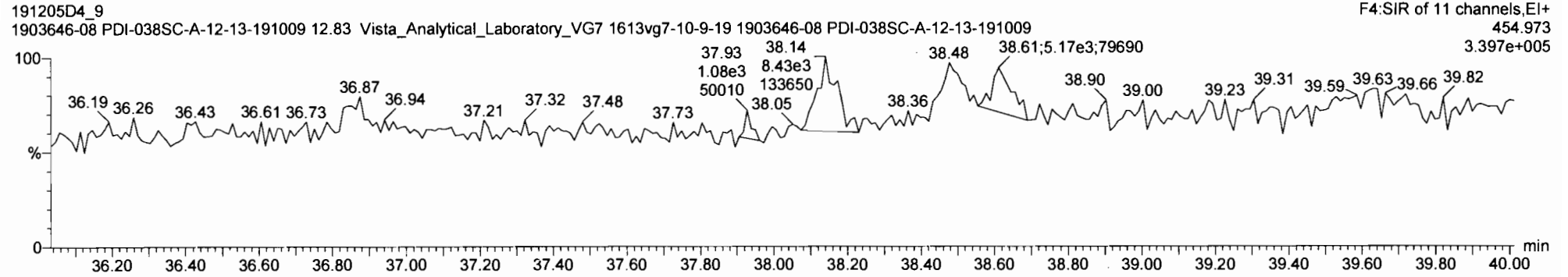
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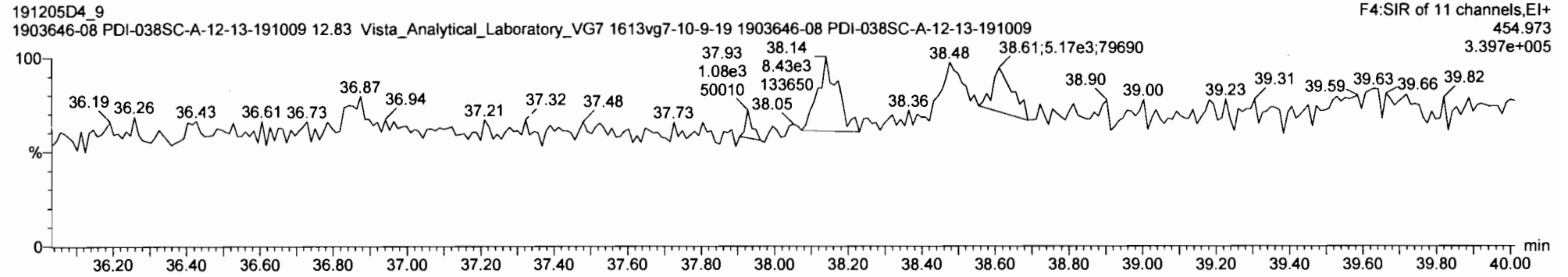
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Description: 1903646-08 PDI-038SC-A-12-13-191009 12.83 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-10.qld

Last Altered: Wednesday, December 11, 2019 11:37:29 Pacific Standard Time

Printed: Wednesday, December 11, 2019 11:39:21 Pacific Standard Time

EL 12/11/19

CT 12/12/19

Method: U:\VG7.pro\MethDB\1613VG7-12-4-19.mdb 06 Dec 2019 10:27:59

Calibration: 10 Dec 2019 15:18:31

Name: 191205D4\_10, Date: 7-DEC-2019, Time: 13:16:49, ID: 1903646-09 PDI-038SC-A-13-13.7-191009,

Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Area	IS Area	WL/Vol	RRF	RA	Y/N	Pred...	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	2,3,7,8-TCDD		8.91e4	10.1965	0.905			1.001		26.11					0.212
2	1,2,3,7,8-PeCDD		7.54e4	10.1965	0.903			1.001		30.62					0.208
3	1,2,3,4,7,8-HxCDD		5.90e4	10.1965	1.101			1.000		33.91					0.309
4	1,2,3,6,7,8-HxCDD		6.74e4	10.1965	0.939			1.000		34.01					0.352
5	1,2,3,7,8,9-HxCDD		6.75e4	10.1965	0.961			1.001		34.34					0.358
6	1,2,3,4,6,7,8-HpCDD	4.70e2	5.97e4	10.1965	0.979	1.075	NO	1.000	1.000	37.78	37.78	1.5753		1.58	0.487
7	OCDD	3.28e3	1.11e5	10.1965	0.959	0.873	NO	1.000	1.000	41.03	41.03	12.098		12.1	0.960
8	2,3,7,8-TCDF		1.51e5	10.1965	0.950			1.001		25.31					0.156
9	1,2,3,7,8-PeCDF		1.17e5	10.1965	0.960			1.001		29.45					0.134
10	2,3,4,7,8-PeCDF		1.18e5	10.1965	1.015			1.001		30.35					0.125
11	1,2,3,4,7,8-HxCDF		8.63e4	10.1965	1.177			1.000		33.02					0.132
12	1,2,3,6,7,8-HxCDF		9.31e4	10.1965	1.069			1.000		33.15					0.143
13	2,3,4,6,7,8-HxCDF		8.84e4	10.1965	1.114			1.001		33.77					0.162
14	1,2,3,7,8,9-HxCDF		7.85e4	10.1965	1.062			1.000		34.69					0.201
15	1,2,3,4,6,7,8-HpCDF		6.62e4	10.1965	1.128			1.001		36.55					0.212
16	1,2,3,4,7,8,9-HpCDF		5.96e4	10.1965	1.280			1.000		38.31					0.176
17	OCDF		1.39e5	10.1965	0.947			1.000		41.25					1.91
18	13C-2,3,7,8-TCDD	8.91e4	8.86e4	10.1965	1.095	0.785	NO	1.021	1.023	26.05	26.08	180.27	91.9		0.744
19	13C-1,2,3,7,8-PeCDD	7.54e4	8.86e4	10.1965	0.881	0.640	NO	1.187	1.200	30.27	30.60	189.46	96.6		0.453
20	13C-1,2,3,4,7,8-Hx...	5.90e4	1.15e5	10.1965	0.642	1.307	NO	1.014	1.014	33.89	33.90	156.76	79.9		0.922
21	13C-1,2,3,6,7,8-Hx...	6.74e4	1.15e5	10.1965	0.856	1.268	NO	1.017	1.017	34.01	34.01	134.37	68.5		0.692
22	13C-1,2,3,7,8,9-Hx...	6.75e4	1.15e5	10.1965	0.807	1.285	NO	1.026	1.026	34.31	34.30	142.82	72.8		0.734
23	13C-1,2,3,4,6,7,8-H...	5.97e4	1.15e5	10.1965	0.654	1.084	NO	1.126	1.130	37.65	37.77	155.79	79.4		1.30
24	13C-OCDD	1.11e5	1.15e5	10.1965	0.580	0.891	NO	1.226	1.227	40.99	41.03	326.95	83.3		0.711
25	13C-2,3,7,8-TCDF	1.51e5	1.54e5	10.1965	1.035	0.794	NO	0.992	0.991	25.30	25.29	185.82	94.7		0.502
26	13C-1,2,3,7,8-PeCDF	1.17e5	1.54e5	10.1965	0.854	1.571	NO	1.154	1.154	29.43	29.43	174.42	88.9		0.964
27	13C-2,3,4,7,8-PeCDF	1.18e5	1.54e5	10.1965	0.847	1.543	NO	1.189	1.188	30.33	30.32	176.85	90.2		0.972
28	13C-1,2,3,4,7,8-Hx...	8.63e4	1.15e5	10.1965	0.832	0.500	NO	0.987	0.988	33.01	33.02	176.98	90.2		1.12
29	13C-1,2,3,6,7,8-Hx...	9.31e4	1.15e5	10.1965	1.034	0.520	NO	0.991	0.991	33.12	33.14	153.51	78.3		0.903
30	13C-2,3,4,6,7,8-Hx...	8.84e4	1.15e5	10.1965	0.953	0.513	NO	1.009	1.009	33.74	33.73	158.25	80.7		0.980
31	13C-1,2,3,7,8,9-Hx...	7.85e4	1.15e5	10.1965	0.828	0.499	NO	1.039	1.038	34.72	34.69	161.76	82.5		1.13

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-10.qld

Last Altered: Wednesday, December 11, 2019 11:37:29 Pacific Standard Time

Printed: Wednesday, December 11, 2019 11:39:21 Pacific Standard Time

Name: 191205D4\_10, Date: 7-DEC-2019, Time: 13:16:49, ID: 1903646-09 PDI-038SC-A-13-13.7-191009,  
 Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

#	Name	Area	IS Area	WL/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...	6.62e4	1.15e5	10.1965	0.757	0.439	NO	1.093	1.092	36.53	36.52	149.06	76.0		1.08
33	33 13C-1,2,3,4,7,8,9-H...	5.96e4	1.15e5	10.1965	0.581	0.443	NO	1.143	1.146	38.21	38.31	174.82	89.1		1.41
34	34 13C-OCDF	1.39e5	1.15e5	10.1965	0.689	0.883	NO	1.233	1.234	41.23	41.25	344.80	87.9		0.603
35	35 37Cl-2,3,7,8-TCDD	3.99e4	8.86e4	10.1965	1.198			1.022	1.023	26.07	26.10	73.738	94.0		0.235
36	36 13C-1,2,3,4-TCDD	8.86e4	8.86e4	10.1965	1.000	0.814	NO	1.000	1.000	25.50	25.51	196.14	100.0		0.815
37	37 13C-1,2,3,4-TCDF	1.54e5	1.54e5	10.1965	1.000	0.790	NO	1.000	1.000	24.06	24.08	196.14	100.0		0.519
38	38 13C-1,2,3,4,6,9-Hx...	1.15e5	1.15e5	10.1965	1.000	0.506	NO	1.000	1.000	33.42	33.43	196.14	100.0		0.934
39	39 Total Tetra-Dioxins		8.91e4	10.1965	0.901			0.000		25.50					0.103
40	40 Total Penta-Dioxins		7.54e4	10.1965	0.872			0.000		30.00					0.101
41	41 Total Hexa-Dioxins		0.00e0	10.1965	0.976			0.000		33.80		1.2358		1.24	0.347
42	42 Total Hepta-Dioxins		5.97e4	10.1965	0.989			0.000		37.75		3.9819		3.98	0.483
43	43 Total Tetra-Furans		1.51e5	10.1965	0.943			0.000		24.00					0.0770
44	44 1st Func. Penta-Fur...		0.00e0	10.1965	0.940			0.000		27.63					0.0426
45	45 Total Penta-Furans		0.00e0	10.1965	0.940			0.000		30.00					0.0580
46	46 Total Hexa-Furans		0.00e0	10.1965	1.078			0.000		33.00					0.0954
47	47 Total Hepta-Furans		0.00e0	10.1965	1.135			0.000		37.75					0.104

Vista Analytical Laboratory

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Printed: Wednesday, December 11, 2019 11:39:21 Pacific Standard Time

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Calibration: 10 Dec 2019 15:18:31

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Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_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
41	Total Hexa-Dioxins	NO	32.39	206.967	36359.938	12.297	MM	1.2358	1.24

**Hepta-Dioxins**

#	Name	N/Y	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
42	Total Hepta-Dioxins	NO	36.93	354.145	31054.818	24.261	MM	2.4065	2.41
6	1,2,3,4,6,7,8-HpCDD	NO	37.78	243.322	31054.818	15.732	MM	1.5753	1.58

**Tetra-Furans**

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

**Penta-Furans function 1**

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

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191205D4\191205D4-10.qld

Last Altered: Wednesday, December 11, 2019 11:37:29 Pacific Standard Time

Printed: Wednesday, December 11, 2019 11:39:21 Pacific Standard Time

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Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Penta-Furans

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hexa-Furans

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Hepta-Furans

#	Name	NY	RT	Area	IS Area	Response	Primary Flags	Conc.	EMPC
1									

Vista Analytical Laboratory

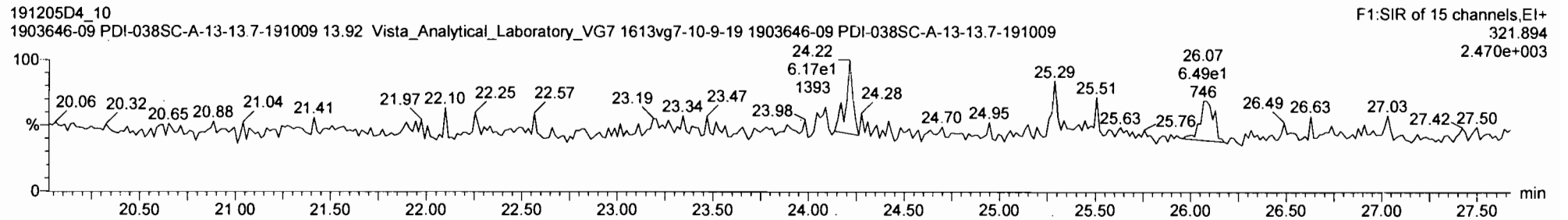
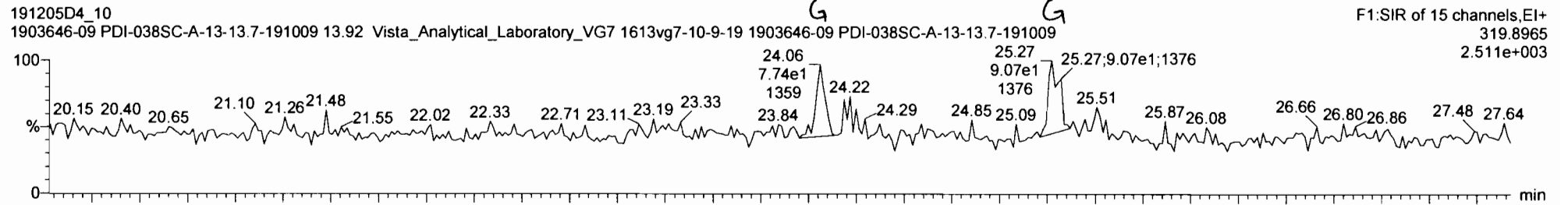
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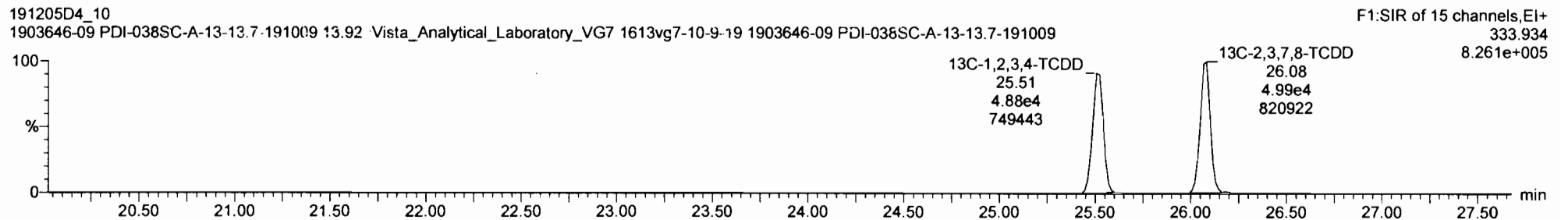
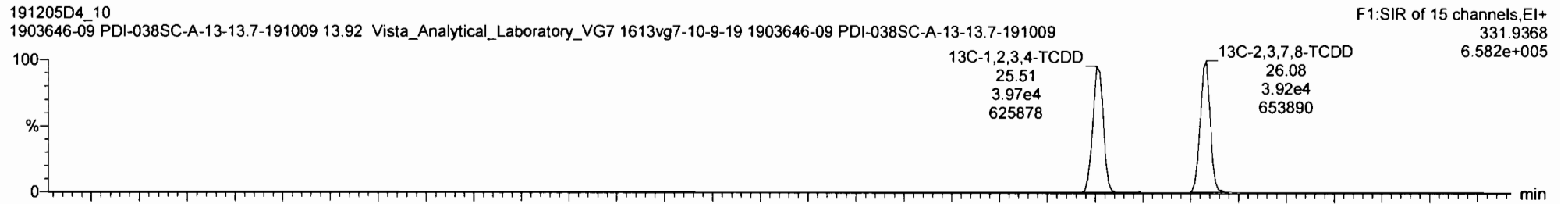
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Total Tetra-Dioxins



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

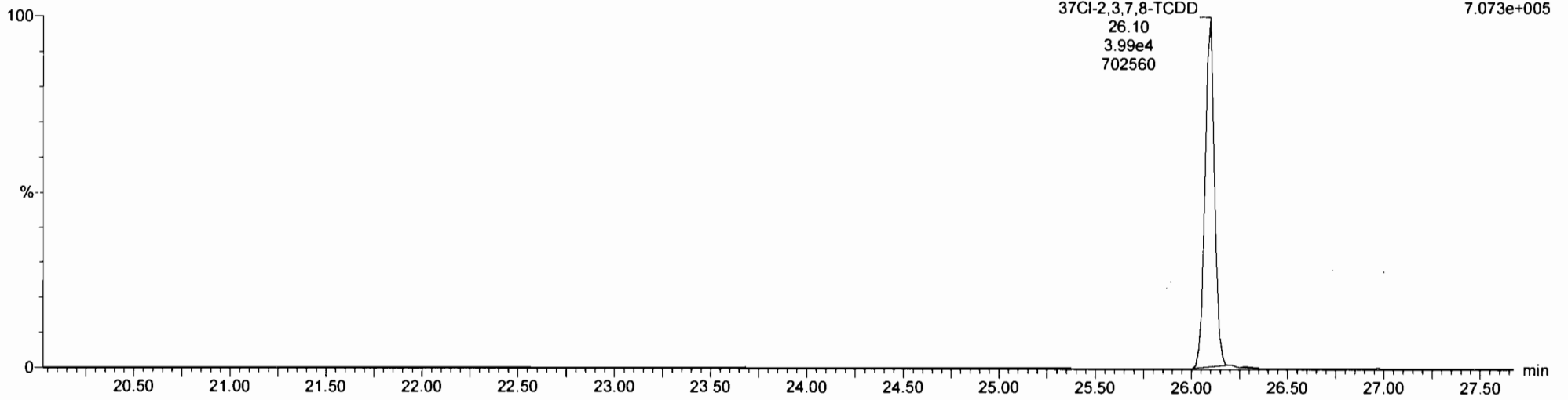


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**37Cl-2,3,7,8-TCDD**

191205D4\_10  
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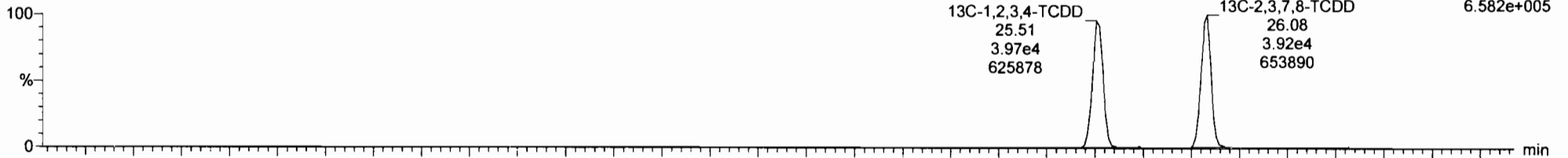
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**13C-1,2,3,4-TCDD**

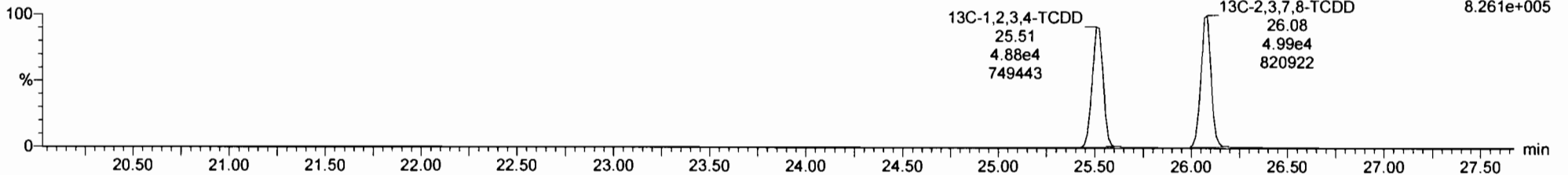
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F1:SIR of 15 channels,EI+  
331.9368  
6.582e+005



191205D4\_10  
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F1:SIR of 15 channels,EI+  
333.934  
8.261e+005



Vista Analytical Laboratory

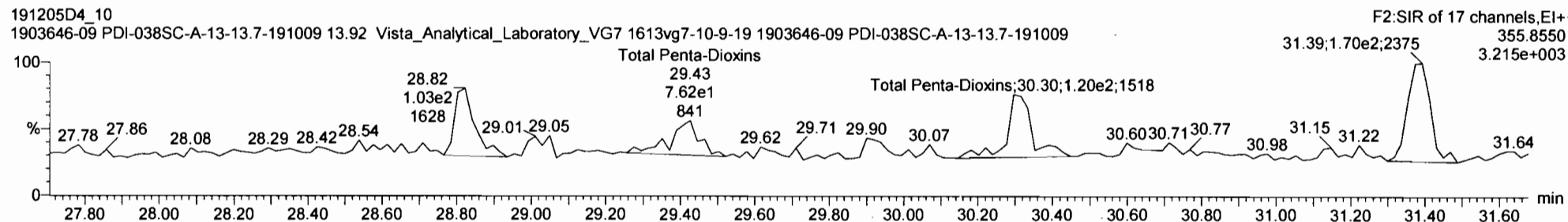
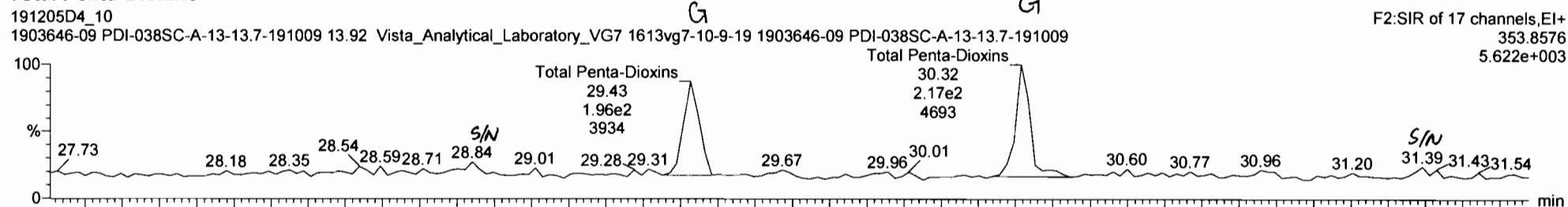
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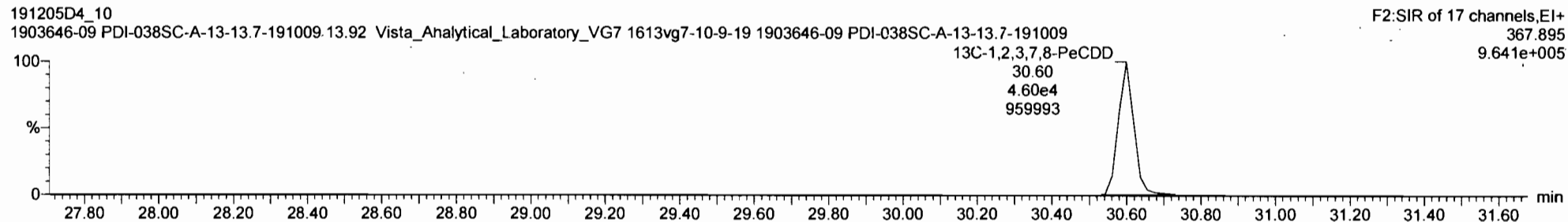
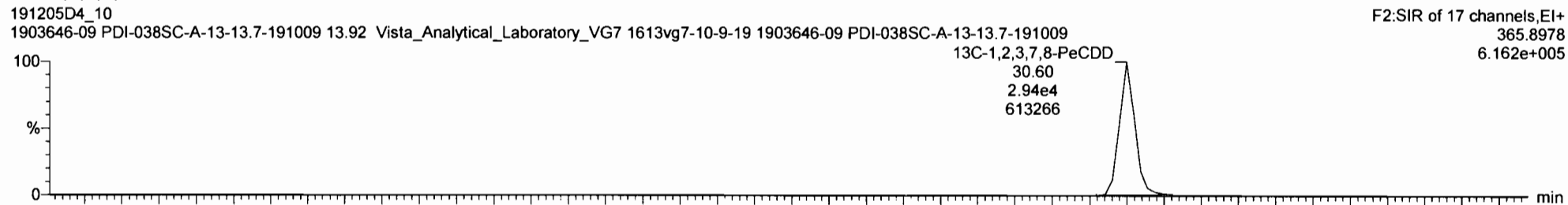
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Total Penta-Dioxins



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





Vista Analytical Laboratory

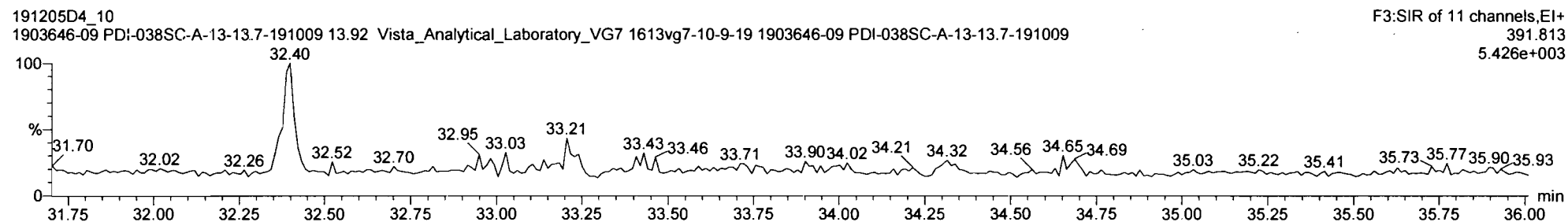
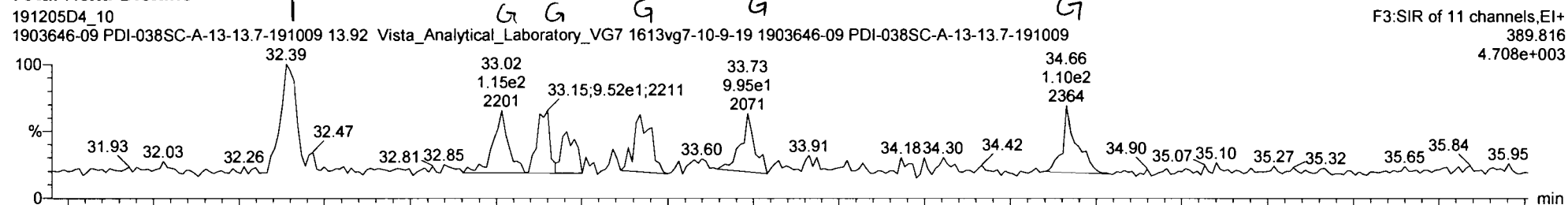
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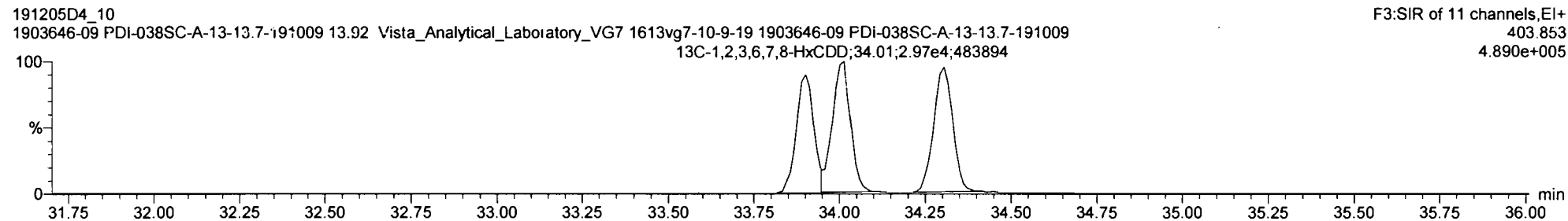
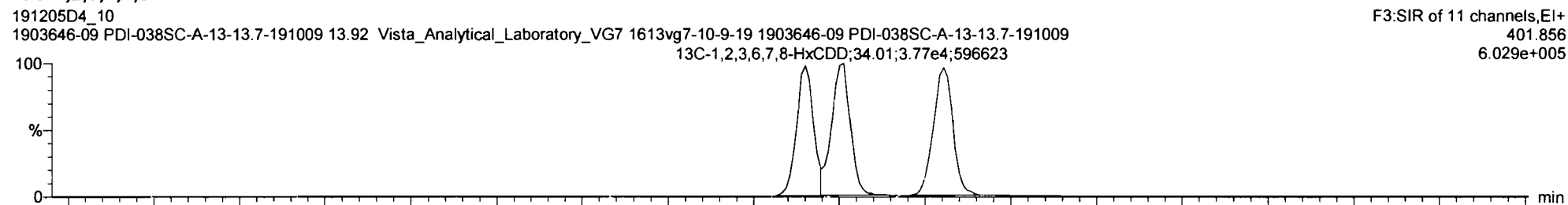
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Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

Total Hexa-Dioxins



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

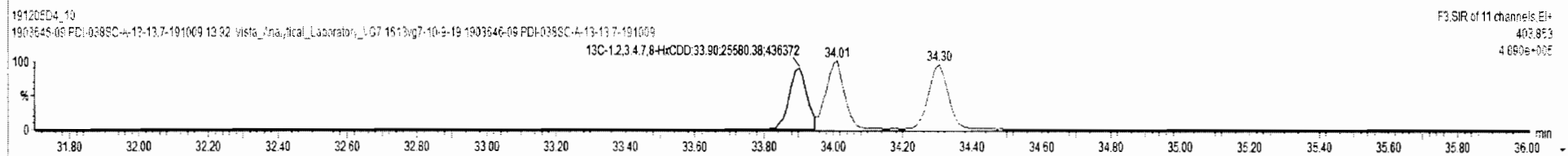
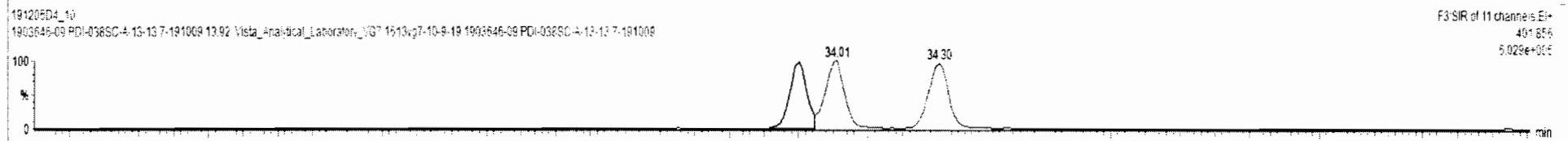
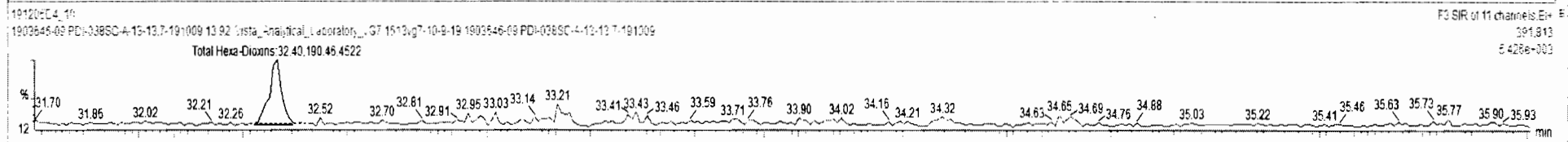
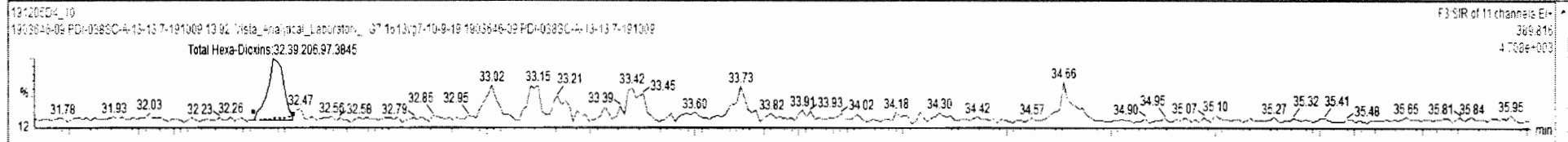




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#	Name	Resp	IS Resp	IS#	RA	n/y	RRF	wtVol	Pred RT	RT	RRT	Pred.RRT	Check RRT	Conc.	%Rec	DL	EMPC
37	13C-1,2,3,4-TCDF	1.54e5	1.54e5	37	0.79	NO	1.000	10.197	24.06	24.08	1.000	1.000	NO	156.1	100	0.519	
38	13C-1,2,3,4,6,8-HxCDF	1.15e5	1.15e5	38	0.51	NO	1.000	10.197	33.42	33.43	1.000	1.000	NO	156.1	100	0.934	
39	Total Tetra-Dioxins		8.91e4				0.901	10.197	25.50			0.000	NO			0.103	
40	Total Penta-Dioxins		7.54e4				0.872	10.197	30.00			0.000	NO			0.101	
41	Total Hexa-Dioxins		0.80e0				0.976	10.197	33.80			0.000	NO	1.236		0.347	1.236
42	Total Hepta-Dioxins		5.97e4				0.989	10.197	37.75			0.000	NO	2.368		0.483	3.775
43	Total Tetra-Furans		1.51e5				0.943	10.197	24.00			0.000	NO			0.0770	
44	1st Func. Penta-Furans		0.00e0				0.940	10.197	27.83			0.000	NO			0.0426	
45	Total Penta-Furans		0.00e0				0.940	10.197	30.00			0.000	NO			0.0580	
46	Total Hexa-Furans		0.00e0				1.078	10.197	33.00			0.000	NO			0.0954	
47	Total Hepta-Furans		0.00e0				1.135	10.197	37.75			0.000	NO			0.104	
48	PEK1																
49	PEK2																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc.
1	41 Total Hexa-Dioxins	33.60	32.39	2.070e2	1.905e2	1.240	1.09	NO	1.2358	1.2358



Vista Analytical Laboratory

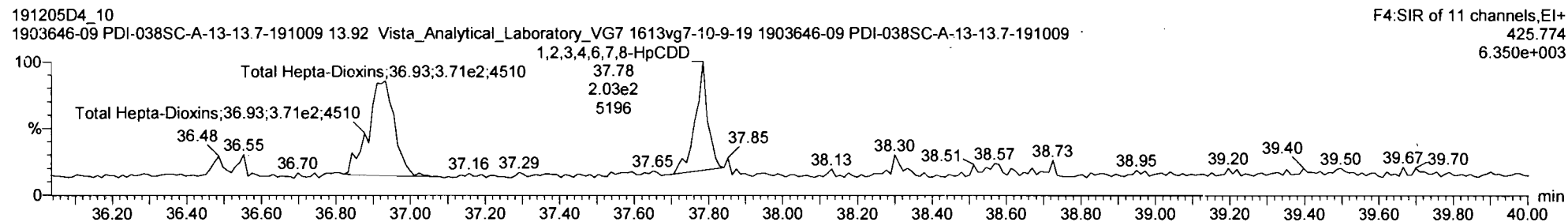
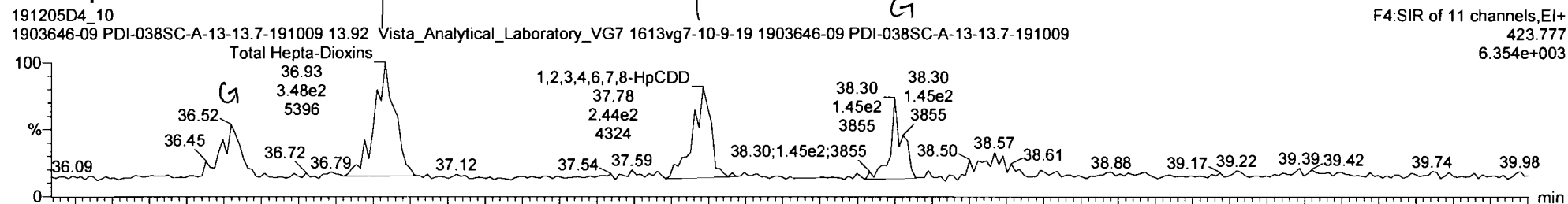
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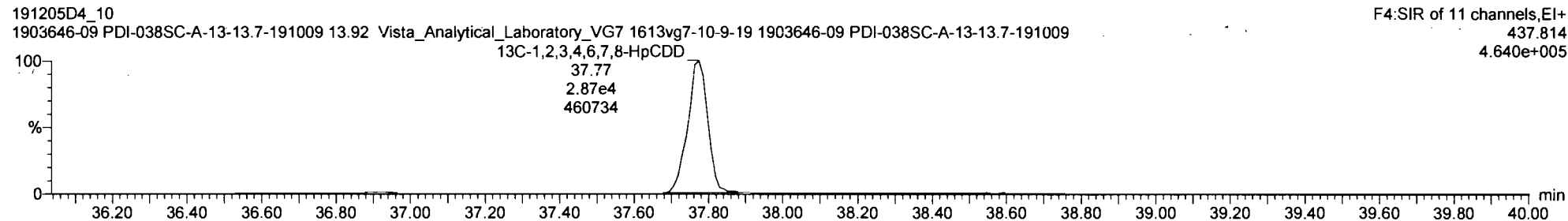
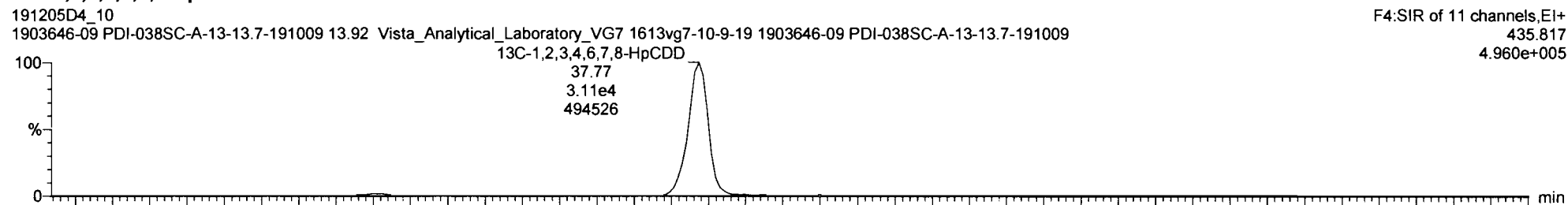
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Total Hepta-Dioxins



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

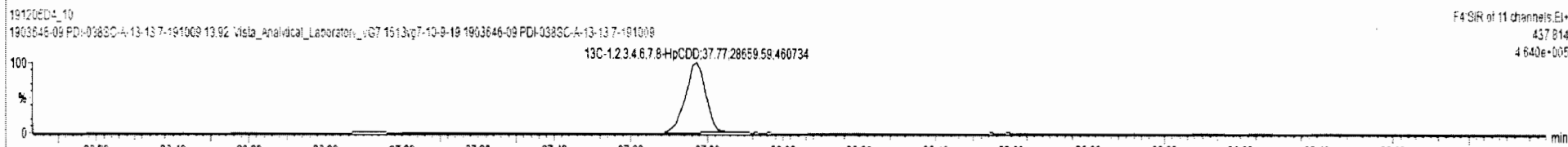
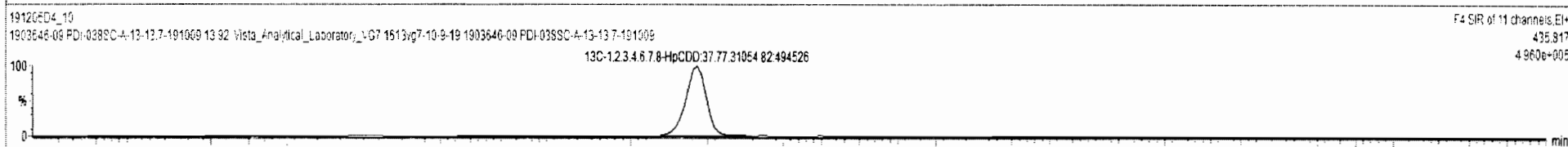
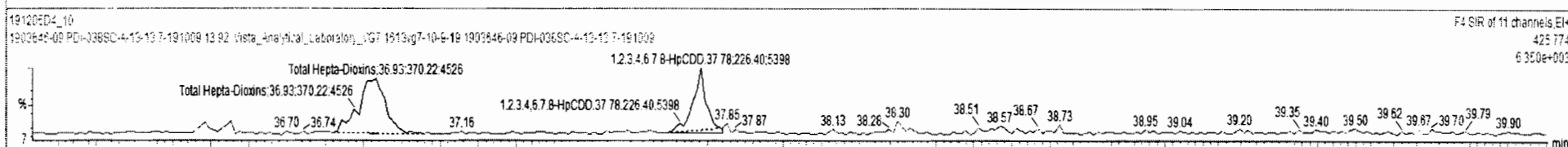
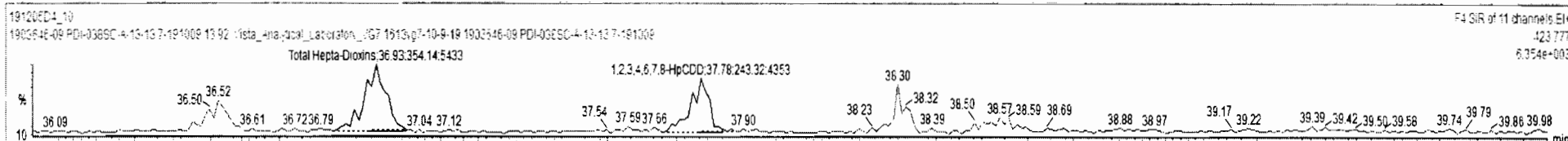




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#	Name	Resp	IS Resp	ES#	RA	n/y	RRF	wt/vol	Pred RT	RT	RRT	Pred RRT	Check RRT	Conc	%Rec	DL	EMPC
37	13C-1,2,3,4-TCDF	1.54e5	1.54e5	37	0.79	NO	1.000	10.197	24.06	24.08	1.000	1.000	NO	196.1	100	0.519	
38	13C-1,2,3,4,6,8-HxCDF	1.15e5	1.15e5	38	0.51	NO	1.000	10.197	33.42	33.43	1.000	1.000	NO	196.1	100	0.934	
39	Total Tetra-Dioxins		8.91e4				0.901	10.197	25.50			0.000	NO			0.103	
40	Total Penta-Dioxins		7.54e4				0.872	10.197	30.00			0.000	NO			0.101	
41	Total Hexa-Dioxins		0.00e0				0.976	10.197	33.80			0.000	NO	1.236		0.347	1.236
42	Total Hepta-Dioxins		5.97e4				0.989	10.197	37.75			0.000	NO	3.982		0.483	3.982
43	Total Tetra-Furans		1.51e5				0.943	10.197	24.00			0.000	NO			0.0770	
44	1st Func Penta-Furans		0.00e0				0.940	10.197	27.63			0.000	NO			0.0426	
45	Total Penta-Furans		0.00e0				0.940	10.197	30.00			0.000	NO			0.0580	
46	Total Hexa-Furans		0.00e0				1.078	10.197	33.00			0.000	NO			0.0854	
47	Total Hepta-Furans		0.00e0				1.135	10.197	37.75			0.000	NO			0.104	
48	DFK1																
49	DFK2																

#	Name	Pred RT	RT	m1 Resp	m2 Resp	Pred RA	RA	n/y	EMPC	Conc
1	42 Total Hepta-Dioxins	37.75	36.93	3.541e2	3.702e2	1.040	0.96	NO	2.4065	2.4065
2	6 1,2,3,4,6,7,8-HpCDD	37.75	37.78	2.430e2	2.264e2	1.040	1.07	NO	1.5753	1.5753



Vista Analytical Laboratory

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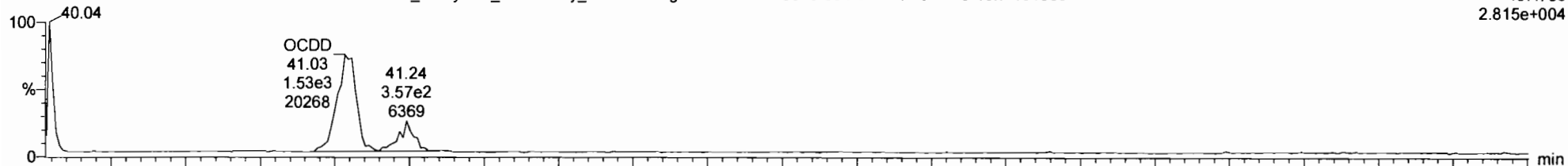
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OCDD

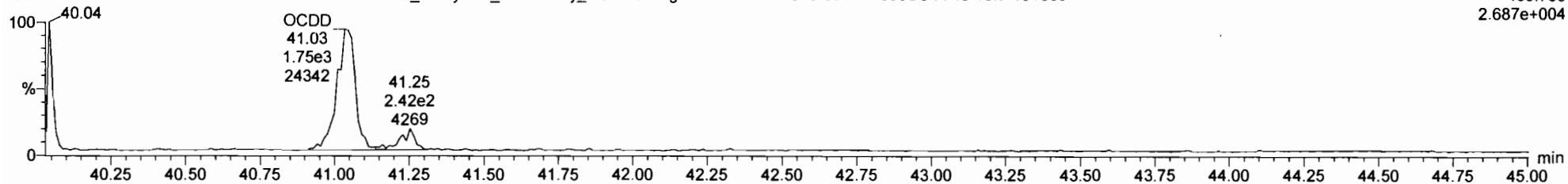
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F5:SIR of 11 channels,EI+  
457.738  
2.815e+004



191205D4\_10  
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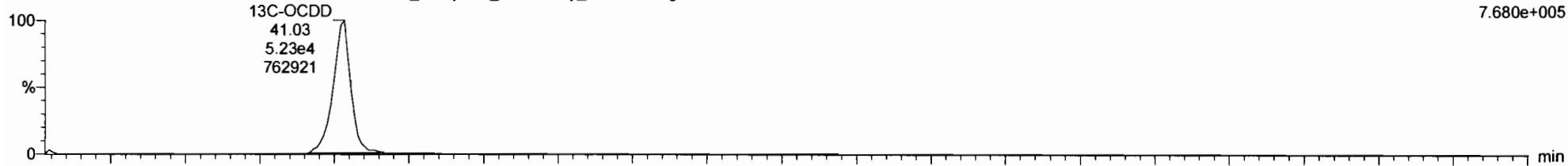
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13C-OCDD

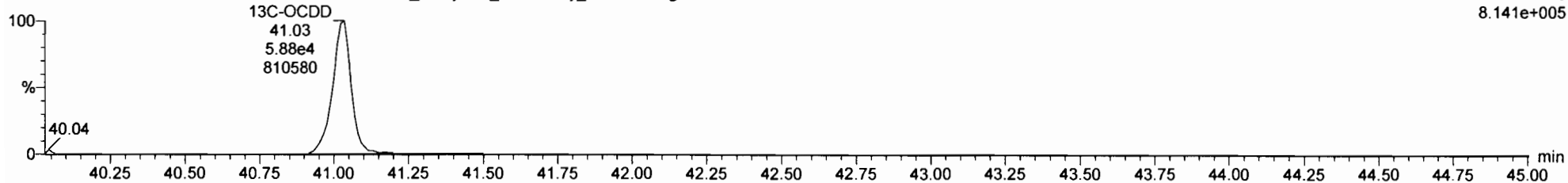
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F5:SIR of 11 channels,EI+  
469.778  
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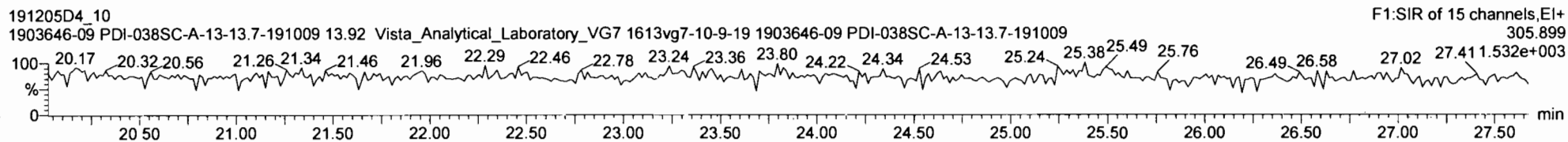
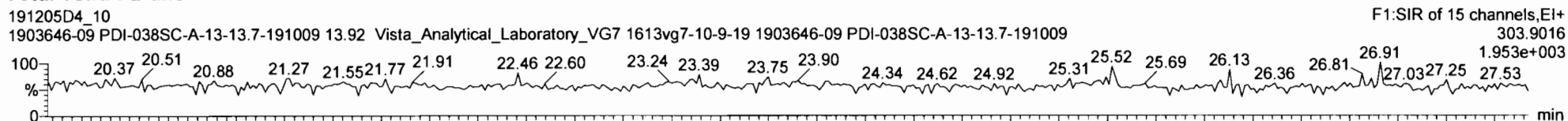
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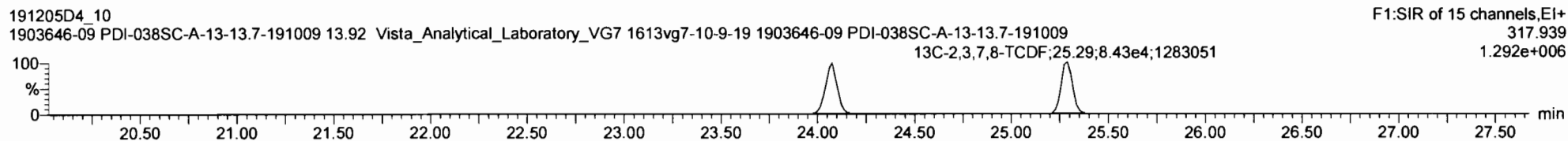
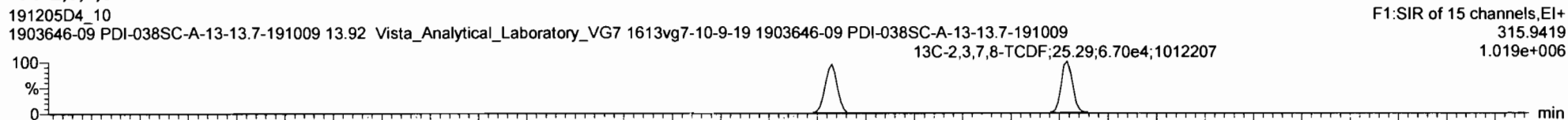


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Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

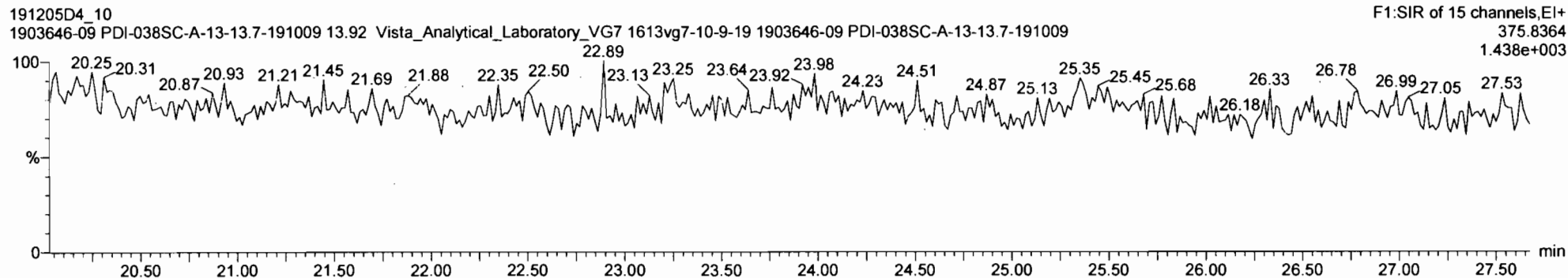
**Total Tetra-Furans**



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



**DPE1**



Vista Analytical Laboratory

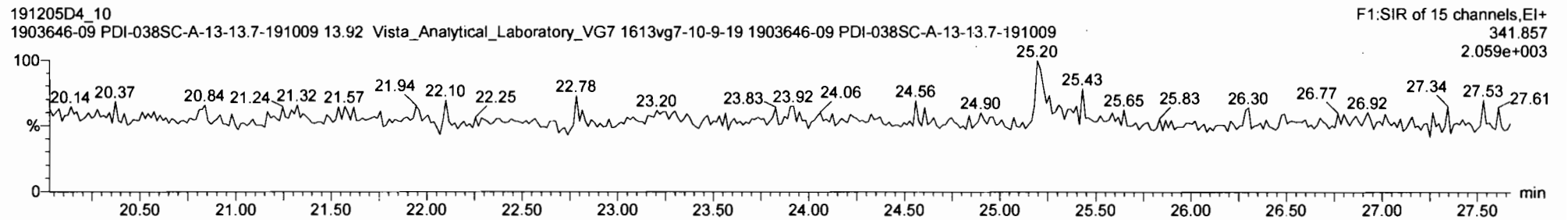
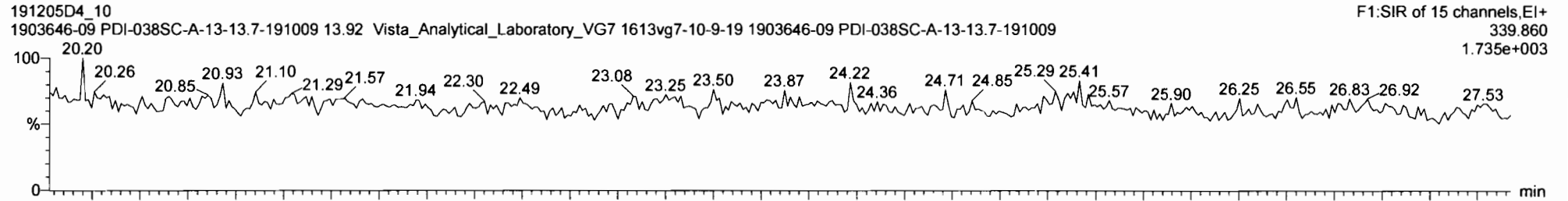
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

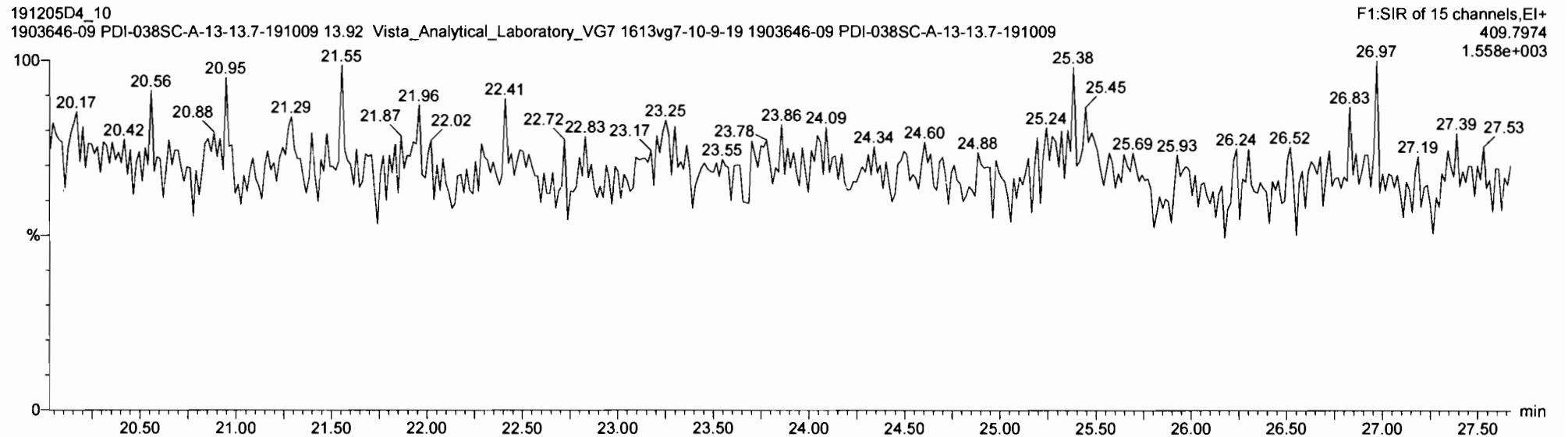
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

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Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

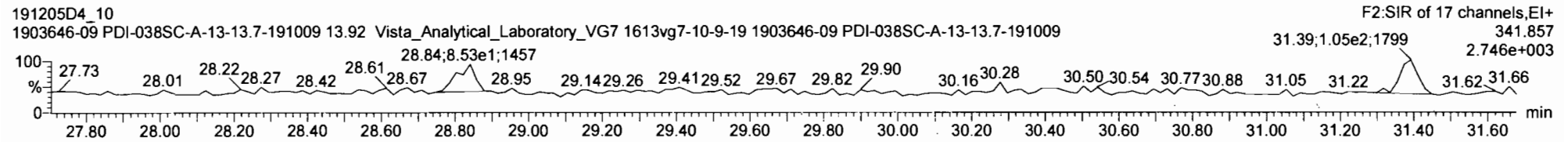
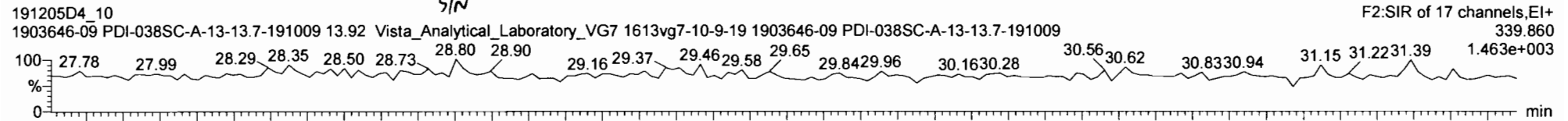
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

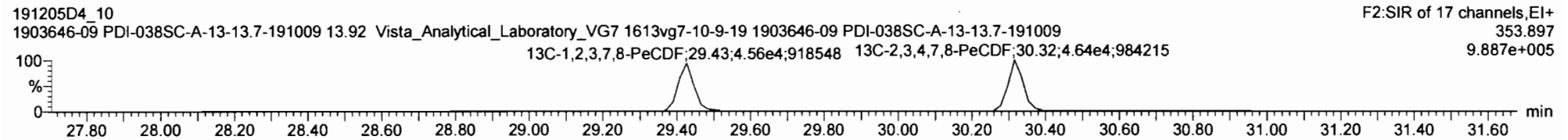
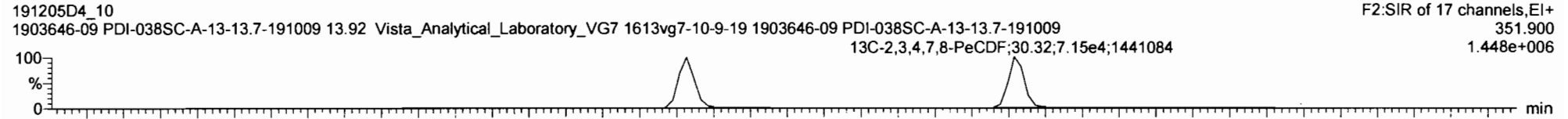
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

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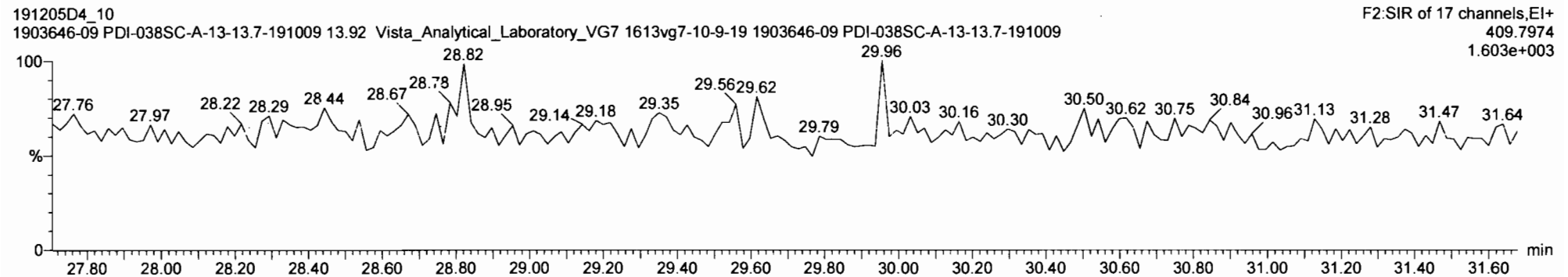
Total Penta-Furans



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



DPE2





Vista Analytical Laboratory

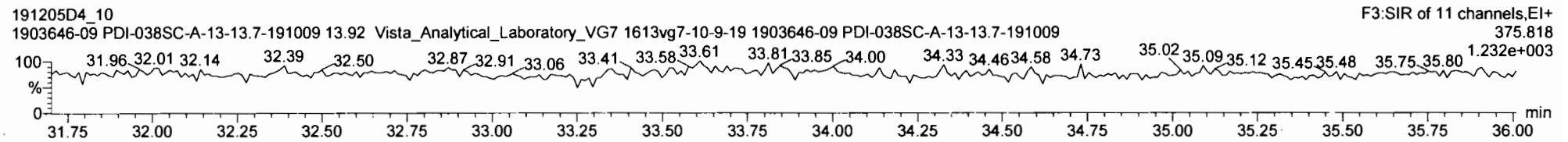
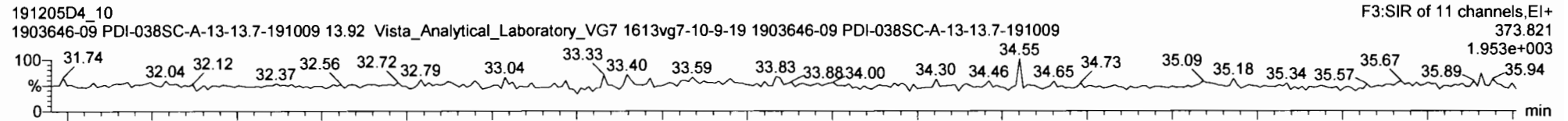
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

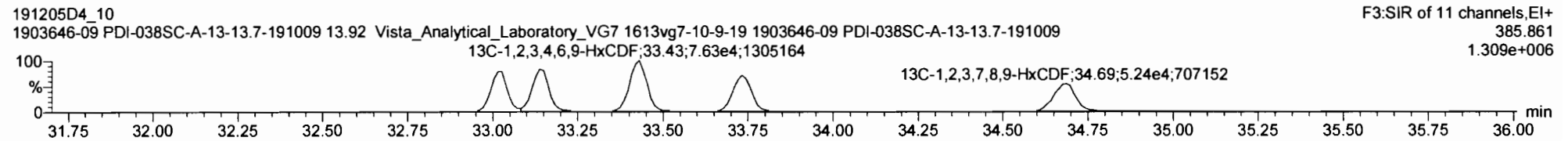
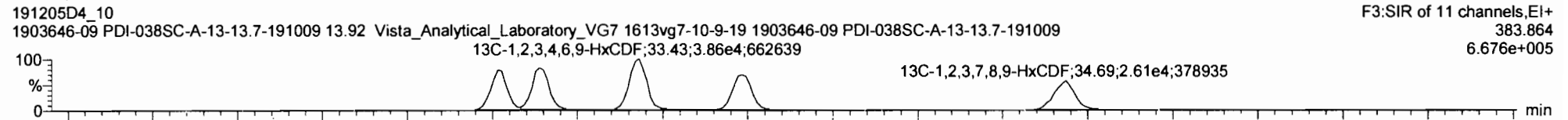
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

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Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

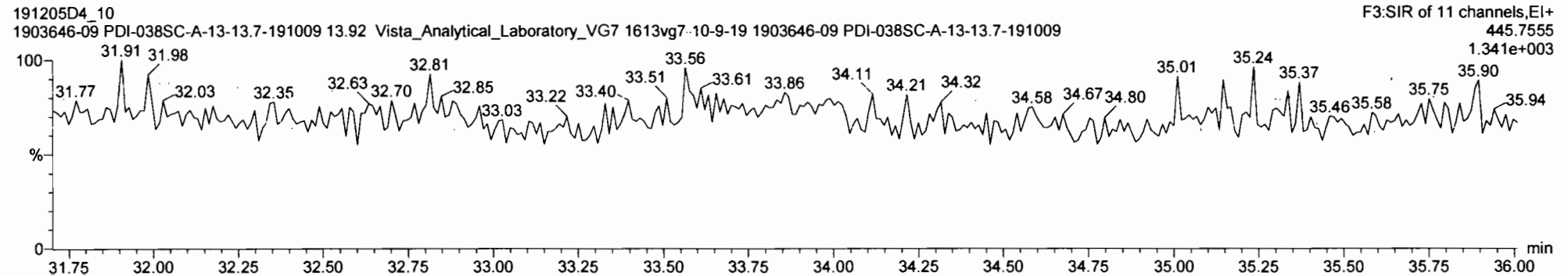
Total Hexa-Furans



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

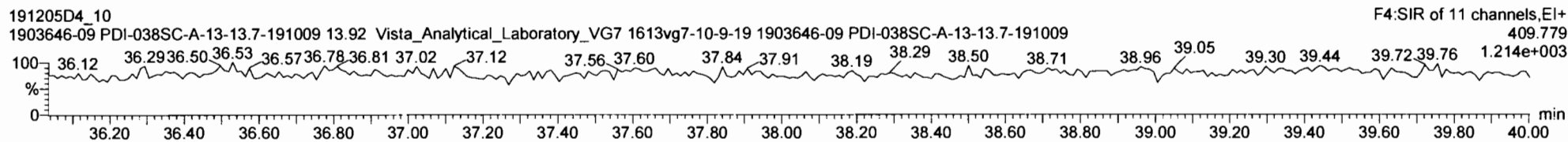
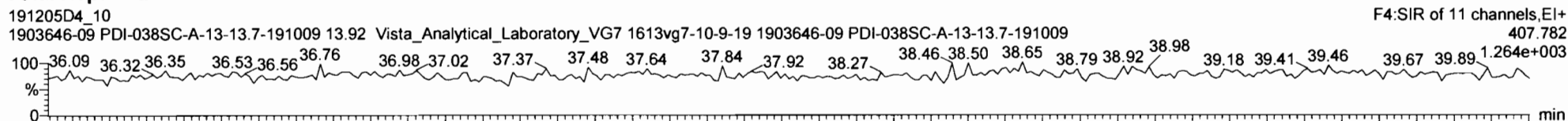


DPE3

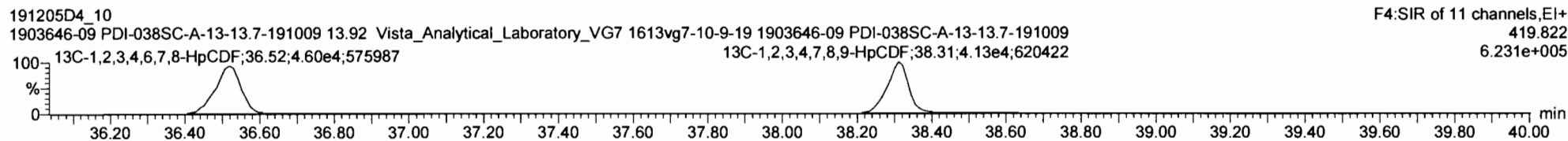
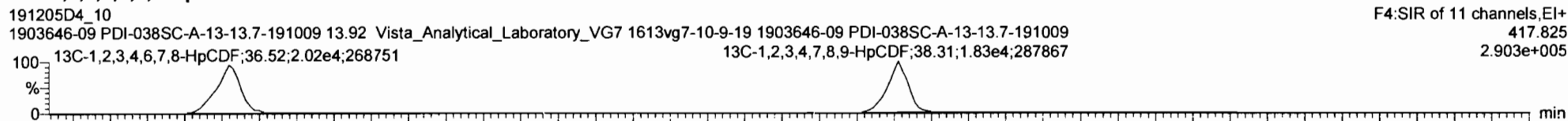


Name: 191205D4\_10, Date: 7-DEC-2019, Time: 13:16:49, ID: 1903646-09 PDI-038SC-A-13-13.7-191009,  
Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

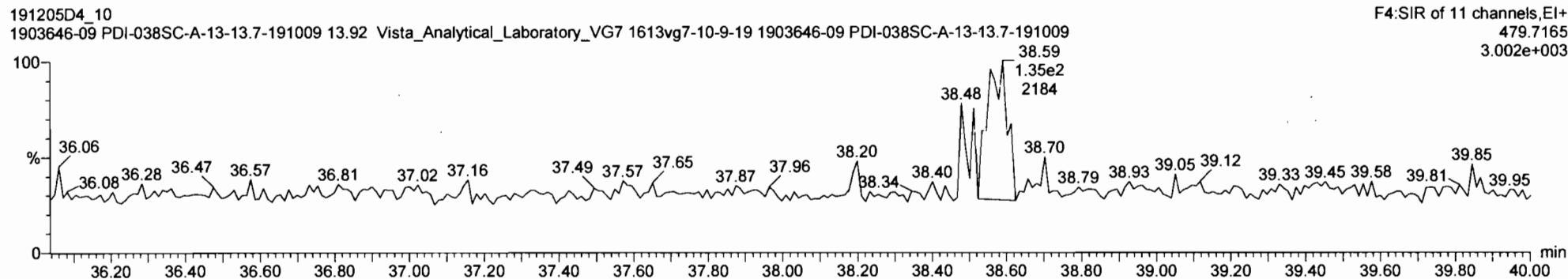
Total Hepta-Furans



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



DPE4



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

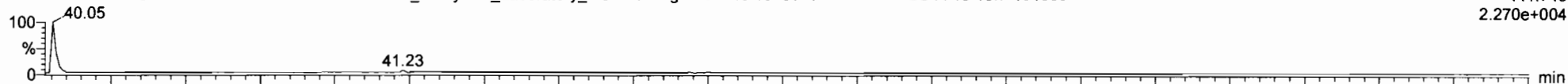
Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_10, Date: 7-DEC-2019, Time: 13:16:49, ID: 1903646-09 PDI-038SC-A-13-13.7-191009,  
Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

OCDF

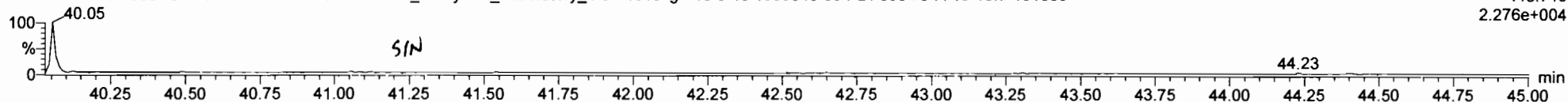
191205D4\_10  
1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-09 PDI-038SC-A-13-13.7-191009

F5:SIR of 11 channels,EI+  
441.743  
2.270e+004



191205D4\_10  
1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-09 PDI-038SC-A-13-13.7-191009

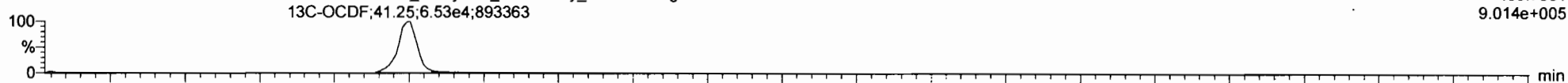
F5:SIR of 11 channels,EI+  
443.740  
2.276e+004



13C-OCDF

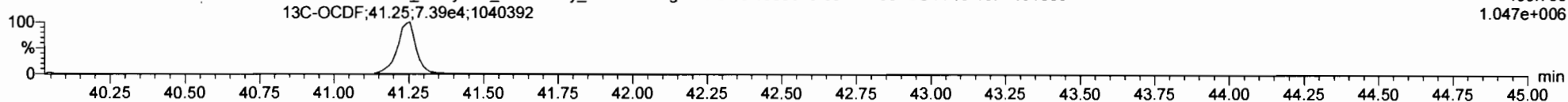
191205D4\_10  
1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-09 PDI-038SC-A-13-13.7-191009

F5:SIR of 11 channels,EI+  
453.7831  
9.014e+005



191205D4\_10  
1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-09 PDI-038SC-A-13-13.7-191009

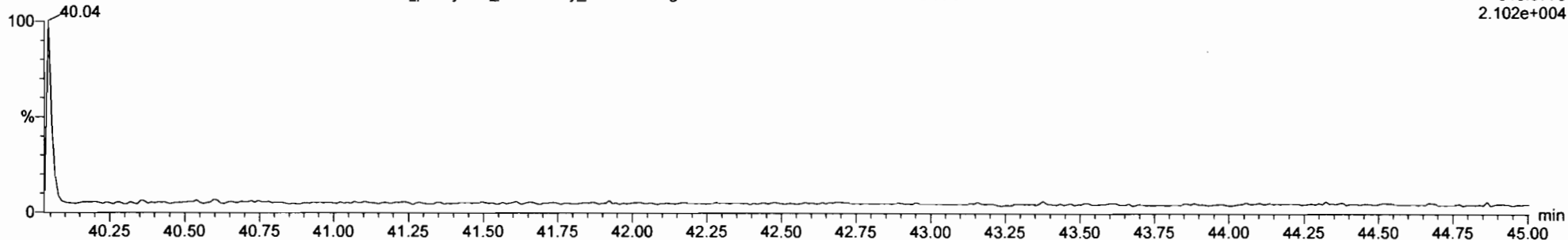
F5:SIR of 11 channels,EI+  
455.780  
1.047e+006



DPES

191205D4\_10  
1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-09 PDI-038SC-A-13-13.7-191009

F5:SIR of 11 channels,EI+  
513.6775  
2.102e+004



Vista Analytical Laboratory

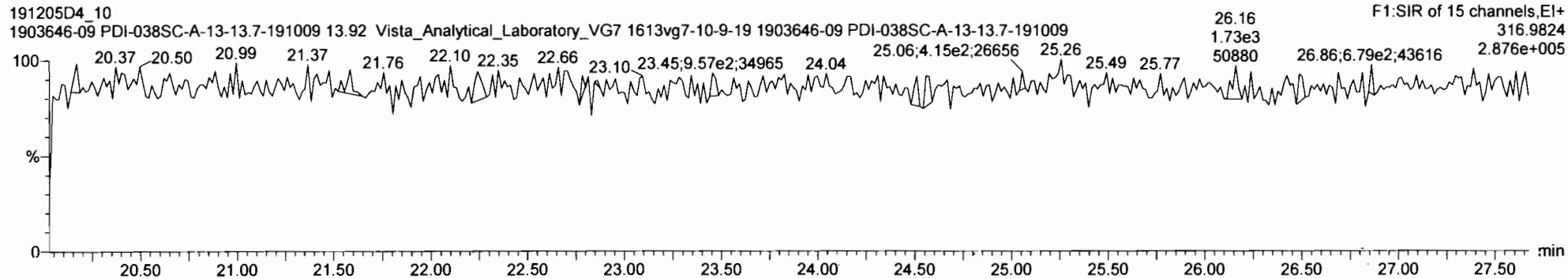
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Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

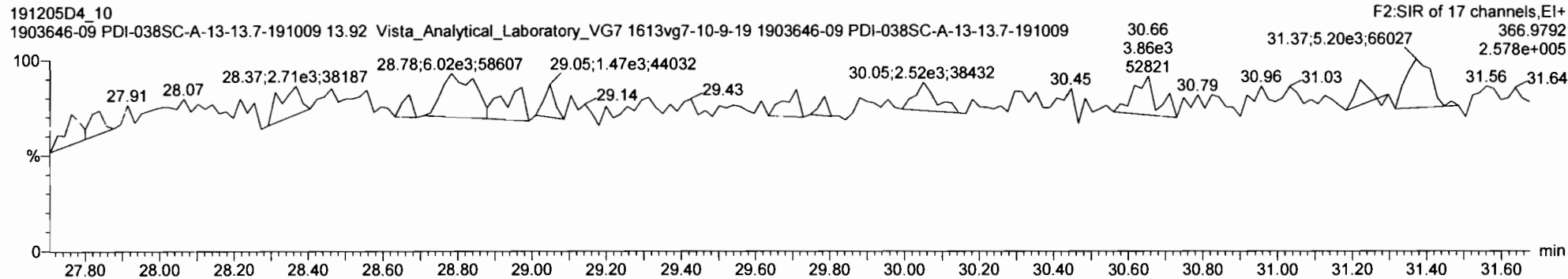
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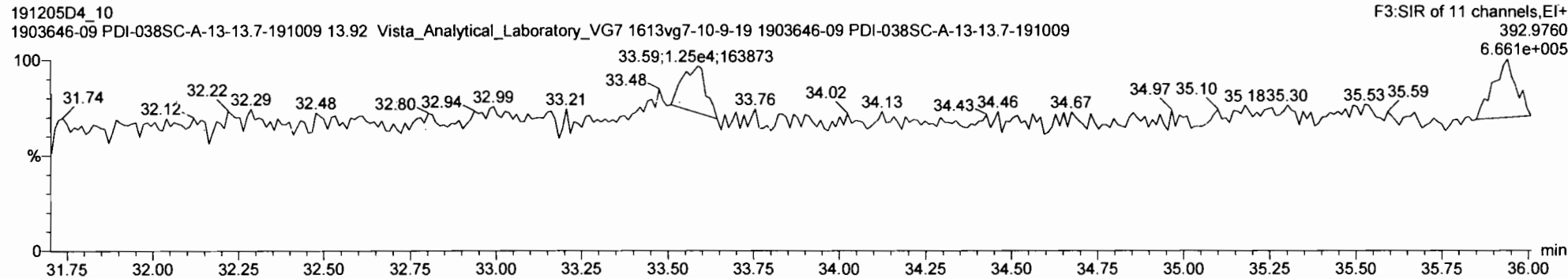
PFK1



PFK2



PFK3



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

Name: 191205D4\_10, Date: 7-DEC-2019, Time: 13:16:49, ID: 1903646-09 PDI-038SC-A-13-13.7-191009,  
Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19

PFK4

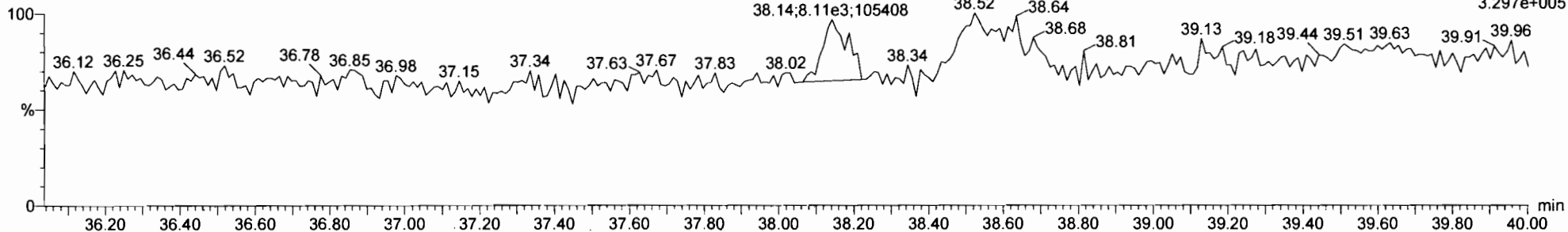
191205D4\_10

1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-09 PDI-038SC-A-13-13.7-191009

F4:SIR of 11 channels,EI+

454.973

3.297e+005



PFK5

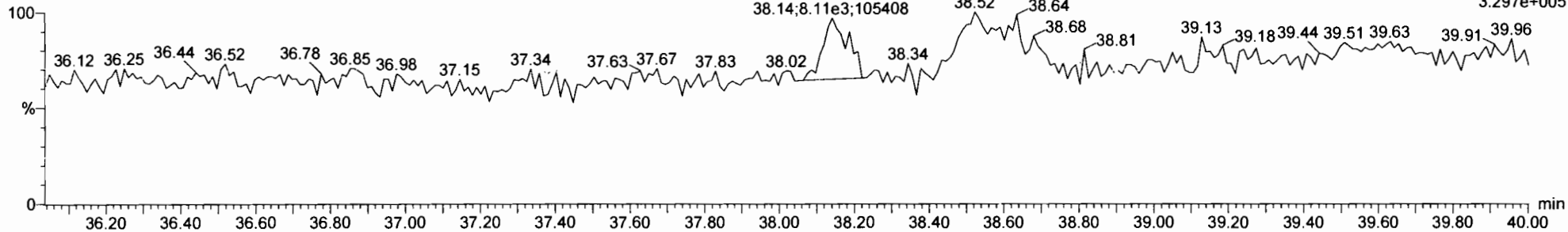
191205D4\_10

1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19 1903646-09 PDI-038SC-A-13-13.7-191009

F4:SIR of 11 channels,EI+

454.973

3.297e+005



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Tuesday, December 10, 2019 14:56:08 Pacific Standard Time

Printed: Tuesday, December 10, 2019 14:56:20 Pacific Standard Time

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**Name: 191205D4\_10, Date: 7-DEC-2019, Time: 13:16:49, ID: 1903646-09 PDI-038SC-A-13-13.7-191009,**

**Description: 1903646-09 PDI-038SC-A-13-13.7-191009 13.92 Vista\_Analytical\_Laboratory\_VG7 1613vg7-10-9-19**

## **CONTINUING CALIBRATION**

**HRMS CALIBRATION STANDARDS REVIEW CHECKLIST**

**Beg. Calibration ID:** ST191205D3-1

**Reviewed By:** OT 12/10/19

*Initials & Date*

**End Calibration ID:** ST191205D3-2

	<u>Beg.</u>	<u>End</u>
<b>Ion abundance within QC limits?</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Concentrations within criteria?</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>TCDD/TCDF Valleys &lt;25%</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>First and last eluters present?</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Retention Times within criteria?</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Verification Std. named correctly?</b> (ST-Year-Month-Day-VG ID)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Forms signed and dated?</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Correct ICAL referenced?</b>	<u>DB</u>	<u>DB</u>
<b><u>Run Log:</u></b>		
- Correct instrument listed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Samples within 12 hour clock?	<u>(Y)</u>	<u>N</u>
- 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%**

NA

**8280 CS1 End Standard:**

- Ratios within limits, S/N <2.5:1, CS1 within 12 hours

NA

**Comments:**



Vista Analytical Laboratory - Injection Log Run file: 191205D3 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191205D3	1	ST191205D3-1	DB	6-DEC-19	17:54:28	ST191205D3-1	ST191205D3-2
191205D3	2	B9J0315-BS1	DB	6-DEC-19	18:42:17	ST191205D3-1	NA
191205D3	3	SOLVENT BLANK	DB	6-DEC-19	19:30:03	NA	NA
191205D3	4	B9J0315-BLK1	DB	6-DEC-19	20:17:54	ST191205D3-1	NA
191205D3	5	1903904-01	DB	6-DEC-19	21:05:49	ST191205D3-1	ST191205D3-2
191205D3	6	1903904-02	DB	6-DEC-19	21:53:37	ST191205D3-1	ST191205D3-2
191205D3	7	1903904-03	DB	6-DEC-19	22:41:25	ST191205D3-1	ST191205D3-2
191205D3	8	1903904-04	DB	6-DEC-19	23:29:13	ST191205D3-1	ST191205D3-2
191205D3	9	1903904-05	DB	7-DEC-19	00:17:01	ST191205D3-1	ST191205D3-2
191205D3	10	1903581-01RE1	DB	7-DEC-19	01:04:49	ST191205D3-1	ST191205D3-2
191205D3	11	1903581-02RE1	DB	7-DEC-19	01:52:37	ST191205D3-1	ST191205D3-2
191205D3	12	1903646-01	DB	7-DEC-19	02:40:25	ST191205D3-1	NA
191205D3	13	1903646-02	DB	7-DEC-19	03:28:12	ST191205D3-1	NA
191205D3	14	SOLVENT BLANK	DB	7-DEC-19	04:15:57	NA	NA
191205D3	15	ST191205D3-2	DB	7-DEC-19	05:03:43	ST191205D3-1	ST191205D3-2

FORM 4A  
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST191205D3-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

NATIVE ANALYTES	M/Z'S	ION	QC	Pass	CONC. FOUND	CONC.
	FORMING RATIO (1)	ABUND. RATIO	LIMITS (2)			RANGE (3)
2,3,7,8-TCDD	M/M+2	0.75	0.65-0.89	y	10.7	7.8 - 12.9 8.2 - 12.3 (4)
1,2,3,7,8-PeCDD	M/M+2	0.62	0.54-0.72	y	52.2	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	y	48.2	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	53.0	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	y	51.3	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	0.90	0.76-1.02	y	100	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	y	9.38	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	51.5	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	y	51.8	41.0 - 61.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	y	47.3	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	47.3	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.21	1.05-1.43	y	49.0	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.21	1.05-1.43	y	48.1	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.99	0.88-1.20	y	47.0	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	y	47.1	43.0 - 58.0
OCDF	M+2/M+4	0.88	0.76-1.02	y	95.3	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: 12/10/19

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: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

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	103	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	105	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	y	103	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	87.1	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	1.06	0.88-1.20	y	98.8	72.0 - 138.0
13C-OCDD	M/M+2	0.91	0.76-1.02	y	234	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.80	0.65-0.89	y	100	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	y	103	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	y	103	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	111	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	101	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	102	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	y	107	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.44	0.37-0.51	y	97.1	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.45	0.37-0.51	y	108	77.0 - 129.0
13C-OCDF	M+2/M+4	0.89	0.76-1.02	y	242	96.0 - 415.0
CLEANUP STANDARD (3)						
37Cl-2,3,7,8-TCDD					9.58	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: 12/10/19

## EPA METHOD 8290

## PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory

Episode No.:

CCAL ID: ST191205D3-1

Contract No.:

SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

NATIVE ANALYTES	M/Z'S	ION	QC	Pass	CONC.	CONC.
	FORMING	ABUND.	LIMITS		FOUND	RANGE
	RATIO	RATIO				(ng/mL)
2,3,7,8-TCDD	M/M+2	0.75	0.65-0.89	y	10.7	8.00 - 12.0
1,2,3,7,8-PeCDD	M/M+2	0.62	0.54-0.72	y	52.2	40.0 - 60.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	y	48.2	40.0 - 60.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	53.0	40.0 - 60.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	y	51.3	40.0 - 60.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	y	50.2	40.0 - 60.0
OCDD	M+2/M+4	0.90	0.76-1.02	y	100	80.0 - 120
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	y	9.38	8.00 - 12.0
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	y	51.5	40.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	y	51.8	40.0 - 60.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	y	47.3	40.0 - 60.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	47.3	40.0 - 60.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.21	1.05-1.43	y	49.0	40.0 - 60.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.21	1.05-1.43	y	48.1	40.0 - 60.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.99	0.88-1.20	y	47.0	40.0 - 60.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	y	47.1	40.0 - 60.0
OCDF	M+2/M+4	0.88	0.76-1.02	y	95.3	80.0 - 120

Analyst: JBDate: 12/10/19

## EPA METHOD 8290

## 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: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

LABELED COMPOUNDS	M/Z'S FORMING RATIO	ION ABUND. RATIO	QC LIMITS	Pass	CONC. FOUND	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	y	103	70.0 - 130
13C-1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	105	70.0 - 130
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	y	103	70.0 - 130
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	y	87.1	70.0 - 130
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	y	95.6	70.0 - 130
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	y	98.8	70.0 - 130
13C-OCDD	M+2/M+4	0.91	0.76-1.02	y	234	140 - 260
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	y	100	70.0 - 130
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	y	103	70.0 - 130
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	y	103	70.0 - 130
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	111	70.0 - 130
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	101	70.0 - 130
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	y	102	70.0 - 130
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	y	107	70.0 - 130
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	y	97.1	70.0 - 130
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	y	108	70.0 - 130
13C-OCDF	M+2/M+4	0.89	0.76-1.02	y	242	140 - 260
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD					9.58	7.00 - 13.0

Analyst: DBDate: 12/10/19

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: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

ZB-5MS IS Data Filename: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

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)	22:40	1,3,6,8-TCDF (F)	20:32
1,2,8,9-TCDD (L)	26:57	1,2,8,9-TCDF (L)	27:05
1,2,4,7,9-PeCDD (F)	28:34	1,3,4,6,8-PeCDF (F)	27:04
1,2,3,8,9-PeCDD (L)	30:58	1,2,3,8,9-PeCDF (L)	31:12
1,2,4,6,7,9-HxCDD (F)	32:23	1,2,3,4,6,8-HxCDF (F)	31:51
1,2,3,7,8,9-HxCDD (L)	34:19	1,2,3,7,8,9-HxCDF (L)	34:41
1,2,3,4,6,7,9-HpCDD (F)	36:55	1,2,3,4,6,7,8-HpCDF (F)	36:31
1,2,3,4,6,7,8-HpCDD (L)	37:46	1,2,3,4,7,8,9-HpCDF (L)	38:19

(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: 12/10/19

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: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

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	1.001	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	1.200	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	1.154	1.000-1.425
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.189	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: 12/10/19

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: 191205D3 S#1 Analysis Date: 6-DEC-19 Time: 17:54:28

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		1.000	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		1.000	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	0.988	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	1.017	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	1.092	1.069-1.111
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.146	1.098-1.192
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.130	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: 12/10/19



Client ID: 1613 CS3 19C2204  
Lab ID: ST191205D3-1

Filename: 191205D3 S:1 Acq: 6-DEC-19 17:54:28  
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191205D3-1  
EndCAL: ST191205D3-2

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	6.42e+05	0.75 y	0.91	26:06	10.703			* 2.5	*	Total Tetra-Dioxins	77.8	78.6	*	*	
1,2,3,7,8-PeCDD	2.57e+06	0.62 y	0.90	30:37	52.224			* 2.5	*	Total Penta-Dioxins	204	205	*	*	
1,2,3,4,7,8-HxCDD	2.30e+06	1.23 y	1.10	33:54	48.212			* 2.5	*	Total Hexa-Dioxins	225	226	*	*	
1,2,3,6,7,8-HxCDD	2.42e+06	1.27 y	0.94	34:01	52.958			* 2.5	*	Total Hepta-Dioxins	116	118	*	*	
1,2,3,7,8,9-HxCDD	2.48e+06	1.25 y	0.96	34:19	51.275			* 2.5	*	Total Tetra-Furans	37.9	39.6	*	*	
1,2,3,4,6,7,8-HpCDD	2.07e+06	1.04 y	0.98	37:46	50.192			* 2.5	*	Total Penta-Furans	227.05	227.38	*	*	
OCDD	4.26e+06	0.90 y	0.96	41:02	100.35			* 2.5	*	Total Hexa-Furans	255	256	*	*	
										Total Hepta-Furans	94.8	96.1	*	*	
2,3,7,8-TCDF	9.05e+05	0.76 y	0.95	25:18	9.3841			* 2.5	*						
1,2,3,7,8-PeCDF	4.27e+06	1.54 y	0.96	29:26	51.487			* 2.5	*						
2,3,4,7,8-PeCDF	4.47e+06	1.58 y	1.01	30:20	51.790			* 2.5	*						
1,2,3,4,7,8-HxCDF	3.35e+06	1.24 y	1.18	33:01	47.291			* 2.5	*						
1,2,3,6,7,8-HxCDF	3.46e+06	1.22 y	1.07	33:09	47.330			* 2.5	*						
2,3,4,6,7,8-HxCDF	3.45e+06	1.21 y	1.11	33:44	48.961			* 2.5	*						
1,2,3,7,8,9-HxCDF	2.97e+06	1.21 y	1.06	34:41	48.126			* 2.5	*						
1,2,3,4,6,7,8-HpCDF	2.54e+06	0.99 y	1.13	36:31	46.975			* 2.5	*						
1,2,3,4,7,8,9-HpCDF	2.47e+06	1.02 y	1.28	38:19	47.078			* 2.5	*						
OCDF	4.92e+06	0.88 y	0.95	41:15	95.350			* 2.5	*						
IS	13C-2,3,7,8-TCDD	6.63e+06	0.79 y	1.10	26:04	102.84				Rec	Qual				
IS	13C-1,2,3,7,8-PeCDD	5.46e+06	0.63 y	0.88	30:36	105.20				103					
IS	13C-1,2,3,4,7,8-HxCDD	4.34e+06	1.30 y	0.64	33:53	103.46				105					
IS	13C-1,2,3,6,7,8-HxCDD	4.86e+06	1.27 y	0.86	33:60	87.088				103					
IS	13C-1,2,3,7,8,9-HxCDD	5.03e+06	1.26 y	0.81	34:17	95.583				87.1					
IS	13C-1,2,3,4,6,7,8-HpCDD	4.22e+06	1.06 y	0.65	37:46	98.815				95.6					
IS	13C-OCDD	8.85e+06	0.91 y	0.58	41:01	233.84				98.8					
IS	13C-2,3,7,8-TCDF	1.01e+07	0.80 y	1.03	25:17	100.24				117					
IS	13C-1,2,3,7,8-PeCDF	8.63e+06	1.59 y	0.85	29:25	103.30				100					
IS	13C-2,3,4,7,8-PeCDF	8.51e+06	1.57 y	0.85	30:19	102.71				103					
IS	13C-1,2,3,4,7,8-HxCDF	6.02e+06	0.51 y	0.83	33:01	110.93				111					
IS	13C-1,2,3,6,7,8-HxCDF	6.84e+06	0.52 y	1.03	33:08	101.27				101					
IS	13C-2,3,4,6,7,8-HxCDF	6.33e+06	0.52 y	0.95	33:44	101.74				102					
IS	13C-1,2,3,7,8,9-HxCDF	5.80e+06	0.51 y	0.83	34:40	107.42				107					
IS	13C-1,2,3,4,6,7,8-HpCDF	4.80e+06	0.44 y	0.76	36:30	97.054				97.1					
IS	13C-1,2,3,4,7,8,9-HpCDF	4.09e+06	0.45 y	0.58	38:18	107.82				108					
IS	13C-OCDF	1.09e+07	0.89 y	0.69	41:14	242.23				121					
C/Up	37Cl-2,3,7,8-TCDD	6.75e+05		1.20	26:05	9.5760				95.8					
RS/RT	13C-1,2,3,4-TCDD	5.88e+06	0.82 y	1.00	25:30	100.00					Integrations	Reviewed			
RS	13C-1,2,3,4-TCDF	9.78e+06	0.80 y	1.00	24:04	100.00				by	by				
RS/RT	13C-1,2,3,4,6,9-HxCDF	6.53e+06	0.50 y	1.00	33:25	100.00				Analyst: <u>DB</u>	Analyst: _____				

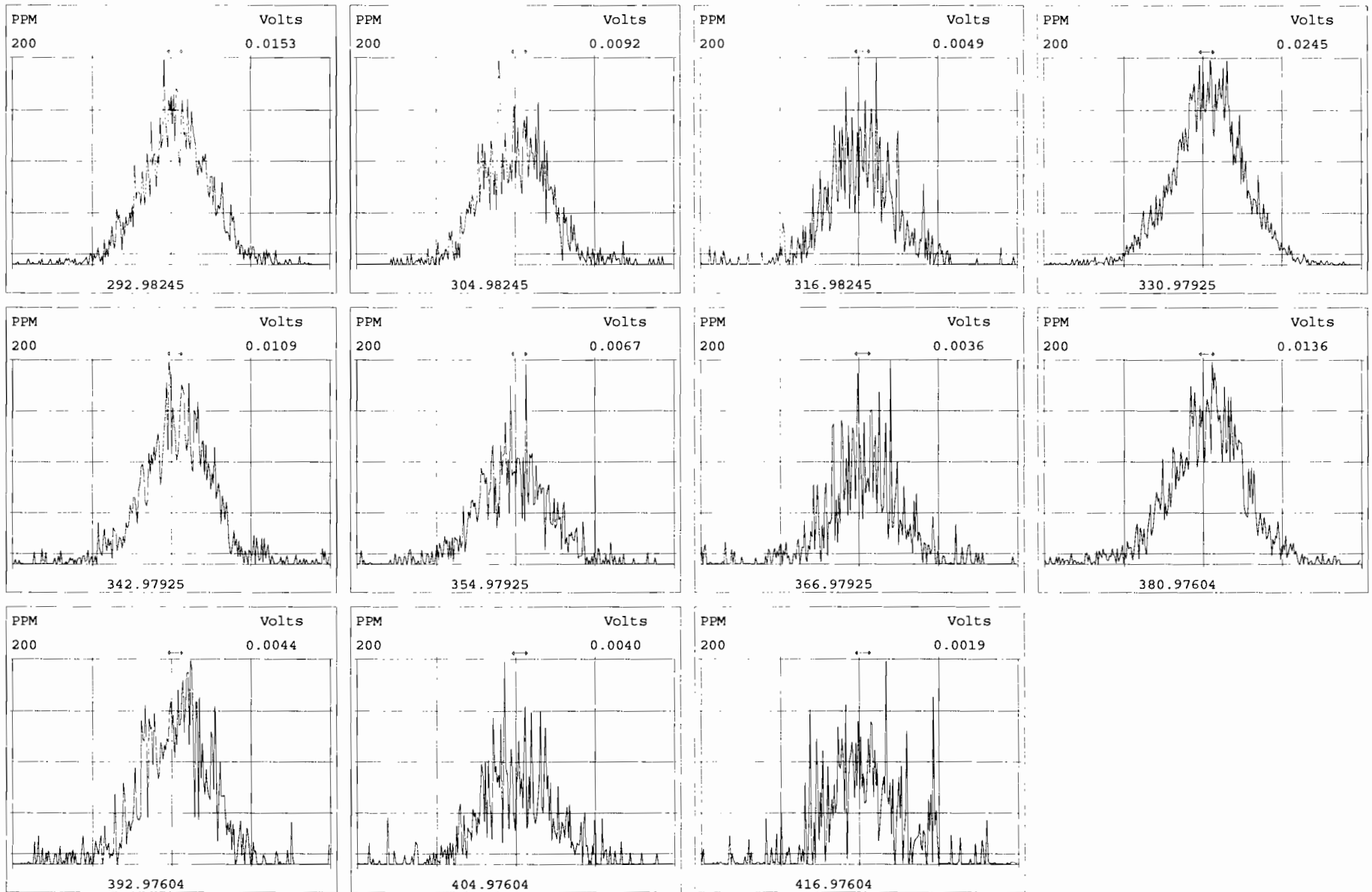
Date: 12/10/19 Date: \_\_\_\_\_

Vista Analytical Laboratory - Injection Log Run file: 191205D3 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191205D3	1	ST191205D3-1	DB	6-DEC-19	17:54:28	ST191205D3-1	ST191205D3-2
191205D3	2	B9J0315-BS1	DB	6-DEC-19	18:42:17	ST191205D3-1	NA
191205D3	3	SOLVENT BLANK	DB	6-DEC-19	19:30:03	NA	NA
191205D3	4	B9J0315-BLK1	DB	6-DEC-19	20:17:54	ST191205D3-1	NA
191205D3	5	1903904-01	DB	6-DEC-19	21:05:49	ST191205D3-1	ST191205D3-2
191205D3	6	1903904-02	DB	6-DEC-19	21:53:37	ST191205D3-1	ST191205D3-2
191205D3	7	1903904-03	DB	6-DEC-19	22:41:25	ST191205D3-1	ST191205D3-2
191205D3	8	1903904-04	DB	6-DEC-19	23:29:13	ST191205D3-1	ST191205D3-2
191205D3	9	1903904-05	DB	7-DEC-19	00:17:01	ST191205D3-1	ST191205D3-2
191205D3	10	1903581-01RE1	DB	7-DEC-19	01:04:49	ST191205D3-1	ST191205D3-2
191205D3	11	1903581-02RE1	DB	7-DEC-19	01:52:37	ST191205D3-1	ST191205D3-2
191205D3	12	1903646-01	DB	7-DEC-19	02:40:25	ST191205D3-1	NA
191205D3	13	1903646-02	DB	7-DEC-19	03:28:12	ST191205D3-1	NA
191205D3	14	SOLVENT BLANK	DB	7-DEC-19	04:15:57	NA	NA
191205D3	15	ST191205D3-2	DB	7-DEC-19	05:03:43	ST191205D3-1	ST191205D3-2

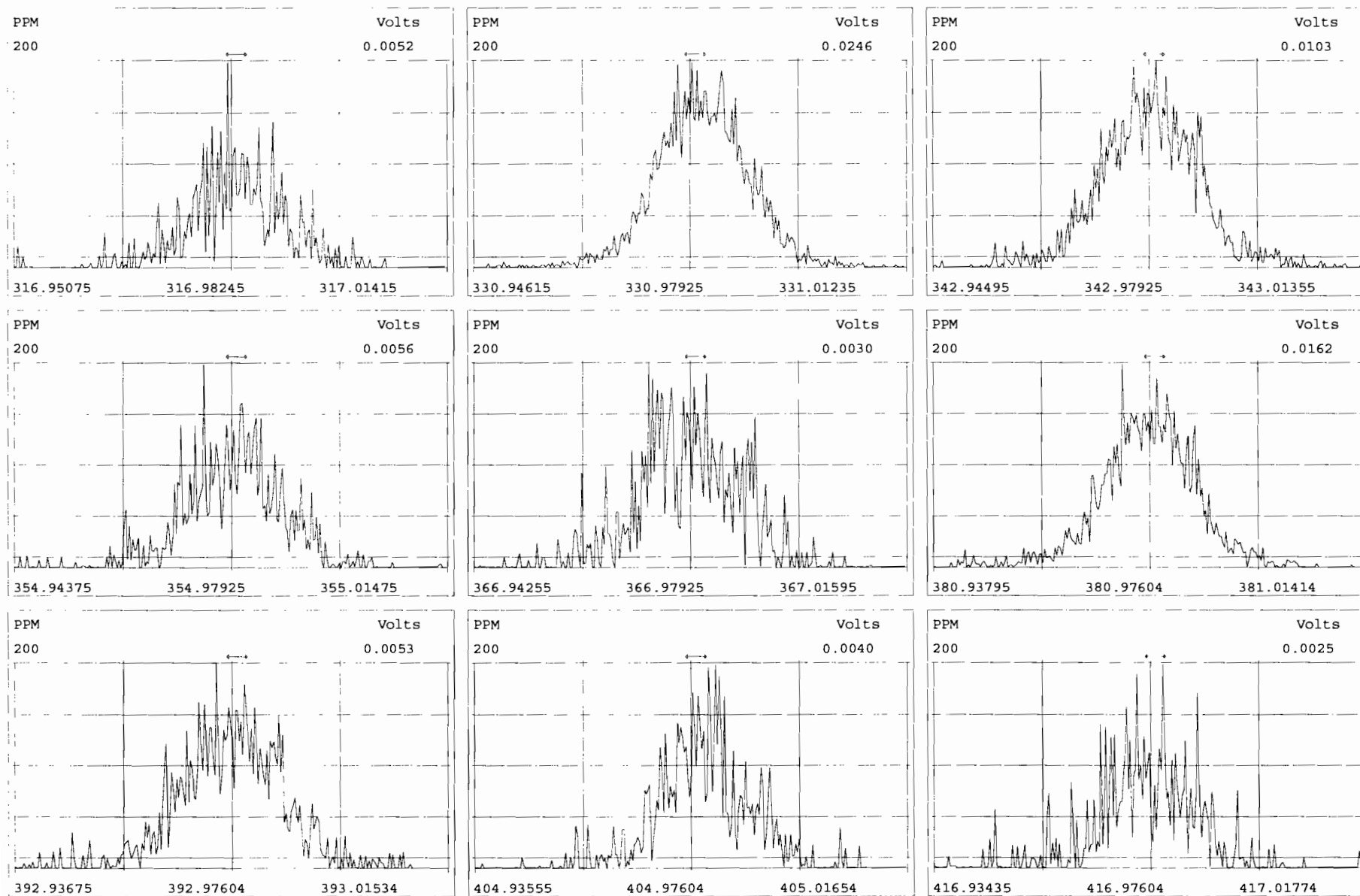
Peak Locate Examination: 6-DEC-2019:17:49 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:1 Reference:PFK



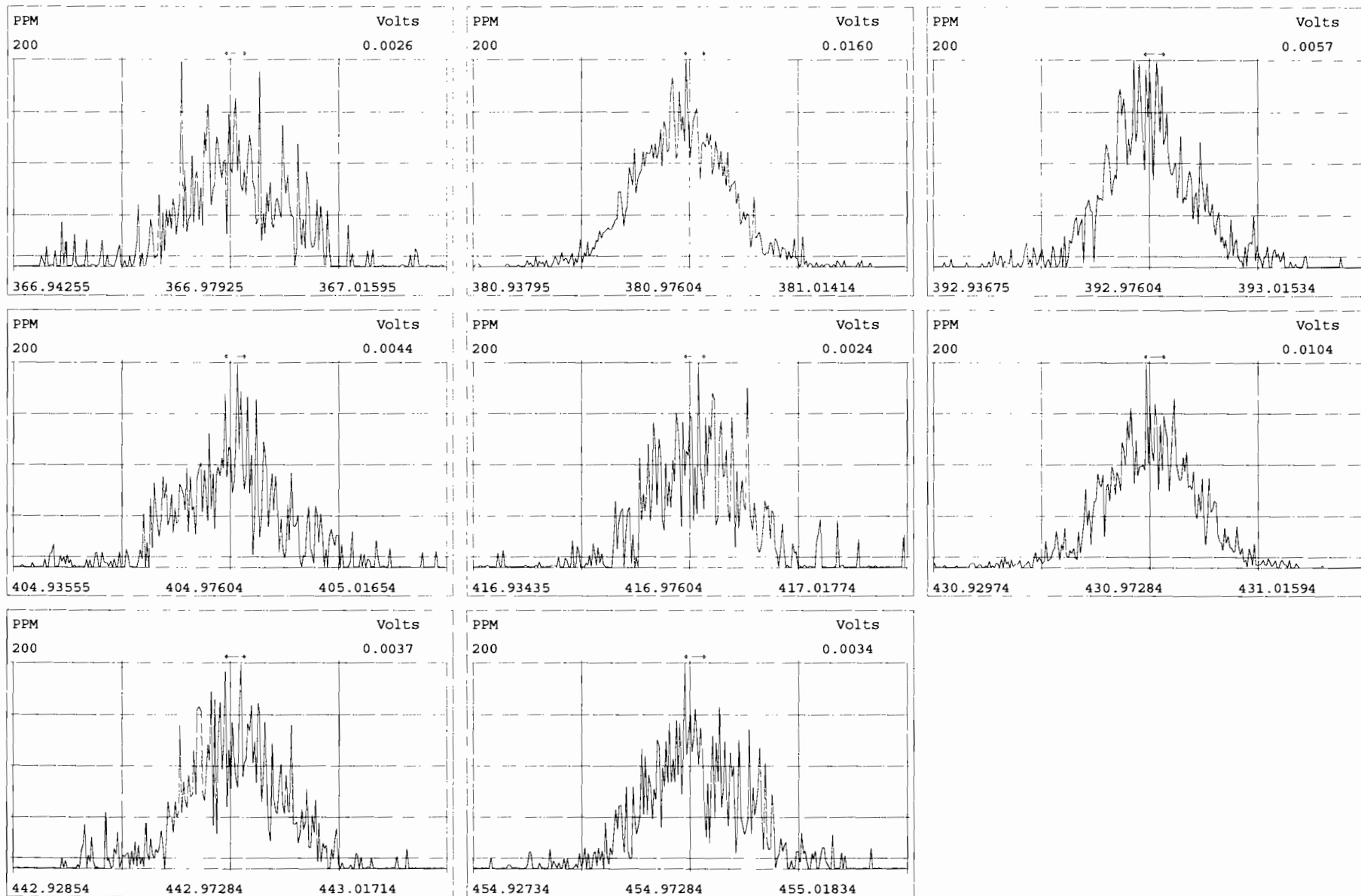
Peak Locate Examination: 6-DEC-2019:17:50 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:2 Reference:PFK



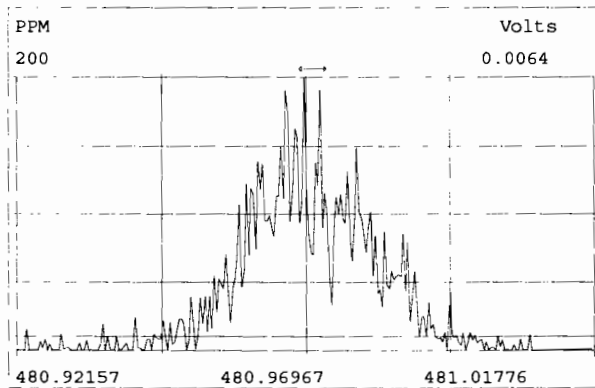
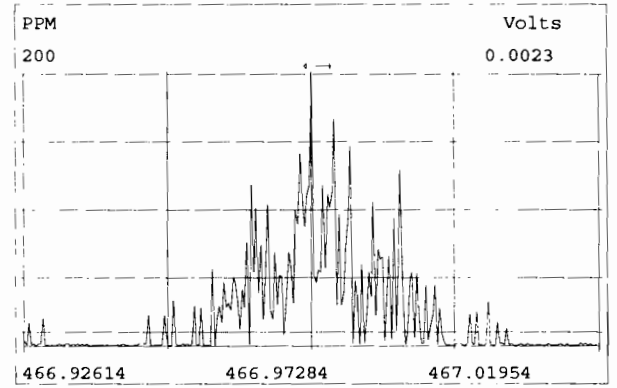
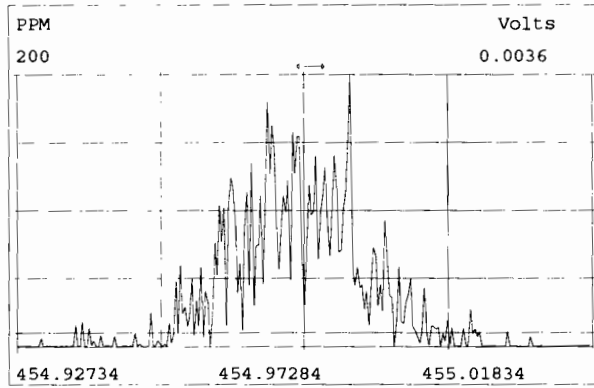
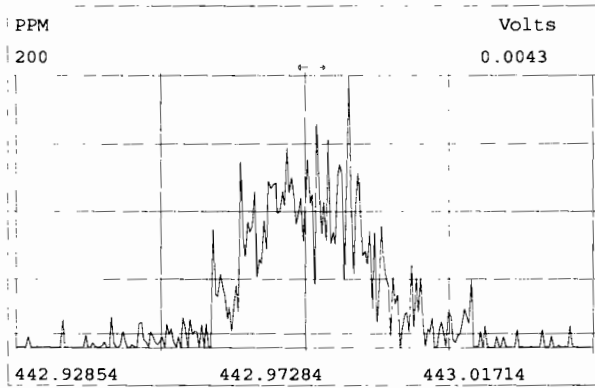
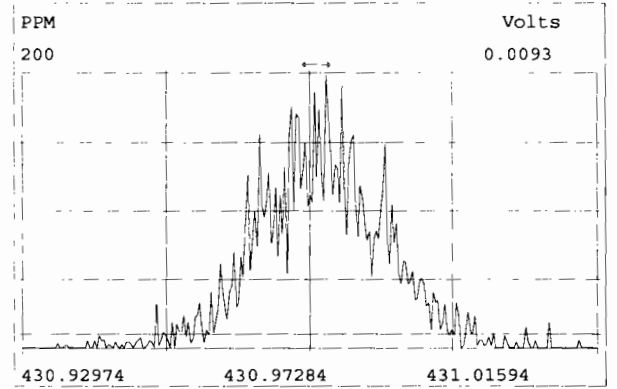
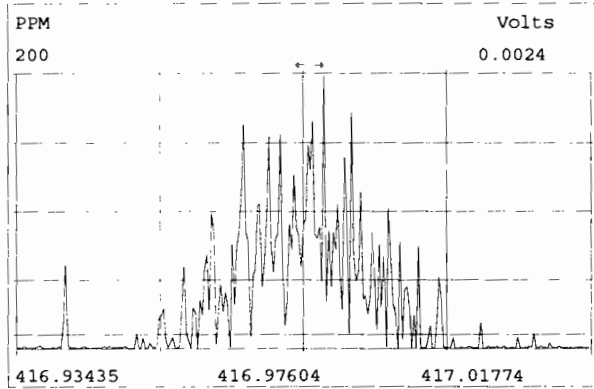
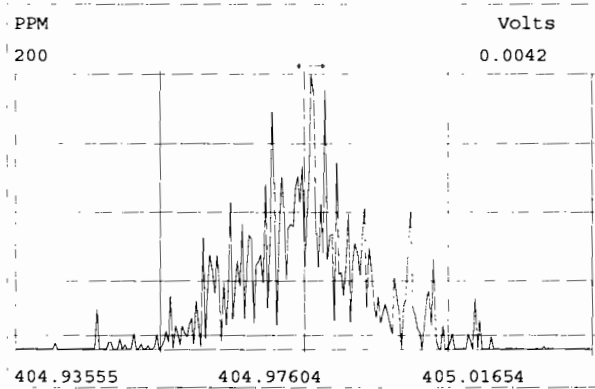
Peak Locate Examination: 6-DEC-2019:17:51 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:3 Reference:PFK



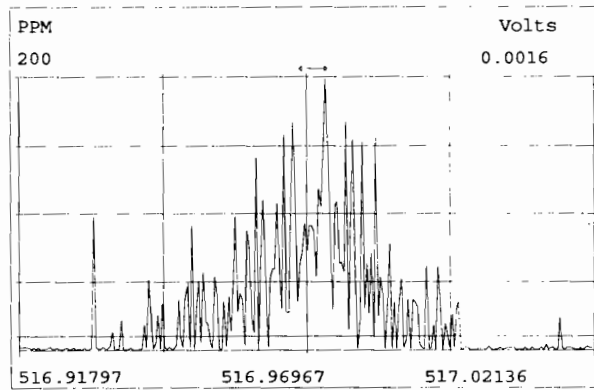
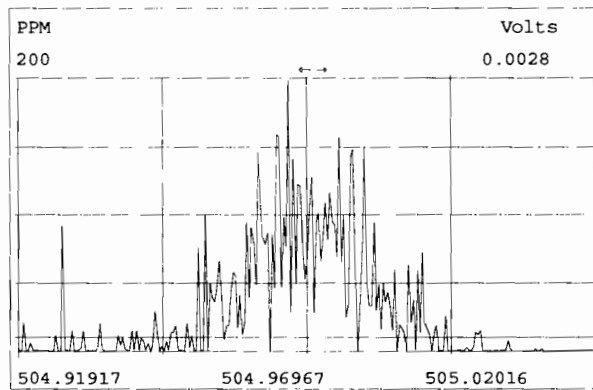
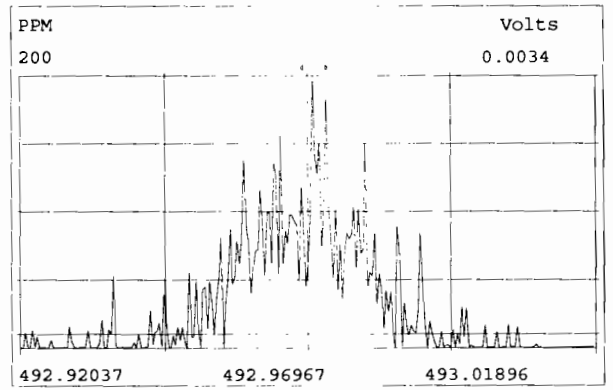
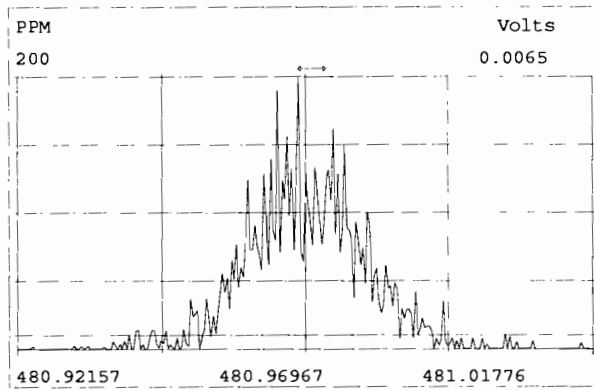
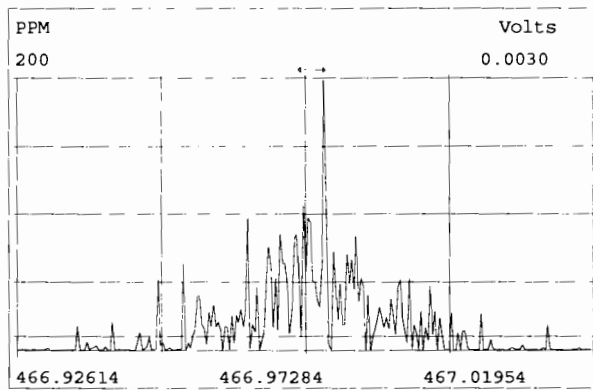
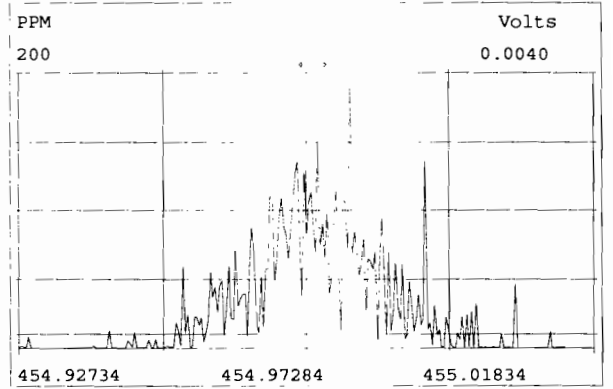
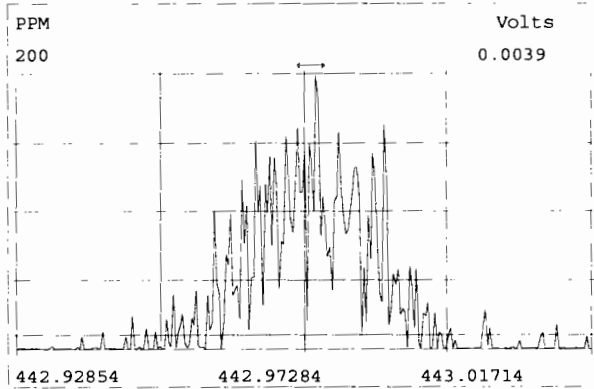
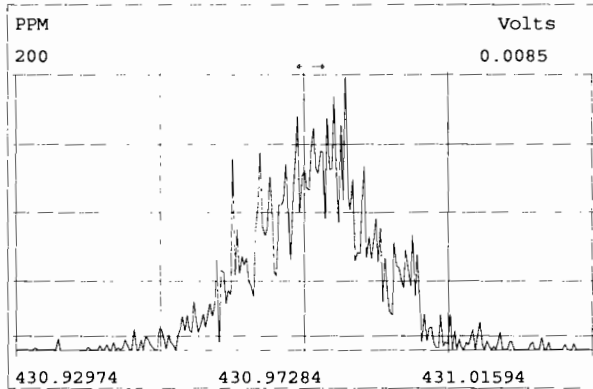
Peak Locate Examination: 6-DEC-2019:17:52 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:4 Reference:PFK

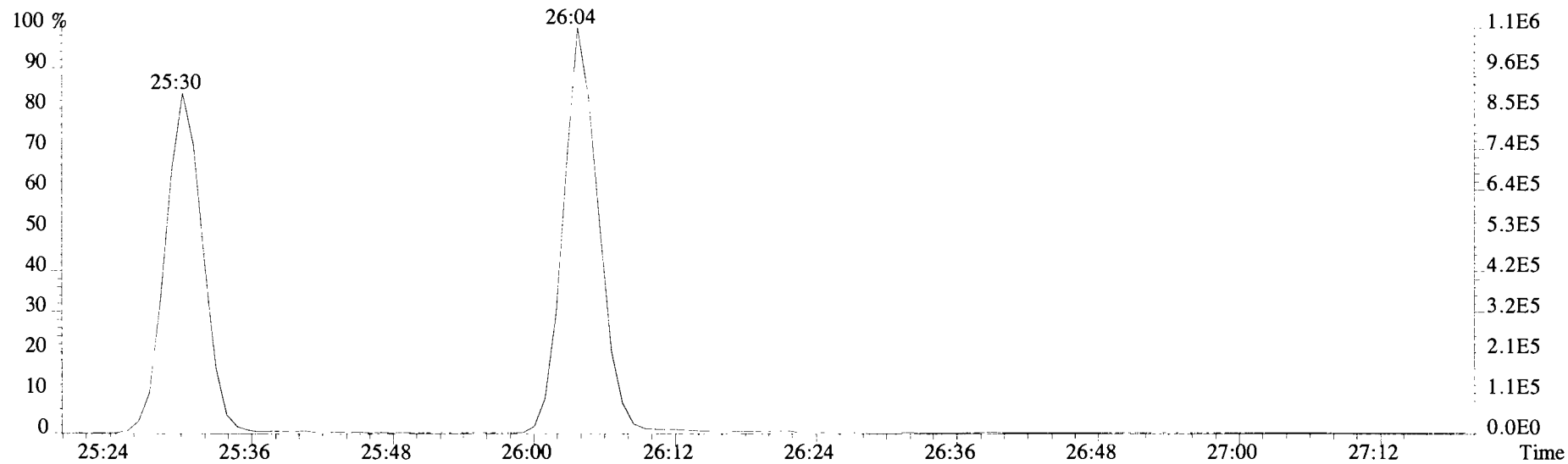
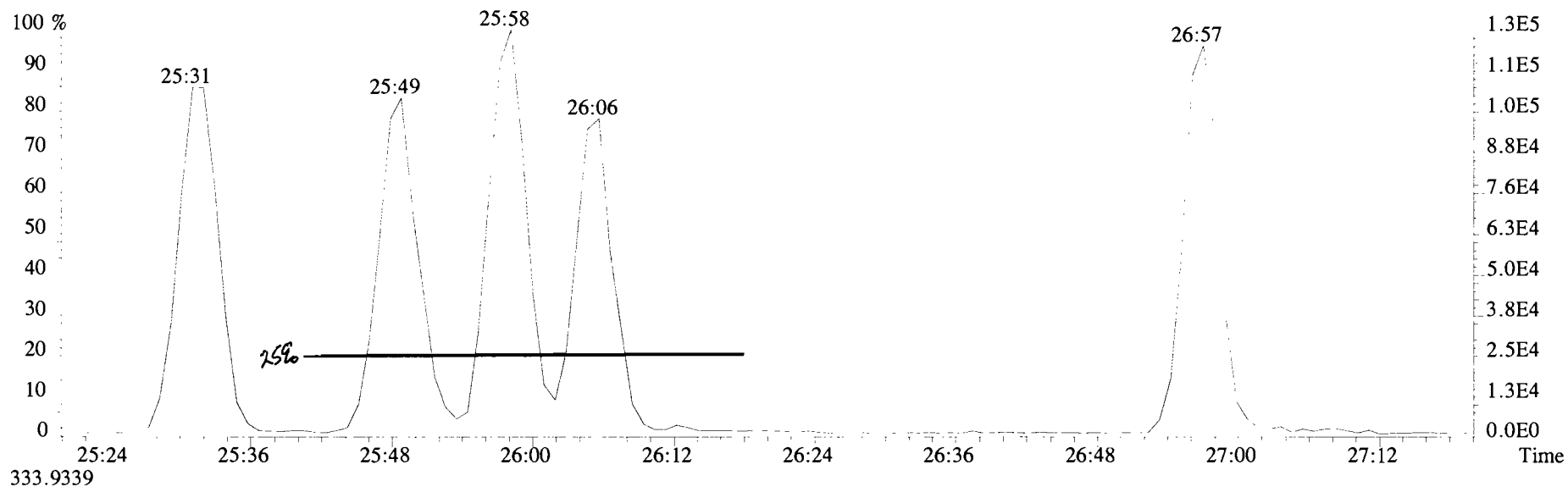


Peak Locate Examination: 6-DEC-2019:17:53 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:5 Reference:PFK

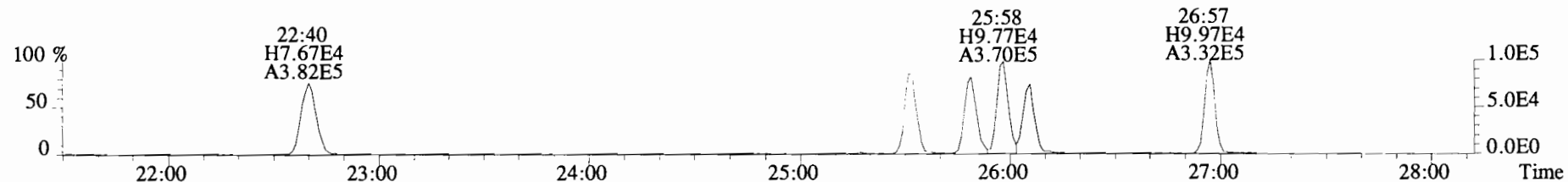


File:191205D3 #1-492 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
321.8936

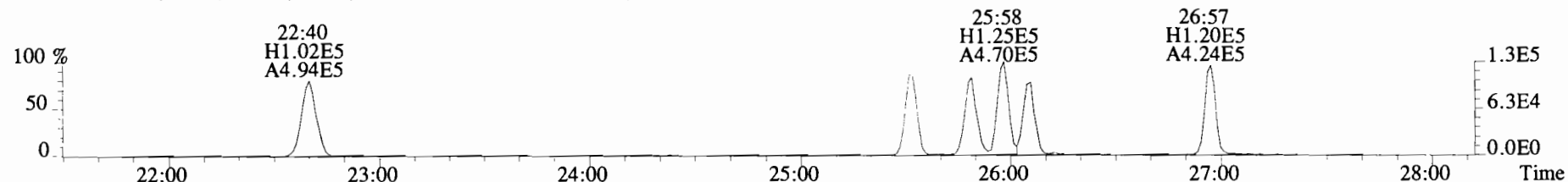




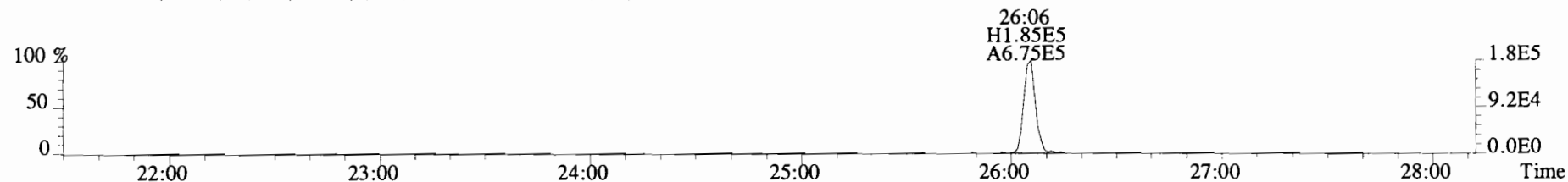
File:191205D3 #1-492 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



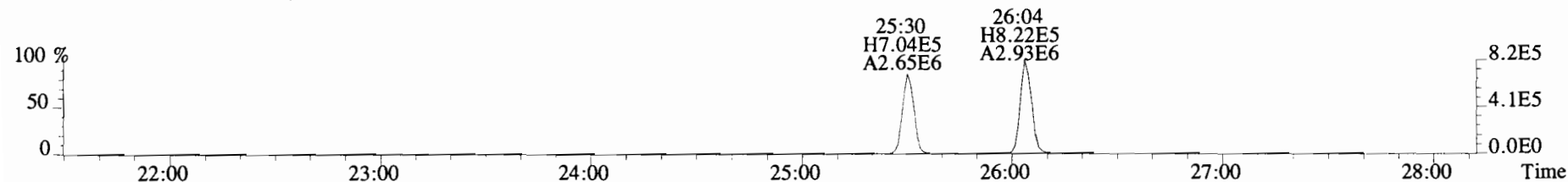
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



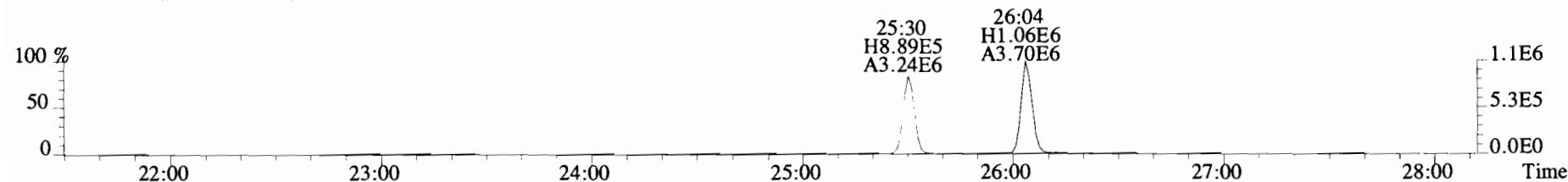
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



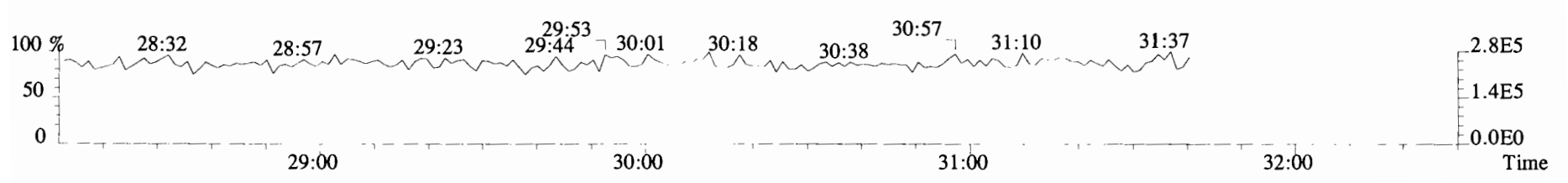
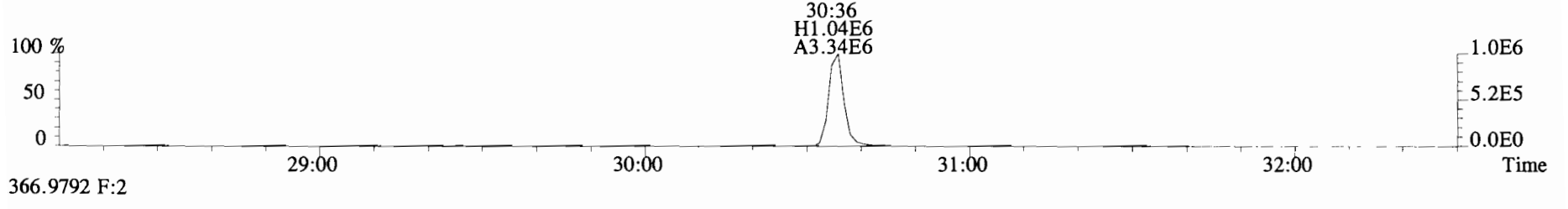
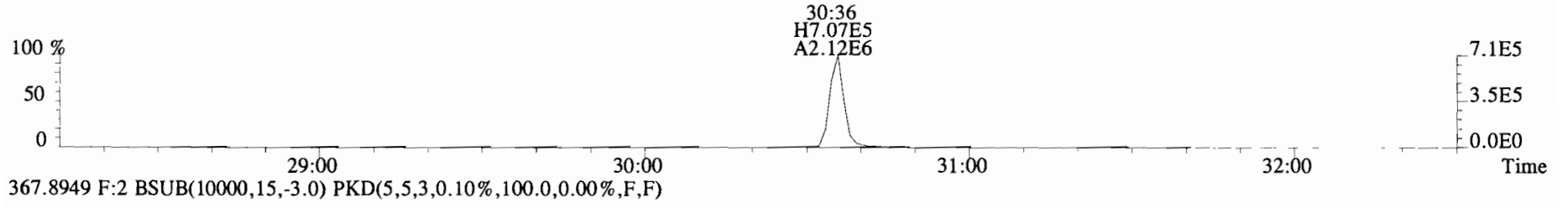
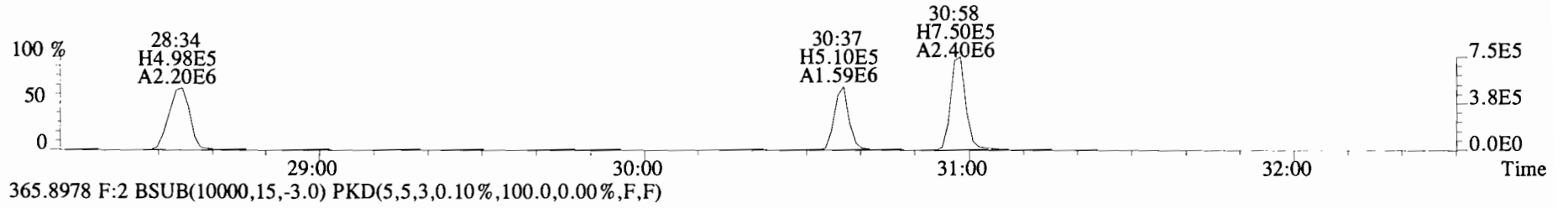
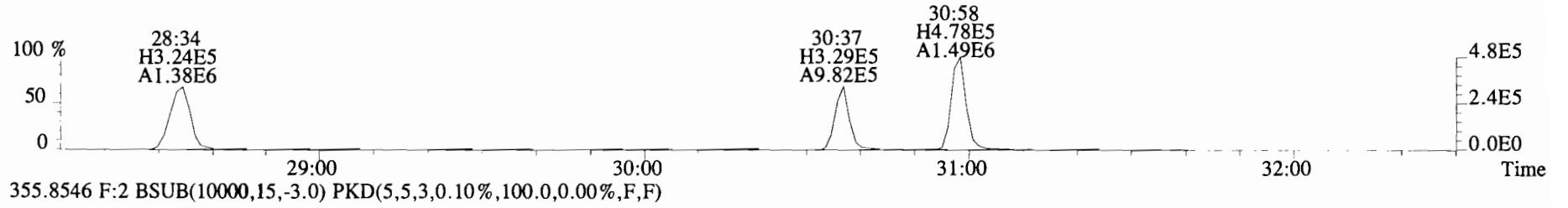
331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



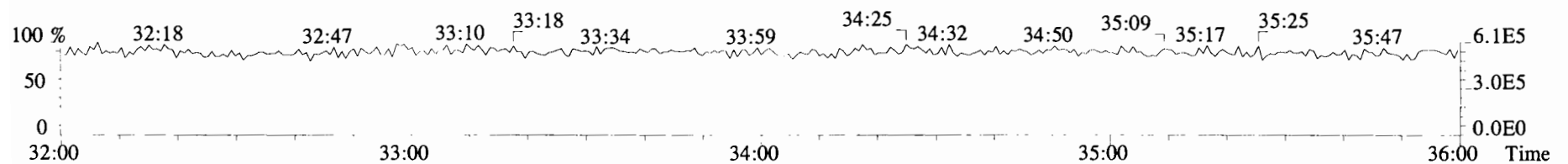
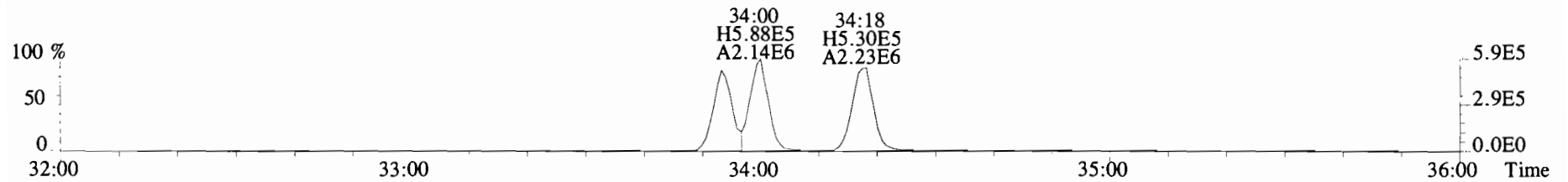
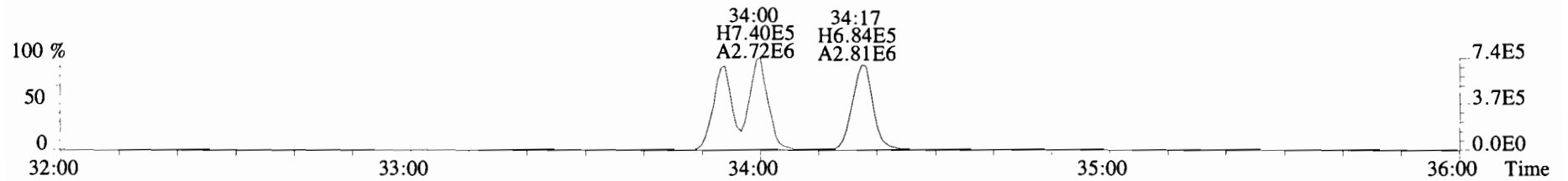
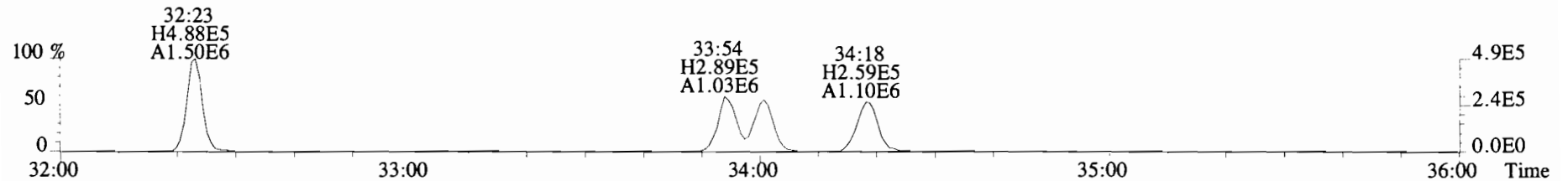
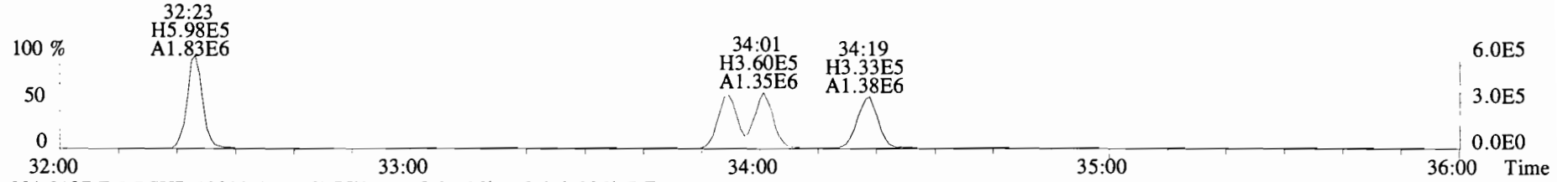
333.9339 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



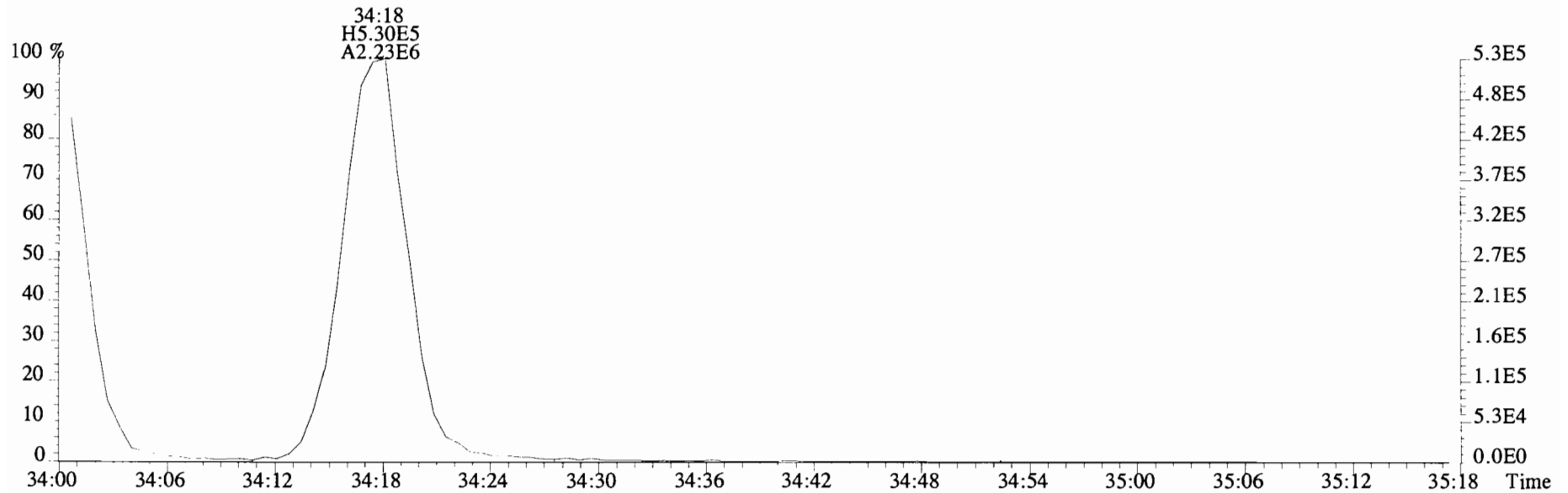
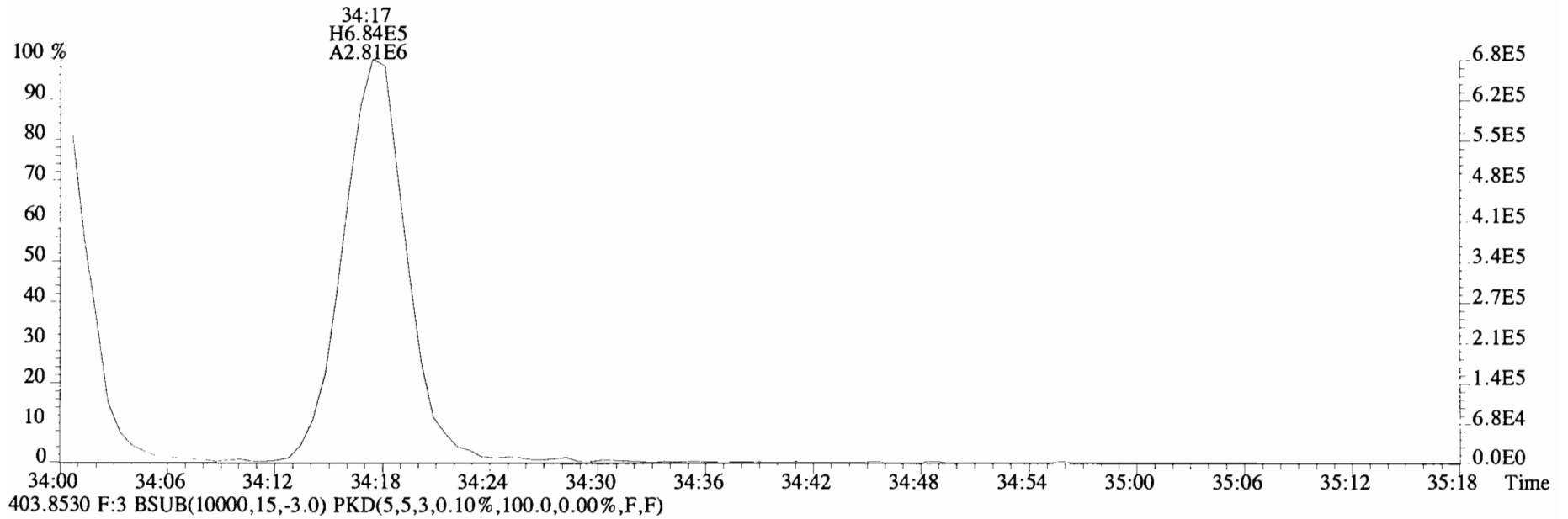
File:191205D3 #1-211 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



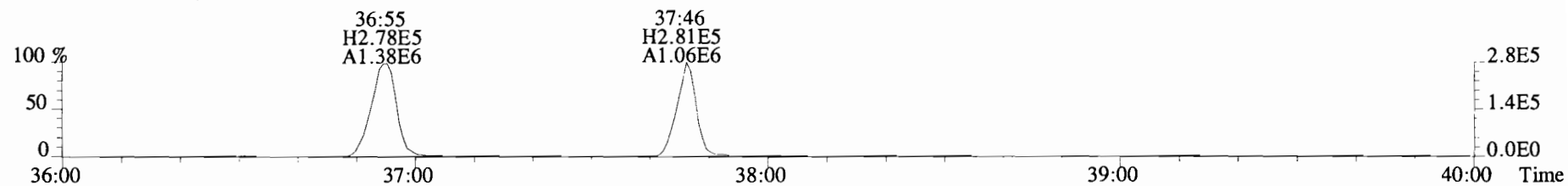
File:191205D3 #1-385 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



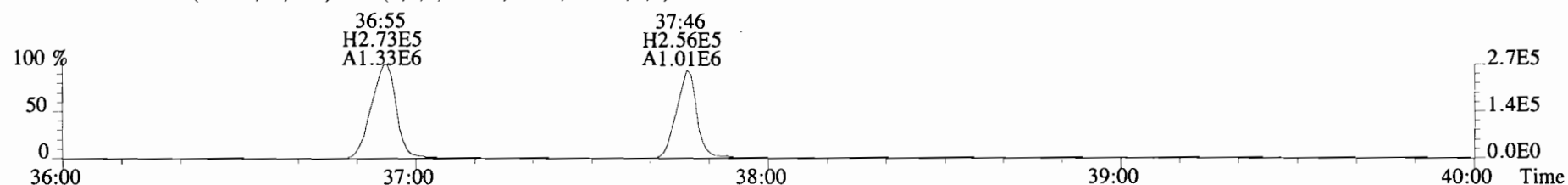
File:191205D3 #1-385 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



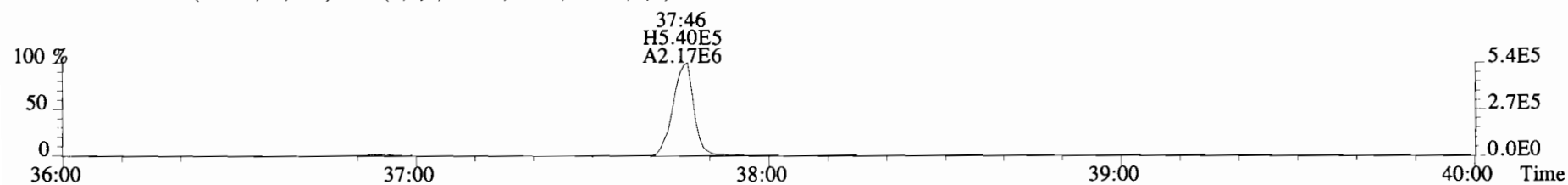
File:191205D3 #1-355 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



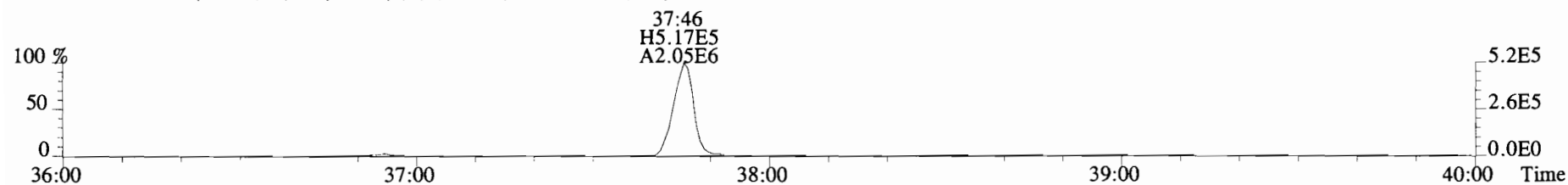
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



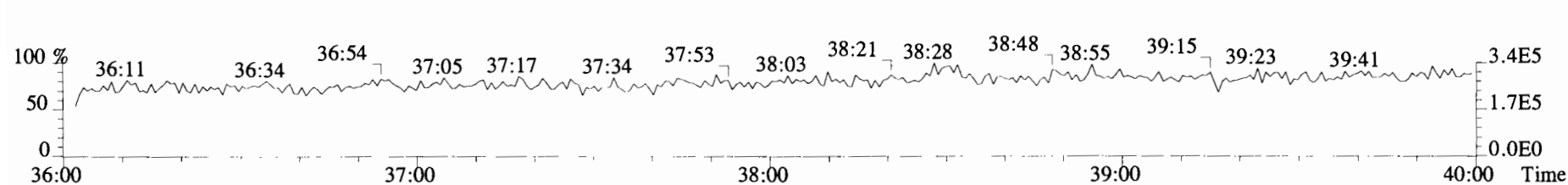
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



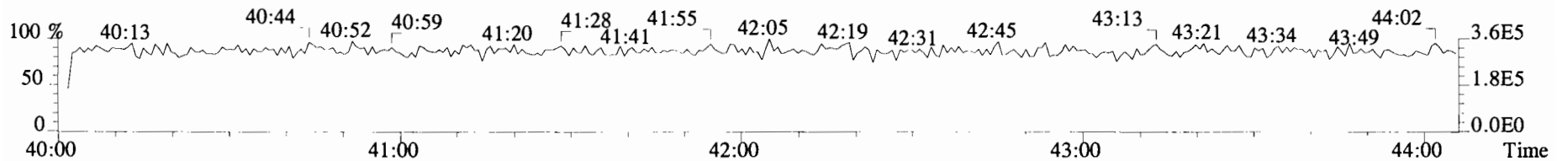
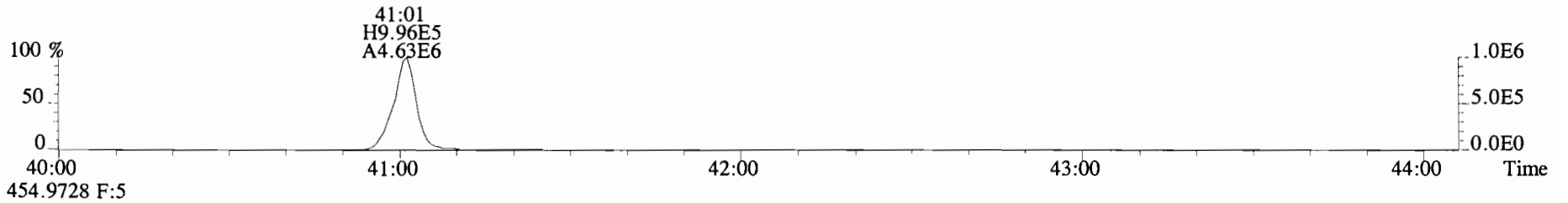
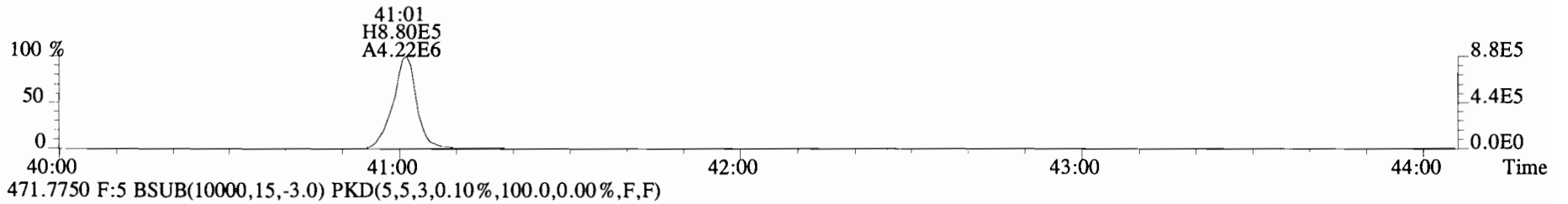
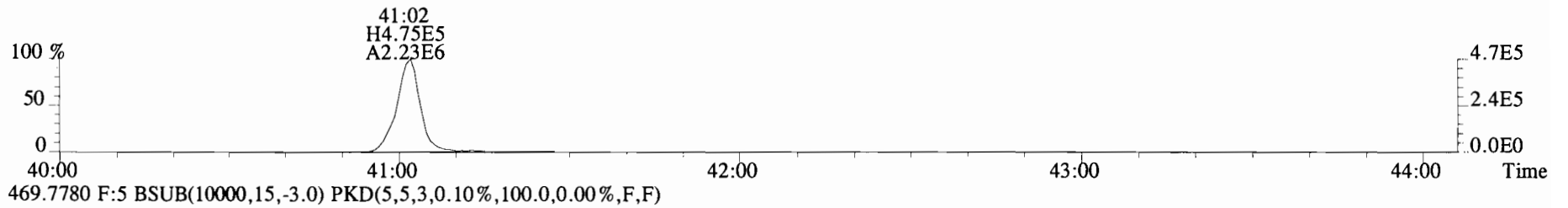
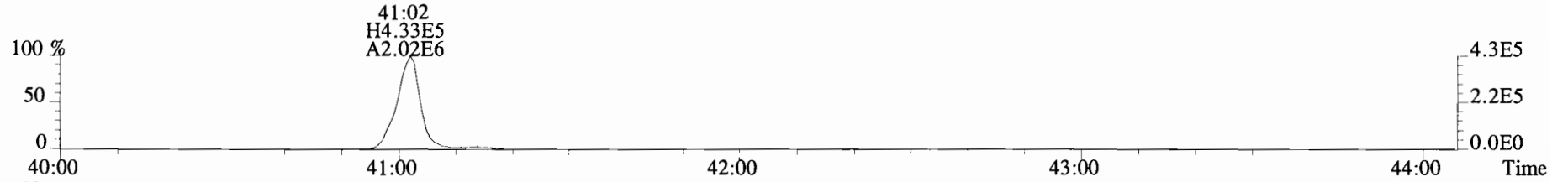
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



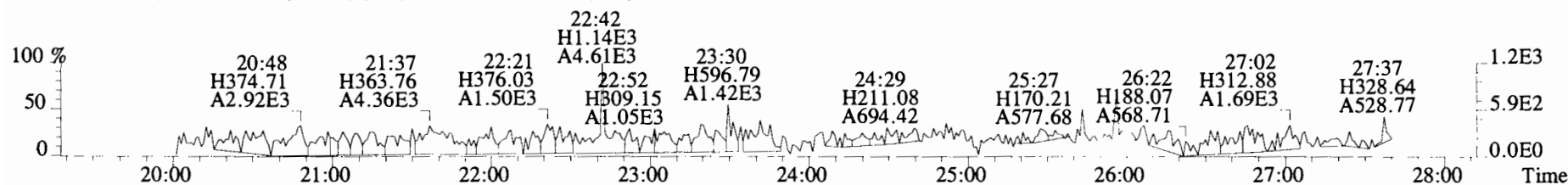
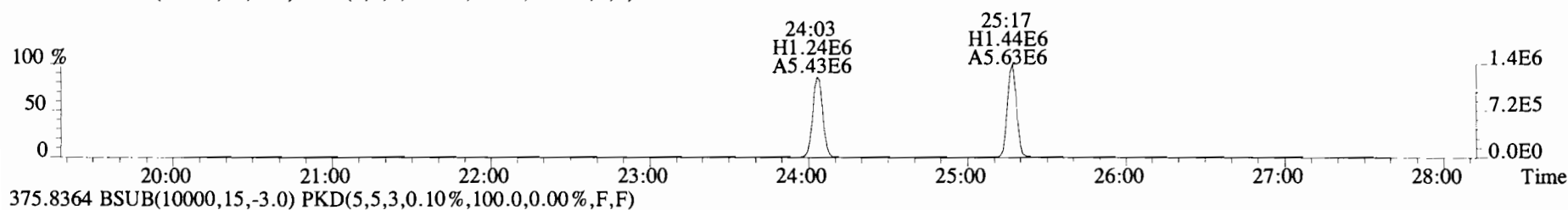
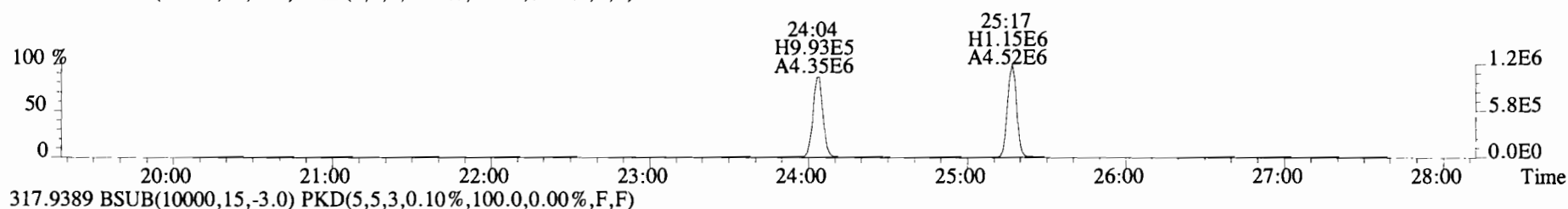
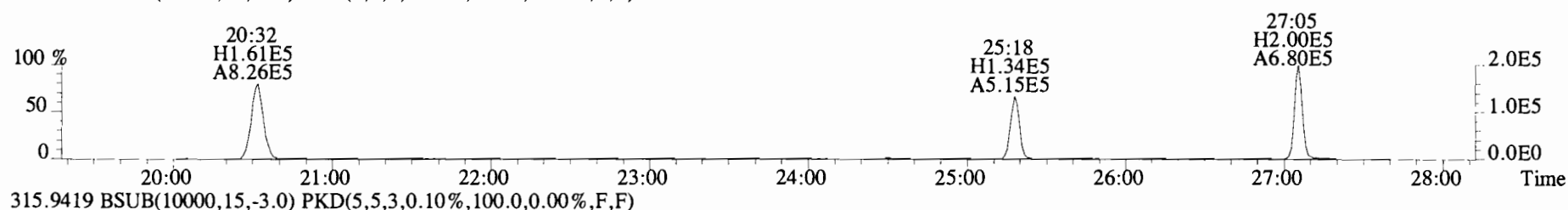
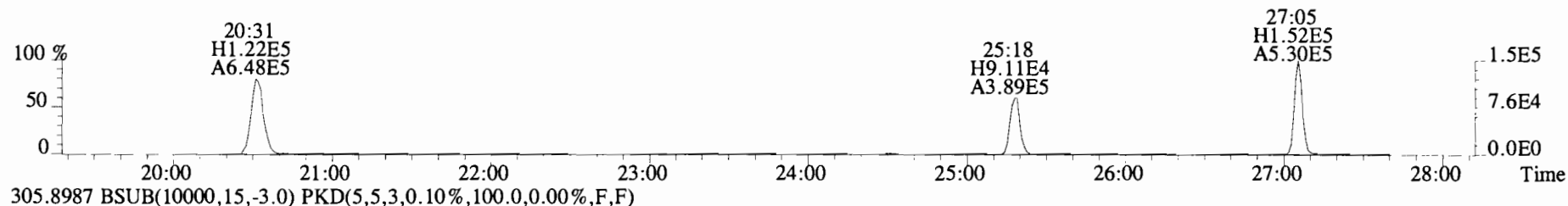
454.9728 F:4



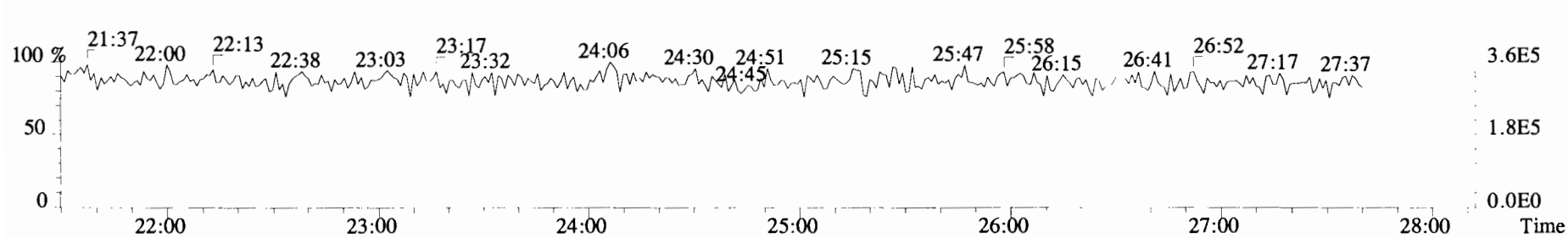
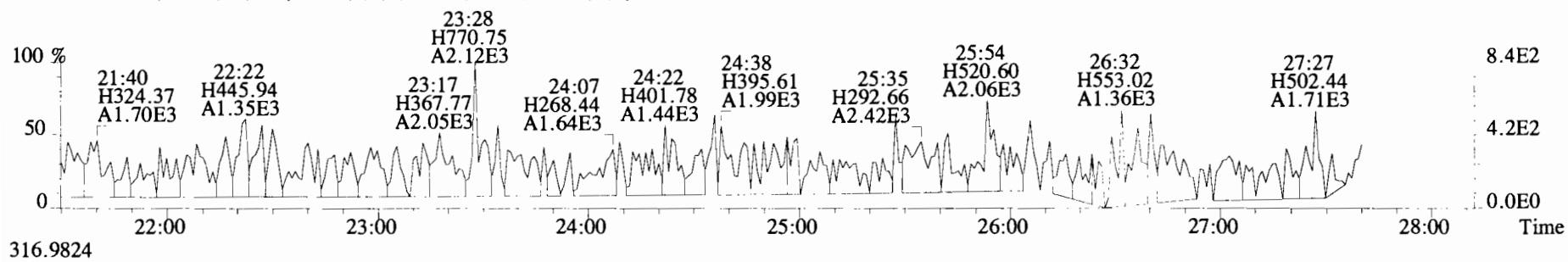
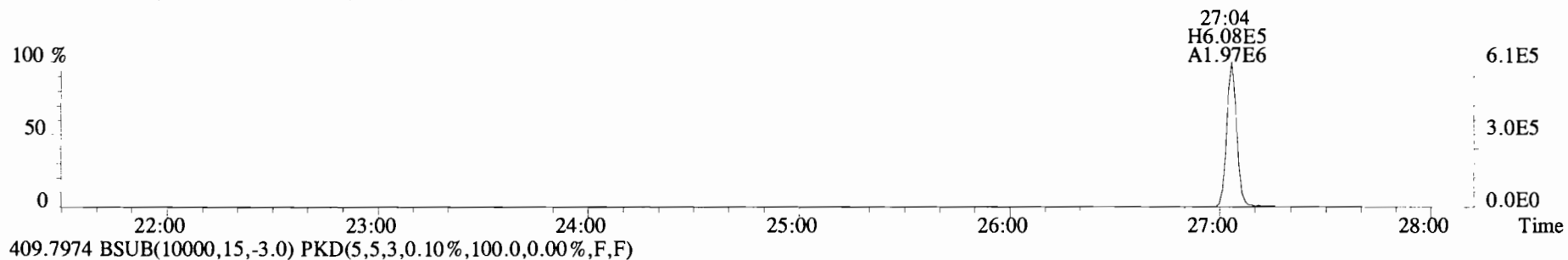
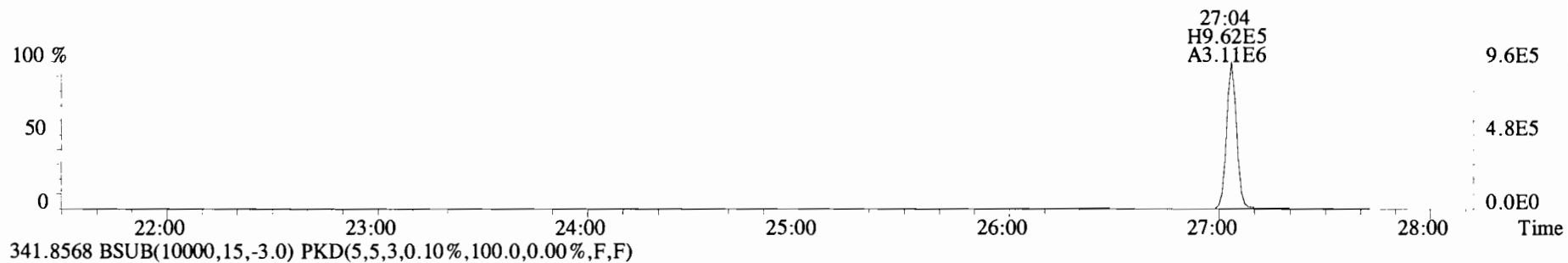
File:191205D3 #1-432 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191205D3 #1-492 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D3-1 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)

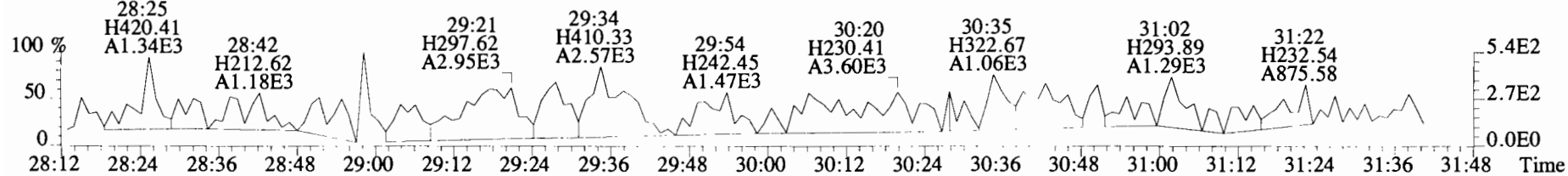
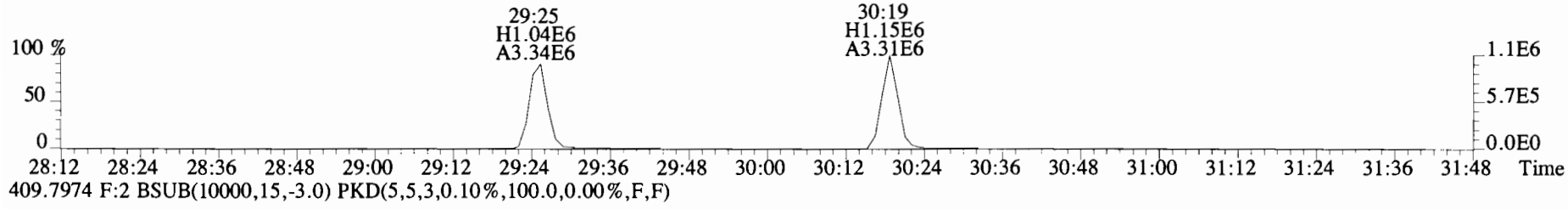
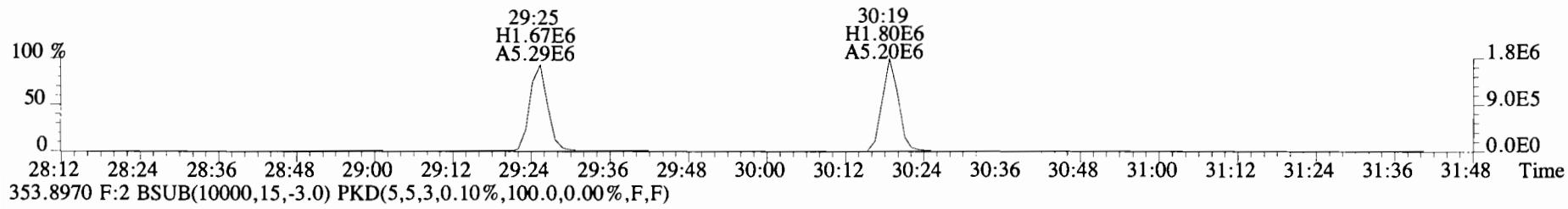
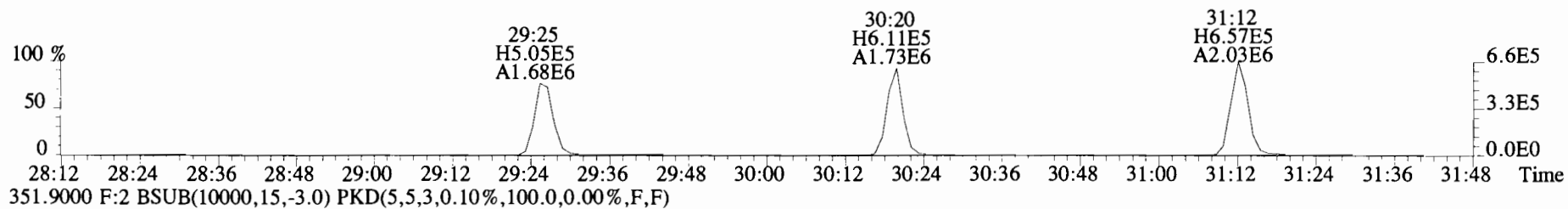
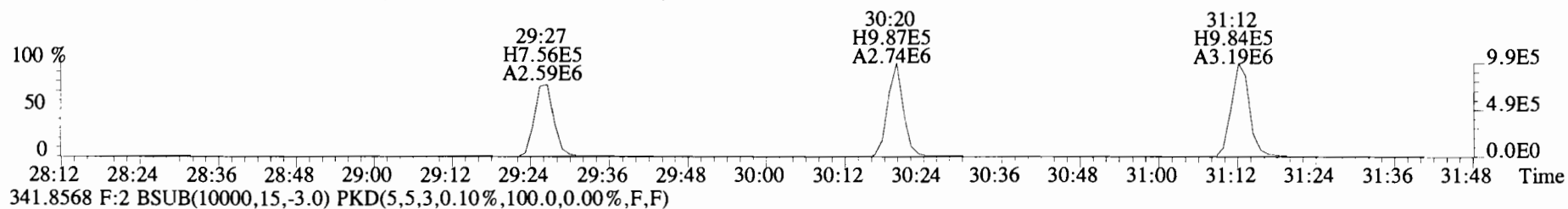


File:191205D3 #1-492 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

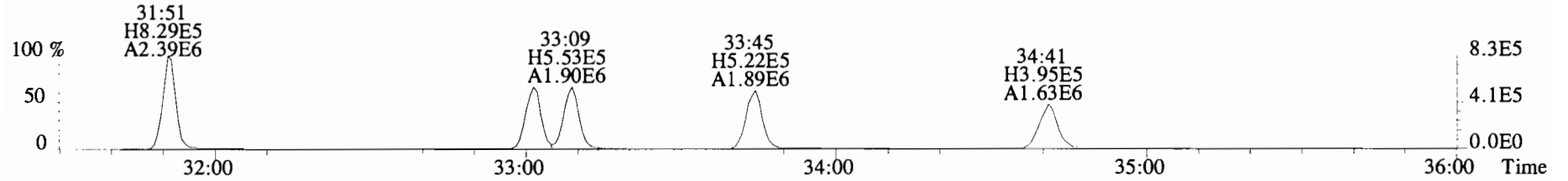




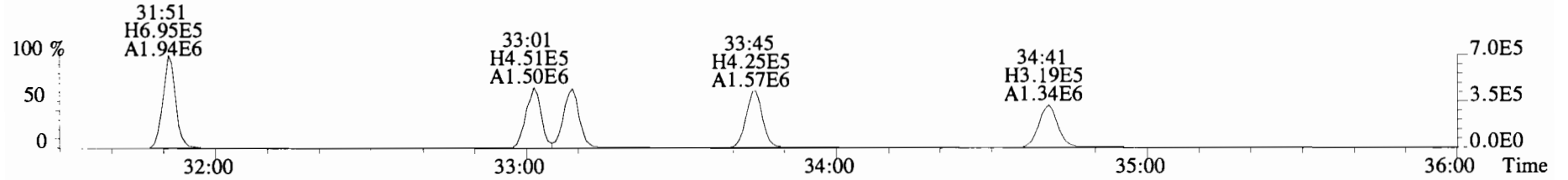
File:191205D3 #1-211 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
 339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



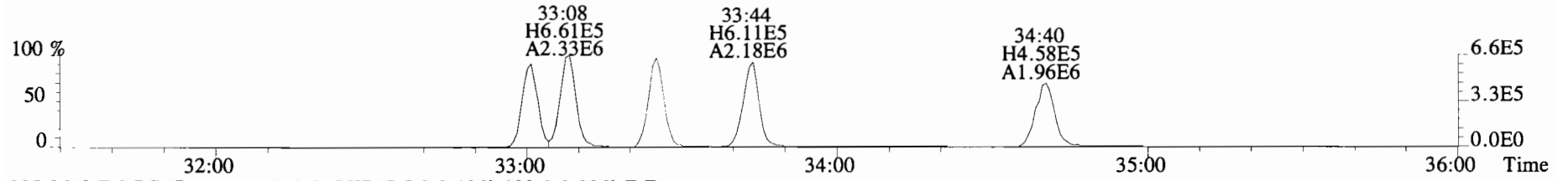
File:191205D3 #1-385 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



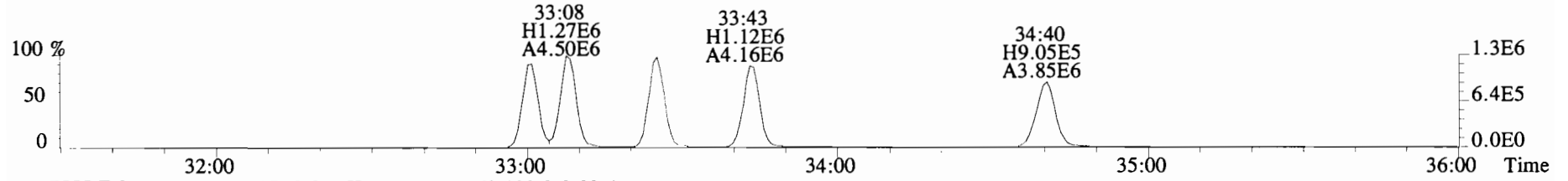
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



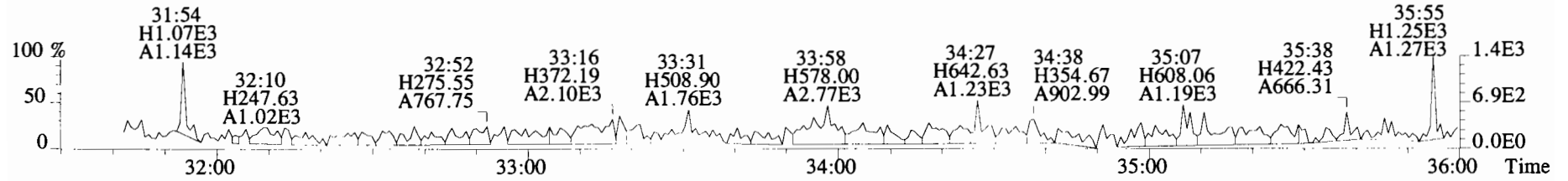
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



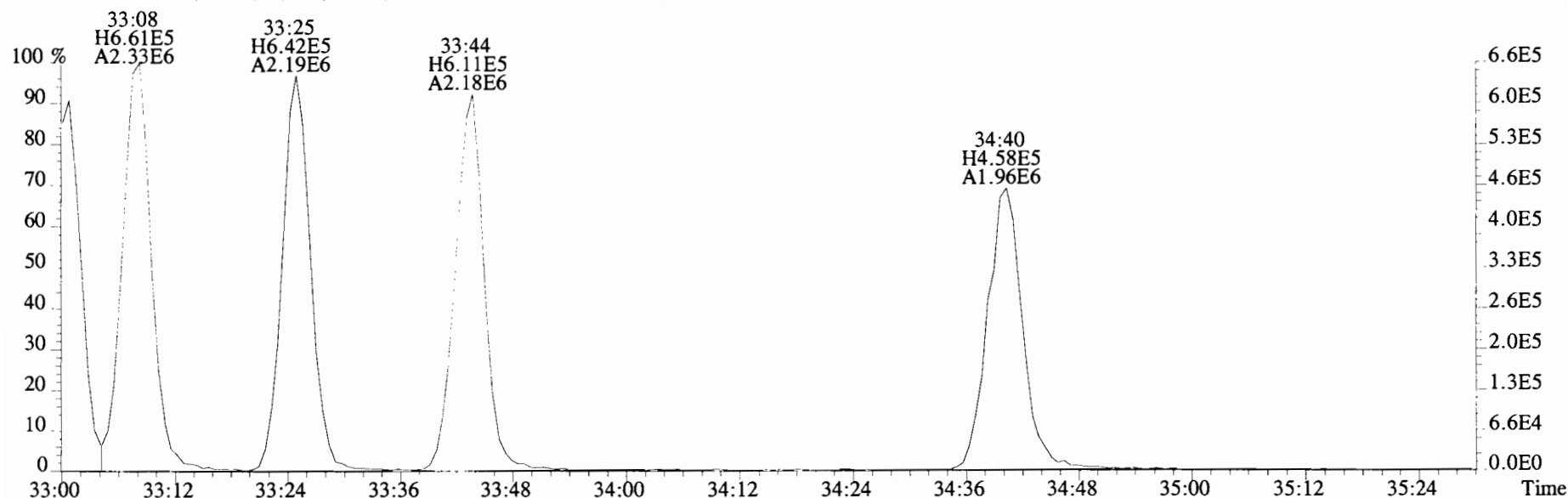
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



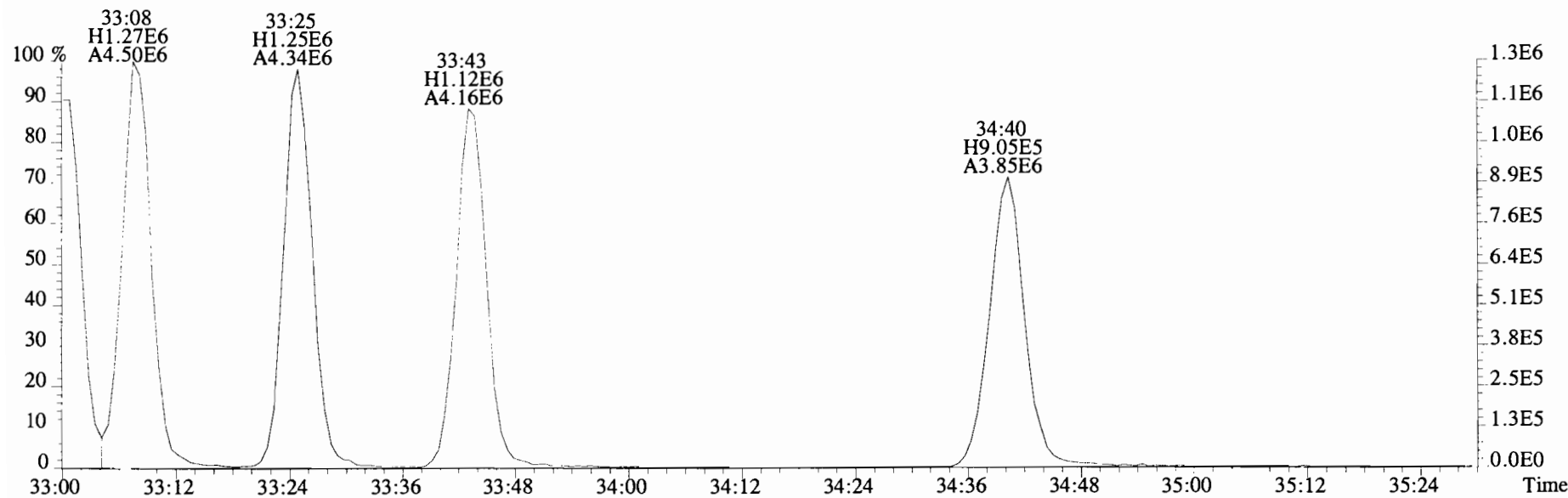
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



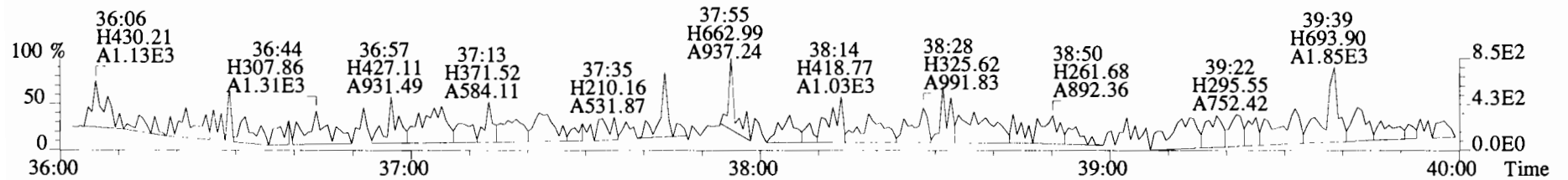
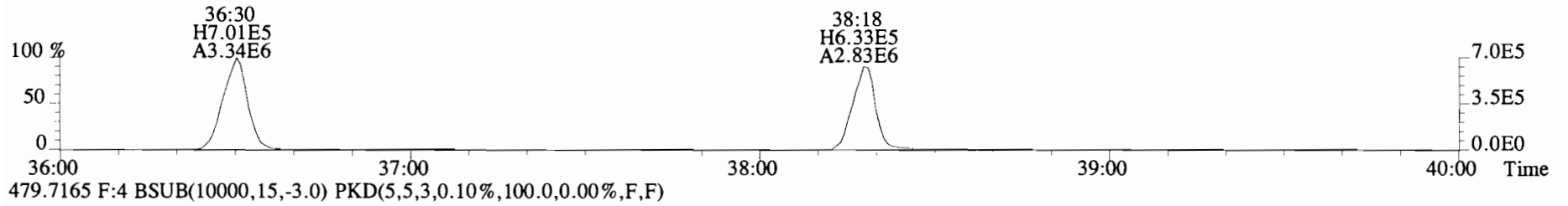
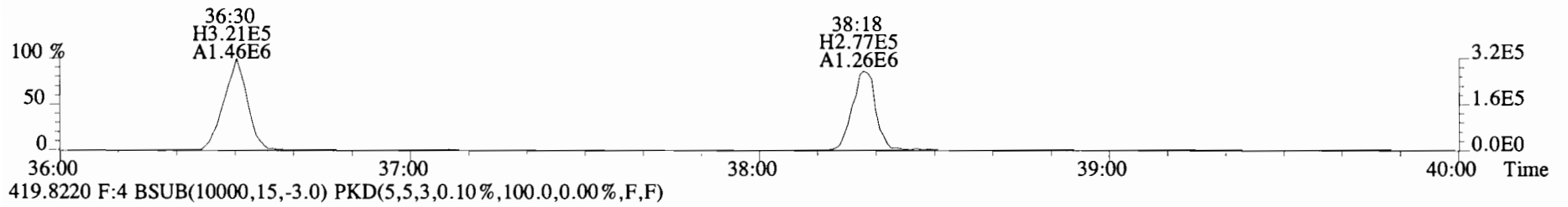
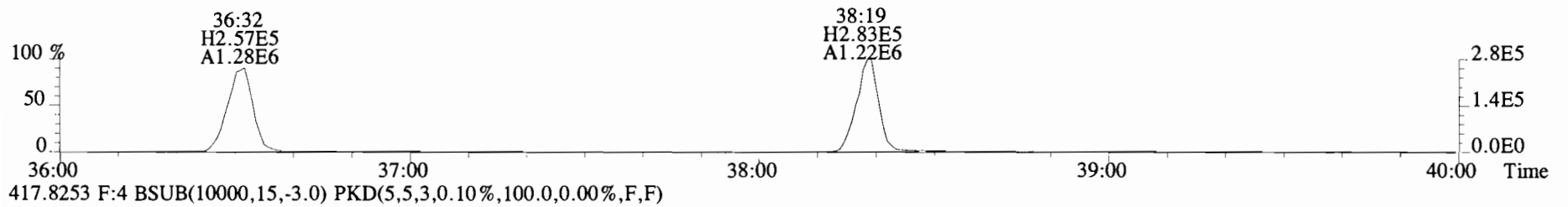
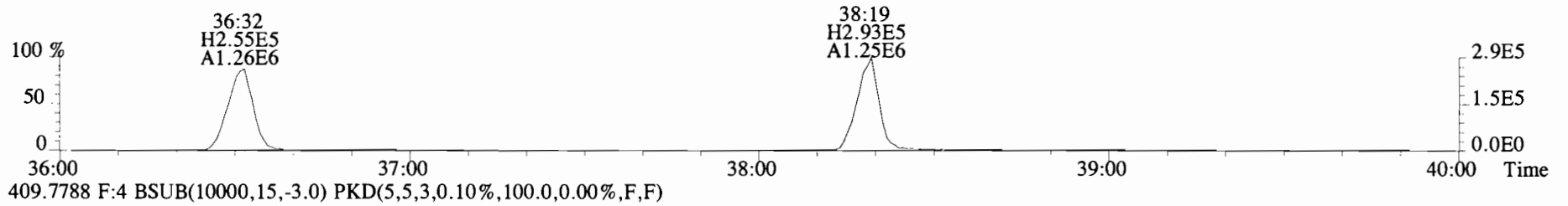
File:191205D3 #1-385 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



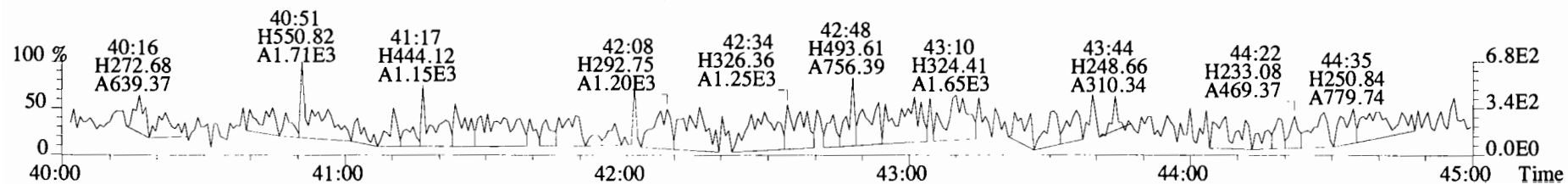
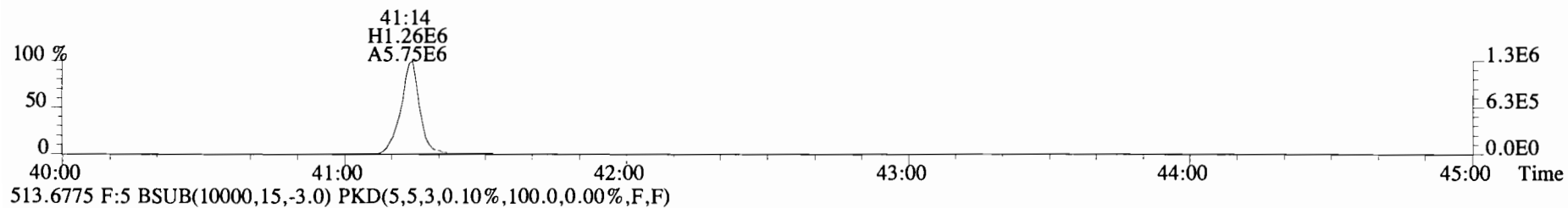
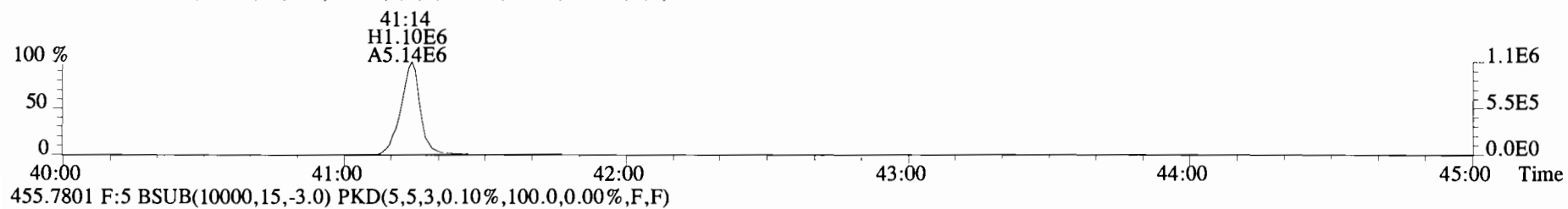
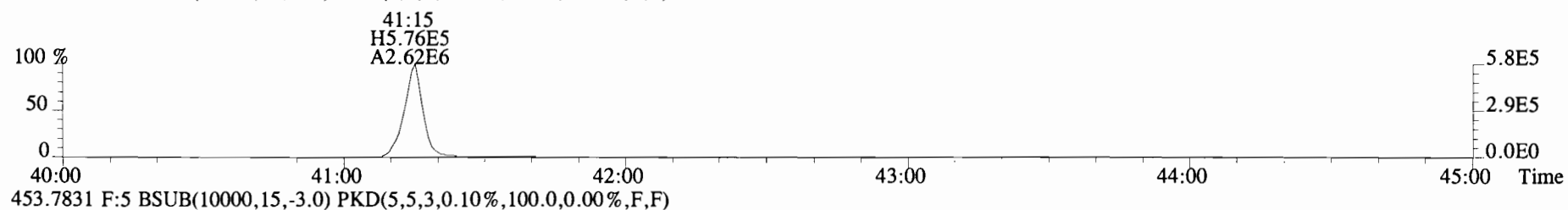
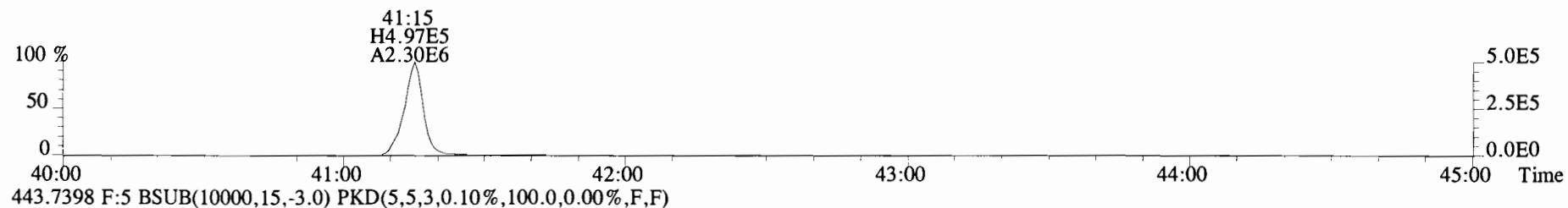
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191205D3 #1-355 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D3-1 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)

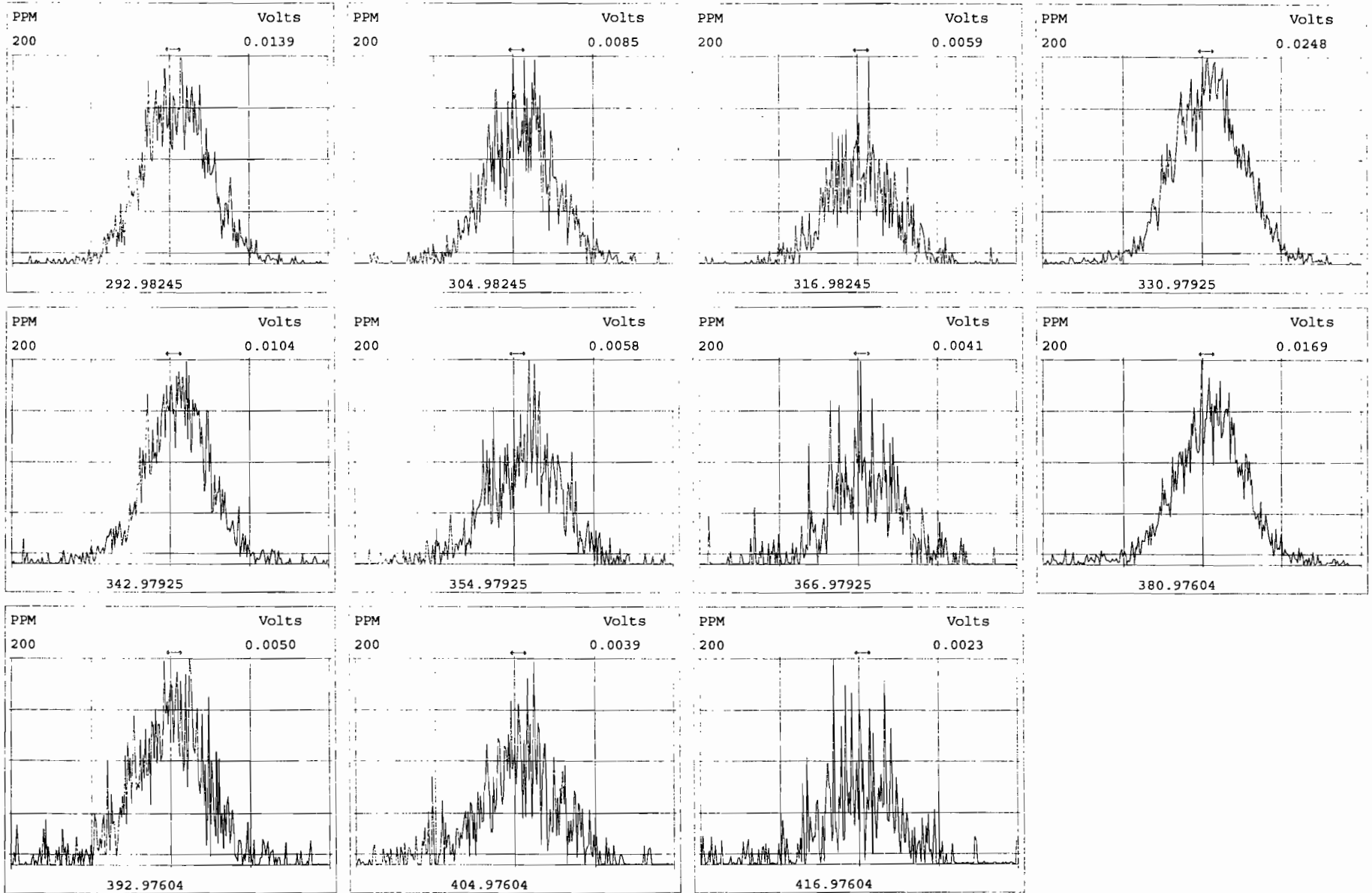


File:191205D3 #1-432 Acq: 6-DEC-2019 17:54:28 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191205D3-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



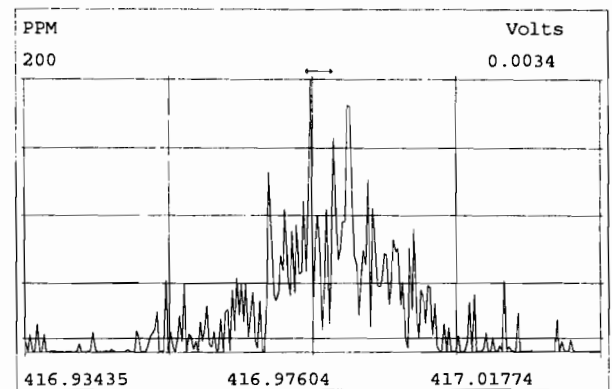
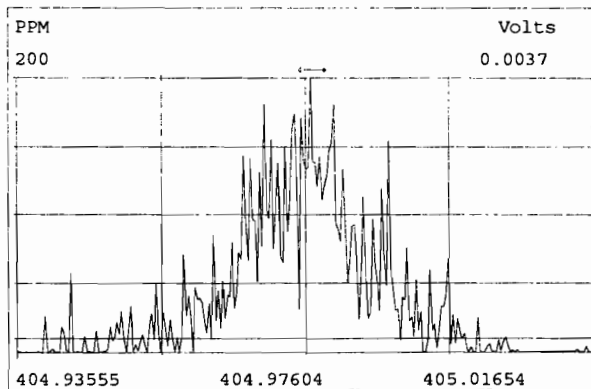
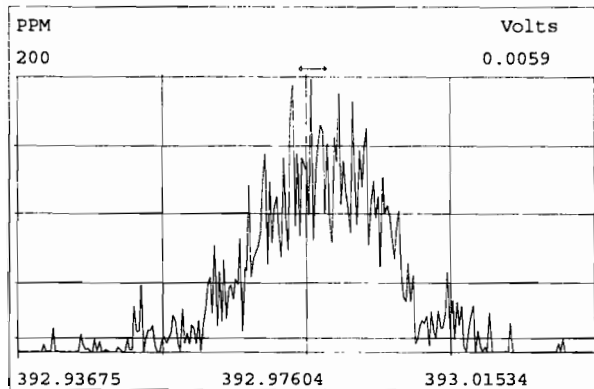
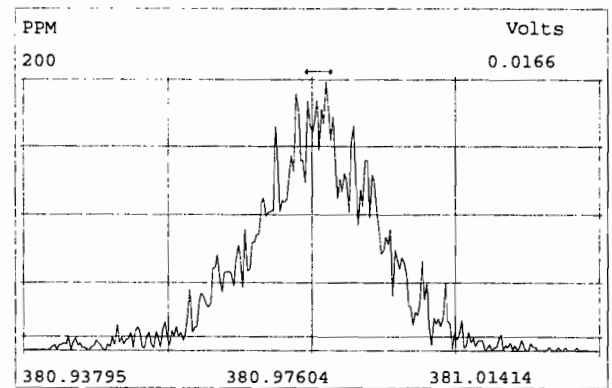
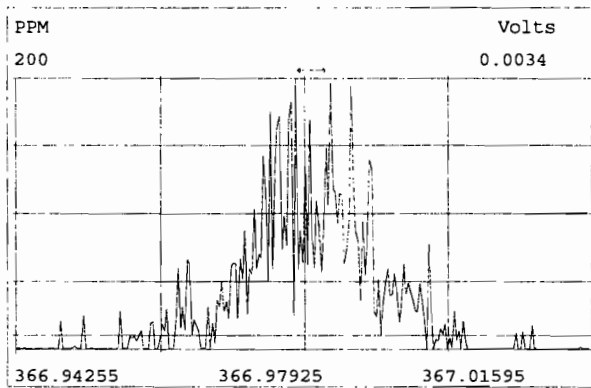
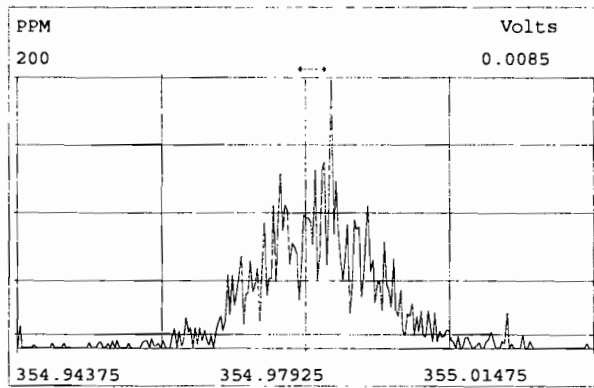
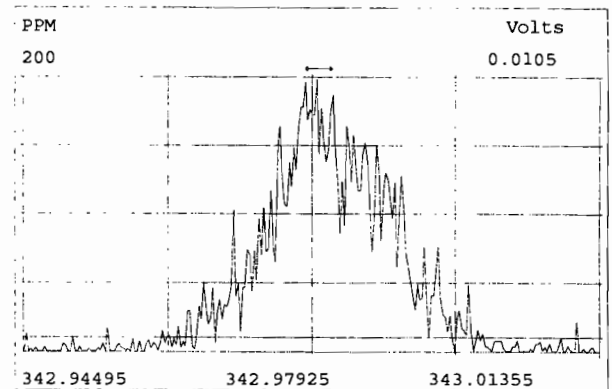
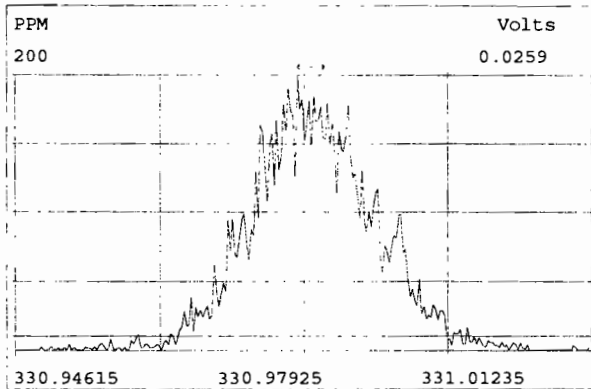
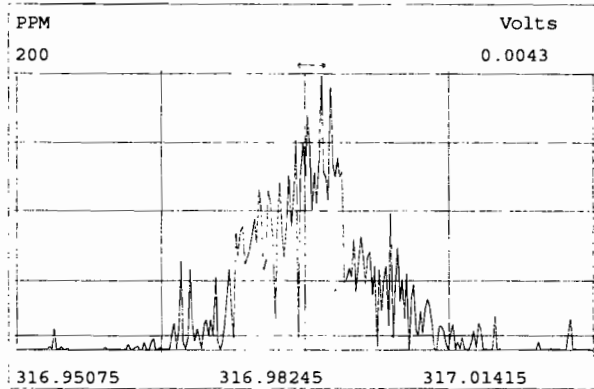
Peak Locate Examination: 7-DEC-2019:06:01 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:1 Reference:PFK



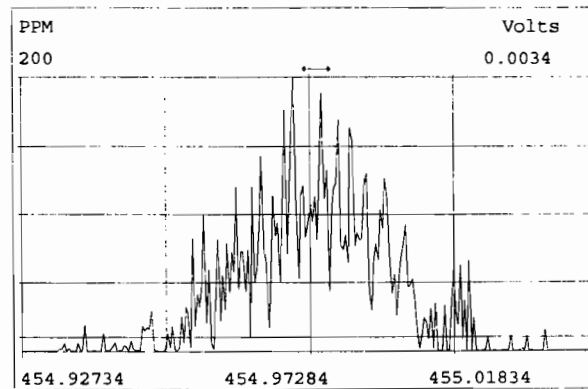
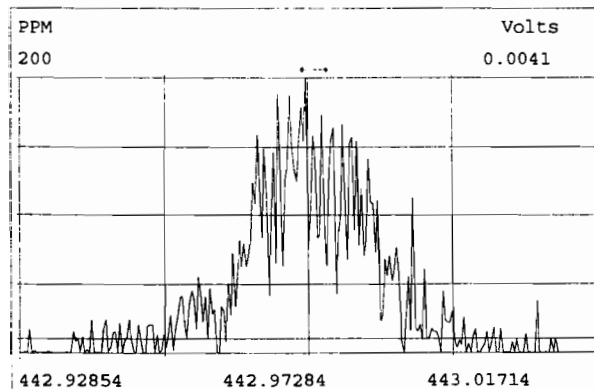
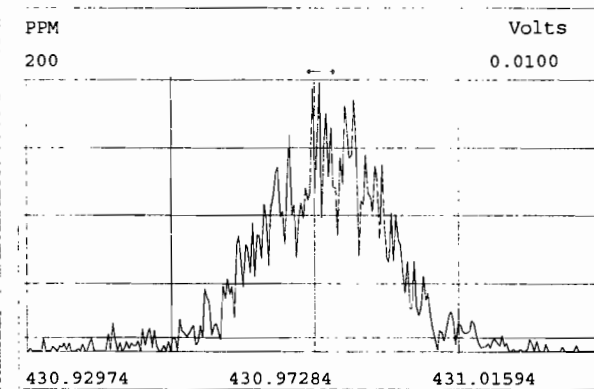
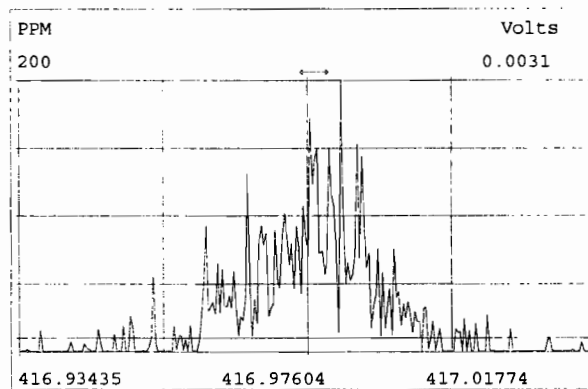
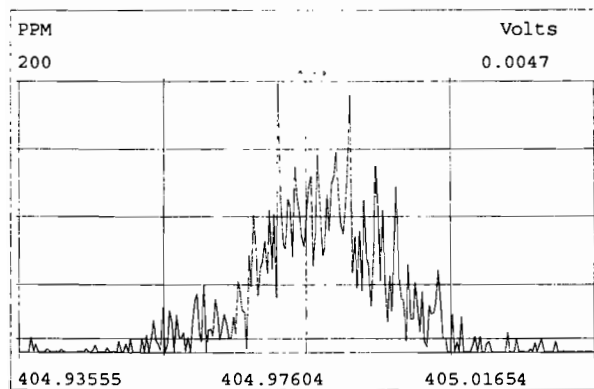
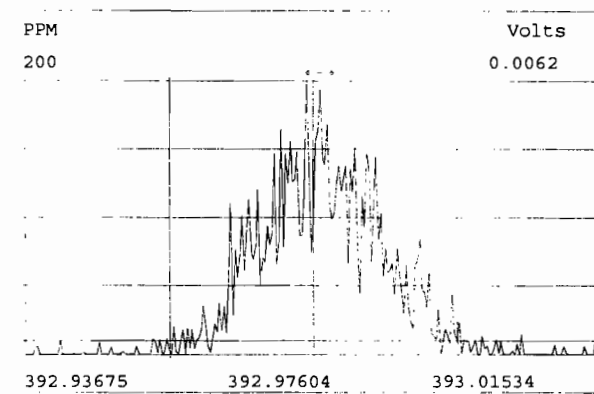
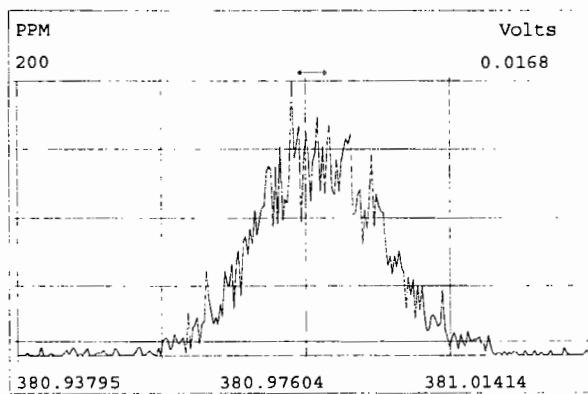
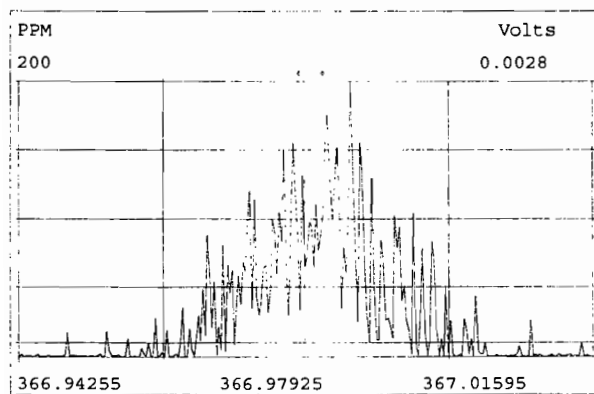
Peak Locate Examination: 7-DEC-2019:06:02 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:2 Reference:PFK



Peak Locate Examination: 7-DEC-2019:06:03 File:RES\_CHECK

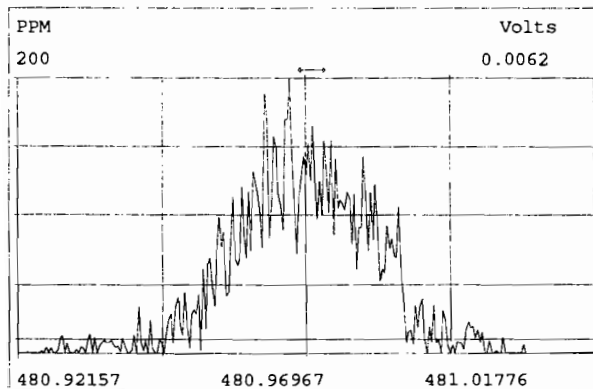
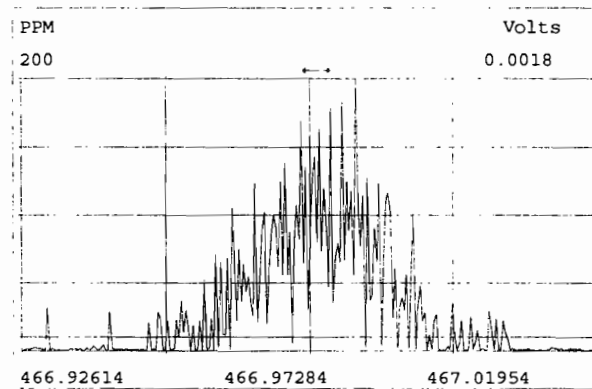
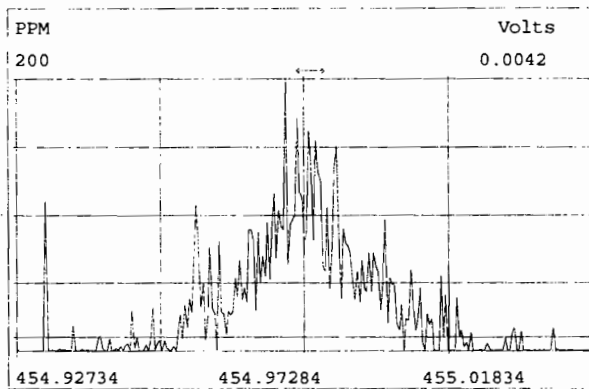
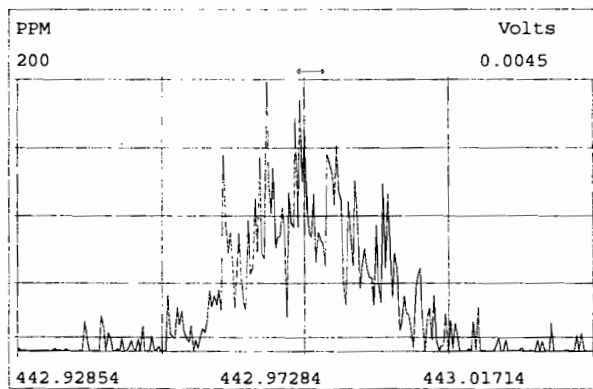
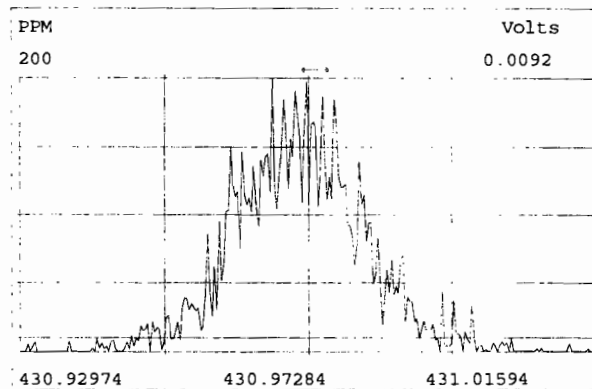
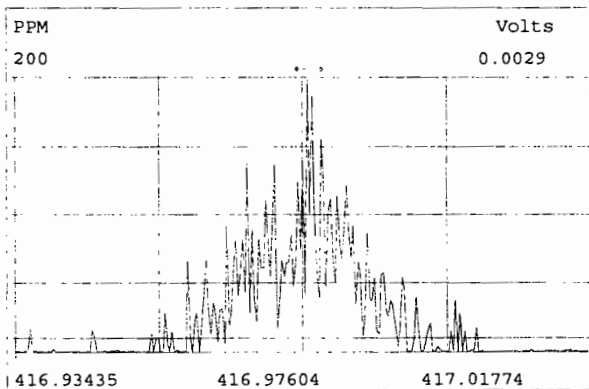
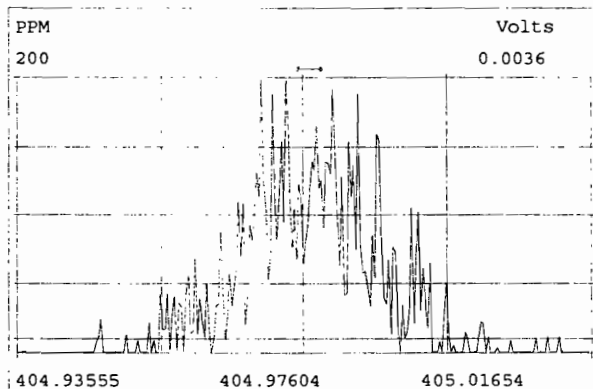
Experiment:OCDD\_DB5 Function:3 Reference:PFK

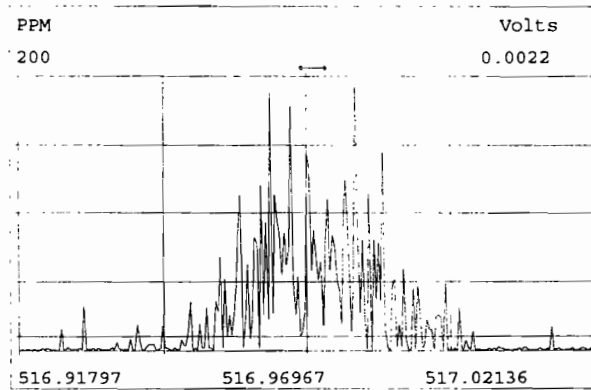
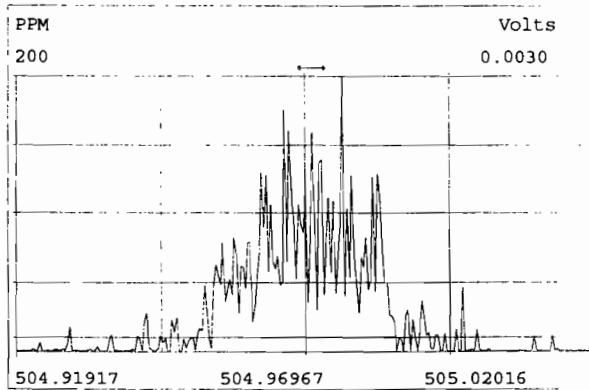
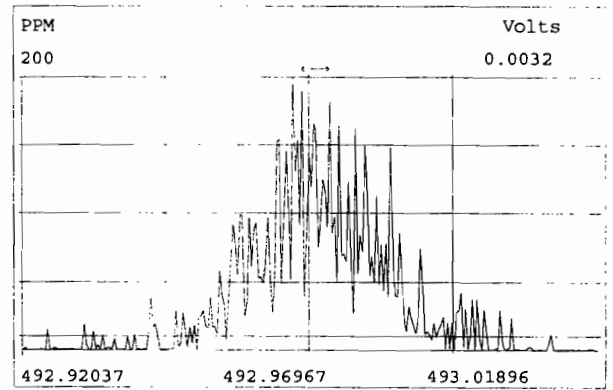
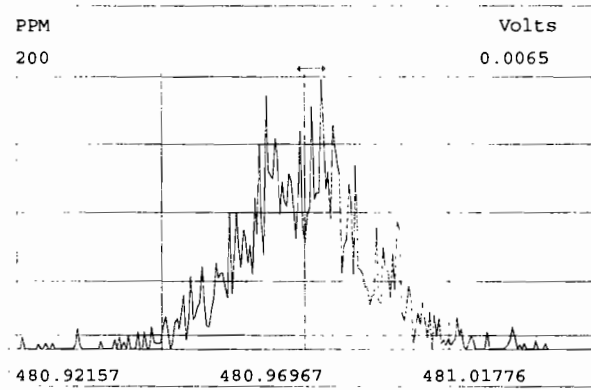
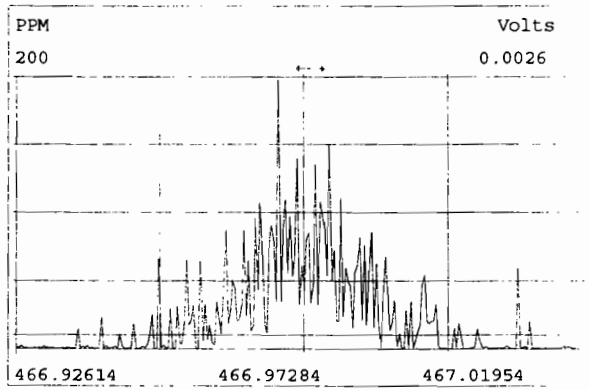
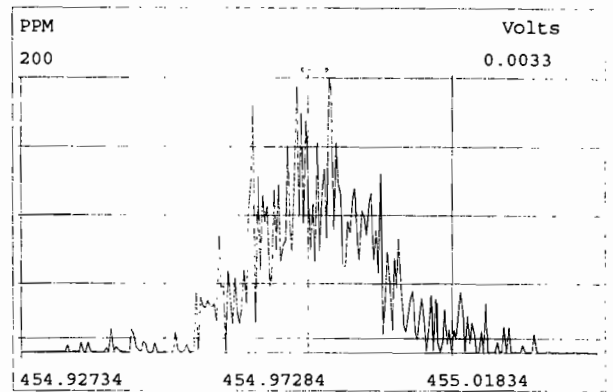
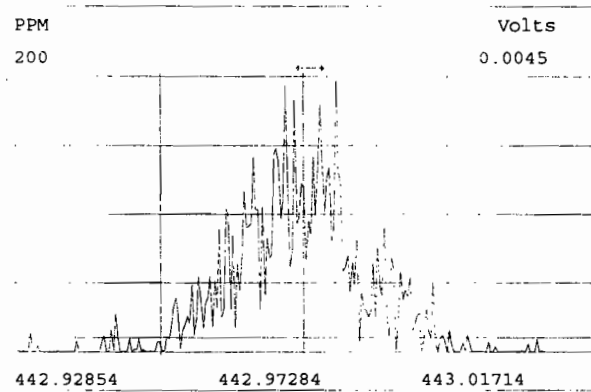
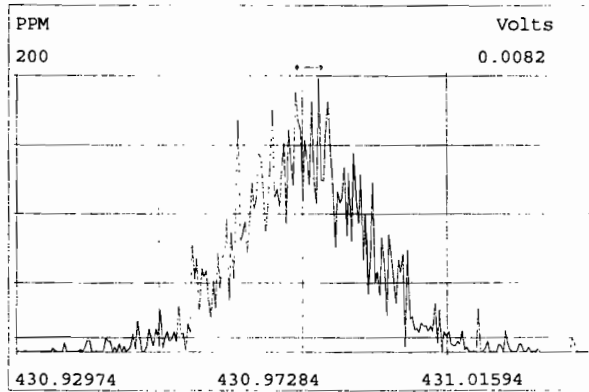




Peak Locate Examination: 7-DEC-2019:06:04 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:4 Reference:PFK





## HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

**Beg. Calibration ID:** ST191205D4-1

**Reviewed By:** CT 12/10/19  
*Initials & Date*

**End Calibration ID:** NA

	<u>Beg.</u>	<u>End</u>
<b>Ion abundance within QC limits?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/> NA
<b>Concentrations within criteria?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>TCDD/TCDF Valleys &lt;25%</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>First and last eluters present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Retention Times within criteria?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Verification Std. named correctly?</b> (ST-Year-Month-Day-VG ID)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Forms signed and dated?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Correct ICAL referenced?</b>	<u>DB</u>	<input type="checkbox"/>
<b><u>Run Log:</u></b>		
- 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>	<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:**

(ASIOS CRASHED DURING END) RES CHECK.  
 1 FUNCTION PRINTED.

Vista Analytical Laboratory - Injection Log Run file: 191205D4 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191205D4	1	ST191205D4-1	DB	7-DEC-19	06:05:48	ST191205D4-1	NA
191205D4	2	SOLVENT BLANK	DB	7-DEC-19	06:53:37	ST191205D4-1	NA
191205D4	3	1903646-03	DB	7-DEC-19	07:41:24	ST191205D4-1	NA
191205D4	4	1903646-04	DB	7-DEC-19	08:29:10	ST191205D4-1	NA
191205D4	5	1903646-05	DB	7-DEC-19	09:17:07	ST191205D4-1	NA
191205D4	6	1903646-06	DB	7-DEC-19	10:05:05	ST191205D4-1	NA
191205D4	7	B9J0315-DUP1	DB	7-DEC-19	10:53:01	ST191205D4-1	NA
191205D4	8	1903646-07	DB	7-DEC-19	11:40:53	ST191205D4-1	NA
191205D4	9	1903646-08	DB	7-DEC-19	12:28:50	ST191205D4-1	NA
191205D4	10	1903646-09	DB	7-DEC-19	13:16:49	ST191205D4-1	NA

FORM 4A  
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory

Episode No.:

CCAL ID: ST191205D4-1

Contract No.:

SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191205D4 S#1 Analysis Date: 7-DEC-19 Time: 06:05:48

	M/Z'S	ION	QC	Pass	CONC. FOUND	CONC. RANGE (3) (ng/mL)
	FORMING RATIO (1)	ABUND. RATIO	LIMITS (2)			
NATIVE ANALYTES						
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	y	10.5	7.8 - 12.9
1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y	50.9	8.2 - 12.3 (4) 39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	y	49.0	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.20	1.05-1.43	y	51.4	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05-1.43	y	51.8	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	y	50.0	43.0 - 58.0
OCDD	M+2/M+4	0.88	0.76-1.02	y	99.9	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	y	9.37	8.4 - 12.0 8.6 - 11.6 (4)
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	y	51.9	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	y	52.0	41.0 - 61.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	46.9	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	y	47.0	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	y	49.4	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	y	47.1	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	y	47.0	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	y	47.2	43.0 - 58.0
OCDF	M+2/M+4	0.91	0.76-1.02	y	95.8	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: DBDate: 12/10/19

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: 191205D4 #1 Analysis Date: 7-DEC-19 Time: 06:05:48

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	0.82	0.65-0.89	y	104	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.62	0.54-0.72	y	106	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	y	103	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	y	86.3	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	y	91.9	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	y	100	72.0 - 138.0
13C-OCDD	M/M+2	0.88	0.76-1.02	y	238	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.77	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	105	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.63	1.32-1.78	y	99.7	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.50	0.43-0.59	y	111	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	y	99.5	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.50	0.43-0.59	y	99.4	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.50	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	98.9	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.44	0.37-0.51	y	107	77.0 - 129.0
13C-OCDF	M+2/M+4	0.90	0.76-1.02	y	250	96.0 - 415.0
CLEANUP STANDARD (3)						
37Cl-2,3,7,8-TCDD					9.55	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: 12/10/19

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: 191205D4 S#1 Analysis Date: 7-DEC-19 Time: 06:05:48

ZB-5MS IS Data Filename: 191205D4 S#1 Analysis Date: 7-DEC-19 Time: 06:05:48

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)	22:40	1,3,6,8-TCDF (F)	20:32
1,2,8,9-TCDD (L)	26:57	1,2,8,9-TCDF (L)	27:06
1,2,4,7,9-PeCDD (F)	28:33	1,3,4,6,8-PeCDF (F)	27:04
1,2,3,8,9-PeCDD (L)	30:58	1,2,3,8,9-PeCDF (L)	31:12
1,2,4,6,7,9-HxCDD (F)	32:23	1,2,3,4,6,8-HxCDF (F)	31:51
1,2,3,7,8,9-HxCDD (L)	34:19	1,2,3,7,8,9-HxCDF (L)	34:41
1,2,3,4,6,7,9-HpCDD (F)	36:55	1,2,3,4,6,7,8-HpCDF (F)	36:31
1,2,3,4,6,7,8-HpCDD (L)	37:46	1,2,3,4,7,8,9-HpCDF (L)	38:19

(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: 12/10/19

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: 191205D4 S#1 Analysis Date: 7-DEC-19 Time: 06:05:48

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME		RRT	QC LIMITS (1)
	REFERENCE	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	1.001	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	1.001	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	1.200	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	1.154	1.000-1.425	
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.189	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: 12/10/19



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: 191205D4 S#1 Analysis Date: 7-DEC-19 Time: 06:05:48

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	1.000	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	1.001	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	0.992	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	1.017	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	1.092	1.069-1.111
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.146	1.098-1.192
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.130	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: 12/10/19

Client ID: 1613 CS3 19C2204  
 Lab ID: ST191205D4-1

Filename: 191205D4 S:1 Acq: 7-DEC-19 06:05:48  
 GC Column ID: ZB-SMS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191205D4-1  
 EndCAL: NA

Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	6.53e+05	0.77 y	0.91	26:05	10.538		* 2.5		*	Total Tetra-Dioxins	75.8	76.8	*	*	
1,2,3,7,8-PeCDD	2.58e+06	0.63 y	0.90	30:37	50.865		* 2.5		*	Total Penta-Dioxins	197	197	*	*	
1,2,3,4,7,8-HxCDD	2.40e+06	1.29 y	1.10	33:55	48.956		* 2.5		*	Total Hexa-Dioxins	223	224	*	*	
1,2,3,6,7,8-HxCDD	2.39e+06	1.20 y	0.94	34:01	51.406		* 2.5		*	Total Hepta-Dioxins	116	117	*	*	
1,2,3,7,8,9-HxCDD	2.48e+06	1.23 y	0.96	34:19	51.786		* 2.5		*	Total Tetra-Furans	37.1	38.5	*	*	
1,2,3,4,6,7,8-HpCDD	2.16e+06	1.04 y	0.98	37:46	49.986		* 2.5		*	Total Penta-Furans	227.68	228.25	*	*	
OCDD	4.45e+06	0.88 y	0.96	41:02	99.854		* 2.5		*	Total Hexa-Furans	252	253	*	*	
										Total Hepta-Furans	94.8	95.7	*	*	
2,3,7,8-TCDF	9.35e+05	0.77 y	0.95	25:18	9.3743		* 2.5		*						
1,2,3,7,8-PeCDF	4.47e+06	1.56 y	0.96	29:26	51.866		* 2.5		*						
2,3,4,7,8-PeCDF	4.47e+06	1.57 y	1.01	30:20	52.012		* 2.5		*						
1,2,3,4,7,8-HxCDF	3.44e+06	1.22 y	1.18	33:01	46.916		* 2.5		*						
1,2,3,6,7,8-HxCDF	3.48e+06	1.22 y	1.07	33:09	47.021		* 2.5		*						
2,3,4,6,7,8-HxCDF	3.51e+06	1.25 y	1.11	33:45	49.387		* 2.5		*						
1,2,3,7,8,9-HxCDF	2.91e+06	1.23 y	1.06	34:41	47.081		* 2.5		*						
1,2,3,4,6,7,8-HpCDF	2.67e+06	1.02 y	1.13	36:31	46.988		* 2.5		*						
1,2,3,4,7,8,9-HpCDF	2.53e+06	1.04 y	1.28	38:19	47.192		* 2.5		*						
OCDF	5.26e+06	0.91 y	0.95	41:15	95.789		* 2.5		*						
IS	13C-2,3,7,8-TCDD	6.84e+06	0.82 y	1.10	26:04	103.79				Rec					
IS	13C-1,2,3,7,8-PeCDD	5.62e+06	0.62 y	0.88	30:36	105.85				Qual					
IS	13C-1,2,3,4,7,8-HxCDD	4.46e+06	1.31 y	0.64	33:53	103.28									
IS	13C-1,2,3,6,7,8-HxCDD	4.96e+06	1.29 y	0.86	33:60	86.268									
IS	13C-1,2,3,7,8,9-HxCDD	4.99e+06	1.25 y	0.81	34:18	91.941									
IS	13C-1,2,3,4,6,7,8-HpCDD	4.40e+06	1.06 y	0.65	37:46	100.12									
IS	13C-OCDD	9.29e+06	0.88 y	0.58	41:01	238.41									
IS	13C-2,3,7,8-TCDF	1.05e+07	0.77 y	1.03	25:17	101.15									
IS	13C-1,2,3,7,8-PeCDF	8.98e+06	1.58 y	0.85	29:25	104.82									
IS	13C-2,3,4,7,8-PeCDF	8.47e+06	1.63 y	0.85	30:19	99.659									
IS	13C-1,2,3,4,7,8-HxCDF	6.22e+06	0.50 y	0.83	33:01	111.29									
IS	13C-1,2,3,6,7,8-HxCDF	6.92e+06	0.51 y	1.03	33:08	99.504									
IS	13C-2,3,4,6,7,8-HxCDF	6.37e+06	0.50 y	0.95	33:44	99.438									
IS	13C-1,2,3,7,8,9-HxCDF	5.83e+06	0.50 y	0.83	34:40	104.71									
IS	13C-1,2,3,4,6,7,8-HpCDF	5.04e+06	0.44 y	0.76	36:30	98.946									
IS	13C-1,2,3,4,7,8,9-HpCDF	4.18e+06	0.44 y	0.58	38:18	107.01									
IS	13C-OCDF	1.16e+07	0.90 y	0.69	41:14	250.07									
C/Up	37Cl-2,3,7,8-TCDD	6.88e+05		1.20	26:05	9.5459				95.5					
RS/RT	13C-1,2,3,4-TCDD	6.02e+06	0.79 y	1.00	25:30	100.00									
RS	13C-1,2,3,4-TCDF	1.00e+07	0.78 y	1.00	24:03	100.00									
RS/RT	13C-1,2,3,4,6,9-HxCDF	6.72e+06	0.52 y	1.00	33:25	100.00									

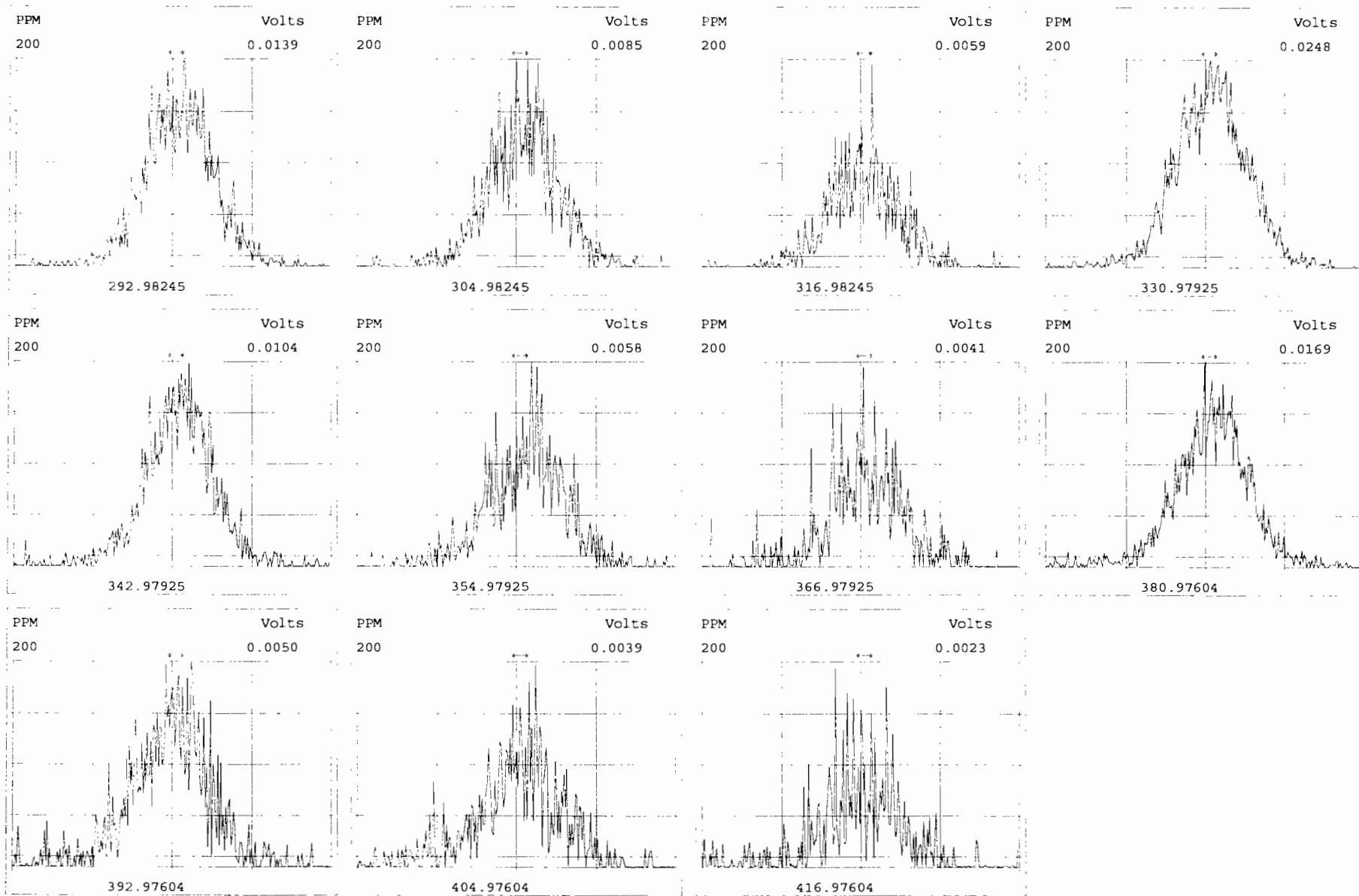
Integrations  
 by DB  
 Analyst: DB  
 Reviewed  
 by CT  
 Analyst: CT  
 Date: 12/10/19  
 Date: 12/10/19

Vista Analytical Laboratory - Injection Log Run file: 191205D4 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191205D4	1	ST191205D4-1	DB	7-DEC-19	06:05:48	ST191205D4-1	NA
191205D4	2	SOLVENT BLANK	DB	7-DEC-19	06:53:37	ST191205D4-1	NA
191205D4	3	1903646-03	DB	7-DEC-19	07:41:24	ST191205D4-1	NA
191205D4	4	1903646-04	DB	7-DEC-19	08:29:10	ST191205D4-1	NA
191205D4	5	1903646-05	DB	7-DEC-19	09:17:07	ST191205D4-1	NA
191205D4	6	1903646-06	DB	7-DEC-19	10:05:05	ST191205D4-1	NA
191205D4	7	B9J0315-DUP1	DB	7-DEC-19	10:53:01	ST191205D4-1	NA
191205D4	8	1903646-07	DB	7-DEC-19	11:40:53	ST191205D4-1	NA
191205D4	9	1903646-08	DB	7-DEC-19	12:28:50	ST191205D4-1	NA
191205D4	10	1903646-09	DB	7-DEC-19	13:16:49	ST191205D4-1	NA

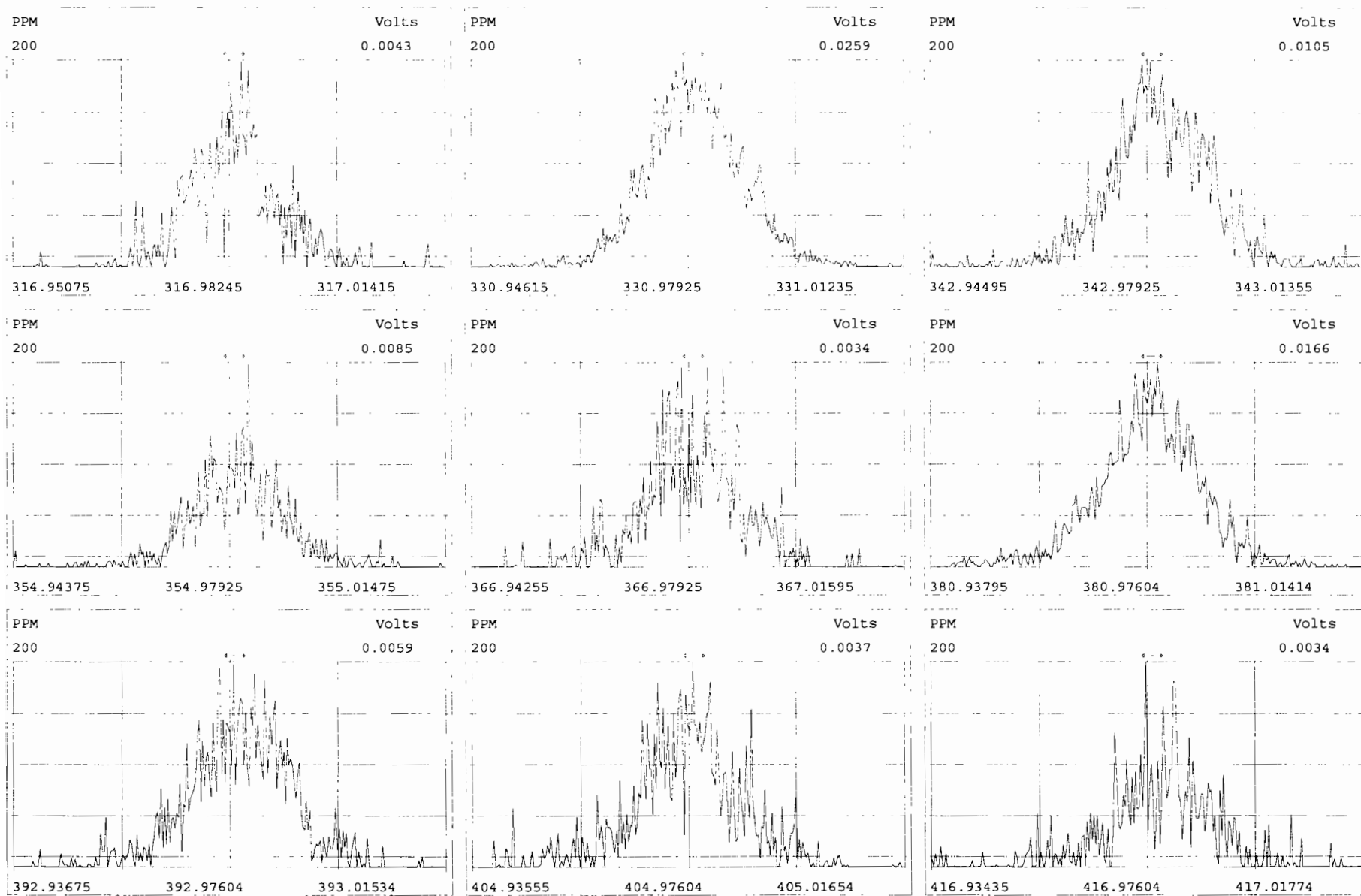
Peak Locate Examination: 7-DEC-2019:06:01 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:1 Reference:PFK



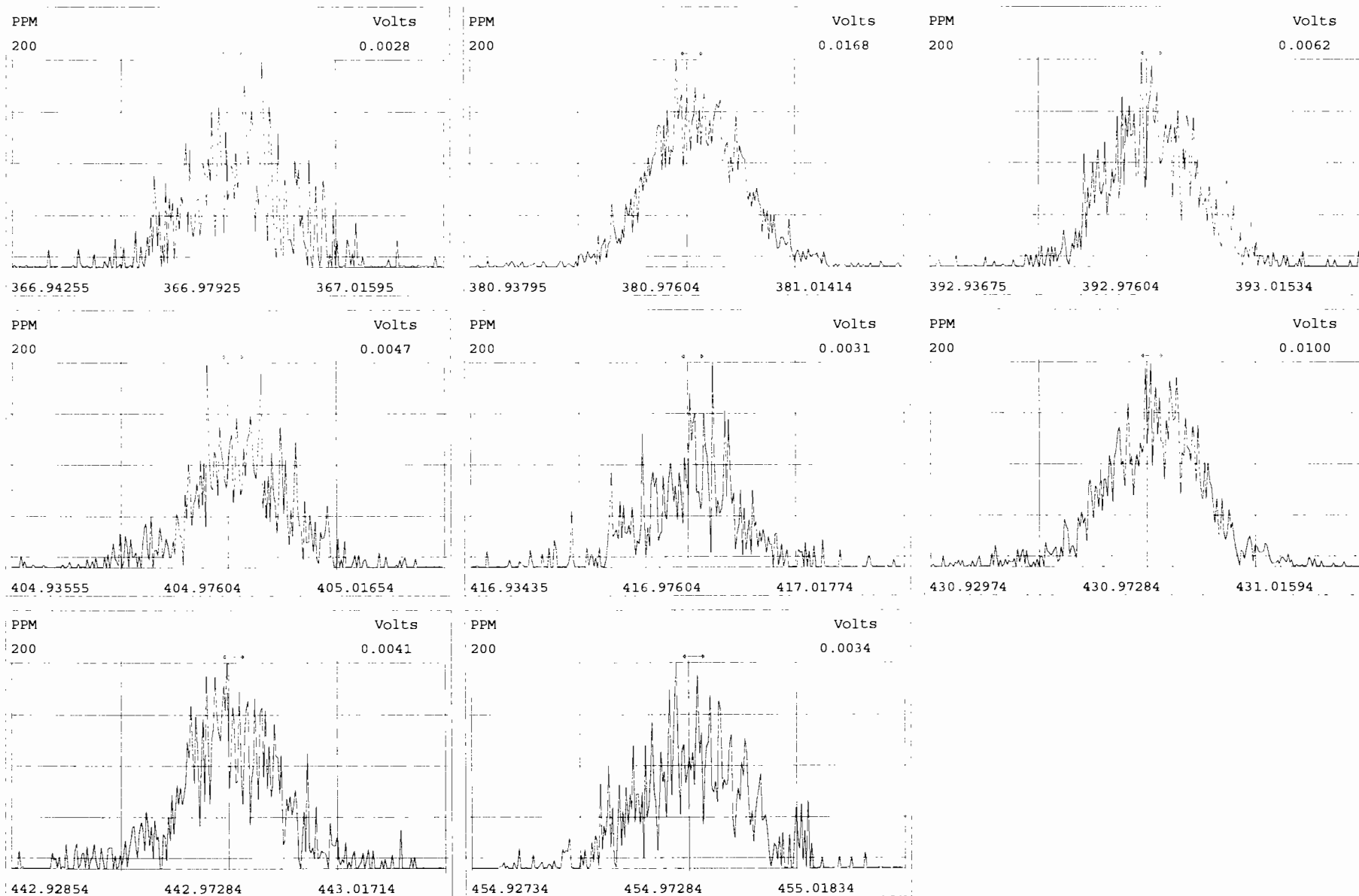
Peak Locate Examination: 7-DEC-2019:06:02 File:RES\_CHECK

Experiment:OCDD\_DB5 Function:2 Reference:PFK



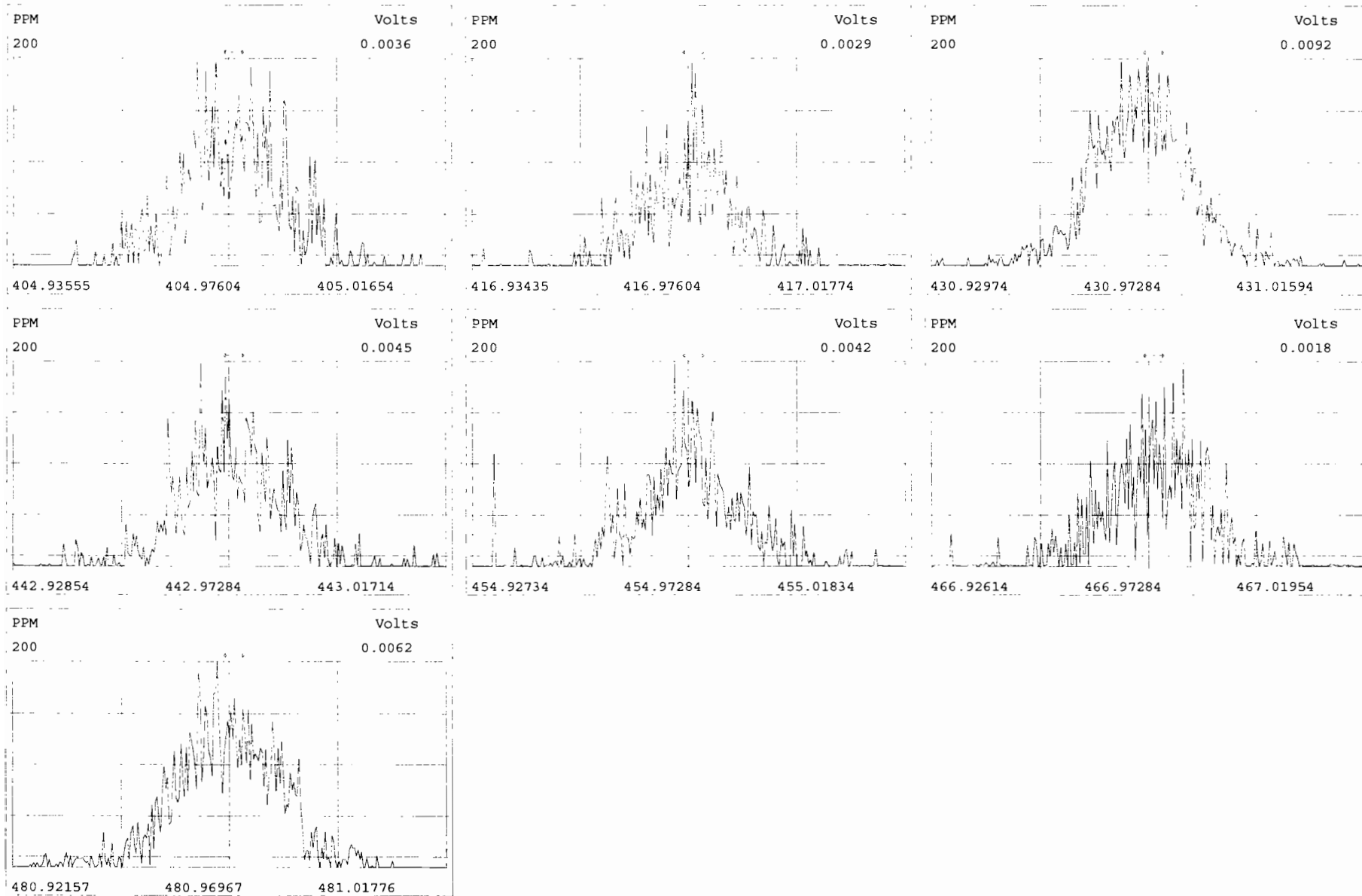
Peak Locate Examination: 7-DEC-2019:06:03 File:RES\_CHECK

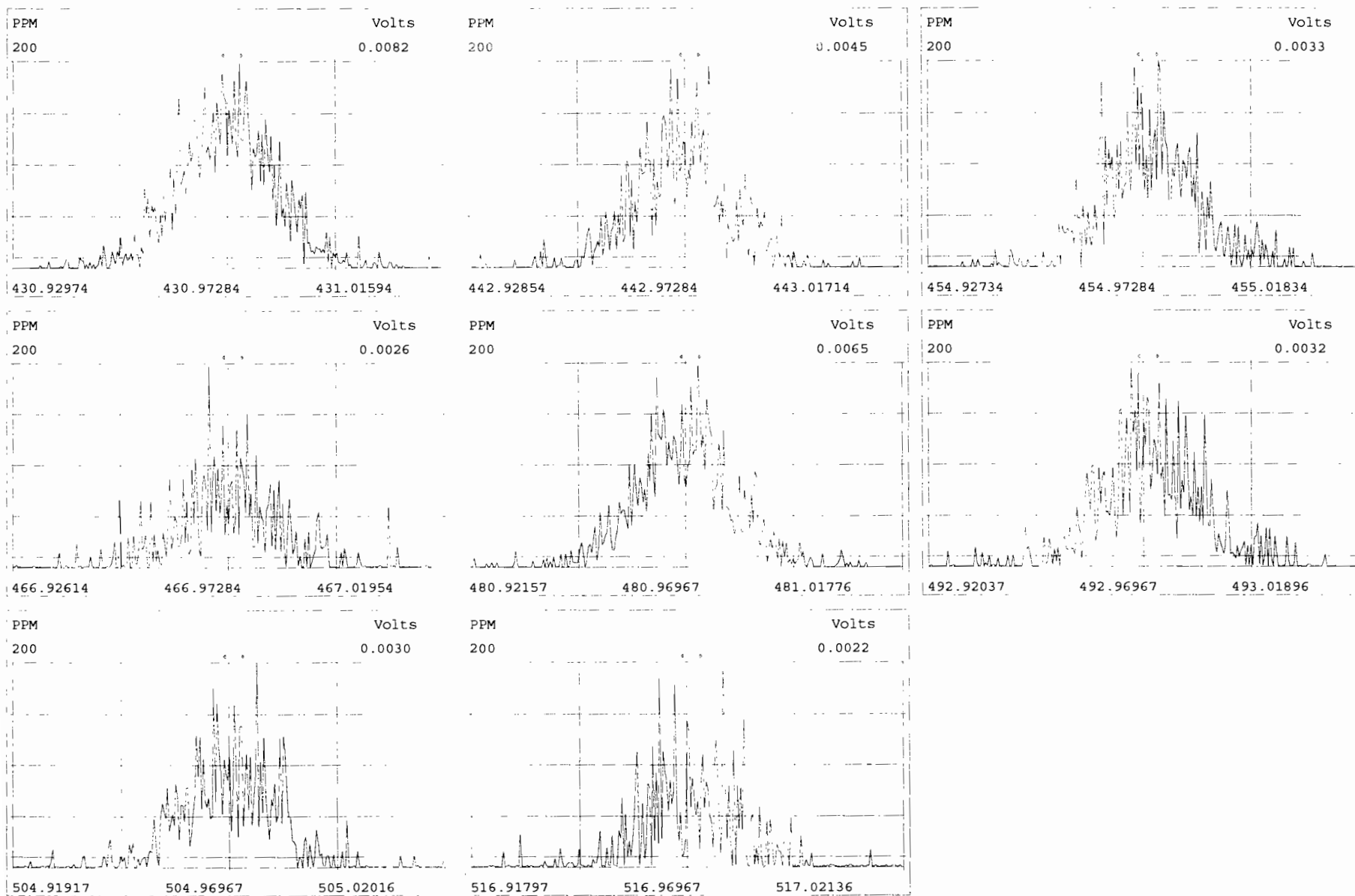
Experiment:OCDD\_DB5 Function:3 Reference:PFK



Peak Locate Examination: 7-DEC-2019:06:04 File:RES\_CHECK

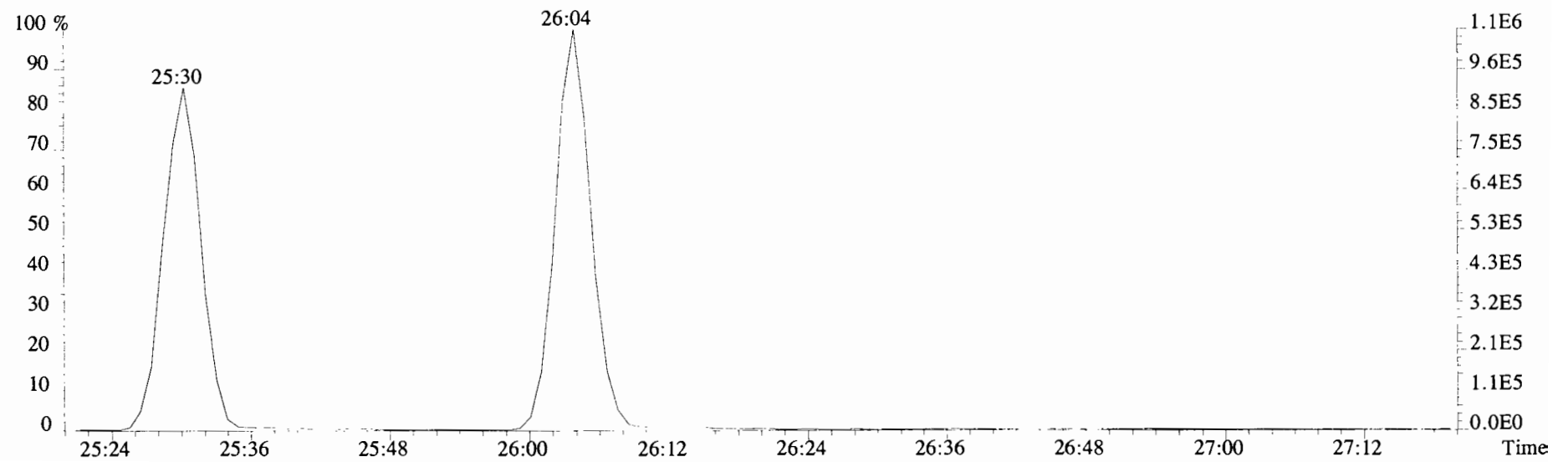
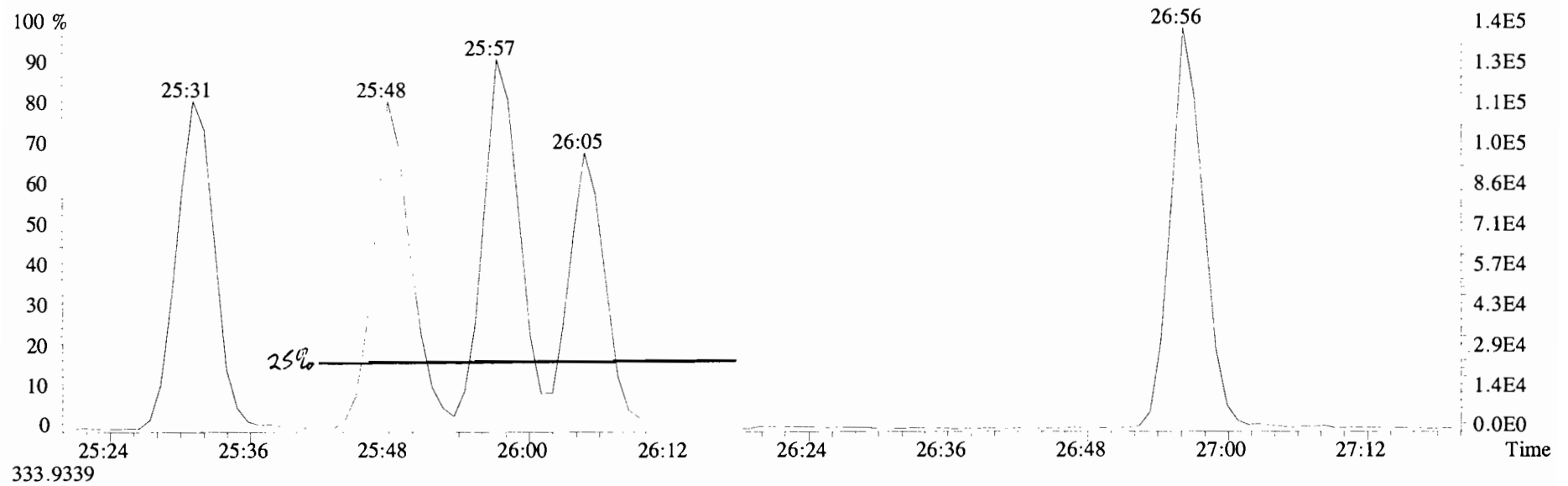
Experiment:OCDD\_DB5 Function:4 Reference:PFK



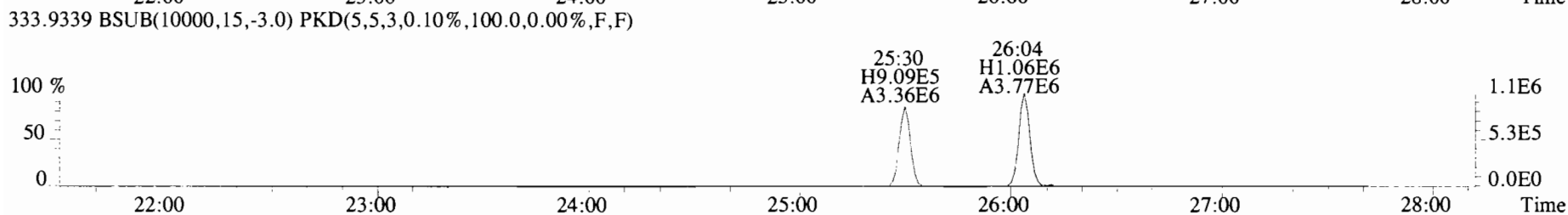
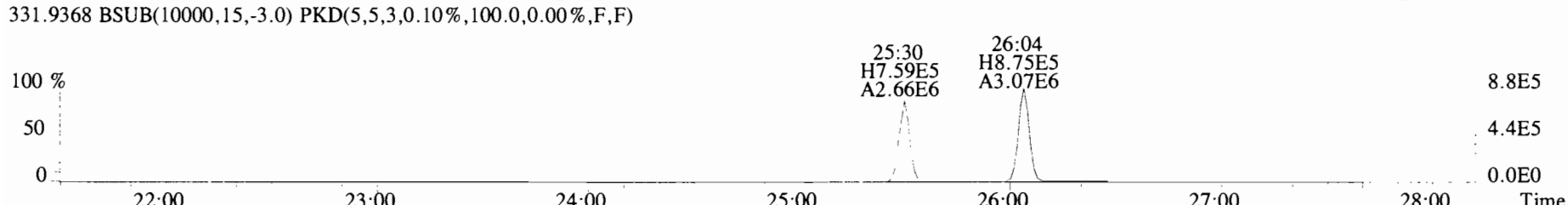
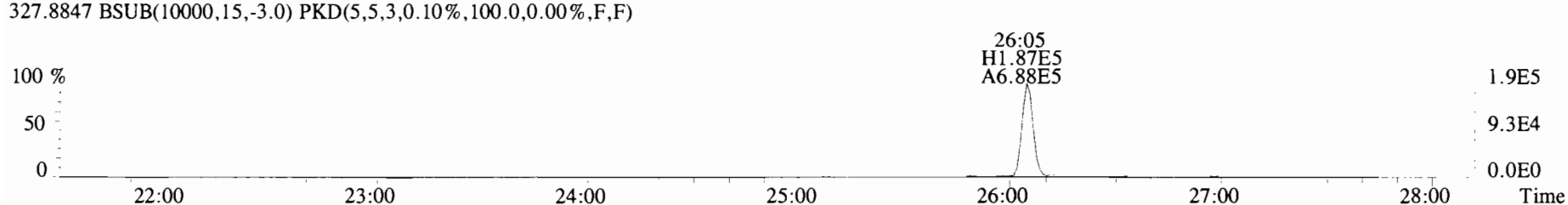
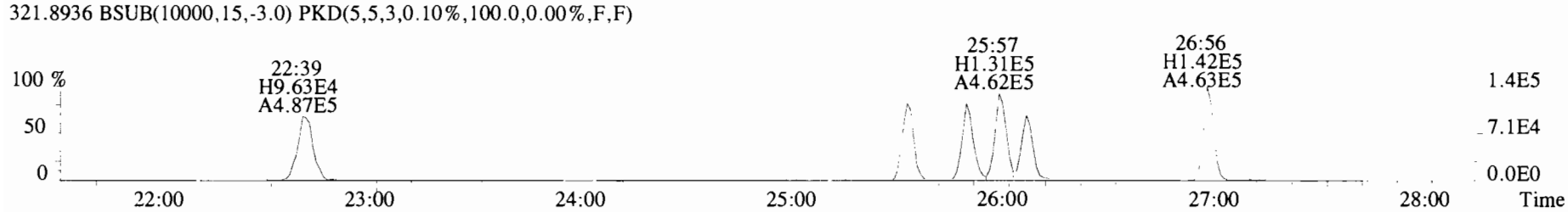
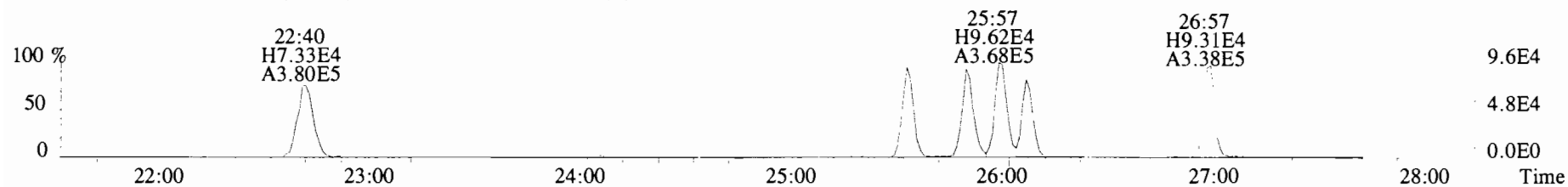




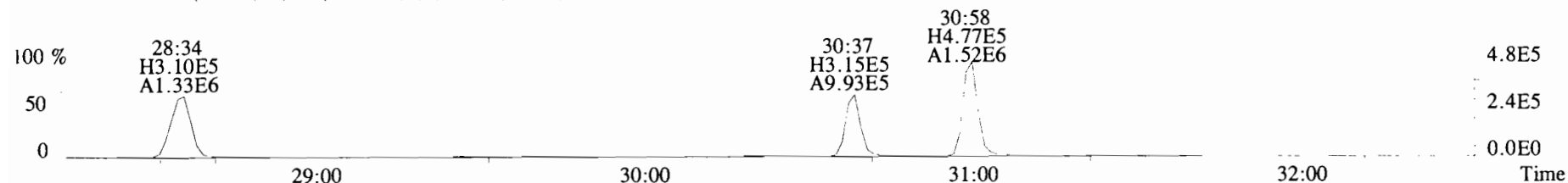
File:191205D4 #1-492 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
321.8936



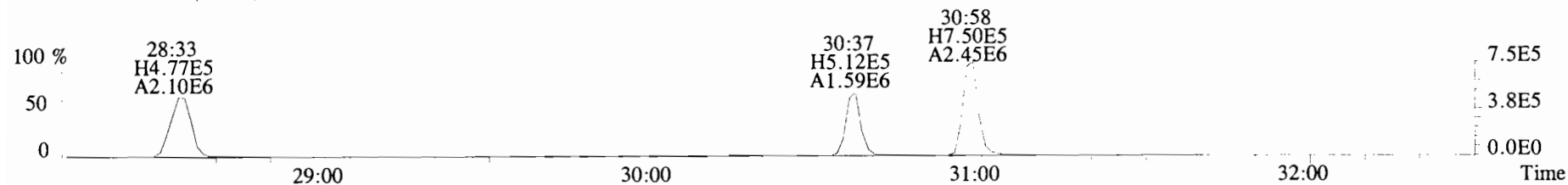
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319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



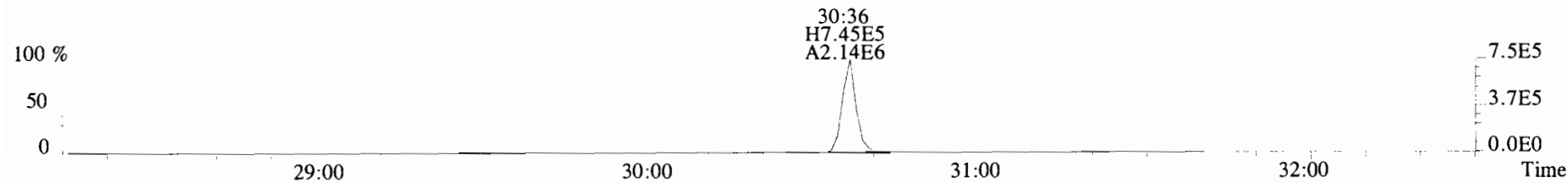
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Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



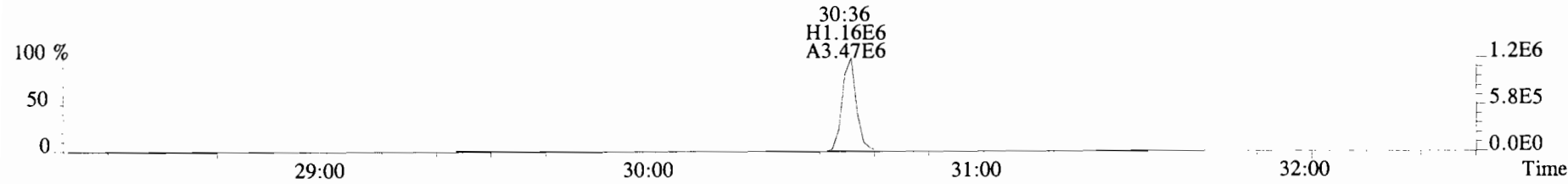
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



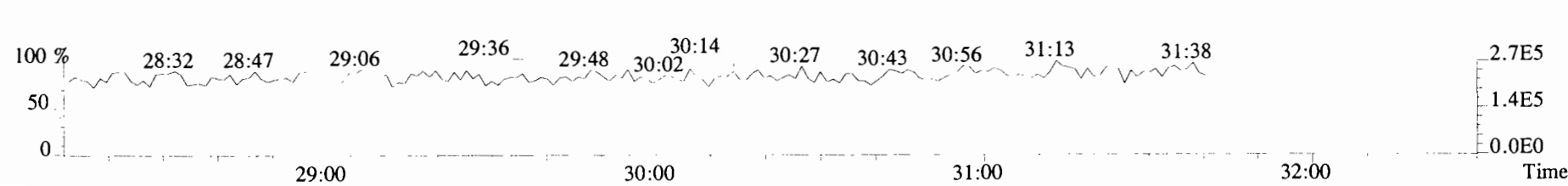
365.8978 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



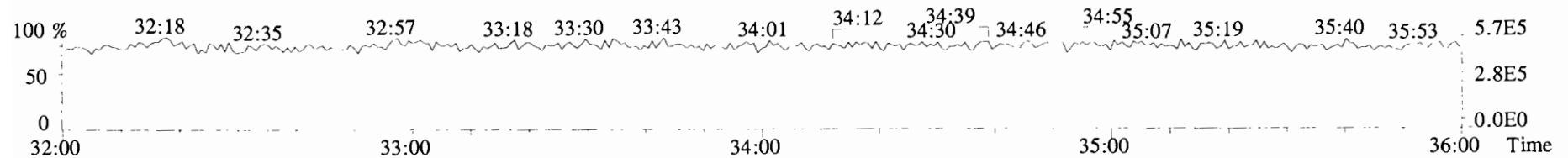
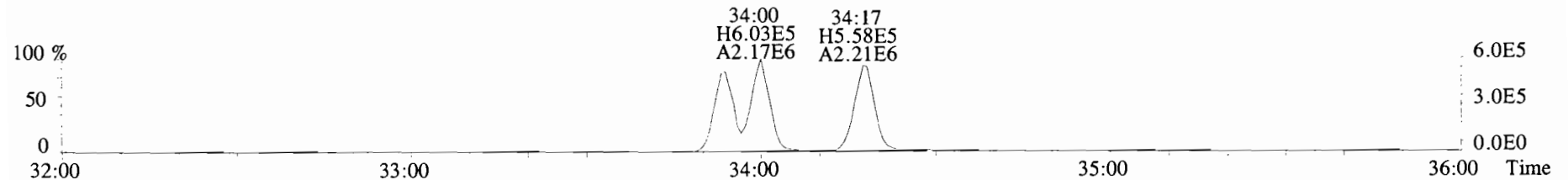
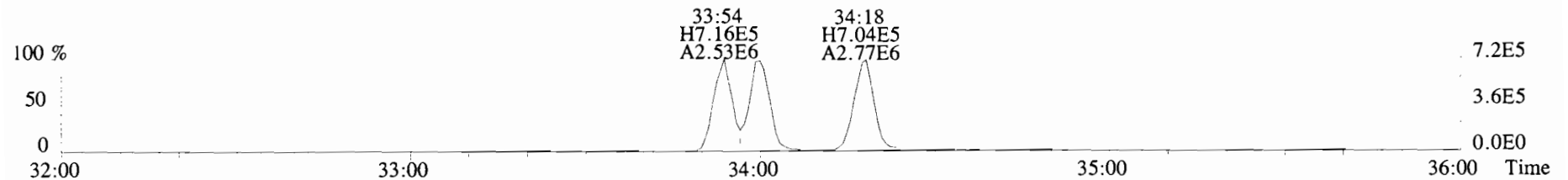
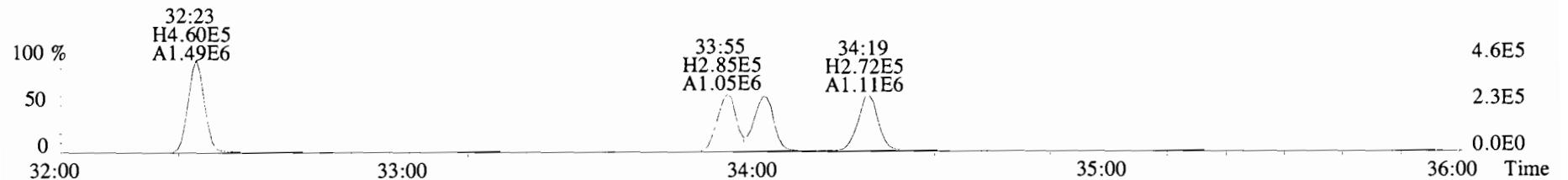
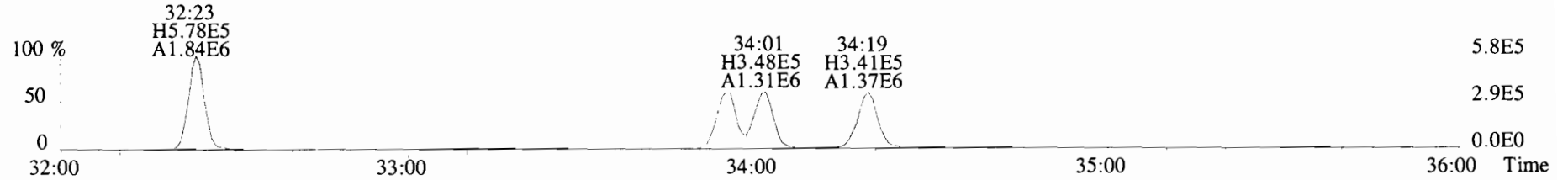
367.8949 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



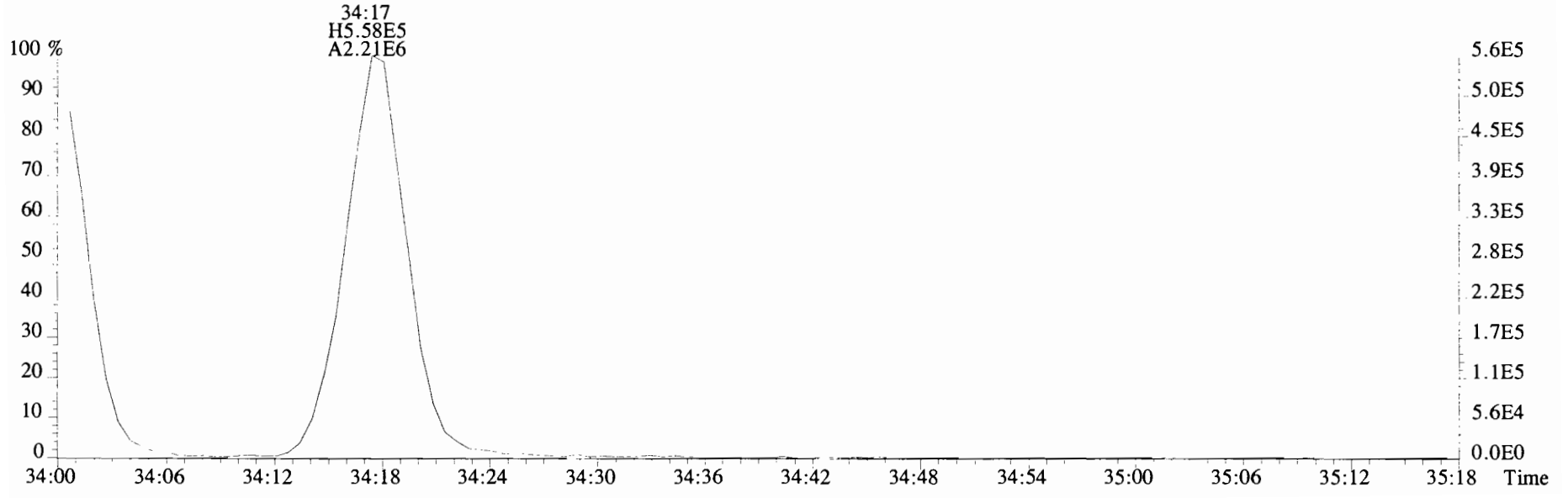
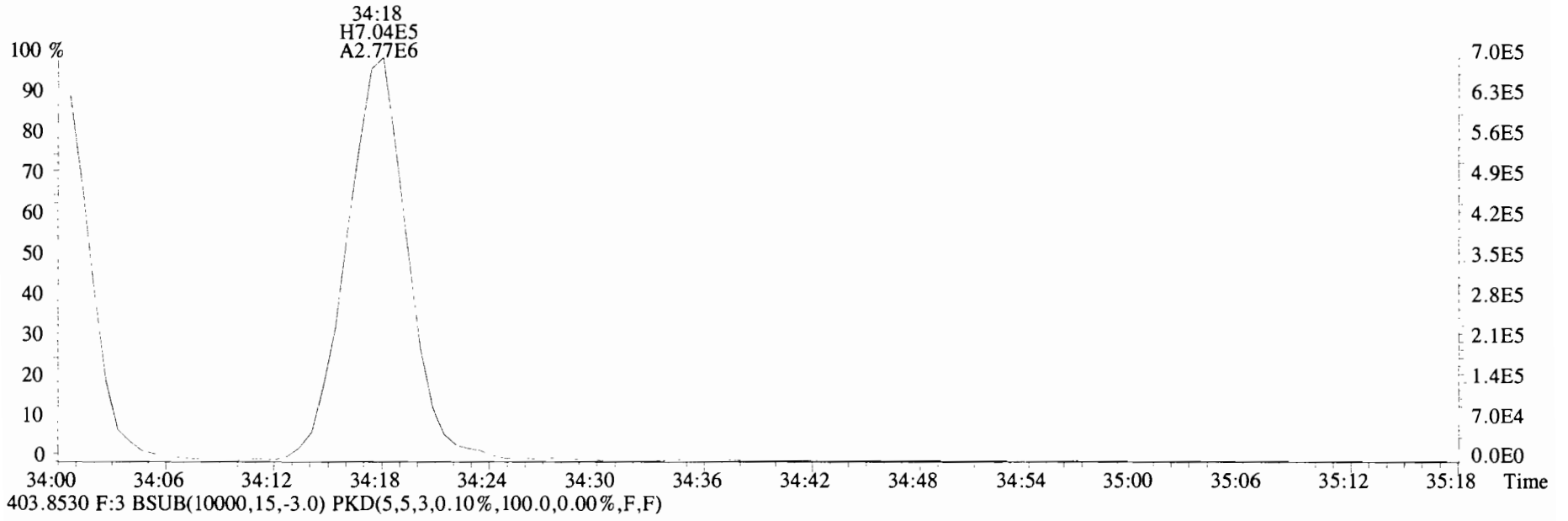
366.9792 F:2



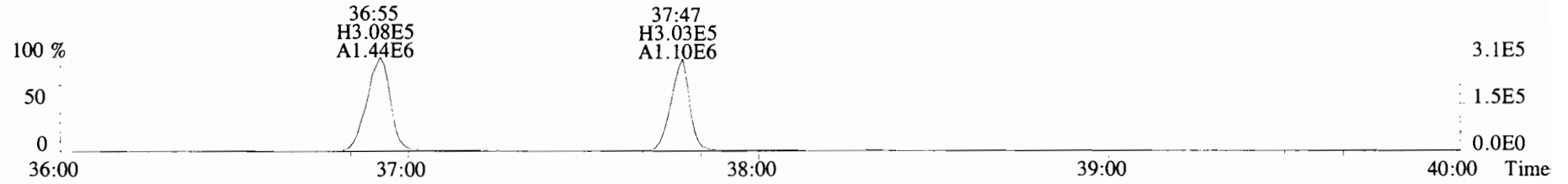
File:191205D4 #1-385 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



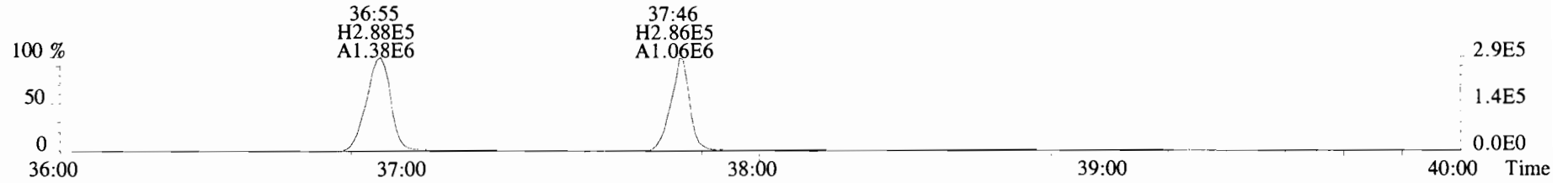
File:191205D4 #1-385 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text: Vista Analytical Laboratory VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



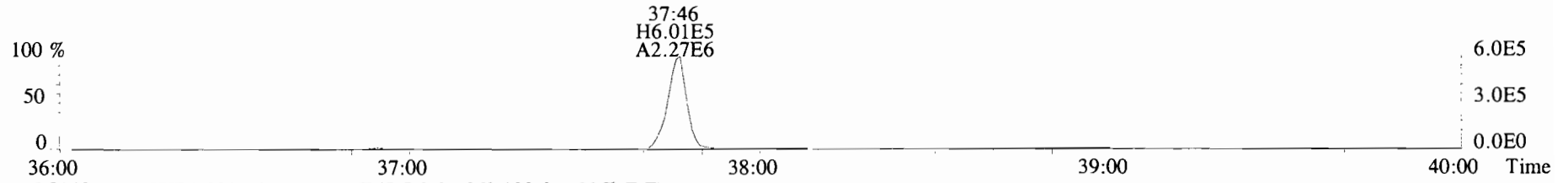
File:191205D4 #1-355 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text: Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



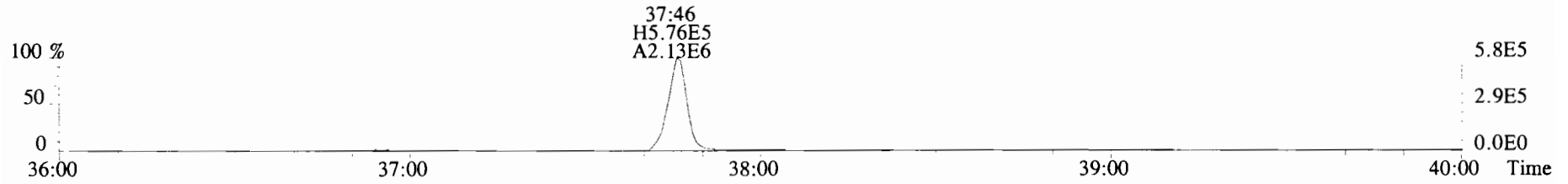
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



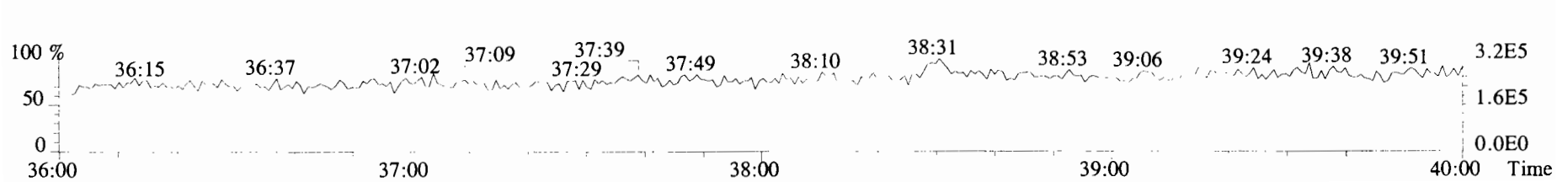
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



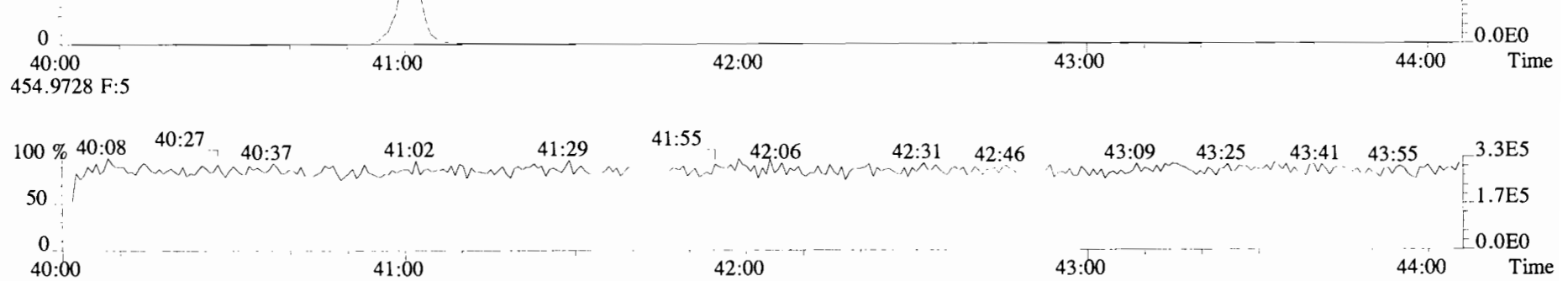
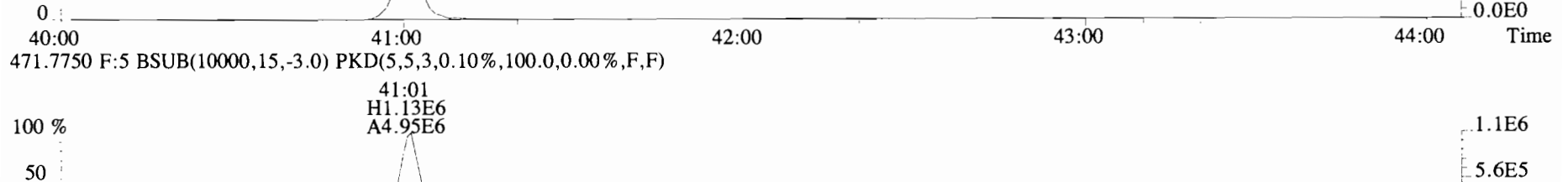
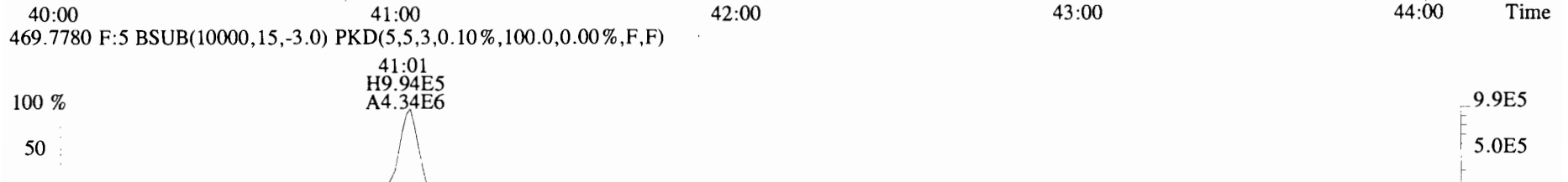
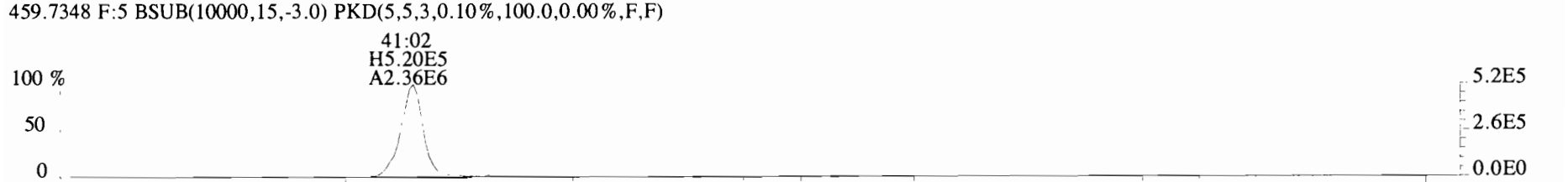
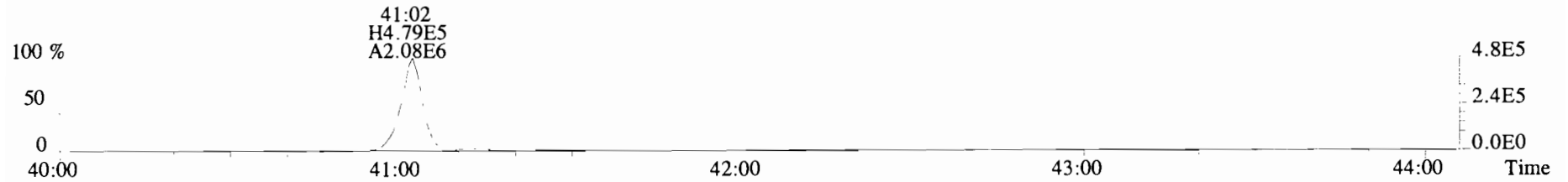
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



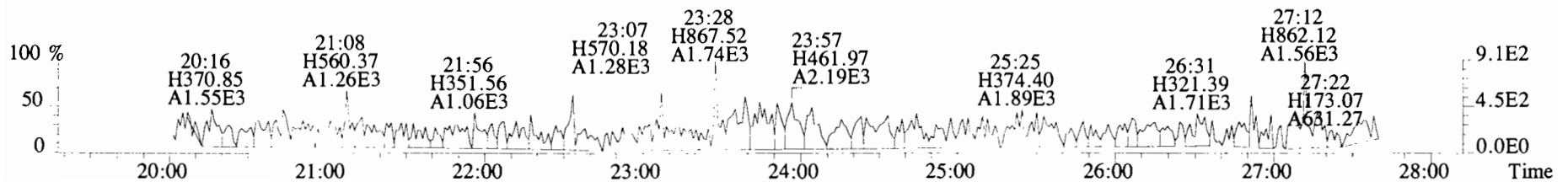
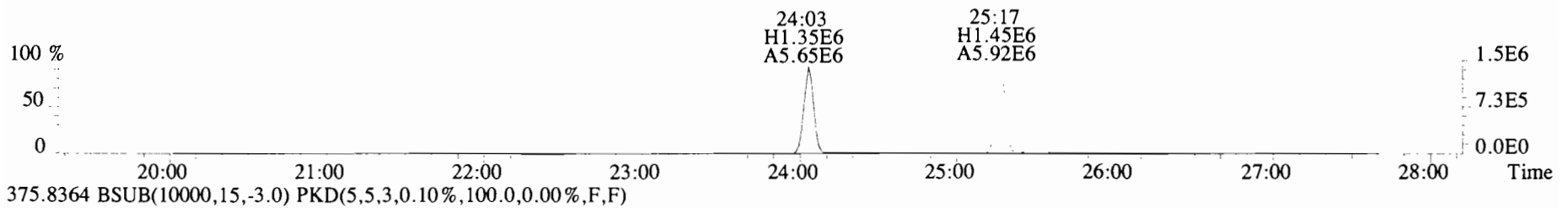
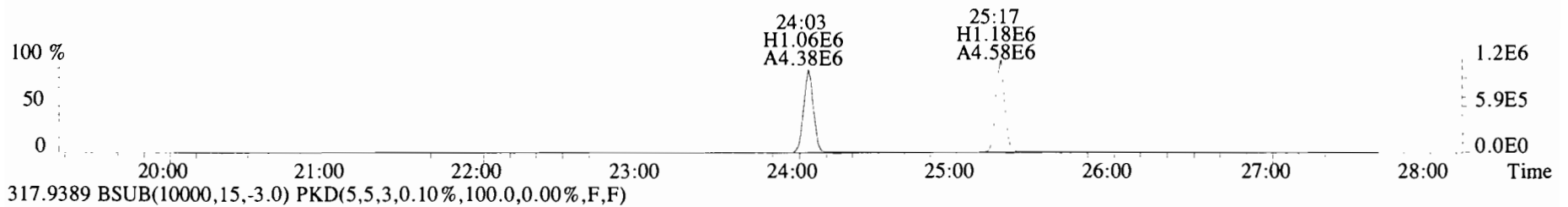
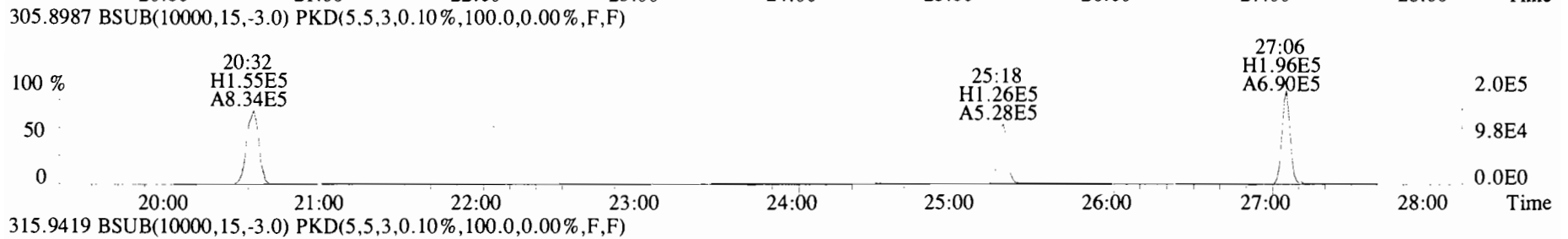
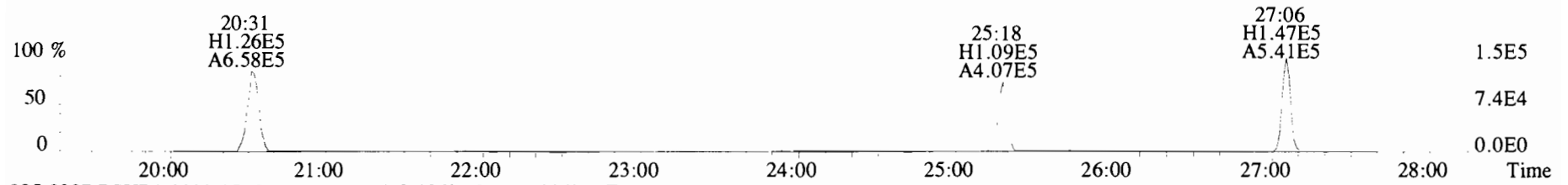
454.9728 F:4



File:191205D4 #1-432 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D4-1 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)

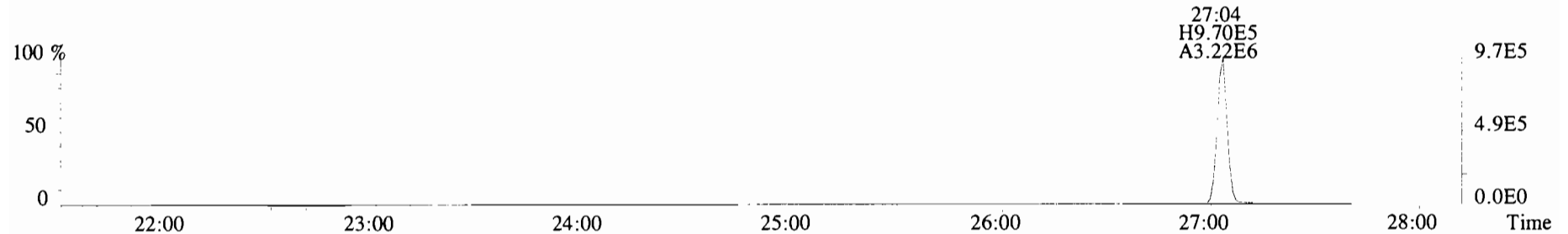


File:191205D4 #1-492 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

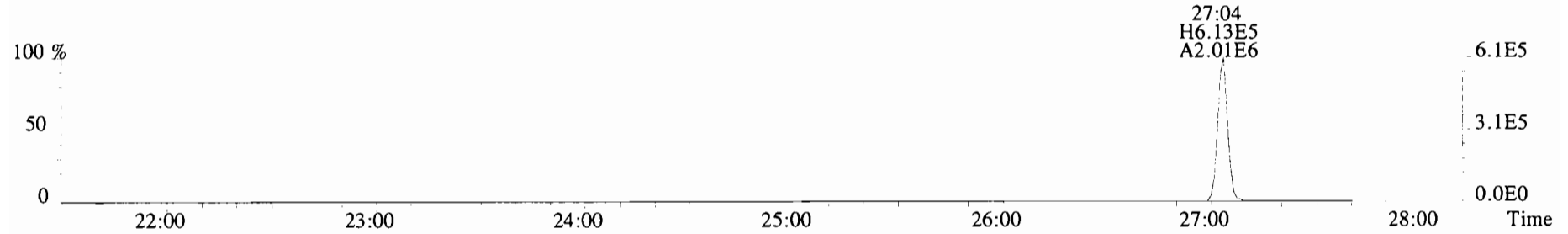




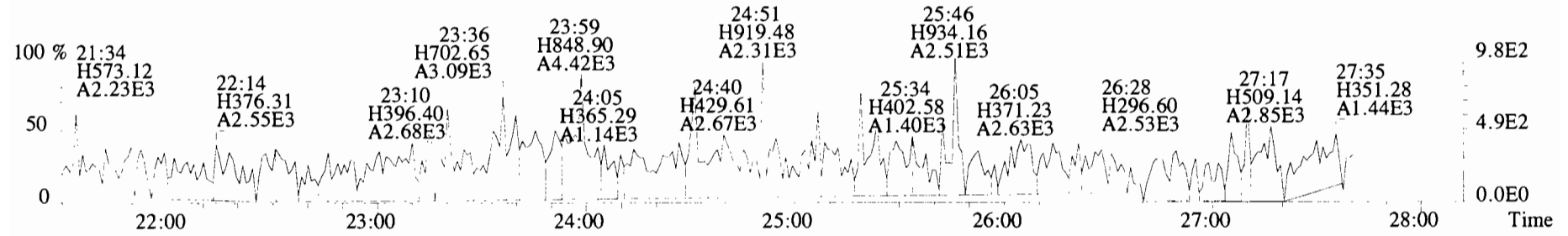
File:191205D4 #1-492 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
 339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



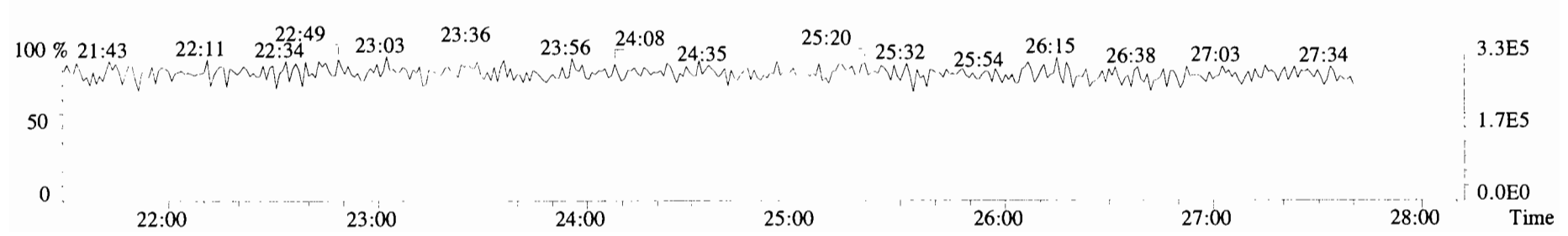
341.8568 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



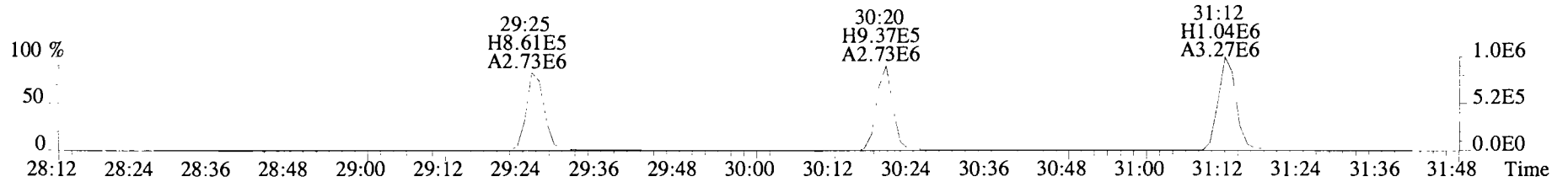
409.7974 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



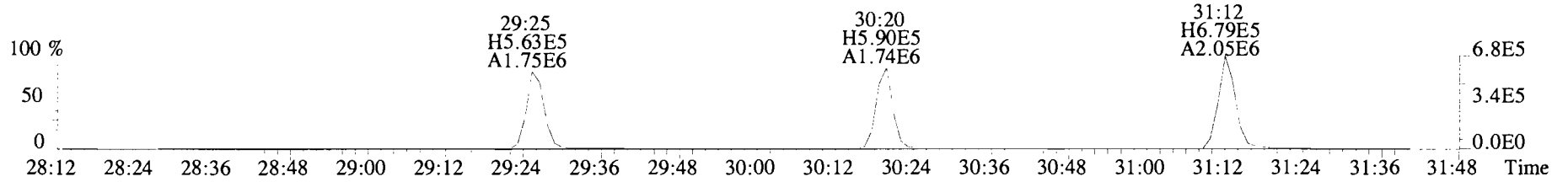
316.9824



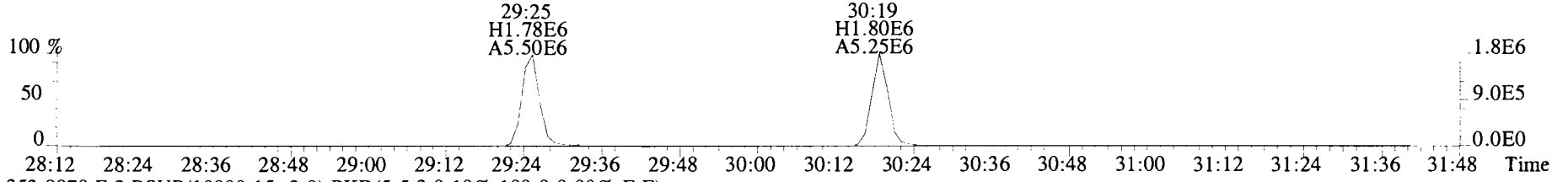
File:191205D4 #1-211 Acq: 7-DEC-2019 06:05:48 GC E1+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text: Vista\_Analytical Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
 339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



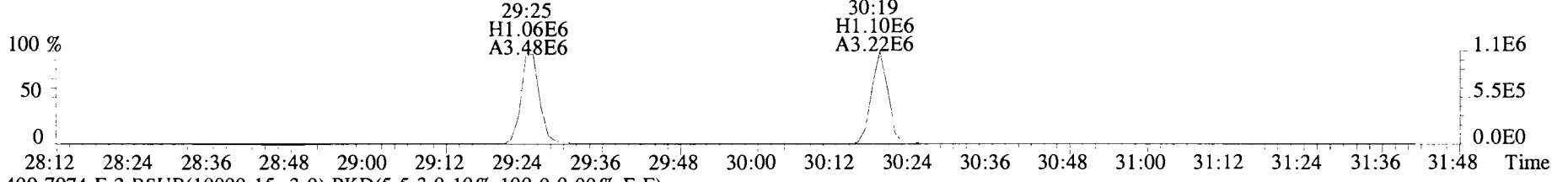
341.8568 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



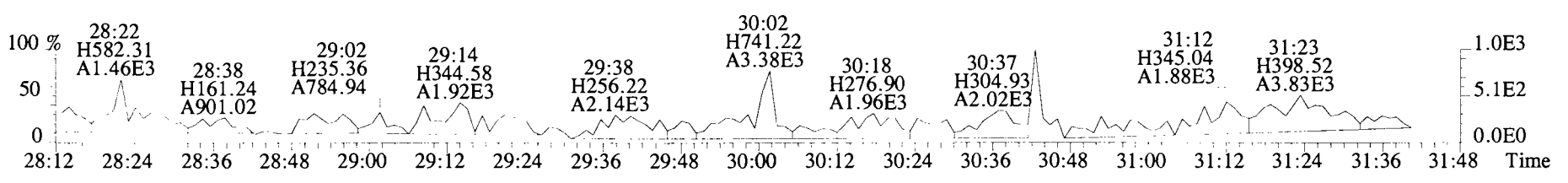
351.9000 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



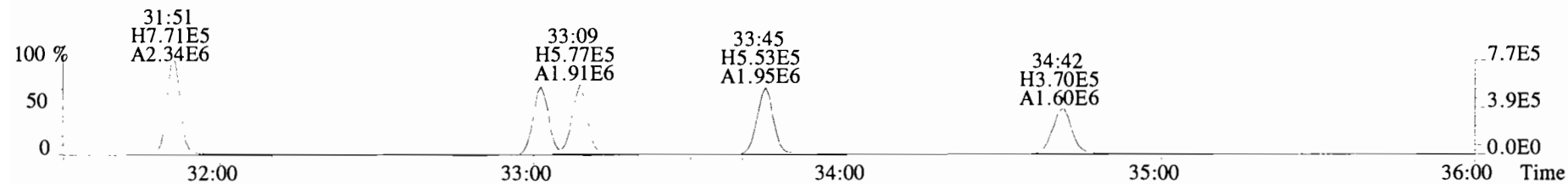
353.8970 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



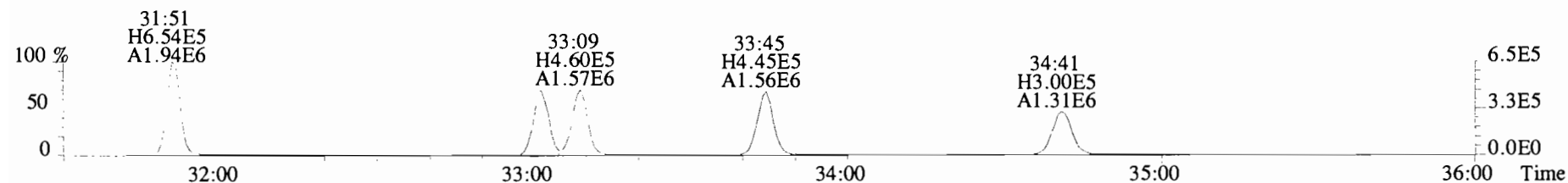
409.7974 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



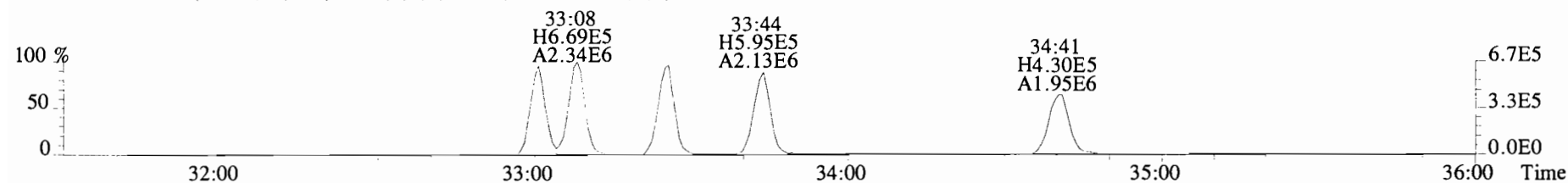
File:191205D4 #1-385 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



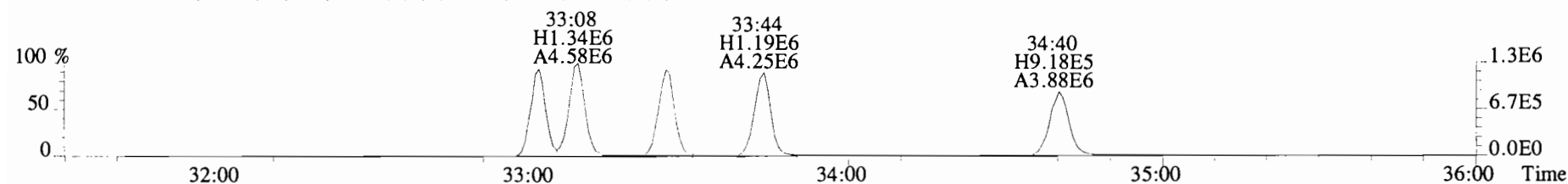
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



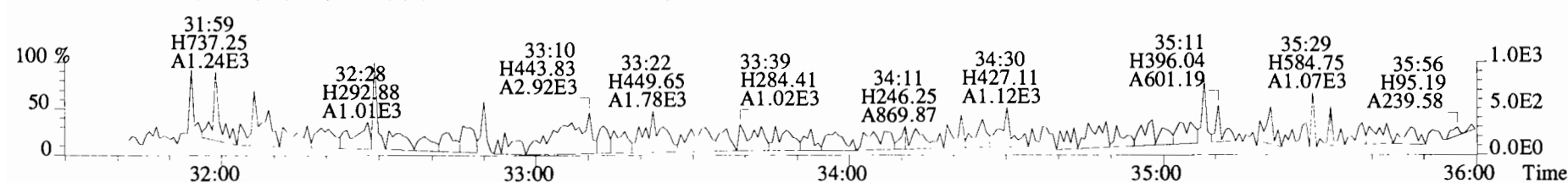
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



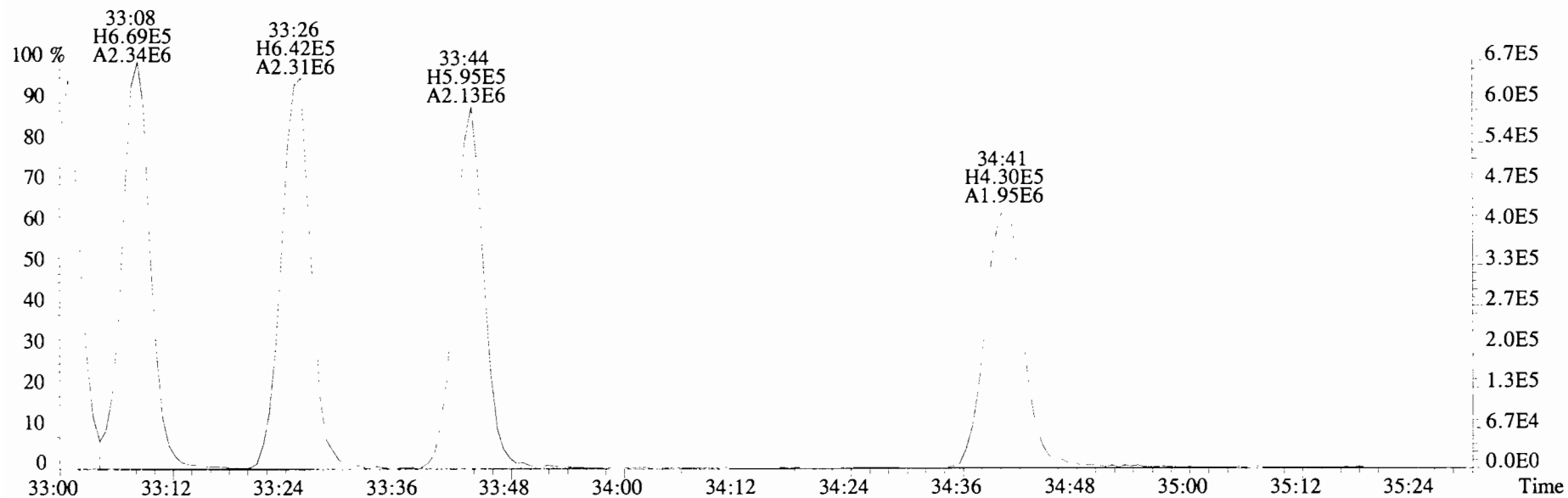
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



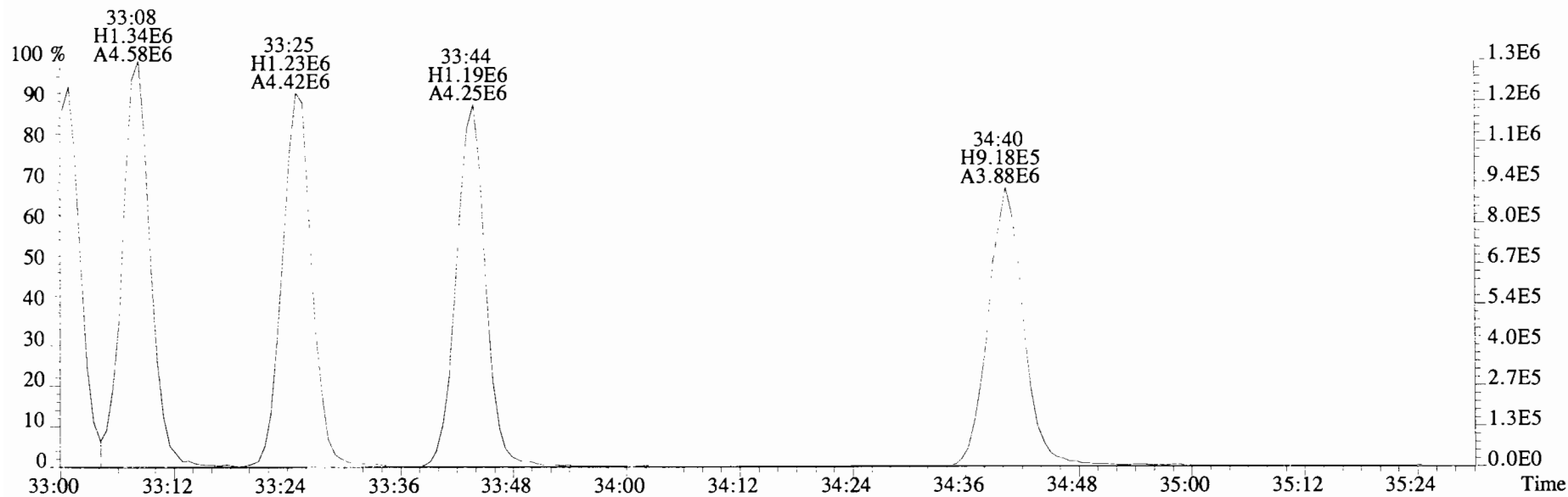
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



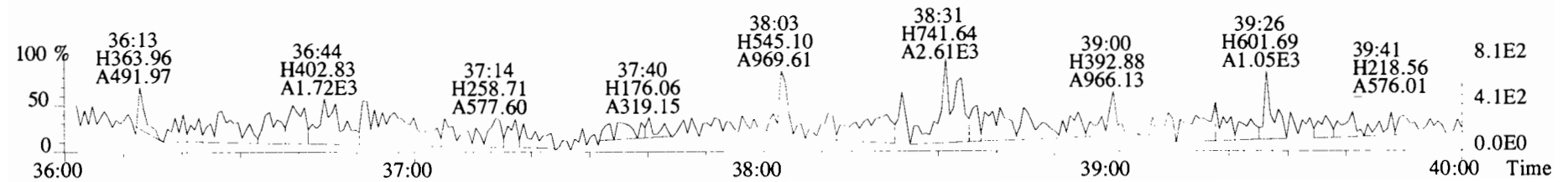
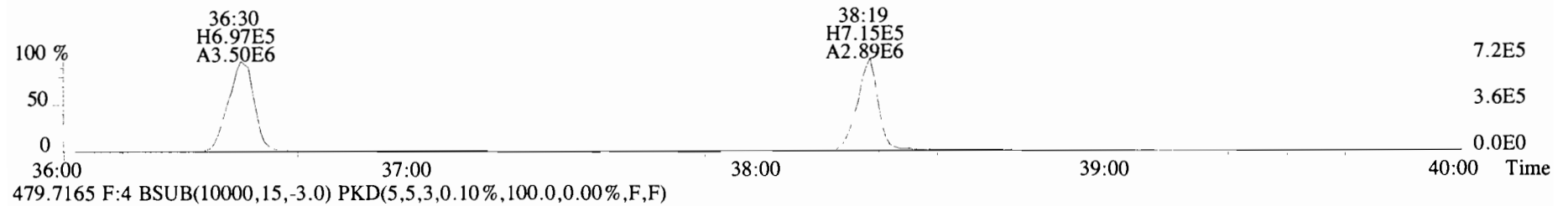
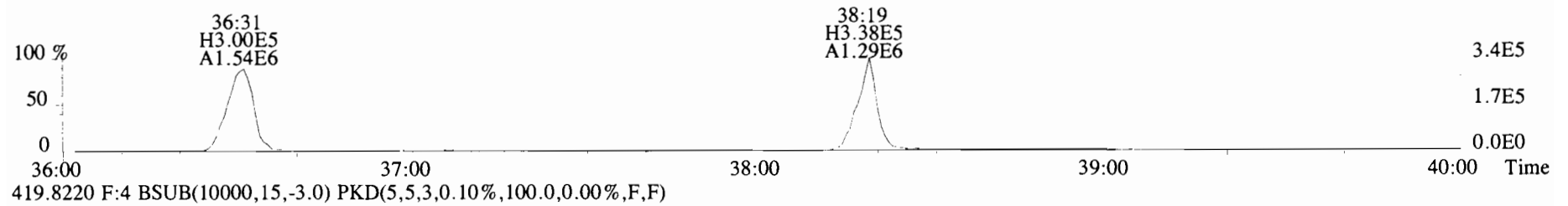
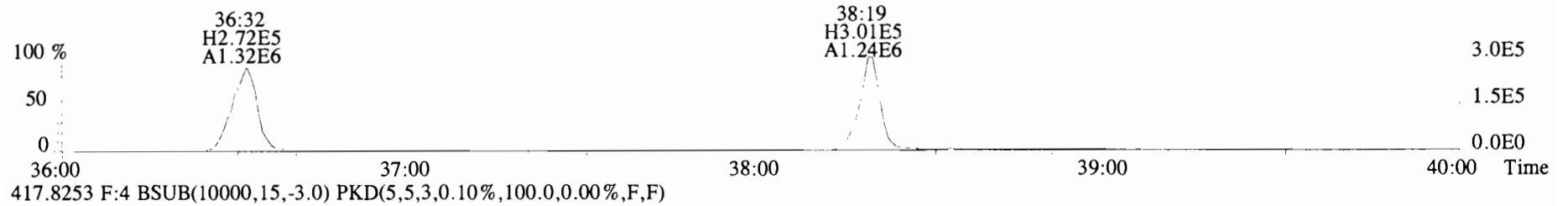
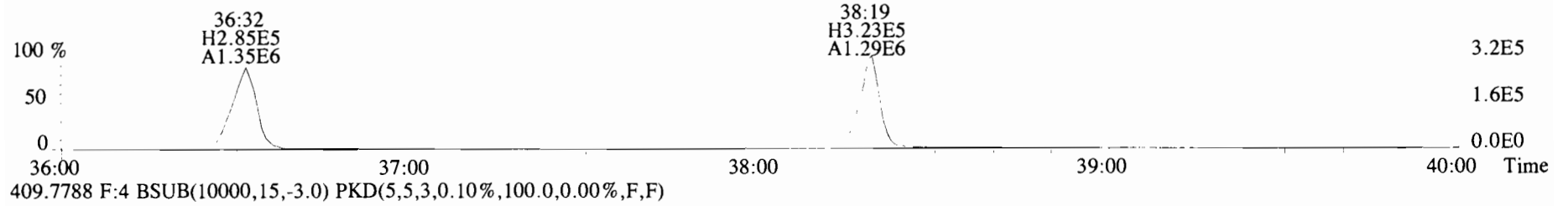
File:191205D4 #1-385 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text: Vista Analytical Laboratory VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



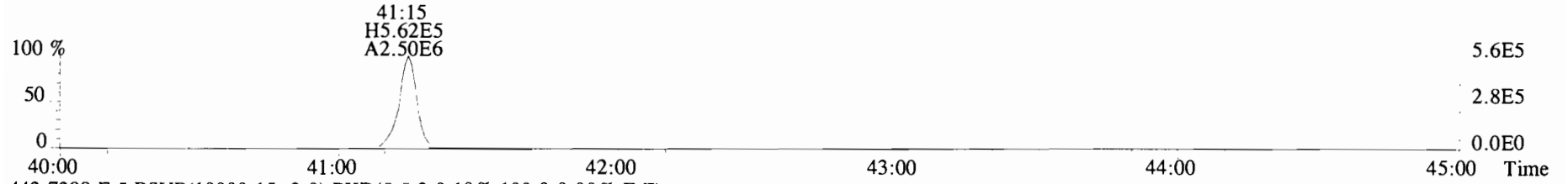
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



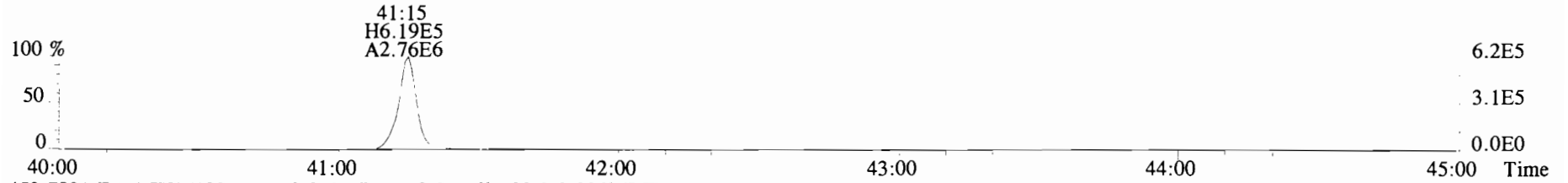
File:191205D4 #1-355 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
 407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



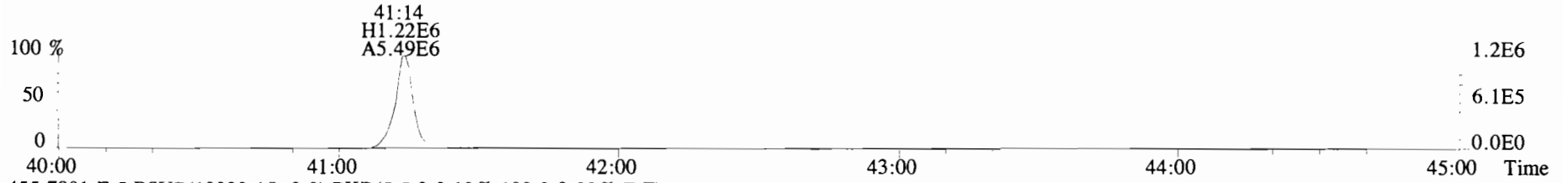
File:191205D4 #1-432 Acq: 7-DEC-2019 06:05:48 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text: Vista Analytical Laboratory\_VG7 Text:ST191205D4-1 1613 CS3 19C2204 Exp:OCDD\_DB5  
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



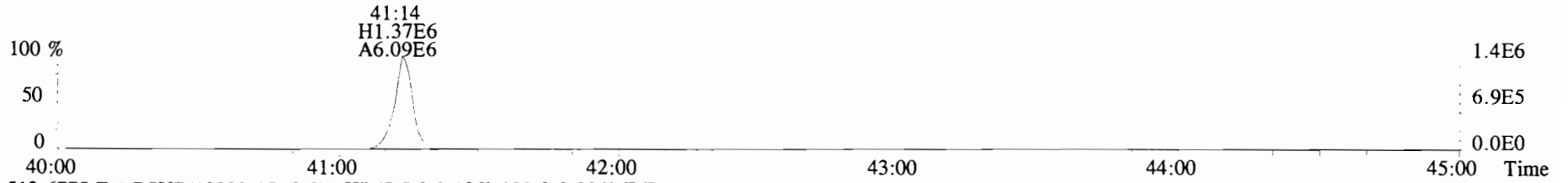
443.7398 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



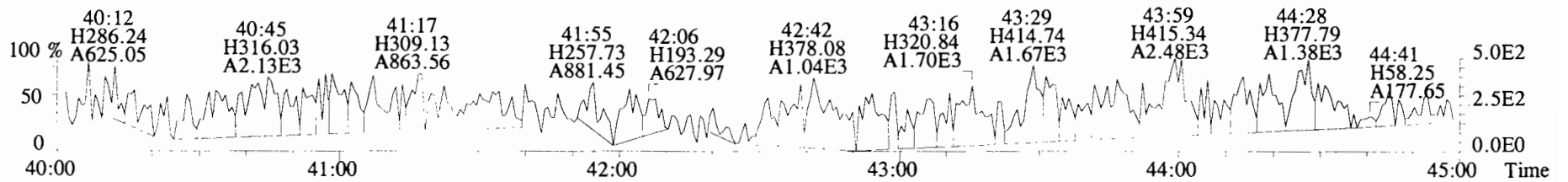
453.7831 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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

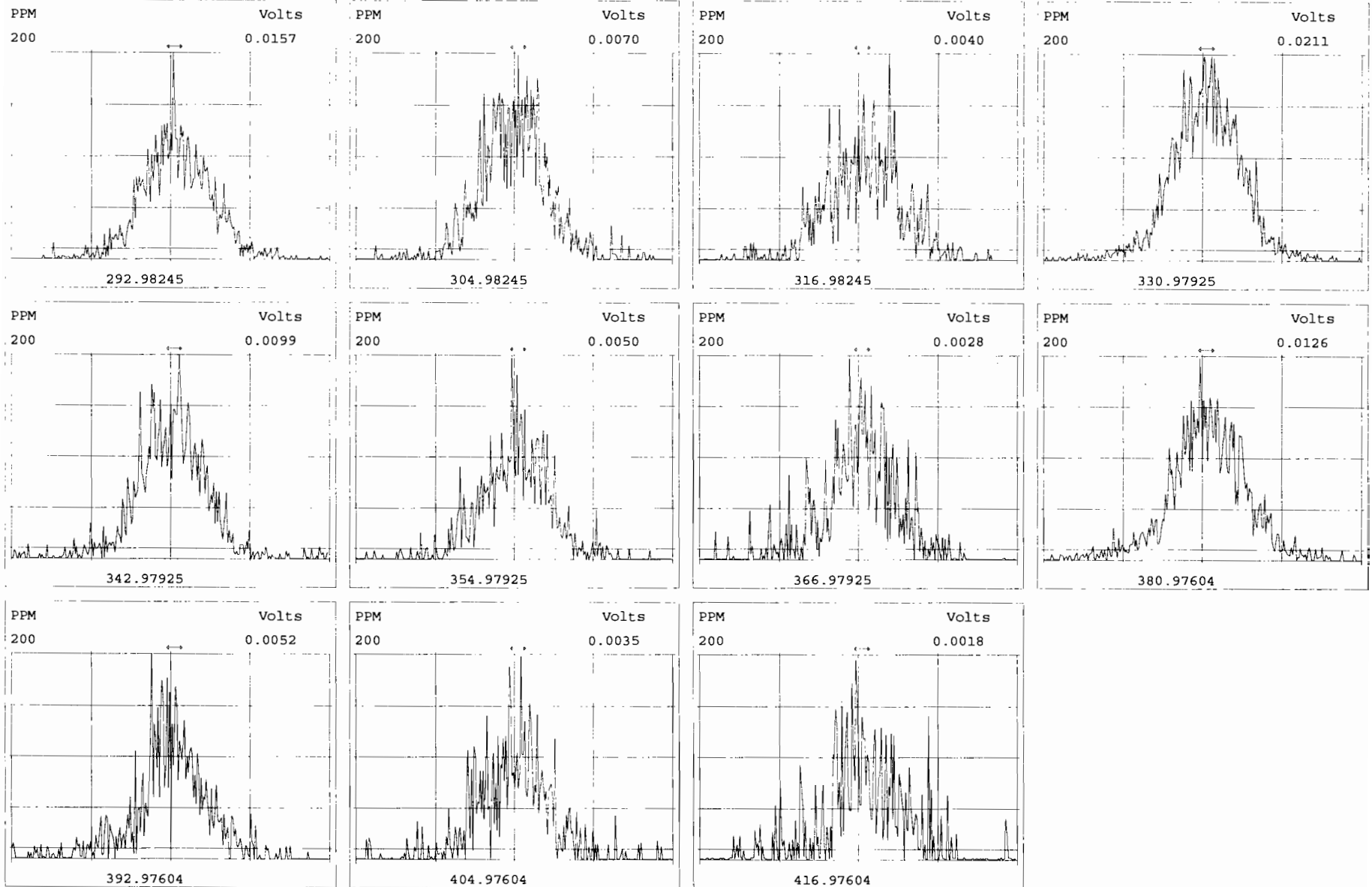


513.6775 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Peak Locate Examination: 7-DEC-2019:14:14 File:RES\_CHECK

Experiment:OCDD\_DB5 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

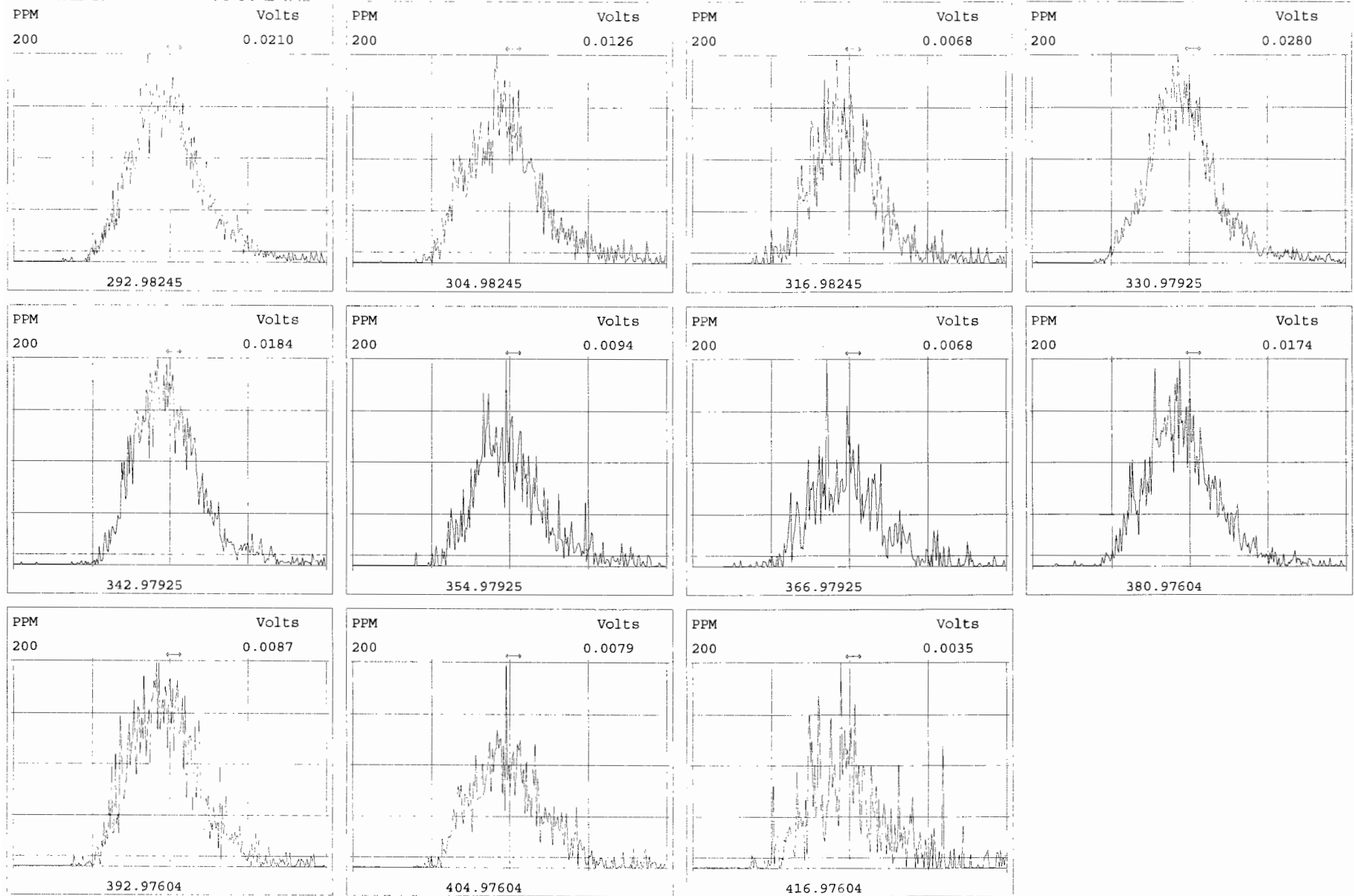
% VALLEY HEIGHT  
BETWEEN  
COMPARED PEAKS (1)

<25%

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

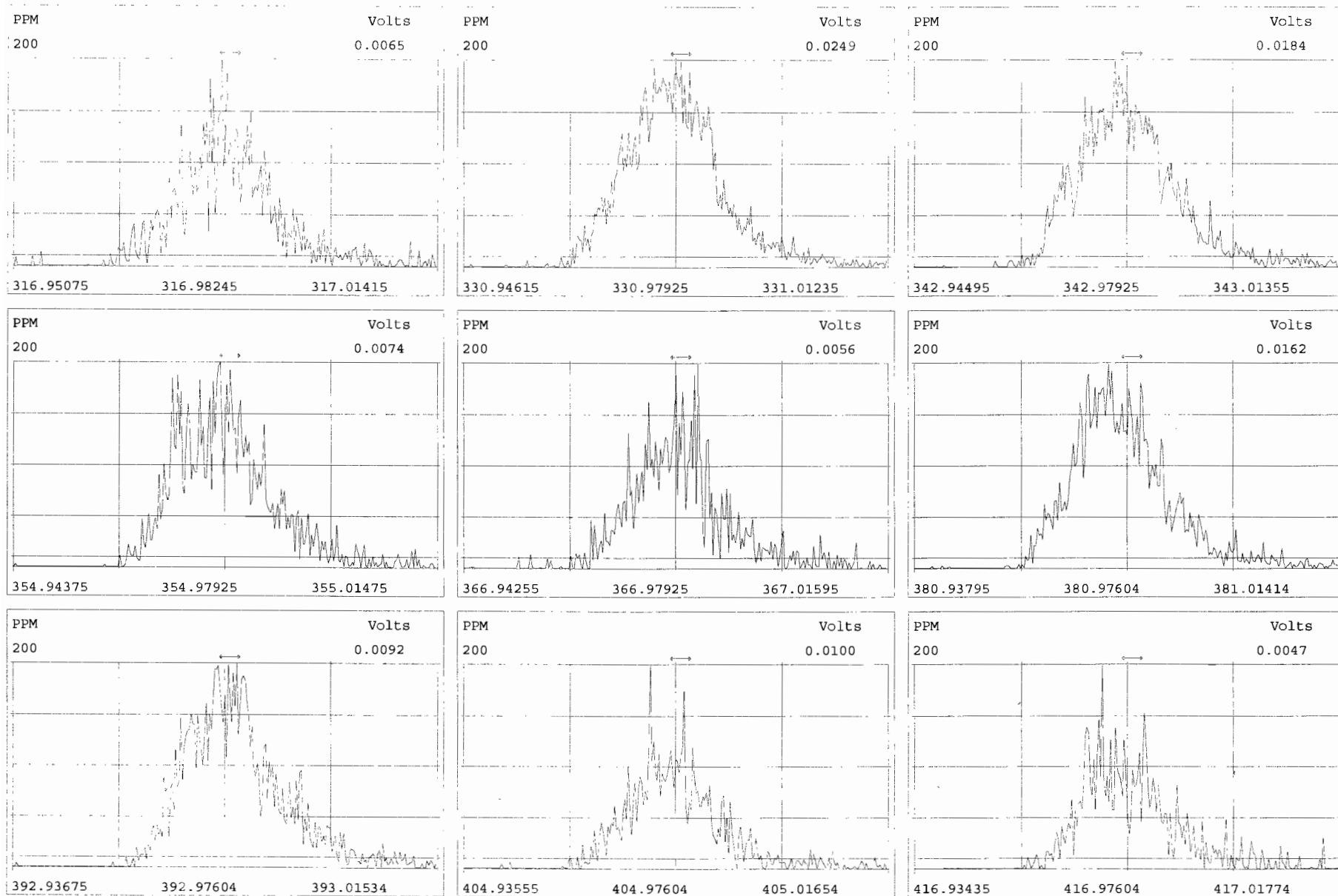
Analyst: DB

Date: 10/10/19



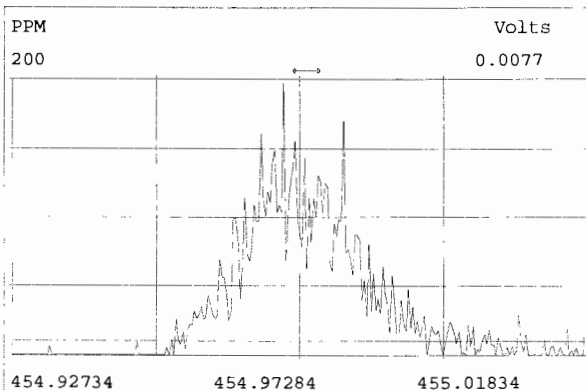
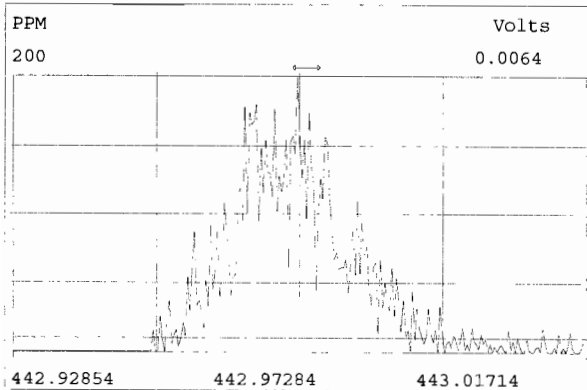
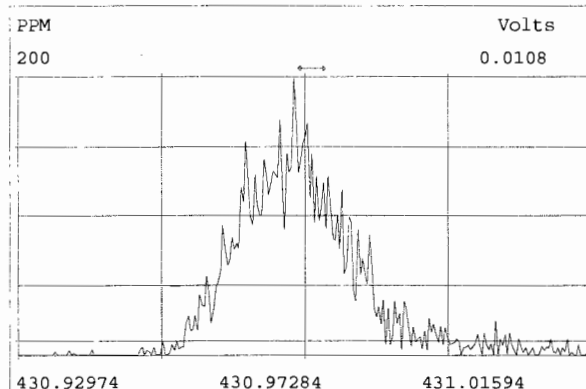
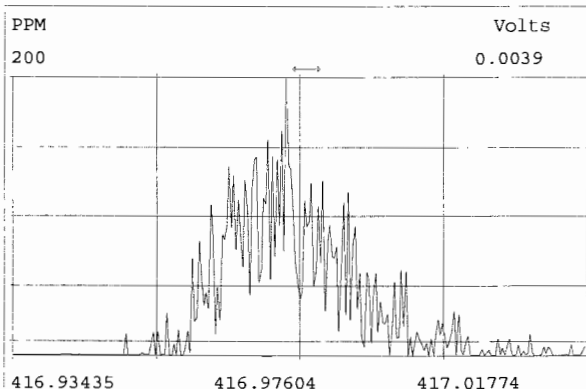
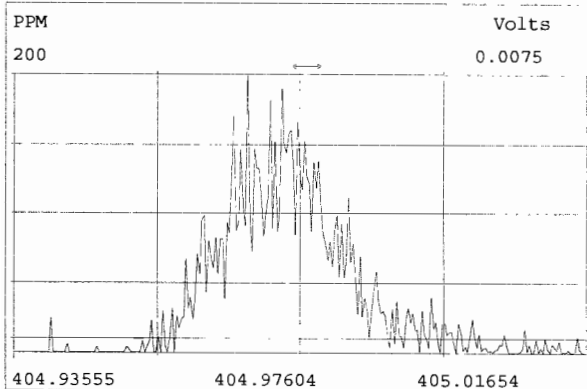
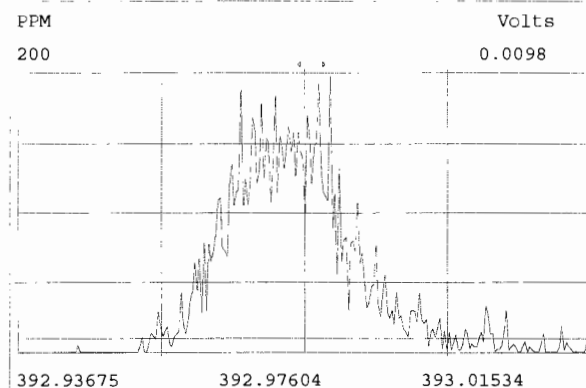
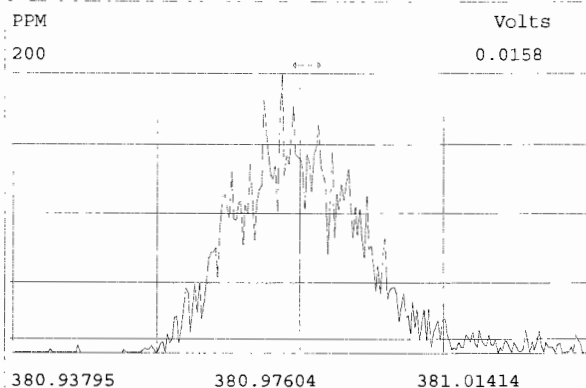
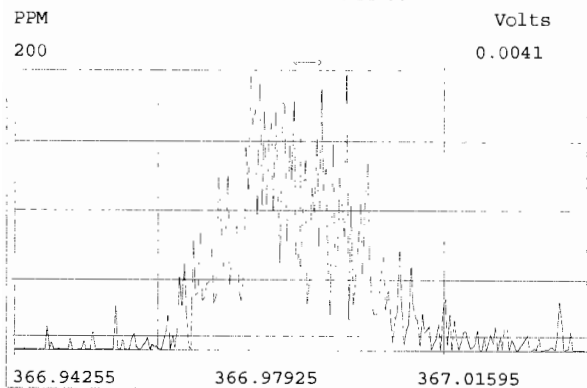
Peak Locate Examination: 9-OCT-2019:16:10 File:191009D1

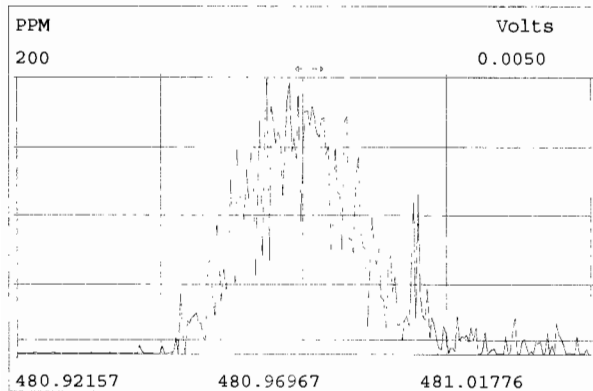
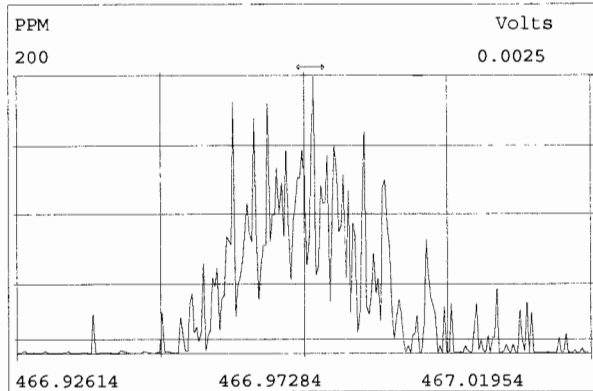
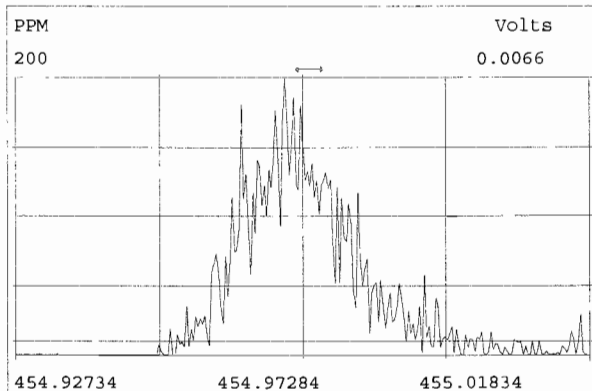
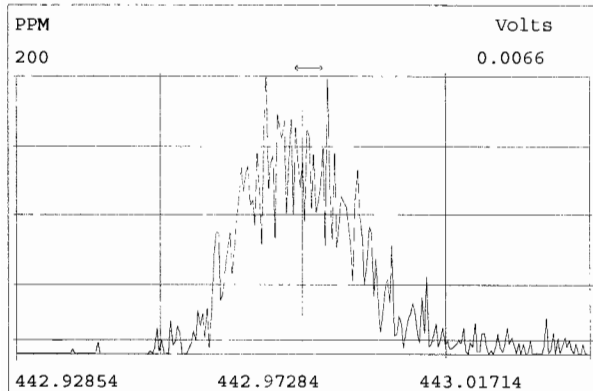
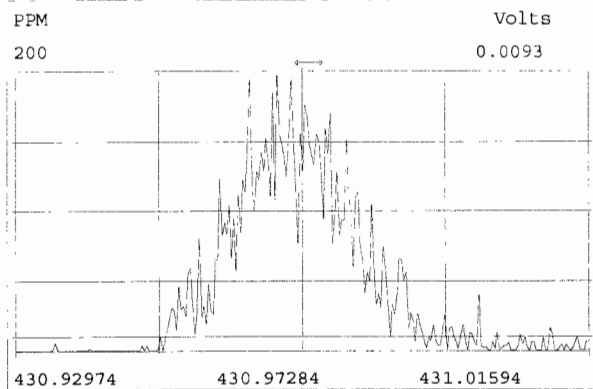
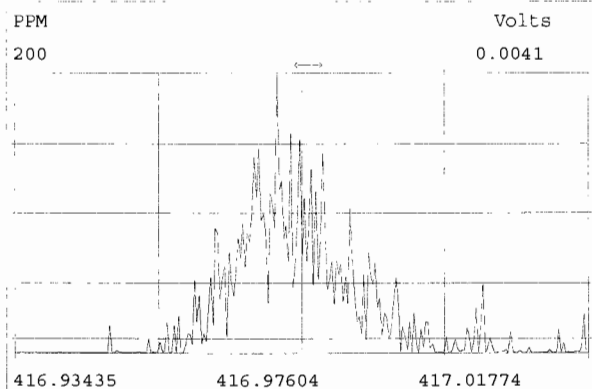
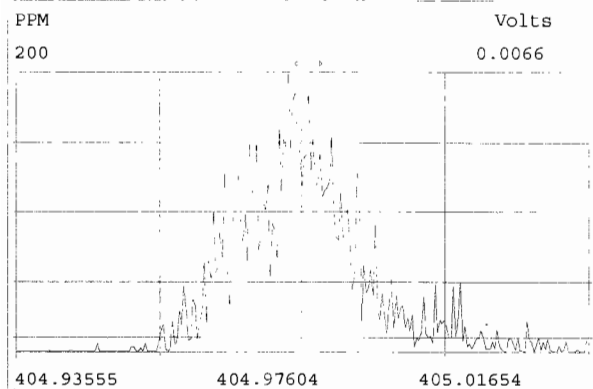
Experiment:OCDD\_DB5 Function:2 Reference:PFK

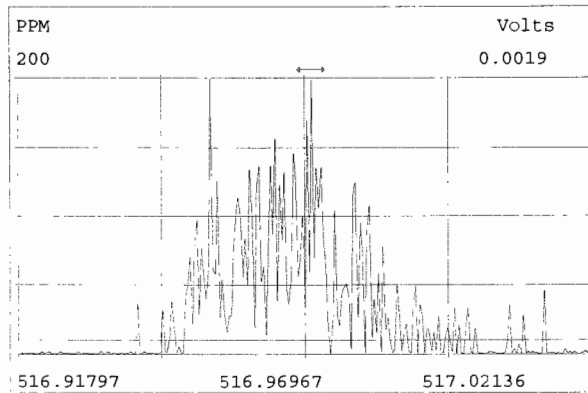
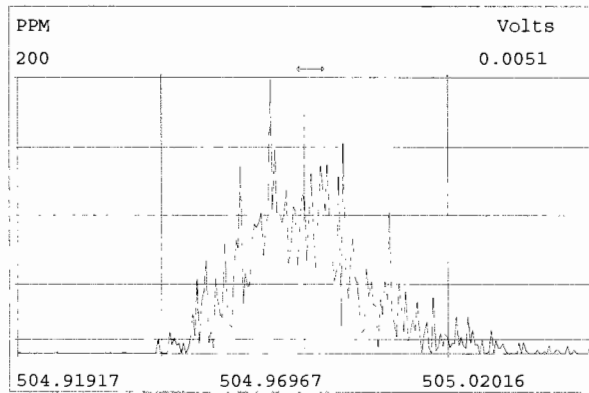
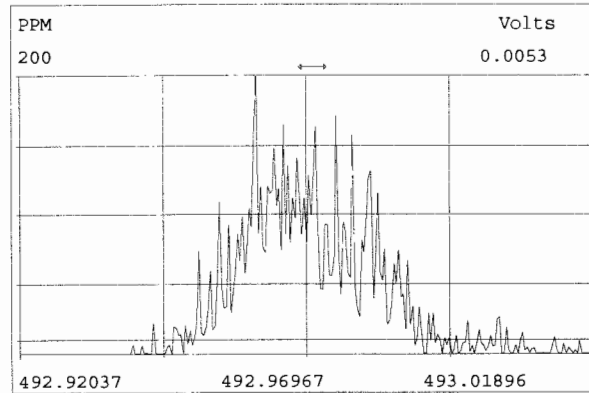
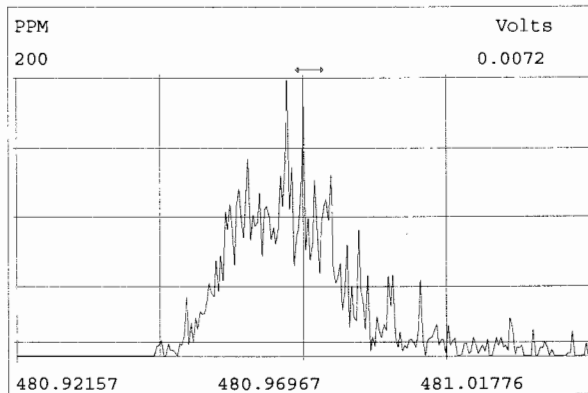
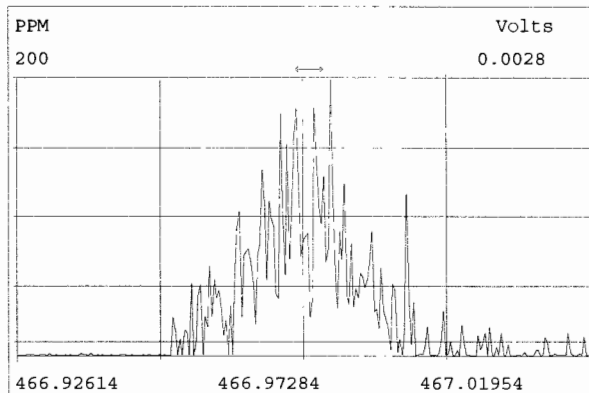
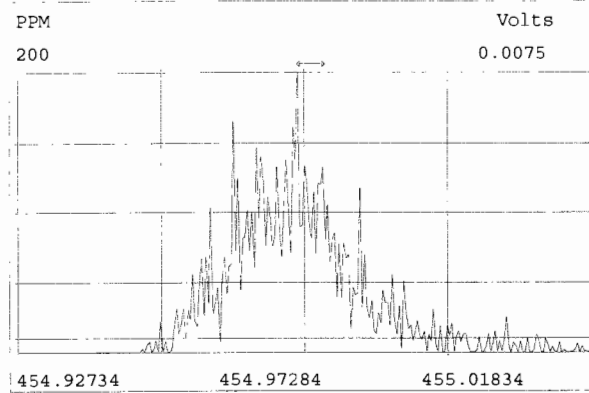
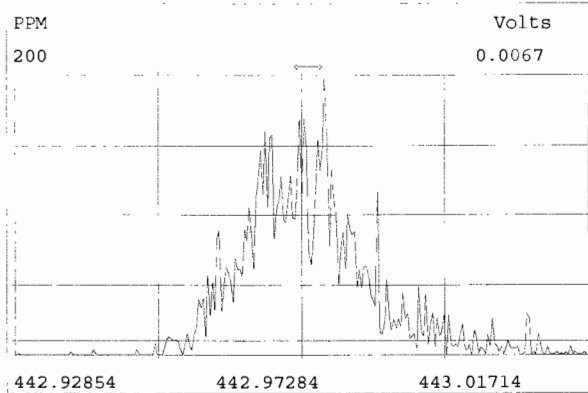
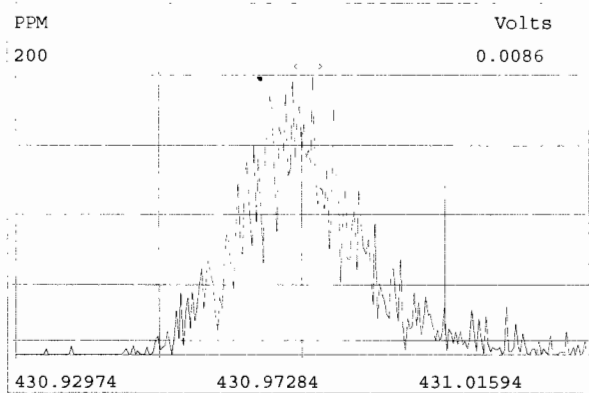


Peak Locate Examination: 9-OCT-2019:16:11 File:191009D1

Experiment:OCDD\_DB5 Function:3 Reference:PFK





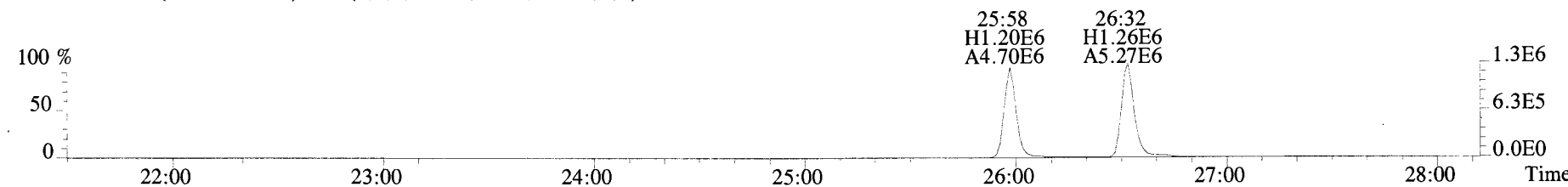
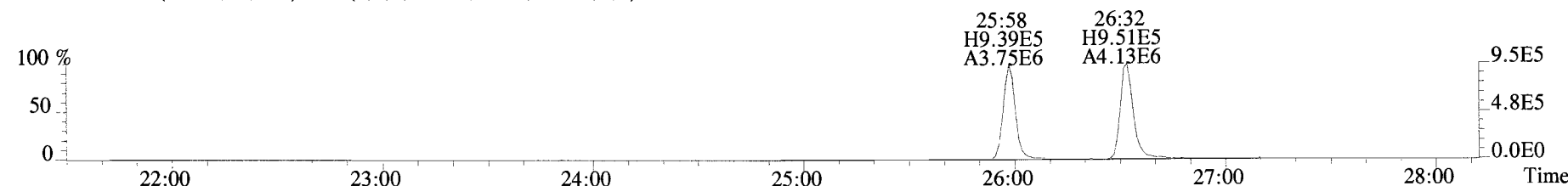
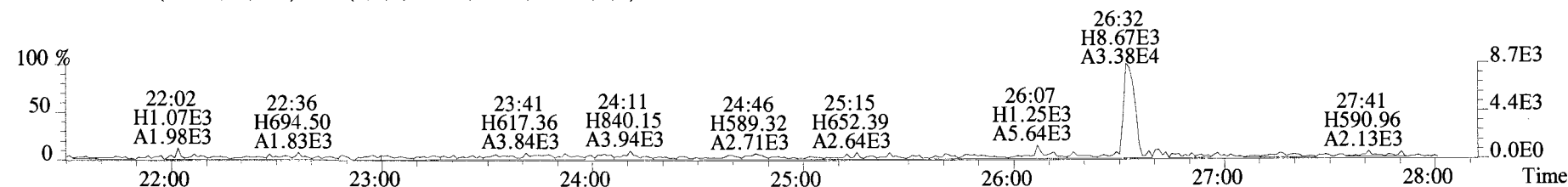
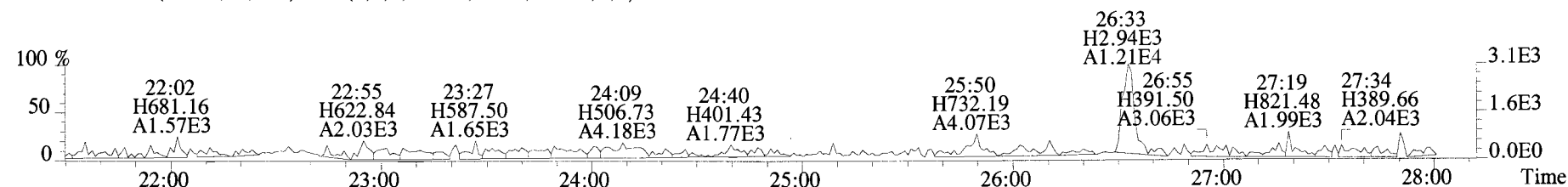
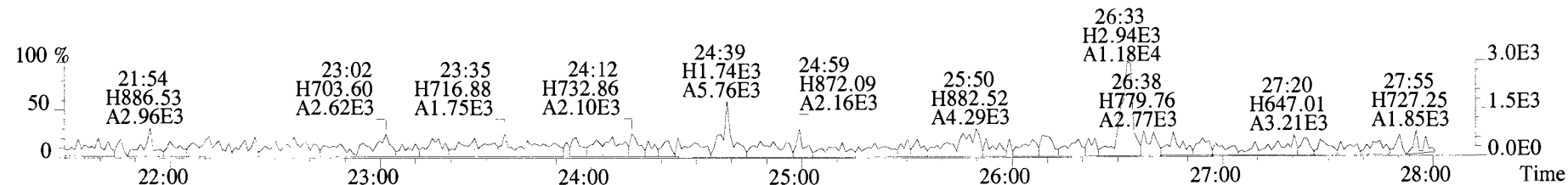


Vista Analytical Laboratory - Injection Log Run file: 191009D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

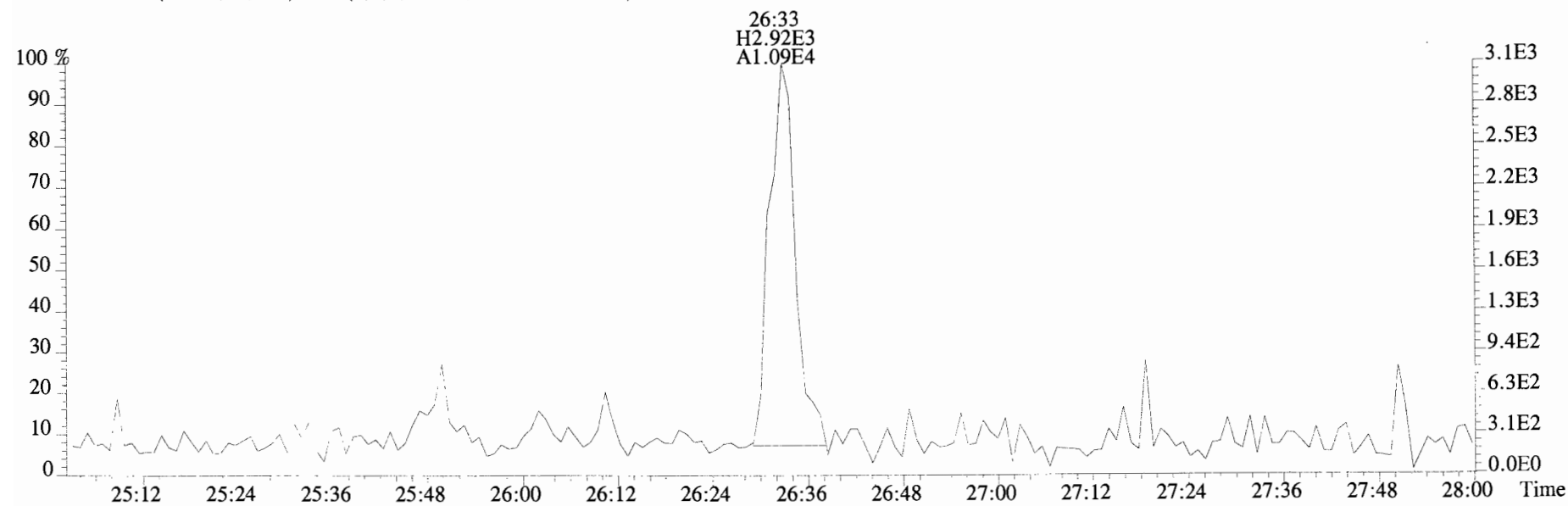
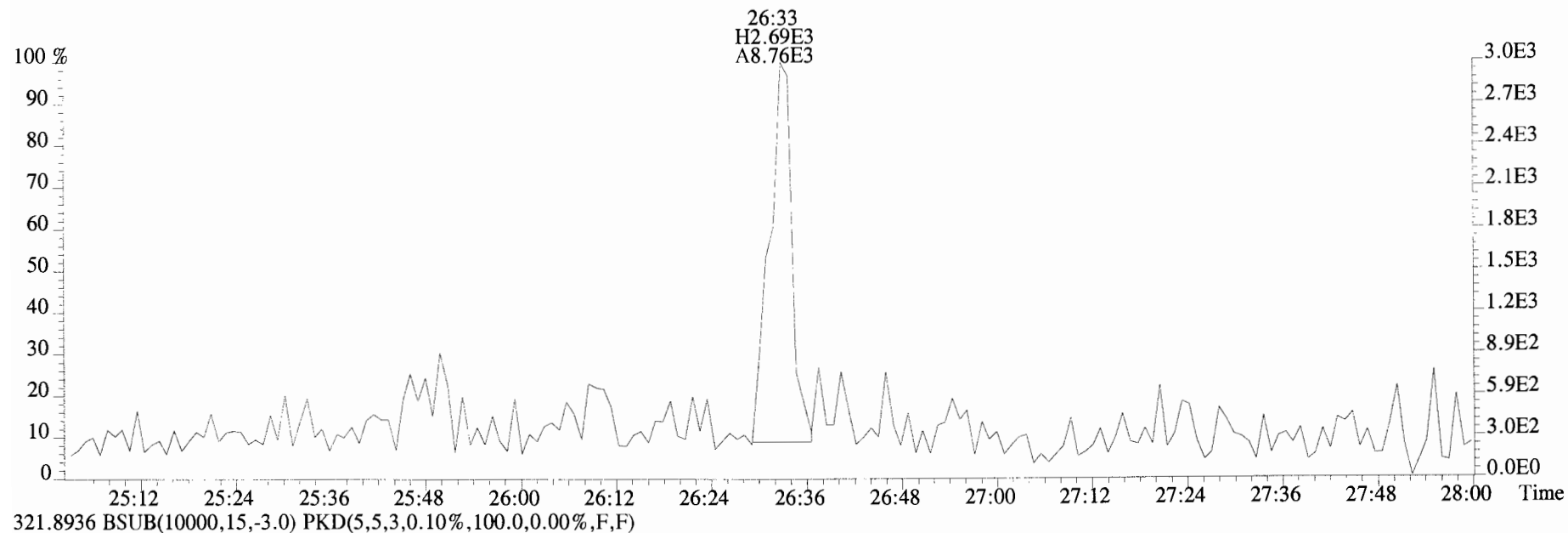
Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191009D1	1	ST191009D1-1	DB	9-OCT-19	16:13:04	ST191009D1-4	NA
191009D1	2	ST191009D1-2	DB	9-OCT-19	17:00:45	ST191009D1-4	NA
191009D1	3	ST191009D1-3	DB	9-OCT-19	17:48:27	ST191009D1-4	NA
191009D1	4	ST191009D1-4	DB	9-OCT-19	18:36:09	ST191009D1-4	NA
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
191009D1	14	1903285-09	DB	10-OCT-19	02:32:11	ST191009D1-4	NA
191009D1	15	1903285-10	DB	10-OCT-19	03:19:47	ST191009D1-4	NA
191009D1	16	1903103-02@5X	DB	10-OCT-19	04:07:23	ST191009D1-4	NA
191009D1	17	1903103-01@5X	DB	10-OCT-19	04:54:54	ST191009D1-4	NA
191009D1	18	B9I0240-DUP1@5X	DB	10-OCT-19	05:42:38	ST191009D1-4	NA



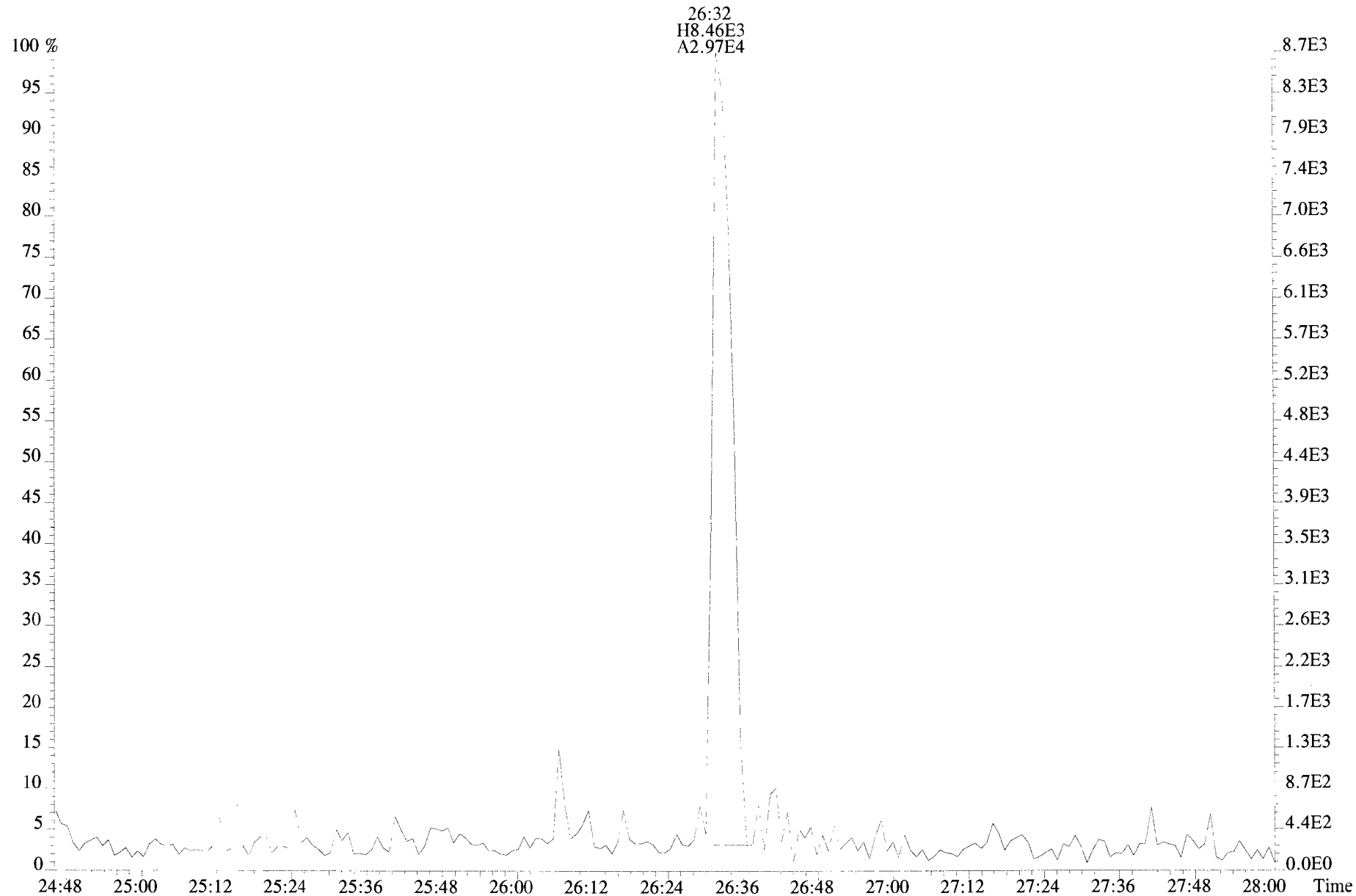
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



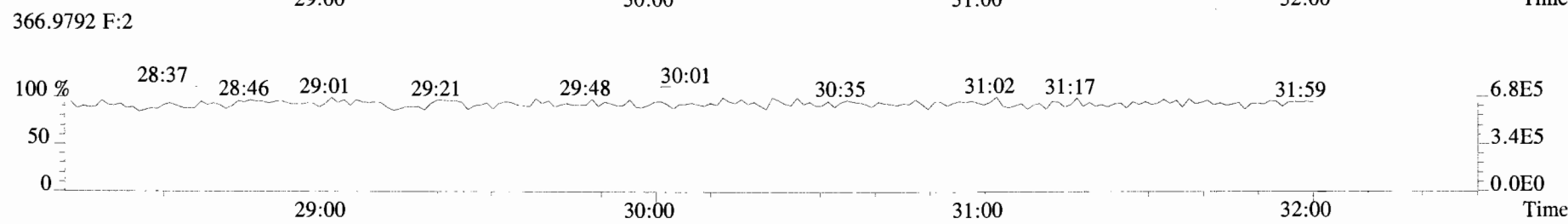
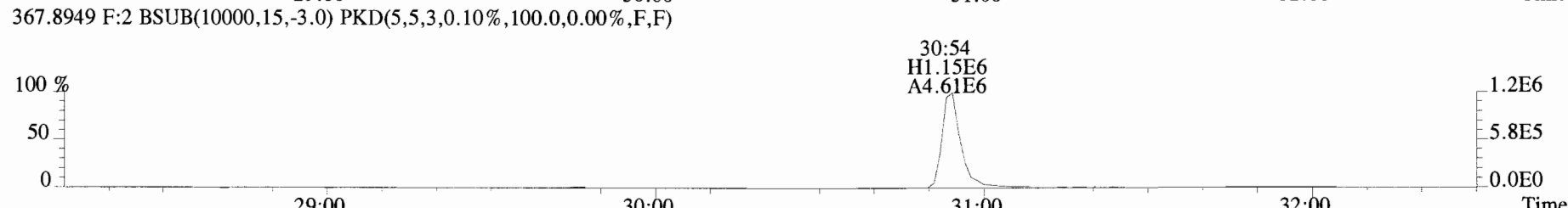
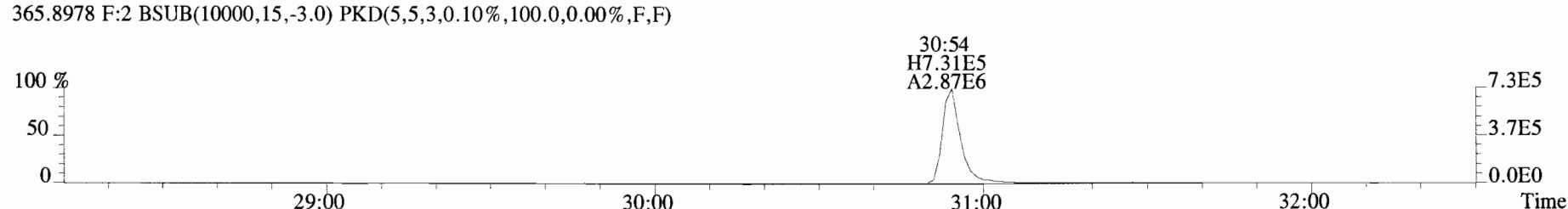
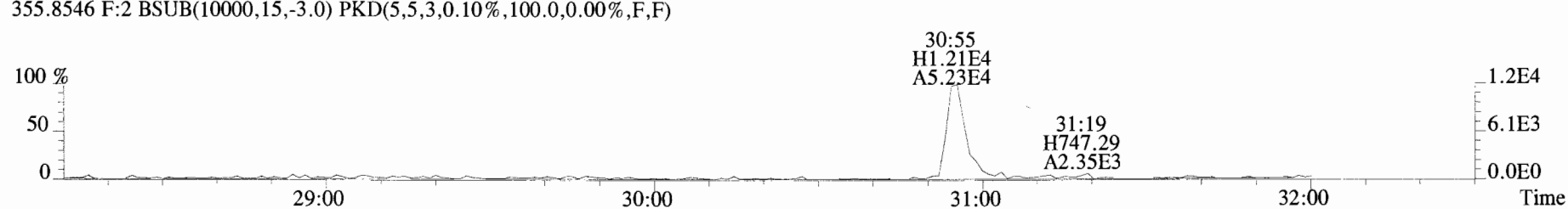
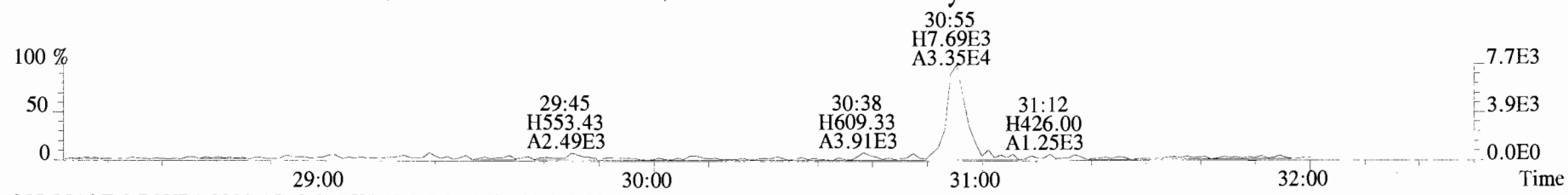
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



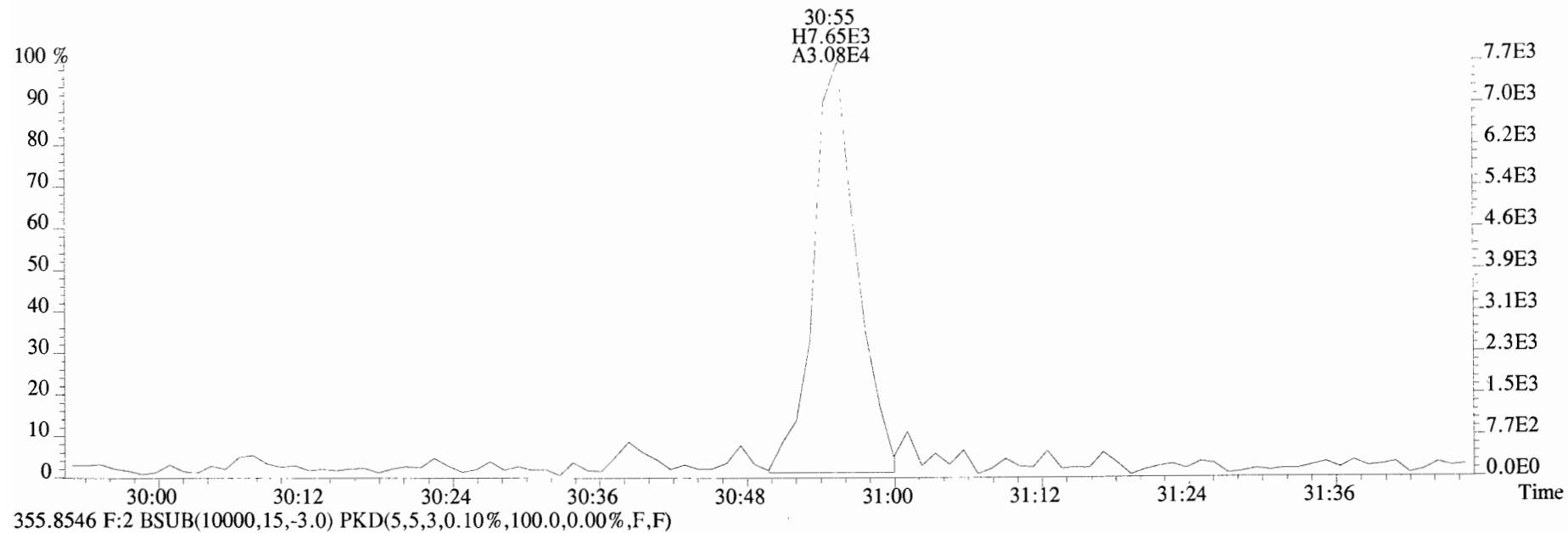
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
327.8847 BSUB(10000,15,-3.0)



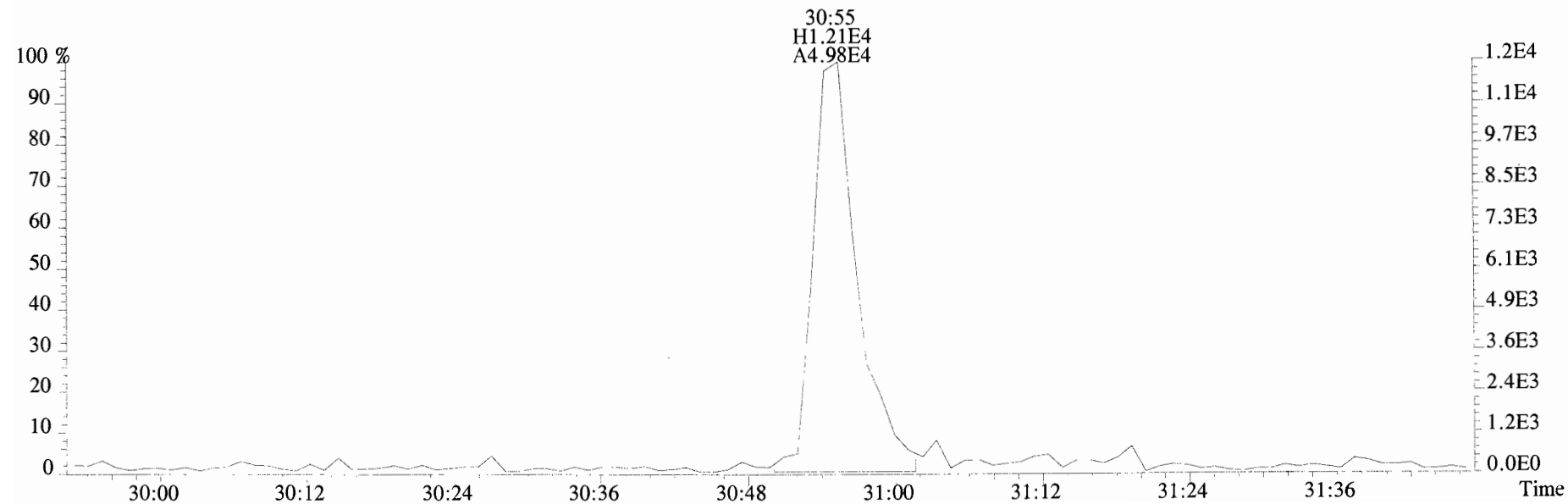
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



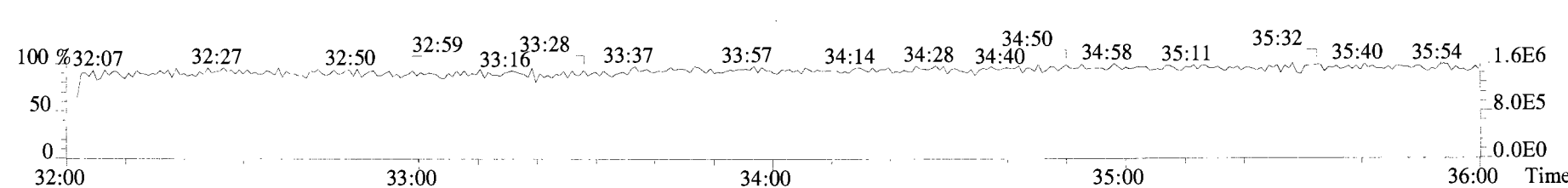
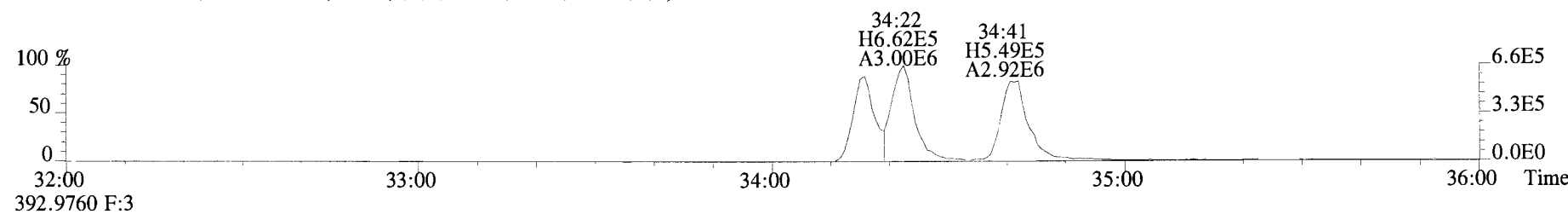
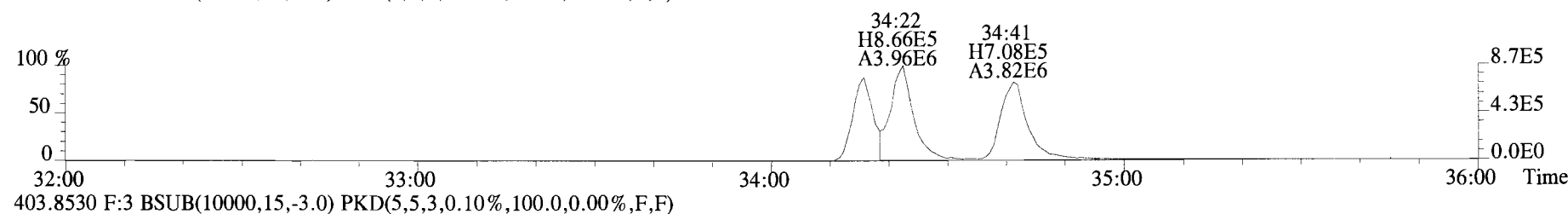
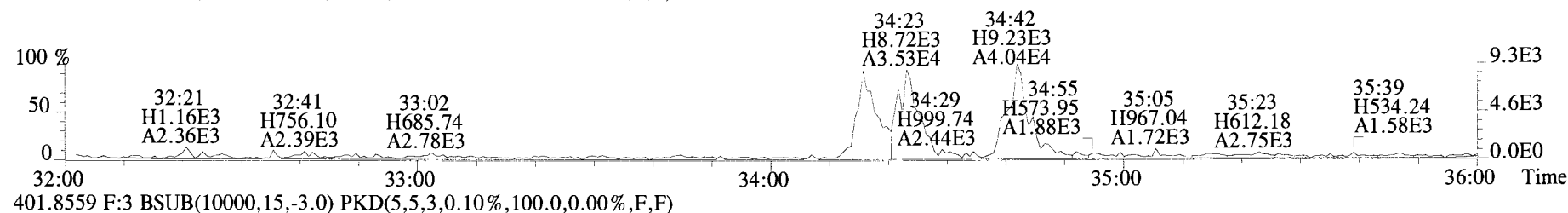
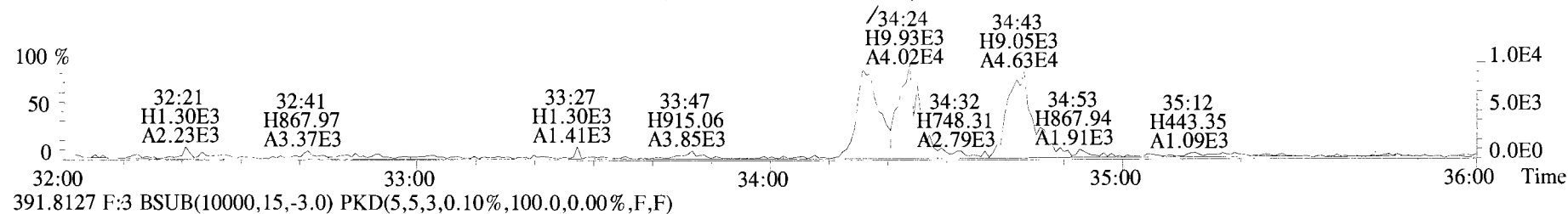
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



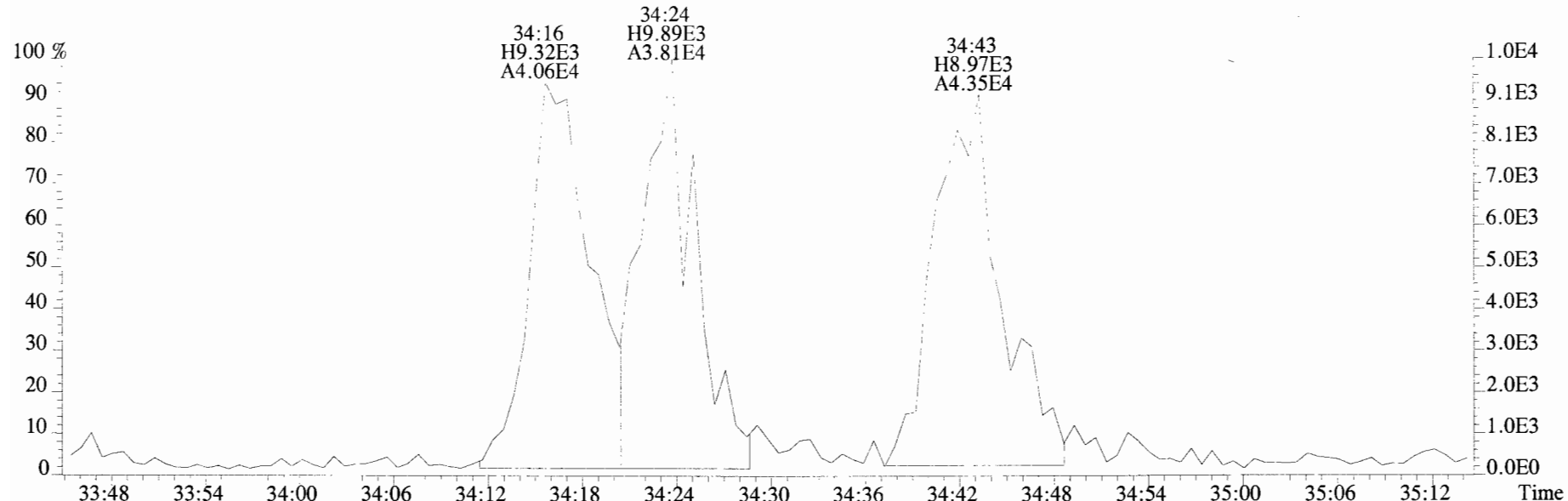
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



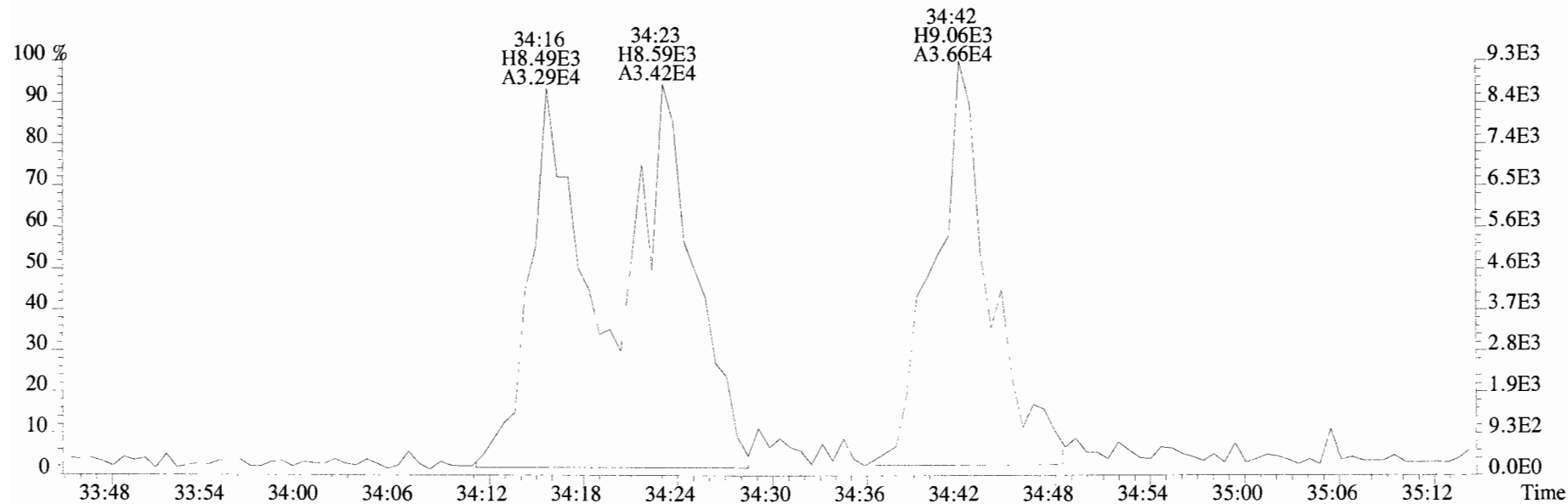
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



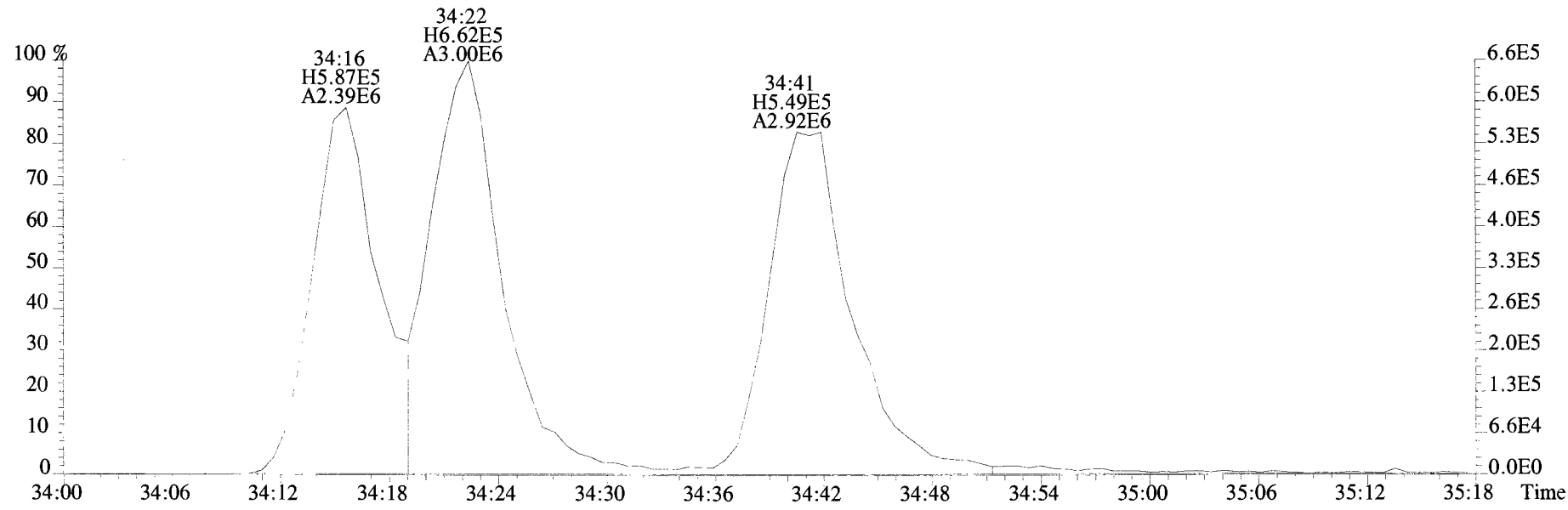
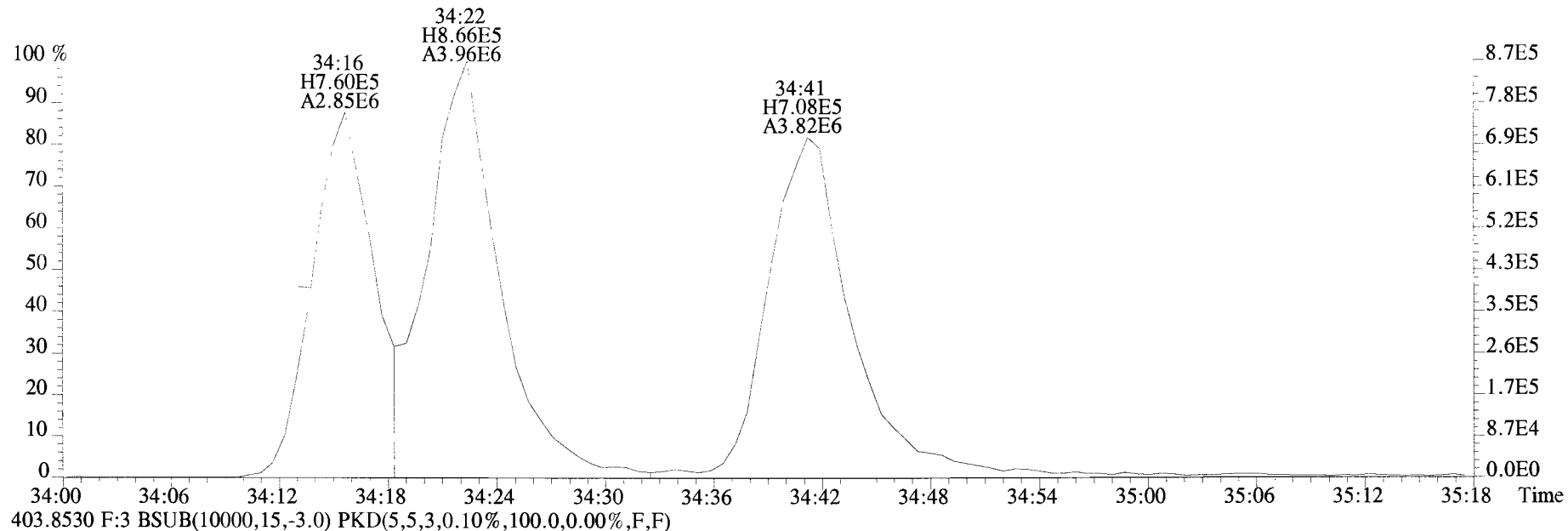
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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

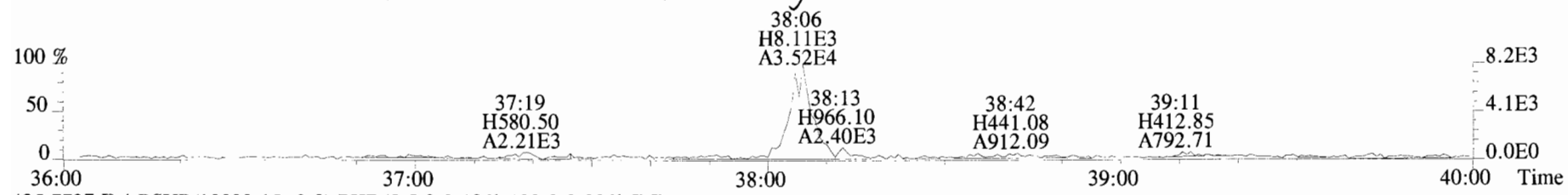


File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

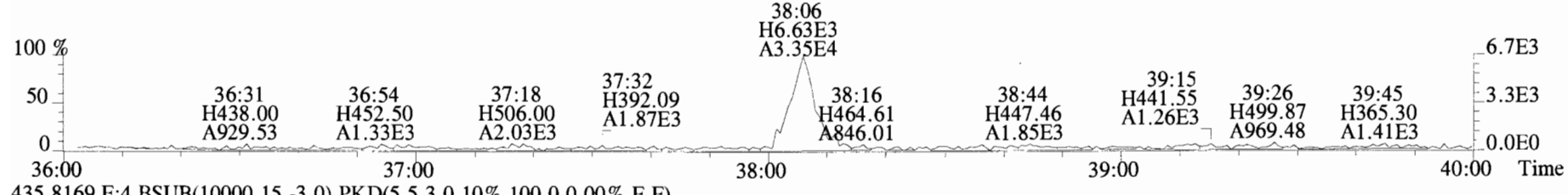




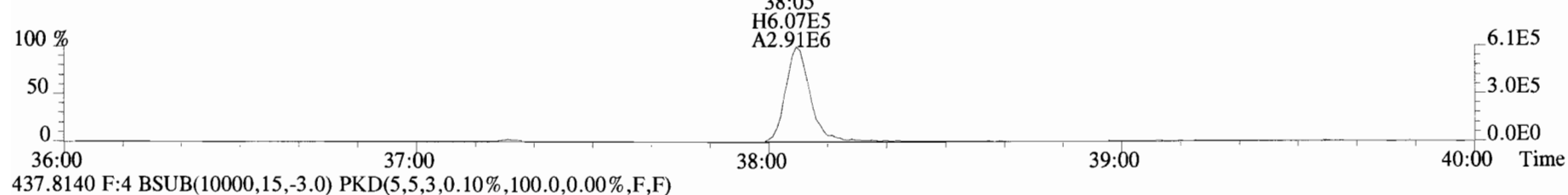
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
 423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



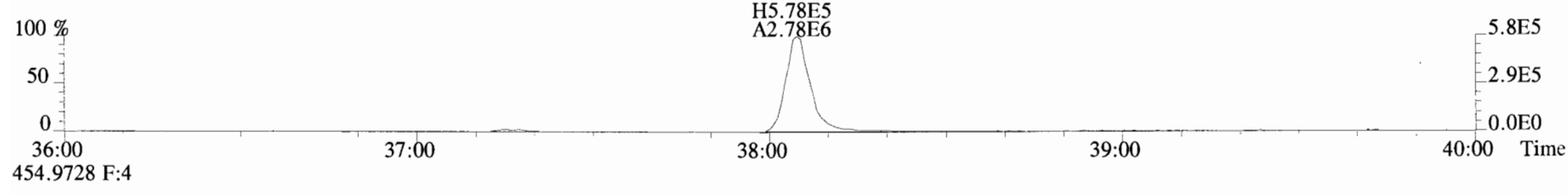
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



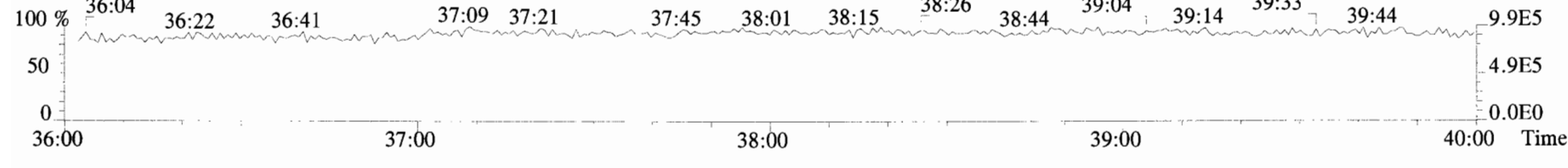
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



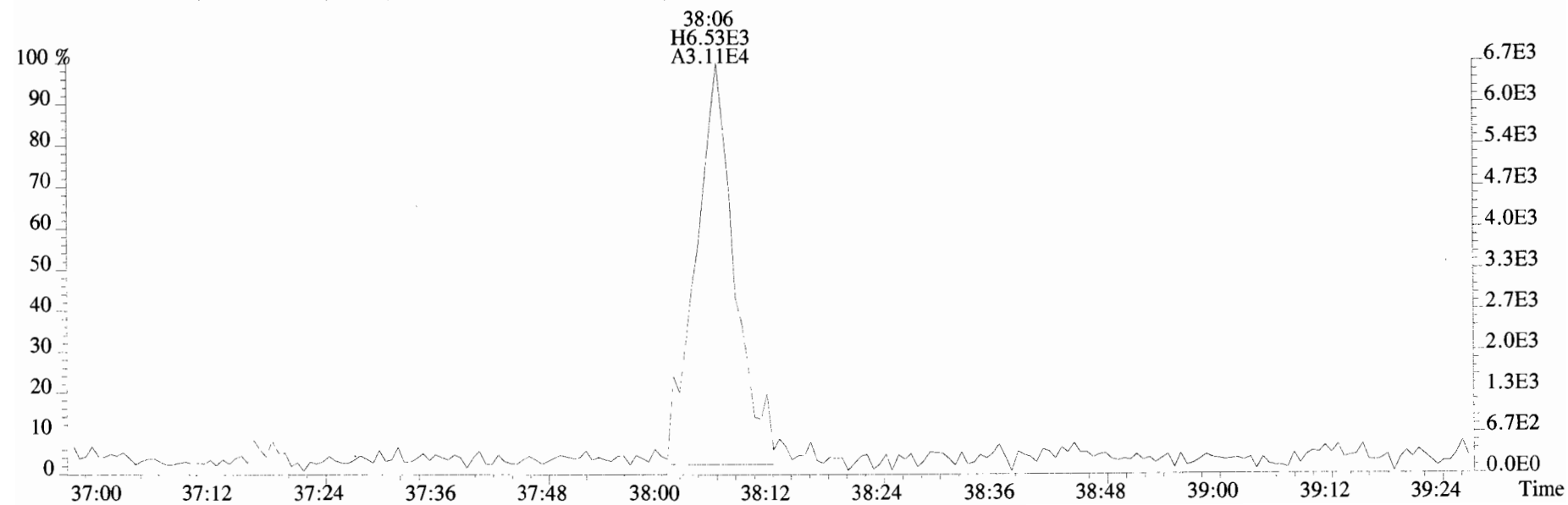
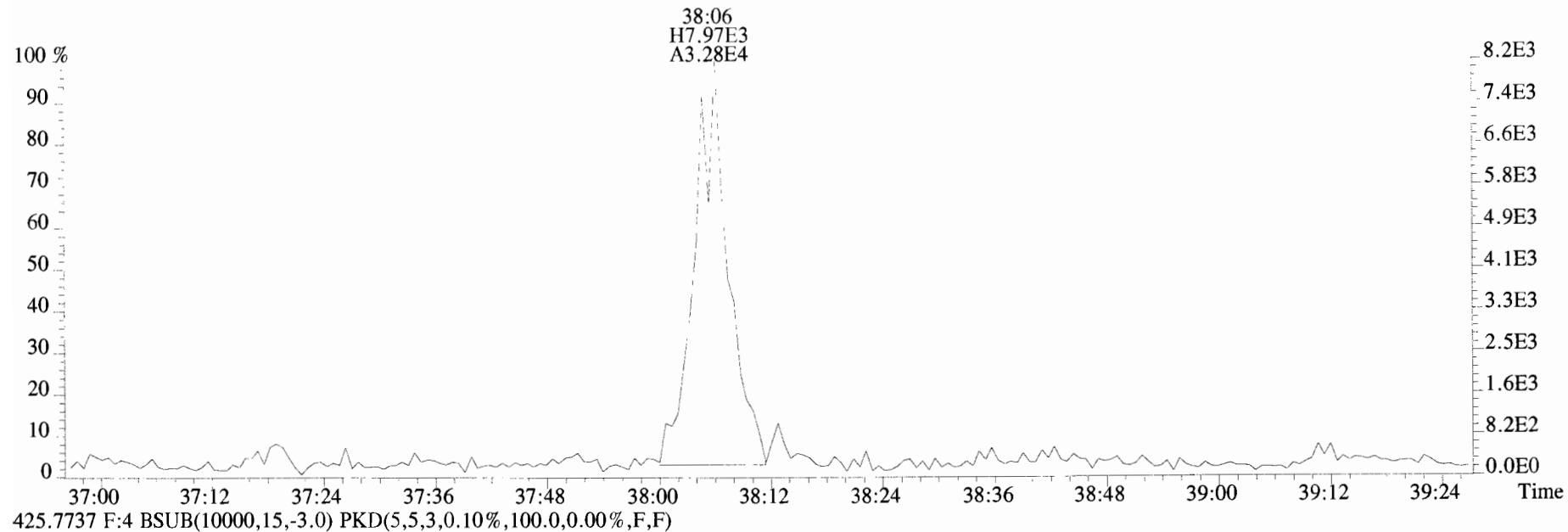
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



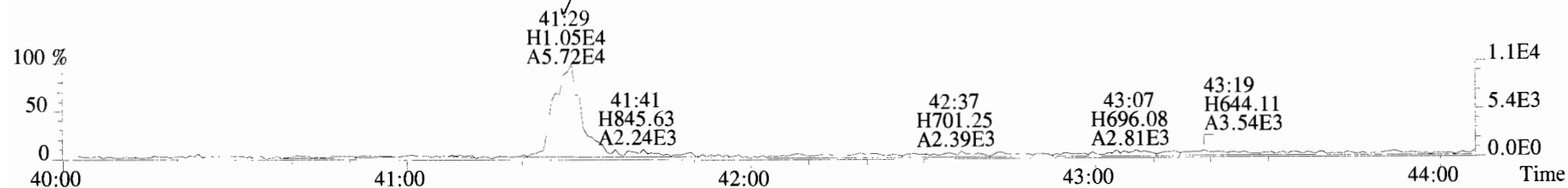
454.9728 F:4



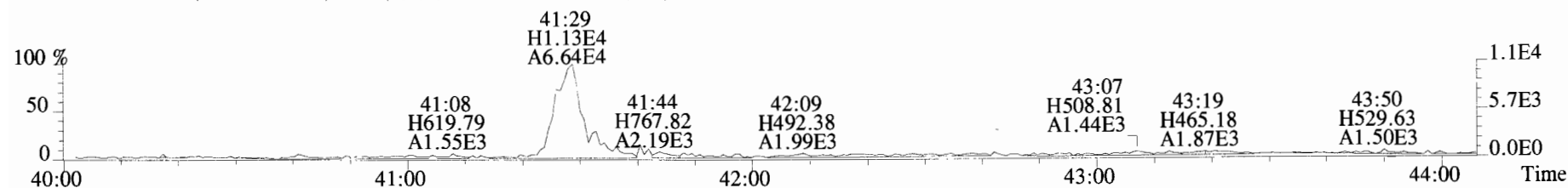
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



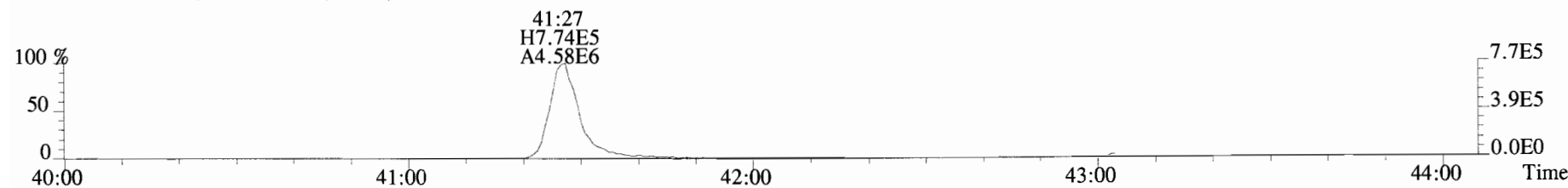
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
457.7377 F:5 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



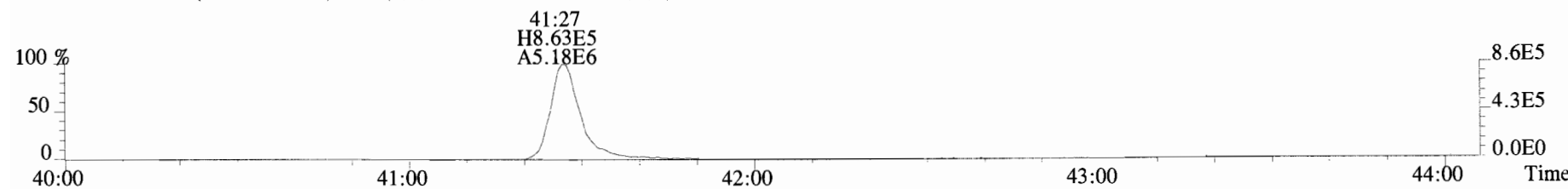
459.7348 F:5 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



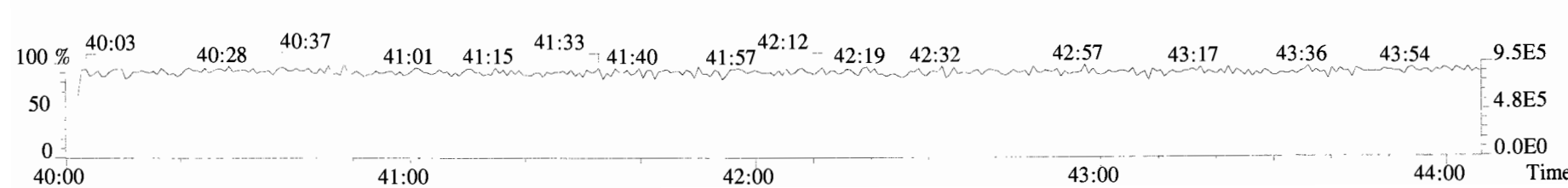
469.7780 F:5 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



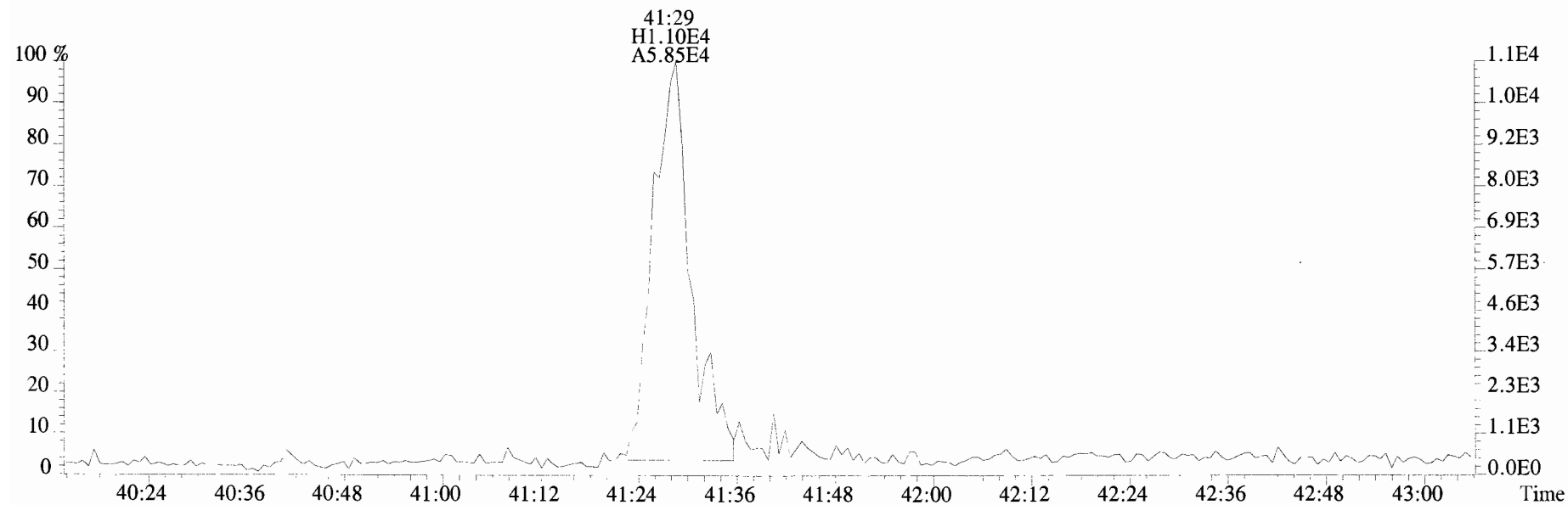
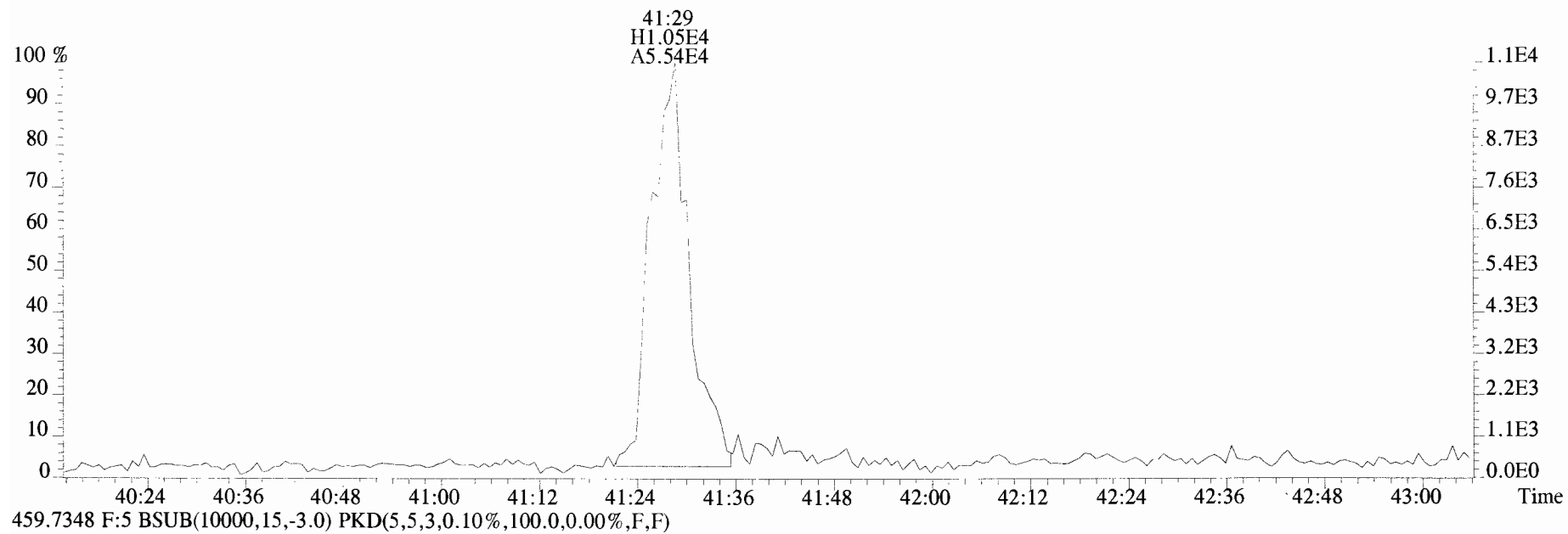
471.7750 F:5 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



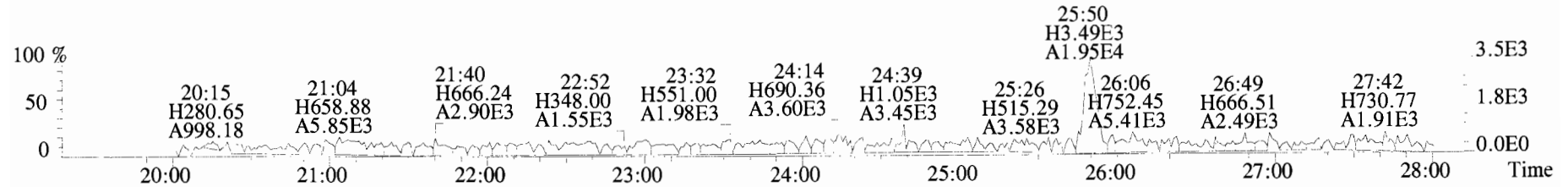
454.9728 F:5



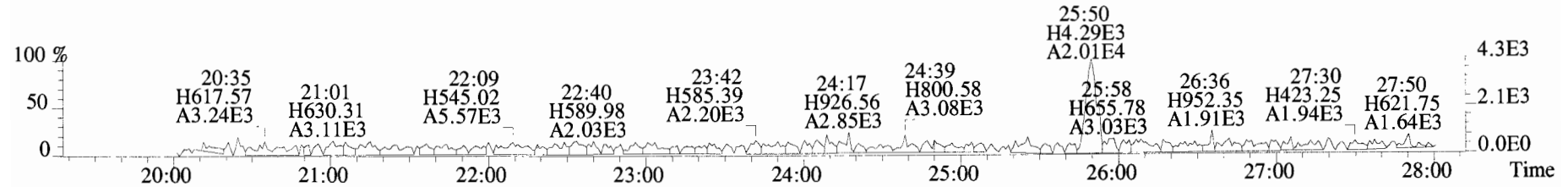
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



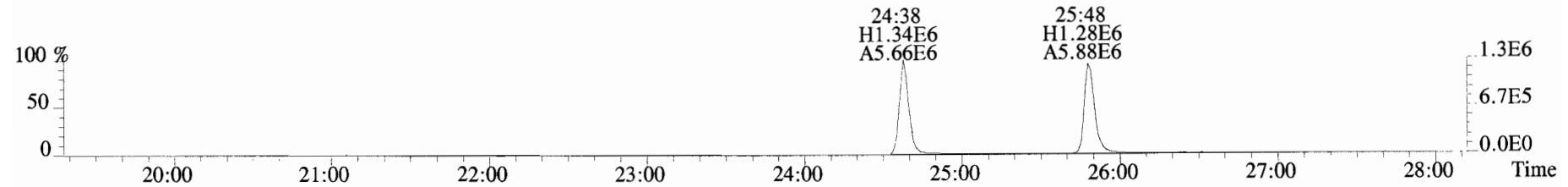
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
 303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



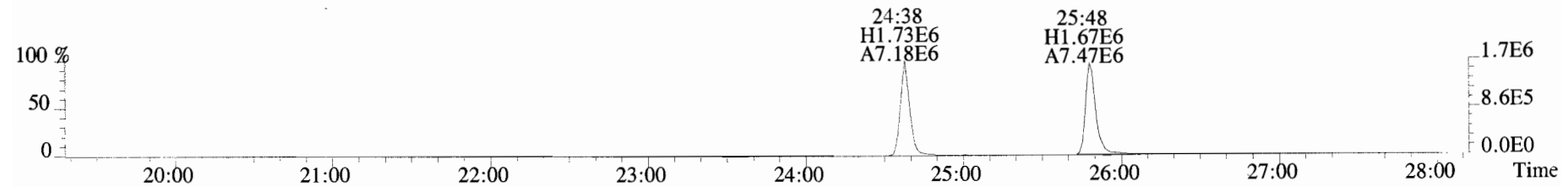
305.8987 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



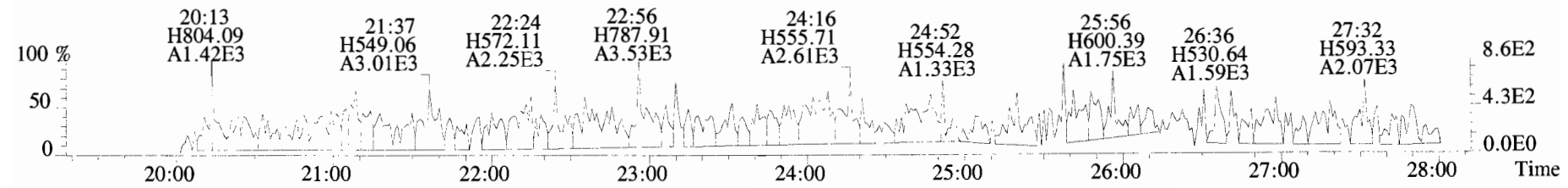
315.9419 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



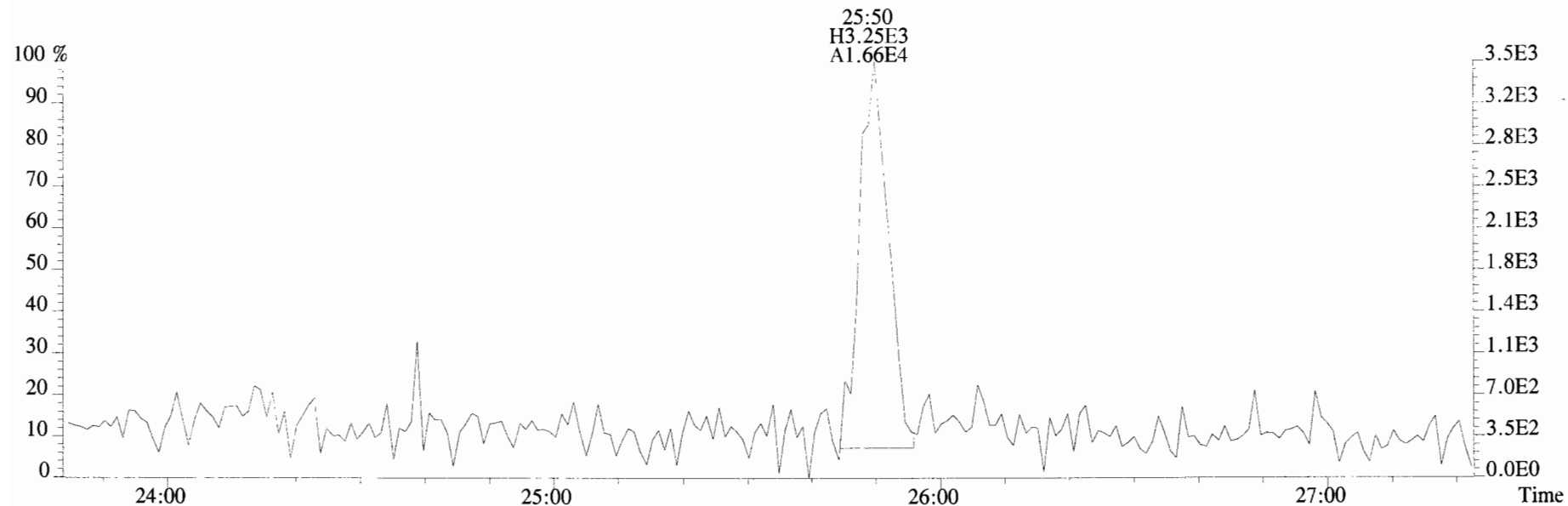
317.9389 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



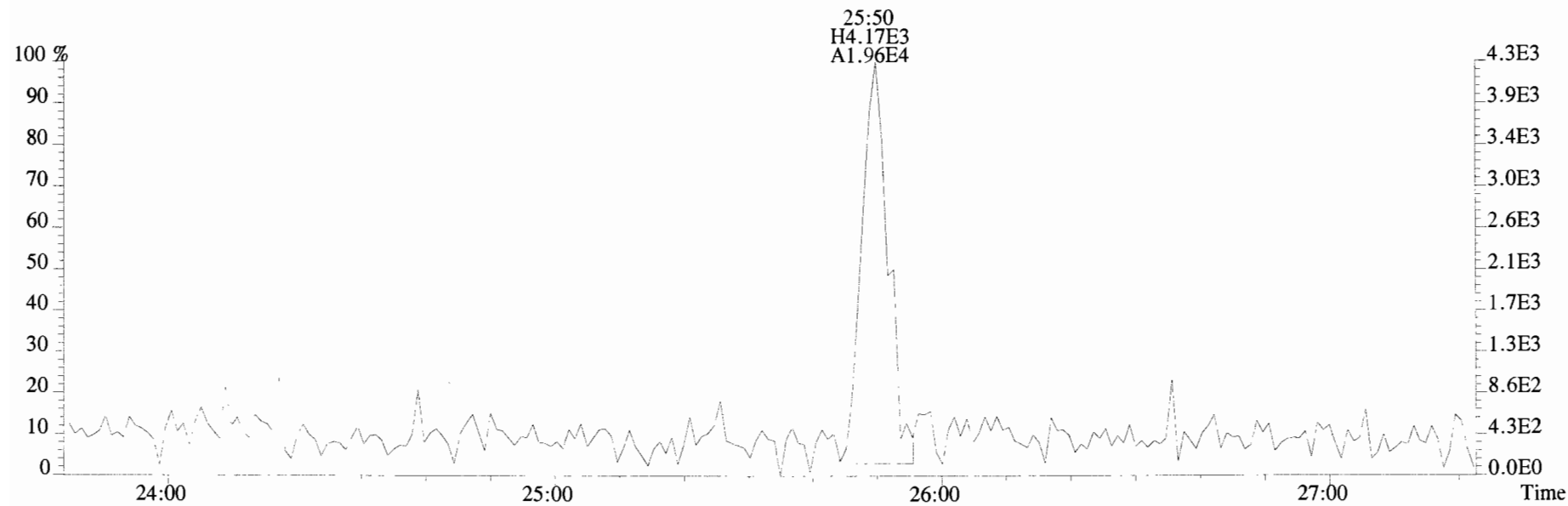
375.8364 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



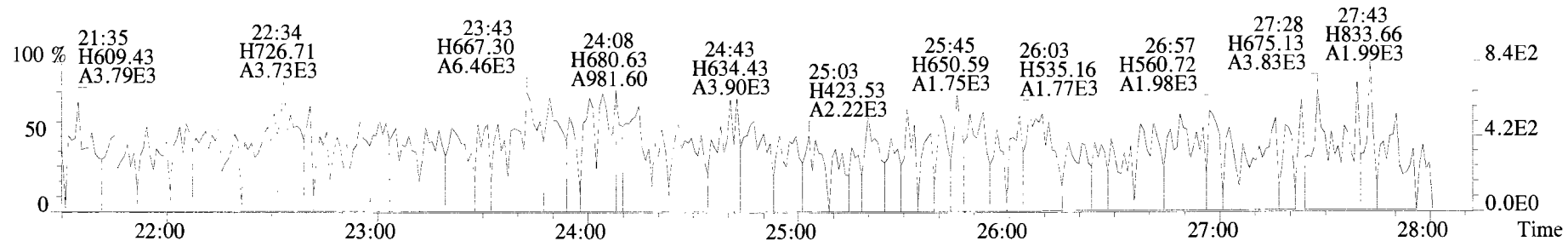
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



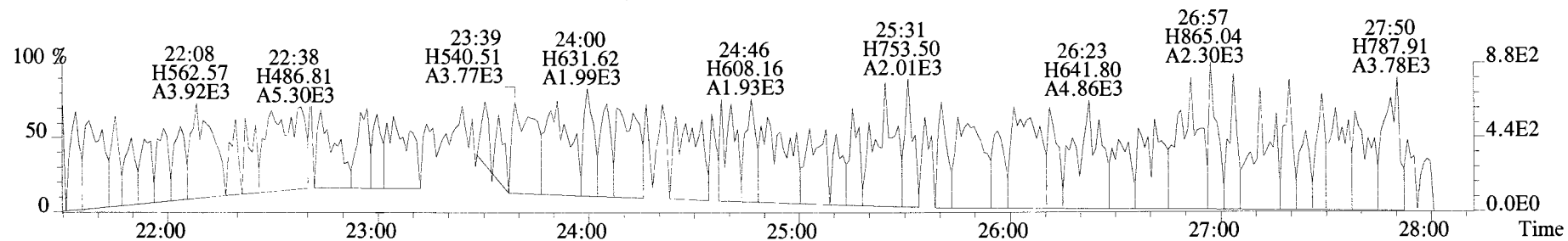
305.8987 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



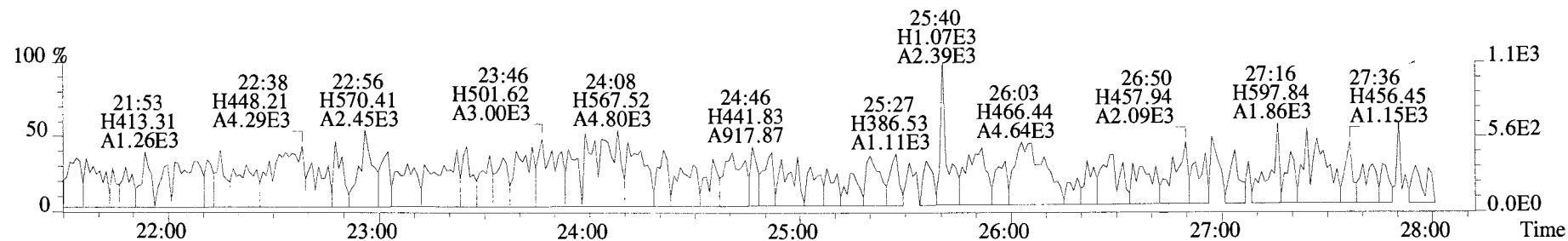
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
 339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



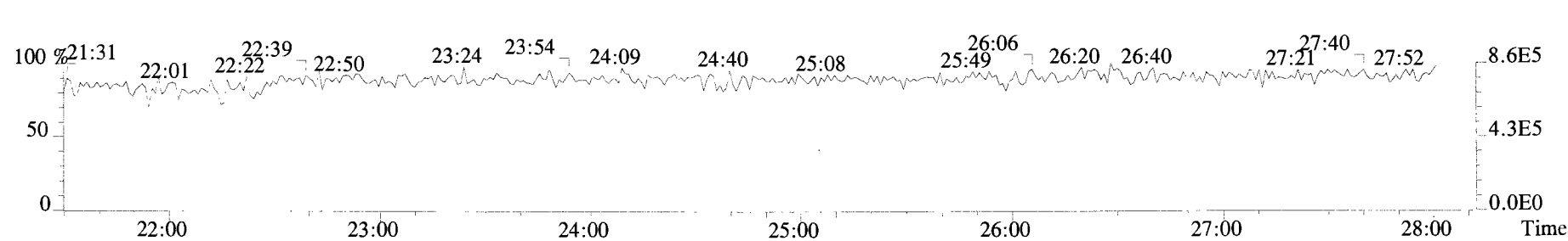
341.8568 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



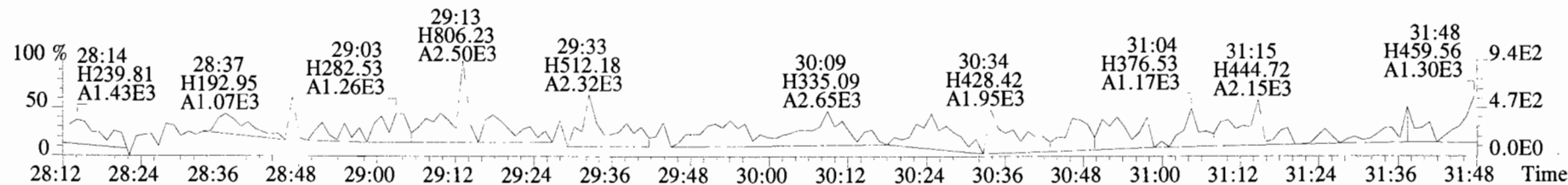
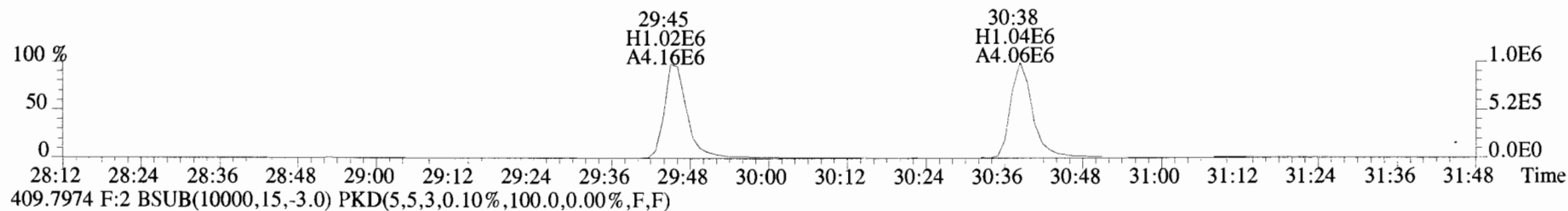
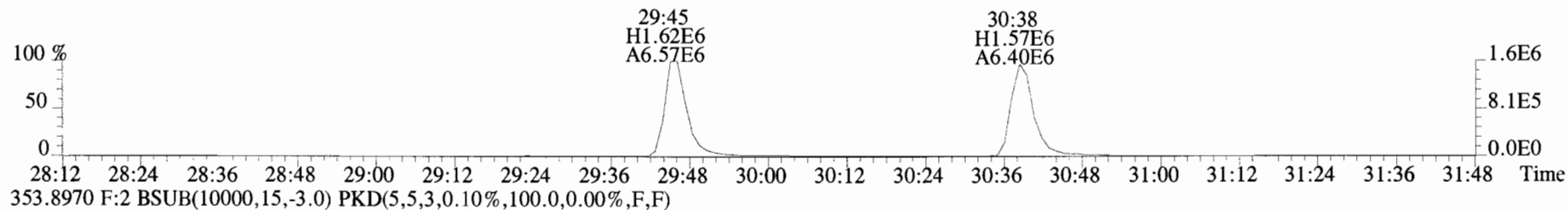
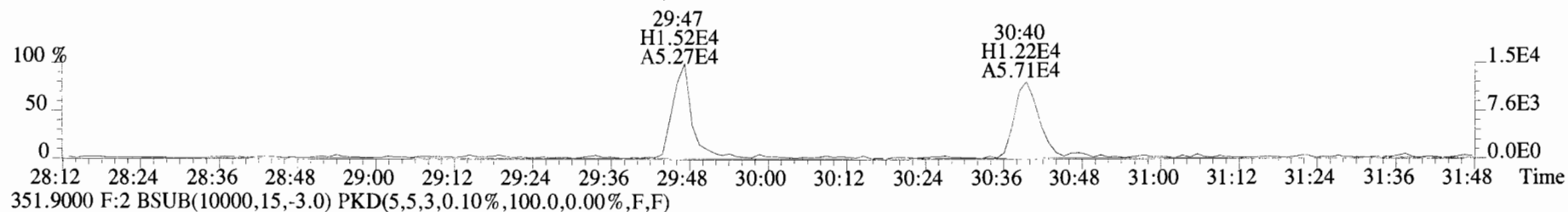
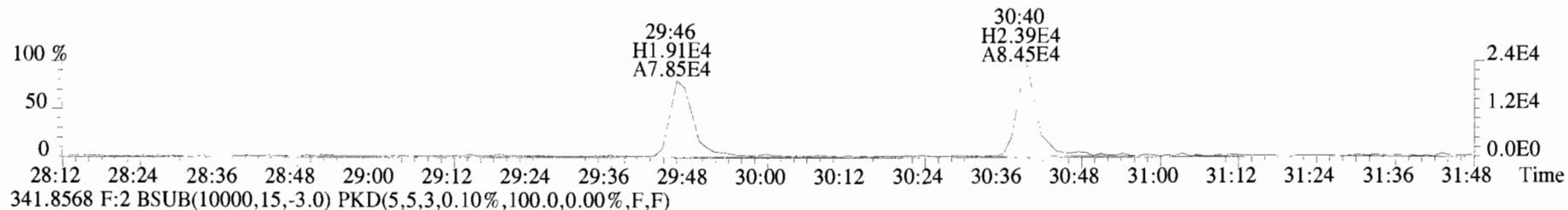
409.7974 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



316.9824

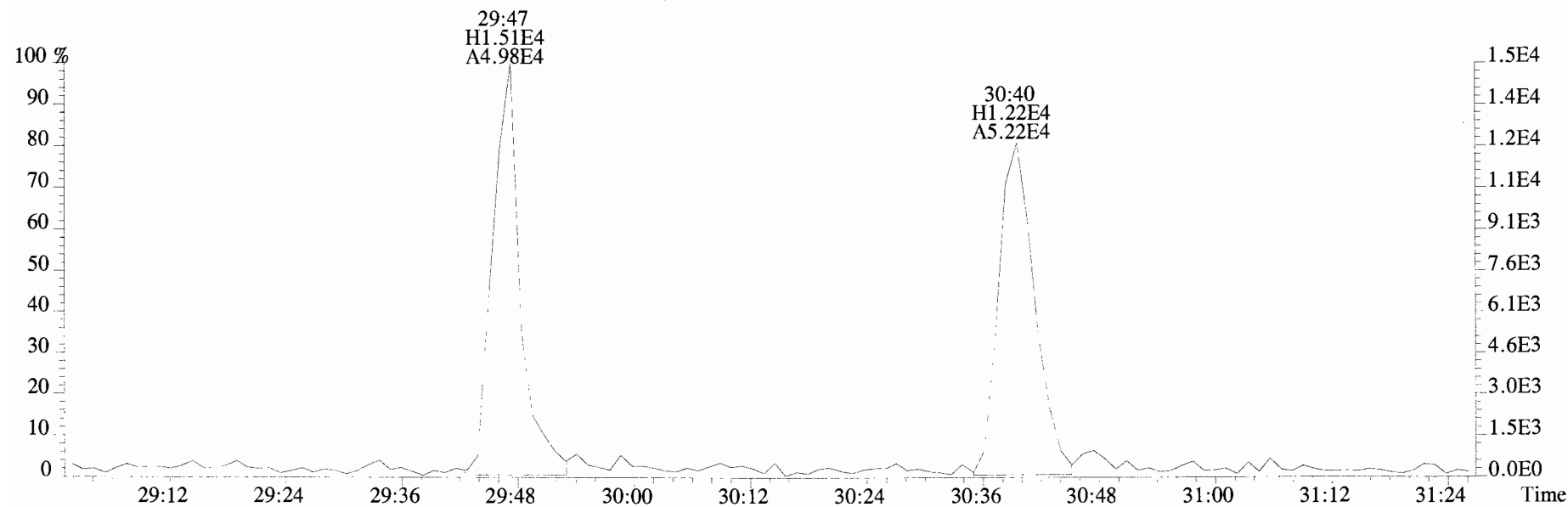
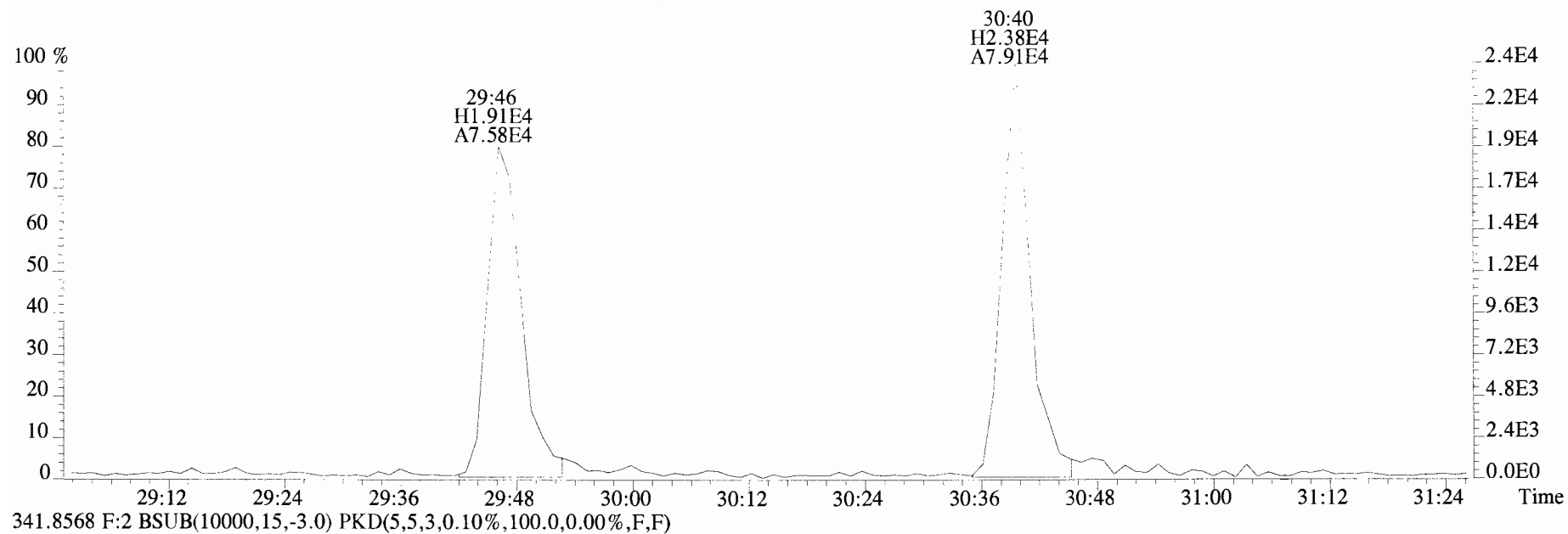


File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

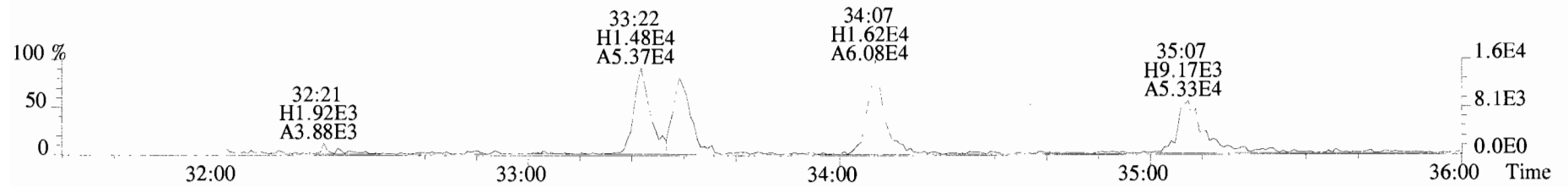




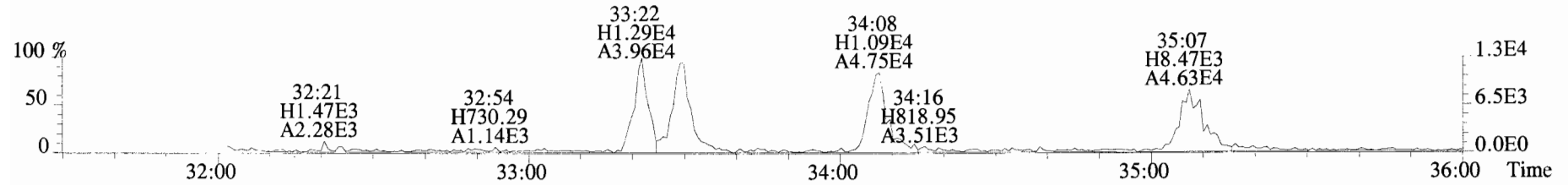
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



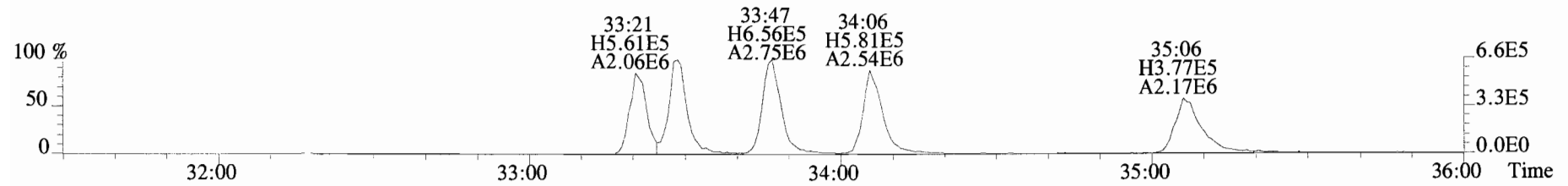
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#1 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



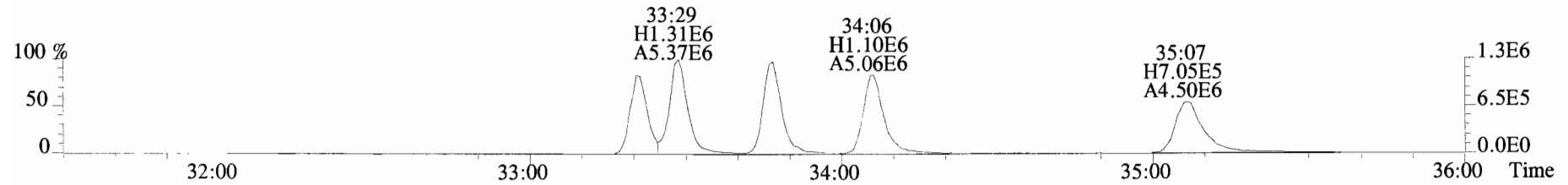
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



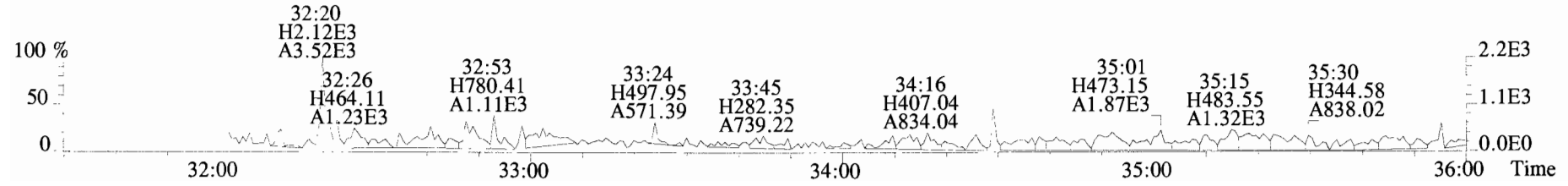
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



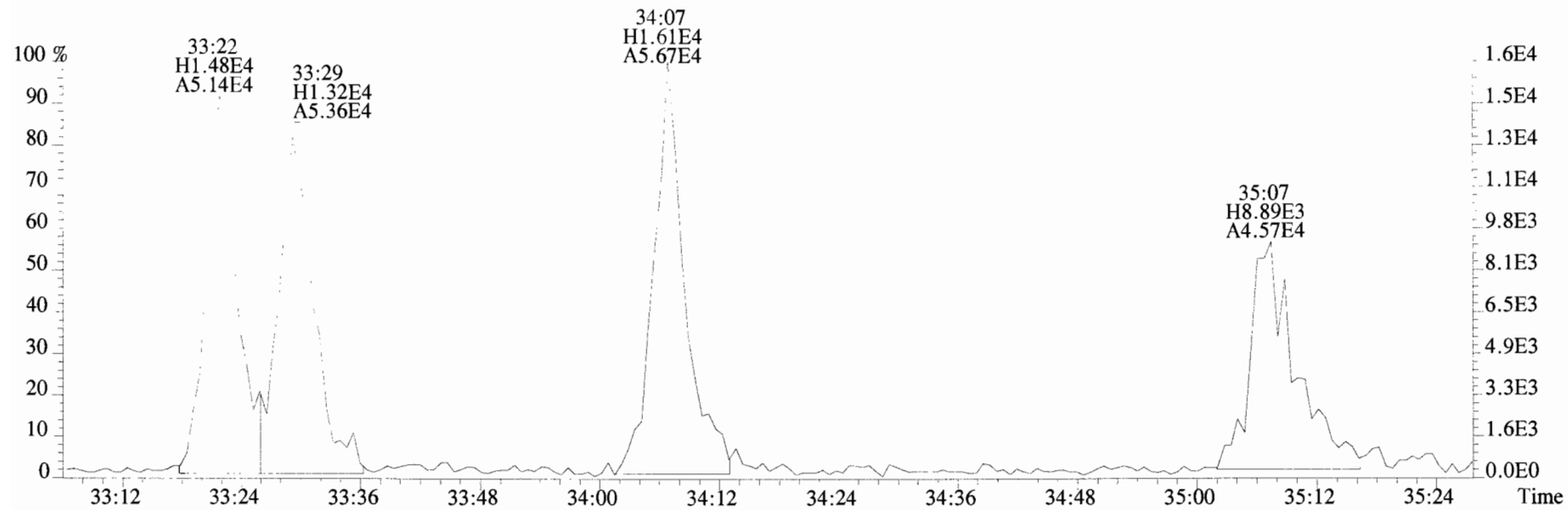
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



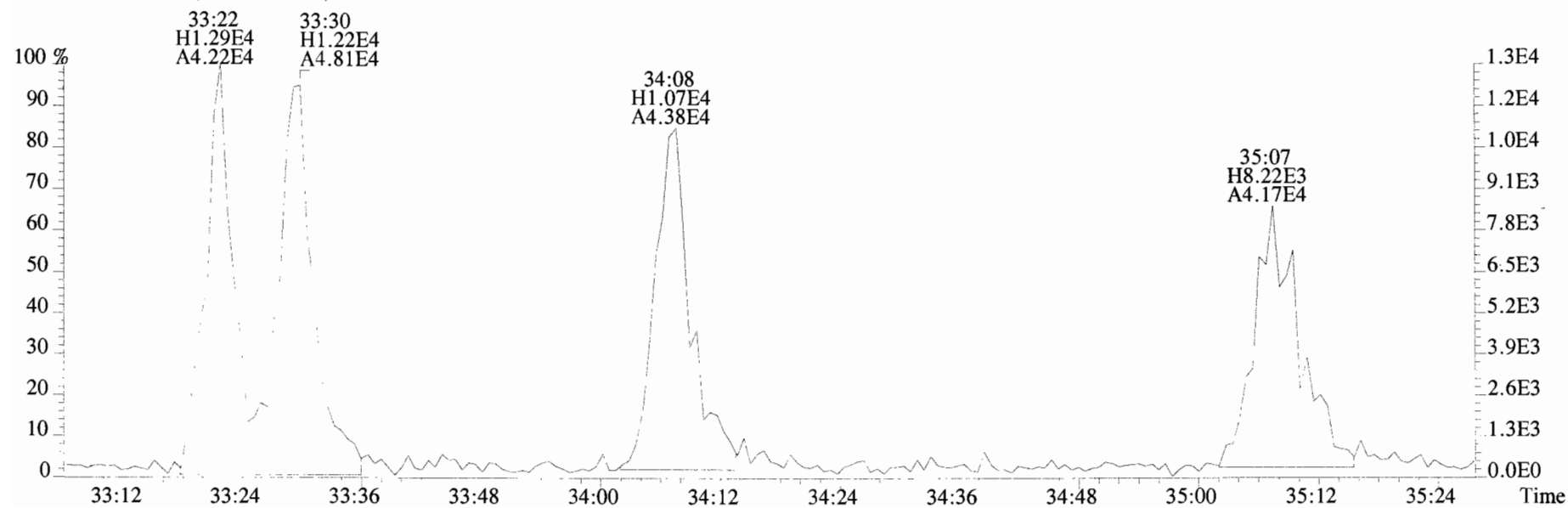
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



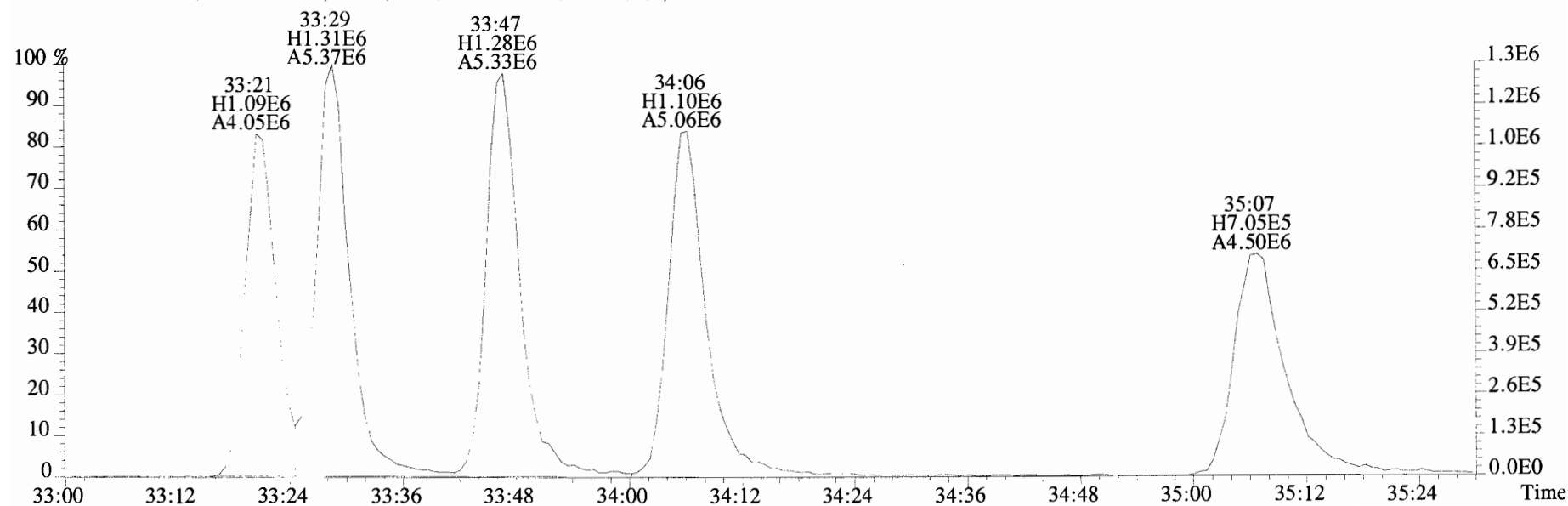
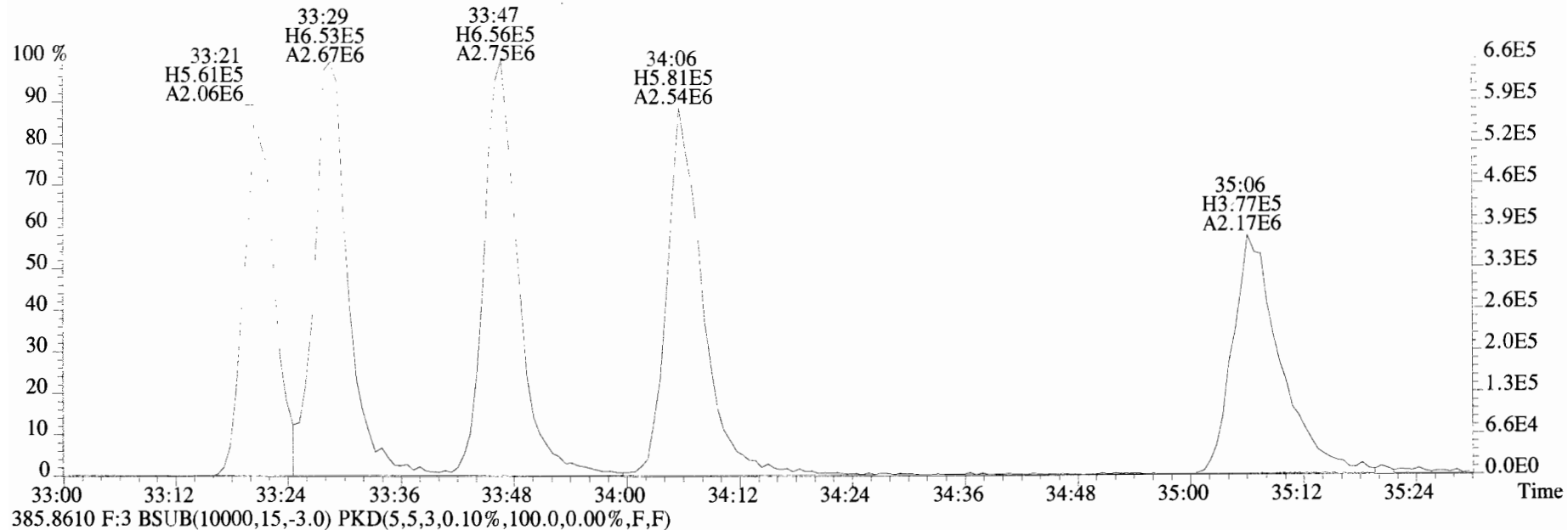
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical\_Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
373.8207 F:3 BSUB(10000,15,-3.0)



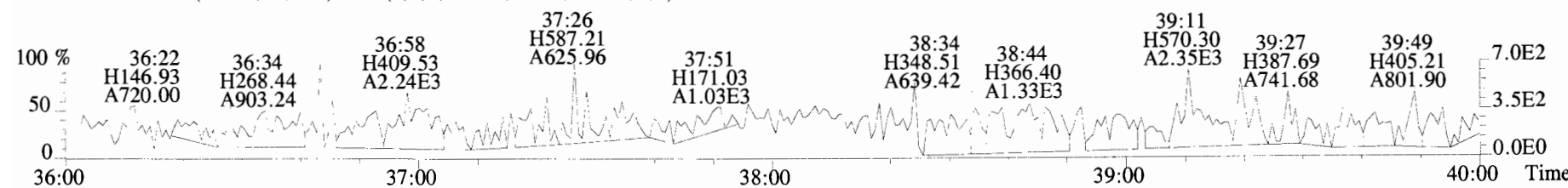
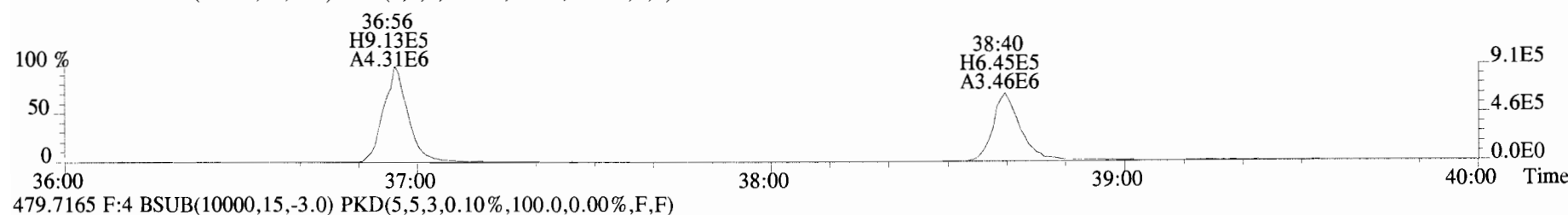
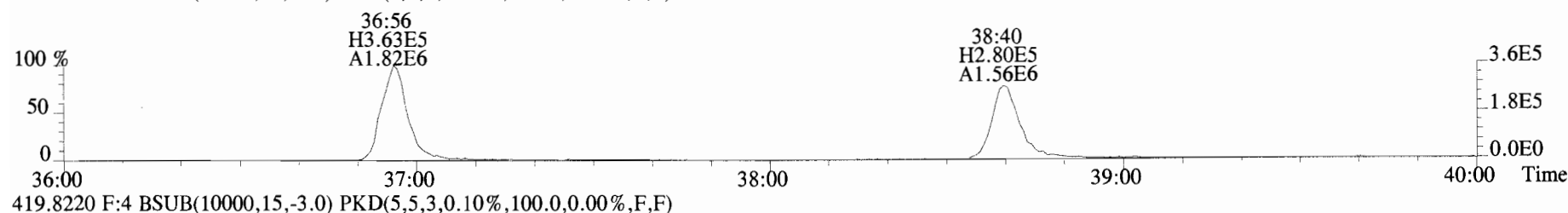
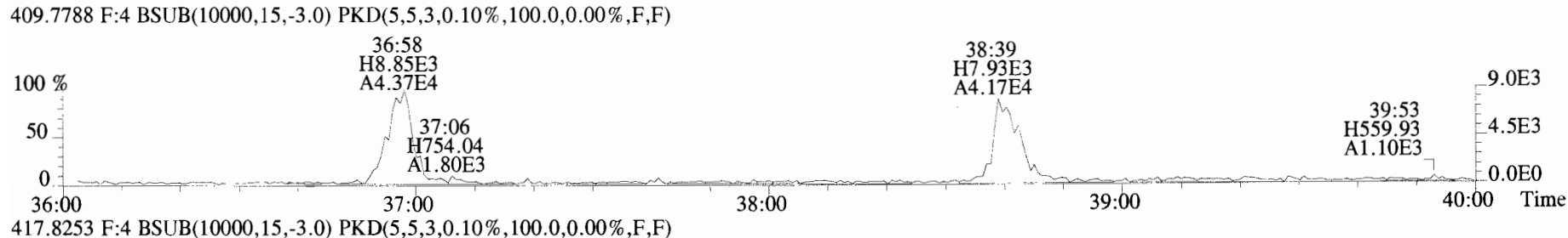
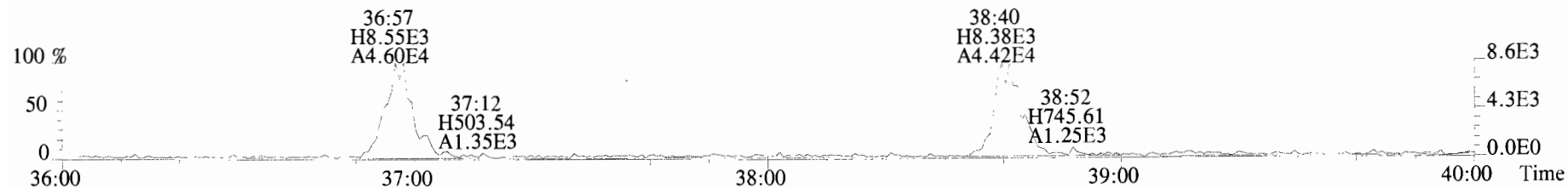
375.8178 F:3 BSUB(10000,15,-3.0)



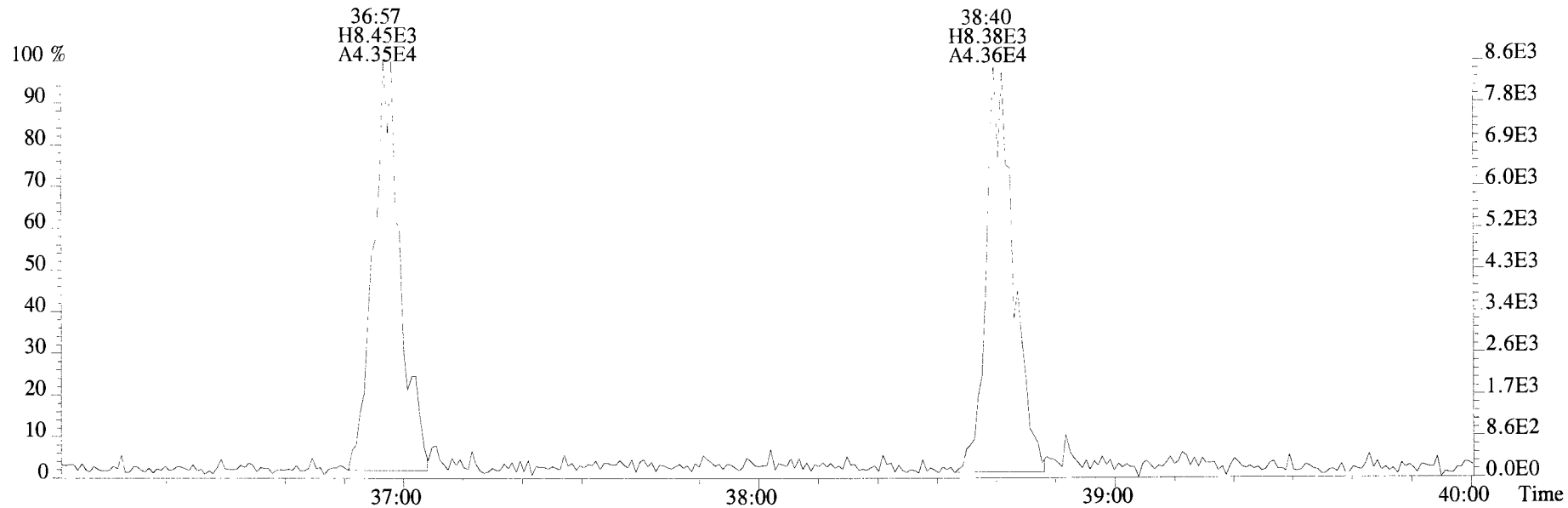
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



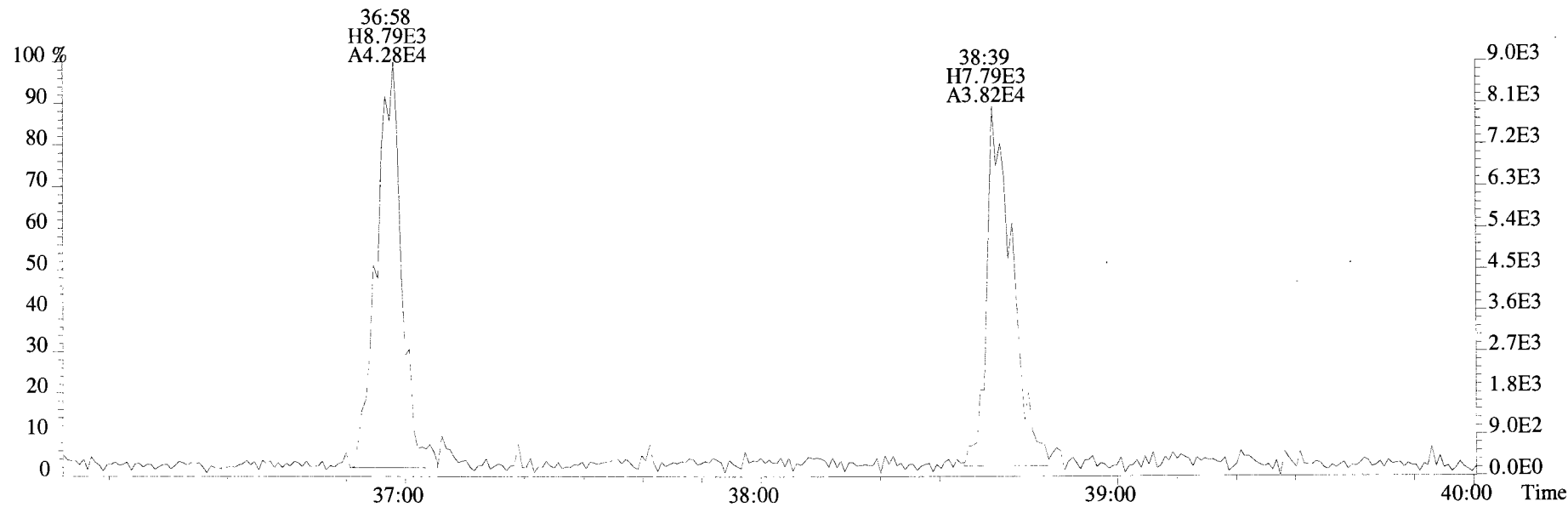
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



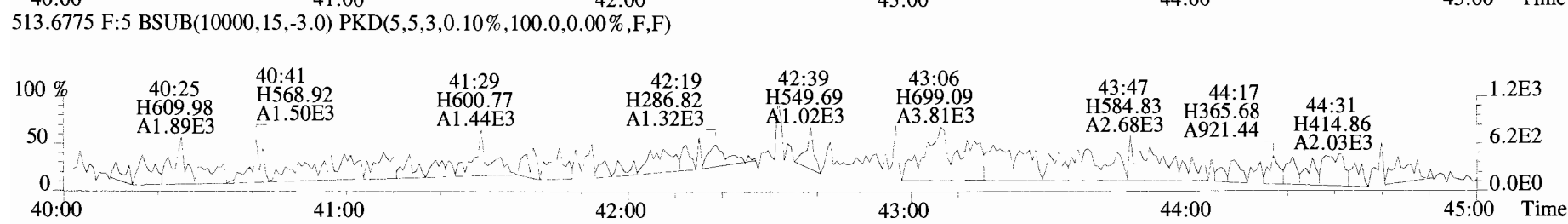
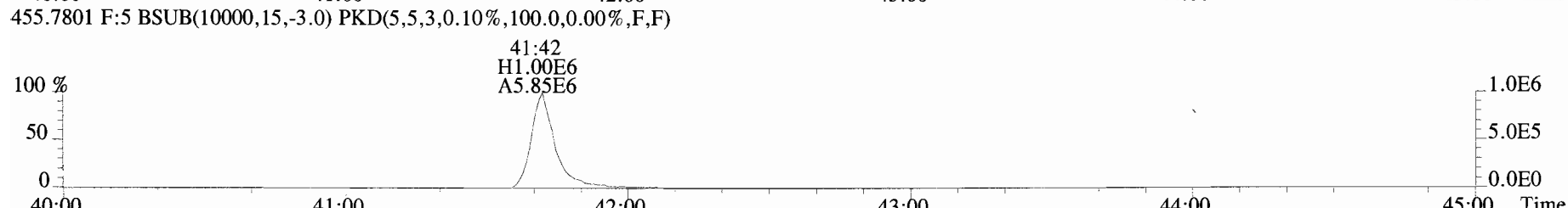
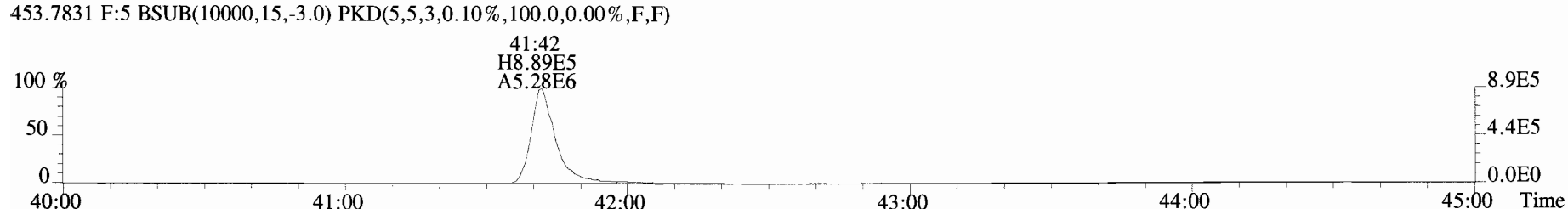
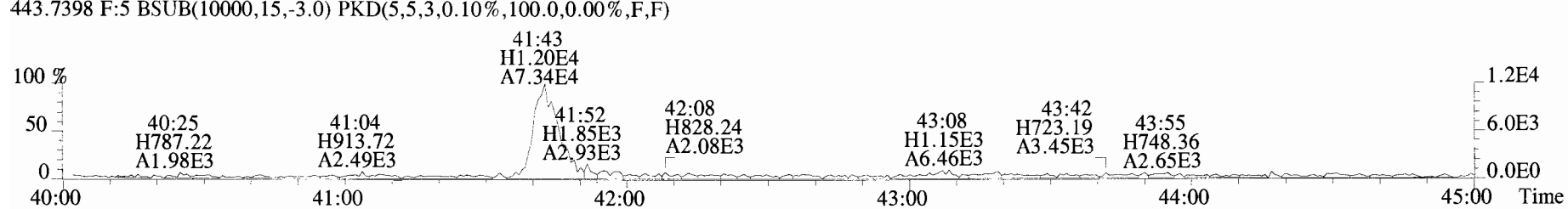
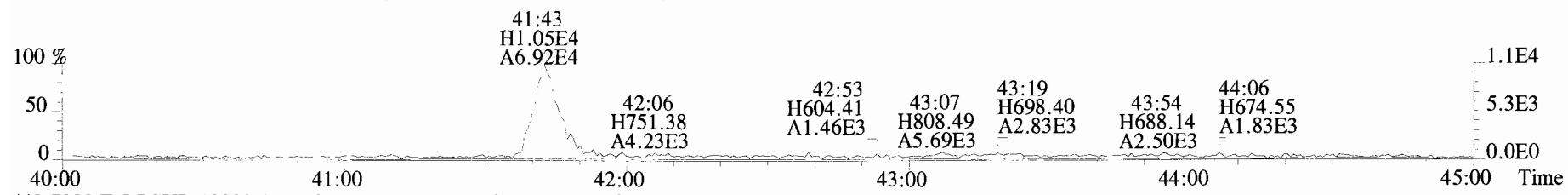
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



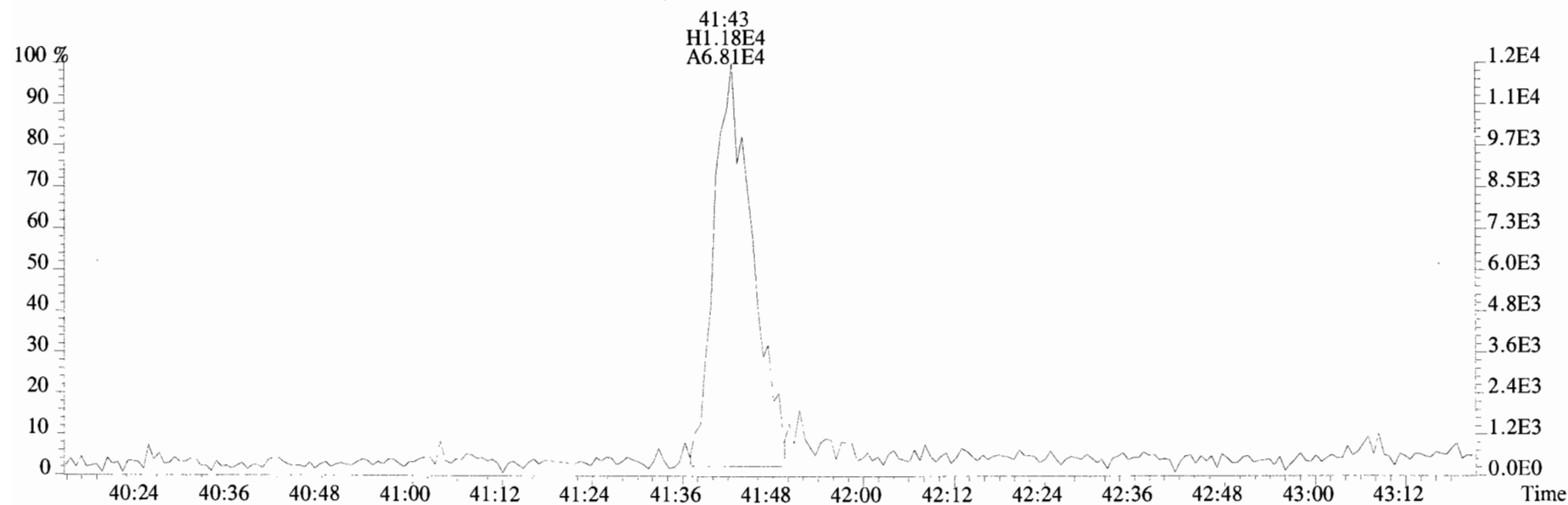
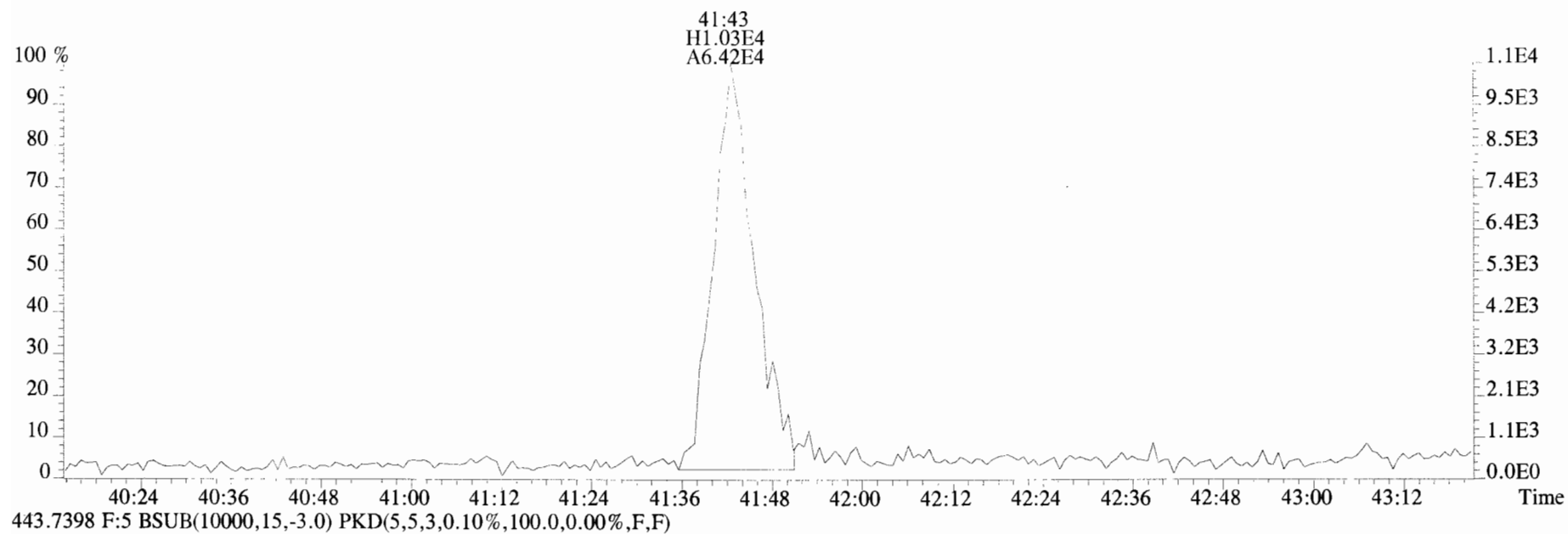
409.7788 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

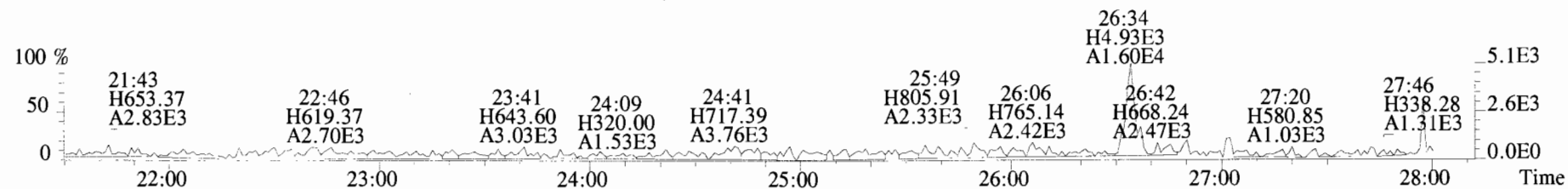


File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD\_DB5  
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

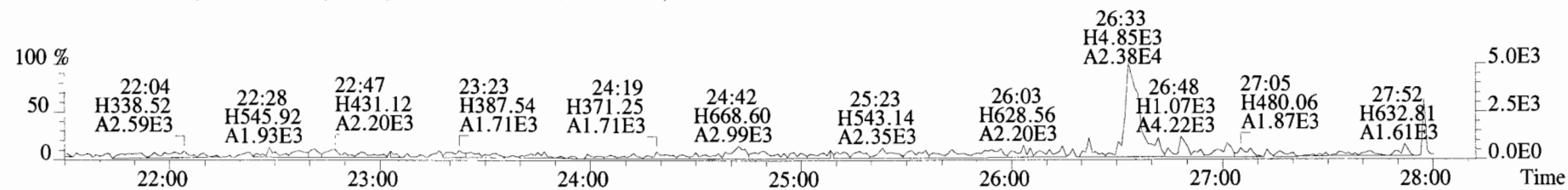




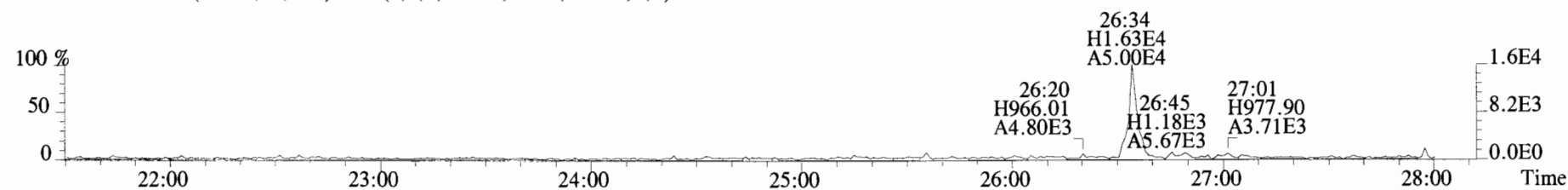
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
319.8965 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



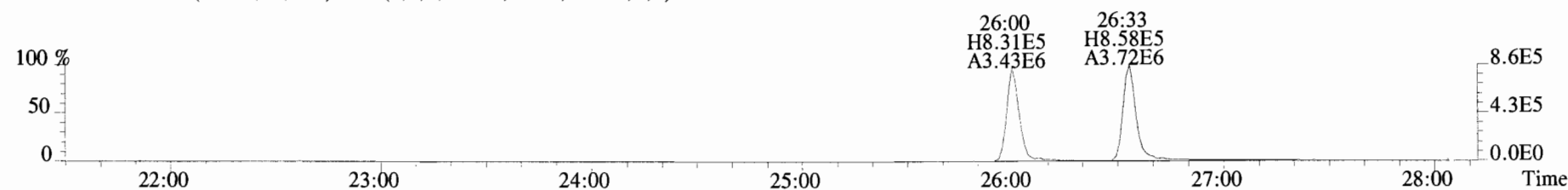
321.8936 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



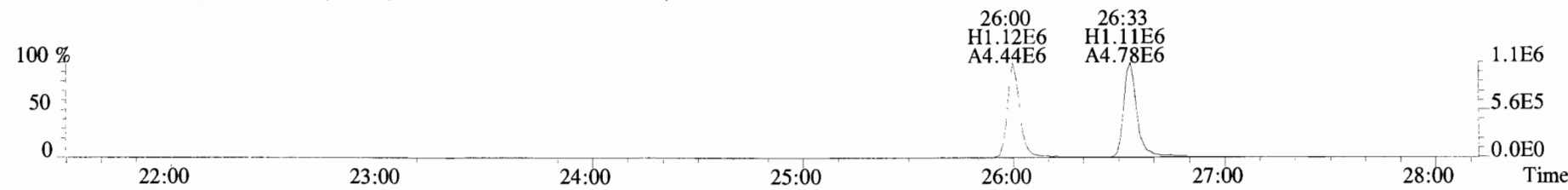
327.8847 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



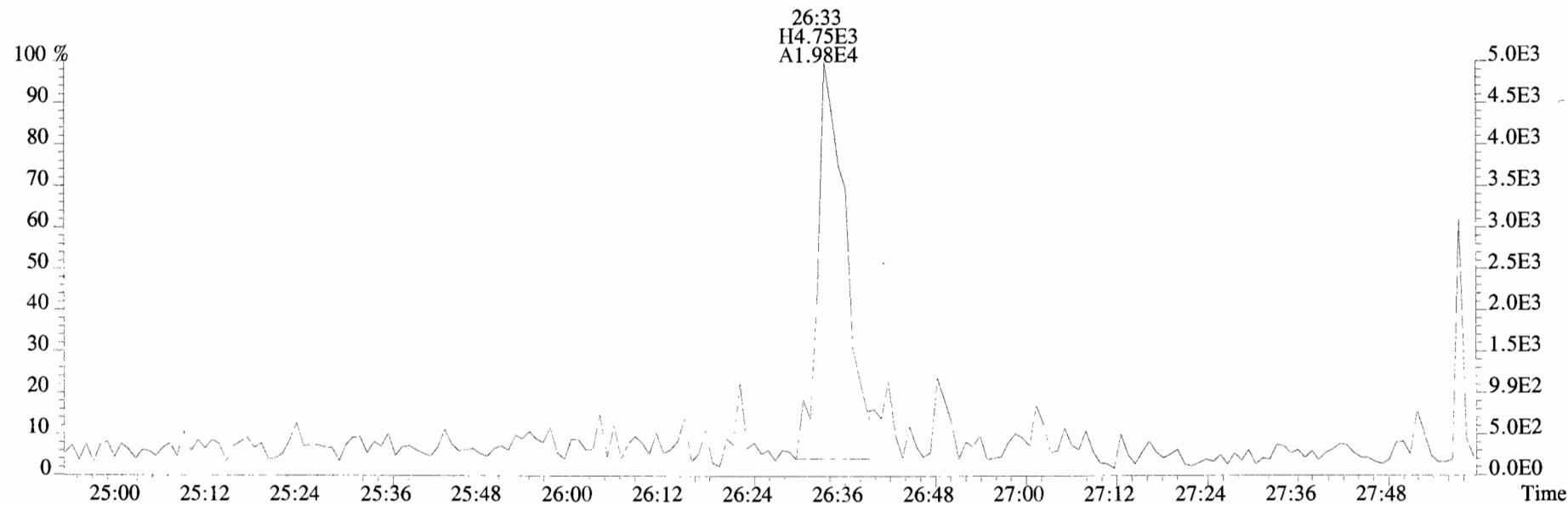
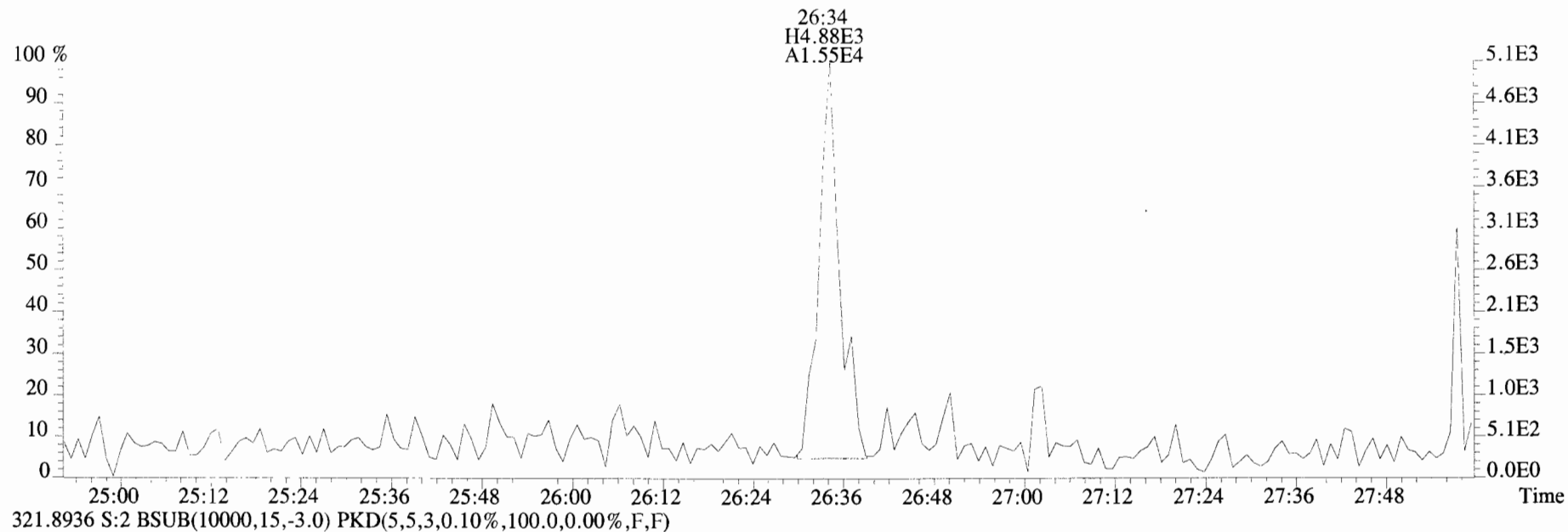
331.9368 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



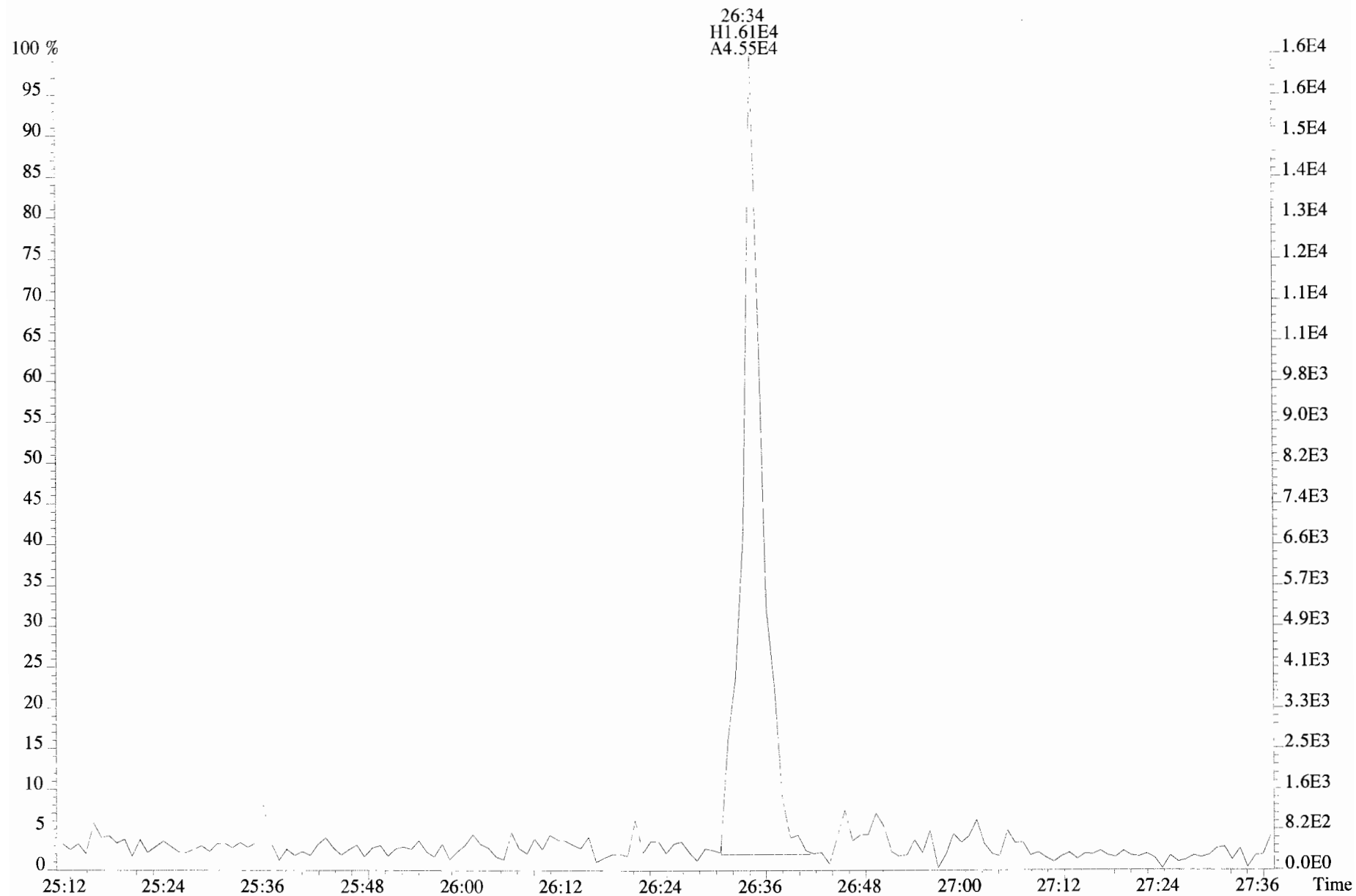
333.9339 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



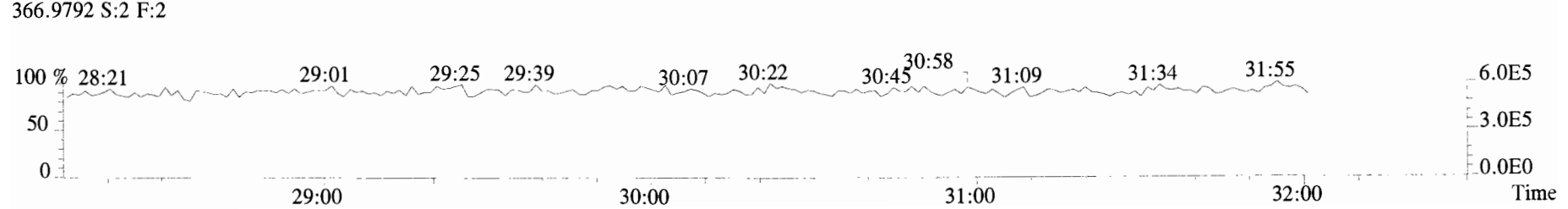
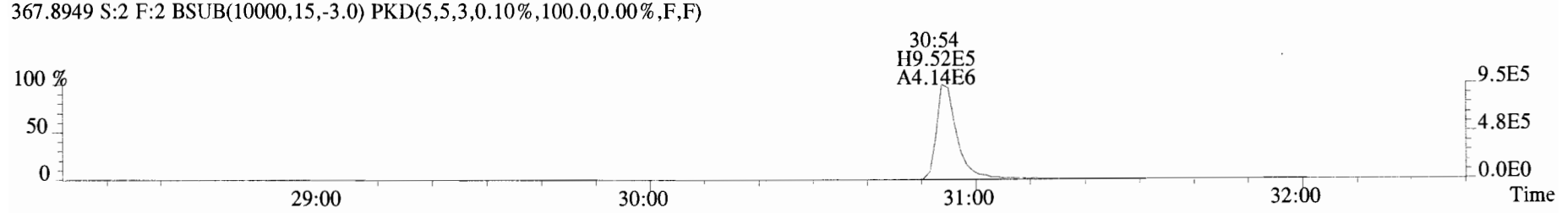
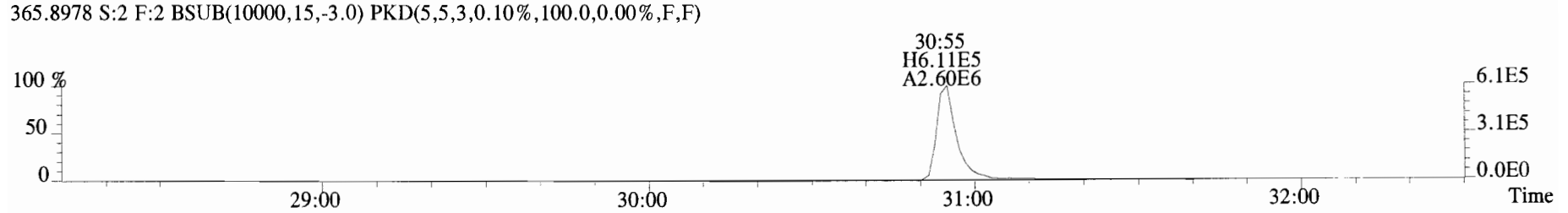
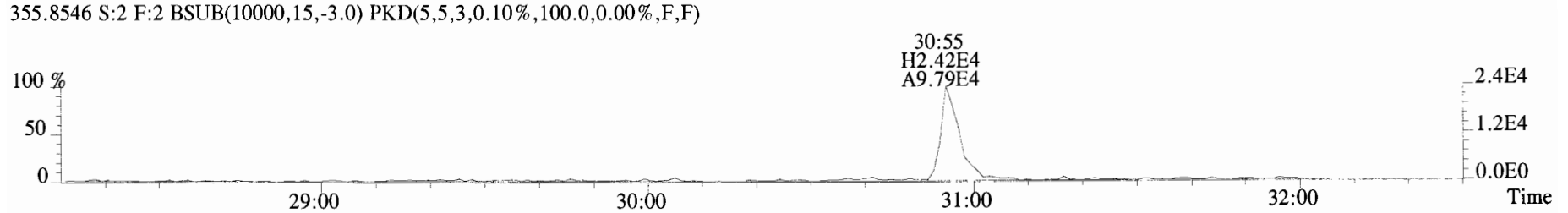
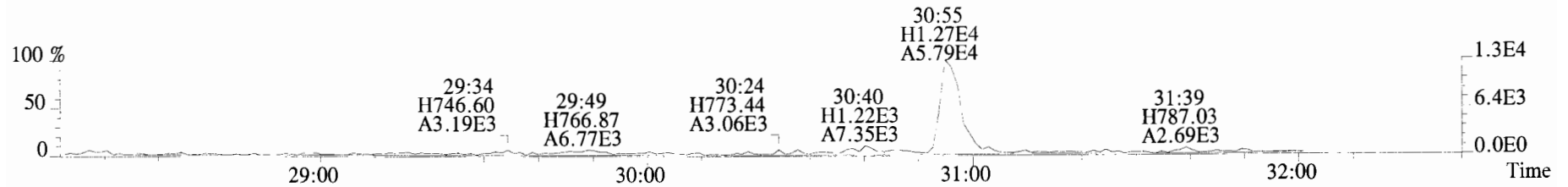
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
319.8965 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



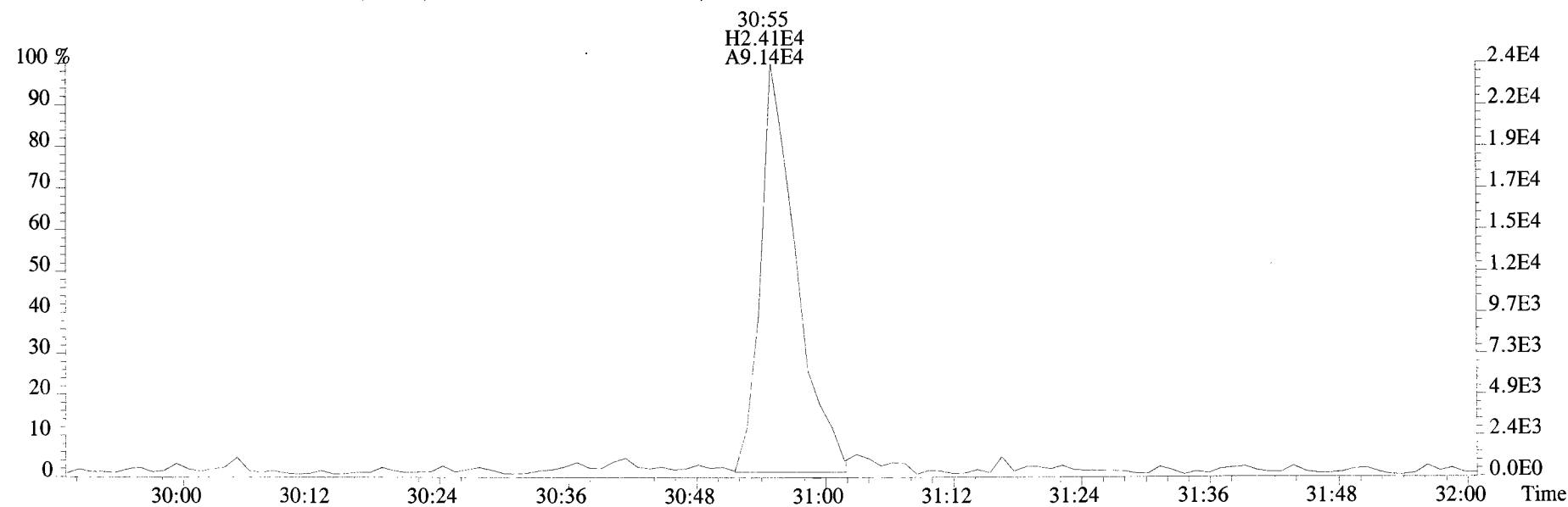
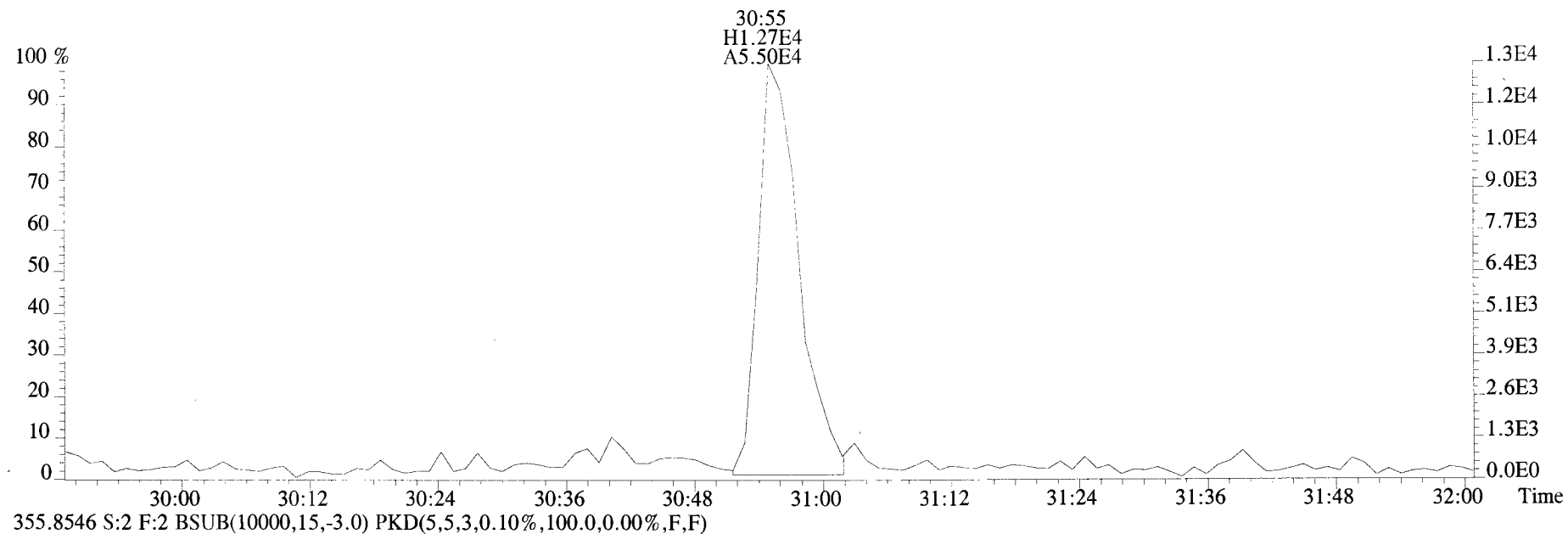
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
327.8847 S:2 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



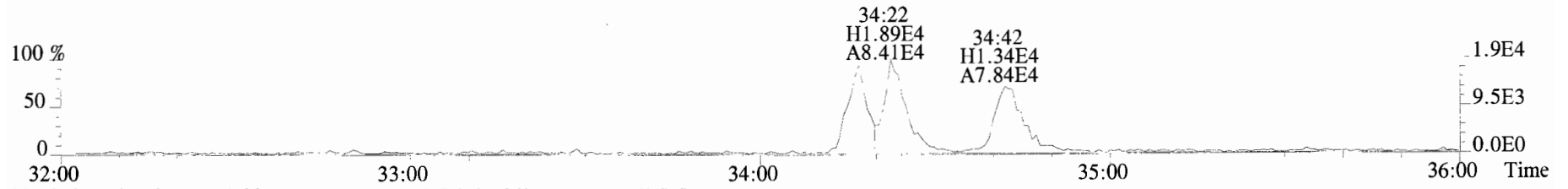
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text: Vista Analytical Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
353.8576 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



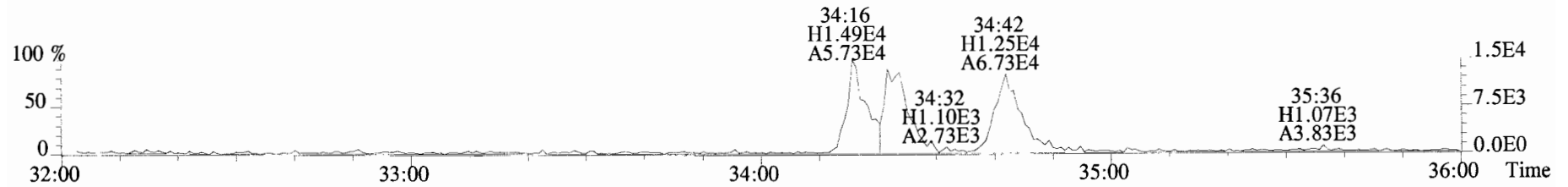
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
353.8576 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



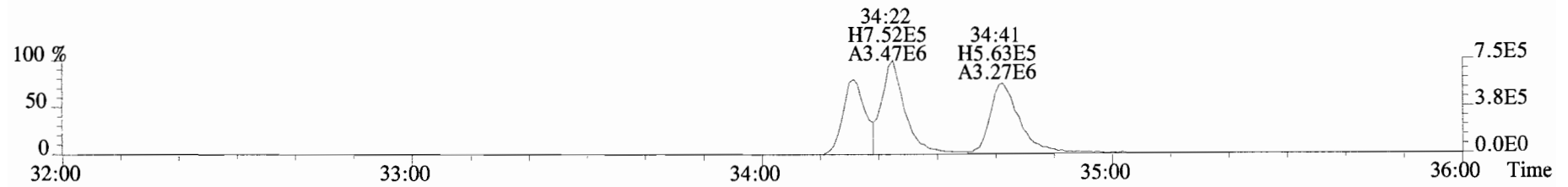
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
389.8156 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



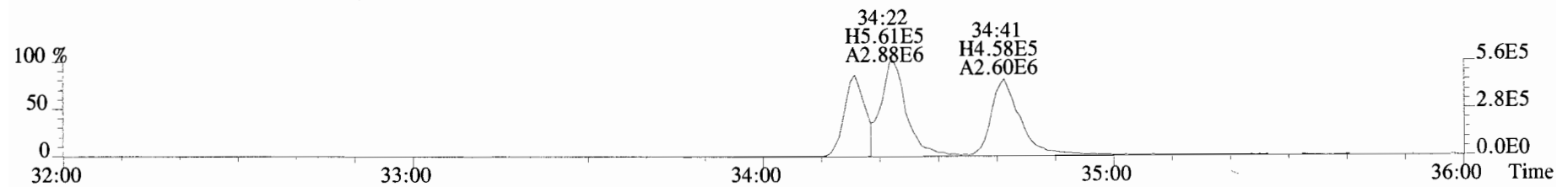
391.8127 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



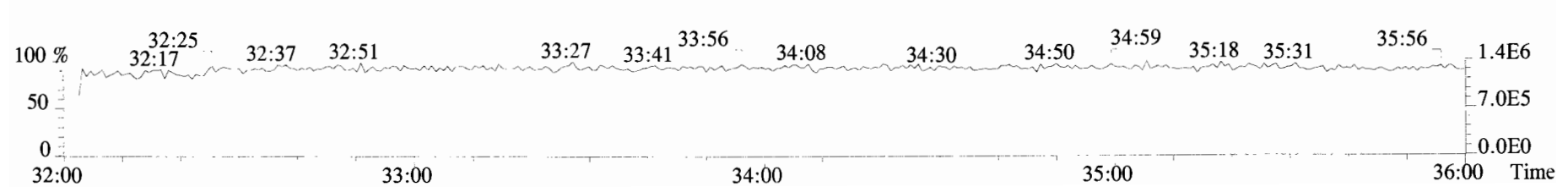
401.8559 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



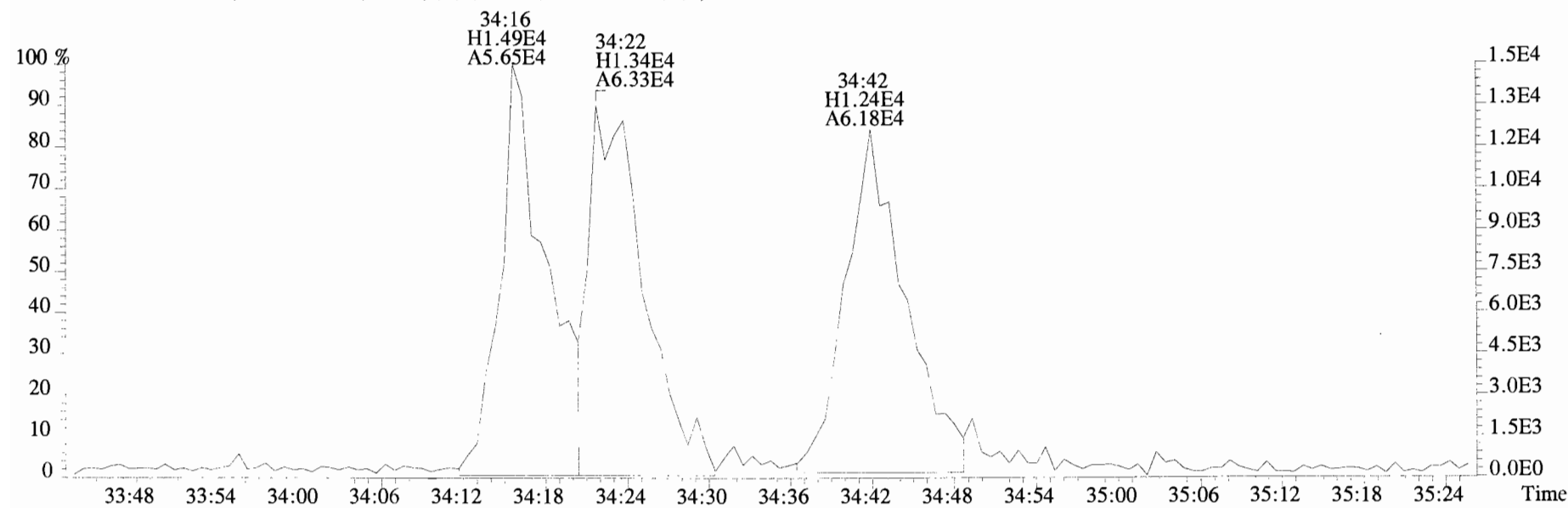
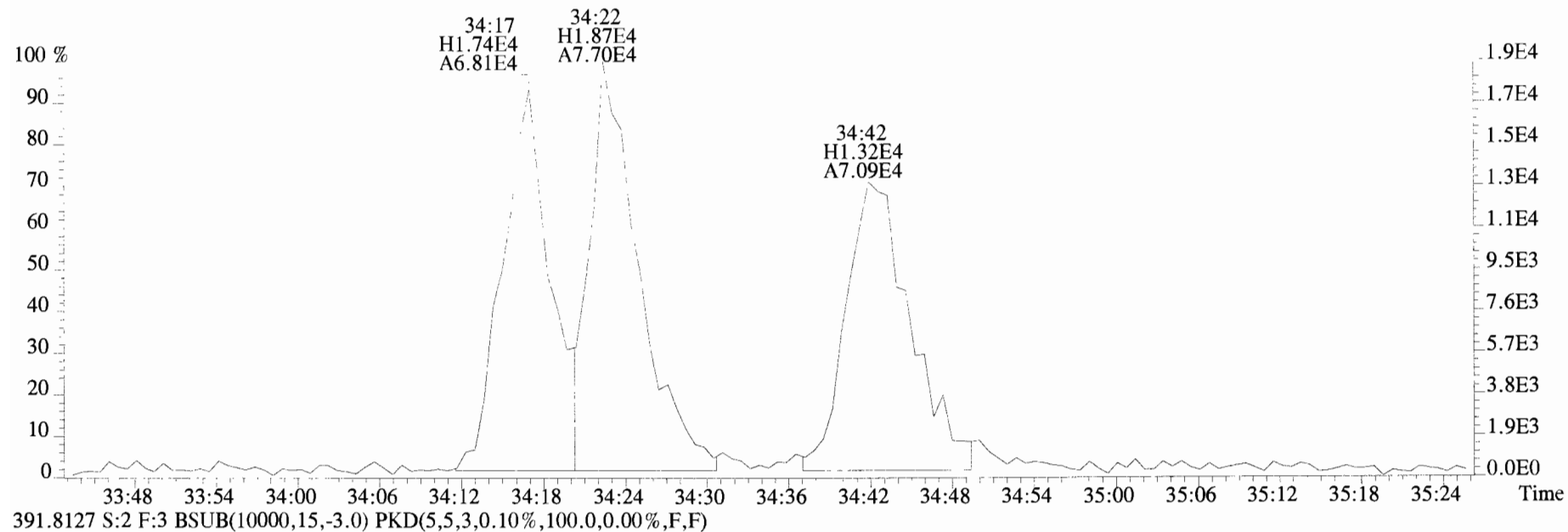
403.8530 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



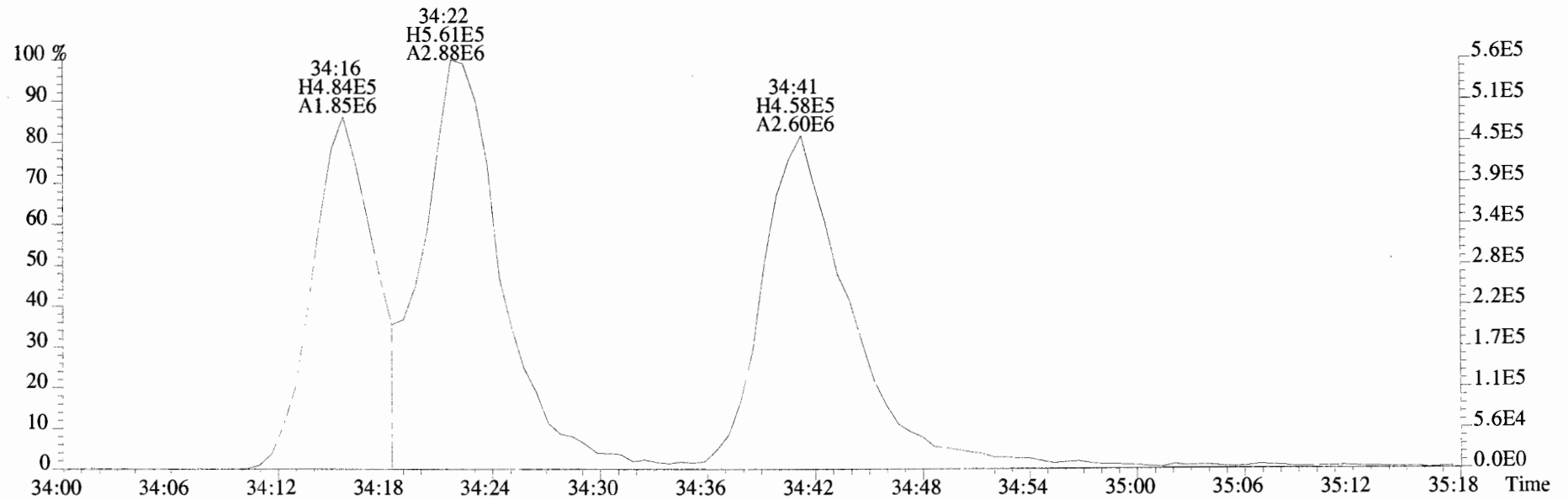
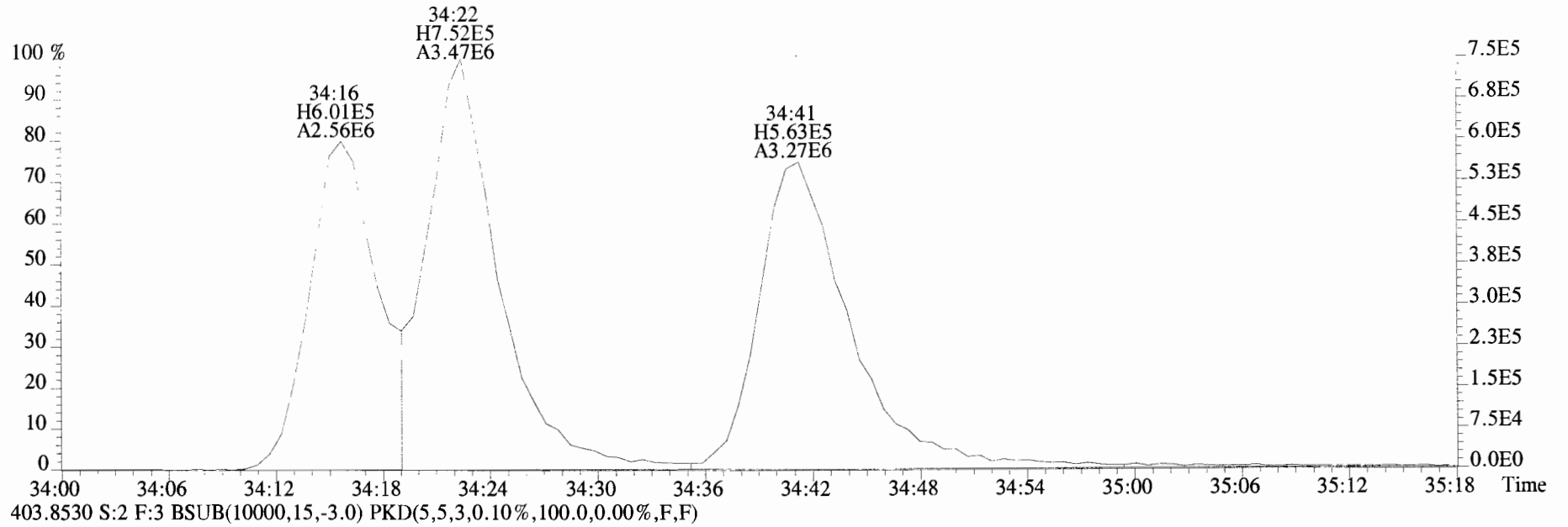
392.9760 S:2 F:3



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)

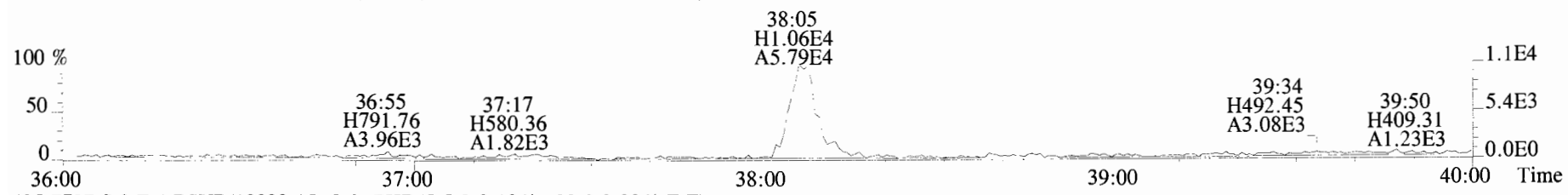


File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
401.8559 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

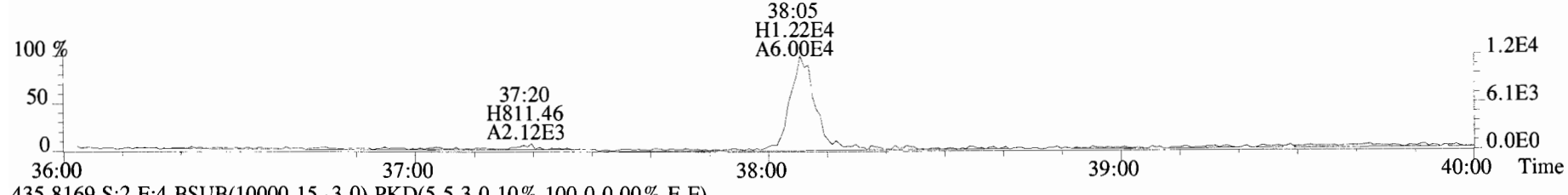




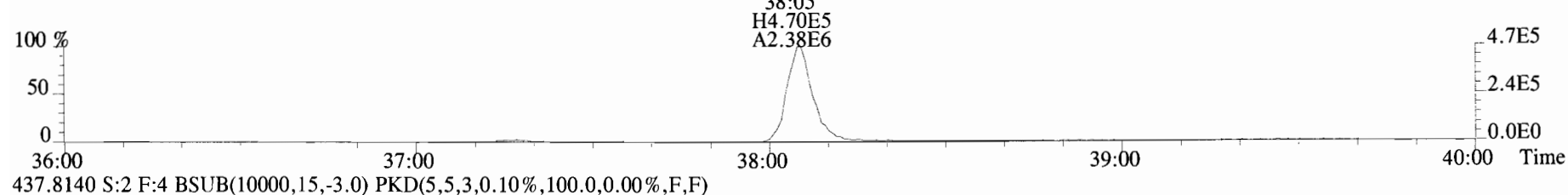
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
423.7767 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



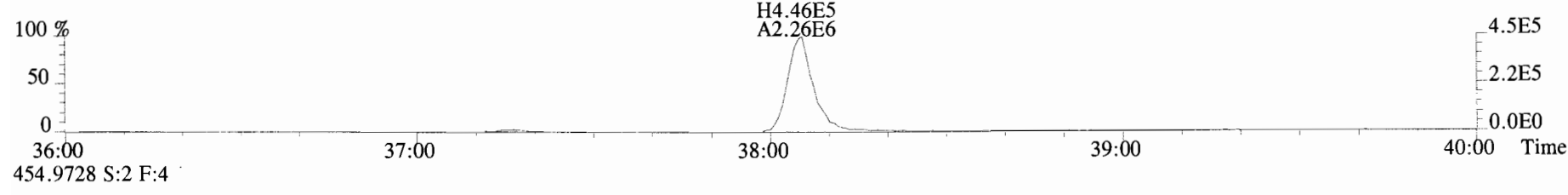
425.7737 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



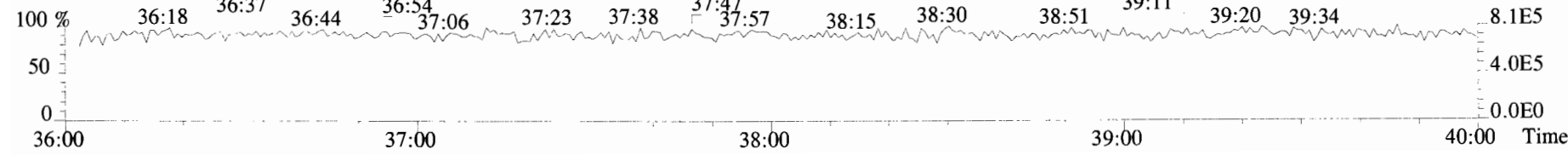
435.8169 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



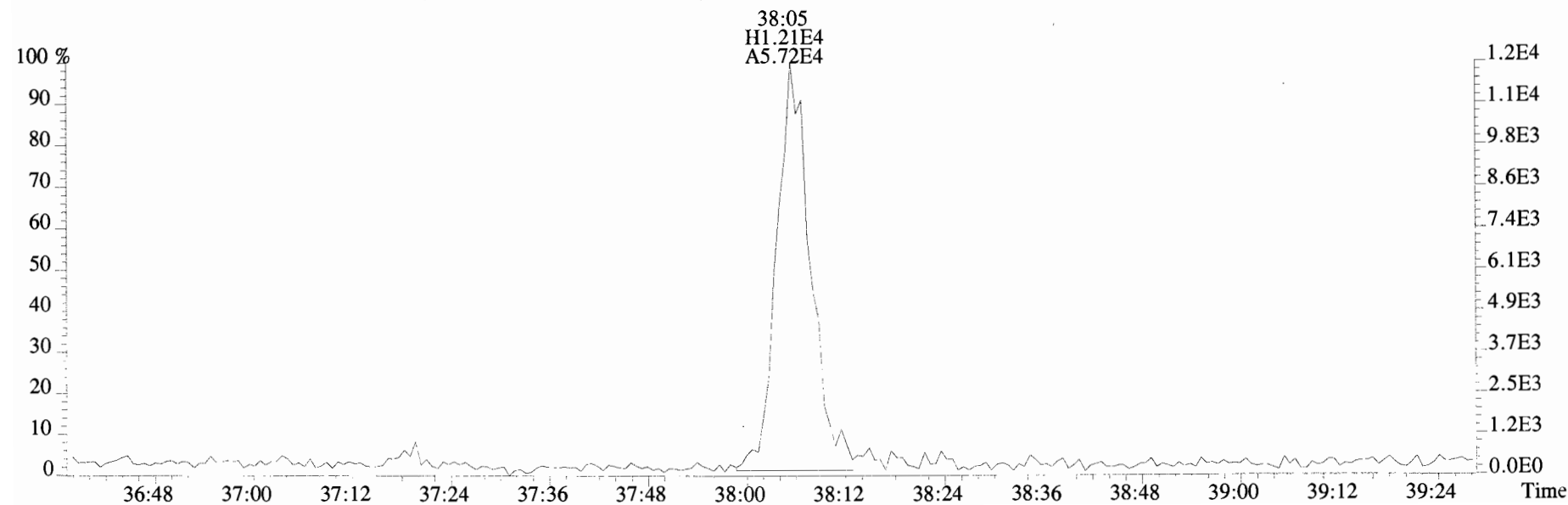
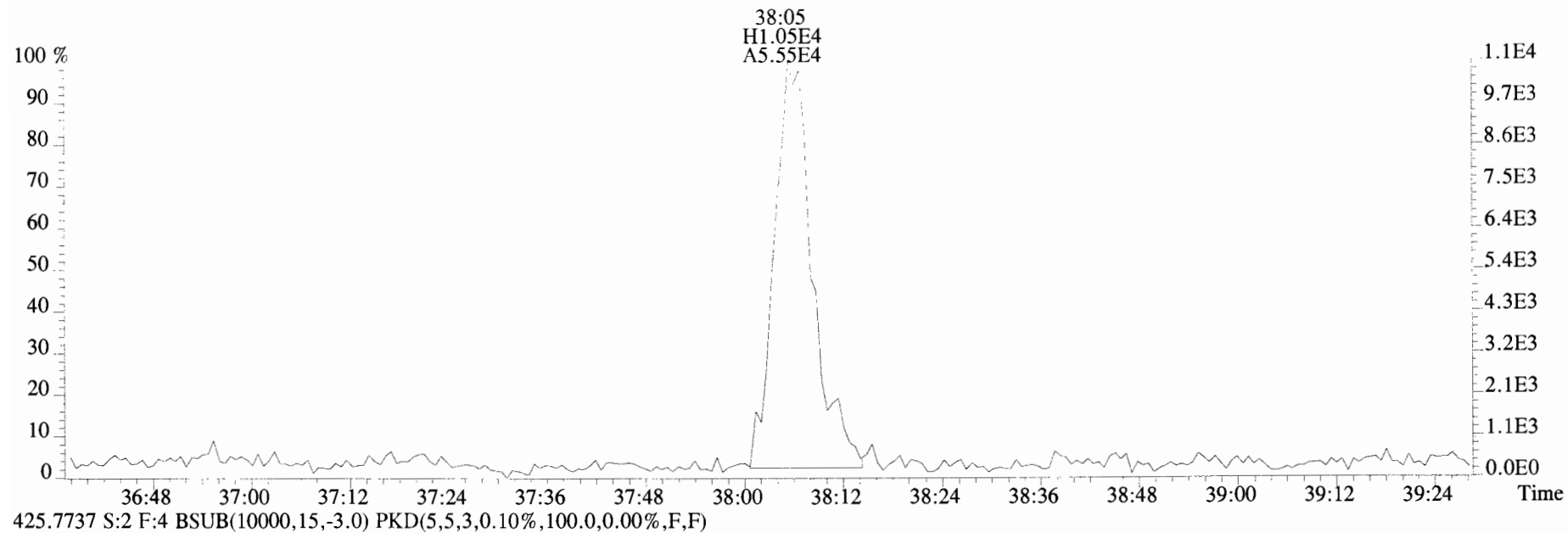
437.8140 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



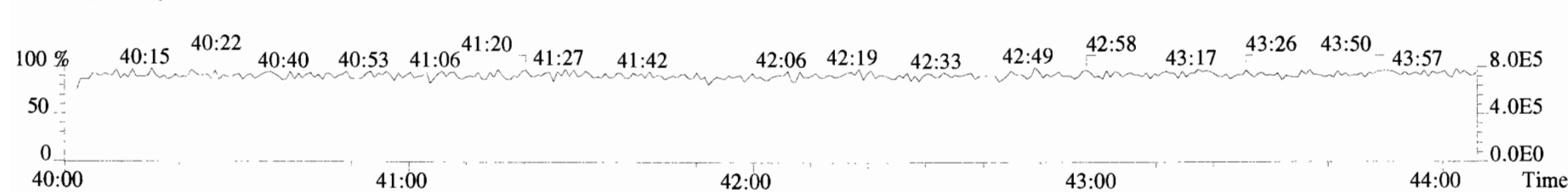
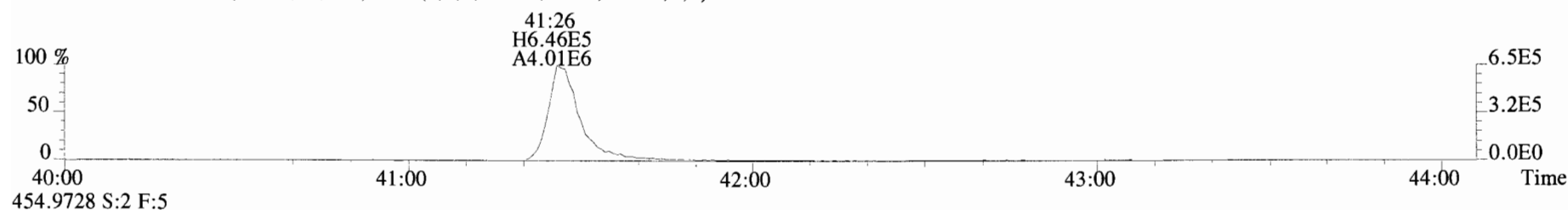
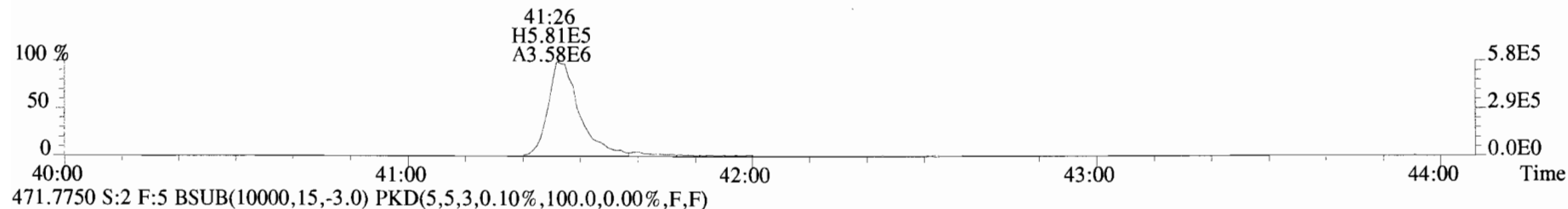
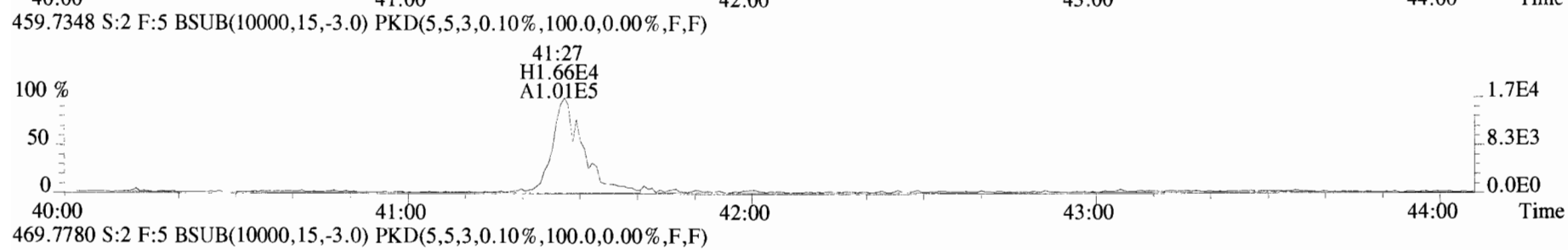
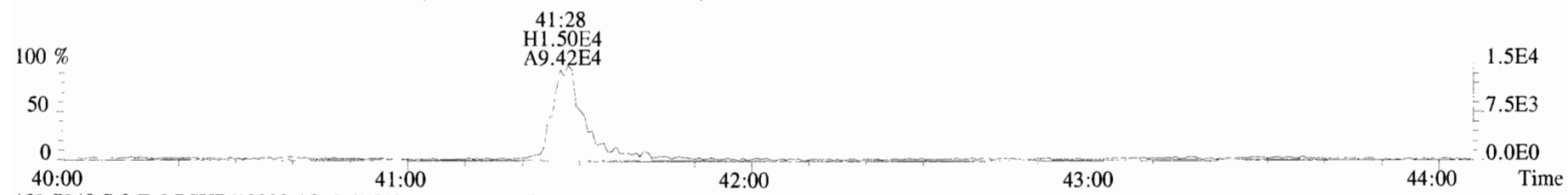
454.9728 S:2 F:4



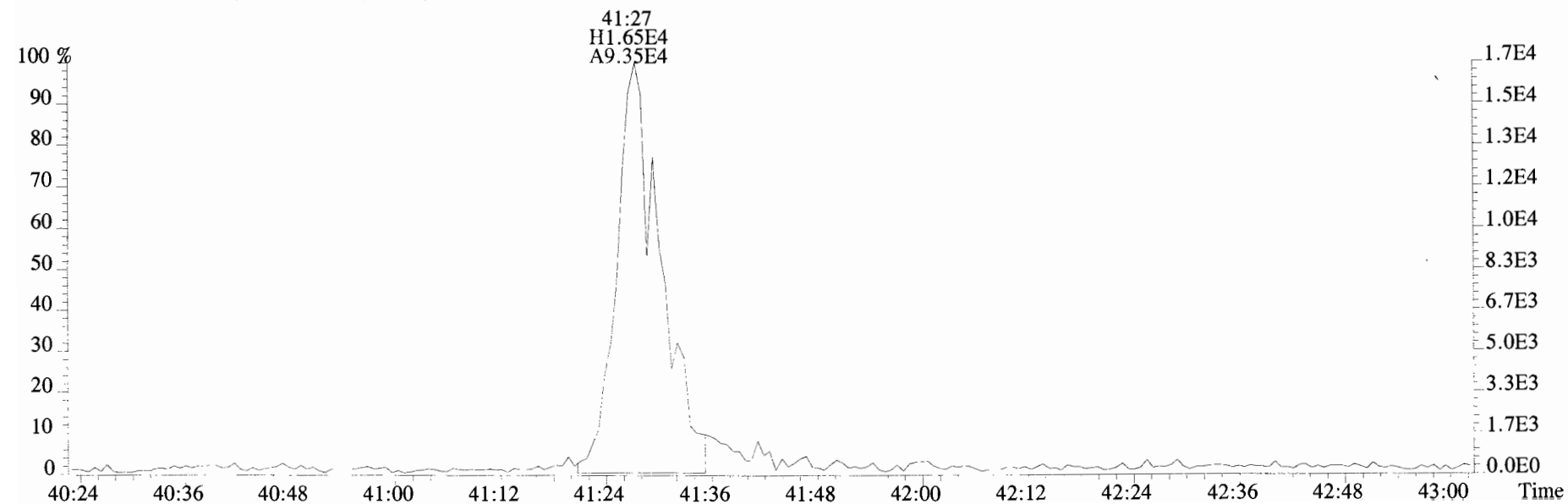
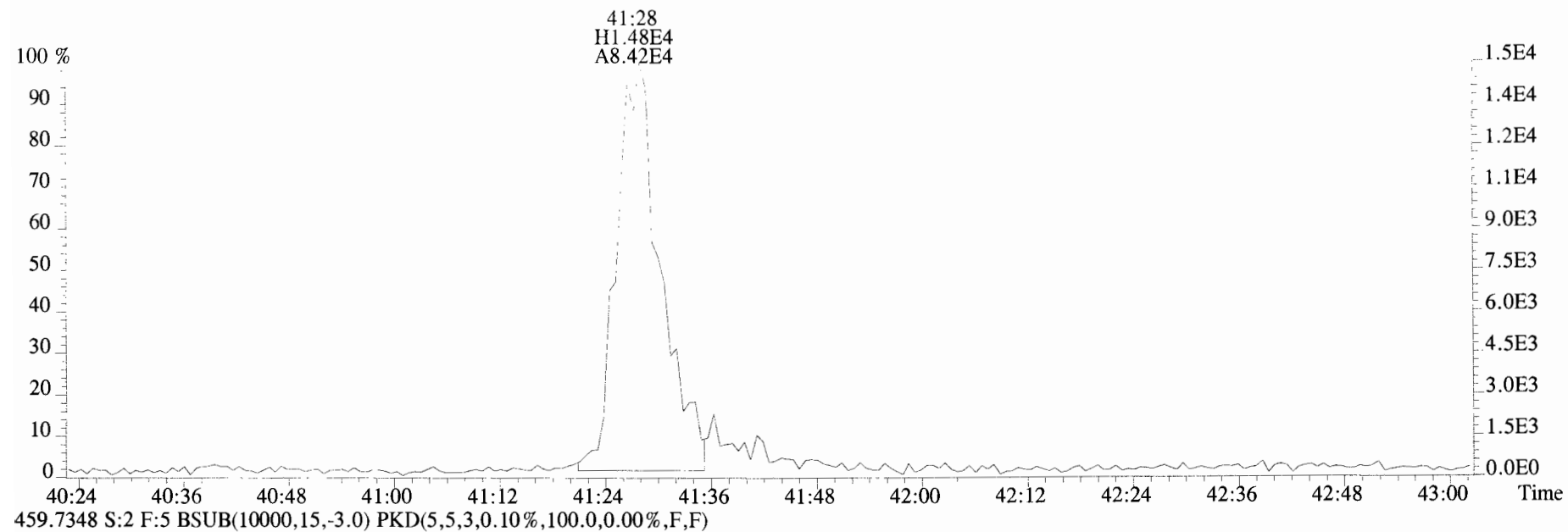
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
423.7767 S:2 F:4 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



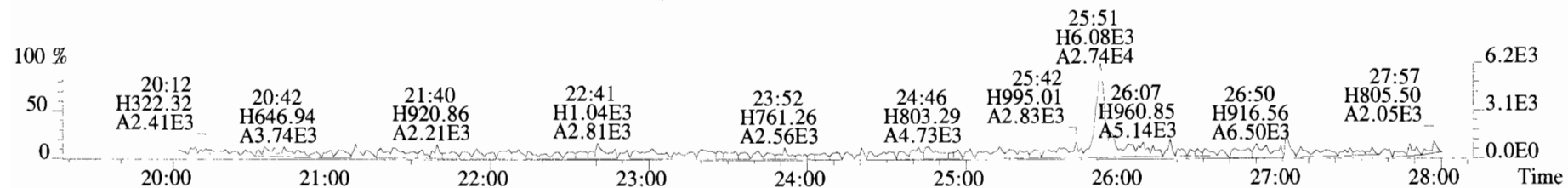
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
457.7377 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



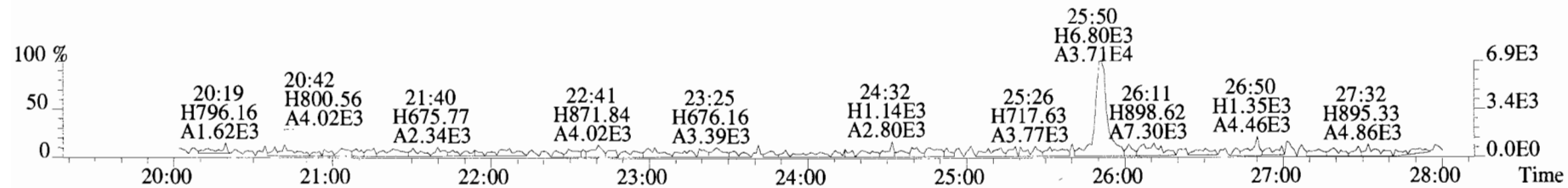
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
457.7377 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



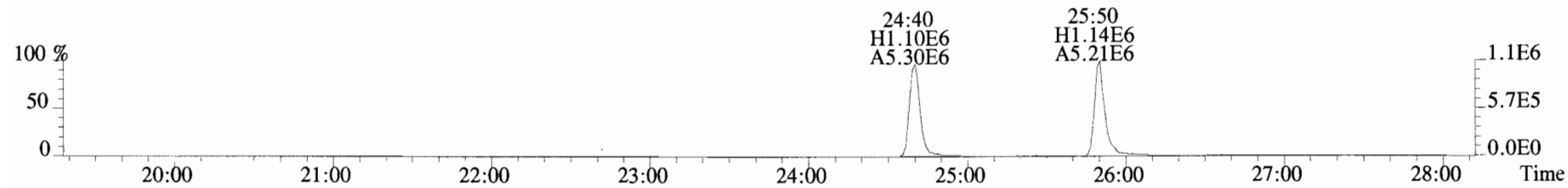
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
 303.9016 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



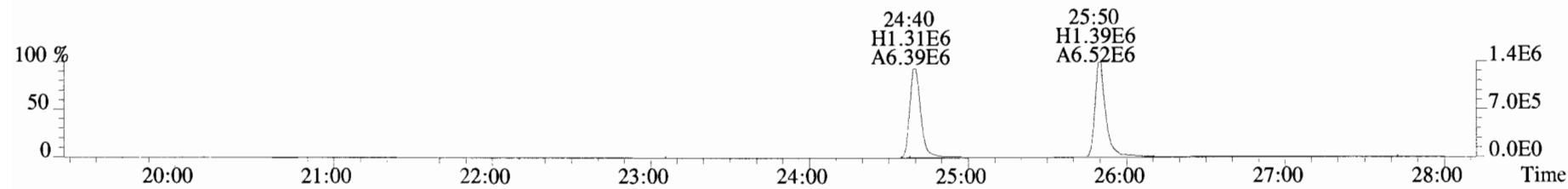
305.8987 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



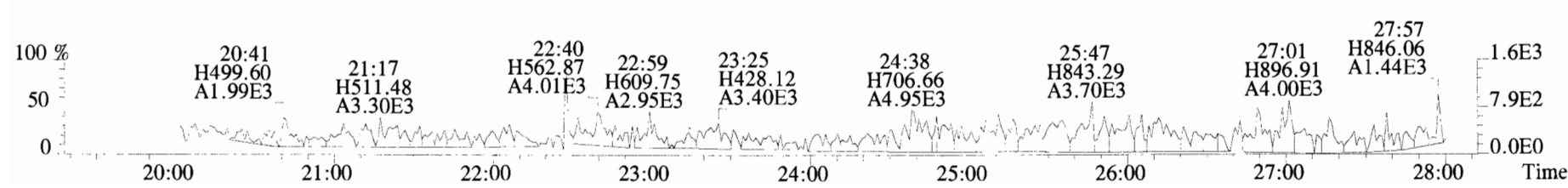
315.9419 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



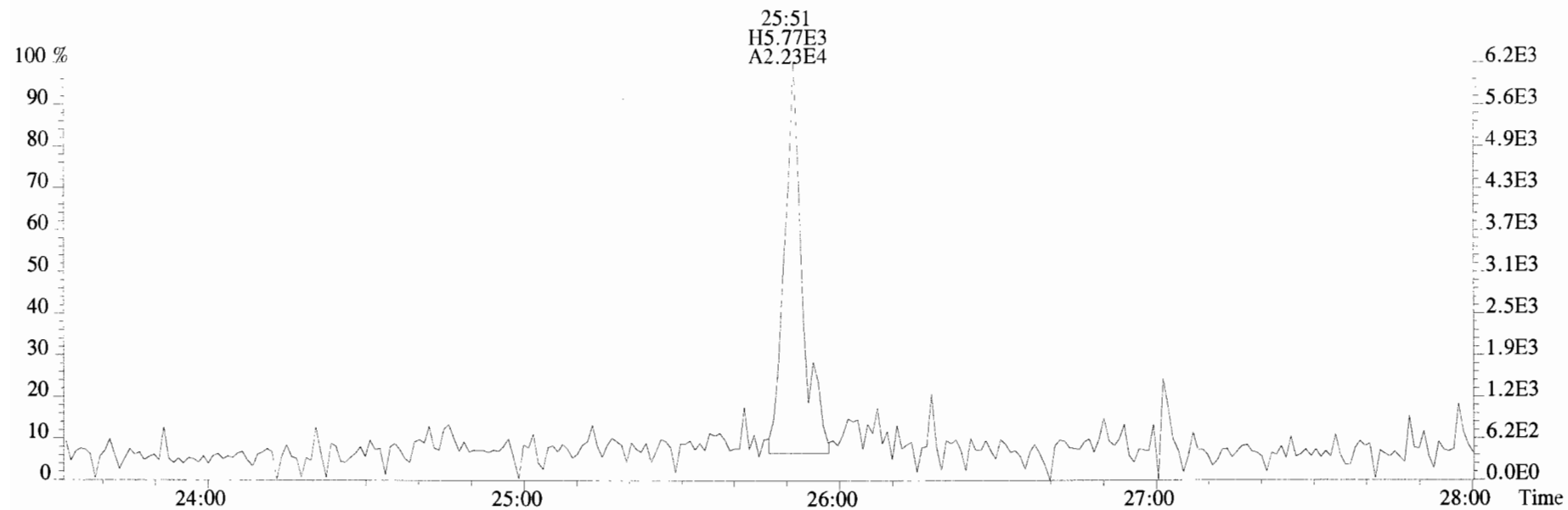
317.9389 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



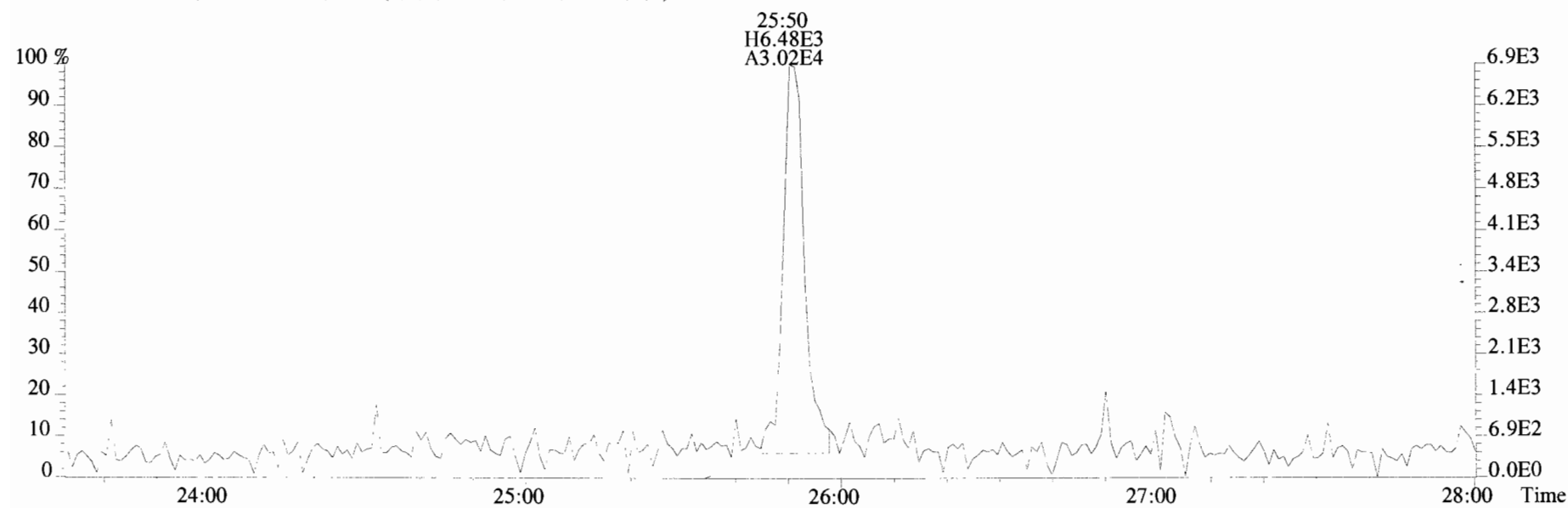
375.8364 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



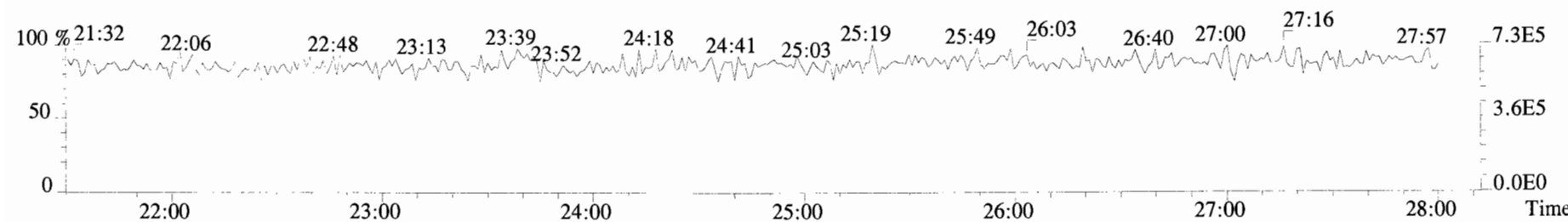
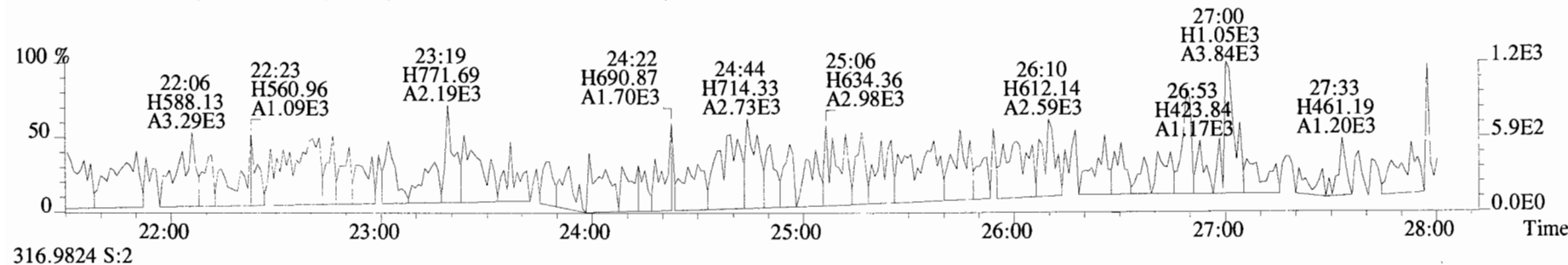
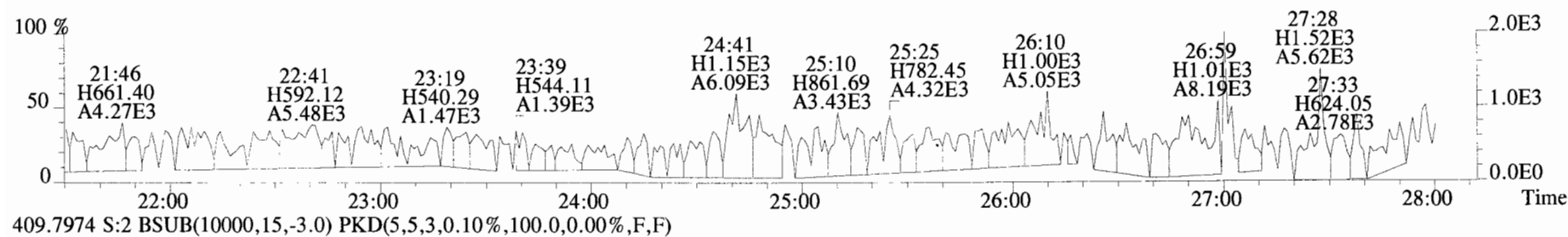
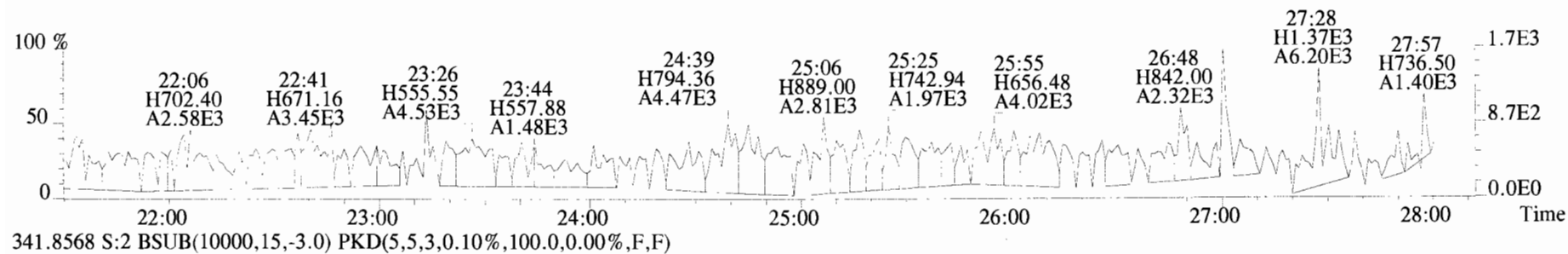
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
303.9016 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



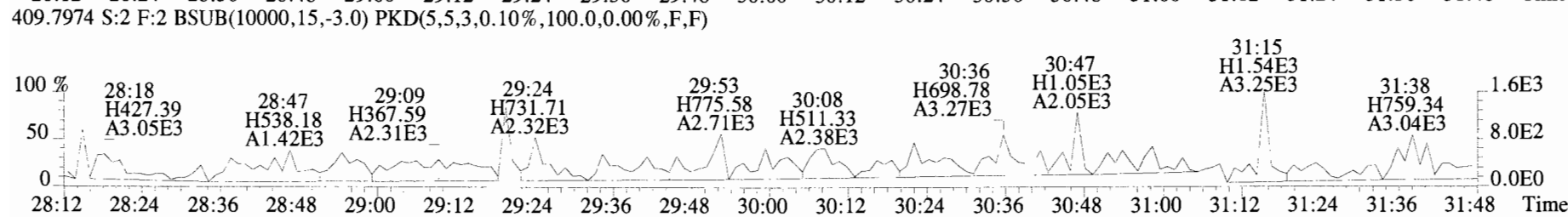
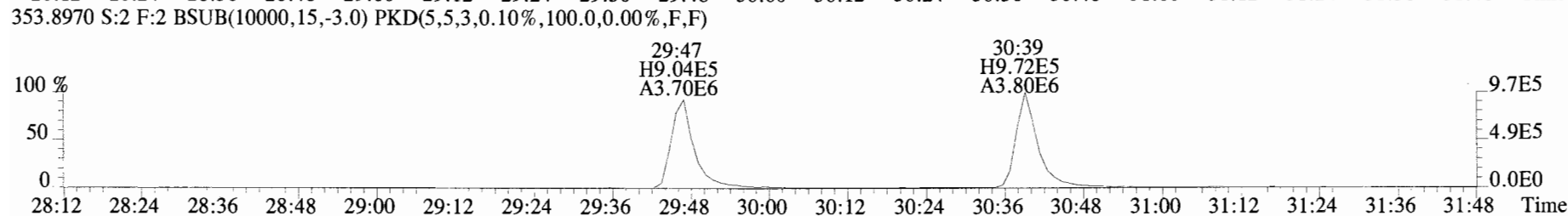
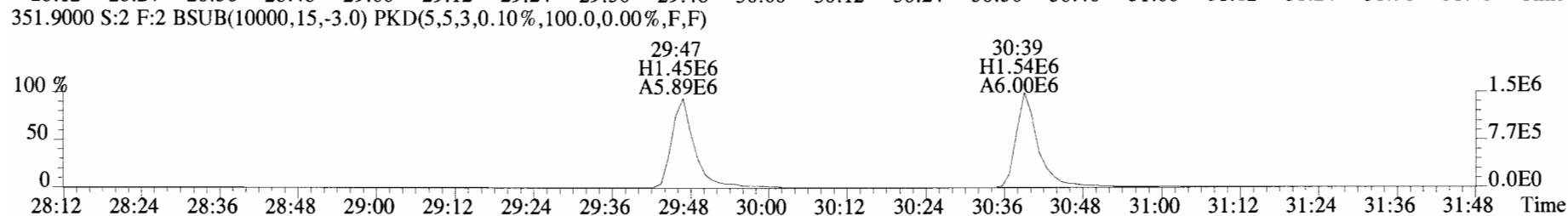
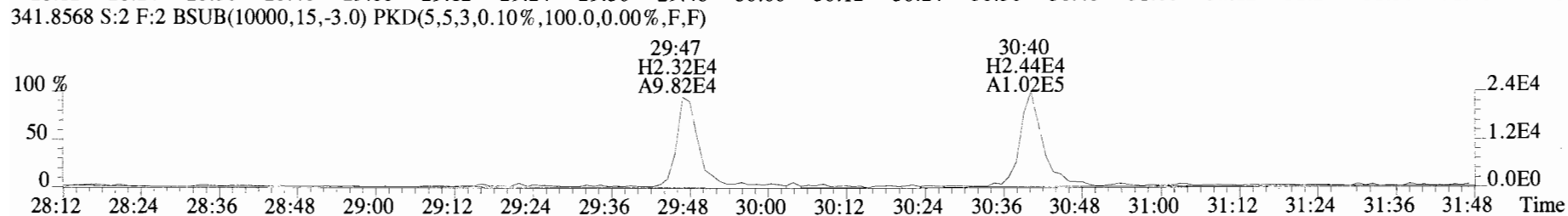
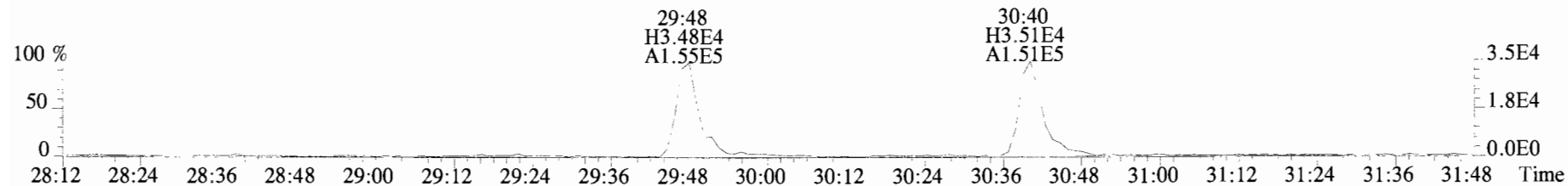
305.8987 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

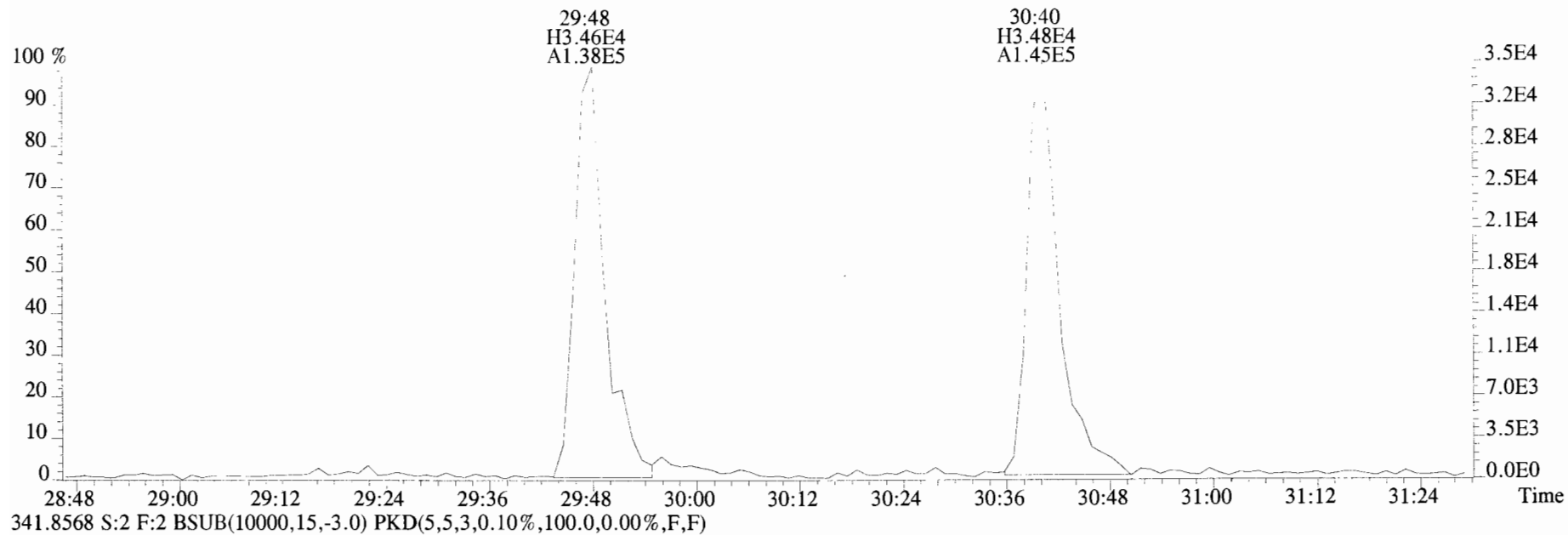


File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
339.8597 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

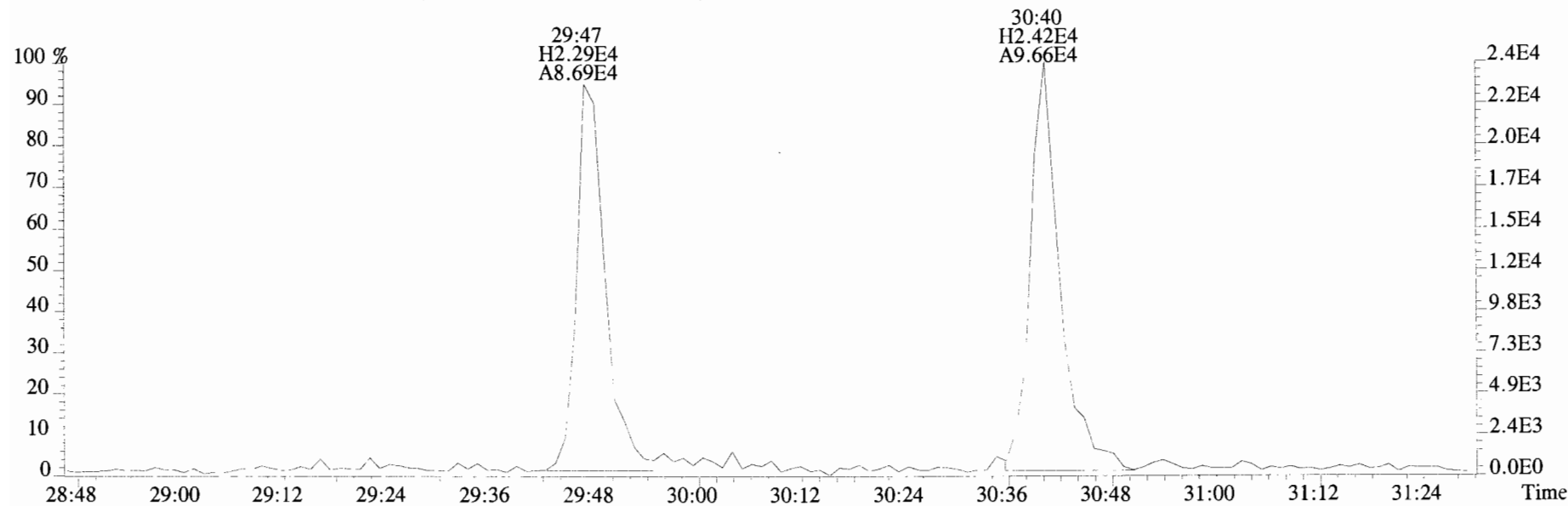




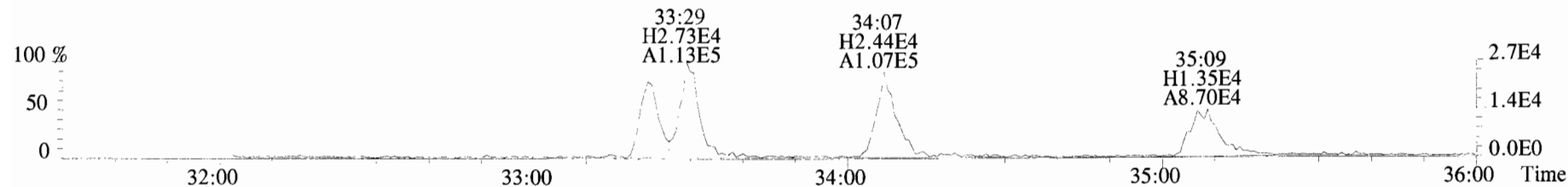
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
339.8597 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



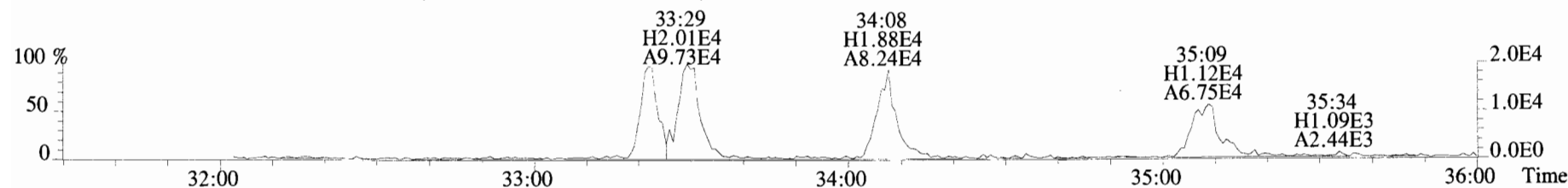
341.8568 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



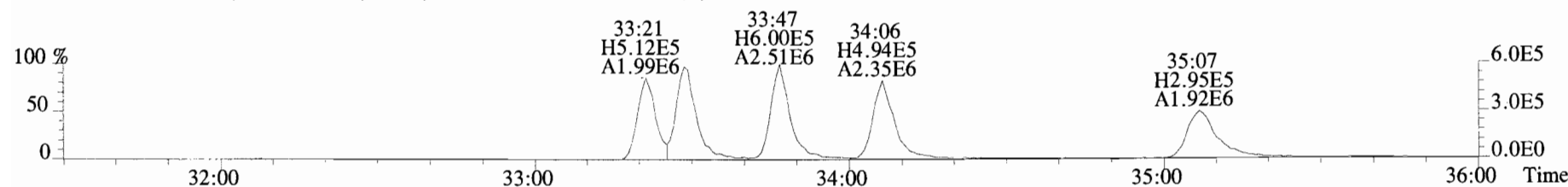
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
 373.8207 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



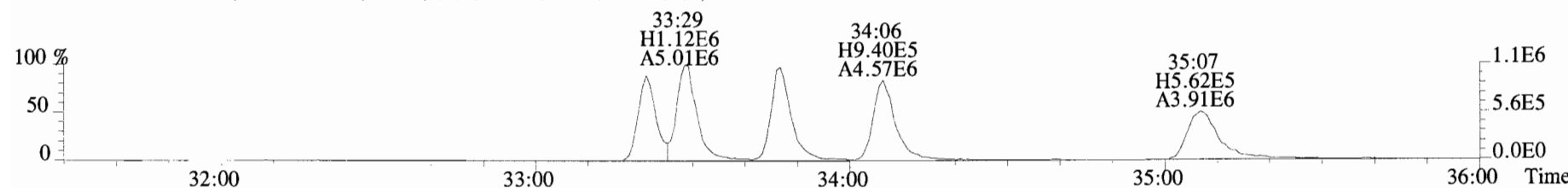
375.8178 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



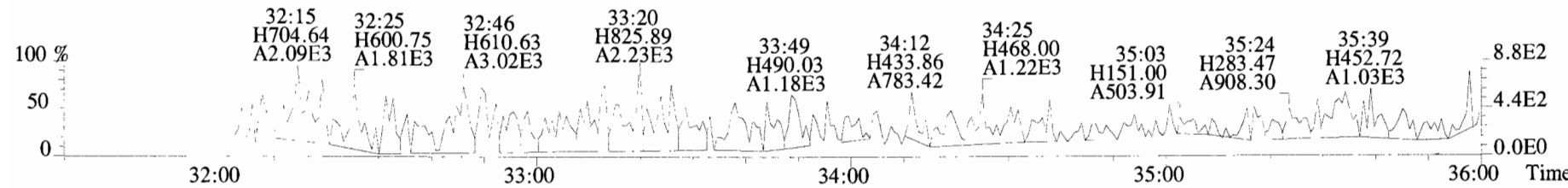
383.8639 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



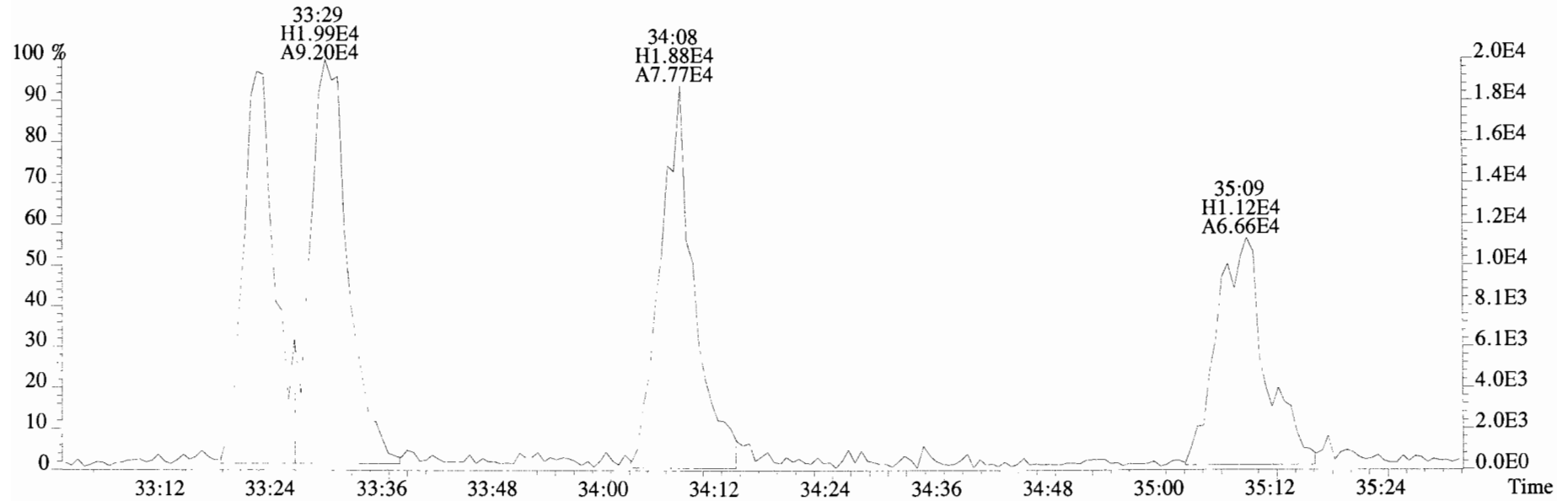
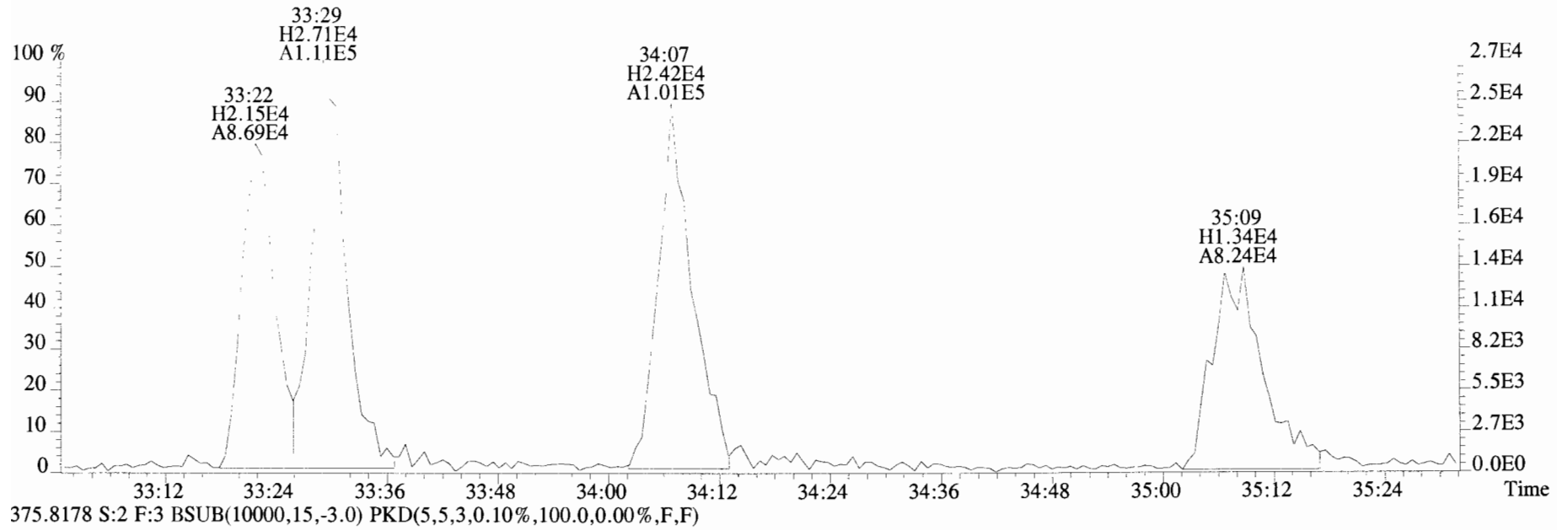
385.8610 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



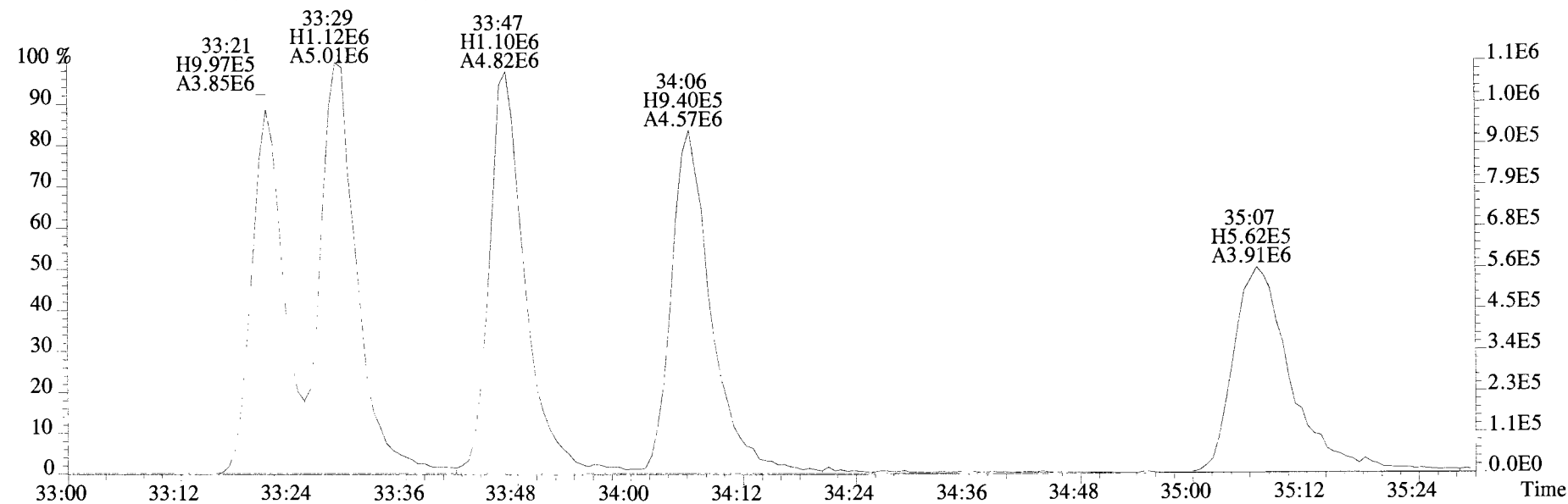
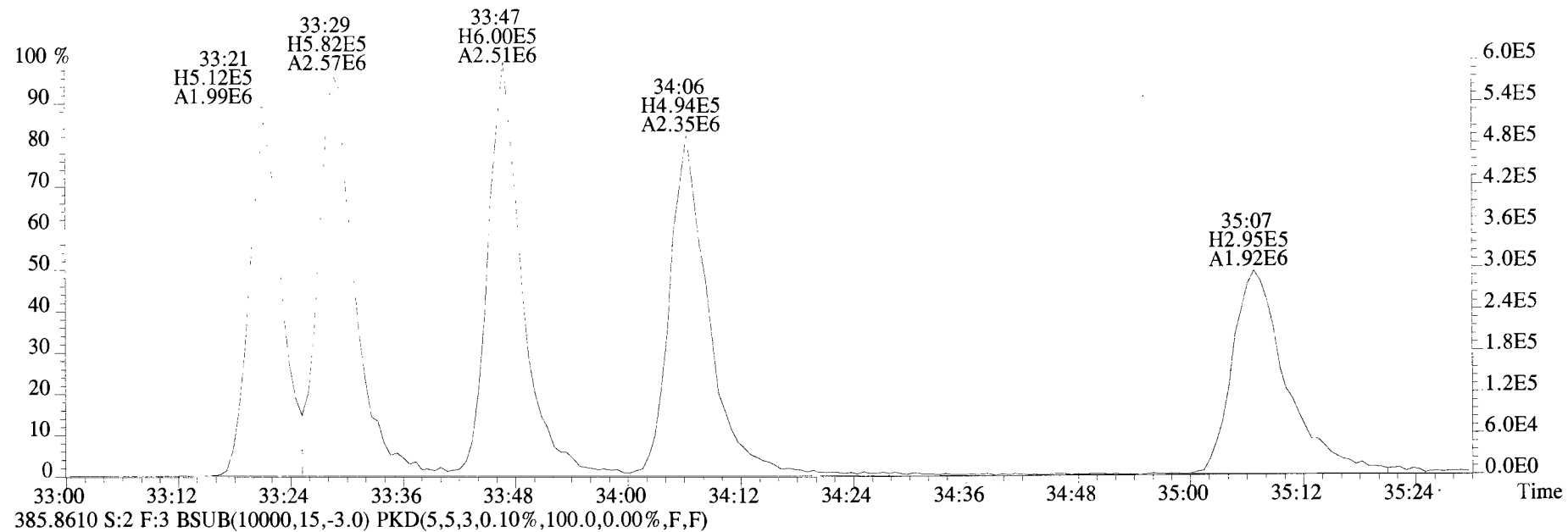
445.7555 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



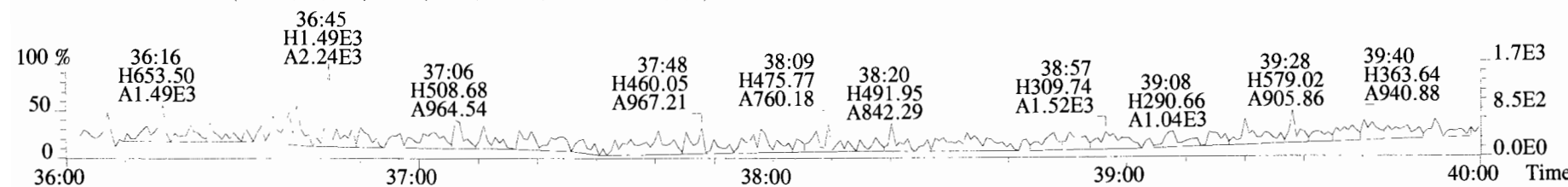
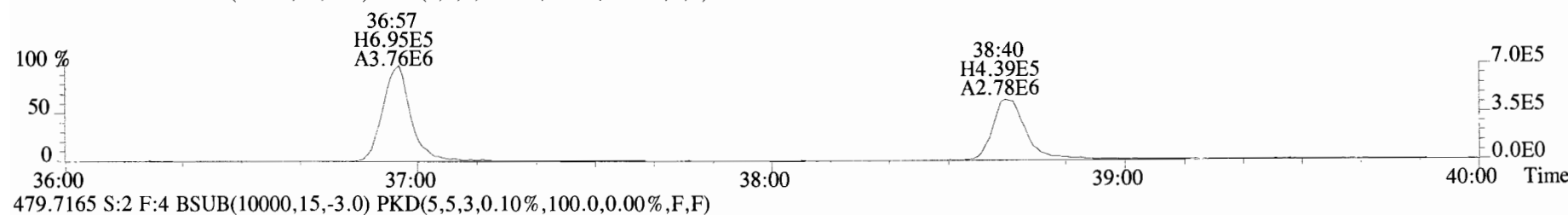
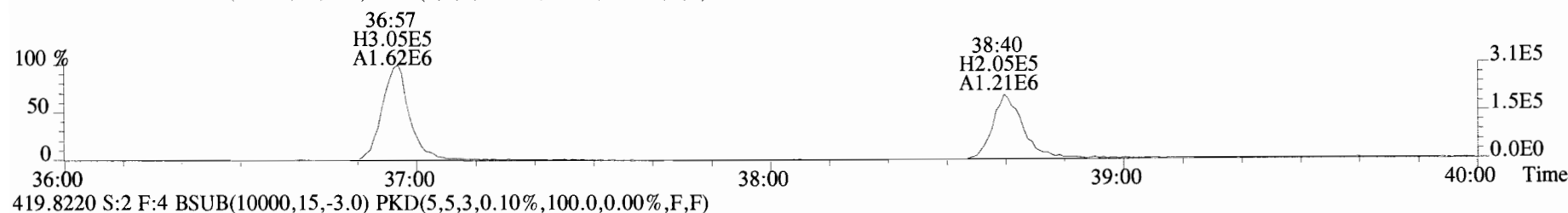
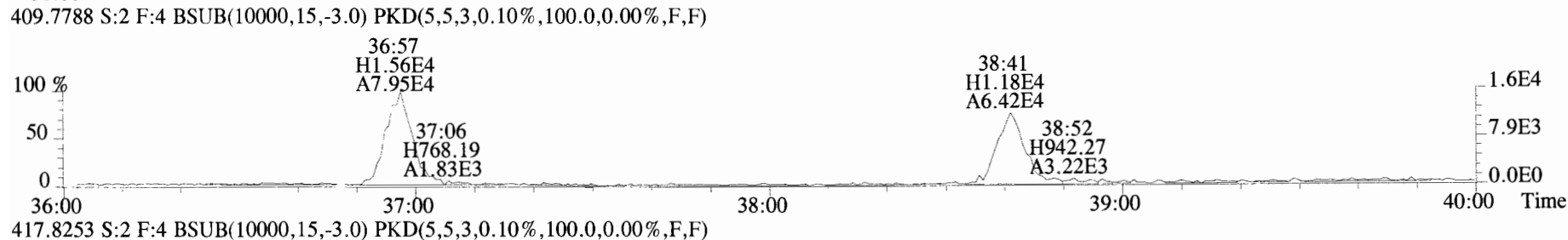
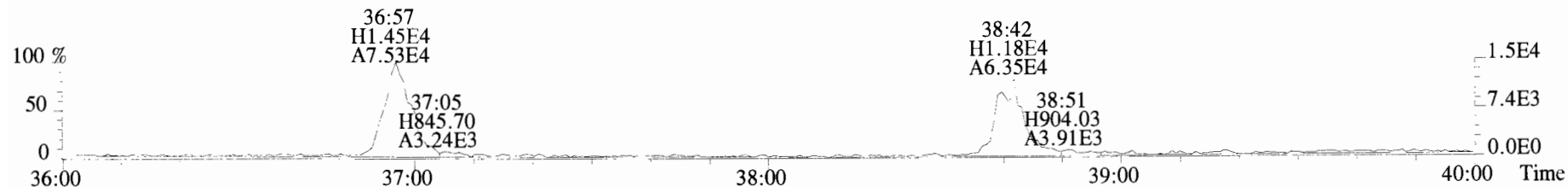
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
373.8207 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



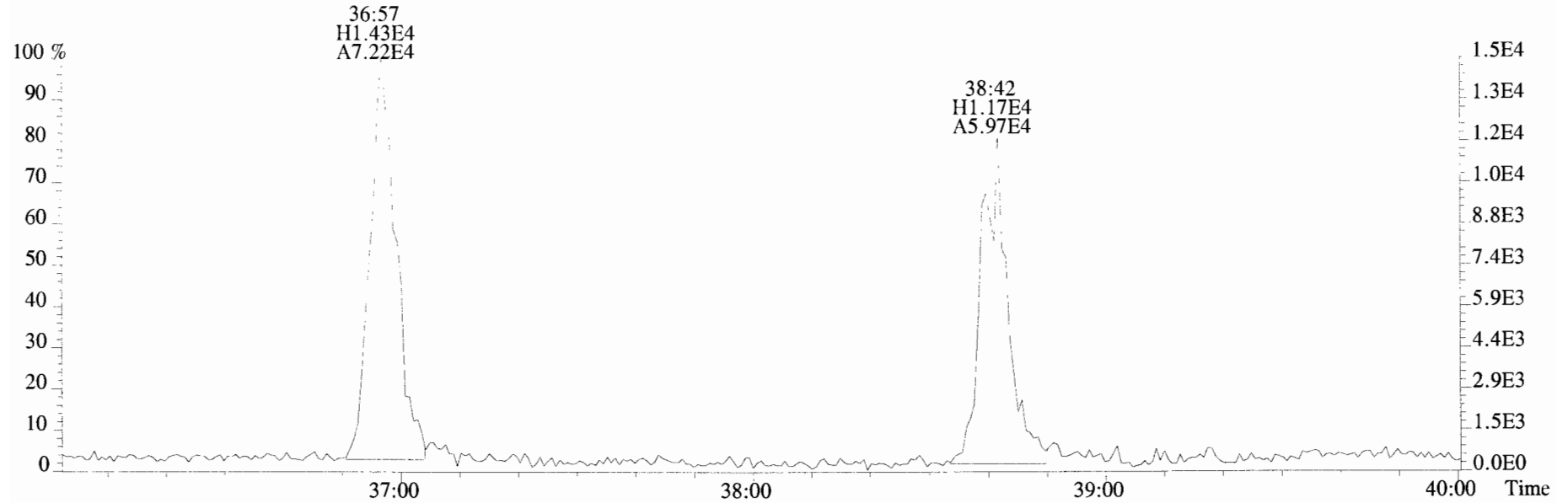
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
383.8639 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



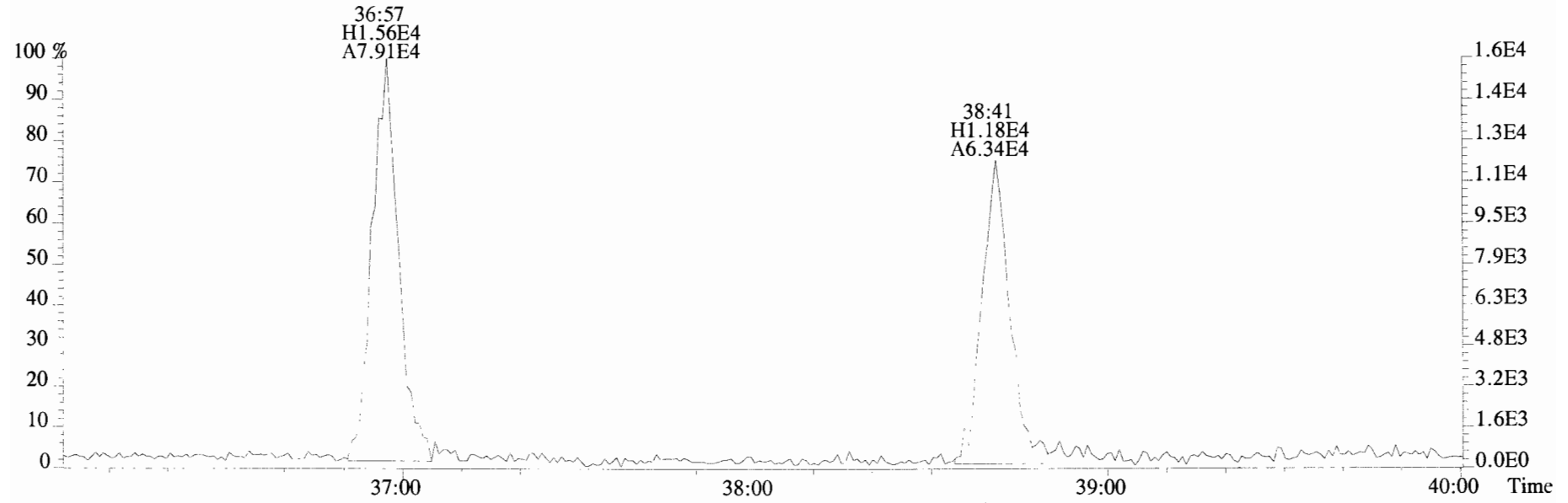
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#2 File Text: Vista Analytical Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
 407.7818 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



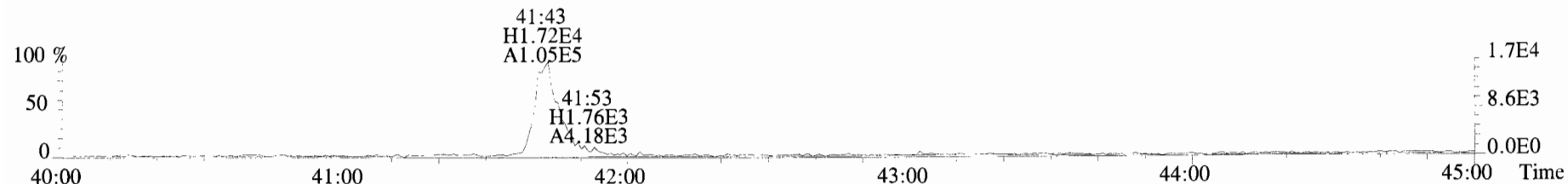
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#2 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
407.7818 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



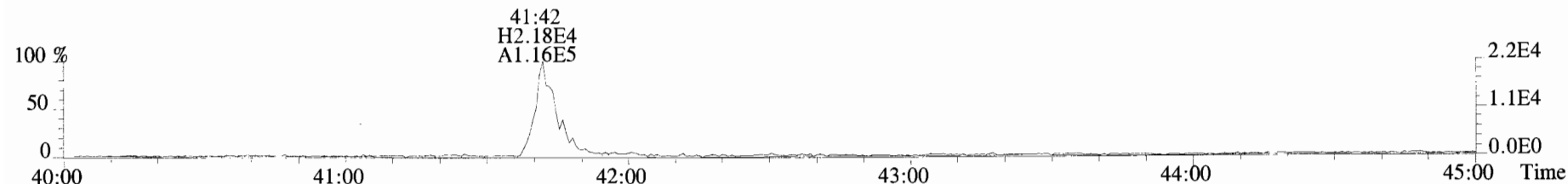
409.7788 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



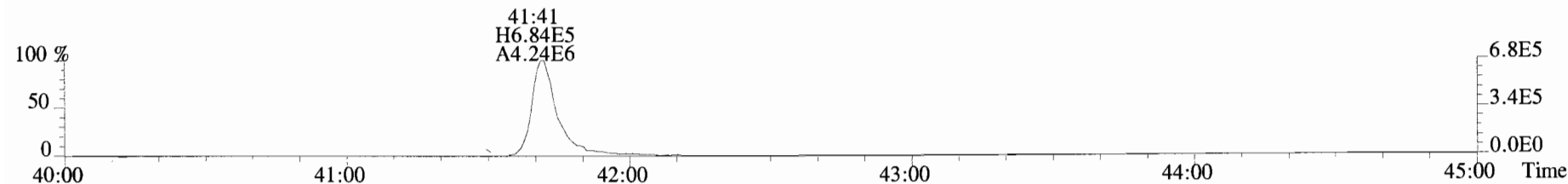
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD\_DB5  
 441.7428 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



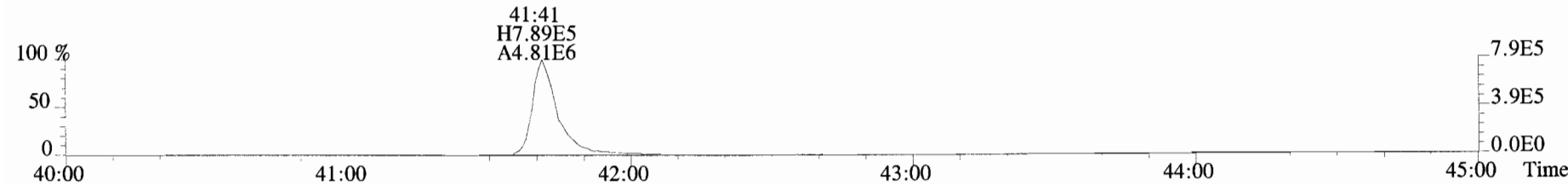
443.7398 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



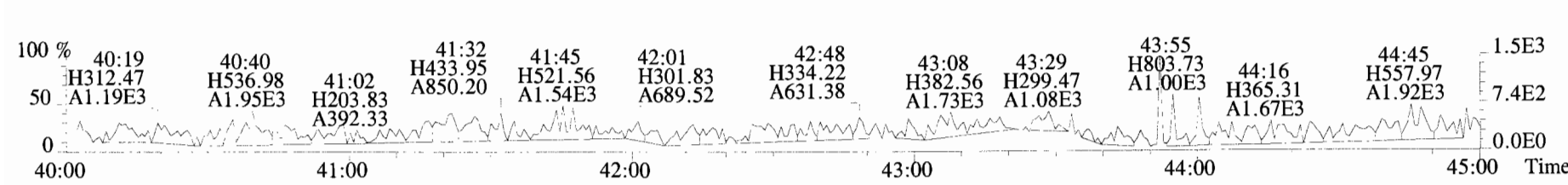
453.7831 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



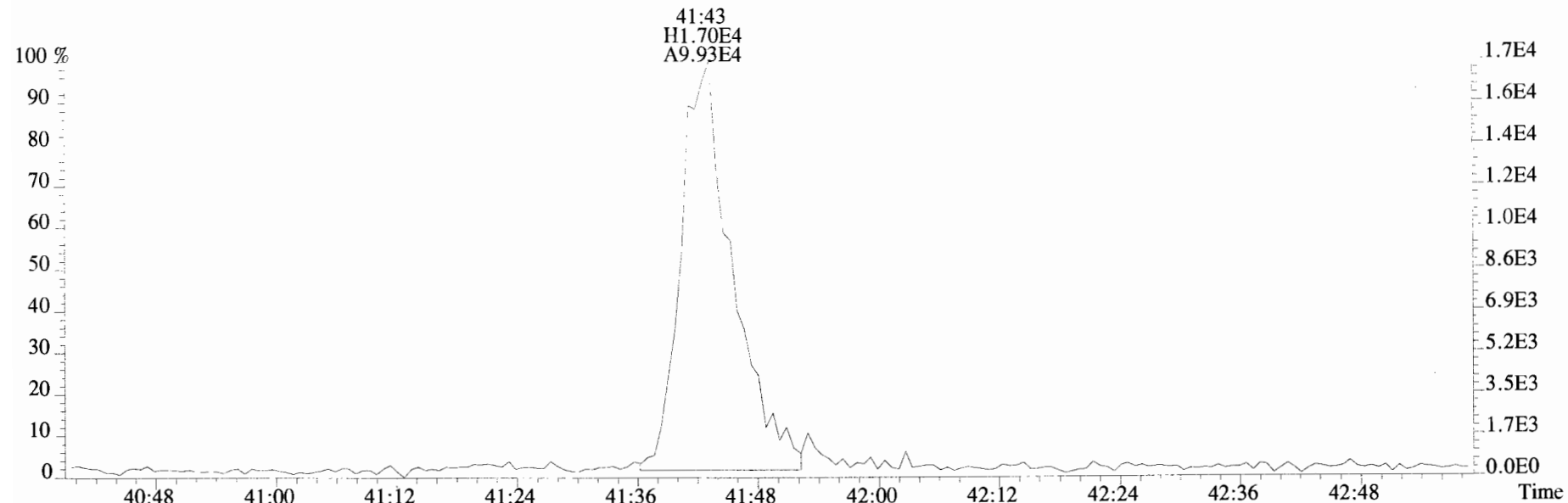
455.7801 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



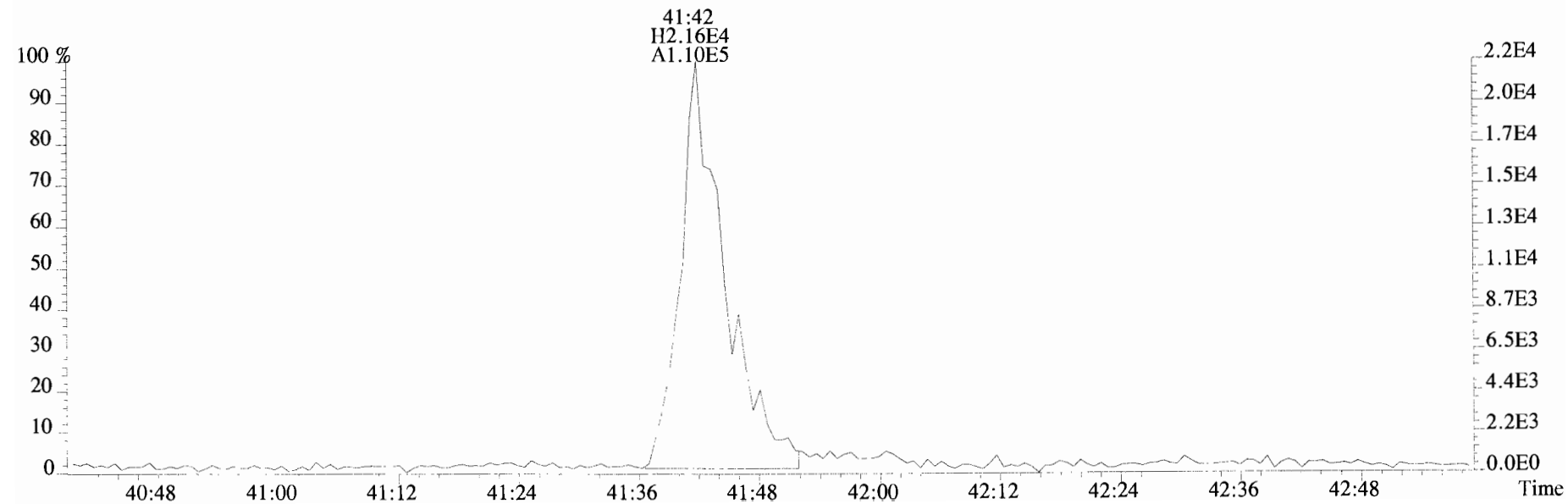
513.6775 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

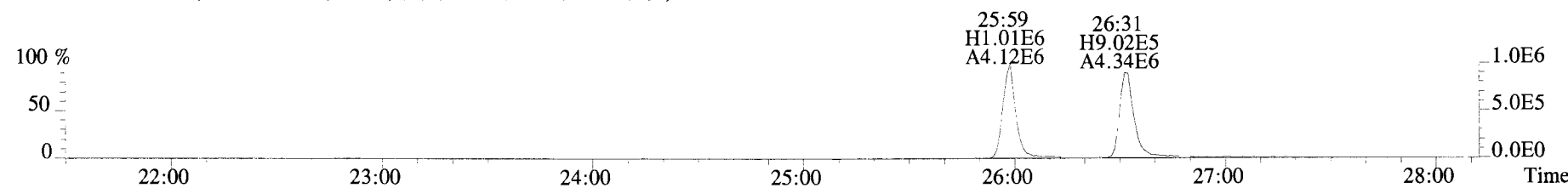
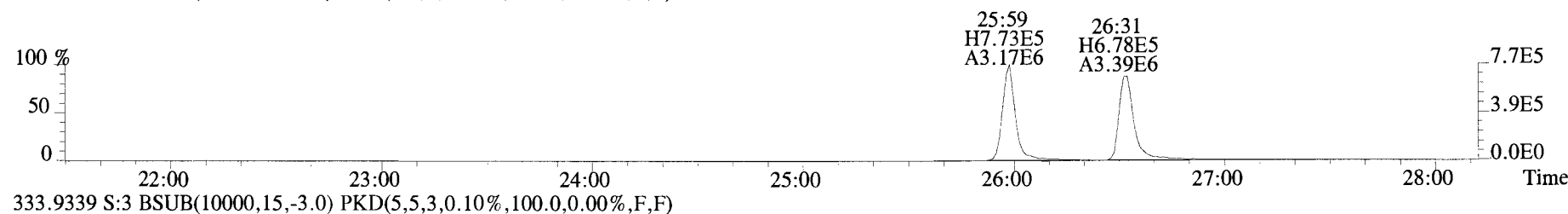
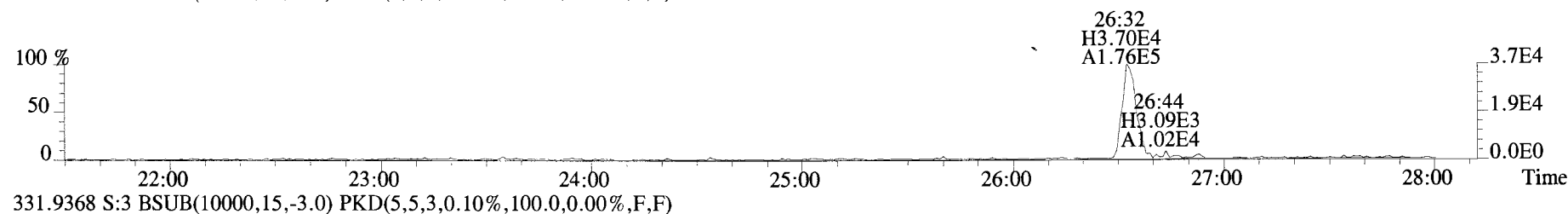
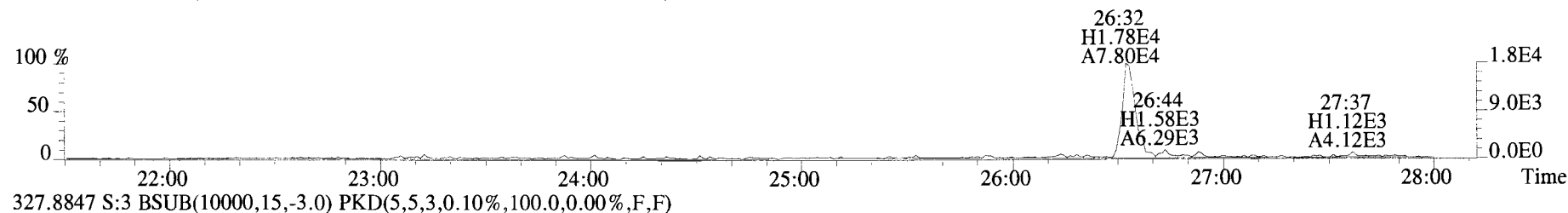
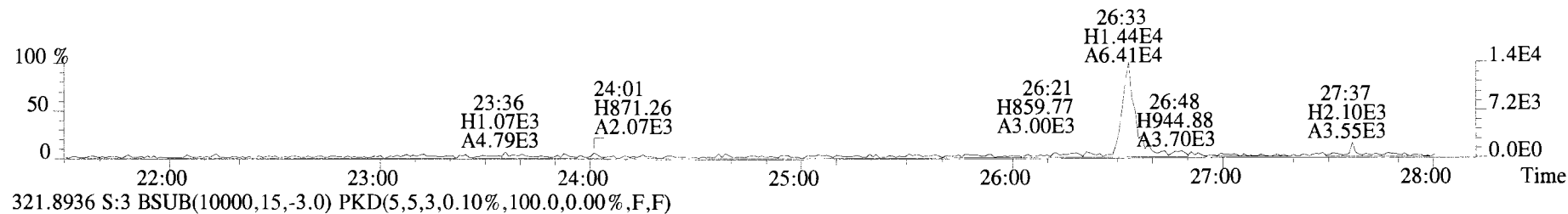


443.7398 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

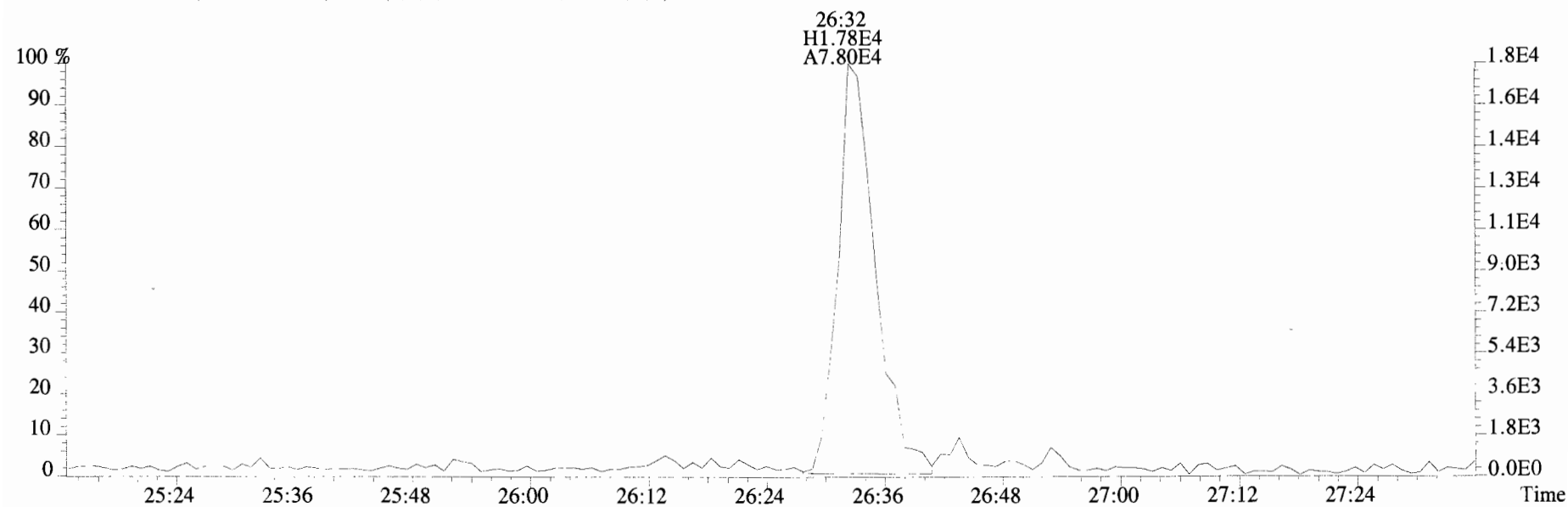
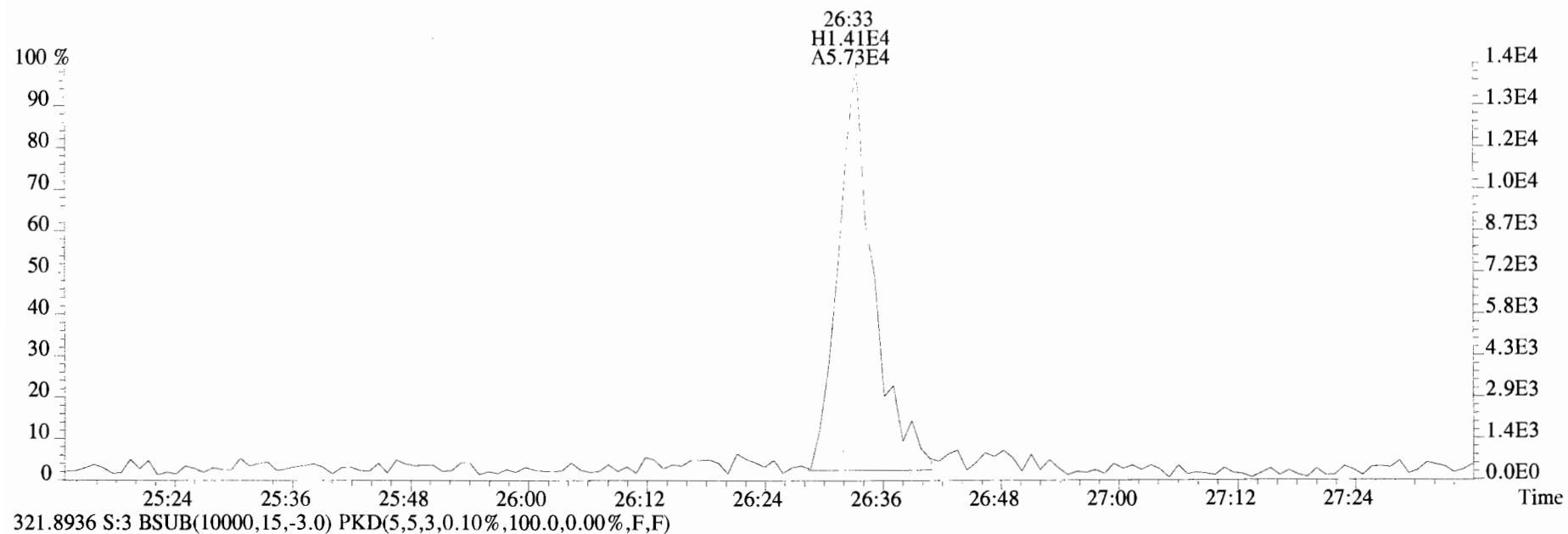




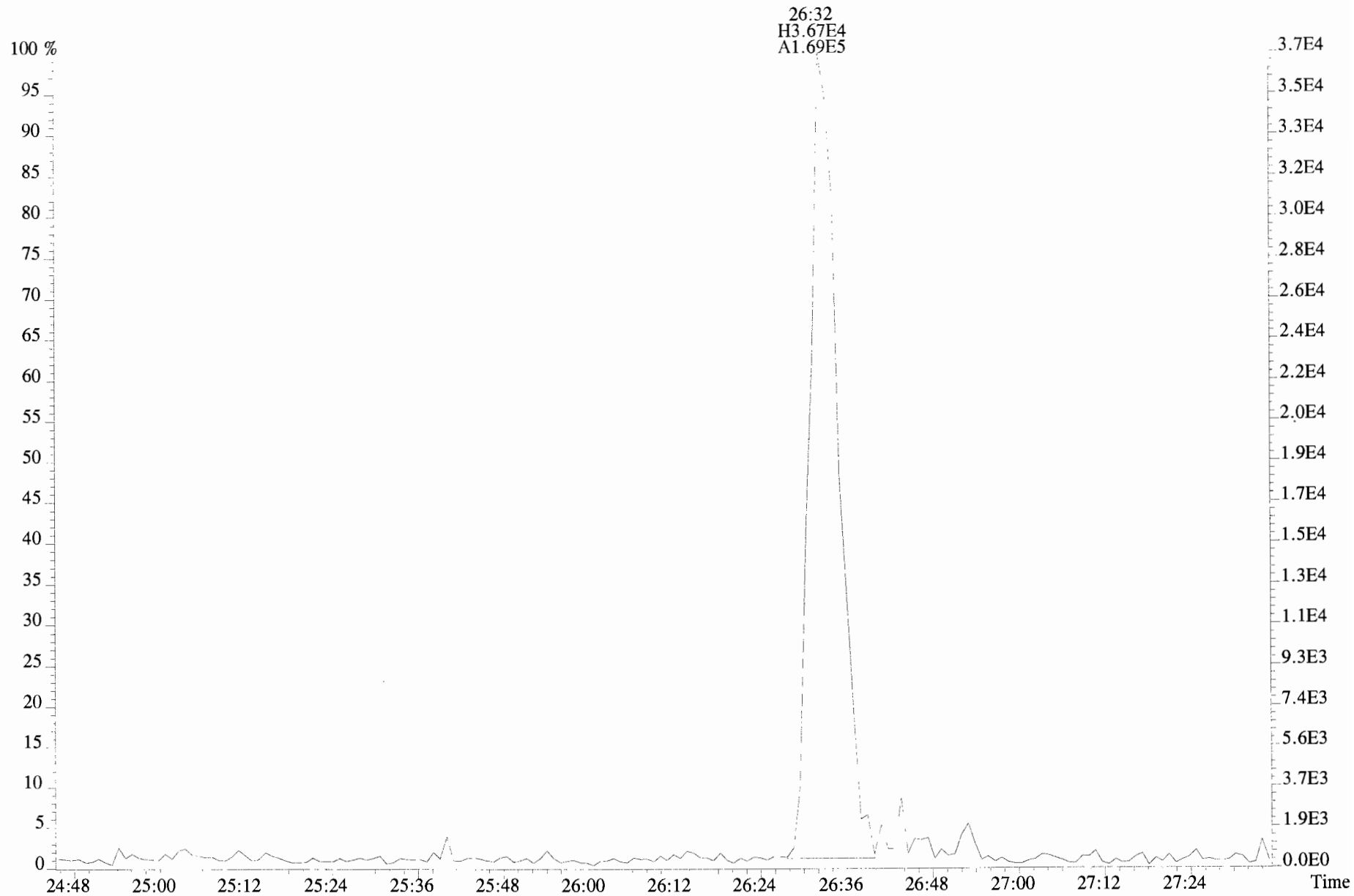
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
319.8965 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



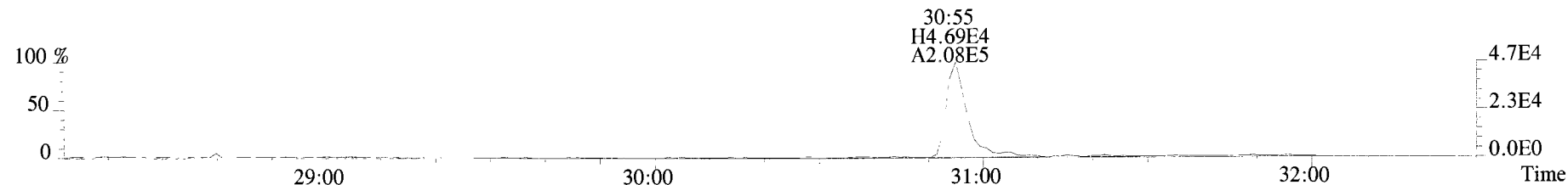
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
319.8965 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



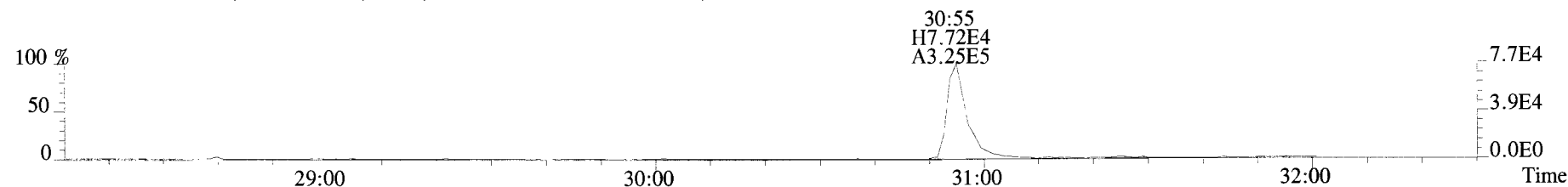
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
327.8847 S:3 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



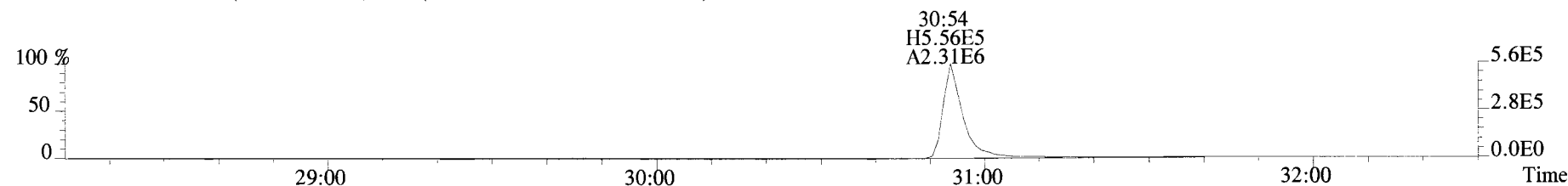
File:191009D1 #1-211 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
353.8576 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



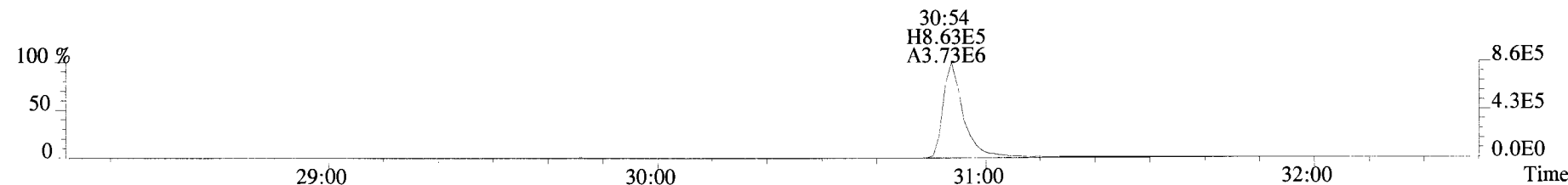
355.8546 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



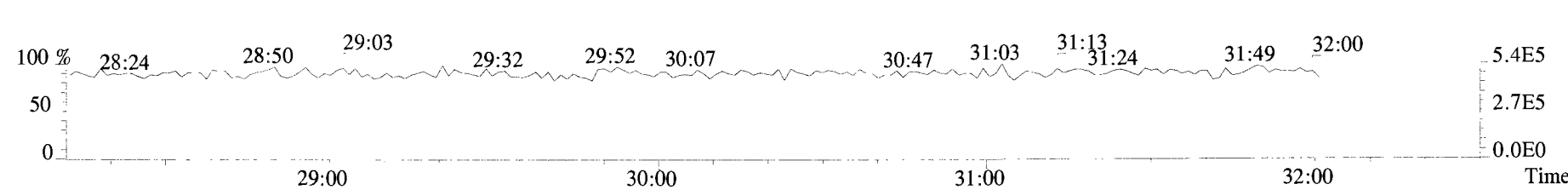
365.8978 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



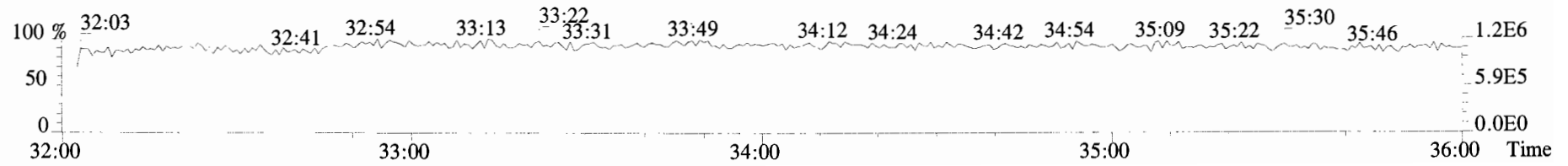
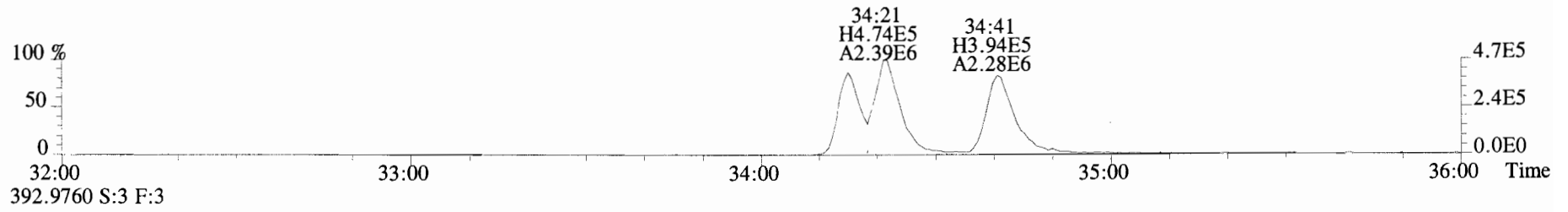
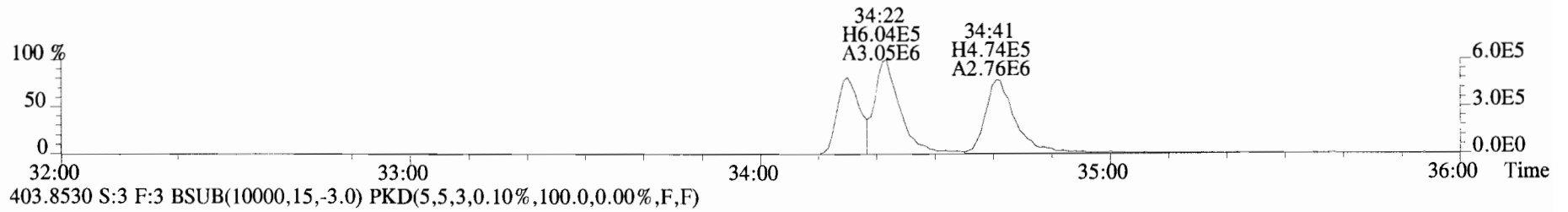
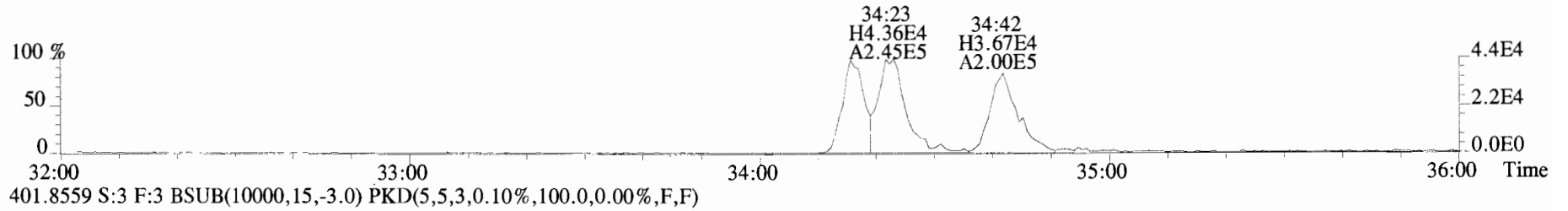
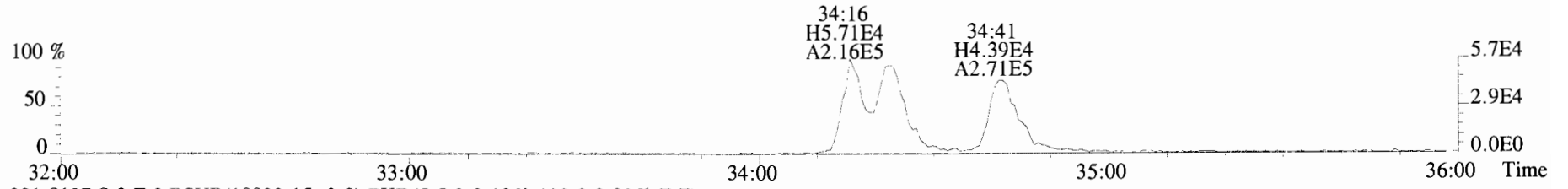
367.8949 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



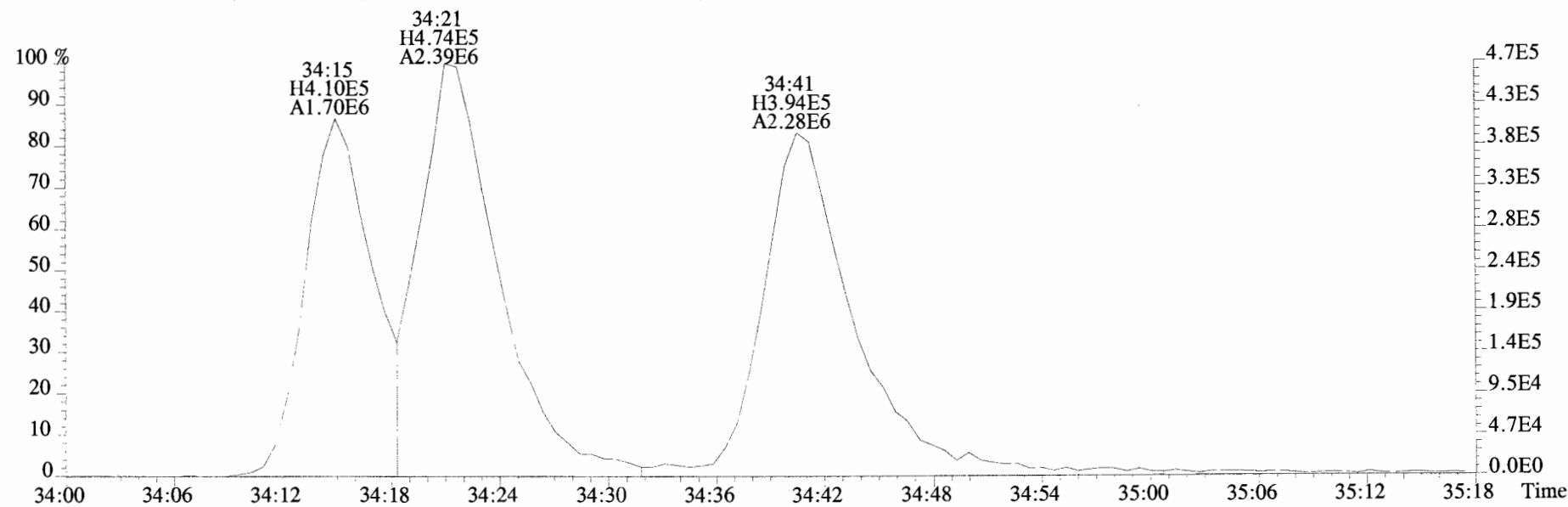
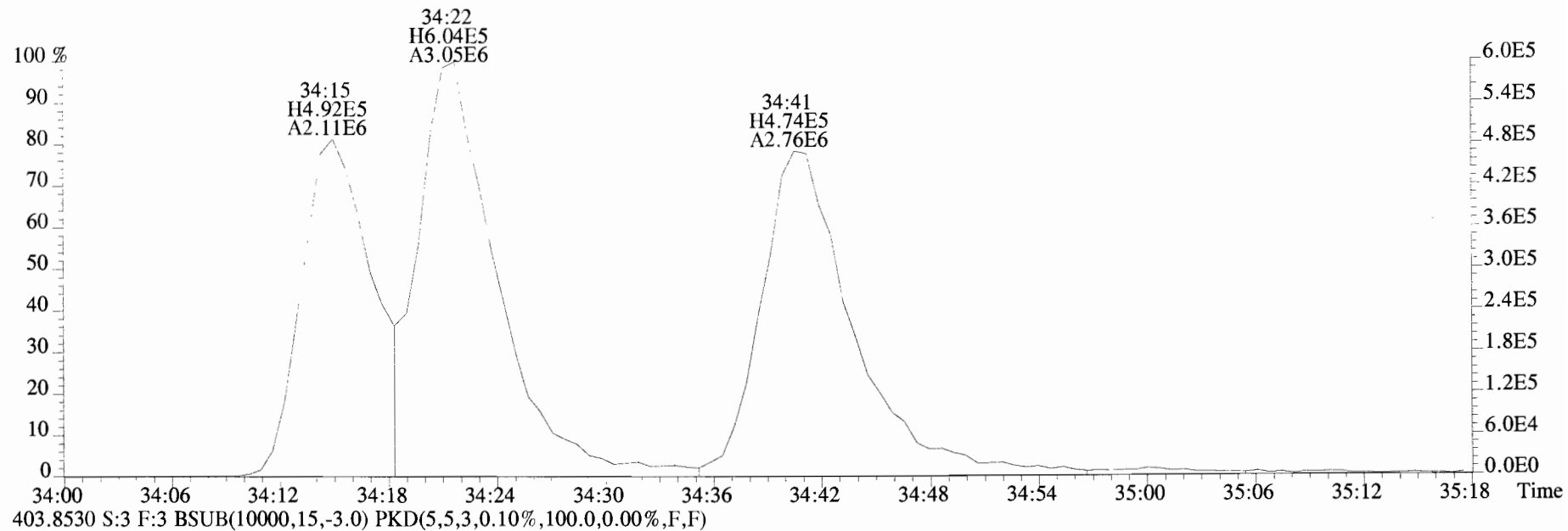
366.9792 S:3 F:2



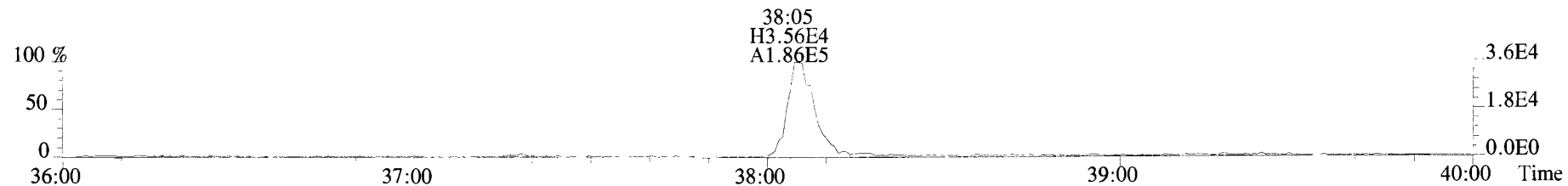
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
389.8156 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



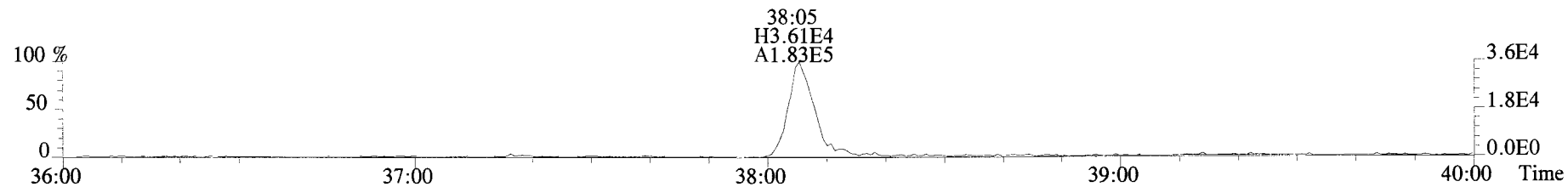
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text: Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
401.8559 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



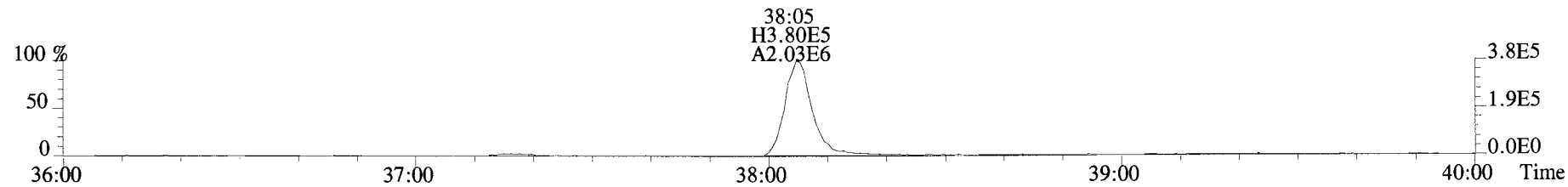
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
423.7767 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



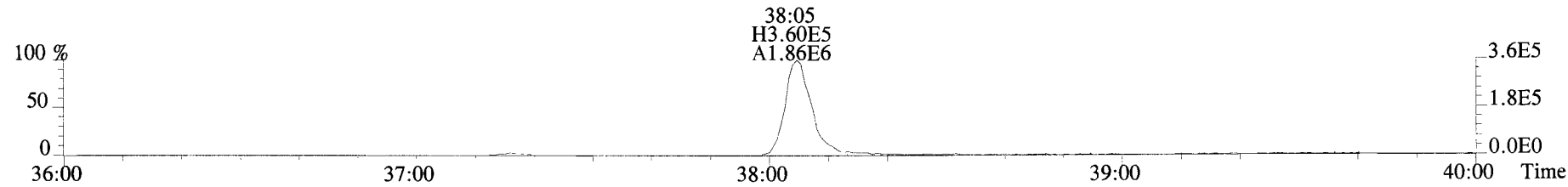
425.7737 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



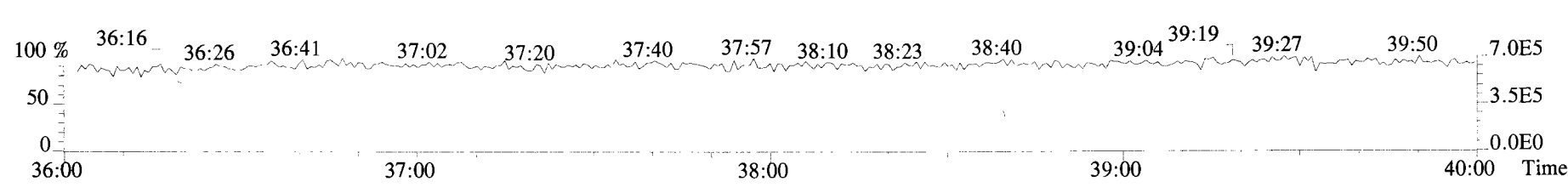
435.8169 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



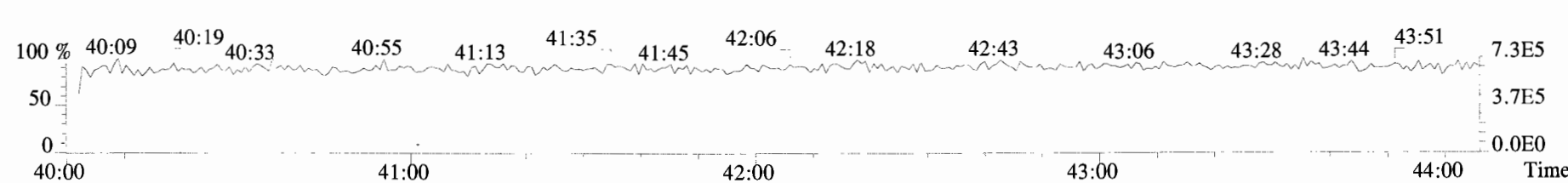
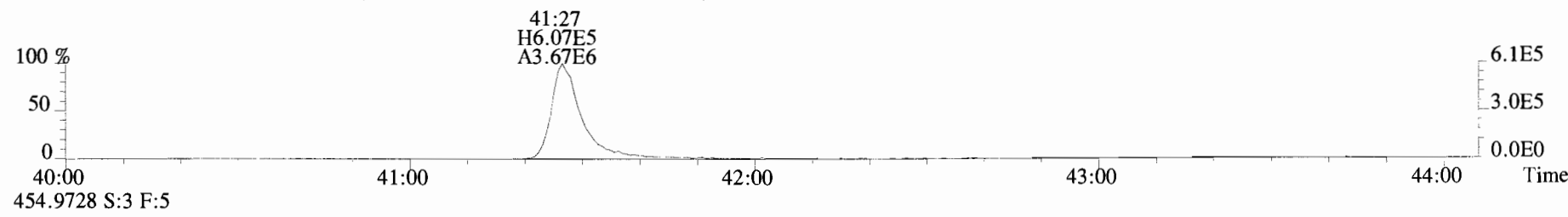
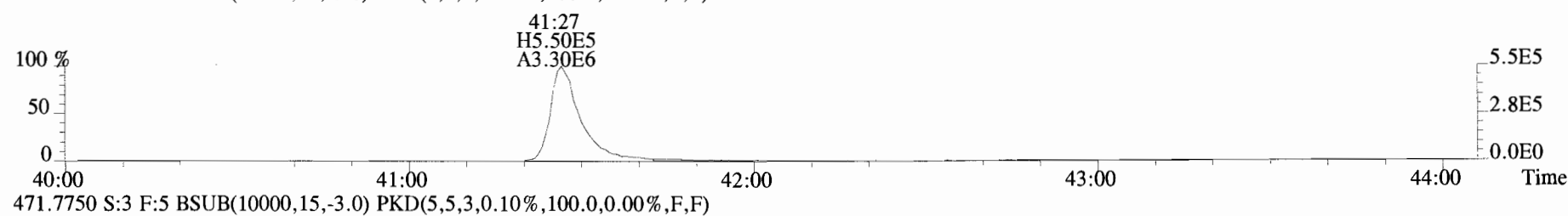
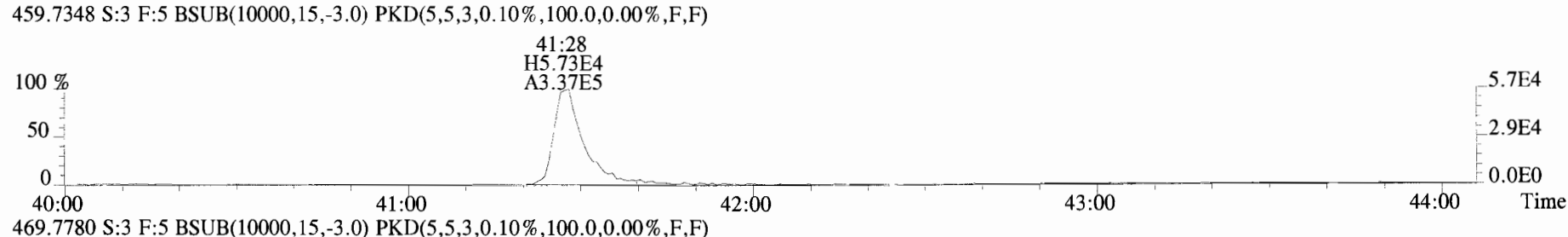
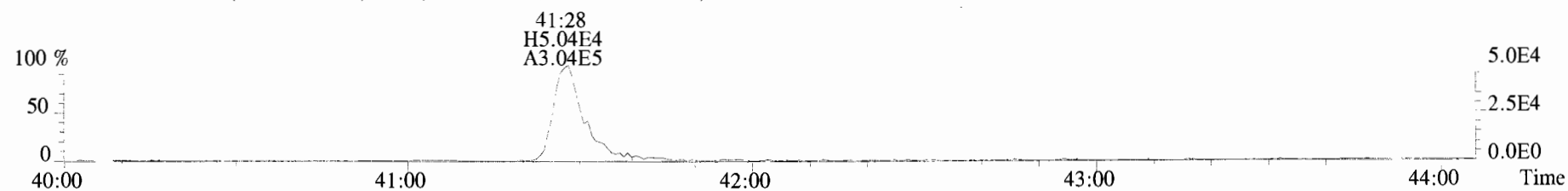
437.8140 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



454.9728 S:3 F:4

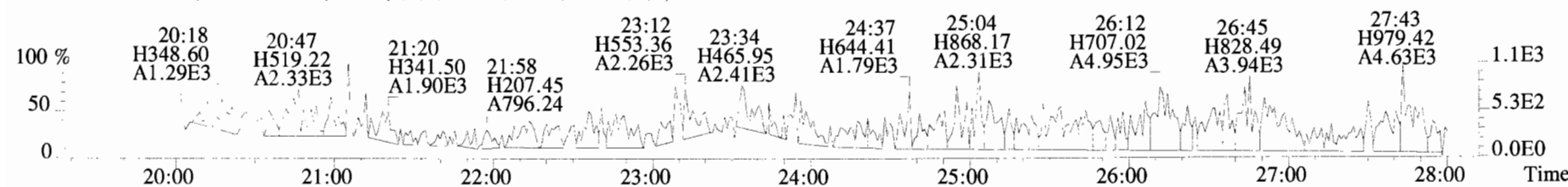
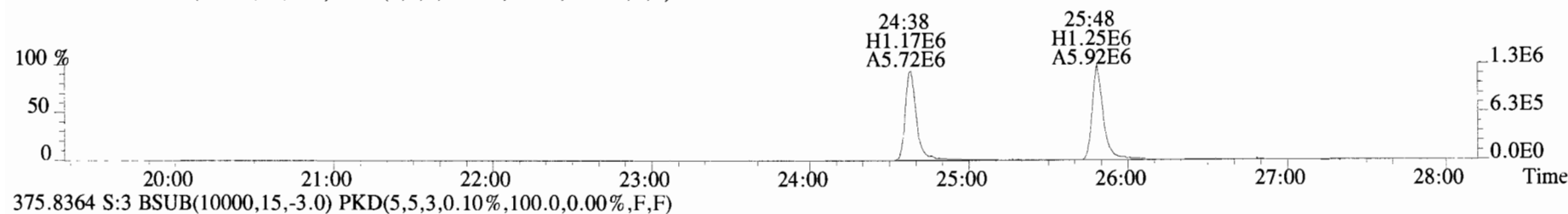
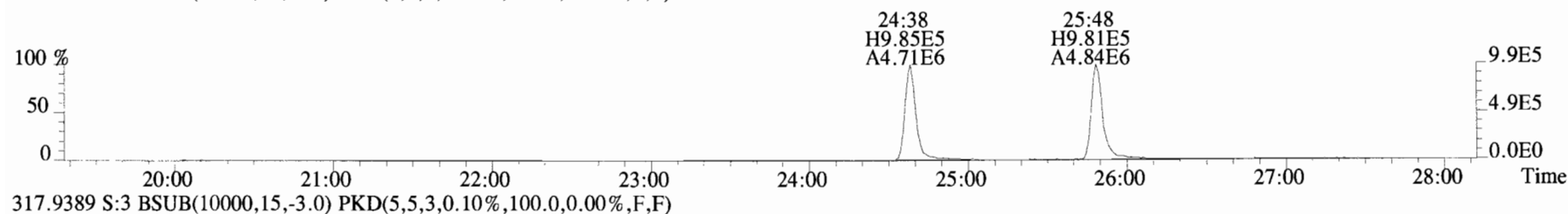
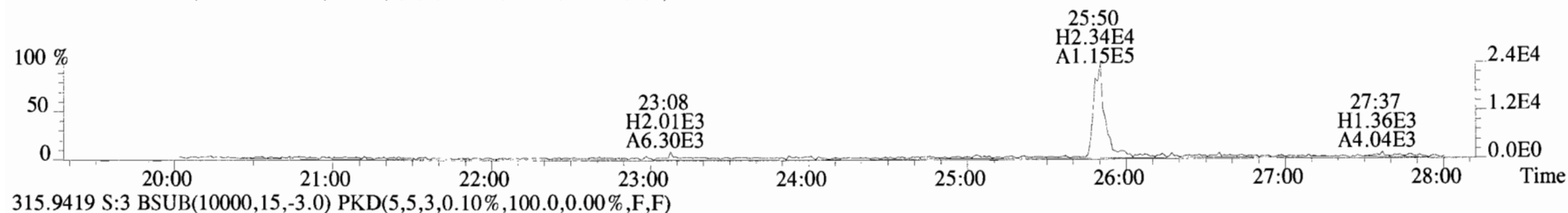
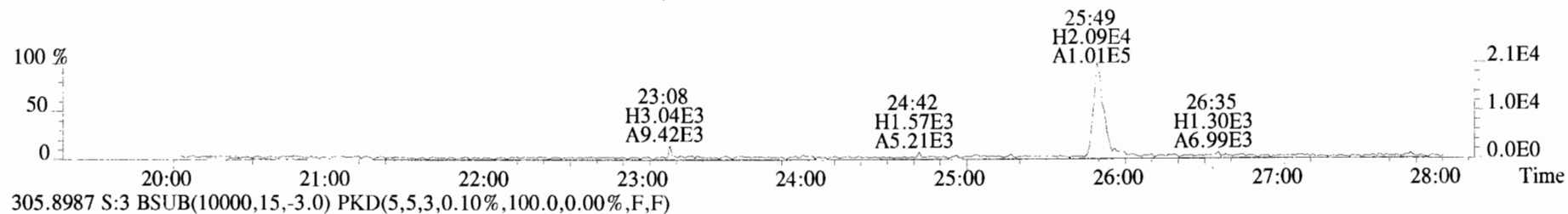


File:191009D1 #1-432 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
457.7377 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

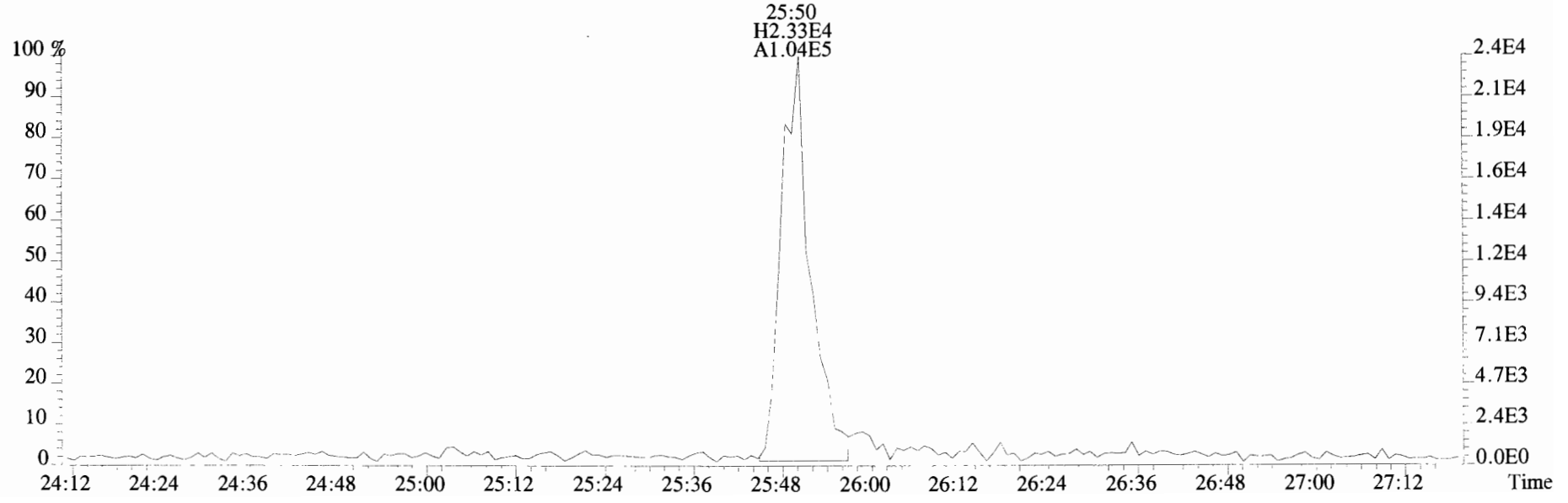
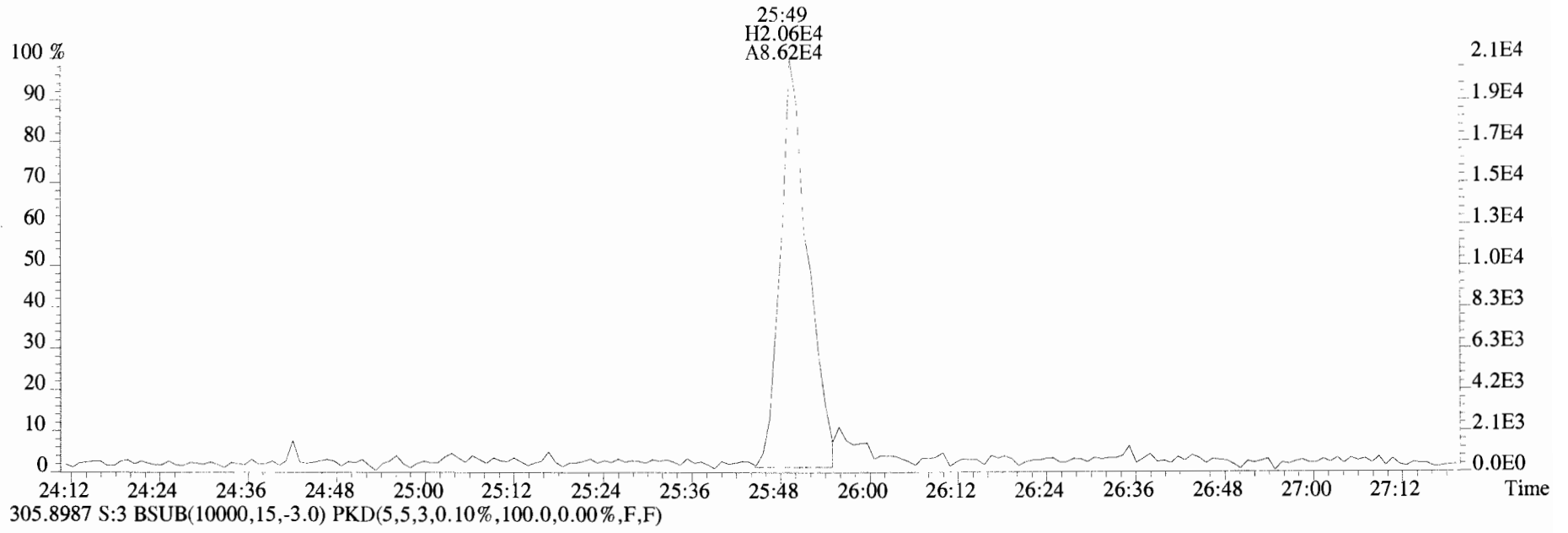




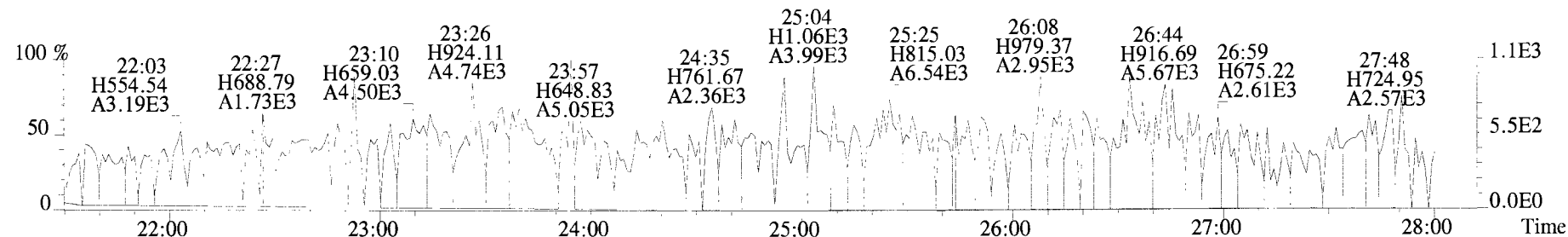
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



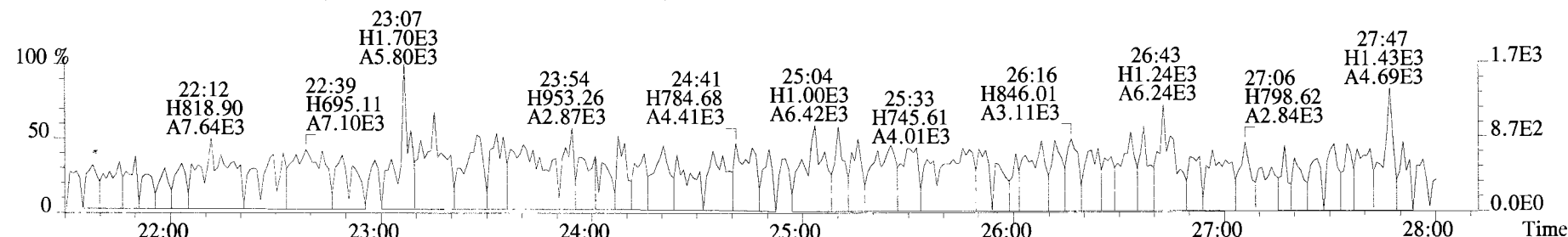
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



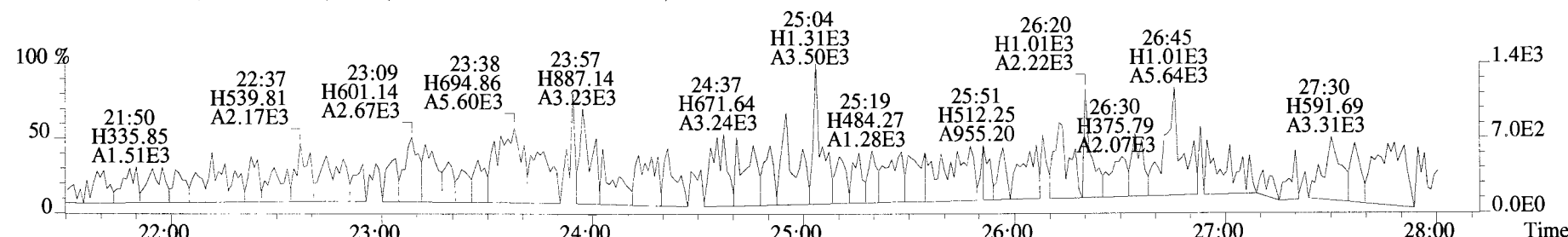
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
339.8597 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



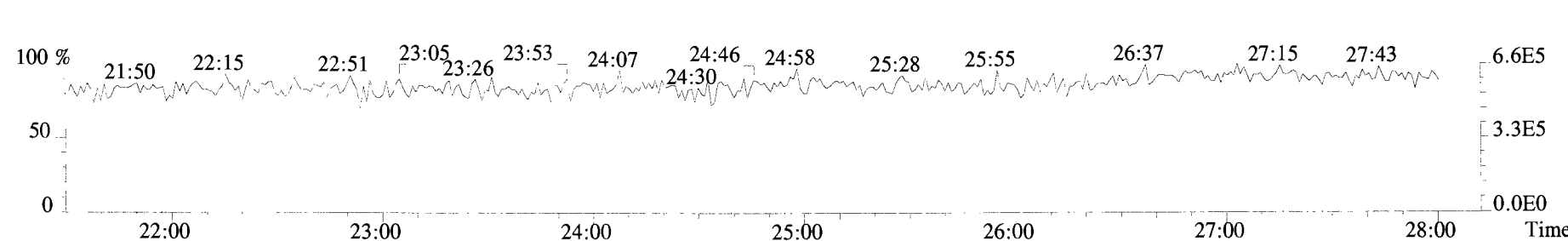
341.8568 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



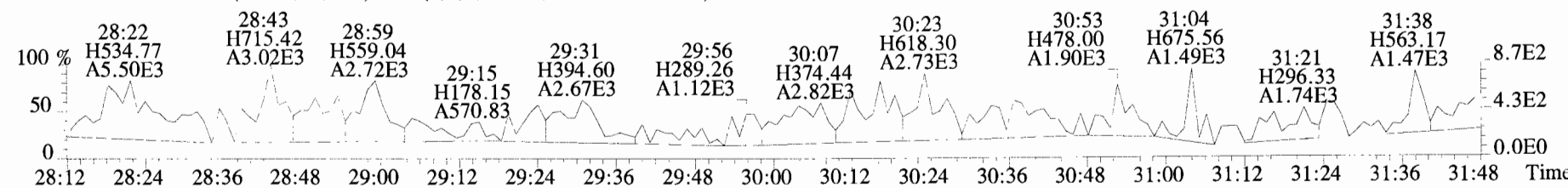
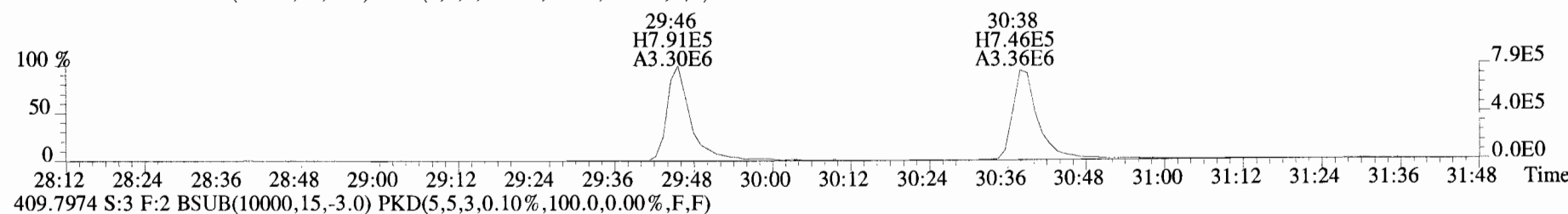
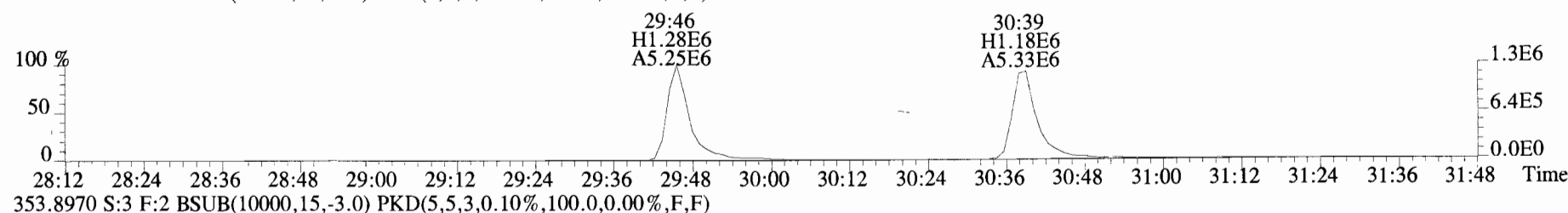
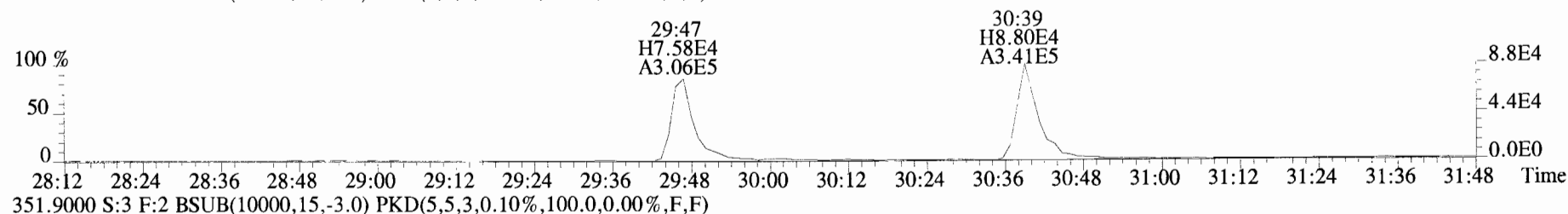
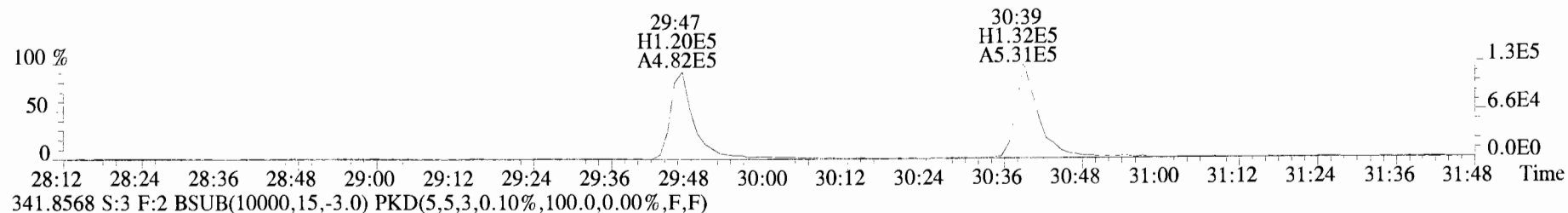
409.7974 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



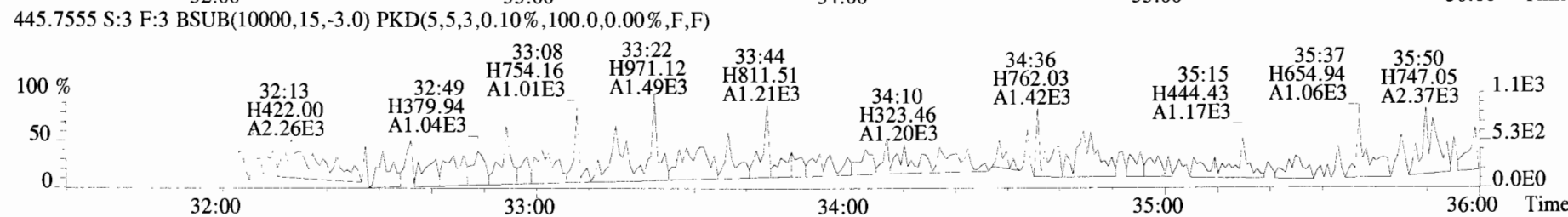
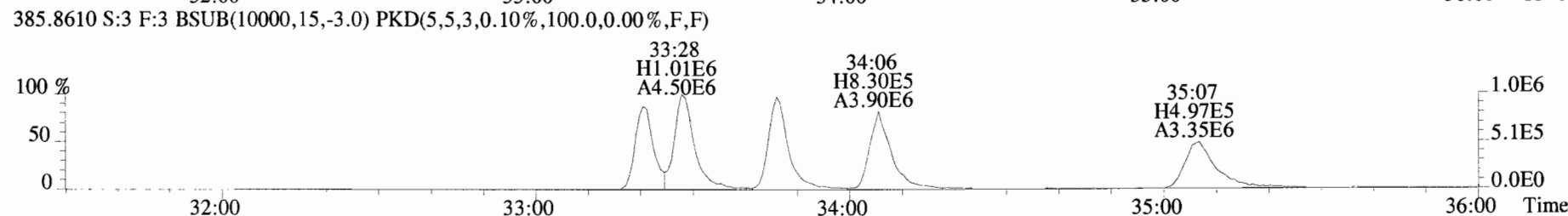
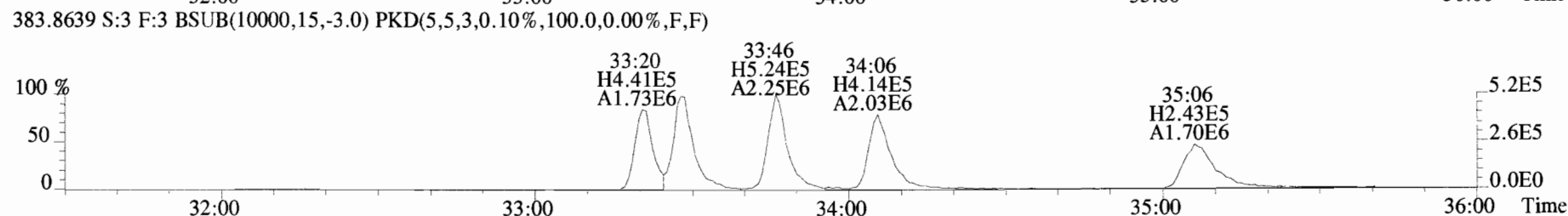
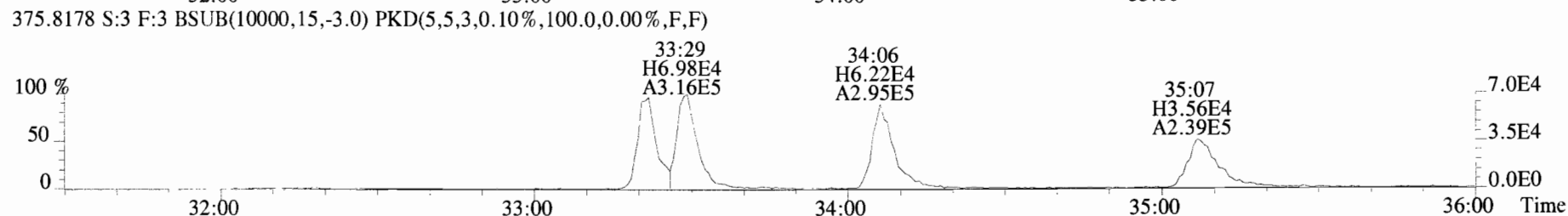
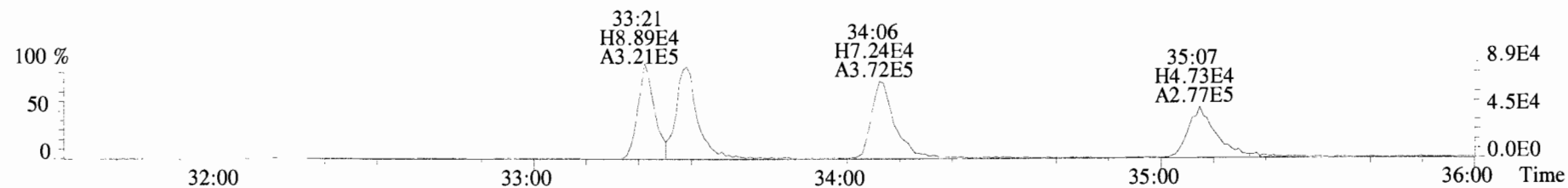
316.9824 S:3



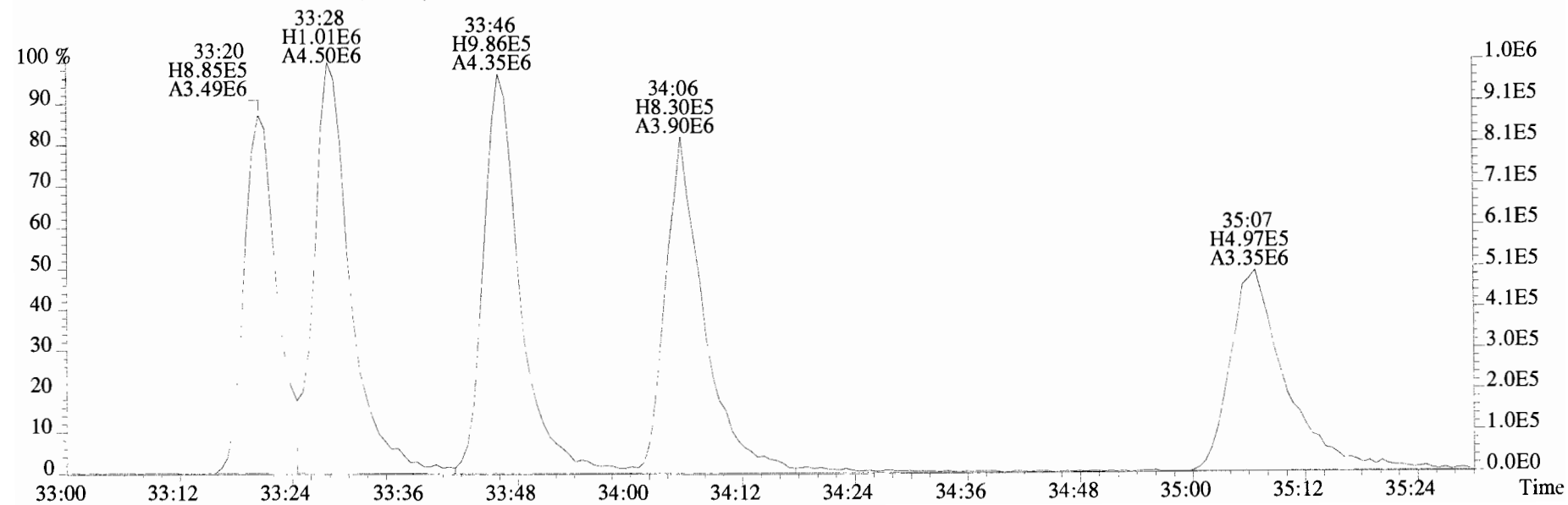
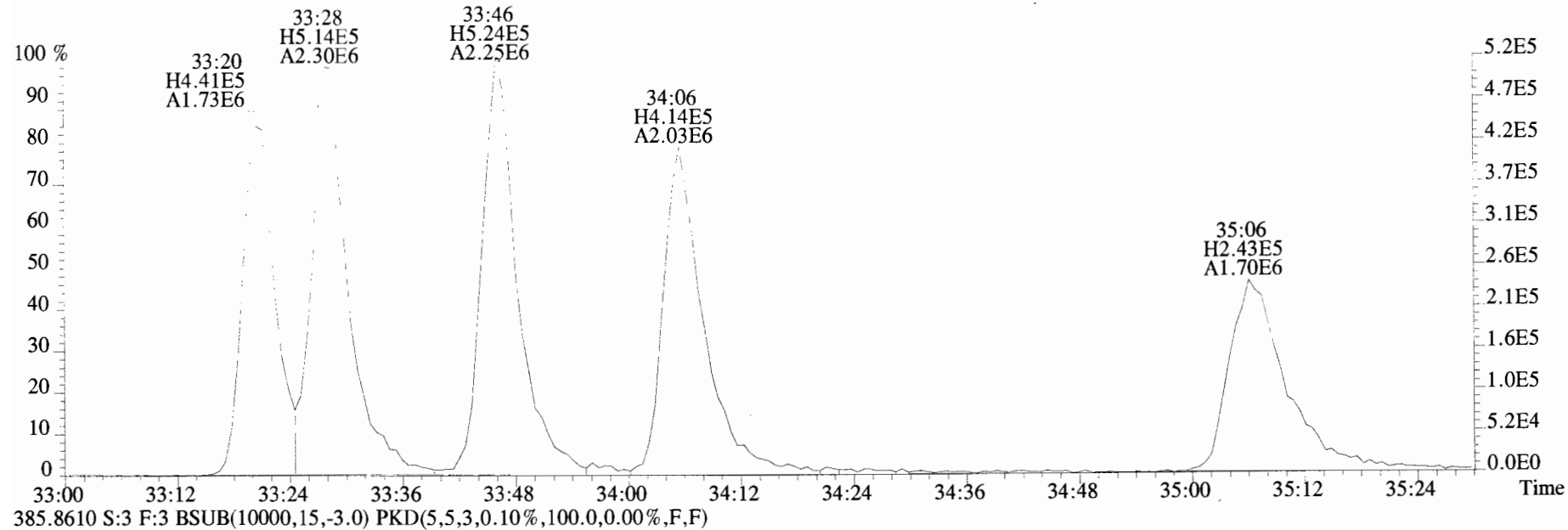
File:191009D1 #1-211 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
339.8597 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



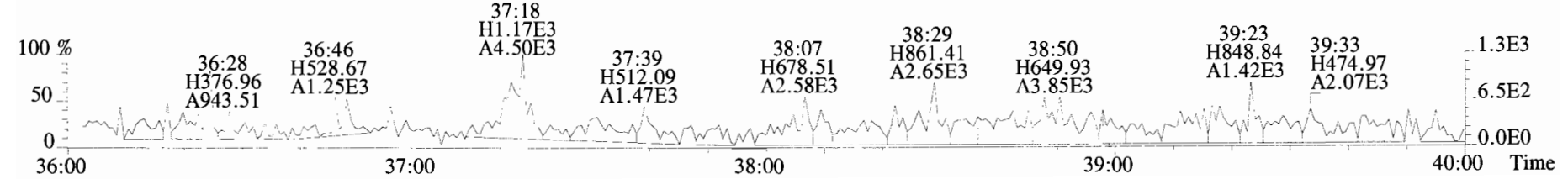
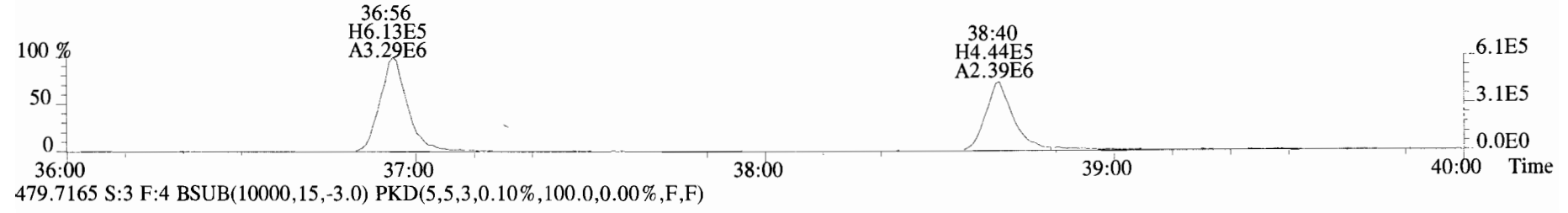
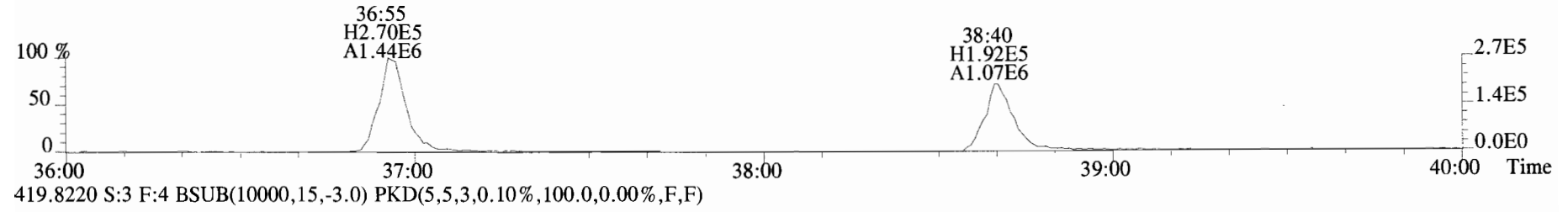
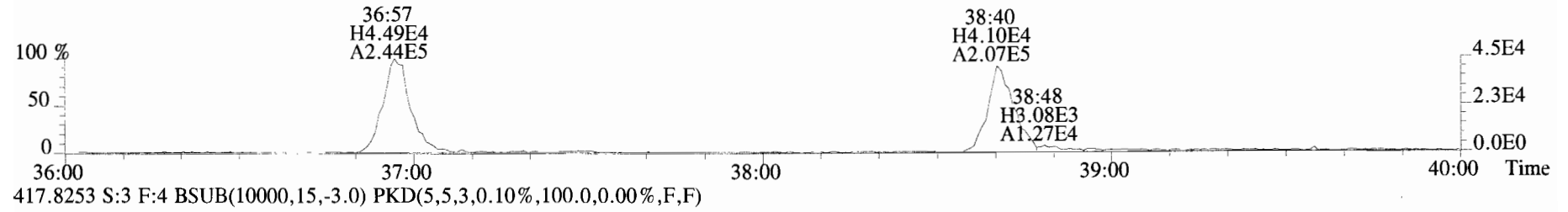
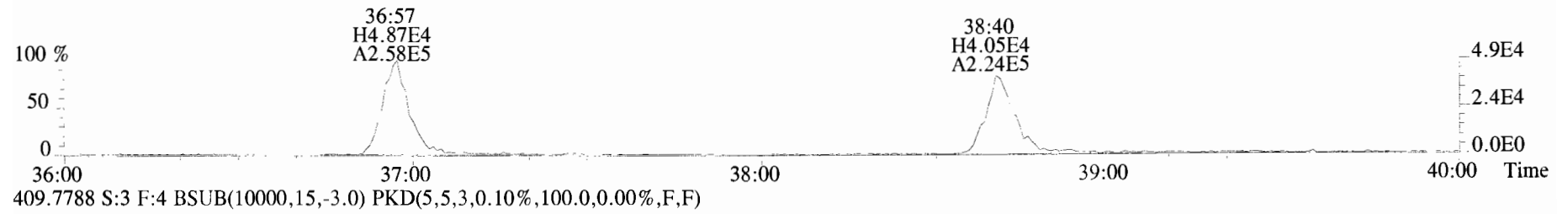
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
 373.8207 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



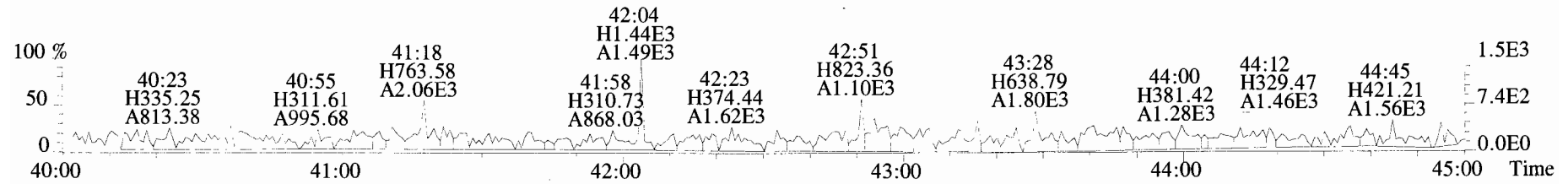
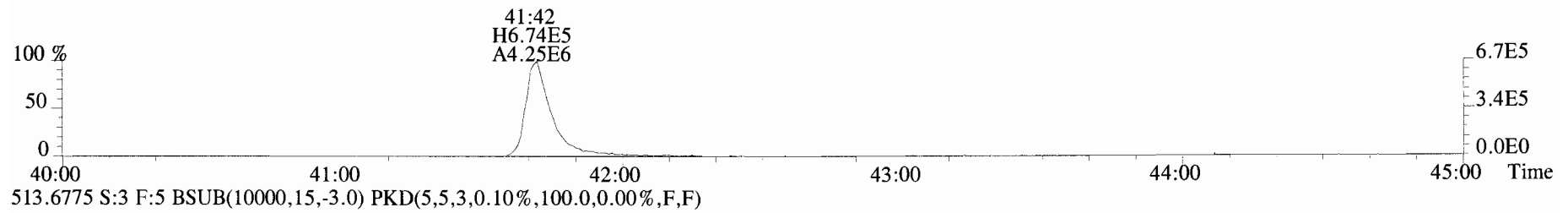
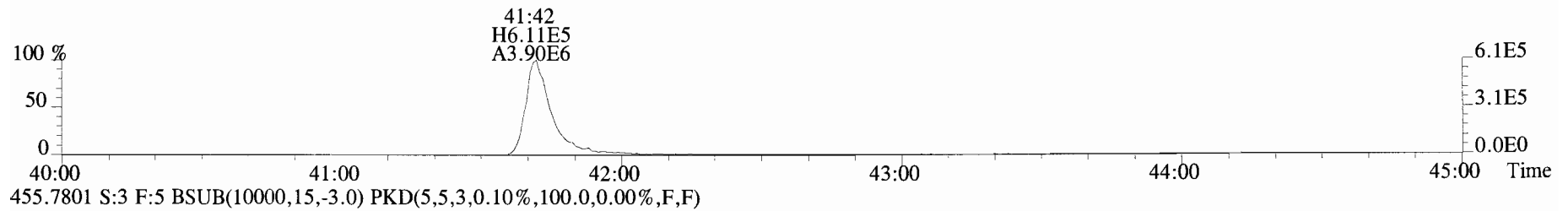
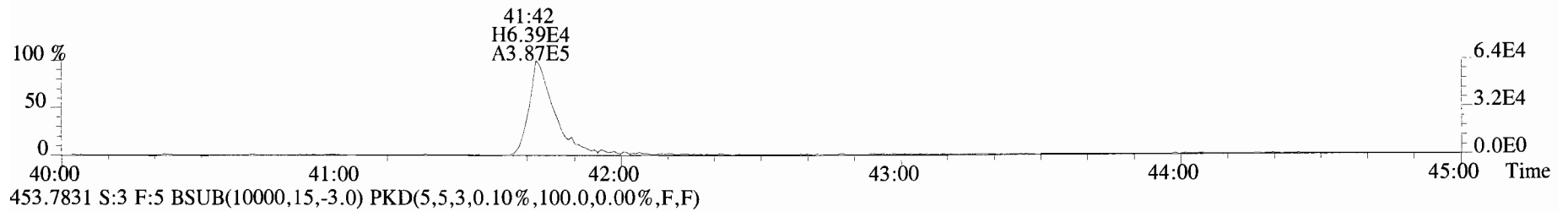
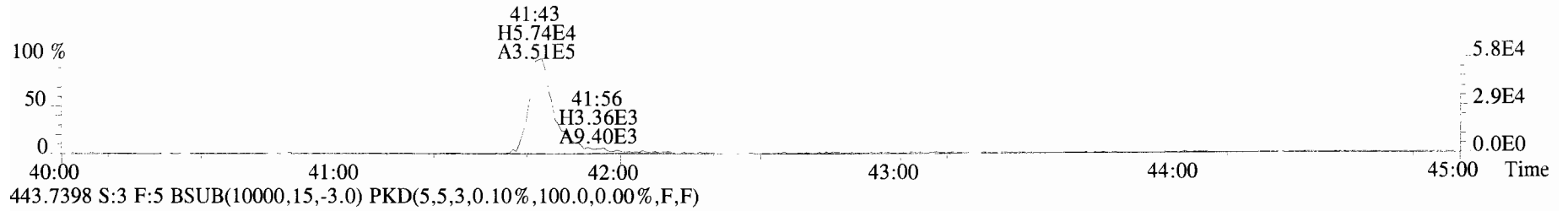
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
383.8639 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

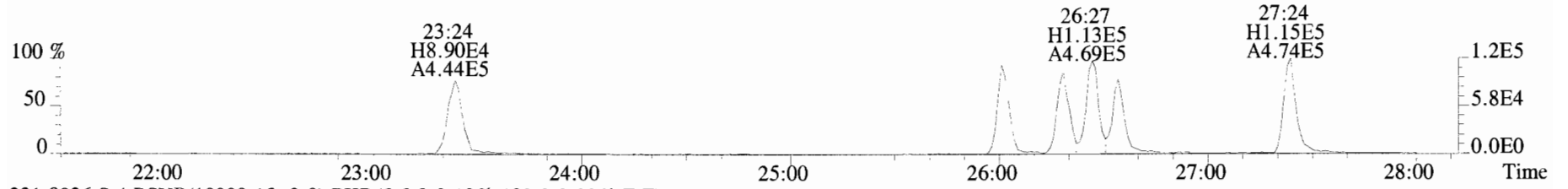


File:191009D1 #1-432 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#3 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD\_DB5  
441.7428 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

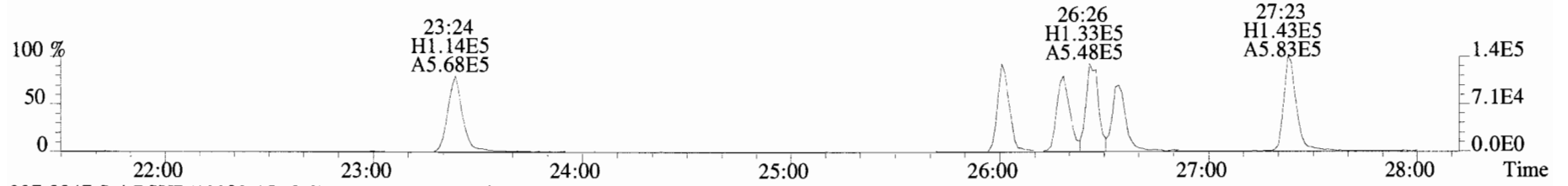




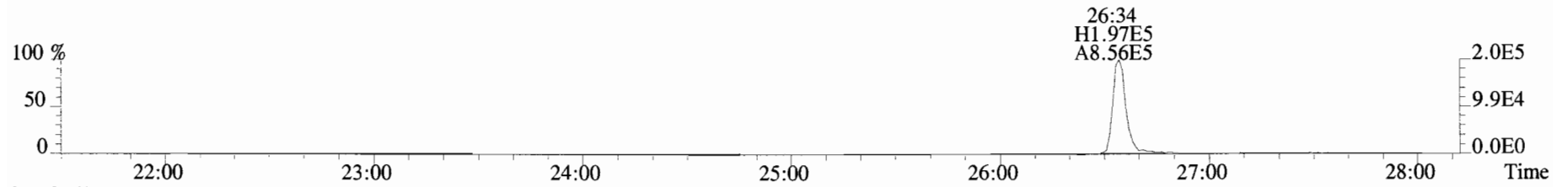
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
319.8965 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



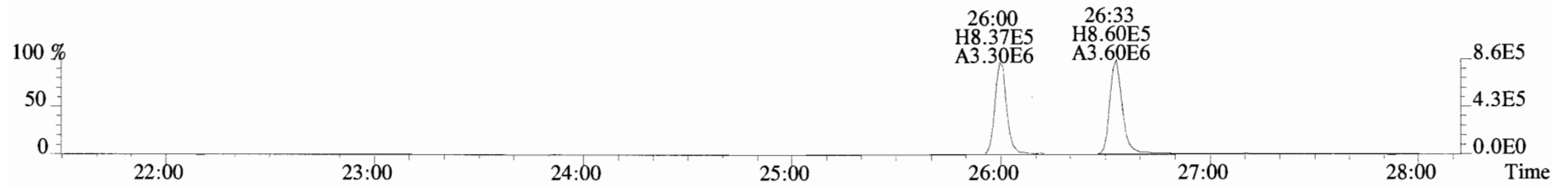
321.8936 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



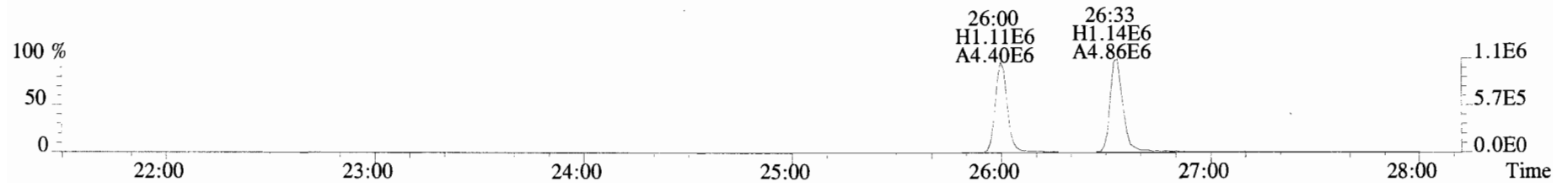
327.8847 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



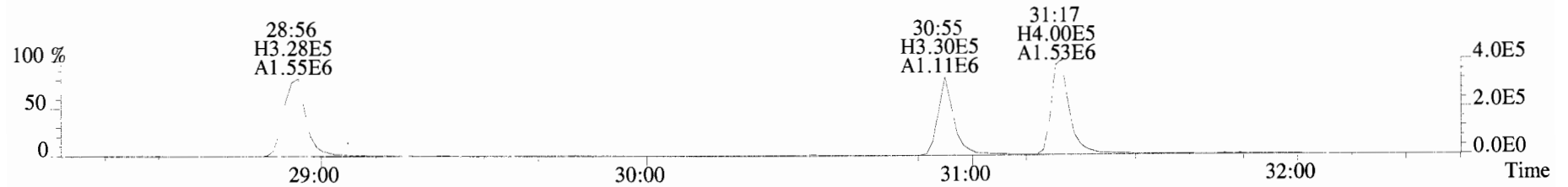
331.9368 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



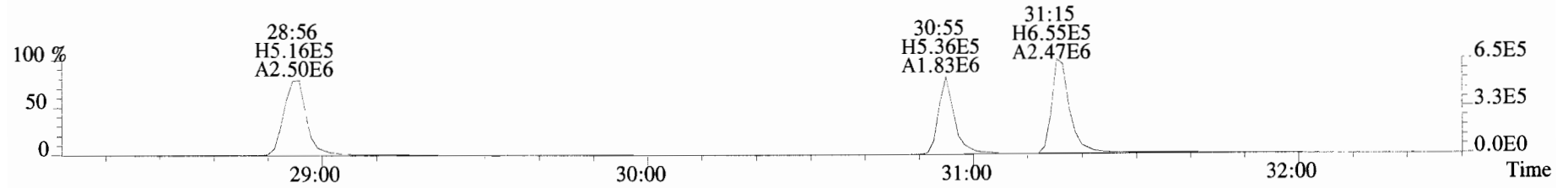
333.9339 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



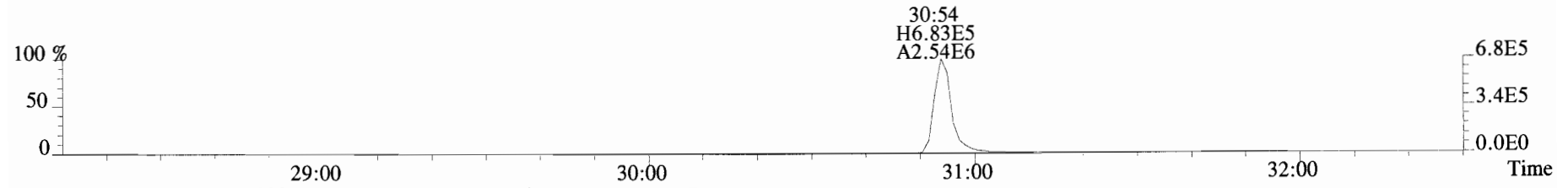
File:191009D1 #1-211 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista Analytical\_Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
353.8576 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



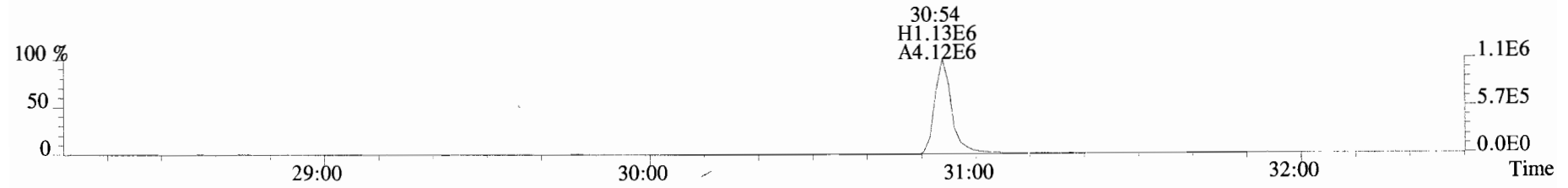
355.8546 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



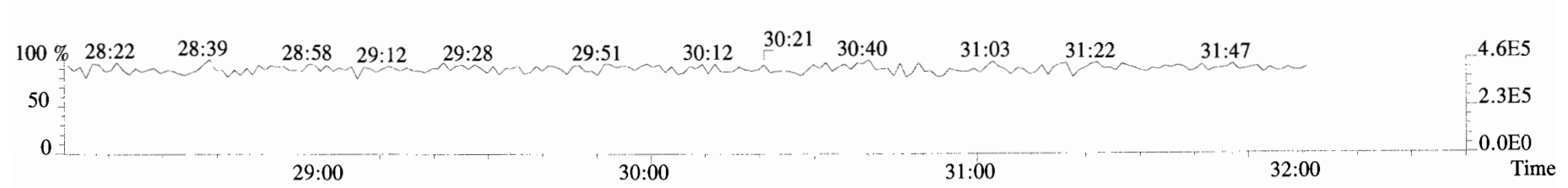
365.8978 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



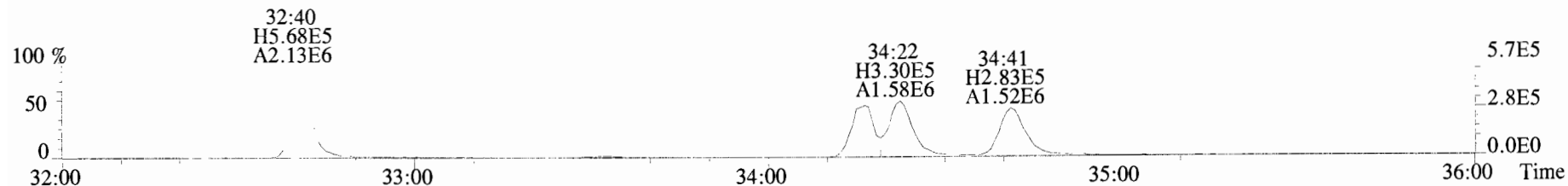
367.8949 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



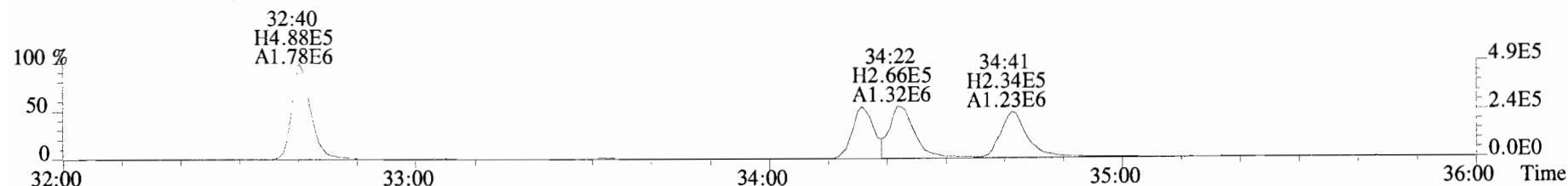
366.9792 S:4 F:2



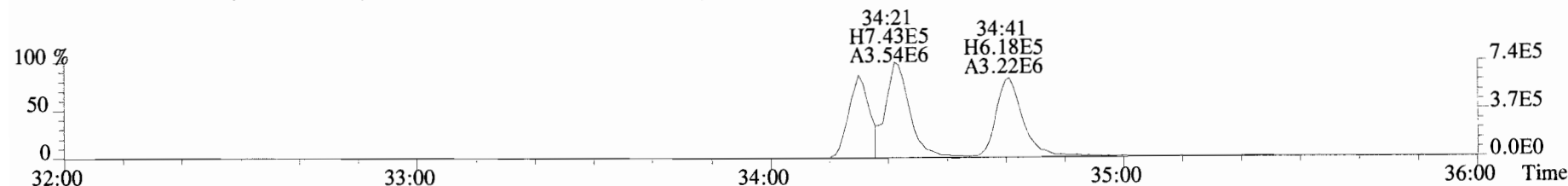
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
389.8156 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



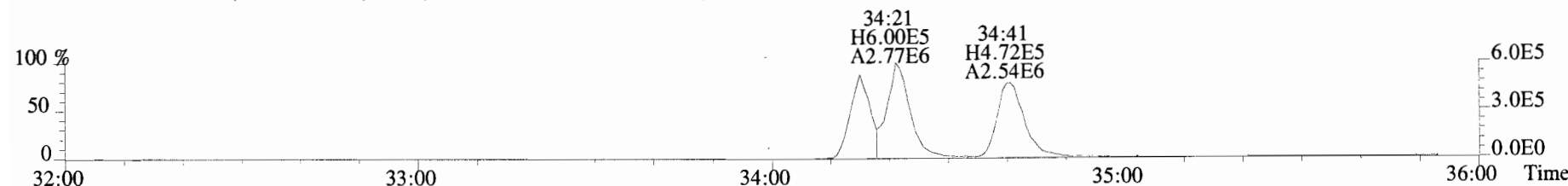
391.8127 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



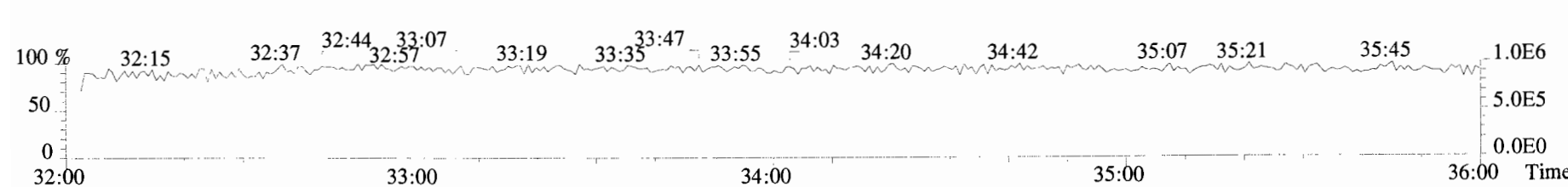
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



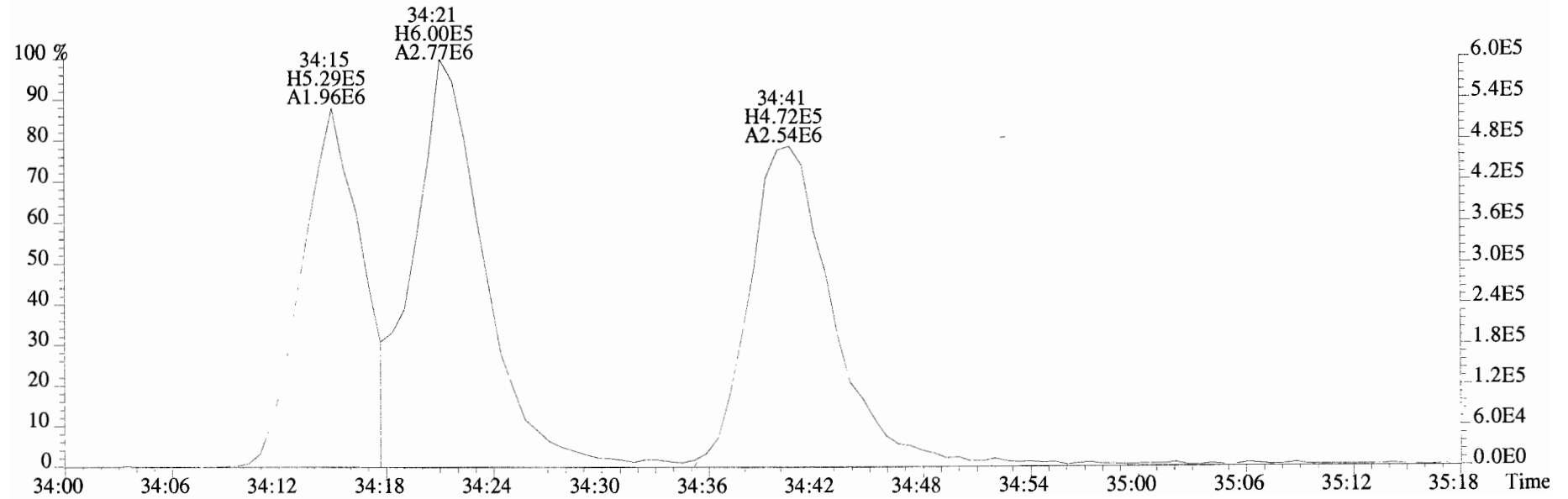
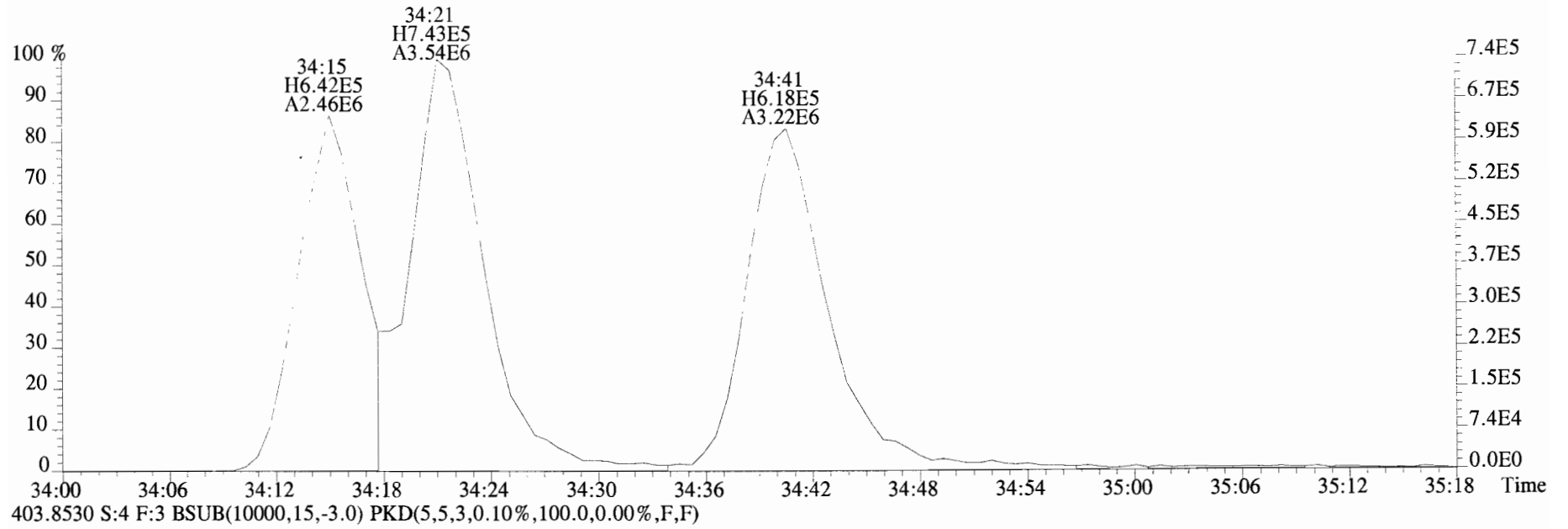
403.8530 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



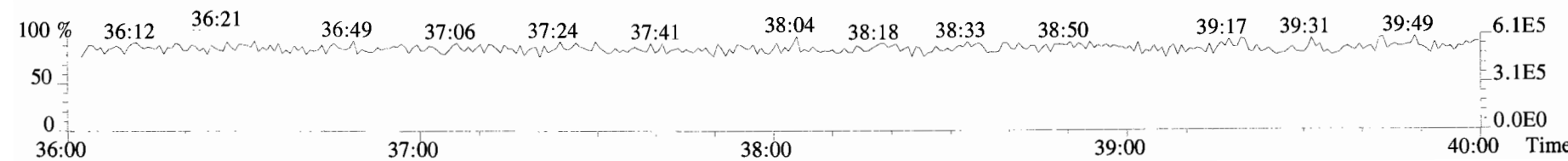
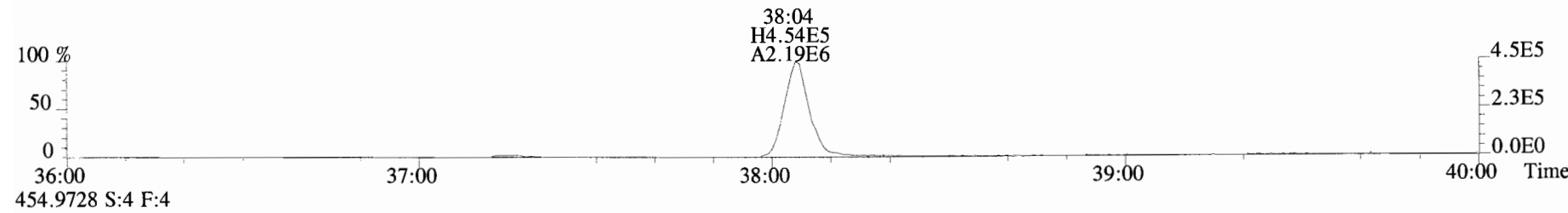
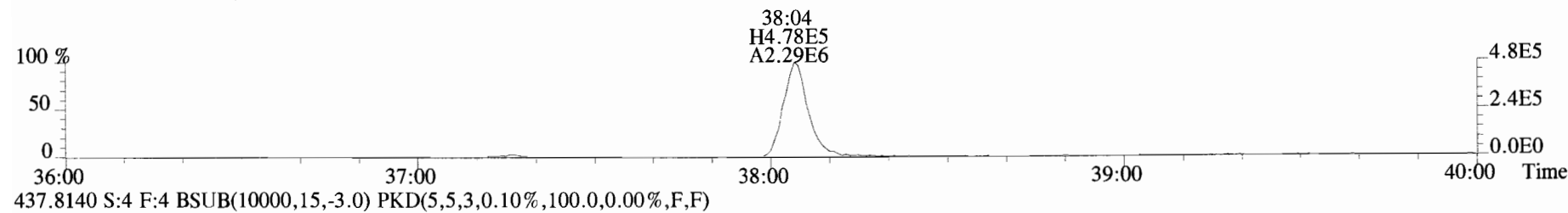
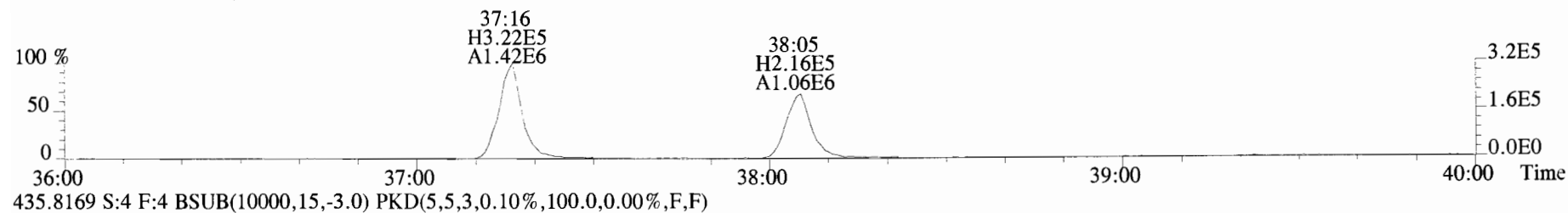
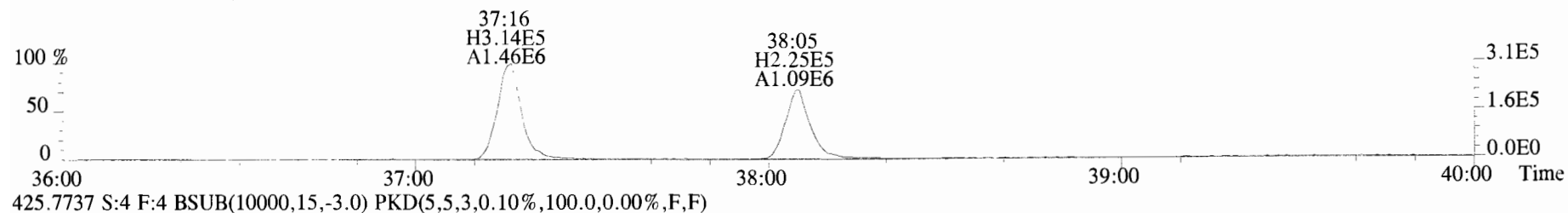
392.9760 S:4 F:3



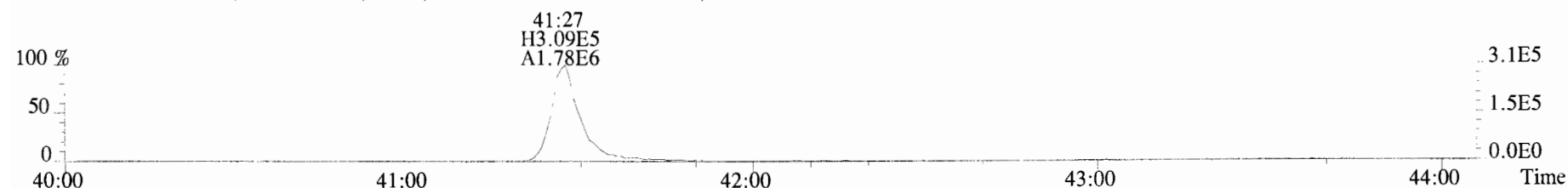
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



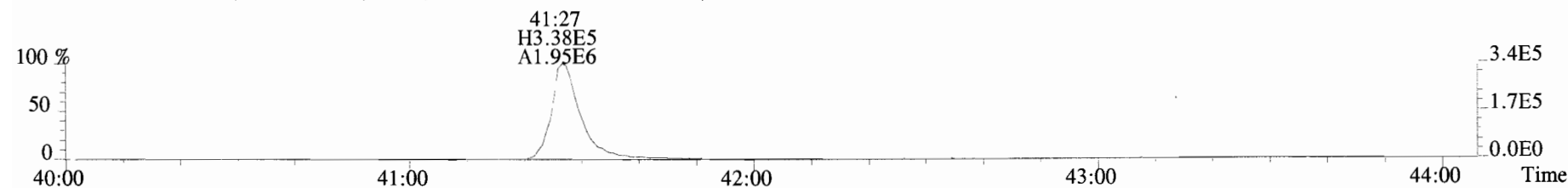
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
423.7767 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



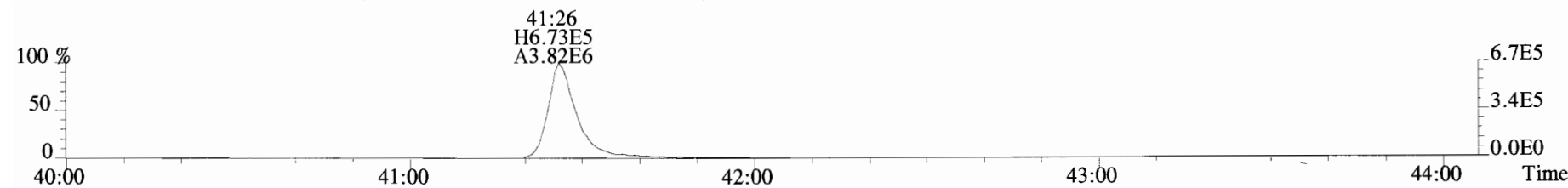
File:191009D1 #1-432 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista Analytical\_Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
457.7377 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



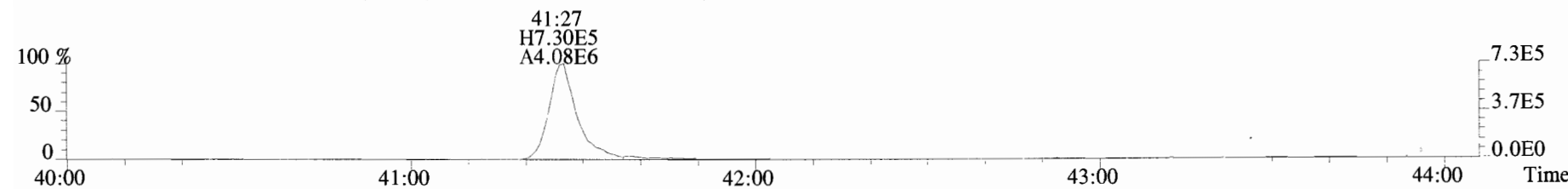
459.7348 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



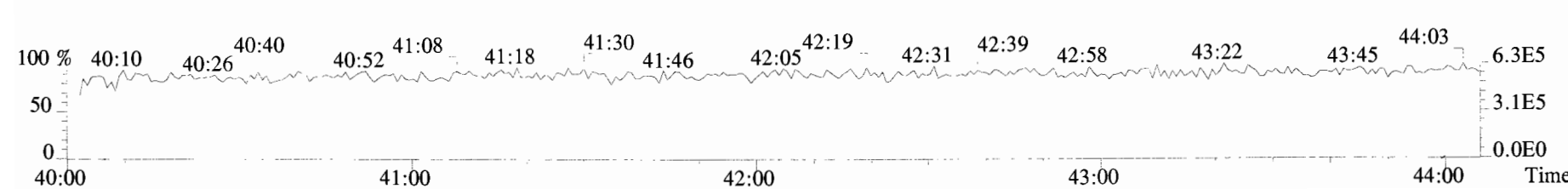
469.7780 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



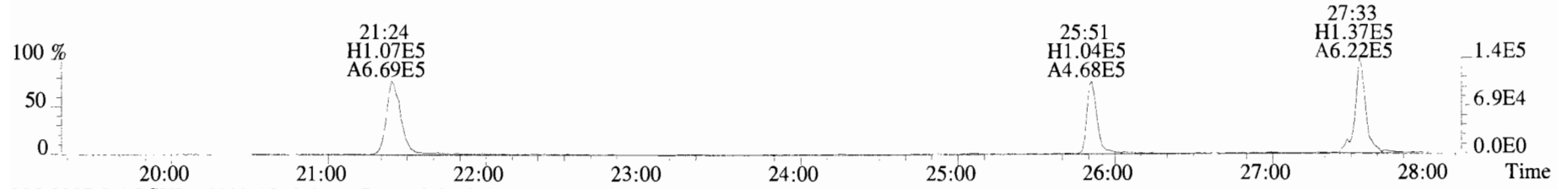
471.7750 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



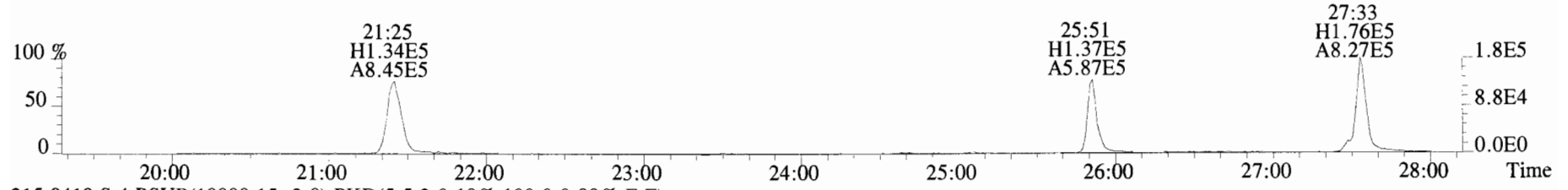
454.9728 S:4 F:5



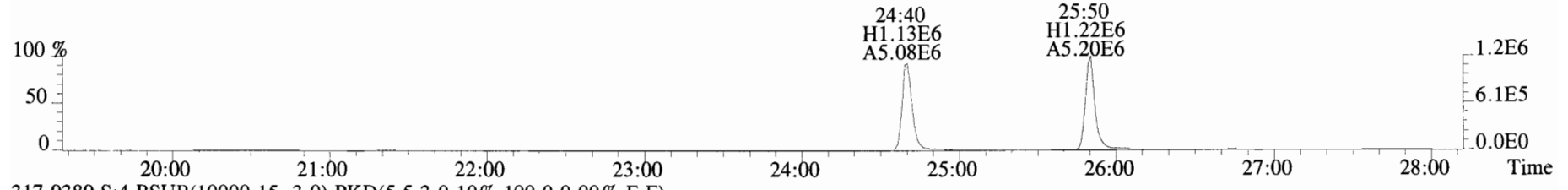
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
303.9016 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



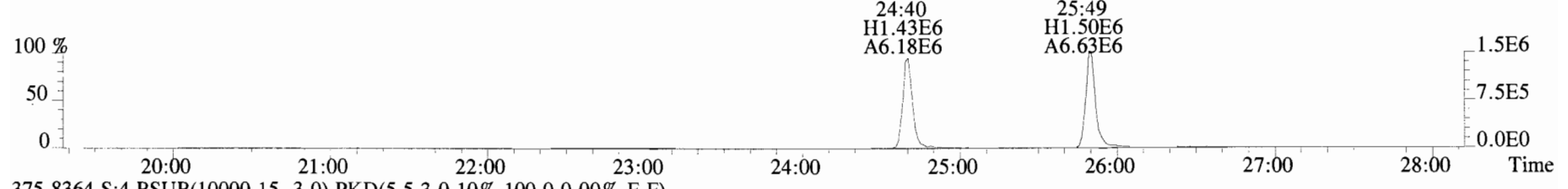
305.8987 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



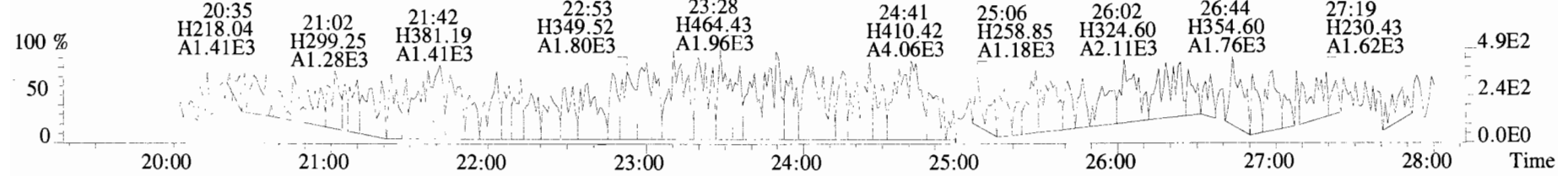
315.9419 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



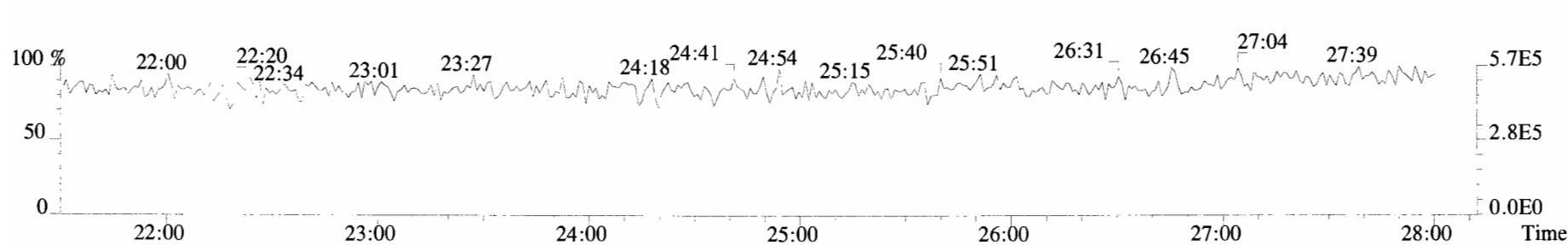
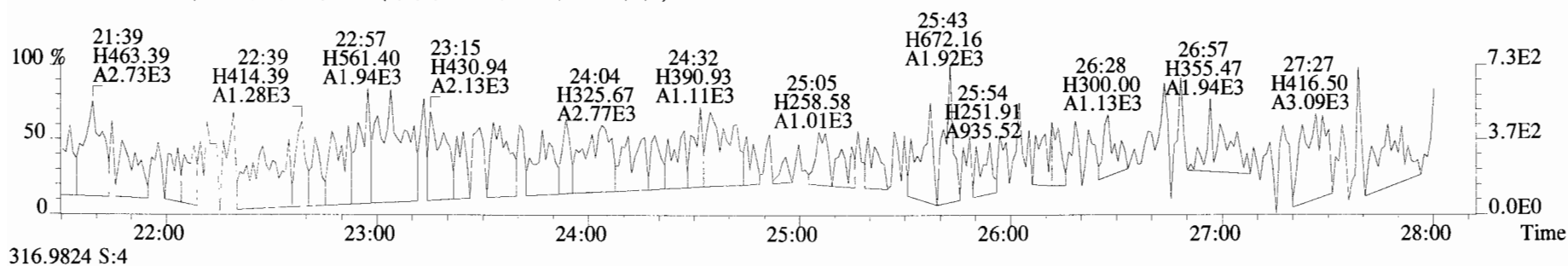
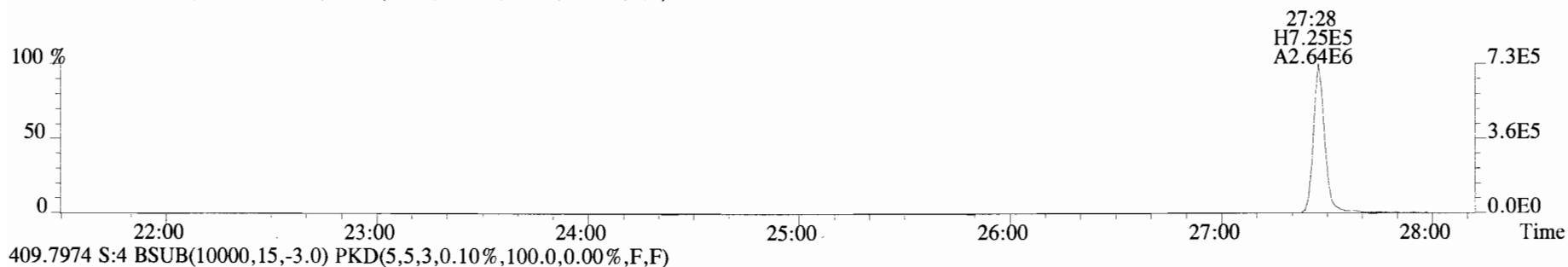
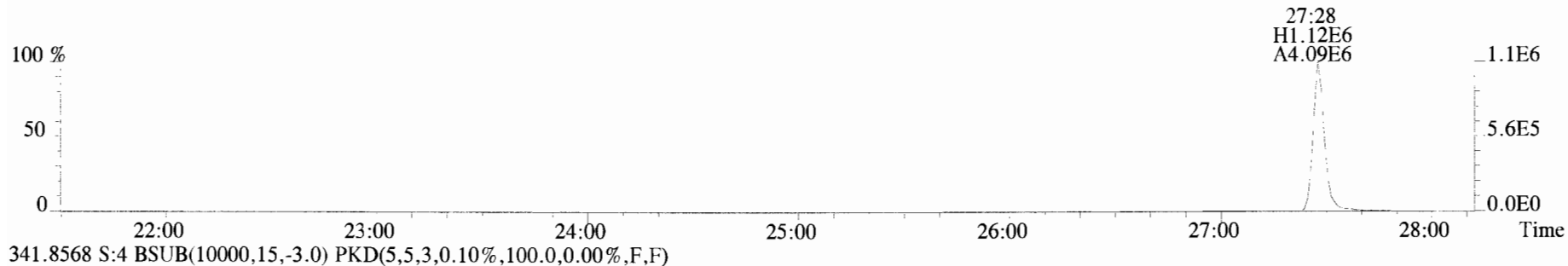
317.9389 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



375.8364 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

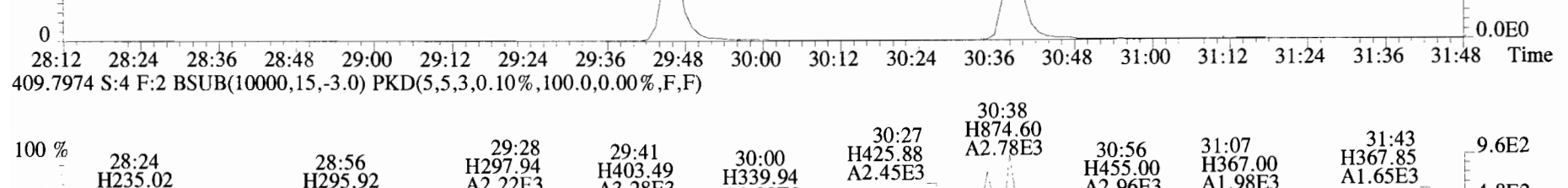
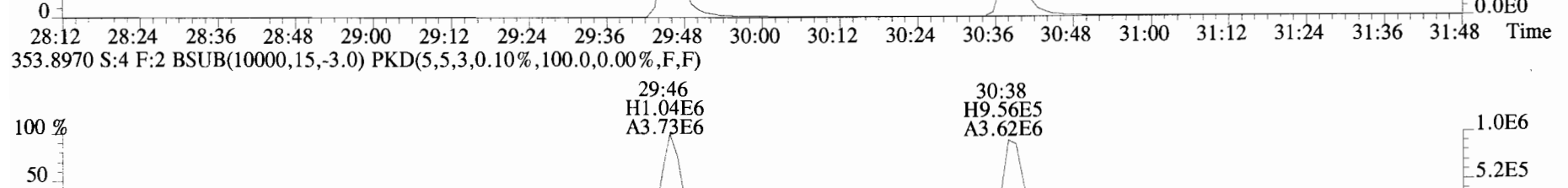
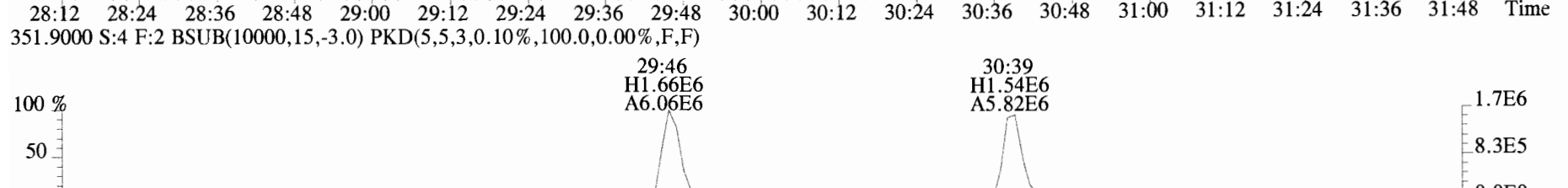
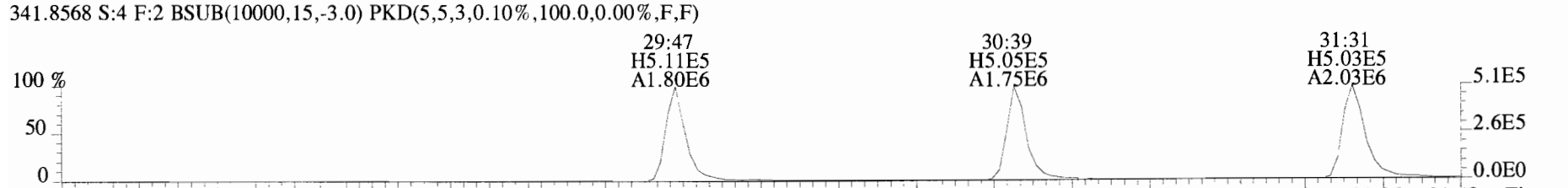
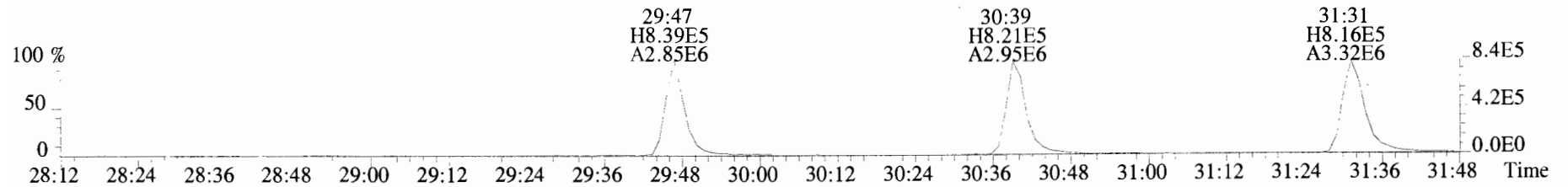


File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#4 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
 339.8597 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

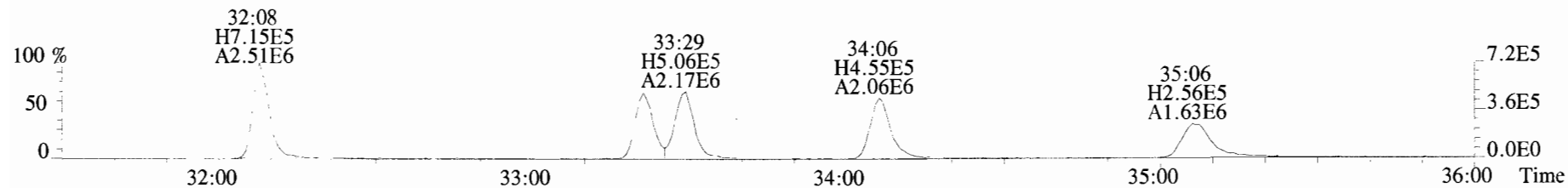




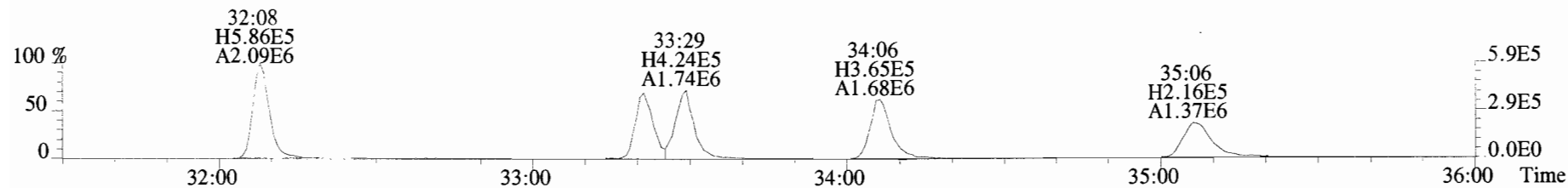
File:191009D1 #1-211 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
339.8597 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



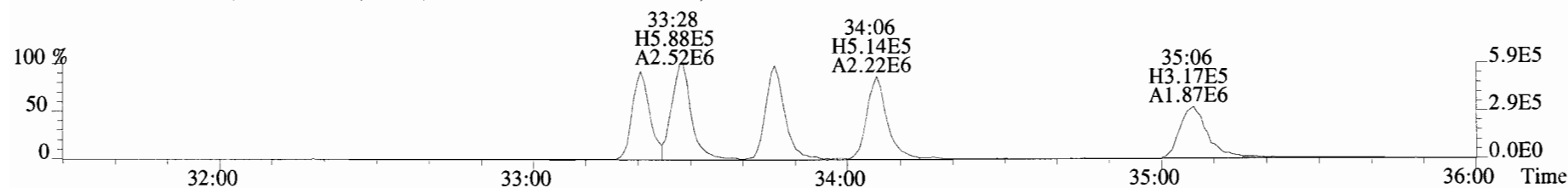
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#4 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
 373.8207 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



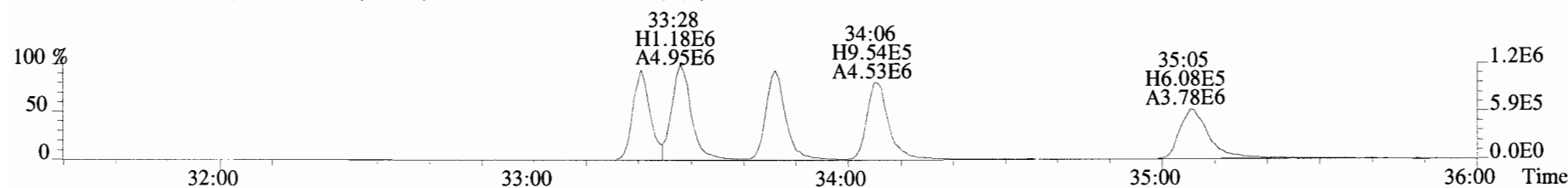
375.8178 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



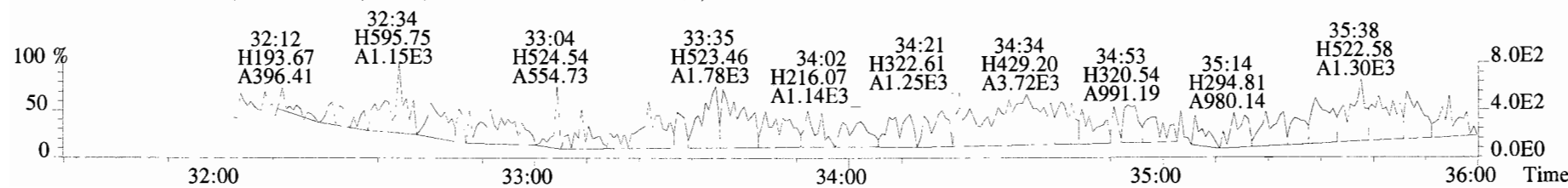
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



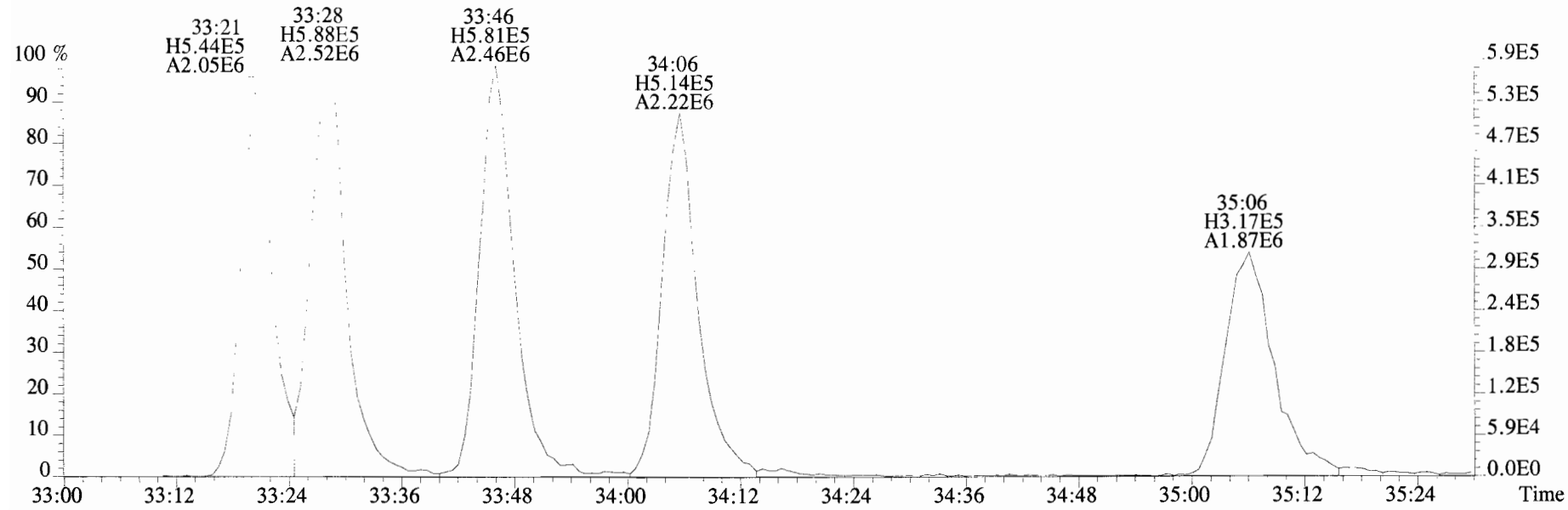
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



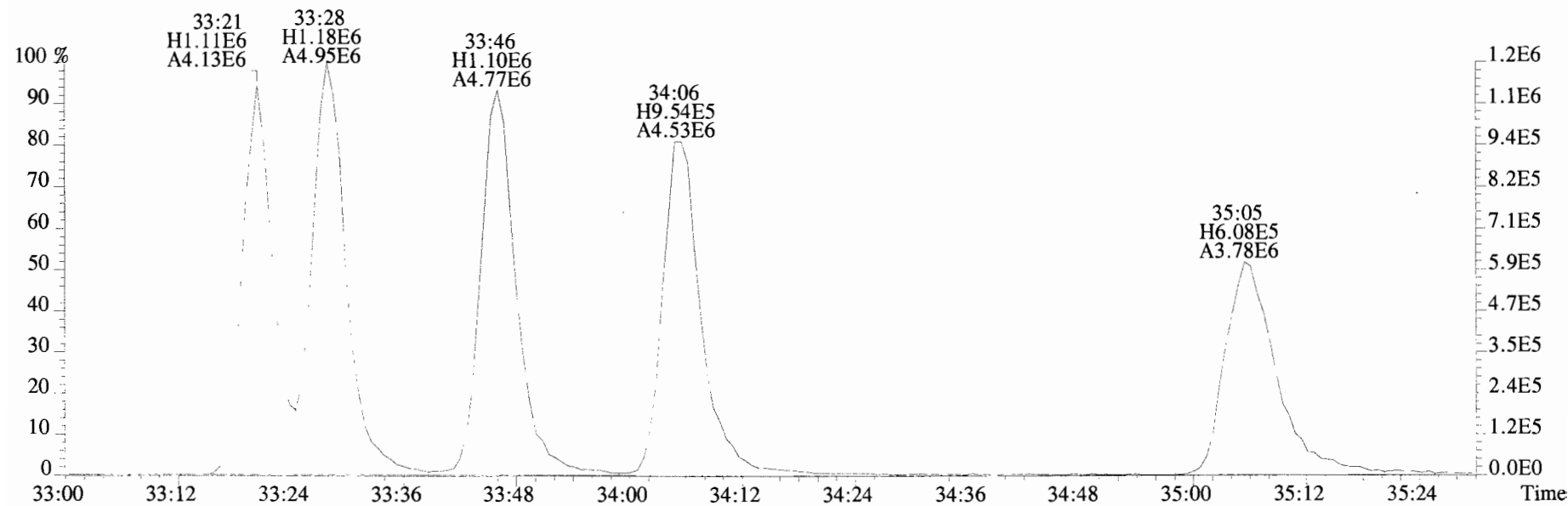
445.7555 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



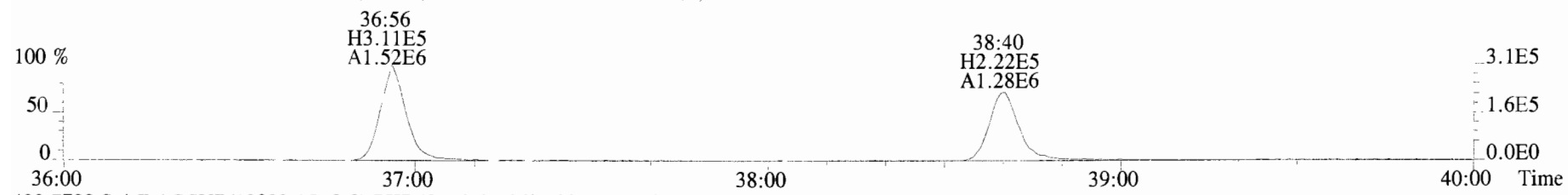
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



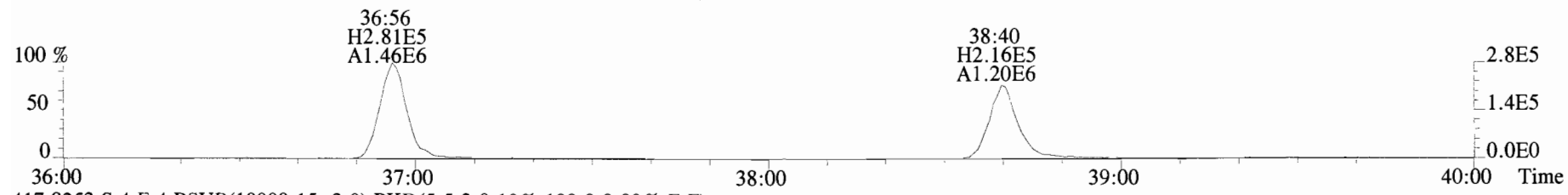
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



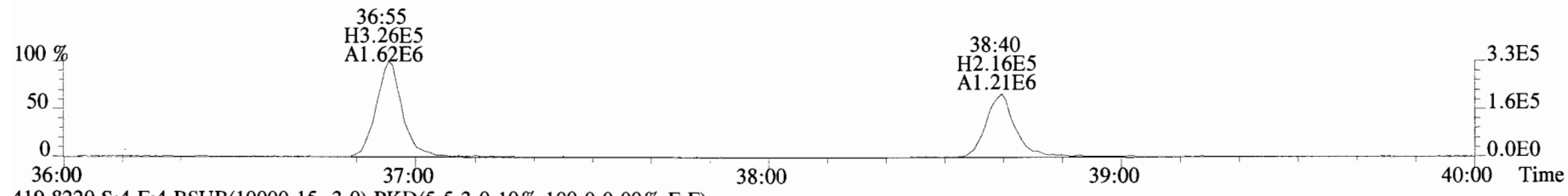
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#4 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
 407.7818 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



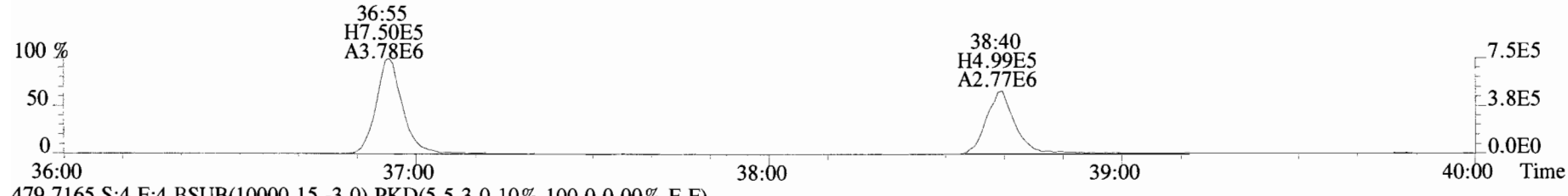
409.7788 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



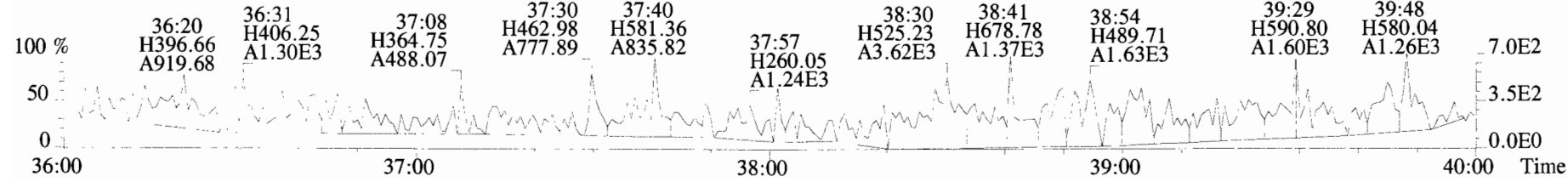
417.8253 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



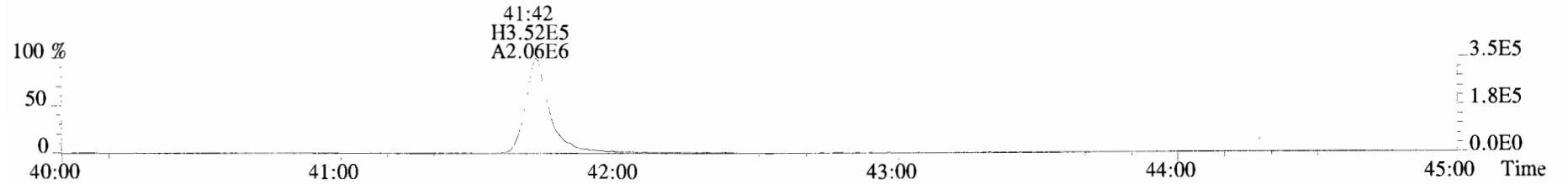
419.8220 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



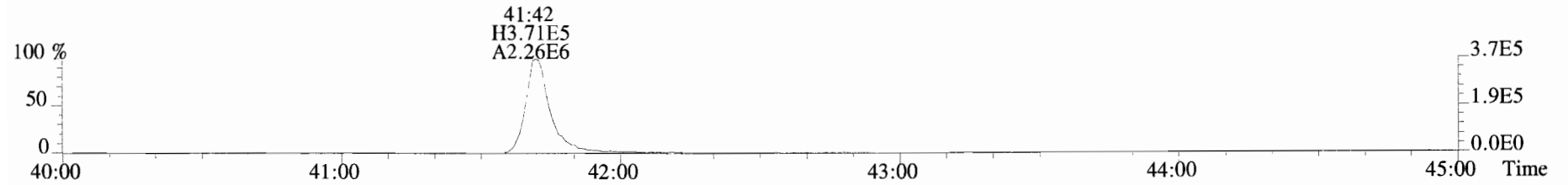
479.7165 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



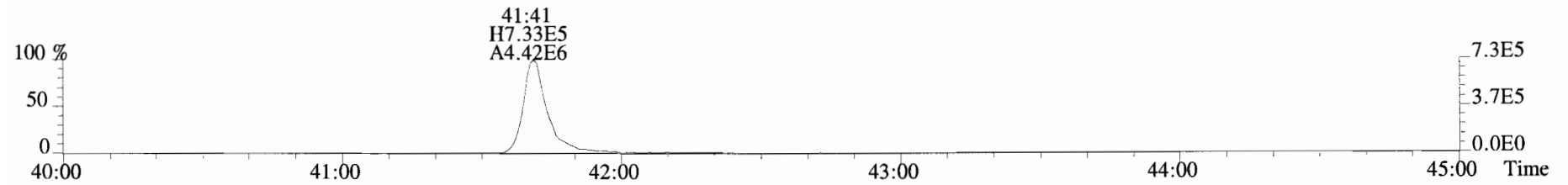
File:191009D1 #1-432 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#4 File Text:Vista Analytical\_Laboratory\_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD\_DB5  
441.7428 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



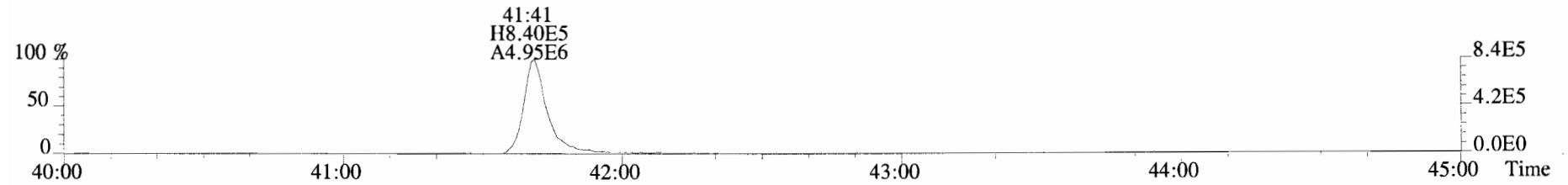
443.7398 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



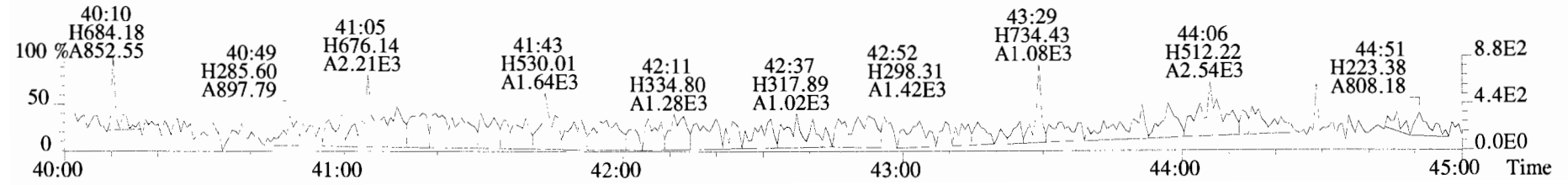
453.7831 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



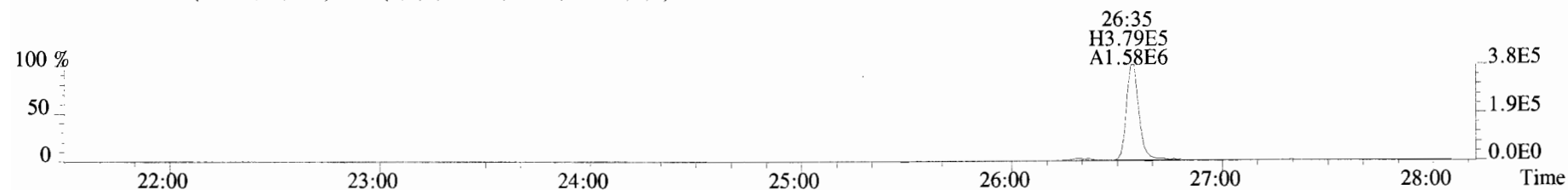
455.7801 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



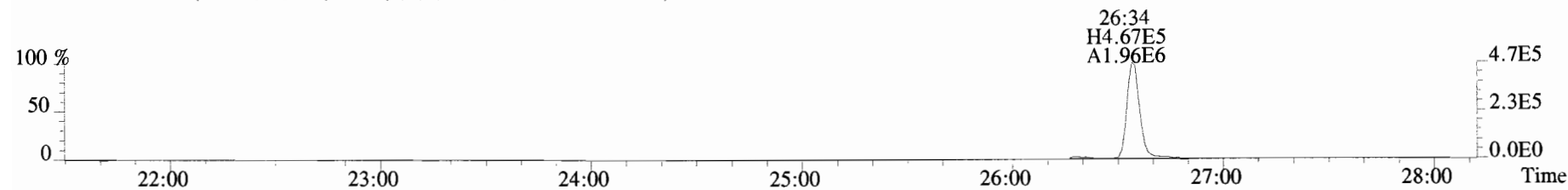
513.6775 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



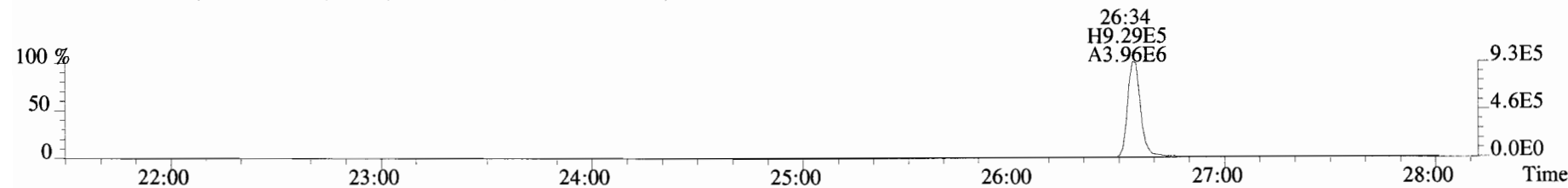
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
319.8965 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



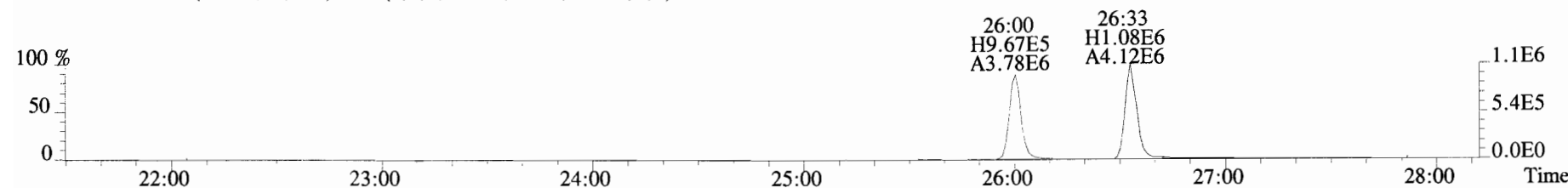
321.8936 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



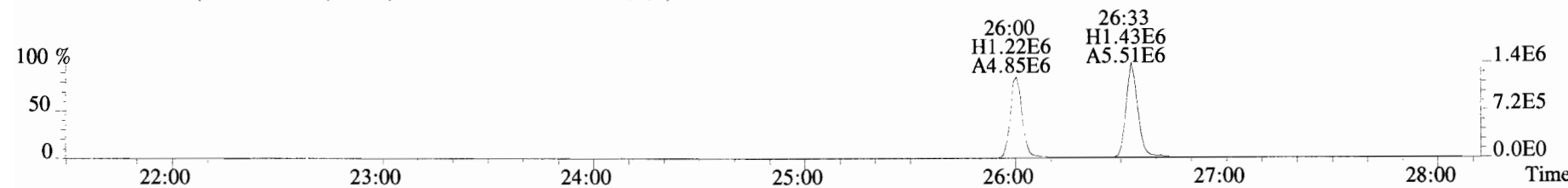
327.8847 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



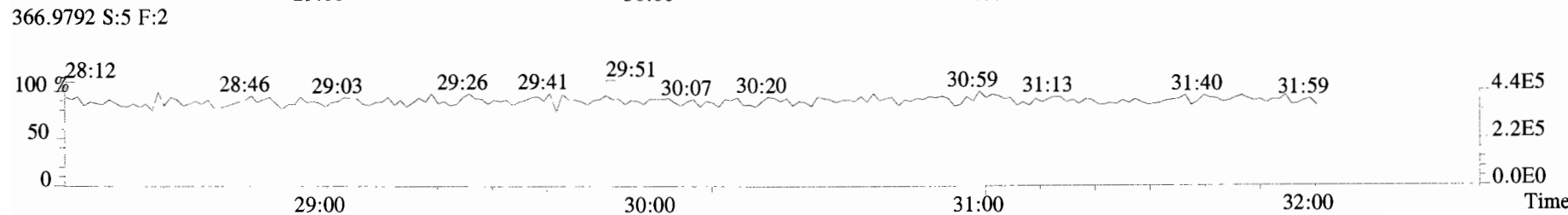
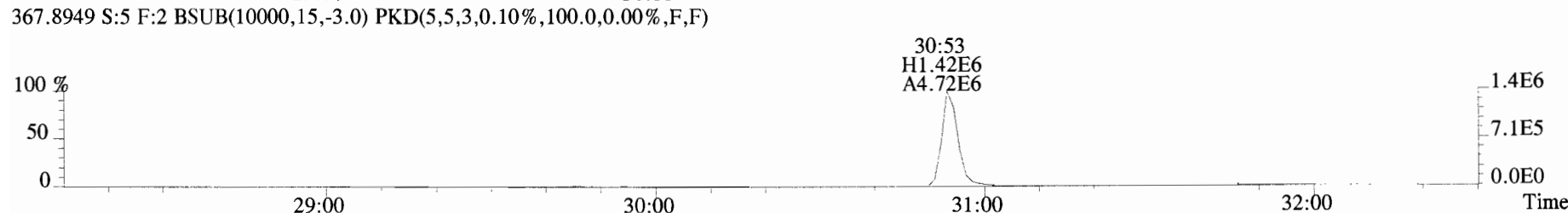
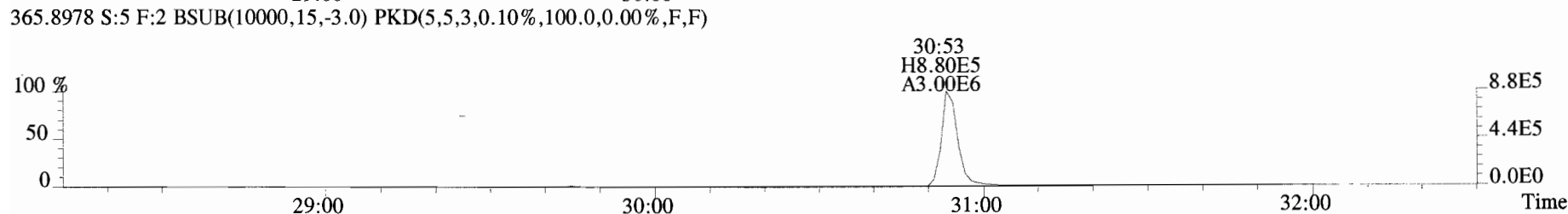
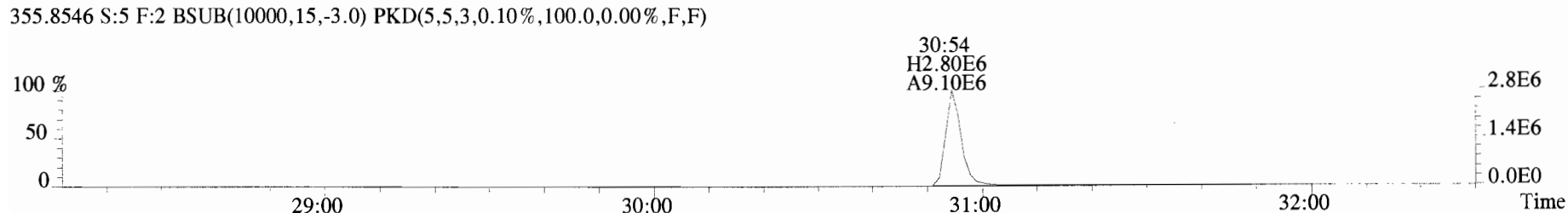
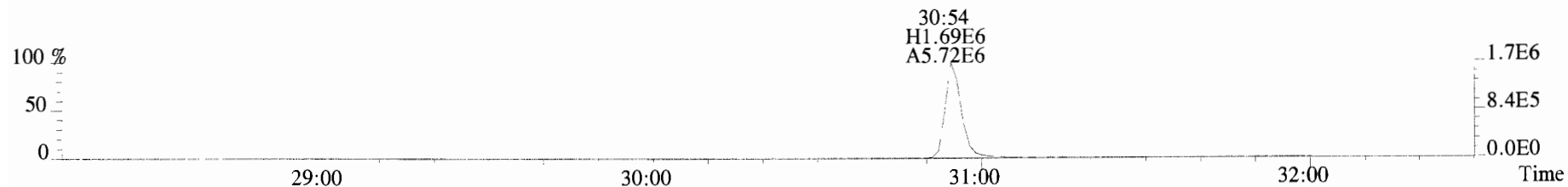
331.9368 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



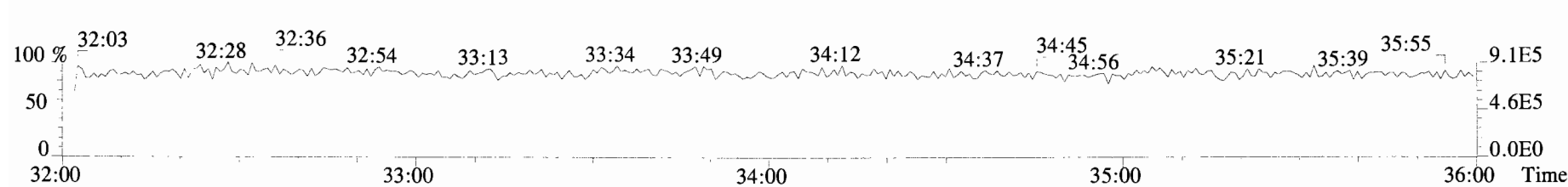
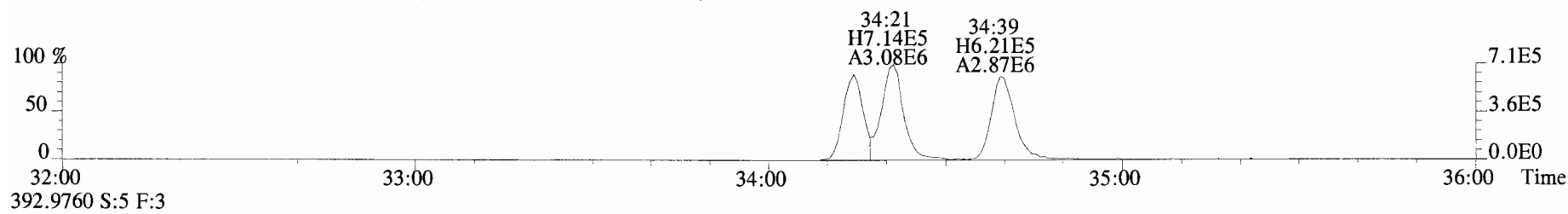
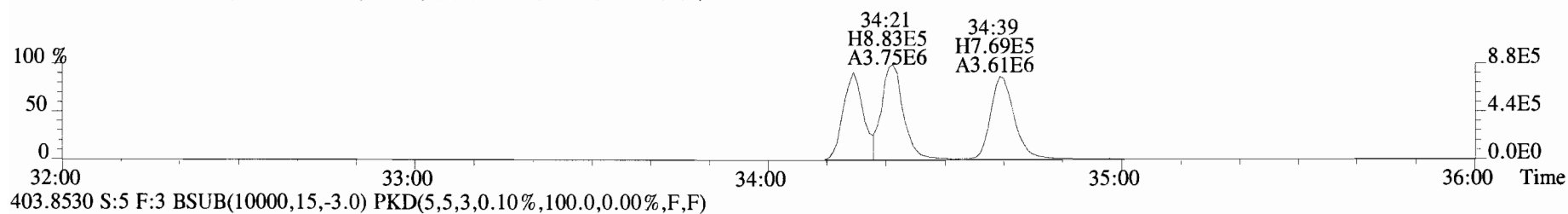
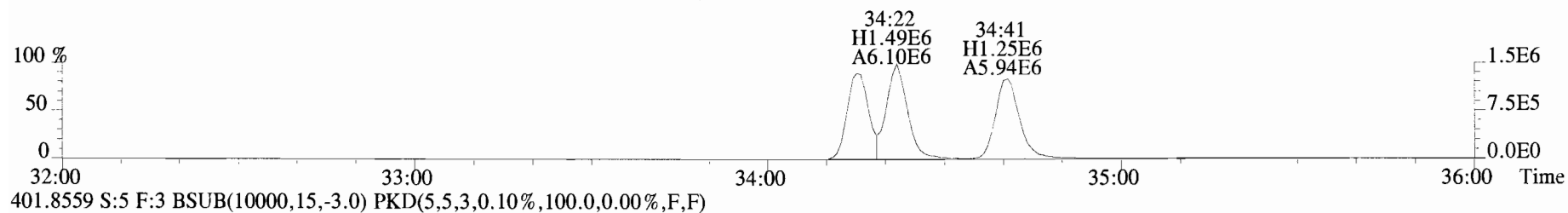
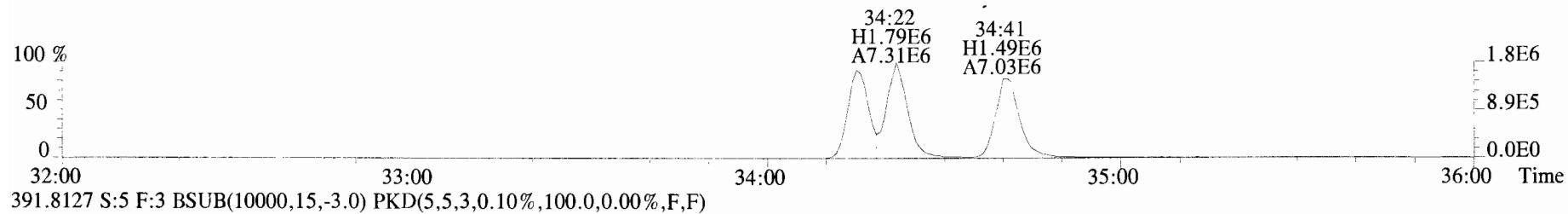
333.9339 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

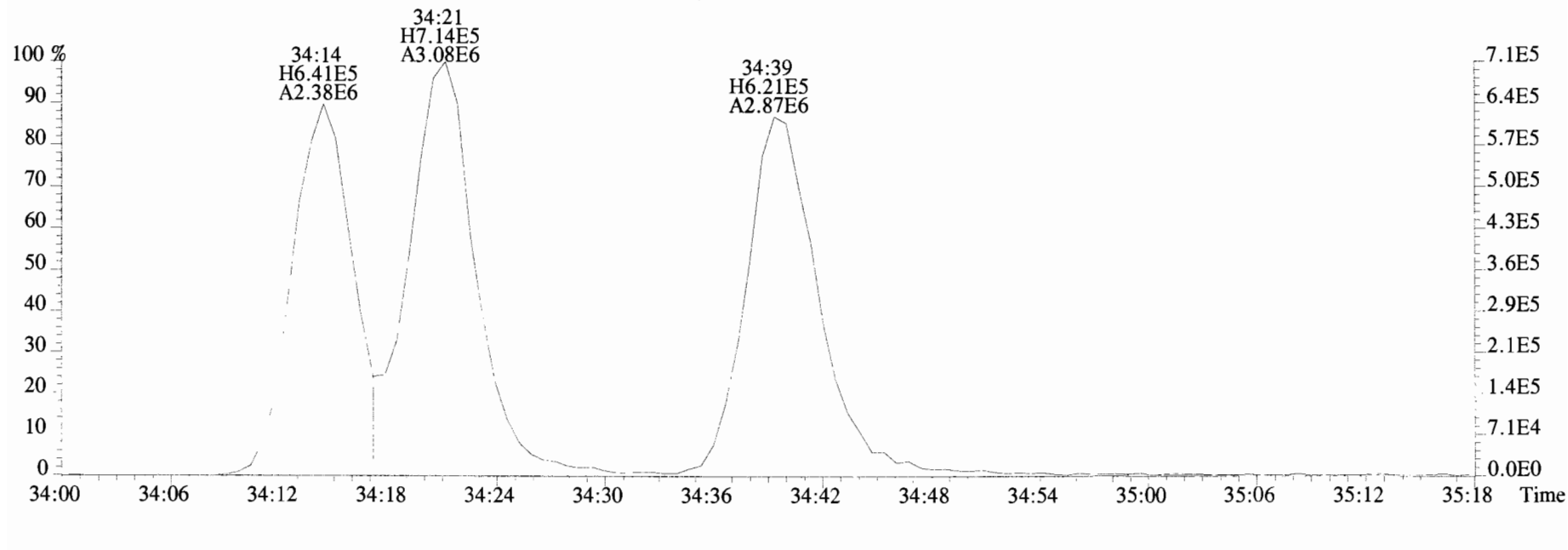
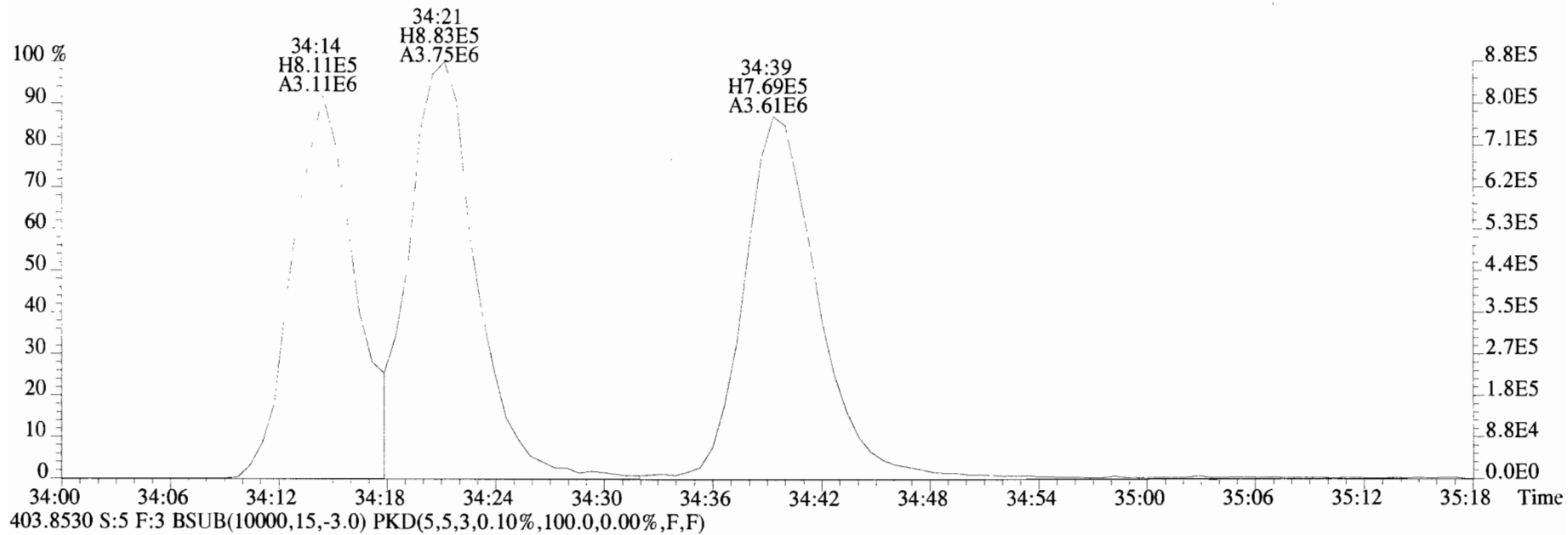


File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
389.8156 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

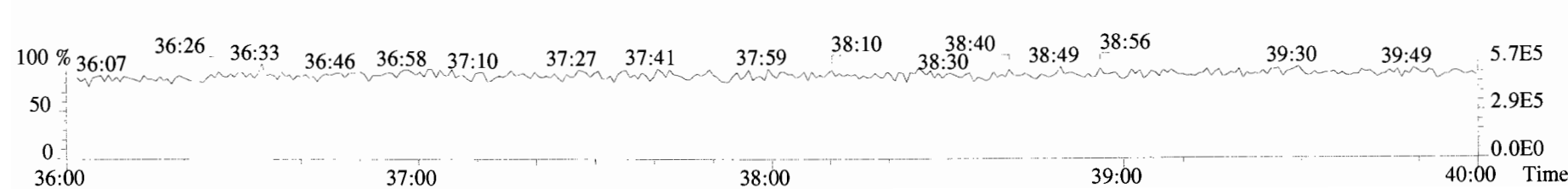
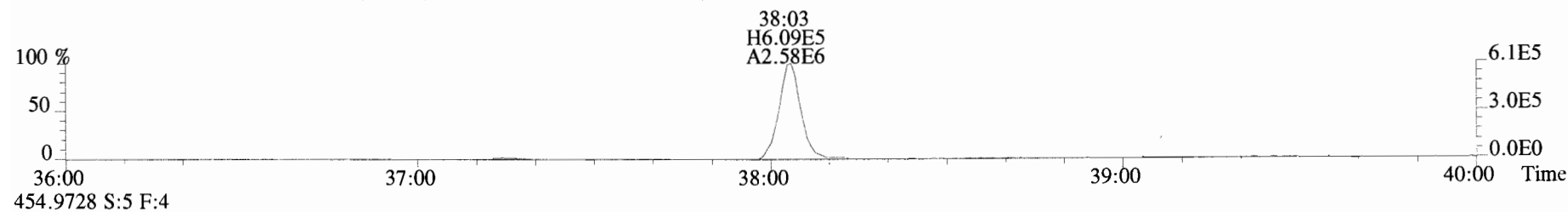
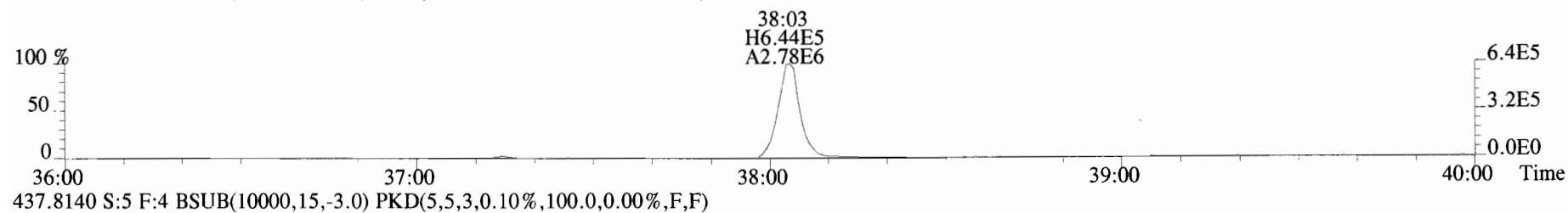
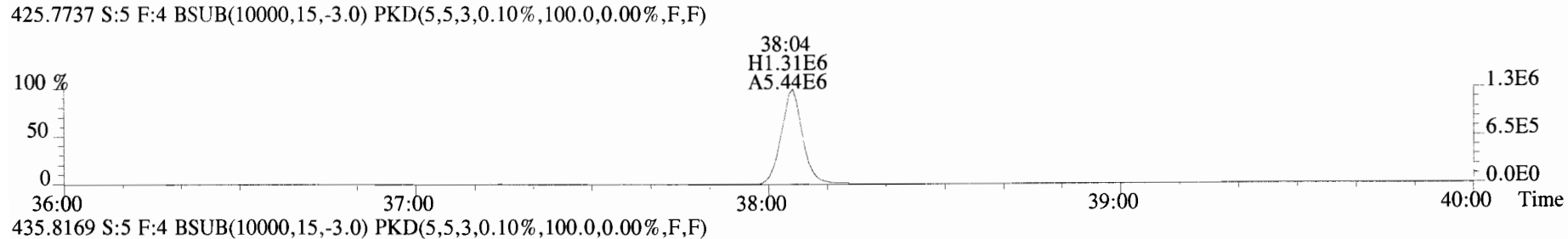
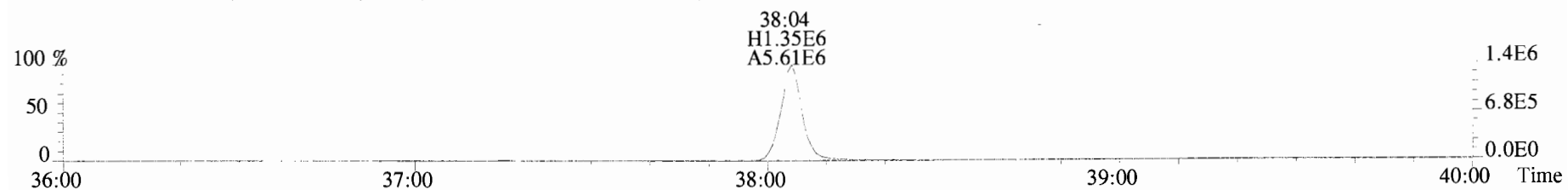




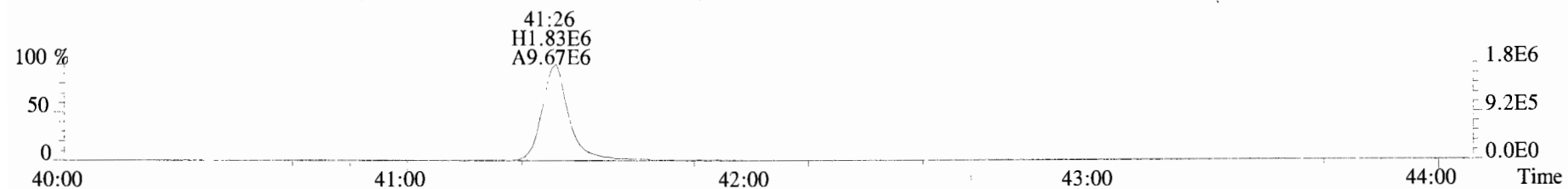
File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text: Vista Analytical Laboratory VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
401.8559 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



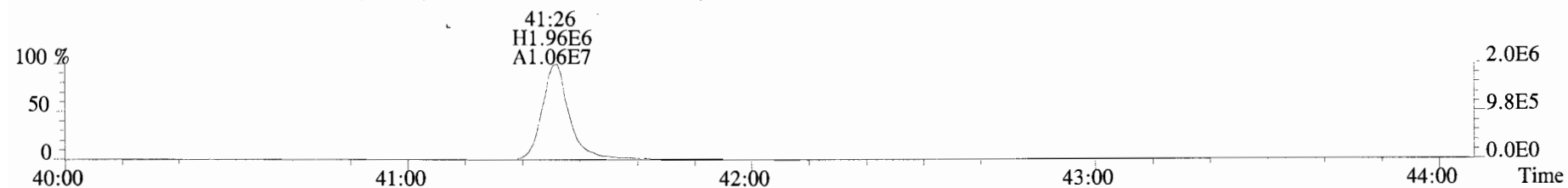
File:191009D1 #1-356 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text: Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
423.7767 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



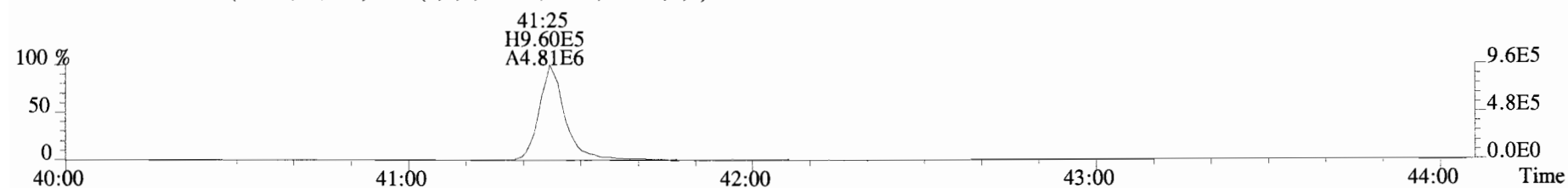
File:191009D1 #1-431 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
457.7377 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



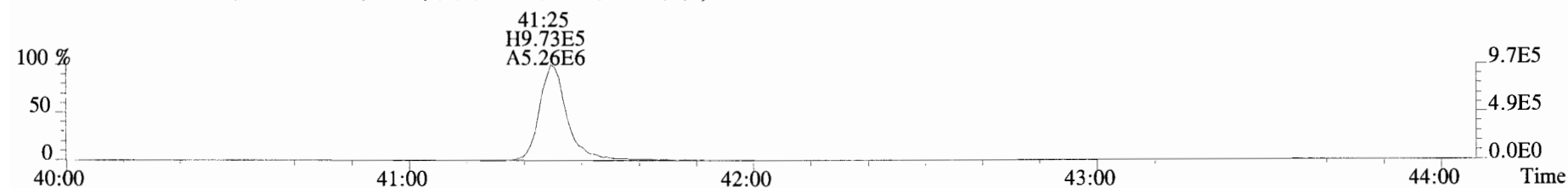
459.7348 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



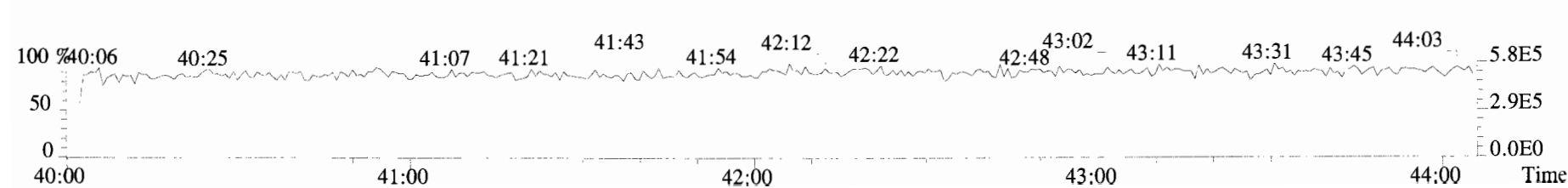
469.7780 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



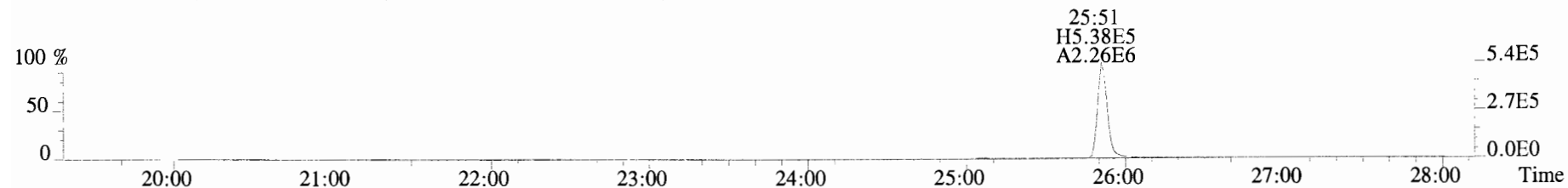
471.7750 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



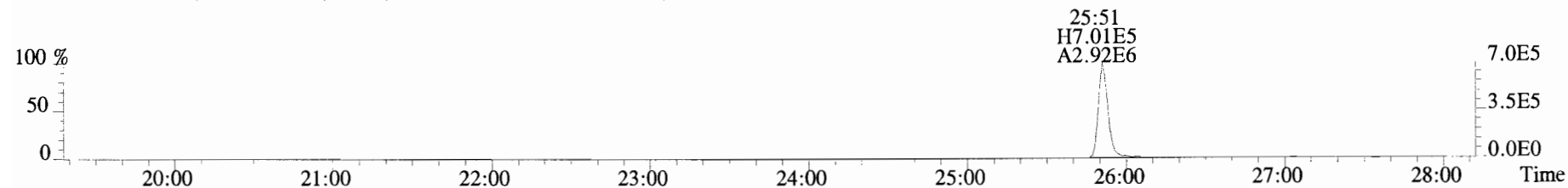
454.9728 S:5 F:5



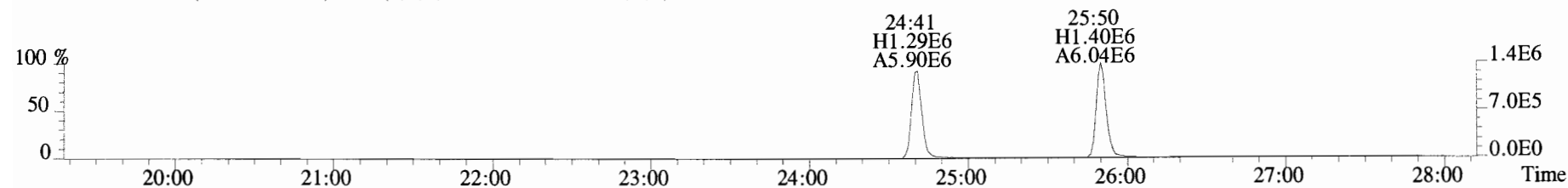
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
303.9016 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



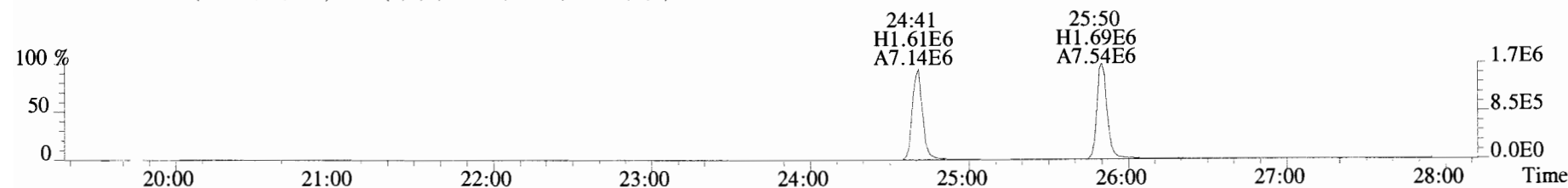
305.8987 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



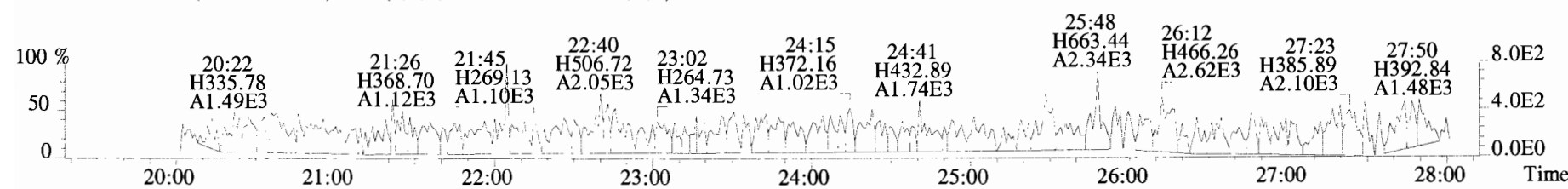
315.9419 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



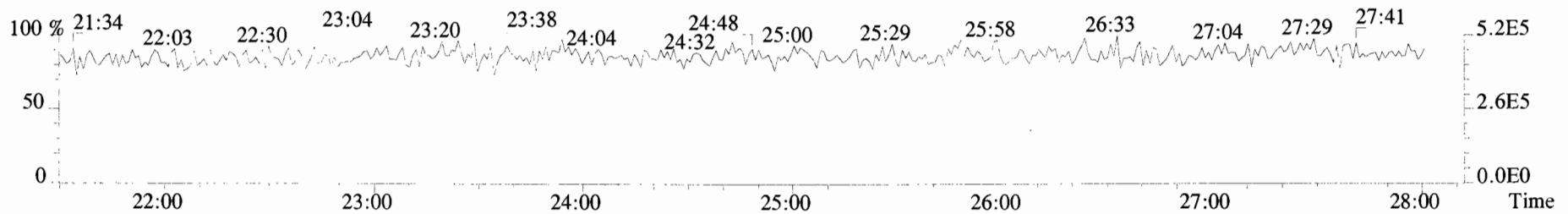
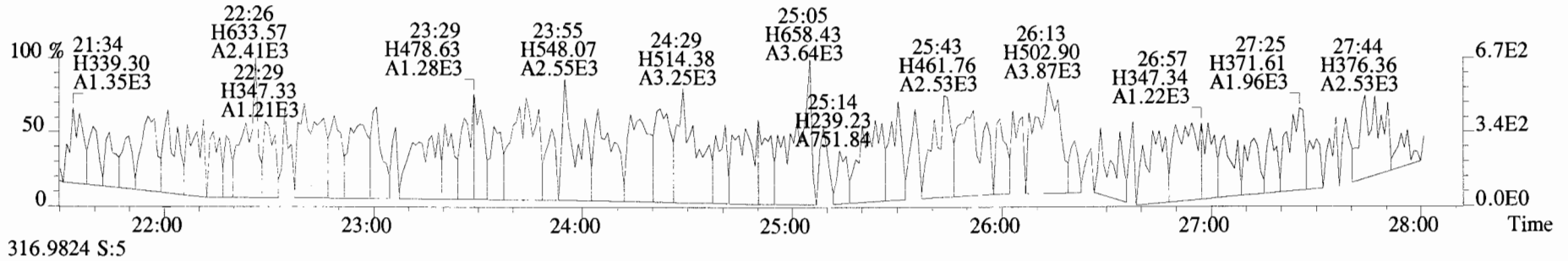
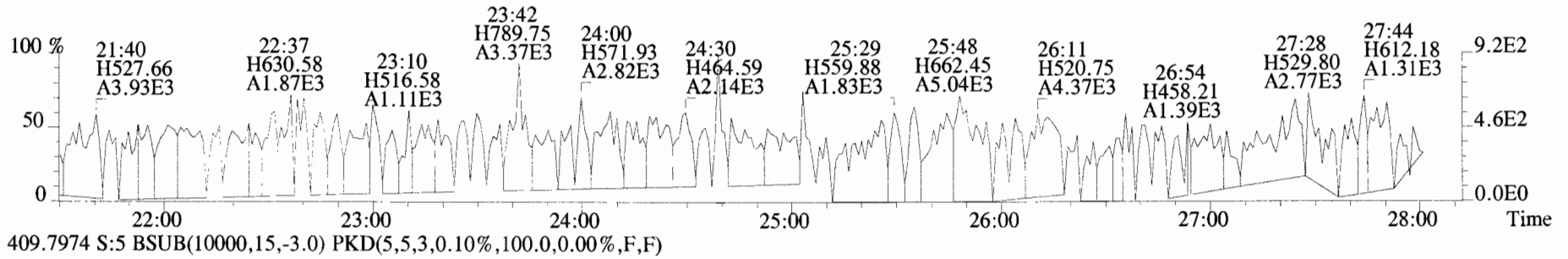
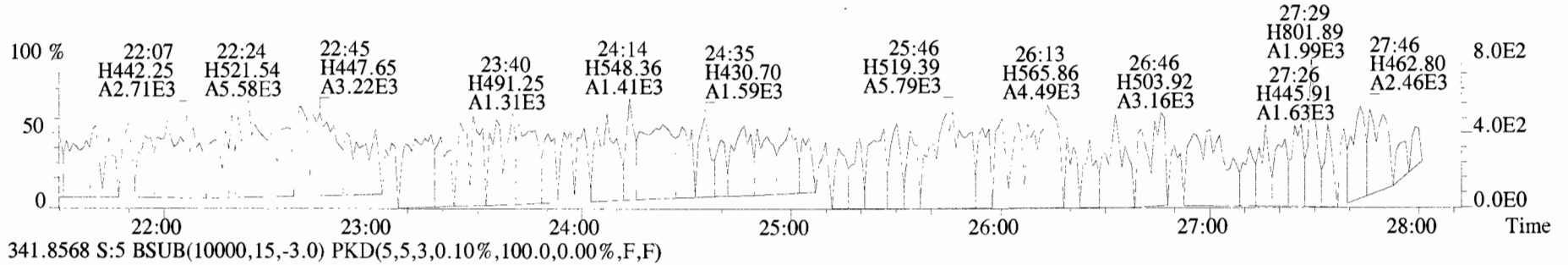
317.9389 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



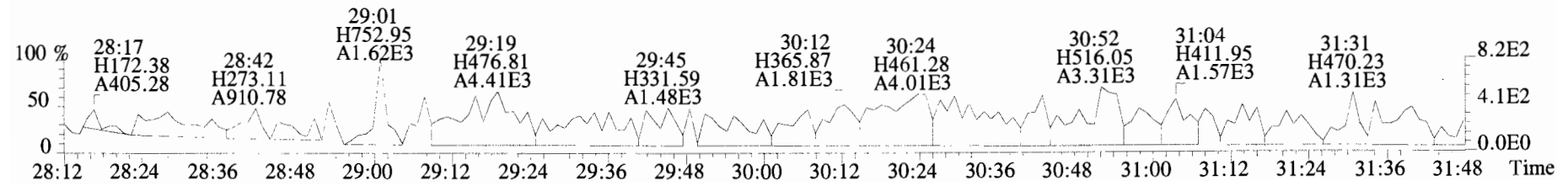
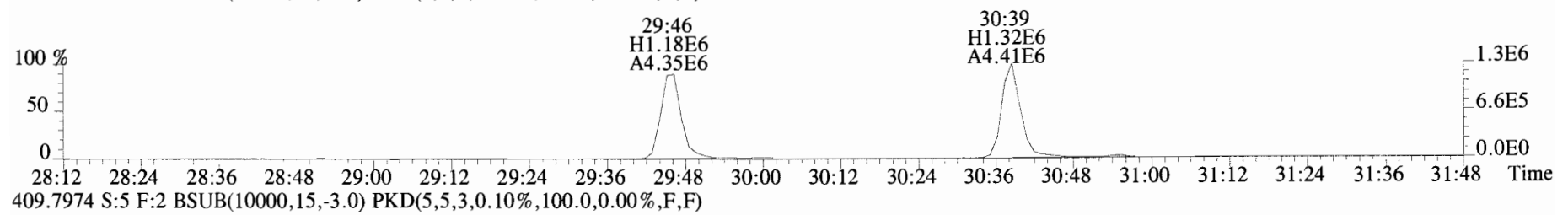
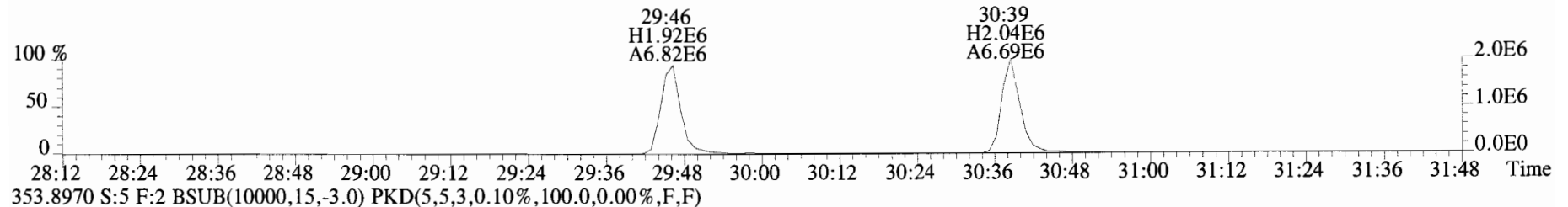
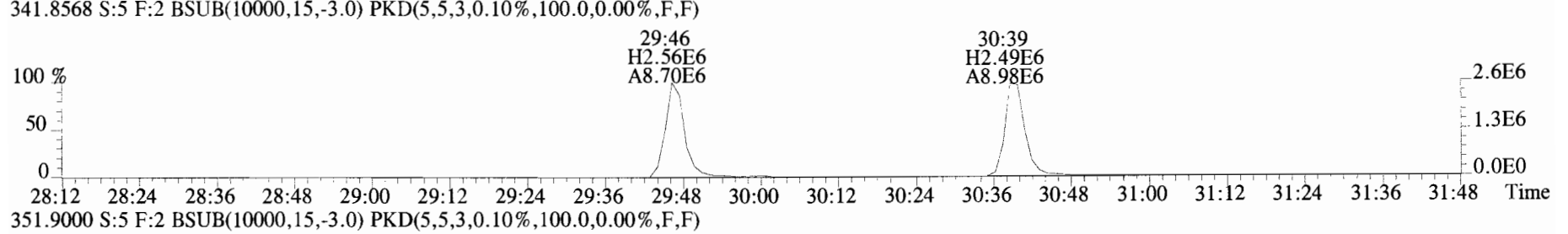
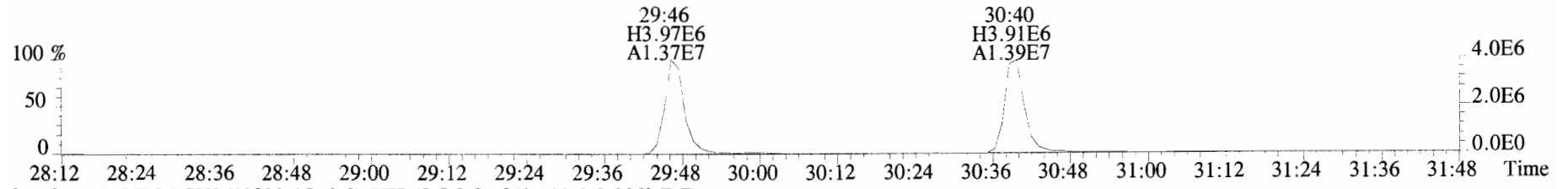
375.8364 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



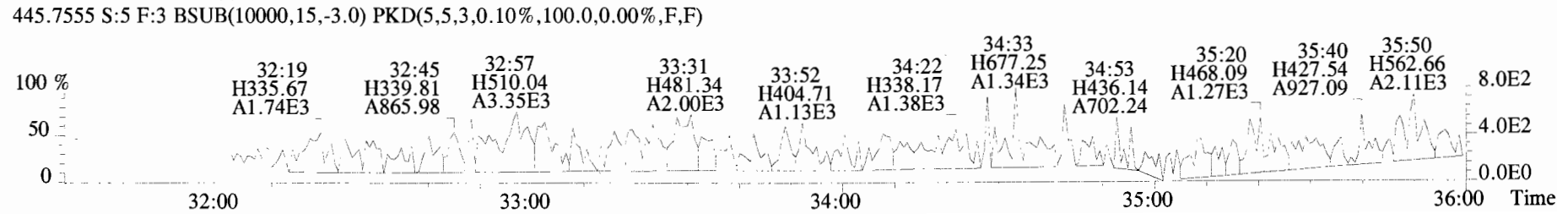
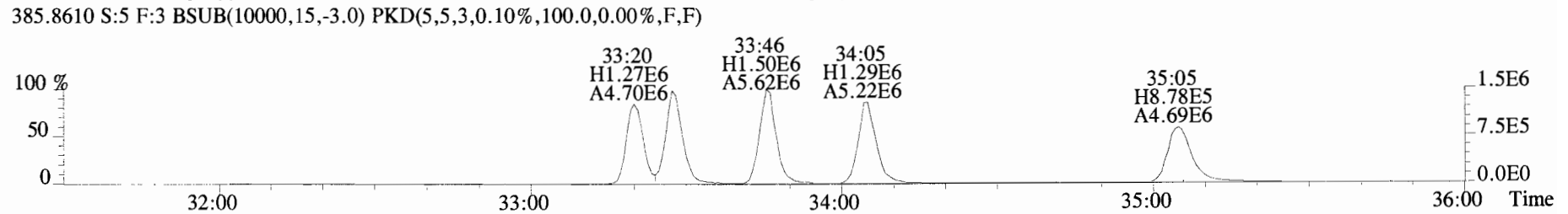
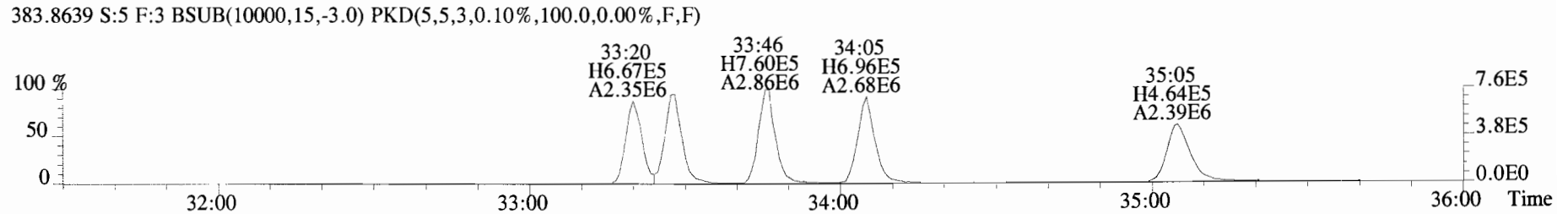
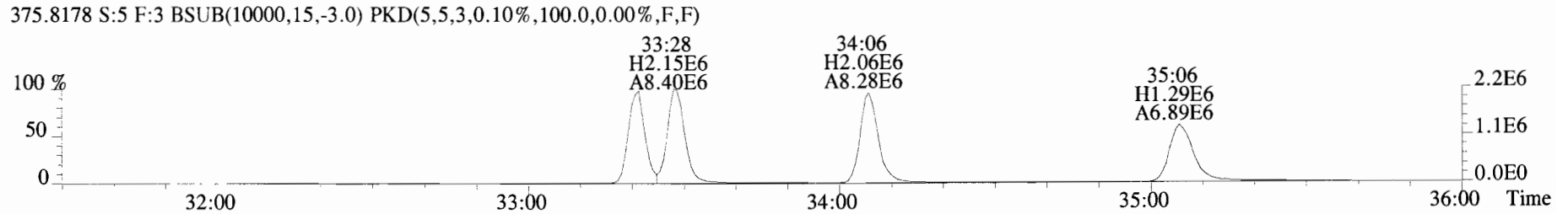
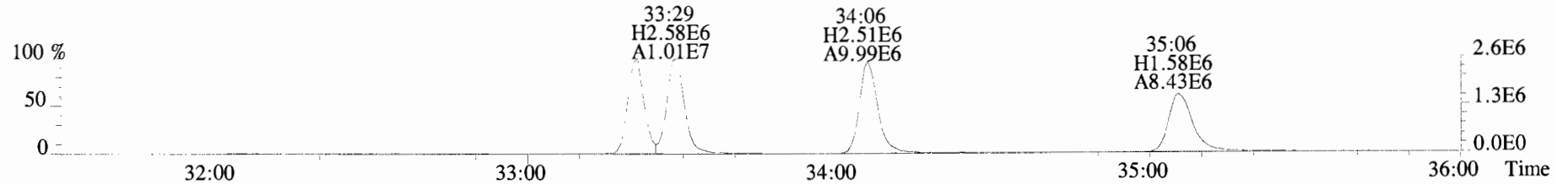
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#5 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
 339.8597 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



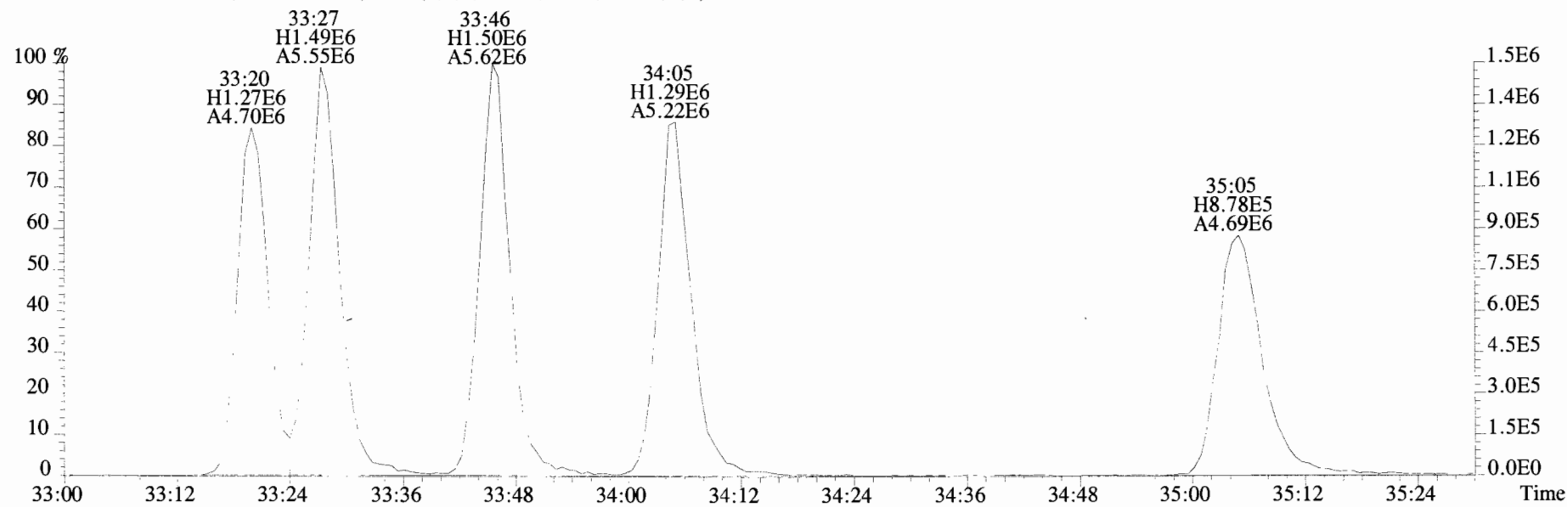
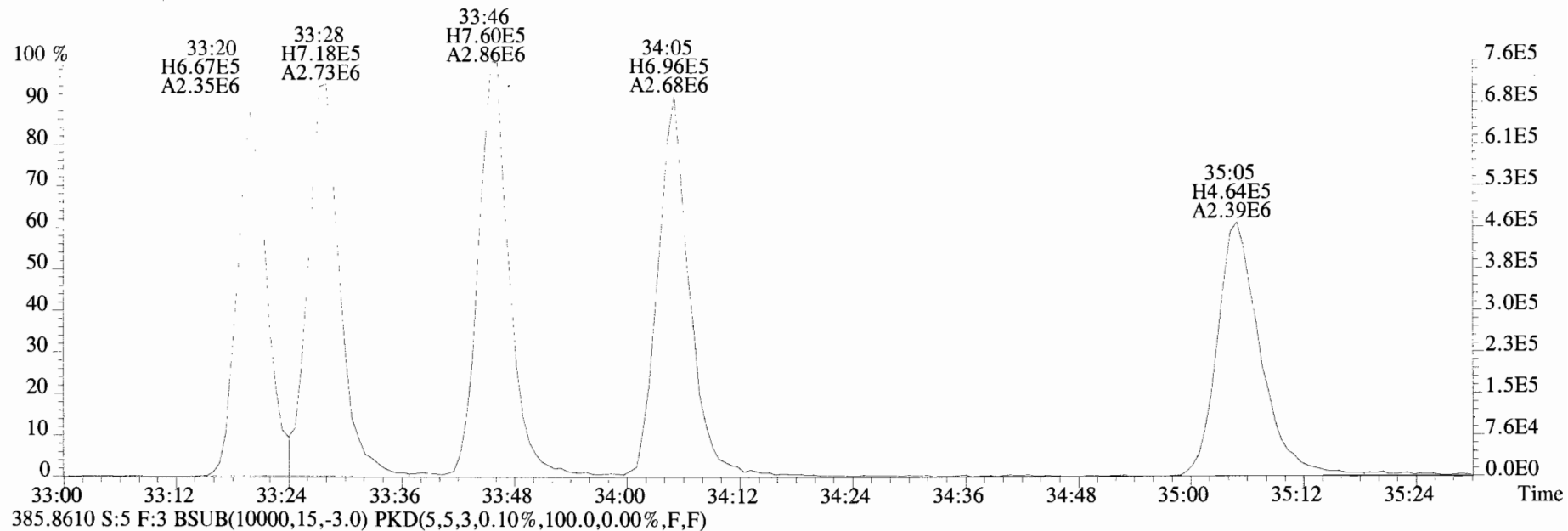
File:191009D1 #1-210 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
339.8597 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

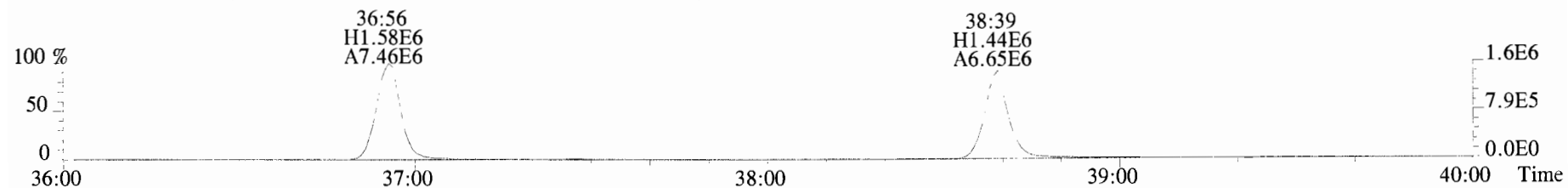


File: 191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text: Vista Analytical Laboratory VG7 Text: ST191009D1-5 1613 CS4 19C2205 Exp: OCDD\_DB5  
383.8639 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

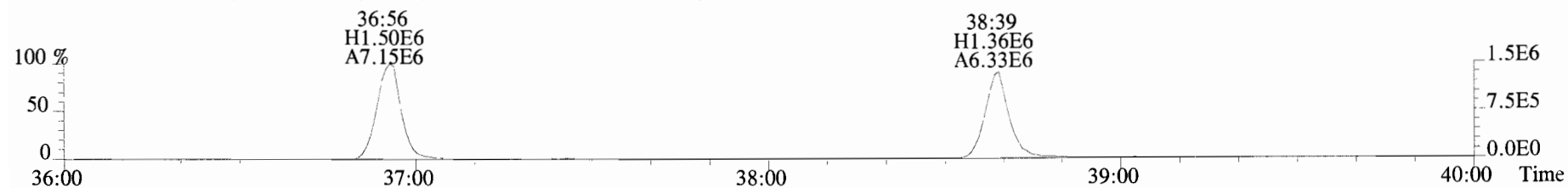




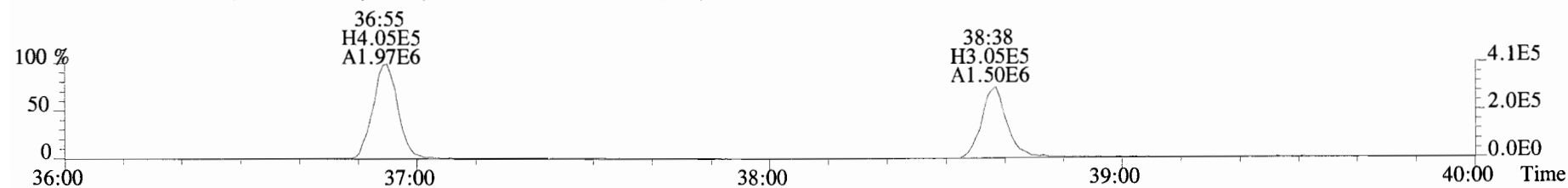
File:191009D1 #1-356 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text: Vista Analytical Laboratory\_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
407.7818 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



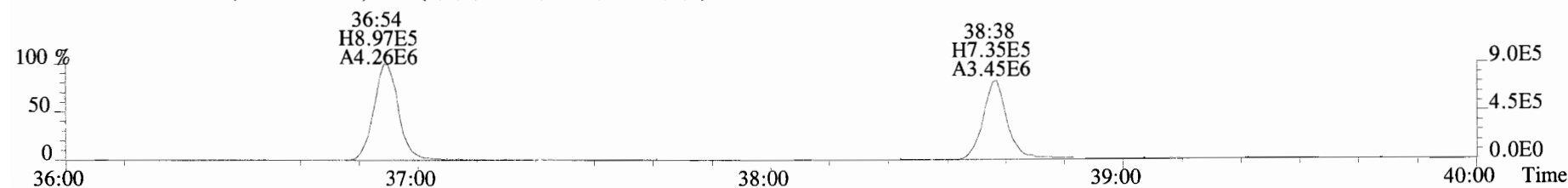
409.7788 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



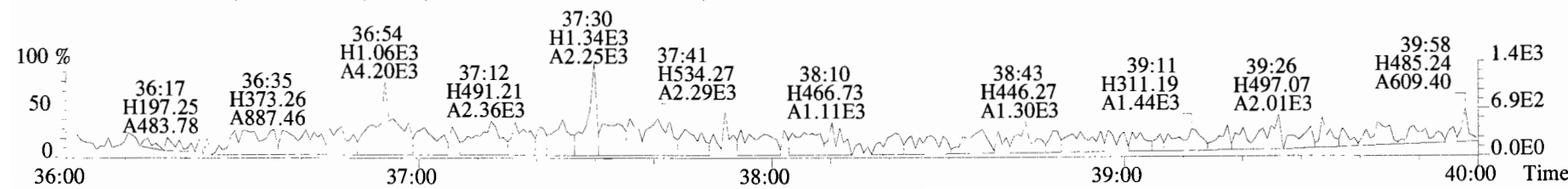
417.8253 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



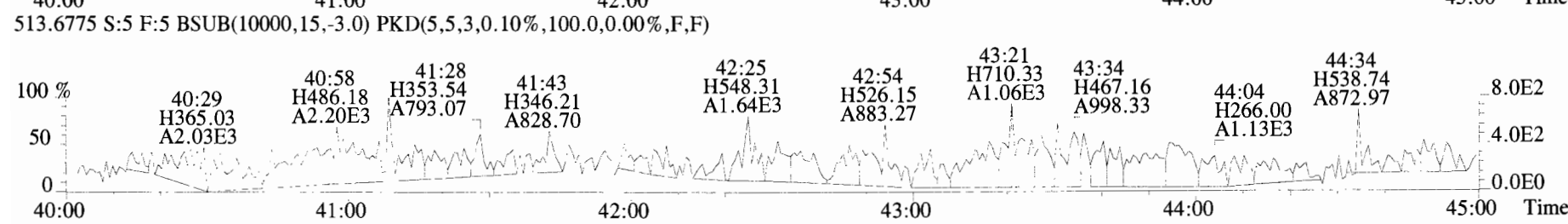
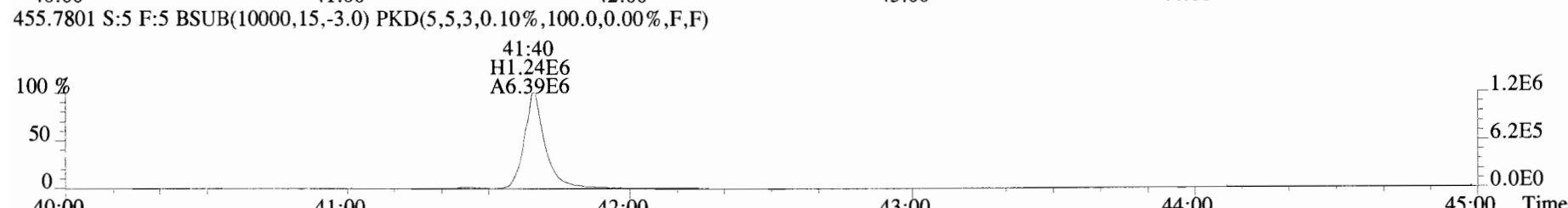
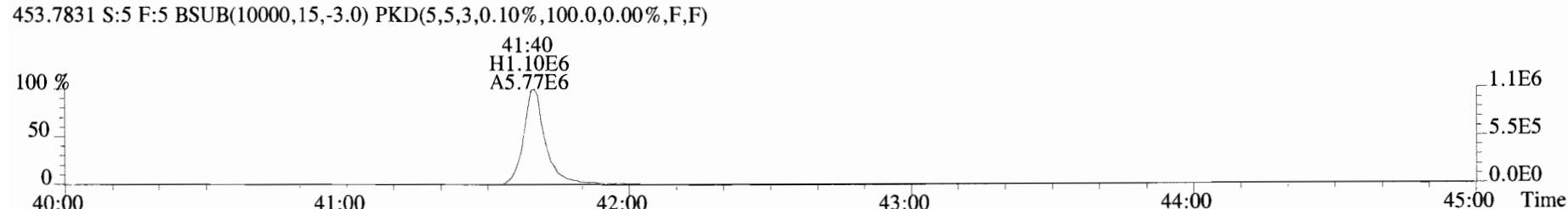
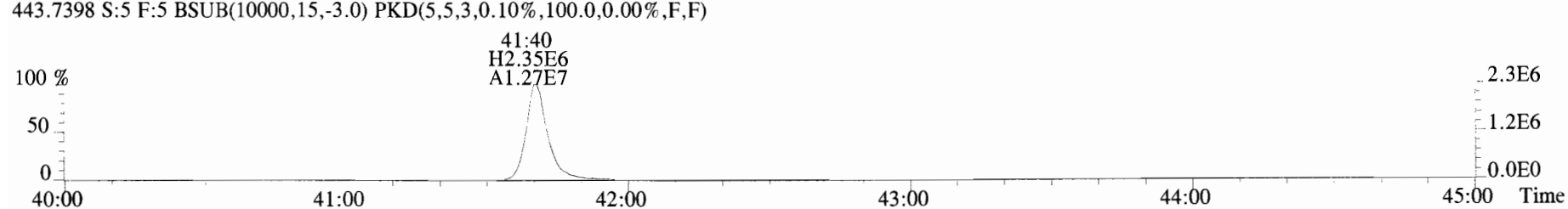
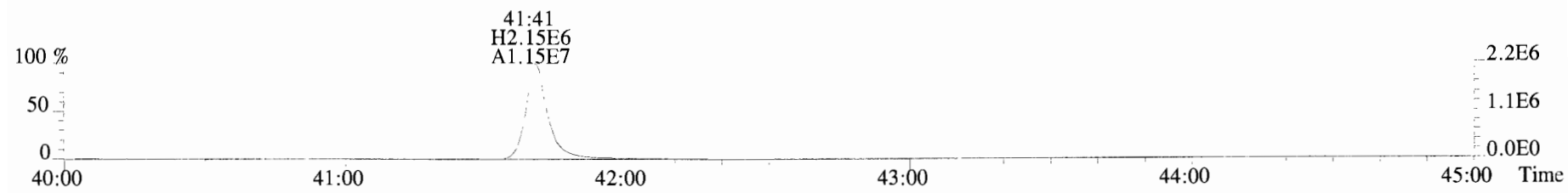
419.8220 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



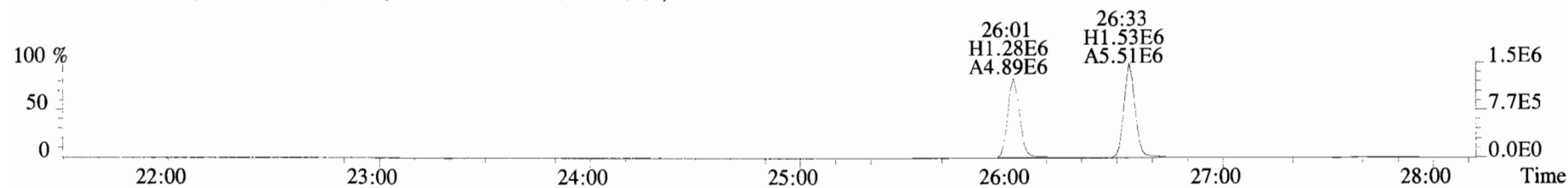
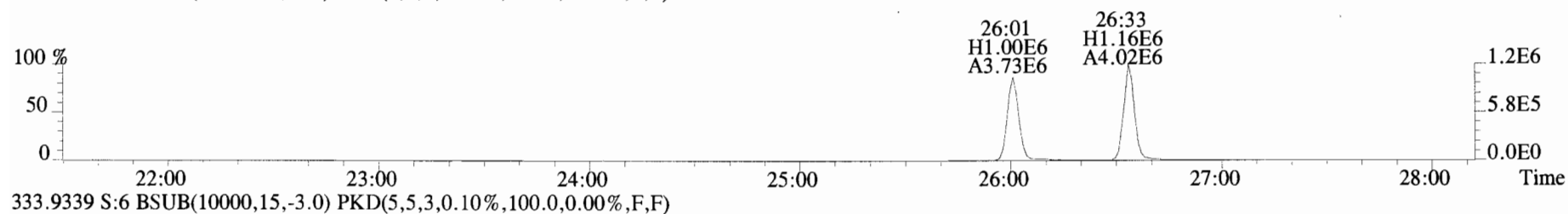
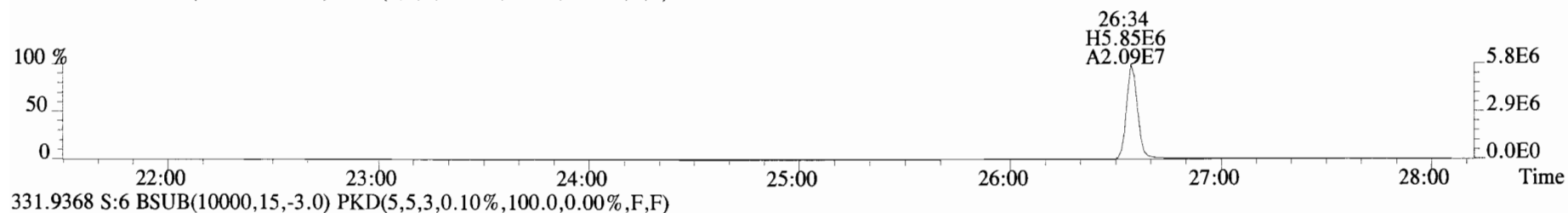
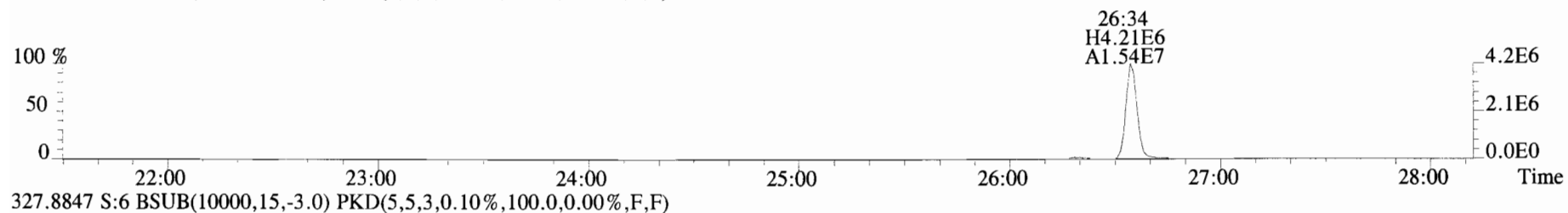
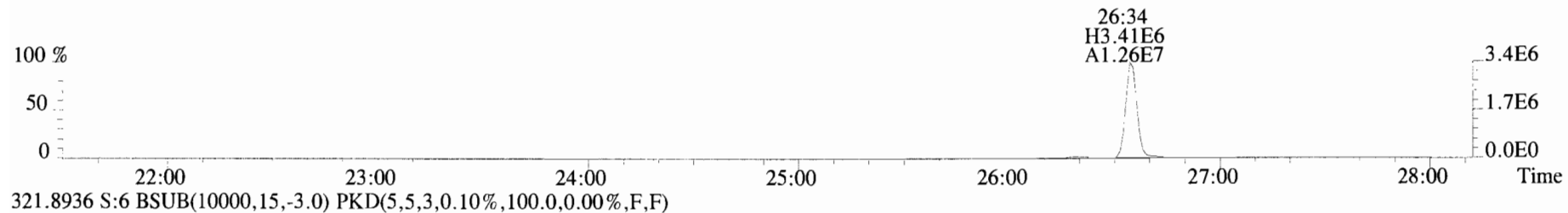
479.7165 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



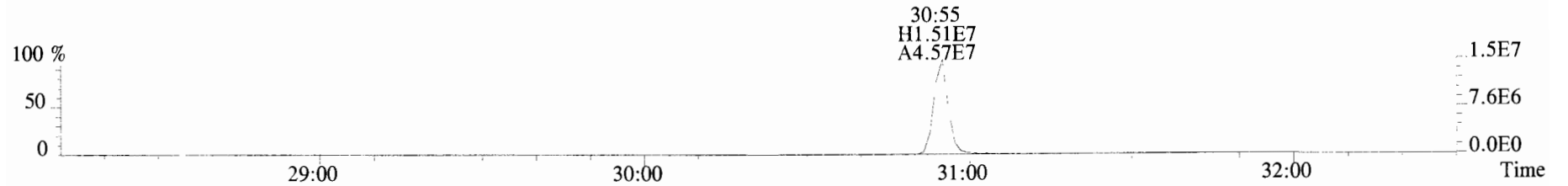
File:191009D1 #1-431 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#5 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD\_DB5  
441.7428 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



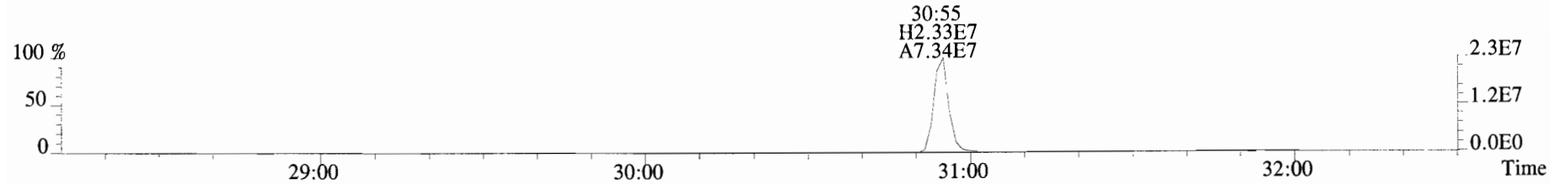
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
319.8965 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



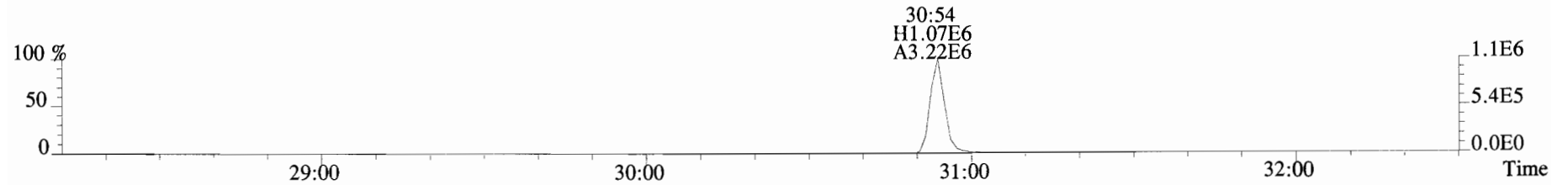
File:191009D1 #1-211 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
353.8576 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



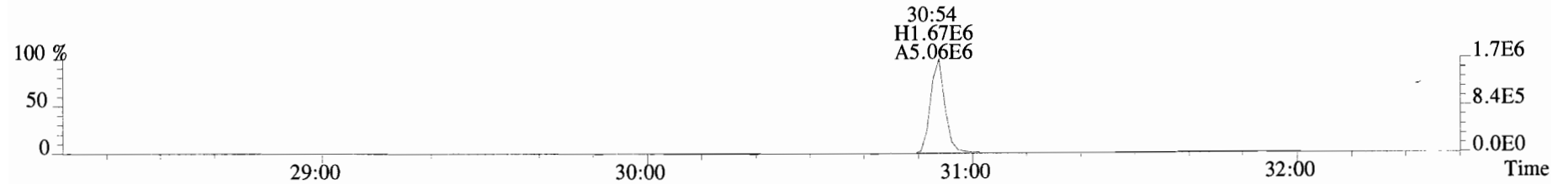
355.8546 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



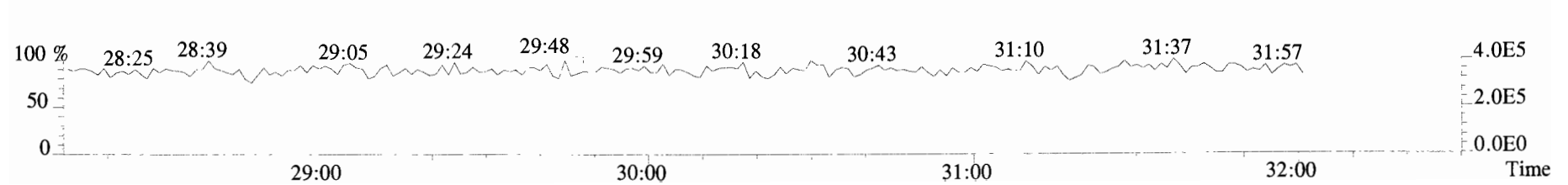
365.8978 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



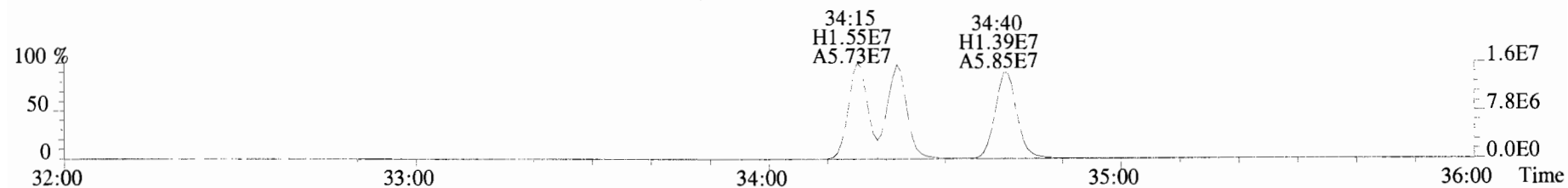
367.8949 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



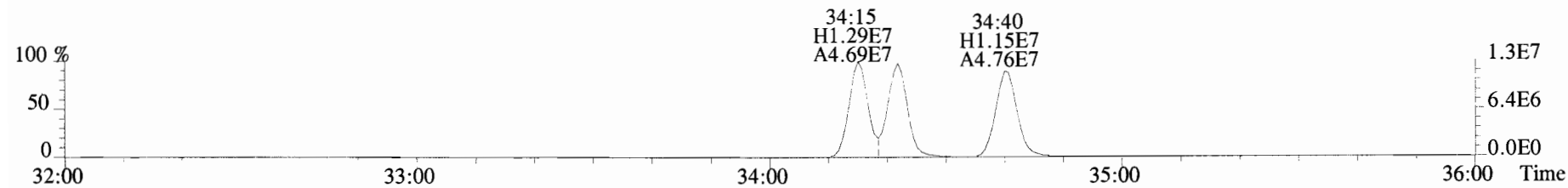
366.9792 S:6 F:2



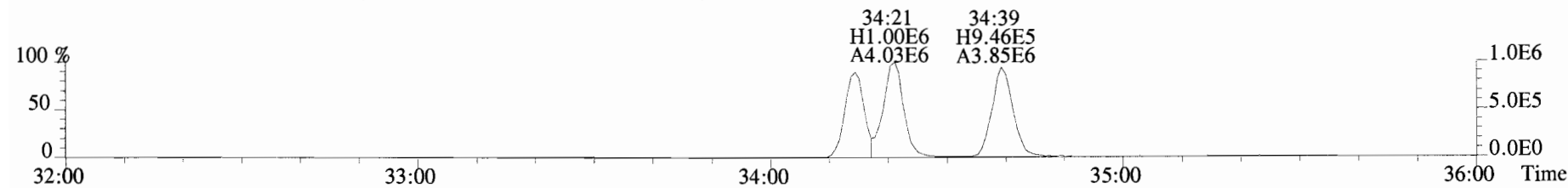
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
389.8156 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



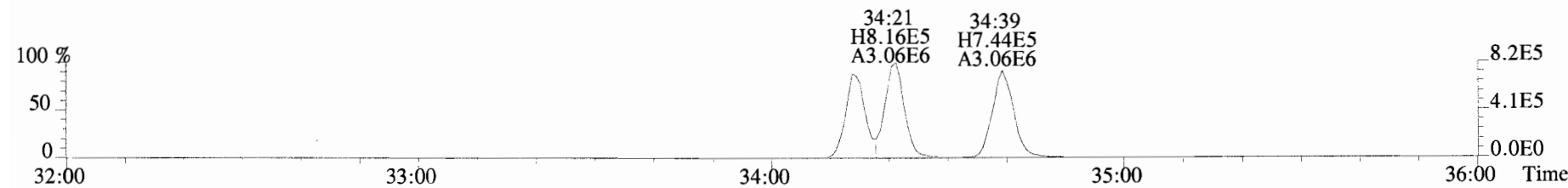
391.8127 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



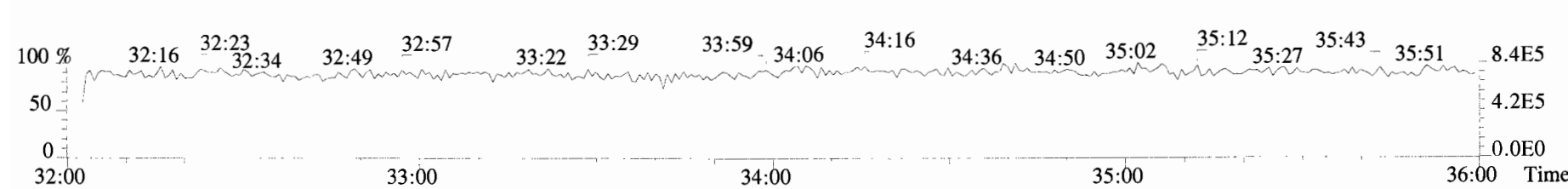
401.8559 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



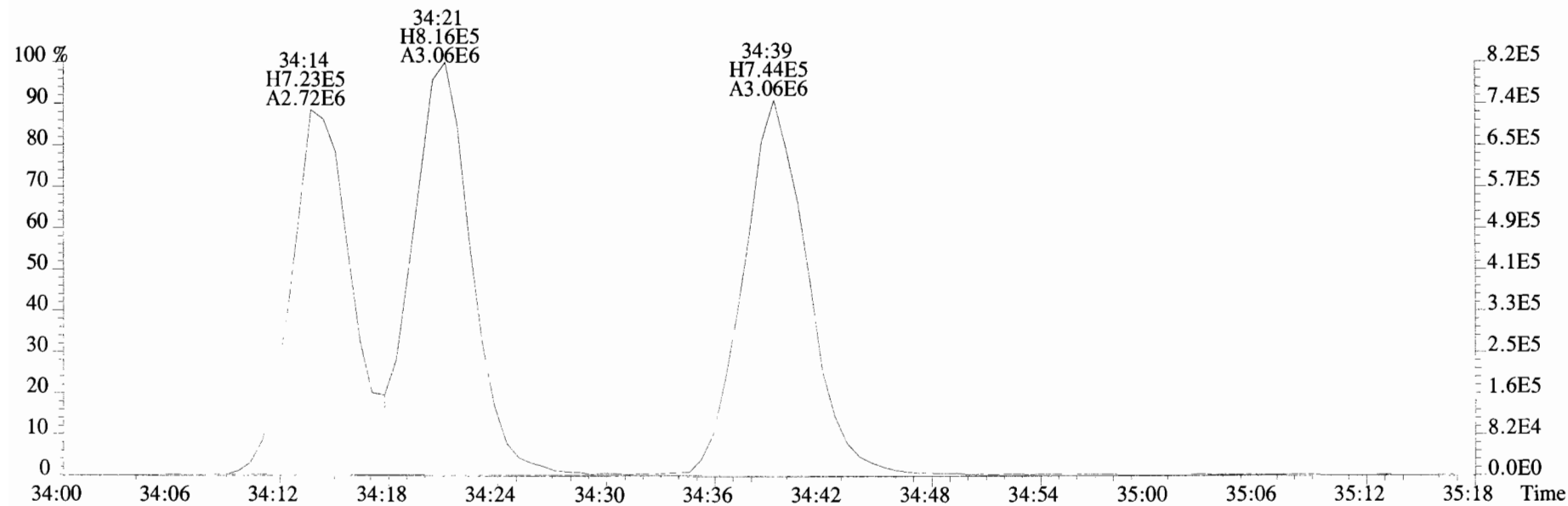
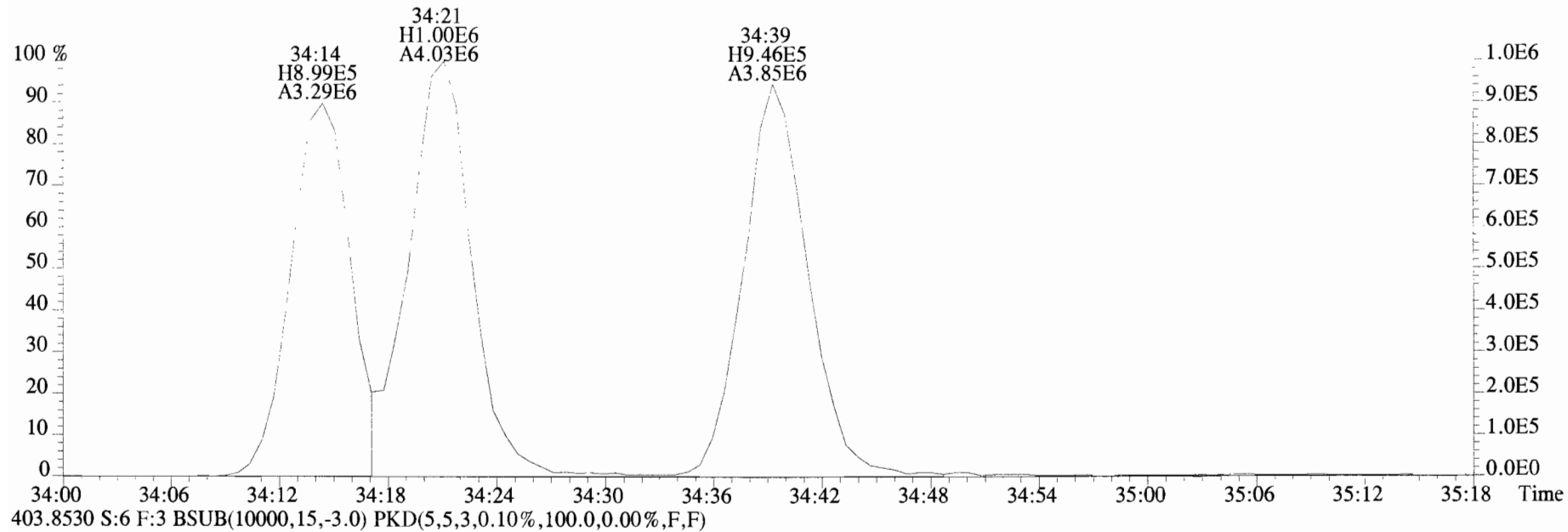
403.8530 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



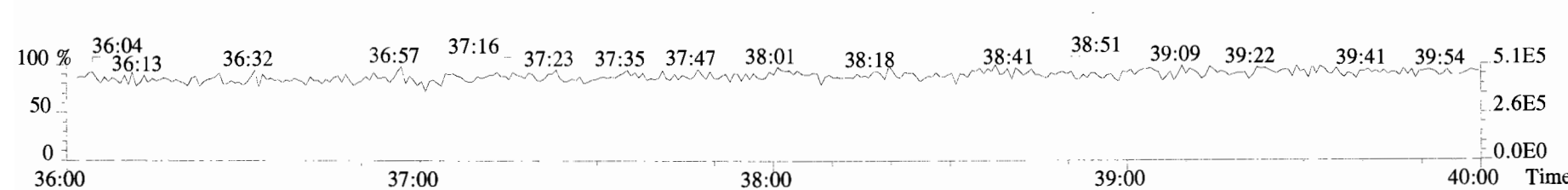
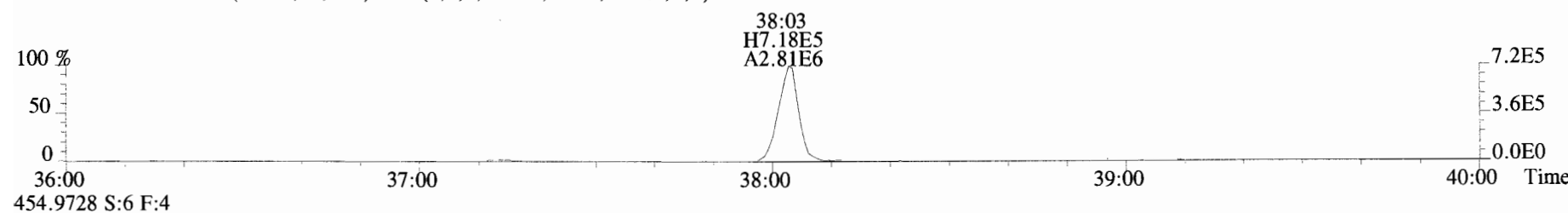
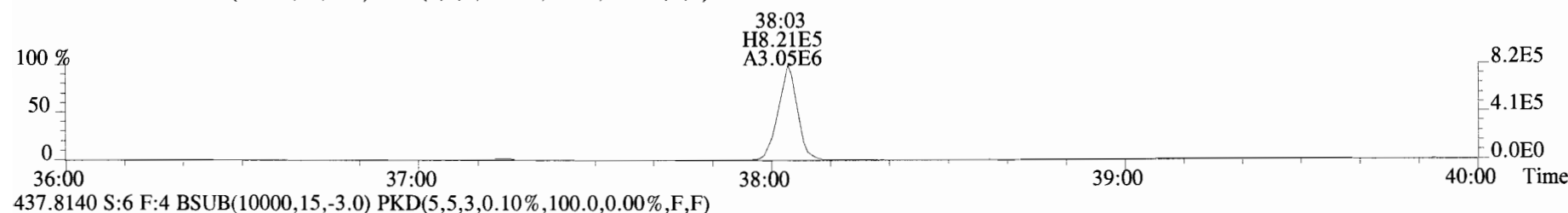
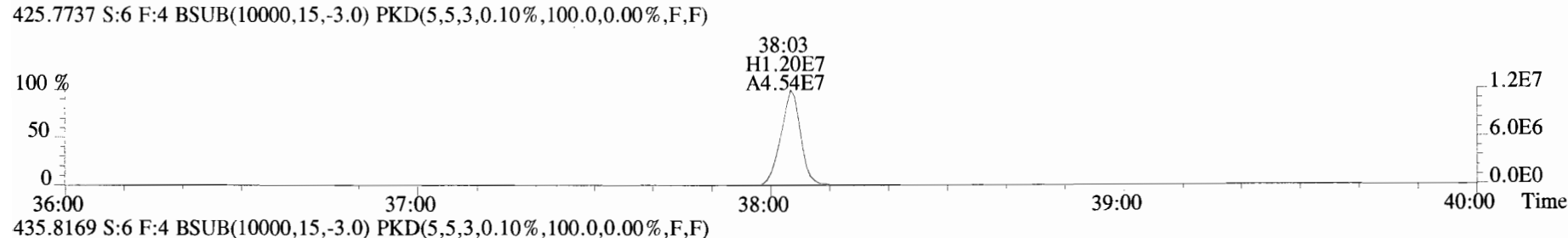
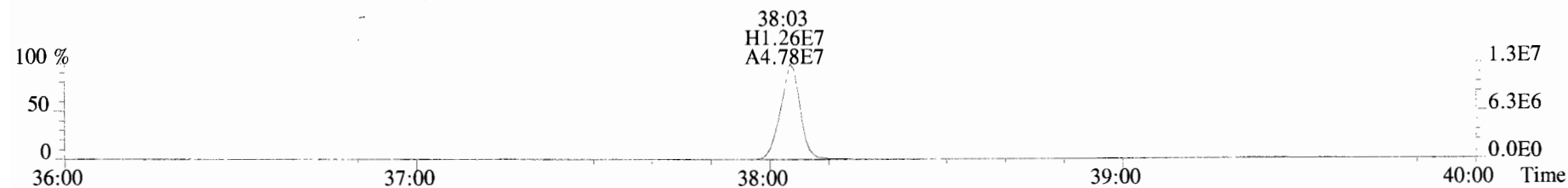
392.9760 S:6 F:3



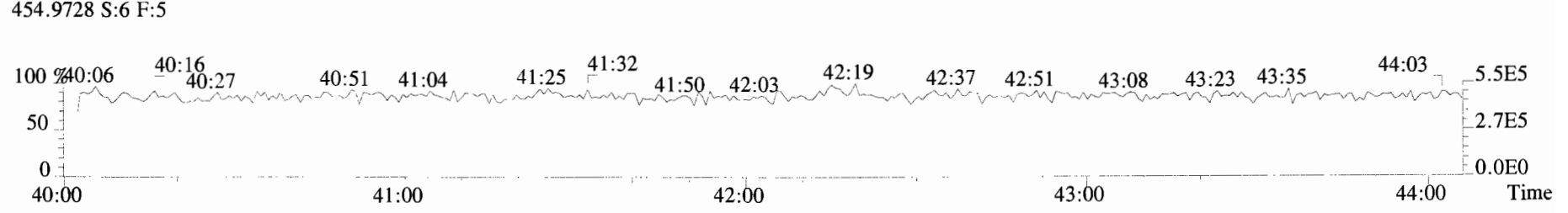
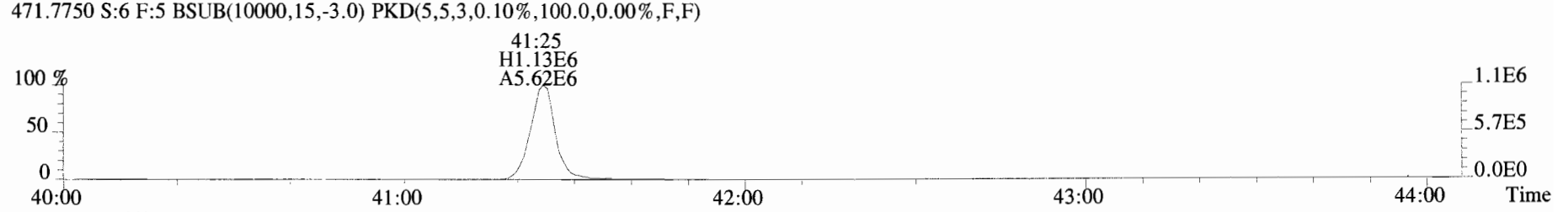
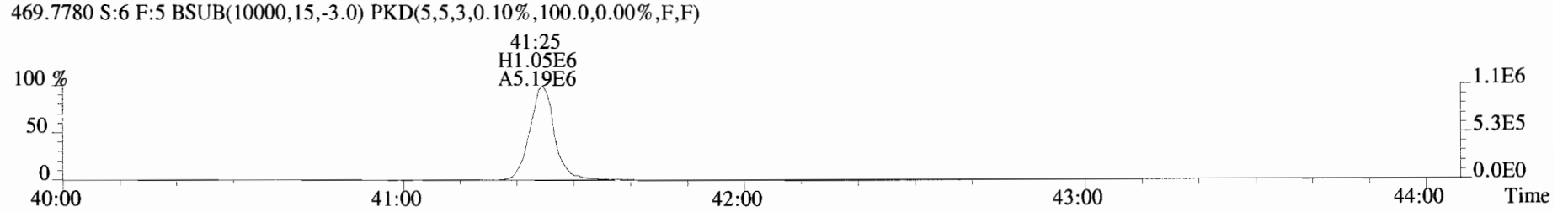
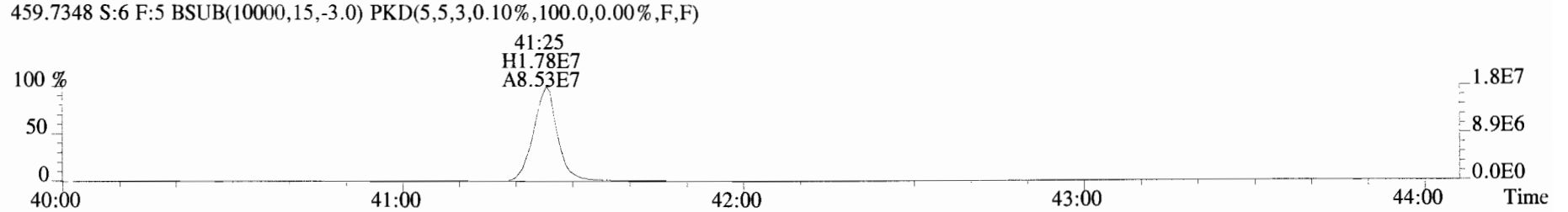
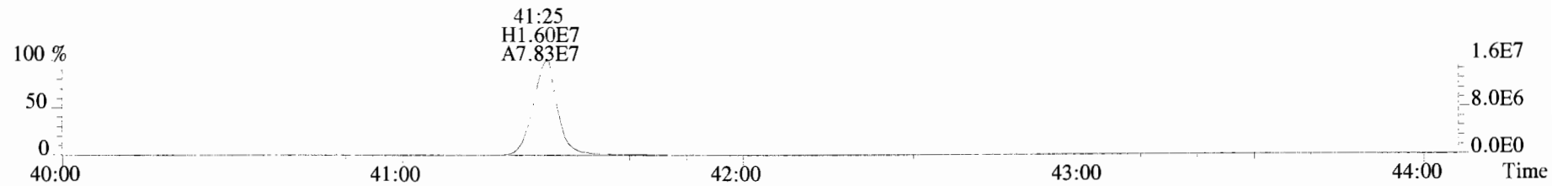
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
401.8559 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

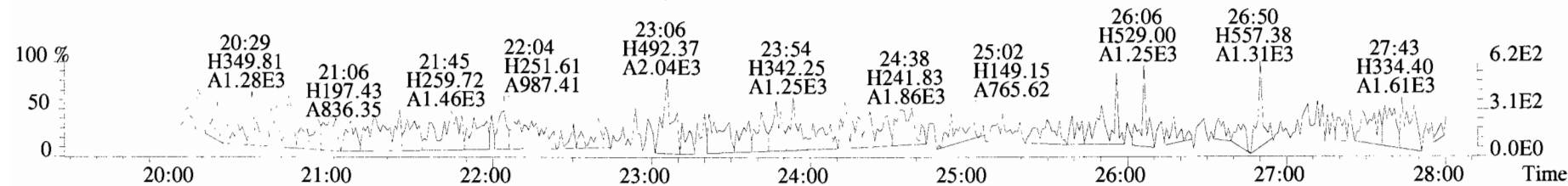
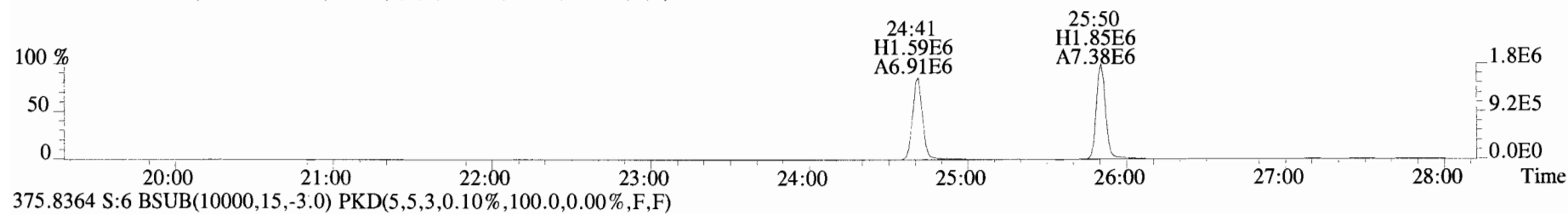
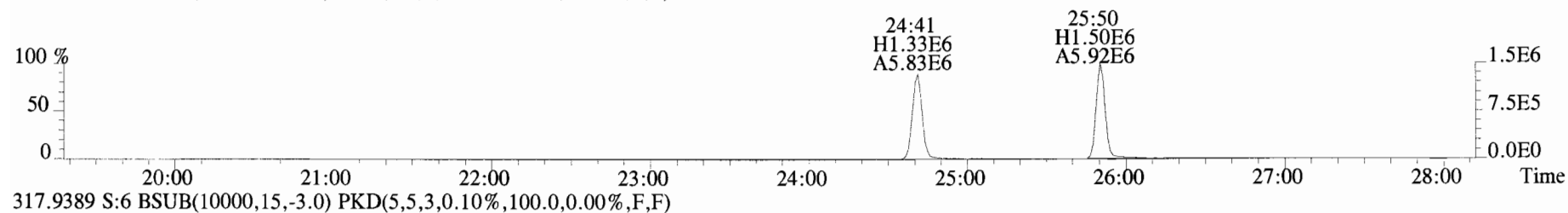
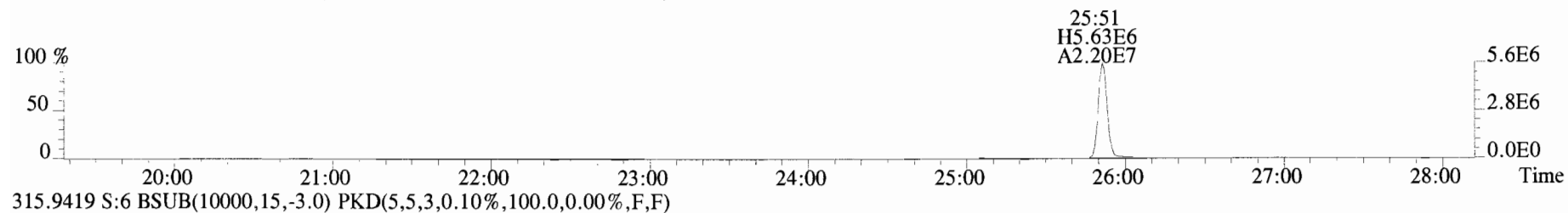
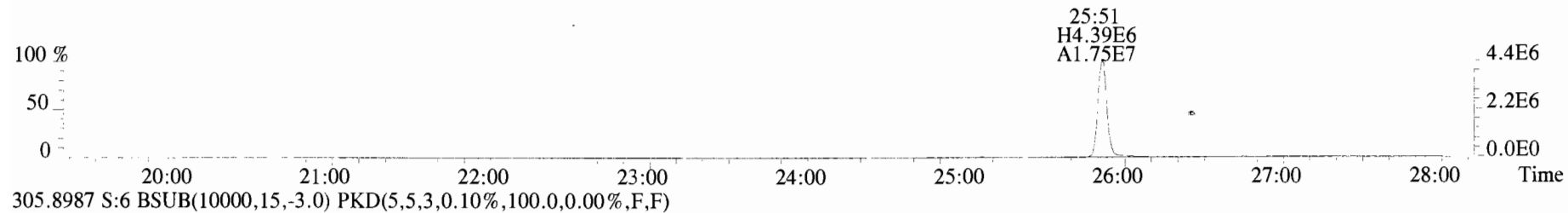


File:191009D1 #1-431 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
457.7377 S:6 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

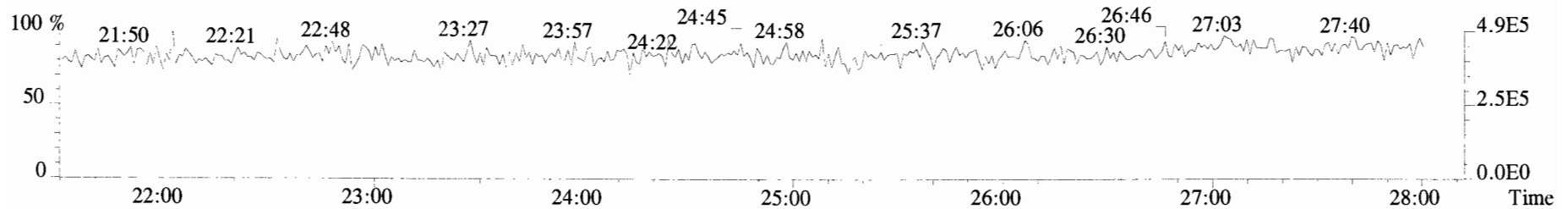
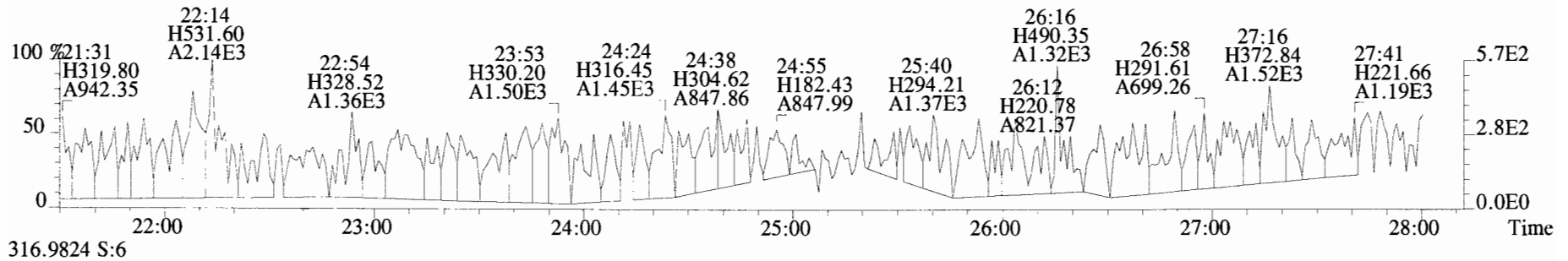
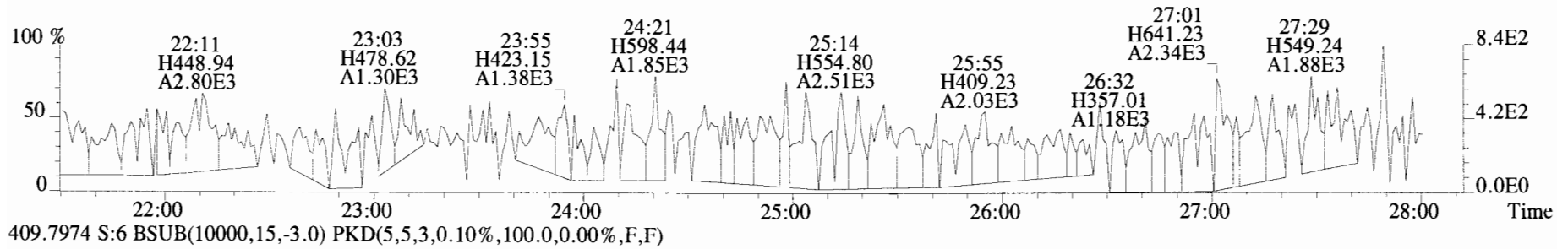
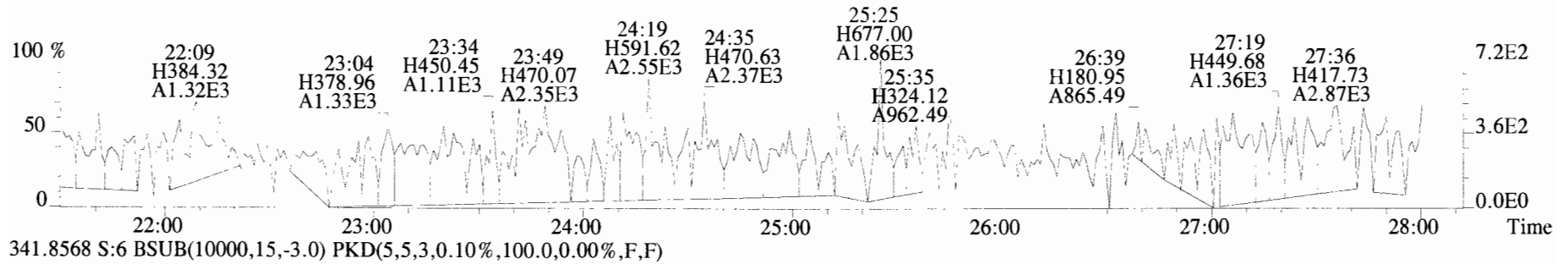




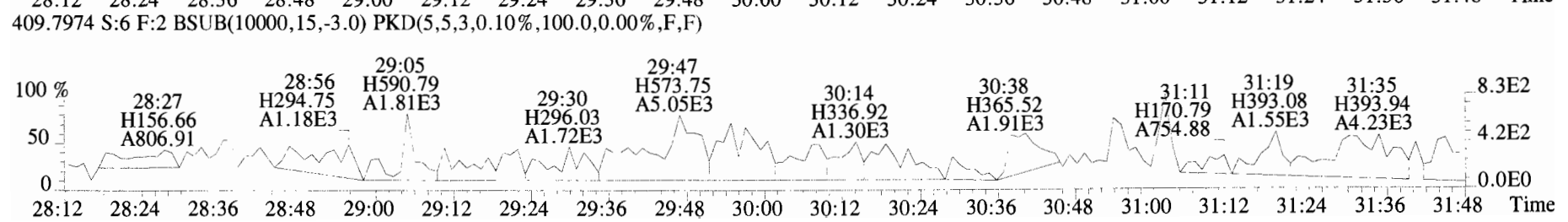
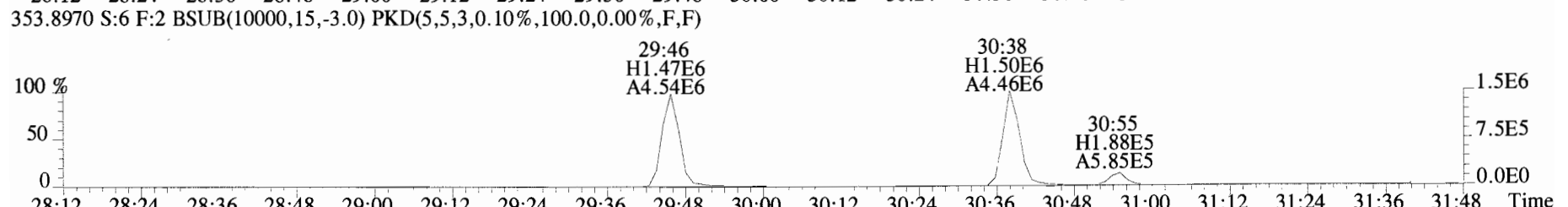
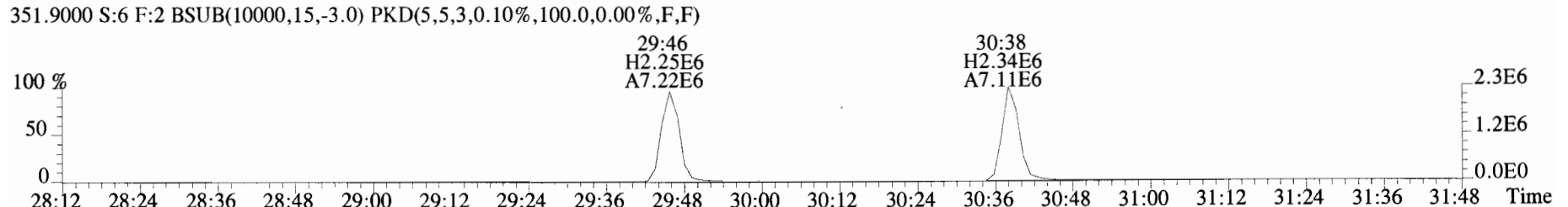
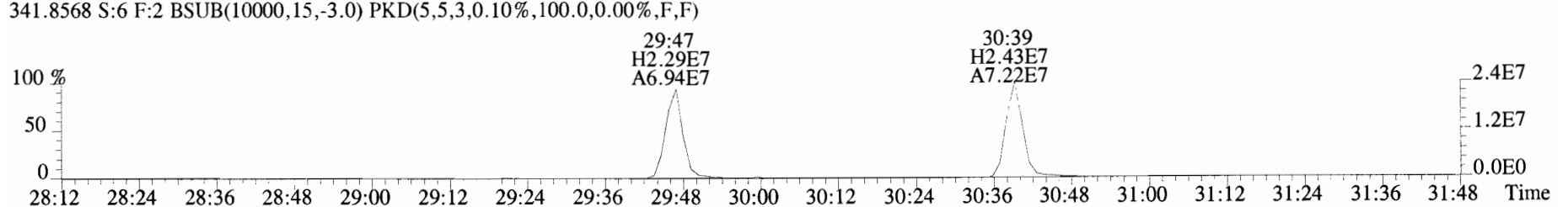
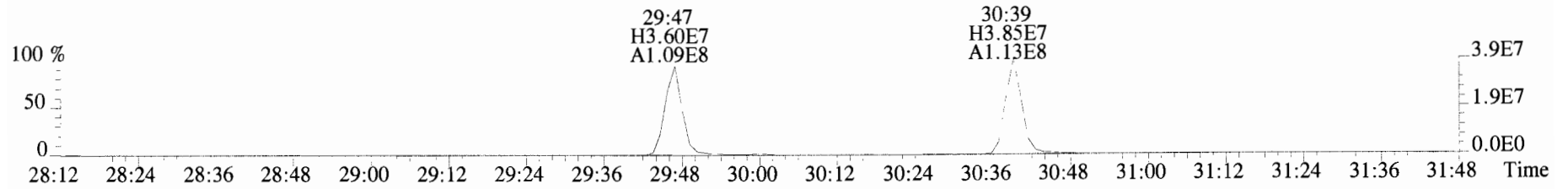
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
303.9016 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



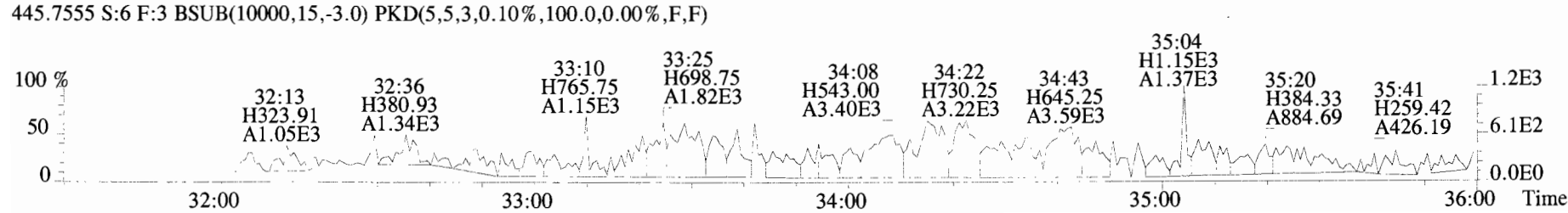
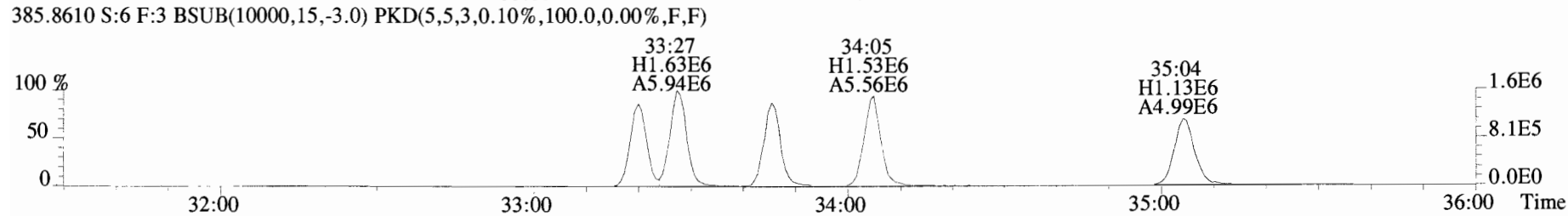
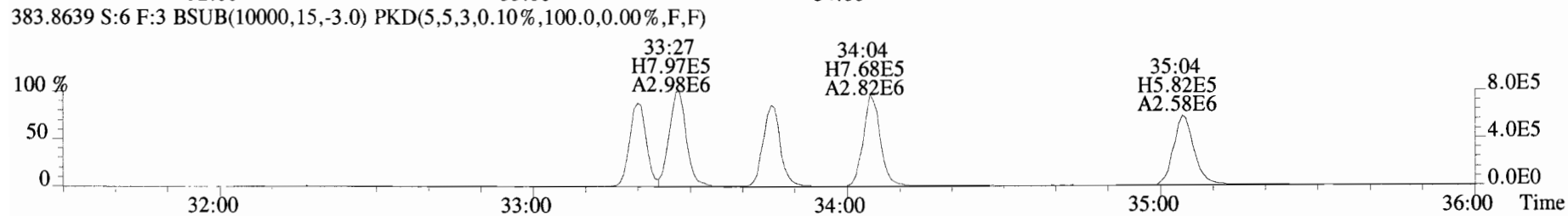
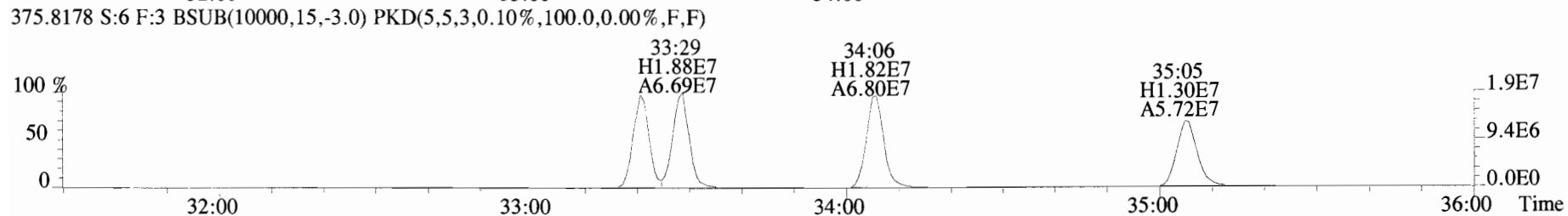
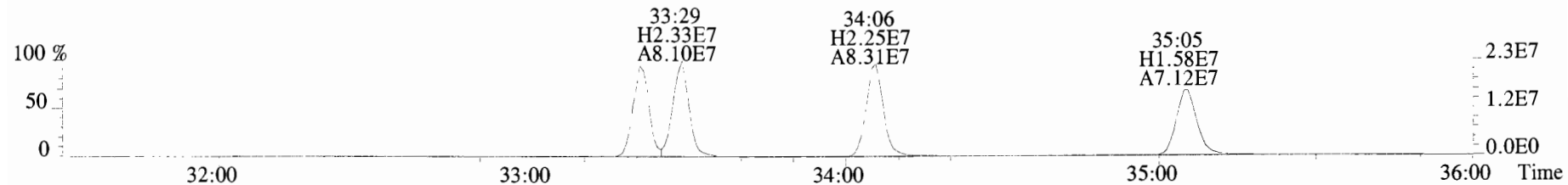
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#6 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
 339.8597 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



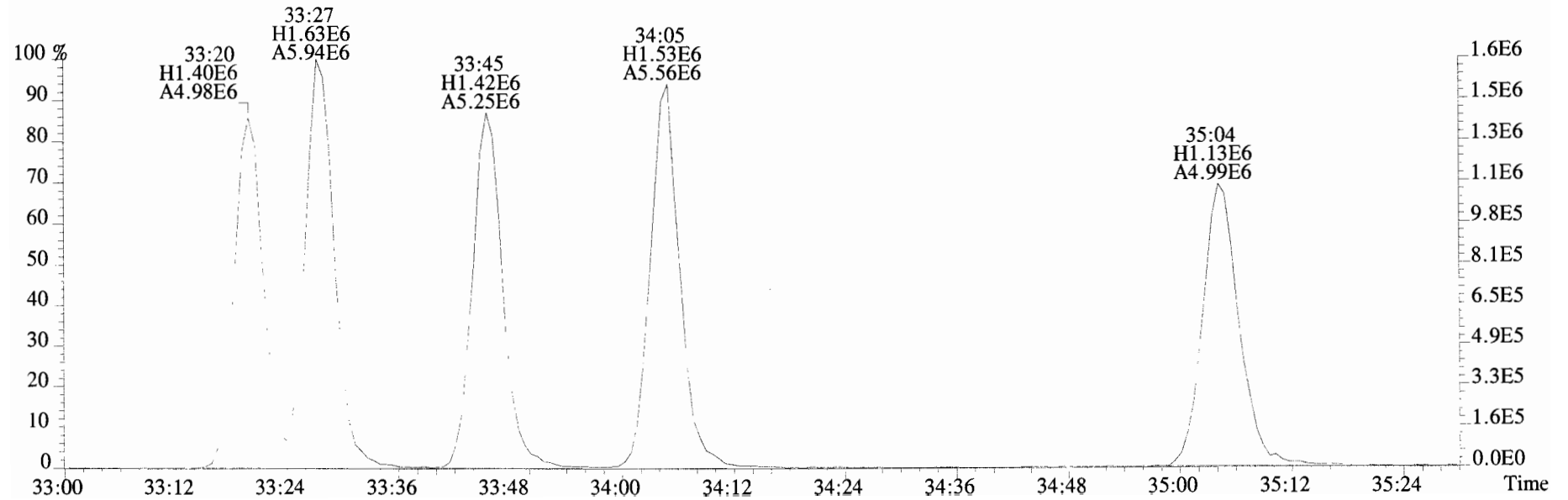
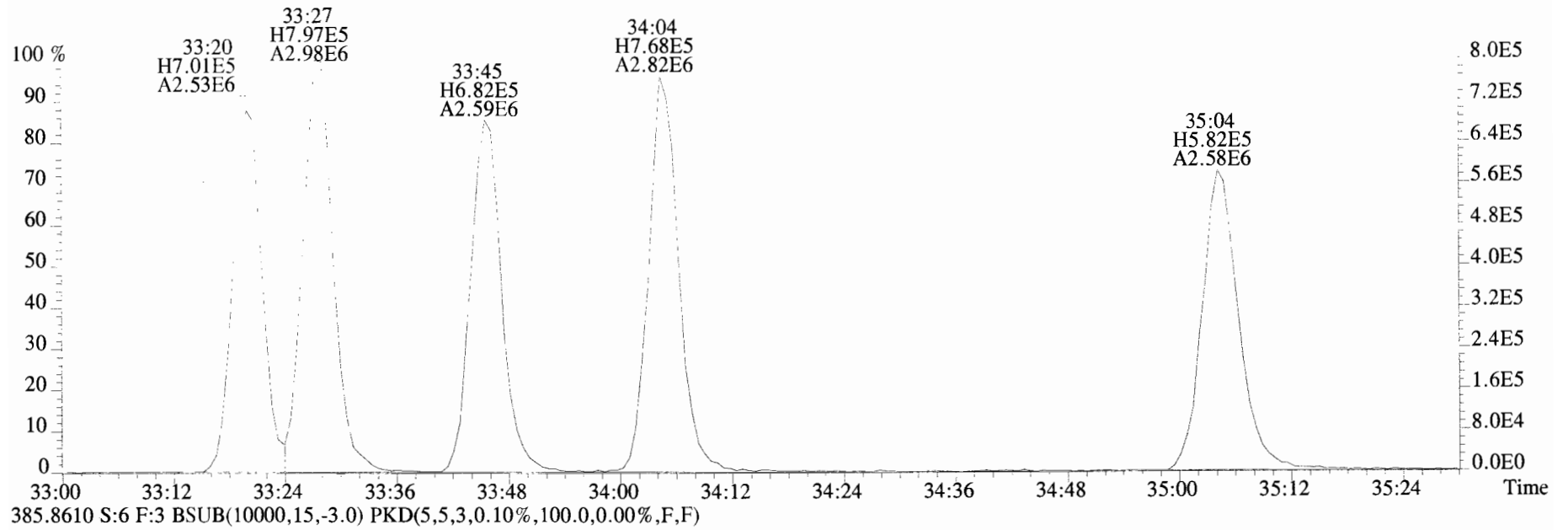
File:191009D1 #1-211 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
339.8597 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



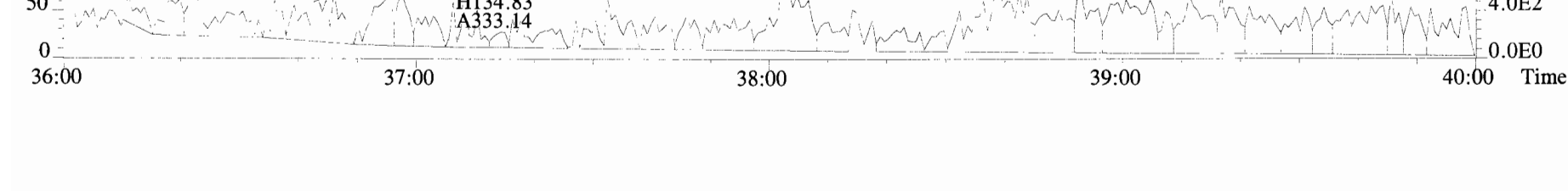
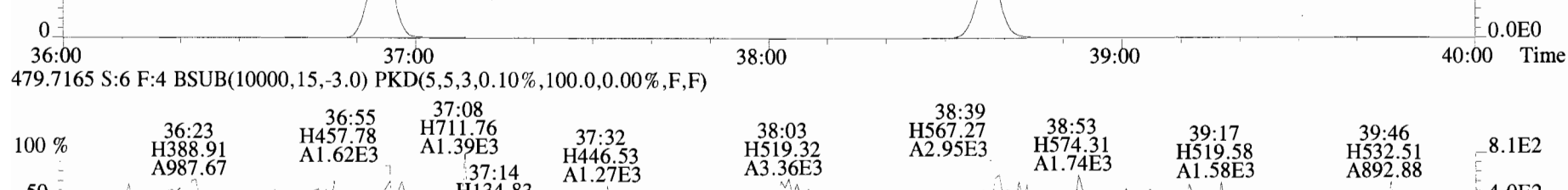
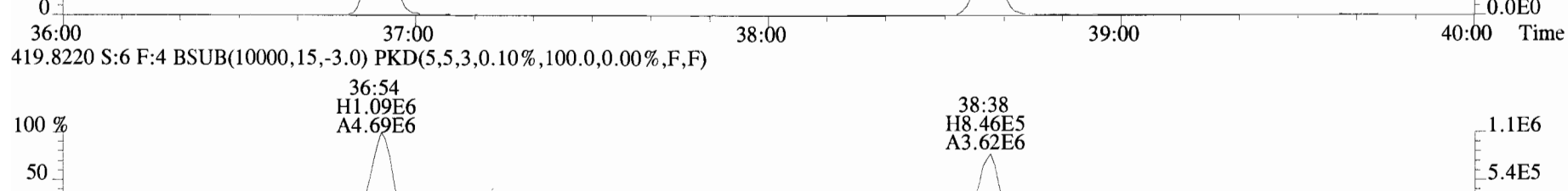
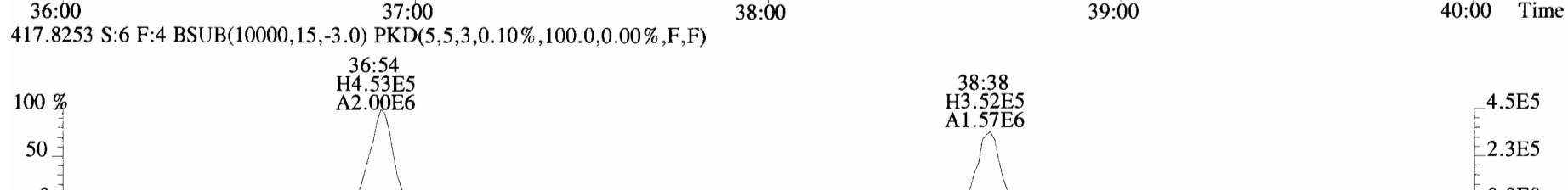
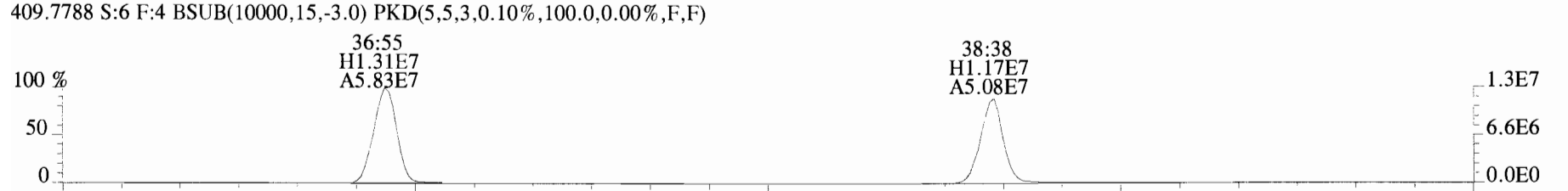
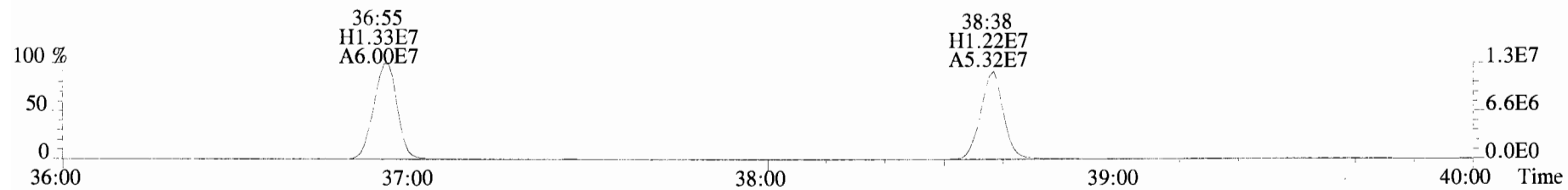
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
 373.8207 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



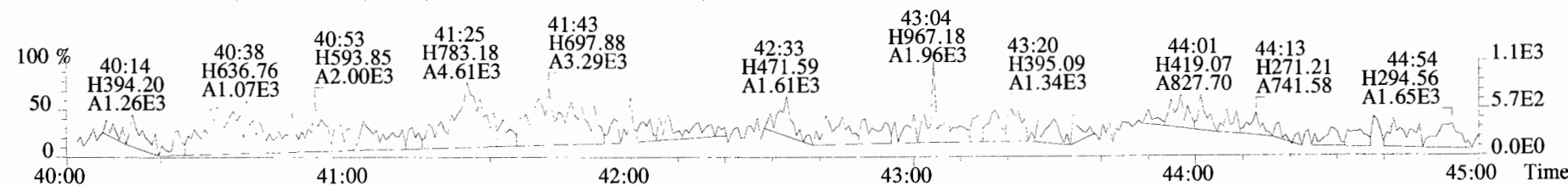
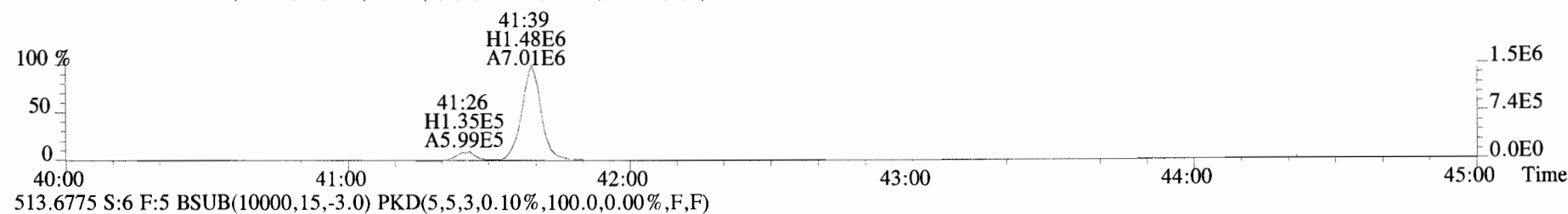
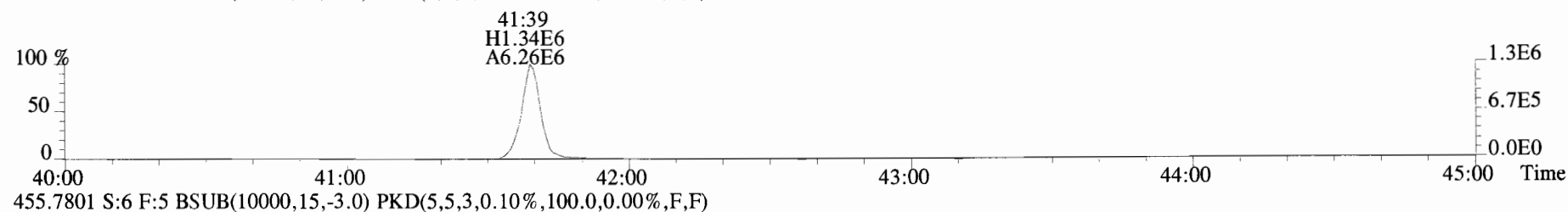
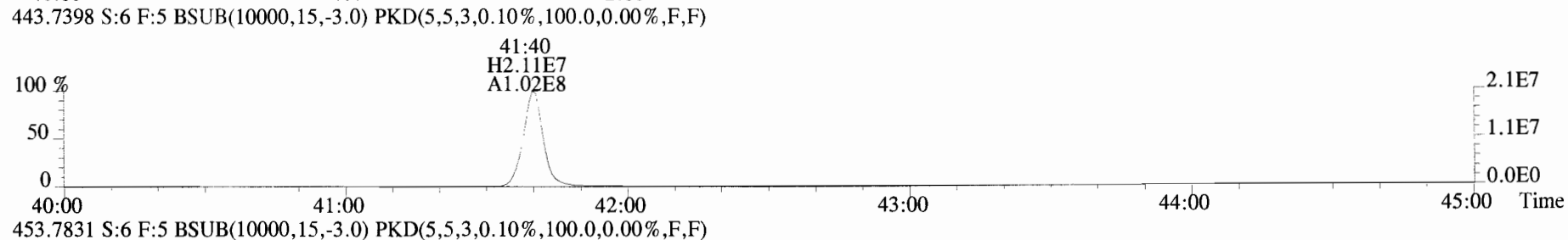
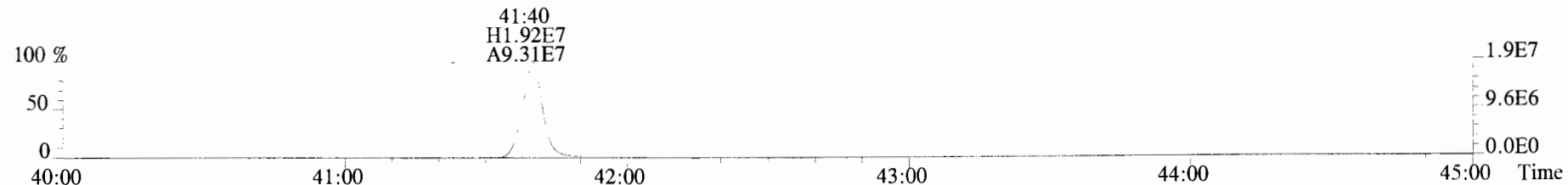
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
383.8639 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

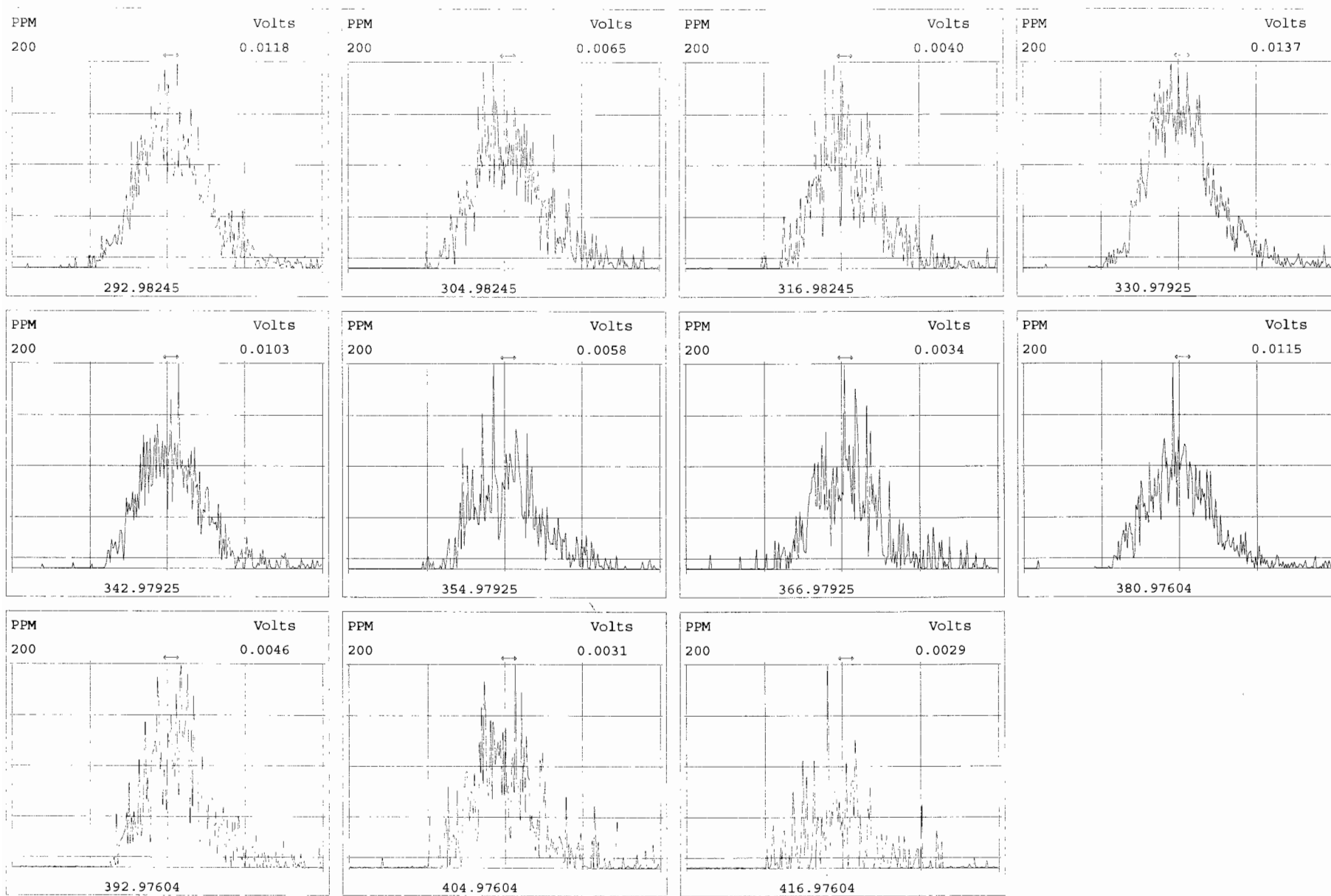


File:191009D1 #1-431 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#6 File Text:Vista Analytical Laboratory\_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD\_DB5  
 441.7428 S:6 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Peak Locate Examination:10-OCT-2019:06:40 File:RES\_CHECK

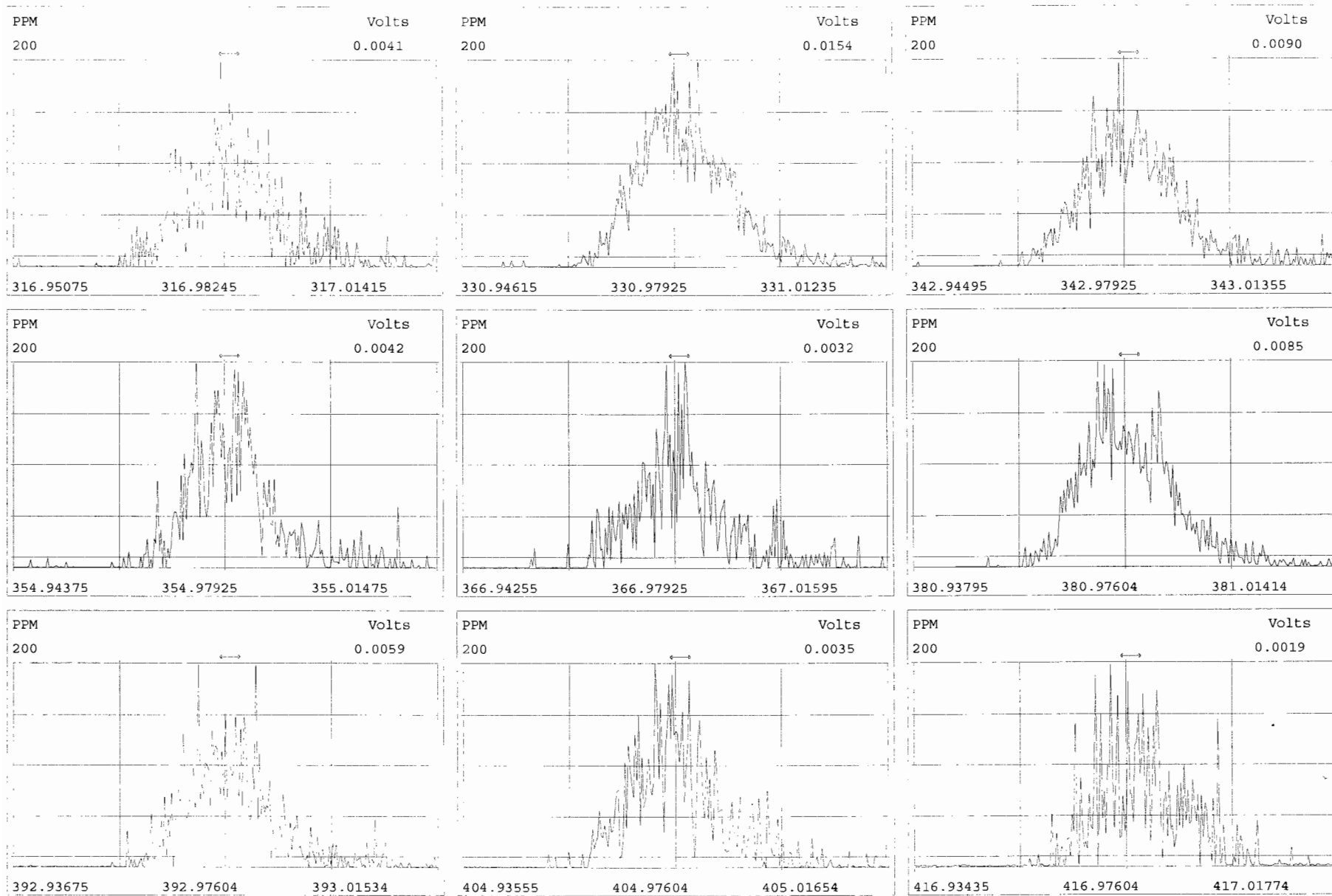
Experiment:OCDD\_DB5 Function:1 Reference:PFK

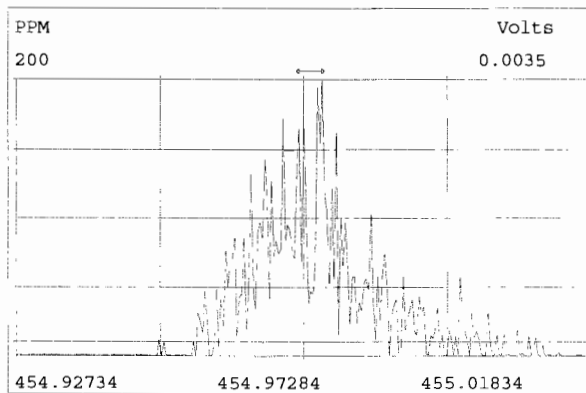
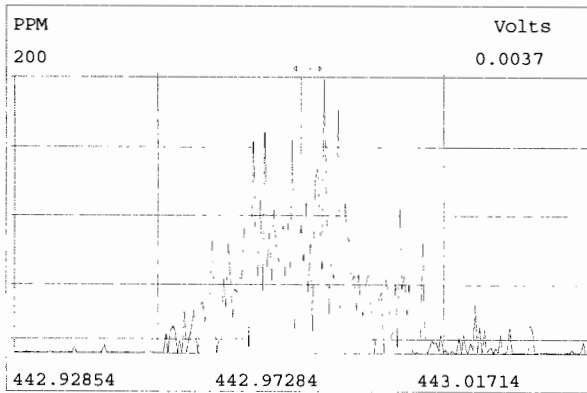
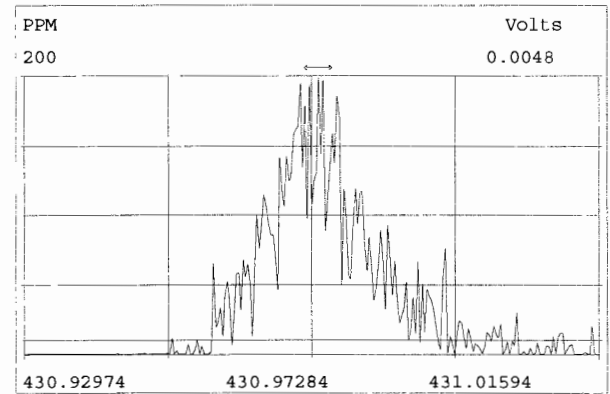
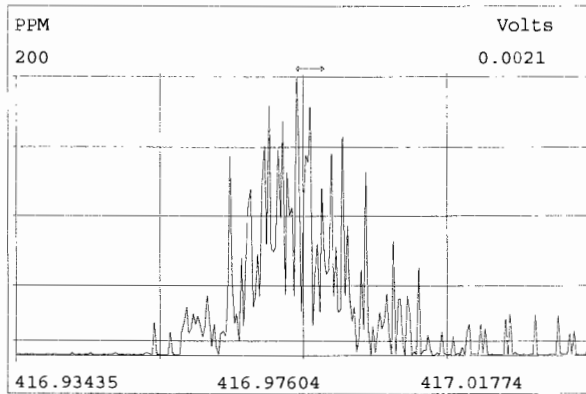
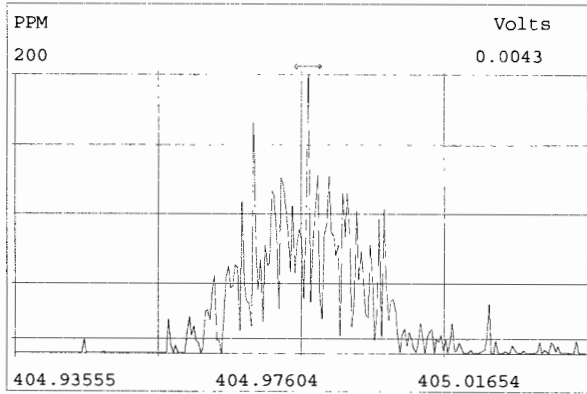
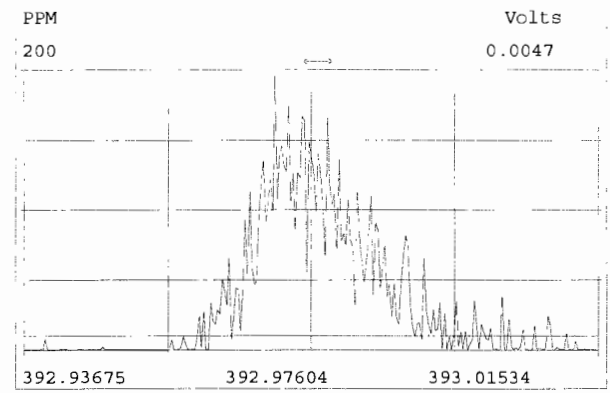
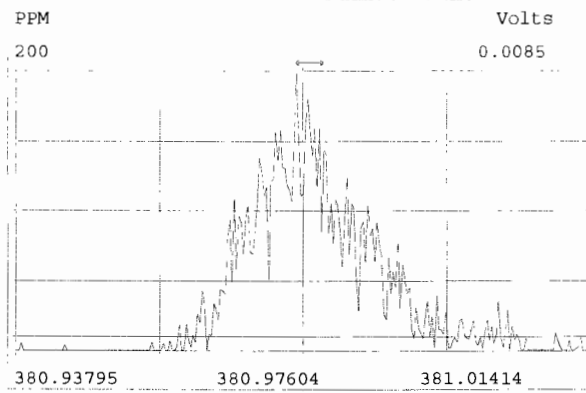
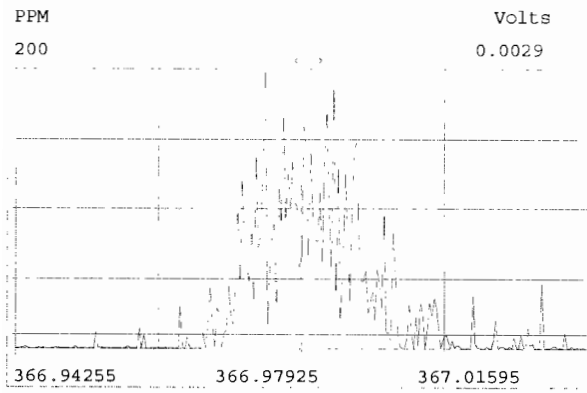


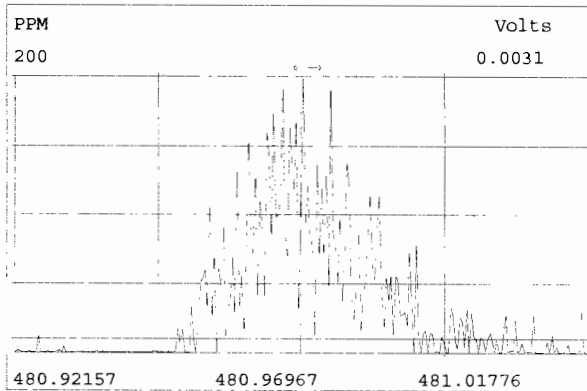
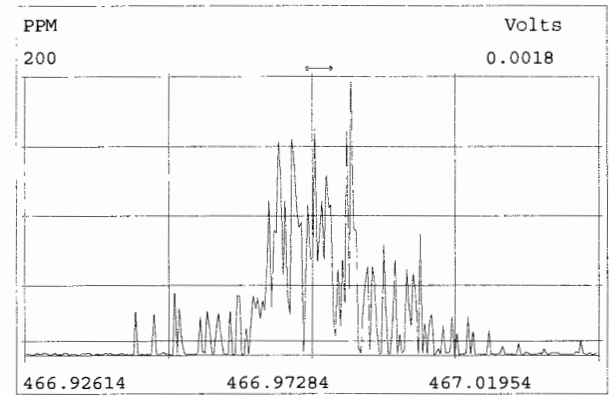
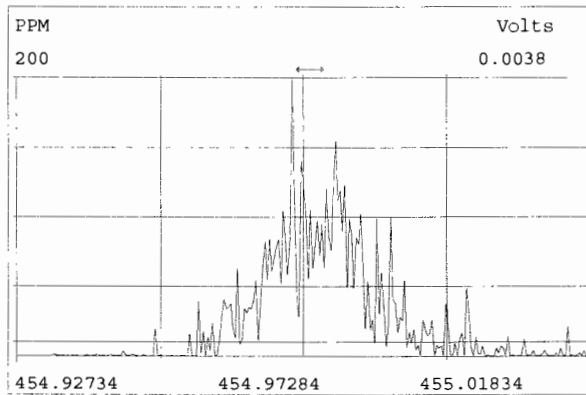
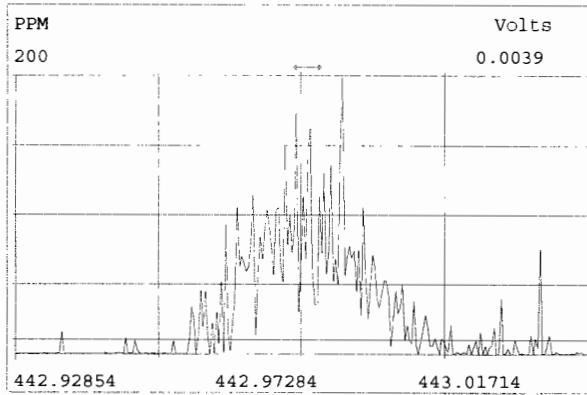
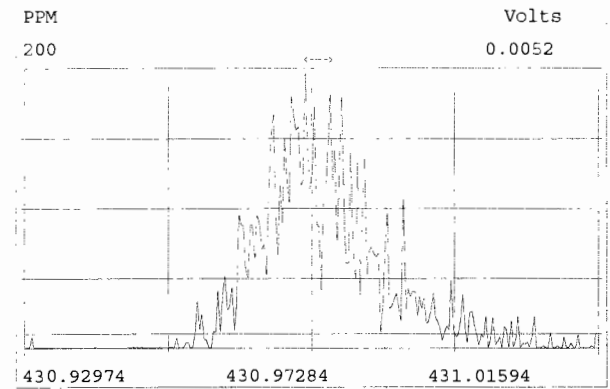
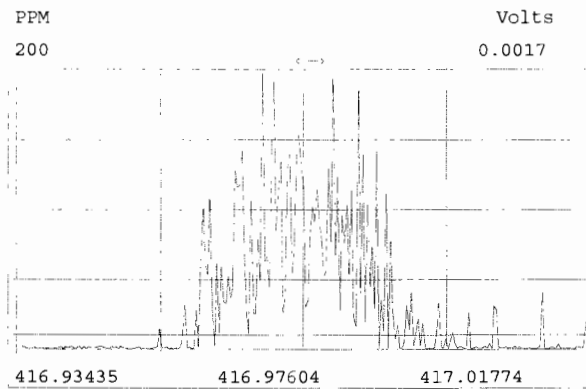
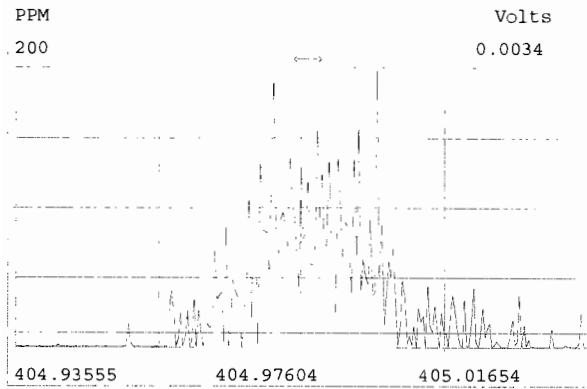


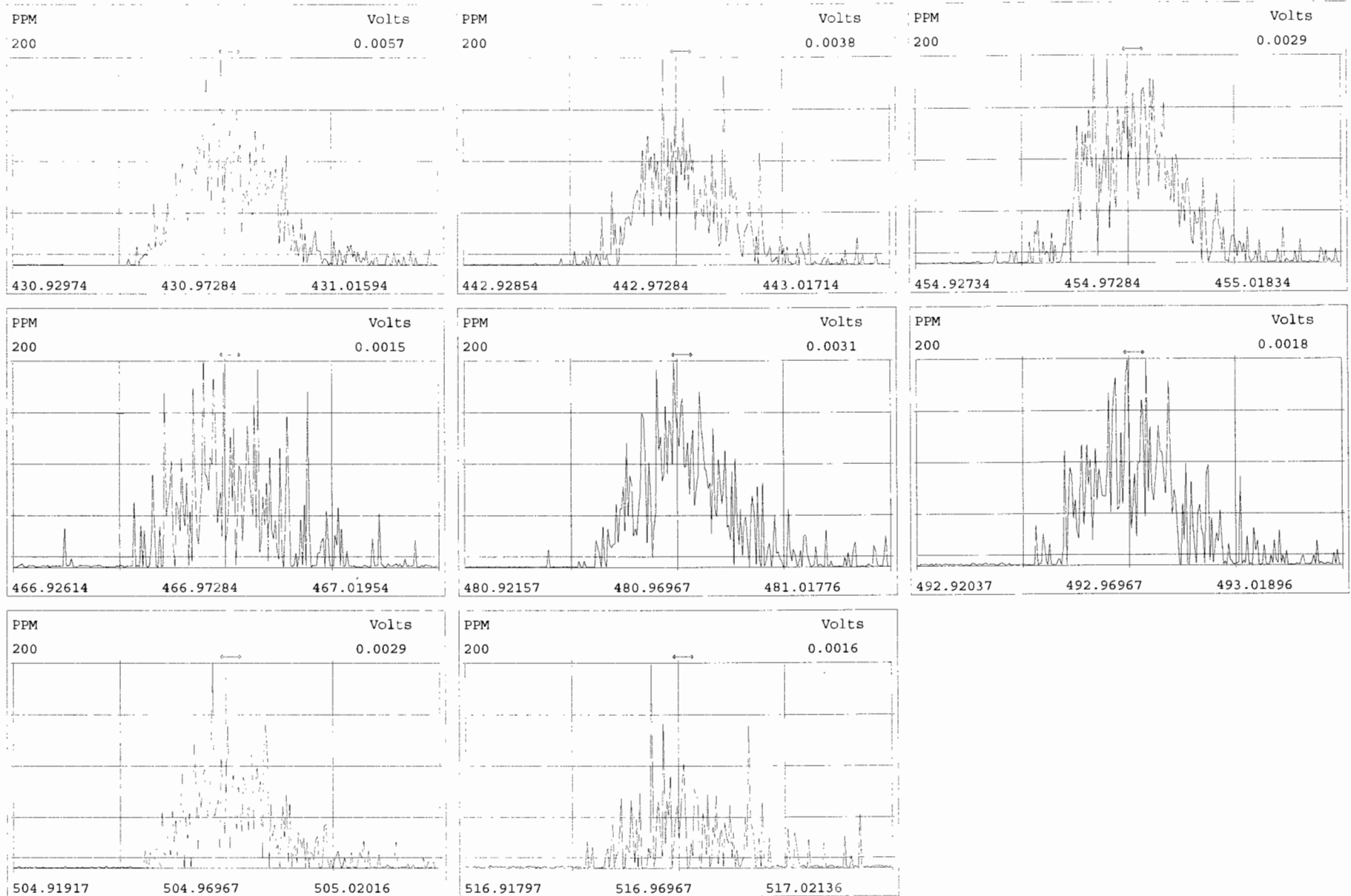
Peak Locate Examination:10-OCT-2019:06:41 File:RES\_CHECK

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

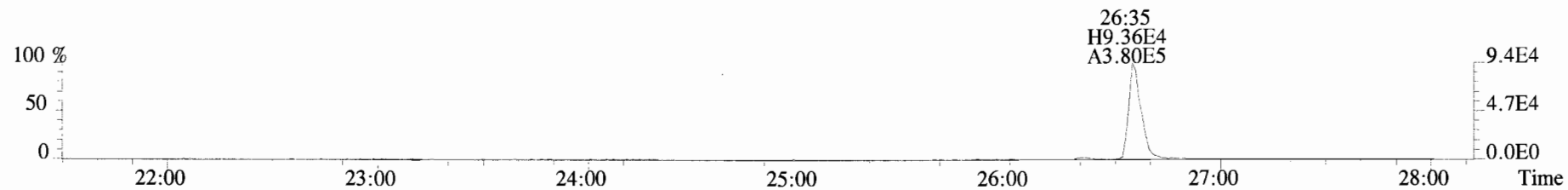
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ConCal: ST191009D1-4  
EndCAL: NA

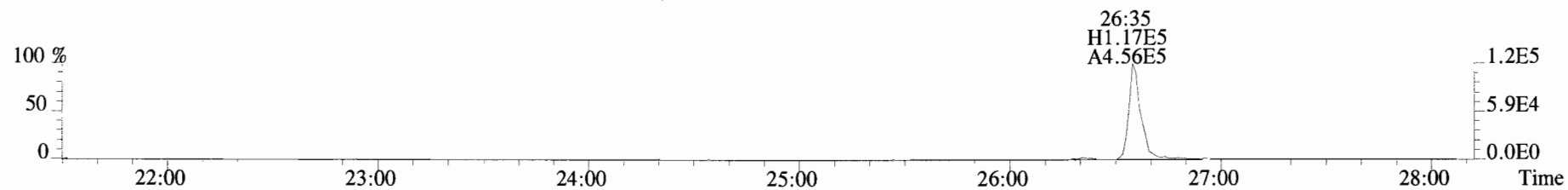
Name	Resp	RA	RRF	RT	Conc	Qual	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	8.36e+05	0.83 y	0.91	26:36	10.234		* 2.5		*	Total Tetra-Dioxins	10.4	11.4		*	*
1,2,3,7,8-PeCDD	3.38e+06	0.63 y	0.90	30:57	51.323		* 2.5		*	Total Penta-Dioxins	51.4	51.7		*	*
1,2,3,4,7,8-HxCDD	2.55e+06	1.31 y	1.10	34:18	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		*						
										Rec	Qual				
IS 13C-2,3,7,8-TCDD	9.02e+06	0.72 y	1.10	26:35	100.49					100					
IS 13C-1,2,3,7,8-PeCDD	7.29e+06	0.64 y	0.88	30:56	100.87					101					
IS 13C-1,2,3,4,7,8-HxCDD	4.73e+06	1.23 y	0.64	34:16	95.948					95.9					
IS 13C-1,2,3,6,7,8-HxCDD	6.28e+06	1.25 y	0.86	34:24	95.558					95.6					
IS 13C-1,2,3,7,8,9-HxCDD	5.85e+06	1.26 y	0.81	34:43	94.306					94.3					
IS 13C-1,2,3,4,6,7,8-HpCDD	4.61e+06	1.06 y	0.65	38:06	91.680					91.7					
IS 13C-OCDD	8.45e+06	0.92 y	0.58	41:29	189.68					94.8					
IS 13C-2,3,7,8-TCDF	1.26e+07	0.78 y	1.03	25:52	97.199					97.2					
IS 13C-1,2,3,7,8-PeCDF	1.04e+07	1.62 y	0.85	29:48	97.425					97.4					
IS 13C-2,3,4,7,8-PeCDF	1.03e+07	1.59 y	0.85	30:41	96.649					96.6					
IS 13C-1,2,3,4,7,8-HxCDF	6.55e+06	0.51 y	0.83	33:22	102.43					102					
IS 13C-1,2,3,6,7,8-HxCDF	8.06e+06	0.51 y	1.03	33:30	101.42					101					
IS 13C-2,3,4,6,7,8-HxCDF	7.11e+06	0.51 y	0.95	34:08	97.073					97.1					
IS 13C-1,2,3,7,8,9-HxCDF	6.30e+06	0.51 y	0.83	35:09	98.999					99.0					
IS 13C-1,2,3,4,6,7,8-HpCDF	5.62e+06	0.43 y	0.76	36:57	96.588					96.6					
IS 13C-1,2,3,4,7,8,9-HpCDF	4.58e+06	0.44 y	0.58	38:42	102.46					102					
IS 13C-OCDF	1.04e+07	0.88 y	0.69	41:44	196.65					98.3					
C/Up 37Cl-2,3,7,8-TCDD	8.91e+05		1.20	26:36	9.0817					90.8					
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 by CT  
Analyst: DB Analyst: CT  
Date: 10/10/19 Date: 10/10/19

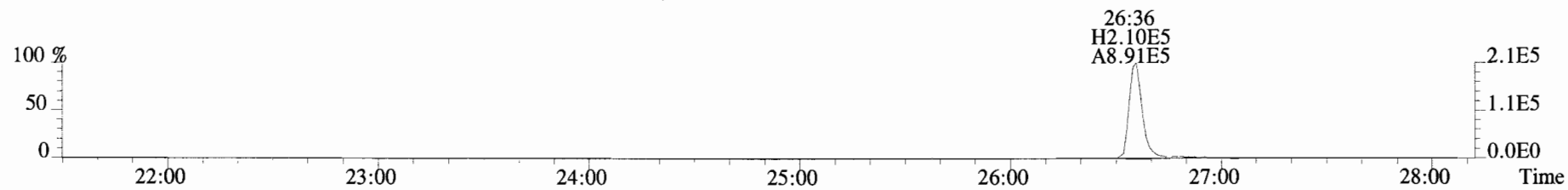
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319.8965 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



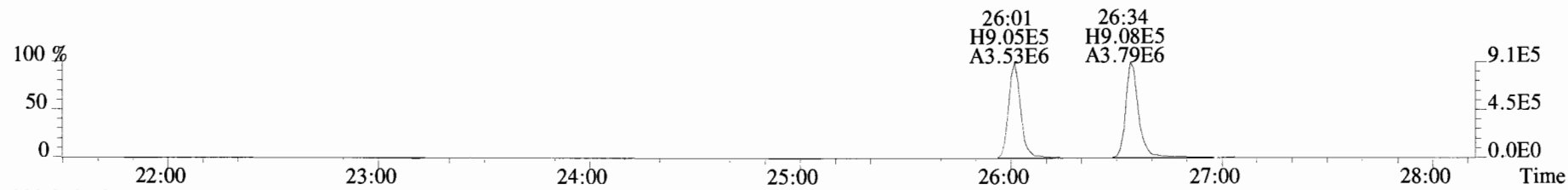
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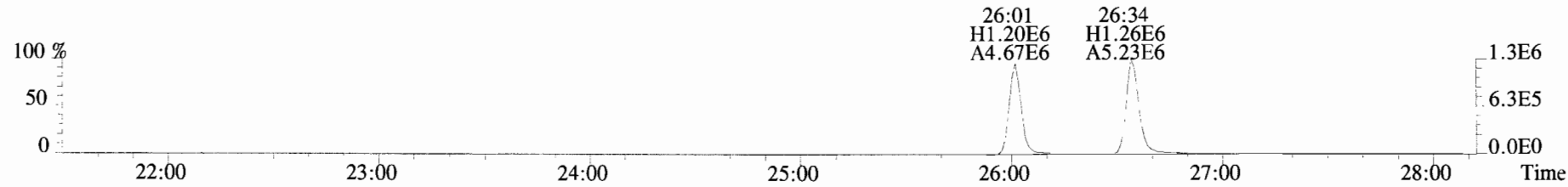
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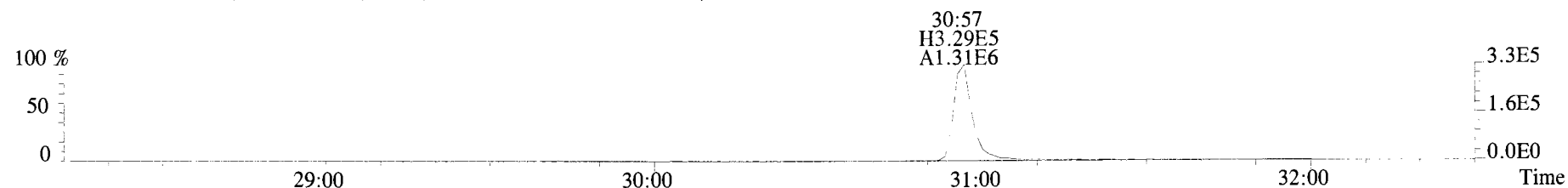
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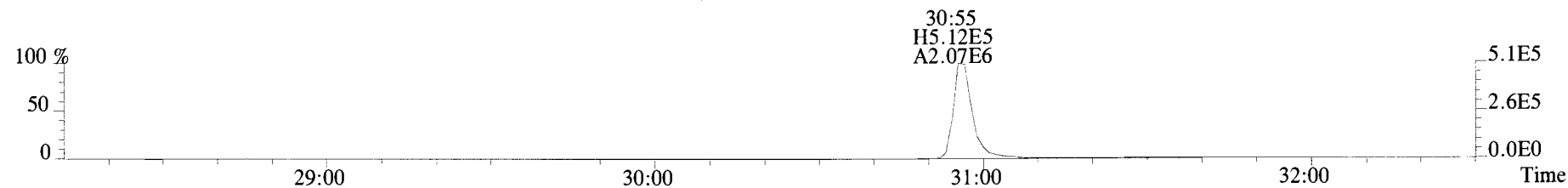
333.9339 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



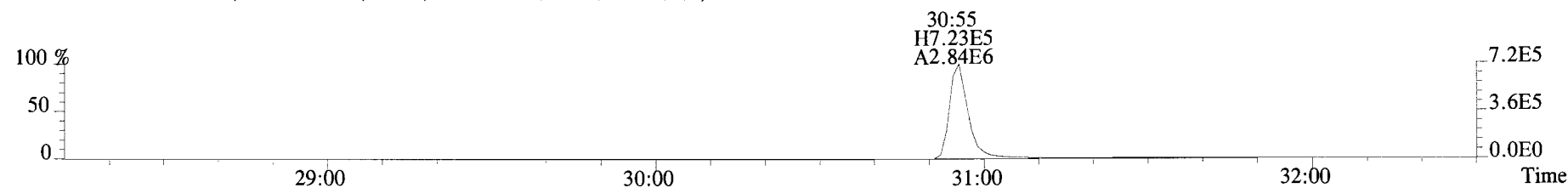
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353.8576 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



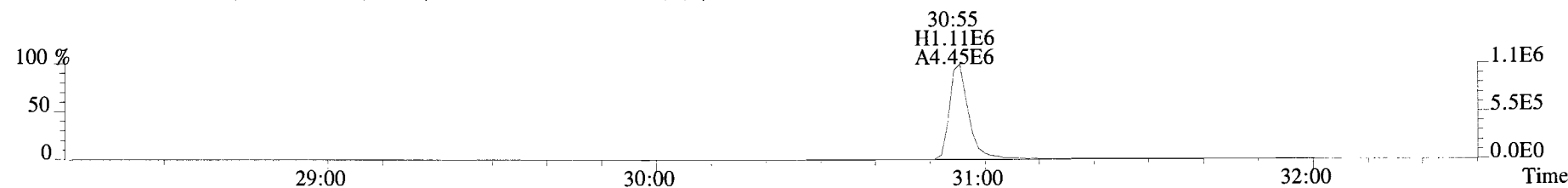
355.8546 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



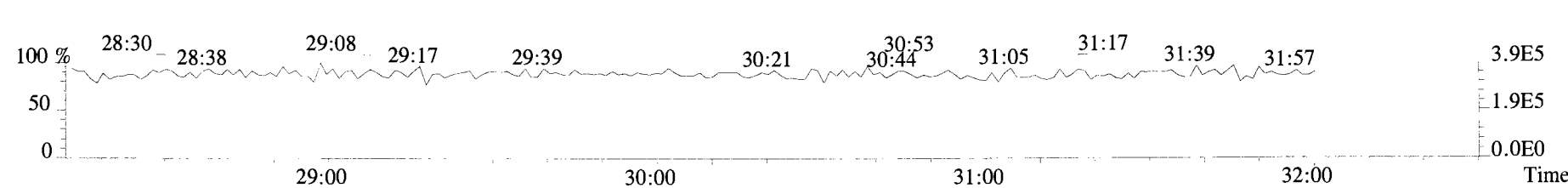
365.8978 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



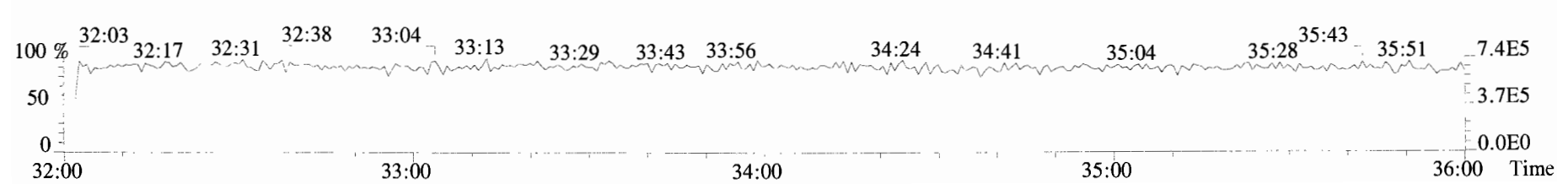
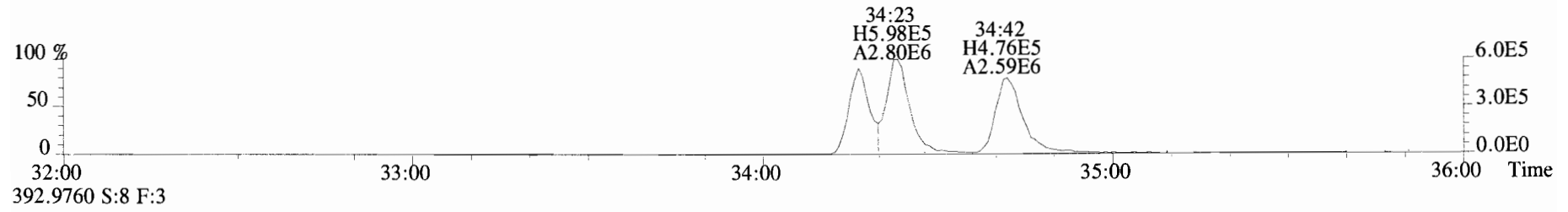
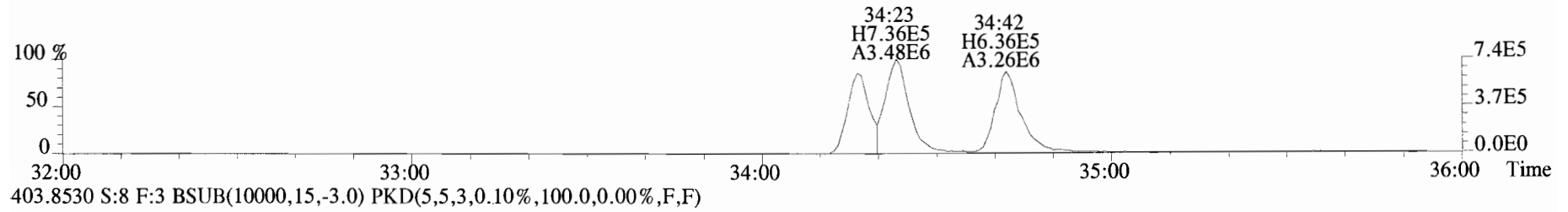
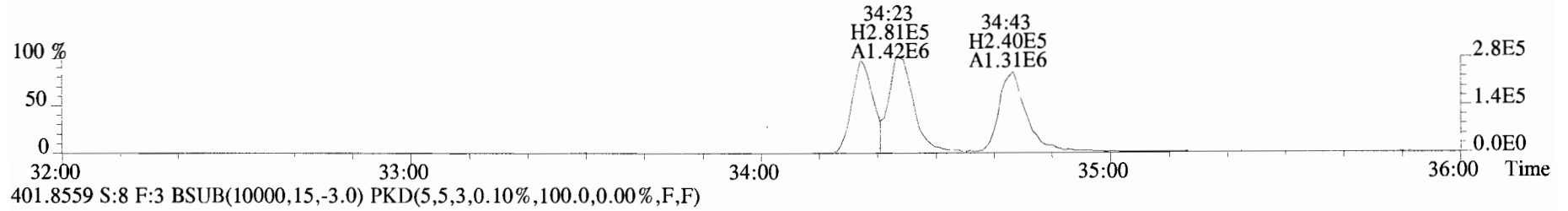
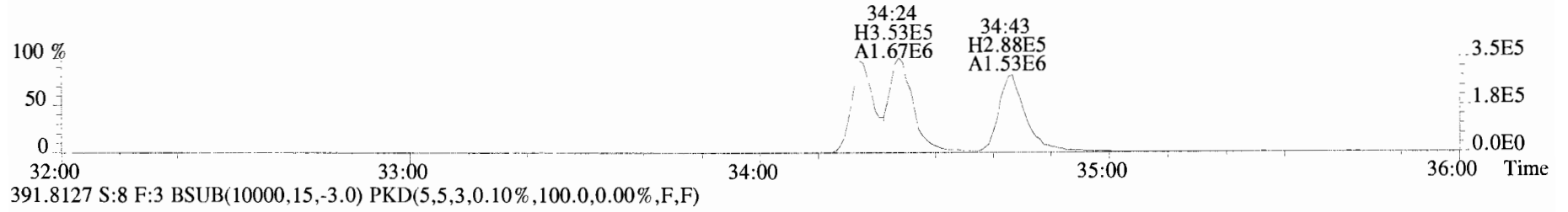
367.8949 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



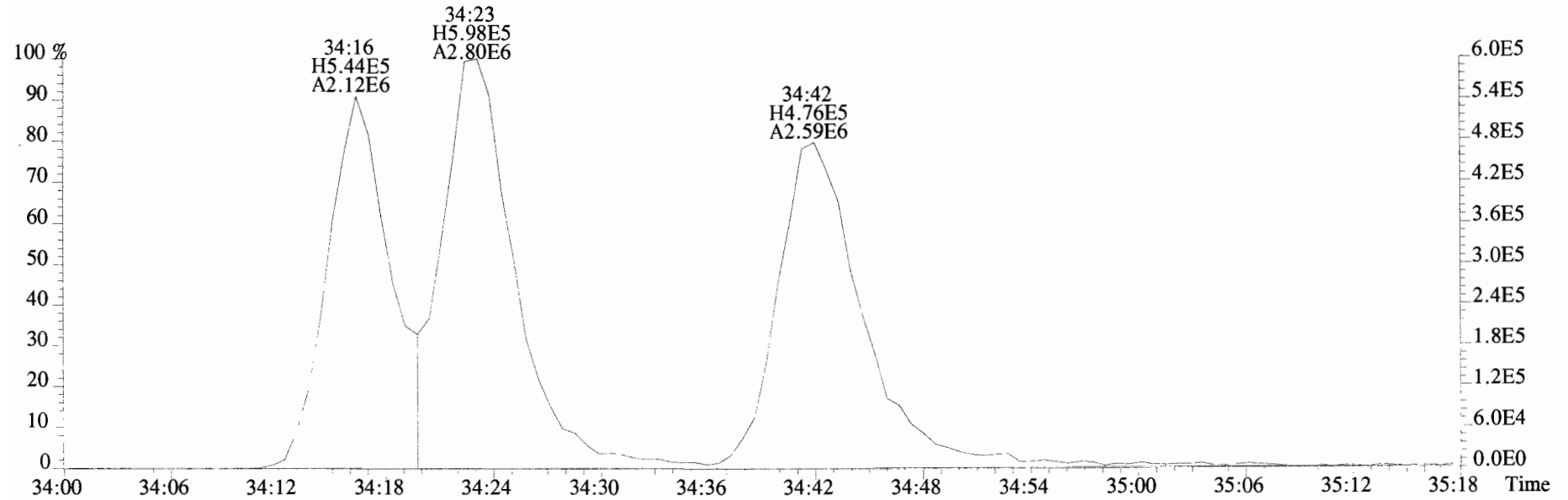
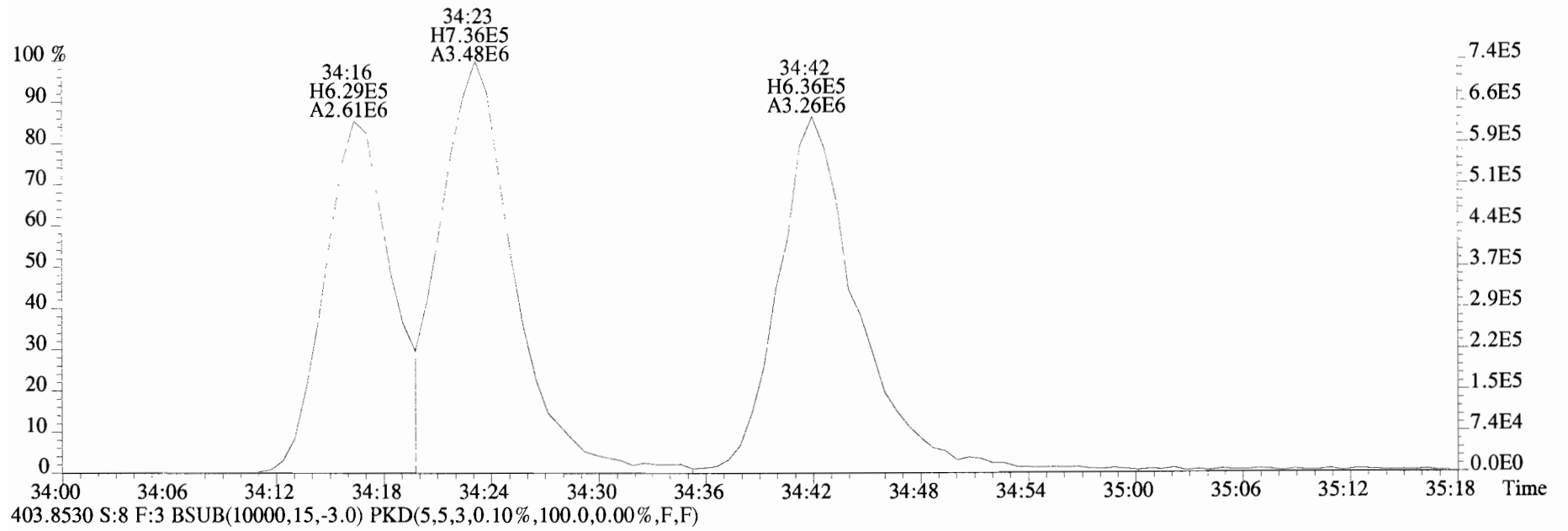
366.9792 S:8 F:2



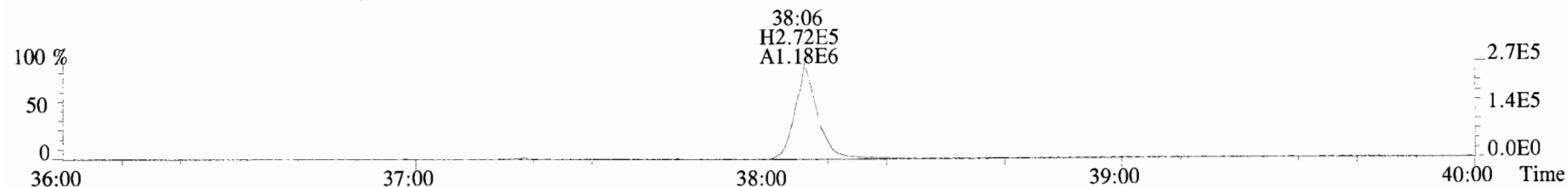
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389.8156 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



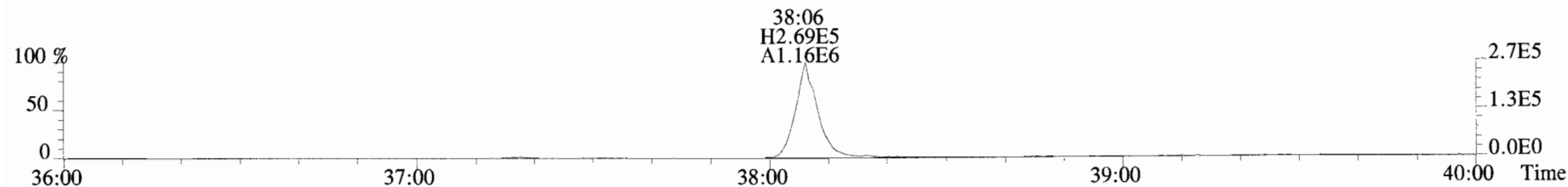
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401.8559 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



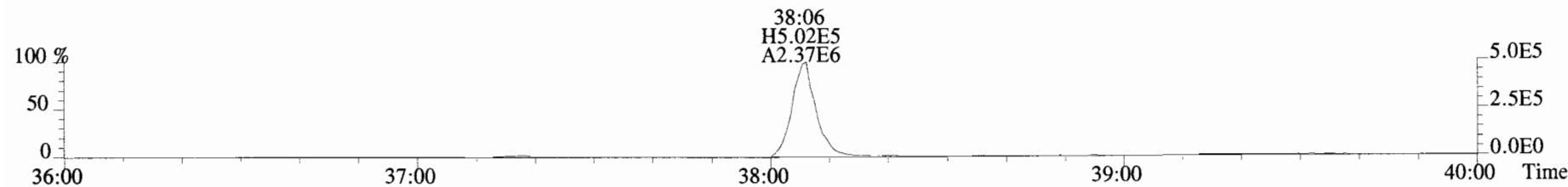
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Sample#8 File Text:Vista Analytical Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
423.7767 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



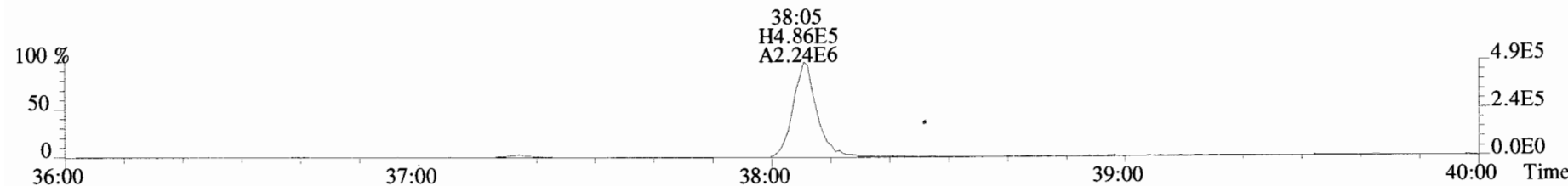
425.7737 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



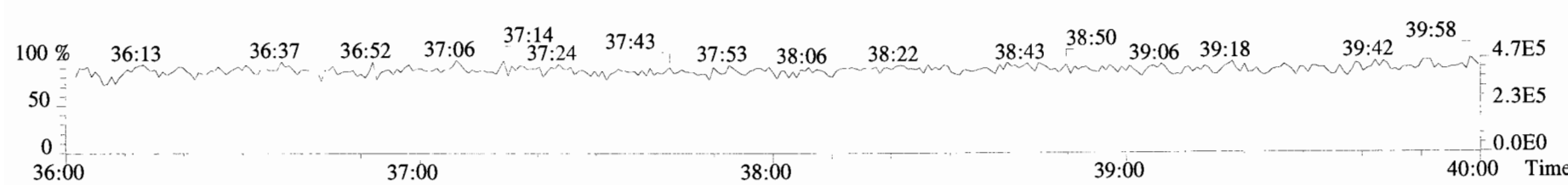
435.8169 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



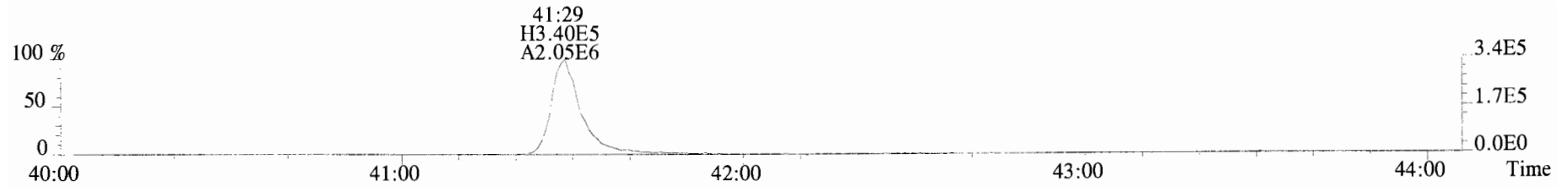
437.8140 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



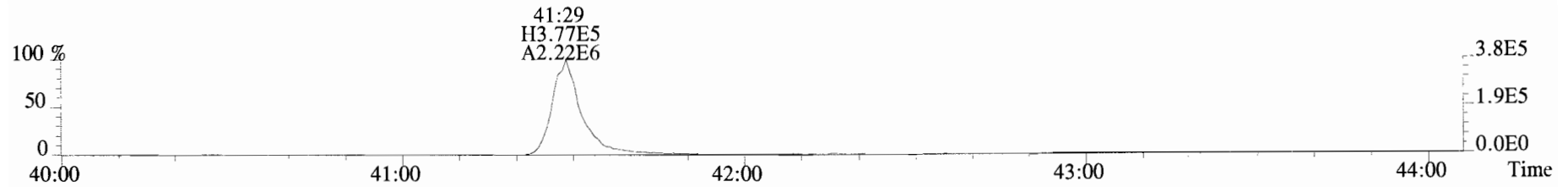
454.9728 S:8 F:4



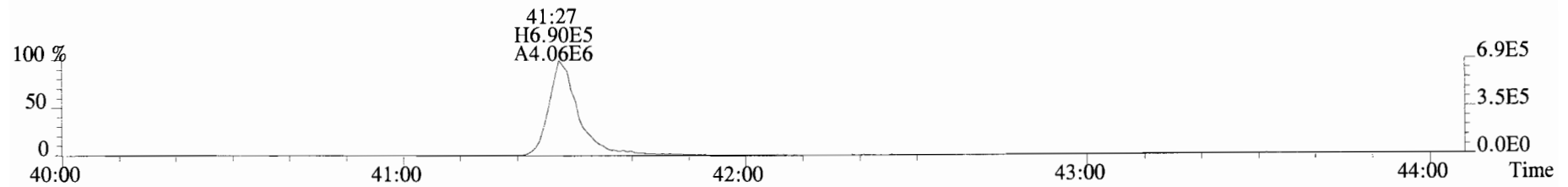
File:191009D1 #1-431 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#8 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
457.7377 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



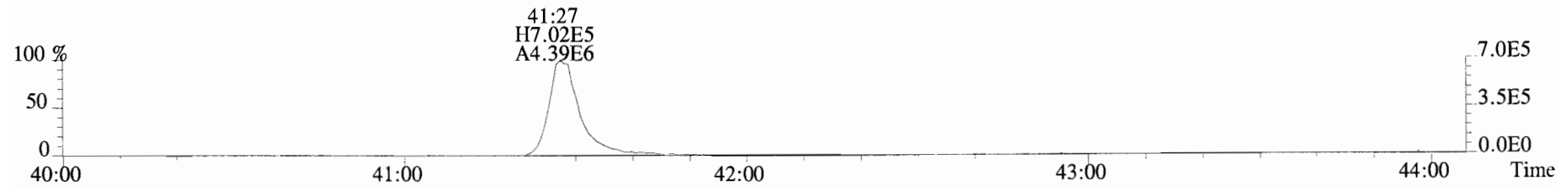
459.7348 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



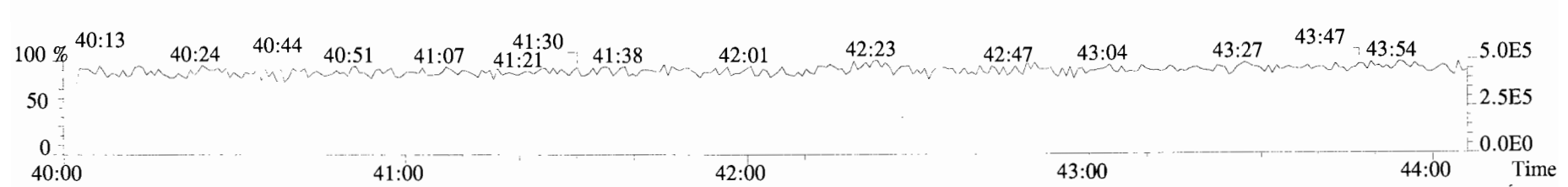
469.7780 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



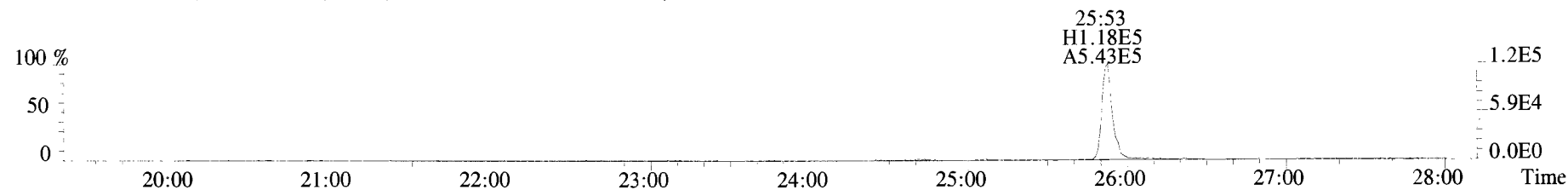
471.7750 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



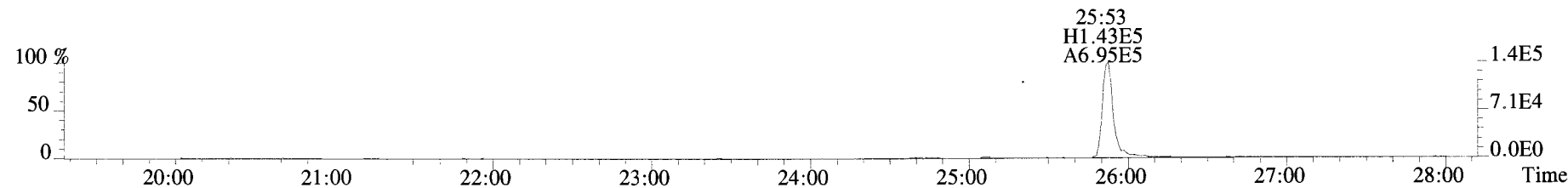
454.9728 S:8 F:5



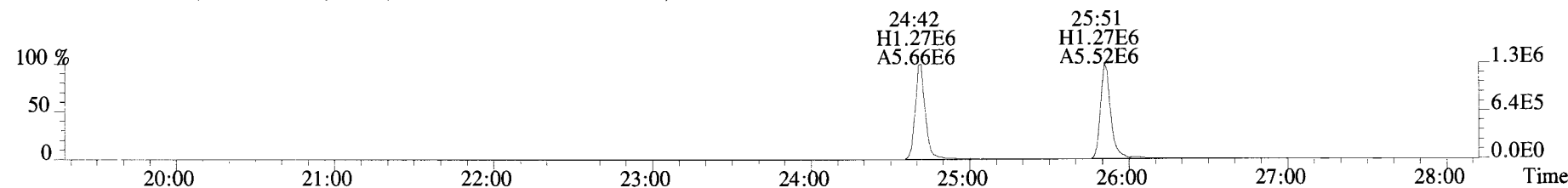
File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#8 File Text: Vista Analytical Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
303.9016 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



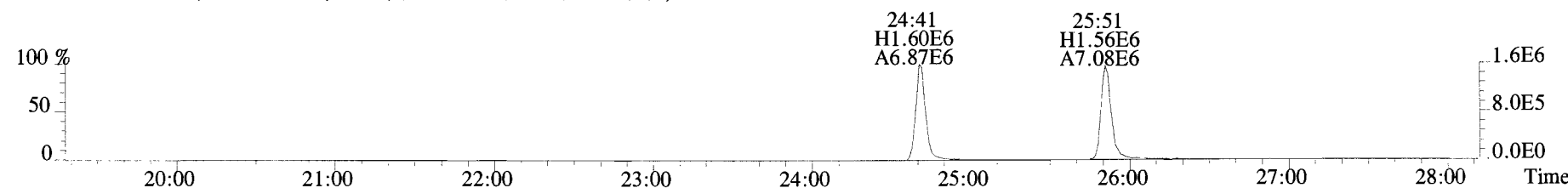
305.8987 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



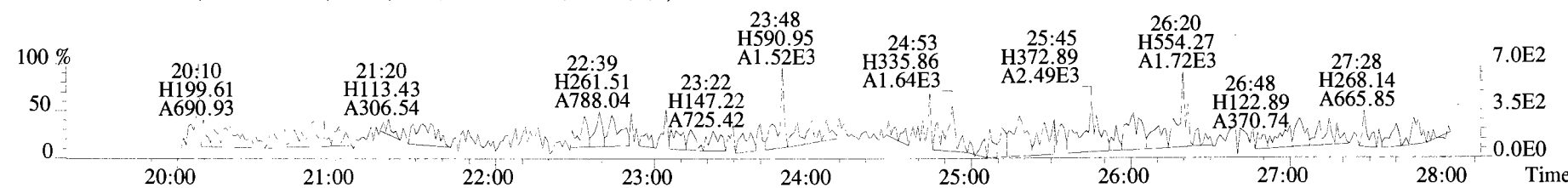
315.9419 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



317.9389 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

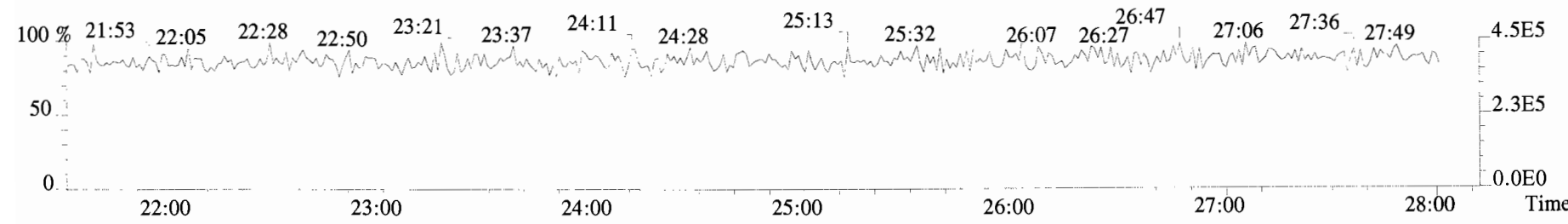
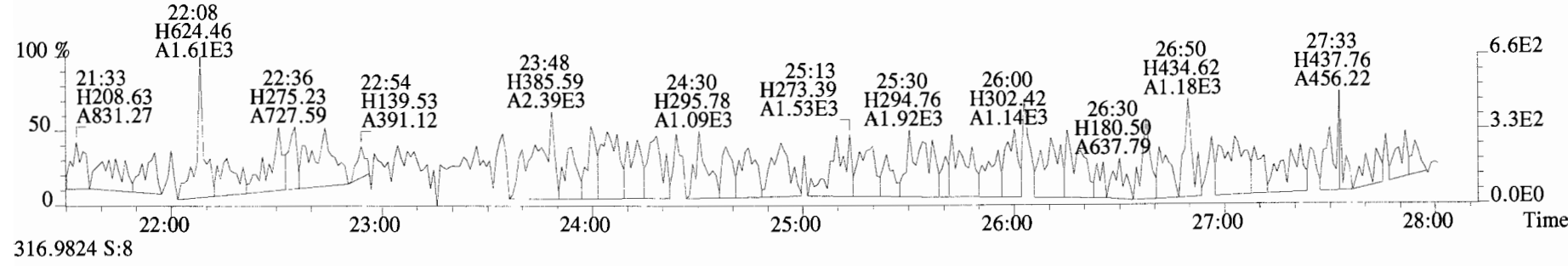
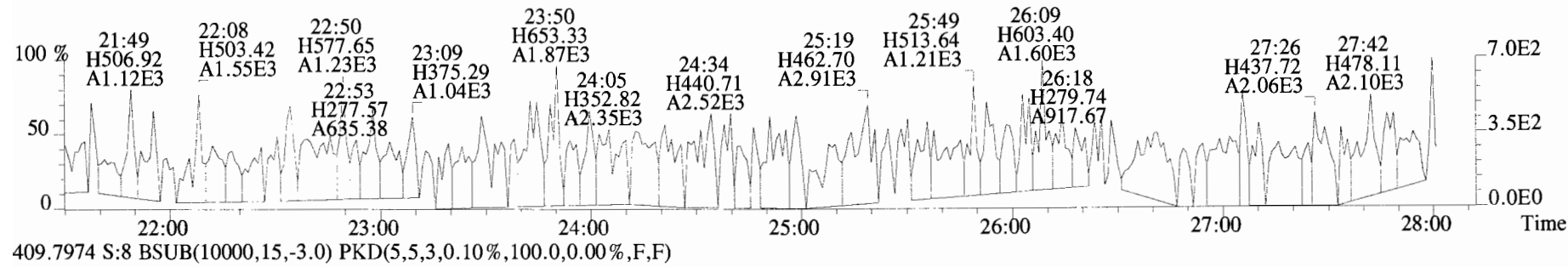
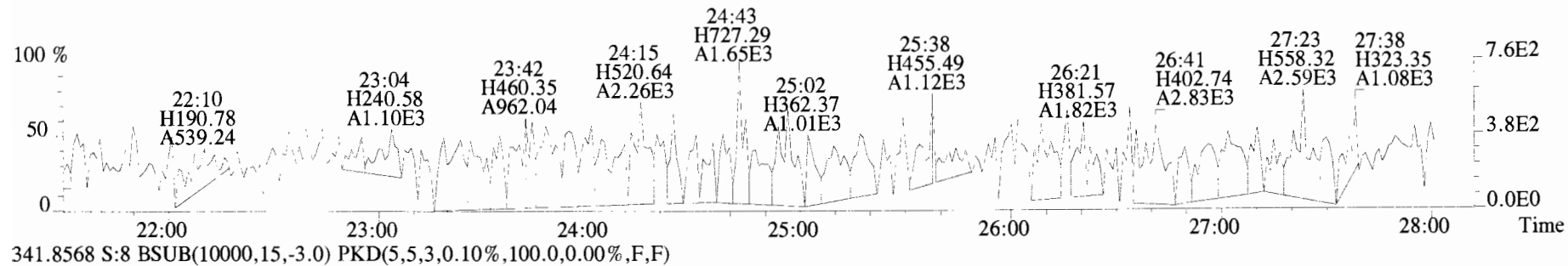


375.8364 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

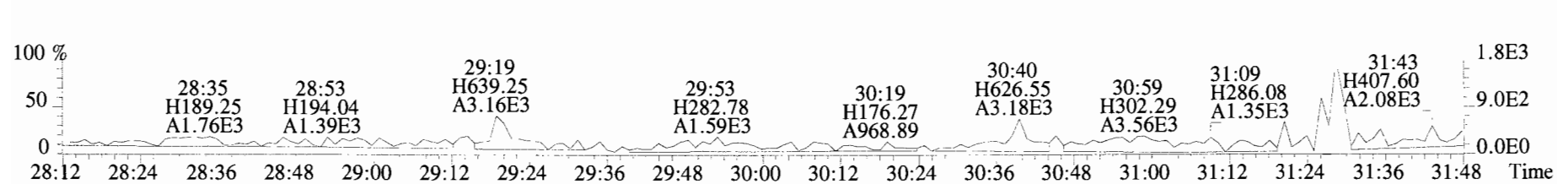
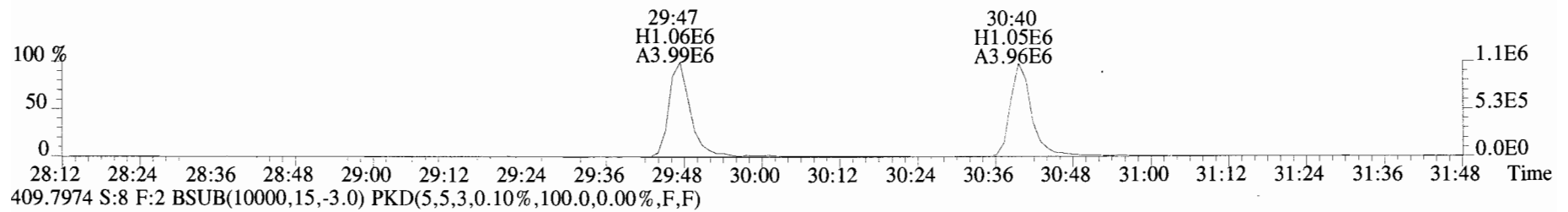
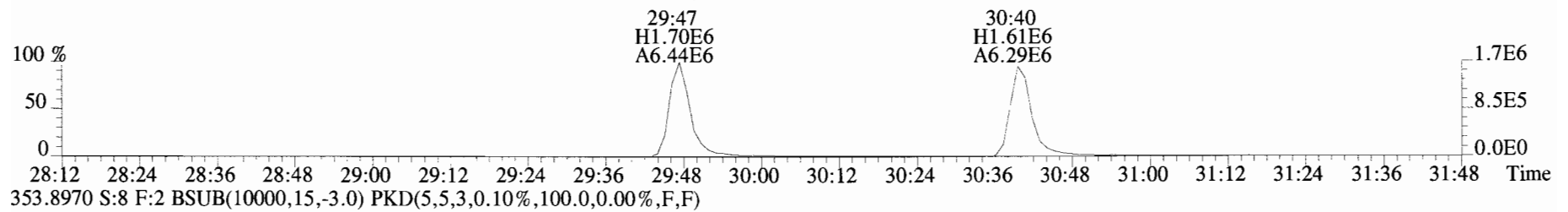
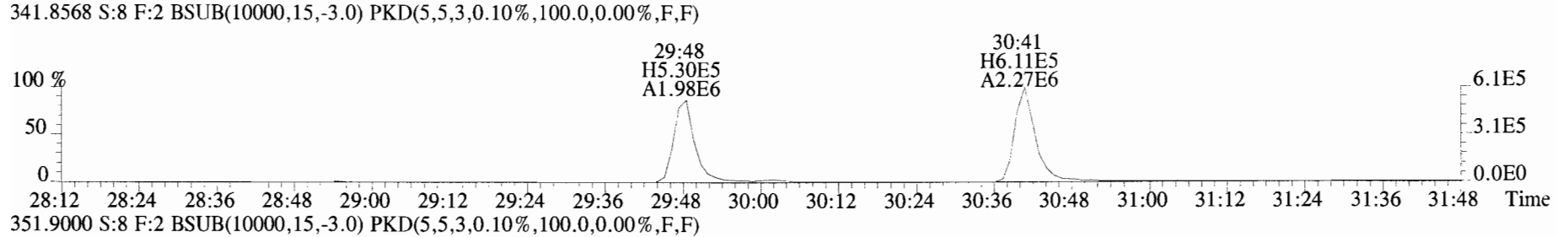
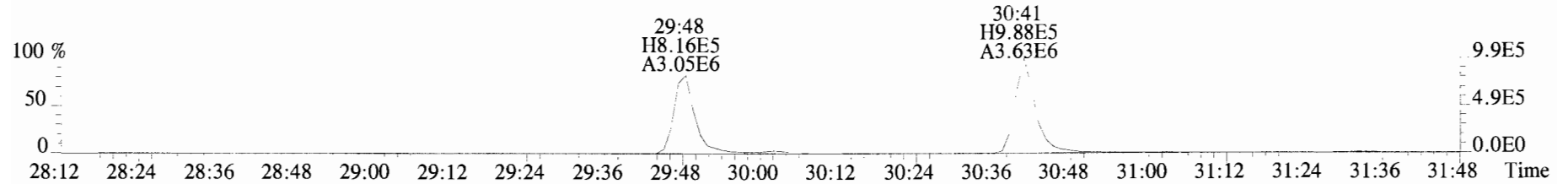




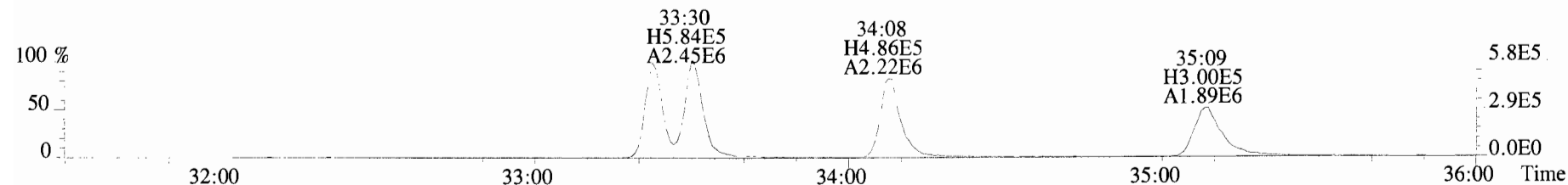
File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#8 File Text:Vista Analytical Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
 339.8597 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



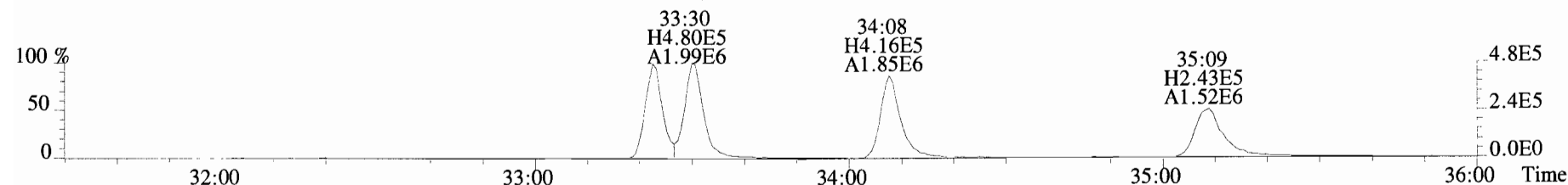
File:191009D1 #1-210 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#8 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
 339.8597 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



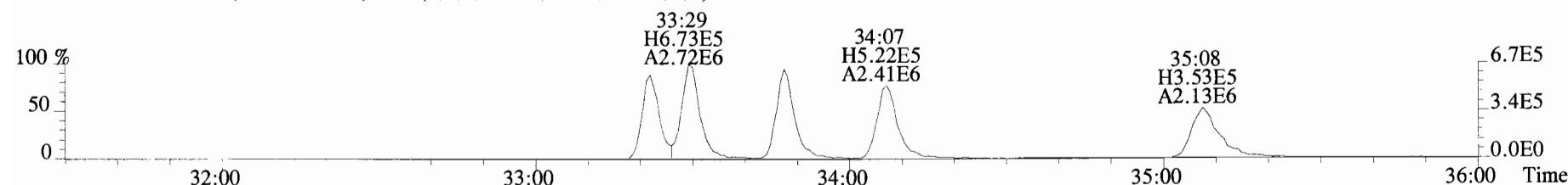
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#8 File Text:Vista\_Analytical\_Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
373.8207 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



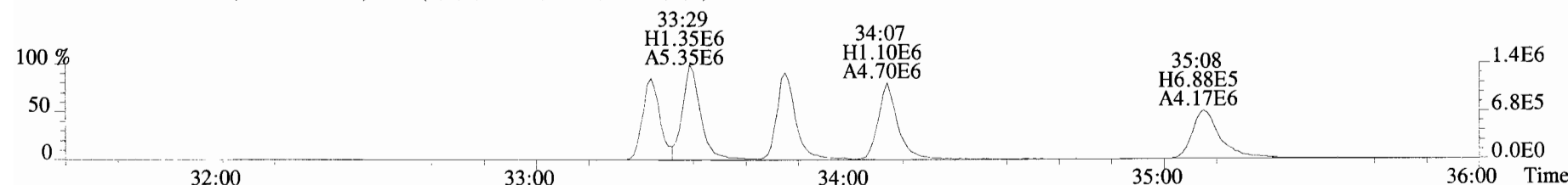
375.8178 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



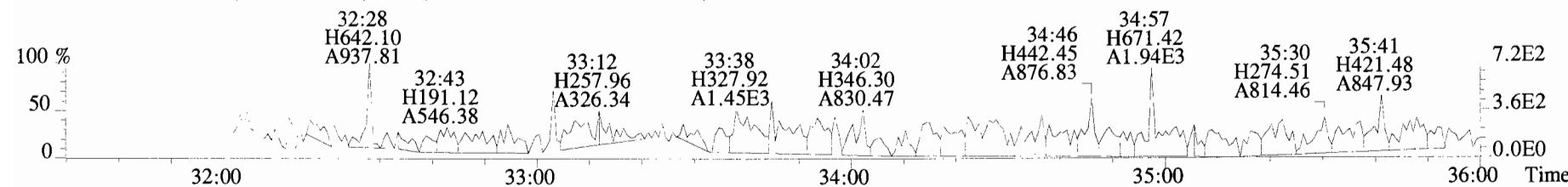
383.8639 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



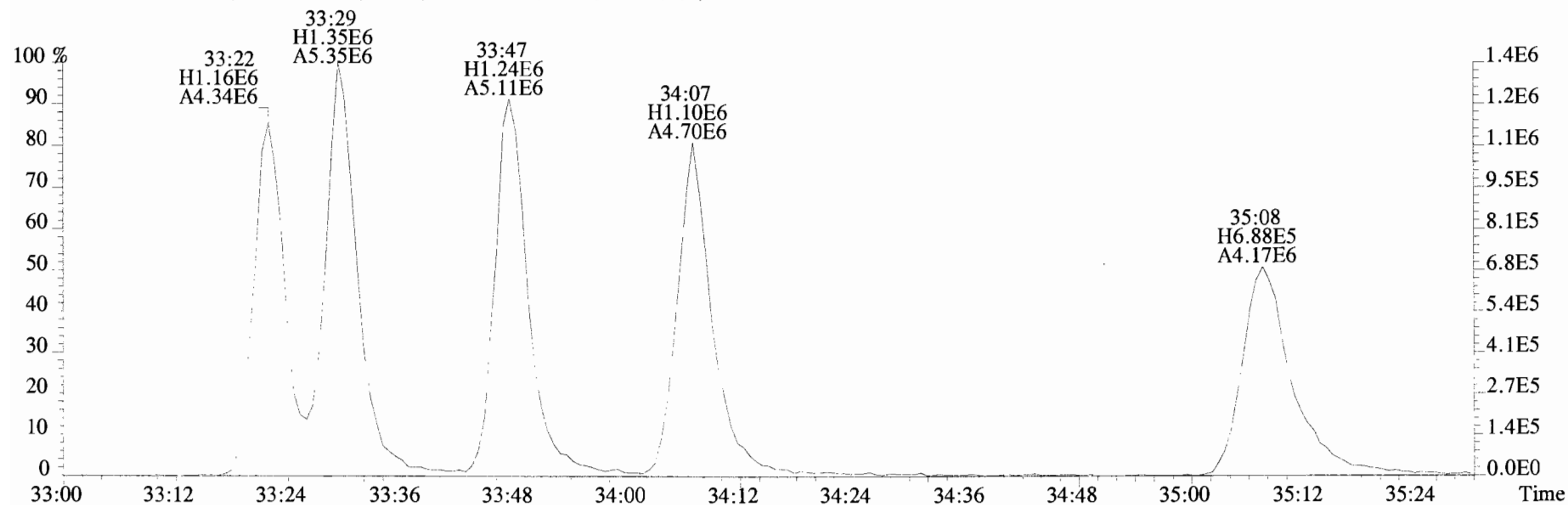
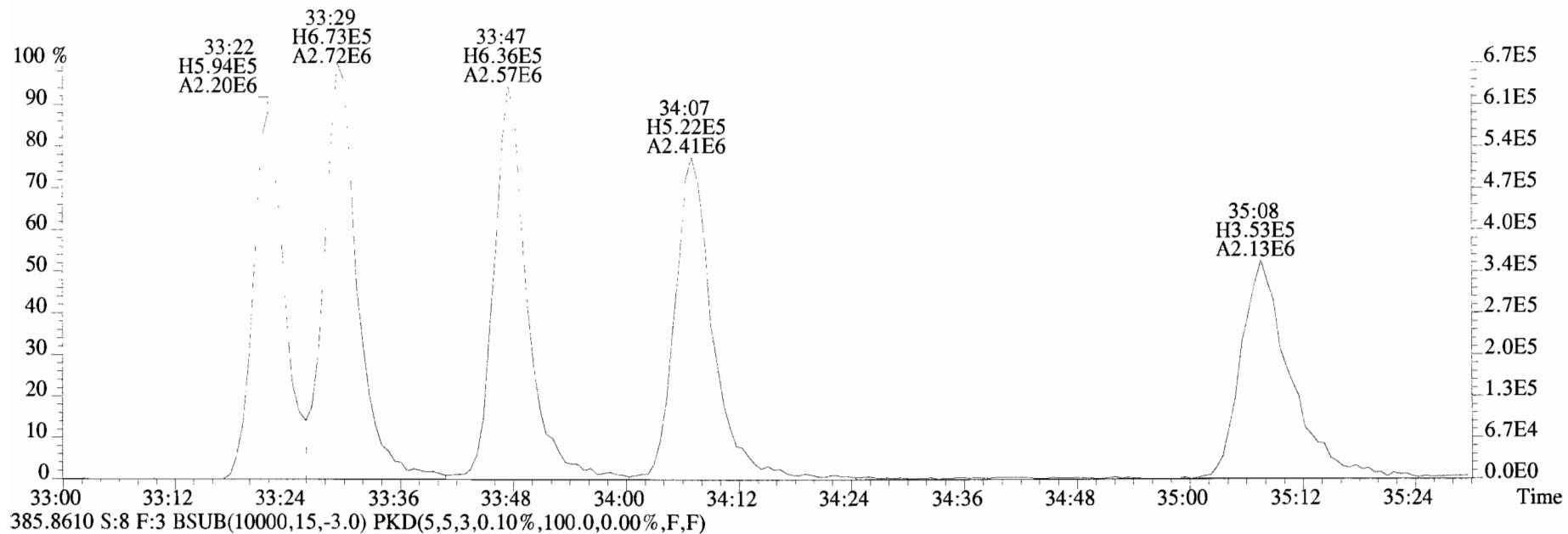
385.8610 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



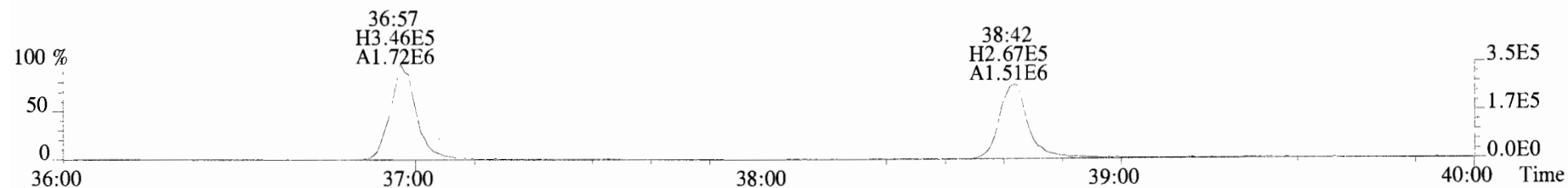
445.7555 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



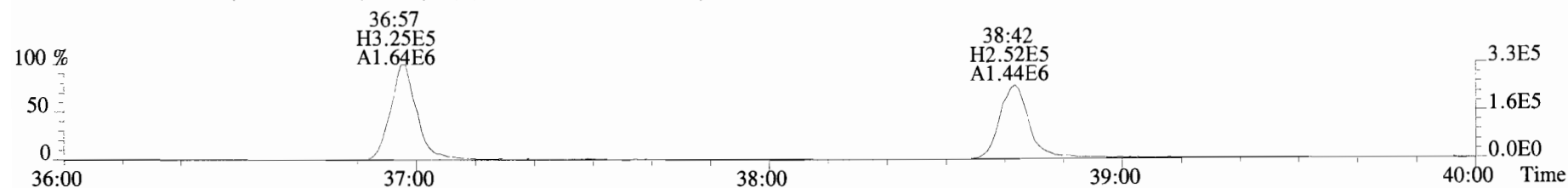
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE  
Sample#8 File Text:Vista Analytical Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
383.8639 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



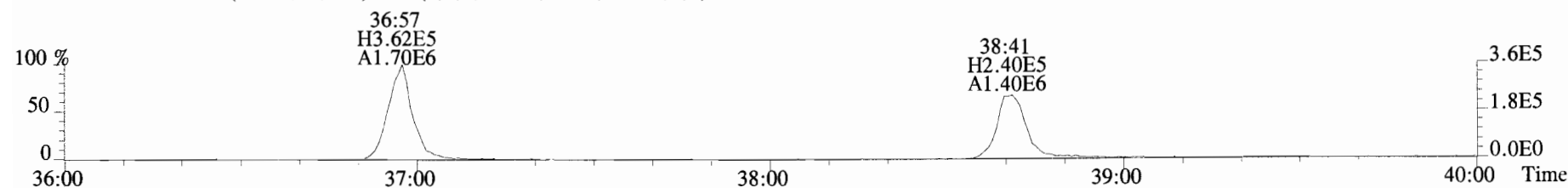
File:191009D1 #1-356 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE  
 Sample#8 File Text:Vista Analytical Laboratory\_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD\_DB5  
 407.7818 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



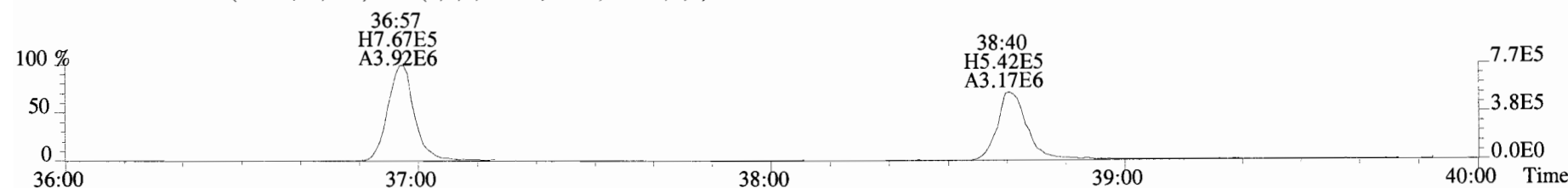
409.7788 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



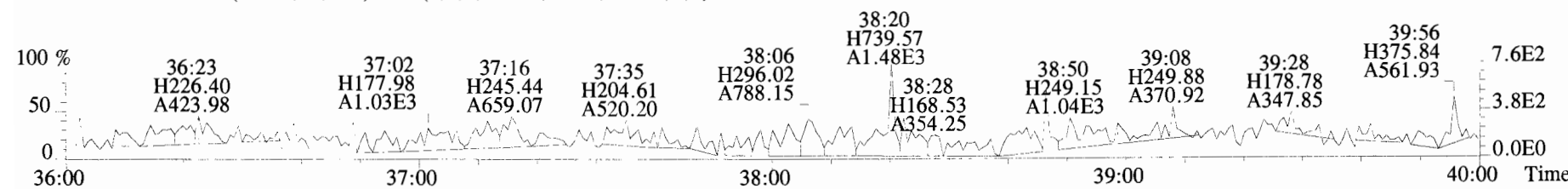
417.8253 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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)

