

December 27, 2019

Vista Work Order No. 1903648

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.

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

Sincerely,

Martha Maier Laboratory Director



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

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

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Vista Work Order No. 1903648 Case Narrative

Sample Condition on Receipt:

Seven 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-073SC-A-11-12-191013". The Duplicate RPD was out of the acceptance criteria for OCDD.

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
1903648-01	PDI-073SC-A-11-12-191013	DUP13-Oct-19 10:41	15-Oct-19 08:51	Amber Glass, 120 mL
				Amber Glass, 120 mL
1903648-02	PDI-073SC-A-12-12.6-191013	13-Oct-19 10:41	15-Oct-19 08:51	Amber Glass, 120 mL
1903648-03	PDI-1073SC-A-12-12.6-191013	13-Oct-19 00:00	15-Oct-19 08:51	Amber Glass, 120 mL
1903648-04	PDI-075SC-A-14-15-191013	13-Oct-19 07:32	15-Oct-19 08:51	Amber Glass, 120 mL
1903648-05	PDI-075SC-A-15-16-191013	13-Oct-19 07:32	15-Oct-19 08:51	Amber Glass, 120 mL
1903648-06	PDI-076SC-A-10-11-191013	13-Oct-19 13:08	15-Oct-19 08:51	Amber Glass, 120 mL
1903648-07	PDI-076SC-A-11-11.9-191013	13-Oct-19 13:13	15-Oct-19 08:51	Amber Glass, 120 mL

Vista Project: 1903648 Client Project: Gasco PDI

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ANALYTICAL RESULTS

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Sample ID: Method	l Blank						EPA Me	thod 1613B	
Matrix: Solid Sample Size: 10.0 g		QC Batch: Date Extracted:	B9J0322 30-Oct-2019 11:02		1	ab Sample: B9J0322-BLK1 ate Analyzed: 17-Dec-19 16:16	6 Column: ZB-5	MS	
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.117			IS	13C-2,3,7,8-TCDD	90.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0712				13C-1,2,3,7,8-PeCDD	98.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0889				13C-1,2,3,4,7,8-HxCDD	78.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.0866				13C-1,2,3,6,7,8-HxCDD	77.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0978				13C-1,2,3,7,8,9-HxCDD	85.4	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.124				13C-1,2,3,4,6,7,8-HpCDD	88.1	23 - 140	
OCDD	ND	0.172				13C-OCDD	70.8	17 - 157	
2,3,7,8-TCDF	ND	0.0613				13C-2,3,7,8-TCDF	91.7	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0447				13C-1,2,3,7,8-PeCDF	88.5	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0454				13C-2,3,4,7,8-PeCDF	91.7	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0298				13C-1,2,3,4,7,8-HxCDF	86.1	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0288				13C-1,2,3,6,7,8-HxCDF	85.9	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0304				13C-2,3,4,6,7,8-HxCDF	91.2	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0440				13C-1,2,3,7,8,9-HxCDF	88.7	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.0486				13C-1,2,3,4,6,7,8-HpCDF	89.1	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0605				13C-1,2,3,4,7,8,9-HpCDF	83.5	26 - 138	
OCDF	ND	0.134				13C-OCDF	75.7	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	84.1	35 - 197	
						Toxic Equivalent Quotient (TI	EQ) Data (pg/g d	lry wt)	
						TEQMinWHO2005Dioxin	0.00		
TOTALS									
Total TCDD	ND	0.117							
Total PeCDD	ND	0.0712							
Total HxCDD	ND	0.0978							
Total HpCDD	ND	0.124							
Total TCDF	ND	0.0613							
Total PeCDF	ND	0.0454							
Total HxCDF	ND	0.0440							
Total HpCDF	ND	0.0605			LOLIU	CL - Lower control limit - upper control lin	٠.		

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.

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Sample ID: OPR								EPA Method 1613B
Matrix: Solid Sample Size: 10.0 g	` `		9J0322 0-Oct-2019	9 11:02		Lab Sample: B9J0322-BS1 Date Analyzed: 17-Dec-19 14:39	Column: ZB-5MS	
Analyte	Amt Found (pg/g)	Spike Amt	%R	Limits		Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	20.6	20.0	103	67 - 158	IS	13C-2,3,7,8-TCDD	88.0	20 - 175
1,2,3,7,8-PeCDD	104	100	104	70 - 142		13C-1,2,3,7,8-PeCDD	89.1	21 - 227
1,2,3,4,7,8-HxCDD	109	100	109	70 - 164		13C-1,2,3,4,7,8-HxCDD	76.0	21 - 193
1,2,3,6,7,8-HxCDD	113	100	113	76 - 134		13C-1,2,3,6,7,8-HxCDD	75.1	25 - 163
1,2,3,7,8,9-HxCDD	109	100	109	64 - 162		13C-1,2,3,7,8,9-HxCDD	80.4	21 - 193
1,2,3,4,6,7,8-HpCDD	101	100	101	70 - 140		13C-1,2,3,4,6,7,8-HpCDD	77.9	26 - 166
OCDD	215	200	107	78 - 144		13C-OCDD	68.6	13 - 199
2,3,7,8-TCDF	22.2	20.0	111	75 - 158		13C-2,3,7,8-TCDF	87.7	22 - 152
1,2,3,7,8-PeCDF	107	100	107	80 - 134		13C-1,2,3,7,8-PeCDF	82.7	21 - 192
2,3,4,7,8-PeCDF	111	100	111	68 - 160		13C-2,3,4,7,8-PeCDF	81.5	13 - 328
1,2,3,4,7,8-HxCDF	107	100	107	72 - 134		13C-1,2,3,4,7,8-HxCDF	82.1	19 - 202
1,2,3,6,7,8-HxCDF	115	100	115	84 - 130		13C-1,2,3,6,7,8-HxCDF	78.2	21 - 159
2,3,4,6,7,8-HxCDF	110	100	110	70 - 156		13C-2,3,4,6,7,8-HxCDF	84.7	22 - 176
1,2,3,7,8,9-HxCDF	109	100	109	78 - 130		13C-1,2,3,7,8,9-HxCDF	88.9	17 - 205
1,2,3,4,6,7,8-HpCDF	116	100	116	82 - 122		13C-1,2,3,4,6,7,8-HpCDF	77.6	21 - 158
1,2,3,4,7,8,9-HpCDF	110	100	110	78 - 138		13C-1,2,3,4,7,8,9-HpCDF	78.8	20 - 186
OCDF	197	200	98.6	63 - 170		13C-OCDF	75.3	13 - 199
					CRS	37Cl-2,3,7,8-TCDD	75.9	31 - 191

LCL-UCL - Lower control limit - upper control limit

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Manric Anchor QEA, LLC Sample Size Scale Sca	Sample ID: PDI-07	3SC-A-11-12-191013							EPA Me	thod 1613B
2,3,7,8-PCDD	Project: Gasco	o PDI	Matrix: Sample	Sediment Size: 15.3 g		Lab QC	Sample: 1903648-01 Batch: B9J0322	Date Extracted:	30-Oct-2019	
1,2,3,7,8-PeCDD	Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
1,2,3,4,7,8-HxCDD	2,3,7,8-TCDD	ND	0.140			IS	13C-2,3,7,8-TCDD	97.9	25 - 164	
1,2,3,6,7,8-HxCDD	1,2,3,7,8-PeCDD	ND	0.114				13C-1,2,3,7,8-PeCDD	99.4	25 - 181	
1,2,3,7,8,9-HkCDD	1,2,3,4,7,8-HxCDD	ND	0.141				13C-1,2,3,4,7,8-HxCDD	78.2	32 - 141	
1,2,3,4,6,7,8-HpCDD	1,2,3,6,7,8-HxCDD	ND	0.149				13C-1,2,3,6,7,8-HxCDD	79.9	28 - 130	
OCDD 14.9 13C-OCDD 54.0 17 - 157 2.3.7,8-TCDF ND 0.123 13C-2,3,7,8-TCDF 99.9 24 - 169 2.3,4,78-PeCDF ND 0.0698 13C-1,2,3,7,8-PeCDF 92.3 24 - 185 2,3,4,78-PeCDF ND 0.0698 13C-2,3,47,8-PeCDF 95.3 21 - 178 1,2,3,4,78-HxCDF ND 0.0630 13C-1,2,3,47,8-HxCDF 86.2 26 - 152 1,2,3,4,78-HxCDF ND 0.0637 13C-1,2,3,4,78-HxCDF 83.3 26 - 152 1,2,3,7,8-HxCDF ND 0.0712 13C-1,2,3,4,6,78-HxCDF 83.0 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0941 13C-1,2,3,4,6,78-HxCDF 94.8 29 - 147 1,2,3,4,7,8,9-HpCDF ND 0.0914 13C-1,2,3,4,7,8,9-HpCDF 78.4 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.094 13C-0,254,67,8-HpCDF 81.4 26 - 138 OCDF ND 0.070 13C-0,23,7,8-HpCDF 78.4 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.170	1,2,3,7,8,9-HxCDD	ND	0.166				13C-1,2,3,7,8,9-HxCDD	81.1	32 - 141	
2,37,8-TCDF ND 0.123 13C-2,37,8-TCDF 99.9 24 - 169 1,2,37,8-PCDF ND 0.0698 13C-12,37,8-PCDF 92.3 24 - 185 2,3,47,8-PCDF ND 0.0658 13C-12,34,78-PCDF 95.3 21 - 178 1,2,3,47,8-HxCDF ND 0.0630 13C-12,3,47,8-HxCDF 86.2 26 - 152 1,2,3,67,8-HxCDF ND 0.0637 13C-12,3,47,8-HxCDF 83.3 26 - 123 2,3,4,67,8-HxCDF ND 0.0712 13C-12,3,46,78-HxCDF 83.0 28 - 136 1,2,3,4,67,8-HxCDF ND 0.0914 13C-12,3,46,78-HxCDF 94.8 29 - 147 1,2,3,4,7,8-9-HpCDF ND 0.0914 13C-12,3,47,8-9-HpCDF 84. 28 - 143 1,2,3,4,7,8-9-HpCDF ND 0.0914 13C-12,3,47,8-9-HpCDF 81.4 26 - 138 OCDF ND 0.170 13C-0CDF 66.3 17 - 157 Toxic Equivalent Quotient (TEQ) Data (pg/g dry w) Toxic Equivalent Quotient (TEQ) Data (pg/g dry w) Toxic Equivalent Quotient (TEQ) Data (pg/g dry w) Toxic Equivalent Quotient (TEQ) Data (pg/g dry	1,2,3,4,6,7,8-HpCDD	1.86			J		13C-1,2,3,4,6,7,8-HpCDD	83.5	23 - 140	
1,2,3,7,8-PeCDF ND	OCDD	14.9					13C-OCDD	54.0	17 - 157	
13C-2,3,4,7,8-PeCDF	2,3,7,8-TCDF	ND	0.123				13C-2,3,7,8-TCDF	99.9	24 - 169	
1,2,3,4,7,8-HxCDF	1,2,3,7,8-PeCDF	ND	0.0698				13C-1,2,3,7,8-PeCDF	92.3	24 - 185	
1,2,3,6,7,8-HxCDF ND 0.0637 13C-1,2,3,6,7,8-HxCDF 83.3 26 - 123 2,3,4,6,7,8-HxCDF ND 0.0712 13C-2,3,4,6,7,8-HxCDF 83.0 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0941 13C-1,2,3,7,8,9-HxCDF 94.8 29 - 147 1,2,3,4,7,8,9-HpCDF ND 0.171 13C-1,2,3,7,8,9-HpCDF 78.4 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0914 13C-1,2,3,4,7,8,9-HpCDF 81.4 26 - 138 COEP	2,3,4,7,8-PeCDF	ND	0.0658				13C-2,3,4,7,8-PeCDF	95.3	21 - 178	
13C-2,3,4,6,7,8-HxCDF ND 0.0712 13C-2,3,4,6,7,8-HxCDF 83.0 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0941 13C-1,2,3,7,8,9-HxCDF 94.8 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.171 13C-1,2,3,4,6,7,8-HpCDF 78.4 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0914 13C-1,2,3,4,7,8,9-HpCDF 81.4 26 - 138 OCDF ND 0.170 13C-1,2,3,4,7,8,9-HpCDF 81.4 26 - 138 OCDF ND 0.170 CRS 37C1-2,3,7,8-TCDD 94.2 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TOXIAS TEQMinWHO2005Dioxin 0.0231 Total TCDD ND 0.273 Total PCDD 0.240 0.388 Total HxCDD 1.41 2.11 Total HyCDD 4.78 1.51 1.72 Total PCDF 0.0775 1.51 1.72 Total HxCDF 0.120 0.171 Total HyCDF ND 0.171	1,2,3,4,7,8-HxCDF	ND	0.0630				13C-1,2,3,4,7,8-HxCDF	86.2	26 - 152	
1,2,3,7,8,9-HxCDF	1,2,3,6,7,8-HxCDF	ND	0.0637				13C-1,2,3,6,7,8-HxCDF	83.3	26 - 123	
1,2,3,4,6,7,8-HpCDF	2,3,4,6,7,8-HxCDF	ND	0.0712				13C-2,3,4,6,7,8-HxCDF	83.0	28 - 136	
1,2,3,4,7,8,9-HpCDF ND 0.0914 13C-1,2,3,4,7,8,9-HpCDF 81.4 26 - 138 OCDF ND 0.170 13C-OCDF 66.3 17 - 157 CRS 37C1-2,3,7,8-TCDD 94.2 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TOTALS Total TCDD ND 0.273 Total PeCDD 0.240 0.388 Total HxCDD 1.41 2.11 Total HpCDD 4.78 Total TCDF 1.51 1.72 Total PeCDF 0.0775 Total HxCDF 0.120 Total HpCDF ND 0.171	1,2,3,7,8,9-HxCDF	ND	0.0941				13C-1,2,3,7,8,9-HxCDF	94.8	29 - 147	
OCDF ND 0.170 13C-OCDF 66.3 17 - 157	1,2,3,4,6,7,8-HpCDF	ND		0.171			13C-1,2,3,4,6,7,8-HpCDF	78.4	28 - 143	
CRS 37C1-2,3,7,8-TCDD 94.2 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry w) TOTALS Total TCDD ND 0.273 Total PcCDD 0.240 0.388 Total HxCDD 1.41 2.11 Total HpCDD 4.78 Total TCDF 1.51 1.72 Total PeCDF 0.0775 Total HxCDF 0.120 Total HpCDF ND 0.171	1,2,3,4,7,8,9-HpCDF	ND	0.0914				13C-1,2,3,4,7,8,9-HpCDF	81.4	26 - 138	
Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)	OCDF	ND	0.170				13C-OCDF	66.3	17 - 157	
TEQMinWHO2005Dioxin 0.0231 TOTALS Total TCDD ND 0.273 Total PCDD 0.240 0.388 Total HxCDD 1.41 2.11 Total HpCDD 4.78						CRS	37Cl-2,3,7,8-TCDD	94.2	35 - 197	
TOTALS Total TCDD ND 0.273 Total PCDD 0.240 0.388 Total HxCDD 1.41 2.11 Total HpCDD 4.78							Toxic Equivalent Quotient (TE	Q) Data (pg/g dry v	vt)	
Total TCDD ND 0.273 Total PeCDD 0.240 0.388 Total HxCDD 1.41 2.11 Total HpCDD 4.78							TEQMinWHO2005Dioxin	0.0231		
Total PeCDD 0.240 0.388 Total HxCDD 1.41 2.11 Total HpCDD 4.78	TOTALS									
Total HxCDD 1.41 2.11 Total HpCDD 4.78 Total TCDF 1.51 1.72 Total PeCDF 0.0775 Total HxCDF 0.120 Total HpCDF ND 0.171	Total TCDD	ND		0.273						
Total HpCDD 4.78 Total TCDF 1.51 1.72 Total PeCDF 0.0775 (1.20) Total HxCDF 0.120 (1.71) Total HpCDF ND 0.171	Total PeCDD	0.240		0.388						
Total TCDF 1.51 1.72 Total PeCDF 0.0775 Total HxCDF 0.120 Total HpCDF ND 0.171	Total HxCDD			2.11						
Total PeCDF 0.0775 Total HxCDF 0.120 Total HpCDF ND 0.171	Total HpCDD									
Total HxCDF 0.120 Total HpCDF ND 0.171	Total TCDF			1.72						
Total HpCDF ND 0.171	Total PeCDF									
1	Total HxCDF									
	Total HpCDF			0.171						

EMPC - Estimated maximum possible concentration

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.

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Sample ID: Duj	olicate							EPA Met	hod 1613B
Source Client ID: Source LabNumber: Matrix: Sample Size:	PDI-073SC-A-11-12-191013 1903648-01 Solid 15.3 g		QC Batch: Date Extracted:	B9J0322 30-Oct-2019 11:02	Lab Sar Date Ar	-	mn: ZB-5MS		
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.128			IS	13C-2,3,7,8-TCDD	95.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.145				13C-1,2,3,7,8-PeCDD	95.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.171				13C-1,2,3,4,7,8-HxCDD	80.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.174				13C-1,2,3,6,7,8-HxCDD	78.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.200				13C-1,2,3,7,8,9-HxCDD	85.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.83			J		13C-1,2,3,4,6,7,8-HpCDD	78.1	23 - 140	
OCDD	11.1					13C-OCDD	63.4	17 - 157	
2,3,7,8-TCDF	ND	0.124				13C-2,3,7,8-TCDF	96.0	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0867				13C-1,2,3,7,8-PeCDF	91.3	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0855				13C-2,3,4,7,8-PeCDF	87.4	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0657				13C-1,2,3,4,7,8-HxCDF	86.2	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0674				13C-1,2,3,6,7,8-HxCDF	84.4	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0695				13C-2,3,4,6,7,8-HxCDF	88.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.103				13C-1,2,3,7,8,9-HxCDF	94.7	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.191			J		13C-1,2,3,4,6,7,8-HpCDF	81.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.123				13C-1,2,3,4,7,8,9-HpCDF	78.5	26 - 138	
OCDF	ND	0.183				13C-OCDF	71.1	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	80.0	35 - 197	
						Toxic Equivalent Quotient (TE	Q) Data (pg/g dr	y wt)	
						TEQMinWHO2005Dioxin	0.0235		
TOTALS									
Total TCDD	0.362		0.960						
Total PeCDD	ND		0.431						
Total HxCDD	1.58		2.59						
Total HpCDD	1.83		4.48						
Total TCDF	1.29								
Total PeCDF	ND	0.0867							
Total HxCDF	0.115								
Total HpCDF	0.191					T LICI - Lower control limit - unner control			

EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit

The results are reported in dry weight. weight.

The sample size is reported in wet

Work Order 1903648 Page 9 of 513 Sample ID: Duplicate EPA Method 1613B

PDI-073SC-A-11-12-191013 Source Client ID:

Source LabNumber: 1903648-01 Matrix: Solid

Duplicate Lab Sample: B9J0322-DUP1

A 1.4				DDD II I	+	T 1 1 1 1 1 1 1	D 0/ D	C 0/D	T.CT. II.CT
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	95.7	97.9	25 - 164
1,2,3,7,8-PeCDD	ND	ND	NA	25		13C-1,2,3,7,8-PeCDD	95.0	99.4	25 - 181
1,2,3,4,7,8-HxCDD	ND	ND	NA	25		13C-1,2,3,4,7,8-HxCDD	80.8	78.2	32 - 141
1,2,3,6,7,8-HxCDD	ND	ND	NA	25		13C-1,2,3,6,7,8-HxCDD	78.3	79.9	28 - 130
1,2,3,7,8,9-HxCDD	ND	ND	NA	25		13C-1,2,3,7,8,9-HxCDD	85.8	81.1	32 - 141
1,2,3,4,6,7,8-HpCDD	1.83	1.86	1.74	25		13C-1,2,3,4,6,7,8-HpCDD	78.1	83.5	23 - 140
OCDD	11.1	14.9	29.2	25		13C-OCDD	63.4	54.0	17 - 157
2,3,7,8-TCDF	ND	ND	NA	25		13C-2,3,7,8-TCDF	96.0	99.9	24 - 169
1,2,3,7,8-PeCDF	ND	ND	NA	25		13C-1,2,3,7,8-PeCDF	91.3	92.3	24 - 185
2,3,4,7,8-PeCDF	ND	ND	NA	25		13C-2,3,4,7,8-PeCDF	87.4	95.3	21 - 178
1,2,3,4,7,8-HxCDF	ND	ND	NA	25		13C-1,2,3,4,7,8-HxCDF	86.2	86.2	26 - 152
1,2,3,6,7,8-HxCDF	ND	ND	NA	25		13C-1,2,3,6,7,8-HxCDF	84.4	83.3	26 - 123
2,3,4,6,7,8-HxCDF	ND	ND	NA	25		13C-2,3,4,6,7,8-HxCDF	88.5	83.0	28 - 136
1,2,3,7,8,9-HxCDF	ND	ND	NA	25		13C-1,2,3,7,8,9-HxCDF	94.7	94.8	29 - 147
1,2,3,4,6,7,8-HpCDF	0.191	ND	#	25		13C-1,2,3,4,6,7,8-HpCDF	81.4	78.4	28 - 143
1,2,3,4,7,8,9-HpCDF	ND	ND	NA	25		13C-1,2,3,4,7,8,9-HpCDF	78.5	81.4	26 - 138
OCDF	ND	ND	NA	25		13C-OCDF	71.1	66.3	17 - 157
					CRS	37Cl-2,3,7,8-TCDD	80.0	94.2	35 - 197

LCL-UCL - Lower control limit - upper control limit

The results are reported in dry weight.

reported to the MDL

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The sample size is reported in wet weight.Results

Sample ID: PDI-073	3SC-A-12-12.6-191013							EPA Met	hod 1613B
Project: Gasco	or QEA, LLC DPDI ct-2019 10:41	Sample I Matrix: Sample % Solid	Sediment Size: 14.1 g		Lab QC	Doratory Data Sample: 1903648-02 Batch: B9J0322 e Analyzed: 17-Dec-19 21:06	Date Received: Date Extracted: Column: ZB-5M	30-Oct-2019	
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.156			IS	13C-2,3,7,8-TCDD	90.8	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0989				13C-1,2,3,7,8-PeCDD	97.7	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.141				13C-1,2,3,4,7,8-HxCDD	76.7	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.146				13C-1,2,3,6,7,8-HxCDD	75.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.166				13C-1,2,3,7,8,9-HxCDD	80.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND		1.39			13C-1,2,3,4,6,7,8-HpCDD	86.1	23 - 140	
OCDD	12.8					13C-OCDD	71.9	17 - 157	
2,3,7,8-TCDF	ND	0.120				13C-2,3,7,8-TCDF	89.7	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0848				13C-1,2,3,7,8-PeCDF	81.1	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0832				13C-2,3,4,7,8-PeCDF	83.1	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0531				13C-1,2,3,4,7,8-HxCDF	82.7	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0529				13C-1,2,3,6,7,8-HxCDF	81.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0555				13C-2,3,4,6,7,8-HxCDF	84.7	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0802				13C-1,2,3,7,8,9-HxCDF	90.0	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.108			J		13C-1,2,3,4,6,7,8-HpCDF	79.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0859				13C-1,2,3,4,7,8,9-HpCDF	82.1	26 - 138	
OCDF	ND	0.166				13C-OCDF	79.7	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	92.5	35 - 197	
						Toxic Equivalent Quotient (TEQ) Data (pg/g dry v	wt)	
						TEQMinWHO2005Dioxin	0.00492		
TOTALS									
Total TCDD	ND	0.156							
Total PeCDD	ND		0.352						
Total HxCDD	0.800		1.88						
Total HpCDD	2.24		3.63						
Total TCDF	0.181		0.624						
Total PeCDF	ND	0.0848							
Total HxCDF	ND		0.0765						
Total HpCDF	0.108								
DL - Sample specifc esti	imated detection limit		•		LCL-UC	L- Lower control limit - upper control 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.

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Name Name	Sample ID: PDI-107	73SC-A-12-12.6-191013					EPA Met	thod 1613B		
23.7,8-TCDD	Name: Ancho Project: Gasco	PDI	Matrix: Sample	Sediment Size: 14.3 g		Lab QC	Sample: 1903648-03 Batch: B9J0322	Date Extracted:	30-Oct-2019	
1,2,3,7,8-PcCDD	Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
1,2,3,4,7,8-HxCDD	2,3,7,8-TCDD	ND	0.170			IS	13C-2,3,7,8-TCDD	77.0	25 - 164	
1,2,3,6,7,8-HxCDD	1,2,3,7,8-PeCDD	ND	0.114				13C-1,2,3,7,8-PeCDD	79.4	25 - 181	
1,2,3,7,8,9-HxCDD	1,2,3,4,7,8-HxCDD	ND	0.196				13C-1,2,3,4,7,8-HxCDD	64.3	32 - 141	
1.3.4,6,7,8-HpCDD	1,2,3,6,7,8-HxCDD	ND	0.177				13C-1,2,3,6,7,8-HxCDD	68.7	28 - 130	
OCDD 8.37 13C-OCDD 61.6 17-157 2,37,8-TCDF ND 0.200 13C-2,3,7.8-TCDF 81.3 24-169 1,23,7.8-PeCDF ND 0.0772 13C-1,2,3,7.8-PeCDF 70.9 24-185 2,34,7.8-PeCDF ND 0.0786 13C-2,3,47.8-PeCDF 70.0 21-178 1,23,4,7.8-HxCDF ND 0.0814 13C-1,2,3,47.8-HxCDF 72.2 26-152 1,2,3,6,7.8-HxCDF ND 0.0794 13C-1,2,3,47.8-HxCDF 73.1 26-123 2,3,4,6,7.8-HxCDF ND 0.0849 13C-1,2,3,4,8-HxCDF 73.1 26-123 2,3,4,6,7.8-HxCDF ND 0.0849 13C-1,2,3,4,8-HxCDF 74.5 29-147 1,2,3,4,7.8-HxCDF ND 0.0863 13C-1,2,3,4,8-HxCDF 74.5 29-147 1,2,3,4,7.8-HxCDF ND 0.0863 13C-1,2,3,4,7.8-HxCDF 73.3 28-143 1,2,3,4,7.8-HxCDF ND 0.0863 13C-1,2,3,4,7.8-HxCDF 79.2 35-197 Total TCDF ND 0.179 Total T	1,2,3,7,8,9-HxCDD	ND	0.216				13C-1,2,3,7,8,9-HxCDD	68.2	32 - 141	
2,3,7,8-TCDF ND 0.200 13C-2,3,7,8-TCDF 81.3 24-169 1,2,3,7,8-PeCDF ND 0.0772 13C-12,3,7,8-PeCDF 70.9 24-185 2,3,4,7,8-PeCDF ND 0.0786 13C-12,3,7,8-PeCDF 73.0 21-178 1,2,3,4,7,8-HxCDF ND 0.0814 13C-12,3,4,7,8-HxCDF 72.2 26-152 1,2,3,6,7,8-HxCDF ND 0.0794 13C-12,3,4,7,8-HxCDF 73.1 26-123 2,3,4,6,7,8-HxCDF ND 0.0849 13C-12,3,4,7,8-HxCDF 74.8 28-136 1,2,3,4,6,7,8-HxCDF ND 0.0120 13C-12,3,4,6,7,8-HxCDF 74.8 28-136 1,2,3,4,6,7,8-HxCDF ND 0.0746 13C-12,3,4,6,7,8-HxCDF 74.8 28-136 1,2,3,4,6,7,8-HxCDF ND 0.0746 13C-12,3,4,7,8-HxCDF 73.3 28-143 1,2,3,4,7,8,9-HyCDF ND 0.0179 13C-0CDF 69.9 17-157 1,2,3,4,7,8,9-HyCDF ND 0.05 13C-12,3,4,7,8-HyCDF 71.6 25-138 1,2,3,4,7,8,9-HyCDF ND	1,2,3,4,6,7,8-HpCDD	1.30			J		13C-1,2,3,4,6,7,8-HpCDD	74.6	23 - 140	
1,2,3,7,8-PeCDF	OCDD	8.37					13C-OCDD	61.6	17 - 157	
2,3,4,7,8-PeCDF ND 0.0786 13C-2,3,4,7,8-PeCDF 73.0 21-178 1,2,3,4,7,8-HxCDF ND 0.0814 13C-1,2,3,4,7,8-HxCDF 72.2 26-152 1,2,3,4,7,8-HxCDF ND 0.0794 13C-1,2,3,4,7,8-HxCDF 73.1 26-123 2,3,4,6,7,8-HxCDF ND 0.0849 13C-2,3,4,6,7,8-HxCDF 74.8 28-136 1,2,3,4,6,7,8-HxCDF ND 0.120 13C-1,2,3,4,6,7,8-HxCDF 74.5 29-147 1,2,3,4,6,7,8-HyCDF ND 0.0746 13C-1,2,3,4,6,7,8-HyCDF 73.3 28-143 1,2,3,4,7,8-HyCDF ND 0.0863 13C-1,2,3,4,6,7,8-HyCDF 73.3 28-143 0CDF ND 0.0179 13C-0CDF 69.9 17-157 CRS 37C1-2,3,7,8-HCDD 79.2 35-197 Total TCDD ND 0.114 TQMiNWH02005Dixin 0.015 Total HyCDD 1.05 15C-12,3,7,8-HCDD 1.05 1.05 Total HyCDF ND 0.114 17C-12,3,7,8-HCDD 1.05 <	2,3,7,8-TCDF	ND		0.200			13C-2,3,7,8-TCDF	81.3	24 - 169	
1,2,3,4,7,8-HxCDF	1,2,3,7,8-PeCDF	ND	0.0772				13C-1,2,3,7,8-PeCDF	70.9	24 - 185	
1,2,3,6,7,8-HxCDF ND 0.0794 13C-1,2,3,6,7,8-HxCDF 73.1 26 - 123 2,3,4,6,7,8-HxCDF ND 0.0849 13C-2,3,4,6,7,8-HxCDF 74.8 28 - 136 1,2,3,7,8,9-HxCDF ND 0.120 13C-1,2,3,7,8,9-HxCDF 74.5 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0746 13C-1,2,3,4,7,8,9-HpCDF 73.3 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0863 13C-1,2,3,4,7,8,9-HpCDF 71.6 26 - 138 0CDF ND 0.179 13C-0CDF 69.9 17 - 157 CRS 37C1-2,3,7,8-TCDD 79.2 35 - 197 TOTALS TOTAL TCDD ND 0.605 Total PCDD ND 0.605 Total HxCDD 1.05 1.14 Total HxCDD 1.05 0.959 Total HxCDD 0.759 0.959 Total HxCDF ND 0.0959 Total HxCDF ND 0.120 Total HxCDF ND 0.0863	2,3,4,7,8-PeCDF	ND	0.0786				13C-2,3,4,7,8-PeCDF	73.0	21 - 178	
2,3,4,6,7,8-HxCDF ND 0.0849 13C-2,3,4,6,7,8-HxCDF 74.8 28 - 136 1,2,3,7,8,9-HxCDF ND 0.120 13C-1,2,3,7,8,9-HxCDF 74.5 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0746 13C-1,2,3,4,6,7,8-HpCDF 73.3 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0863 13C-1,2,3,4,7,8,9-HpCDF 71.6 26 - 138 OCDF ND 0.179 13C-10,23,4,7,8,9-HpCDF 79.6 29 - 147 CRS 37C1-2,3,4,7,8,9-HpCDF 71.6 26 - 138 OCDF ND 0.179 CRS 37C1-2,3,4,7,8-HpCDF 79.2 35 - 197 TOXIS TOXIS Equivalent Quotient (TEQ) bata (pg/g dry w) TOXIS Equivalent Quotient (TEQ) bata (pg/g dry w) </td <td>1,2,3,4,7,8-HxCDF</td> <td>ND</td> <td>0.0814</td> <td></td> <td></td> <td></td> <td>13C-1,2,3,4,7,8-HxCDF</td> <td>72.2</td> <td>26 - 152</td> <td></td>	1,2,3,4,7,8-HxCDF	ND	0.0814				13C-1,2,3,4,7,8-HxCDF	72.2	26 - 152	
1,2,3,7,8,9-HxCDF ND 0.120 13C-1,2,3,7,8,9-HxCDF 74.5 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0746 13C-1,2,3,4,6,7,8-HpCDF 73.3 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0863 13C-1,2,3,4,7,8,9-HpCDF 71.6 26 - 138 OCDF ND 0.179 13C-OCDF 69.9 17 - 157 CRS 37C1-2,3,7,8-TCDD 79.2 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TOTALS Total TCDD ND 0.605 TEQMinWH02005Dioxin 0.0155 Total TCDD ND 0.605 Teget (Section of the Color of	1,2,3,6,7,8-HxCDF	ND	0.0794				13C-1,2,3,6,7,8-HxCDF	73.1	26 - 123	
1,2,3,4,6,7,8-HpCDF ND 0.0746 13C-1,2,3,4,6,7,8-HpCDF 73.3 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0863 13C-1,2,3,4,7,8,9-HpCDF 71.6 26 - 138 OCDF ND 0.179 13C-OCDF 69.9 17 - 157 CRS 37CI-2,3,7,8-TCDD 79.2 35 - 197 Total CDD ND 0.015 Total TCDD ND 0.605 ND 0.015 Total HxCDD 1.05 0.065 ND 1.05 1.05 Total HpCDD 3.28 0.959 1.05 <td>2,3,4,6,7,8-HxCDF</td> <td>ND</td> <td>0.0849</td> <td></td> <td></td> <td></td> <td>13C-2,3,4,6,7,8-HxCDF</td> <td>74.8</td> <td>28 - 136</td> <td></td>	2,3,4,6,7,8-HxCDF	ND	0.0849				13C-2,3,4,6,7,8-HxCDF	74.8	28 - 136	
1,2,3,4,7,8,9-HpCDF ND 0.0863 13C-1,2,3,4,7,8,9-HpCDF 71.6 26 - 138 OCDF ND 0.179 13C-OCDF 69.9 17 - 157 CRS 37C1-2,3,7,8-TCDD 79.2 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TOTALS Total TCDD ND 0.605 Total PeCDD ND 0.114 Total HxCDD 1.05 Total HpCDD 3.28 Total PeCDF 0.759 0.959 Total PeCDF 0.229 0.309 Total HxCDF ND 0.120 Total HpCDF ND 0.0863	1,2,3,7,8,9-HxCDF	ND	0.120				13C-1,2,3,7,8,9-HxCDF	74.5	29 - 147	
OCDF ND 0.179 13C-OCDF 69.9 17 - 157	1,2,3,4,6,7,8-HpCDF	ND	0.0746				13C-1,2,3,4,6,7,8-HpCDF	73.3	28 - 143	
CRS 37C1-2,37,8-TCDD 79.2 35 - 197 Toxic Equivalent Quotient (TEQ Data (pg/g dry w) — TeQMinWHO2005Dioxin 0.0155 TOTALS Total TCDD ND 0.605 ————————————————————————————————————	1,2,3,4,7,8,9-HpCDF	ND	0.0863				13C-1,2,3,4,7,8,9-HpCDF	71.6	26 - 138	
Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)	OCDF	ND	0.179				13C-OCDF	69.9	17 - 157	
TEQMinWHO2005Dioxin 0.0155 TOTALS Total TCDD ND 0.605						CRS	37Cl-2,3,7,8-TCDD	79.2	35 - 197	
TOTALS Total TCDD ND 0.605 Total PeCDD ND 0.114 Total HxCDD 1.05 1.05 Total HpCDD 3.28 1.05 Total TCDF 0.759 0.959 Total PeCDF 0.229 0.309 Total HxCDF ND 0.120 Total HpCDF ND 0.0863							Toxic Equivalent Quotient (TEQ) Data (pg/g dry v	vt)	
Total TCDD ND 0.605 Total PcCDD ND 0.114 Total HxCDD 1.05 Total HpCDD 3.28 Total TCDF 0.759 0.959 Total PcCDF 0.229 0.309 Total HxCDF ND 0.120 Total HpCDF ND 0.0863							TEQMinWHO2005Dioxin	0.0155		
Total PeCDD ND 0.114 Total HxCDD 1.05 Total HpCDD 3.28 Total TCDF 0.759 Total PeCDF 0.229 Total HxCDF ND Total HyCDF ND Total HpCDF ND 0.0863	TOTALS									
Total HxCDD 1.05 Total HpCDD 3.28 Total TCDF 0.759 Total PeCDF 0.229 Total HxCDF ND Total HpCDF ND ND 0.0863	Total TCDD			0.605						
Total HpCDD 3.28 Total TCDF 0.759 Total PeCDF 0.229 Total HxCDF ND Total HpCDF ND ND 0.0863	Total PeCDD		0.114							
Total TCDF 0.759 0.959 Total PeCDF 0.229 0.309 Total HxCDF ND 0.120 Total HpCDF ND 0.0863	Total HxCDD									
Total PeCDF 0.229 0.309 Total HxCDF ND 0.120 Total HpCDF ND 0.0863										
Total HxCDF ND 0.120 Total HpCDF ND 0.0863										
Total HpCDF ND 0.0863				0.309						
DL - Sample specific estimated detection limit LCL-UCL- Lower control limit - upper control limit			0.0863							

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.

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Sample ID: PDI-0758	SC-A-14-15-191013								EPA Met	thod 1613B
Project: Gasco I	· QEA, LLC PDI -2019 7:32	Sample Da Matrix: Sample S % Solids:	Sediment ize: 16.0 g		Lab QC I	Batch: B9	03648-04 0J0322 -Dec-19 22:43	Date Received: Date Extracted: Column: ZB-5MS		
Analyte Conc. ()	pg/g)	DL I	EMPC	Qualifiers		Labeled Standard		%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND 0	.167			IS	13C-2,3,7,8-TCDD)	83.5	25 - 164	
1,2,3,7,8-PeCDD		.115				13C-1,2,3,7,8-PeC	DD	90.6	25 - 181	
1,2,3,4,7,8-HxCDD		.193				13C-1,2,3,4,7,8-Hx	CDD	68.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND 0	.178				13C-1,2,3,6,7,8-Hx	CDD	73.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND 0	.207				13C-1,2,3,7,8,9-Hx	CDD	76.1	32 - 141	
1,2,3,4,6,7,8-HpCDD	1.13			J		13C-1,2,3,4,6,7,8-I	HpCDD	76.0	23 - 140	
OCDD	8.85					13C-OCDD		64.5	17 - 157	
2,3,7,8-TCDF	ND 0	.146				13C-2,3,7,8-TCDF		85.3	24 - 169	
1,2,3,7,8-PeCDF	ND 0.	0856				13C-1,2,3,7,8-PeC	DF	80.6	24 - 185	
2,3,4,7,8-PeCDF	ND 0.	0741				13C-2,3,4,7,8-PeC	DF	81.5	21 - 178	
1,2,3,4,7,8-HxCDF	ND		0.0654			13C-1,2,3,4,7,8-Hx	CDF	79.6	26 - 152	
1,2,3,6,7,8-HxCDF	ND 0.	0827				13C-1,2,3,6,7,8-Hx	CDF	78.9	26 - 123	
2,3,4,6,7,8-HxCDF	ND 0.	0888				13C-2,3,4,6,7,8-Hx	CDF	78.3	28 - 136	
1,2,3,7,8,9-HxCDF	ND 0	.124				13C-1,2,3,7,8,9-Hx	CDF	82.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.153			J		13C-1,2,3,4,6,7,8-I	HpCDF	78.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND 0	.105				13C-1,2,3,4,7,8,9-I	HpCDF	77.0	26 - 138	
OCDF	ND 0	.170				13C-OCDF		73.4	17 - 157	
					CRS	37Cl-2,3,7,8-TCDI)	92.9	35 - 197	
						Toxic Equivalent (Quotient (TEQ)	Data (pg/g dry w	t)	
						TEQMinWHO2005	Dioxin	0.0155		
TOTALS										
Total TCDD		167								
Total PeCDD	ND		0.110							
Total HxCDD	ND		0.773							
Total HpCDD	2.84									
Total TCDF	0.592									
Total PeCDF	0.271									
Total HxCDF	0.168		0.281							
Total HpCDF DL - Sample specifc estim	0.153					L- Lower control limit - u				

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.

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Sample ID: PDI-075	5SC-A-15-16-191013			EPA Method 1613I
Project: Gasco	or QEA, LLC PDI et-2019 7:32	Sample Data Matrix: Sediment Sample Size: 15.4 g % Solids: 65.2		Laboratory DataLab Sample:1903648-05Date Received:15-Oct-20198:51QC Batch:B9J0322Date Extracted:30-Oct-201911:02Date Analyzed:17-Dec-19 23:32Column: ZB-5MS
Analyte Conc.	(pg/g)	DL EMPC	Qualifiers	Labeled Standard %R LCL-UCL Qualifiers
2,3,7,8-TCDD	ND	0.158		IS 13C-2,3,7,8-TCDD 96.4 25 - 164
1,2,3,7,8-PeCDD	ND	0.107		13C-1,2,3,7,8-PeCDD 105 25 - 181
1,2,3,4,7,8-HxCDD	ND	0.157		13C-1,2,3,4,7,8-HxCDD 75.9 32 - 141
1,2,3,6,7,8-HxCDD	ND	0.156		13C-1,2,3,6,7,8-HxCDD 82.3 28 - 130
1,2,3,7,8,9-HxCDD	ND	0.178		13C-1,2,3,7,8,9-HxCDD 80.3 32 - 141
1,2,3,4,6,7,8-HpCDD	4.23			13C-1,2,3,4,6,7,8-HpCDD 87.9 23 - 140
OCDD	45.6			13C-OCDD 80.9 17 - 157
2,3,7,8-TCDF	ND	0.546		13C-2,3,7,8-TCDF 93.0 24 - 169
1,2,3,7,8-PeCDF	ND	0.638		13C-1,2,3,7,8-PeCDF 89.0 24 - 185
2,3,4,7,8-PeCDF	ND	0.225		13C-2,3,4,7,8-PeCDF 89.8 21 - 178
1,2,3,4,7,8-HxCDF	0.971		J	13C-1,2,3,4,7,8-HxCDF 85.3 26 - 152
1,2,3,6,7,8-HxCDF	0.268		J	13C-1,2,3,6,7,8-HxCDF 86.1 26 - 123
2,3,4,6,7,8-HxCDF	0.150		J	13C-2,3,4,6,7,8-HxCDF 89.0 28 - 136
1,2,3,7,8,9-HxCDF	ND	0.0859		13C-1,2,3,7,8,9-HxCDF 92.2 29 - 147
1,2,3,4,6,7,8-HpCDF	1.31		J	13C-1,2,3,4,6,7,8-HpCDF 90.6 28 - 143
1,2,3,4,7,8,9-HpCDF	ND	0.0999		13C-1,2,3,4,7,8,9-HpCDF 88.6 26 - 138
OCDF	1.80		J	13C-OCDF 85.1 17 - 157
				CRS 37C1-2,3,7,8-TCDD 101 35 - 197
				Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)
				TEQMinWHO2005Dioxin 0.209
TOTALS				
Total TCDD	ND	0.158		
Total PeCDD	ND	0.107		
Total HxCDD	1.34	1.88		
Total HpCDD	10.6			
Total TCDF	1.29	1.84		
Total PeCDF	0.737	2.20		
Total HxCDF	2.51			
Total HpCDF DL - Sample specifc esti	2.94			LCL-UCL- Lower control limit - upper control 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.

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Sample ID: PDI-076	SC-A-10-11-191013						EPA Met	hod 1613B
Project: Gasco	r QEA, LLC PDI 2019 13:08	Sample Data Matrix: Sediment Sample Size: 13.6 g % Solids: 73.8		Lab QC	Sample: 1903648-06 Batch: B9J0322 e Analyzed: 18-Dec-19 00:19	Date Received: Date Extracted: Column: ZB-5MS		
Analyte Conc. ((pg/g)	DL EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.144		IS	13C-2,3,7,8-TCDD	95.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.102			13C-1,2,3,7,8-PeCDD	104	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.145			13C-1,2,3,4,7,8-HxCDD	80.9	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.129			13C-1,2,3,6,7,8-HxCDD	87.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.157			13C-1,2,3,7,8,9-HxCDD	89.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.202			13C-1,2,3,4,6,7,8-HpCDD	84.6	23 - 140	
OCDD	1.75		J		13C-OCDD	80.0	17 - 157	
2,3,7,8-TCDF	ND	0.0924			13C-2,3,7,8-TCDF	93.3	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0541			13C-1,2,3,7,8-PeCDF	87.1	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0439			13C-2,3,4,7,8-PeCDF	90.4	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0415			13C-1,2,3,4,7,8-HxCDF	89.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0426			13C-1,2,3,6,7,8-HxCDF	90.6	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0440			13C-2,3,4,6,7,8-HxCDF	92.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0593			13C-1,2,3,7,8,9-HxCDF	99.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.0302			13C-1,2,3,4,6,7,8-HpCDF	93.5	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0405			13C-1,2,3,4,7,8,9-HpCDF	86.2	26 - 138	
OCDF	ND	0.140			13C-OCDF	89.2	17 - 157	
				CRS	37Cl-2,3,7,8-TCDD	101	35 - 197	
					Toxic Equivalent Quotient (TEQ) Data (pg/g dry v	vt)	
					TEQMinWHO2005Dioxin	0.000525		
TOTALS								
Total TCDD		0.144						
Total PeCDD		0.102						
Total HxCDD	ND	0.178						
Total HpCDD	0.452							
Total TCDF		0.0924						
Total PeCDF		0.0541						
Total HxCDF		0.0593						
Total HpCDF DL - Sample specifc estin		0.0405						

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.

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2,3,7,8-TCDD ND 0.168	
2,3,7,8-TCDD	
1,2,3,7,8-PeCDD	Qualifiers
1,2,3,4,7,8-HxCDD	
1,2,3,6,7,8-HxCDD	
1,2,3,7,8,9-HxCDD	
1,2,3,4,6,7,8-HpCDD	
OCDD 2.86 J 13C-OCDD 73.7 17-157 2,3,7,8-TCDF ND 0.0806 13C-2,3,7,8-TCDF 92.7 24-169 1,2,3,7,8-PeCDF ND 0.0660 13C-1,2,3,7,8-PeCDF 92.0 24-185 2,3,4,7,8-PeCDF ND 0.0544 13C-2,3,4,7,8-PeCDF 101 21-178 1,2,3,4,7,8-HxCDF ND 0.0548 13C-1,2,3,4,7,8-HxCDF 87.2 26-152 1,2,3,6,7,8-HxCDF ND 0.0524 13C-1,2,3,6,7,8-HxCDF 87.7 26-123 2,3,4,6,7,8-HxCDF ND 0.0545 13C-2,3,4,6,7,8-HxCDF 89.6 28-136 1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29-147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28-143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8-HpCDF 74.7 26-138 0CDF ND 0.199 13C-0CDF 80.7 17-157 CRS 37C1-2,3,7,8-TCDD 103 35	
2,3,7,8-TCDF ND 0.0806 13C-2,3,7,8-TCDF 92.7 24 - 169 1,2,3,7,8-PeCDF ND 0.0660 13C-1,2,3,7,8-PeCDF 92.0 24 - 185 2,3,4,7,8-PeCDF ND 0.0544 13C-2,3,4,7,8-PeCDF 101 21 - 178 1,2,3,4,7,8-HxCDF ND 0.0548 13C-1,2,3,4,7,8-HxCDF 87.2 26 - 152 1,2,3,6,7,8-HxCDF ND 0.0524 13C-1,2,3,4,7,8-HxCDF 87.7 26 - 123 2,3,4,6,7,8-HxCDF ND 0.0545 13C-2,3,4,6,7,8-HxCDF 89.6 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37C1-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
1,2,3,7,8-PeCDF ND 0.0660 13C-1,2,3,7,8-PeCDF 92.0 24 - 185 2,3,4,7,8-PeCDF ND 0.0544 13C-2,3,4,7,8-PeCDF 101 21 - 178 1,2,3,4,7,8-HxCDF ND 0.0548 13C-1,2,3,4,7,8-HxCDF 87.2 26 - 152 1,2,3,6,7,8-HxCDF ND 0.0524 13C-1,2,3,6,7,8-HxCDF 87.7 26 - 123 2,3,4,6,7,8-HxCDF ND 0.0545 13C-2,3,4,6,7,8-HxCDF 89.6 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.0404	
2,3,4,7,8-PeCDF ND 0.0544 13C-2,3,4,7,8-PeCDF 101 21-178 1,2,3,4,7,8-HxCDF ND 0.0548 13C-1,2,3,4,7,8-HxCDF 87.2 26-152 1,2,3,6,7,8-HxCDF ND 0.0524 13C-1,2,3,6,7,8-HxCDF 87.7 26-123 2,3,4,6,7,8-HxCDF ND 0.0545 13C-2,3,4,6,7,8-HxCDF 89.6 28-136 1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29-147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28-143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-0,2,3,4,7,8,9-HpCDF 74.7 26-138 OCDF ND 0.199 13C-0CDF 80.7 17-157 CRS 37Cl-2,3,7,8-TCDD 103 35-197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TeQMinWHO2005Dioxin	
1,2,3,4,7,8-HxCDF ND 0.0548 13C-1,2,3,4,7,8-HxCDF 87.2 26 - 152 1,2,3,6,7,8-HxCDF ND 0.0524 13C-1,2,3,6,7,8-HxCDF 87.7 26 - 123 2,3,4,6,7,8-HxCDF ND 0.0545 13C-2,3,4,6,7,8-HxCDF 89.6 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
1,2,3,6,7,8-HxCDF ND 0.0524 13C-1,2,3,6,7,8-HxCDF 87.7 26 - 123 2,3,4,6,7,8-HxCDF ND 0.0545 13C-2,3,4,6,7,8-HxCDF 89.6 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
2,3,4,6,7,8-HxCDF ND 0.0545 13C-2,3,4,6,7,8-HxCDF 89.6 28 - 136 1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
1,2,3,7,8,9-HxCDF ND 0.0838 13C-1,2,3,7,8,9-HxCDF 87.4 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
1,2,3,4,6,7,8-HpCDF ND 0.0694 13C-1,2,3,4,6,7,8-HpCDF 80.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
1,2,3,4,7,8,9-HpCDF ND 0.0925 13C-1,2,3,4,7,8,9-HpCDF 74.7 26 - 138 OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
OCDF ND 0.199 13C-OCDF 80.7 17 - 157 CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
CRS 37Cl-2,3,7,8-TCDD 103 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TEQMinWHO2005Dioxin 0.00404	
TEQMinWHO2005Dioxin 0.00404	
TOTALS	
TOTALS	
Total TCDD ND 0.168	
Total PeCDD ND 0.0972	
Total HxCDD 0.251	
Total HpCDD 0.318 0.759	
Total TCDF ND 0.0806	
Total PeCDF ND 0.0660	
Total HxCDF ND 0.0838	
Total HpCDF ND 0.0925 DL - Sample specific estimated detection limit LCL-UCL - Lower control limit - upper control 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.

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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.

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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-В
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.

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NELAP Accredited Test Methods

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

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

Work Order 1903648 Page 20 of 513



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

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

1903648 3.6°C, 3.8°C

COC ID:

Lab:

VISTA-20191013-143451

Sample Custodian:

SN

Project: Gasco PDI Samp

1605 Cornwall Avenue, Bellingham, WA 98225

Client:

NW Natural

VISTA

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collecte		# Containers	Lab QC*	Test Request	Method	TAT**	Preservative
001	PDI-073SC-A-11-12-191013	N	SE	Date 10/13/2019	Time 10:41	2	X				
		114	LOL	10/13/2019	10.41						
								Dioxin/Furans	E1613B	30	4°C
				Γ				Total solids (VISTA)	SM2540G	30	4°C
002	PDI-073SC-A-12-12.6-191013	N	SE	10/13/2019	10:41	1					
								Dioxin/Furans	E1613B	30	T 4°C
								Total solids (VISTA)	SM2540G	30	4°C
003	PDI-1073SC-A-12-12.6-191013	FD	SE	10/13/2019		1	П		T SWIZE 180	1 00	
								Dioxin/Furans	E1613B	Lan	I 4°C
								Total solids (VISTA)	SM2540G	30	4°C
004	PDI-075SC-A-14-15-191013	N	SE	10/13/2019	7:32	1	П	(1.0 // //	01/125400	1 30	140
					1000000			Dioxin/Furans	E1613B	30	4°C
								Total solids (VISTA)	SM2540G	30	4°C
005	PDI-075SC-A-15-16-191013	N	SE	10/13/2019	7:32	1	П		OWIZ540G	30	
								Dioxin/Furans	E1613B	30	I 4°C
								Total solids (VISTA)	SM2540G	30	4°C
006	PDI-076SC-A-10-11-191013	N	SE	10/13/2019	13:08	1			GIVI23400	30	1.0
				-				Dioxin/Furans	E1613B	30	I 4°C
								Total solids (VISTA)	SM2540G	30	4°C
007	PDI-076SC-A-11-11.9-191013	N	SE	10/13/2019	13:13	1		(7	OWIZOTOG		
								Dioxin/Furans	E1613B	30	4°C
							- 1	Total solids (VISTA)	SM2540G	30	4°C

Relinquished By:	Received By: Signature	Relinquished By:	Received By:	Relinquished By:	Received By:
Print Name	11-6				Signature
C. OREIRO	Company Canal		Print Name Company		Print Name
	Date/Time /		Date/Time		Company Date/Time
10/14/19 0755	10/15/19			Dater filme	Date/Time

Comment:



Sample Log-In Checklist

Vista Work Orde	197	7364	+ &					Page #		of		
Vista Work Order #:TAT_Std												
Samples	Date/Time	•		Ini	itials:	Location: WR-Z						
Arrival:	, , ,		- 0 1	,								
	10/15/19	(28:51	+	106		Sh	nelf/Racl	k: <u>\/ /</u>	<u> </u>		
Delivered By:	FedEx	On Tra	ac	GSO	DH	L	Han Delive		Other			
Preservation:	(ce	(ce) Blue Ice Dry Ice						ry Ice		No	ne	
Temp °C: 3.8	(uncorre	cted)		1010	1							
Temp °C: 3.8	(correcte	ed)	Probe use	ed:	Y /(N)		Th	ermome	eter ID:	<u>T R-</u>	4_	
and the second second second second				T					YES	NO	NA	
Shipping Contain	er(s) Intact?)							V			
Shipping Custody	Seals Intac	ct?							1			
Airbill 2 of 4	Trk#	7767	1463	73	78				V			
Shipping Docume	entation Pres	sent?							1			
Shipping Containe					Vista Client			Re	eturn	Disp	oose	
Chain of Custody	/ Sample D	ocumer	ntation Pre	eser	nt?							
Chain of Custody												
Holding Time Acc												
	Date/Time			Init	tials:		Location: WR-Z					
Logged In:	10/11/19	09	54		aym	Shelf/Rac						
COC Anomaly/Sa	mple Accen	tance F	orm com	aleta	242						/	

Comments:

ID.: LR - SLC

Rev No.: 4

Rev Date: 10/08/2019

Page: 1 of 1



Sample Log-In Checklist

						De	ae #		· F	
Vista Work Orde	r#: 19036	48		-			\T	Sto		_
Samples								WR-2		
Arrival:	10/15/19 08	51		WWS	Shelf/Rack: ∭∂					
Delivered By:	FedEx UP	ac	GSO	DHI	- .	d red	Other			
Preservation:	lce	Ice Blue Ice Dry Ice							No	ne
Temp °C: 3,6 (uncorrected) Probe used: Y / N Thermometer ID:								TD-:	2	
Temp °C: 3.6	(corrected)	Probe us	sea:	YIN)	Inerr	nome	ter ID:	LK	7
			2119					YES	NO	NA
Shipping Contain	er(s) Intact?							/		
Shipping Custody	/ Seals Intact?							1		
Airbill 4 of 1	1 Trk # 776	7 1463 81	121					/		
Shipping Docume	entation Present	?			V			✓		
Shipping Contain	er	Vista		Client	R	etain	Re	eturn	Dis	oose
Chain of Custody / Sample Documentation Present? Worksoft in the control							1	1		
Chain of Custody / Sample Documentation Complete?							/	/		
Holding Time Acc	eptable?								/	/
	Date/Time	_	In	itials:		Locat	tion:	WR-	7	
Logged In:	10/16/19	0954		apr	V	Shelf	/Rack	<u>A-</u>		
COC Anomaly/Sa	imple Acceptanc	e Form con	nple	ted?						

Comments:

ID.: LR - SLC

Rev No.: 4

Rev Date: 10/08/2019

Page: 1 of 1

CoC/Label Reconciliation Report WO# 1903648

LabNumber CoC Sample ID	Label ID matches COCID		Sampled	Label Sampled matches	Sampled doesn't match	Container	Container Correct	Sample BaseMatrix Comments
4 1903648-01 A PDI-073SC-A-11-12-191013	Ø	001	13-Oct-19 10:4			Amber Glass, 120 mL		Solid
4-1903648-01 B PDI-073SC-A-11-12-191013	Ø	001	13-Oct-19 10:4			Amber Glass, 120 mL		Solid
4 1903648-02 A PDI-073SC-A-12-12.6-191013	D	002	13-Oct-19 10:4			Amber Glass, 120 mL		Solid
4 1903648-03 A PDI-1073SC-A-12-12.6-191013	\square	003	¥13-Oct-19 00:0			Amber Glass, 120 mL	Ø,	Solid
2 1903648-04 A PDI-075SC-A-14-15-191013	Ø,	004	13-Oct-19 07:3	2 🔟		Amber Glass, 120 mL		Solid
2 1903648-05 A PDI-075SC-A-15-16-191013	Q,	005	13-Oct-19 07:3	2 🗹		Amber Glass, 120 mL	\square	Solid
4 1903648-06 A PDI-076SC-A-10-11-191013	d	006	13-Oct-19 13:0	3 0/		Amber Glass, 120 mL	ø,	Solid
1903648-07 A PDI-076SC-A-11-11.9-191013	Q	007	13-Oct-19 13:1:	3 📮		Amber Glass, 120 mL	D	Solid

	Yes	No	NA	Comments:	*	10.47	is on label	1.
Sample Container Intact?	V					10.72	1º on label	time
Sample Custody Seals Intact?				1				
Adequate Sample Volume?				1				
Preservation Documented: Na2S2O3 Trizma None Other		J	J	4 = /	coole	r A		
If Chlorinated or Drinking Water Samples, Acceptable Preservation?				4 = (Cool	er Z		

Verifed by/Date: <u>H/DC 10/17/19</u>

EXTRACTION INFORMATION

Work Order 1903648 Page 25 of 513

Process Sheet

Workorder: 1903648

Prep Expiration: 2020-10-12

Client: Anchor QEA, LLC

Workorder Due: 12-Nov-19 00:00

TAT: 28 21

05-NW-19

Method: 1613 Full List

Matrix: Solid Client Matrix: Sediment Also run: Percent Solids Prep Batch:

8930322

Prep Data Entered:

Initial Sequence: S1Lb037

LabSampleID	Recon ClientSampleID	Date Received	Location	Comments
1903648-01	DI-073SC-A-11-12-191013	15-Oct-19 08:51	WR-2 A-1	DUP
1903648-02	PDI-073SC-A-12-12.6-191013	15-Oct-19 08:51	WR-2 A-1	
1903648-03	PDI-1073SC-A-12-12.6-191013	15-Oct-19 08:51	WR-2 A-1	
1903648-04	PDI-075SC-A-14-15-191013	15-Oct-19 08:51	WR-2 A-1	
1903648-05	PDI-075SC-A-15-16-191013	15-Oct-19 08:51	WR-2 A-1	
1903648-06	PDI-076SC-A-10-11-191013	15-Oct-19 08:51	WR-2 A-1	
1903648-07	PDI-076SC-A-11-11.9-191013	15-Oct-19 08:51	WR-2 A-1	

WO Comments: Past 13

Dioxin - 10g (dry weight)

Pre-Prep Check Out: 90 10/29/19 Pre-Prep Check In:

Prep Check Out: 10/30/19

Prep Check In: 10/30//1

Page 1 of 1

	PREPARATION BENCH SHEET
Matrix: Solid	В9J0322
Method: 1613 Full List	Prepared using: HRMS - Soxhlet

Chemist:

Prep Date/Time: 30-Oct-19 11:02

									V					
G Eqv	Sample Amt.	CHI			AP CHEM/ DATE	CF	IEM/	AA CHEM/ DATE		CHE	CM/	CHE	RS M/WIT ATE	
NA	,	- /				n 10/31/19	1		 		00			
NA	(10.00)			1 7			_	T-	7		T	1		7
15.25	15.31					NA				\				
15.25	15.27					1								1
7	14.14			1	\									1
14.37	14.33				1	N 10/31 /19								1
15.88	15.95			1	1	NA						12		
15.34	15.40					1						100	8 E 155	
×313.55	13.56												See C	
14.04	14.20												191	1
12.21	nn												7	
11.46	11.52												3	N. C.
14.00	14.00					J								
15.90	15.92					N 10/31/19								
11.88	11.88		, 	6	•	NA	6				1		t	,
PCDD/F \	18F1913, 10	<u></u>	PCB	210061	PCB_	19III03,10ML	Start D 10130	Pate/Time	SOLV:	401 VA	_	Chemist Check I Chemist	:/Date: <u>//</u> n: :/Date: <u>//</u>	10/30/19
	NA NA NA NS.25 15.25 15.25 14.15 14.37 15.88 15.34 7513.55 14.04 17.21 11.46 14.00 15.90 11.88 NS Name PCDD/F PCB	Eqv Amt. (g) NA (10.00) NA (10.00) 15.25 5.31 15.25 5.27 14.15 14.14 14.37 14.33 15.88 5.95 15.34 5.95 15.34 5.95 15.39 15.95 14.00 14.20 17.21 12.20 11.96 11.52 14.00 14.00 15.90 15.92 11.88 11.88 NS Name (15) PCDD/F 18 F4913, 10	Eqv Amt. (g) CHI (g) NA (10.00) 12 NA (10.00) IS.25 IS.31 IS.25 IS.27 IY.15 IY.IY IY.32 IY.33 IS.88 IS.95 IS.34 IS.40 VS13.SS IS.86 IY.04 IY.20 IZ.21 IX.X II.46 II.52 IY.00 IY.00 IS.90 IS.92 II.88 II.88 NS Name Us) PCDD/F I&FI913, 10 L PCB	Eqv Amt. (g) CHEM/WIT DATE NA (10.00) 12 N 30/19 NA (10.00) 15.25 15.31 15.25 15.31 14.15 14.14 14.37 14.33 15.88 15.93 15.88 15.95 15.34 15.40 15.35 13.56 14.04 14.20 12.21 12.22 11.46 11.52 14.00 14.00 15.90 15.92 11.88 11.88 NS Name Us CRS Name PCDD/F 18F4913, 10 L PCB	Eqv Amt. (g) CHEM/WIT DATE NA (10.00) 12 N 10/30/19 20 10 NA (10.00) 12 N 10/30/19 20 10 NA (10.00) 15.25 15.31 15.25 15.31 14.15 14.14 14.37 14.33 15.88 15.93 15.88 15.95 15.34 15.40 16.94 14.20 17.21 12.20 17.21 12.20 18.90 15.92 11.88 11.88 NS Name Us) CRS Name PCDD/F 18F4913, 10 L PCDD/F 19I 1002, IC PCB PCB	Eqv Amt. (g) CHEM/WIT DATE NA (10.00) 1	Eqv Amt. (g) CHEM/WIT DATE CHEM/ DATE NA (10.00) 12 N 19/30/19 20 M 10/31/19 21/031/14 NA (10.00) 12 N 19/30/19 20 M 10/31/19 21/031/14 NA (10.00) 15.25 15.27 . 19.15 19.19 NA 15.25 15.27 . 19.15 19.19 NA 15.88 15.99 NA 15.39 NS.40 NA 15.39 NS.40 NA 15.39 NS.40 NA 15.39 NS.40 NA 16.40 19.50 NA 17.21 NA 18.40 NS.40 NA NS.40 NS.40 NA NS.40 NS.40 NA PCDD/F 1971/803.10ML PCB PCB PCB	Eqv Ami. (g) CHEM/WIT DATE CHEM/WIT DATE DATE NA (10.00) 22 N 18/30/19 20 M 10/31/19 22 10/31/14 20/15.25 15.31 NA 15.25 15.27 NA 15.25 15.27 NA 14.37 14.33 NA 15.88 15.93 NA 15.39 15.40 NA 15.39 15.40 NA 15.40 NA 15.40 NA 15.50 15.93 NA 15.88 15.93 NA 15.88 15.93 NA 15.88 15.95 NA 16.99 16.90 NA 16.90 16.90 N	Eqv Amt. (8) CHEM/WIT DATE CHEM/ DATE NA (10.00) 12 N 19 30 19 20 10 31 19 20 10 31 19 20 10 13 19 20 10 10 13 19 20 10 10 13 19 20 10 10 13 19 20 10 10 10 10 10 10 10 10 10 10 10 10 10	Eqv Amil. (B) CHEM/WIT DATE CHEM/ DATE DATE DATE DATE DATE DATE DATE DATE	Eqv Ann. (g) CHEM/WIT DATE CHEM/WIT DATE DATE DATE NA (10.00) 1	Eq. Anit (g) CHEM/WIT DATE CHEM/WIT DATE DATE DATE DATE DATE DATE DATE DAT	Eqv Ami. CHEM/WIT DATE CHEM/WIT DATE CHEM/ DATE CHEM/ DATE NA (10.00) 2	CHEM/WIT CHEM/WIT CHEM/WIT DATE DA

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 extaction; pipetted and used Nitrogen to assist

PREPARATION BENCH SHEET

	-	
Matrix:	So	lid

Meth	· bon	1613	Full	I .ict

B9J0322	 	
	B9J0322	

Chemist:

Prep Date/Time: 30-Oct-19 11:02

Prepared	using:	HRMS -	Soxhlet
----------	--------	--------	---------

С	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
	1903655-08	13.40	13.41	n 10/30/19	90× 10/31/19	NA	20/31/19	X 10/31/19	00 11/01/12	as AZ 1/01/19
	1903655-09	11.80	11.80		T	T			T	T '
	1903655-10	14.36	14.47							
	1903655-11	13.17	13.17							
	1903655-12	13.94	13.98							
	1903655-13	14.56	14.56							
	1903655-14	14.66	14.67	<i>\</i>	1	Y		J	1	U

		(4)	(V ₇)			
IS Name (V2)	NS Name $\sqrt{5}$	CRS Name	RS Name	Cycle Time	APP: SEFUN SOX SDS	Check Out: Chemist/Date: 1 (0/3d/4
PCDD/F 19(1902 10 L	PCDD/F 18F1913, 10, L	PCDD/F 1911607, 10u	V PCDD/F 19T1603,104	L Start Date/Time	SOLV: tol	
PCB	PCB	PCB	PCB	14:29	Other NA	Check In: Chemist/Date: 12 (0/30/19
PAH	PAH	PAH	PAH	Stop Date/Time	Final Volume(s) Ciy	Balance ID: HPMS-8
				928	20nc	
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 extaction; pipetted and used Nitrogen to assist

Batch: B9J0322

Matrix: Solid

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1903648-01	15.27	65.58659	10.0151	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903648-02	14.14	70.68965	9.9955	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903648-03	14.33	69.82544	10.0060	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903648-04	15.95	62.95399	10.0412	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903648-05	15.4	65.18608	10.0387	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903648-06	13.56	73.81465	10.0093	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903648-07	14.2	71.24999	10.1175	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-01	12.22	81.86813	10.0043	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-02	11.52	87.24428	10.0505	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-03	14	71.42857	10.0000	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-06	15.92	62.88783	10.0117	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-07	11.88	84.17367	9.9998	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-08	13.41	74.64455	10.0098	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-09	11.8	84.77367	10.0033	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-10	14.47	69.64091	10.0770	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-11	13.17	75.94936	10.0025	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-12	13.98	71.71718	10.0261	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-13	14.56	68.69774	10.0024	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
1903655-14	14.67	68.21367	10.0069	20	30-Oct-19 11:02	JJC			Sediment	1613 Full List
B9J0322-BLK1	10			20	30-Oct-19 11:02	JJC				QC
B9J0322-BS1	10			20	30-Oct-19 11:02	JJC	18F1913	10		QC
B9J0322-DUP1	15.31			20	30-Oct-19 11:02	JJC				QC

All bolded data on report verified against written benchsheet by (initial/date) 00 11/01/19

Printed: 11/1/2019 1:07:40PM Page 1 of 1

Percent Moisture/ Percent Solids

D2216-90

BATCH ID B9J0195

Analyst: AO

Test Code: %Moist/%Solids

Data Entry Verified by:

(Initial and Date) 10/30/19

Oven ID: 01/02

	В	С	D	E	F			1	K L		M	N	0	P
				Intial and Date:			C 10/30/19		AO 10/29/19			NA		AO 10/29/19
Particle Size	SamplD		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	Visual Inspection	CI-		pH After	Acid Added	Sample Homogenized*
	1903648-01	A	Sample	1.2700	10.2200 🗸	7.1400	5.8700	65.59	MUD	NA	NA	NA	NA	Y
	1903648-02	A	Sample	1.2900	6.5100	4.9800 🗸	3.6900	70.69	MUD	NA	NA	NA	NA	Υ
	1903648-03	A	Sample	1.2600	9.2800	6.8600 🗸	5.6000	69.83	MUD	NA	NA	NA	NA	Y
_	1903648-04	A	Sample	1.2800	9.5400	6.4800 V	5.2000	62.95	MUD	NA	NA	NA	NA	Y
	1903648-05	A	Sample	1.2800	9.6100	6.7100 🗸	5.4300	65.19	MUD	NA	NA	NA	NA	Y
	1903648-06	A	Sample	1.2700	10.5500 🗸	8.1200 🗸	6.8500	73.81	MUD	NA	NA	NA	NA	Y
	1903648-07	Α	Sample	1.2700	9.2700	6.9700	5.7000	71.25	MUD	NA	NA	NA	NA	Y
										\vdash				
			-							-				
										_				
									-					

^{*}Sample homogenized in sample container unless otherwise noted.

BCH_PMOIST_B9J0195.xls

10/30/2019 10:44 AM

Percent Moisture/ Percent Solids

D2216-90

BATCH ID B9J0195

	Analyst:	Test Code: %Moist/%Solids	
ĺ	- Analyte:	Units: %	Data Entry Verified by: (Initial and Date)
	Oven ID: 01 02		

Inst HRM	5-10		430	453										
II S TO BUILD IN	В	C	D	E	III SO E FA III SO	G	Name He case		K	L	M	N	0	Р
		No. 10		Intial and Date:	00 20129/19	1 10/30/19			00 10/2					90 10 29 19
Particle Size	SampID		SampType	Pan Tare Wt. (gms)	Wet Pan'and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	Visual' Inspection	CI-	pH Before	pH After	Acid Added	
	1903648-01	A	Sample	1.27	10.22	7.14			MVd	1				×
	1903648-02	I	Sample	1.29	6.51	4.98			+					4
	1903648-03		Sample	1.26	9.54	6 86	90 0				901	11		7
	1903648-04		Sample	1.28	9.54	6.48	10	4			10	2		×
	1903648-05		Sample	1.28	9.61	6.71	/-	9/19			/	29)	1	X
	1903648-06		Sample	1.27	10.65	8.12		113				1	2	7
	1903648-07	4	Sample	1.27	9.27	6.97			é				1	*
										_				
										_				
										_				
										_				
										_				
										_				
										_				

^{*}Sample homogenized in sample container unless otherwise noted.

SAMPLE DATA – EPA METHOD 1613

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Dataset: U:\VG11.PRO\Results\191217K2\191217K2-4.qld

Last Altered: Wednesday, December 18, 2019 18:01:46 Pacific Standard Time Friday, December 20, 2019 12:12:07 Pacific Standard Time Printed:

HC 12.20-19 C7 12/27/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5 1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2 4, Date: 17-Dec-2019, Time: 16:16:19, ID: B9J0322-BLK1 Method Blank 10, Description: Method Blank

1 4 4	# Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
1	1 2,3,7,8-TCDD		6.18e5	10.0000				1.001		26.18					0.117
2	2 1,2,3,7,8-PeCDD		4.77e5	10.0000				1.001		31.31					0.0712
3	3 1,2,3,4,7,8-HxCDD		3.14e5	10.0000				1.000		34.65					0.0889
4	4 1,2,3,6,7,8-HxCDD		3.74e5	10.0000				1.000		34.75					0.0866
5	5 1,2,3,7,8,9-HxCDD		3.49e5	10.0000				1.001		35.06					0.0978
6	6 1,2,3,4,6,7,8-HpCDD		2.92e5	10.0000				1.000		38.53					0.124
7	7 OCDD		4.13e5	10.0000				1.000		41.77					0.172
8	8 2,3,7,8-TCDF		8.60e5	10.0000				1.001		25.20					0.0613
9	9 1,2,3,7,8-PeCDF		6. 6 1e5	10.0000				1.001		30.00					0.0447
10	10 2,3,4,7,8-PeCDF		6.60e5	10.0000				1.001		31.00					0.0454
11	11 1,2,3,4,7,8-HxCDF		4.51e5	10.0000				1.000		33.78					0.0298
12	12 1,2,3,6,7,8-HxCDF		5.47e5	10.0000				1.000		33.91					0.0288
13	13 2,3,4,6,7,8-HxCDF		5.05e5	10.0000				1.001		34.51					0.0304
14	14 1,2,3,7,8,9-HxCDF		4.04e5	10.0000				1.000		35.35					0.0440
15	15 1,2,3,4,6,7,8-HpCDF		4.17e5	10.0000				1.001		37.14					0.0486
16	16 1,2,3,4,7,8,9-HpCDF		2.79e5	10.0000				1.000		39.13					0.0605
17	17 OCDF		5.56e5	10.0000				1.000		41.97					0.134
18	18 13C-2,3,7,8-TCDD	6.18e5	6.52e5	10.0000		0.785	NO	1.027	1.028	26.15	26.15	180.84	90.4		0.476
19	19 13C-1,2,3,7,8-PeCDD	4.77e5	6.52e5	10.0000		0.628	NO	1.230	1.230	31.29	31.29	196.92	98.5		0.300
20	20 13C-1,2,3,4,7,8-Hx	3.14e5	6.20e5	10.0000		1.253	NO	1.014	1.014	34.64	34.64	156.88	78.4		0.689
21	21 13C-1,2,3,6,7,8-Hx	3.74e5	6.20e5	10.0000		1.222	NO	1.017	1.017	34.74	34.75	155.37	77.7		0.573
22	22 13C-1,2,3,7,8,9-Hx	3.49e5	6.20e5	10.0000		1.187	NO	1.025	1.025	35.01	35.02	170.71	85.4		0.675
23	23 13C-1,2,3,4,6,7,8-H	2.92e5	6.20e5	10.0000		1.041	NO	1.127	1.128	38.51	38.52	176.24	88.1		0.682
24	24 13C-OCDD	4.13e5	6.20e5	10.0000		0.888	NO	1.223	1.223	41.79	41.77	283.06	70.8		0.894
25	25 13C-2,3,7,8-TCDF	8.60e5	9.60e5	10.0000		0.727	NO	0.989	0.989	25.16	25.17	183.30	91.7		0.566
26	26 13C-1,2,3,7,8-PeCDF	6.61e5	9.60e5	10.0000		1.510	NO	1.178	1.178	29.98	29.98	177.00	88.5		0.675
27	27 13C-2,3,4,7,8-PeCDF	6.60e5	9.60e5	10.0000		1.483	NO	1.217	1.217	30.97	30.97	183.38	91.7		0.700
28	28 13C-1,2,3,4,7,8-Hx	4.51e5	6.20e5	10.0000		0.530	NO	0.989	0.989	33.78	33.78	172.19	86.1		0.612
29	29 13C-1,2,3,6,7,8-Hx	5.47e5	6.20e5	10.0000		0.523	NO	0.992	0.992	33.89	33.90	171.84	85.9		0.503
30	30 13C-2,3,4,6,7,8-Hx	5.05e5	6.20e5	10.0000		0.529	NO	1.009	1.009	34.47	34.47	182.32	91.2		0.579
31	31 13C-1,2,3,7,8,9-Hx	4.04e5	6.20e5	10.0000		0.561	NO	1.035	1.035	35.37	35.35	177.32	88.7		0.704
32	32 13C-1,2,3,4,6,7,8-H	4.17e5	6.20e5	10.0000		0.434	NO	1.085	1.086	37.08	37.10	178.22	89.1		0.731

Dataset: U:\VG11.PRO\Results\191217K2\191217K2-4.qld

Last Altered: Wednesday, December 18, 2019 18:01:46 Pacific Standard Time Printed: Friday, December 20, 2019 12:12:07 Pacific Standard Time

Name: 191217K2_4, Date: 17-Dec-2019, Time: 16:16:19, ID: B9J0322-BLK1 Method Blank 10, Description: Method Blank

AT STA	# Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
33	33 13C-1,2,3,4,7,8,9-H	2.79e5	6.20e5	10.0000		0.449	NO	1.145	1.145	39.11	39.13	166.97	83.5		1.02
34	34 13C-OCDF	5.56e5	6.20e5	10.0000		0.908	NO	1.229	1.228	41.97	41.97	302.87	75.7		0.629
35	35 37CI-2,3,7,8-TCDD	2.34e5	6.52e5	10.0000				1.028	1.028	26.17	26.17	67.245	84.1		0.0908
36	36 13C-1,2,3,4-TCDD	6.52e5	6.52e5	10.0000		0.790	NO	1.000	1.000	25.45	25.45	200.00	100.0		0.499
37	37 13C-1,2,3,4-TCDF	9.60e5	9.60e5	10.0000		0.743	NO	1.000	1.000	23.55	23.57	200.00	100.0		0.554
38	38 13C-1,2,3,4,6,9-Hx	6.20e5	6.20e5	10.0000		0.538	NO	1.000	1.000	34.16	34.16	200.00	100.0		0.517
39	39 Total Tetra-Dioxins		6.18e5	10.0000				0.000		24.62					0.0746
40	40 Total Penta-Dioxins		4.77e5	10.0000				0.000		29.96					0.0250
41	41 Total Hexa-Dioxins		0.00e0	10.0000				0.000		33.63					0.0408
42	42 Total Hepta-Dioxins		2.92e5	10.0000				0.000		38.80					0.0682
43	43 Total Tetra-Furans		8.60e5	10.0000				0.000		23.61					0.0232
44	44 1st Func. Penta-Fur		0.00e0	10.0000				0.000		27.04					0.0135
45	45 Total Penta-Furans		0.00e0	10.0000				0.000		29.27					0.0210
46	46 Total Hexa-Furans		0.00e0	10.0000				0.000		33.56					0.0191
47	47 Total Hepta-Furans		0.00e0	10.0000				0.000		37.83					0.0299

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Dataset: U:\VG11.PRO\Results\191217K2\191217K2-4.qld

Last Altered: Wednesday, December 18, 2019 18:01:46 Pacific Standard Time Printed: Friday, December 20, 2019 12:12:07 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5 1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_4, Date: 17-Dec-2019, Time: 16:16:19, ID: B9J0322-BLK1 Method Blank 10, Description: Method Blank

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

Blatto	# Name	N/Y	RT	Area	IS Area	Response Primary Flags	Conc.	EMPC
1	1000							

Hepta-Dioxins

1000	# Name	N/Y	RT	Area	IS Area	Response Primary Flags	Conc.	EMPC
1								

Tetra-Furans

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

Penta-Furans function 1

1. T. C. C.	# 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								

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-4.qld

Last Altered: Printed: Wednesday, December 18, 2019 18:01:46 Pacific Standard Time

Friday, December 20, 2019 12:12:07 Pacific Standard Time

Name: 191217K2_4, Date: 17-Dec-2019, Time: 16:16:19, ID: B9J0322-BLK1 Method Blank 10, Description: Method Blank

Hexa-Furans

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

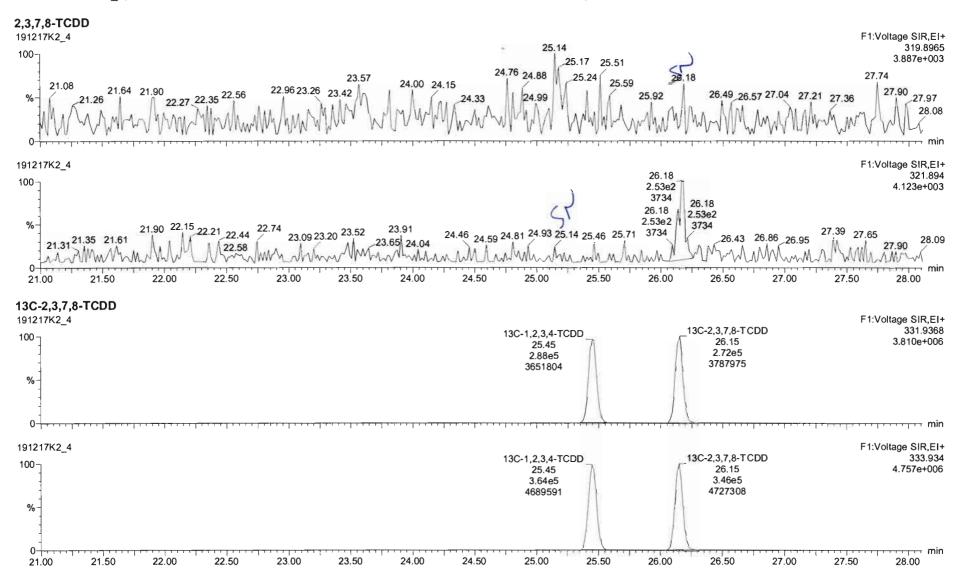
Hepta-Furans

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

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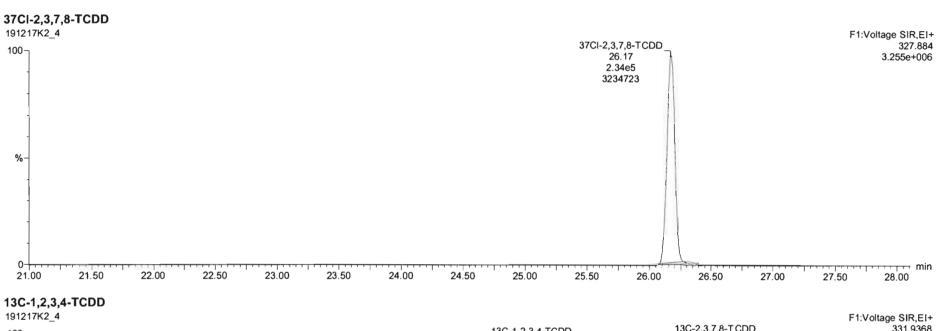
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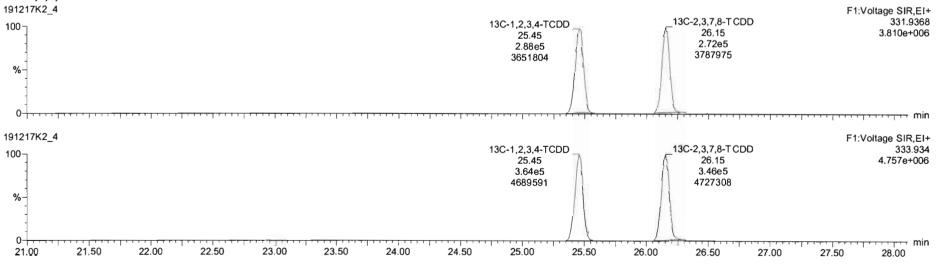
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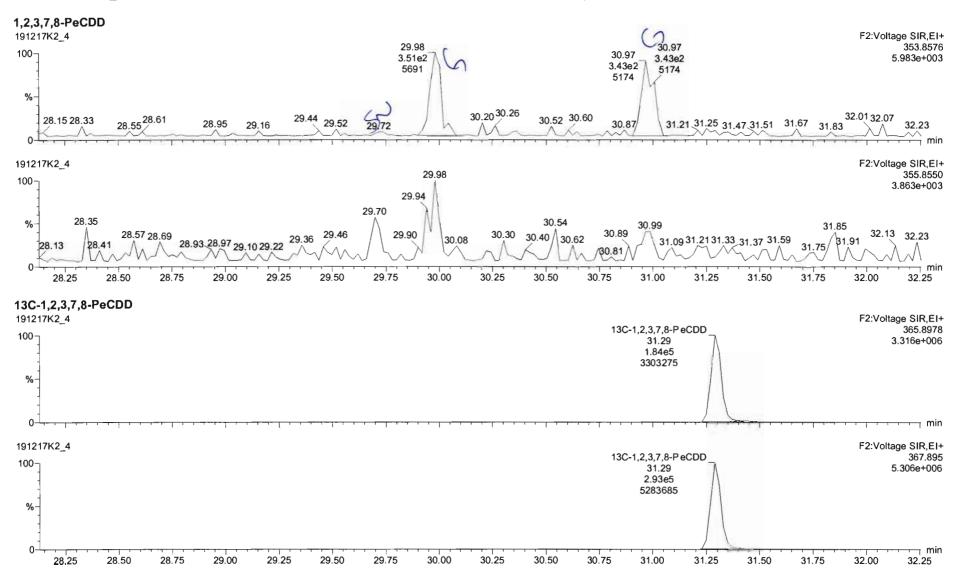




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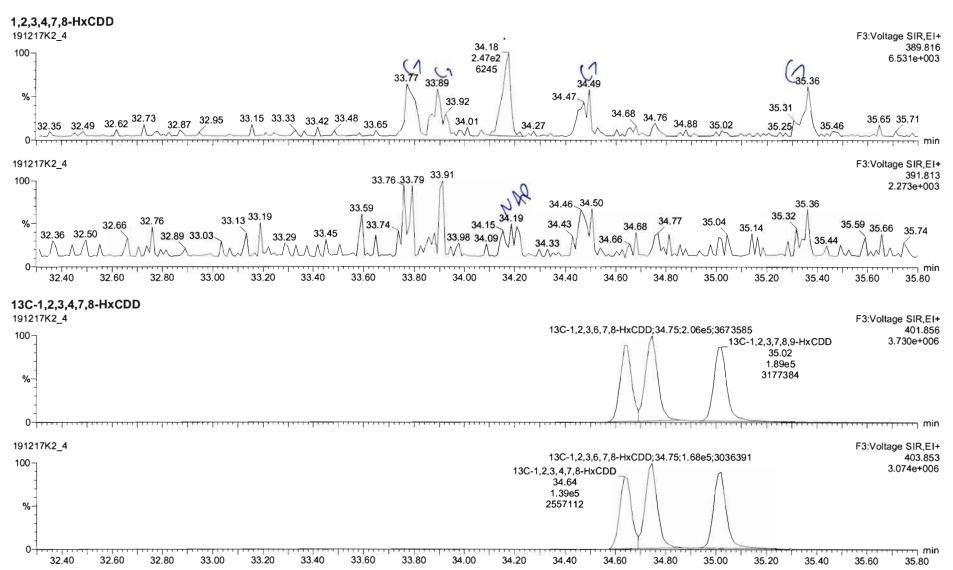
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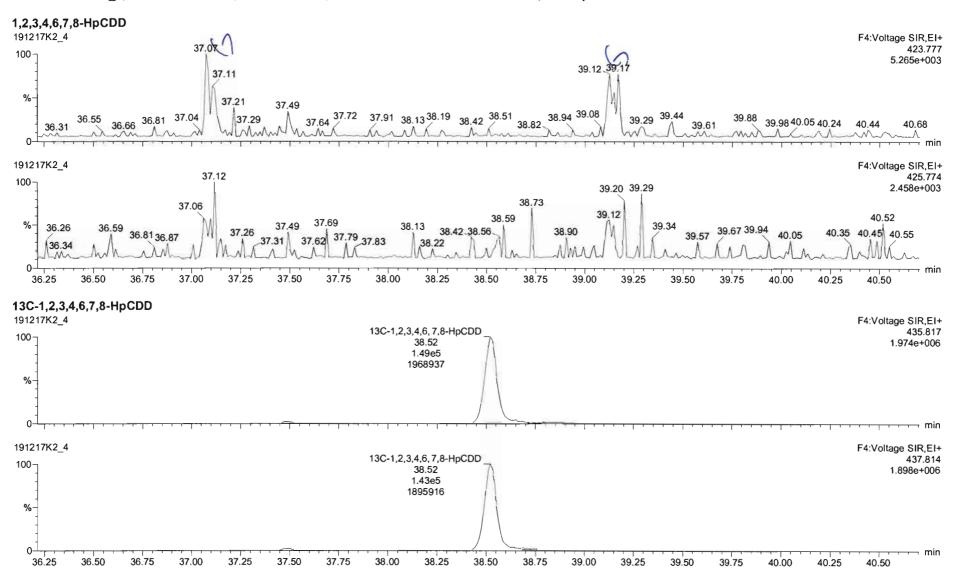
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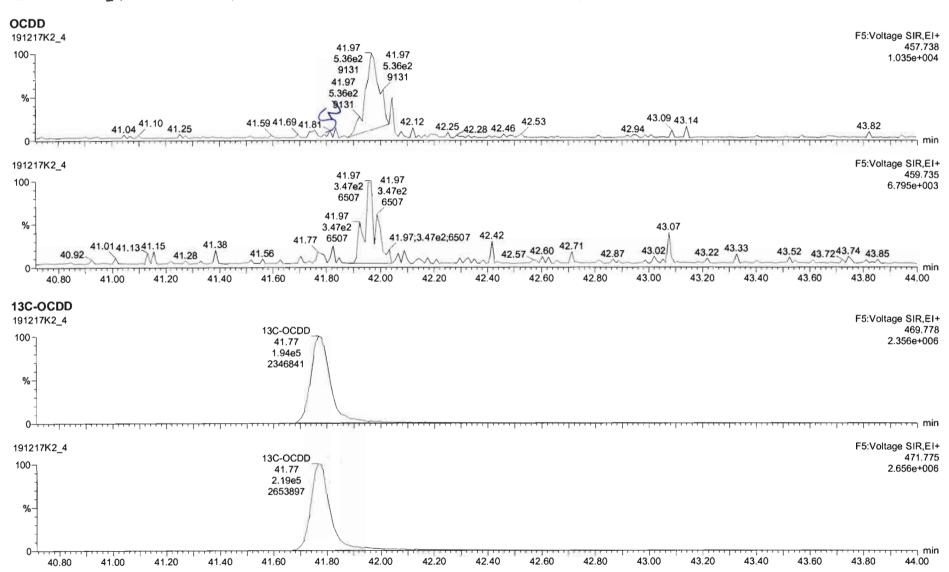
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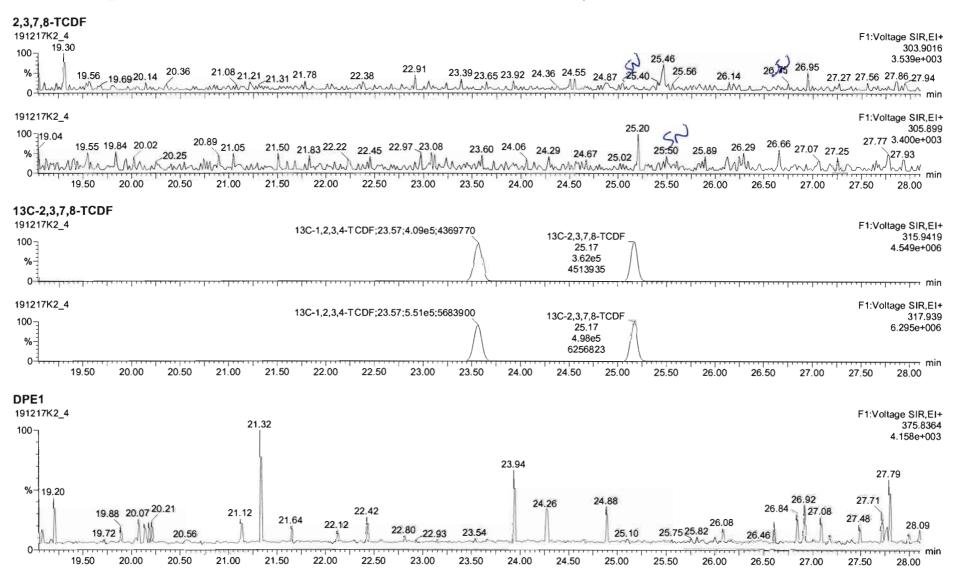
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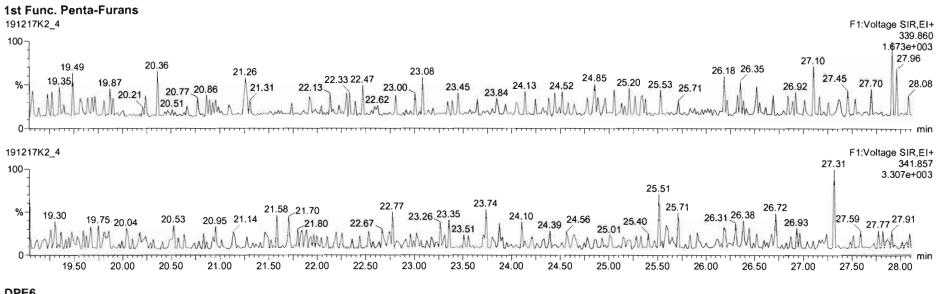
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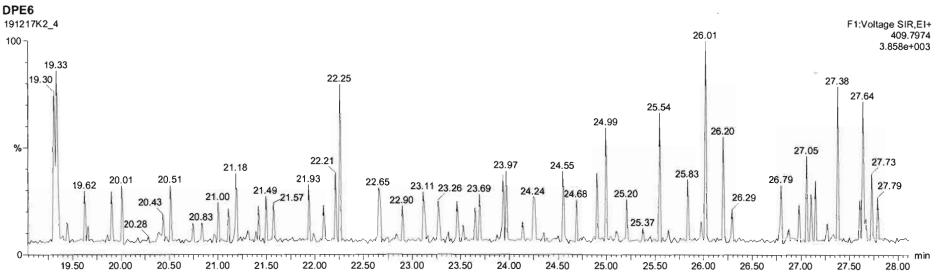


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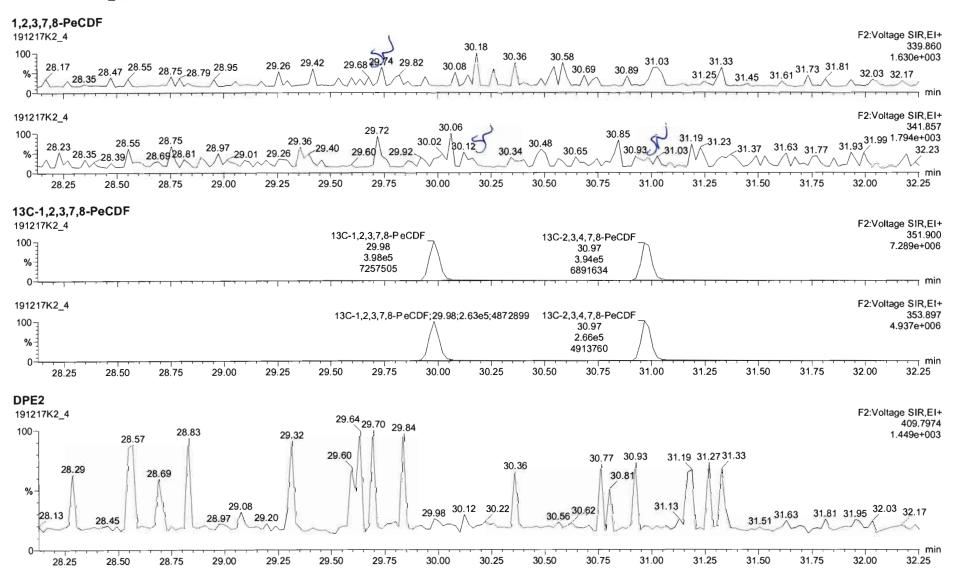




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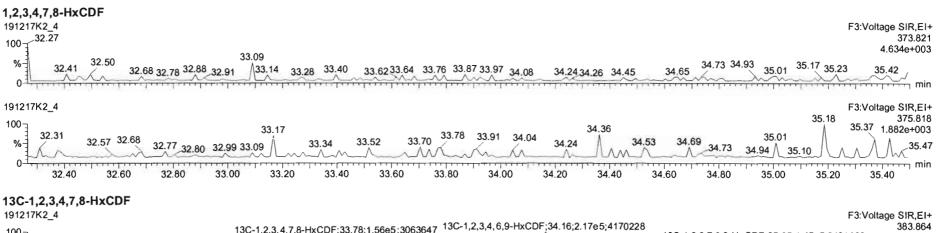
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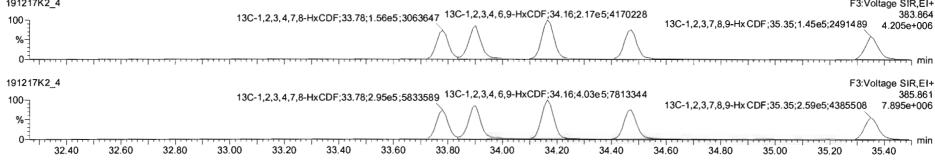


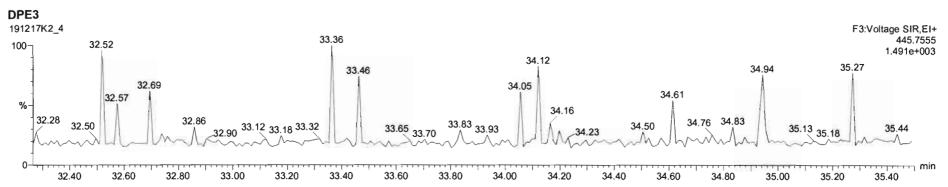
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



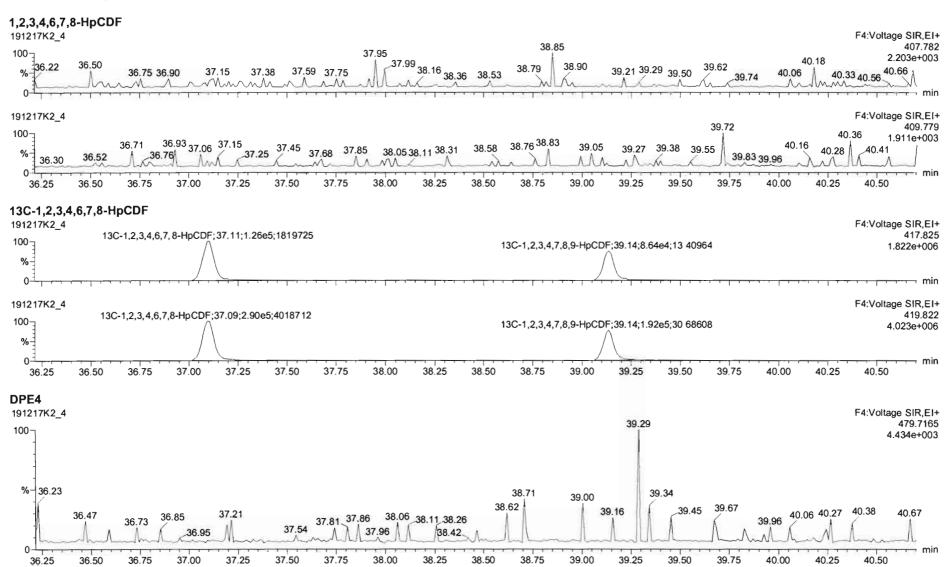




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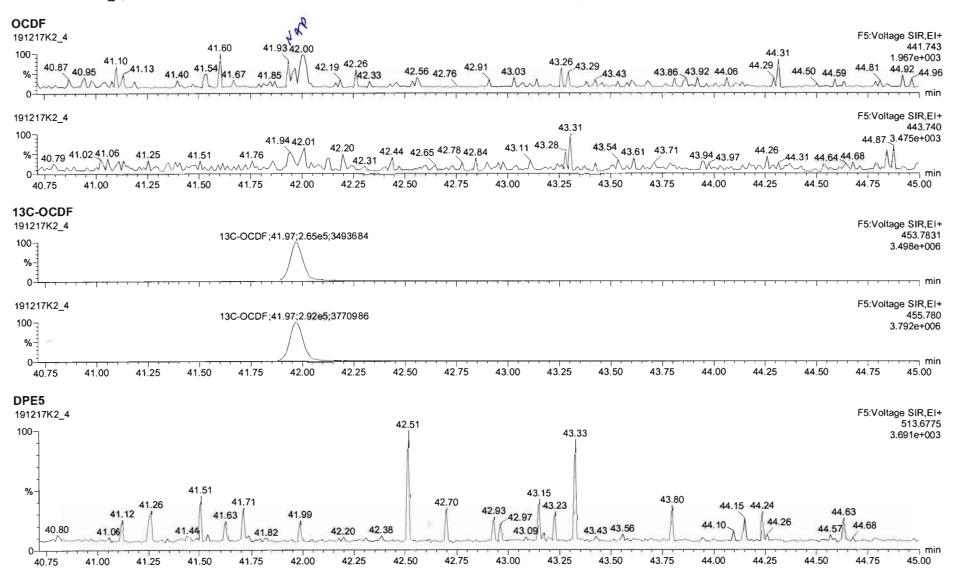
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



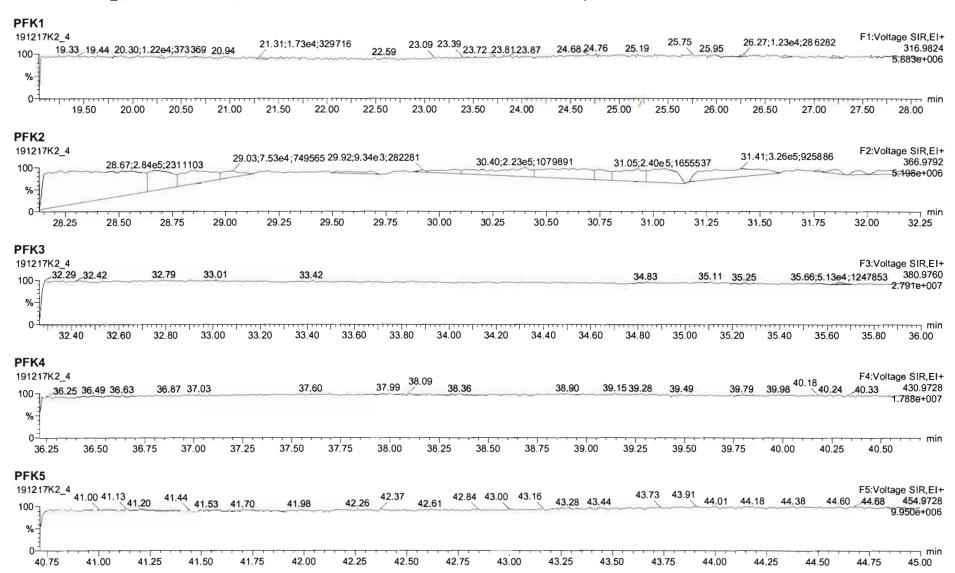
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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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Vista Analytical Laboratory

U:\VG11.PRO\Results\191217K2\191217K2-2.qld Dataset:

Last Altered: Friday, December 20, 2019 12:13:02 Pacific Standard Time Friday, December 20, 2019 12:14:03 Pacific Standard Time Printed:

HC 127019 C7 12/27/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_2, Date: 17-Dec-2019, Time: 14:39:35, ID: B9J0322-BS1 OPR 10, Description: OPR

-	# 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	4.73e4	4.97e5	10.0000		0.805	NO	1.001	1.001	26.17	26.17	20.569		20.6	0.190
2	2 1,2,3,7,8-PeCDD	1.67e5	3.57e5	10.0000		0.635	NO	1.001	1.001	31.31	31.31	103.84		104	0.213
3	3 1,2,3,4,7,8-HxCDD	1.50e5	2.59e5	10.0000		1.303	NO	1.000	1.000	34.65	34.65	108.70		109	0.462
4	4 1,2,3,6,7,8-HxCDD	1.68e5	3.07e5	10.0000		1.304	NO	1.000	1.000	34.74	34.75	113.21		113	0.465
5	5 1,2,3,7,8,9-HxCDD	1.49e5	2.79e5	10.0000		1.290	NO	1.001	1.000	35.04	35.02	109.19		109	0.525
6	6 1,2,3,4,6,7,8-HpCDD	1.15e5	2.19e5	10.0000		1.052	NO	1.000	1.000	38.53	38.53	100.91		101	0.521
7	7 OCDD	1.77e5	3.40e5	10.0000		0.901	NO	1.000	1.000	41.77	41.78	214.99		215	0.663
8	8 2,3,7,8-TCDF	7.06e4	6.79e5	10.0000		0.790	NO	1.001	1.001	25.18	25.19	22.185		22.2	0.118
9	9 1,2,3,7,8-PeCDF	2.67e5	5.09e5	10.0000		1.607	NO	1.001	1.001	30.00	30.00	107.30		107	0.238
10	10 2,3,4,7,8-PeCDF	2.69e5	4.84e5	10.0000		1.556	NO	1.001	1.001	31.00	30.99	110.86		111	0.212
11	11 1,2,3,4,7,8-HxCDF	2.42e5	3.66e5	10.0000		1.244	NO	1.000	1.000	33.77	33.78	106.59		107	0.356
12	12 1,2,3,6,7,8-HxCDF	2.66e5	4.23e5	10.0000		1.198	NO	1.000	1.000	33.90	33.90	114.76		115	0.356
13	13 2,3,4,6,7,8-HxCDF	2.58e5	3.98e5	10.0000		1.188	NO	1.001	1.000	34.49	34.47	109.96		110	0.376
14	14 1,2,3,7,8,9-HxCDF	2.01e5	3.44e5	10.0000		1.248	NO	1.000	1.001	35.34	35.36	109.05		109	0.563
15	15 1,2,3,4,6,7,8-HpCDF	2.01e5	3.08e5	10.0000		1.072	NO	1.001	1.001	37.12	37.10	115.60		116	0.458
16	16 1,2,3,4,7,8,9-HpCDF	1.56e5	2.24e5	10.0000		1.060	NO	1.000	1.001	39.12	39.15	110.39		110	0.587
17	17 OCDF	2.55e5	4.70e5	10.0000		0.877	NO	1.000	1.000	41.97	41.98	197.12		197	0.602
18	18 13C-2,3,7,8-TCDD	4.97e5	5.39e5	10.0000		0.767	NO	1.027	1.027	26.15	26.14	176.01	88.0		0.521
19	19 13C-1,2,3,7,8-PeCDD	3.57e5	5.39e5	10.0000		0.636	NO	1.230	1.229	31.29	31.29	178.19	89.1		0.537
20	20 13C-1,2,3,4,7,8-Hx	2.59e5	5.27e5	10.0000		1.236	NO	1.014	1.014	34.64	34.64	152.02	76.0		0.555
21	21 13C-1,2,3,6,7,8-Hx	3.07e5	5.27e5	10.0000		1.255	NO	1.017	1.017	34.73	34.74	150.26	75.1		0.462
22	22 13C-1,2,3,7,8,9-Hx	2.79e5	5.27e5	10.0000		1.242	NO	1.025	1.025	35.01	35.01	160.86	80.4		0.544
23	23 13C-1,2,3,4,6,7,8-H	2.19e5	5.27e5	10.0000		1.041	NO	1.127	1.128	38.51	38.52	155.78	77.9		0.605
24	24 13C-OCDD	3.40e5	5.27e5	10.0000		0.888	NO	1.223	1.223	41.79	41.77	274.21	68.6		0.775
25	25 13C-2,3,7,8-TCDF	6.79e5	7.92e5	10.0000		0.726	NO	0.989	0.989	25.16	25.16	175.39	87.7		0.695
26	26 13C-1,2,3,7,8-PeCDF	5.09e5	7.92e5	10.0000		1.521	NO	1.178	1.178	29.98	29.98	165.44	82.7		0.899
27	27 13C-2,3,4,7,8-PeCDF	4.84e5	7.92e5	10.0000		1.493	NO	1.217	1.217	30.97	30.97	162.99	81.5		0.933
28	28 13C-1,2,3,4,7,8-Hx	3.66e5	5.27e5	10.0000		0.518	NO	0.989	0.988	33.77	33.77	164.22	82.1		0.841
29	29 13C-1,2,3,6,7,8-Hx	4.23e5	5.27e5	10.0000		0.523	NO	0.992	0.992	33.89	33.89	156.43	78.2		0.692
30	30 13C-2,3,4,6,7,8-Hx	3.98e5	5.27e5	10.0000		0.535	NO	1.009	1.009	34.46	34.46	169.30	84.7		0.796
31	31 13C-1,2,3,7,8,9-Hx	3.44e5	5.27e5	10.0000		0.513	NO	1.035	1.034	35.37	35.34	177.81	88.9		0.968
32	32 13C-1,2,3,4,6,7,8-H	3.08e5	5.27e5	10.0000		0.438	NO	1.085	1.085	37.08	37.08	155.15	77.6		0.612

Work Order 1903648

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Dataset: U:\VG11.PRO\Results\191217K2\191217K2-2.qld

Last Altered: Friday, December 20, 2019 12:13:02 Pacific Standard Time Friday, December 20, 2019 12:14:03 Pacific Standard Time

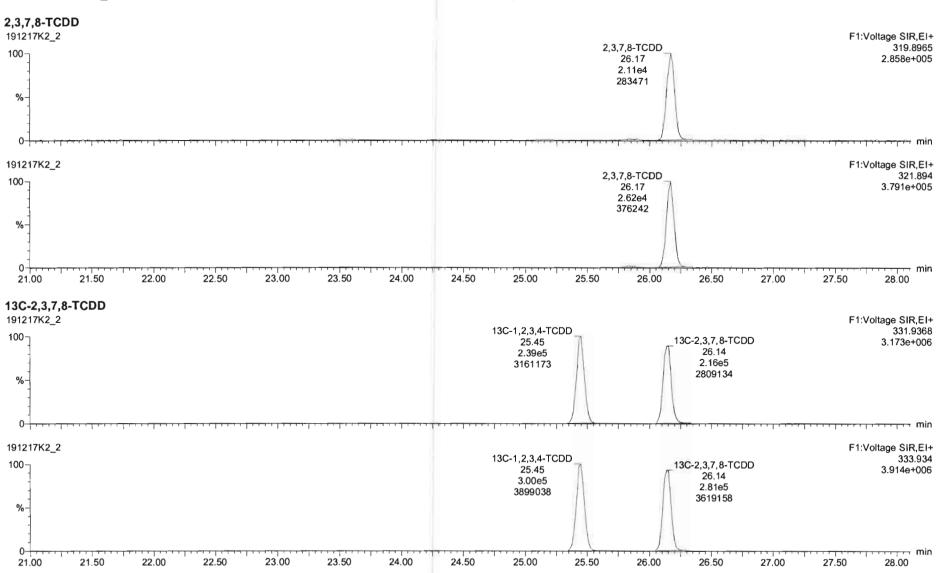
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	# Name	Area	IS Area	Wt./Vol.	RRF	RA	Y/N	Pred	RRT	Pred.RT	RT	Conc.	%Rec	EMPC	DL
33	33 13C-1,2,3,4,7,8,9-H	2.24e5	5.27e5	10.0000		0.435	NO	1.145	1.145	39.11	39.12	157.56	78.8		0.856
34	34 13C-OCDF	4.70e5	5.27e5	10.0000		0.892	NO	1.229	1.228	41.97	41.97	301.16	75.3		0.545
35	35 37CI-2,3,7,8-TCDD	1.75e5	5.39e5	10.0000				1.028	1.028	26.17	26.17	60.727	75.9		0.0893
36	36 13C-1,2,3,4-TCDD	5.39 e 5	5.39 e 5	10.0000		0.795	NO	1.000	1.000	25.45	25.45	200.00	100.0		0.547
37	37 13C-1,2,3,4-TCDF	7.92e5	7.92e5	10.0000		0.726	NO	1.000	1.000	23.55	23.55	200.00	100.0		0.679
38	38 13C-1,2,3,4,6,9-Hx	5.27e5	5.27 e 5	10.0000		0.520	NO	1.000	1.000	34.16	34.16	200.00	100.0		0.711

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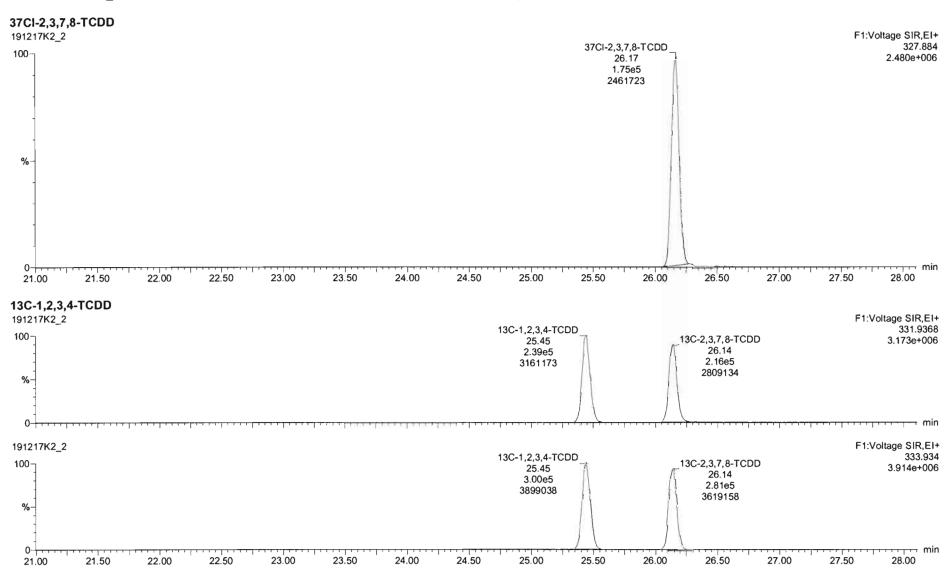
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



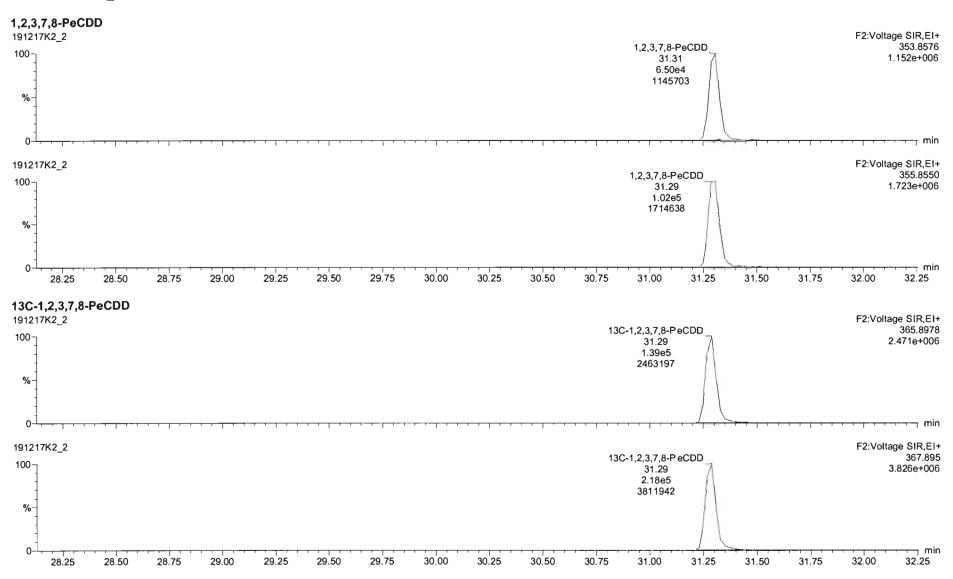
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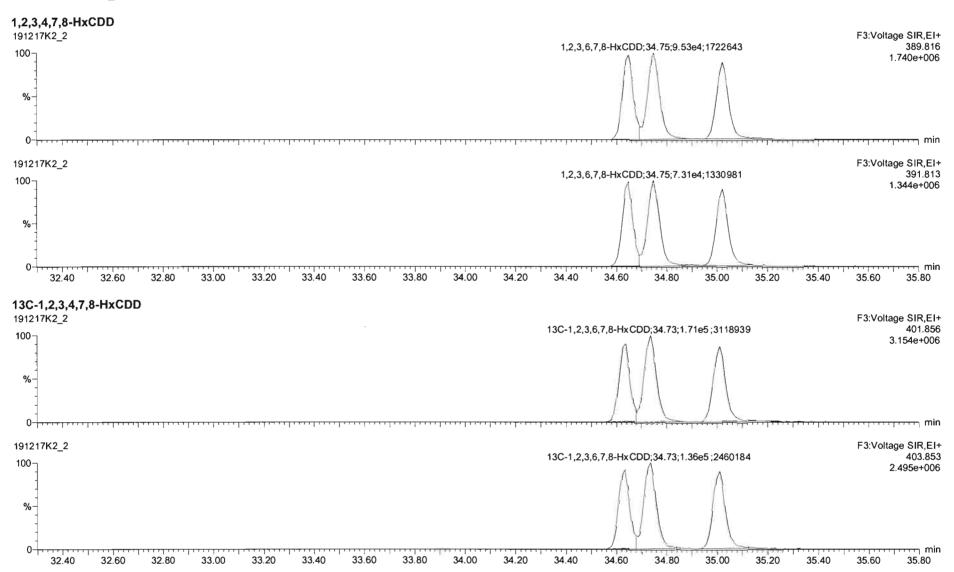
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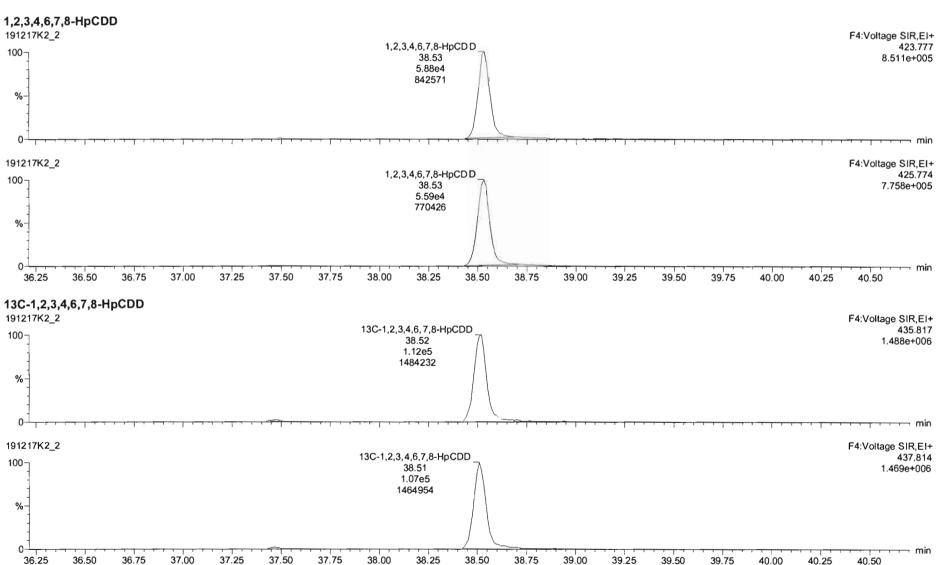
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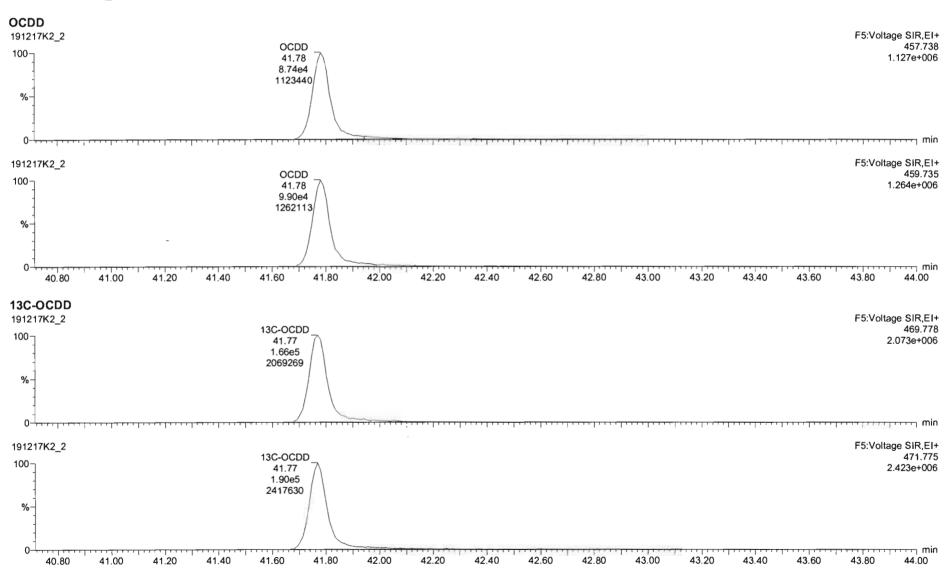
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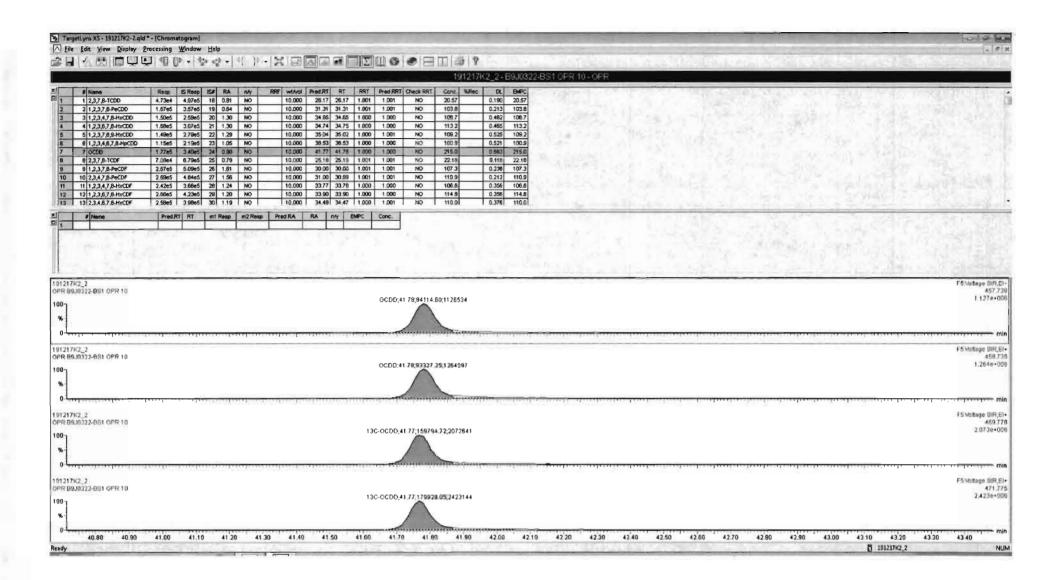


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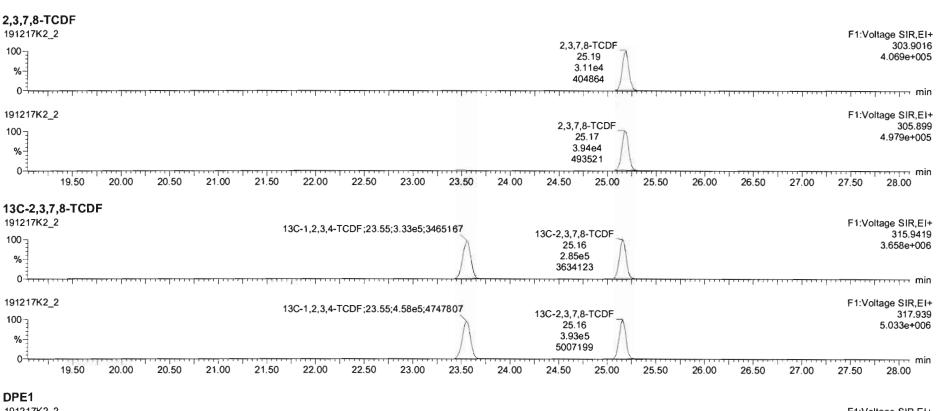


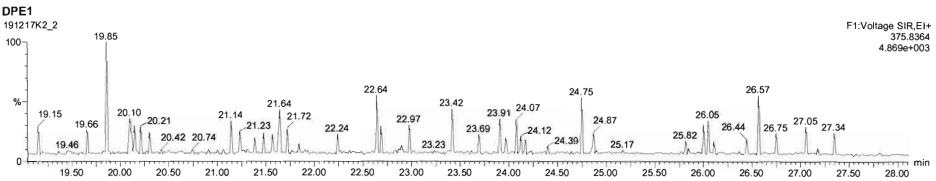
Work Order 1903648 Page 58 of 513

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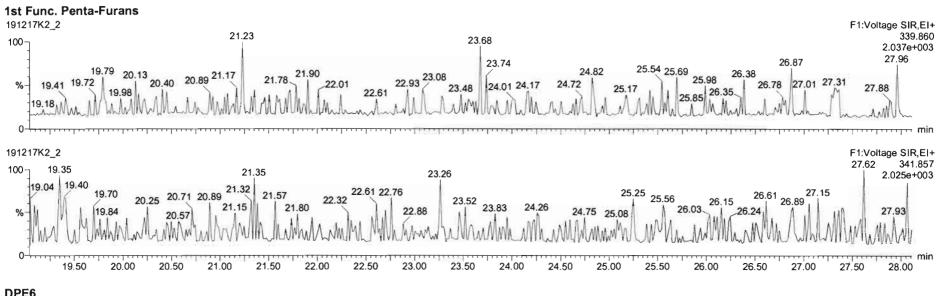
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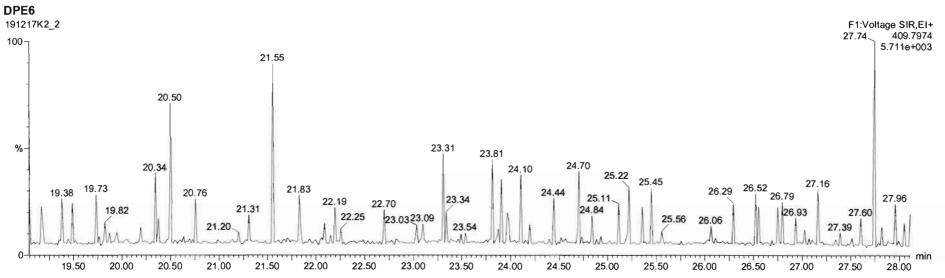




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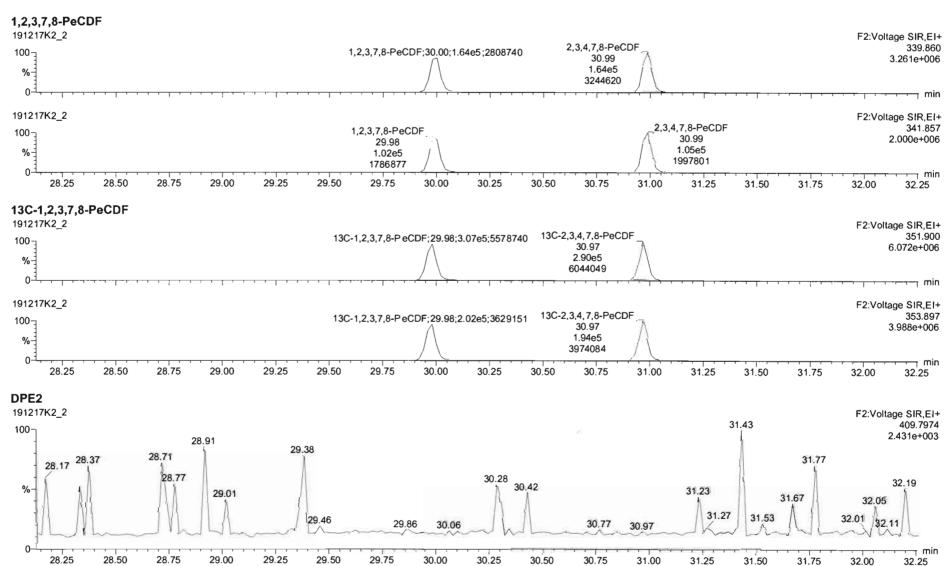




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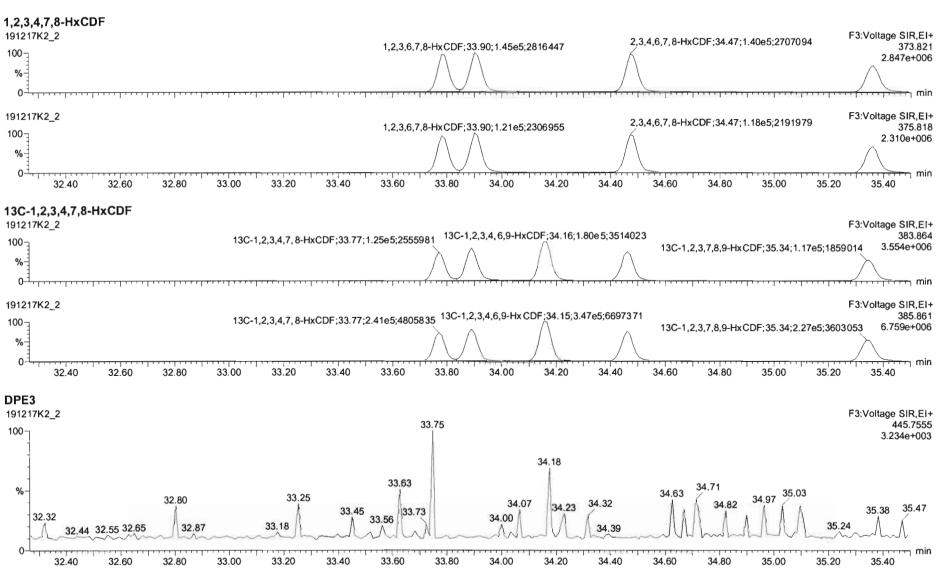
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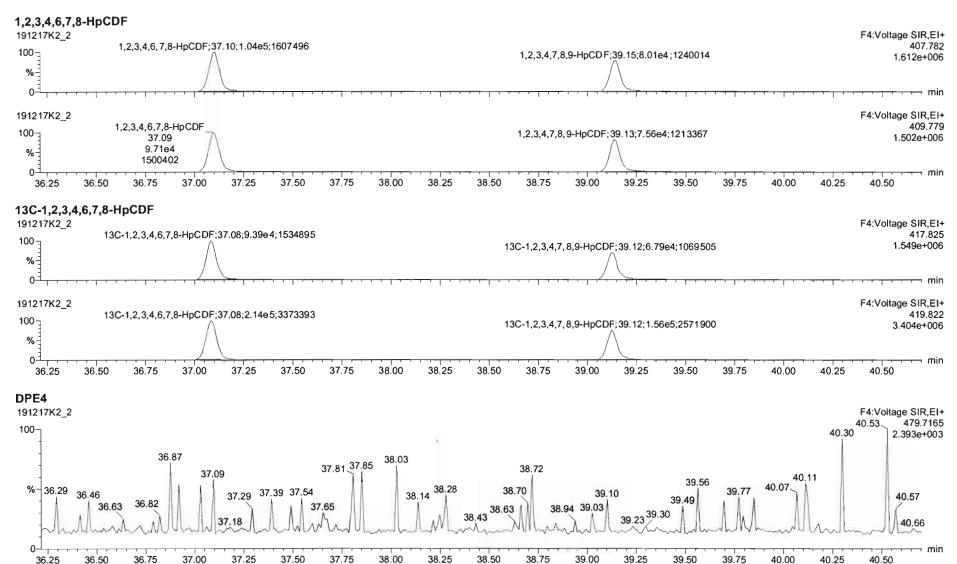


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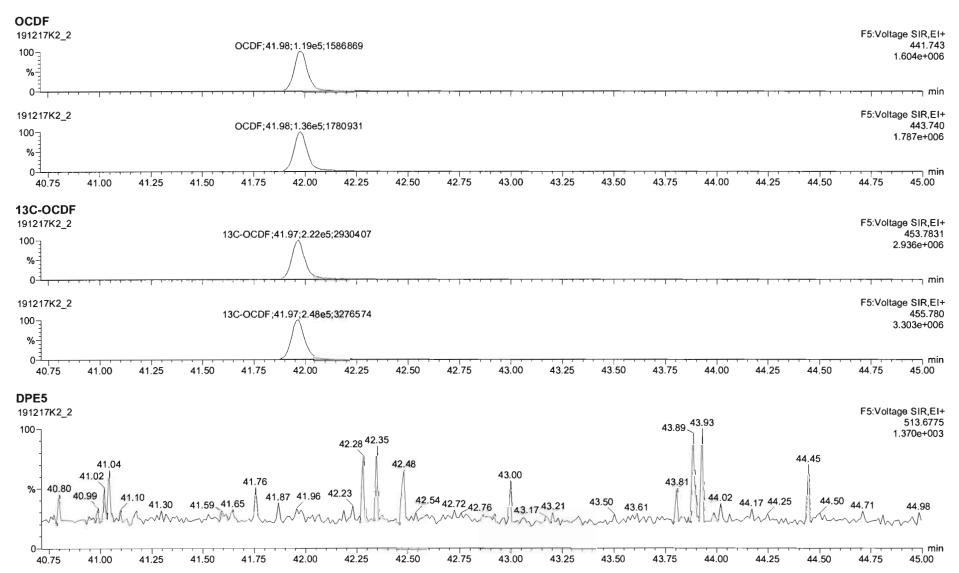
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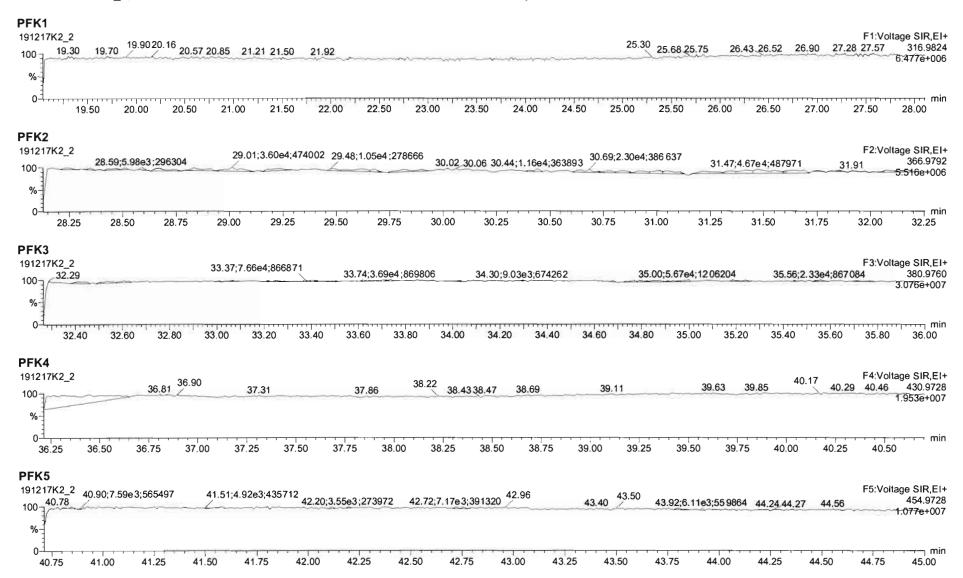
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



MassLynx MassLynx V4.1 SCN 945

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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-9.qld

Last Altered:

Thursday, December 26, 2019 16:44:03 Pacific Standard Time

Printed:

Thursday, December 26, 2019 17:27:12 Pacific Standard Time

EL 12/26/19

C7 12/27/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_9, Date: 17-Dec-2019, Time: 20:18:05, ID: 1903648-01 PDI-073SC-A-11-12-191013 15.27, Description: PDI-073SC-A-11-12-191013

STATE OF THE STATE OF	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
100000	1 2,3,7,8-TCDD				0.925	10.015	26.18		1.00		YES			0.140	
2	2 1,2,3,7,8-PeCDD				0.905	10.015	31.31		1.00		YES			0.114	1
3	3 1,2,3,4,7,8-HxCDD				1.07	10.015	34.66		1.00		YES			0.141	
4	4 1,2,3,6,7,8-HxCDD				0.967	10.015	34.75		1.00		YES			0.149	
5	5 1,2,3,7,8,9-HxCDD				0.978	10.015	35.06		1.00		YES			0.166	1
6	6 1,2,3,4,6,7,8-HpCDD	2975.235	1.021	NO	1.04	10.015	38.54	38.54	1.00	1.00	NO	1.862		0.215	1.862
7	7 OCDD	12680.389	0.861	NO	0.972	10.015	41.80	41.81	1.00	1.00	NO	14.88		0.415	14.88
8	8 2.3,7,8-TCDF				0.938	10.015	25.20		1.00		YES			0.123	
9	9 1,2,3,7,8-PeCDF				0.976	10.015	30.00		1.00		YES			0.0698	
10	10 2,3,4,7,8-PeCDF				1.00	10.015	31.02		1.00		YES			0.0658	İ
11	11 1,2,3,4,7,8-HxCDF				1.24	10.015	33.78		1.00		YES			0.0630)
12	12 1,2,3,6,7,8-HxCDF				1.10	10.015	33.91		1.00		YES			0.0637	
13	13 2,3,4,6,7,8-HxCDF				1.18	10.015	34.51		1.00		YES			0.0712	
14	14 1,2,3,7,8,9-HxCDF				1.07	10.015	35.35		1.00		YES			0.0941	
15	15 1,2,3,4,6,7,8-HpCDF	517.924	1.681	YES	1.13	10.015	37.14	37.12	1.00	1.00	NO	0.2247		0.9 76 5	0.1710
16	16 1,2,3,4,7,8,9-HpCDF				1.26	10.015	39.15		1.00		YES			0.0914	
17	17 OCDF				1.10	10.015	42.00		1.00		YES			0.170	
18	18 13C-2,3,7,8-TCDD	676482.501	0.799	NO	1.05	10.015	26.15	26.15	1.03	1.03	NO	195.5	97.9	0.437	1
19	19 13C-1,2,3,7,8-PeCDD	486277.266	0.615	NO	0.743	10.015	31.29	31.29	1.23	1.23	NO	198.4	99.4	0.613	
20	20 13C-1,2,3,4,7,8-HxCDD	348431.063	1.234	NO	0.646	10.015	34.64	34.65	1.01	1.01	NO	156.2	78.2	0.508	1
21	21 13C-1,2,3,6,7,8-HxCDD	427607.281	1.222	NO	0.777	10.015	34.73	34.75	1.02	1.02	NO	159.5	79.9	0.423	
22	22 13C-1,2,3,7,8,9-HxCDD	368886.531	1.181	NO	0.659	10.015	35.01	35.02	1.02	1.03	NO	162.0	81.1	0.498	ĺ
23	23 13C-1,2,3,4,6,7,8-HpCDD	307602.172	1.062	NO	0.534	10.015	38.51	38.53	1.13	1.13	NO	166.8	83.5	0.643	
24	24 13C-OCDD	350236.328	0.901	NO	0.470	10.015	41.79	41.80	1.22	1.22	NO	215.7	54.0	0.681	ĺ
25	25 13C-2,3,7,8-TCDF	919094.844	0.719	NO	0.977	10.015	25.16	25.17	0.99	0.99	NO	199.5	99.9	0.580	- 1
26	26 13C-1,2,3,7,8-PeCDF	675347.938	1.513	NO	0.778	10.015	29.98	29.98	1.18	1.18	NO	184.3	92.3	0.659	
27	27 13C-2,3,4,7,8-PeCDF	672575.751	1.508	NO	0.750	10.015	30.97	30.99	1.22	1.22	NO	190.3	95.3	0.683	
28	28 13C-1,2,3,4,7,8-HxCDF	502405.578	0.514	NO	0.845	10.015	33.77	33.78	0.99	0.99	NO	172.2	86.2	0.824	
29	29 13C-1,2,3,6,7,8-HxCDF	589544.875	0.520	NO	1.03	10.015	33.89	33.90	0.99	0.99	NO	166.3	83.3	0.678	
30	30 13C-2,3,4,6,7,8-HxCDF	510784.719	0.526	NO	0.893	10.015	34.46	34.47	1.01	1.01	NO	_165.7	83.0	0.780	

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U:\VG11.PRO\Results\191217K2\191217K2-9.qld

Last Altered: Printed:

Thursday, December 26, 2019 16:44:03 Pacific Standard Time Thursday, December 26, 2019 17:27:12 Pacific Standard Time

Name: 191217K2_9, Date: 17-Dec-2019, Time: 20:18:05, ID: 1903648-01 PDI-073SC-A-11-12-191013 15.27, Description: PDI-073SC-A-11-12-191013

Des Vall 40	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
31	31 13C-1,2,3,7,8,9-HxCDF	480035.812	0.515	NO	0.734	10.015	35.37	35.35	1.04	1.03	NO	189.4	94.8	0.948	
32	32 13C-1,2,3,4,6,7,8-HpCDF	407418.461	0.414	NO	0.754	10.015	37.08	37.10	1.09	1.09	NO	156.5	78.4	0.657	
33	33 13C-1,2,3,4,7,8,9-HpCDF	302623.125	0.430	NO	0.539	10.015	39.11	39.15	1.14	1.15	NO	162.6	81.4	0.920	
34	34 13C-OCDF	541407.391	0.866	NO	0.593	10.015	41.97	42.00	1.23	1.23	NO	264.7	66.3	0.590	
35	35 37CI-2,3,7,8-TCDD	265355.594			1.07	10.015	26.17	26.18	1.03	1.03	NO	75.22	94.2	0.0818	1
36	36 13C-1,2,3,4-TCDD	658739.594	0.791	NO	1.00	10.015	25.45	25.45	1.00	1.00	NO	199.7	100	0.458	
37	37 13C-1,2,3,4-TCDF	941030.751	0.725	NO	1.00	10.015	23.55	23.57	1.00	1.00	NO	199.7	100	0.567	
38	38 13C-1,2,3,4,6,9-HxCDF	689470.719	0.530	NO	1.00	10.015	34.16	34.16	1.00	1.00	NO	199.7	100	0.696	1
39	39 Total Tetra-Dioxins				0.925	10.015	24.62		0.00		NO	0.0000		0.140	0.2730
40	40 Total Penta-Dioxins				0.905	10.015	29.96		0.00		NO	0.2403		0.0618	0.3880
41	41 Total Hexa-Dioxins				0.967	10.015	33.63		0.00		NO	1.411		0.157	2.110
42	42 Total Hepta-Dioxins				1.04	10.015	38.80		0.00		NO	4.777		0.215	4.777
43	43 Total Tetra-Furans				0.938	10.015	23.61		0.00		NO	1.515		0.123	1.723
44	44 1st Func. Penta-Furans				0.976	10.015	27.04		0.00		NO	0.07754		0.0132	0.07800
45	45 Total Penta-Furans				0.976	10.015	29.27		0.00		NO			0.0275	
46	46 Total Hexa-Furans				1.18	10.015	33.56		0.00		NO	0.1199		0.0401	0.1200
47	47 Total Hepta-Furans				1.13	10.015	37.83		0.00		NO	0.0000		0.0445	0.1710

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Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-9.qld

Last Altered: Printed:

Thursday, December 26, 2019 16:44:03 Pacific Standard Time Thursday, December 26, 2019 17:27:03 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_9, Date: 17-Dec-2019, Time: 20:18:05, ID: 1903648-01 PDI-073SC-A-11-12-191013 15.27, Description: PDI-073SC-A-11-12-191013

Tetra-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	39 Total Tetra-Dioxins	0.00e0	6.76 e 5	0.766	NO	24.62	21.87	0.0000	0.2730

Penta-Dioxins

100	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	40 Total Penta-Dioxins	5.29e2	4.86e5	0.543	NO	29.96	29.54	0.2403	0.2400
2	40 Total Penta-Dioxins	0.00e0	4.86e5	0.369	YES	29.96	29.06	0.0000	0.1470

Hexa-Dioxins

S. STEEL SOLD	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
12500	41 Total Hexa-Dioxins	0.00e0	0.00e0	1.037	YES	33.63	34.00	0.0000	0.6990
2	41 Total Hexa-Dioxins	2.61e3	0.00e0	1.335	NO	33.63	33.19	1.411	1.411

Hepta-Dioxins

\$1.334	# Name	Area	IS Area	RA	Y/N	Pred.RT	IRT	Conc.	EMPC
1 100 0000	6 1,2,3,4,6,7,8-HpCDD	2.98e3	3.08e5	1.021	NO	38.54	38.54	1.862	1.862
2	42 Total Hepta-Dioxins	4.66e3	3.08e5	1.002	NO	38.80	37.51	2.916	2.916

Tetra-Furans

A STANSON OF	# Name	Area	iS Area	RA	Y/N	Pred.RT	IRT	Conc.	EMPC
1	43 Total Tetra-Furans	0.00e0	9.19e5	0.896	YES	23.61	24.13	0.0000	0.2080
2	43 Total Tetra-Furans	1.47e3	9.19e5	0.727	NO	23.61	21.41	0.3400	0.3400
3	43 Total Tetra-Furans	3.42e3	9.19e5	0.836	NO	23.61	20.91	0.7919	0.7920
4	43 Total Tetra-Furans	6.85e2	9.19e5	0.754	NO	23.61	19.79	0.1587	0.1590
5	43 Total Tetra-Furans	9.68e2	9.19e5	0.698	NO	23.61	25.62	0.2243	0.2240

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Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-9.qld

Last Altered:

Thursday, December 26, 2019 16:44:03 Pacific Standard Time

Printed:

Thursday, December 26, 2019 17:27:03 Pacific Standard Time

Name: 191217K2_9, Date: 17-Dec-2019, Time: 20:18:05, ID: 1903648-01 PDI-073SC-A-11-12-191013 15.27, Description: PDI-073SC-A-11-12-191013

Penta-Furans function 1

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	44 1st Func. Penta-Fura	2.55e2	0.00e0	1.699	NO	27.04	27.33	0.07754	0.07800

Penta-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Hexa-Furans

AR STUDEN	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
100000000000000000000000000000000000000	46 Total Hexa-Furans	3.69e2	0.00e0	1.316	NO	33.56	32.85	0.1199	0.1200

Hepta-Furans

TO PATE	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 - 3 - 1	15 1,2,3,4,6,7,8-HpCDF	5.18e2	4.07e5	1.681	YES	37.14	37.12	0.0000	0.1710

Work Order 1903648

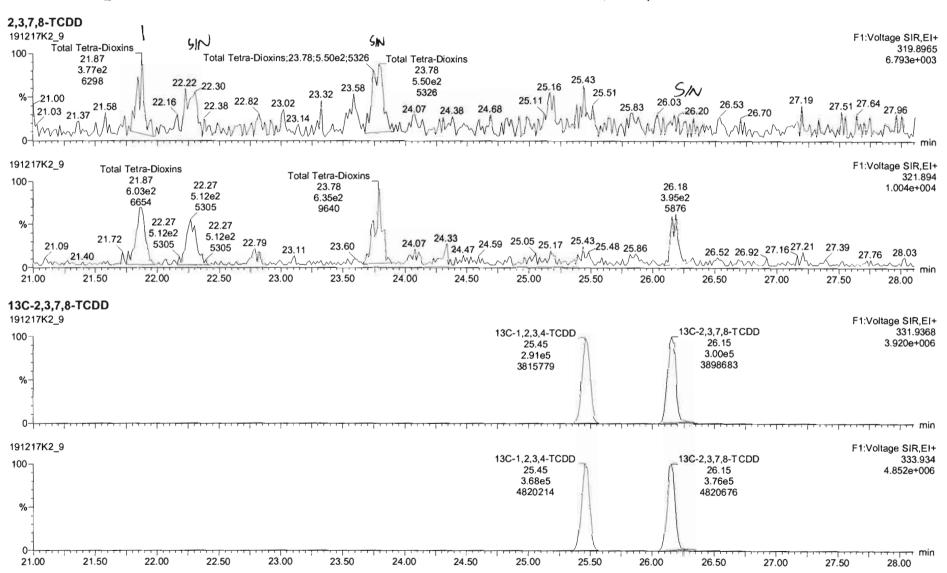
Page 69 of 513

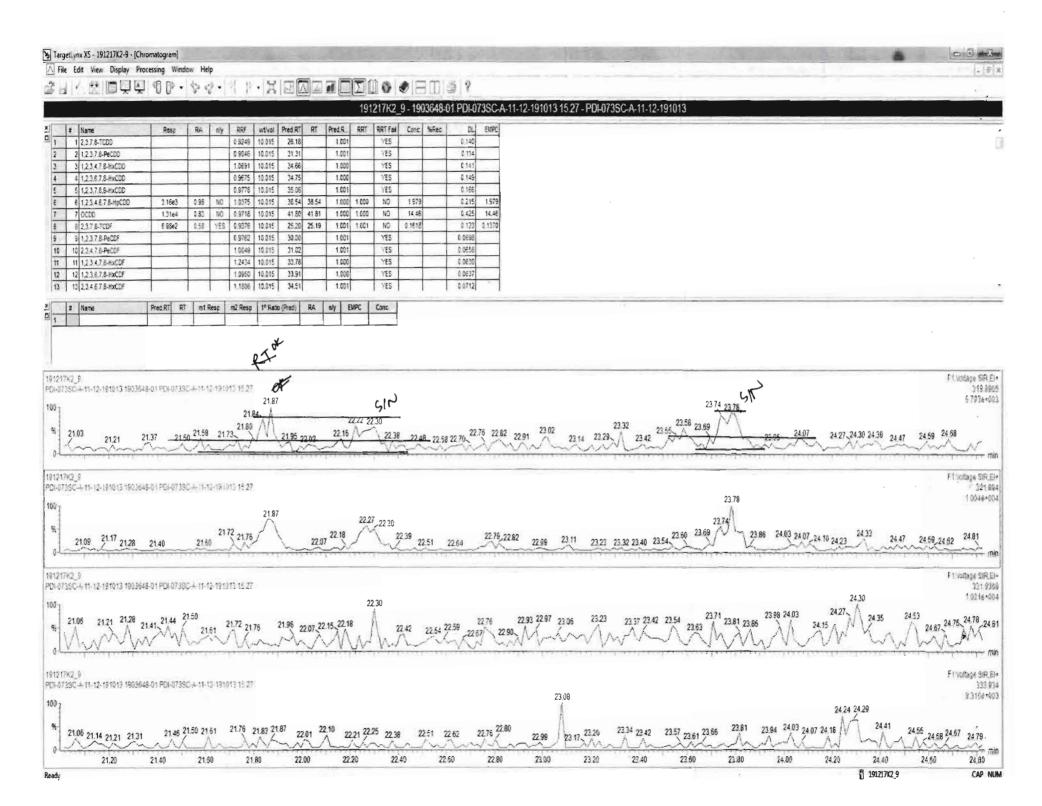
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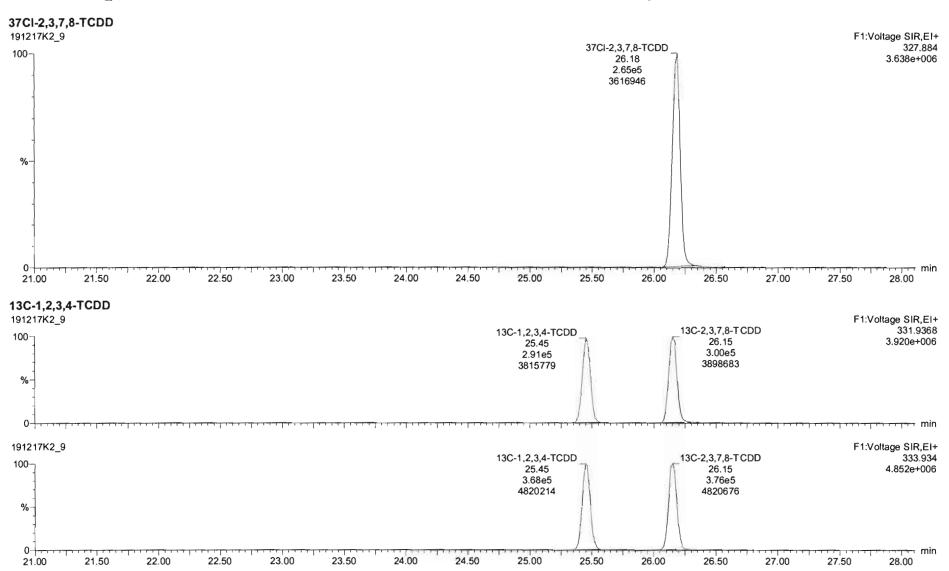




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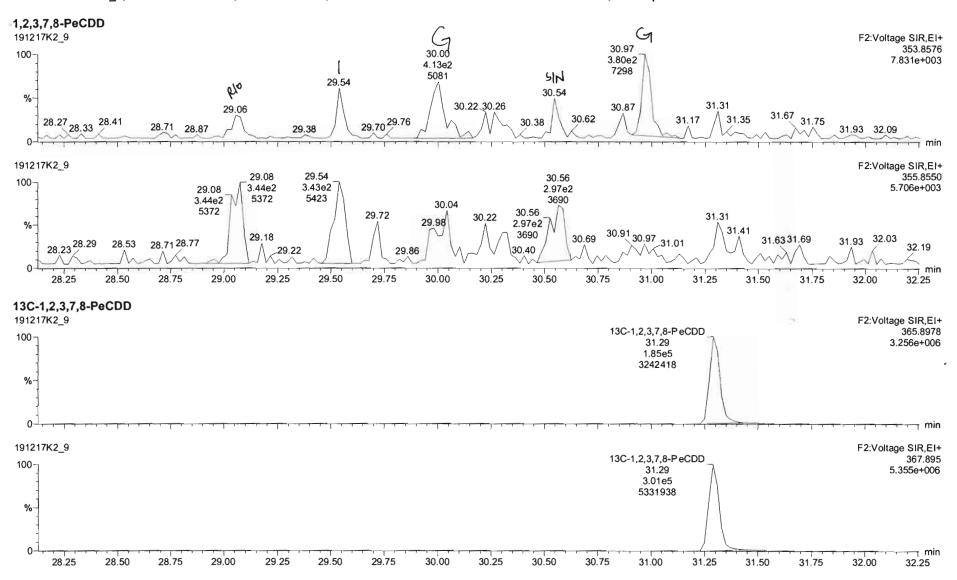


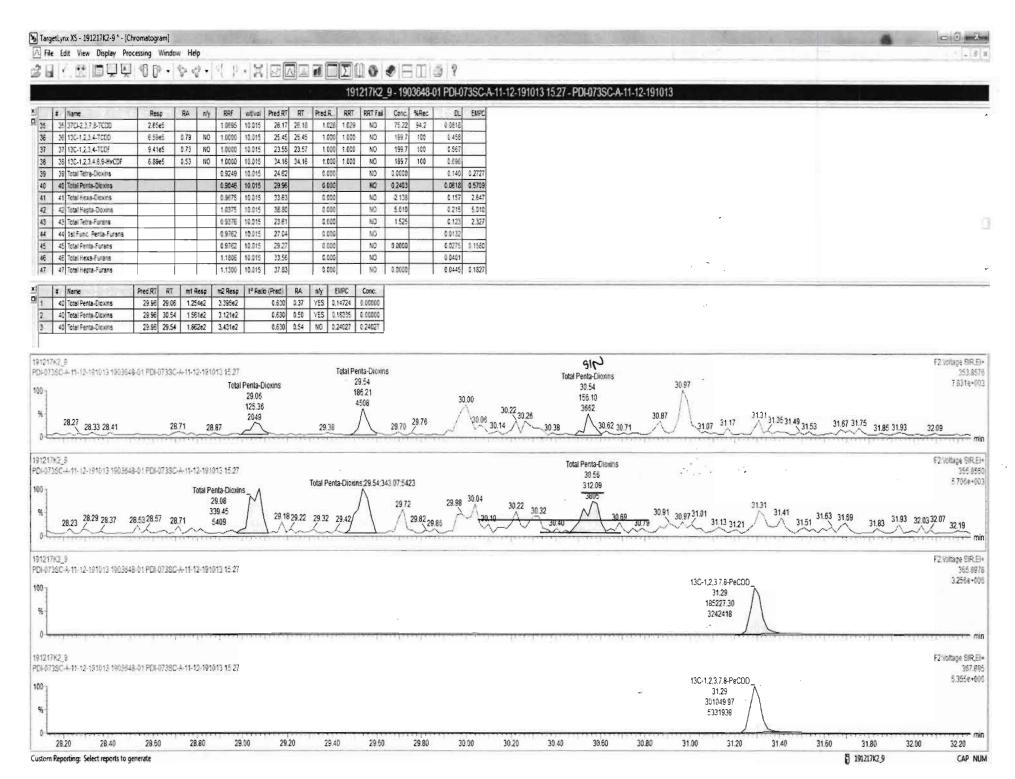
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Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

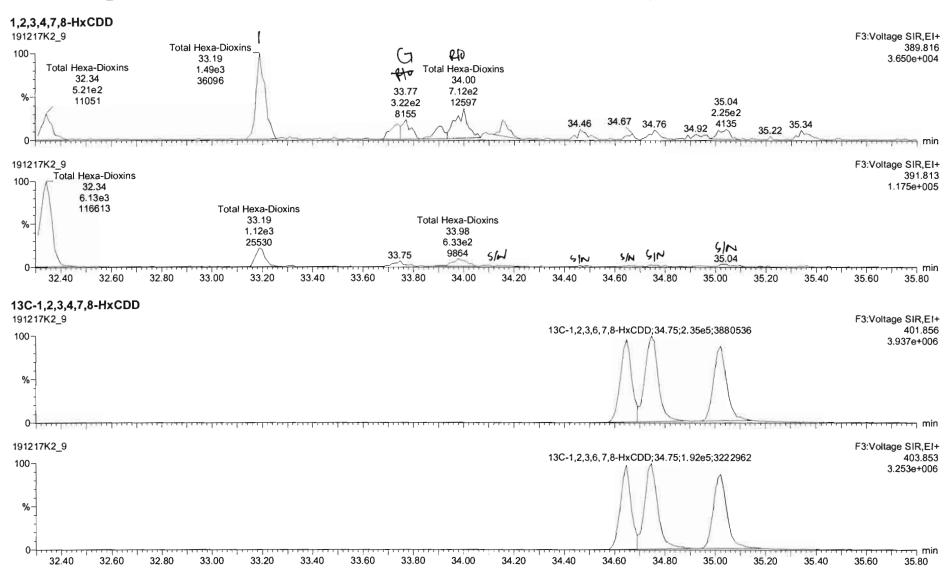


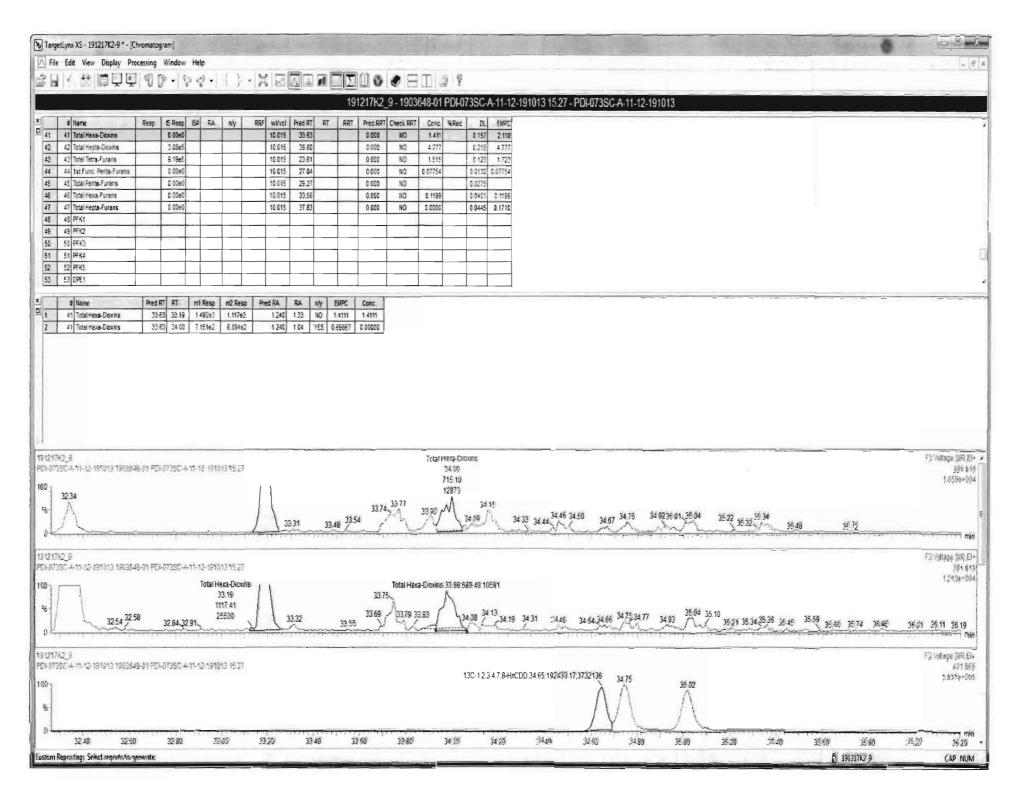


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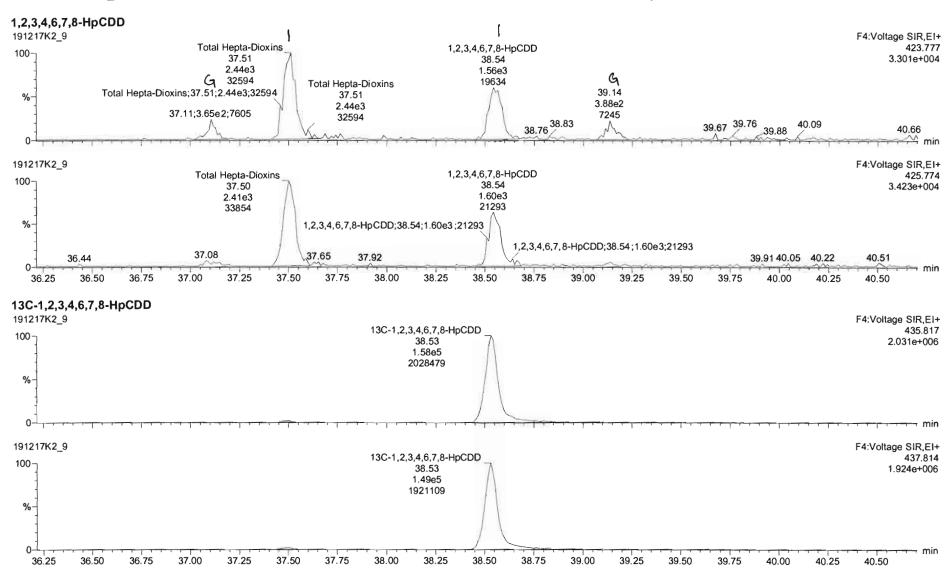
Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

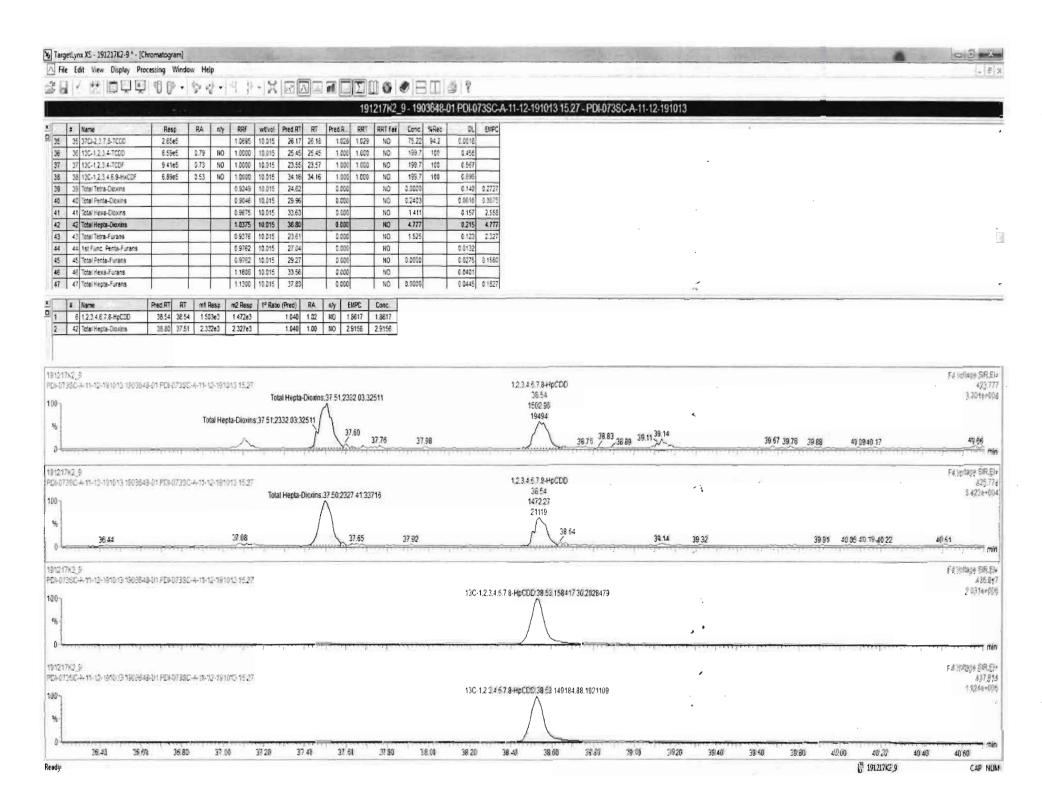




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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



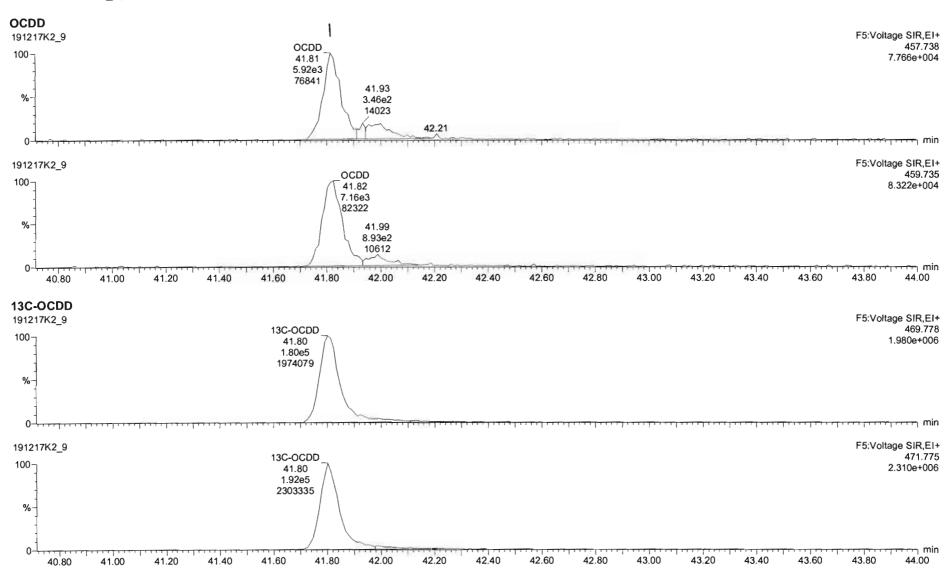


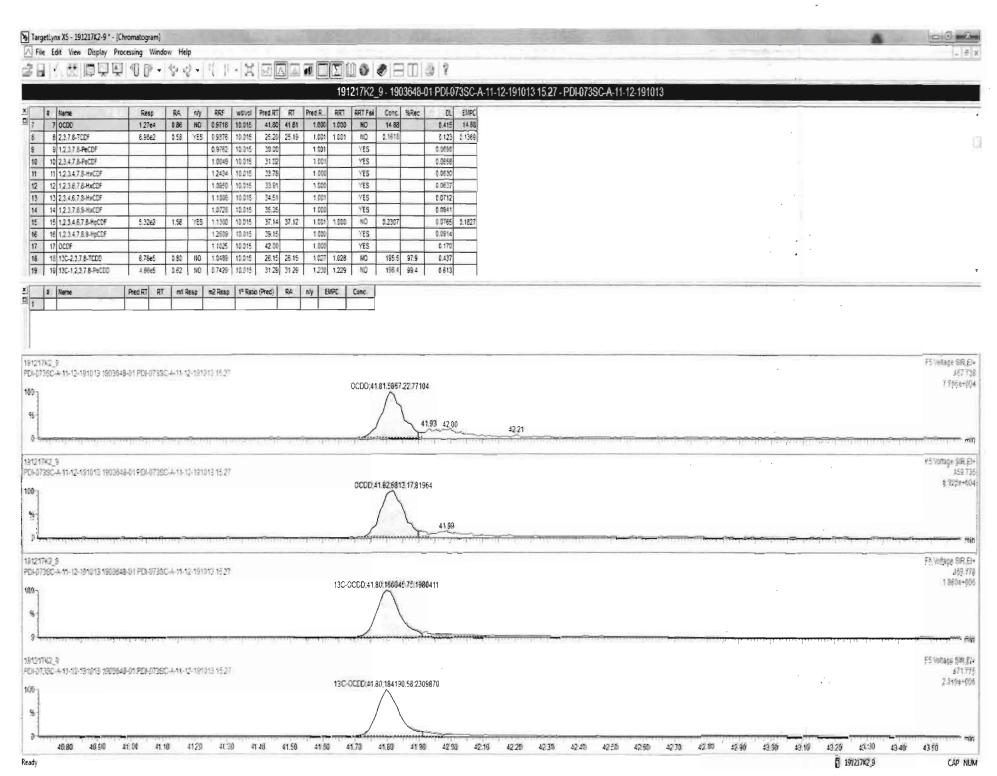
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

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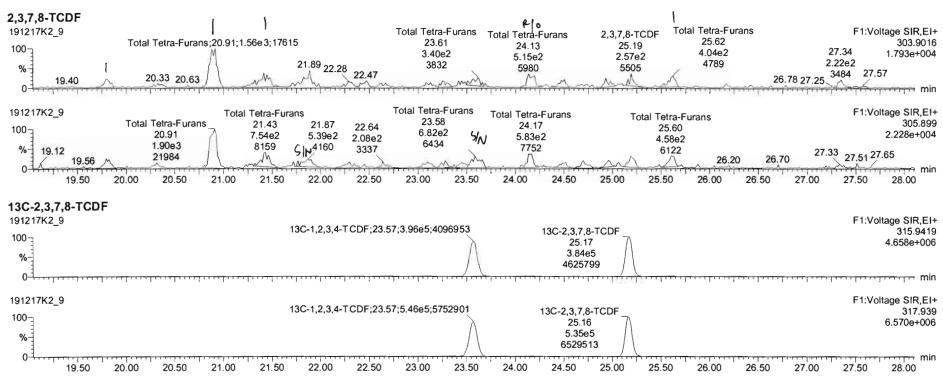


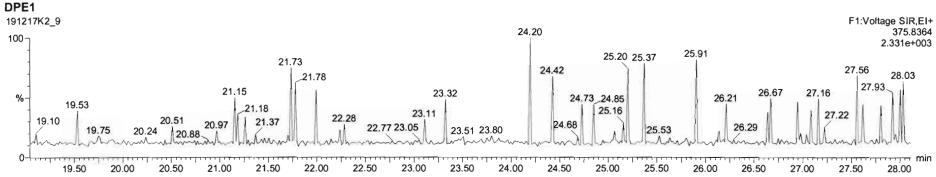


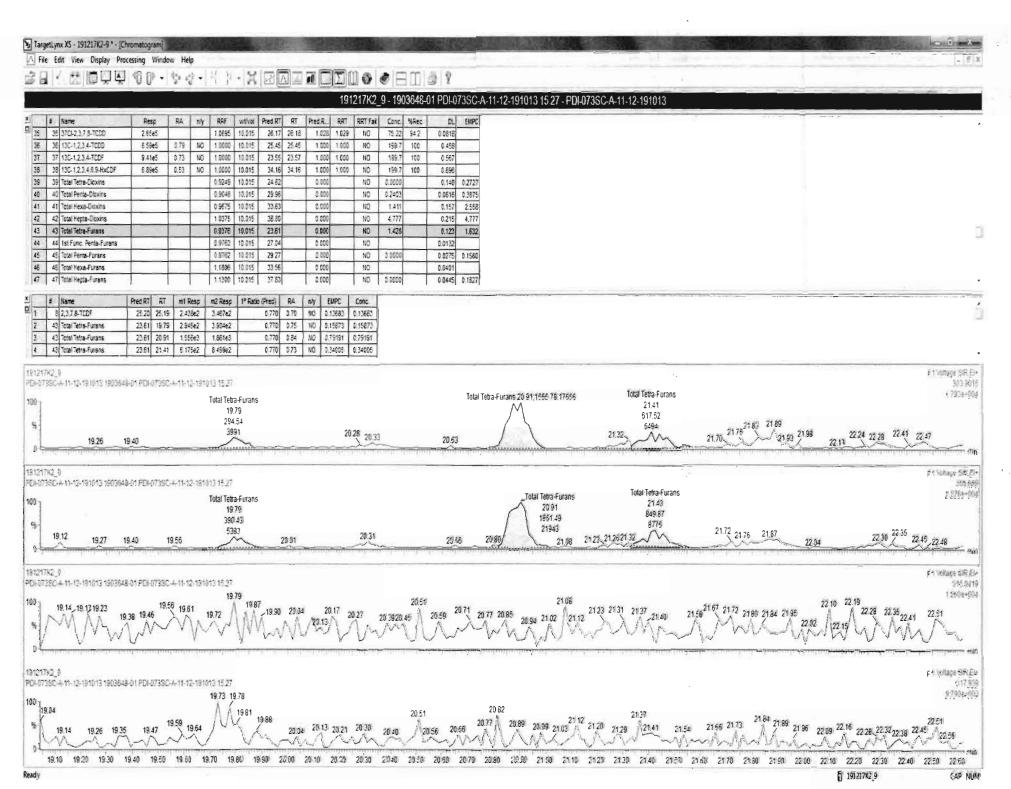
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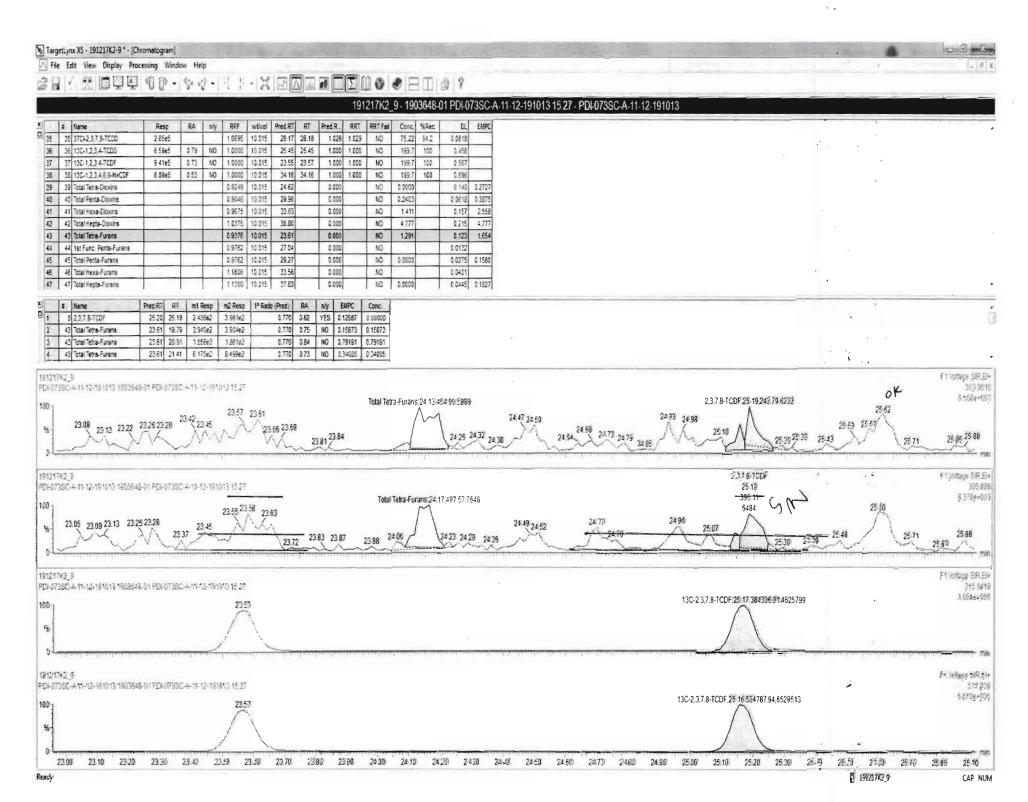
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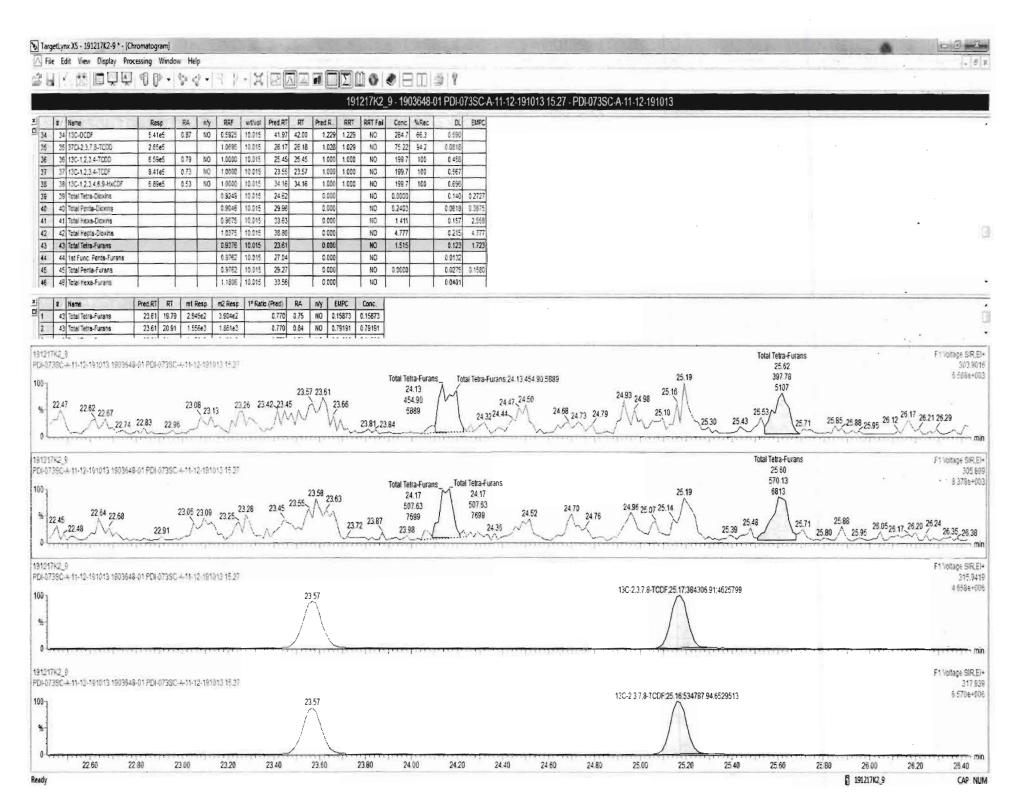
Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





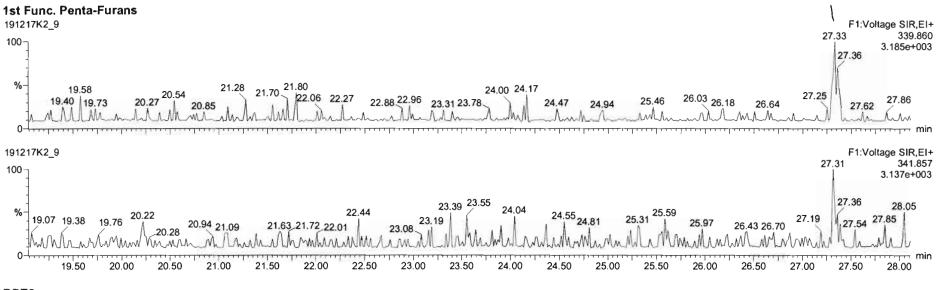


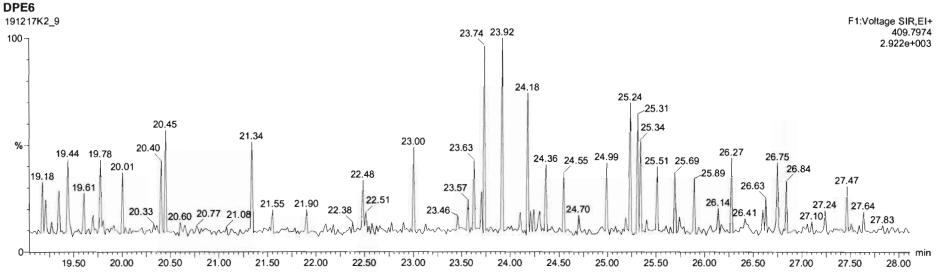


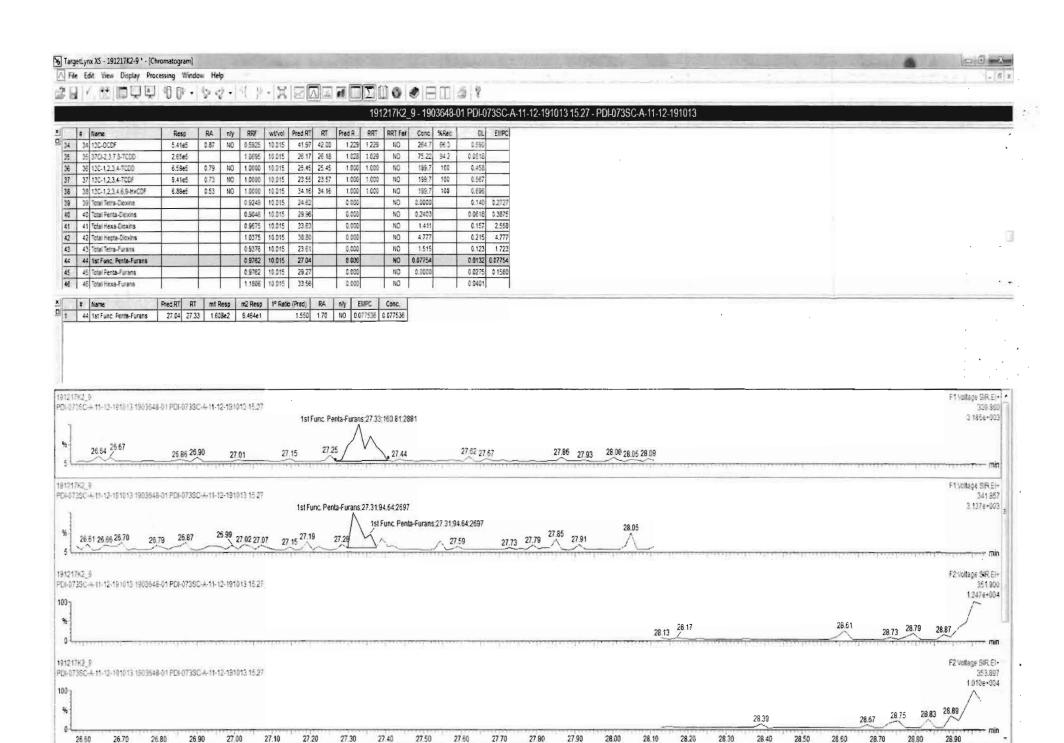


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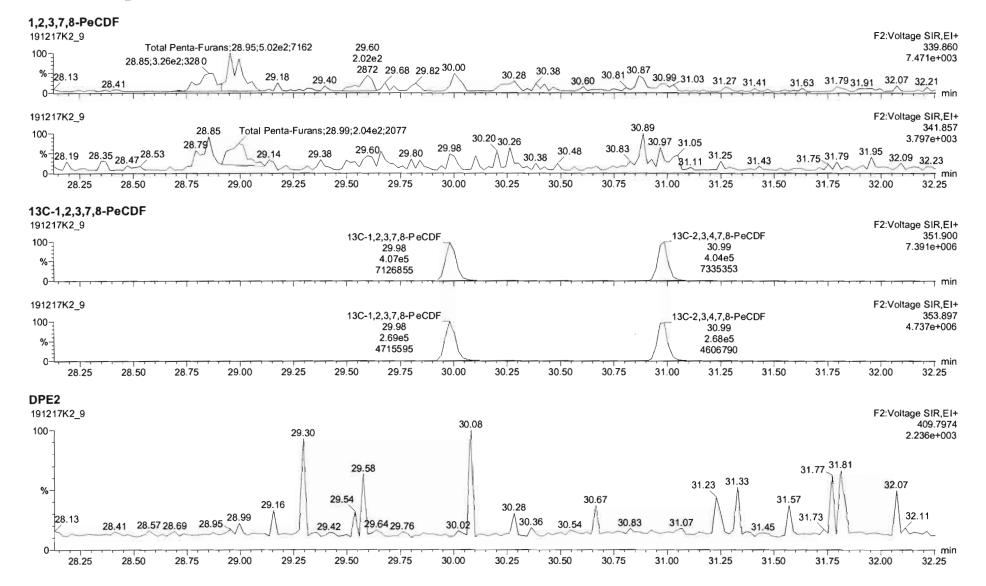
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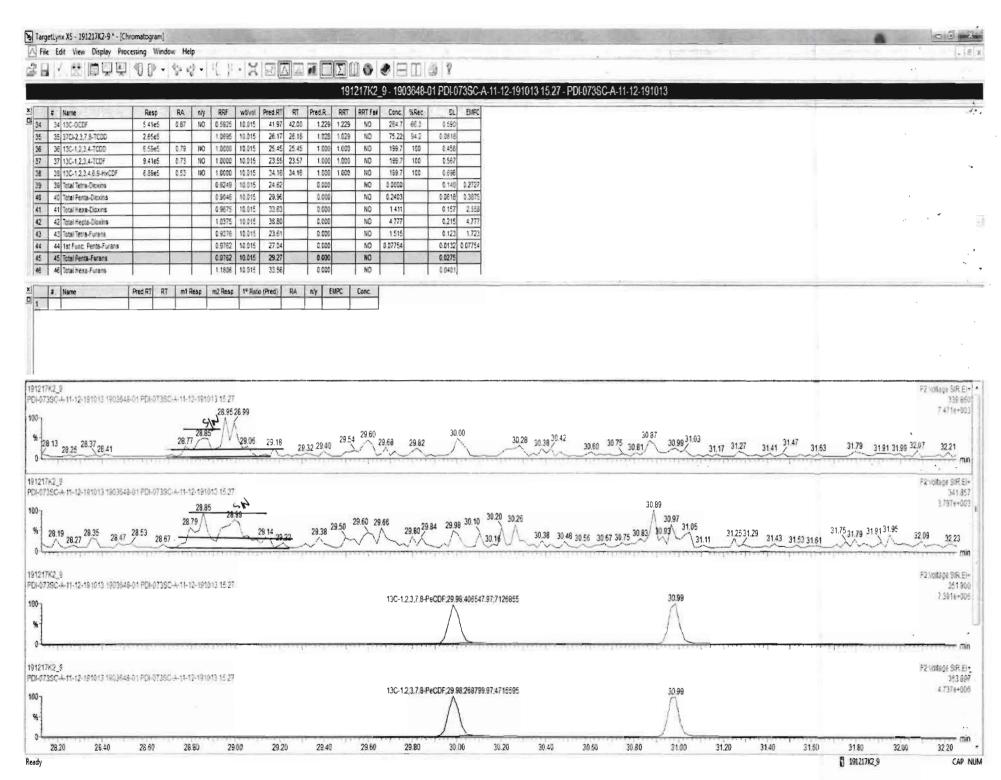
191217K2 9

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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

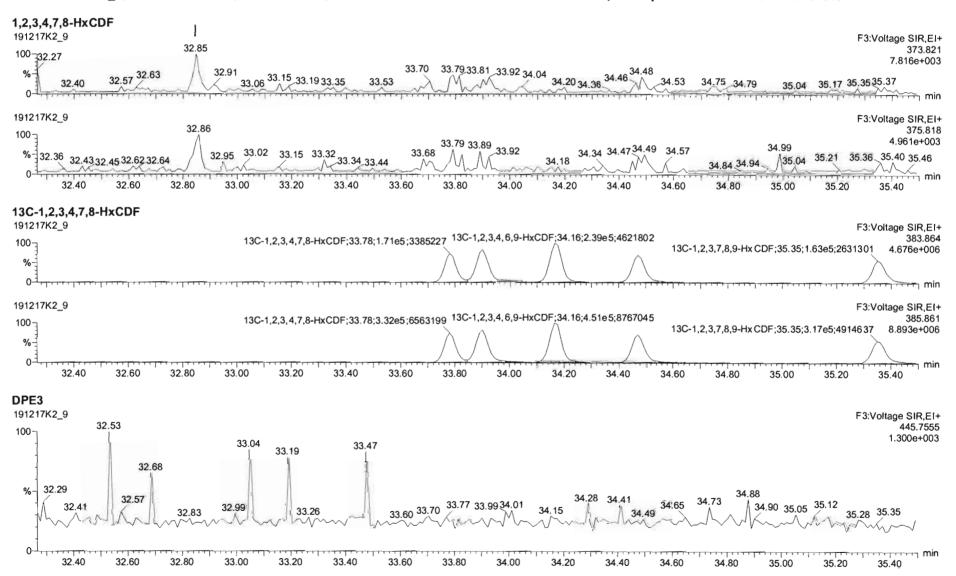


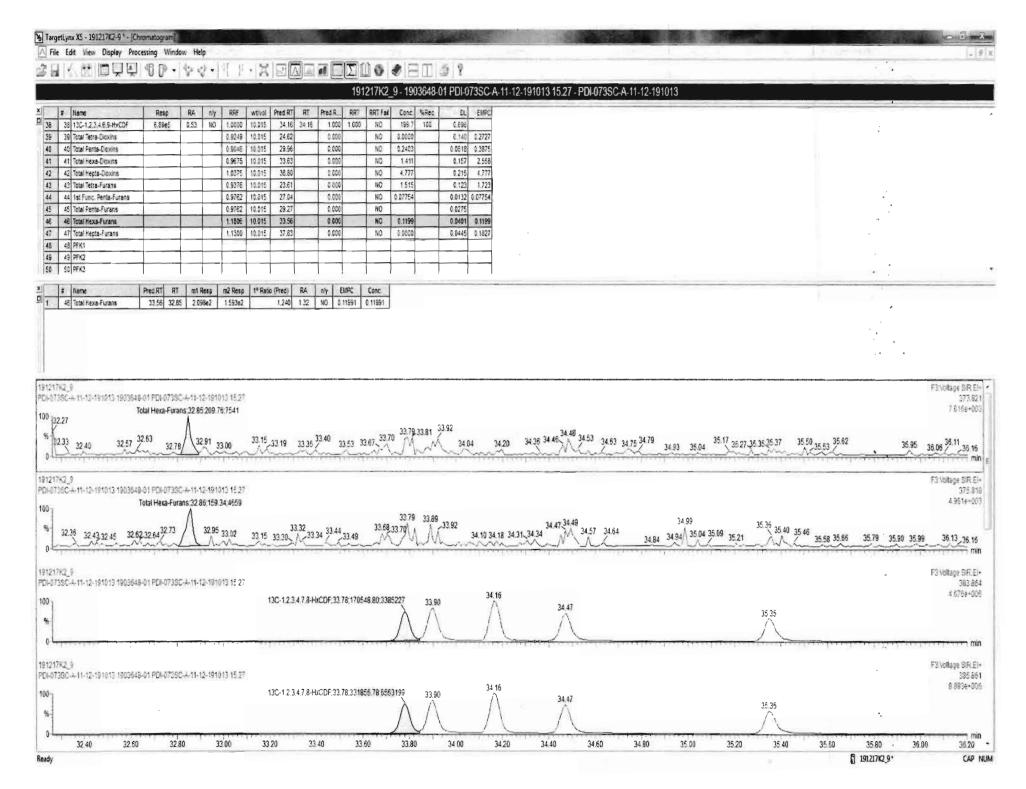


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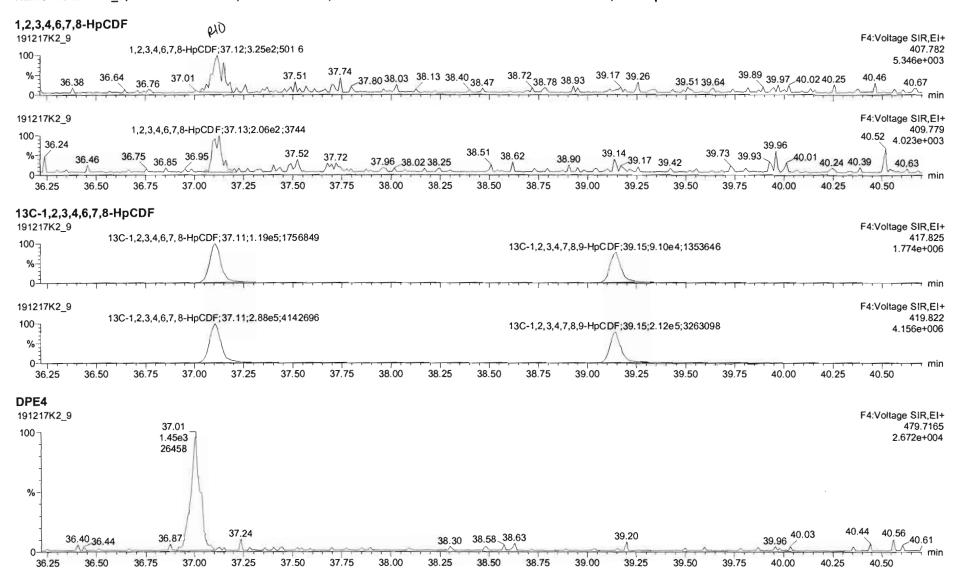
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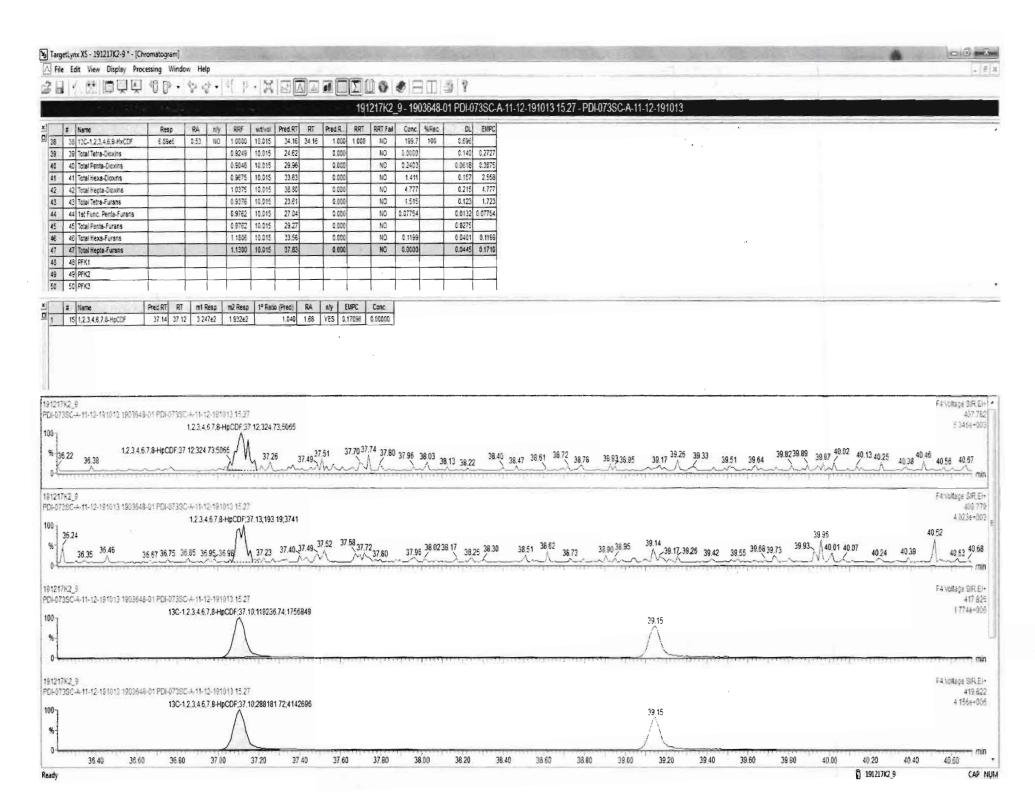




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MassLynx 4.1 SCN815

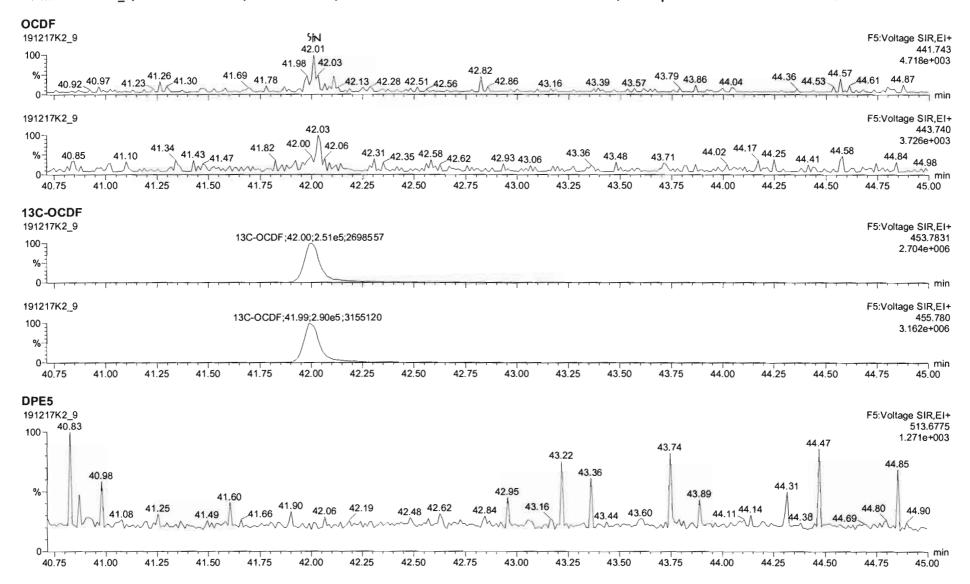
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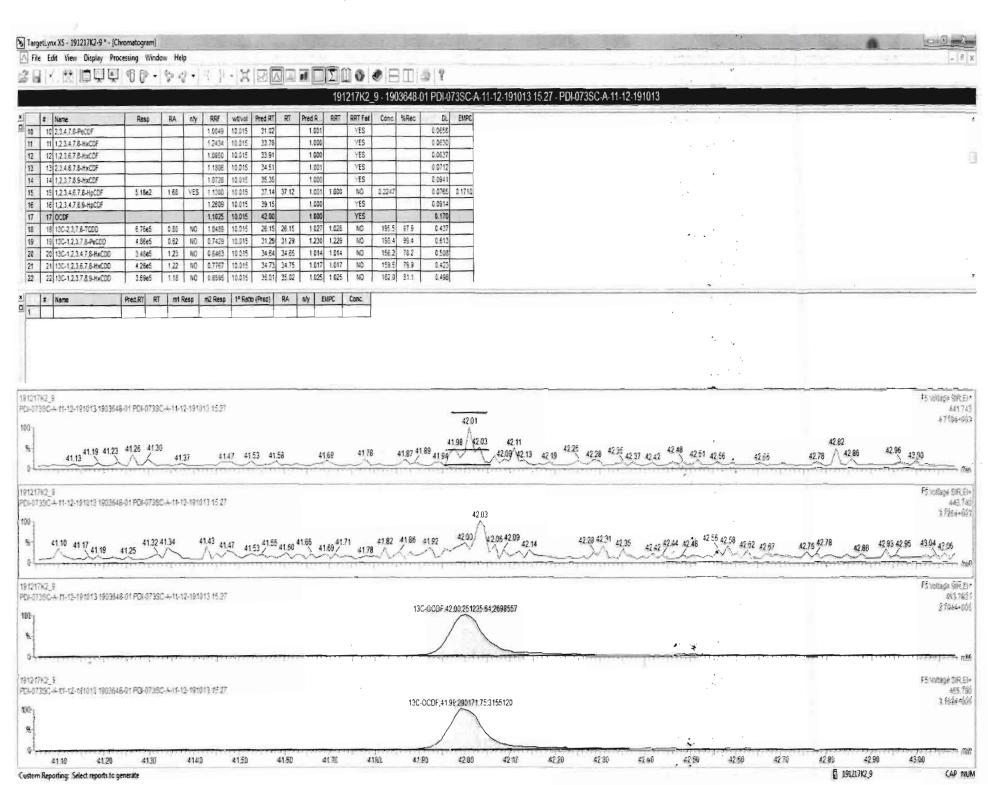
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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

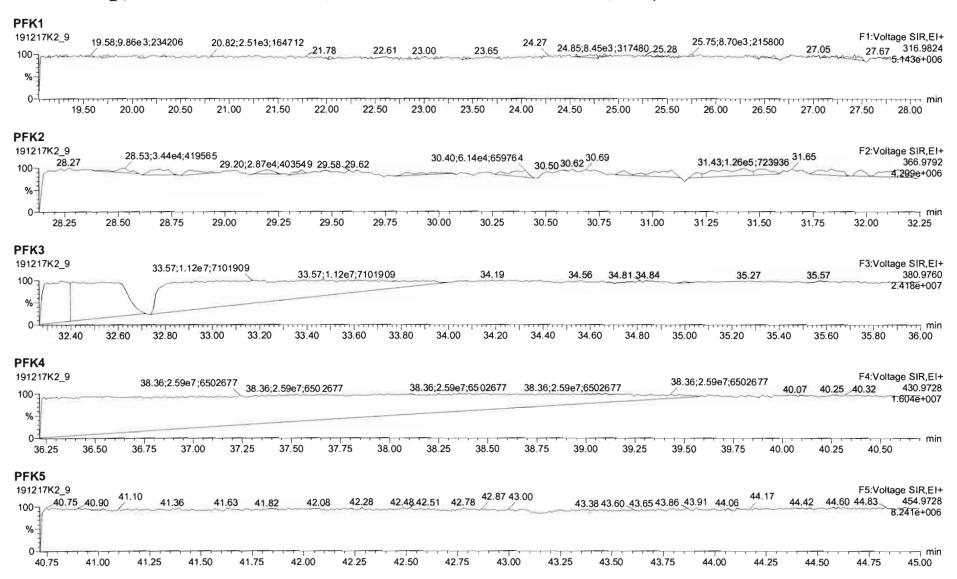




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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



MassLynx MassLynx V4.1 SCN 945

Page 1 of 2

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-8.qld

Last Altered: Printed:

Friday, December 20, 2019 11:10:10 Pacific Standard Time Friday, December 20, 2019 11:20:15 Pacific Standard Time

EL 12/20/19 C712/26/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2 8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate

107 200 2	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD				0.925	10.041	26.20		1.00		YES			0.128	
2	2 1,2,3,7,8-PeCDD				0.905	10.041	31.33		1.00		YES			0.145	1
3	3 1,2,3,4,7,8-HxCDD				1.07	10.041	34.67		1.00		YES			0.171	
4	4 1,2,3,6,7,8-HxCDD				0.967	10.041	34.76		1.00		YES			0.174	[
5	5 1,2,3,7,8,9-HxCDD				0.978	10.041	35.07		1.00		YES			0.200	
6	6 1,2,3,4,6,7,8-HpCDD	2292.732	1.148	NO	1.04	10.041	38.55	38.58	1.00	1.00	NO	1.830		0.257	1.830
7	7 OCDD	9309.317	0.949	NO	0.972	10.041	41.81	41.83	1.00	1.00	NO	11.09		0.492	11.09
8	8 2,3,7,8-TCDF				0.938	10.041	25.20		1.00		YES			0.124	
9	9 1,2,3,7,8-PeCDF				0.976	10.041	30.02		1.00		YES			0.0867	1
10	10 2,3,4,7,8-PeCDF				1.00	10.041	31.02		1.00		YES			0.0855	
11	11 1,2,3,4,7,8-HxCDF				1.24	10.041	33.79		1.00		YES			0.0657	1
12	12 1,2,3,6,7,8-HxCDF				1.10	10.041	33.92		1.00		YES		•	0.0674	
13	13 2,3,4,6,7,8-HxCDF				1.18	10.041	34.52		1.00		YES			0.0695	1
14	14 1,2,3,7,8,9-HxCDF				1.07	10.041	35.38		1.00		YES			0.103	
15	15 1,2,3,4,6,7,8-HpCDF	384.214	1.145	NO	1.13	10.041	37.15	37.11	1.00	1.00	NO	0.1912		0.0685	0.1912
16	16 1,2,3,4,7,8,9-HpCDF				1.26	10.041	39.16		1.00		YES			0.123	1
17	17 OCDF				1.10	10.041	42.01		1.00		YES			0.183	1
18	18 13C-2,3,7,8-TCDD	574829.750	0.793	NO	1.05	10.041	26.16	26.17	1.03	1.03	NO	190.7	95.7	0.505	1
19	19 13C-1,2,3,7,8-PeCDD	404217.266	0.615	NO	0.743	10.041	31.31	31.31	1.23	1.23	NO	189.3	95.0	0.403	
20	20 13C-1,2,3,4,7,8-HxCDD	301265.594	1.214	NO	0.646	10.041	34.66	34.66	1.01	1.01	NO	161.0	80.8	0.611	1
21	21 13C-1,2,3,6,7,8-HxCDD	350737.156	1.220	NO	0.777	10.041	34.76	34.76	1.02	1.02	NO	156.0	78.3	0.509	1
22	22 13C-1,2,3,7,8,9-HxCDD	326164.547	1.225	NO	0.659	10.041	35.03	35.03	1.02	1.02	NO	170.8	85.8	0.599	
23	23 13C-1,2,3,4,6,7,8-HpCDD	240569.164	1.094	NO	0.534	10.041	38.53	38.54	1.13	1.13	NO	155.6	78.1	0.594	- 1
24	24 13C-OCDD	344078.281	0.883	NO	0.470	10.041	41.81	41.81	1.22	1.22	NO	252.7	63.4	0.819	1
25	25 13C-2,3,7,8-TCDF	786967.031	0.718	NO	0.977	10.041	25.17	25.17	0.99	0.99	NO	191.2	96.0	0.604	1
26	26 13C-1,2,3,7,8-PeCDF	595775.735	1.506	NO	0.778	10.041	30.00	30.00	1.18	1.18	NO	181.9	91.3	0.748	J
27	27 13C-2,3,4,7,8-PeCDF	549730.157	1.477	NO	0.750	10.041	30.99	30.99	1.22	1.22	NO	174.1	87.4	0.776	1
28	28 13C-1,2,3,4.7,8-HxCDF	420290.703	0.517	NO	0.845	10.041	33.80	33.79	0.99	0.99	NO	171.8	86.2	0.781	1
29	29 13C-1,2,3,6,7,8-HxCDF	499489.594	0.514	NO	1.03	10.041	33.91	33.91	0.99	0.99	NO	168.0	84.4	0.643	1
30	30 13C-2,3,4,6,7,8-HxCDF	455399.047	0.523	_NO_	0.893	10.041	34.49	34.48	1.01	1.01	NO	176.2	88.5	0.739	

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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-8.qld

Last Altered: Printed: Friday, December 20, 2019 11:10:10 Pacific Standard Time Friday, December 20, 2019 11:20:15 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate

U.S. D. S.	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
31	31 13C-1,2,3,7,8,9-HxCDF	401140.391	0.519	NO	0.734	10.041	35.39	35.38	1.04	1.03	NO	188.7	94.7	0.899	
32	32 13C-1,2,3,4,6,7,8-HpCDF	354170.226	0.416	NO	0.754	10.041	37.11	37.12	1.09	1.09	NO	162.2	81.4	0.641	}
33	33 13C-1,2,3,4,7,8,9-HpCDF	243844.742	0.451	NO	0.539	10.041	39.13	39.16	1.14	1.15	NO	156.3	78.5	0.897	
34	34 13C-OCDF	485762.532	0.914	NO	0.593	10.041	42.00	42.01	1.23	1.23	NO	283.2	71.1	0.780	
35	35 37CI-2,3,7,8-TCDD	195826.422			1.07	10.041	26.18	26.18	1.03	1.03	NO	63.71	80.0	0.110	
36	36 13C-1,2,3,4-TCDD	572446.969	0.769	NO	1.00	10.041	25.45	25.47	1.00	1.00	NO	199.2	100	0.530	
37	37 13C-1,2,3,4-TCDF	838675.281	0.739	NO	1.00	10.041	23.55	23.58	1.00	1.00	NO	199.2	100	0.591	
38	38 13C-1,2,3,4,6,9-HxCDF	576633.765	0.536	NO	1.00	10.041	34.16	34.19	1.00	1.00	NO	199.2	100	0.660	
39	39 Total Tetra-Dioxins				0.925	10.041	24.62		0.00		NO	0.3621		. 0.128	0.9604
40	40 Total Penta-Dioxins				0.905	10.041	29.96		0.00		NO	0.0000		0.0683	0.4314
41	41 Total Hexa-Dioxins				0.967	10.041	33.63		0.00		NO	1.579	* *	0.188	2.591
42	42 Total Hepta-Dioxins				1.04	10.041	38.80		0.00		NO	1.830		0.257	4.478
43	43 Total Tetra-Furans				0.938	10.041	23.61		0.00		NO	1.293		0.124	1.293
44	44 1st Func. Penta-Furans				0.976	10.041	27.04		0.00		NO			0.0159	
45	45 Total Penta-Furans				0.976	10.041	29.27		0.00		NO			0.0466	
46	46 Total Hexa-Furans				1.18	10.041	33.56		0.00		NO	0.1155		0.0378	0.1155
47	47 Total Hepta-Furans				1.13	10.041	37.83		0.00		NO	0.1912		0.0799	0.1912

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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-8.qld

Last Altered:

Friday, December 20, 2019 11:10:10 Pacific Standard Time

Printed:

Friday, December 20, 2019 11:20:40 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2 8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate

Tetra-Dioxins

C Brail	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	39 Total Tetra-Dioxins	9.67e2	5.75e5	0.728	NO	24.62	23.80	0.3621	0.3621
2	39 Total Tetra-Dioxins	0.00e0	5.75e5	1.125	YES	24.62	22.28	0.0000	0.2913
3	39 Total Tetra-Dioxins	0.00e0	5.75e5	0.955	YES	24.62	21.89	0.0000	0.3070

Penta-Dioxins

200	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	40 Total Penta-Dioxins	0.00e0	4.04e5	0.559	NO	29.96	29.03	0.0000	0.2288
2	40 Total Penta-Dioxins	0.00e0	4.04e5	0.494	YES	29.96	29.56	0.0000	0.2025

Hexa-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	41 Total Hexa-Dioxins	0.00e0	0.00e0	1.024	YES	33.63	34.00	0.0000	0.5984
2	41 Total Hexa-Dioxins	0.00e0	0.00e0	1.841	YES	33.63	33.75	0.0000	0.4141
3	41 Total Hexa-Dioxins	2.50e3	0.00e0	1.314	NO	33.63	33.21	1.579	1.579

Hepta-Dioxins

PARTY CARROLL	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	2.29e3	2.41e5	1.148	NO	38.55	38.58	1.830	1.830
2	42 Total Hepta-Dioxins	0.00e0	2.41e5	1.208	YES	38.80	37.52	0.0000	2.648

Tetra-Furans

132016	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
A MATERIAL	43 Total Tetra-Furans	8.38e2	7.87e5	0.797	NO	23.61	25.62	0.2263	0.2263
2	43 Total Tetra-Furans	3.21e3	7.87e5	0.791	NO	23.61	20.91	0.8672	0.8672
3	43 Total Tetra-Furans	7.40e2	7.87e5	0.839	NO	23.61	19.81	0.1997	0.1997

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-8.qld

Last Altered: Printed:

Friday, December 20, 2019 11:10:10 Pacific Standard Time Friday, December 20, 2019 11:20:40 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate

Penta-Furans function 1

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Penta-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 1700 170									

Hexa-Furans

The state of	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	46 Total Hexa-Furans	3.04e2	0.00e0	1.149	NO	33.56	32.85	0.1155	0.1155

Hepta-Furans

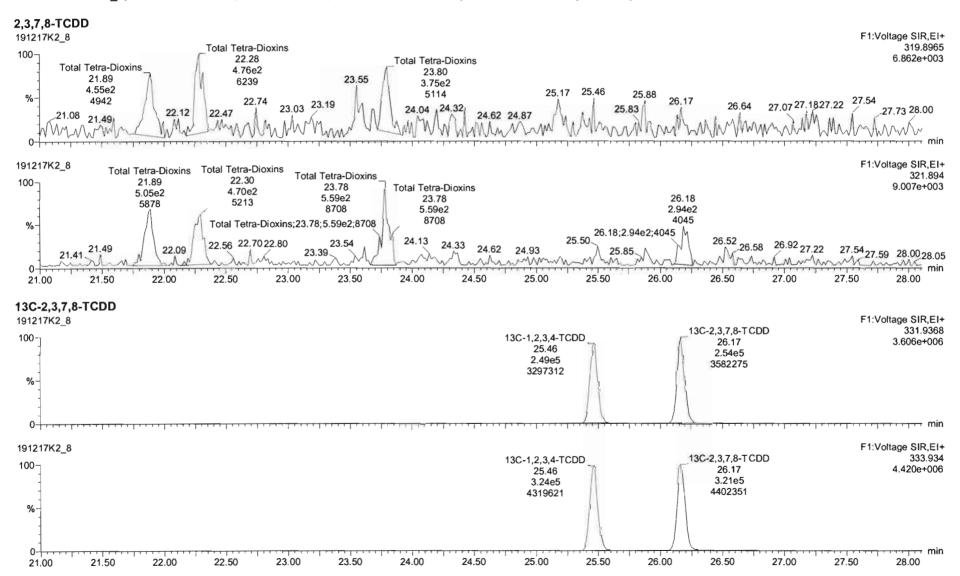
ELS/ATER	# Name	Area	1S Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
114 - 225	15 1,2,3,4,6,7,8-HpCDF	3.84e2	3.54e5	1.145	NO	37.15	37.11	0.1912	0.1912

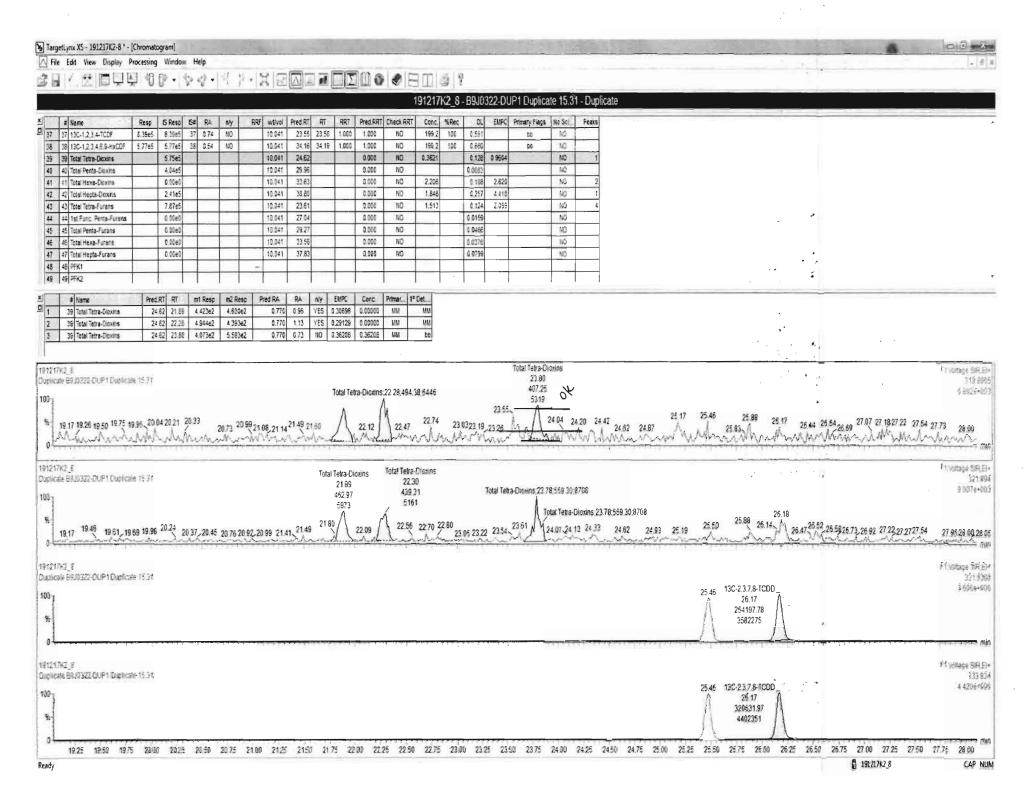
Work Order 1903648

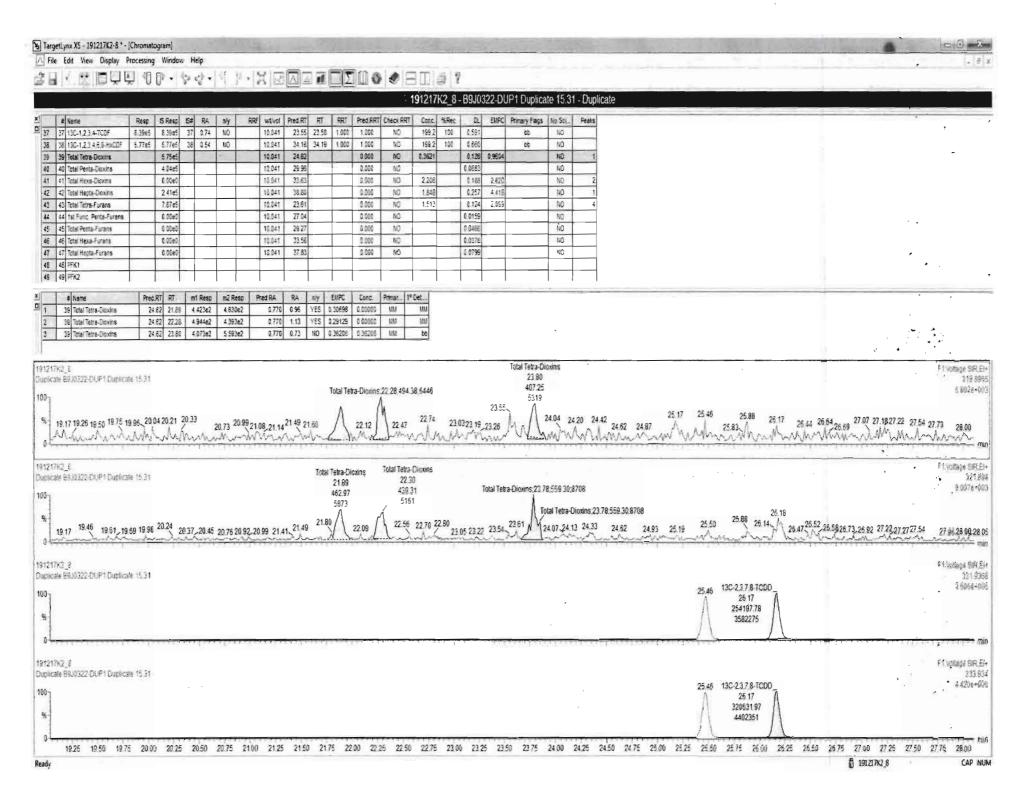
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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate





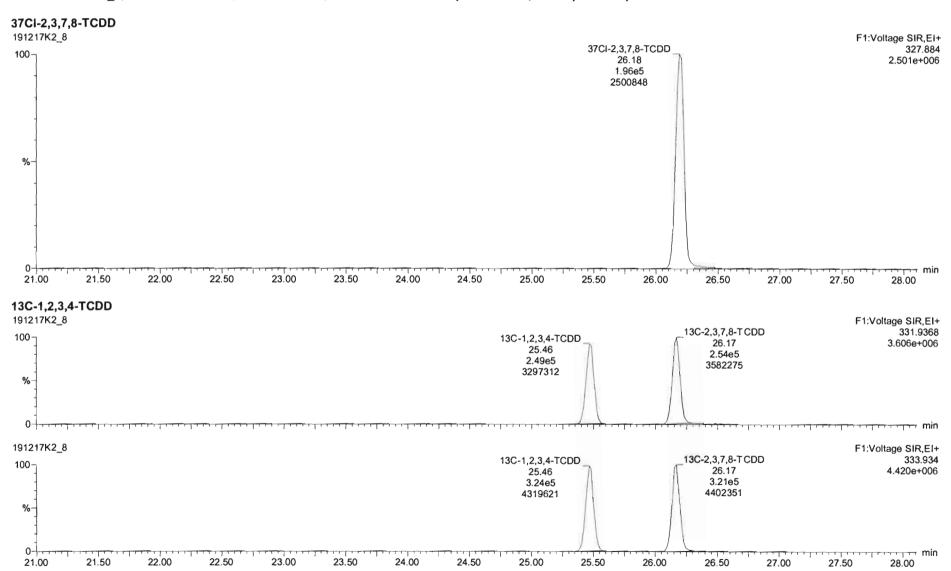


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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate



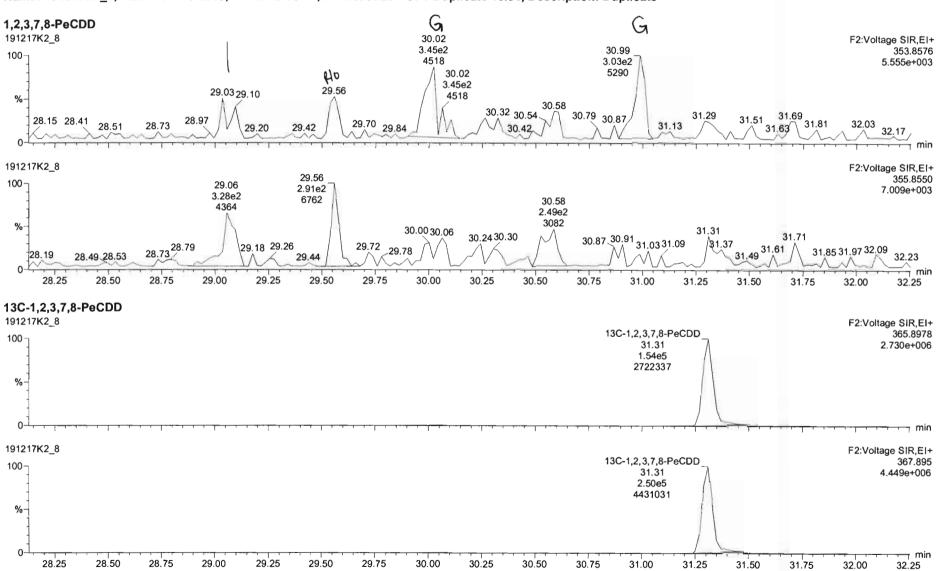
Dataset:

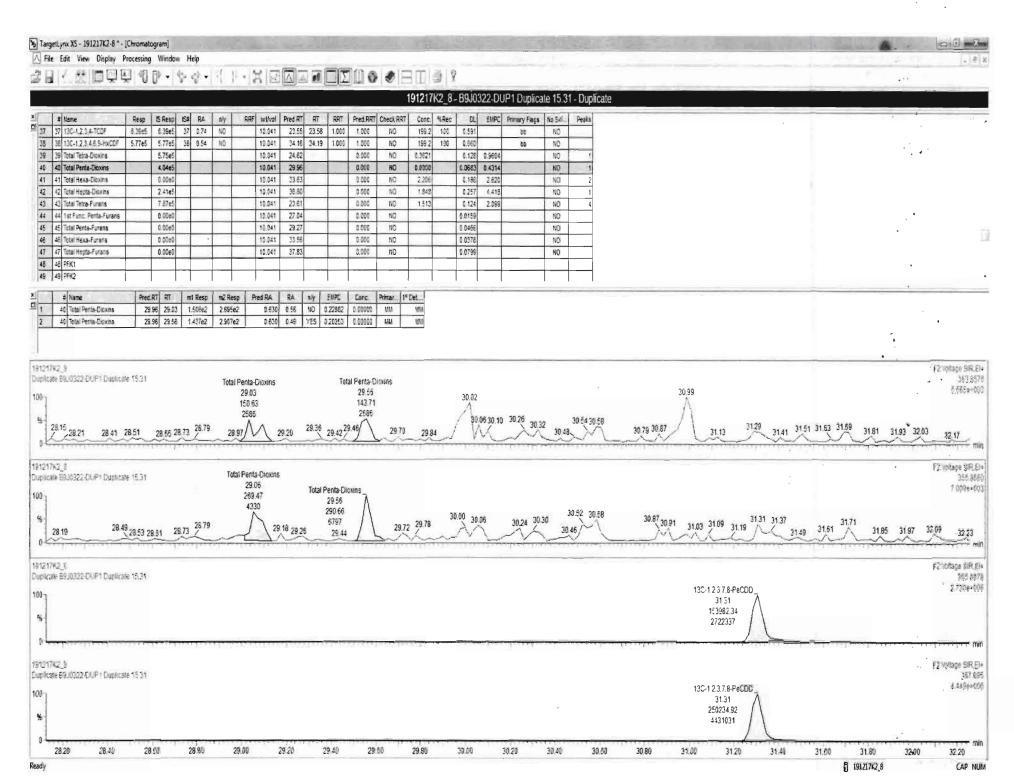
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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate





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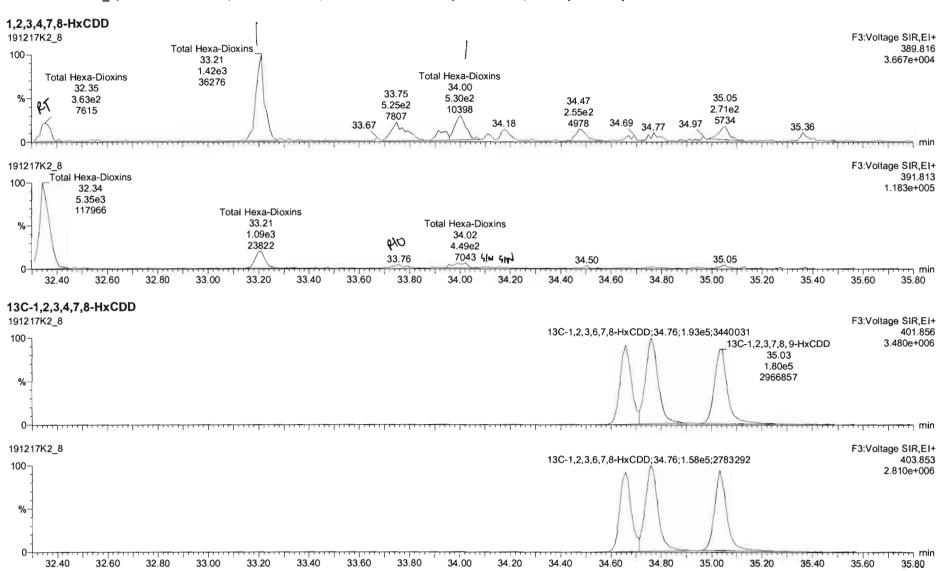
Dataset:

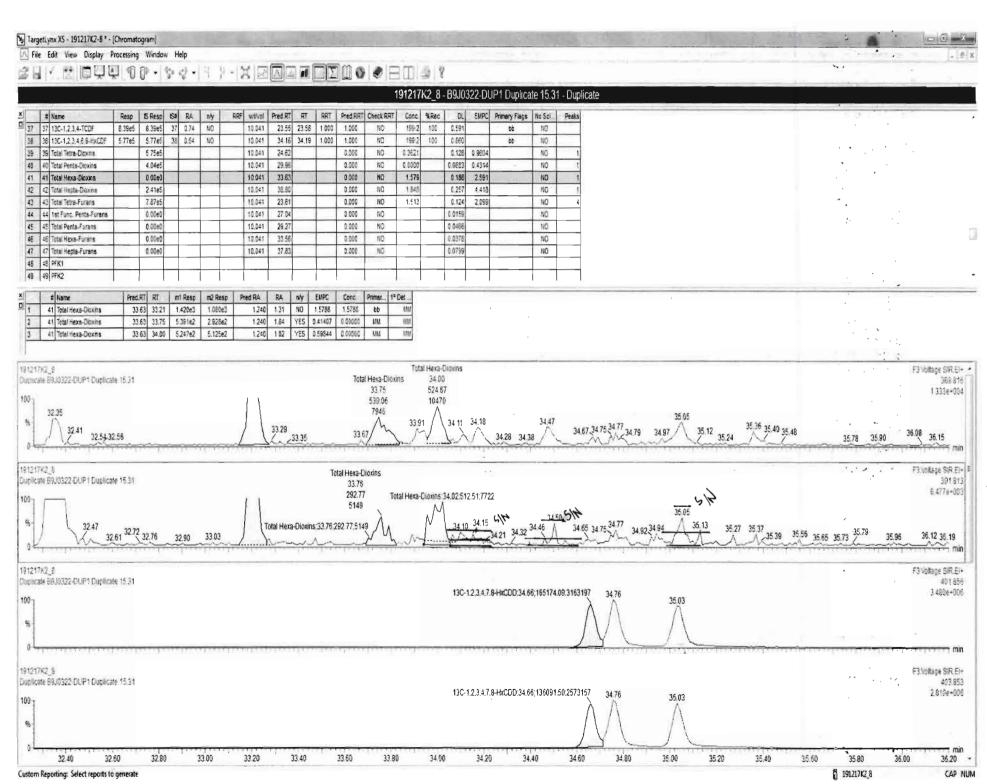
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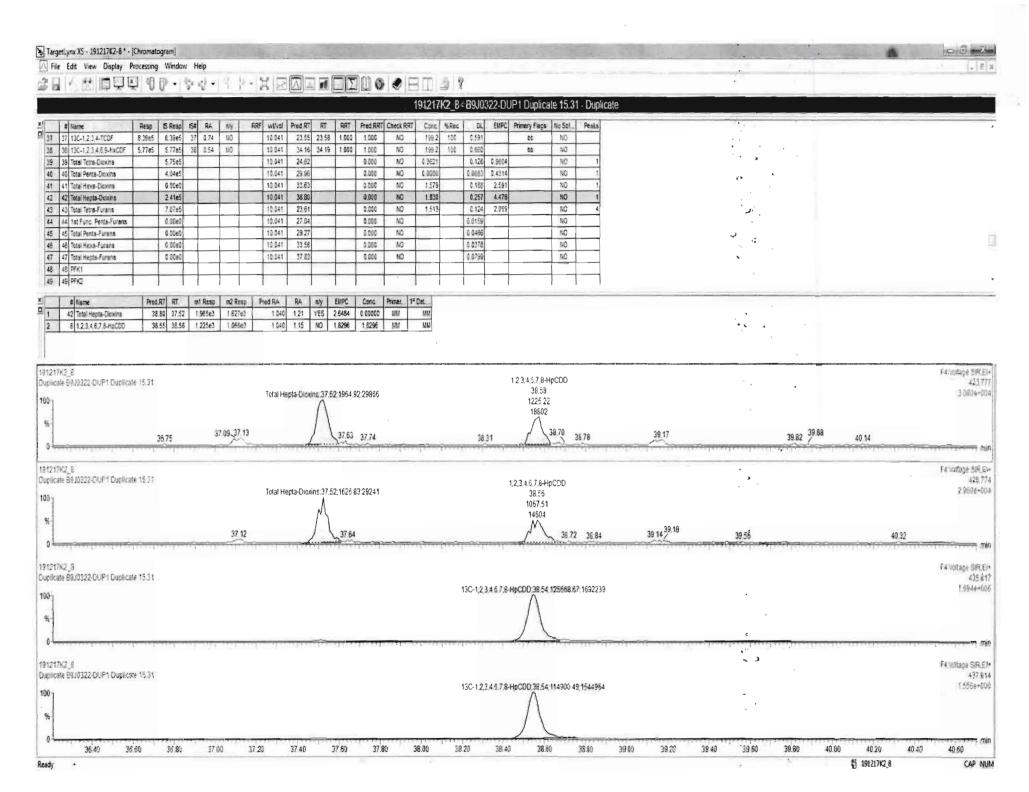
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2 8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate







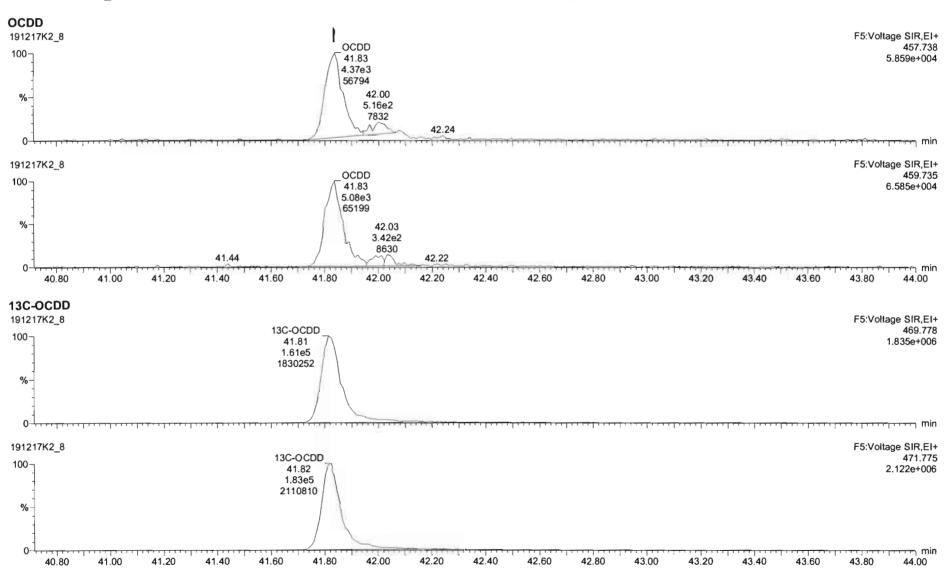
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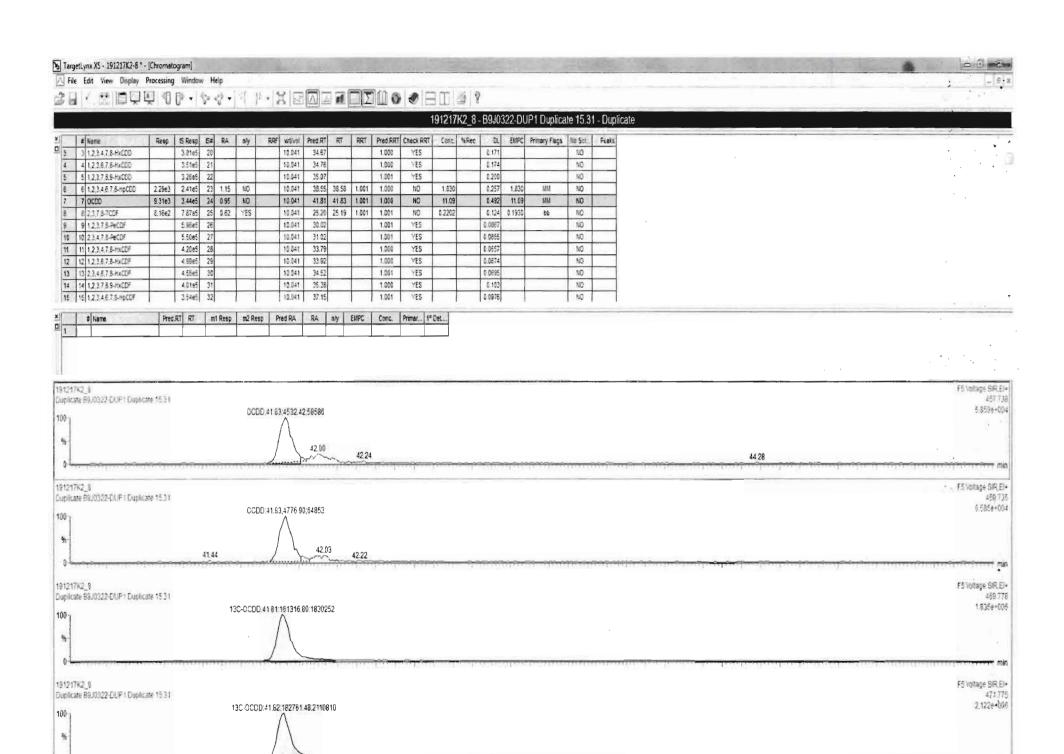
Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time

Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate





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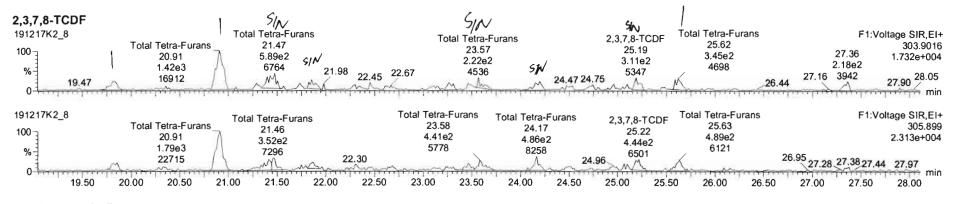
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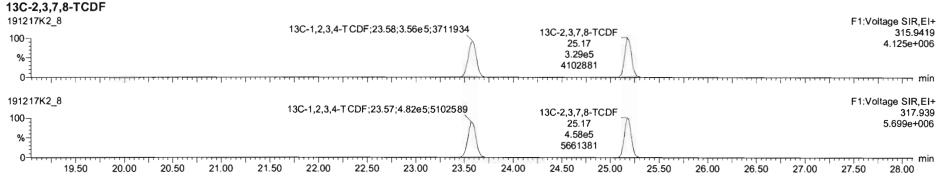
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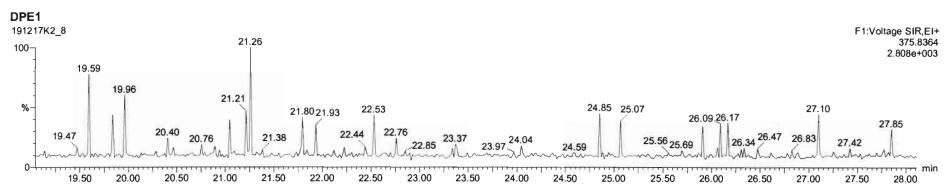
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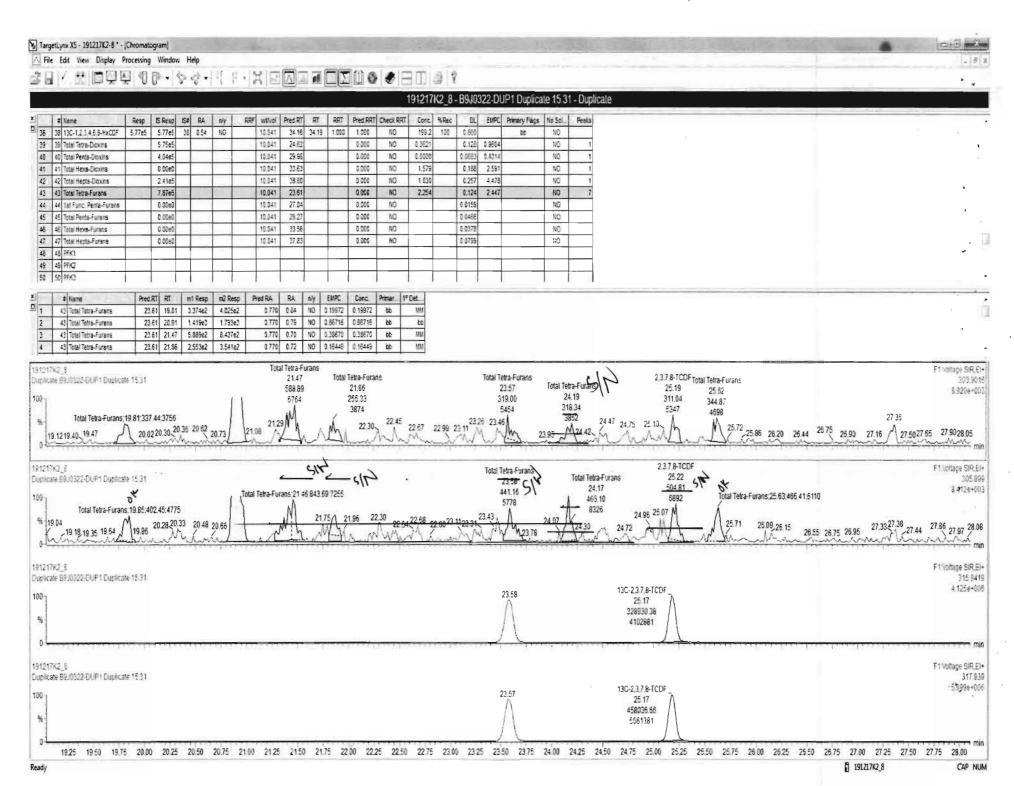
Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

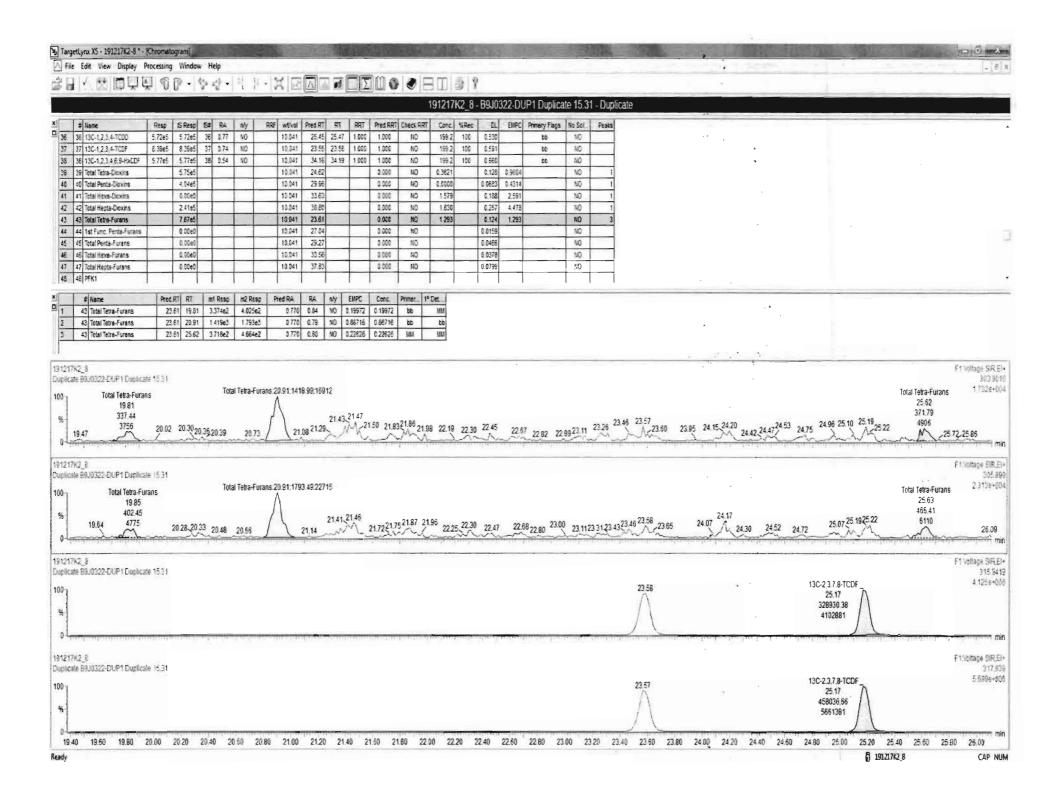
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Work Order 1903648 Page 114 of 513

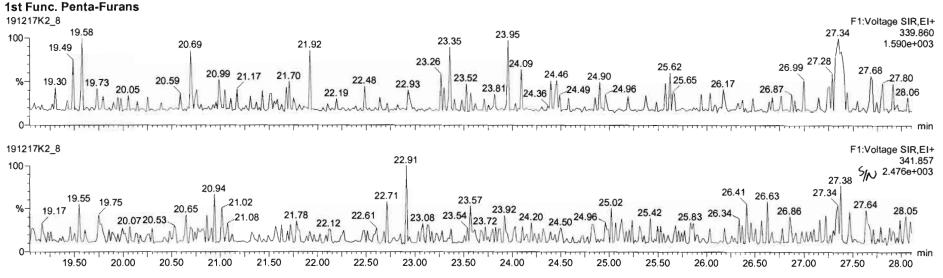
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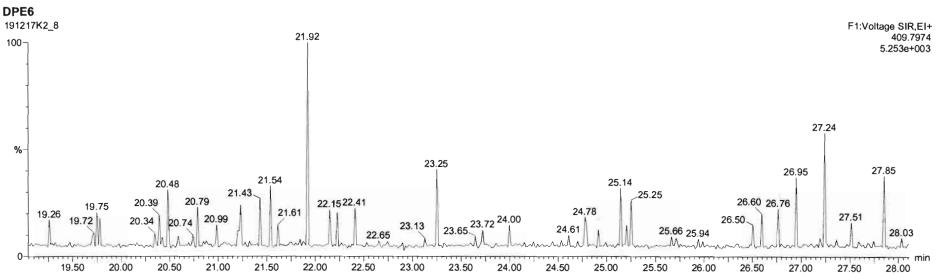
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2 8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate





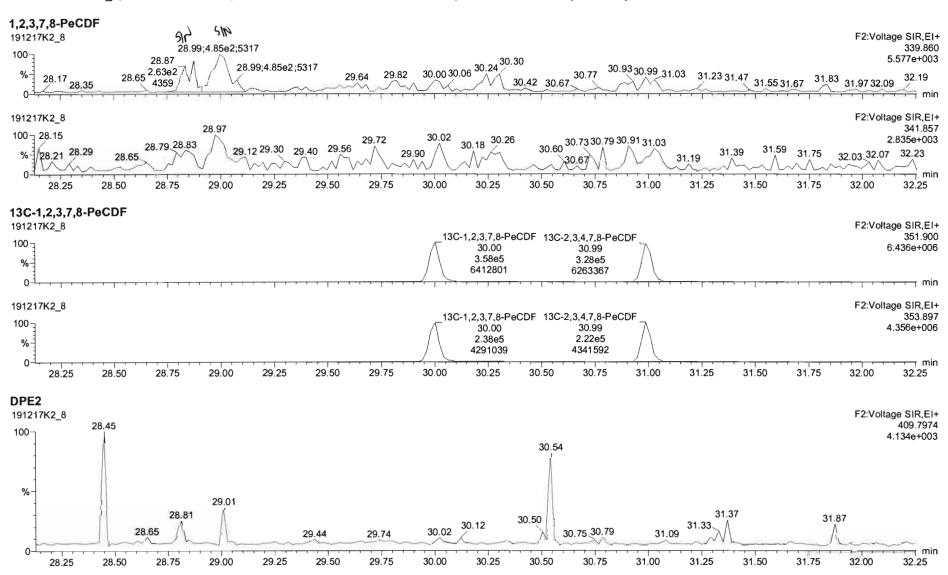


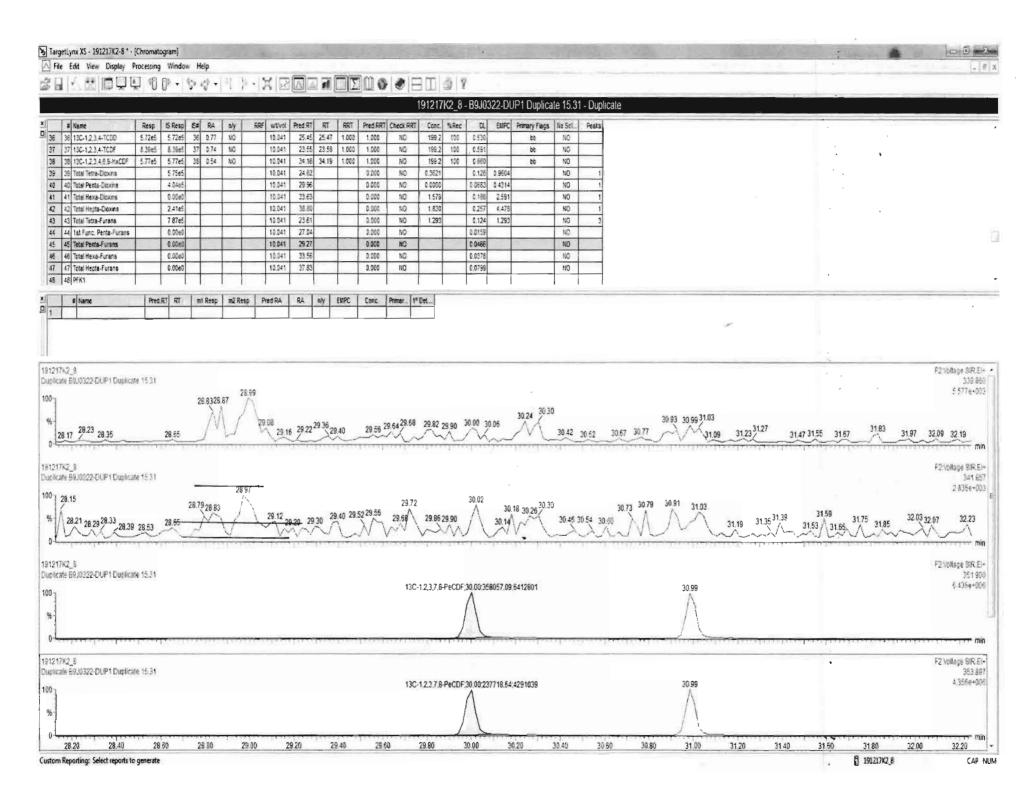
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2 8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate





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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

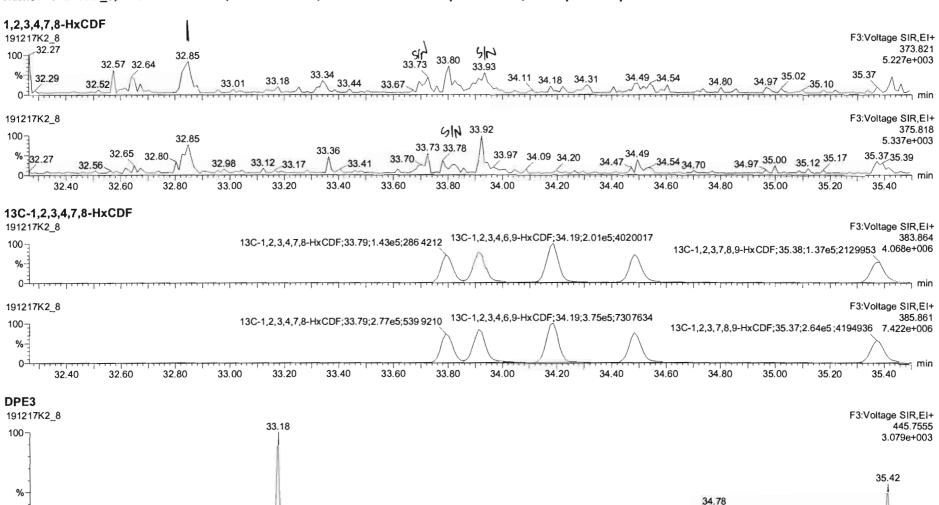
Name: 191217K2 8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate

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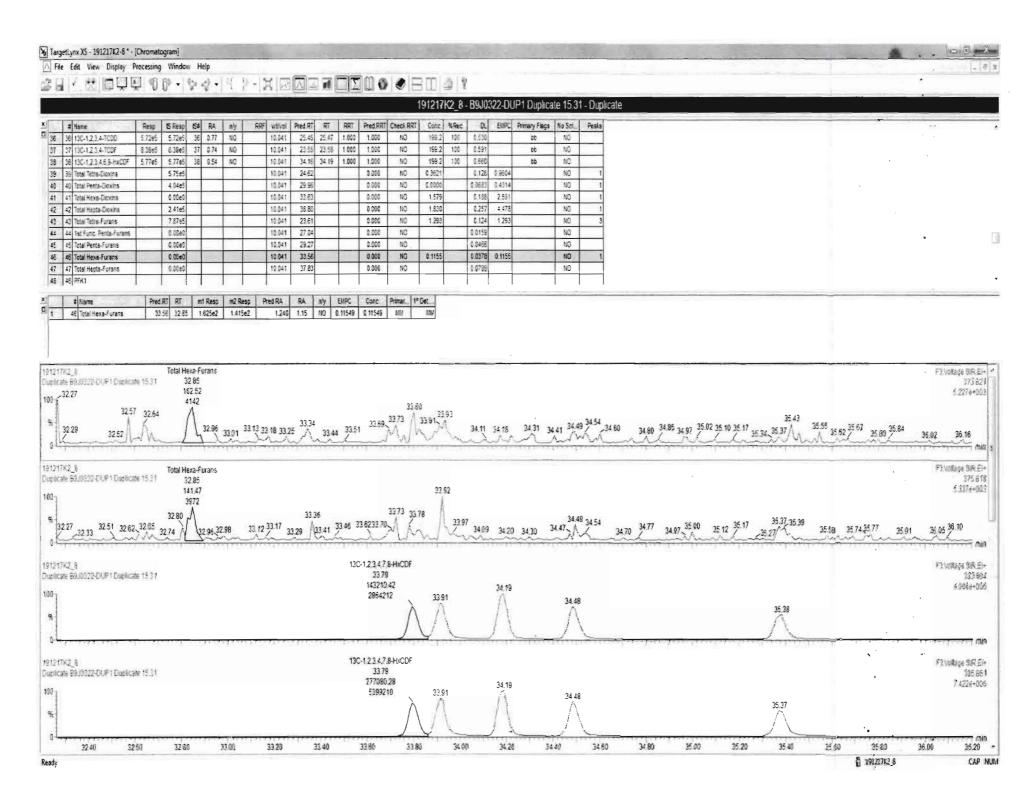
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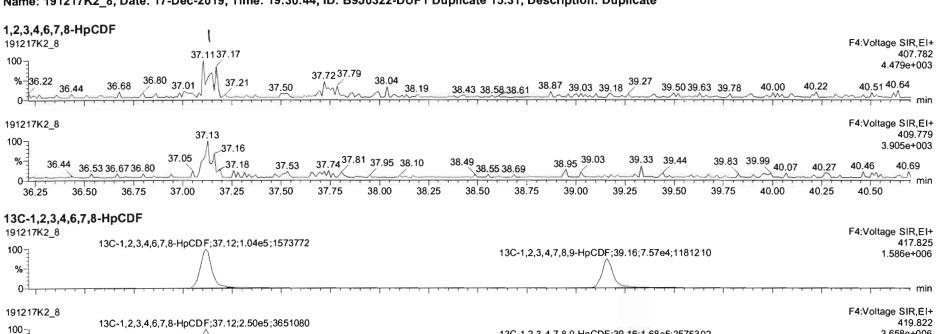
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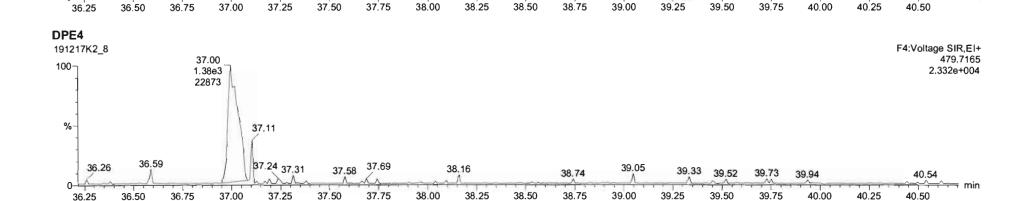
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate

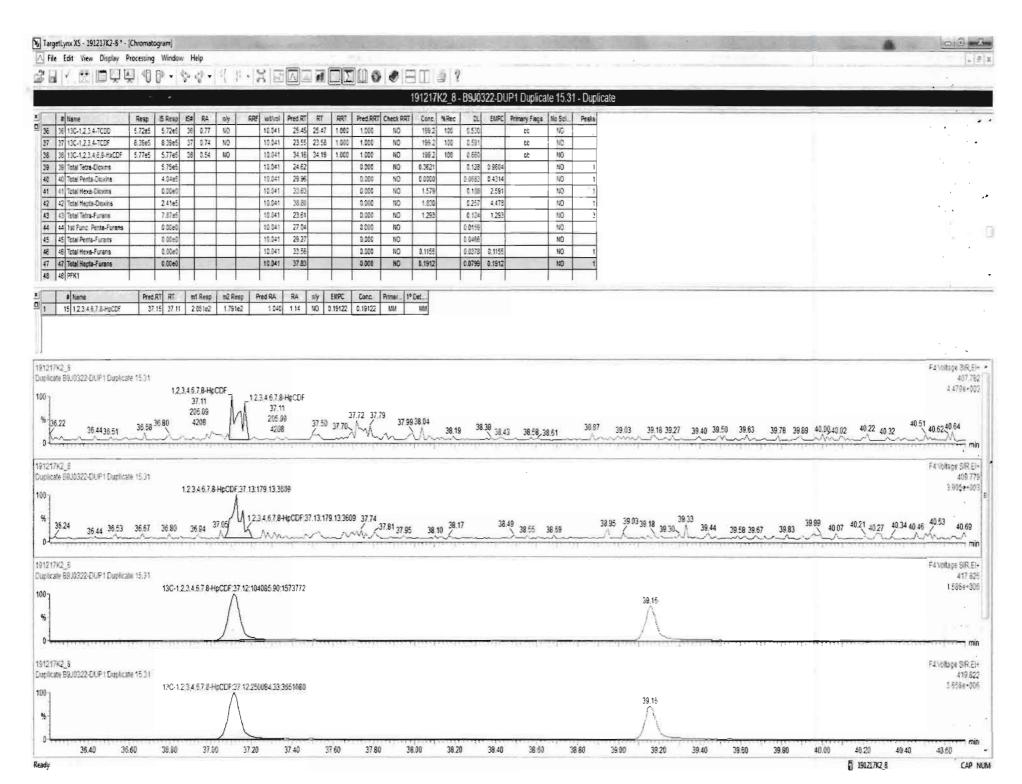




13C-1,2,3,4,7,8,9-HpCDF;39.16;1.68e5;2575392

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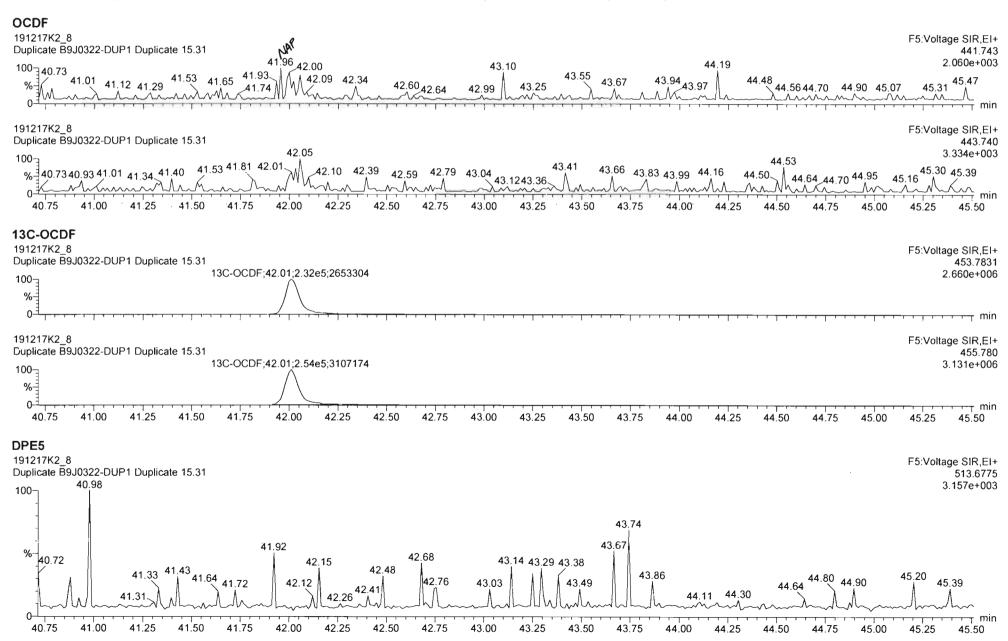
Vista Analytical Laboratory

Work Order 1903648

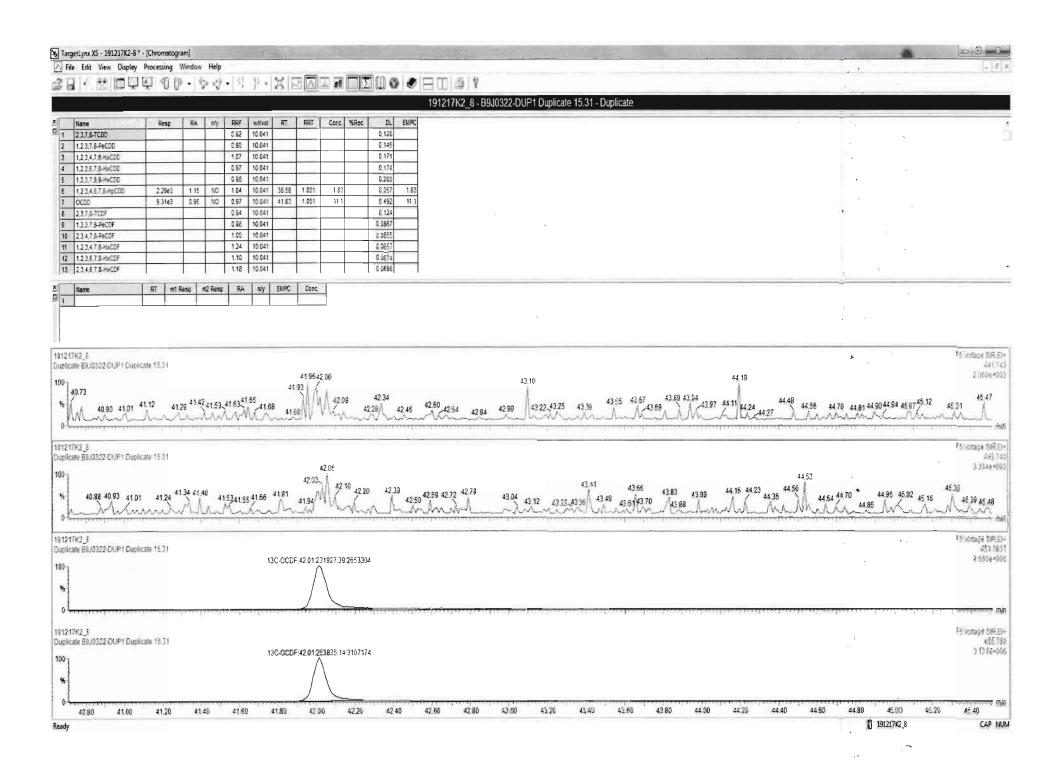
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Last Altered: Friday, December 20, 2019 11:10:10 Pacific Standard Time Friday, December 20, 2019 11:16:24 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate



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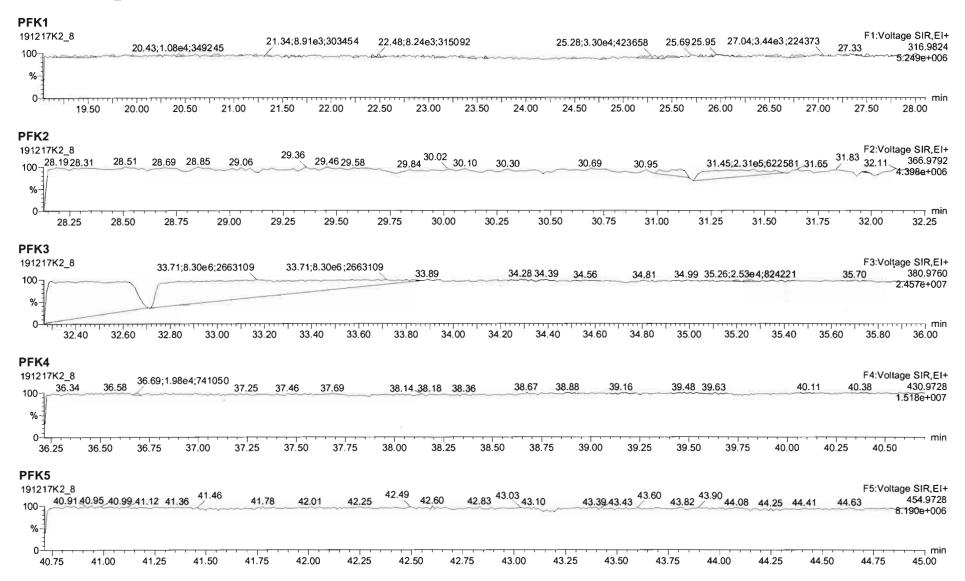


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Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Printed: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_8, Date: 17-Dec-2019, Time: 19:30:44, ID: B9J0322-DUP1 Duplicate 15.31, Description: Duplicate



Vista Analytical Laboratory

Page 1 of 2

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-10.qld

Last Altered: Printed:

Friday, December 20, 2019 14:12:59 Pacific Standard Time Friday, December 20, 2019 14:16:58 Pacific Standard Time

EL 12/20/19

CT 12/26/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_10, Date: 17-Dec-2019, Time: 21:06:27, ID: 1903648-02 PDI-073SC-A-12-12.6-191013 14.14, Description: PDI-073SC-A-12-12.6-191013

195000	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
15度更是此	1 2,3,7,8-TCDD				0.925	9.996	26.18		1.00		YES			0.156	
2	2 1,2,3,7.8-PeCDD				0.905	9.996	31.31		1.00		YES			0.0989	
3	3 1,2,3,4,7,8-HxCDD				1.07	9.996	34.66		1.00		YES			0.141	. ' [
4	4 1,2,3,6,7,8-HxCDD				0.967	9.996	34.75		1.00		YES			0.146	
5	5 1,2,3,7,8,9-HxCDD				0.978	9.996	35.06		1.00		YES			0.166	; [
6	6 1,2,3,4,6,7,8-HpCDD	2201.278	1.219	YES	1.04	9.996	38.54	38.56	1.00	1.00	NO	1.511		0.276	1.389
7	7 OCDD	12886.961	0.968	NO	0.972	9.996	41.80	41.81	1.00	1.00	NO	12.84		0.433	12.84
8	8 2,3,7,8-TCDF				0.938	9.996	25.20		1.00		YES			0.120	
9	9 1,2,3,7,8-PeCDF				0.976	9.996	30.00		1.00		YES			0.0848	1
10	10 2,3,4,7,8-PeCDF				1.00	9.996	31.00		. 1.00		YES			0.0832	
11	11 1,2,3,4,7,8-HxCDF				1.24	9.996	33.78		1.00		YES			0.0531	
12	12 1,2,3,6,7,8-HxCDF				1.10	9.996	33.91		1.00		YES			0.0529	
13	13 2,3,4,6,7,8-HxCDF				1.18	9.996	34.51		1.00		YES			0.0555	
14	14 1,2.3,7,8,9-HxCDF				1.07	9.996	35.35		1.00		YES			0.0802	
15	15 1,2,3,4,6,7,8-HpCDF	221.908	1.011	NO	1.13	9.996	37.14	37.09	1.00	1.00	NO	0.1079		0.0440	0.1079
16	16 1,2,3,4,7,8,9-HpCDF				1.26	9.996	39.13		1.00		YES			0.0859	. 24
17	17 OCDF				1.10	9.996	41.99		1.00		YES			0.166	
18	18 13C-2,3,7,8-TCDD	557559.453	0.772	NO	1.05	9.996	26.16	26.15	1.03	1.03	NO	181.6	90.8	0.407	
19	19 13C-1,2,3,7,8-PeCDD	424847.875	0.640	NO	0.743	9.996	31.31	31.29	1.23	1.23	NO	195.4	97.7	0.516	
20	20 13C-1,2,3,4,7,8-HxCDD	302720.032	1.225	NO	0.646	9.996	34.64	34.65	1.01	1.01	NO	153.4	76.7	0.631	
21	21 13C-1,2,3,6,7,8-HxCDD	356369.750	1.243	NO	0.777	9.996	34.73	34.75	1.02	1.02	NO	150.3	75.1	0.525	*
22	22 13C-1,2,3,7,8,9-HxCDD	326095.203	1.205	NO	0.659	9.996	35.01	35.02	. 1.02	1.03	NO	161.9	80.9	0.619	.]
23	23 13C-1.2,3,4,6,7.8-HpCDD	280968.156	1.071	NO	0.534	9.996	38.51	38.53	1.13	1.13	NO	172.3	86.1	0.825	
24	24 13C-OCDD	413350.781	0.887	NO	0.470	9.996	41.79	41.80	1.22	1.22	NO	287.8	71.9	0.991	ĺ
25	25 13C-2,3,7,8-TCDF	809982.875	0.729	NO	0.977	9.996	25.17	25.17	0.99	0.99	NO	179.5	89.7	0.547	1
26	26 13C-1,2,3,7,8-PeCDF	582487.734	1.554	NO	0.778	9.996	30.00	29.98	1.18	1.18	NO	162.2	81.1	0.572	
27	27 13C-2,3,4,7,8-PeCDF	576005.532	1.466	NO	0.750	9.996	30.99	30.97	1.22	1.22	NO	166.4	83.1	0.593	
28	28 13C-1,2,3,4,7,8-HxCDF	427256.563	0.527	NO	0.845	9.996	33.77	33.78	0.99	0.99	NO	165.6	82.7	0.827	
29	29 13C-1,2,3,6,7,8-HxCDF	508275.156	0.530	NO	1.03	9.996	33.89	33.90	0.99	0.99	NO	162.1	81.0	0.681	.
30	30 13C-2,3,4,6,7,8-HxCDF	462191.250	0.527	NO	0.893	9.996	34.46	34.47	1.01	1.01	NO	169.5	84.7	0.783	

Work Order 1903648

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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-10.qld

Last Altered: Printed: Friday, December 20, 2019 14:12:59 Pacific Standard Time Friday, December 20, 2019 14:16:58 Pacific Standard Time

Name: 191217K2_10, Date: 17-Dec-2019, Time: 21:06:27, ID: 1903648-02 PDI-073SC-A-12-12.6-191013 14.14, Description: PDI-073SC-A-12-12.6-191013

STATE OF THE STATE OF	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
31	31 13C-1,2,3,7,8,9-HxCDF	403728.532	0.524	NO	0.734	9.996	35.37	35.35	1.04	1.03	NO	180.1	90.0	0.952	
32	32 13C-1,2,3,4,6,7,8-HpCDF	364038.890	0.453	NO	0.754	9.996	37.08	37.10	1.09	1.09	NO	158.1	79.0	1.17	
33	33 13C-1,2,3,4,7,8,9-HpCDF	270518.172	0.452	NO	0.539	9.996	39.11	39.13	1.14	1.15	NO	164.4	82.1	1.63	
34	34 13C-OCDF	576870.813	0.851	NO	0.593	9.996	41.97	41.99	1.23	1.23	NO	318.8	79.7	0.782	
35	35 37CI-2,3,7,8-TCDD	231714.828			1.07	9.996	26.18	26.17	1.03	1.03	NO	74.03	92.5	0.0969	
36	36 13C-1,2,3,4-TCDD	585575.922	0.779	NO	1.00	9.996	25.45	25.47	1.00	1.00	NO	200.1	100	0.427	1
37	37 13C-1,2,3,4-TCDF	923787.625	0.731	NO	1.00	9.996	23.55	23.57	1.00	1.00	NO	200.1	100	0.535	
38	38 13C-1,2,3,4,6,9-HxCDF	610987.687	0.529	NO	1.00	9.996	34.16	34.16	1.00	1.00	NO	200.1	100	0.699	[
39	39 Total Tetra-Dioxins				0.925	9.996	24.62		0.00		NO			0.0880	
40	40 Total Penta-Dioxins				0.905	9.996	29.96		0.00		NO	0.0000		0.0342	0.3524
41	41 Total Hexa-Dioxins				0.967	9.996	33.63		0.00		NO	0.7996		0.156	1.885
42	42 Total Hepta-Dioxins				1.04	9.996	38.80		0.00		NO	2.239		0.276	3.628
43	43 Total Tetra-Furans				0.938	9.996	23.61		0.00		NO	0.1815		0.120	0.6237
44	44 1st Func. Penta-Furans				0.976	9.996	27.04		0.00		NO			0.0151	
45	45 Total Penta-Furans				0.976	9.996	29.27		0.00		NO			0.0421	
46	46 Total Hexa-Furans				1.18	9.996	33.56		0.00		NO	0.0000		0.0320	0.07653
47	47 Total Hepta-Furans				1.13	9.996	37.83		0.00		NO	0.1079		0.0478	0.1079

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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-10.qld

Last Altered:

Friday, December 20, 2019 14:12:59 Pacific Standard Time

Printed:

Friday, December 20, 2019 14:17:07 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_10, Date: 17-Dec-2019, Time: 21:06:27, ID: 1903648-02 PDI-073SC-A-12-12.6-191013 14.14, Description: PDI-073SC-A-12-12.6-191013

Tetra-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
4 89 6 8 6								

Penta-Dioxins

5 6 1	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	40 Total Penta-Dioxins	0.00e0	4.25e5	0.799	YES	29.96	29.08	0.0000	0.1927
2	40 Total Penta-Dioxins	0.00e0	4.25e5	0.562	NO	29.96	29.54	0.0000	0.1597

Hexa-Dioxins

PER PER PER	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1100000000	41 Total Hexa-Dioxins	1.27e3	0.00e0	1.272	NO	33.63	33.99	0.7996	0.7996
2	41 Total Hexa-Dioxins	0.00e0	0.00e0	0.986	YES	33.63	33.19	0.0000	1.085

Hepta-Dioxins

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	2.20e3	2.81e5	1.219	YES	38.54	38.56	0.0000	1.389
2	42 Total Hepta-Dioxins	3.26e3	2.81e5	1.041	NO	38.80	37.50	2.239	2.239

Tetra-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	43 Total Tetra-Furans	6.89e2	8.10e5	0.773	NO	23.61	19.81	0.1815	0.1815
2	43 Total Tetra-Furans	0. 0 0e0	8.10e5	0.579	YES	23.61	20.88	0.0000	0.4422

Penta-Furans function 1

# Name	Area IS	Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 Interior								

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Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-10.qld

Last Altered: Printed:

Friday, December 20, 2019 14:12:59 Pacific Standard Time Friday, December 20, 2019 14:17:07 Pacific Standard Time

Name: 191217K2_10, Date: 17-Dec-2019, Time: 21:06:27, ID: 1903648-02 PDI-073SC-A-12-12.6-191013 14.14, Description: PDI-073SC-A-12-12.6-191013

Page 2 of 2

Penta-Furans

# Name	Area IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7							

Hexa-Furans

THE PARTY	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	46 Total Hexa-Furans	0.00e0	0.00e0	2.173	YES	33.56	32.63	0.0000	0.02456
2	46 Total Hexa-Furans	0.00e0	0.00e0	0.744	YES	33.56	32.80	0.0000	0.05196

Hepta-Furans

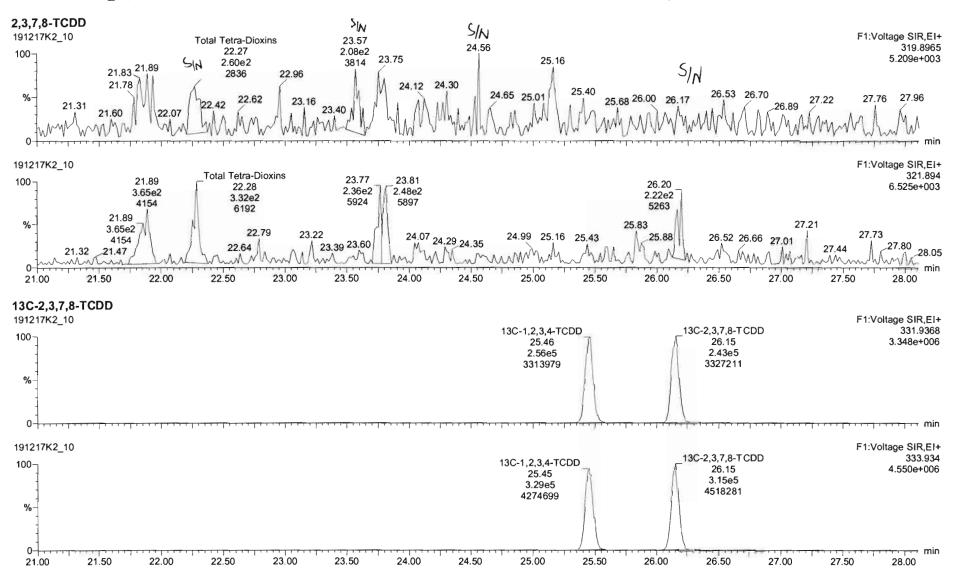
Coler St. St.	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	15 1,2,3,4,6,7,8-HpCDF	2.22e2	3.64e5	1.011	NO	37.14	37.09	0.1079	0.1079

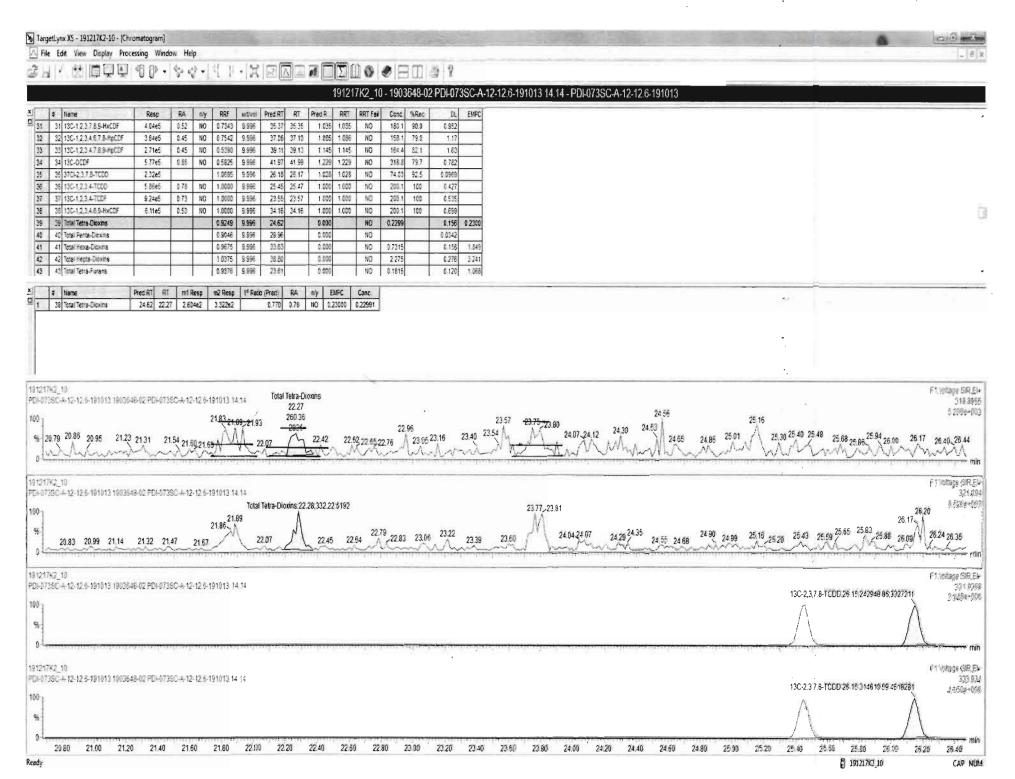
Work Order 1903648 Page 128 of 513

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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

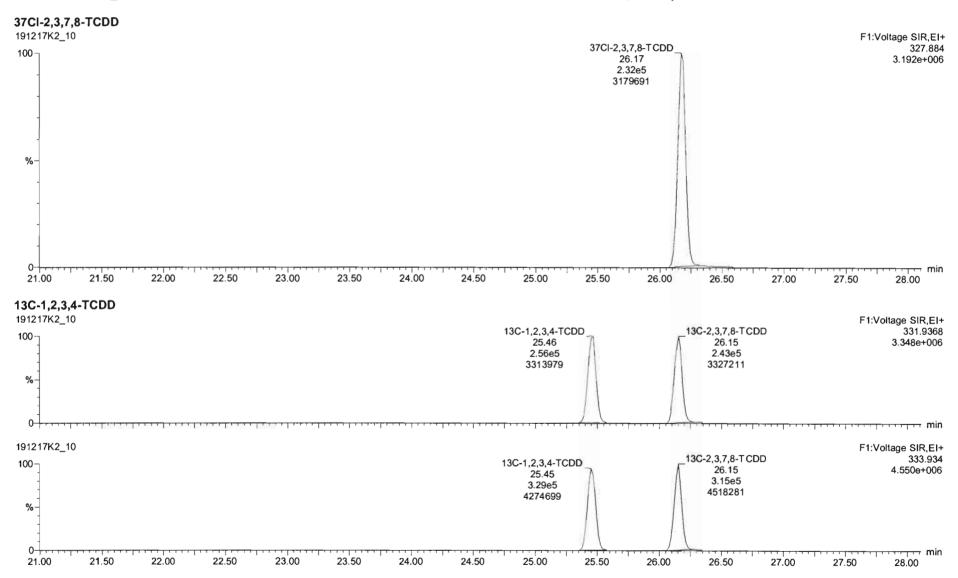




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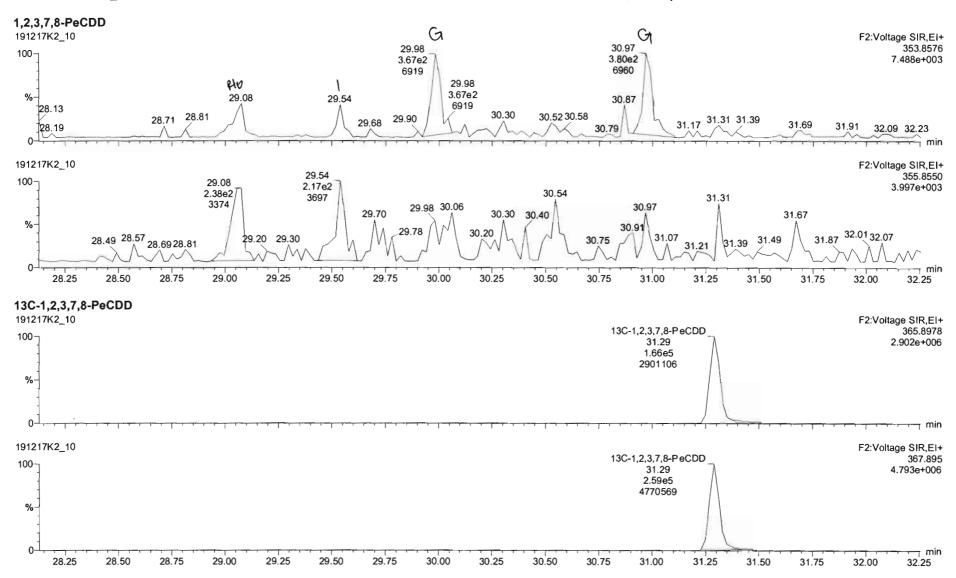
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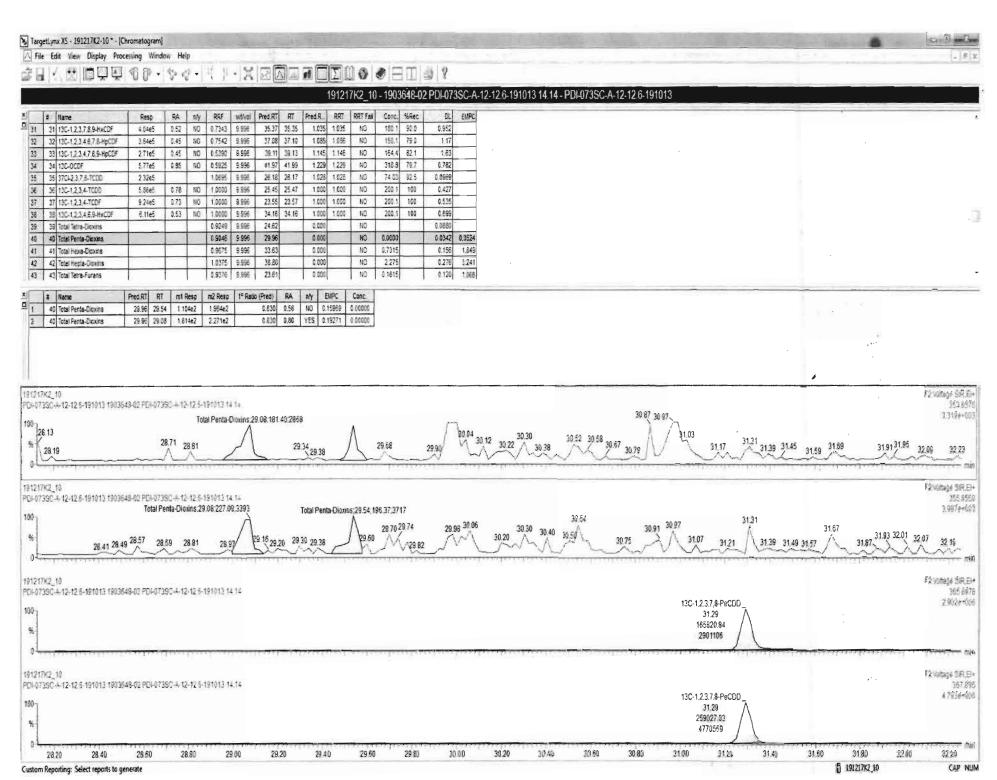
Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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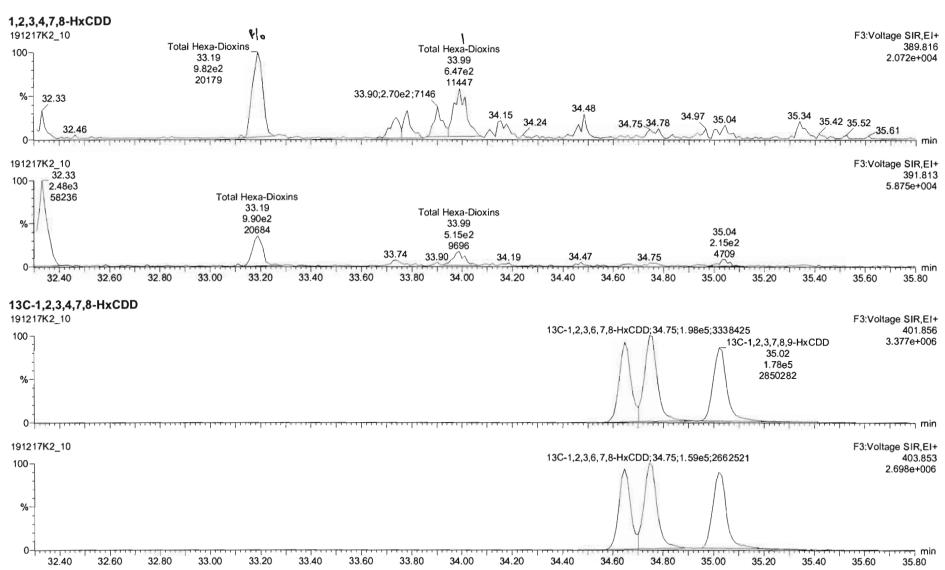
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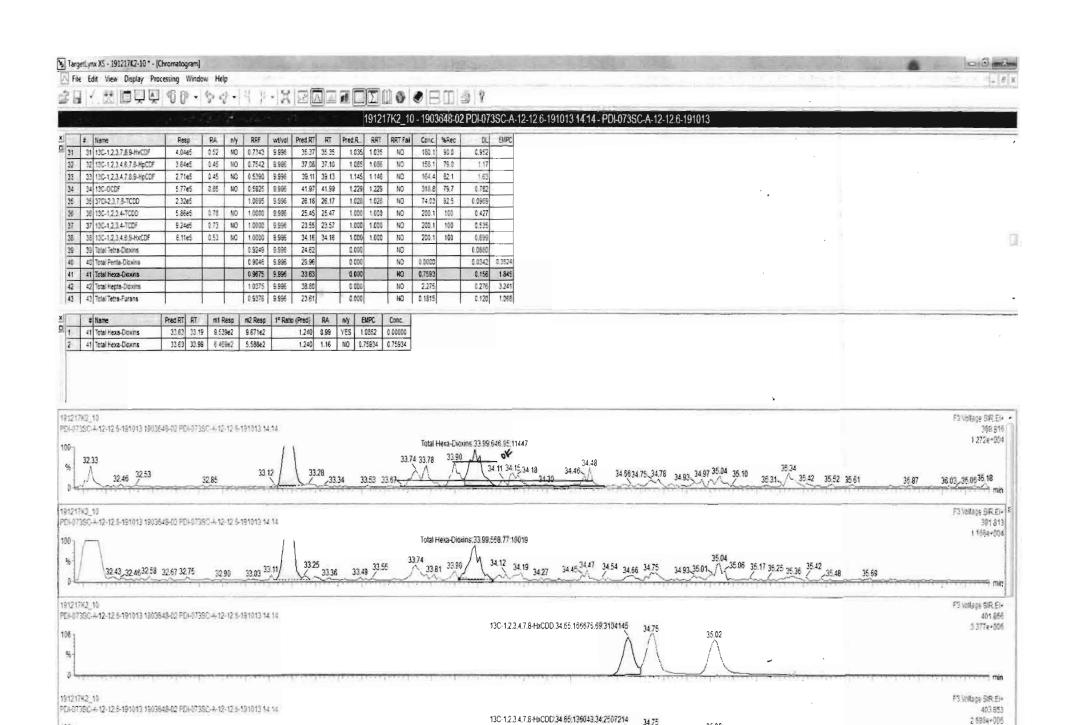




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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





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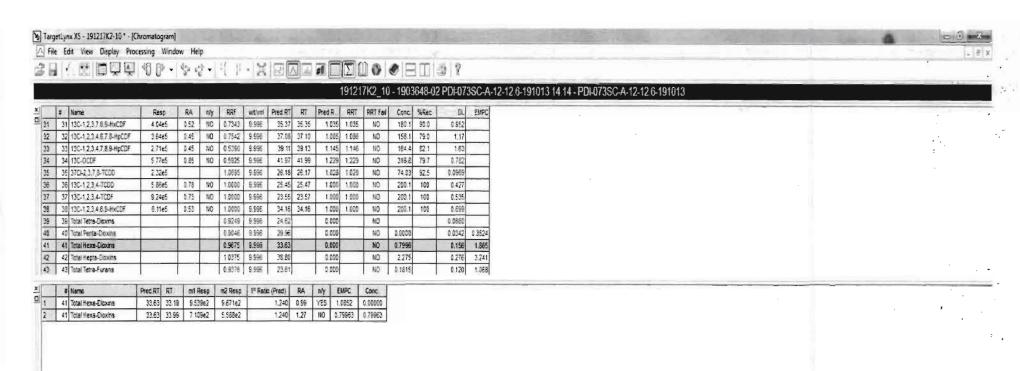
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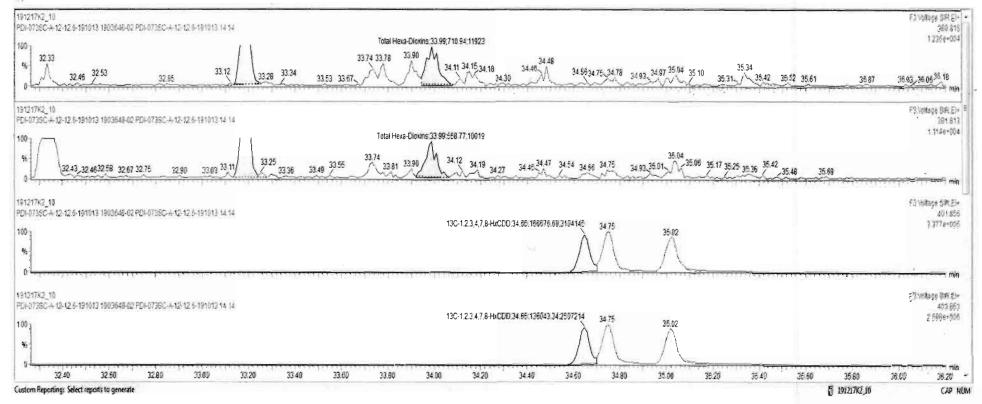
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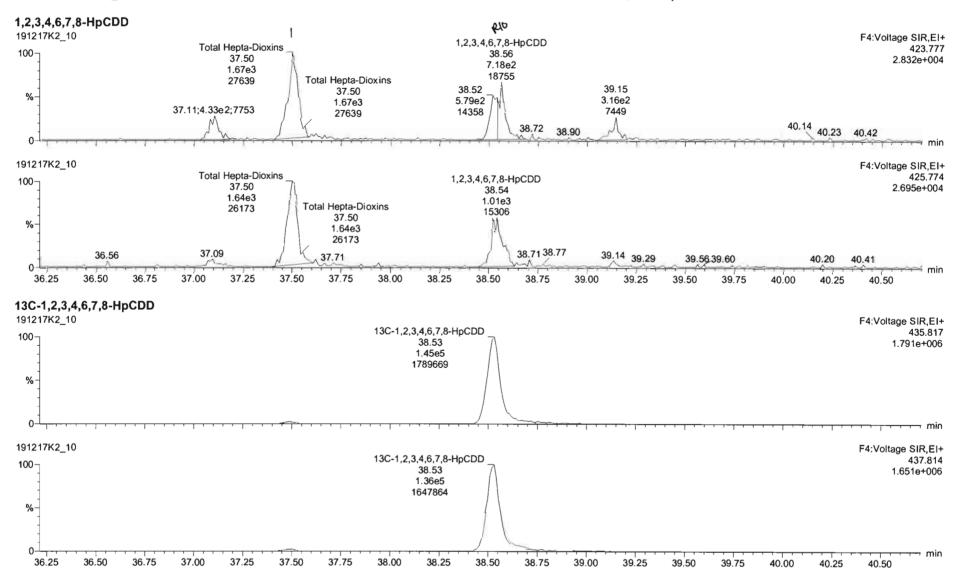


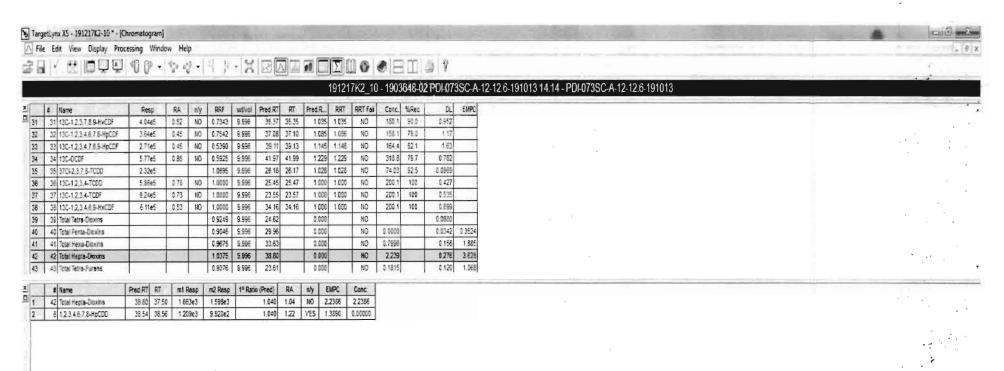


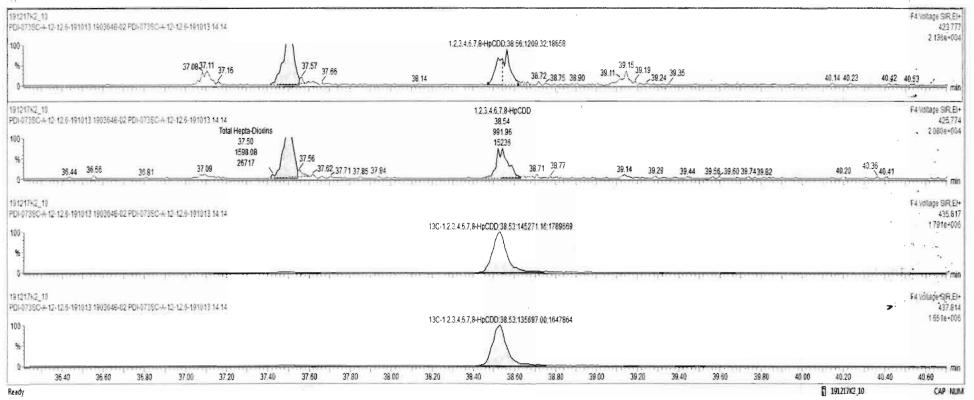
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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

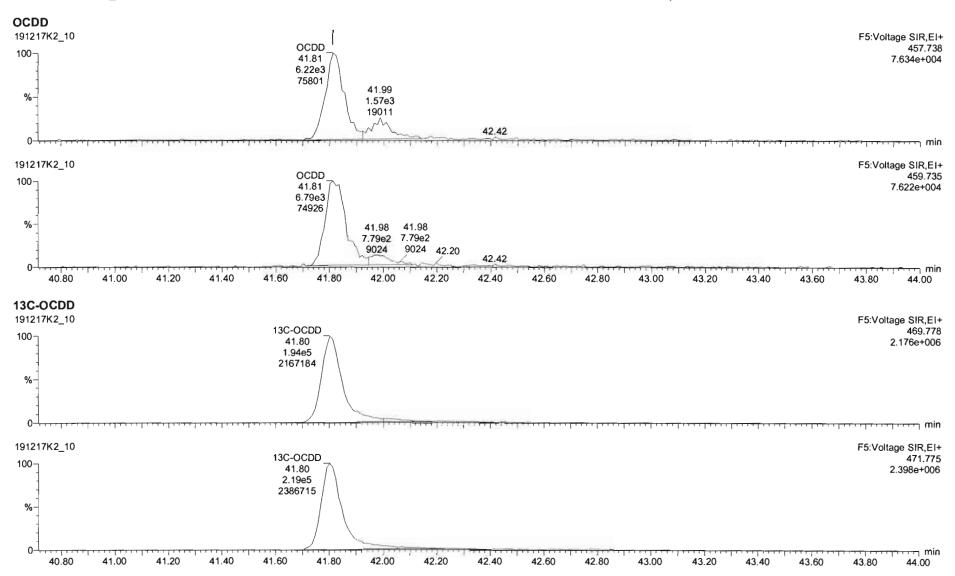


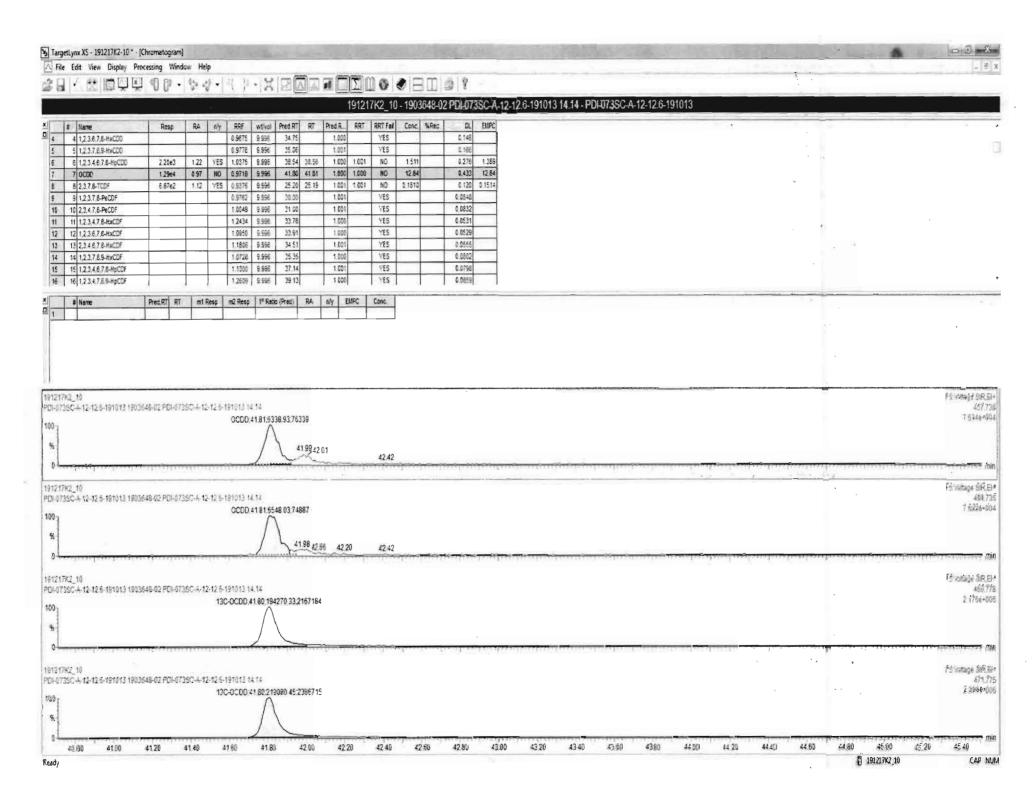




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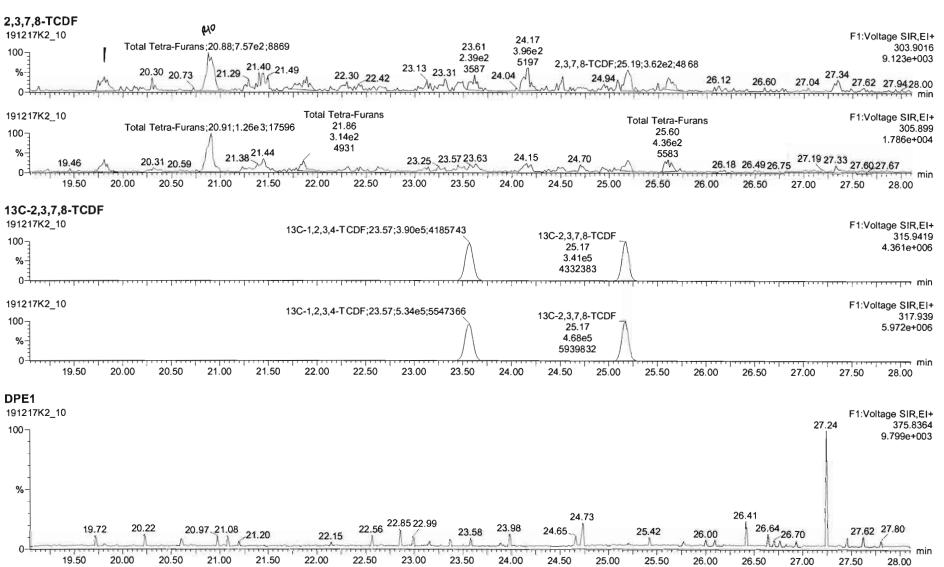


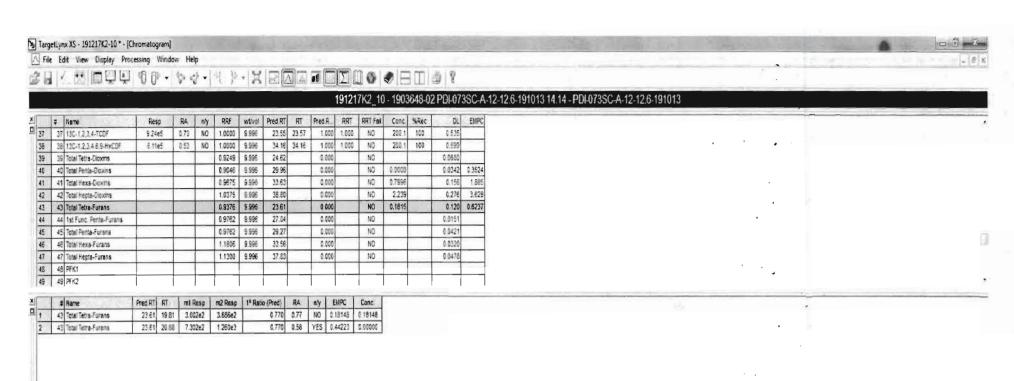
Work Order 1903648 Page 140 of 513

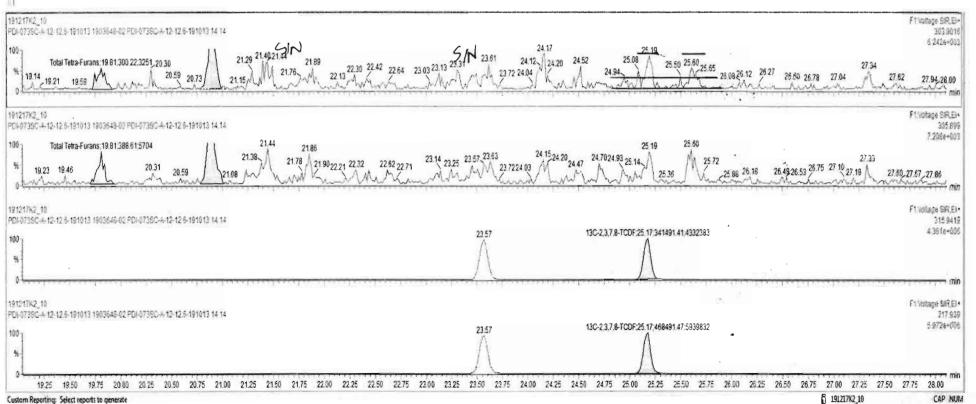
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Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



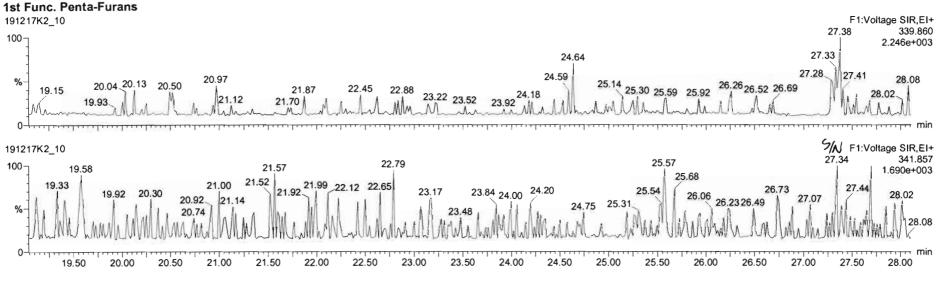


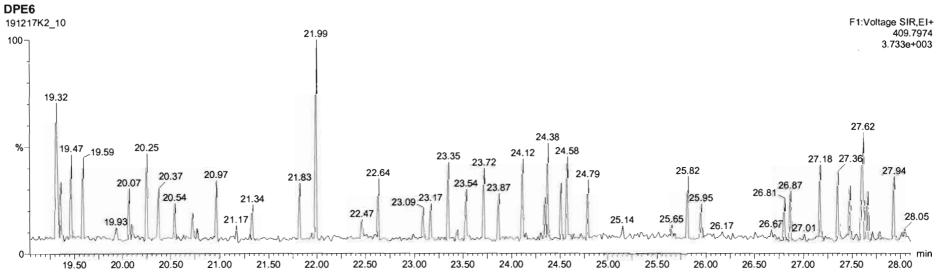


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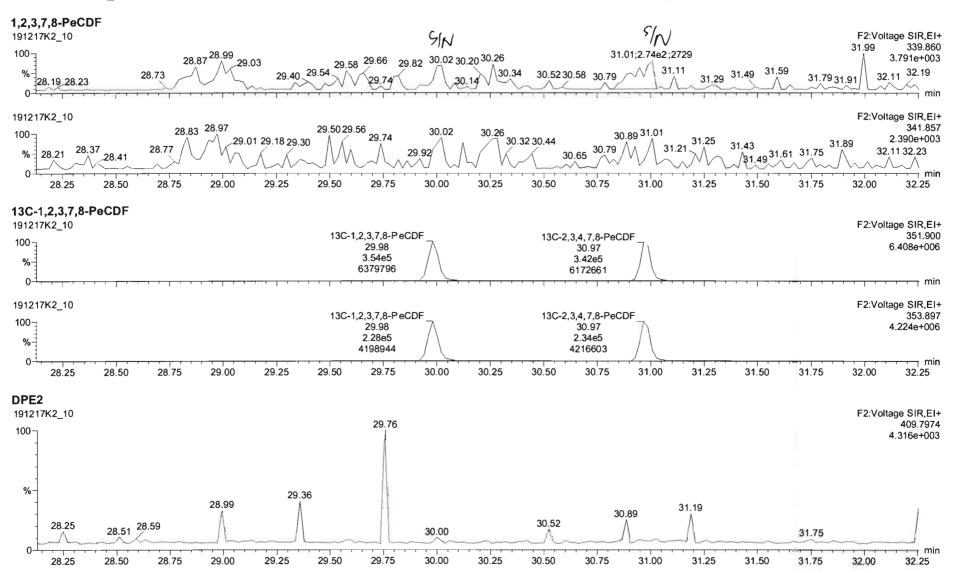




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MassLynx 4.1 SCN815

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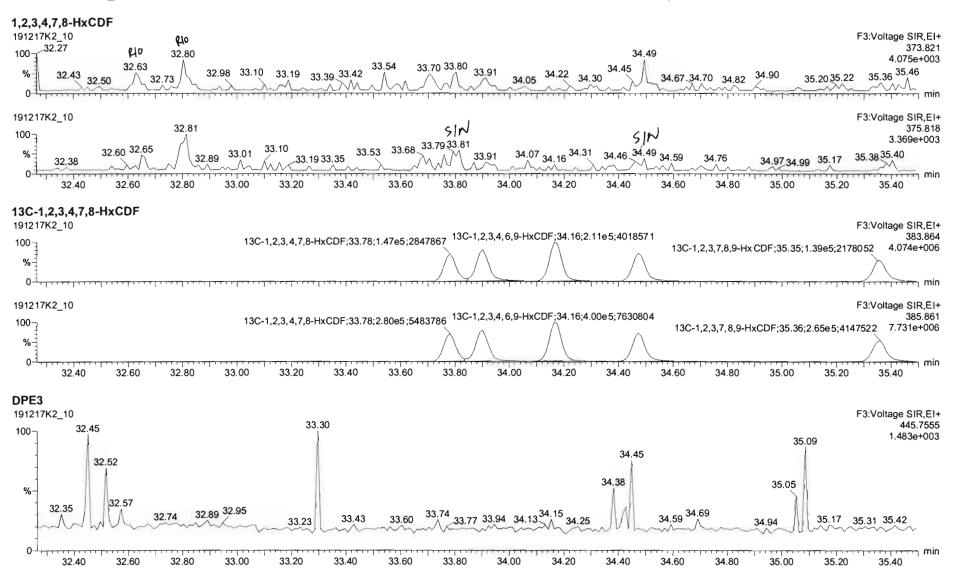
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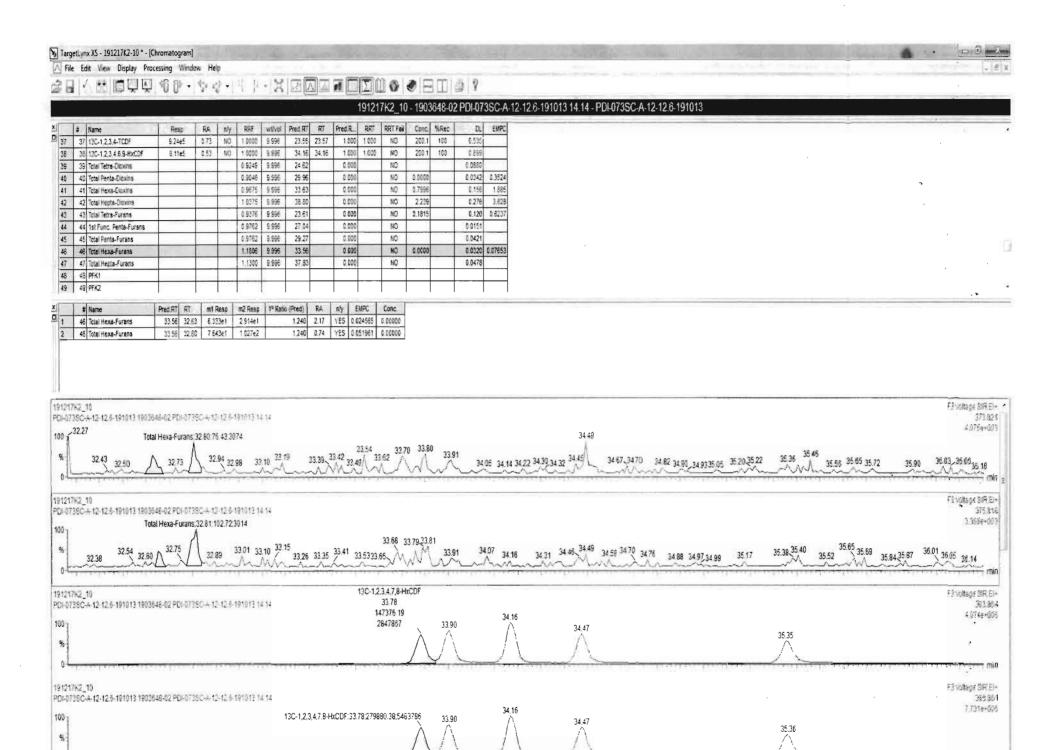
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time

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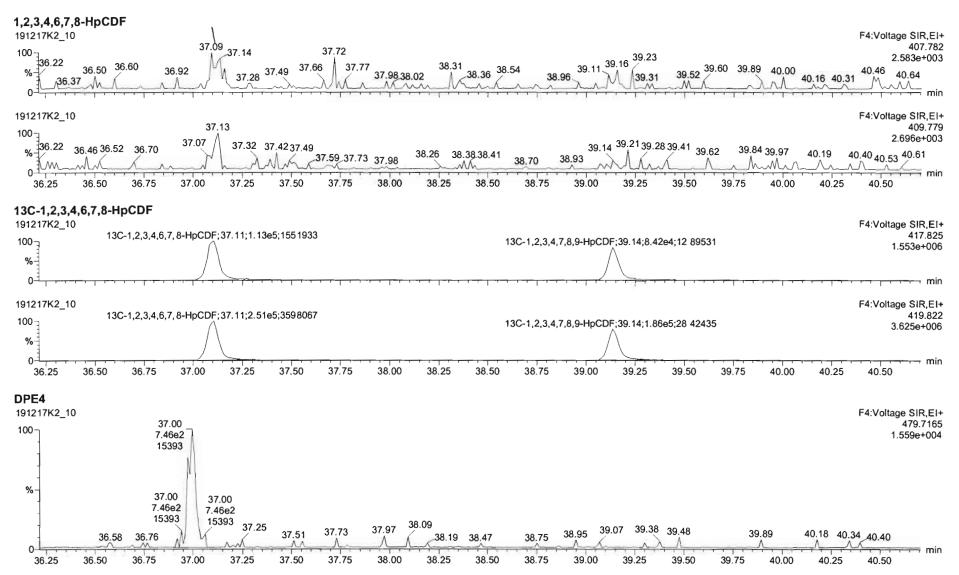
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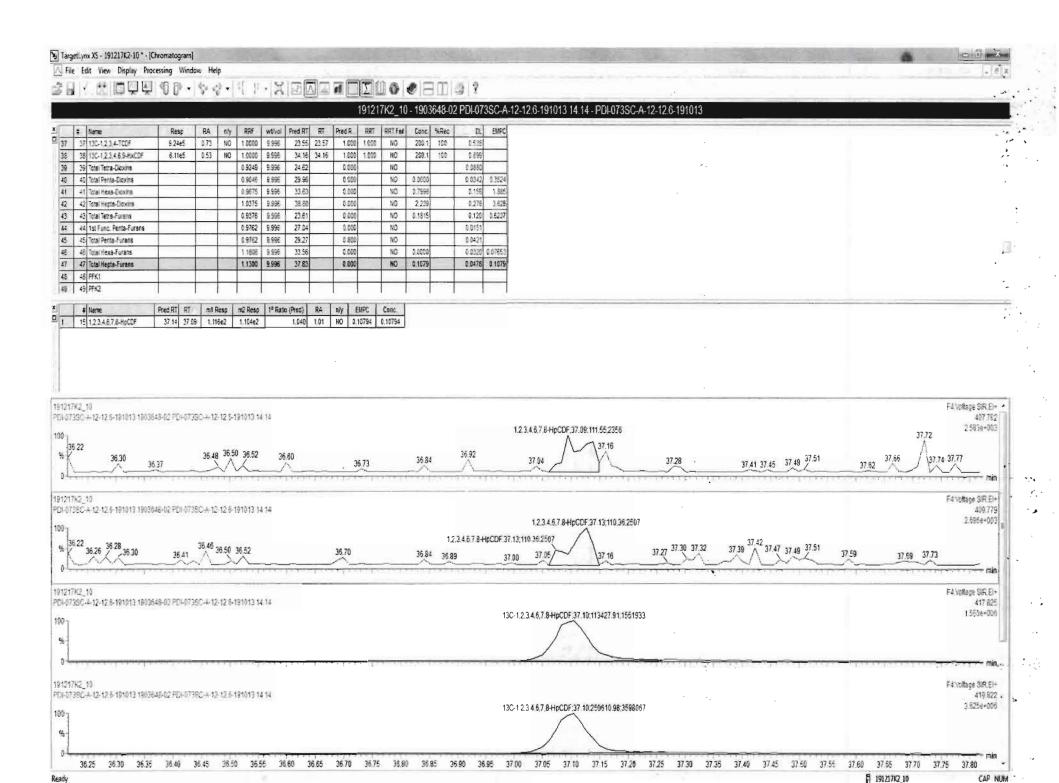
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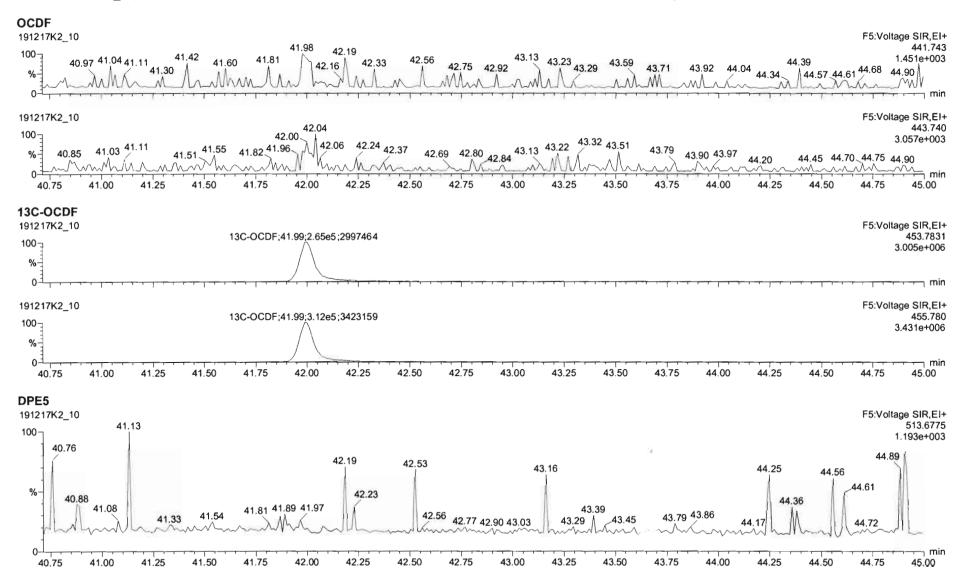
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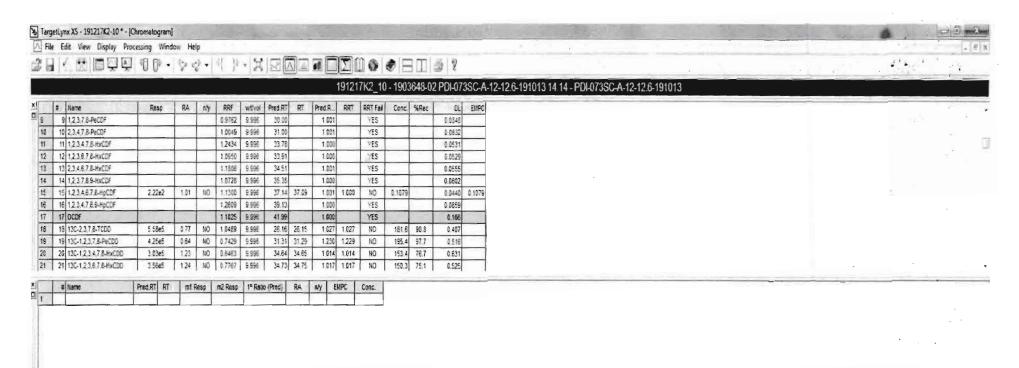


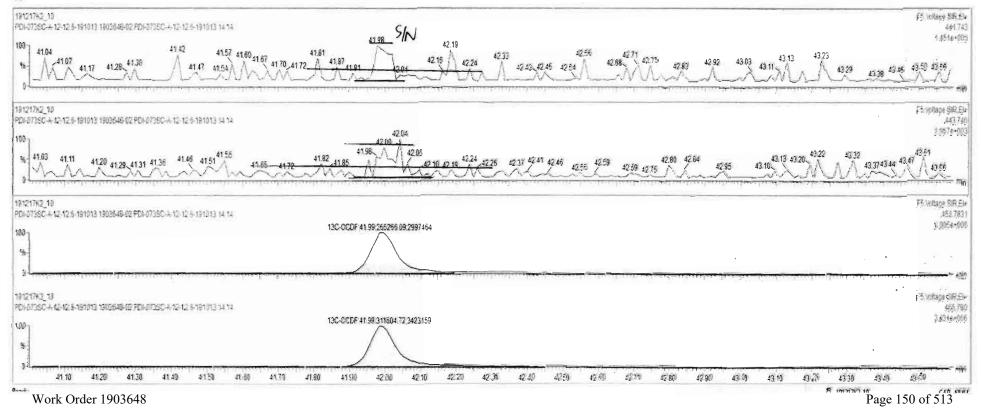


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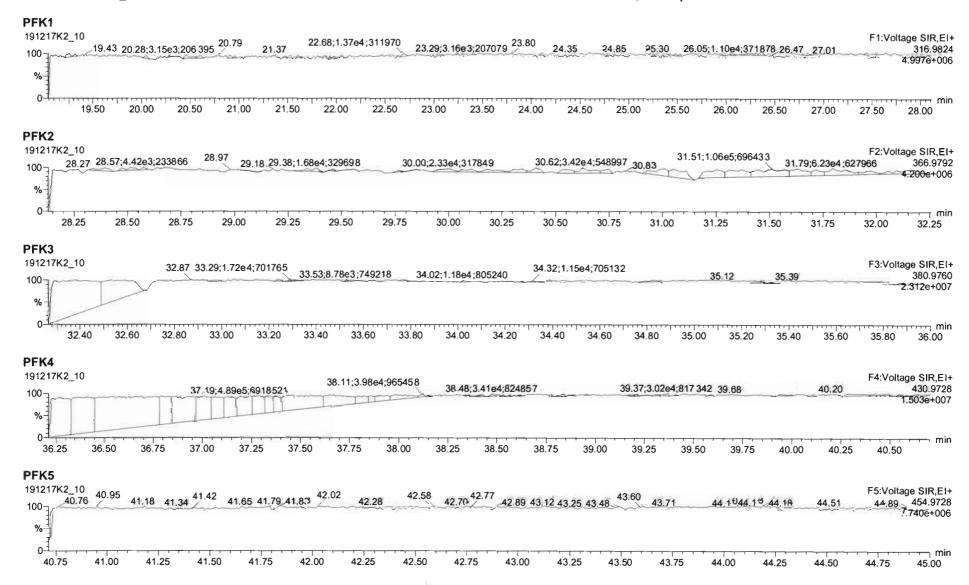




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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-11.qld

Last Altered:

Friday, December 20, 2019 15:25:23 Pacific Standard Time

Printed:

Friday, December 20, 2019 15:27:49 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_11, Date: 17-Dec-2019, Time: 21:54:47, ID: 1903648-03 PDI-1073SC-A-12-12.6-191013 14.33, Description: PDI-1073SC-A-12-12.6-191013

A DESCRIPTION OF THE PARTY OF T	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1 1 3 0 0 0	1 2,3,7,8-TCDD				0925	10.006	12618		(.00		YES			0.170	
2	2 1,2,3,7,8-PeCDD				0.905	10.006	31.31		1.00		YES		•	0.114	1
3	3 1,2,3,4,7,8-HxCDD				1.07	10.006	34.66		1.00		YES			0.196	1
4	4 1,2,3,6,7,8-HxCDD				0.967	10.006	34.75		1.00		YES			0.177	j
5	5 1,2,3,7,8,9-HxCDD				0.978	10.006	35.06		1.00		YES			0.216	1
6	6 1,2,3,4,6,7,8-HpCDD	1487.005	0.944	NO	1.04	10.006	38.54	38.56	1.00	1.00	NO	1.300	,	0.236	1.300
7 50 0 350	7 OCDD	6522.171	0.932	NO	0.972	10.006	41.80	41.82	1.00	1.00	NO	8.366		0.742	8.366
8	8 2,3,7,8-TCDF	677.316	0.897	YES	0.938	10.006	25.18	25.17	1.00	1.00	NO	0.2148		0.128	0.2004
9	9 1,2,3,7,8-PeCDF				0.976	10.006	30.00		1.00		YES			0.0772	1
10	10 2,3,4,7,8-PeCDF				1.00	10.006	31.00		1.00		YES			0.0786	1
11	11 1,2,3,4,7,8-HxCDF				1.24	10.006	33.78		1.00		YES			0.0814	1
12	12 1,2,3,6,7,8-HxCDF				1.10	10.006	33.91		1.00		YES			0.0794	1
13	13 2,3,4,6,7,8-HxCDF				1.18	10.006	34.51		1.00		YES			0.0849	1
14	14 1,2,3,7,8,9-HxCDF				1.07	10.006	35.36		1.00		YES			0.120	1
15	15 1,2,3,4,6,7,8-HpCDF				1.13	10.006	37.14		1.00		YES			0.0746	1
16	16 1,2,3,4,7,8,9-HpCDF				1.26	10.006	39.15		1.00		YES			0.0863	1
17	17 OCDF				1.10	10.006	42.00		1.00		YES			0.179	1
18	18 13C-2,3,7,8-TCDD	453483.422	0.773	NO	1.05	10.006	26.15	26.15	1.03	1.03	NO	154.0	77.0	0.398	ſ
19	19 13C-1,2,3,7,8-PeCDD	330884.680	0.610	NO	0.743	10.006	31.29	31.29	1.23	1.23	NO	158. 6	79.4	0.408	1
20	20 13C-1,2,3,4,7,8-HxCDD	229736.617	1.212	NO	0.646	10.006	34.64	34.65	1.01	1.01	NO	128.5	64:3	0.751	- 1
21	21 13C-1,2,3,6,7,8-HxCDD	295038.359	1.168	NO	0.777	10.006	34.73	34.75	1.02	1.02	NO	137.3	68.7	0.625	- 1
22	22 13C-1,2,3,7,8,9-HxCDD	248887.055	1.147	NO	0.659	10.006	35.01	35.02	1.02	1.03	NO	136.4	68.2	0.735	1
23	23 13C-1,2,3,4.6,7,8-HpCDD	220288.579	1.073	NO	0.534	10.006	38.51	38.53	1.13	1.13	NO	149.1	74.6	0.690	1
24	24 13C-OCDD	320702.062	0.866	NO	0.470	10.006	41.79	41.80	1.22	1.22	NO	246.4	61.6	0.879	1
25	25 13C-2,3,7,8-TCDF	672119.156	0.719	NO	0.977	10.006	25.16	25.16	0.99	0.99	NO	162.6	. 81.3	0.639	1
26	26 13C-1,2,3,7,8-PeCDF	466279.751	1.484	NO	0.778	10.006	29.98	29.98	1.18	1.18	NO	141.8	70.9	0.740	1
27	27 13C-2,3,4,7,8-PeCDF	462734.204	1.465	NO	0.750	10.006	30.97	30.97	1.22	1.22	NO	145.9	73.0	0.768	1
28	28 13C-1,2,3,4,7,8-HxCDF	337289.984	0.539	NO	0.845	10.006	33.77	33.78	0.99	0.99	NO	144.2	72.2.	0.833	
29	29 13C-1,2,3,6,7,8-HxCDF	415052.047	0.552	NO	1.03	10.006	33.89	33.90	0.99	0.99	NO	146.1	73.1	0.686	
30	30 13C-2,3,4,6,7,8-HxCDF	369494.555	0.533	NO	0.893	10.006	34.46	34.47	1.01	1.01	NO	149.6	74.8	0.788	

Work Order 1903648 Page 152 of 513 Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-11.qld

Last Altered: Printed: Friday, December 20, 2019 15:25:23 Pacific Standard Time Friday, December 20, 2019 15:27:49 Pacific Standard Time

Name: 191217K2 11, Date: 17-Dec-2019, Time: 21:54:47, ID: 1903648-03 PDI-1073SC-A-12-12.6-191013 14.33, Description: PDI-1073SC-A-12-12.6-191013

3 (3 9 9)	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
31	31 13C-1,2,3,7,8,9-HxCDF	302661.633	0.549	NO	0.734	10.006	35.37	35.36	1.04	1.04	NO	149.0	74.5	0.959	
32	32 13C-1,2,3,4,6,7,8-HpCDF	305691.399	0.424	NO	0.754	10.006	37.08	37.10	1.09	1.09	NO	146.5	73.3	0.764	1
33	33 13C-1,2,3,4,7,8,9-HpCDF	213409.578	0.418	NO	0.539	10.006	39.11	39.15	1.14	1.15	NO	143.1	71.6	1.07	
34	34 13C-OCDF	458078.922	0.889	NO	0.593	10.006	41.97	42.00	1.23	1.23	NO	279.4	69.9	0.815	
35	35 37CI-2,3,7,8-TCDD	190214.156			1.07	10.006	26.17	26.17	1.03	1.03	NO	63.35	79.2	0.0834	
36	36 13C-1,2,3,4-TCDD	561181.766	0.797	NO	1.00	10.006	25.45	25.45	1.00	1.00	NO	199.9	100	0.418	
37	37 13C-1,2,3,4-TCDF	845251.126	0.738	NO	1.00	10.006	23.55	23.57	1.00	1.00	NO	199.9	100	0.625	1
38	38 13C-1,2,3,4,6,9-HxCDF	553024.703	0.538	NO	1.00	10.006	34.16	34.16	1.00	1.00	NO	199.9	100	0.704	
39	39 Total Tetra-Dioxins				0.925	10.006	24.62		0.00		NO	0.0000		0.0970	0.6052
40	40 Total Penta-Dioxins				0.905	10.006	29.96		0.00		NO			0.0497	
41	41 Total Hexa-Dioxins				0.967	10.006	33.63		0.00		NO	1.045		0.202	1.045
42	42 Total Hepta-Dioxins				1.04	10.006	38.80		0.00		NO	3.285		0.236	3.285
43	43 Total Tetra-Furans				0.938	10.006	23.61		0.00		NO	0.7589		0.128	0.9593
44	44 1st Func. Penta-Furans				0.976	10.006	27.04		0.00		NO			0.0242	
45	45 Total Penta-Furans				0.976	10.006	29.27		0.00		NO	0.2291		0.0791	0.3094
46	46 Total Hexa-Furans				1.18	10.006	33.56		0.00		NO			0.0503	
47	47 Total Hepta-Furans				1.13	10.006	37.83		0.00		NO			0.0472	_

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Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-11.qld

Last Altered: Printed:

Friday, December 20, 2019 15:25:23 Pacific Standard Time Friday, December 20, 2019 15:27:57 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_11, Date: 17-Dec-2019, Time: 21:54:47, ID: 1903648-03 PDI-1073SC-A-12-12.6-191013 14.33, Description: PDI-1073SC-A-12-12.6-191013

Tetra-Dioxins

E. COST	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	39 Total Tetra-Dioxins	0.00e0	4.53e5	0.981	YES	24.62	21.87	0.0000	0.3270
2	39 Total Tetra-Dioxins	0.00e0	4.53e5	0.935	YES	24.62	22.25	0.0000	0.2782

Penta-Dioxins

# Name	Area IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1							

Hexa-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
155008	41 Total Hexa-Dioxins	1.30e3	0.00e0	1.255	NO	33.63	33.19	1.045	1.045

Hepta-Dioxins

2 JOHN	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 BUSTISE	6 1,2,3,4,6,7,8-HpCDD	1.49e3	2.20e5	0.944	NO	38.54	38.56	1.300	1.300
2	42 Total Hepta-Dioxins	2.27e3	2.20e5	1.056	NO	38.80	37.50	1.984	1.984

Tetra-Furans

THE FLAND	# Name	Area	IS: Area	IRA.	Y/N	Pred.RT	RT	Conc	EMPC
1	8 2,3,7,8-TCDF	6.77e2	6.72e5	0.897	YES	25.18	25.17	0.0000	0.2004
2	43 Total Tetra-Furans	1.72e3	6.72e5	0.821	NO	23.61	20.89	0.5455	0.5455
3	43 Total Tetra-Furans	6.73e2	6.72e5	0.660	NO	23.61	19.78	0.2134	0.2134

Penta-Furans function 1

# Name	Area	IS Area	RA	YIN	Fred.RT	RT	Conc.	EMPC
					1/			

Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191217K2\191217K2-11.qld

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Page 2 of 2

Penta-Furans

-	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	45 Total Penta-Furans	5.20e2	0.00e0	1.522	NO	29.27	28.97	0.2291	0.2291
2	45 Total Penta-Furans	0.00e0	0.00e0	0.964	YES	29.27	28.83	0.0000	0.08032

Hexa-Furans

A STATE DESCRIPTION	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
13									

Hepta-Furans

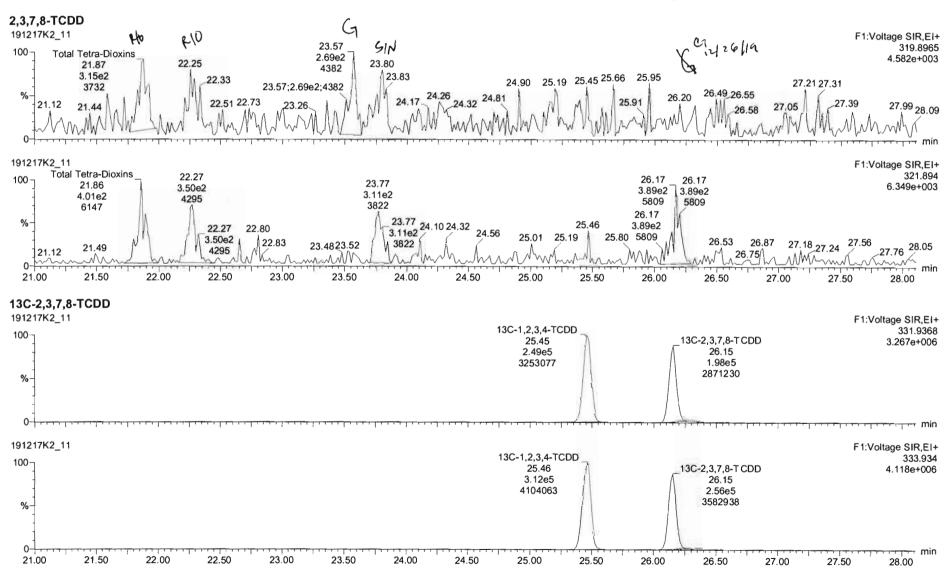
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1							

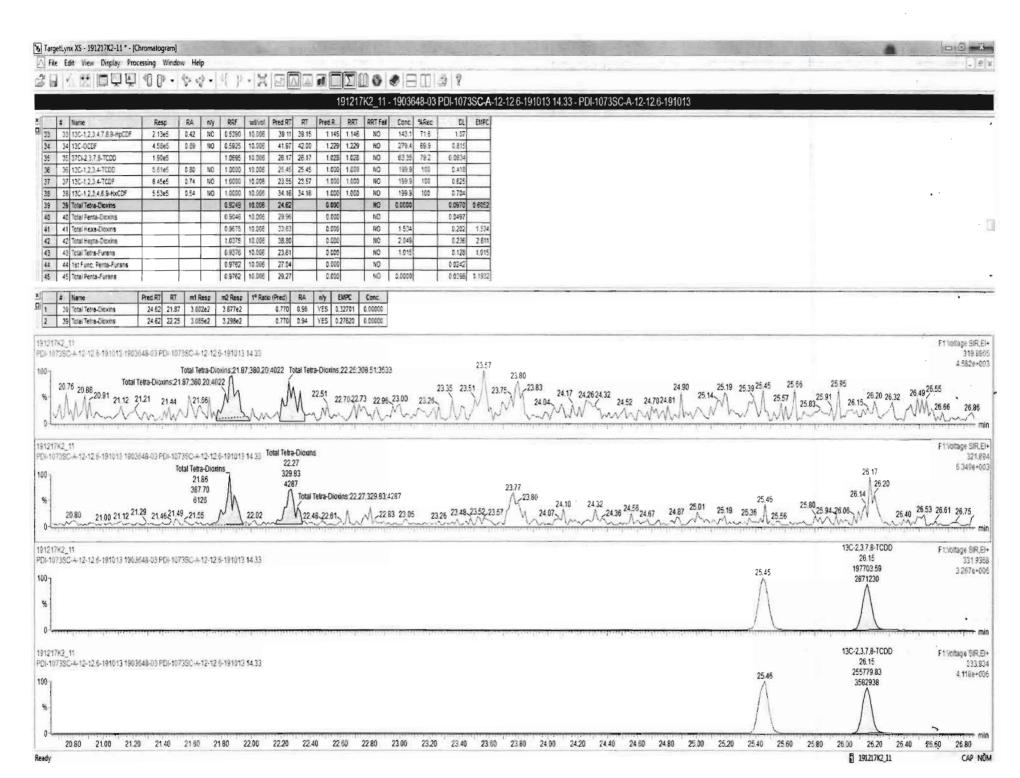
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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

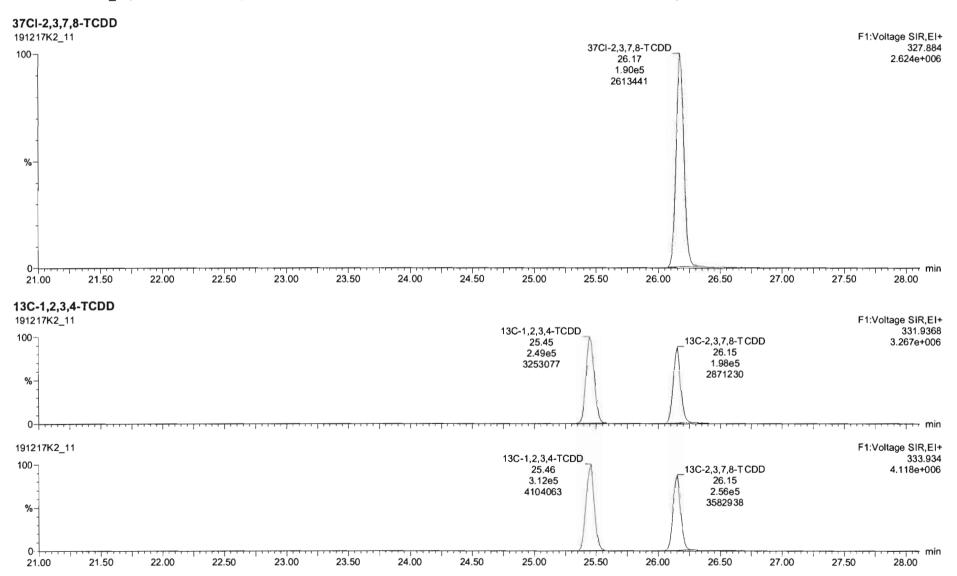




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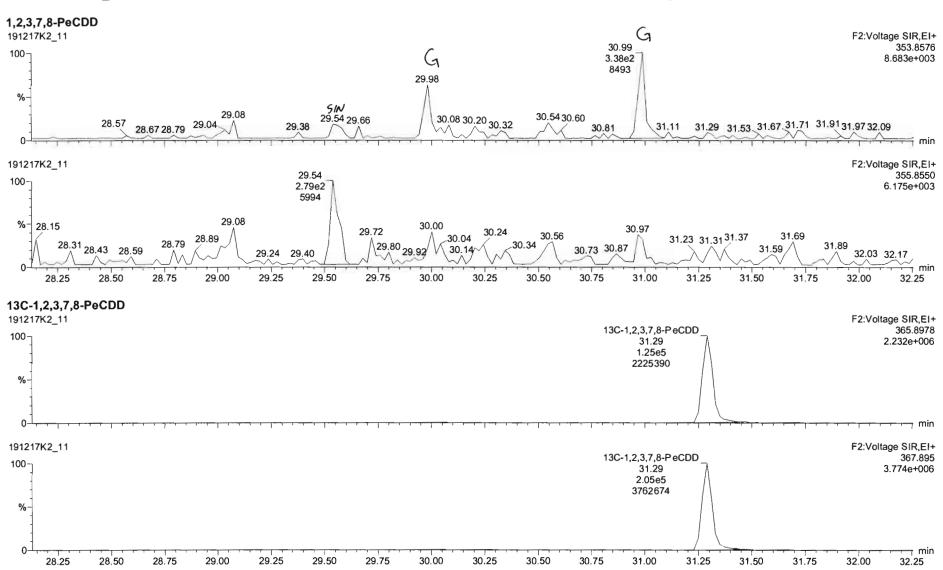
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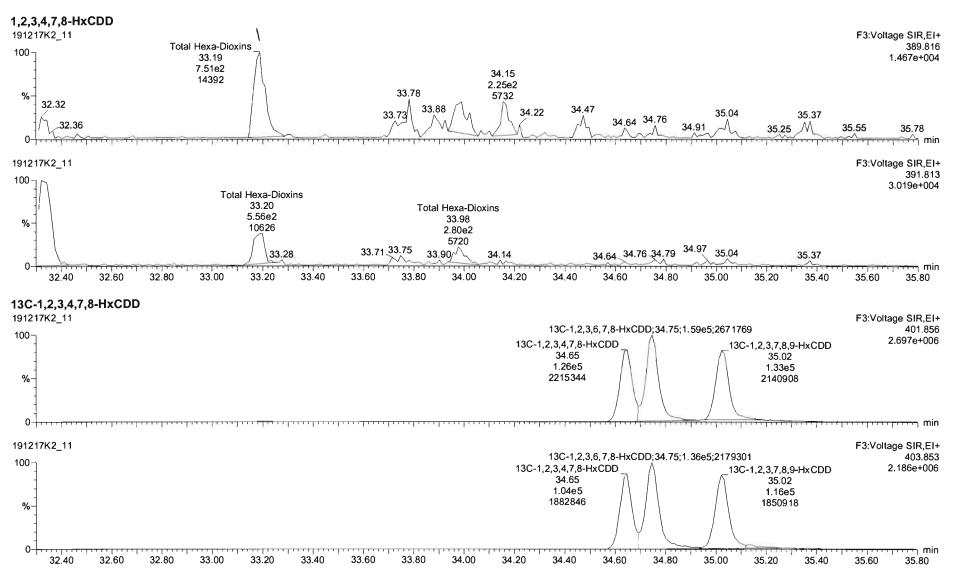
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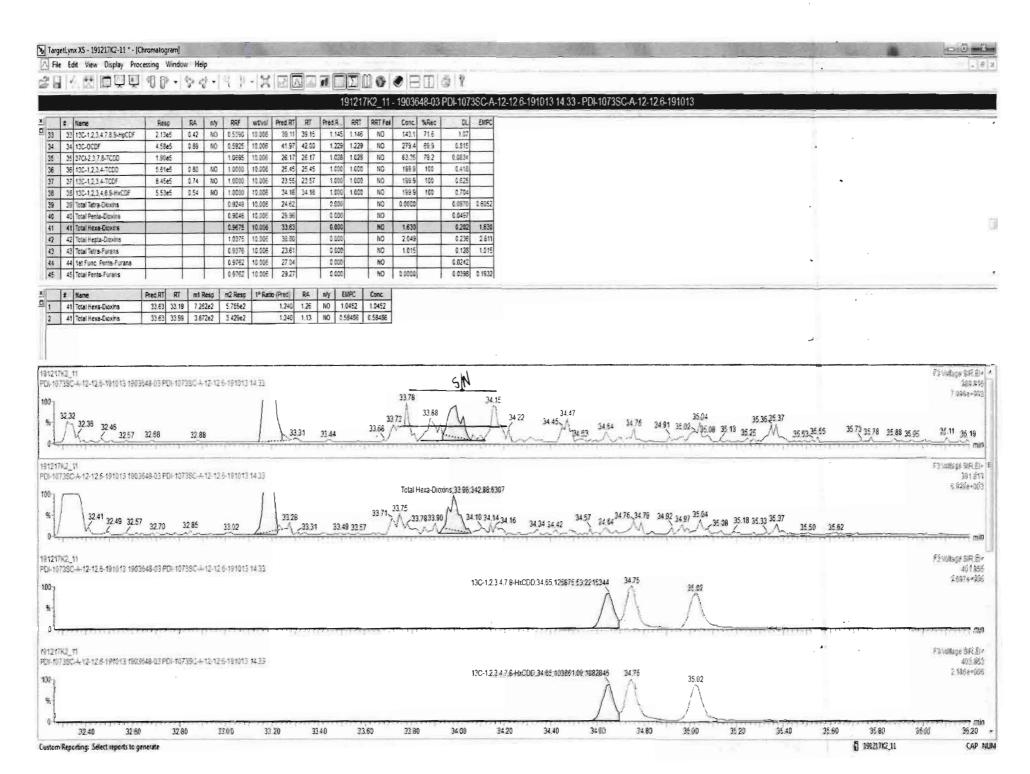
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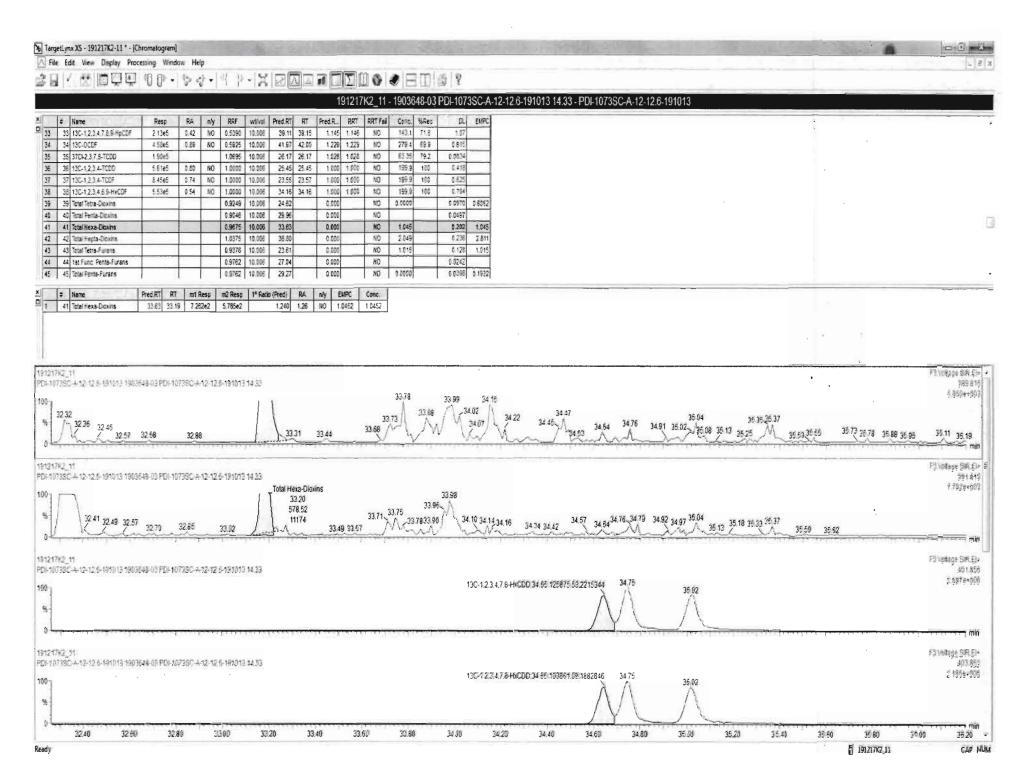
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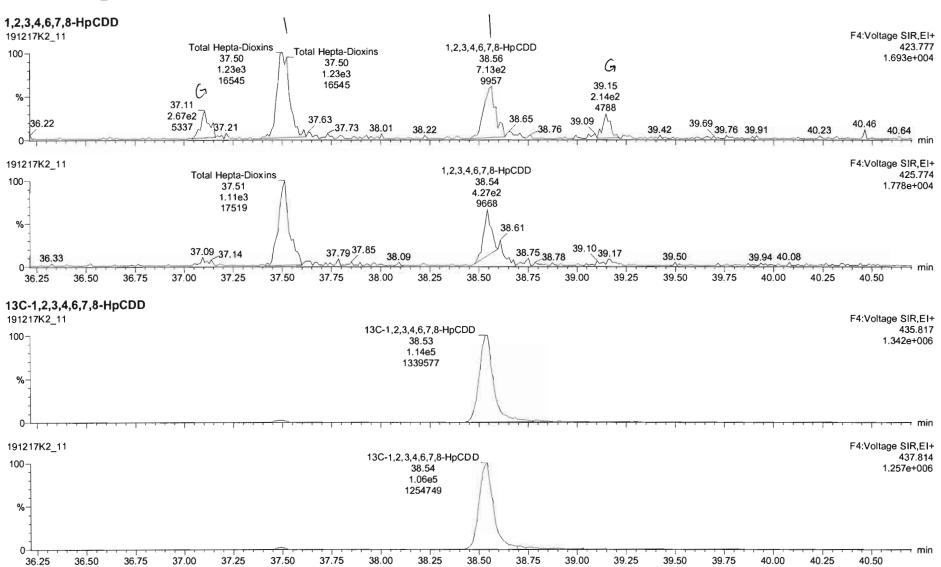
Work Order 1903648 Page 161 of 513

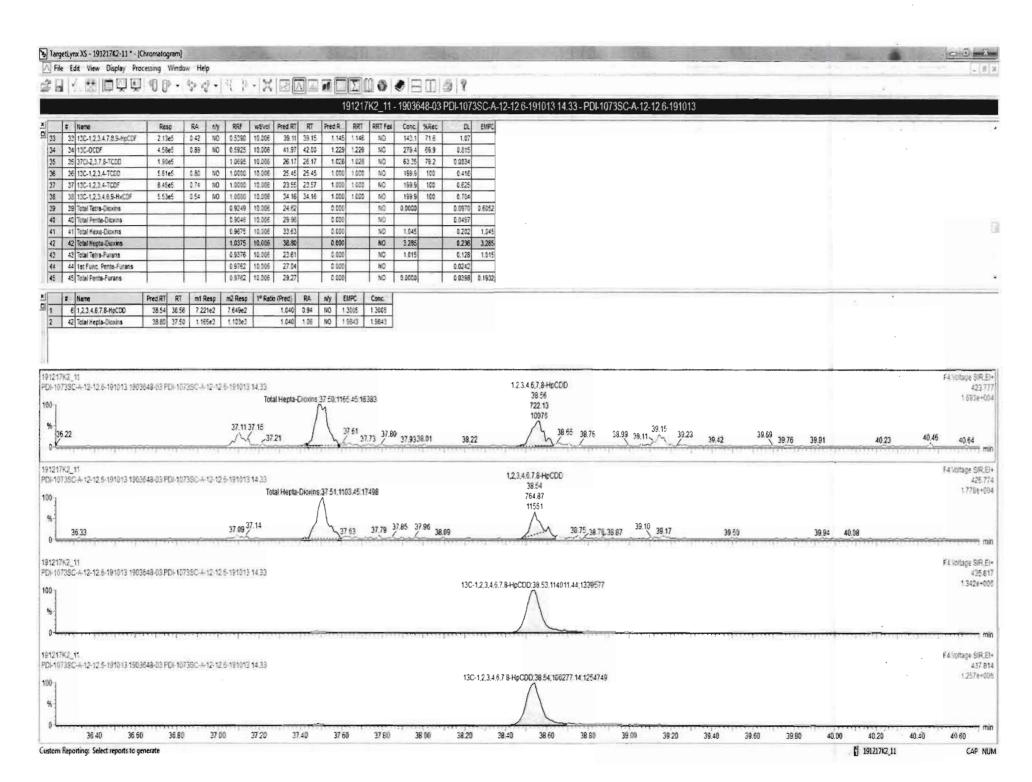


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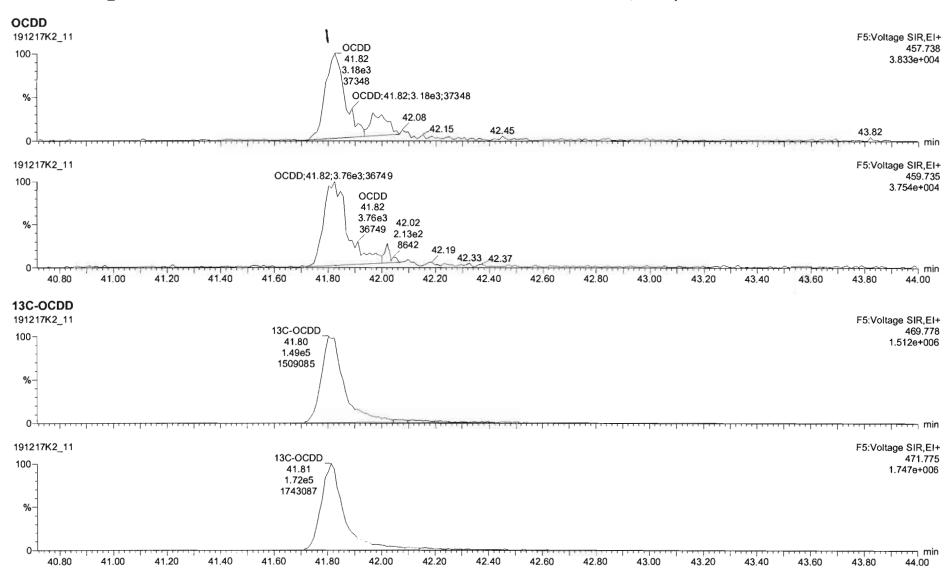


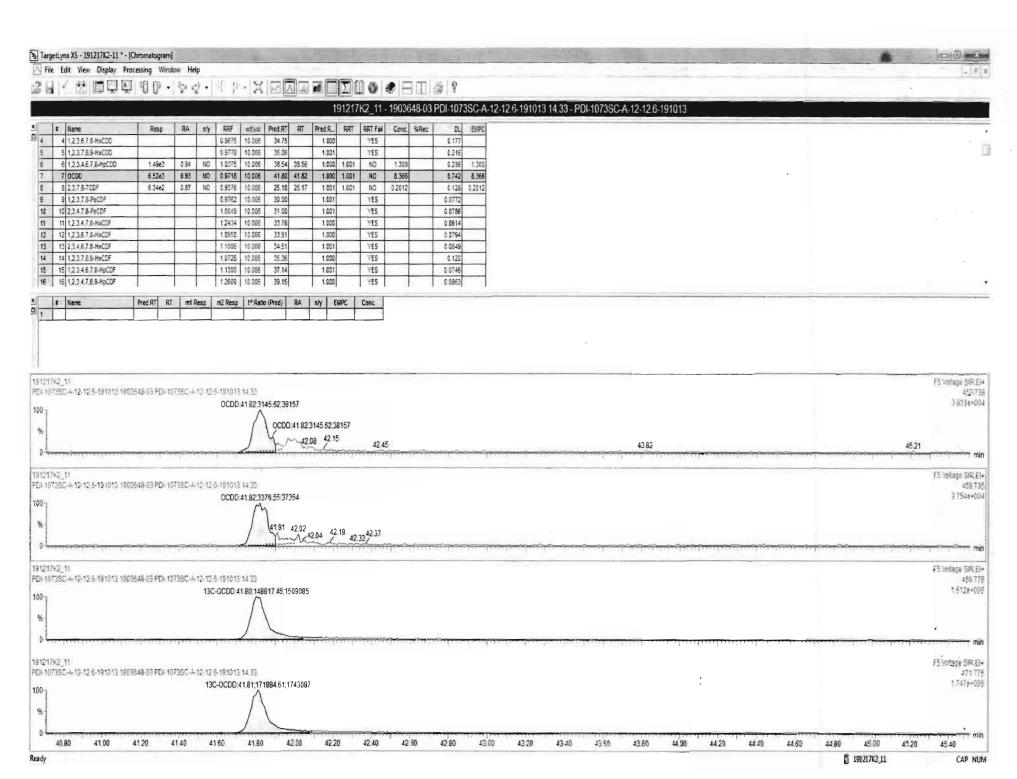


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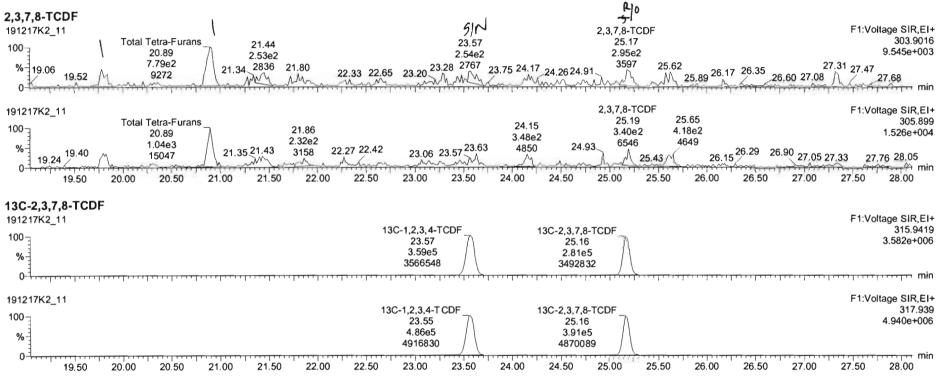


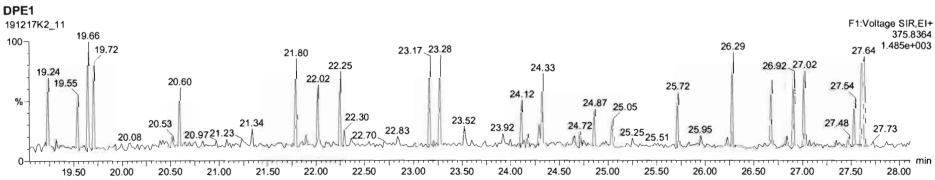


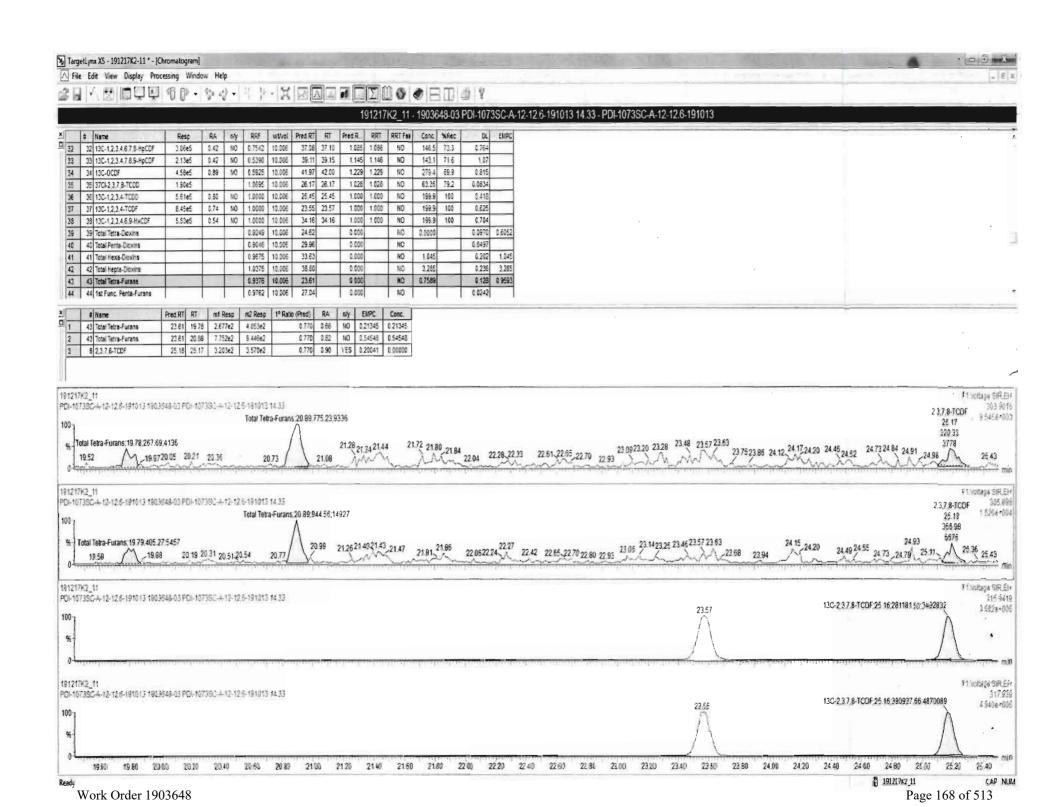
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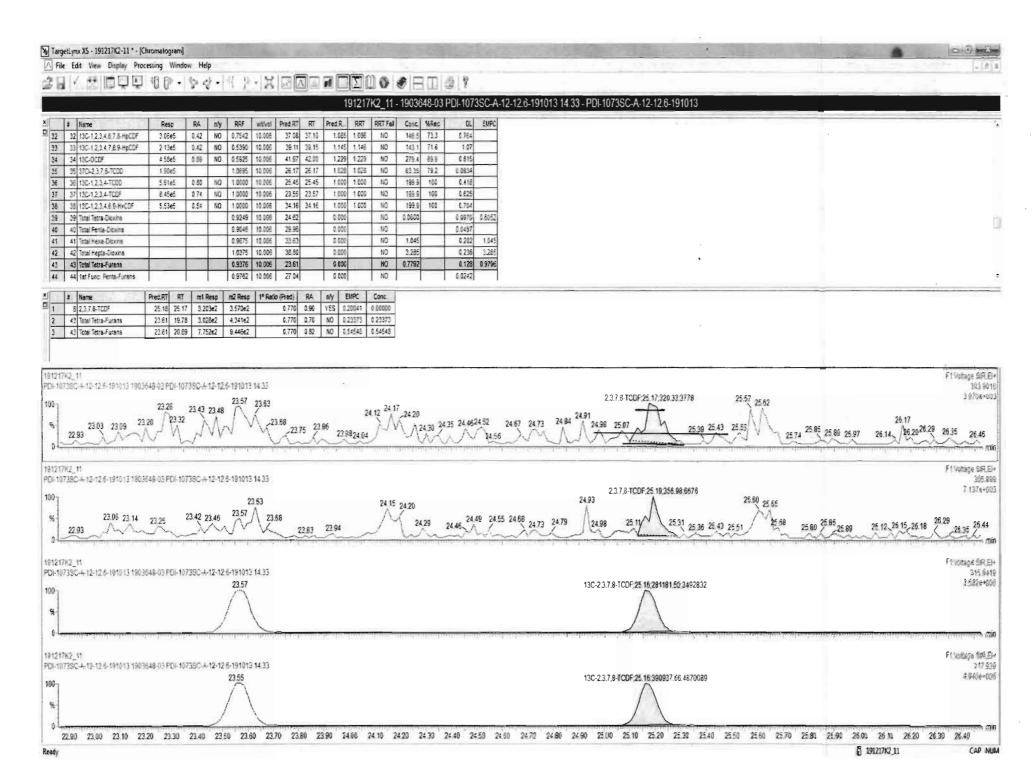
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Wednesday, December 18, 2019 18:00:55 Pacific Standard Time







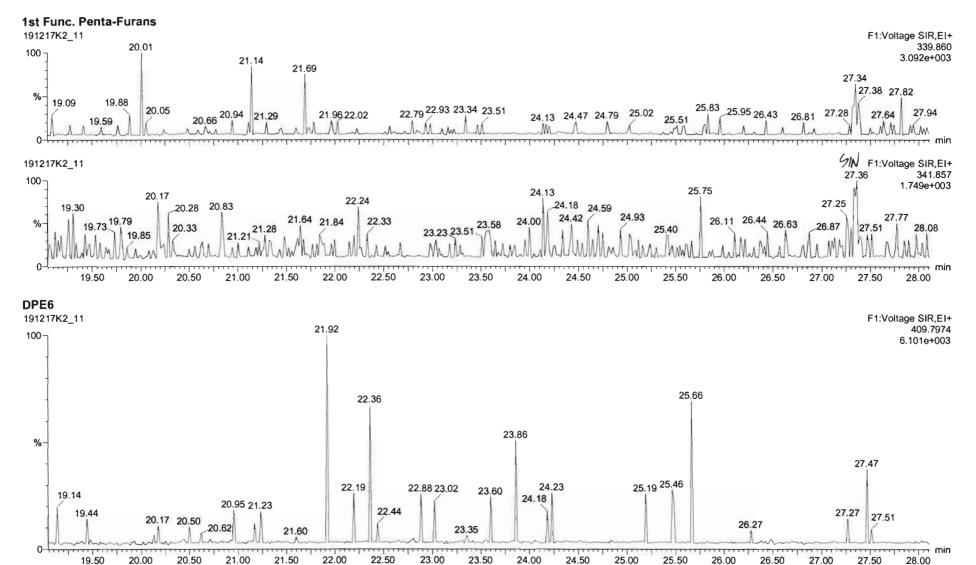


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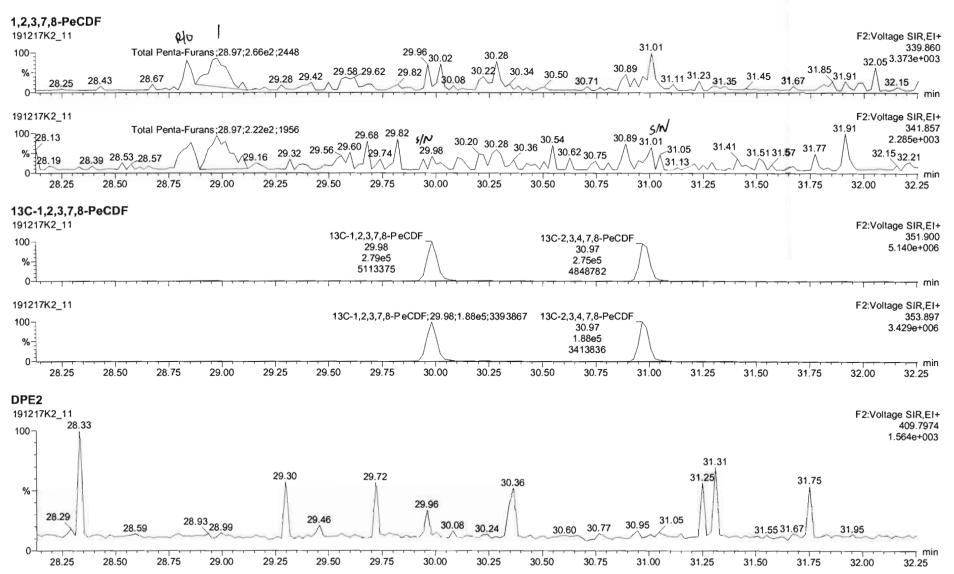
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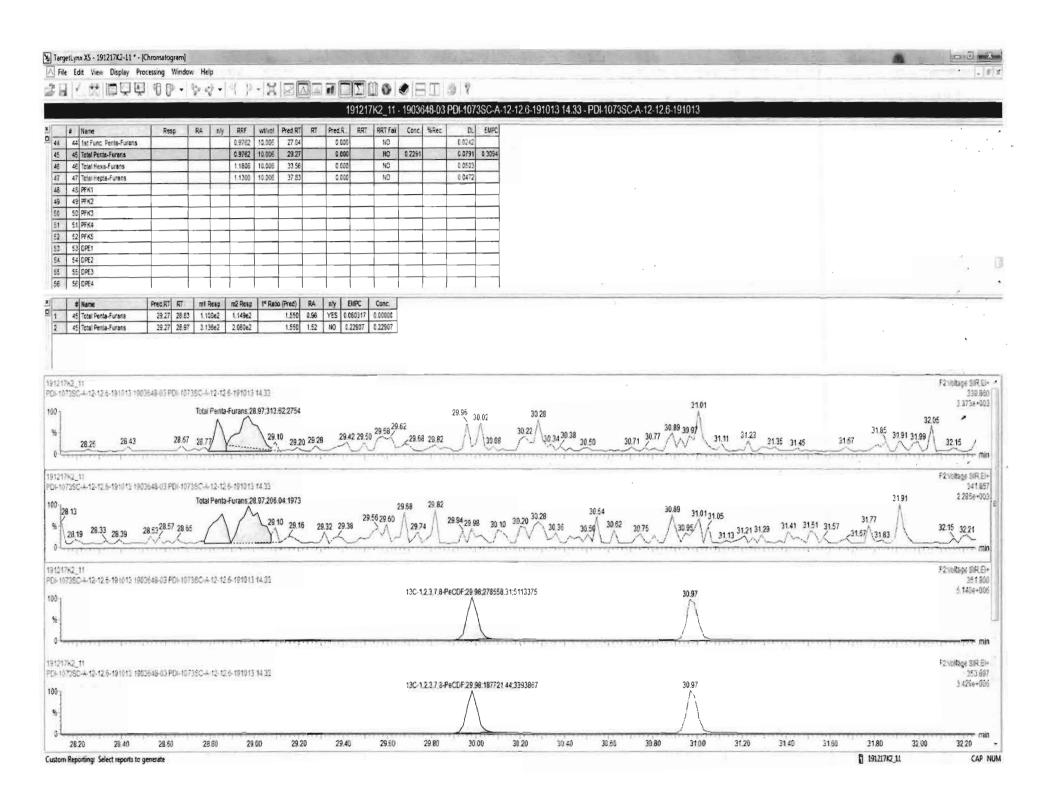
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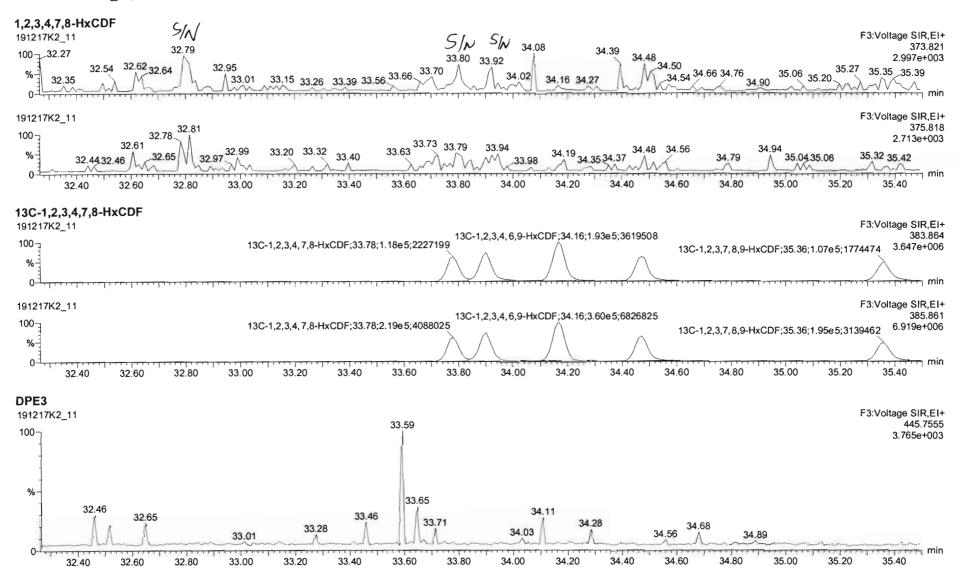


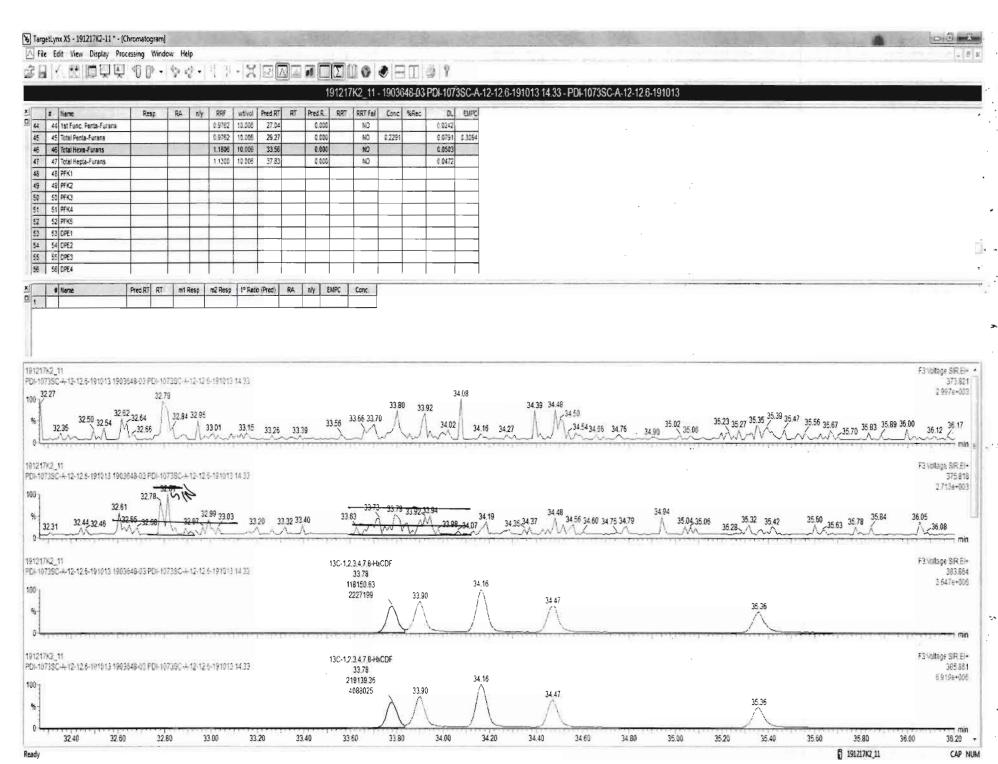


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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

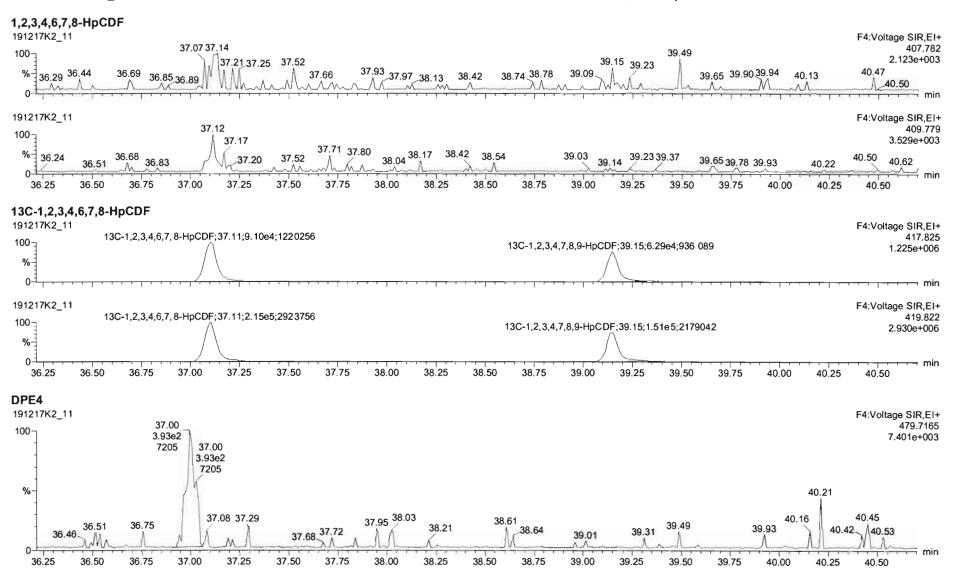


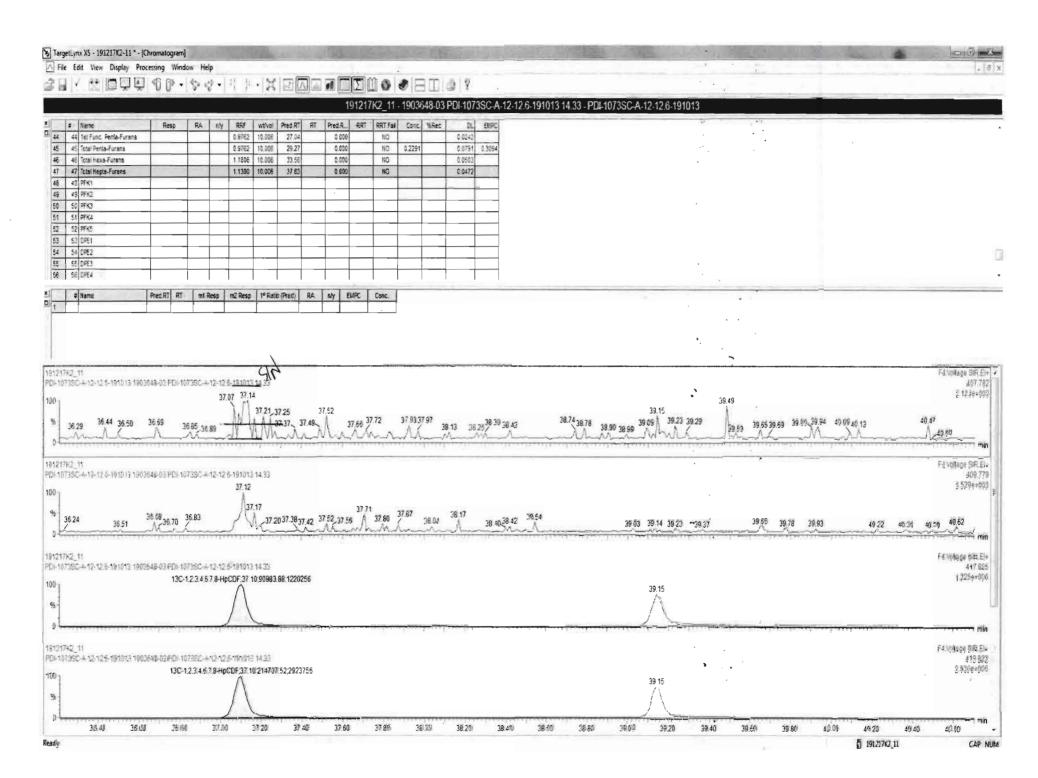


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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



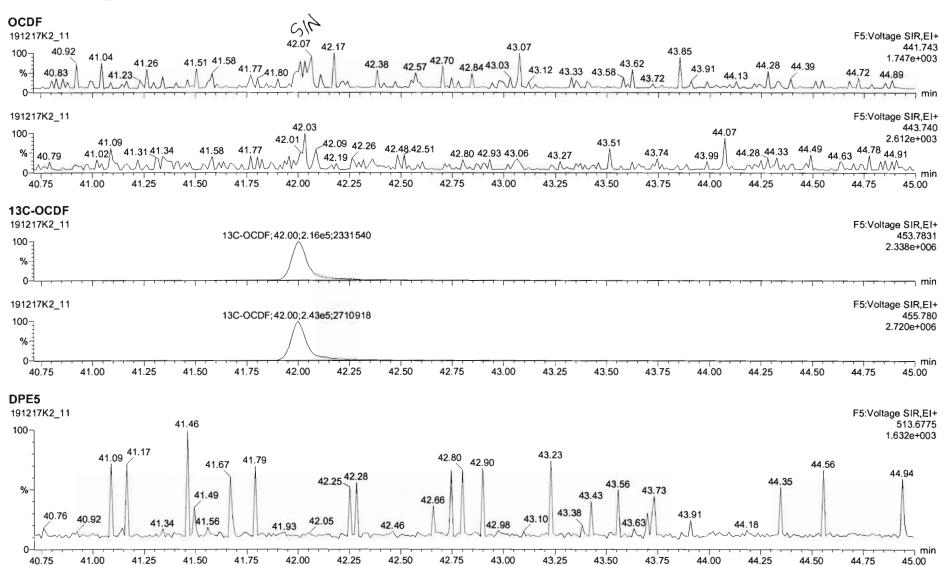


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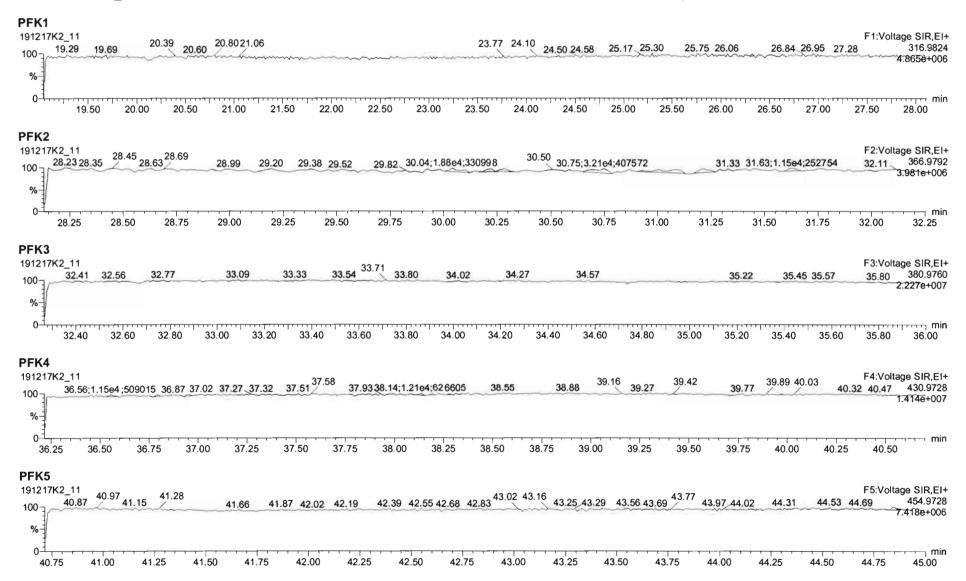
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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time

Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



Quantify Sample Summary Report Vista Analytical Laboratory MassLynx MassLynx V4.1 SCN 945

Page 1 of 2

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-12.qld

Last Altered: Printed:

Thursday, December 26, 2019 16:50:08 Pacific Standard Time Thursday, December 26, 2019 17:24:57 Pacific Standard Time

EL 12/26/19

C7 12/27/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_12, Date: 17-Dec-2019, Time: 22:43:08, ID: 1903648-04 PDI-075SC-A-14-15-191013 15.95, Description: PDI-075SC-A-14-15-191013

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD				0.925	10.041	26.18		1.00		YES			0.167	
2	2 1,2,3,7,8-PeCDD				0.905	10.041	31.33		1.00		YES			0.115	}
3	3 1,2,3.4,7,8-HxCDD				1.07	10.041	34.67		1.00		YES			0.193	1
4	4 1,2,3,6,7,8-HxCDD				0.967	10.041	34.76		1.00		YES			0.178	ł
5	5 1,2,3,7,8,9-HxCDD				0.978	10.041	35.07		1.00		YES			0.207	1
6	6 1,2,3,4,6,7,8-HpCDD	1190.911	1.023	NO	1.04	10.041	38.57	38.55	1.00	1.00	NO	1.131		0.262	1.131
7 10 10 10 10	7 OCDD	6517.330	0.867	NO	0.972	10.041	41.83	41.86	1.00	1.00	NO	8.853		0.506	8.853
8	8 2,3,7,8-TCDF				0.938	10.041	25.20		1.00		YES			0.146	}
9	9 1,2,3,7,8-PeCDF				0.976	10.041	30.02		1.00		YES			0.0856	
10	10 2,3,4,7,8-PeCDF				1.00	10.041	31.02		1.00		YES			0.0741	}
11 - 15 5 5	11 1,2,3,4,7,8-HxCDF	149.887	1.455	YES	1.24	10.041	33.79	33.81	1.00	1.00	NO	0.07169		0.0380	0.06500
12	12 1,2,3,6,7,8-HxCDF				1.10	10.041	33.92		1.00		YES			0.0827	
13	13 2,3,4,6,7,8-HxCDF				1.18	10.041	34.53		1.00		YES			8880.0	
14	14 1,2,3,7,8,9-HxCDF				1.07	10.041	35.37		1.00		YES			0.124	
15	15 1,2,3,4,6,7,8-HpCDF	255.391	0.958	NO	1.13	10.041	37.15	37.13	1.00	1.00	NO	0.1530		0.0391	0.1530
16	16 1,2,3,4,7,8,9-HpCDF				1.26	10.041	39.16		1.00		YES			0.105	
17	17 OCDF				1.10	10.041	42.02		1.00		YES			0.170	
18	18 13C-2,3,7,8-TCDD	429369.047	0.778	NO	1.05	10.041	26.16	26.15	1.03	1.03	NO	166.4	83.5	0.447	
19	19 13C-1,2,3,7,8-PeCDD	329887.883	0.605	NO	0.743	10.041	31.31	31.31	1.23	1.23	NO	180.5	90.6	0.448	
20	20 13C-1,2,3,4,7,8-HxCDD	220650.265	1.238	NO	0.646	10.041	34.65	34.66	1.01	1.01	NO	136.6	68.6	0.737	}
21	21 13C-1,2,3,6,7,8-HxCDD	284217.797	1.180	NO	0.777	10.041	34.75	34.76	1.02	1.02	NO	146.4	73.5	0.613	
22	22 13C-1,2,3,7,8,9-HxCDD	249804.102	1.162	NO	0.659	10.041	35.02	35.03	1.02	1.02	NO	151.6	76.1	0.722	1
23	23 13C-1,2,3,4,6,7,8-HpCDD	202162.632	1.080	NO	0.534	10.041	38.52	38.55	1.13	1.13	NO	151.4	76.0	0.784	1
24	24 13C-OCDD	3 0 1791.062	0.900	NO	0.470	10.041	41.80	41.83	1.22	1.22	NO	256.8	64.5	1.15	
25	25 13C-2,3,7,8-TCDF	642138.375	0.736	NO	0.977	10.041	25.17	25.17	0.99	0.99	NO	169.9	85.3	0.618	
26	26 13C-1,2,3,7,8-PeCDF	482626.969	1.563	NO	0.778	10.041	30.00	30.00	1.18	1.18	NO	160.5	80.6	0.911	
27	27 13C-2,3,4,7,8-PeCDF	470617.734	1.475	NO	0.750	10.041	30.99	30.99	1.22	1.22	NO	162.3	81.5	0.945	
28	28 13C-1,2,3,4,7,8-HxCDF	334886.781	0.525	NO	0.845	10.041	33.79	33.79	0.99	0.99	NO	158.6	79.6	1.04	
29	29 13C-1,2,3,6,7,8-HxCDF	403362.438	0.518	NO	1.03	10.041	33.90	33.91	0.99	0.99	NO	157.2	78.9	0.852	
30	30 13C-2,3,4,6,7,8-HxCDF	347968.390	0.515	NO	0.893	10.041	34.48	34.49	1.01	1.01	NO	156.0	78.3	0.980	

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191217K2\191217K2-12.qld

Last Altered: Thursday, December 26, 2019 16:50:08 Pacific Standard Time Thursday, December 26, 2019 17:24:57 Pacific Standard Time

Name: 191217K2_12, Date: 17-Dec-2019, Time: 22:43:08, ID: 1903648-04 PDI-075SC-A-14-15-191013 15.95, Description: PDI-075SC-A-14-15-191013

STATE	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
31	31 13C-1,2,3,7,8,9-HxCDF	299907.305	0.492	NO	0.734	10.041	35.38	35.37	1.04	1.03	NO	163.4	82.1	1.19	
32	32 13C-1,2,3,4,6,7,8-HpCDF	294172.258	0.425	NO	0.754	10.041	37.09	37.12	1.09	1.09	NO	156.1	78.4	0.722	
33	33 13C-1,2,3,4,7,8,9-HpCDF	206565.895	0.433	NO	0.539	10.041	39.12	39.16	1.14	1.15	NO	153.4	77.0	1.01	
34	34 13C-OCDF	432818.047	0.881	NO	0.593	10.041	41.99	42.02	1.23	1.23	NO	292.3	73.4	0.716	
35	35 37Cl-2,3,7,8-TCDD	194743.219			1.07	10.041	26.18	26.18	1.03	1.03	NO	74.02	92.9	0.101	
36	36 13C-1,2,3,4-TCDD	490003.719	0.795	NO	1.00	10.041	25.45	25.47	1.00	1.00	NO	199.2	100	0.469	
37	37 13C-1,2,3,4-TCDF	770104.500	0.734	NO	1.00	10.041	23.55	23.58	1.00	1.00	NO	199.2	100	0.604	
38	38 13C-1,2,3,4,6,9-HxCDF	497740.657	0.512	NO	1.00	10.041	34.16	34.17	1.00	1.00	NO	199.2	100	0.875	
39	39 Total Tetra-Dioxins				0.925	10.041	24.62		0.00		NO			0.104	
40	40 Total Penta-Dioxins				0.905	10.041	29.96		0.00		NO	0.0000		0.0431	0.1100
41	41 Total Hexa-Dioxins				0.967	10.041	33.63		0.00		NO	0.0000		0.108	0.7730
42	42 Total Hepta-Dioxins				1.04	10.041	38.80		0.00		NO	2.842		0.262	2.842
43	43 Total Tetra-Furans				0.938	10.041	23.61		0.00		NO	0.5920		0.146	0.5920
44	44 1st Func. Penta-Furans				0.976	10.041	27.04		0.00		NO			0.0127	
45	45 Total Penta-Furans				0.976	10.041	29.27		0.00		NO	0.2707		0.0440	0.2710
46	46 Total Hexa-Furans				1.18	10.041	33.56		0.00		NO	0.1683		0.0439	0.2810
47	47 Total Hepta-Furans				1.13	10.041	37.83		0.00		NO	0.1530		0.0450	0.1530

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Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-12.qld

Last Altered:

Thursday, December 26, 2019 16:50:08 Pacific Standard Time

Printed: Thursday, December 26, 2019 17:26:44 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_12, Date: 17-Dec-2019, Time: 22:43:08, ID: 1903648-04 PDI-075SC-A-14-15-191013 15.95, Description: PDI-075SC-A-14-15-191013

Tetra-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Penta-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	40 Total Penta-Dioxins	0.00e0	3.30e5	0.763	YES	29.96	29.56	0.0000	0.1100

Hexa-Dioxins

8 1 1000	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
100000000	41 Total Hexa-Dioxins	0.00e0	0.00e0	1.027	YES	33.63	33.21	0.0000	0.7730

Hepta-Dioxins

CONTRACTOR OF THE	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	1.19e3	2.02e5	1.023	NO	38.57	38.55	1.131	1.131
2	42 Total Hepta-Dioxins	1.80e3	2.02e5	1.065	NO	38.80	37.53	1.711	1.711

Tetra-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 4	3 Total Tetra-Furans	1.79e3	6.42e5	0.768	NO	23.61	20.89	0.5920	0.5920

Penta-Furans function 1

# Name	Area	IS Area	RA	Y/N	Pred.RT	IRT	Conc.	EMPC
1								

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Page 1 of 2

Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Page 2 of 2

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-12.qld

Last Altered:

Thursday, December 26, 2019 16:50:08 Pacific Standard Time

Printed:

Thursday, December 26, 2019 17:26:44 Pacific Standard Time

Name: 191217K2_12, Date: 17-Dec-2019, Time: 22:43:08, ID: 1903648-04 PDI-075SC-A-14-15-191013 15.95, Description: PDI-075SC-A-14-15-191013

Penta-Furans

PART	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	45 Total Penta-Furans	4.08e2	0.00e0	1.758	NO	29.27	28.99	0.1746	0.1750
2	45 Total Penta-Furans	2.24e2	0.00e0	1.351	NO	29.27	28.83	0.09607	0.09600

Hexa-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	11 1,2,3,4,7,8-HxCDF	1.50e2	3.35e5	1.455	YES	33.79	33.81	0.0000	0.06500
2	46 Total Hexa-Furans	0.00e0	0.00e0	1.852	YES	33.56	32.67	0.0000	0.04700
3	46 Total Hexa-Furans	2.29e2	0.00e0	1.371	NO	33.56	32.83	0.1117	0.1120
4	46 Total Hexa-Furans	1.16e2	0.00e0	1.149	NO	33.56	33.69	0.05656	0.05700

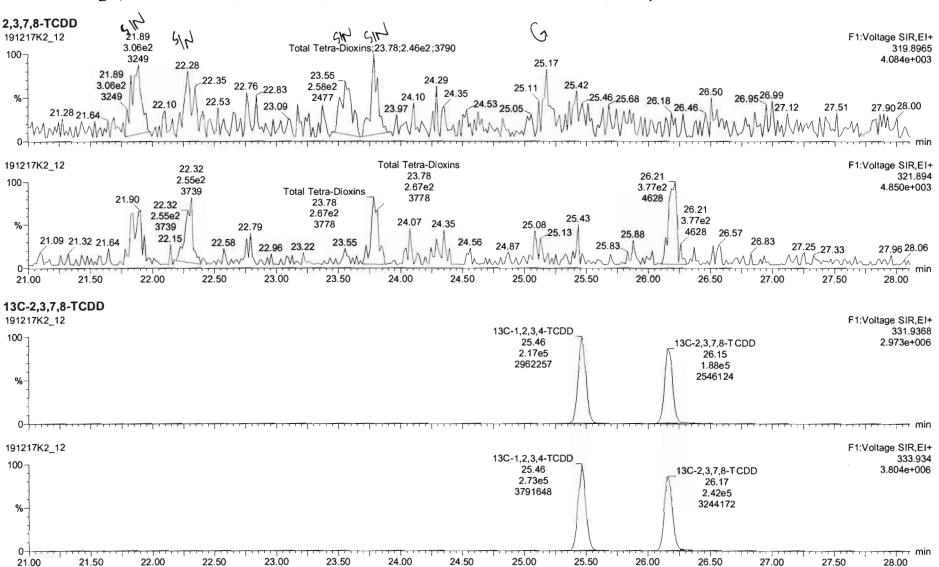
Hepta-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	15 1,2,3,4,6,7,8-HpCDF	2.55e2	2.94e5	0.958	NO	37.15	37.13	0.1530	0.1530

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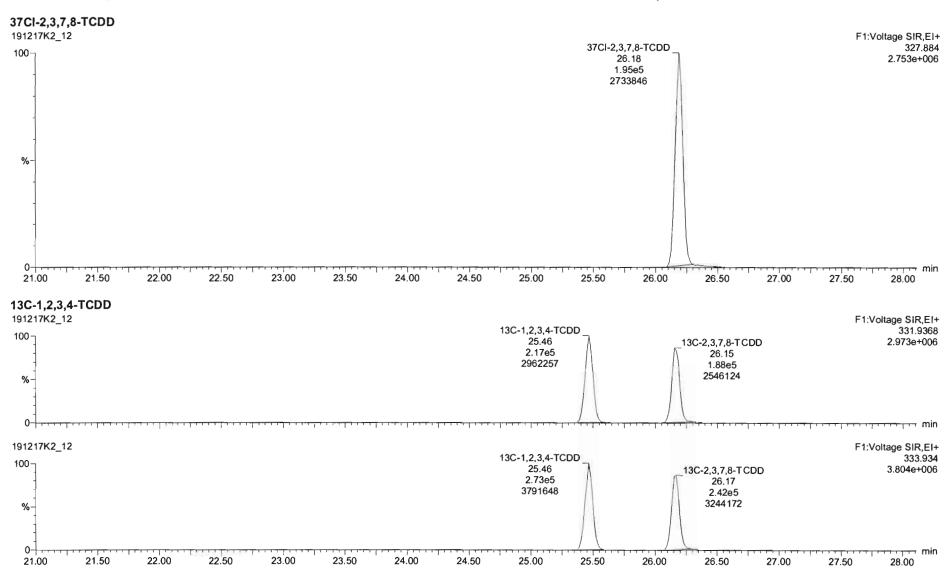
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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



MassLynx 4.1 SCN815

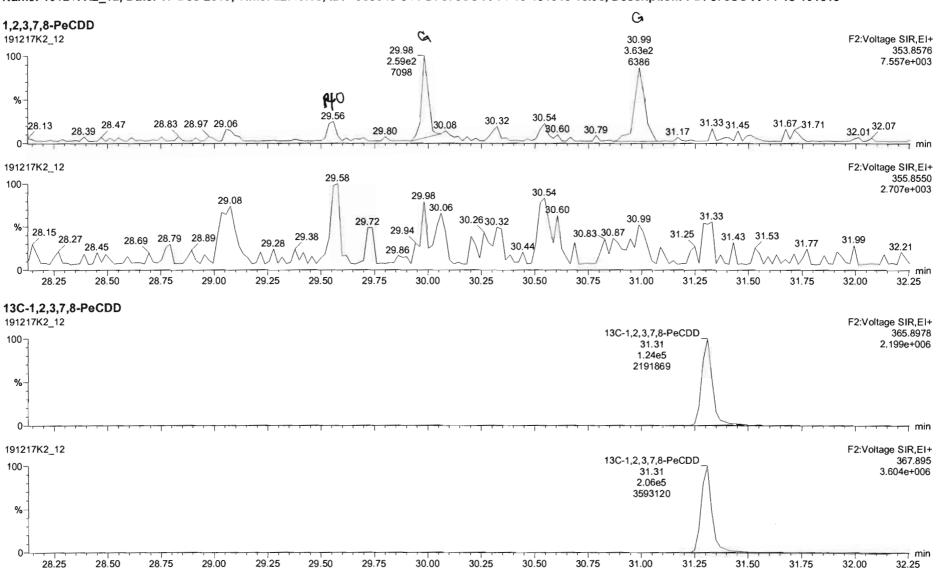
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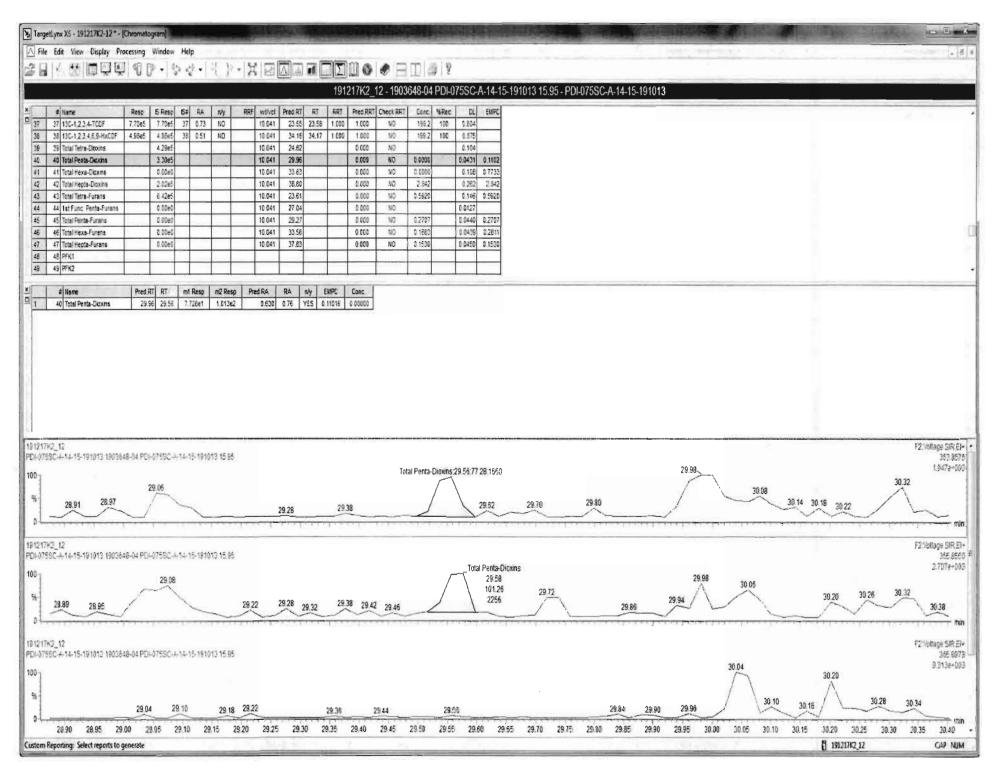
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



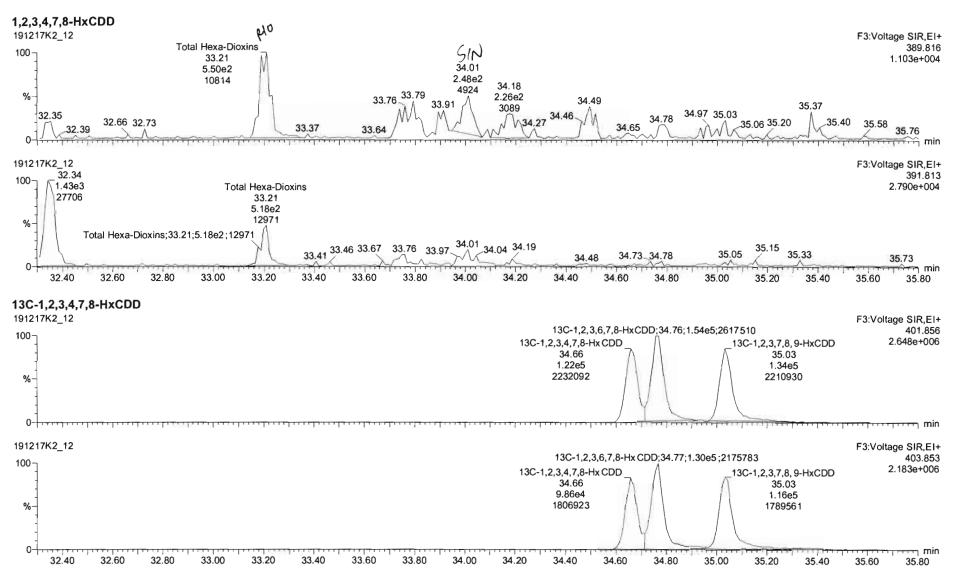


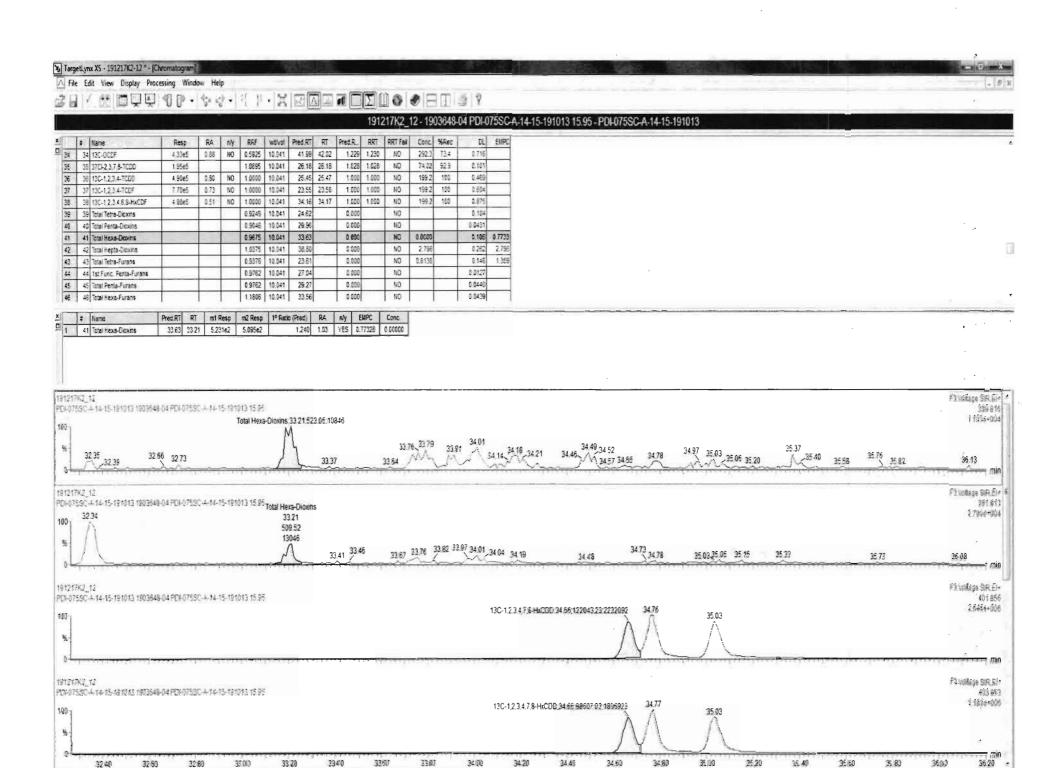
Work Order 1903648 Page 186 of 513

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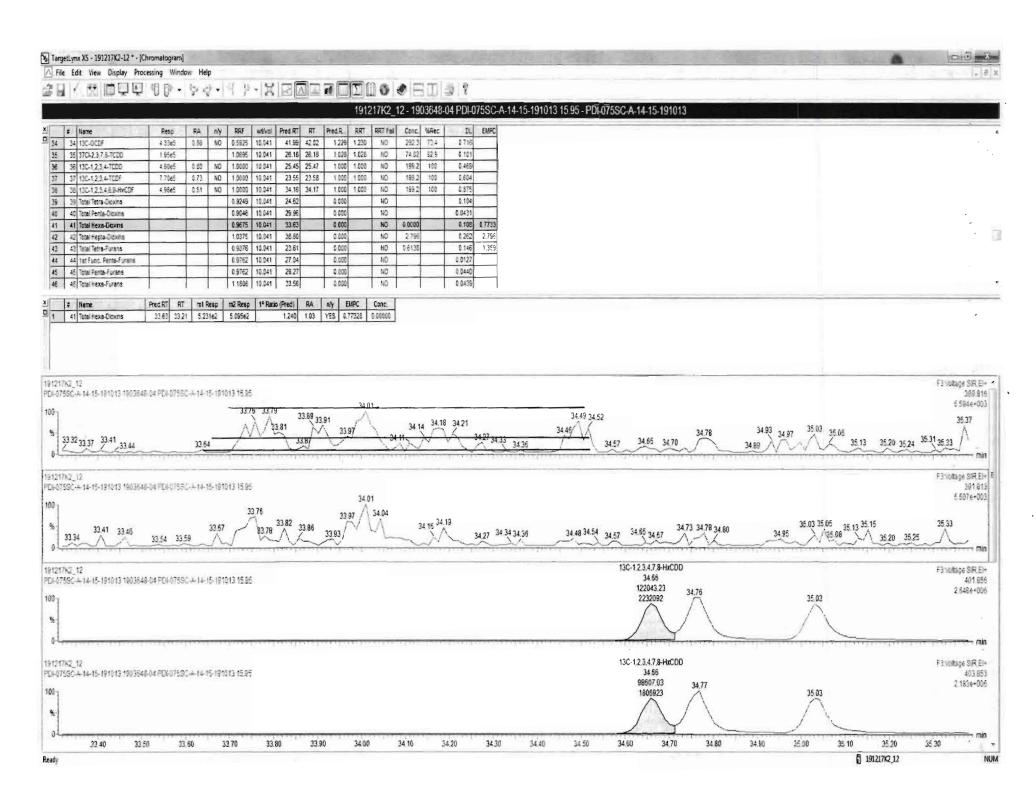
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





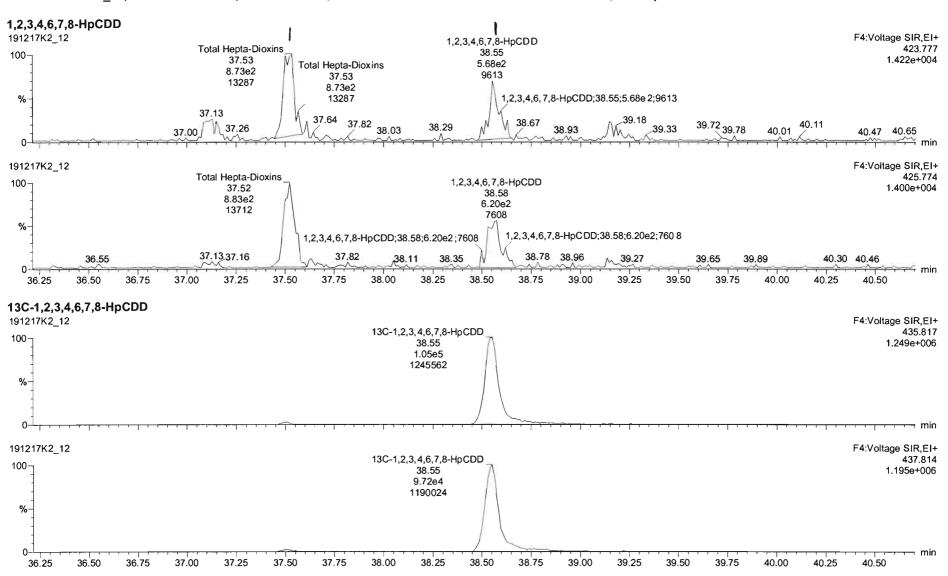
§ 191217K2 12

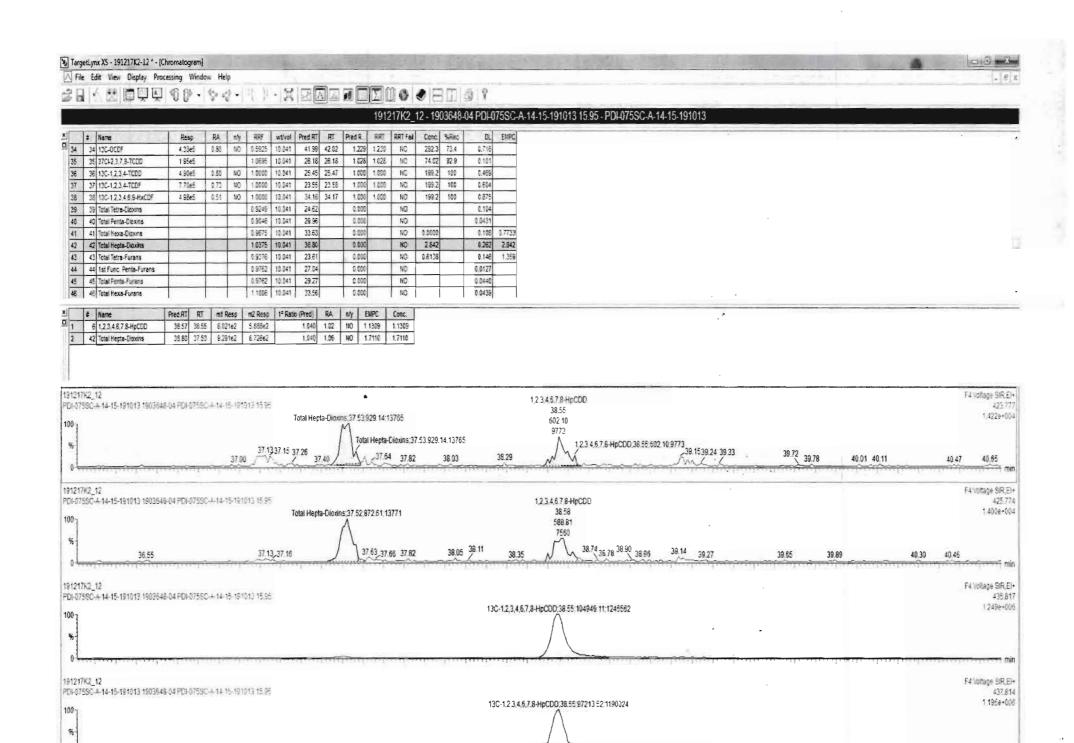


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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





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37 80

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38 40

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39 40

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40.00

40.20

§ 191217K2 12

40.60

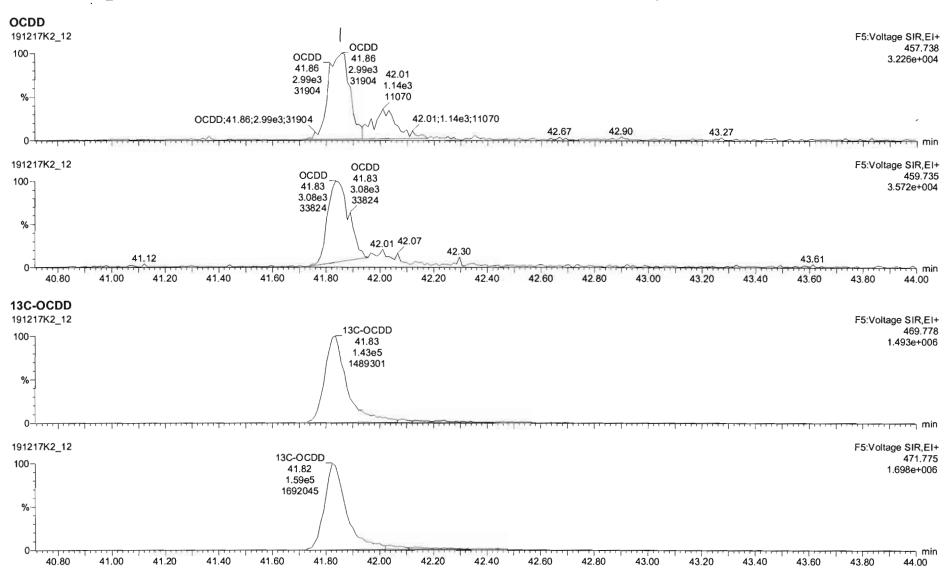
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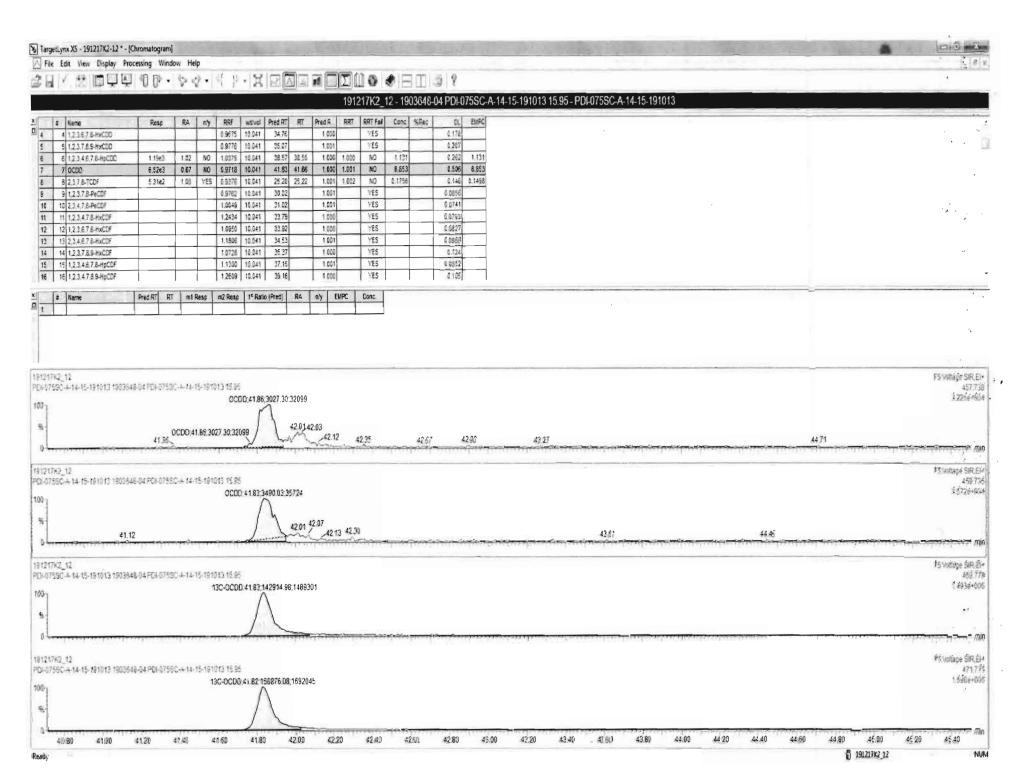
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Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Printed: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_12, Date: 17-Dec-2019, Time: 22:43:08, ID: 1903648-04 PDI-075SC-A-14-15-191013 15.95, Description: PDI-075SC-A-14-15-191013

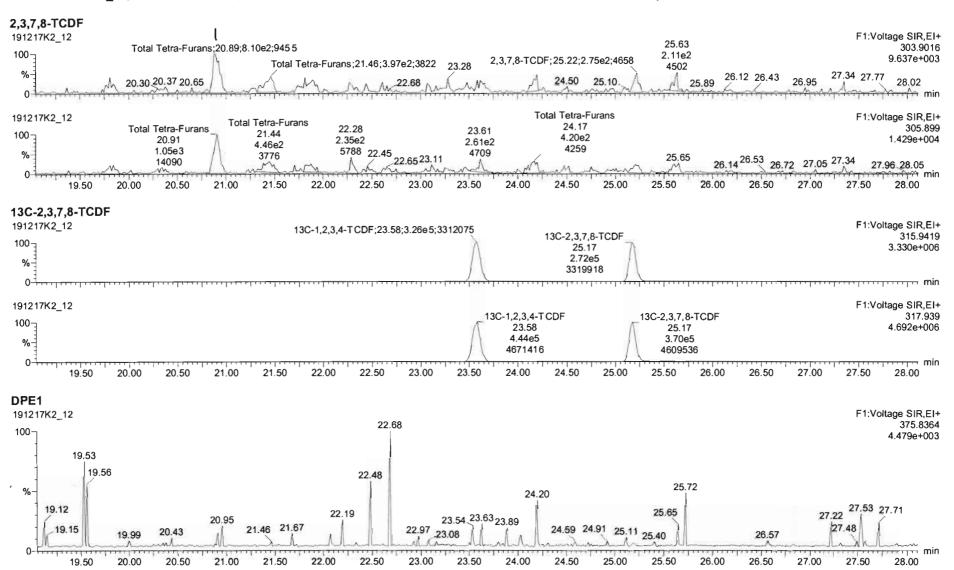


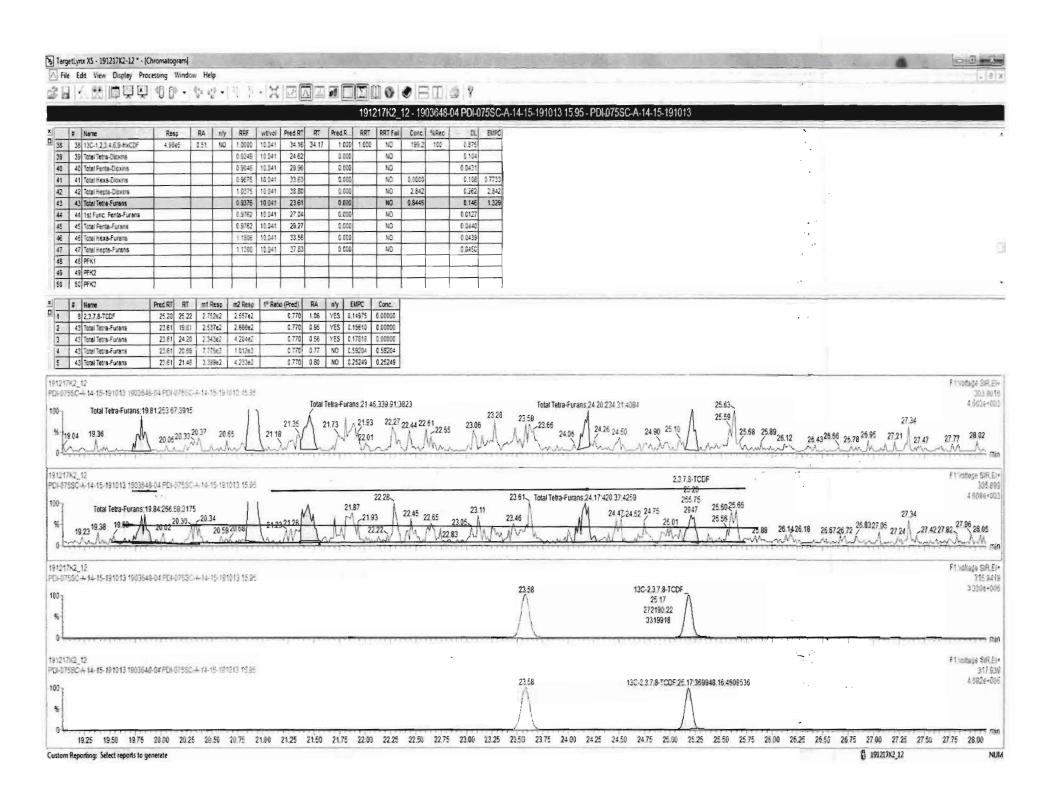


Work Order 1903648 Page 193 of 513

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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



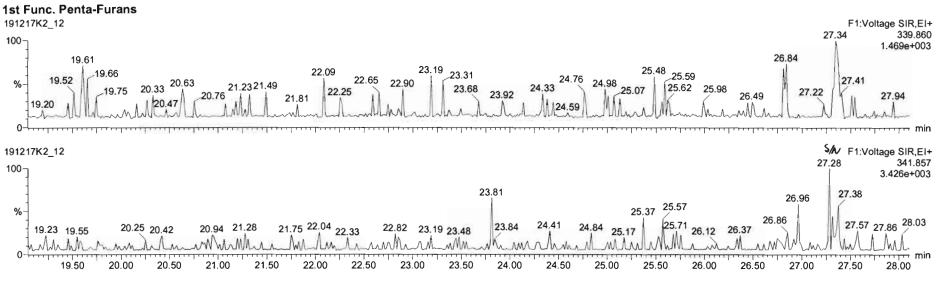


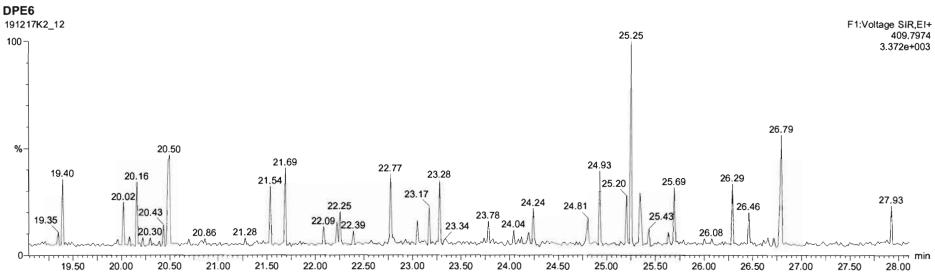
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Printed: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

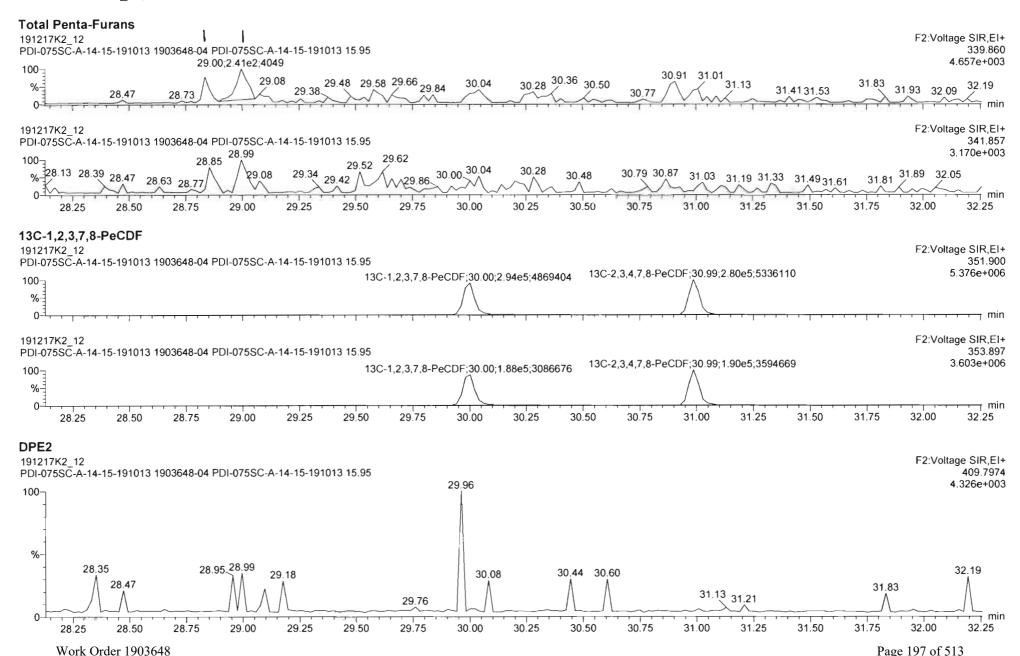


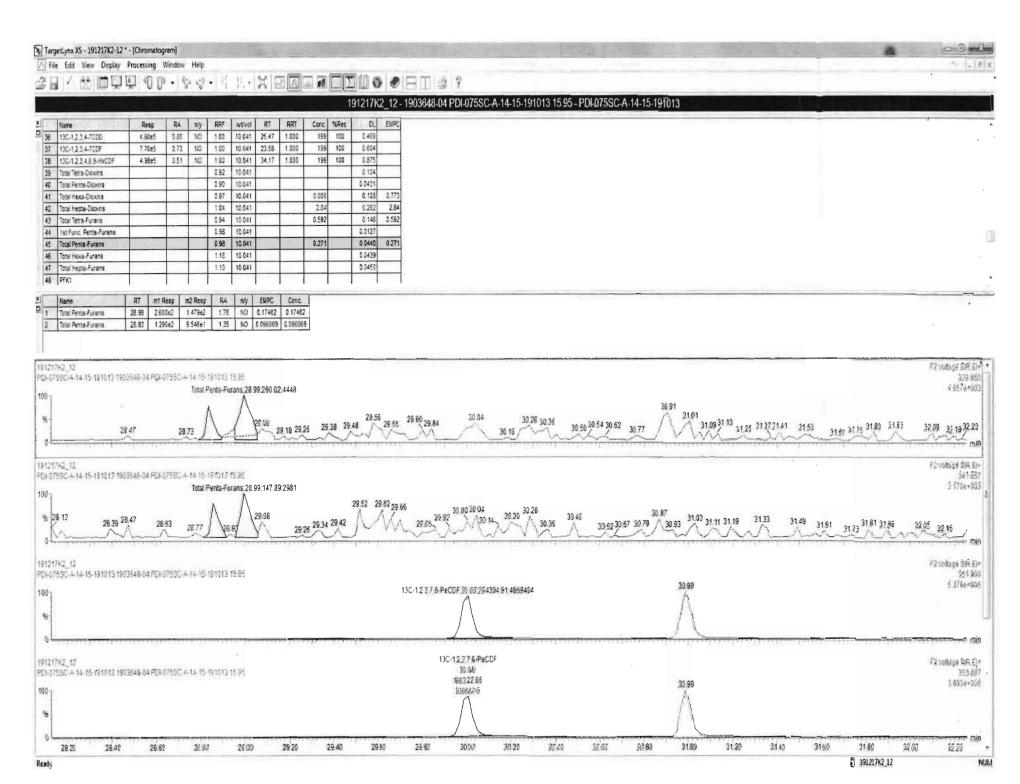


Vista Analytical Laboratory

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Printed: Monday, December 23, 2019 08:34:10 Pacific Standard Time

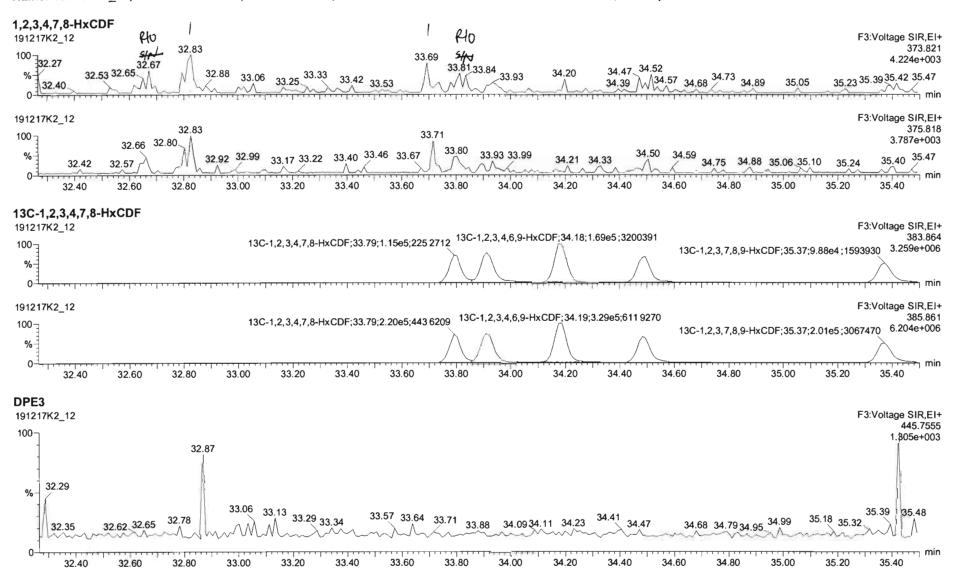


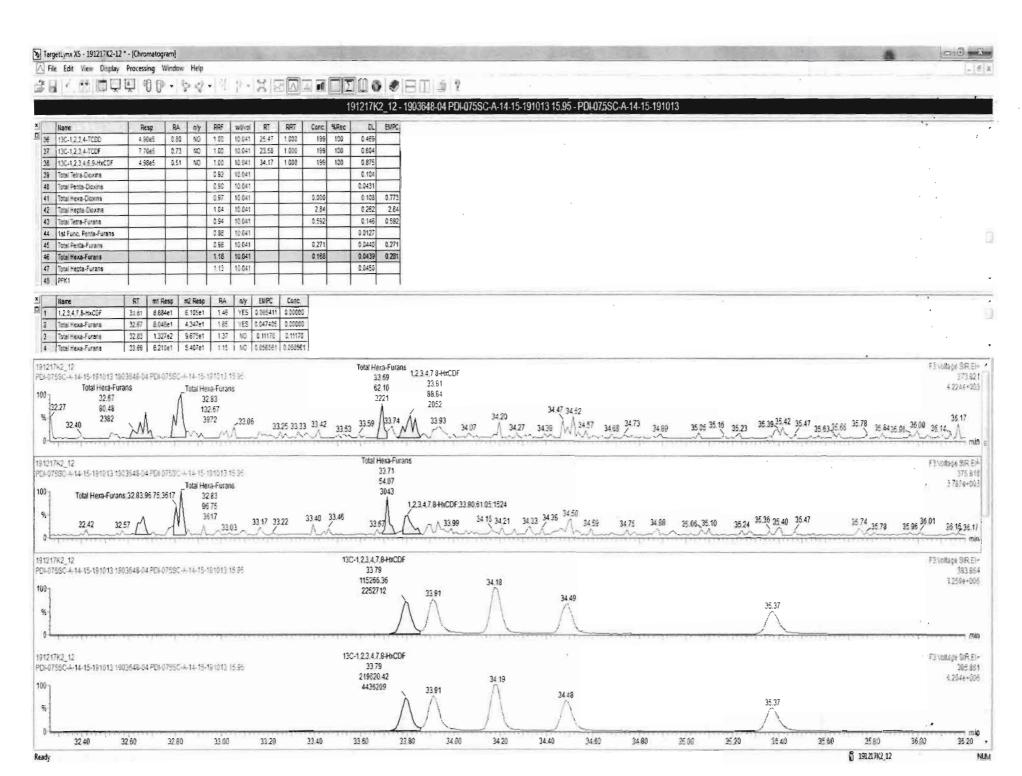


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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

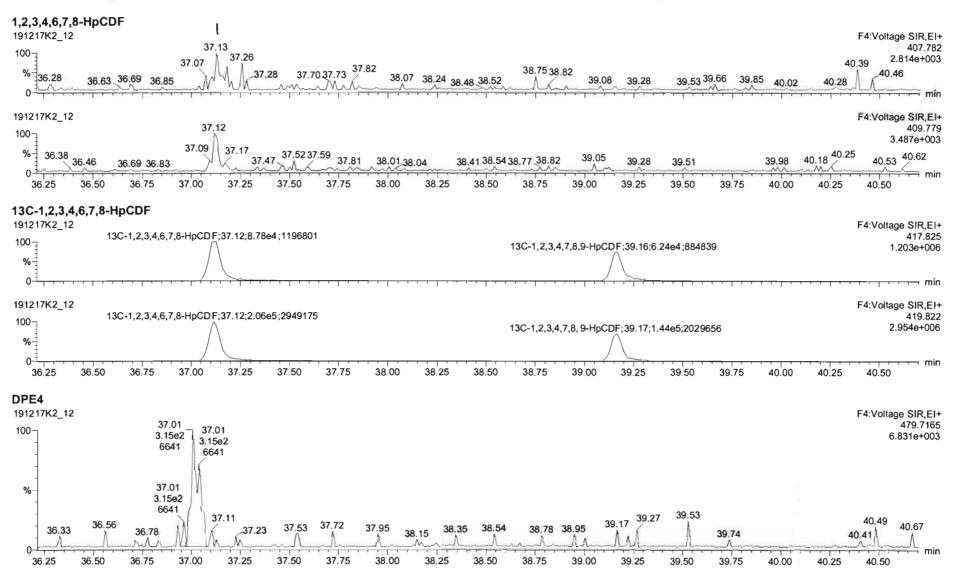


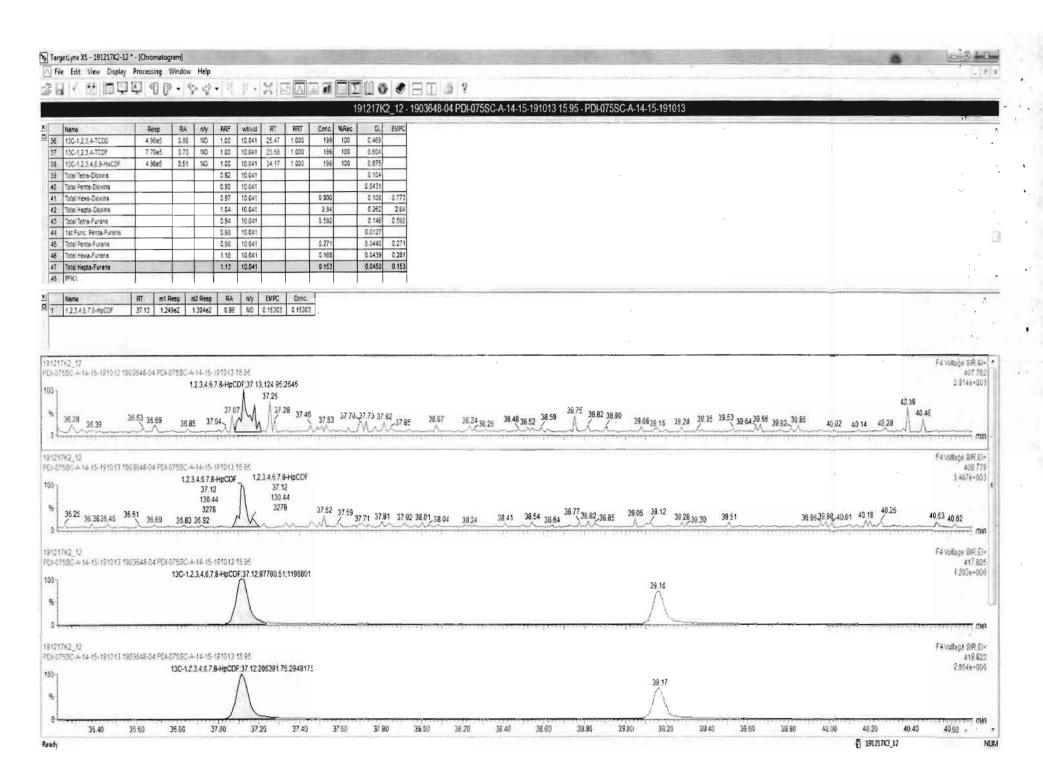


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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





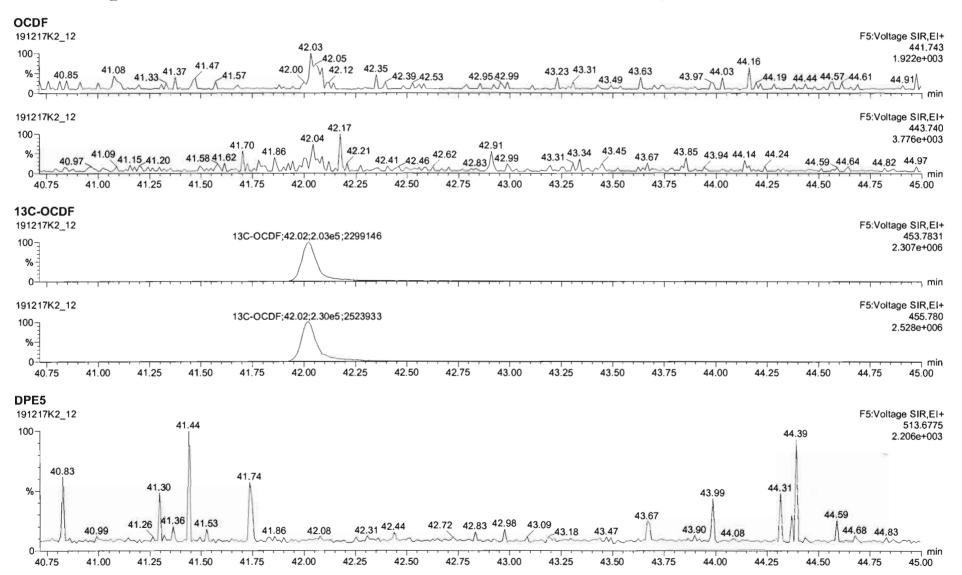
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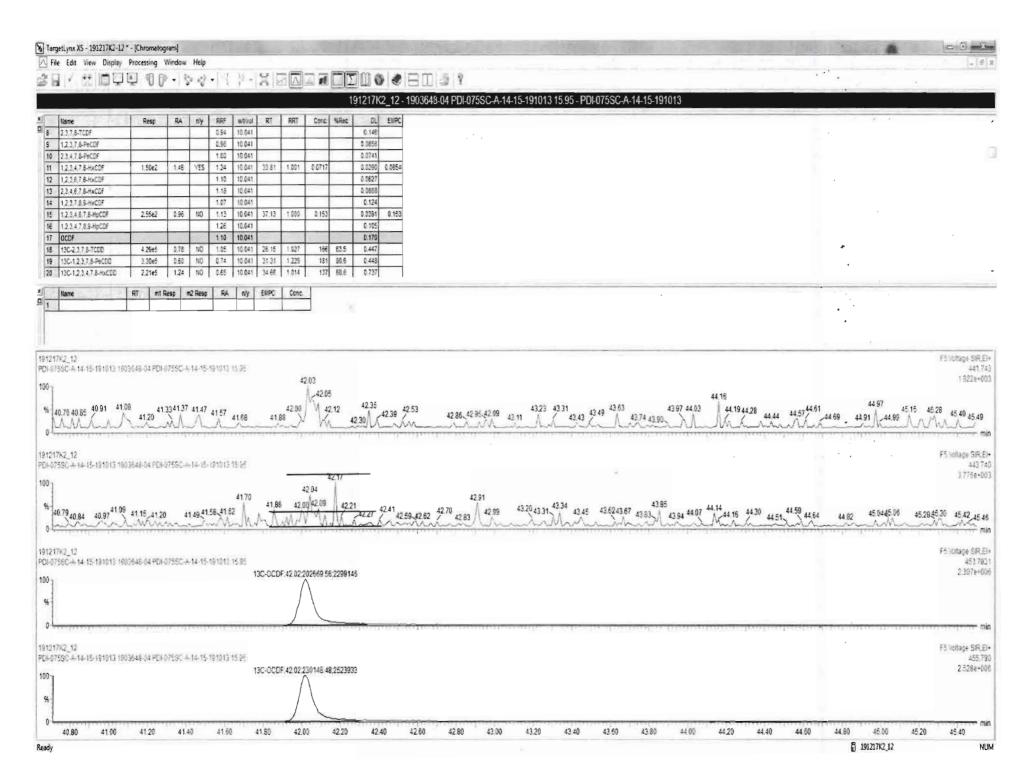
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Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





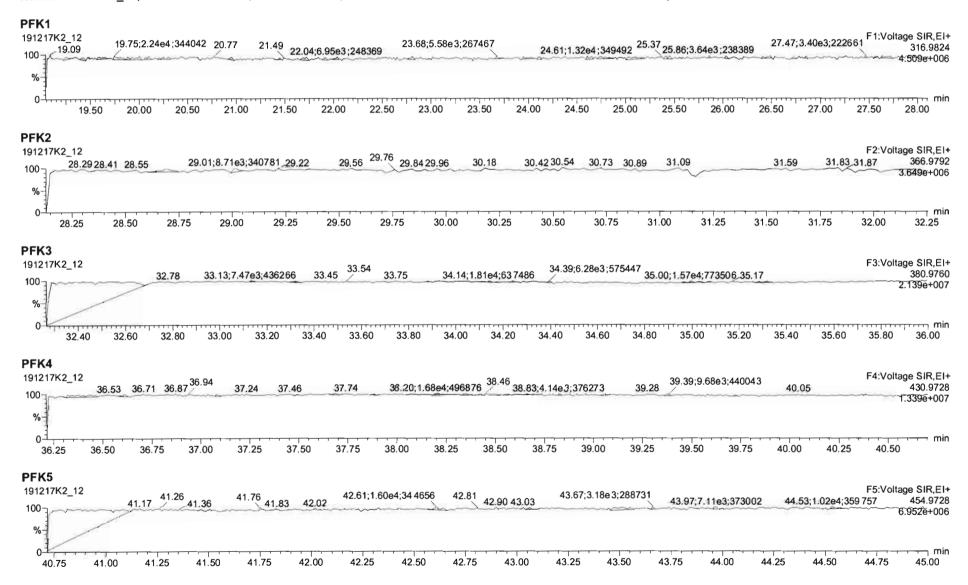
Page 143 of 182

Dataset:

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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



MassLynx MassLynx V4.1 SCN 945

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191217K2\191217K2-13.qld

Last Altered: Thursday, December 26, 2019 17:17:35 Pacific Standard Time Printed: Thursday, December 26, 2019 17:19:41 Pacific Standard Time

EL 12/26/19

CT 12/27/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_13, Date: 17-Dec-2019, Time: 23:32:25, ID: 1903648-05 PDI-075SC-A-15-16-191013 15.4, Description: PDI-075SC-A-15-16-191013

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD				0.925	10.039	26.18		1.00		YES			0.158	
2	2 1,2,3,7,8-PeCDD				0.905	10.039	31.33		1.00		YES			0.107	}
3	3 1,2,3,4,7,8-HxCDD				1.07	10.039	34.67		1.00		YES			0.157	}
4	4 1,2,3,6,7,8-HxCDD				0.967	10.039	34.76		1.00		YES			0.156	1
5	5 1,2,3,7,8,9-HxCDD				0.978	10.039	35.07		1.00		YES			0.178	j
6	6 1,2,3,4,6,7,8-HpCDD	6173.484	1.005	NO	1.04	10.039	38.55	38.56	1.00	1.00	NO	4.232		0.252	4.232
7	7 OCDD	50522.912	0.866	NO	0.972	10.039	41.81	41.82	1.00	1.00	NO	45.63		0.849	45.63
8	8 2,3,7,8-TCDF	2315.966	0.897	YES	0.938	10.039	25.20	25.20	1.00	1.00	NO	0.5852		0.148	0.5460
9	9 1,2,3,7,8-PeCDF	2256.237	1.875	YES	0.976	10.039	30.02	30.02	1.00	1.00	NO	0.7185		0,116	0.6382
10	10 2,3,4,7,8-PeCDF	871.567	2.150	YES	1.00	10.039	31.00	31.01	1.00	1.00	NO	0.2775		0.0985	0.2247
11	11 1,2,3,4,7,8-HxCDF	2605.353	1.188	NO	1.24	10.039	33.79	33.81	1.00	1.00	NO	0.9706		0.0557	0.9706
12	12 1,2,3,6,7,8-HxCDF	776.061	1.384	NO	1.10	10.039	33.92	33.93	1.00	1.00	NO	0.2677		0.0591	0.2677
13	13 2,3,4,6,7,8-HxCDF	420.722	1.090	NO	1.18	10.039	34.52	34.48	1.00	1.00	NO	0.1496		0.0601	0.1496
14	14 1,2,3,7,8,9-HxCDF				1.07	10.039	35.37		1.00		YES			0.0859	1
15	15 1,2,3,4,6,7,8-HpCDF	3024.938	1.112	NO	1.13	10.039	37.15	37.13	1.00	1.00	NO	1.308		0.0748	1.308
16	16 1,2,3,4,7,8,9-HpCDF				1.26	10.039	39.16		1.00		YES			0.0999	1
17	17 OCDF	2997.454	0.957	NO	1.10	10.039	42.01	42.04	1.00	1.00	NO	1.800		0.161	1.800
18	18 13C-2,3,7,8-TCDD	574036.141	0.815	NO	1.05	10.039	26.16	26.15	1.03	1.03	NO	192.0	96.4	0.406	}
19	19 13C-1,2,3,7,8-PeCDD	441303.813	0.608	NO	0.743	10.039	31.31	31.31	1.23	1.23	NO	208.4	105	0.532	1
20	20 13C-1,2,3,4,7,8-HxCDD	292752.399	1.291	NO	0.646	10.039	34.65	34.66	1.01	1.01	NO	151.2	75.9	0.665	}
21	21 13C-1,2,3,6,7,8-HxCDD	381691.672	1.307	NO	0.777	10.039	34.75	34.76	1.02	1.02	NO	164.0	82.3	0.553	ł
22	22 13C-1,2,3,7,8,9-HxCDD	316278.625	1.239	NO	0.659	10.039	35.02	35.03	1.02	1.03	NO	160.1	80.3	0.652	{
23	23 13C-1,2,3,4,6,7,8-HpCDD	280152.797	1.048	NO	0.534	10.039	38.52	38.54	1.13	1.13	NO	175.1	87.9	1.02	1
24	24 13C-OCDD	453977.766	0.878	NO	0.470	10.039	41.80	41.81	1.22	1.22	NO	322.2	80.9	0.992	}
25	25 13C-2,3,7,8-TCDF	840966.625	0.722	NO	0.977	10.039	25.17	25.17	0.99	0.99	NO	185.4	93.0	0.515	{
26	26 13C-1,2,3,7,8-PeCDF	639949.376	1.580	NO	0.778	10.039	30.00	30.00	1.18	1.18	NO	177.3	89.0	0.875	1
27	27 13C-2,3,4,7,8-PeCDF	622690.172	1.520	NO	0.750	10.039	30.99	30.99	1.22	1.22	NO	178.9	89.8	0.908	1
28	28 13C-1,2,3,4,7,8-HxCDF	430099.594	0.533	NO	0.845	10.039	33.79	33.79	0.99	0.99	NO	169.9	85.3	0.889	}
29	29 13C-1,2,3,6,7,8-HxCDF	527380.672	0.535	NO	1.03	10.039	33.90	33.91	0.99	0.99	NO	171.5	86.1	0.732	1
30	30 13C-2,3,4,6,7,8-HxCDF	474511.734	0.547	NO	0.893	10.039	34.48	34.48	1.01	1.01	NO	177.4	89.0	0.841	1
31	31 13C-1,2,3,7,8,9-HxCDF	404070.390	0.506	NO	0.734	10.039	35.38	35.37	1.04	1.03	NO	183.7	92.2	1.02	

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Dataset: U:\VG11.PRO\Results\191217K2\191217K2-13.qld

Last Altered: Thursday, December 26, 2019 17:17:35 Pacific Standard Time Thursday, December 26, 2019 17:19:41 Pacific Standard Time

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	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	407675.438	0.431	NO	0.754	10.039	37.09	37.12	1.09	1.09	NO	180.4	90.6	0.750	
33	33 13C-1,2,3,4,7,8,9-HpCDF	284911.875	0.416	NO	0.539	10.039	39.12	39.16	1.14	1.15	NO	176.4	88.6	1.05	Ĭ
34	34 13C-OCDF	601927.813	0.914	NO	0.593	10.039	41.99	42.01	1.23	1.23	NO	339.1	85.1	0.807	J
35	35 37CI-2,3,7,8-TCDD	246360.250			1.07	10.039	26.18	26.18	1.03	1.03	NO	80.81	101	0.109	1
36	36 13C-1,2,3,4-TCDD	567924.938	0.789	NO	1.00	10.039	25.45	25.47	1.00	1.00	NO	199.2	100	0.425	1
37	37 13C-1,2,3,4-TCDF	924699.126	0.724	NO	1.00	10.039	23.55	23.57	1.00	1.00	NO	199.2	100	0.503	i
38	38 13C-1,2,3,4,6,9-HxCDF	596876.672	0.517	NO	1.00	10.039	34.16	34.17	1.00	1.00	NO	199.2	100	0.751	1
39	39 Total Tetra-Dioxins				0.925	10.039	24.62		0.00		NO			0.102	1
40	40 Total Penta-Dioxins				0.905	10.039	29.96		0.00		NO			0.0390	1
41	41 Total Hexa-Dioxins				0.967	10.039	33.63		0.00		NO	1.339		0.169	1.881
42	42 Total Hepta-Dioxins				1.04	10.039	38.80		0.00		NO	10.58		0.252	10.58
43	43 Total Tetra-Furans				0.938	10.039	23.61		0.00		NO	1.291		0.148	1.837
44	44 1st Func. Penta-Furans				0.976	10.039	27.04		0.00		NO	0.3936		0.0342	0.3936
45	45 Total Penta-Furans				0.976	10.039	29.27		0.00		NO	0.3430		0.107	1.810
46	46 Total Hexa-Furans				1.18	10.039	33.56		0.00		NO	2.511		0.0622	2.511
47	47 Total Hepta-Furans				1.13	10.039	37.83		0.00		NO	2.938		0.0899	2.938

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Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-13.qld

Last Altered:

Thursday, December 26, 2019 17:17:35 Pacific Standard Time

Printed:

Thursday, December 26, 2019 17:19:50 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613 rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_13, Date: 17-Dec-2019, Time: 23:32:25, ID: 1903648-05 PDI-075SC-A-15-16-191013 15.4, Description: PDI-075SC-A-15-16-191013

Tetra-Dioxins

10000	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1									

Penta-Dioxins

	# Name	Area IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Hexa-Dioxins

The second	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	41 Total Hexa-Dioxins	2.15e3	0.00e0	1.161	NO	33.63	33.20	1.339	1.339
2	41 Total Hexa-Dioxins	0.00e0	0.00e0	1.635	YES	33.63	33.99	0.0000	0.5413

Hepta-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	42 Total Hepta-Dioxins	9.26e3	2.80e5	1.005	NO	38.80	37.52	6.348	6.348
2	6 1,2,3,4,6,7,8-HpCDD	6.17e3	2.80e5	1.005	NO	38.55	38.56	4.232	4.232

Tetra-Furans

1000	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	43 Total Tetra-Furans	2.55e3	8.41e5	0.800	NO	23.61	20.91	0.6434	0.6434
2	8 2,3,7,8-TCDF	2.32e3	8.41e5	0.897	YES	25.20	25.20	0.0000	0.5460
3	43 Total Tetra-Furans	2.56e3	8.41e5	0.691	NO	23.61	24.15	0.6472	0.6472

Penta-Furans function 1

1 1957	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	44 1st Func. Penta-Fura	1.22e3	0.00e0	1.754	NO	27.04	27.34	0.3936	0.3936

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-13.qld

Last Altered:

Thursday, December 26, 2019 17:17:35 Pacific Standard Time

Printed: Thursday, December 26, 2019 17:19:50 Pacific Standard Time

Name: 191217K2_13, Date: 17-Dec-2019, Time: 23:32:25, ID: 1903648-05 PDI-075SC-A-15-16-191013 15.4, Description: PDI-075SC-A-15-16-191013

Penta-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	10 2,3,4,7,8-PeCDF	8.72e2	6.23e5	2.150	YES	31.00	31.01	0.0000	0.2247
2	45 Total Penta-Furans	1.06e3	0.00e0	1.723	NO	29.27	30.28	0.3430	0.3430
3	9 1,2,3,7,8-PeCDF	2.26e3	6.40e5	1.875	YES	30.02	30.02	0.0000	0.6382
4	45 Total Penta-Furans	0.00e0	0.00e0	1.238	YES	29.27	29.00	0.0000	0.4954
5	45 Total Penta-Furans	0.00e0	0.00e0	0.828	YES	29.27	31.03	0.0000	0.1084

Hexa-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	46 Total Hexa-Furans	4.25e2	0.00e0	1.375	NO	33.56	32.65	0.1563	0.1563
2	13 2,3,4,6,7,8-HxCDF	4.21e2	4.75e5	1.090	NO	34.52	34.48	0.1496	0.1496
3	12 1,2,3,6,7,8-HxCDF	7.76e2	5.27e5	1.384	NO	33.92	33.93	0.2677	0.2677
4	11 1,2,3,4,7,8-HxCDF	2.61e3	4.30e5	1.188	NO	33.79	33.81	0.9706	0.9706
5	46 Total Hexa-Furans	1.36e3	0.00e0	1.175	NO	33.56	33.35	0.4992	0.4992
6	46 Total Hexa-Furans	1.27e3	0.00e0	1.085	NO	33.56	32.80	0.4681	0.4681

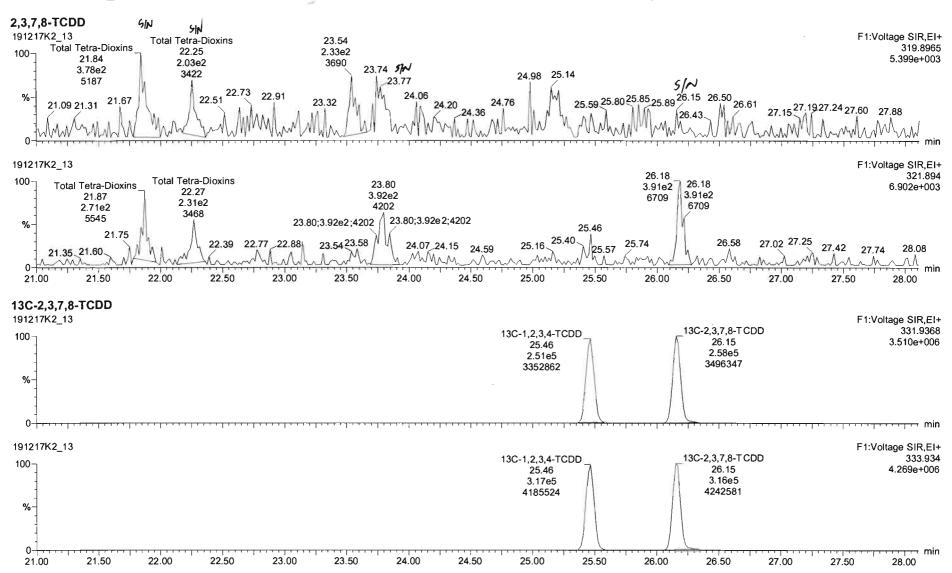
Hepta-Furans

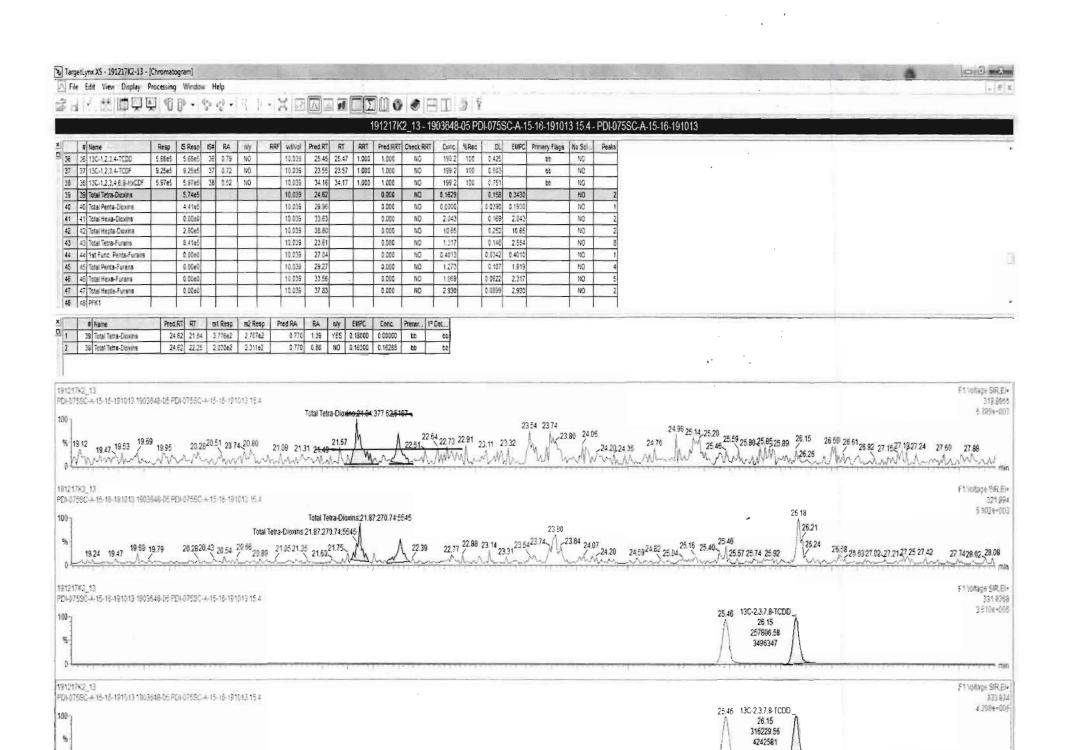
	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	47 Total Hepta-Furans	3.20e3	0.00e0	1.056	NO	37.83	37.73	1.630	1.630
2	15 1,2,3,4,6,7,8-HpCDF	3.02e3	4.08e5	1.112	NO	37.15	37.13	1.308	1.308

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Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





19.25 19.50 19.75 20.00 20.25 20.50 20.75 21.00 21.25 21.50 21.75 22.00 22.25 22.50 22.75 23.00 23.25 25.50 23.75 24.00 24.25 24.50 24.75 25.00 25.25 25.50 25.75 25.00 25.25 25.50 26.75 25.00 27.25 27.50 27.75 28.00

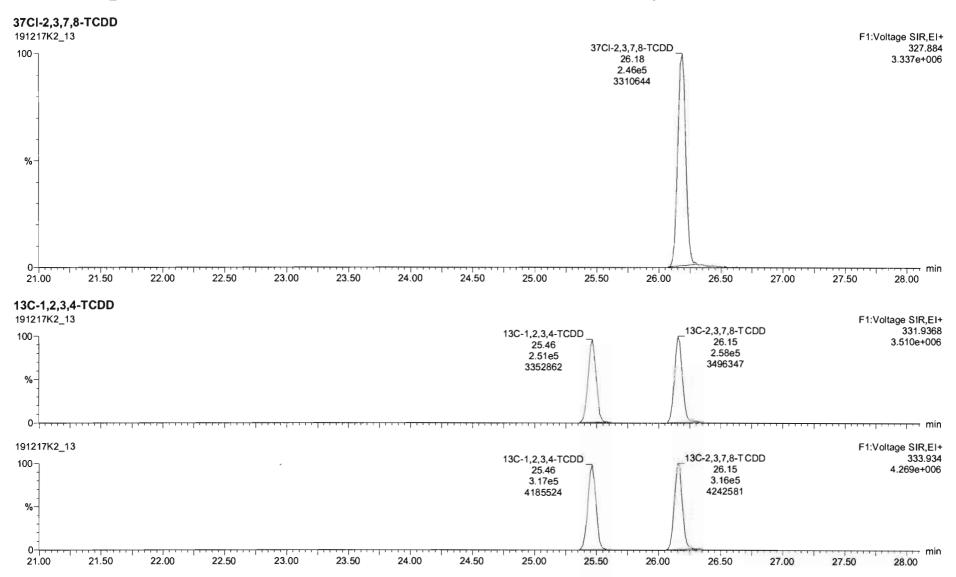
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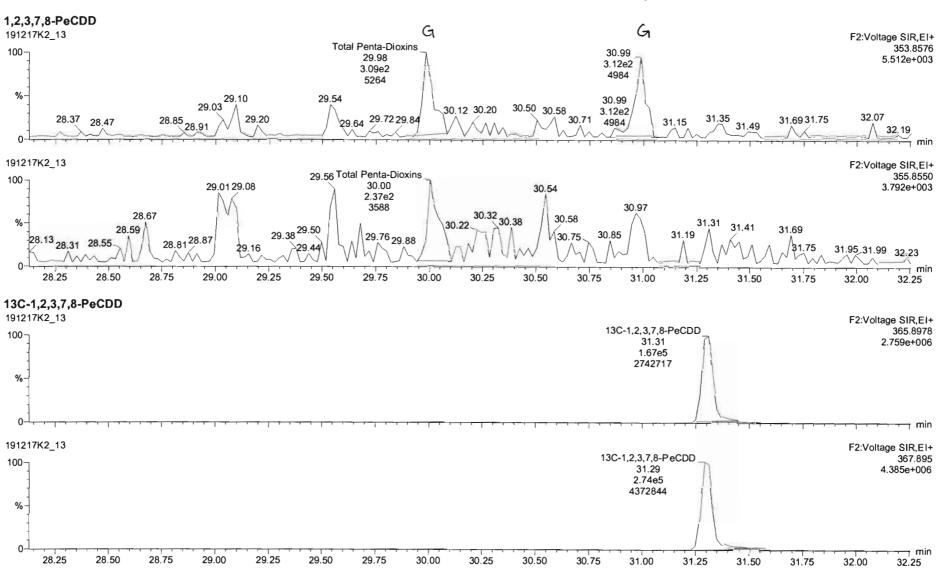
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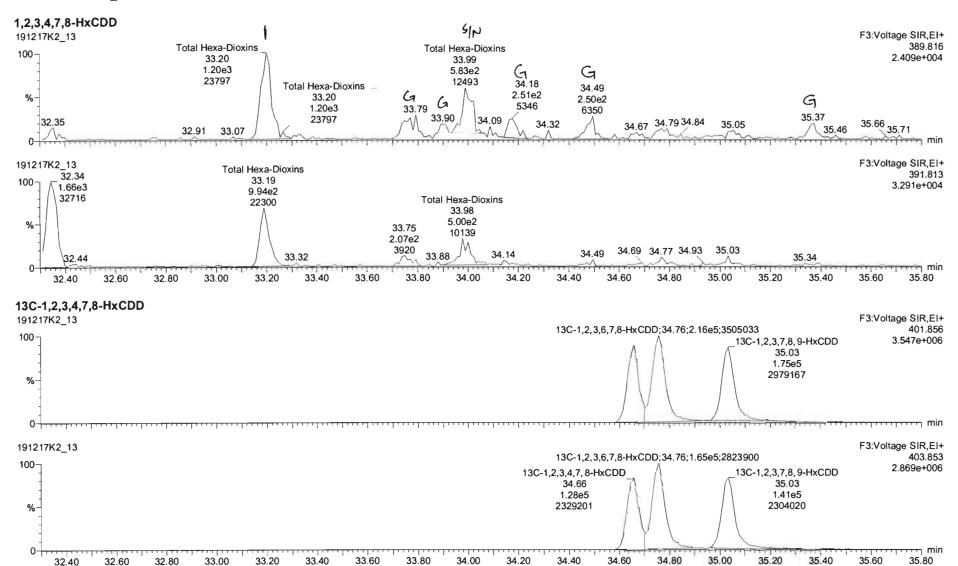
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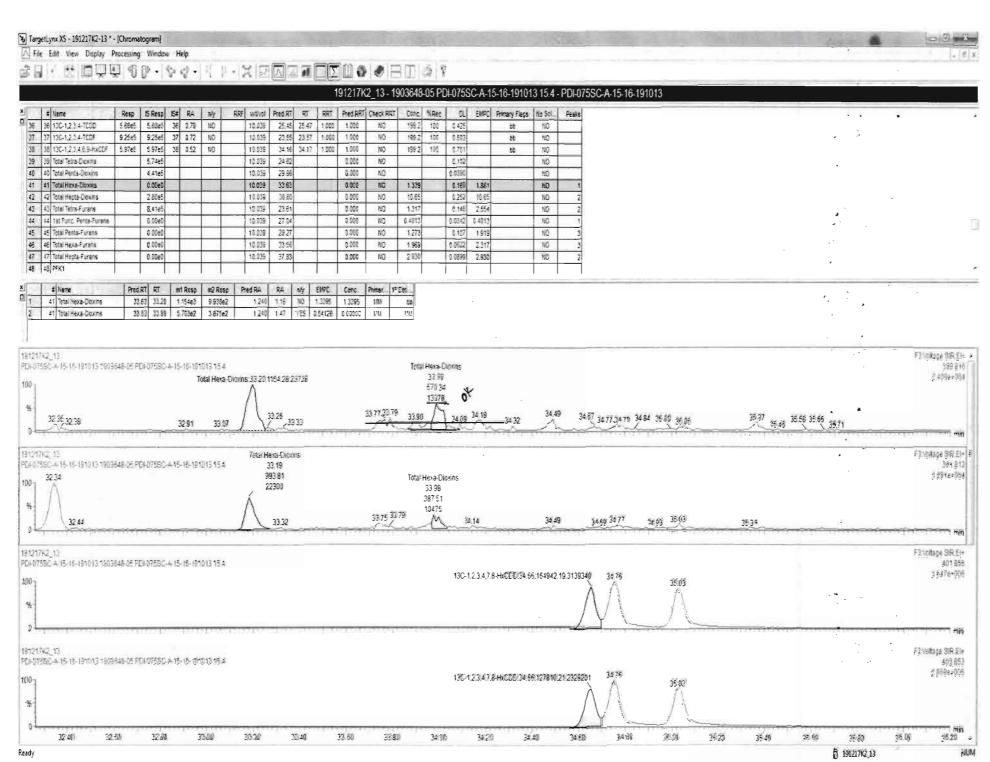


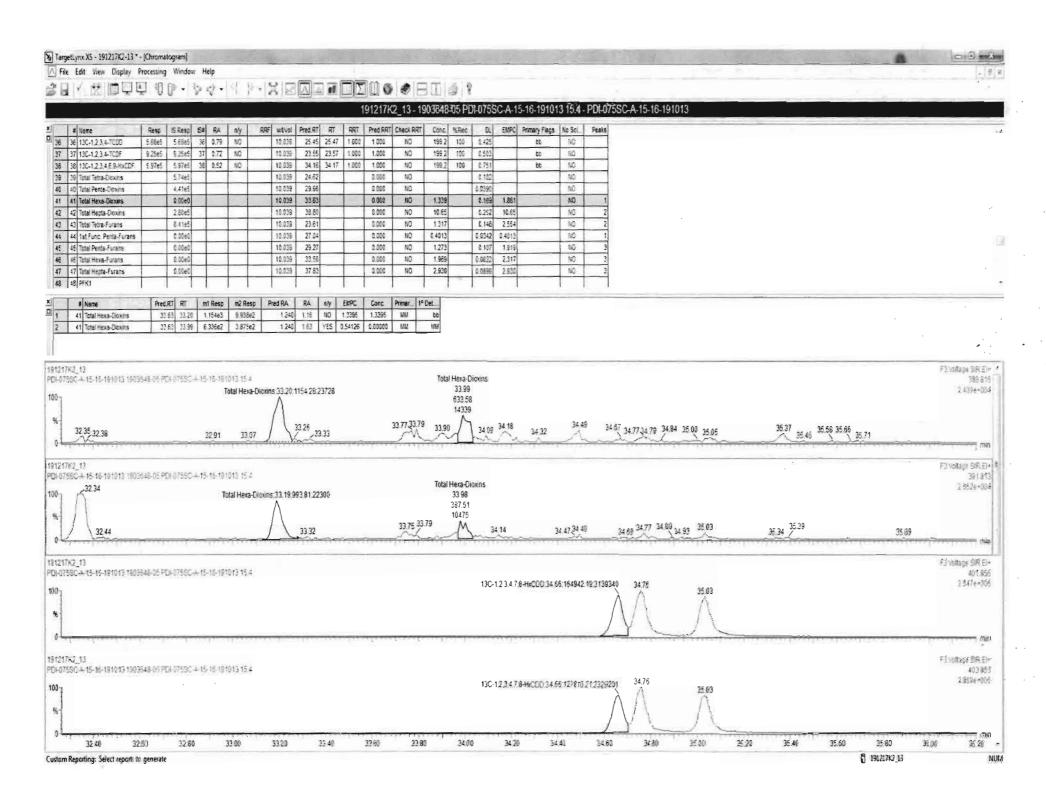
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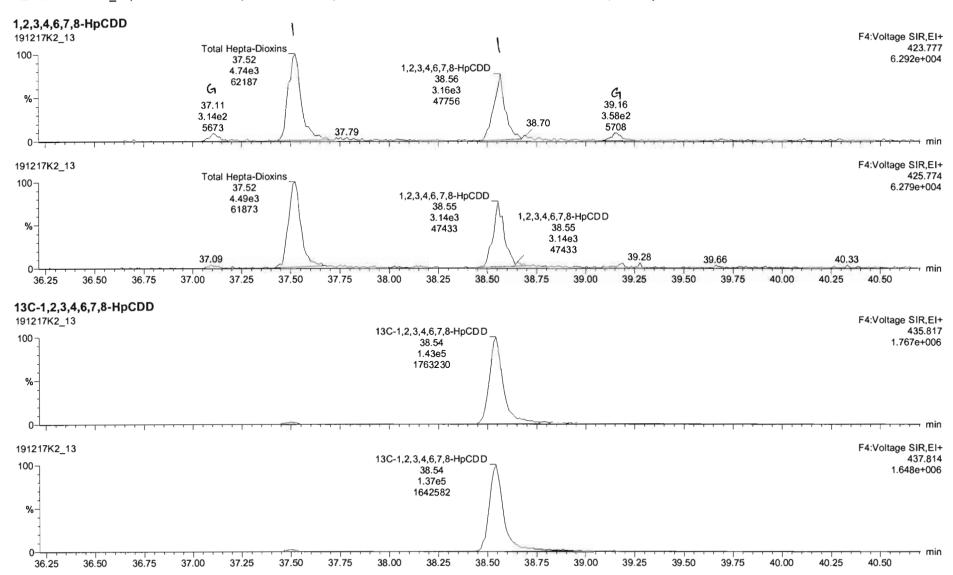


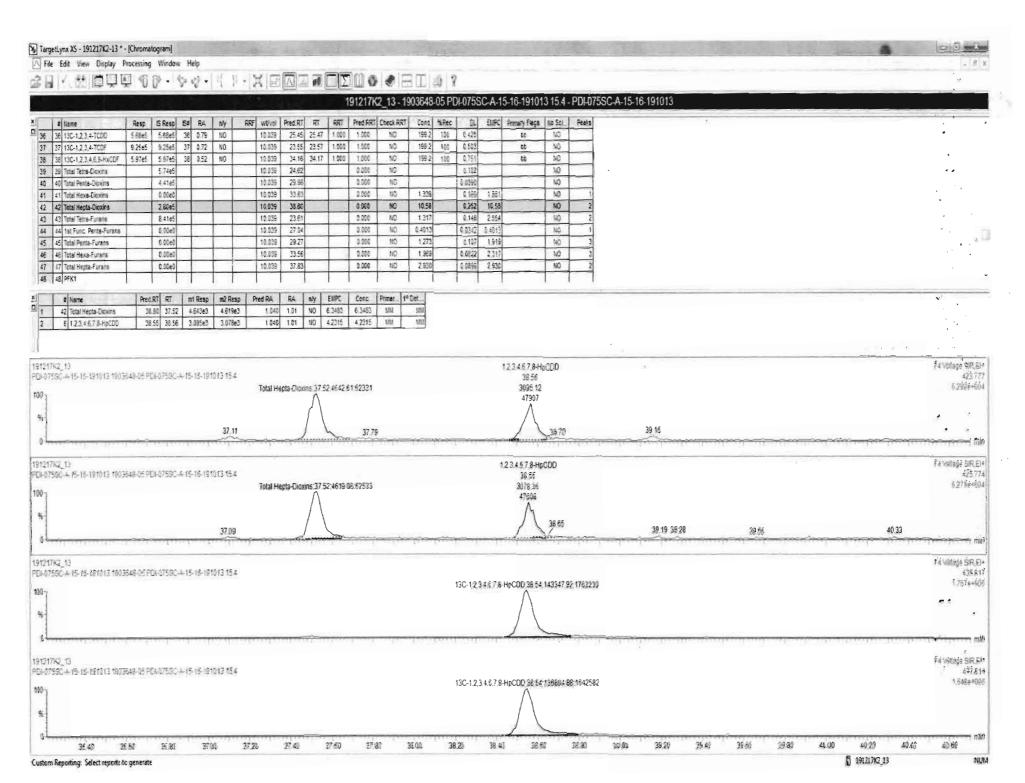




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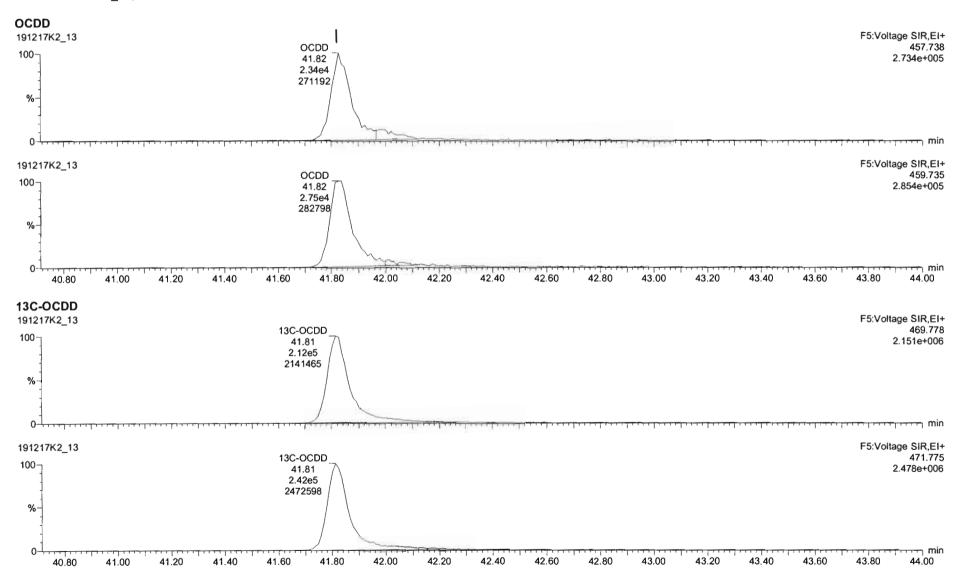


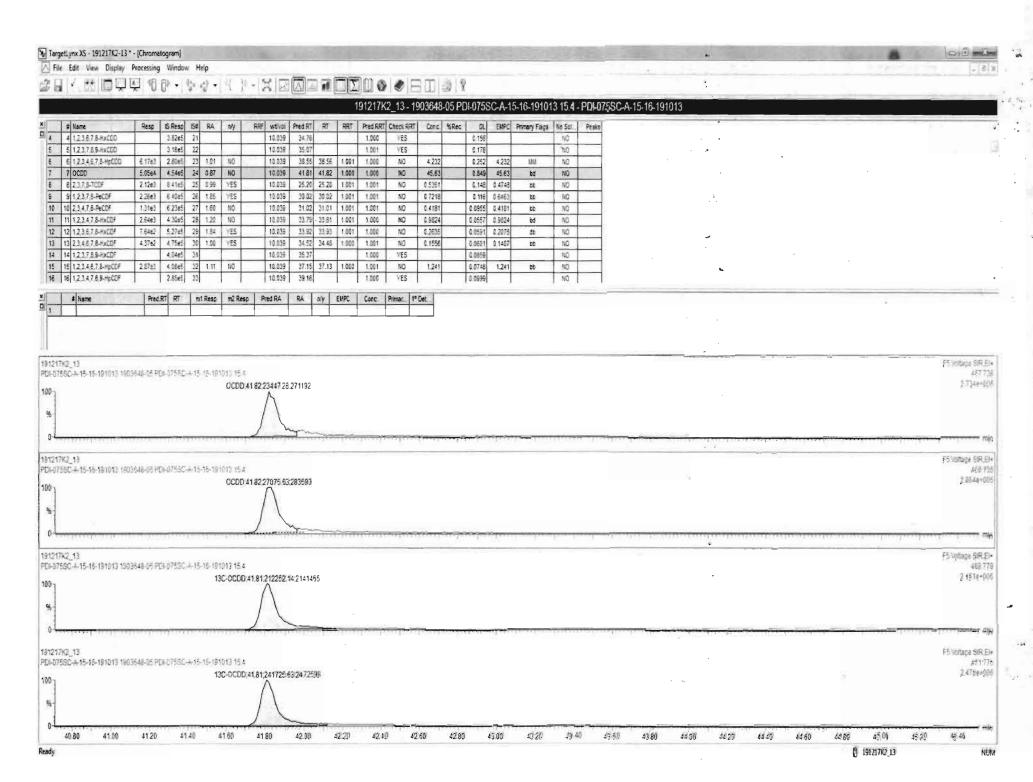


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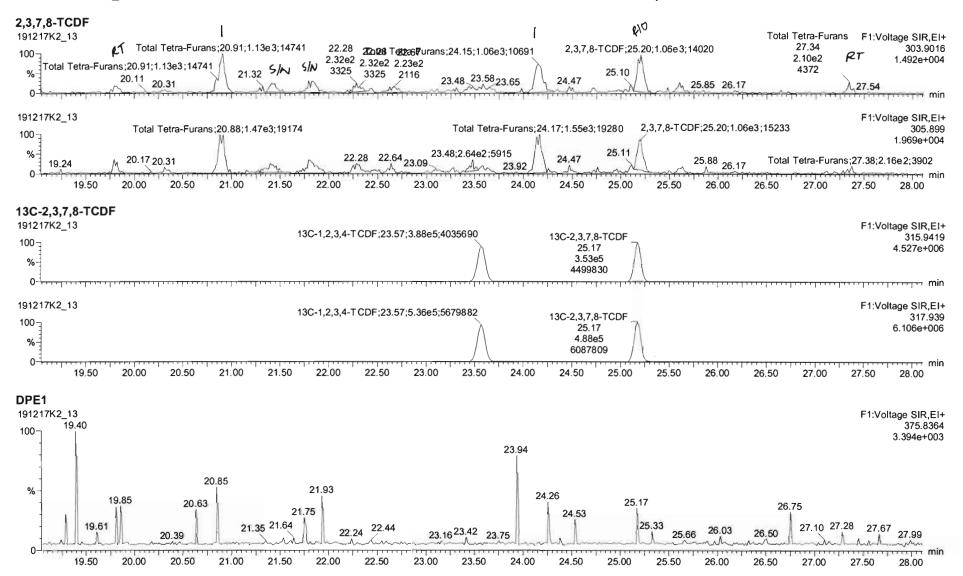


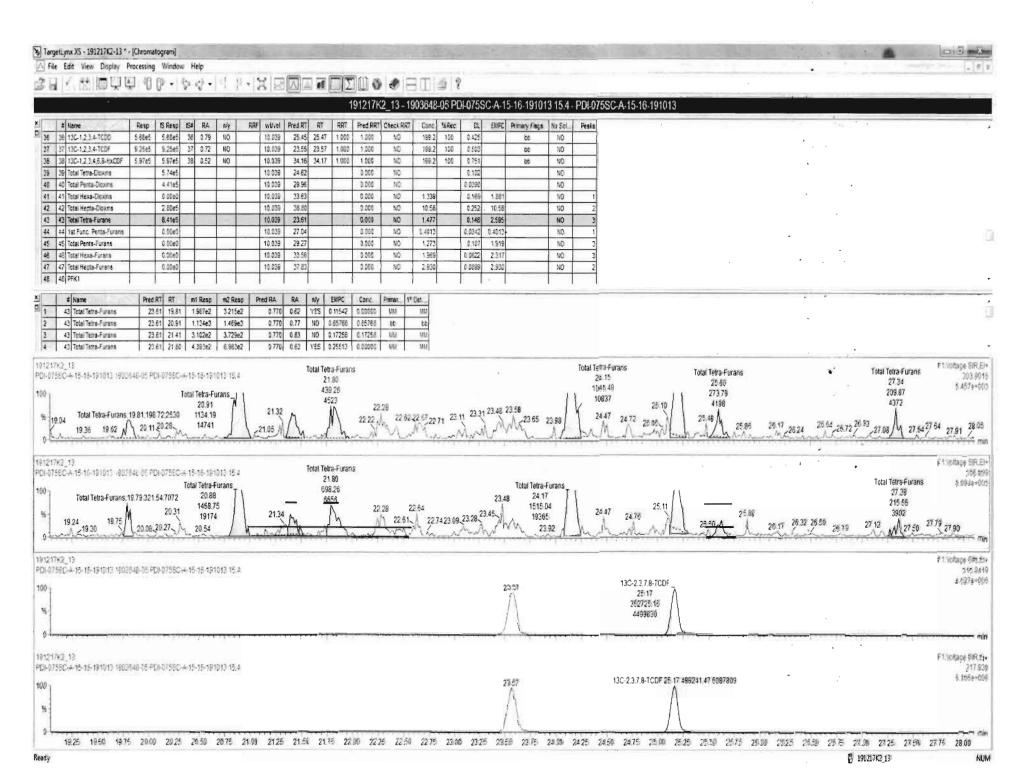


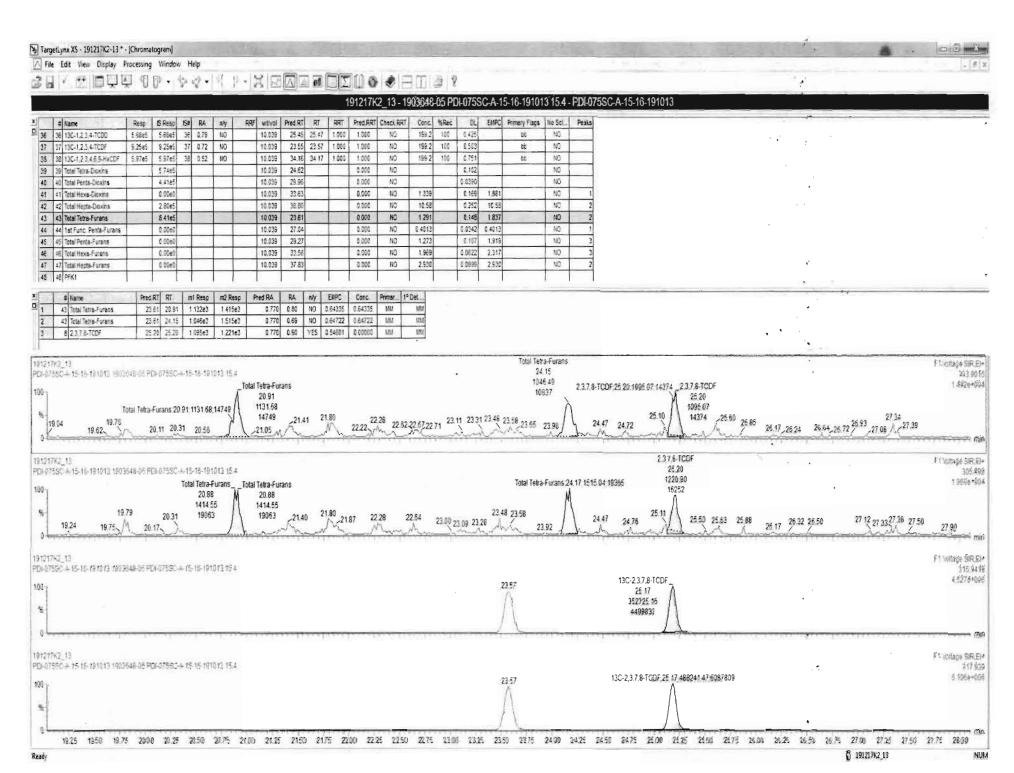
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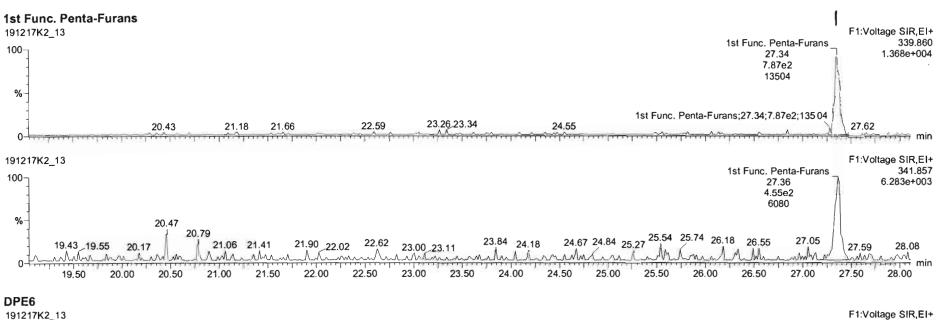


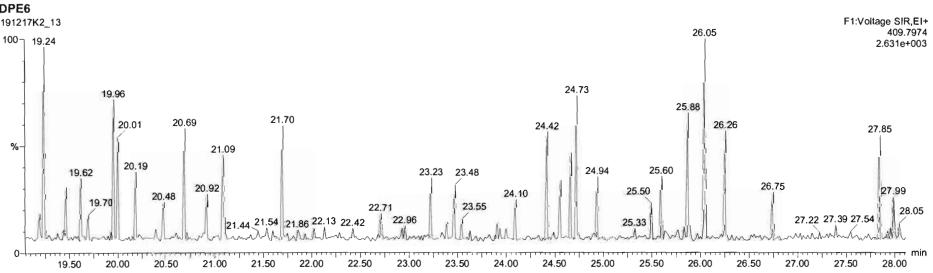


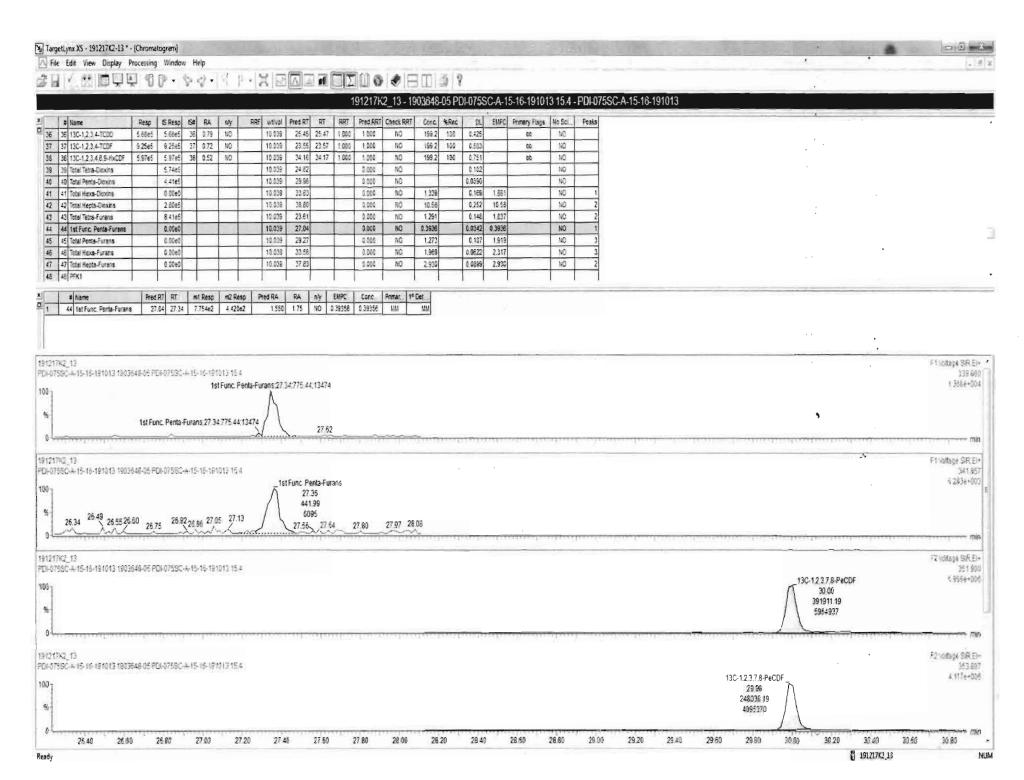


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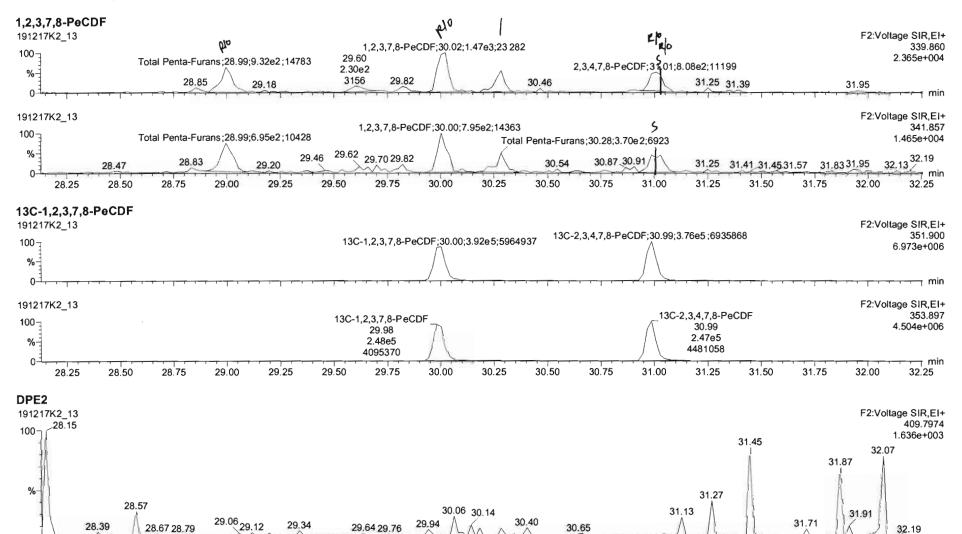




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Name: 191217K2_13, Date: 17-Dec-2019, Time: 23:32:25, ID: 1903648-05 PDI-075SC-A-15-16-191013 15.4, Description: PDI-075SC-A-15-16-191013



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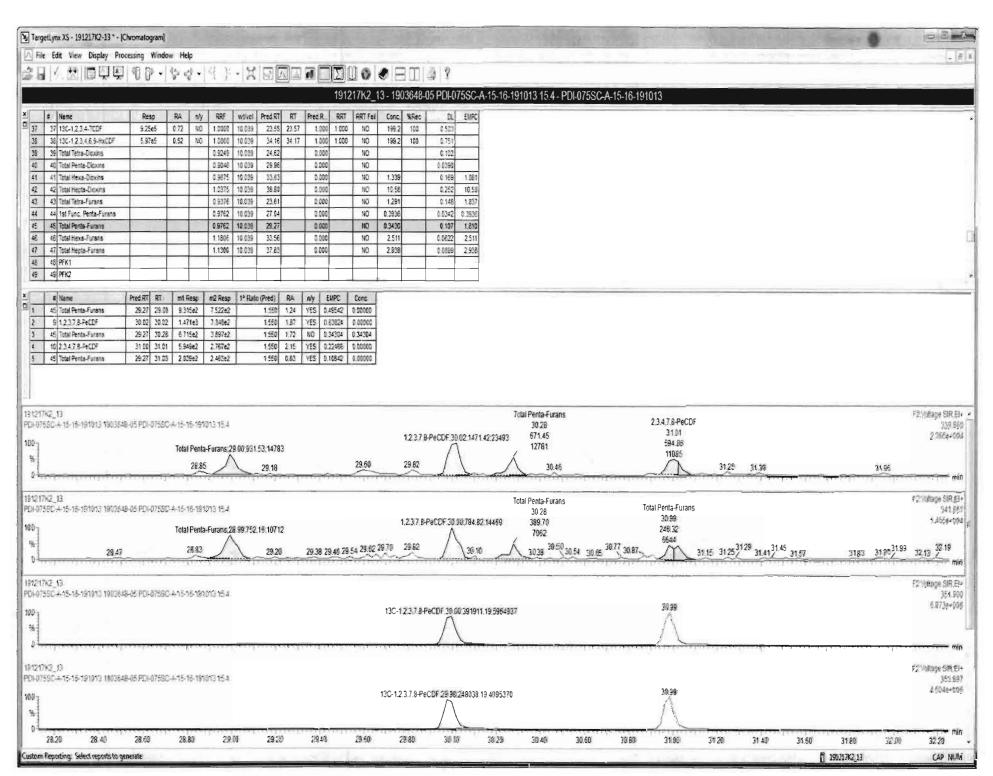
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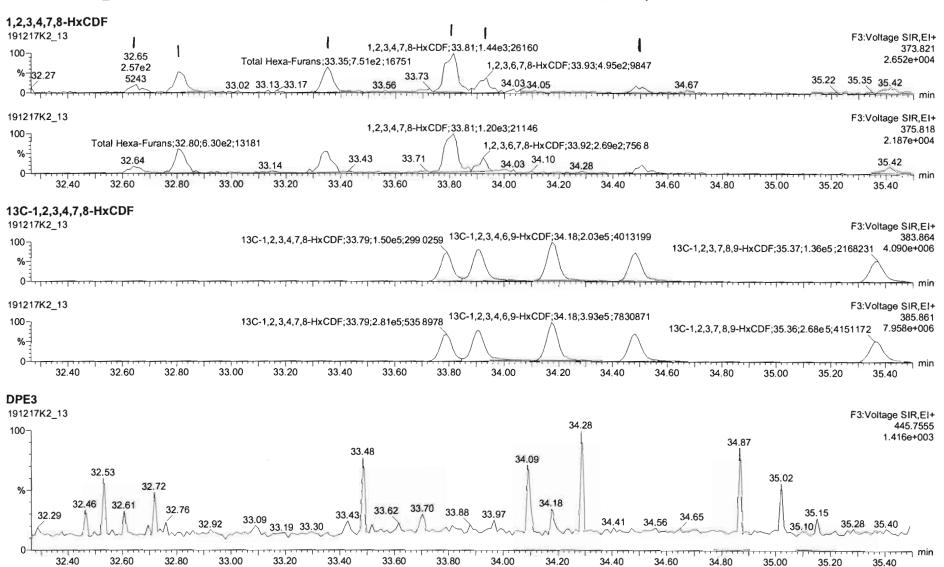


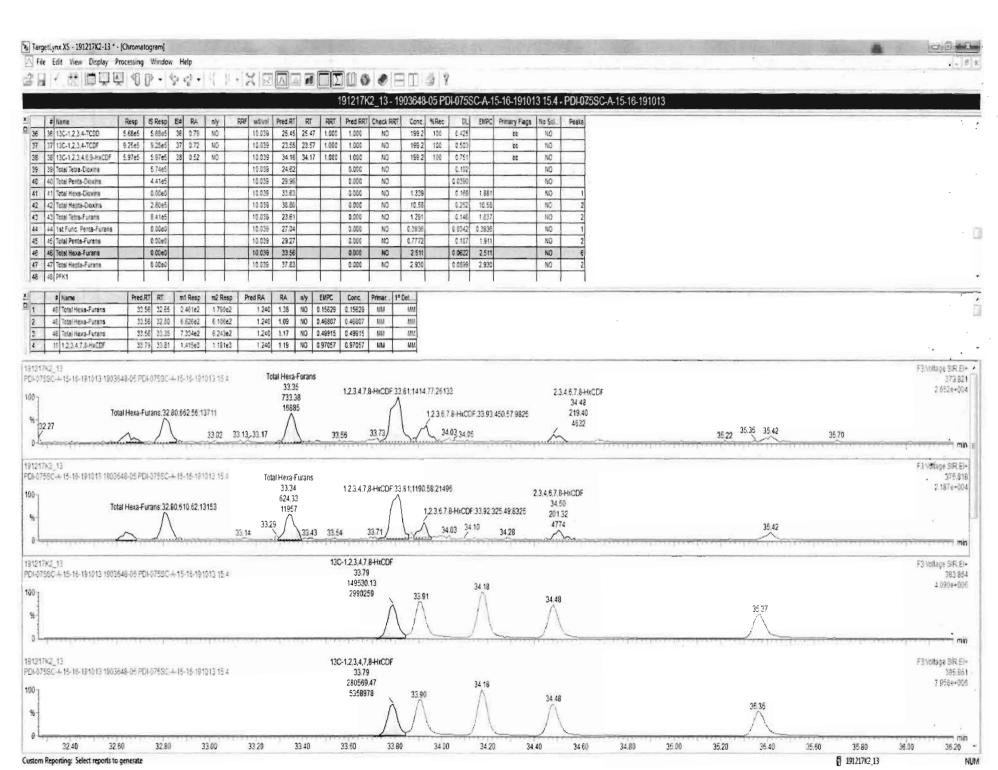
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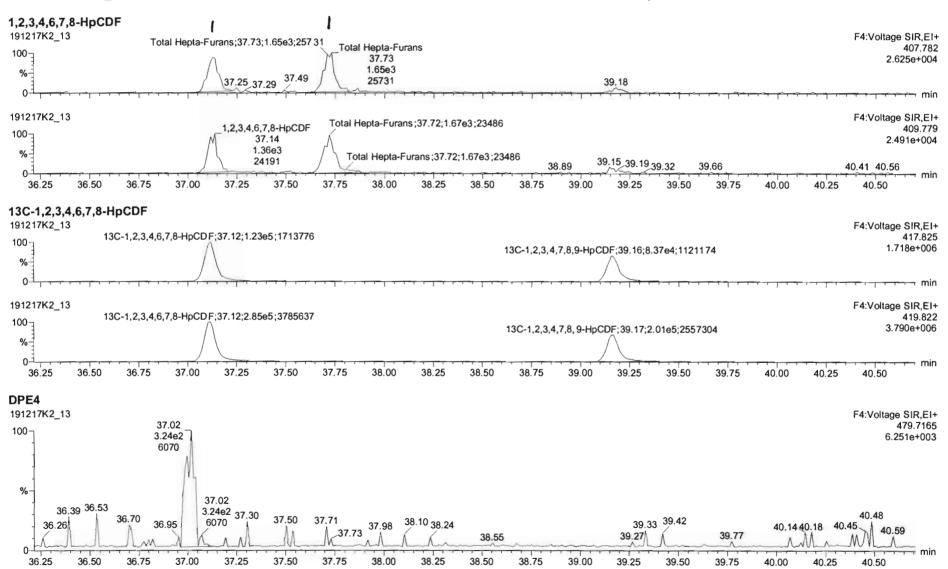
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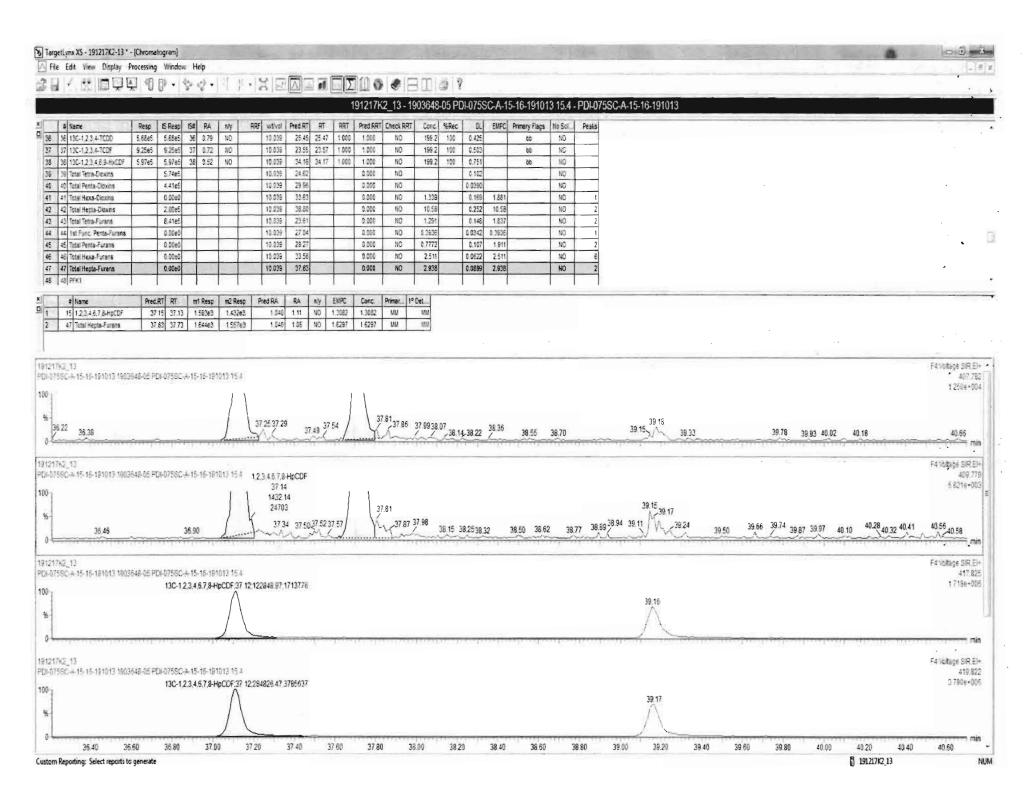




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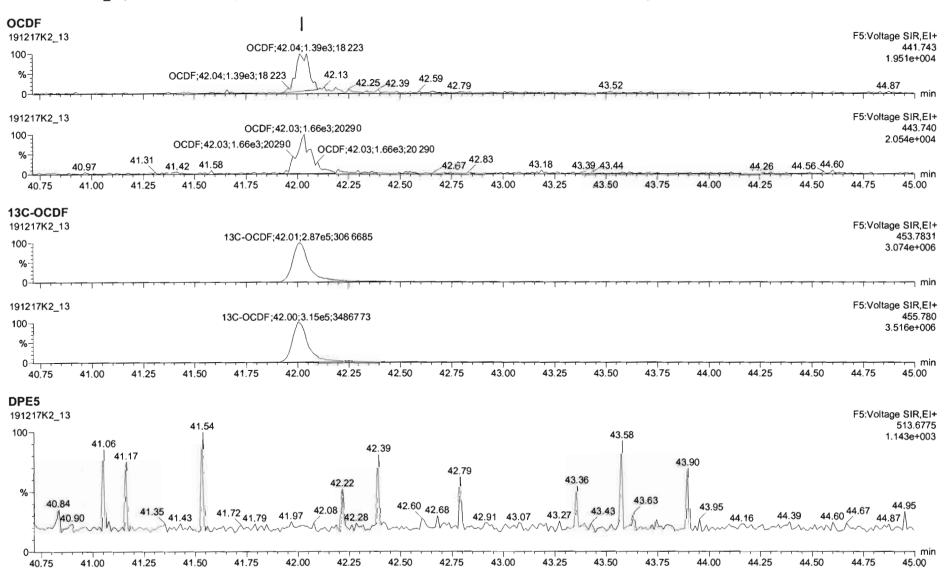


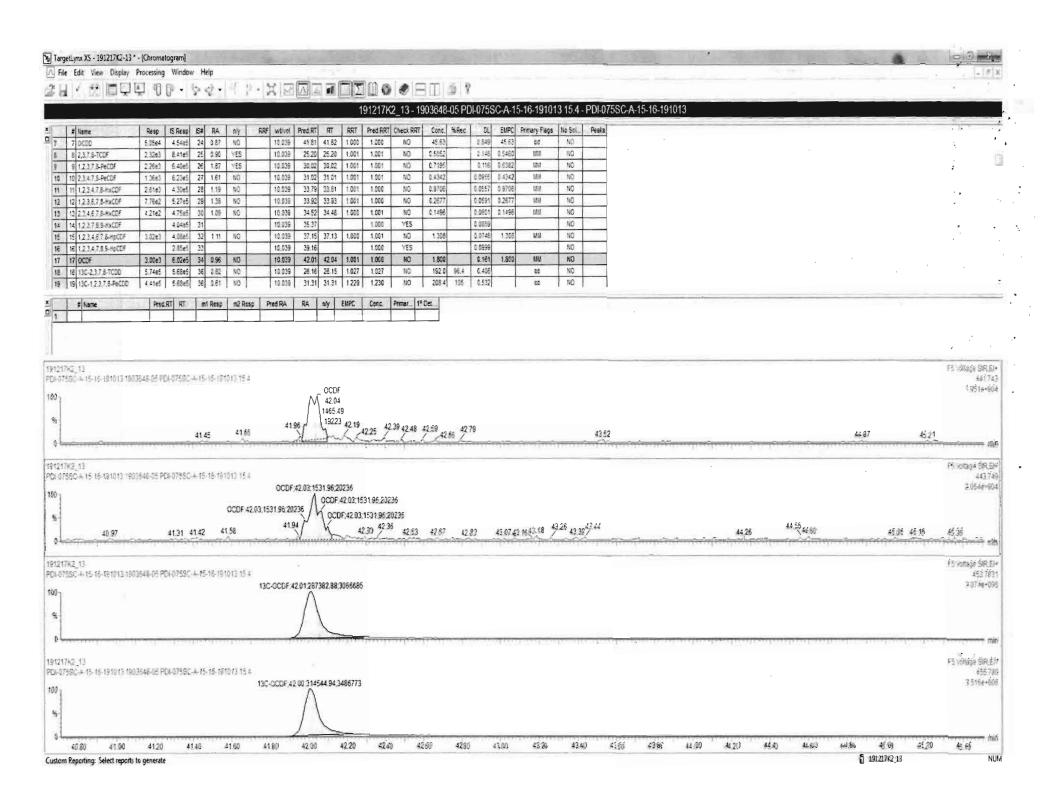


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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

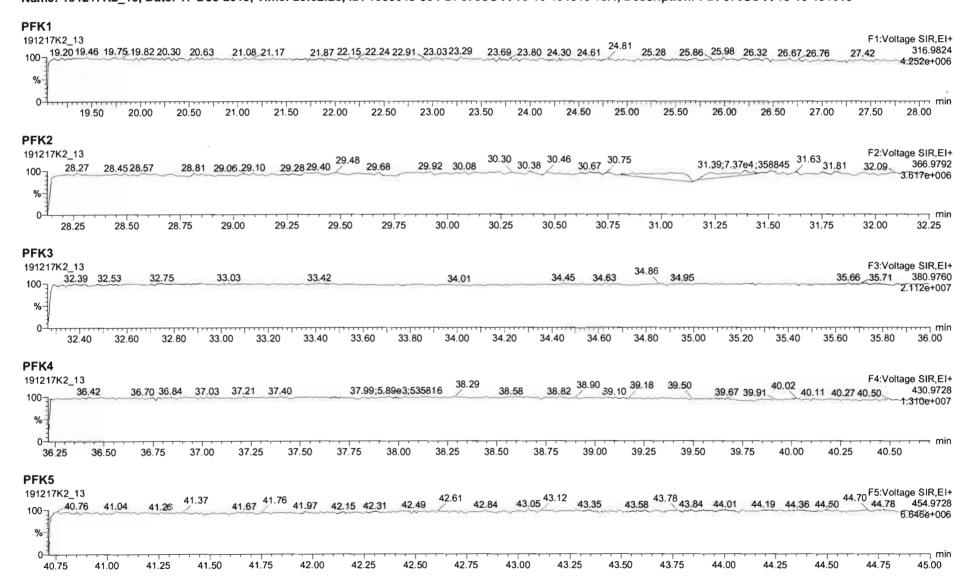




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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



MassLynx MassLynx V4.1 SCN 945

Page 1 of 2

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-14.qld

Last Altered: Printed:

Monday, December 23, 2019 09:43:37 Pacific Standard Time Monday, December 23, 2019 09:46:07 Pacific Standard Time

EL 12

C712/26/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_14, Date: 18-Dec-2019, Time: 00:19:49, ID: 1903648-06 PDI-076SC-A-10-11-191013 13.56, Description: PDI-076SC-A-10-11-191013

2 Clarky	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD				0.925	10.009	26.18		1.00		YES			0.144	
2	2 1,2,3,7,8-PeCDD				0.905	10.009	31.33		1.00		YES'			0.102	}
3	3 1,2,3,4,7,8-HxCDD				1.07	10.009	34.67		1.00		YES			0.145	}
4	4 1,2,3,6,7,8-HxCDD				0.967	10.009	34.75		1.00		YES			0.129	}
5	5 1,2,3,7,8,9-HxCDD				0.978	10.009	35.06		1.00		YES 、 '			0.157	ľ
6	6 1,2,3,4,6,7,8-HpCDD				1.04	10.009	38.55		1.00		YES			0.202	İ
7	7 OCDD	1436.777	0.970	NO	0.972	10.009	41.81	41.81	1.00	1.00	NO	1.753		0.376	1.753
8	8 2,3,7,8-TCDF				0.938	10.009	25.18		1.00		YES			0.0924	
9	9 1,2,3,7,8-PeCDF				0.976	10.009	30.00		1.00		YES			0.0541	
10	10 2,3,4,7,8-PeCDF				1.00	10.009	31.02		1.00		YES	:		0.0439	
11	11 1,2,3,4,7,8-HxCDF				1.24	10.009	33.79		1.00		YES			0.0415	
12	12 1,2,3,6,7,8-HxCDF				1.10	10.009	33.91		1.00		YES			0.0426	
13	13 2,3,4,6,7,8-HxCDF				1.18	10.009	34.52		1.00		YES			0.0440	
14	14 1,2,3,7,8,9-HxCDF				1.07	10.009	35.36		1.00		YES			0.0593	1
15	15 1,2,3,4,6,7,8-HpCDF				1.13	10.009	37.14		1.00		YES -:			0.0302	
16	16 1,2,3,4,7,8,9-HpCDF				1.26	10.009	39.15		1.00		YES			0.0405	
17	17 OCDF				1.10	10.009	42.01		1.00		YES			0.140	
18	18 13C-2,3,7,8-TCDD	426819.922	0.774	NO	1.05	10.009	26.15	26.15	1.03	1.03	NO	190.5	95.3	0.460	
19	19 13C-1,2,3,7,8-PeCDD	329506.812	0.612	NO	0.743	10.009	31.29	31.31	1.23	1.23	NO .`	207.7	104	0.710	
20	20 13C-1,2,3,4,7,8-HxCDD	234328.641	1.250	NO	0.646	10.009	34.65	34.66	1.01	1.01	NO	161.7	80.9	0.984	ĺ
21	21 13C-1,2,3,6,7,8-HxCDD	305415.594	1.177	NO	0.777	10.009	34.75	34.75	1.02	1.02	NO	175.4	87.8	0.819	
22	22 13C-1,2,3,7,8,9-HxCDD	265181.860	1.130	NO	0.659	10.009	35.02	35.02	1.02	1.02	NO	179.3	89.8	0.964	
23	23 13C-1,2,3,4,6,7,8-HpCDD	202552.165	1.096	NO	0.534	10.009	38.52	38.54	1.13	1.13	NO	169.1	84.6	0.930	
24	24 13C-OCDD	337100.626	0.858	NO.	0.470	10.009	41.80	41.81	1.22	1.22	NO	319.6	80.0	1,44	
25	25 13C-2,3,7,8-TCDF	643252.032	0.732	NO	0.977	10.009	25.16	25.16	0.99	0.99	NO	186.4	93.3	0.693	
26	26 13C-1,2,3,7,8-PeCDF	478182.891	1.548	NO	0.778	10.009	29.98	29.98	1.18	1.18	NO	174.1	87.1	0.918	
27	27 13C-2,3,4,7,8-PeCDF	478370.313	1.509	NO	0.750	10.009	30.97	30.99	1.22	1.22	NO	180.7	90.4	0.952	1
28	28 13C-1,2,3,4,7,8-HxCDF	338557.141	0.518	NO	0.845	10.009	33.79	33.79	0.99	0.99	NO	178.7	89.4	1.27	
29	29 13C-1,2,3,6,7,8-HxCDF	416727.484	0.525	NO	1.03	10.009	33.90	33.90	0.99	0.99	NO	181.0	90.6	1.05	
30	30 13C-2,3,4,6,7,8-HxCDF	369408.883	0.528	NO	0.893	10.009	34.48	34.48	1.01	1.01	NO	184.5	92.4	1.20	

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Page 2 of 2

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-14.qld

Last Altered: Printed: Monday, December 23, 2019 09:43:37 Pacific Standard Time Monday, December 23, 2019 09:46:07 Pacific Standard Time

Name: 191217K2_14, Date: 18-Dec-2019, Time: 00:19:49, ID: 1903648-06 PDI-076SC-A-10-11-191013 13.56, Description: PDI-076SC-A-10-11-191013

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
31	31 13C-1,2,3,7,8,9-HxCDF	328513.469	0.493	NO	0.734	10.009	35.38	35.36	1.04	1.03	NO	199.5	99.9	1.46	
32	32 13C-1,2,3,4,6,7,8-HpCDF	315807.305	0.439	NO	0.754	10.009	37.09	37.10	1.09	1.09	NO	186.8	93.5	0.880	
33	33 13C-1,2,3,4,7,8,9-HpCDF	208152.847	0.411	NO	0.539	10.009	39.12	39.15	1.14	1.15	NO	172.2	86.2	1.23	
34	34 13C-OCDF	473791.406	0.911	NO	0.593	10.009	41.99	42.01	1.23	1.23	NO	356.6	89.2	1.01	
35	35 37CI-2,3,7,8-TCDD	184293.359			1.07	10.009	26.17	26.17	1.03	1.03	NO	80.68	101	0.0996	
36	36 13C-1,2,3,4-TCDD	426790.203	0.780	NO	1.00	10.009	25.45	25.45	1.00	1.00	NO	199.8	100	0.482	
37	37 13C-1,2,3,4-TCDF	705513.250	0.723	NO	1.00	10.009	23.55	23.55	1.00	1.00	NO	199.8	100	0.678	
38	38 13C-1,2,3,4,6,9-HxCDF	448001.453	0.536	NO	1.00	10.009	34.16	34.17	1.00	1.00	NO	199.8	100	1.08	
39	39 Total Tetra-Dioxins				0.925	10.009	24.62		0.00		NO			0.0907	
40	40 Total Penta-Dioxins				0.905	10.009	29.96		0.00		NO			0.0393	
41	41 Total Hexa-Dioxins				0.967	10.009	33.63		0.00		NO	0.0000		0.0806	0.1782
42	42 Total Hepta-Dioxins				1.04	10.009	38.80		0.00		NO	0.4516		0.202	0.4516
43	43 Total Tetra-Furans				0.938	10.009	23.61		0.00		NO			0.0311	
44	44 1st Func. Penta-Furans				0.976	10.009	27.04		0.00		NO			0.0180	
45	45 Total Penta-Furans				0.976	10.009	29.27		0.00		NO			0.0184	
46	46 Total Hexa-Furans				1.18	10.009	33.56		0.00		NO			0.0251	
47	47 Total Hepta-Furans				1.13	10.009	37.83		0.00		NO			0.0195	

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Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-14.qld

Last Altered: Printed:

Monday, December 23, 2019 09:43:37 Pacific Standard Time Monday, December 23, 2019 09:46:19 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_14, Date: 18-Dec-2019, Time: 00:19:49, ID: 1903648-06 PDI-076SC-A-10-11-191013 13.56, Description: PDI-076SC-A-10-11-191013

Tetra-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
TO STATE OF THE PARTY OF THE PA								

Penta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Hexa-Dioxins

55-19/1V	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc	EMPC
1	41 Total Hexa-Dioxins	0.00e0	0.00e0	1.751	YES	33.63	33.19	0.0000	0.1782

Hepta-Dioxins

DE LOUIS DE	# Name	Area	iSi Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 7 0 10 10 15	42 Total Hepta-Dioxins	4.75e2	2.03e5	0.946	NO	38.80	37.50	0.4516	0.4516

Tetra-Furans

# Name	Area	IS Area	IRA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Penta-Furans function 1

11/0/05-74	# Name	Area	IS: Area	IRA	YZN	Pred.RT	FRT	Conc.	IEMPC
1									

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Page 1 of 2

Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-14.qld

Last Altered:

Monday, December 23, 2019 09:43:37 Pacific Standard Time

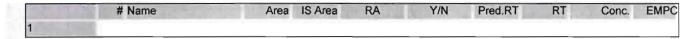
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Monday, December 23, 2019 09:46:19 Pacific Standard Time

Name: 191217K2_14, Date: 18-Dec-2019, Time: 00:19:49, ID: 1903648-06 PDI-076SC-A-10-11-191013 13.56, Description: PDI-076SC-A-10-11-191013

Page 2 of 2

Penta-Furans



Hexa-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1007000								

Hepta-Furans

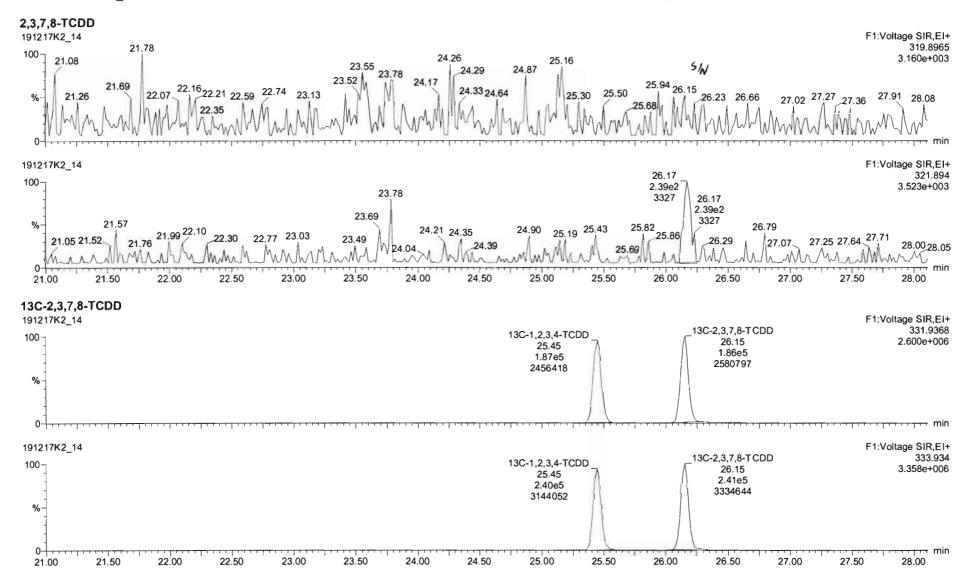
THE PERSON	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1									

Work Order 1903648 Page 238 of 513

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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



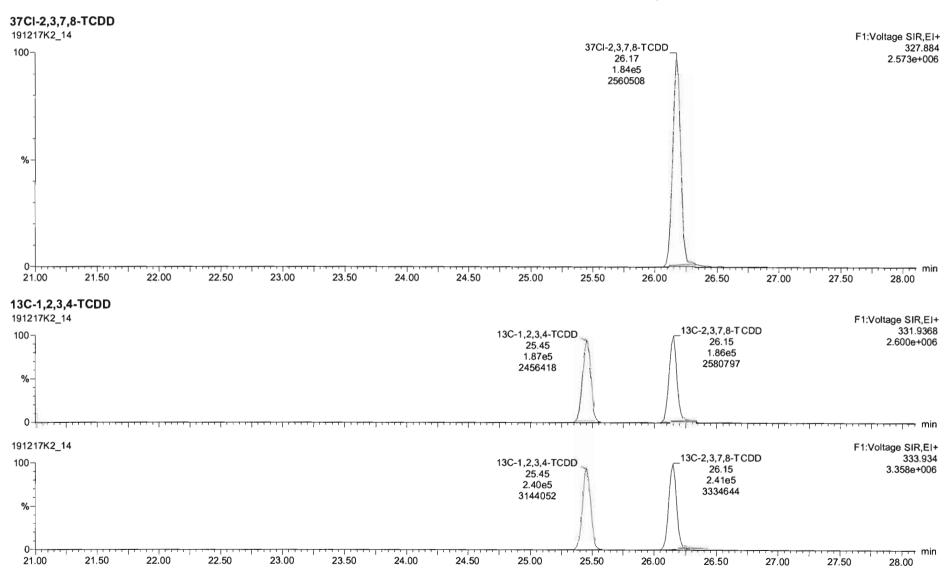
Page 158 of 182

Dataset:

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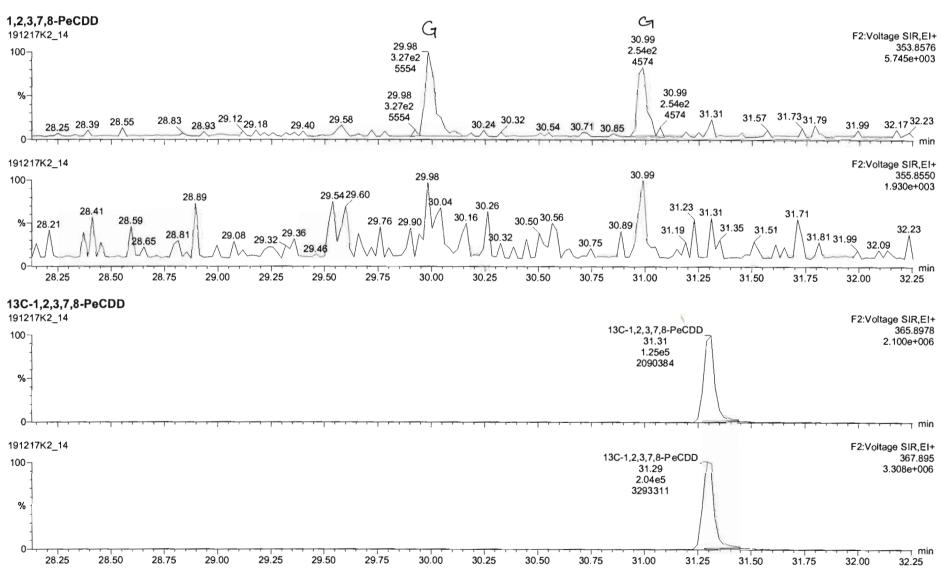


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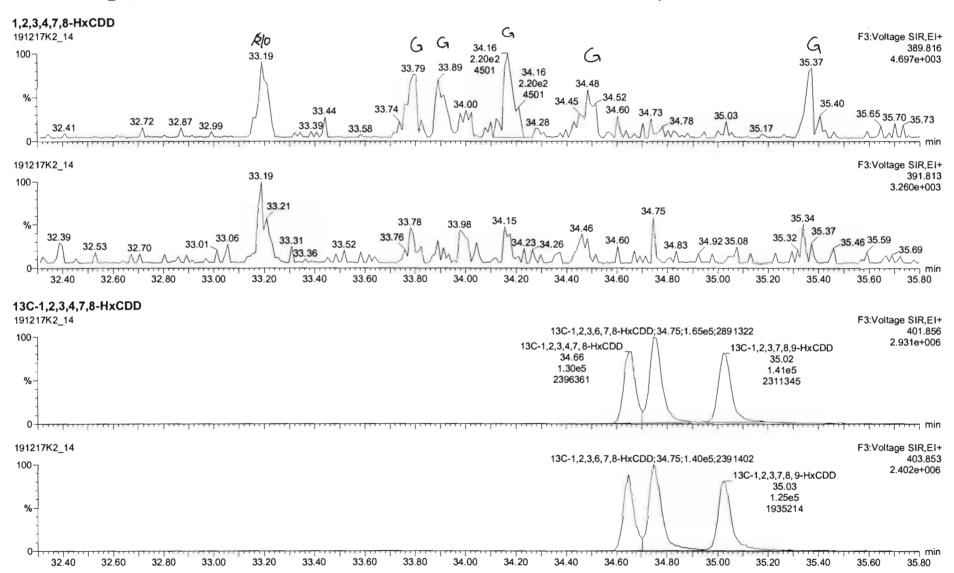
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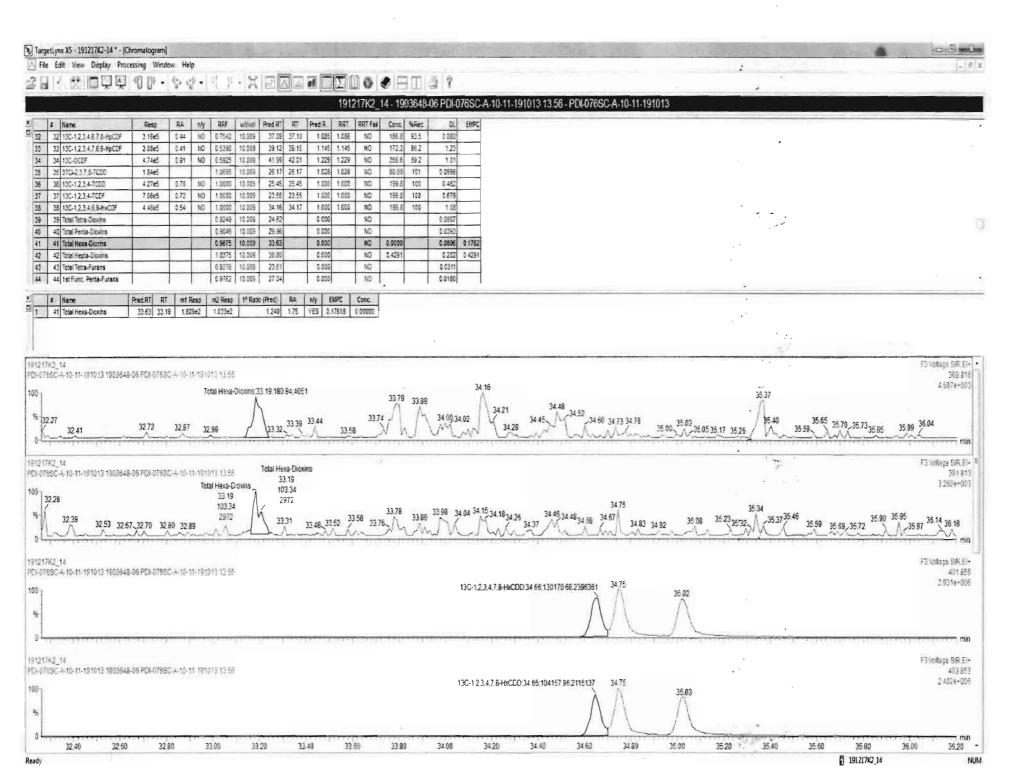
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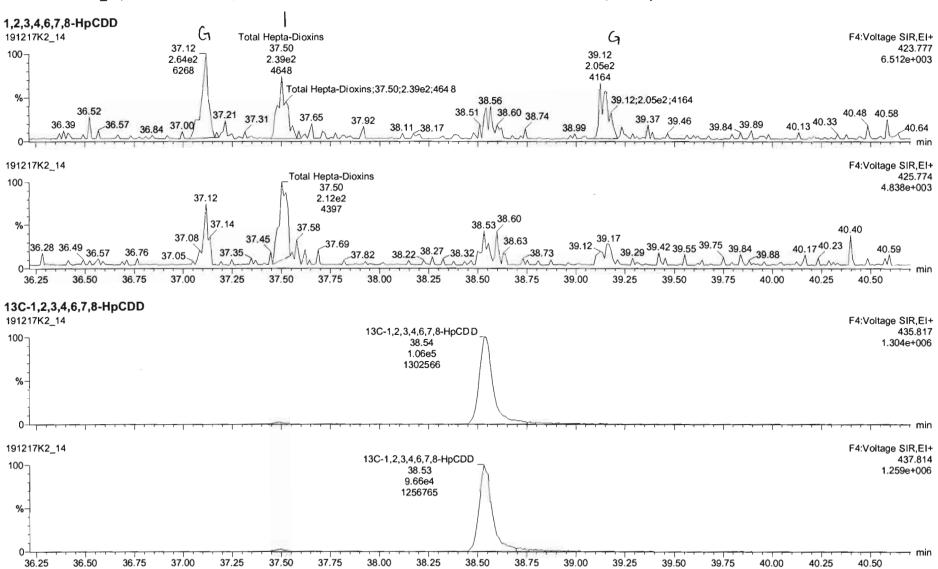


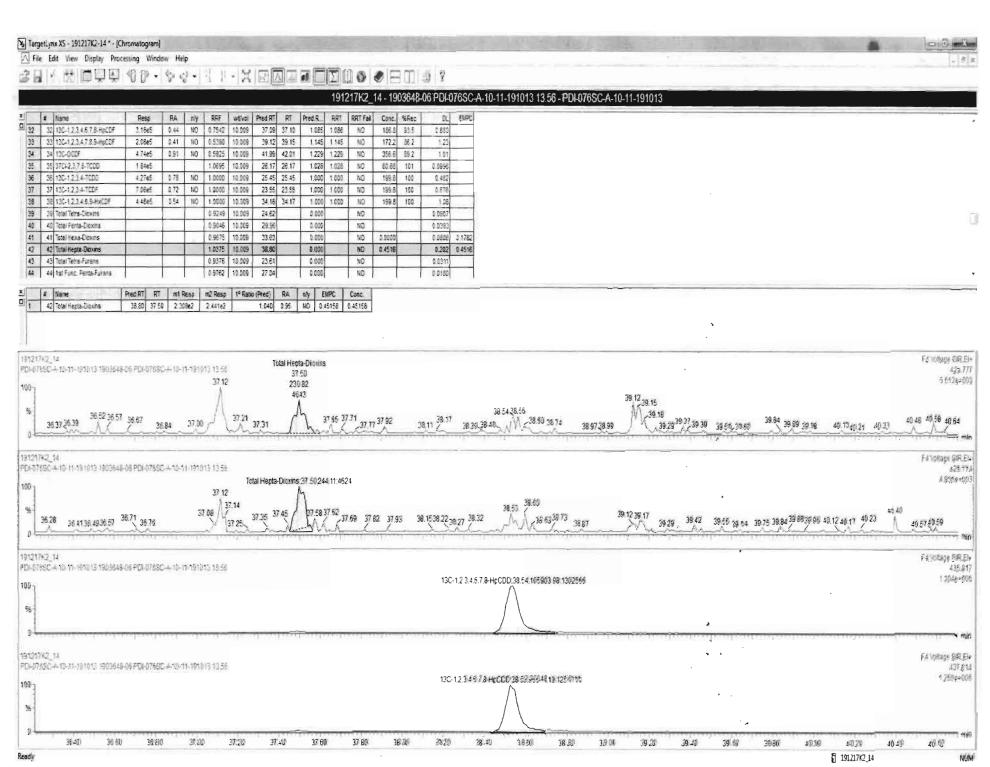
Page 161 of 182

Dataset:

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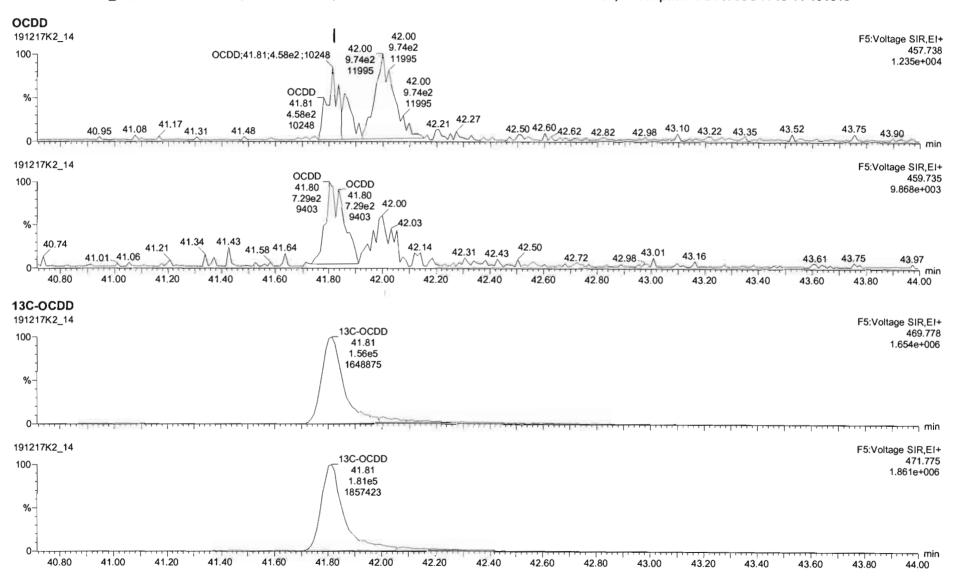


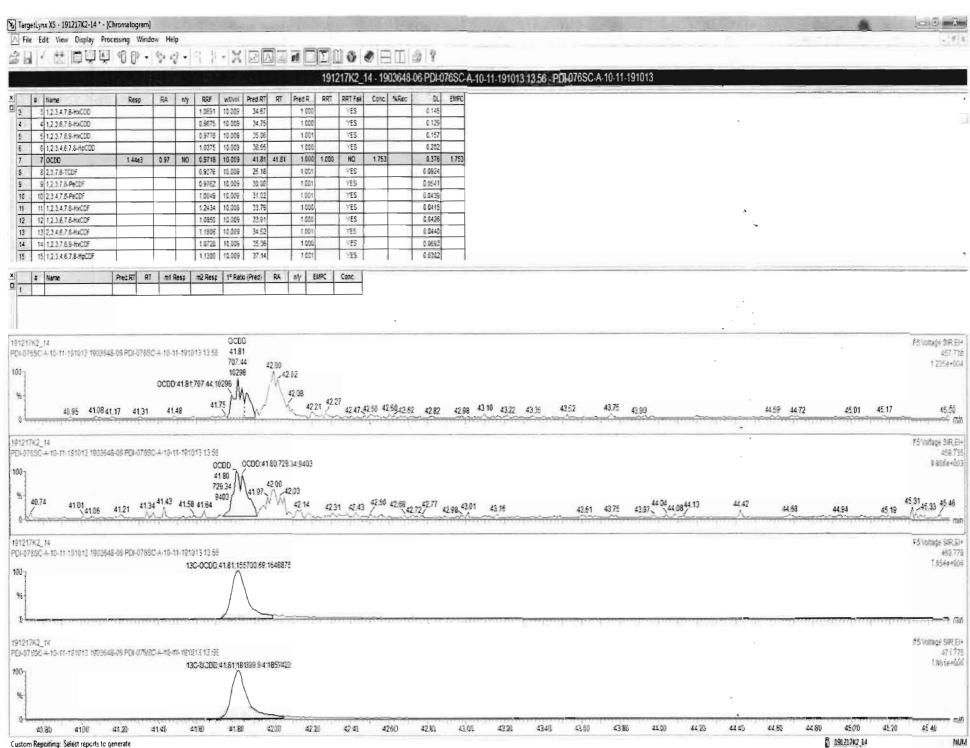
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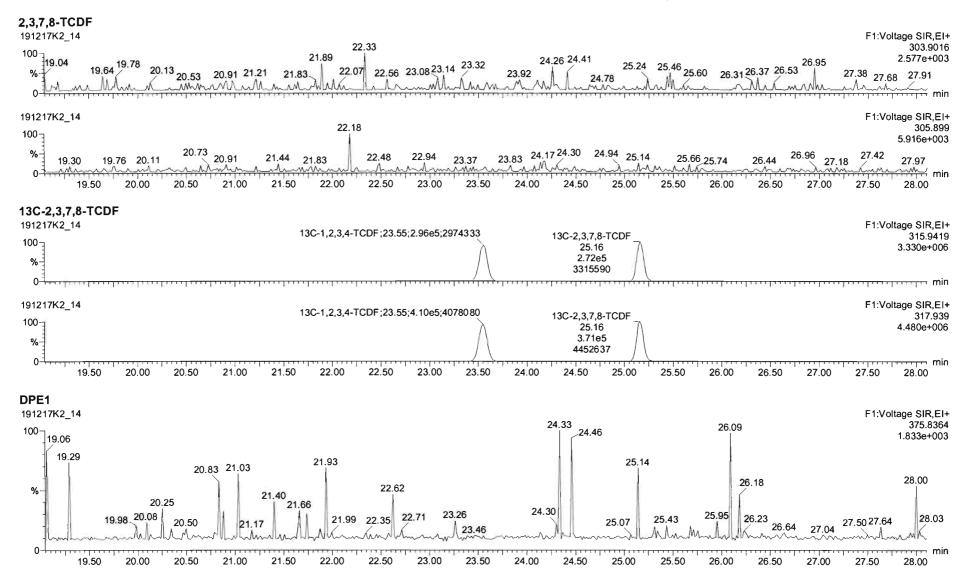
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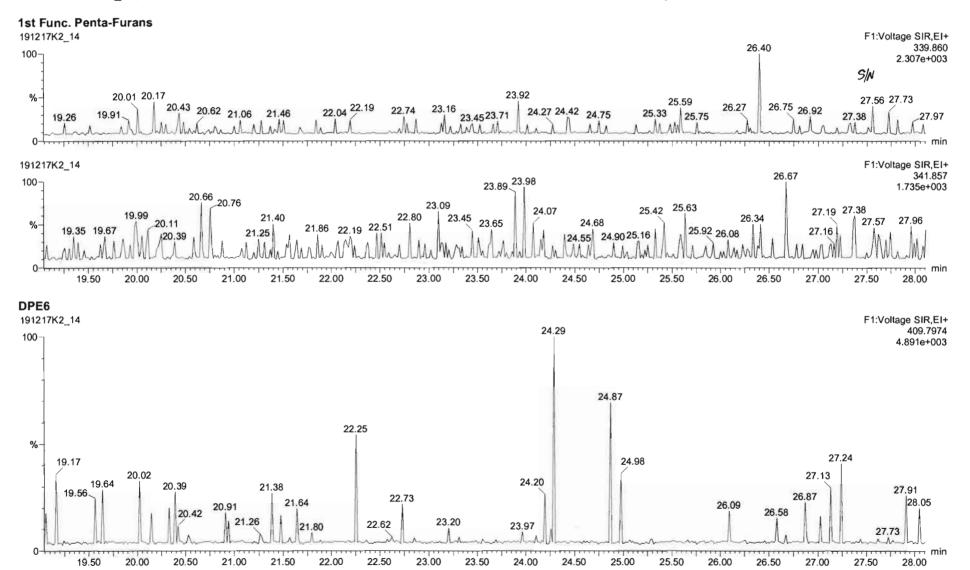
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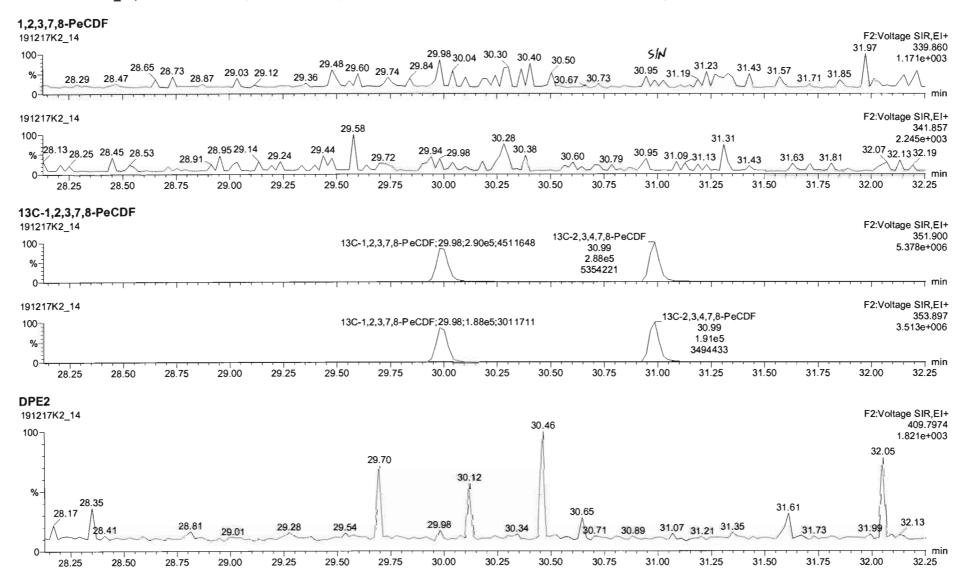
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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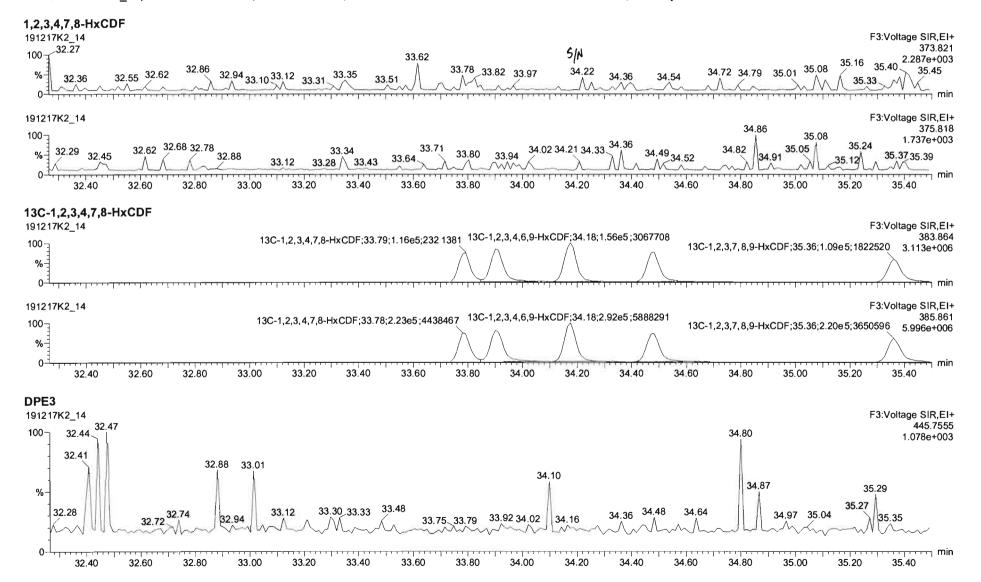
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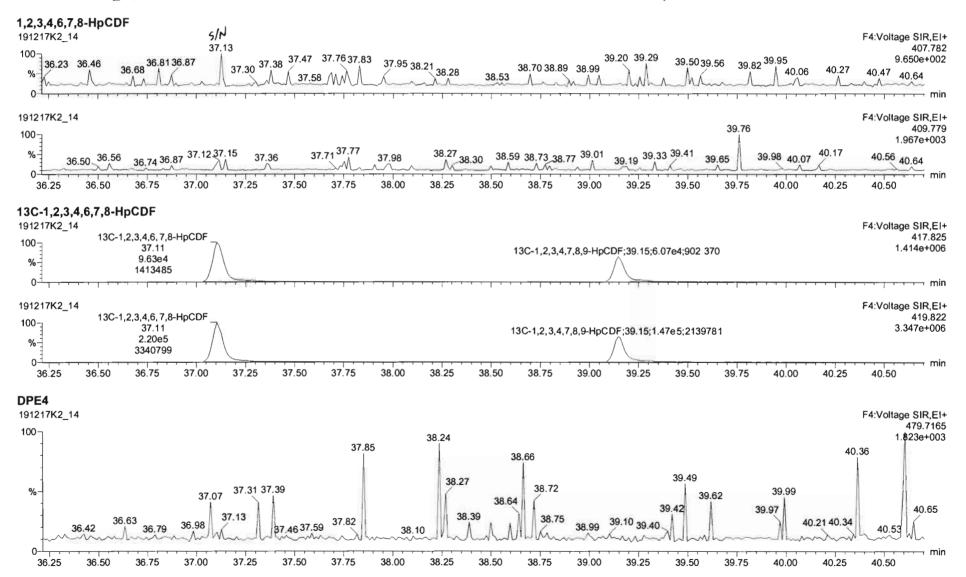
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



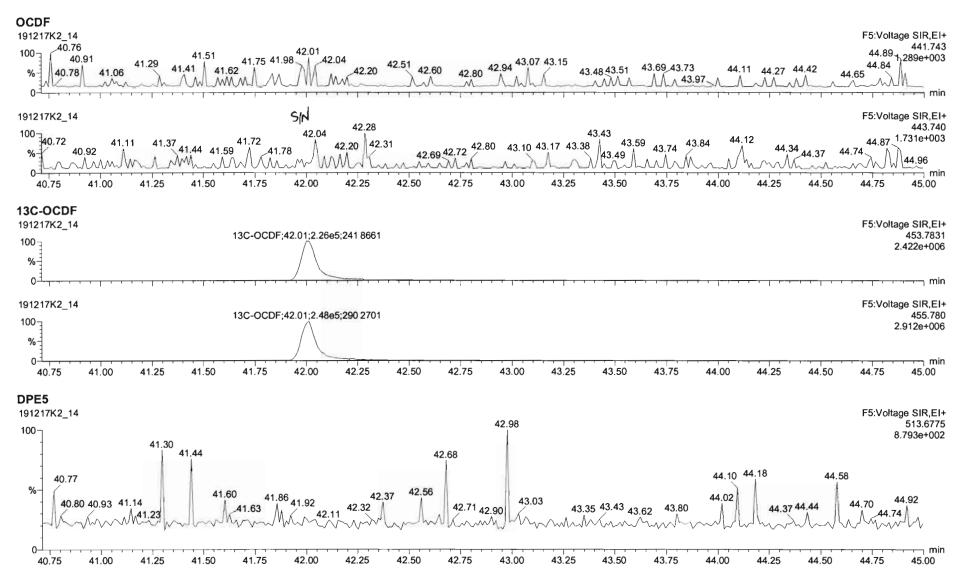
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Untitled

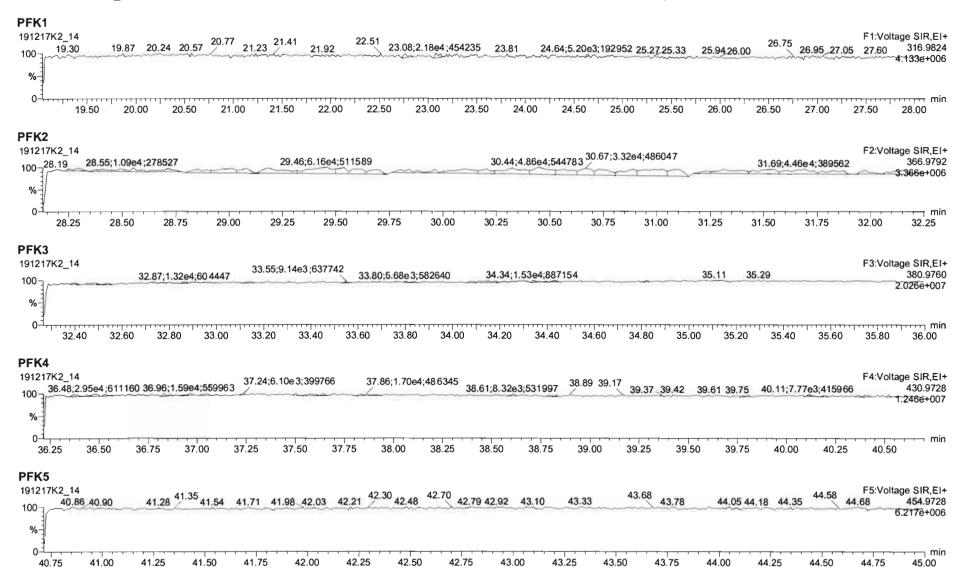
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Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-15.qld

Last Altered:

Thursday, December 26, 2019 17:22:38 Pacific Standard Time

Printed:

Thursday, December 26, 2019 17:23:54 Pacific Standard Time

EL 12/26/19

C712/27/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2 15, Date: 18-Dec-2019, Time: 01:09:29, ID: 1903648-07 PDI-076SC-A-11-11.9-191013 14.2, Description: PDI-076SC-A-11-11.9-191013

DEPOSITE OF	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1/40	1 2,3,7,8-TCDD				0.925	10.117	26.18		1.00		YES			0.168	- 19
2	2 1,2,3,7,8-PeCDD				0.905	10.117	31.31		1.00		YES			0.0972	
3	3 1,2,3,4,7,8-HxCDD				1.07	10.117	34.66		1.00		YES			0.145	
4	4 1,2,3,6,7,8-HxCDD				0.967	10.117	34.75		1.00		YES			0.128	[
5	5 1,2,3,7,8,9-HxCDD				0.978	10.117	35.06		1.00		YES			0.157	}
6	6 1,2,3,4,6,7,8-HpCDD	265.417	1.020	NO	1.04	10.117	38.55	38.59	1.00	1.00	NO	0.3183		0.155	0.3183
7	7 OCDD	1946.315	0.795	NO	0.972	10.117	41.80	41.80	1.00	1.00	NO	2.861		0.458	2.861
8	8 2,3,7,8-TCDF				0.938	10.117	25.20		1.00		YES			0.0806	
9	9 1,2,3,7,8-PeCDF				0.976	10.117	30.00		1.00		YES			0.0660	
10	10 2,3,4,7,8-PeCDF				1.00	10.117	31.02		1.00		YES			0.0544	ĺ
11 5 5 6	11 1,2,3,4,7,8-HxCDF				1.24	10.117	33.78		1.00		YES			0.0548	ļ
12	12 1,2,3,6,7,8-HxCDF				1.10	10.117	33.91		1.00		YES			0.0524	
13	13 2,3,4,6,7,8-HxCDF				1.18	10.117	34.51		1.00		YES			0.0545	
14	14 1,2,3,7,8,9-HxCDF				1.07	10.117	35.36		1.00		YES			0.0838	
15	15 1,2,3,4,6,7,8-HpCDF				1.13	10.117	37.14		1.00		YES			0.0694	. 1
16	16 1,2,3,4,7,8,9-HpCDF				1.26	10.117	39.15		1.00		YES			0.0925]
17	17 OCDF				1.10	10.117	42.00		1.00		YES			0.199	
18	18 13C-2,3,7,8-TCDD	349249.657	0.775	NO	1.05	10.117	26.16	26.15	1.03	1.03	NO	189.8	96.0	0.704	
19	19 13C-1,2,3,7,8-PeCDD	283371.789	0.621	NO	0.743	10.117	31.31	31.29	1.23	1.23	NO	217.4	110	0.812	
20	20 13C-1,2,3,4,7,8-HxCDD	189973.047	1.313	NO	0.646	10.117	34.65	34.65	1.01	1.01	NO	145.6	73.6	0.827	ľ
21	21 13C-1,2,3,6,7,8-HxCDD	257990.328	1.095	NO	0.777	10.117	34.75	34.75	1.02	1.02	NO	164.5	83.2	0.688	
22	22 13C-1,2,3,7,8,9-HxCDD	216312.899	1.162	NO	0.659	10.117	35.02	35.02	1.02	1.02	NO	162.4	82.2	0.810	
23	23 13C-1,2,3,4,6,7,8-HpCDD	158892.890	1.048	NO	0.534	10.117	38.52	38.54	1.13	1.13	NO	147.3	74.5	0.908	}
24	24 13C-OCDD	276810.782	0.881	NO	0.470	10.117	41.80	41.80	1.22	1.22	NO	291.4	73.7	1.33	
25	25 13C-2,3,7,8-TCDF	522906.250	0.735	NO	0.977	10.117	25.17	25.17	0.99	0.99	NO	183.3	92.7	0.724	Ì
26	26 13C-1,2,3,7,8-PeCDF	412640.704	1.567	NO	0.778	10.117	30.00	29.98	1.18	1.18	NO	181.8	92.0	1.09	
27	27 13C-2,3,4,7,8-PeCDF	435955.922	1.496	NO	0.750	10.117	30.99	30.99	1.22	1.22	NO	199.2	101	1.13	
28	28 13C-1,2,3,4,7,8-HxCDF	294010.727	0.525	NO	0.845	10.117	33.79	33.78	0.99	0.99	NO	172.3	87.2	1.36	
29	29 13C-1,2,3,6,7,8-HxCDF	359231.657	0.514	NO	1.03	10.117	33.90	33.90	0.99	0.99	NO	173.3	87.7	1.12	
30	30 13C-2,3,4,6,7,8-HxCDF	319497.579	0.503	NO	0.893	10.117	34.48	34.47	1.01	1.01	NO	177.2	89.6	1.29	

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MassLynx MassLynx V4.1 SCN 945

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Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-15.qld

Last Altered: Printed: Thursday, December 26, 2019 17:22:38 Pacific Standard Time Thursday, December 26, 2019 17:23:54 Pacific Standard Time

Name: 191217K2_15, Date: 18-Dec-2019, Time: 01:09:29, ID: 1903648-07 PDI-076SC-A-11-11.9-191013 14.2, Description: PDI-076SC-A-11-11.9-191013

Part of	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
31	31 13C-1,2,3,7,8,9-HxCDF	256078.484	0.528	NO	0.734	10.117	35.38	35.36	1.04	1.03	NO	172.7	87.4	1.57	
32	32 13C-1,2,3,4,6,7,8-HpCDF	243006.719	0.440	NO	0.754	10.117	37.09	37.10	1.09	1.09	NO	159.6	80.7	1.02	
33	33 13C-1,2,3,4,7,8,9-HpCDF	160619.234	0.433	NO	0.539	10.117	39.12	39.15	1.14	1.15	NO	147.6	74.7	1.42	
34	34 13C-OCDF	381831.516	0.909	NO	0.593	10.117	41.99	42.00	1.23	1.23	NO	319.1	80.7	1.13	
35	35 37Cl-2,3,7,8-TCDD	152828.125			1.07	10.117	26.18	26.18	1.03	1.03	NO	81.44	103	0.158	
36	36 13C-1,2,3,4-TCDD	346852.172	0.794	NO	1.00	10.117	25.45	25.47	1.00	1.00	NO	197.7	100	0.738	
37	37 13C-1,2,3,4-TCDF	576909.515	0.749	NO	1.00	10.117	23.55	23.57	1.00	1.00	NO	197.7	100	0.708	
38	38 13C-1,2,3,4,6,9-HxCDF	399170.828	0.530	NO	1.00	10.117	34.16	34.17	1.00	1.00	NO	197.7	100	1.15	
39	39 Total Tetra-Dioxins				0.925	10.117	24.62		0.00		NO			0.105	
40	40 Total Penta-Dioxins				0.905	10.117	29.96		0.00		NO			0.0415	Ì
41	41 Total Hexa-Dioxins				0.967	10.117	33.63		0.00		NO	0.2513		0.0643	0.2513
42	42 Total Hepta-Dioxins				1.04	10.117	38.80		0.00		NO	0.3183		0.155	0.7591
43	43 Total Tetra-Furans				0.938	10.117	23.61		0.00		NO			0.0337	
44	44 1st Func. Penta-Furans				0.976	10.117	27.04		0.00		NO			0.0185	
45	45 Total Penta-Furans				0.976	10.117	29.27		0.00		NO			0.0258	
46	46 Total Hexa-Furans				1.18	10.117	33.56		0.00		NO			0.0387	
47	47 Total Hepta-Furans				1.13	10.117	37.83		0.00		NO			0.0432	

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Quantify Totals Report MassLynx MassLynx V4.1 SCN 945

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Vista Analytical Laboratory

Dataset:

Printed:

U:\VG11.PRO\Results\191217K2\191217K2-15.qld

Last Altered:

Thursday, December 26, 2019 17:22:38 Pacific Standard Time Thursday, December 26, 2019 17:24:02 Pacific Standard Time

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Calibration: U:\VG11.PRO\CurveDB\db5 1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_15, Date: 18-Dec-2019, Time: 01:09:29, ID: 1903648-07 PDI-076SC-A-11-11.9-191013 14.2, Description: PDI-076SC-A-11-11.9-191013

Tetra-Dioxins

#	Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 44 18									

Penta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC

Hexa-Dioxins

- Car (6)	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Coric.	EMPC
1	41 Total Hexa-Dioxins	2.72e2	0.00e0	1.305	NO	33.63	33.20	0.2513	0.2513

Hepta-Dioxins

MEZER BATTE	# Name	Area	IS Area	RA	YIN	Pred.RT	RT	Conc.	EMPC
1,5114134	42 Total Hepta-Dioxins	0.00e0	1.59e5	1.442	YES	38.80	37.50	0.0000	0.4409
2	6 1,2,3,4,6,7,8-HpCDD	2.65e2	1.59e5	1.020	NO	38.55	38.59	0.3183	0.3183

Tetra-Furans

# Na	nne	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
13,500 350									

Penta-Furans function 1

# Name	Area IS Area	RA	YIN	Pred.RT	RT	Conc.	EMPC
1 10 10 10 10							

Vista Analytical Laboratory

Dataset:

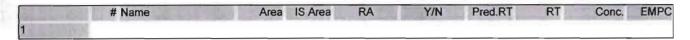
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Last Altered: Printed: Thursday, December 26, 2019 17:22:38 Pacific Standard Time

Thursday, December 26, 2019 17:24:02 Pacific Standard Time

Name: 191217K2_15, Date: 18-Dec-2019, Time: 01:09:29, ID: 1903648-07 PDI-076SC-A-11-11.9-191013 14.2, Description: PDI-076SC-A-11-11.9-191013

Penta-Furans



Hexa-Furans



Hepta-Furans

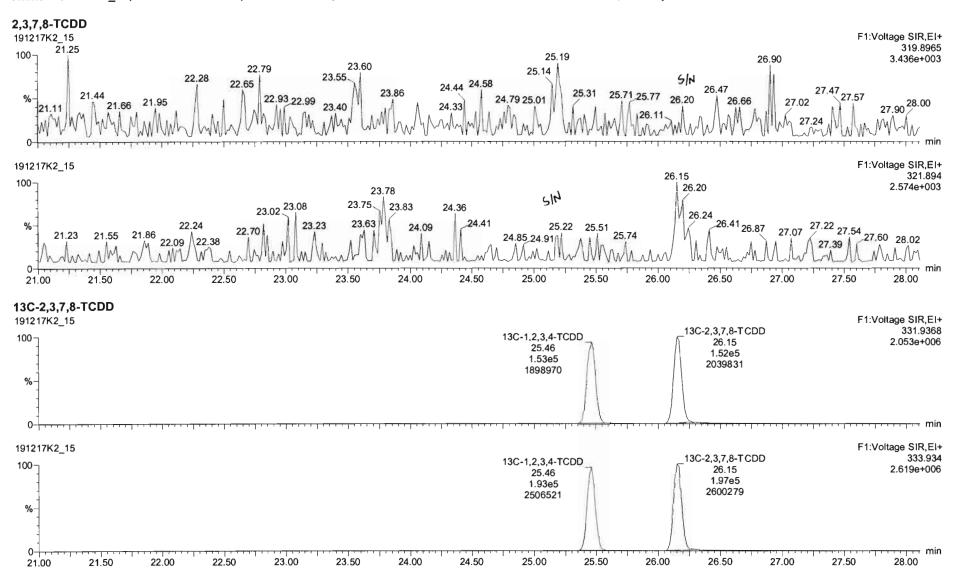
# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

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Untitled

Last Altered: Printed:

Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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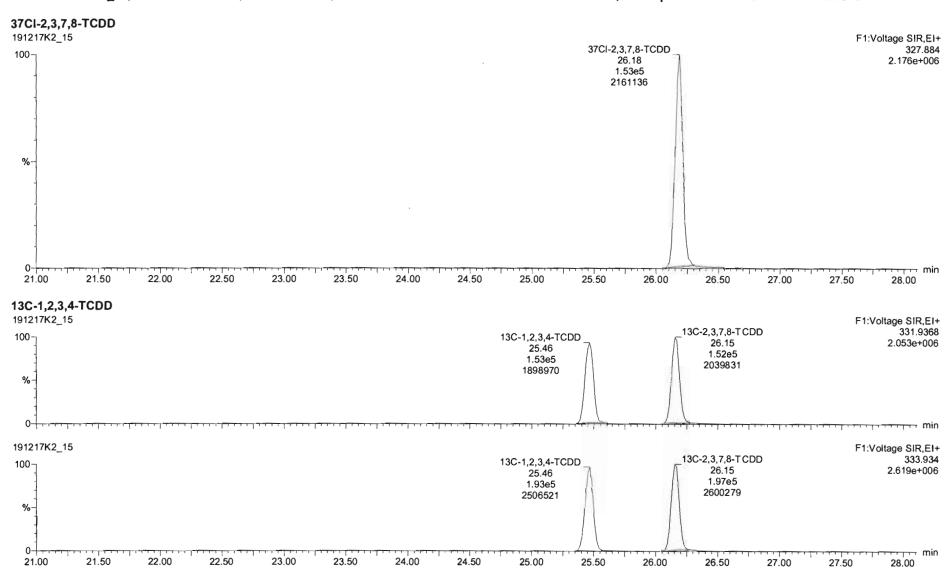
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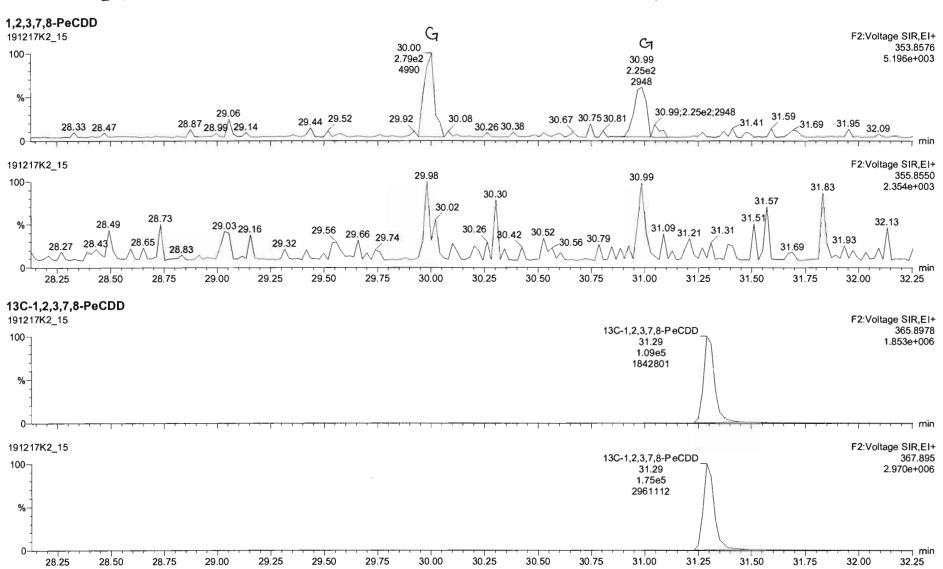
Printed: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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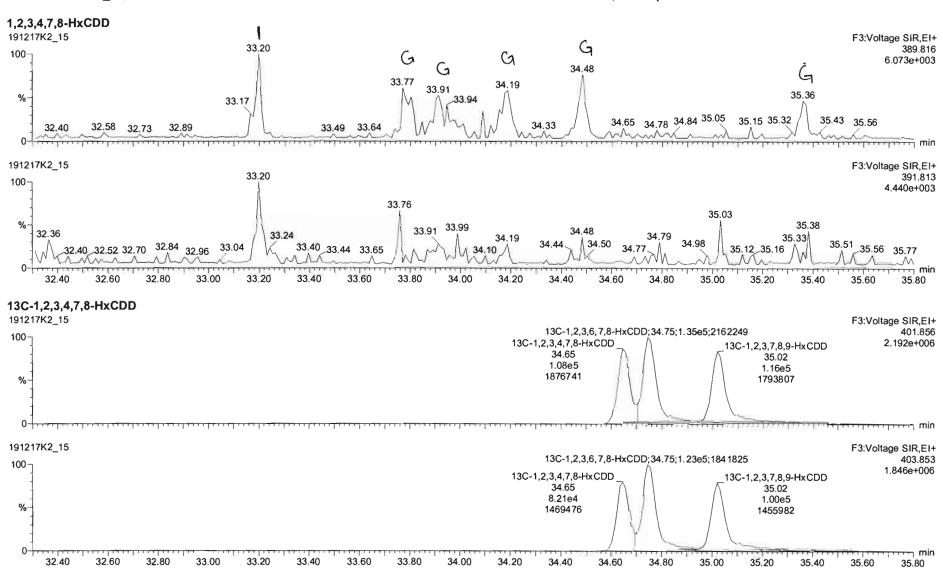
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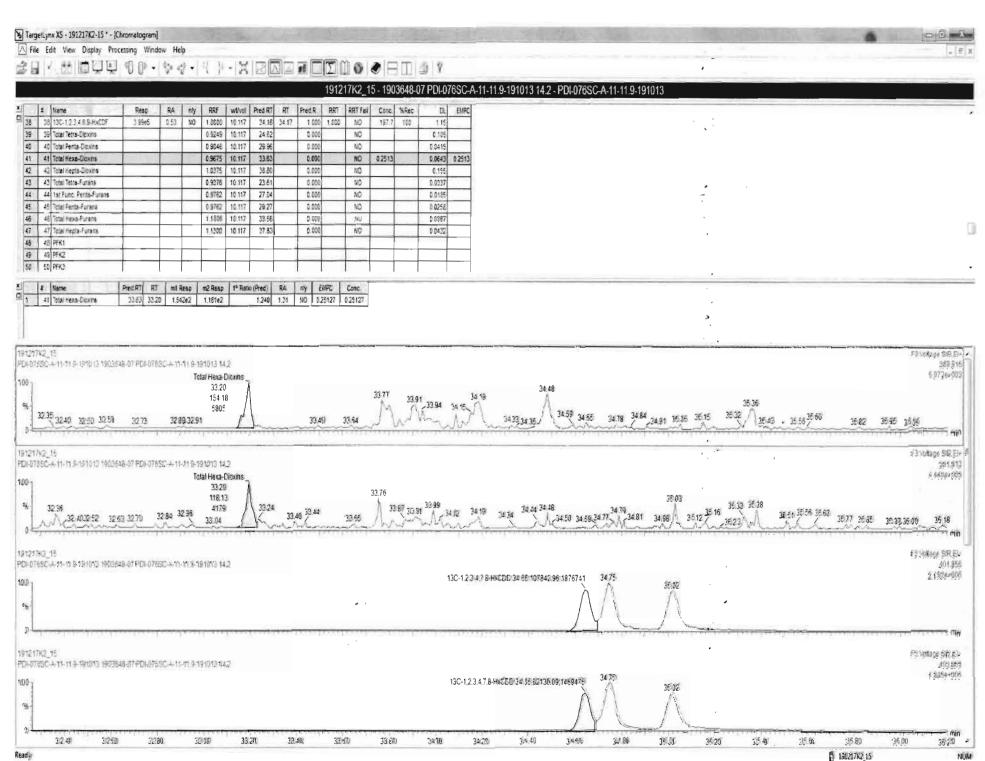


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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

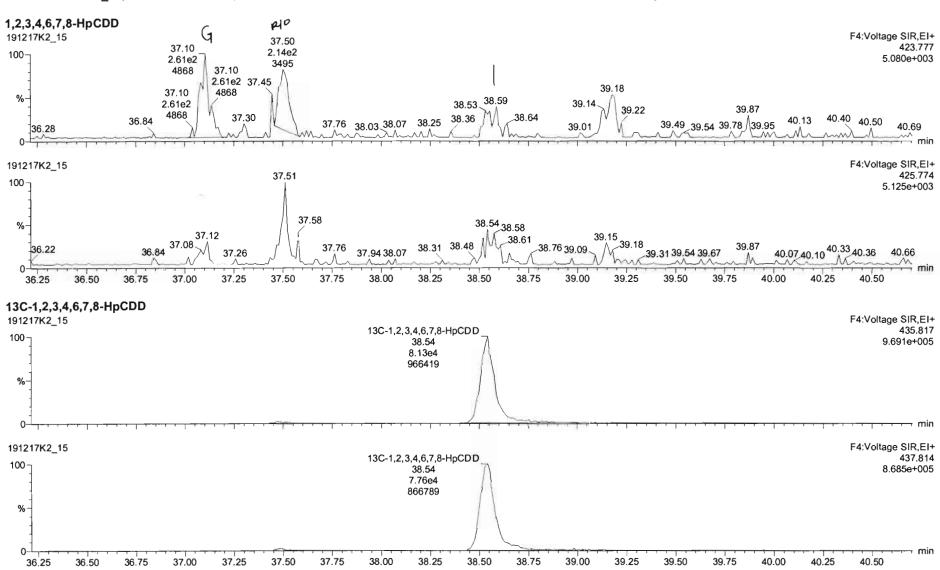


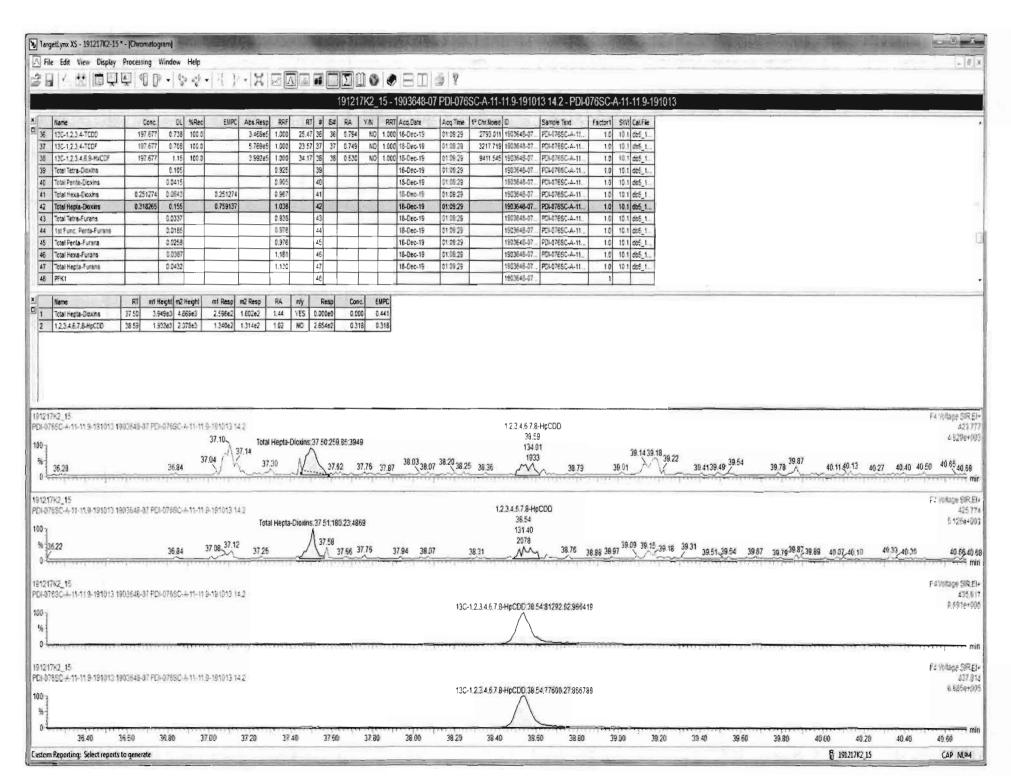


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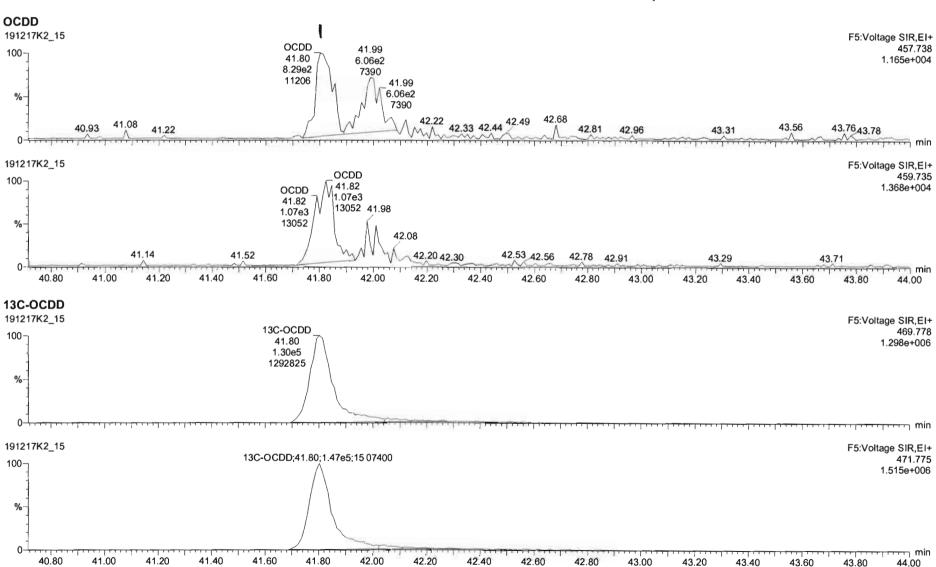
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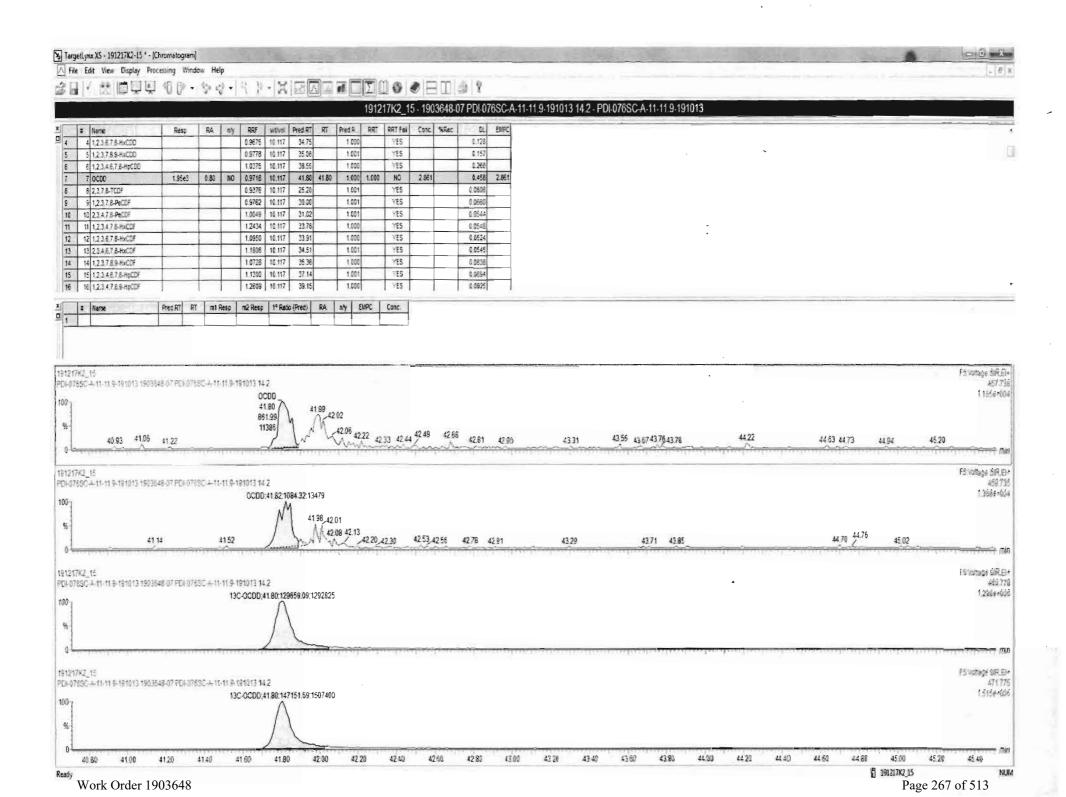




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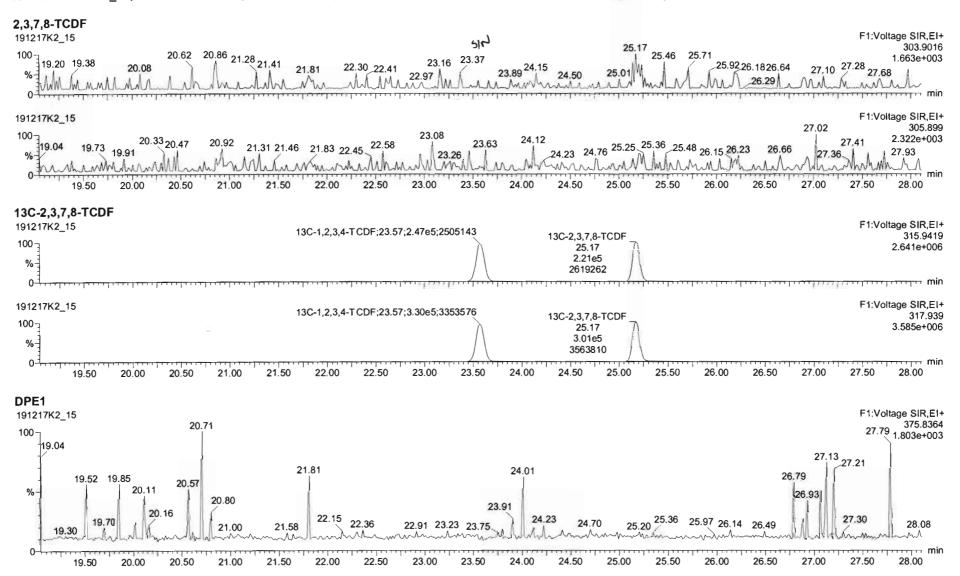
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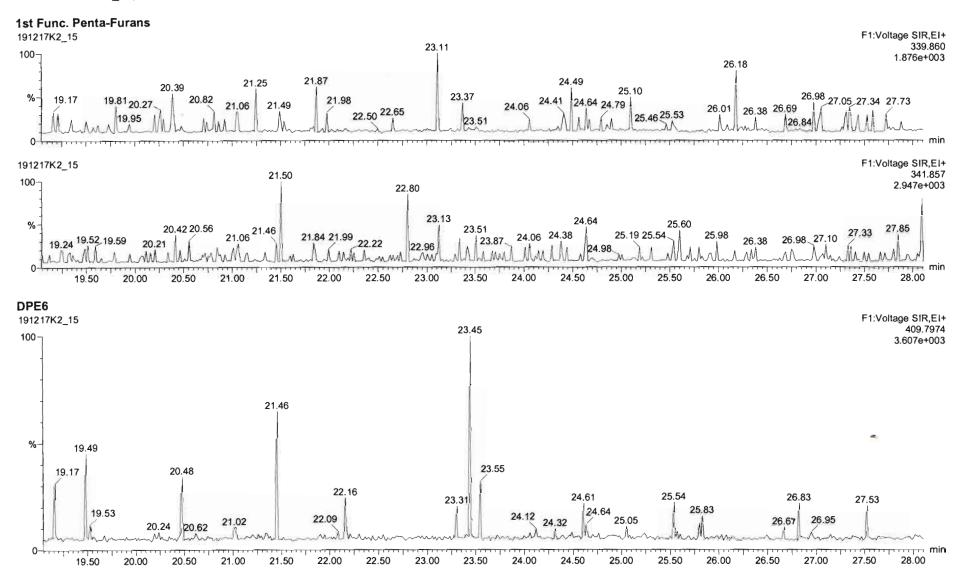
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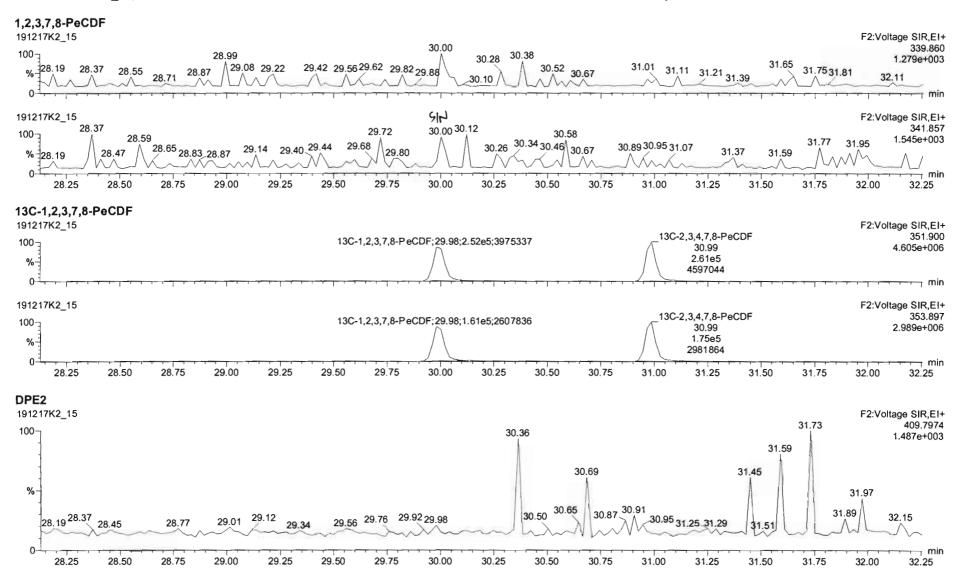
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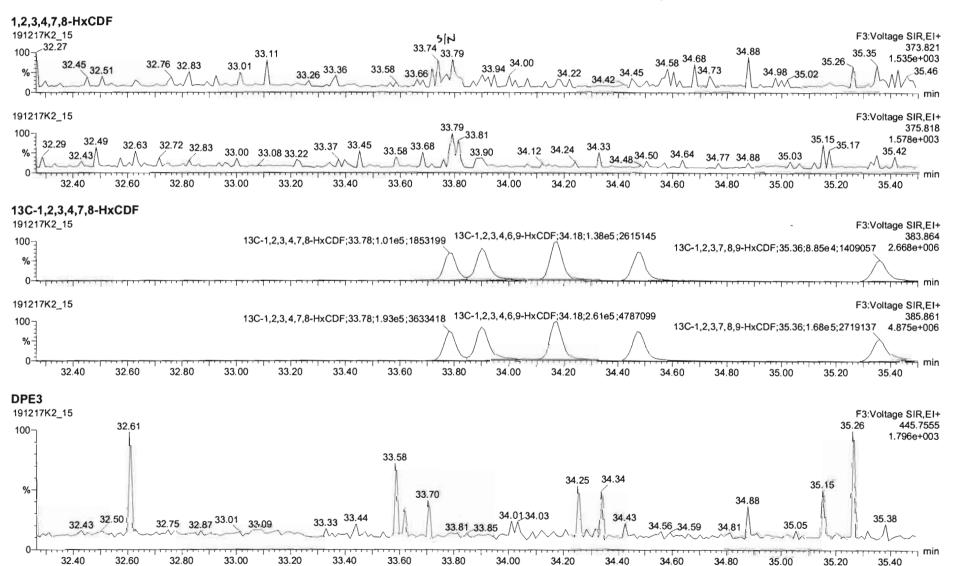
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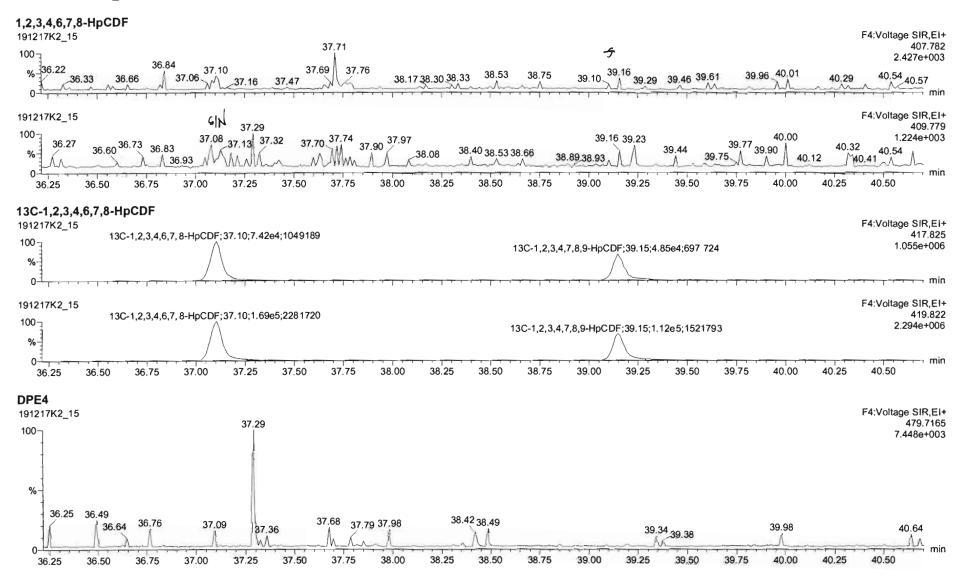
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Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



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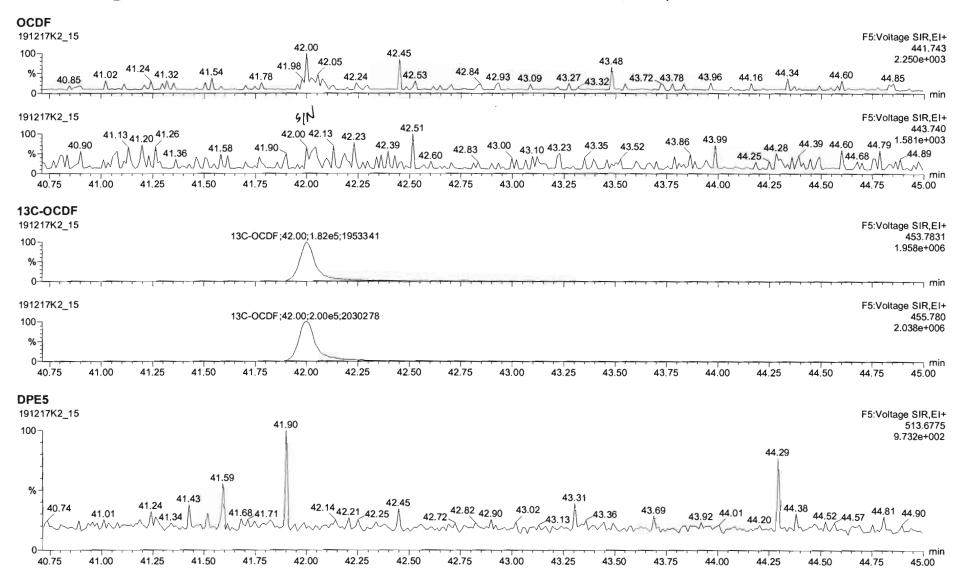
MassLynx 4.1 SCN815

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Dataset:

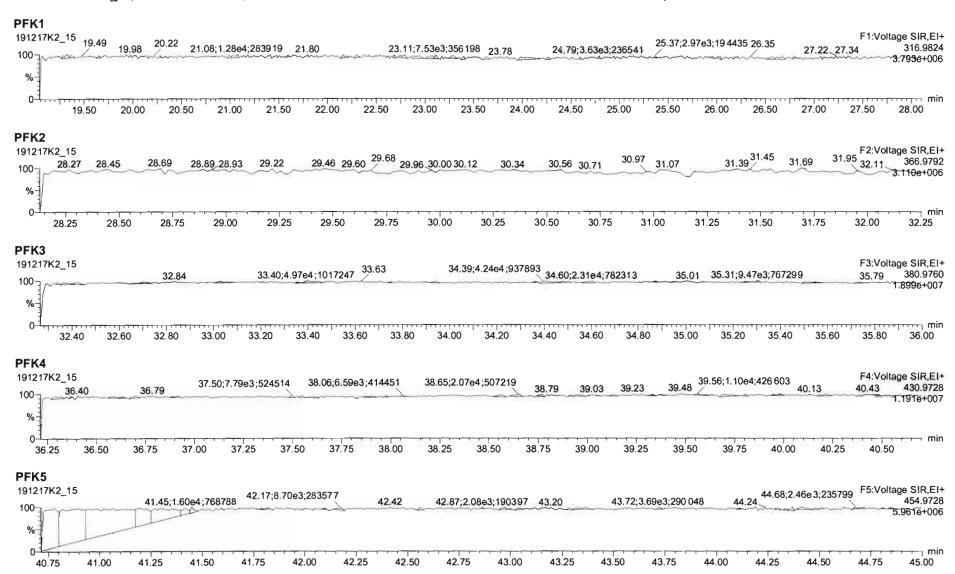
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Untitled

Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Printed: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time



CONTINUING CALIBRATION

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HRMS CALIBRATIO	N STANDARDS I	REVIEW CHECKLIST	
Beg. Calbration ID: STI9121712		Reviewed By:	<u>. </u>
End Calibration ID:		Initiais & Date	
Ion abundance within QC limits?	Beg. End	Mass resolution <u>></u>	Beg. End
Concentrations within criteria?		□ 5k □ 6-8K □ 8K ≤ 10K 1614 1699 429 1613/1668/8280	,
TCDD/TCDF Valleys <25%		Intergrated peaks display correctly?	M
First and last eluters present?	团 中	GC Break <20%	
Retention Times within criteria?		8280 CS1 End Standard:	
Verification Std. named correctly?		- Ratios within limits, S/N <2.5:1, CS1 within 12 hours	MA
(ST-Year-Month-Day-VG ID)			
Forms signed and dated?	团 中	Comments:	_
Correct ICAL referenced?	water h	-	
Run Log:			
- Correct instrument listed?	NA		
- Samples within 12 hour clock?	√ N		
- Bottie position verfied?	4		

ID: LR - HCSRC

Rev. No.: 0 Rev. Date: 06/06/2017

Page: 1 of 1

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U:\VG11.PRO\Results\191217K2\191217K2-1.qld Dataset:

Wednesday, December 18, 2019 18:10:47 Pacific Standard Time Last Altered: Wednesday, December 18, 2019 18:11:15 Pacific Standard Time Printed:

HC 12-18-19 GRB 12/19/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:36 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204

#-Name	Resp :	IS Resp:	RA -	n/y	RRF	Pred.RT -	RT	- RT Flag -	Pred.RRT;	RRT :	Conc.	%Rec -	STD out
1 2,3,7,8-TCDD	4.66e4	5.07e5	0.74	NO	0.925	26.18	26.17	NO	1.001	1.001	9.9476	99.5	NO
2 1,2,3,7,8-PeCDD	1.58e5	3.40e5	0.60	NO	0.905	31.31	31.31	NO	1.001	1.001	51.251	103	NO
3 1,2,3,4,7,8-HxCDD	1.53e5	2.71e5	1.28	NO	1.07	34.65	34.66	NO	1.000	1.001	52.807	106	NO
4 1,2,3,6,7,8-HxCDD	1.66e5	3.23e5	1.27	NO	0.967	34.75	34.76	NO	1.000	1.000	52.912	106	NO
5 1,2,3,7,8,9-HxCDD	1.49e5	3.03e5	1.34	NO	0.978	35.04	35.03	NO	1.001	1.001	50.317	101	NO
6 1,2,3,4,6,7,8-HpCDD	1.18e5	2.38e5	1.09	NO	1.04	38.53	38.53	NO	1.000	1.000	47.683	95.4	NO
7 OCDD	1.97e5	3.77e5	0.90	NO	0.972	41.78	41.79	NO	1.000	1.000	107.58	108	NO
8 2,3,7,8-TCDF	6.98e4	7.21e5	0.78	NO	0.938	25.18	25.19	NO	1.001	1.001	10.332	103	NO
9 1,2,3,7,8-PeCDF	2.74e5	5.15e5	1.61	NO	0.976	30.00	30.00	NO	1.001	1.001	54.361	109	NO
10 2,3,4,7,8-PeCDF	2.69e5	4.95e5	1.58	NO	1.00	31.00	30.99	NO	1.001	1.001	53.946	108	NO
11 1,2,3,4,7,8-HxCDF	2.48e5	3.81e5	1.28	NO	1.24	33.78	33.79	NO	1.000	1.000	52.299	105	NO
12 1,2,3,6,7,8-HxCDF	2.64e5	4.50e5	1.29	NO	1.10	33.90	33.91	NO	1.000	1.001	53.450	107	NO
13 2,3,4,6,7,8-HxCDF	2.64e5	4.20e5	1.29	NO	1.18	34.51	34.48	NO	1.001	1.000	53.263	107	NO
14 1,2,3,7,8,9-HxCDF	2.02e5	3.54e5	1.26	NO	1.07	35.35	35.37	NO	1.000	1.001	53.047	106	NO
15 1,2,3,4,6,7,8-HpCDF	2.07e5	3.45e5	1.09	NO	1.13	37.13	37.10	NO	1.001	1.000	52.991	106	NO
16 1,2,3,4,7,8,9-HpCDF	1.59e5	2.31e5	1.10	NO	1.26	39.12	39.15	NO	1.000	1.001	54.661	109	NO
170 17 OCDF	2.67e5	5.19e5	0.91	NO	1.10	41.97	41.98	NO	1.000	1.000	93.359	93.4	NO
18 13C-2,3,7,8-TCDD	5.07e5	4.69e5	0.77	NO	1.05	26.15	26.15	NO	1.027	1.028	102.98	103	NO
19 13C-1,2,3,7,8-PeCDD	3.40e5	4.69e5	0.61	NO	0.743	31.29	31.29	NO	1.230	1.229	97.570	97.6	NO
20 13C-1,2,3,4,7,8-HxCDD	2.71e5	4.67e5	1.23	NO	0.646	34.64	34.64	NO	1.014	1.014	89.816	89.8	NO
21 3 21 13C-1,2,3,6,7,8-HxCDD	3.23e5	4.67e5	1.23	NO	0.777	34.73	34.75	NO	1.017	1.017	89.079	89.1	NO
22 13C-1,2,3,7,8,9-HxCDD	3.03e5	4.67e5	1.22	NO	0.659	35.01	35.01	NO	1.025	1.025	98.202	98.2	NO
23 13C-1,2,3,4,6,7,8-HpCDD	2.38e5	4.67e5	1.13	NO	0.534	38.51	38.52	NO	1.127	1.128	95.286	95.3	NO
24 24 13C-OCDD	3.77e5	4.67e5	0.89	NO	0.470	41.79	41.78	NO	1.223	1.223	171.54	85.8	NO
25 25 13C-2,3,7,8-TCDF	7.21e5	7.02e5	0.73	NO	0.977	25.16	25.16	NO	0.989	0.989	105.03	105	NO
26	5.15e5	7.02e5	1.48	NO	0.778	29.98	29.98	NO	1.178	1.178	94.370	94.4	NO
27 27 13C-2,3,4,7,8-PeCDF	4.95e5	7.02e5	1.52	NO	0.750	30.97	30.97	NO	1.217	1.217	94.069	94.1	NO
28 28 13C-1,2,3,4,7,8-HxCDF	3.81e5	4.67e5	0.54	NO	0.845	33.77	33.78	NO	0.989	0.989	96.398	96.4	NO
29 29 13C-1,2,3,6,7,8-HxCDF	4.50e5	4.67e5	0.54	NO	1.03	33.89	33.89	NO	0.992	0.992	93.832	93.8	NO
30 13C-2,3,4,6,7,8-HxCDF	4.20e5	4.67e5	0.52	NO	0.893	34.46	34.47	NO	1.009	1.009	100.62	101	NO
31 13C-1,2,3,7,8,9-HxCDF	3.54e5	4.67e5	0.55	NO	0.734	35.37	35.35	NO	1.035	1.035	103.17	103	NO

Work Order 1903648 Page 277 of 513 MassLynx 4.1 SCN815

Page 2 of 2

Dataset:

U:\VG11.PRO\Results\191217K2\191217K2-1.qld

Last Altered:

Wednesday, December 18, 2019 18:10:47 Pacific Standard Time

Printed:

Wednesday, December 18, 2019 18:11:15 Pacific Standard Time

Name: 191217K2_1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204

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32 32 13C-1,2,3,4,6,7,8-HpCDF	3.45e5	4.67e5	0.44	NO	0.754	37.08	37.09	NO	1.085	1.086	97.965	98.0	NO
33 13C-1,2,3,4,7,8,9-HpCDF	2.31e5	4.67e5	0.47	NO	0.539	39.11	39.12	NO	1.145	1.145	91.735	91.7	NO
34 33 13C-OCDF	5.19e5	4.67e5	0.87	NO	0.593	41.97	41.97	NO	1.229	1.228	187.30	93.7	NO
35 35 37Cl-2,3,7,8-TCDD	5.03e4	4.69e5			1.07	26.17	26.17	NO	1.028	1.028	10.016	100	NO
36 13C-1,2,3,4-TCDD	4.69e5	4.69e5	0.80	NO	1.00	25.45	25.45	NO	1.000	1.000	100.00	100	NO
37 37 13C-1,2,3,4-TCDF	7.02e5	7.02e5	0.75	NO	1.00	23.55	23.55	NO	1.000	1.000	100.00	100	NO
38 13C-1,2,3,4,6,9-HxCDF	4.67e5	4.67e5	0.53	NO _	1.00	34.16	34.16	NO	1.000	1.000	100.00	100	NO

Work Order 1903648 Page 278 of 513

Page 1 of 1

Dataset: Untitled

Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Printed: Wednesday, December 18, 2019 18:00:16 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Compound name: 2,3,7,8-TCDD

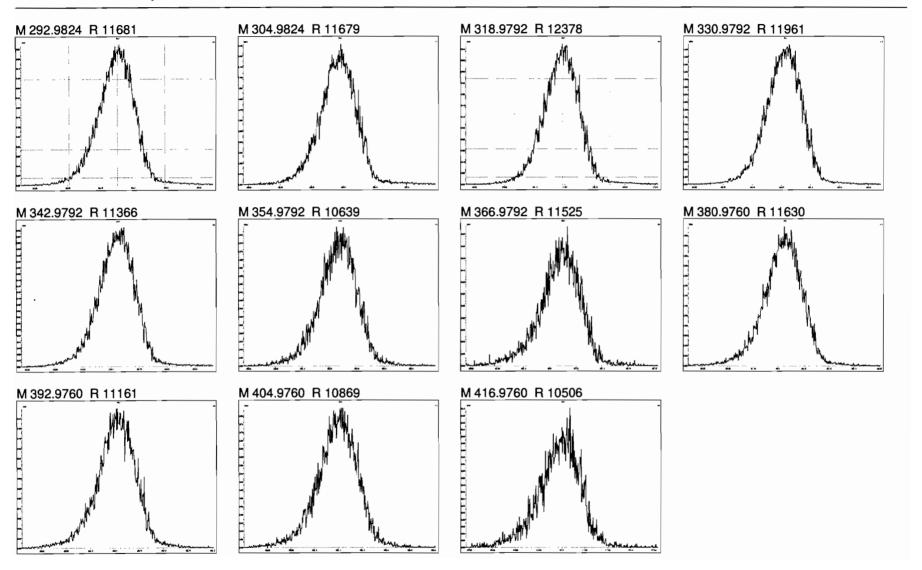
s.,	-1404	Name		ID .			Acq.Date	-Acq.Time
1	1-2-1 1-2-1 103-1	ិ; 191217K2	_1	ST191217K2-	1 1613 CS3 19C2204		17-Dec-19	13:52:02
2		; 191217K2	2_2	B9J0322-BS1	OPR 10		17-Dec-19	14:39:35
3		៊ី 191217K2	2_3	SOLVENT BLA	ANK		17-Dec-19	15:27:59
4		:191217K2	2_4	B9J0322-BLK1	Method Blank 10		17-Dec-19	16:16:19
5		;-191217K2	_5	1903742-05 PI	DI-1069SC-A-13-14.3	3-191016 1	17-Dec-19	17:04:40
6	Abrill	ु 191217K2	2_6	1903742-06 P	DI-022SC-A-11-12-19	91016 11.41	17-Dec-19	17:53:02
7		-191217K2	2_7	1903742-07 P	DI-022SC-A-12-13.1-	191016 13	17-Dec-19	18:42:37
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9		;191217K2	_9	1903648-01 P	DI-073SC-A-11-12-19	91013 15.27	17-Dec-19	20:18:05
10		;191217K2	_10	1903648-02 PI	DI-073SC-A-12-12.6-	191013 14	17-Dec-19	21:06:27
11		7191217K2	_11	1903648-03 PI	DI-1073SC-A-12-12.6	3-191013 1	17-Dec-19	21:54:47
12		191217K2	_12	1903648-04 PI	DI-075SC-A-14-15-19	91013 15.95	17-Dec-19	22:43:08
13		-191217K2	_13	1903648-05 PI	DI-075SC-A-15-16-19	91013 15.4	17-Dec-19	23:32:25
14		÷191217K2	_14	1903648-06 PI	DI-076SC-A-10-11-19	1013 13.56	18-Dec-19	00:19:49
15	: <u>(4</u> 04	191217K2	_15	1903648-07 PI	DI-076SC-A-11-11.9-	191013 14.2	18-Dec-19	01:09:29

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Experiment: ocdd_db5.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed:

Tuesday, December 17, 2019 13:45:39 Pacific Standard Time

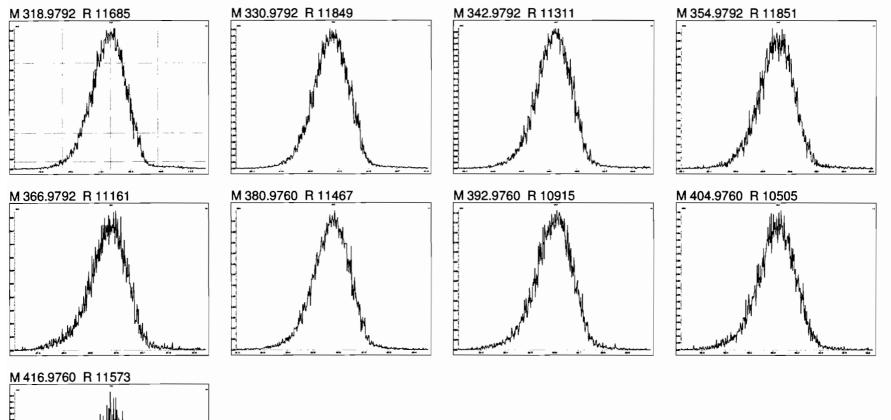


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Experiment: ocdd_db5.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed:

Tuesday, December 17, 2019 13:46:41 Pacific Standard Time

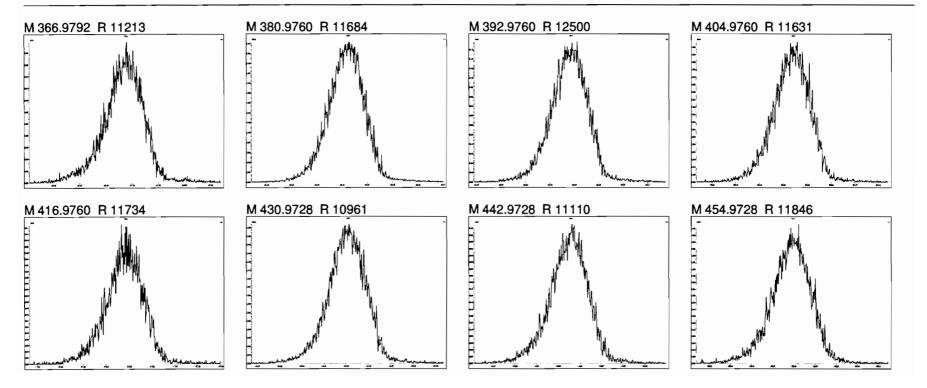


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Experiment: ocdd_db5.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed:

Tuesday, December 17, 2019 13:48:04 Pacific Standard Time

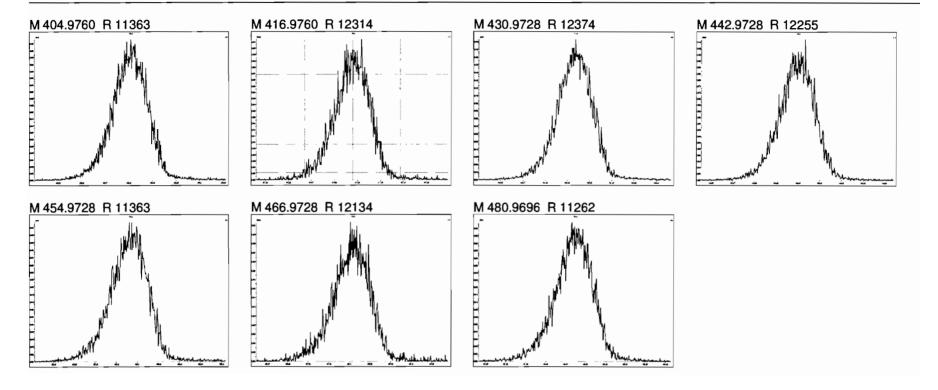


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Experiment: ocdd_db5.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed:

Tuesday, December 17, 2019 13:49:48 Pacific Standard Time

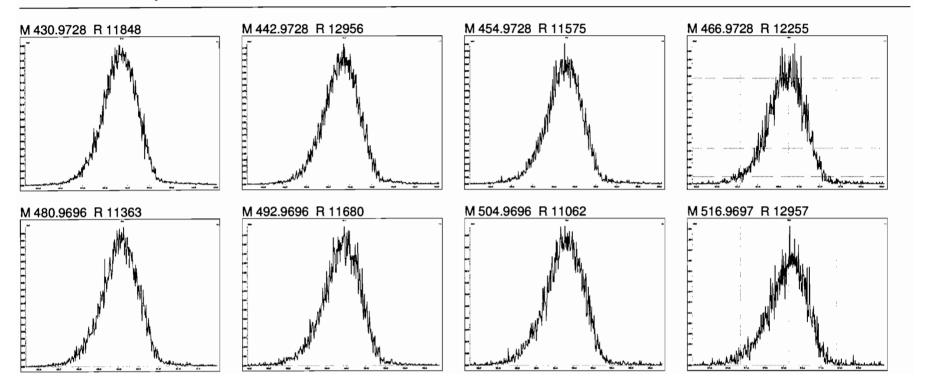


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Experiment: ocdd_db5.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed:

Tuesday, December 17, 2019 13:50:29 Pacific Standard Time



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Untitled

Last Altered: Printed:

Wednesday, December 18, 2019 17:56:33 Pacific Standard Time Wednesday, December 18, 2019 17:56:46 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\CPSM.mdb 18 Dec 2019 17:57:56

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191217K2_1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204

74s 1 / 57	#-Name	RT
l ga _{te} (f.	1 1,3,6,8-TCDD (First)	21.84
2	2 1,2,8,9-TCDD (Last)	27.19
3 :	3 1,2,4,7,9-PeCDD (First)	29.08
	4 1,2,3,8,9-PeCDD (Last)	31.69
5	5 1,2,4,6,7,9-HxCDD (First)	33.19
6	6 1,2,3,7,8,9-HxCDD (Last)	35.03
7	7 1,2,3,4,6,7,9-HpCDD (First)	37.50
8 (20)	8 1,2,3,4,6,7,8-HpCDD (Last)	38.53
9 : :	9 1,3,6,8-TCDF (First)	19.79
10	10 1,2,8,9-TCDF (Last)	27.33
11 POSE C	11 1,3,4,6,8-PeCDF (First)	27.31
12 :	12 1,2,3,8,9-PeCDF (Last)	31.93
13	13 1,2,3,4,6,8-HxCDF (First)	32.64
14	14 1,2,3,7,8,9-HxCDF (Last)	35.37
15,	15 1,2,3,4,6,7,8-HpCDF (First)	37.11
16	16 1,2,3,4,7,8,9-HpCDF (Last)	39.15

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Quantify Sample Report

MassLynx 4.1 SCN815

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Vista Analytical Laboratory VG-11

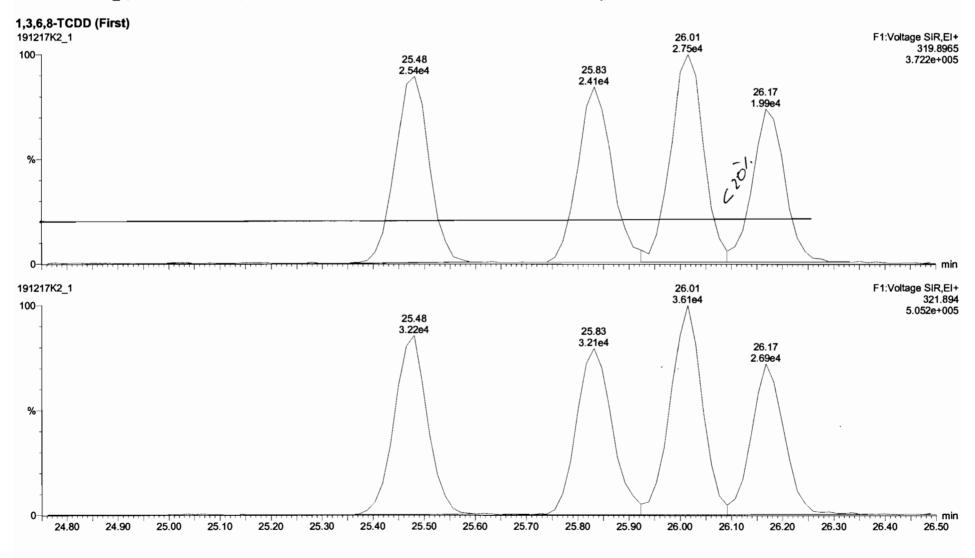
Dataset: Untitled

Last Altered: Wednesday, December 18, 2019 17:56:33 Pacific Standard Time Printed: Wednesday, December 18, 2019 17:56:46 Pacific Standard Time

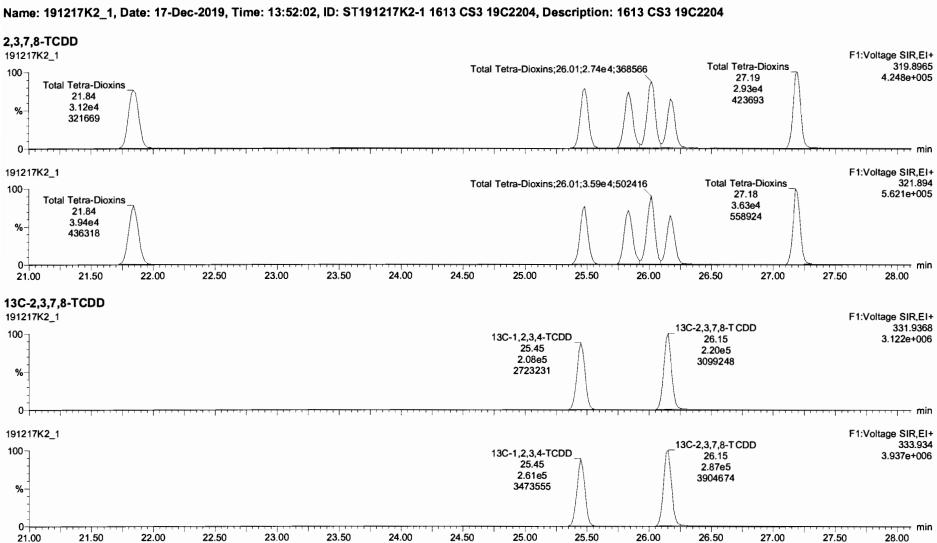
Method: U:\VG11.PRO\MethDB\CPSM.mdb 18 Dec 2019 17:57:56

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

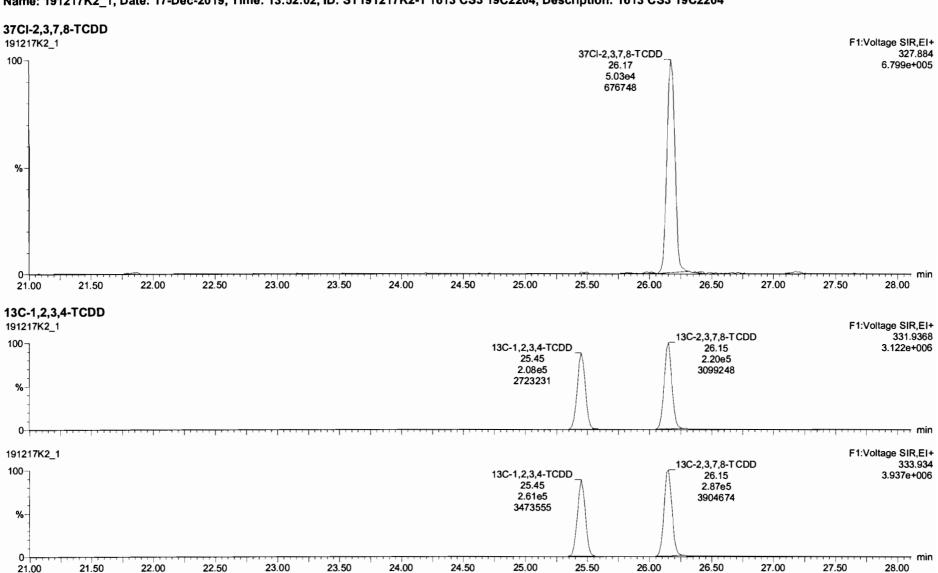
Name: 191217K2_1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204



Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45







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Dataset:

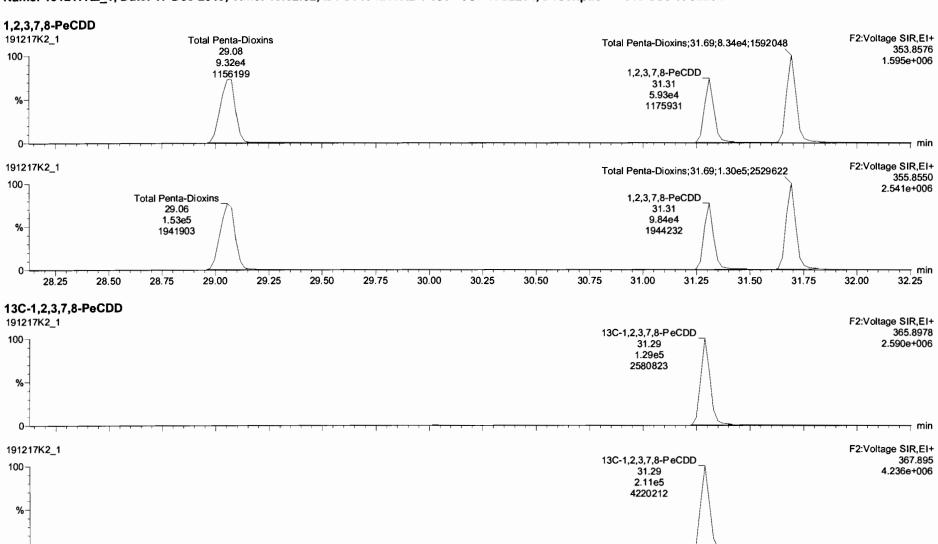
Untitled

Last Altered: Printed: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

29.25

29.50





30.00

29.75

30.25

30.50

30.75

31.00

31.25

31.50

31.75

28.50

28.75

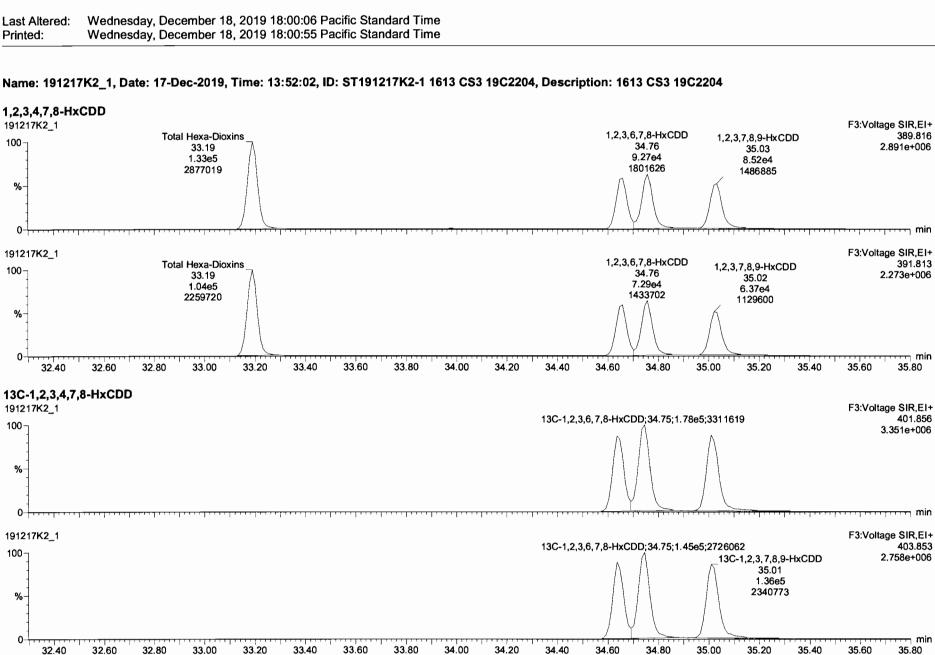
29.00

28.25

32.00

min

32.25



Work Order 1903648 Page 290 of 513

38.50

38.75

39.00

39.25

39.50

39.75

40.00

38.25

36.75

36.50

36.25

37.00

37.25

37.50

37.75

38.00

40.25

40.50

Dataset: Untitled

40.80

41.00

41.20

41.40

41.60

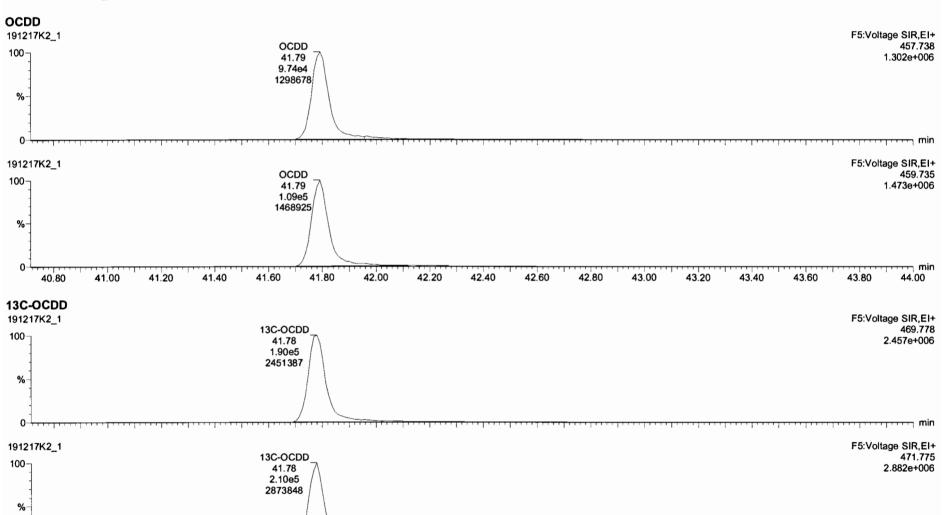
41.80

42.00

42.20

Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Printed: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time





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42.40

42.60

42.80

43.00

43.20

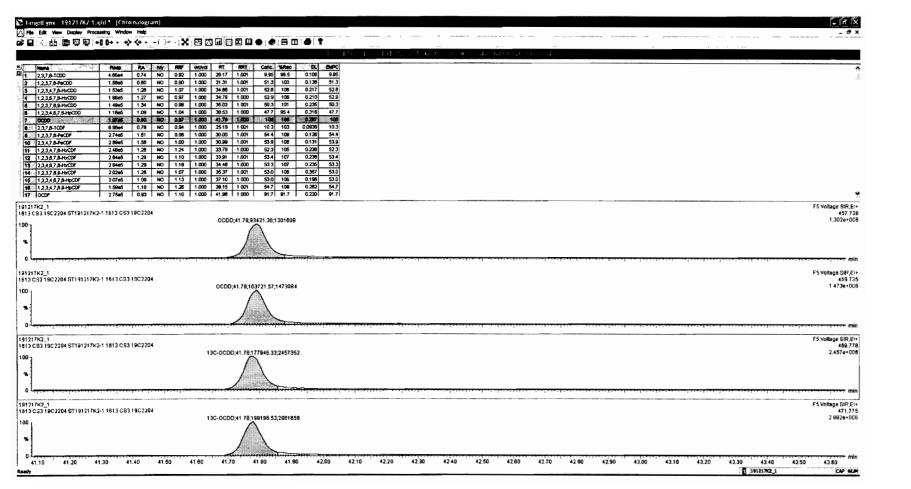
43.40

43.60

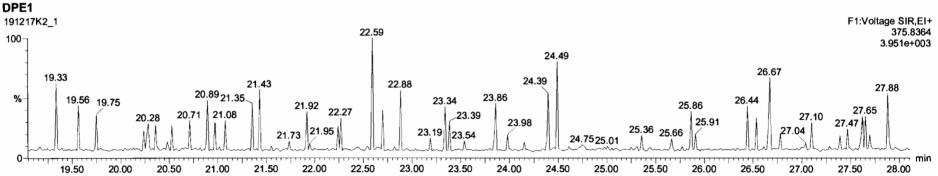
43.80

··· min

44.00



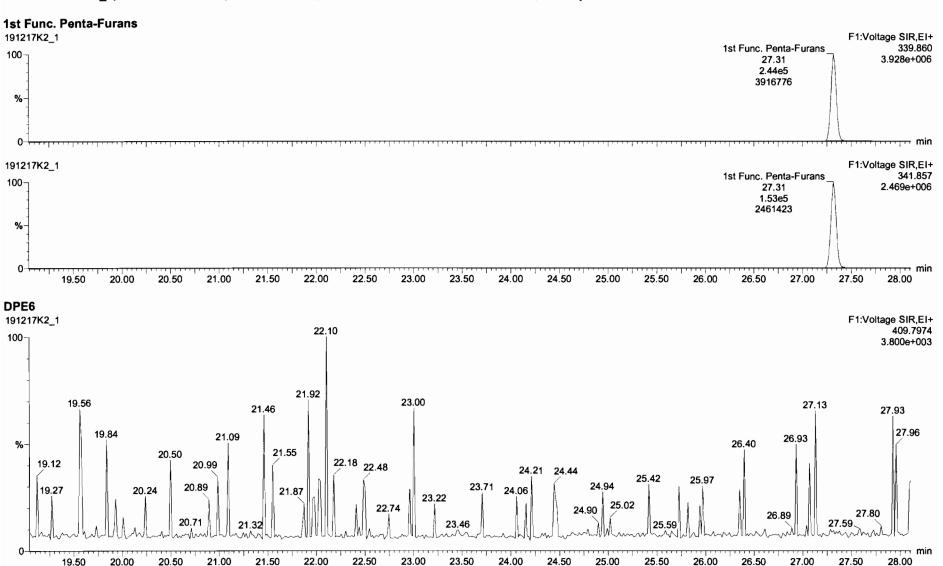
Work Order 1903648 Page 293 of 513



Untitled Dataset:

Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time Printed:

Name: 191217K2_1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204



19.50

20.00

30.25

30.50

30.75

31.00

31.25

31.50

31.75

32.00

28.25

28.50

28.75

29.00

29.25

29.50

29.75

30.00

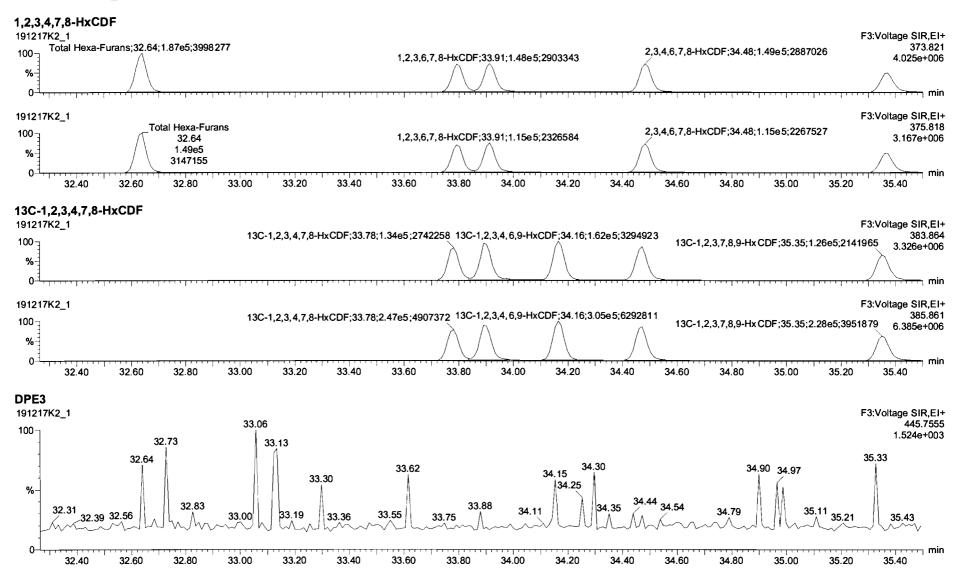
min T

32.25

Dataset: Untitled

Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Printed: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204



38.50

38.75

39.00

39.25

39.50

39.75

40.00

40.25

40.50

36.25

36.50

36.75

37.00

37.25

37.50

37.75

38.00

38.25

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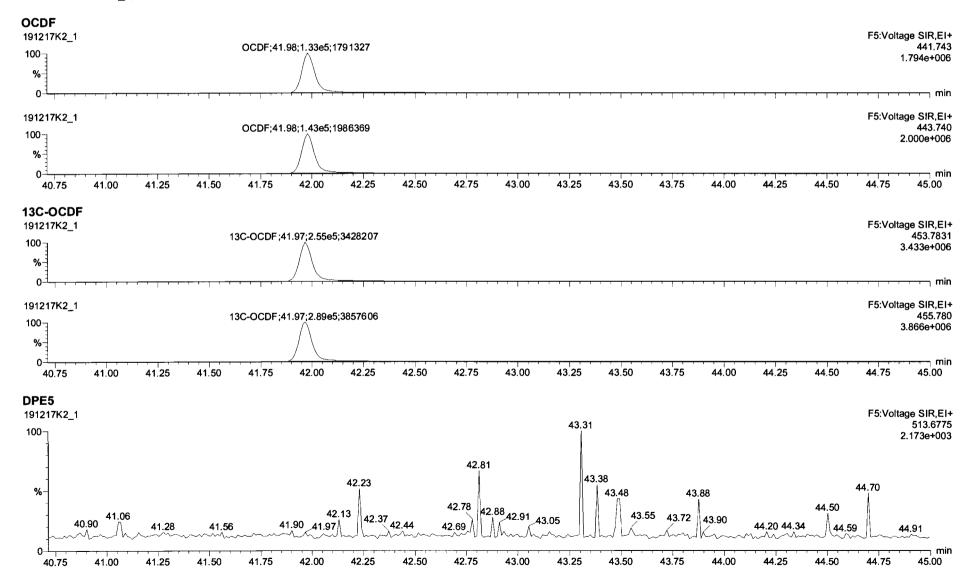
Quantify Sample Report Vista Analytical Laboratory

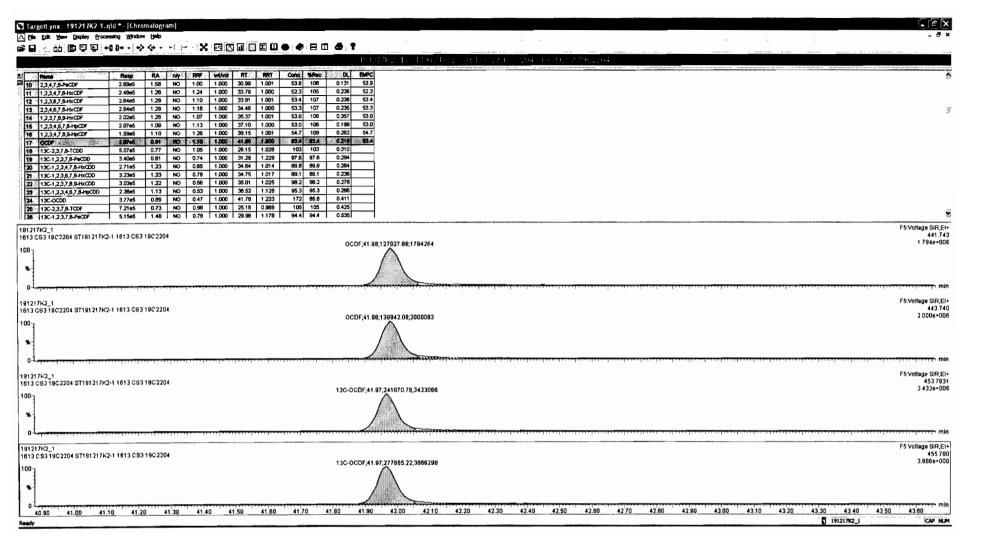
Untitled

Dataset:

Last Altered: Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Wednesday, December 18, 2019 18:00:55 Pacific Standard Time

Name: 191217K2_1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204





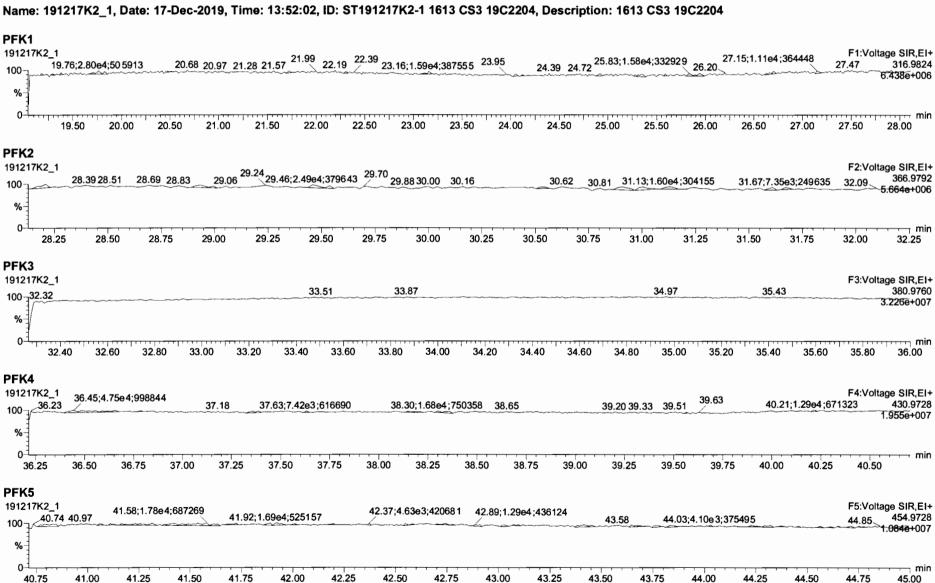
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Dataset:

Untitled

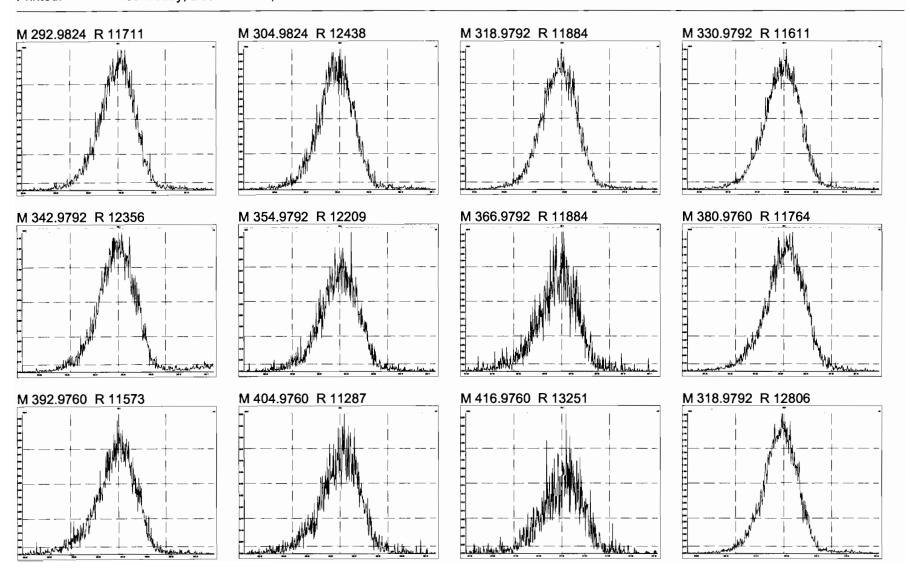
Wednesday, December 18, 2019 18:00:06 Pacific Standard Time Last Altered: Wednesday, December 18, 2019 18:00:55 Pacific Standard Time Printed:

Name: 191217K2 1, Date: 17-Dec-2019, Time: 13:52:02, ID: ST191217K2-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204



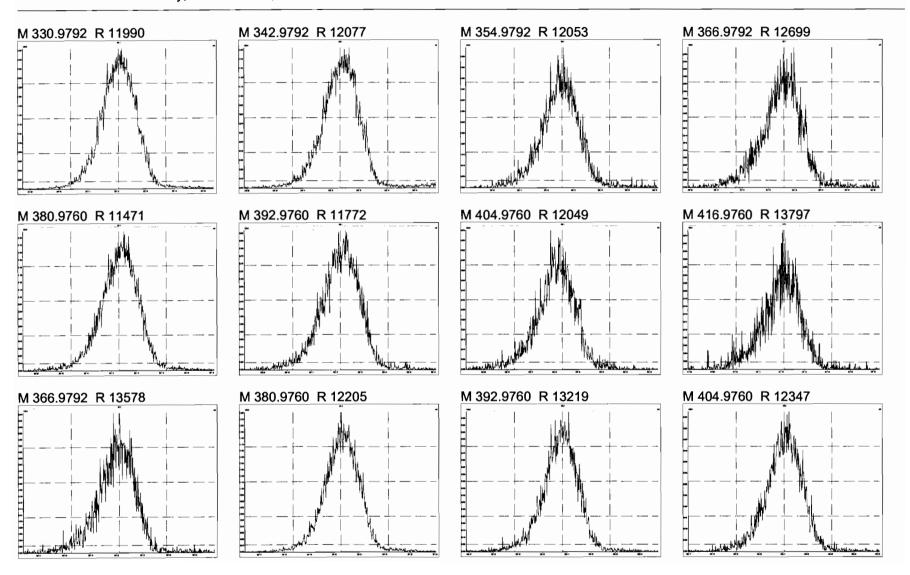
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Wednesday, December 18, 2019 02:05:14 Pacific Standard Time

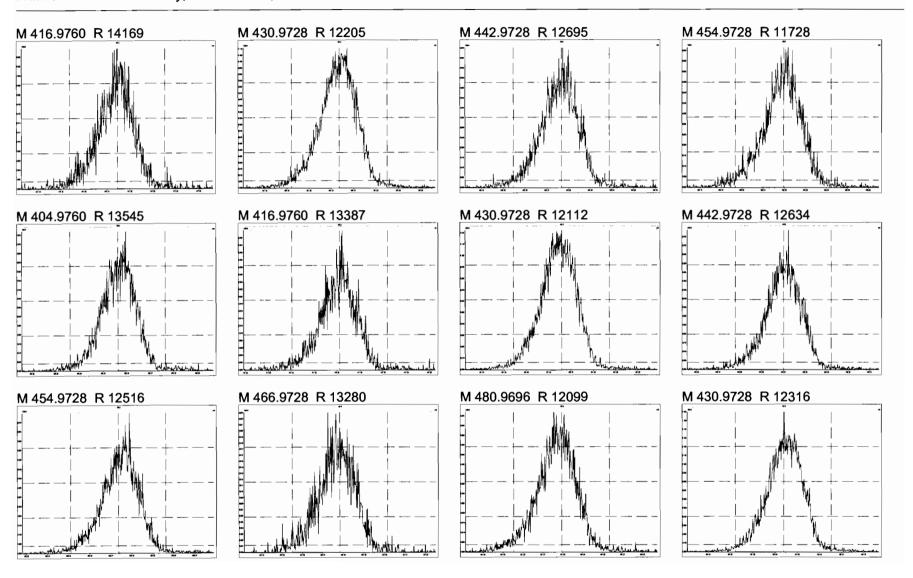


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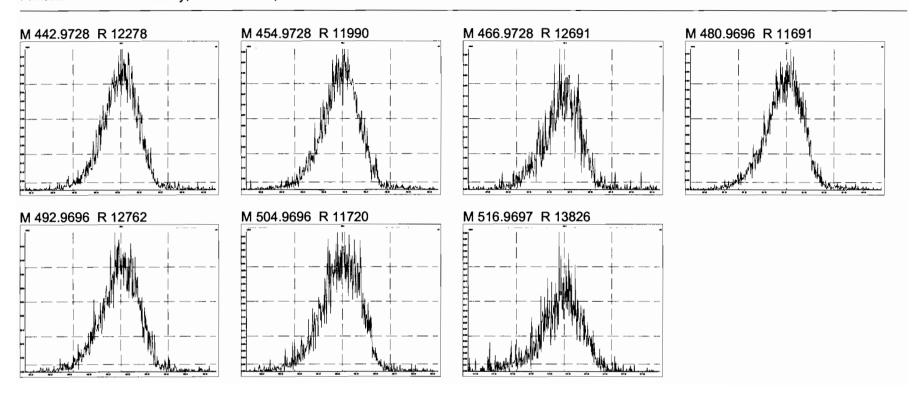
Wednesday, December 18, 2019 02:05:14 Pacific Standard Time



Wednesday, December 18, 2019 02:05:14 Pacific Standard Time



Wednesday, December 18, 2019 02:05:14 Pacific Standard Time



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INITIAL CALIBRATION

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Vista Analytical Laboratory

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Dataset:

U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Printed:

Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

HC 5.8.19

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Compound name: 2,3,7,8-TCDD Response Factor: 0.924948

RRF SD: 0.0405637, Relative SD: 4.38551

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA :	n/y	: RT.	RRT-	Resp:	IS Resp	Conc.	; %Dev ;	RRF:	X = dropped
1 190507K1_2	0.250	0.88	NO	26.34	1.000	1.33e3	5.80e5	0.247	-1.2	0.914	MM
2 190507K1_3	10.0	0.78	NO	26.36	1.001	5.65e4	6.19e5	9.87	-1.3	0.913	MM
3 190507K1_4	0.500	0.80	NO	26.36	1.001	3.15e3	6.64e5	0.513	2.7	0.950	MM
4 190507K1_5	2.00	0.79	NO	26.34	1.001	1.19e4	6.91e5	1.85	-7.3	0.857	MM
5 19050 7K1_6	40.0	0.78	NO	26.36	1.001	2.26e5	6.01e5	40.7	1.8	0.941	bb
6 190507K1_7	300	0.78	NO	26.36	1.001	2.60e6	8.87e5	316	5.4	0.975	bb

Compound name: 1,2,3,7,8-PeCDD

Response Factor: 0.904644

RRF SD: 0.0649505, Relative SD: 7.17968

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

Curve type: RF

. Name :	Std. Conc	RA :	n/y ;	RT-	RRT-	Resp;	IS Resp	Conc.	; %Dev ;	RRF;)	C = dropped
1 19050 7K1_2	1.25	0.67	NO	31.14	1.001	4.13e3	3.79e5	1.20	-3.7	0.871	MM
2 19050 7K1_3	50.0	0.63	NO	31.14	1.001	1.80e5	4.47e5	44.5	-11.0	0.806	MM
3 19050 7K1_4	2.50	0.57	NO	31.14	1.001	1.07e4	4.65e5	2.54	1.6	0.919	bb
4 19050 7K1_5	10.0	0.66	NO	31.14	1.001	4.19e4	4.73e5	9.78	-2.2	0.885	MM
5 19050 7K1_6	200	0.61	NO	31.14	1.001	8.32e5	4.25e5	216	8.1	0.978	bb
6 19050 7K1_7	1500	0.62	NO	31.14	1.001	1.00e7	6.89e5	1610	7.1	0.969	MM

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Vista Analytical Laboratory

U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 1,2,3,4,7,8-HxCDD

Response Factor: 1.06909

RRF SD: 0.071776, Relative SD: 6.71372

Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)

Curve type: RF

Dataset:

Name	Std. Conc	RA -	n/y	RT-	RRT-	Resp;	IS Resp	Conc.	: %Dev	RRF;	X = dropped
190507K1_2	1.25	1.38	NO	34.42	1.001	3.85e3	3.03e5	1.19	-4.8	1.02	bd
2 19050 7K1_3	50.0	1.28	NO	34.42	1.000	1.76e5	3.36e5	49.0	-2.0	1.05	bd
3 190507K1_4	2.50	1.25	NO	34.41	1.000	8.65e3	3.49e5	2.32	-7.4	0.990	bd
4 19050 7K1_5	10.0	1.24	NO	34.41	1.000	3.88e4	3.69e5	9.82	-1.8	1.05	MM
5 190507K1_6	200	1.25	NO	34.41	1.000	7.36e5	3.27e5	210	5.2	1.13	bd
6 190507K1_7	1500	1.25	NO	34.42	1.001	9.53e6	5.37e5	1660	10.7	1.18	bd

Compound name: 1,2,3,6,7,8-HxCDD

Response Factor: 0.967479

RRF SD: 0.0402916, Relative SD: 4.16459

Response type: Internal Std (Ref 21), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y :	RT-	RRT.	Resp:	IS Resp :	Conc,	: %Dev	: RRF	X = dropped
1 190507K1_2	1.25	1.40	NO	34.53	1.001	4.41e3	3.71e5	1.23	-1.6	0.952	MM
2 190507K1_3	50.0	1.26	NO	34.53	1.000	1.92e5	4.10e5	48.5	-3.0	0.938	d b
3 . 190507K1_4	2.50	1.17	NO	34.53	1.001	9.34e3	4.07e5	2.37	- 5.1	0.918	MM
4 190507K1_5	10.0	1.22	NO	34.52	1.000	4.16e4	4.30e5	9.99	-0.1	0.967	db
5 19050 7K1_6	200	1.25	NO	34.52	1.000	7.88e5	3.86e5	211	5.5	1.02	db
6 19050 7K1_7	1500	1.25	NO	34.52	1.000	1.02e7	6.73e5	1560	4.3	1.01	db

Compound name: 1,2,3,7,8,9-HxCDD

Response Factor: 0.977795

RRF SD: 0.0369, Relative SD: 3.7738

Response type: Internal Std (Ref 22), Area * (IS Conc. / IS Area)

Curve type: RF

ſ	Name	Std. Conc	, RA	. n/y	: RT.	RRT.	Resp:	IS Resp	Conc.	: %Dev :	RRF;)	(= dropped
ľ	1 190507K1_2	1.25	1.09	NO	34.81	1.000	3.66e3	2.90e5	1.29	3.2	1.01	MM
1	2 190507K1_3	5 0.0	1.35	NO	34.81	1.000	1.63e5	3.44e5	48.4	-3.2	0.947	bb

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 1,2,3,7,8,9-HxCDD

Name	Std. Conc	; RA	n/y :	RT.	RRT.	Resp:	IS Resp	Conc.	%Dev	RRF:	X = dropped
3 19050 7K1_4	2.50	1.22	NO	34.80	1.000	8.28e3	3.44e5	2.46	-1.4	0.964	MM
4 19050 7K1_5	10.0	1.22	NO	34.80	1.000	3.65e4	3.93e5	9.51	- 4.9	0.929	bb
5 19050 7K1_6	200	1.22	NO	34.80	1.000	6.68e5	3.27e5	209	4.6	1.02	MM
6 19050 7K1_7	1500	1.20	NO	34.81	1.000	8.68e6	5.82e5	1530	1.8	0.995	MM

Compound name: 1,2,3,4,6,7,8-HpCDD

Response Factor: 1.03751

RRF SD: 0.0369608, Relative SD: 3.56246

Response type: Internal Std (Ref 23), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	; RA	n/y :	RT.	RRT.	Resp:	IS Resp	Conc.	; %Dev	RRF:	K = dropped
1 190507K1_2	1.25	0.97	NO	38.32	1.001	3.20e3	2.52e5	1.23	-1.9	1.02	MM
2 190507K1_3	50.0	1.03	NO	38.32	1.000	1.42e5	2.76e5	49.5	- 0.9	1.03	bb
3 190507K1_4	2.50	1.16	NO	38.31	1.000	7.08e3	2.70e5	2.53	1.0	1.05	bb
4 190507K1_5	10.0	1.05	NO	38.31	1.000	2.98e4	3.04e5	9.46	-5.4	0.981	MM
5 190507K1_6	200	1.03	NO	38.31	1.000	5.83e5	2.74e5	205	2.5	1.06	MM
6 190507K1_7	1500	1.05	NO	38.31	1.000	7.58e6	4.65e5	1570	4.8	1.09	bb

Compound name: OCDD Response Factor: 0.971773

RRF SD: 0.0504127, Relative SD: 5.1877

Response type: Internal Std (Ref 24), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y :	RT-	RRT.	Resp:	IS Resp	Conc.	: %Dev :	RRF:	(= dropped
190507K1_2	2.50	0.90	NO	41.48	1.001	5.20e3	4.62e5	2.32	-7.4	0.900	ММ
2 190507K1_3	100	0.90	NO	41.48	1.000	2.35e5	4.72e5	103	2.6	0.997	ММ
3 , 190507K1_4	5.00	0.95	NO	41.46	1.000	1.13e4	4.66e5	4.97	-0.5	0.966	ММ
4 190507K1_5	¹ 20.0	0.89	NO	41.47	1.000	4.71e4	5.06e5	19.2	-4.2	0.931	ММ
5 190507K1_6	400	0.90	NO	41.47	1.000	9.61e5	4.83e5	410	2.4	0.995	ММ
6 190507K1_7	3000	0.90	NO	41.48	1.000	1.35e7	8.65e5	3210	7.0	1.04	мм

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 2,3,7,8-TCDF Response Factor: 0.937613

RRF SD: 0.0427885, Relative SD: 4.56356

Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area)

Curve type: RF

	Name :	Std. Conc :	RA .	n/y :	RT-	RRT.	Resp	IS Resp	Conc.	%Dev ;	RRF;)	C = dropped
1	190507K1_2	0.250	0.81	NO	25.50	1.001	1.85e3	8.07e5	0.245	-2.1	0.918	ММ
2	190507K1_3	10.0	0.78	NO	25.51	1.001	7.75e4	8.61e5	9.59	-4.1	0.899	bb
3	190507K1_4	0.500	0.80	NO	25.50	1.001	4.06e3	8.97e5	0.482	-3.6	0.904	MM
4	190507K1_5	2.00	0.77	NO	25.50	1.001	1.71e4	9.28e5	1.97	-1.7	0.922	bb
5	190507K1_6	40.0	0.77	NO	25.50	1.001	3.18e5	8.09e5	42.0	5.0	0.984	bb
6	190507K1_7	300	0.78	NO	25.51	1.001	3.44e6	1.15e6	320	6.5	0.999	bb

Compound name: 1,2,3,7,8-PeCDF

Response Factor: 0.976196

RRF SD: 0.0578773, Relative SD: 5.92886

Response type: Internal Std (Ref 26), Area * (IS Conc. / IS Area)

Curve type: RF

Name :	Std. Conc	: RA	- n/y	RT-	RRT.	Resp:	IS Resp	Conc.	: %Dev	: RRF:	X = dropped
1 190507K1_2	1.25	1.71	NO	29.89	1.000	6.85e3	6.20e5	1.13	-9.3	0.885	MM
2 19050 7K1_3	50.0	1.58	NO	29.91	1.001	3.23e5	6.71e5	49.3	-1.4	0.962	bb
3 , 190507K1_4	2.50	1.55	NO	29.89	1.000	1.67e4	6.91e5	2.48	-0.8	0.968	ММ
4 190507K1_5	10.0	1.65	NO	29.89	1.000	6.93e4	7.19e5	9.86	-1.4	0.963	bd
5 190507K1_6	200	1.63	NO	29.89	1.000	1.34e6	6.45e5	213	6.7	1.04	bd
6 19050 7K1_7	1500	1.57	NO	29.91	1.001	1.58e7	1.02e6	1590	6.3	1.04	bb

Compound name: 2,3,4,7,8-PeCDF

Response Factor: 1.00488

RRF SD: 0.0625517, Relative SD: 6.22482

Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)

Curve type: RF

: Name	Std. Conc	. RA	n/y	: RT.	RRT.	Resp:	IS Resp	Conc.	%Dev	RRF	= dropped
190507K1_2	1.25	1.69	NO	30.86	1.001	6.68e3	5.77e5	1.15	-7 .8	0.926	MM
2 190507K1_3	50.0	1.58	NO	30.86	1.001	3.17e5	6.35e5	49.7	-0.5	1.00	bb

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Dataset:

U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 2,3,4,7,8-PeCDF

Name	Std. Conc	RA	n/y :	RT.	RRT	Resp:	IS Resp	Conc.	%Dev :	RRF:	X = dropped
3 190507K1_4	2.50	1.59	NO	30.86	1.001	1.67e4	6.65e5	2.50	0.0	1.00	bb
4 19050 7K1_5	10.0	1.58	NO	30.86	1.001	6.82e4	7.20e5	9.42	-5.8	0.947	bb
5 19050 7K1_6	200	1.58	NO	30.86	1.001	1.34e6	6.22e5	214	6.9	1.07	bb
6 190507K1_7	1500	1.58	NO	30.86	1.001	1.61e7	9.94e5	1610	7.2	1.08	bb

Compound name: 1,2,3,4,7,8-HxCDF

Response Factor: 1.24344

RRF SD: 0.0556273, Relative SD: 4.47366

Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	: RA	n/y :	RT-	RRT.	Resp:	IS Resp :	Conc.	; %Dev ;	RRF;	K = dropped
1 ,190507K1_2	1.25	1.34	NO	33.54	1.000	6.00e3	4.01e5	1.20	-3.7	1.20	bd
2 190507K1_3	50.0	1.25	NO	33.56	1.001	2.69e5	4.41e5	49.1	-1.8	1.22	bd
3 .190507K1_4	2.50	1.24	NO	33.54	1.001	1.35e4	4.57e5	2.38	-4 .9	1.18	bd
4 19050 7K1_5	10.0	1.26	NO	33.54	1.001	5.97e4	4.82e5	9.96	-0.4	1.24	bd
5 19050 7K1_6	200	1.24	NO	33.54	1.000	1.10e6	4.20e5	211	5.5	1.31	bd
6 190507K1_7	1500	1.24	NO	33.54	1.000	1.38e7	7.03e5	1580	5.4	1.31	bd

Compound name: 1,2,3,6,7,8-HxCDF

Response Factor: 1.09501

RRF SD: 0.0731388, Relative SD: 6.67929

Response type: Internal Std (Ref 29), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	: RA	n/y	: RT.	RRT-	Resp;	IS Resp	: Conc.	; %Dev ;	RRF:	X = dropped
1 190507K1_2	1.25	1.35	NO	33.67	1.000	6.12e3	4.90e5	1.14	-8.8	0.999	MM
2 ,190507K1_3	50.0	1.26	NO	33.68	1.000	3.02e5	5.46e5	50.5	1.0	1.11	ММ
3	2.50	1.14	NO	33.68	1.001	1.42e4	5.55e5	2.33	-6.7	1.02	ММ
4 190507K1_5	10.0	1.22	, NO	33.67	1.000	6.32e4	5.73e5	10.1	0.7	1.10	MM
5 190507K1_6	200	1.23	NO	33.67	1.000	1.18e6	5.09e5	211	5.5	1.16	db
6 190507K1_7	1500	1.24	NO	33.68	1.000	1.52e7	8.53e5	1620	8.3	1.19	db

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Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 2,3,4,6,7,8-HxCDF

Response Factor: 1.1806

RRF SD: 0.0976101, Relative SD: 8.26786

Response type: Internal Std (Ref 30), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	; RA -	n/y :	RT.	RRT.	Resp;	IS Resp	Conc.	%Dev ;	RRF; X	= dropped
1 190507K1_2	1.25	1.22	NO	34.26	1.000	5.74e3	4.48e5	1.09	-13.1	1.03	ММ
2 190507K1_3	50.0	1.26	NO	34.27	1.001	2.75e5	4.57e5	51.0	2.0	1.20	bb
3 190507K1_4	2.50	1.27	NO	34.26	1.000	1.40e4	4.86e5	2.43	-2.7	1.15	bd
4 190507K1_5	10.0	1.22	NO	34.26	1.001	5.76e4	5.05e5	9.67	-3.3	1.14	MM
5 190507K1_6	200	1.25	NO	34.26	1.001	1.12e6	4.40e5	216	8.1	1.28	bb
6 190507K1_7	1500	1.24	NO	34.26	1.000	1.40e7	7.27e5	1640	9.1	1.29	ММ

Compound name: 1,2,3,7,8,9-HxCDF

Response Factor: 1.07281

RRF SD: 0.121558, Relative SD: 11.3308

Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)

Curve type: RF

	Name	Std. Conc	RA .	n/y	RT.	RRT	Resp	IS Resp	Conc.	; %Dev ;	RRF;)	(= dropped
1	; 190507K1_2	1.25	1.19	NO	35.17	1.000	3.73e3	3.43e5	1.01	-19.1	0.868	ММ
2	\$190507K1_3	50.0	1.25	NO	35.19	1.000	2.00e5	3.80e5	49.1	-1.8	1.05	ММ
3	, 190507K1_4	2.50	1.26	NO	35.18	1.000	1.02e4	3.91e5	2.42	-3.1	1.04	ММ
4	190507K1_5	10.0	1.25	NO	35.18	1.000	4.51e4	4.16e5	10.1	1.1	1.08	MM
5	190507K1_6	200	1.25	NO	35.18	1.001	8.63e5	3.64e5	221	10.4	1.18	MM
6	190507K1_7	1500	1.24	NO	35.19	1.001	1.15e7	6.37e5	1690	12.5	1.21	bb

Compound name: 1,2,3,4,6,7,8-HpCDF

Response Factor: 1.12998

RRF SD: 0.056055, Relative SD: 4.96072

Response type: Internal Std (Ref 32), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	. RA	n/y	: RT	RRT.	Resp;	IS Resp	: Conc.	: %Dev	: RRF:	X = dropped
190507K1_2	1.25	1.19	NO	36.92	1.001	4.83e3	3.64e5	1.18	-5.9	1.06	ММ
2 190507K1_3	50.0	1.05	NO	36.94	1.001	2.21e5	3.98e5	49.3	-1.5	1.11	bb

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Compound name: 1,2,3,4,6,7,8-HpCDF

Name Mane	Std. Conc	RA	n/y	RT.	RRT.	Resp:	IS Resp	Conc.	; %Dev ;	RRF; X	= dropped
3 190507K1_4	2.50	1.03	NO	36.91	1.000	1.12e4	4.08e5	2.44	-2.4	1.10	MM
4 190507K1_5	10.0	1.01	NO	36.91	1.000	4.63e4	4.18e5	9.80	-2.0	1.11	bb
5 19050 7K1_6	200	1.03	NO	36.91	1.000	8.93e5	3.80e5	208	4.0	1.18	MM
6 190507K1_7	1500	1.04	NO	36.92	1.000	1.14e7	6.22e5	1620	7.7	1.22	bb

Compound name: 1,2,3,4,7,8,9-HpCDF

Response Factor: 1.26094

RRF SD: 0.121952, Relative SD: 9.67152

Response type: Internal Std (Ref 33), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y :	RT.	RRT.	Resp:	IS Resp	Conc.	; %Dev ;	RRF;)	(= dropped
1 19050 7K1_2	1.25	1.07	NO	38.86	1.000	4.31e3	2.51e5	1.36	9.0	1.37	MM
2 19050 7K1_3	50.0	1.10	NO	38.87	1.000	1.69e5	2.88e5	46.4	-7.1	1.17	MM
3 [190507K1_4	2.50	1.04	NO	38.86	1.000	8.36e3	2.91e5	2.28	- 9.0	1.15	MM
4 19050 7K1_5	10.0	1.04	NO	38.86	1.000	3.47e4	3.06e5	8.99	-10.1	1.13	MM
5 19050 7K1_6	200	1.06	NO	38.86	1.000	7.19e5	2.58e5	221	10.3	1.39	bb
6 190507K1_7	1500	1.03	NO	3 8.8 7	1.000	9.34e6	4.62e5	1600	6.9	1.35	bb

Compound name: OCDF Response Factor: 1.10253

RRF SD: 0.218115, Relative SD: 19.7831

Response type: Internal Std (Ref 34), Area * (IS Conc. / IS Area)

Curve type: RF

Name growing	Std. Conc :	RA -	n/y	: RT	RRT.	Resp:	IS Resp	Conc.	: %Dev :	RRF:	X = dropped
1 190507K1_2	2.50	0.91	NO	41.69	1.000	1.12e4	5.83e5	3.49	39.5	1.54	ММ
2 190507K1_3	100	0.90	NO	41.71	1.000	3.03e5	6.08e5	90.4	-9.6	0.997	ММ
3 190507K1_4	5.00	0.89	NO	41.70	1.000	1.58e4	6.30e5	4.54	-9.2	1.00	MM
4 190507K1_5	20.0 '	0.93	NO	41.69	1.000	6.07e4	6.40e5	17.2	-13.9	0.950	, WW
5 19050 7K1_6	400	0.90	NO	41.70	1.000	1.21e6	5.80e5	378	-5.5	1.04	MM
6 · 190507K1_7	3000	0.91	NO	41.71	1.000	1.71e7	1.05e6	2960	-1.3	1.09	MM

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Compound name: 13C-2,3,7,8-TCDD

Response Factor: 1.04889

RRF SD: 0.0285302, Relative SD: 2.72003

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

Name Name	Std. Conc	: RA -	n/y ;	RT.	RRT	Resp	IS Resp ;	Conc.	; %Dev ;	RRF;)	< = dropped
1 190507K1_2	100	0.78	NO	26.34	1.026	5.80e5	5.62e5	98.5	-1.5	1.03	bb
2 190507K1_3	100	0.80	NO	26.34	1.026	6.19e5	6.00e5	98.4	-1.6	1.03	bb
3 190507K1_4	100	0.78	NO	26.33	1.026	6.64e5	6.32e5	100	0.1	1.05	bb
4 190507K1_5	100	0.78	NO	26.33	1.025	6.91e5	6.60e5	99.9	-0.1	1.05	bb
5 190507K1_6	100	0.79	NO	26.34	1.026	6.01e5	5.86e5	97.8	-2.2	1.03	bb
6 190507K1_7	100	0.78	NO	26.34	1.026	8.87e5	8.04e5	105	5.3	1.10	bb

Compound name: 13C-1,2,3,7,8-PeCDD

Response Factor: 0.7429

RRF SD: 0.0610463, Relative SD: 8.21729

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	: RA :	n/y :	RT.	RRT.	Resp:	IS Resp	Conc.	%Dev	RRF; X	= dropped
1 19050 7K1_2	100	0.63	NO	31.12	1.212	3.79e5	5.62e5	90.9	- 9.1	0.675	MM
2 [190507K1_3	100	0.61	NO	31.12	1.212	4.47e5	6.00e5	100	0.4	0.746	bb
3 190507K1_4	100	0.64	NO	31.12	1.212	4.65e5	6.32e5	99.1	- 0.9	0.736	bb
4 190507K1_5	100	0.59	NO	31.12	1.212	4.73e5	6.60e5	96.5	-3.5	0.717	MM
5 190507K1_6	100	0.60	NO	31.12	1.212	4.25e5	5.86e5	97.8	-2.2	0.726	MM
6 190507K1_7	100	0.63	NO	31.12	1.212	6.89e5	8.04e5	115	15.4	0.857	MM

Compound name: 13C-1,2,3,4,7,8-HxCDD

Response Factor: 0.646258

RRF SD: 0.0314471, Relative SD: 4.86603

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name.	Std. Conc	RA	n/y	RT.	RRT.	Resp;	IS Resp	Conc.	: %Dev	: RRF:	(= dropped
1 190507K1_2	100	1.34	NO	34.40	1.014	3.03e5	4.98e5	94.1	-5.9	0.608	bd
2 190507K1_3	100	1.24	NO	34.41	1.014	3.36e5	5.10e5	102	1.8	0.658	bd

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Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-1,2,3,4,7,8-HxCDD

Name Mane	Std. Conc	; RA .	n/y :	RT-	RRT.	Resp;	IS Resp	Conc.	; %Dev ;	RRF;)	(= dropped
3 190507K1_4	100	1.31	NO	34.40	1.014	3.49e5	5.59e5	96.7	-3.3	0.625	bd
4 , 19050 7K1_5	100	1.32	NO	34.40	1.014	3.69e5	5.73e5	99.7	-0.3	0.644	MM
5 19050 7K1_6	100	1.26	NO	34.40	1.014	3.27e5	5.09e5	99.5	-0.5	0.643	bd
6 190507K1_7	100	1.27	NO	34.40	1.014	5.37e5	7.67e5	108	8.3	0.700	bd

Compound name: 13C-1,2,3,6,7,8-HxCDD

Response Factor: 0.776669

RRF SD: 0.0552613, Relative SD: 7.11516

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	: Std Conc	; RA	n/y	: RT.	RRT.	Resp:	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
100507K1_2	100	1.28	NO	34.51	1.017	3.71e5	4.98e5	95.9	-4.1	0.745	MM
2 190507K1_3	100	1.25	NO	34.52	1.017	4.10e5	5.10e5	103	3.3	0.802	db
3 190507K1_4	100	1.28	NO	34.51	1.017	4.07e5	5.59e5	93.6	-6.4	0.727	MM
4 190507K1_5	100	1.26	NO	34.51	1.017	4.30e5	5.73e5	96.7	-3.3	0.751	db
5 190507K1_6	100	1.28	NO	34.51	1.017	3.86e5	5.09e5	97.5	-2.5	0.758	db
6 190507K1_7	100	1.27	NO	34.51	1.017	6.73e5	7.67e5	113	12.9	0.877	db

Compound name: 13C-1,2,3,7,8,9-HxCDD

Response Factor: 0.659499

RRF SD: 0.0613845, Relative SD: 9.30774

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y :	RT.	RRT-	Resp;	IS Resp :	Conc.	: %Dev :	RRF	X = dropped
1 190507K1_2	100	1.25	NO	34.80	1.025	2.90e5	4.98e5	88.4	-11.6	0.583	MM
2 19050 7K1_3	100	1.18	NO	34.80	1.025	3.44e5	5.10e5	102	2.2	0.674	MM
3 190507K1_4	100	1.26	NO	34.78	1.025	3.44e5	5.59e5	93.2	-6.8	0.615	MM
190507K1_5	100	1.25	NO '	34.78	1.025	3.93e5	5.73e5	104	3.9	0.685	bb
5 19050 7K1_6	100	1.32	NO	34.78	1.025	3.27e5	5.09e5	97.3	-2.7	0.642	MM
6 190507K1_7	100	1.25	NO	34.80	1.026	5.82e5	7.67e5	115	15.0	0.758	bb

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Quantify Compound Summary Report MassLyn

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Dataset:

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Last Altered: Printed:

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

Response Factor: 0.534168

RRF SD: 0.0414632, Relative SD: 7.76221

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	RT-	RRT-	Resp:	IS Resp	Conc.	: %Dev	RRF: X	= dropped
1 19050 7K1_2	100	1.01	NO	38.30	1.128	2.52e5	4.98e5	94.6	- 5.4	0.506	MM
2 19050 7K1_3	100	1.05	NO	38.31	1.129	2.76e5	5.10e5	101	1.3	0.541	MM
3 19050 7K1_4	100	1.06	NO	38.30	1.129	2.70e5	5.59e5	90.5	- 9.5	0.484	MM
4 19050 7K1_5	100	1.09	NO	38.30	1.129	3.04e5	5.73e5	99.3	-0.7	0.530	MM
5 190507K1_6	100	1.06	NO	38.30	1.129	2.74e5	5.09e5	101	8.0	0.539	MM
6 190507K1_7	100	1.07	NO	38.31	1.129	4.65e5	7.67e5	113	13.4	0.606	bb

Compound name: 13C-OCDD Response Factor: 0.470365

RRF SD: 0.0499896, Relative SD: 10.6278

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y :	RT.	RRT.	Resp:	IS Resp :	Conc.	: %Dev :	RRF:	X = dropped
1 190507K1_2	200	0.91	NO	41.46	1.221	4.62e5	4.98e5	198	-1.2	0.465	MM
2 190507K1_3	200	0.89	NO	41.47	1.222	4.72e5	5.10e5	196	-1.8	0.462	MM
3 - 190507K1_4	200	0.89	NO	41.46	1.222	4.66e5	5.59e5	177	-11.4	0.417	MM
4 190507K1_5	200	0.89	NO	41.46	1.222	5.06e5	5.73e5	188	-6.2	0.441	MM
5 19050 7K1_6	200	0.91	NO	41.46	1.222	4.83e5	5.09e5	202	8.0	0.474	MM
6 19050 7K1_7	200	0.90	NO	41.47	1.222	8.65e5	7.67e5	240	19.8	0.563	MM

Compound name: 13C-2,3,7,8-TCDF

Response Factor: 0.9775

RRF SD: 0.00806645, Relative SD: 0.825212

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

	Std. Conc	: RA	n/y	; RT	RRT.	Resp:	IS Resp	Conc.	: %Dev :	RRF;	X = dropped
1 190507K1_2	100	0.79	NO	25.48	0.992	8.07e5	8.33e5	99.2	-0.8	0.970	bb
2 190507K1_3	100	0.76	NO	25.48	0.992	8.61e5	8.73e5	101	0.9	0.987	bb

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Last Altered: Printed: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-2,3,7,8-TCDF

Name	Std. Conc	RA .	n/y [RT.	RRT.	Resp:	IS Resp	Conc.	%Dev	RRF; >	< = dropped
3 190507K1_4	100	0.78	NO	25.48	0.993	8.97e5	9.16e5	100	0.2	0.979	bb
4 190507K1_5	100	0.78	NO	25.48	0.992	9.28e5	9.50e5	99.9	-0.1	0.977	bb
5 190507K1_6	100	0.77	NO	25.48	0.992	8.09e5	8.36e5	98.9	-1.1	0.967	bb
6 190507K1_7	100	0.79	NO	25.48	0.992	1.15e6	1.17e6	101	8.0	0.986	bb

Compound name: 13C-1,2,3,7,8-PeCDF

Response Factor: 0.777829

RRF SD: 0.0468157, Relative SD: 6.01876

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y	RT.	RRT-	Resp:	IS Resp ;	Conc.	; %Dev ;	RRF;)	(= dropped
1 190507K1_2	100	1.64	NO	29.89	1.164	6.20e5	8.33e5	95.7	-4.3	0.744	bd
2 , 190507K1_3	100	1.52	NO	29.89	1.164	6.71e5	8.73e5	98.8	-1.2	0.769	bb
3 190507K1_4	100	1.58	NO	29.89	1.165	6.91e5	9.16e5	97.0	-3.0	0.754	bb
4 190507K1_5	100	1.58	NO	29.89	1.164	7.19e5	9.50e5	97.4	-2.6	0.758	bb
5 19050 7K1_6	100	1.57	NO	29.89	1.164	6.45e5	8.36e5	99.1	-0.9	0.771	bb
6 190507K1_7	100	1.58	NO	29.89	1.164	1.02e6	1.17e6	112	12.0	0.871	bb

Compound name: 13C-2,3,4,7,8-PeCDF

Response Factor: 0.749922

RRF SD: 0.0548586, Relative SD: 7.31524

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA :	n/y	: RT	RRT.	Resp;	IS Resp	: Conc.	: %Dev	RRF:	X = dropped
1 190507K1_2	100	1.56	NO	30.84	1.201	5.77e5	8.33e5	92.4	-7.6	0.693	bb
2 190507K1_3	100	1.60	NO	30.84	1.201	6.35e5	8.73e5	97.0	-3.0	0.727	bb
3 , 190507K1_4	100	1.61	NO	30.84	1.201	6.65e5	9.16e5	96.8	-3.2	0.726	bb
4 190507K1_5	100	1.58	NO	30.84	1.201	7.20e5	9.50e5	101	1.1	0.758	bb '
5 190507K1_6	100	1.58	NO	30.84	1.201	6.22e5	8.36e5	99.1	-0.9	0.743	bb
6 190507K1_7	100	1.59	NO	30.84	1.201	9.94e5	1.17e6	114	13.7	0.853	bb

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Vista Analytical Laboratory

U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-1,2,3,4,7,8-HxCDF

Response Factor: 0.845154

RRF SD: 0.04026, Relative SD: 4.76363

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Dataset:

	Name	Std. Conc	RA	n/y	RT.	RRT-	Resp;	IS Resp	Conc.	: %Dev :	RRF:	X = dropped
1	190507K1_2	100	0.52	NO	33.53	0.988	4.01e5	4.98e5	95.3	-4.7	0.806	bd
2	190507K1_3	100	0.52	NO	33.53	0.988	4.41e5	5.10e5	102	2.3	0.864	bd
3	190507K1_4	100	0.51	NO	33.52	0.988	4.57e5	5.59e5	96.8	-3.2	0.818	bd
4	190507K1_5	100	0.52	NO	33.52	0.988	4.82e5	5.73e5	99.5	-0.5	0.841	bd
5	190507K1_6	100	0.52	NO	33.53	0.988	4.20e5	5.09e5	97.7	-2.3	0.826	bd
6	190507K1_7	100	0.53	NO	33.53	0.988	7.03e5	7.67e5	108	8.4	0.916	bd

Compound name: 13C-1,2,3,6,7,8-HxCDF

Response Factor: 1.02668

RRF SD: 0.0516295, Relative SD: 5.02879

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name 11	Std. Conc	RA -	n/y	RT.	RRT.	Resp:	IS Resp	: Conc.	: %Dev :	RRF:	X = dropped
1 19050 7K1_2	100	0.53	NO	33.65	0.992	4.90e5	4.98e5	96.0	-4.0	0.986	db
2 190507K1_3	100	0.53	NO	33.67	0.992	5.46e5	5.10e5	104	4.2	1.07	db
3 190507K1_4	100	0.53	NO	33.65	0.992	5.55e5	5.59e5	96.7	-3.3	0.993	db
4 19050 7K1_5	100	0.54	NO	33.65	0.992	5.73e5	5.73e5	97.4	-2 .6	1.00	MM
5 190507K1_6	100	0.52	NO	33.65	0.992	5.09e5	5.09e5	97.4	-2.6	1.00	db
6 190507K1_7	100	0.52	NO	33.67	0.992	8.53e5	7.67e5	108	8.3	1.11	db

Compound name: 13C-2,3,4,6,7,8-HxCDF

Response Factor: 0.89286

RRF SD: 0.0303616, Relative SD: 3.40049

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

'Name'	Std. Conc	: RA	- n/y	RT.	RRT	Resp:	IS Resp	Conc.	: %Dev	RRF:	X = dropped
1 19050 7K1_2	100	0.50	NO	34.25	1.009	4.48e5	4.98e5	101	8.0	0.900	bb
2 19050 7K1_3	100	0.52	NO	34.25	1.009	4.57e5	5.10e5	100	0.2	0.895	bb

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-2,3,4,6,7,8-HxCDF

Name Name	Std. Conc	RA -	n/y :	RT.	RRT-	Resp:	IS Resp	Conc.	; %Dev ;	RRF;)	< = dropped
3 11 19050 7K1_4	100	0.53	NO	34.25	1.009	4.86e5	5.59e5	97.2	-2.8	0.868	bb
4 19050 7K1_5	100	0.53	NO	34.24	1.009	5.05e5	5.73e5	98.7	-1.3	0.881	MM
5 190507K1_6	100	0.52	NO	34.24	1.009	4.40e5	5.09e5	96.9	-3.1	0.865	ММ
6 19050 7K1_7	100	0.52	NO	34.25	1.009	7.27e5	7.67e5	106	6.2	0.948	bb

Compound name: 13C-1,2,3,7,8,9-HxCDF

Response Factor: 0.734263

RRF SD: 0.05054, Relative SD: 6.88309

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA	n/y	RT.	RRT-	Resp:	IS Resp	Conc.	; %Dev ;	RRF:	X = dropped
1 190507K1_2	100	0.53	NO	35.17	1.036	3.43e5	4.98e5	94.0	- 6.0	0.690	MM
2 ,190507K1_3	100	0.51	NO	35.18	1.036	3.80e5	5.10e5	101	1.5	0.745	bb
3 190507K1_4	100	0.52	NO	35.17	1.036	3.91e5	5.59e5	95.3	-4.7	0.700	MM
4 190507K1_5	100	0.53	NO	35.17	1.037	4.16e5	5.73e5	98.8	-1.2	0.725	MM
5 19050 7K1_6	100	0.54	NO	35.16	1.036	3.64e5	5.09e5	97.5	-2.5	0.716	MM
6 190507K1_7	100	0.52	NO	35.17	1.036	6.37e5	7.67e5	113	13.0	0.830	MM

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

Response Factor: 0.75417

RRF SD: 0.0338797, Relative SD: 4.49232

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	RT.	RRT-	Resp;	IS Resp	Conc.	; %Dev ;	RRF:	X = dropped
1 190507K1_2	100	0.47	NO	36.90	1.087	3.64e5	4.98e5	96.9	-3.1	0.731	bb
2 190507K1_3	100	0.45	NO	36.91	1.088	3.98e5	5.10e5	103	3.3	0.779	bd
3 190507K1_4	100	0.43	NO	36.90	1.088	4.08e5	5.59e5	96.7	-3.3	0.729	bb
4 190507K1_5	100	0.47	NO	36.90	1.088	4.18e5	5.73e5	96.7	-3.3	0.729	' bd
5 190507K1_6	100	0.45	NO	36.90	1.088	3.80e5	5.09e5	98.9	-1 .1	0.746	bď
6 190507K1_7	100	0.45	NO	36.91	1.088	6.22e5	7.67e5	108	7.6	0.811	рр

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Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-1,2,3,4,7,8,9-HpCDF

Response Factor: 0.53899

RRF SD: 0.0380601, Relative SD: 7.06137

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

, Na	ame	Std. Conc	RA	n/y	RT.	RRT-	Resp;	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
1 19	90507K1_2	100	0.45	NO	38.85	1.145	2.51e5	4.98e5	93.5	-6.5	0.504	MM
2 ,19	90507K1_3	100	0.44	NO	38.86	1.145	2.88e5	5.10e5	105	4.8	0.565	bd
3	90507K1_4	100	0.42	NO	38.85	1.145	2.91e5	5.59e5	96.6	-3.4	0.521	bb
4 11 19	90507K1_5	100	0.43	NO	38.85	1.145	3.06e5	5.73e5	99.2	-0.8	0.535	bb
5 -19	90507K1_6	100	0.43	NO	38.85	1.145	2.58e5	5.09e5	94.1	-5.9	0.507	MM
6 19	90507K1_7	100	0.46	NO	38.86	1.145	4.62e5	7.67e5	112	11.7	0.602	bd

Compound name: 13C-OCDF Response Factor: 0.592524

RRF SD: 0.046422, Relative SD: 7.83462

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	: Std. Conc	RA	n/y	RT.	RRT.	Resp;	IS Resp	; Conc.	; %Dev ;	RRF;	X = dropped
1 19050 7K1_2	200	0.89	NO	41.69	1.228	5.83e5	4.98e5	198	-1.2	0.586	MM
2 19050 7K1_3	200	0.88	NO	41.70	1.229	6.08e5	5.10e5	201	0.6	0.596	MM
3 190507K1_4	200	0.90	NO	41.69	1.229	6.30e5	5.59e5	190	-5 .0	0.563	MM
4 19050 7K1_5	200	0.88	NO	41.68	1.228	6.40e5	5.73e5	188	-5.8	0.558	MM
5 190507K1_6	200	0.90	NO	41.69	1.229	5.80e5	5.09e5	192	-3.8	0.570	MM
6 190507K1_7	200	0.89	NO	41.70	1.229	1.05e6	7.67e5	230	15.2	0.683	MM

Compound name: 37Cl-2,3,7,8-TCDD

Response Factor: 1.06948

RRF SD: 0.0767834, Relative SD: 7.17951

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

: Name	Std. Conc	- n/y : RT	RRT.	Resp:	IS Resp	: Conc.	: %Dev	RRF	X = dropped
1 79050 7K1_2	0.250	26.34	1.026	1.45e3	5.62e5	0.241	-3.6	1.03	bb
2 190507K1_3	10.0	26.36	1.026	6.16e4	6.00e5	9.60	-4.0	1.03	bb

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 37CI-2,3,7,8-TCDD

Name	Std. Conc : RA	n/y RT-	RRT.	Resp	IS Resp	Conc.	%Dev	RRF:	X = dropped
3 190507K1_4	0.500	26.36	1.027	3.13e3	6.32e5	0.463	-7.4	0.990	bb
4 190507K1_5	2.00	26.36	1.026	1.45e4	6.60e5	2.06	2.8	1.10	bd
5 0 190507K1_6	40.0	26.36	1.026	2.49e5	5.86e5	39.7	-0.6	1.06	bb
6 190507K1_7	200	26.36	1.026	1.94e6	8.04e5	226	12.9	1.21	bb

Compound name: 13C-1,2,3,4-TCDD

Response Factor: 1

RRF SD: 4.96507e-017, Relative SD: 4.96507e-015

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	: RT-	RRT.	Resp:	IS Resp ;	Conc.	: %Dev :	RRF;	X = dropped
1 19050 7K1_2	100	0.79	NO	25.68	1.000	5.62e5	5.62e5	100	0.0	1.00	bb
2 , 19050 7K1_3	100	0.79	NO	25.68	1.000	6.00e5	6.00e5	100	0.0	1.00	bb
3 190507K1_4	100	0.80	NO	25.67	1.000	6.32e5	6.32e5	100	0.0	1.00	bb
4 190507K1_5	100	0.80	NO	25.68	1.000	6.60e5	6.60e5	100	0.0	1.00	bb
5 190507K1_6	100	0.80	NO	25.68	1.000	5.86e5	5.86e5	100	-0.0	1.00	bb
6 19050 7K1_7	100	0.77	NO	25.68	1.000	8.04e5	8.04e5	100	0.0	1.00	bb

Compound name: 13C-1,2,3,4-TCDF

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA	n/y	: RT-	RRT.	Resp*	IS Resp ;	Conc.	: %Dev :	RRF;)	C = dropped
1 190507K1_2	100	0.81	NO	24.05	1.000	8.33e5	8.33e5	100	0.0	1.00	bb
2 [190507K1_3	100	0.80	NO	24.05	1.000	8.73e5	8.73e5	100	0.0	1.00	bb
3 190507K1_4	100	0.79	NO	24.05	1.000	9.16e5	9.16e5	100	0.0	1.00	bb
4 190507K1_5	[°] 100	0.78	NO	24.03	1.000	9.50e5	'9.50e5	100	0.0	1.00	bb
5 190507K1_6	100	0.78	NO	24.05	1.000	8.36e5	8.36e5	100	0.0	1.00	bb
6 190507K1_7	100	0.79	NO	24.05	1.000	1.17e6	1.17e6	100	0.0	1.00	bb

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Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-1,2,3,4,6,9-HxCDF

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA :	n/y	; RT-	RRT.	Resp;	IS Resp	Conc.	; %Dev ;	RRF;	K = dropped
1 19050 7K1_2	100	0.53	NO	33.94	1.000	4.98e5	4.98e5	100	0.0	1.00	bd
2 19050 7K1_3	100	0.51	NO	33.94	1.000	5.10e5	5.10e5	100	0.0	1.00	MM
3 19050 7K1_4	100	0.52	NO	33.93	1.000	5.59e5	5.59e5	100	0.0	1.00	bb
4 19050 7K1_5	100	0.52	NO	33.93	1.000	5.73e5	5.73e5	100	0.0	1.00	bb
5 19050 7K1_6	100	0.52	NO	33.93	1.000	5.09e5	5.09e5	100	0.0	1.00	bb
6 190507K1_7	100	0.52	NO	33.93	1.000	7.67e5	7.67e5	100	0.0	1.00	bb

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MassLynx 4.1 SCN815

Page 1 of 1

Dataset:

Untitled

Last Altered: Printed:

Wednesday, May 08, 2019 8:06:43 AM Pacific Daylight Time Wednesday, May 08, 2019 8:06:44 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\CPSM-5-7-19.mdb 07 May 2019 13:29:19

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K1_3, Date: 07-May-2019, Time: 12:16:36, ID: ST190507K1_3 1613 CS3 19C2204, Description: 1613 CS3 19C2204

10000	#	Name	RT
1	1	1,3,6,8-TCDD (First)	22.43
2 4 4 7 (2	1,2,8,9-TCDD (Last)	27.29
3	3	1,2,4,7,9-PeCDD (First)	29.01
4 :	4	1,2,3,8,9-PeCDD (Last)	31.50
5	5	1,2,4,6,7,9-HxCDD (First)	32.92
6	6	1,2,3,7,8,9-HxCDD (Last)	34.81
7	7	1,2,3,4,6,7,9-HpCDD (First)	37.32
8	8	1,2,3,4,6,7,8-HpCDD (Last)	38.32
9	9	1,3,6,8-TCDF (First)	20.23
10 :	10	1,2,8,9-TCDF (Last)	27.46
11 :	11	1,3,4,6,8-PeCDF (First)	27.36
12 :	12	1,2,3,8,9-PeCDF (Last)	31.76
13	13	1,2,3,4,6,8-HxCDF (First)	32.39
14	14	1,2,3,7,8,9-HxCDF (Last)	35.19
15	15	1,2,3,4,6,7,8-HpCDF (First)	36.94
16	16	1,2,3,4,7,8,9-HpCDF (Last)	38.87

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Quantify Compound Summary Report Vista Analytical Laboratory VG-11 MassLynx 4.1 SCN815

Page 1 of 1

Dataset:

Untitled

Last Altered: Printed:

Wednesday, May 08, 2019 8:00:20 AM Pacific Daylight Time Wednesday, May 08, 2019 8:00:34 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Compound name: 2,3,7,8-TCDD

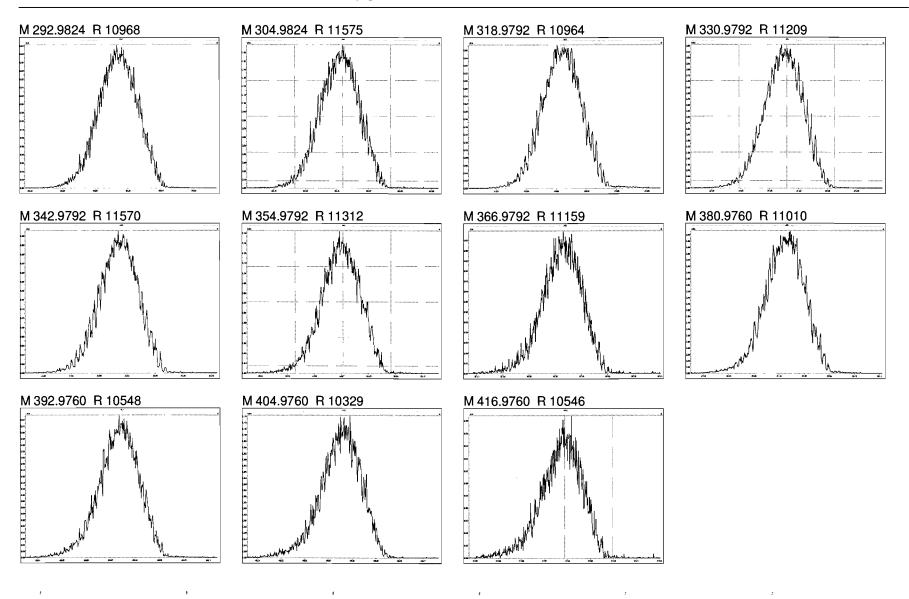
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1	;190507K1_1(1)	ST190507K1_1 1613 CS3 18J1008	07-May-19	10:05:54
2	,190507K1_2	ST190507K1_2 1613 CS0 19C2201	07-May-19	11:18:22
3	190507K1_3	ST190507K1_3 1613 CS3 19C2204	07-May-19	12:16:36
4	190507K1_4	ST190507K1_4 1613 CS1 19C2202	07-May-19	13:04:59
5	-190507K1_5	ST190507K1_5 1613 CS2 19C2203	07-May-19	13:51:47
6	-190507K1_6	ST190507K1_6 1613 CS4 19C2205	07-May-19	14:39:24
7	190507K1_7	ST190507K1_7 1613 CS5 19C2206	07-May-19	15:27:02
8	190507K1_8	SS190507K1_1 1613 SSS 19C2207	07-May-19	16:16:59
9	;190507K1_9	SOLVENT BLANK	07-May-19	17:12:35
10	,190507K1_10	QC190507K1-1 1613 Method Blank 1	07-May-19	18:00:01
11	[190507K2_1	ST190507K2_1 1613 CS3 18J1008	07-May-19	18:48:10

R) not used, used do get windows in new column 1/2 5-8-19

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File: Experiment: ocdd_db5.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, May 07, 2019 11:13:04 Pacific Daylight Time



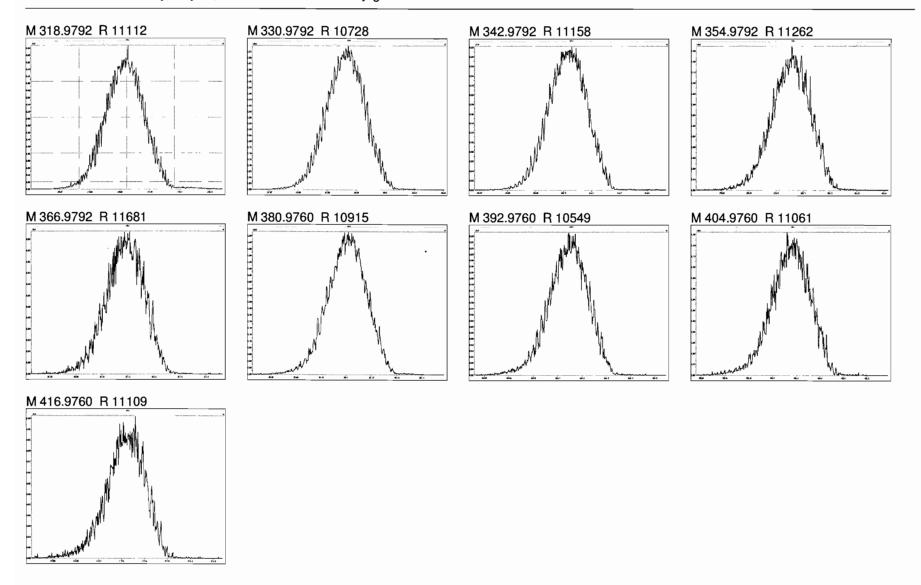
Work Order 1903648 Page 325 of 513

File:

Experiment: ocdd_db5.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed:

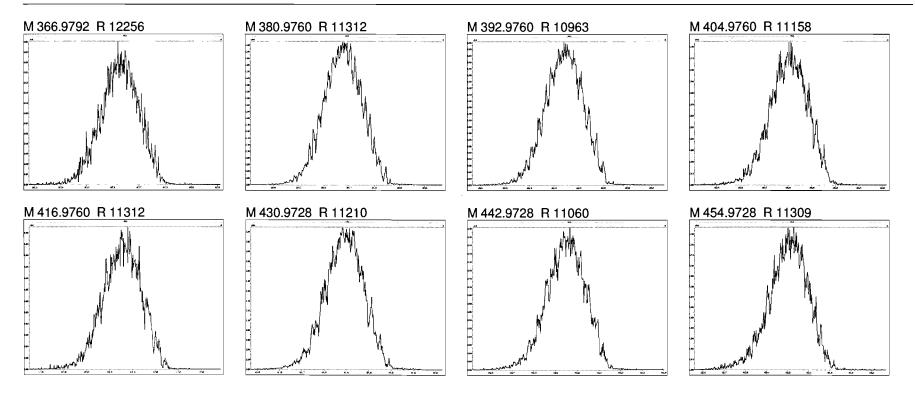
Tuesday, May 07, 2019 11:13:43 Pacific Daylight Time



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File: Experiment: ocdd_db5.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, May 07, 2019 11:14:13 Pacific Daylight Time



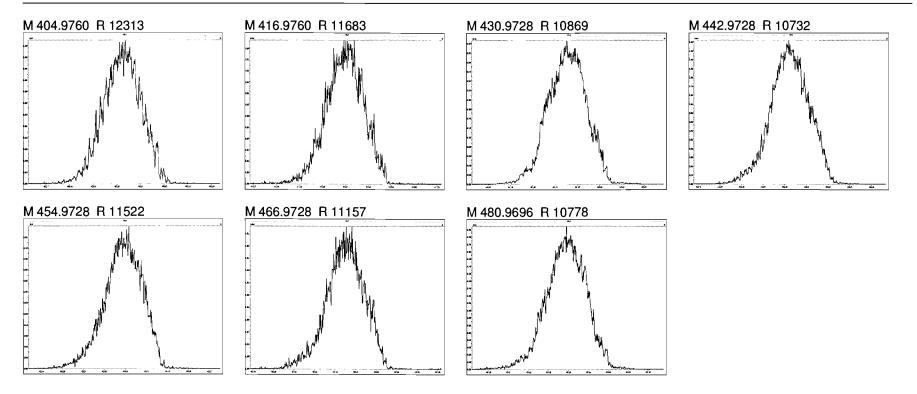
Work Order 1903648 Page 327 of 513

File:

Experiment: ocdd_db5.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed:

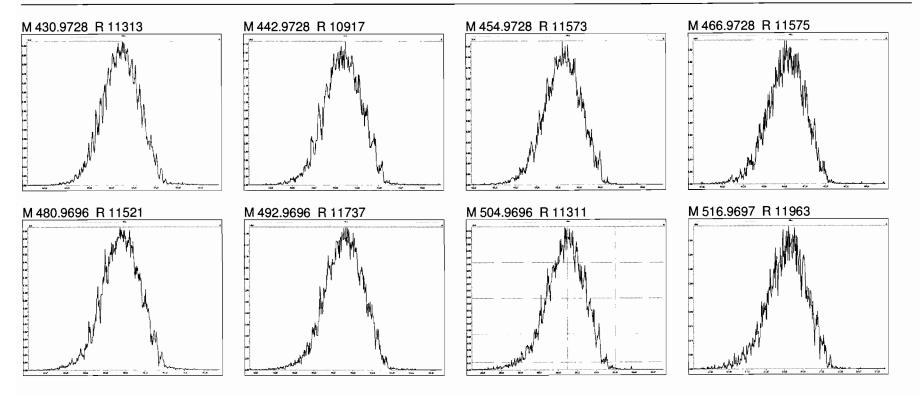
Tuesday, May 07, 2019 11:14:57 Pacific Daylight Time



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File: Experiment: ocdd_db5.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, May 07, 2019 11:15:30 Pacific Daylight Time



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Quantify Sample Report

MassLynx 4.1 SCN815

Page 1 of 1

Vista Analytical Laboratory VG-11

Dataset:

Untitled

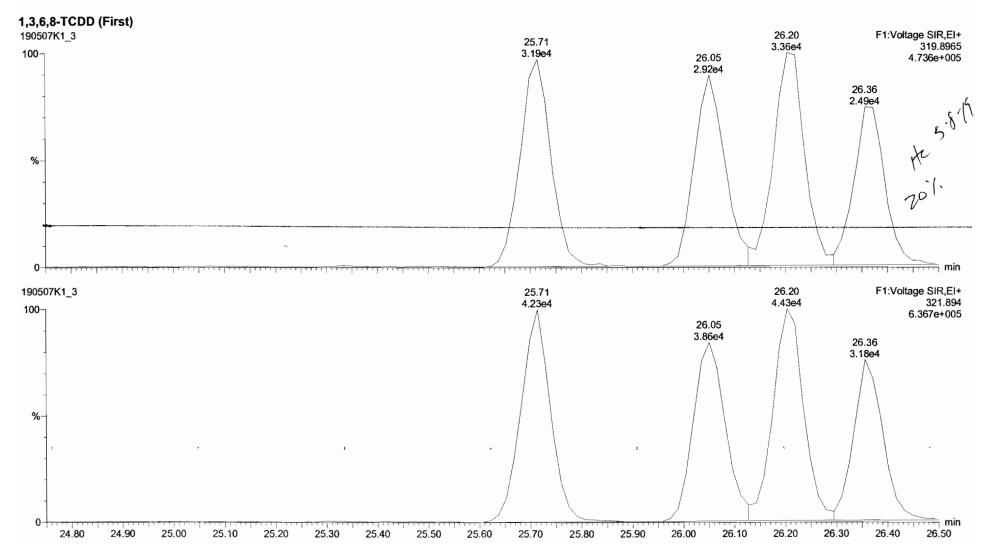
Last Altered: Printed:

Wednesday, May 08, 2019 8:06:43 AM Pacific Daylight Time Wednesday, May 08, 2019 8:06:44 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\CPSM-5-7-19.mdb 07 May 2019 13:29:19

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K1_3, Date: 07-May-2019, Time: 12:16:36, ID: ST190507K1_3 1613 CS3 19C2204, Description: 1613 CS3 19C2204



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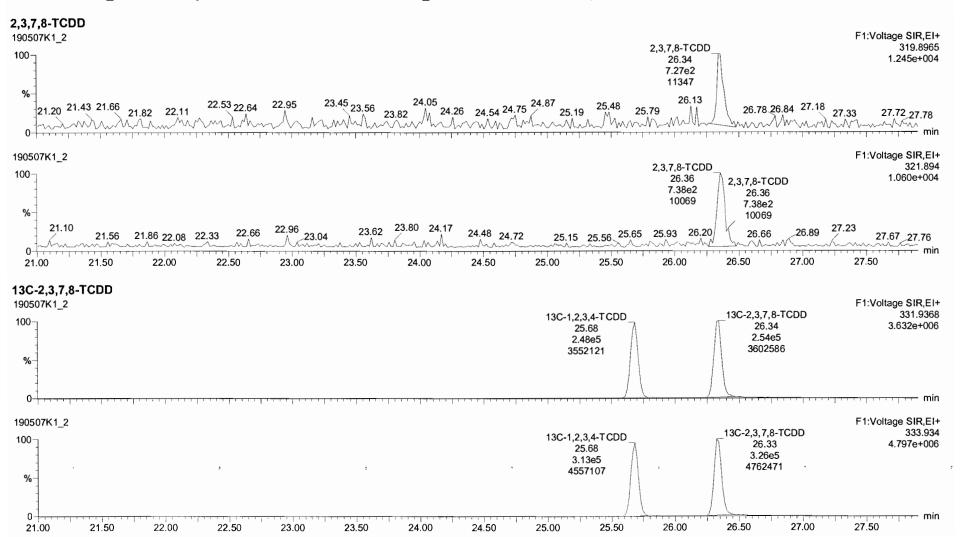
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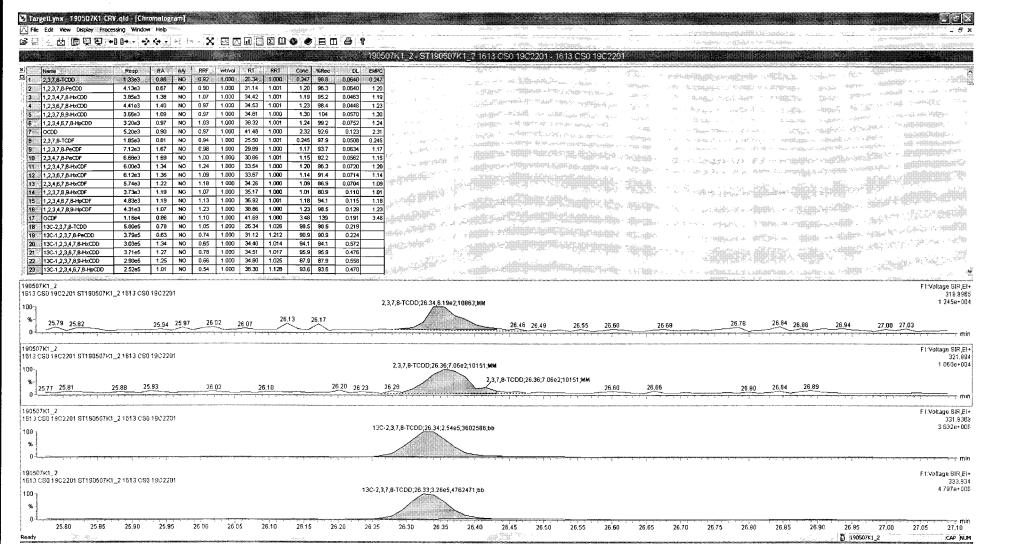
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Last Altered: Printed:

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 07 May 2019 16:51:46





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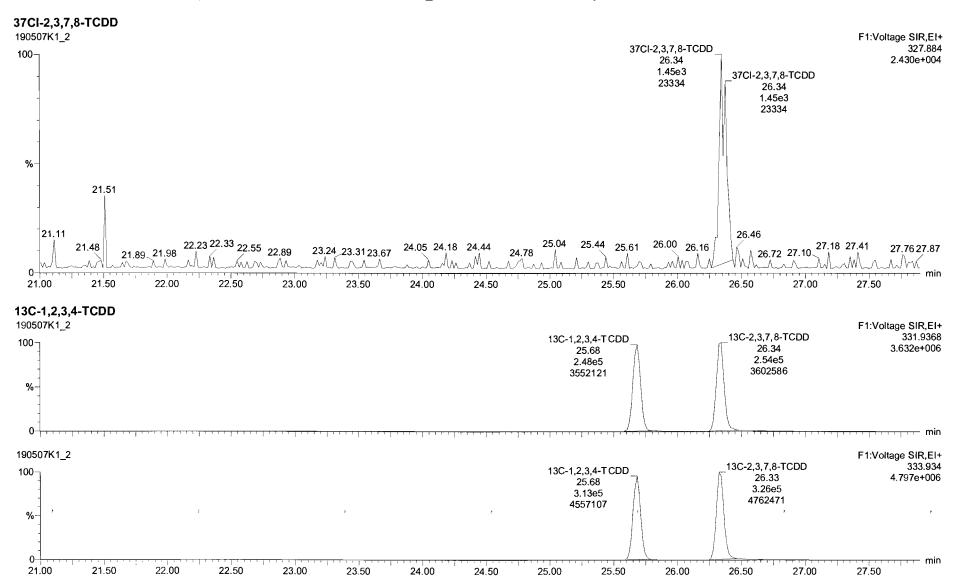
Dataset:

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Last Altered: We Printed: We

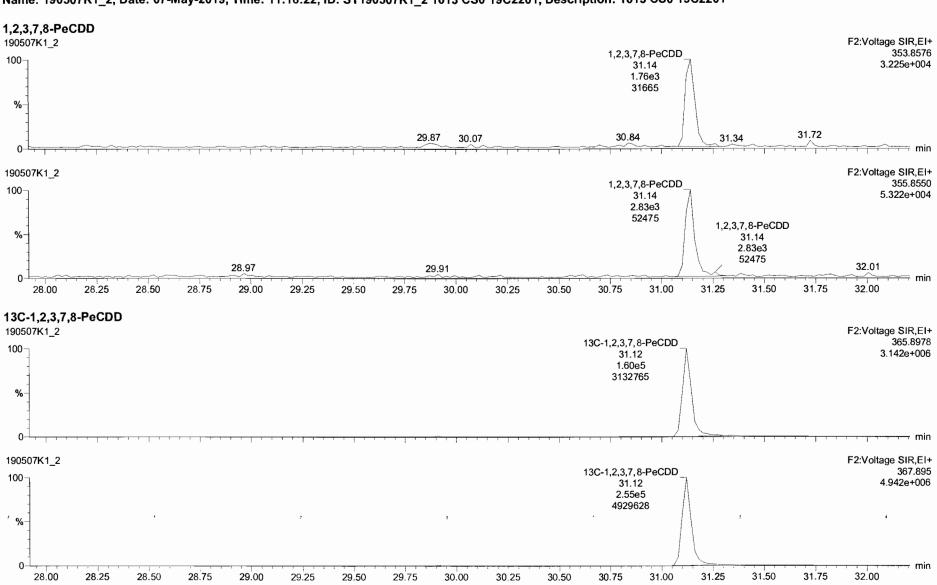
Vista Analytical Laboratory

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



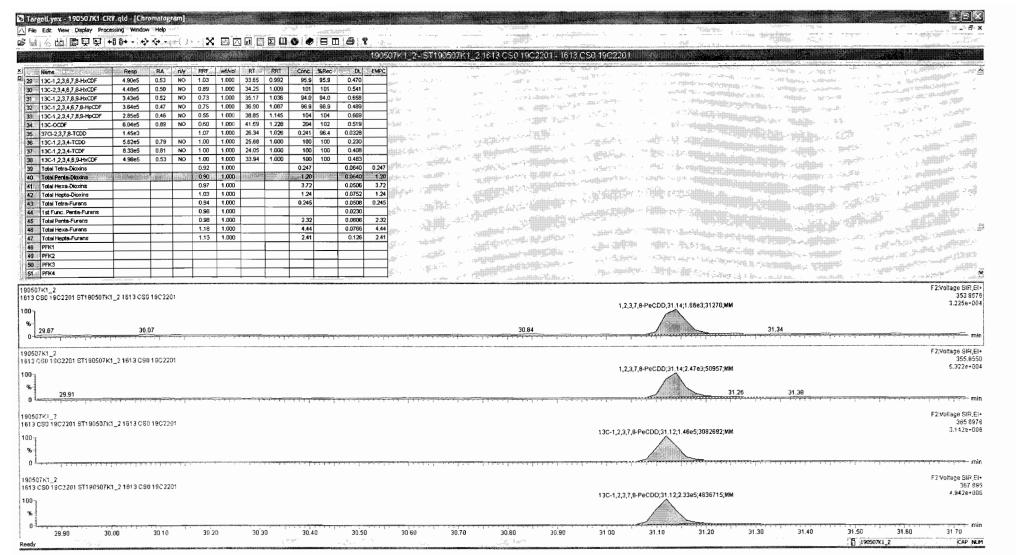


Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

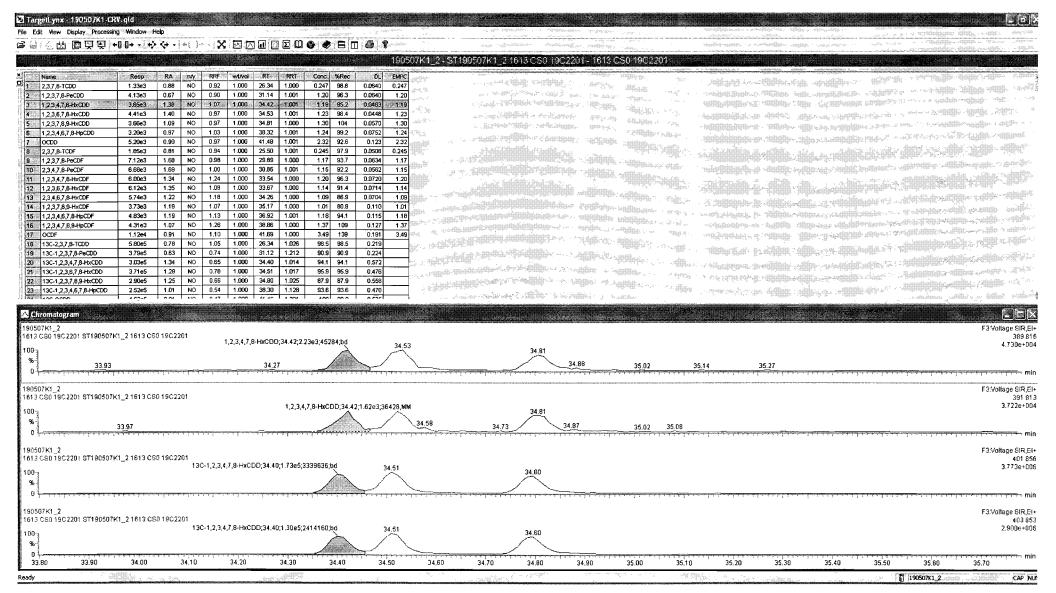


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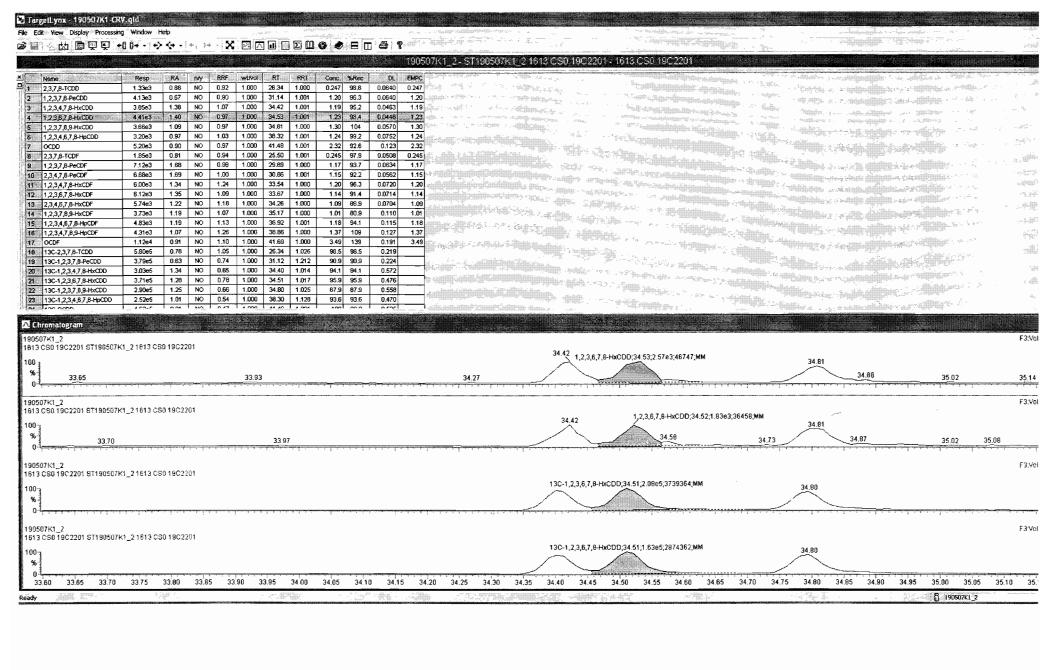
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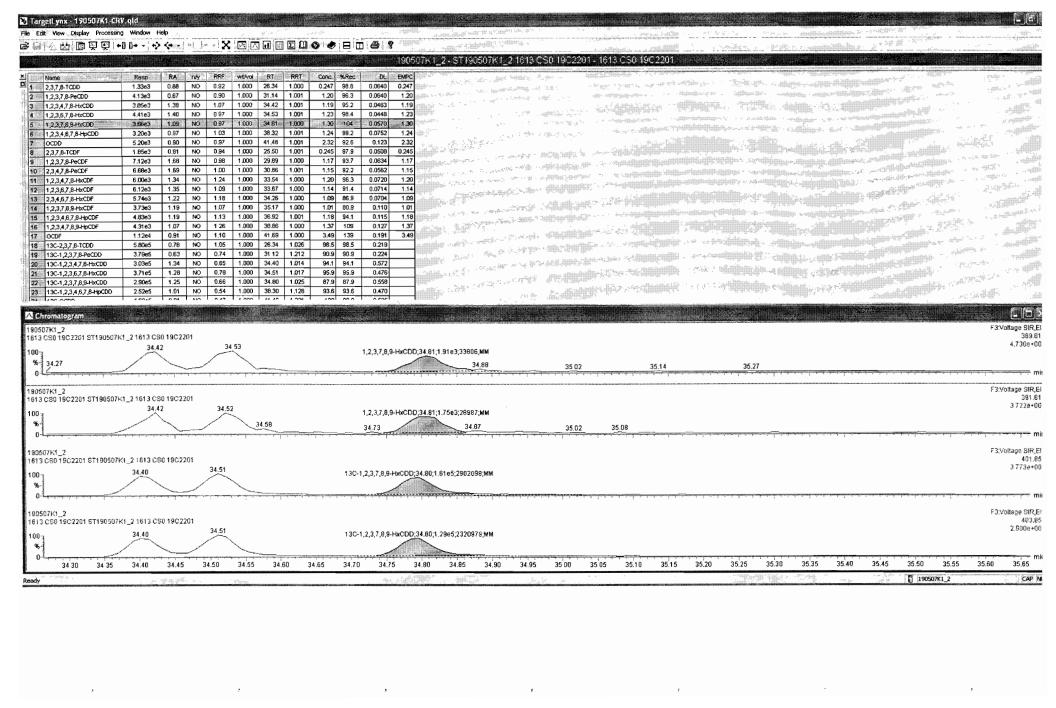
Work Order 1903648 Page 335 of 513



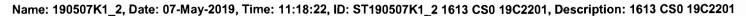
Work Order 1903648 Page 337 of 513

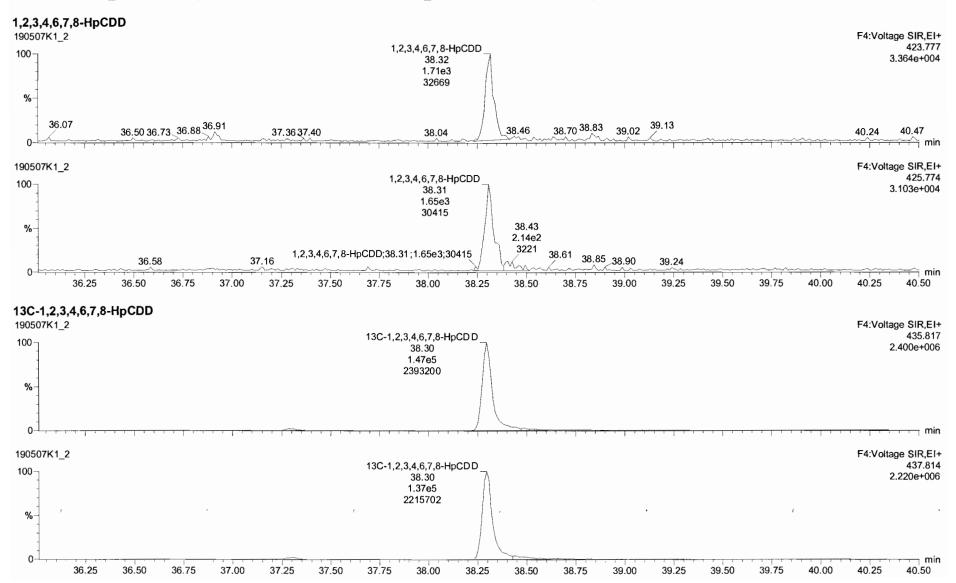


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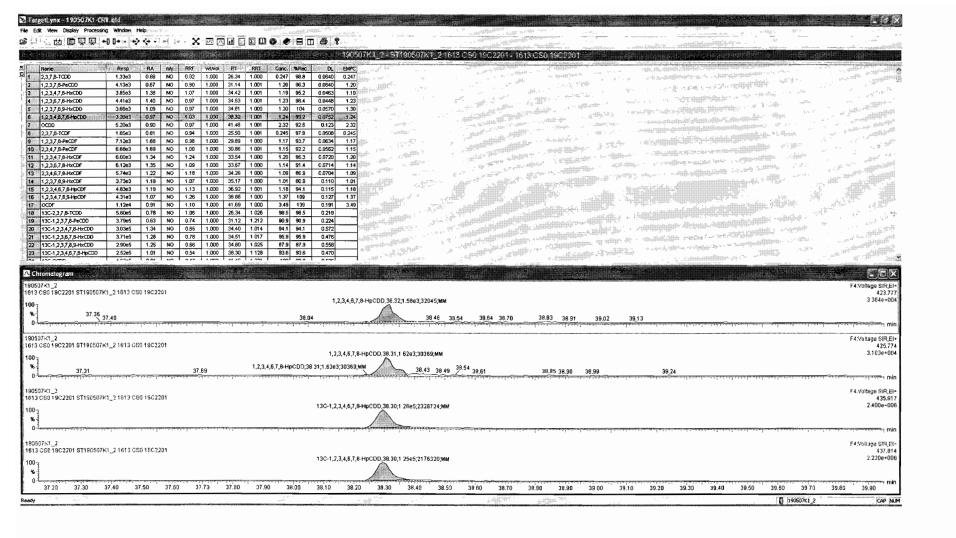


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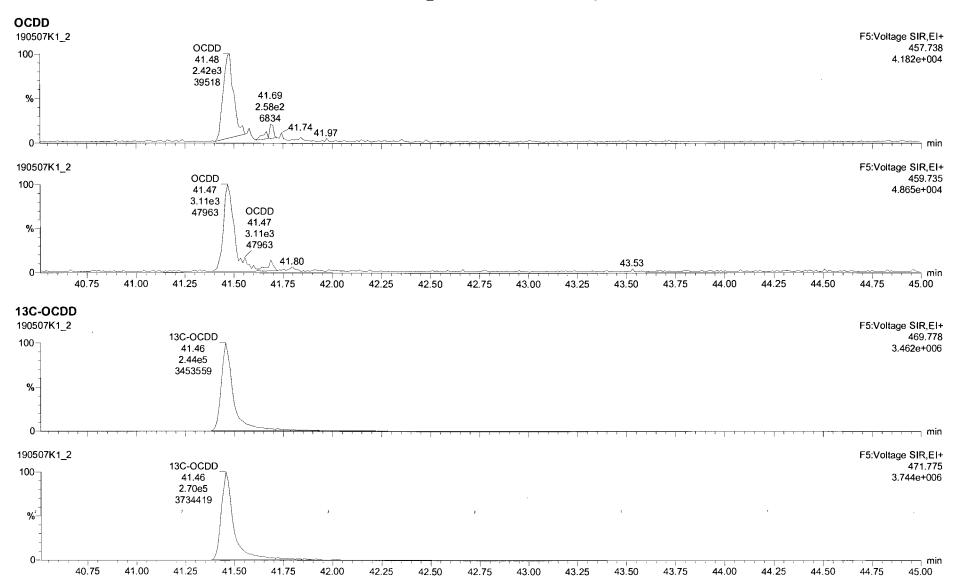


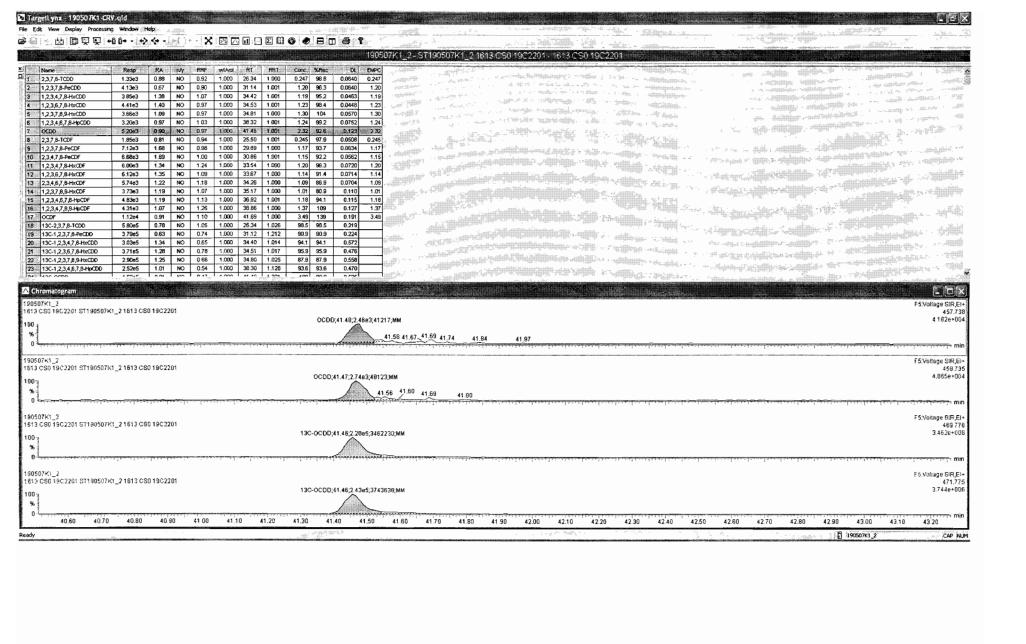
Work Order 1903648 Page 341 of 513

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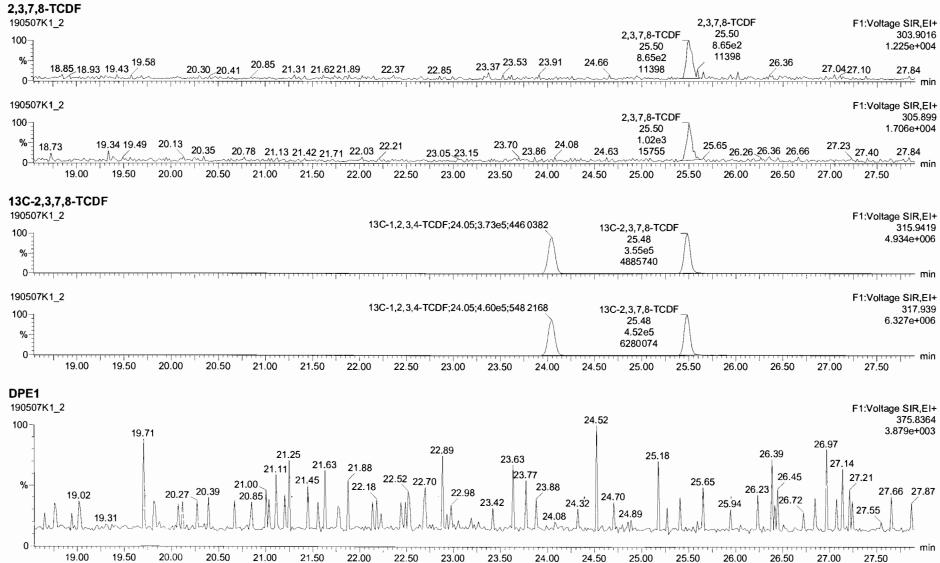
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Last Altered: Printed: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

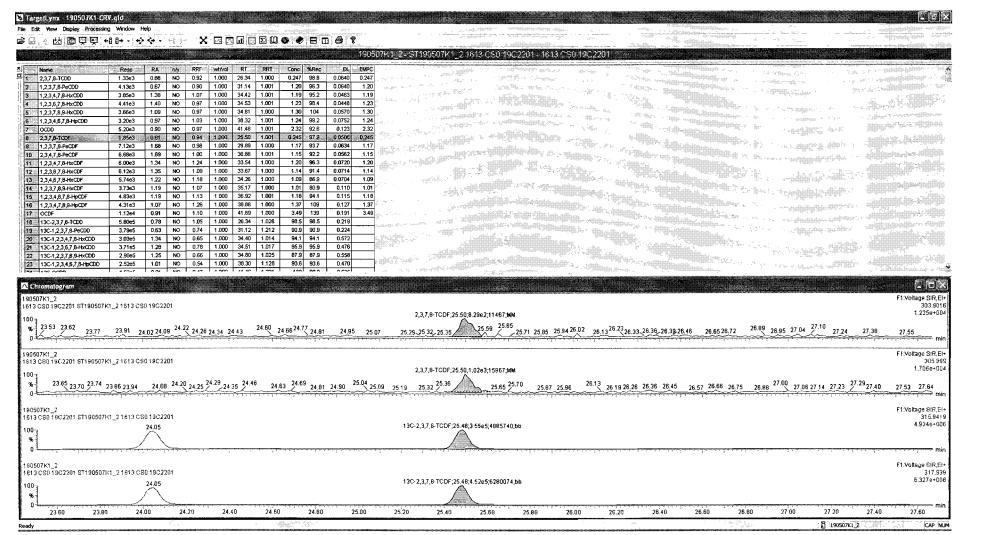




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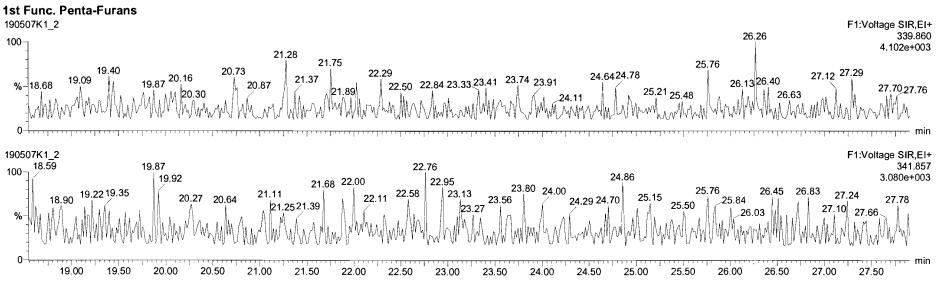
Work Order 1903648 Page 345 of 513

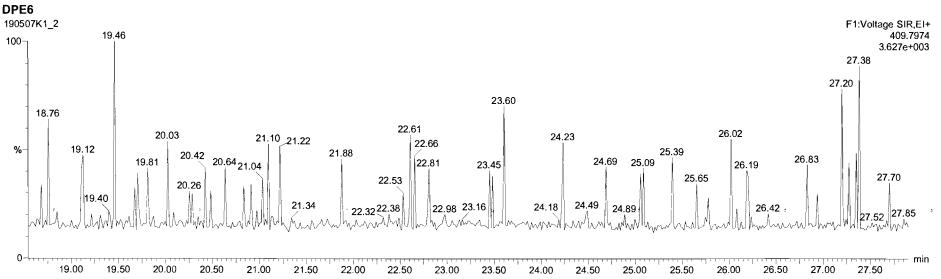
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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



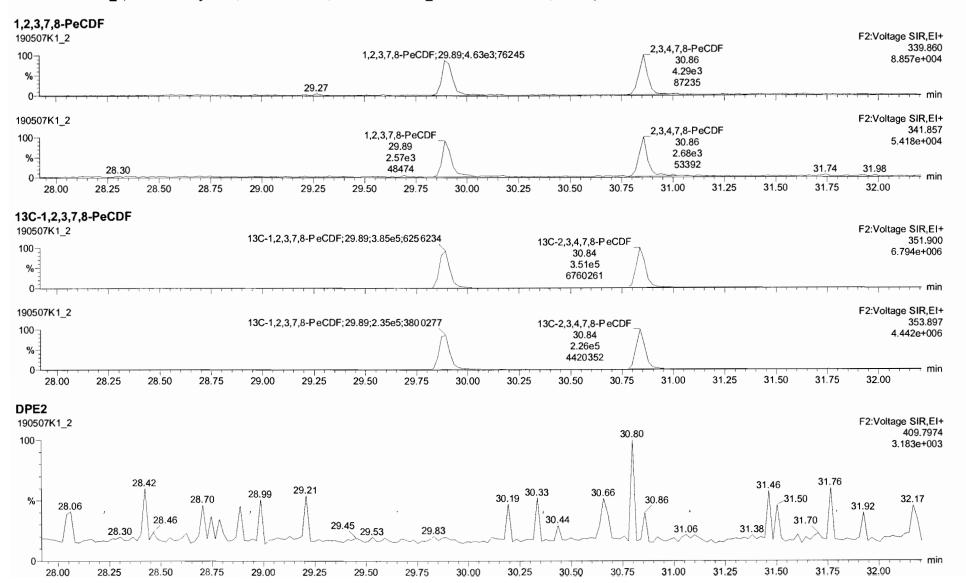


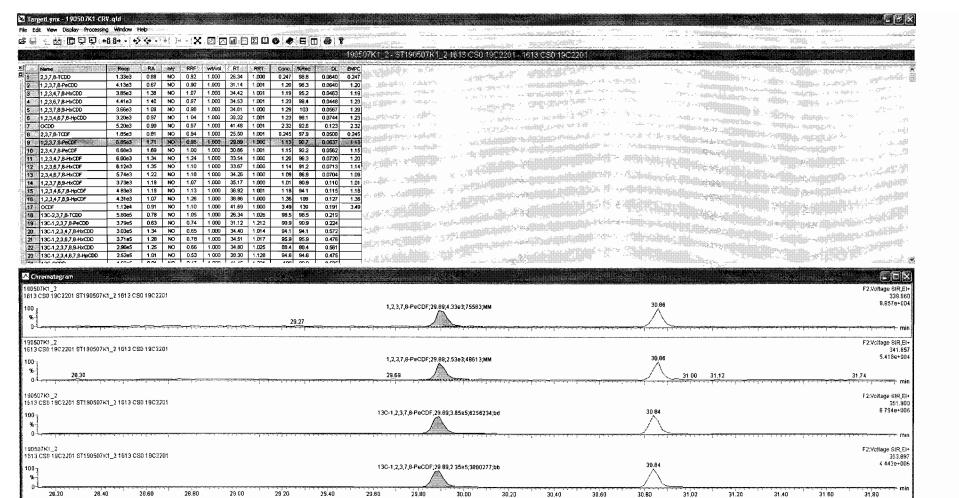
Quantify Sample Report Vista Analytical Laboratory

Dataset:

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Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

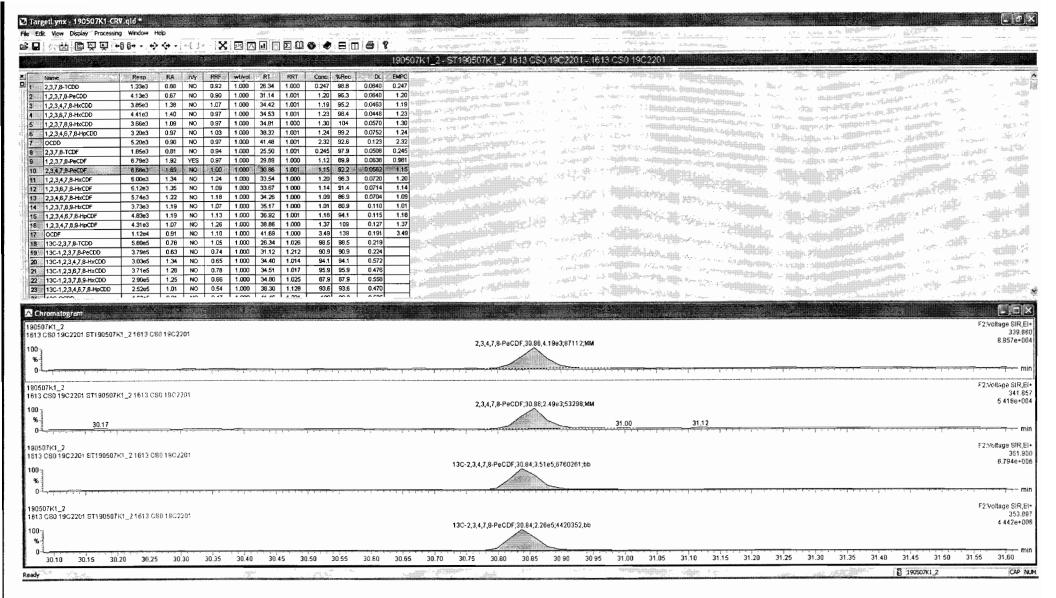




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190507K1_2

CAP NUM

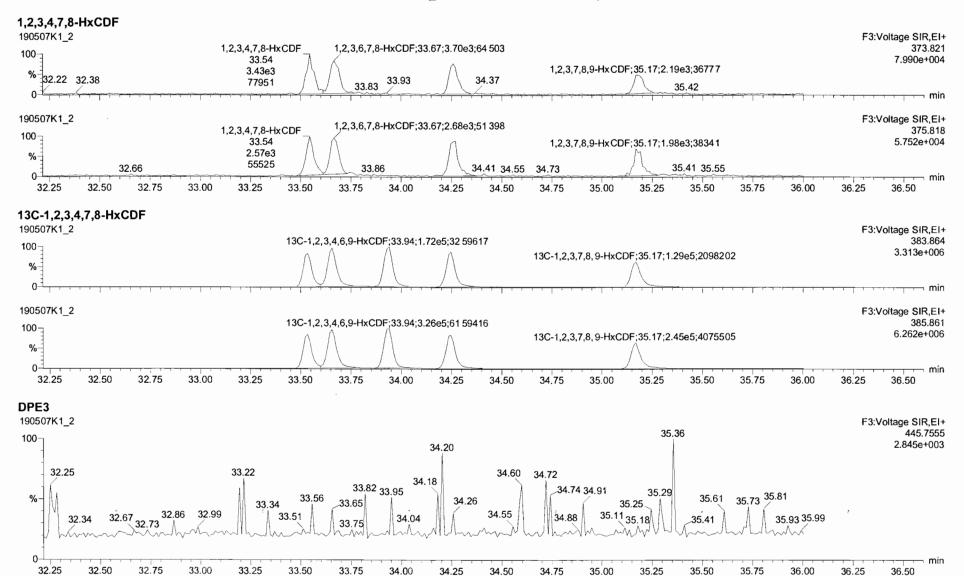


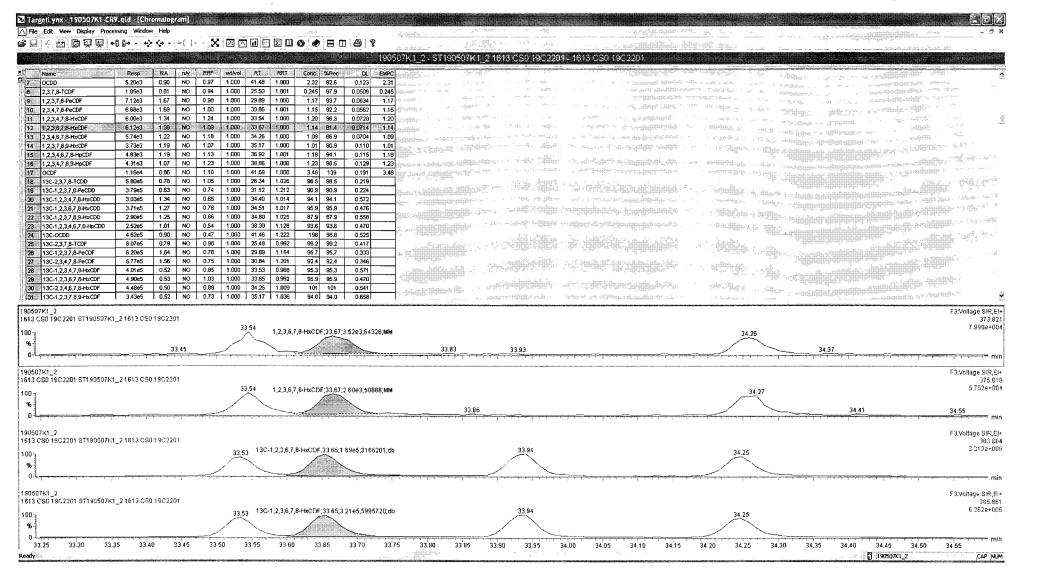
Quantify Sample Report Vista Analytical Laboratory

Dataset:

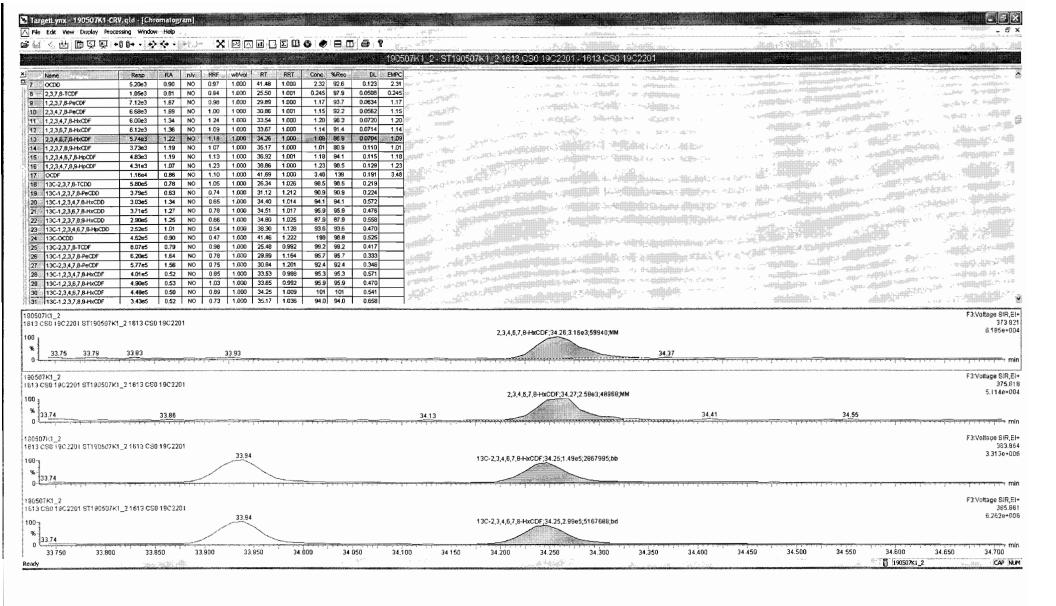
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Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

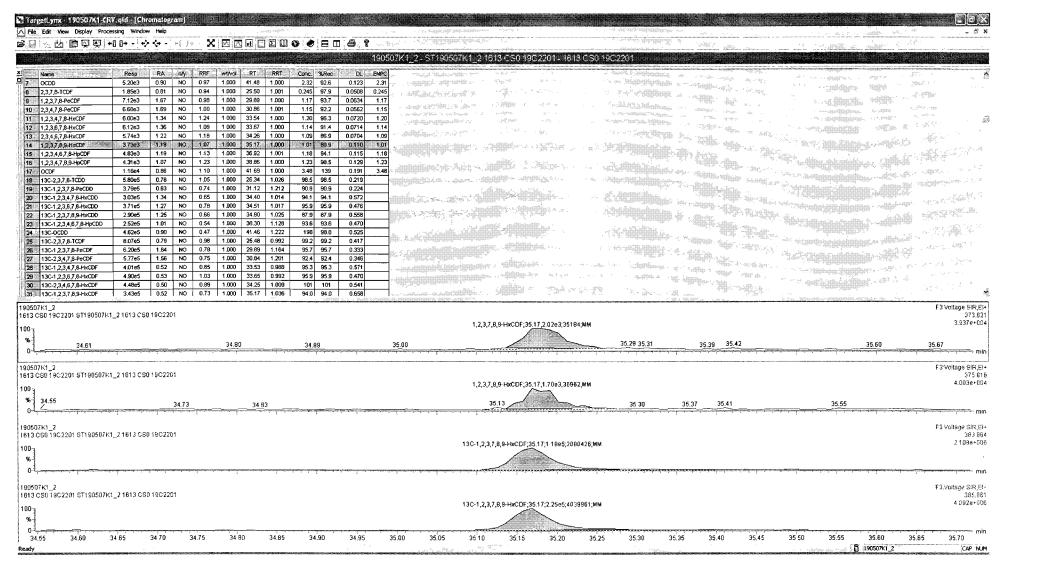




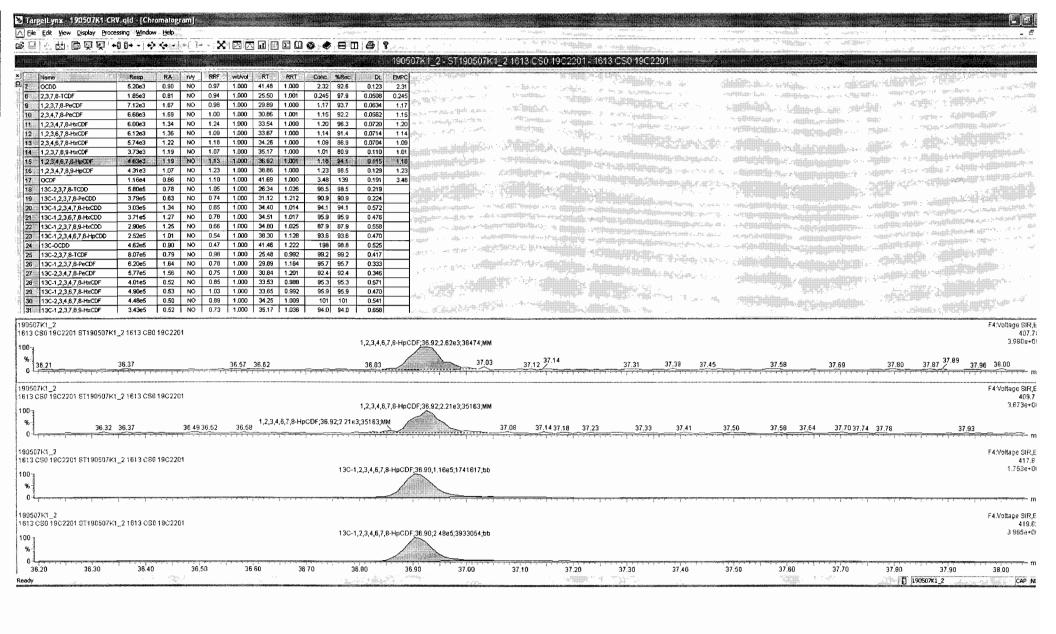
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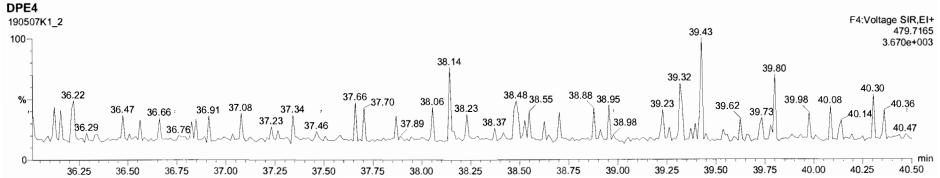
Work Order 1903648 Page 352 of 513

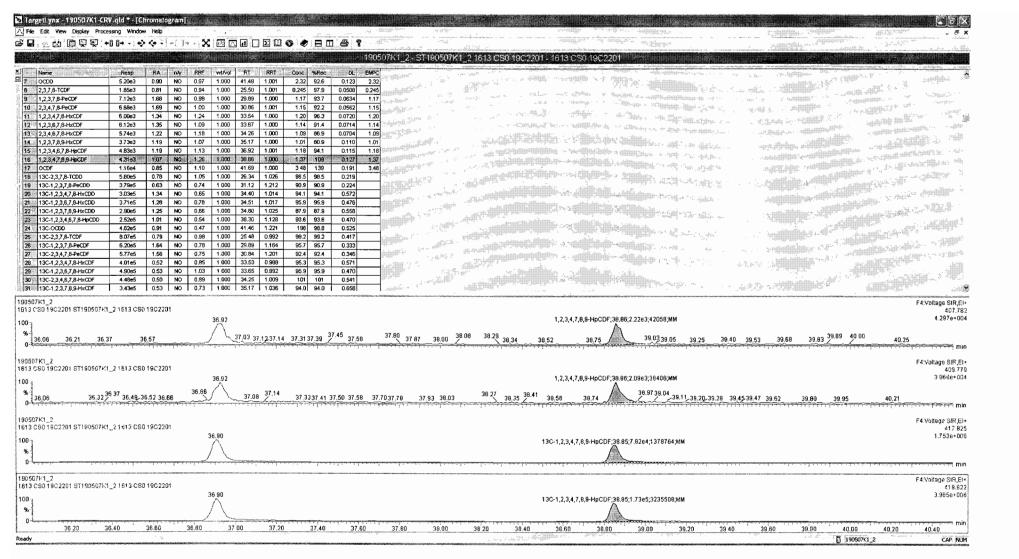


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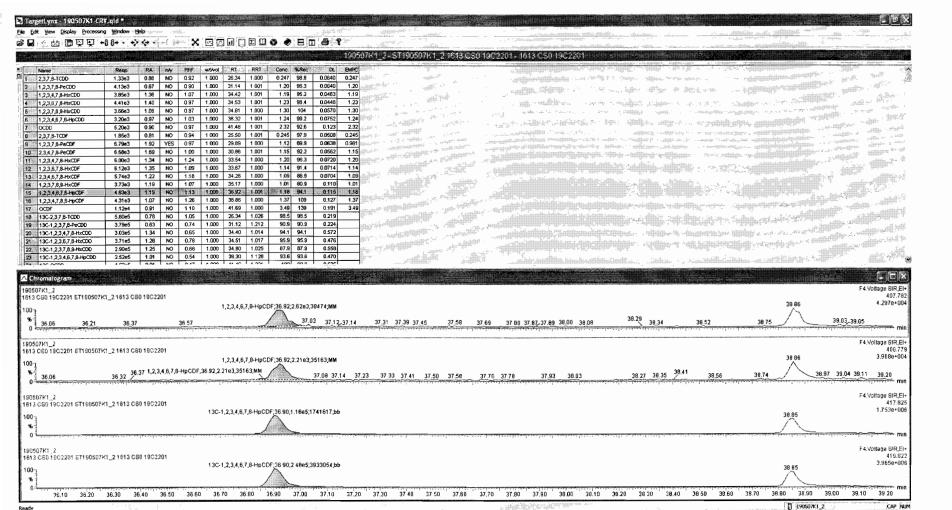


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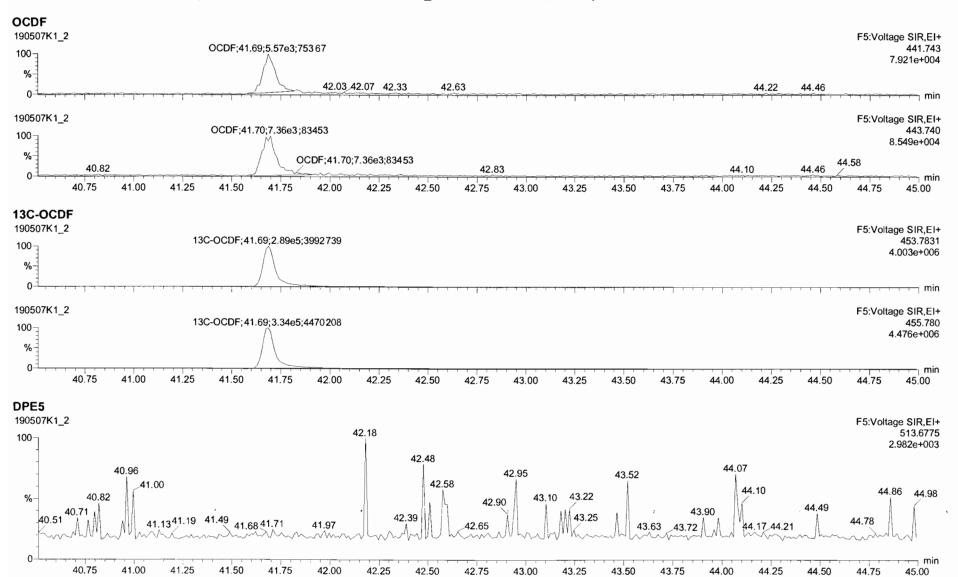


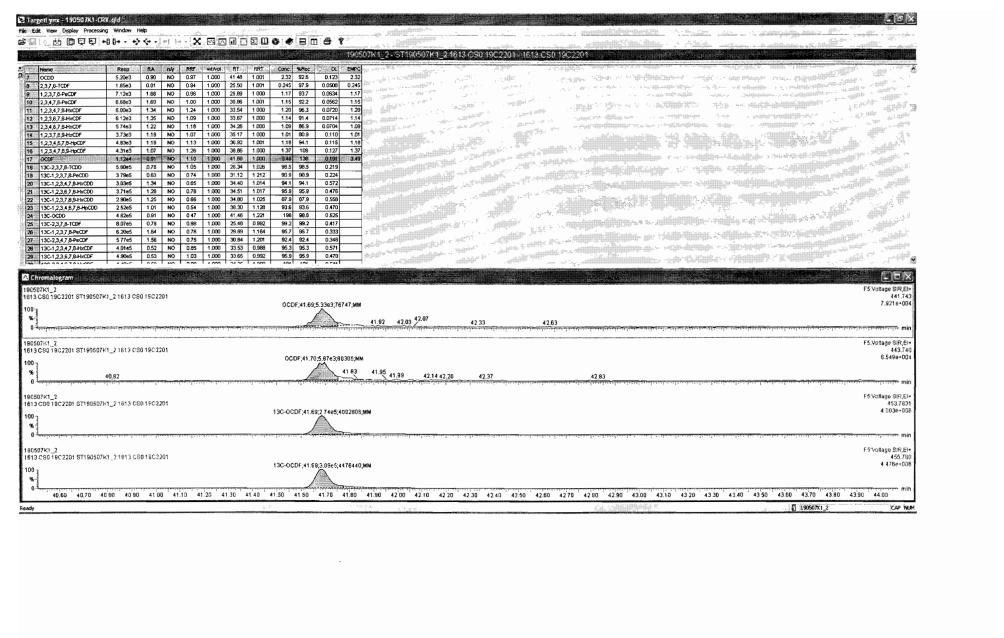
Work Order 1903648 Page 357 of 513

Dataset:

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Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



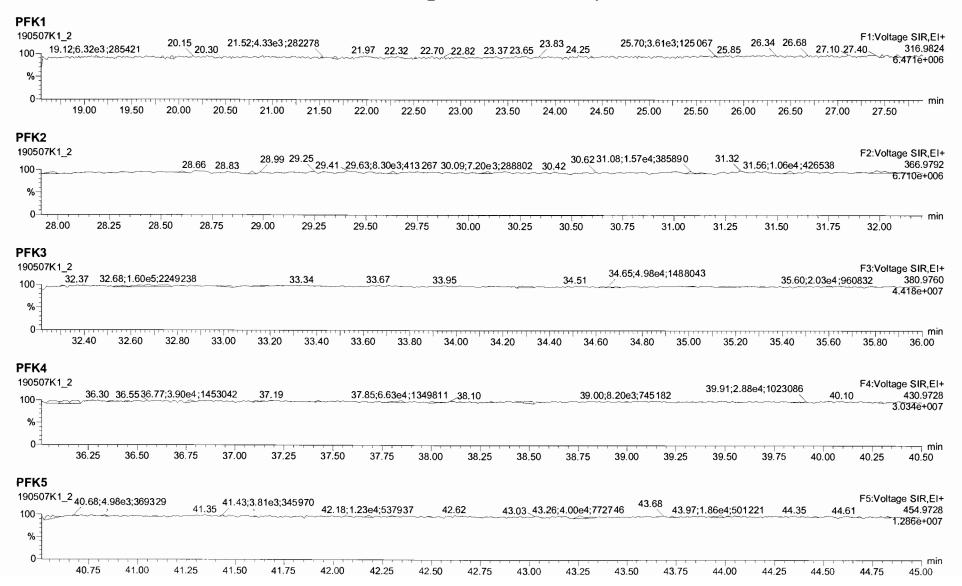


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Dataset:

Untitled

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24.20

24 00

24.40

24 60

24 80

25.00

25.40

25.60

25.80

26.00

26.20

26.40

26 68

26.80

27.00

27.20

27.40

[្ជី 190507K1_4

27.00

CAP NUM

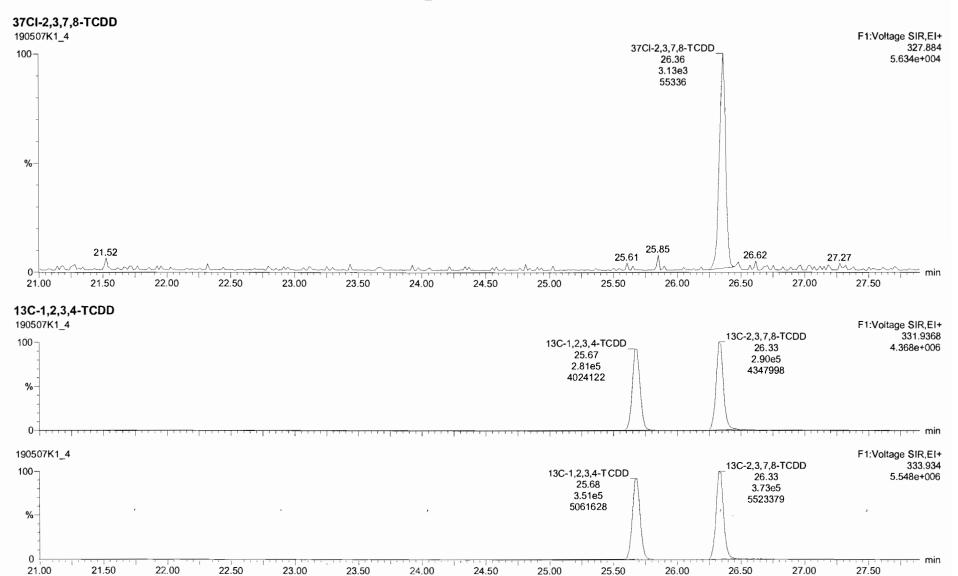
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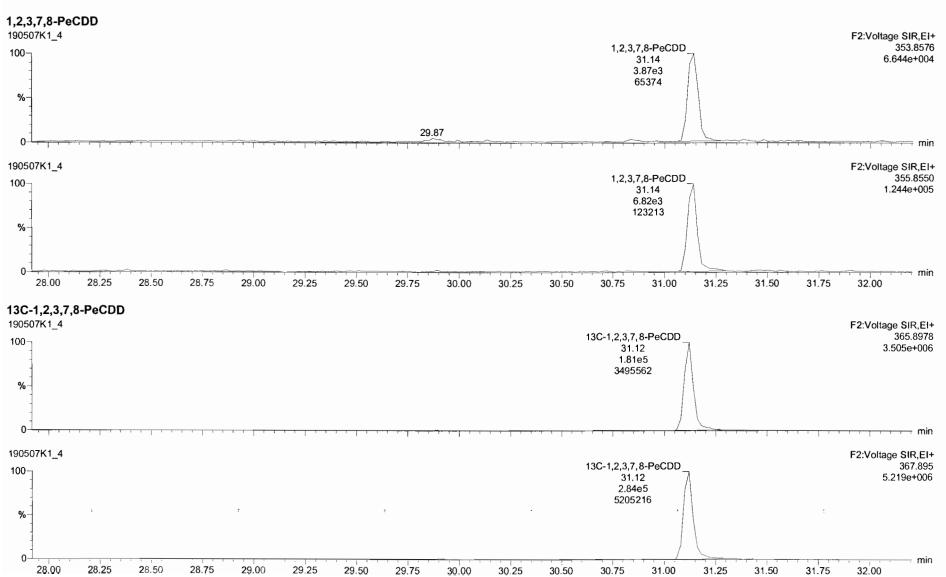
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34.20

34.40

34.60

34.80

35.00

35.20

35.40

35.60

35.80

32.60

32.80

33.00

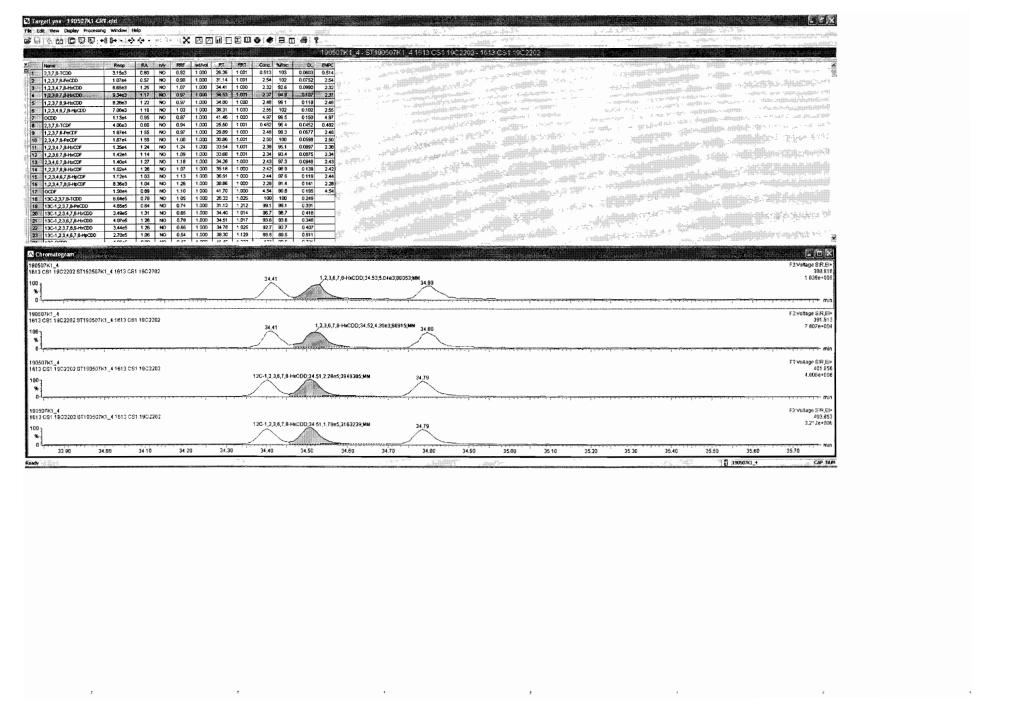
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33.40

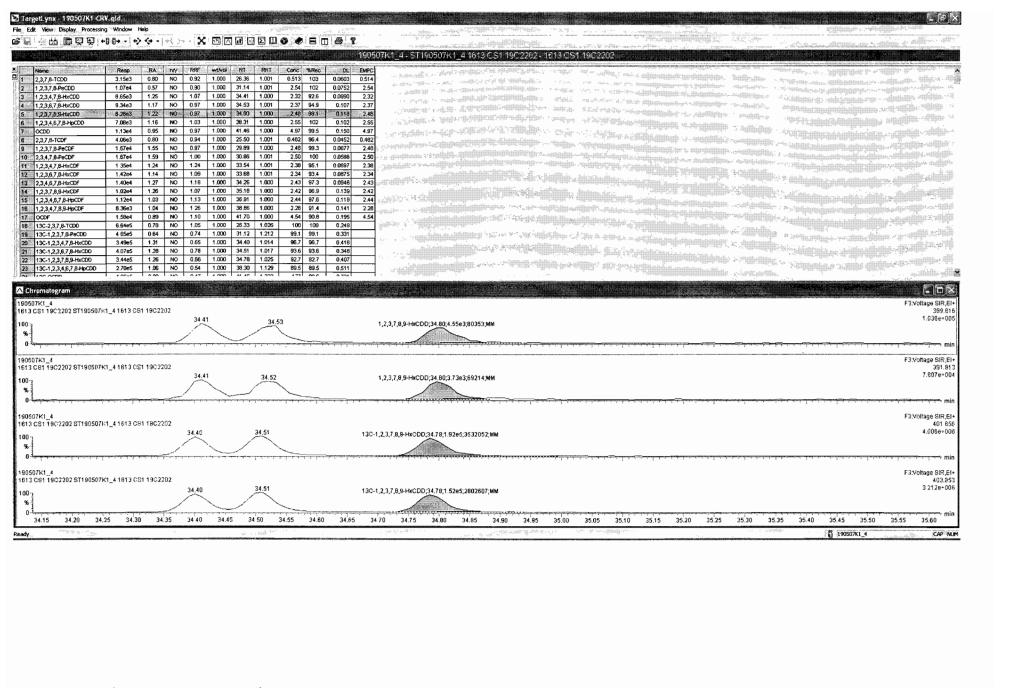
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33.80

34.00



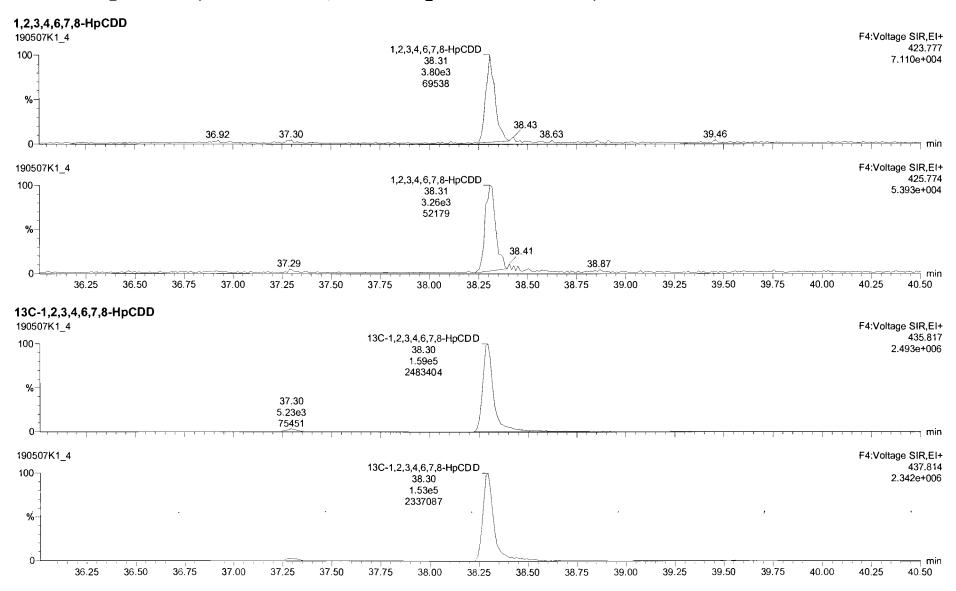
Work Order 1903648 Page 366 of 513

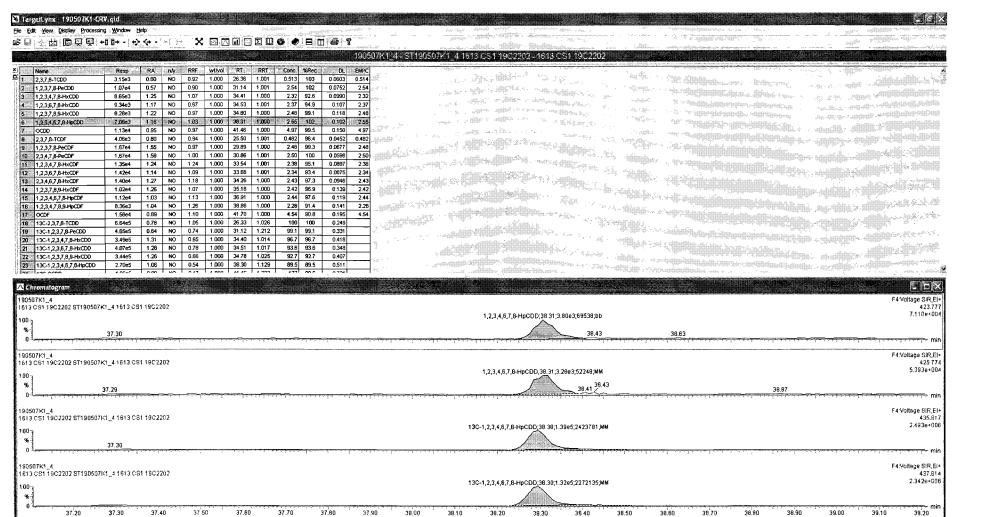


Work Order 1903648 Page 367 of 513

Dataset: Untitled

Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time





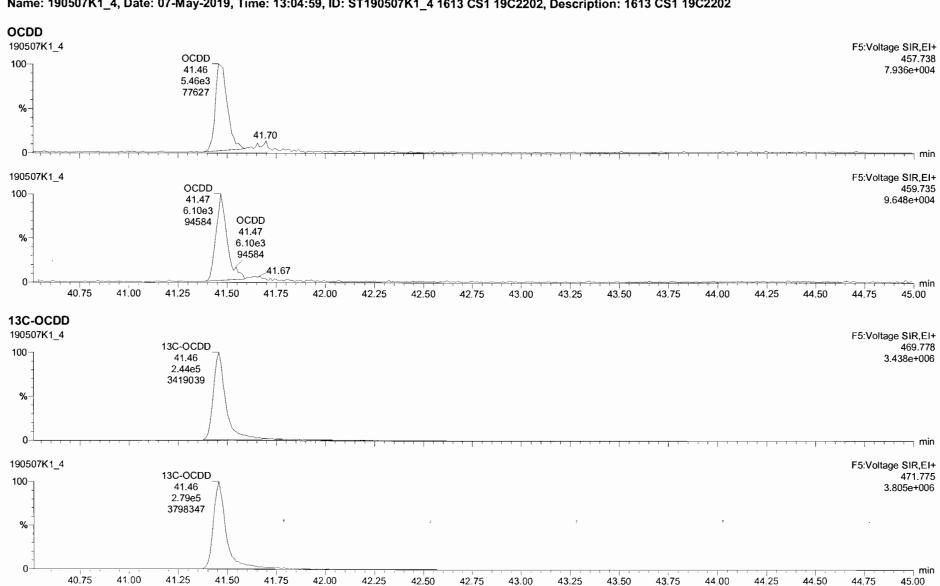
Work Order 1903648 Page 369 of 513

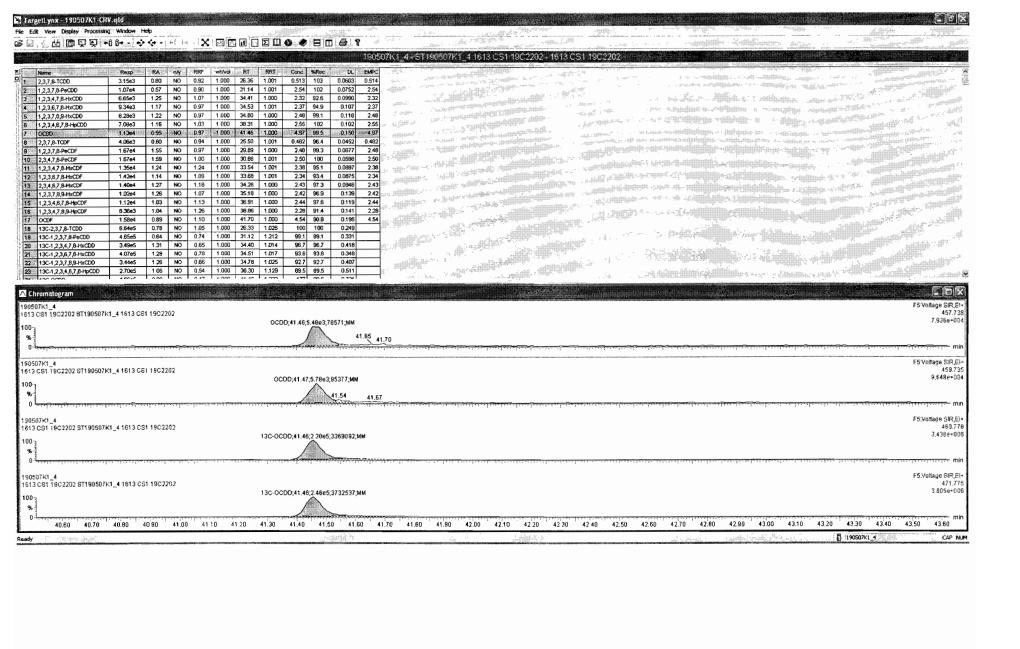
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CAP NUM

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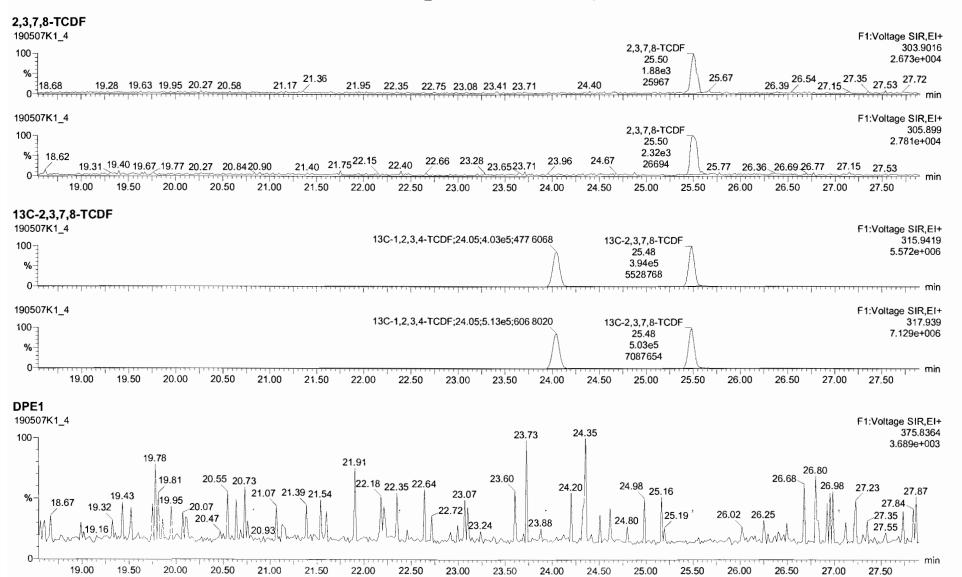


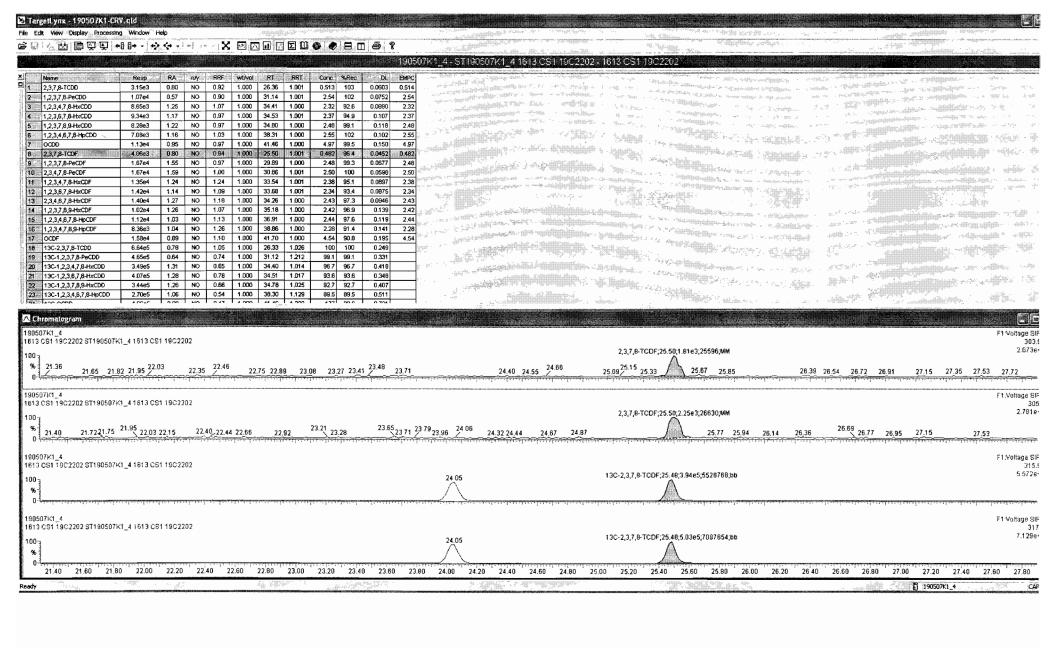
Work Order 1903648 Page 371 of 513

Untitled

Last Altered: Printed:

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

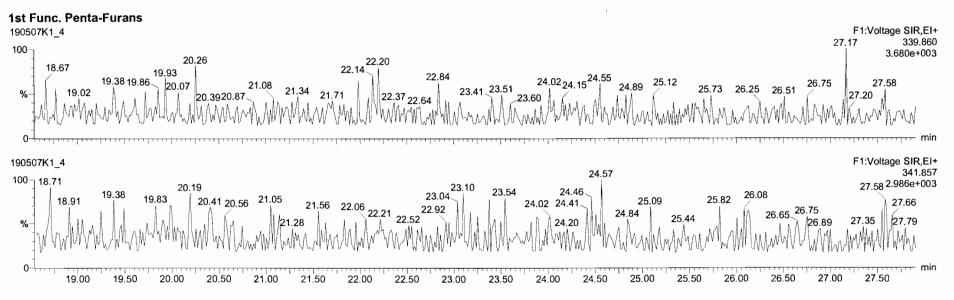


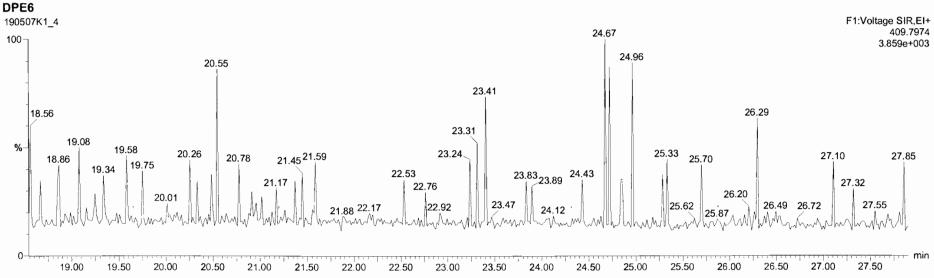


Work Order 1903648 Page 373 of 513

Untitled

Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



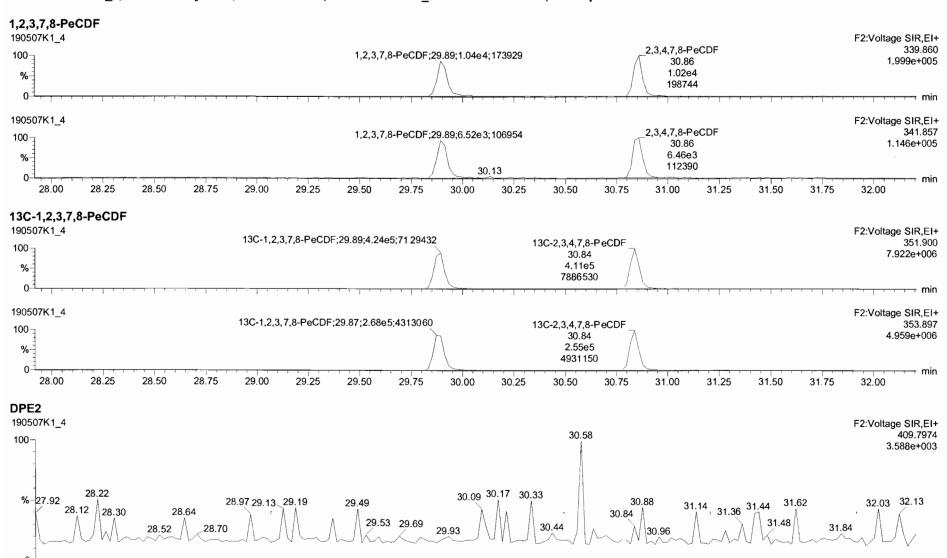


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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

Name: 190507K1_4, Date: 07-May-2019, Time: 13:04:59, ID: ST190507K1_4 1613 CS1 19C2202, Description: 1613 CS1 19C2202



28.25

28.50

28.75

29.00

29.25

29.50

29.75

30.00

30.25

30.50

30.75

31.00

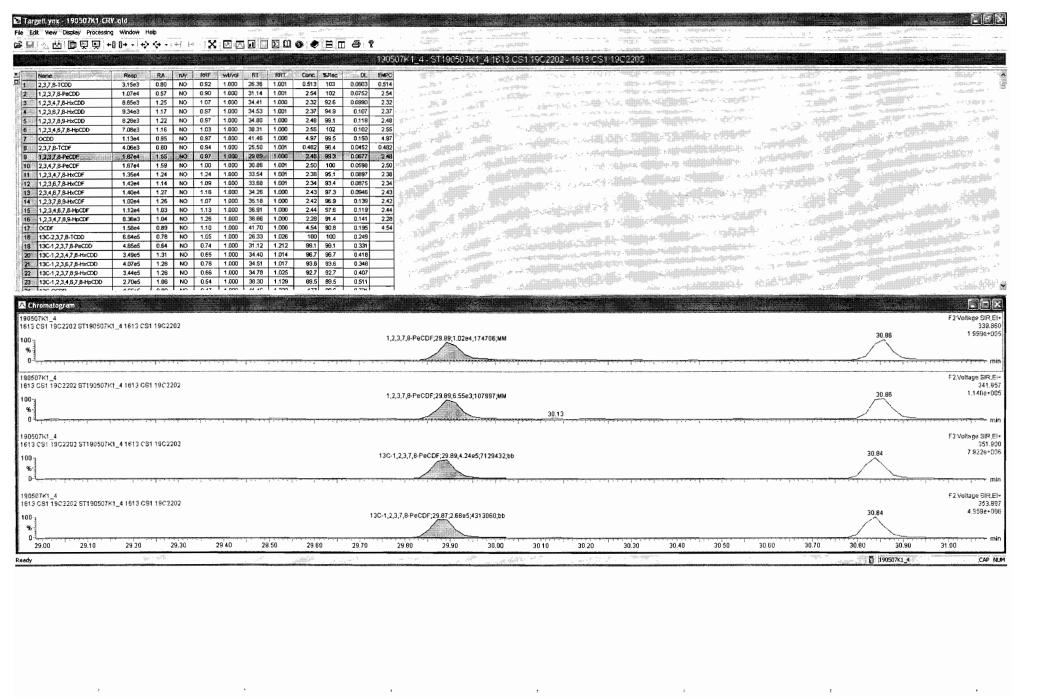
31.25

31.50

31.75

28.00

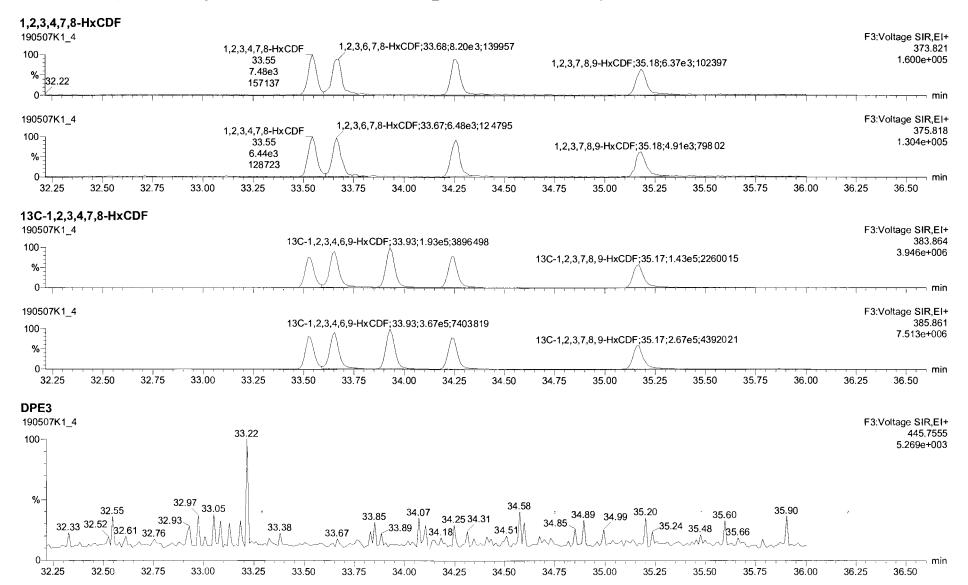
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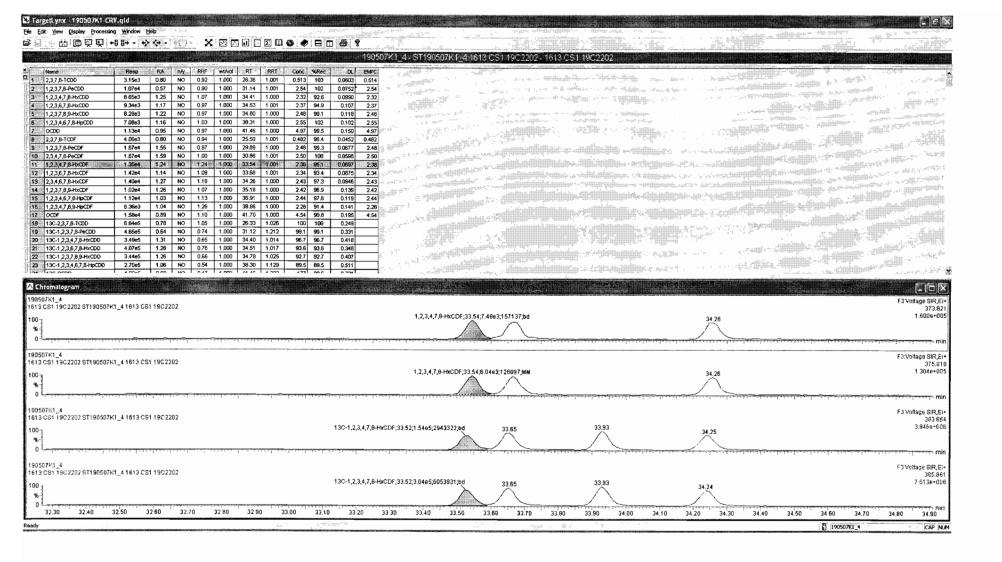


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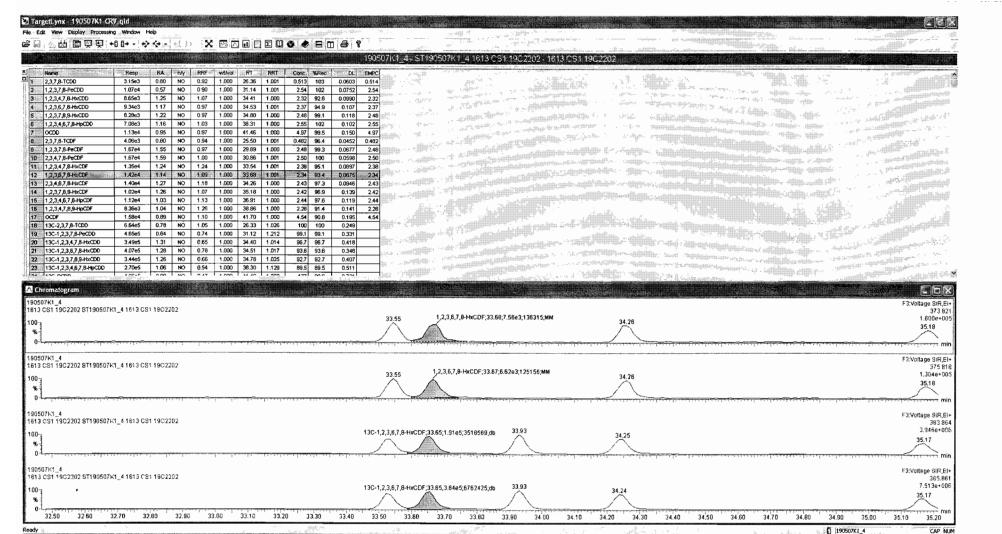
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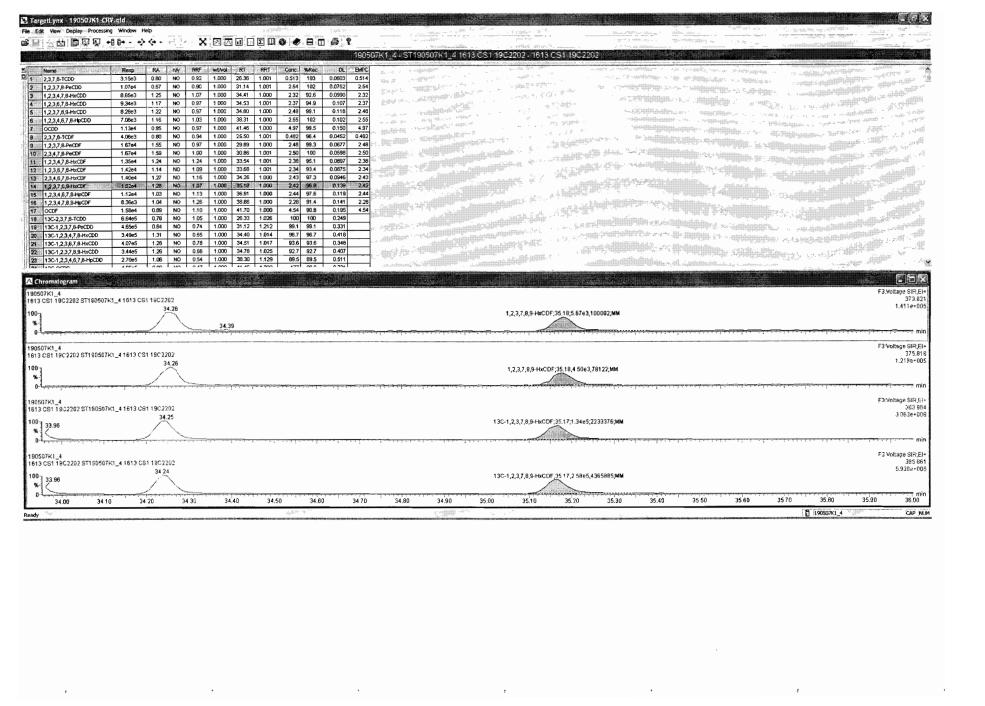




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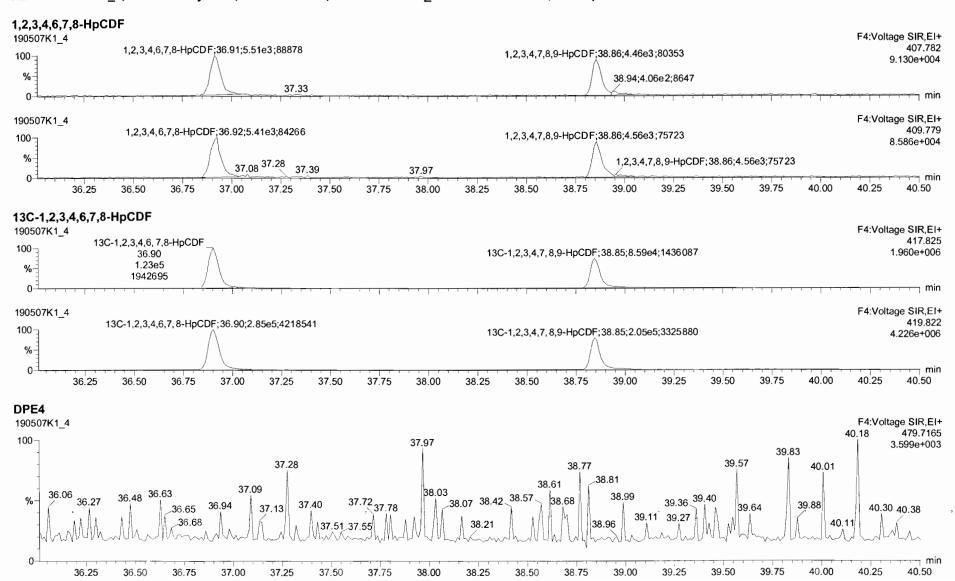


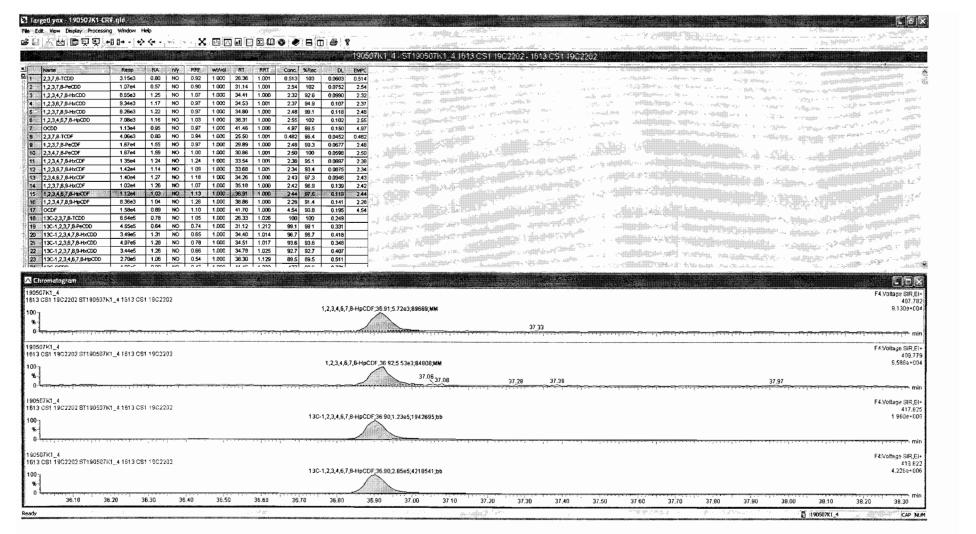
Work Order 1903648 Page 380 of 513

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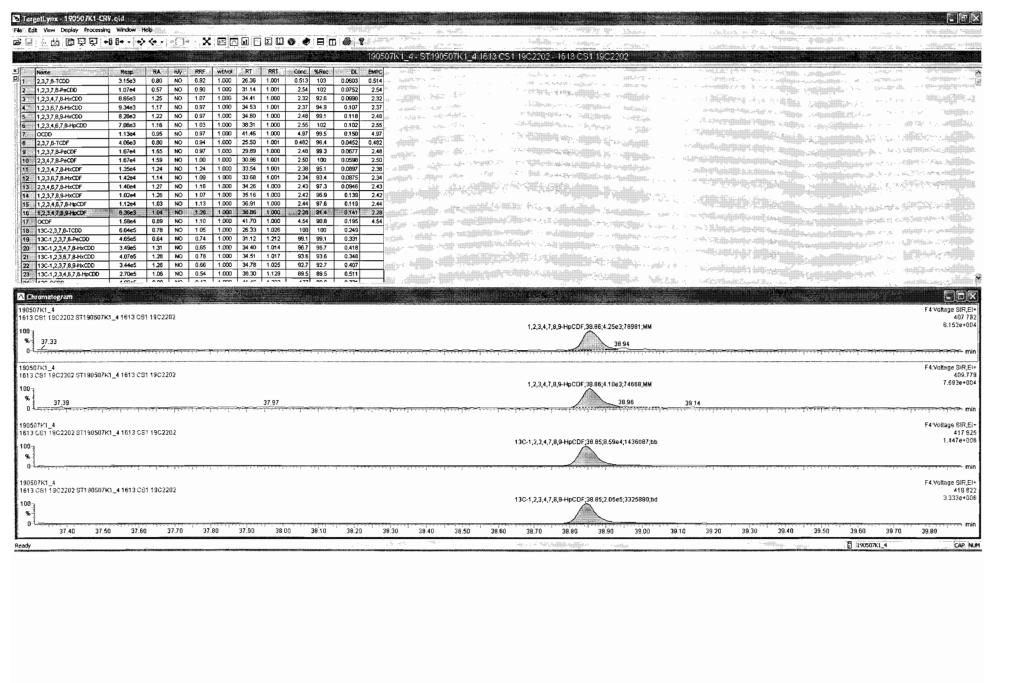
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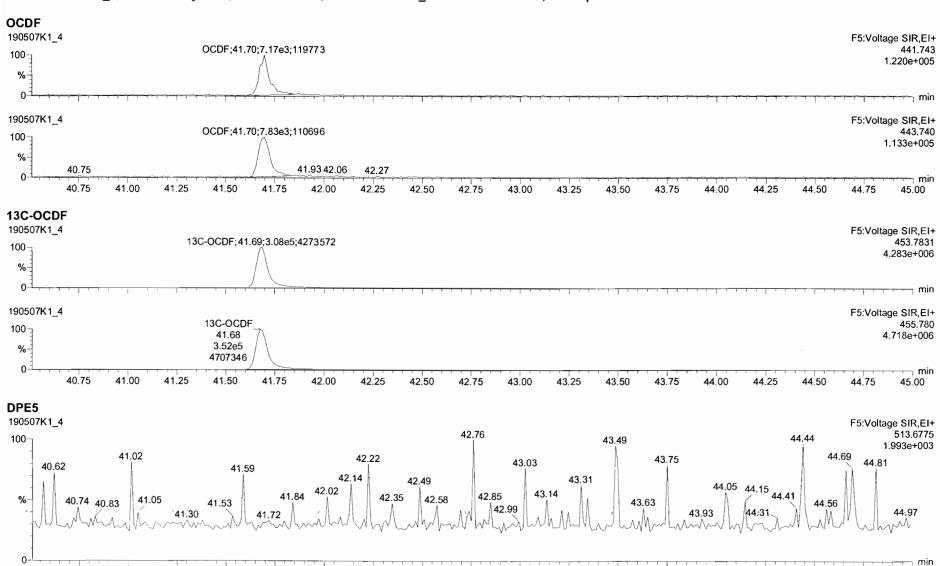
Work Order 1903648 Page 383 of 513

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Last Altered: Printed:

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

Name: 190507K1_4, Date: 07-May-2019, Time: 13:04:59, ID: ST190507K1 4 1613 CS1 19C2202, Description: 1613 CS1 19C2202



40.75

41.00

41.25

41.50

41.75

42.00

42.25

42.50

42.75

43.00

43.25

43.50

45.00

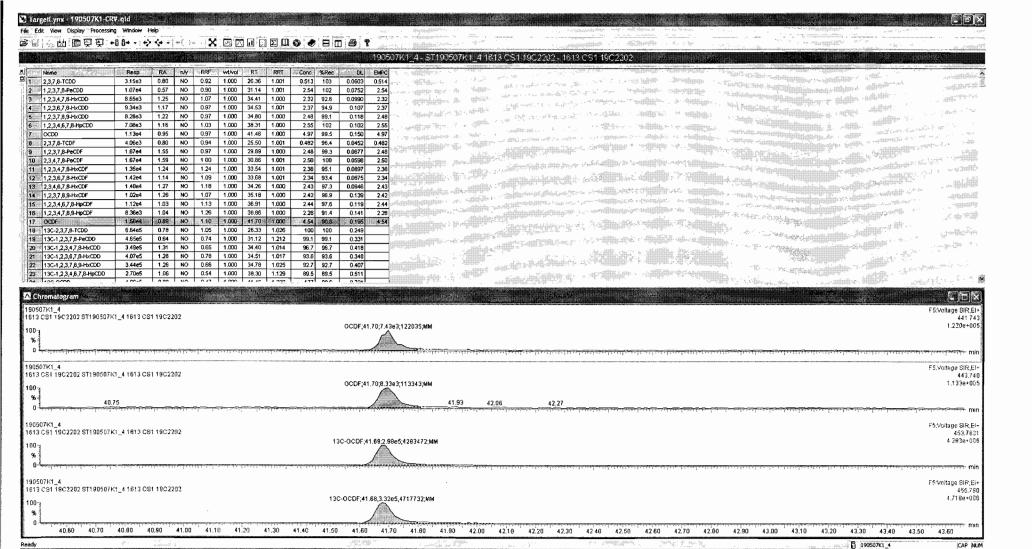
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43.75

44.00

44.25

44.50

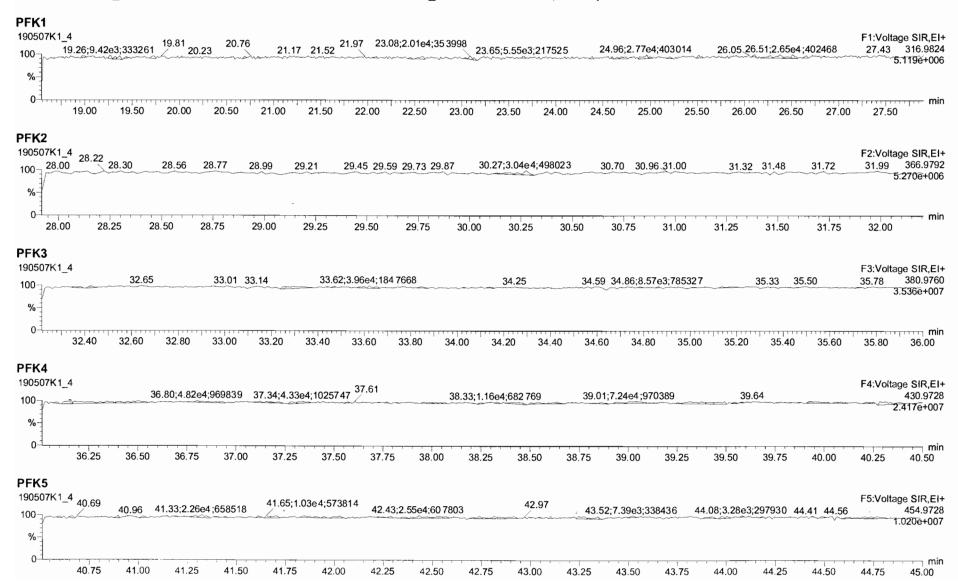


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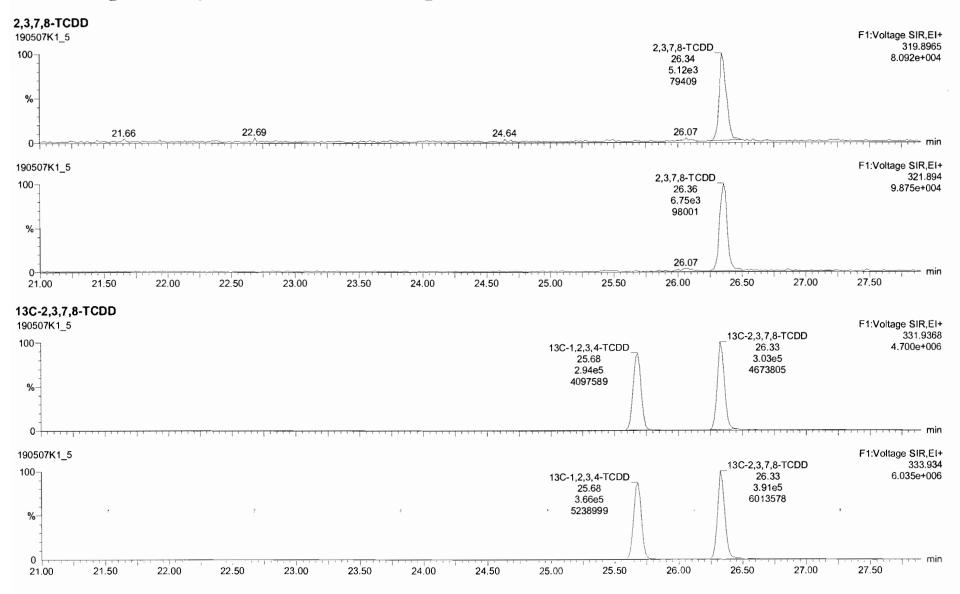
Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

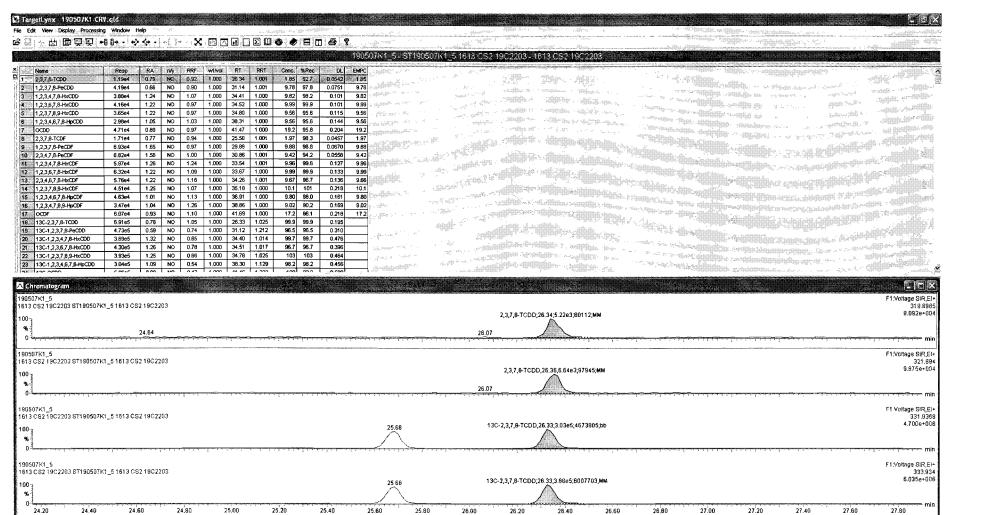


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Ready

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[] 190507K1_5

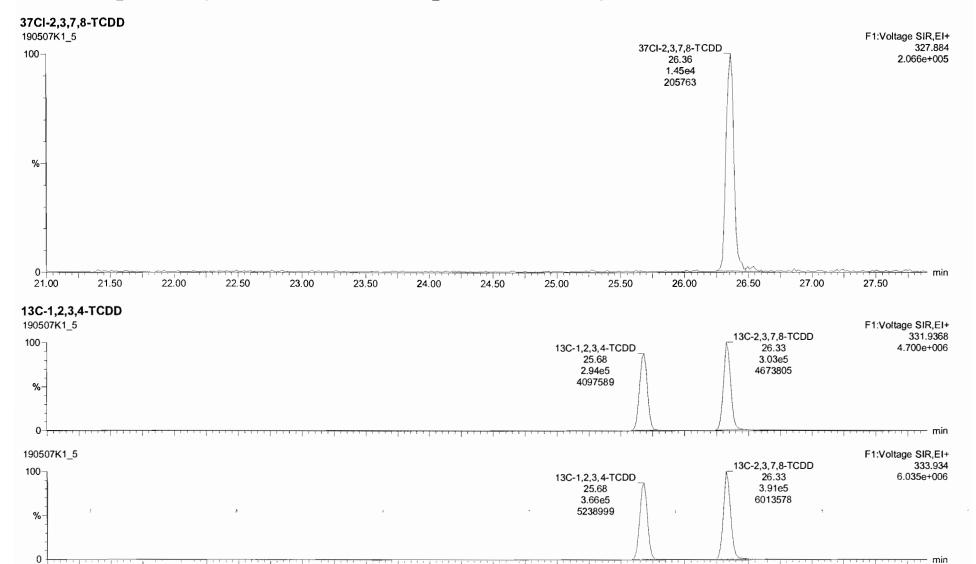
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Last Altered: Printed:

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

Name: 190507K1_5, Date: 07-May-2019, Time: 13:51:47, ID: ST190507K1_5 1613 CS2 19C2203, Description: 1613 CS2 19C2203



24.50

25.00

25.**5**0

26.00

26.50

27.00

21.50

21.00

22.00

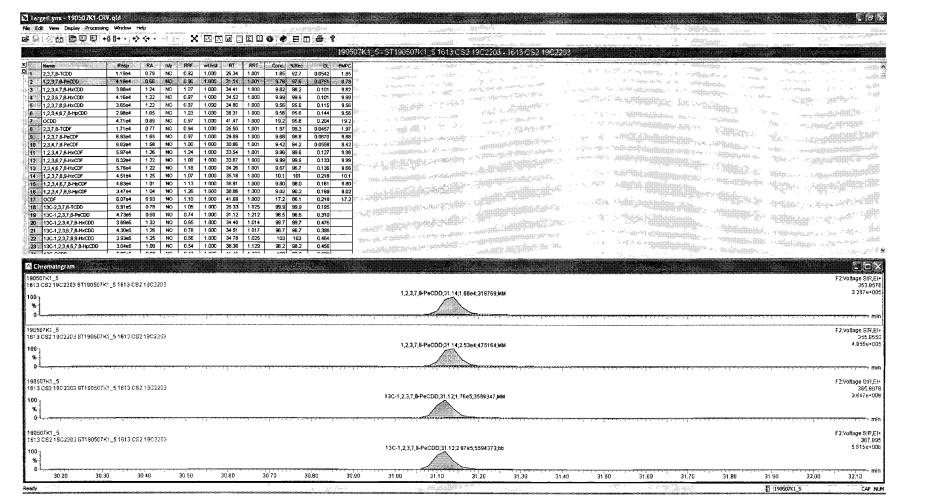
22.50

23.00

23.50

24.00

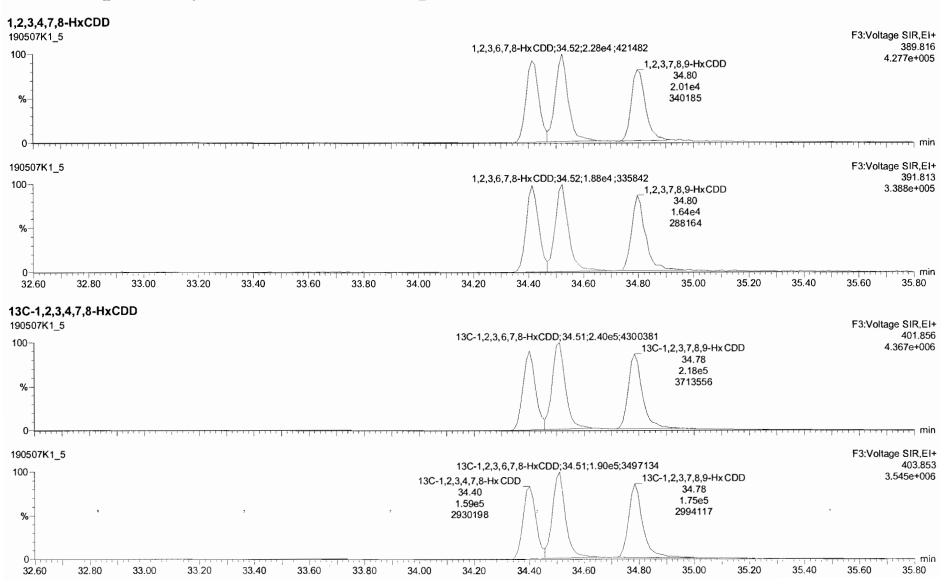
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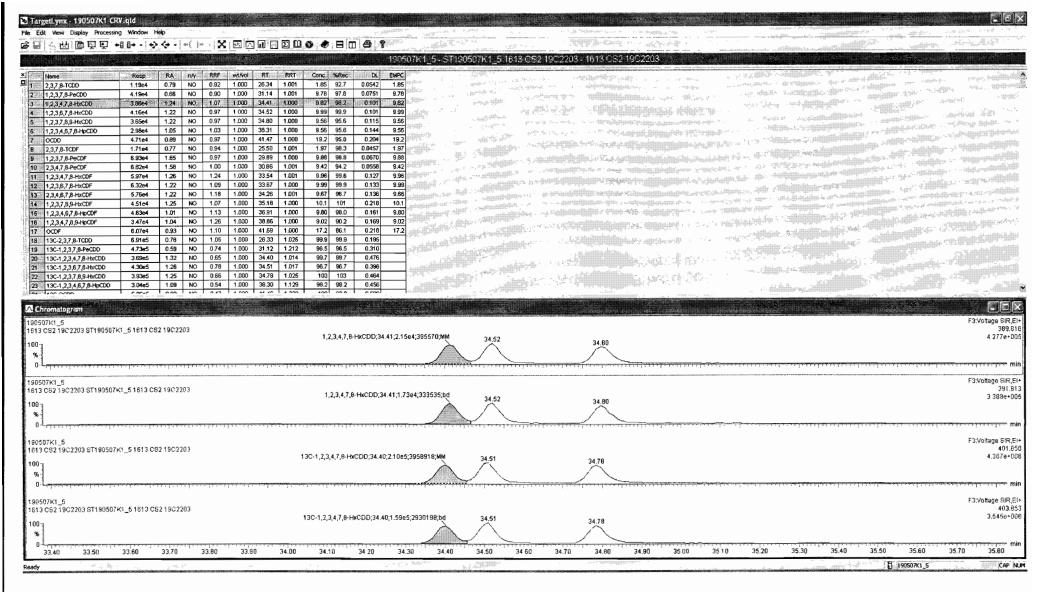


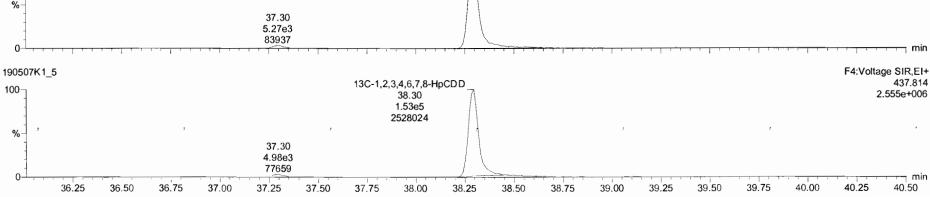
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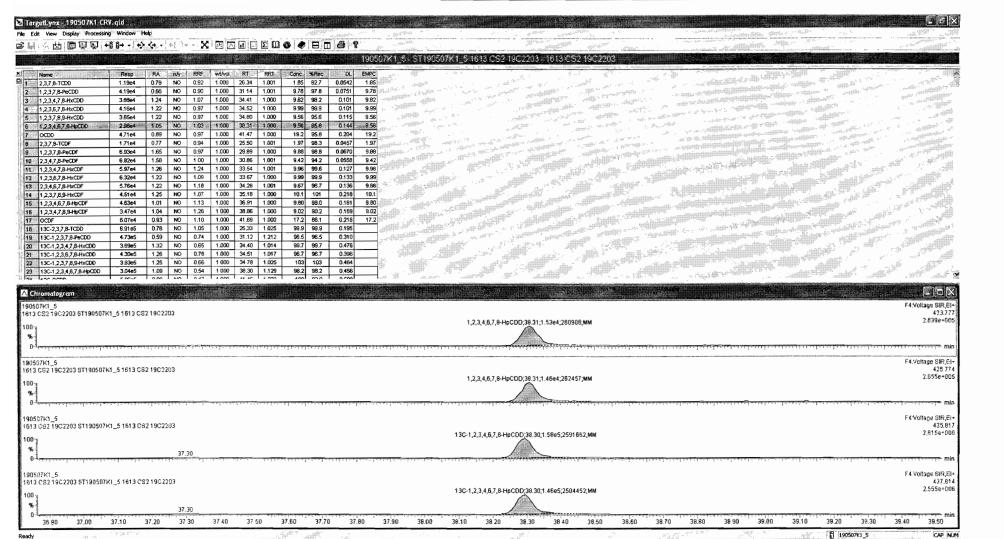
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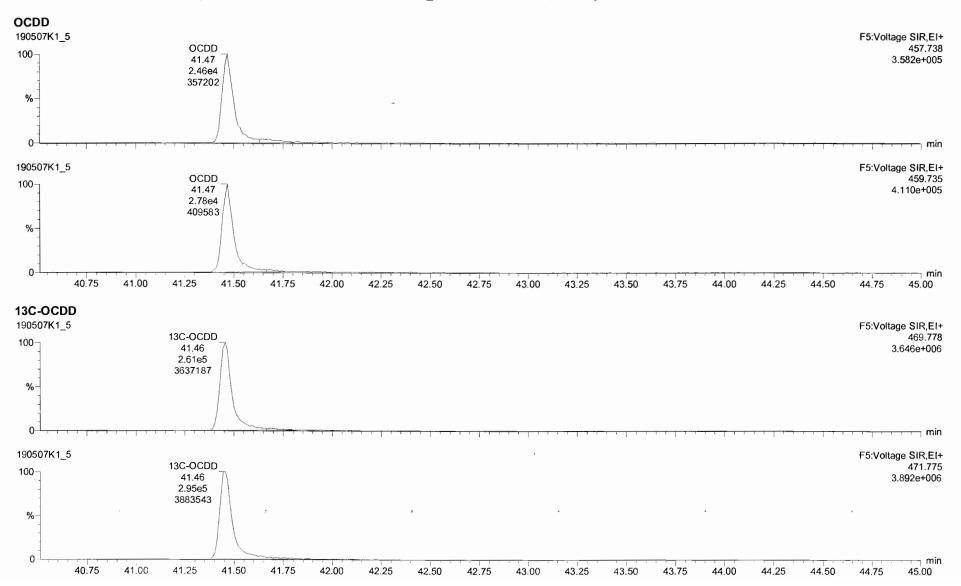


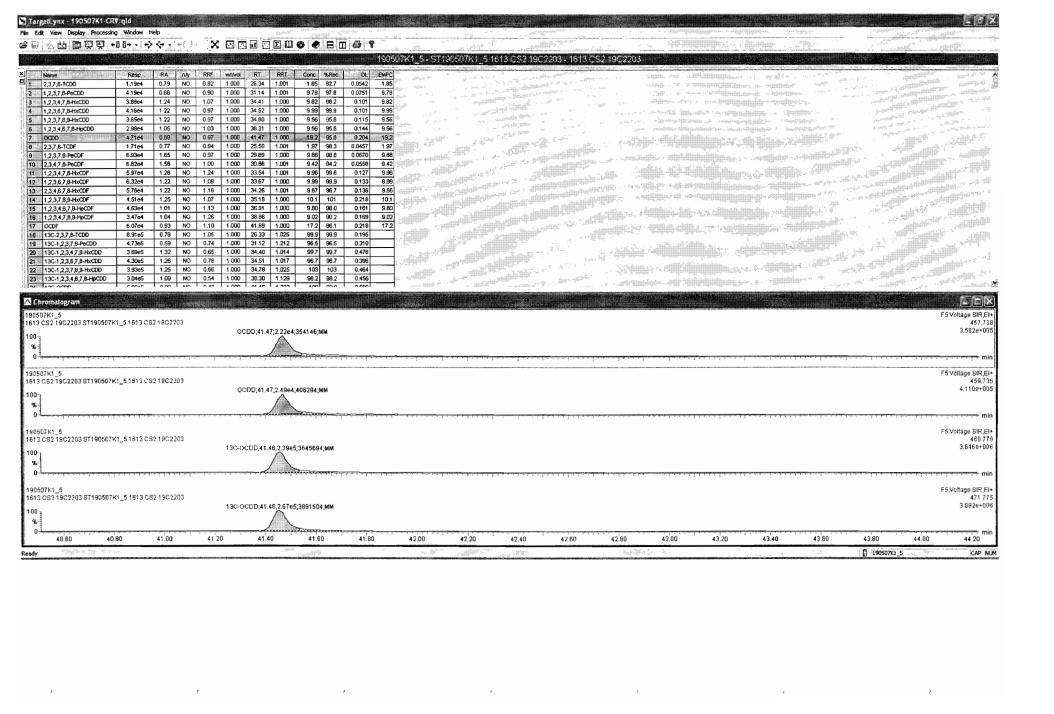




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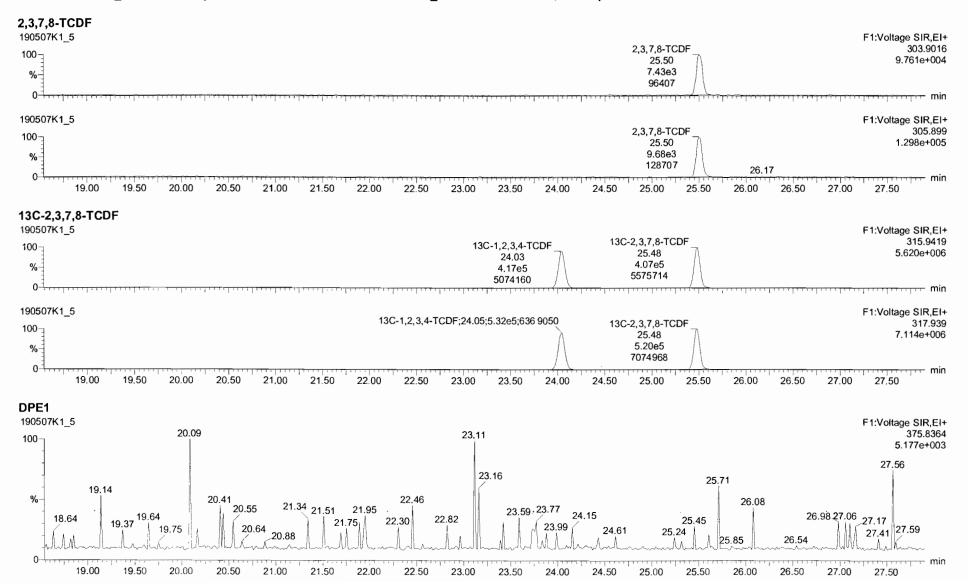




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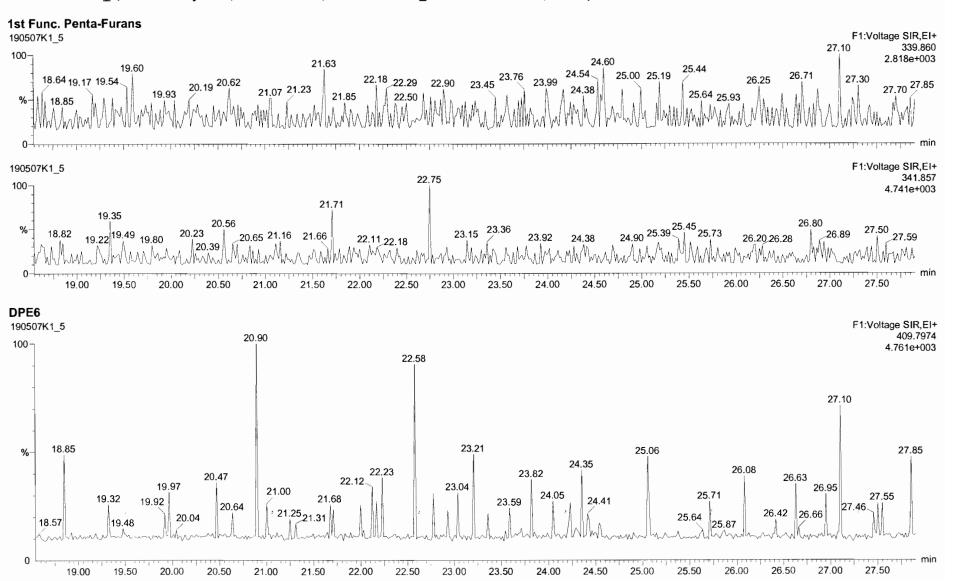
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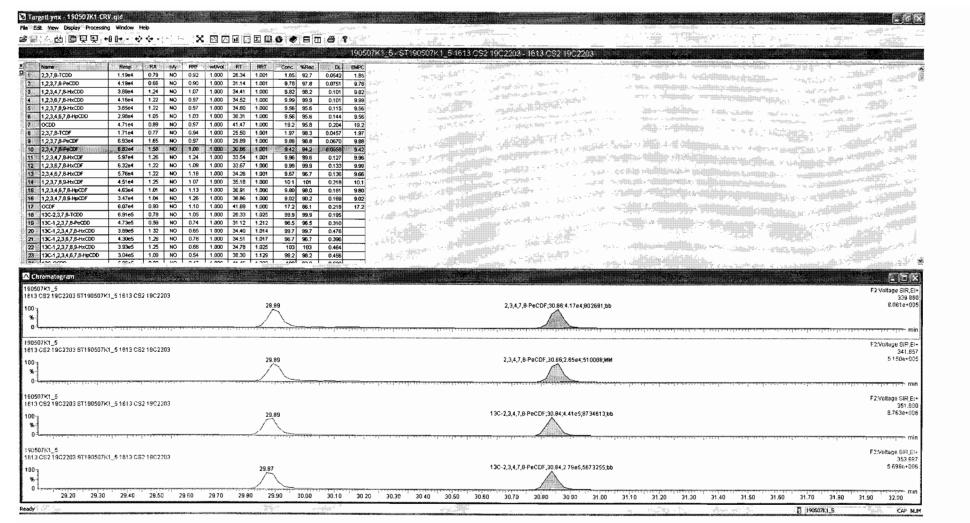
Last Altered: Printed: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



Untitled

Last Altered: Printed: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

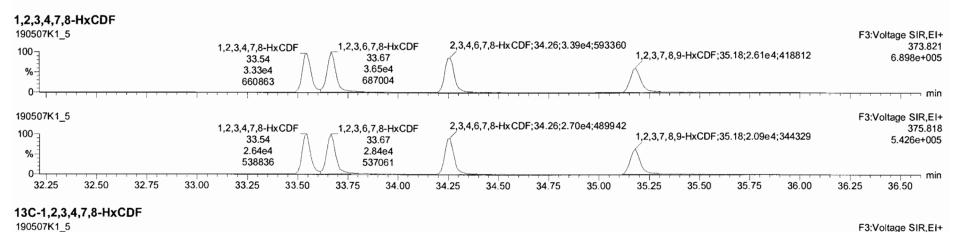


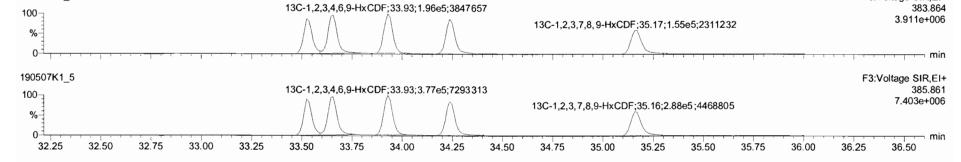


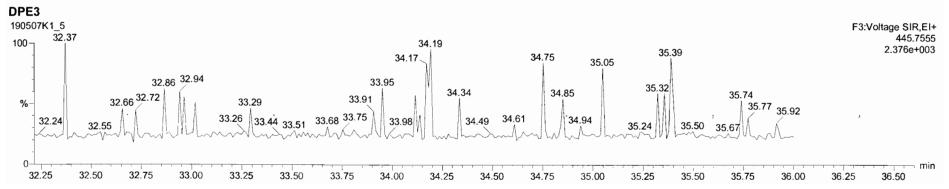
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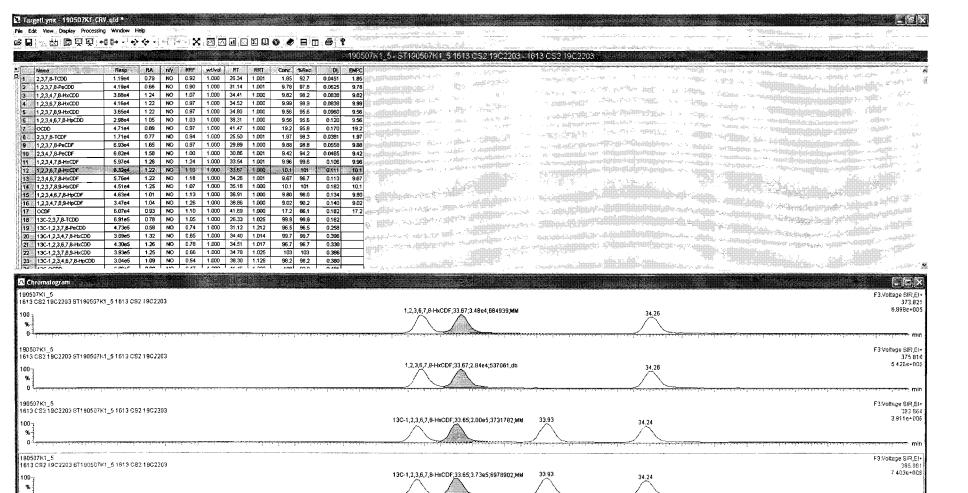
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32.40

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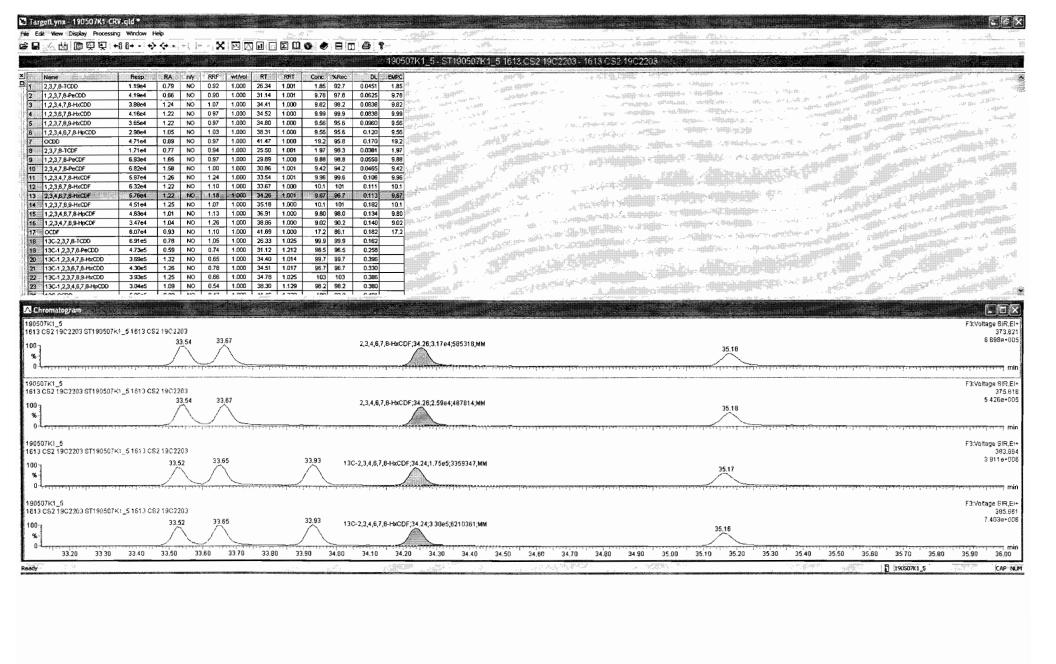
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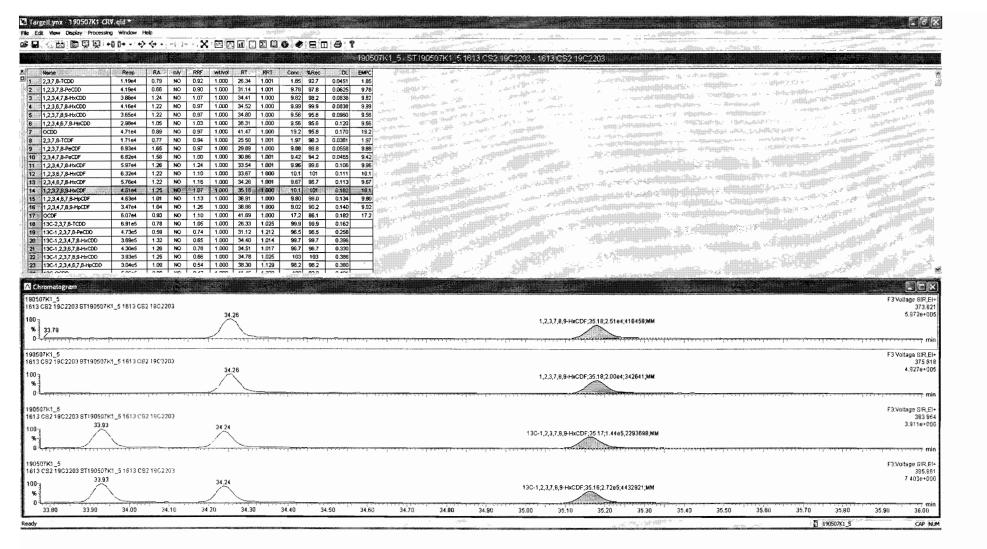
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Work Order 1903648 Page 403 of 513



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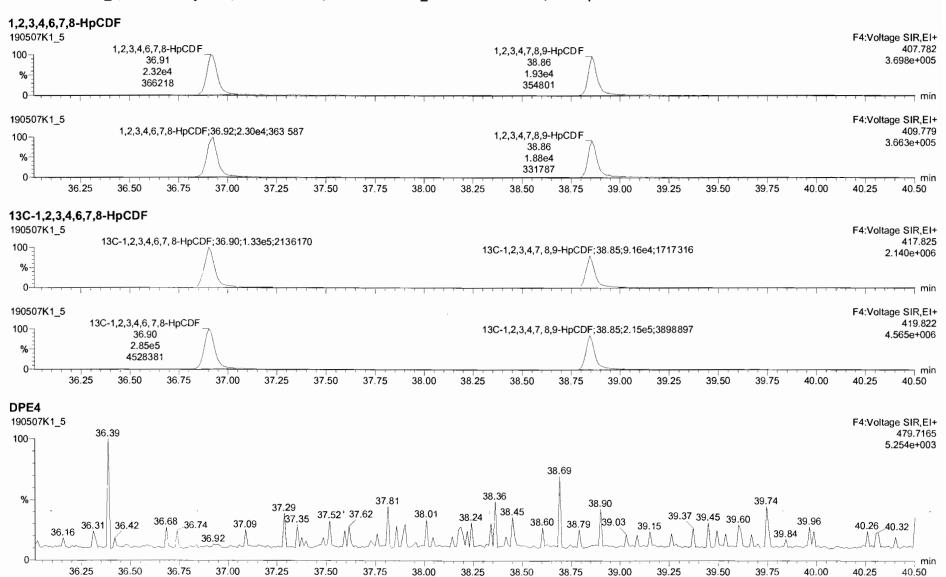


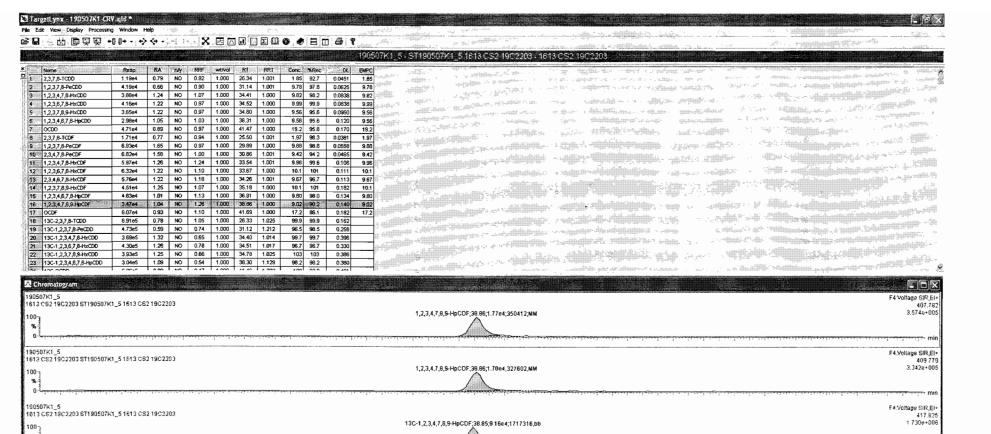
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38 90

39 00

39.10

39.20

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39.70

39.80

40.00

190507K1_5

38.80

190507K1 5

37.50

1613 C82 19C2203 ST190507K1_51613 CS2 19C2203

37.70

37 80

37.90

38,00

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38 20

38.30

38 40

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38.70

37.60

Work Order 1903648 Page 407 of 513

F4 Voltage SIR,EI

3 91 26+006

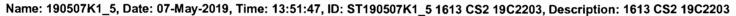
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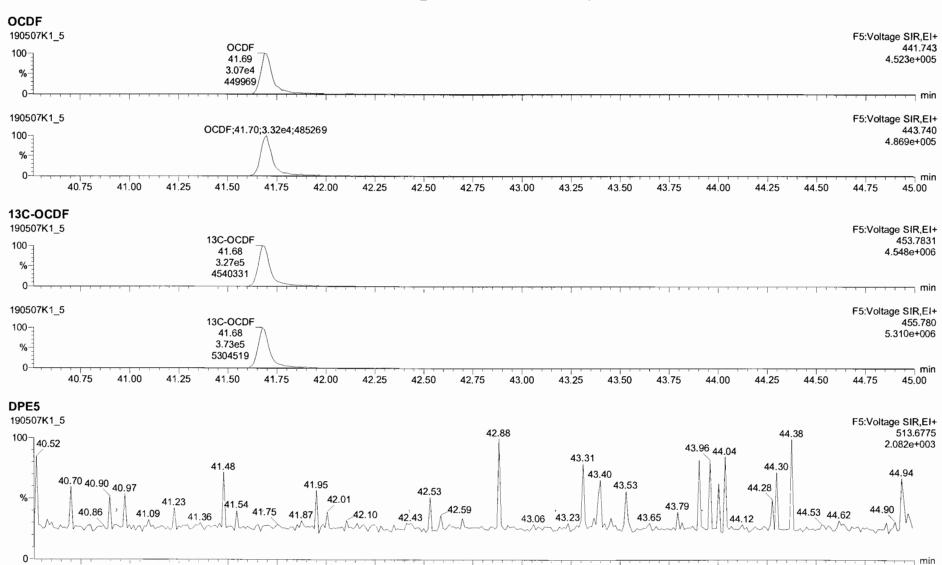
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41.00

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41.50

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42.00

42.25

42.50

42.75

43.00

43.25

43.50

43.75

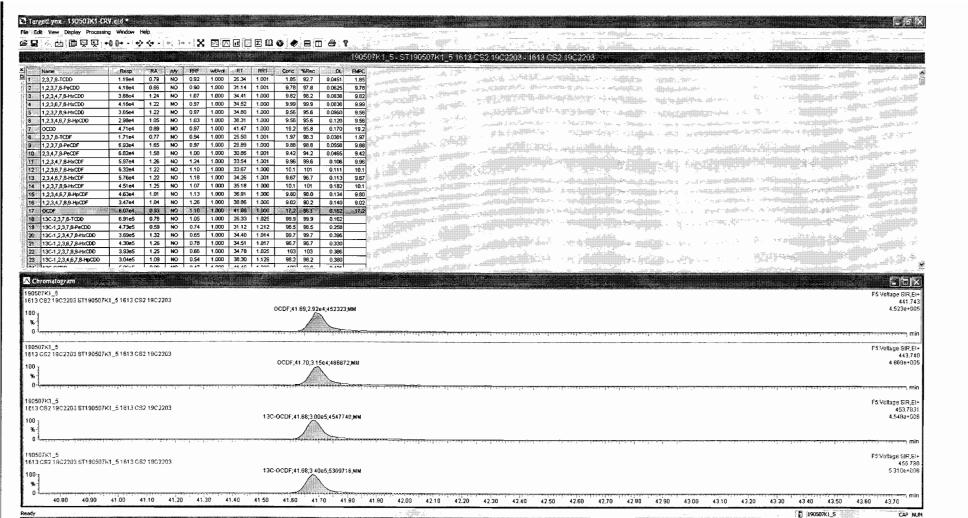
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45.00

44.75

44.50

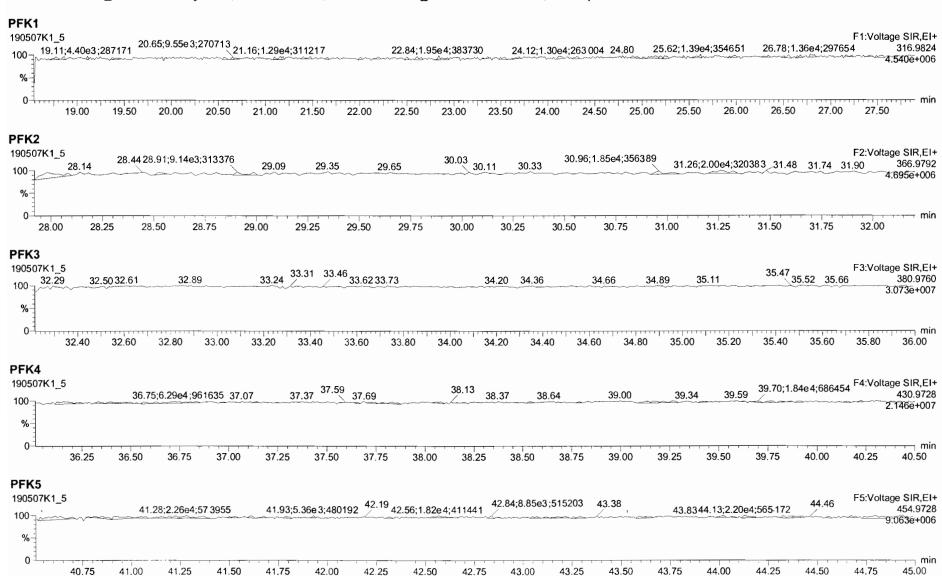


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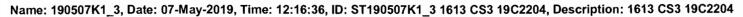
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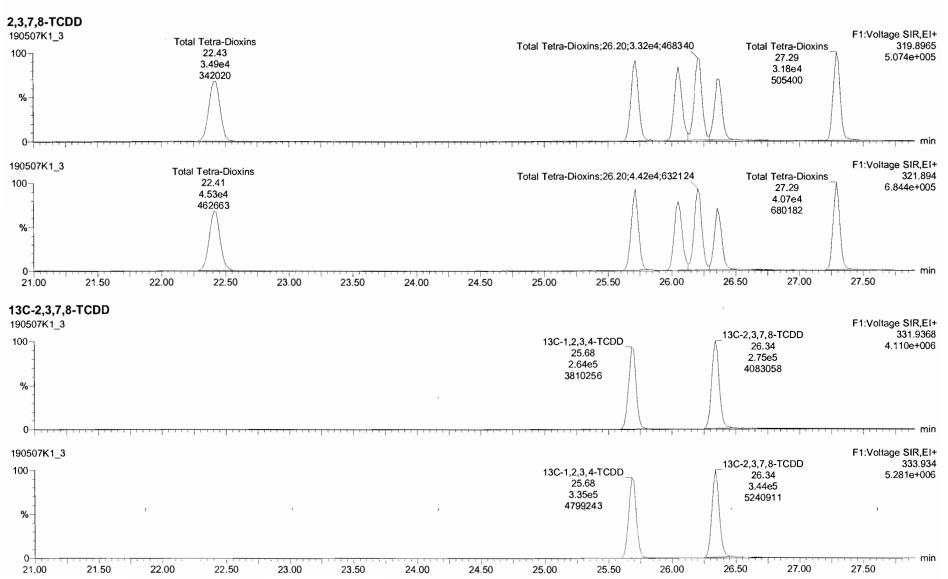


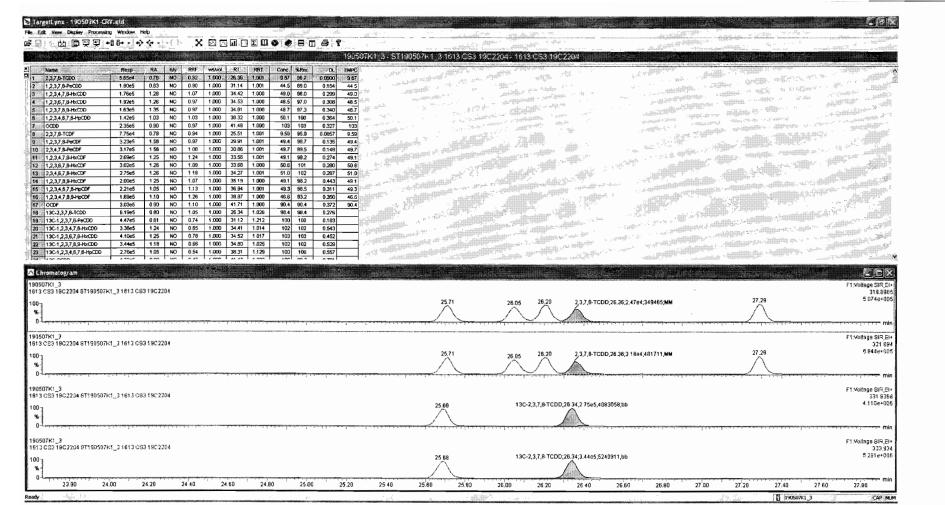
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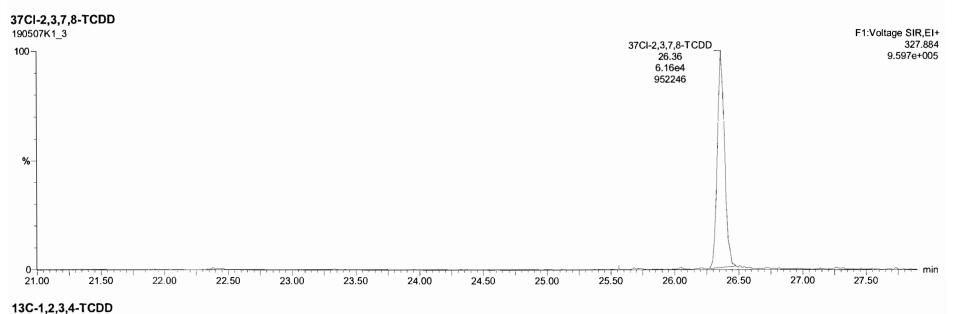
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Vista Analytical Laboratory

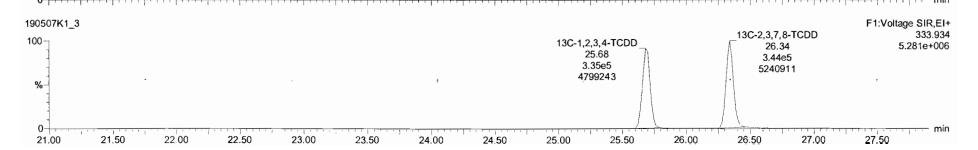
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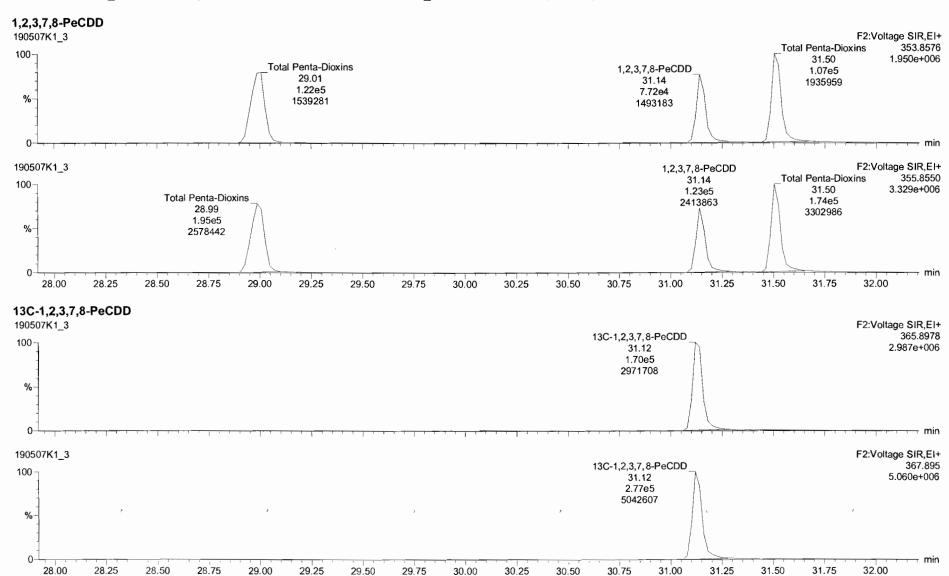


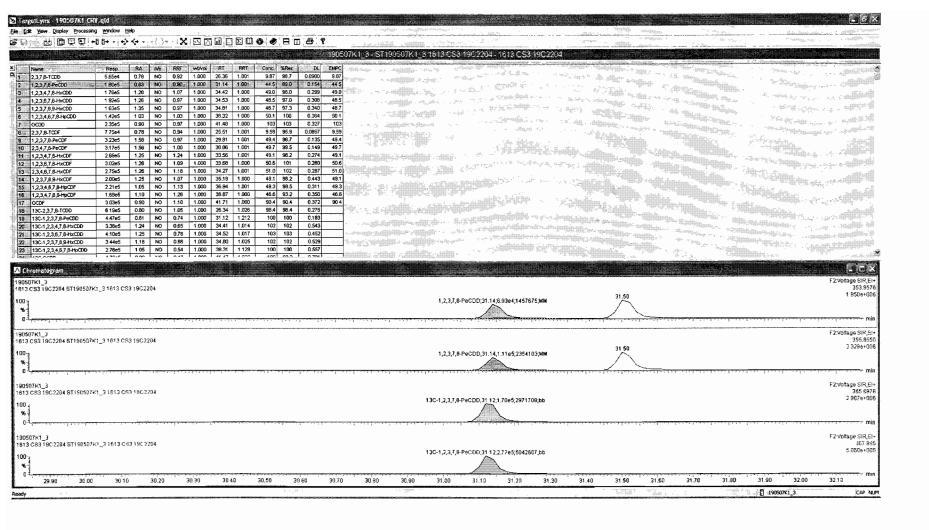
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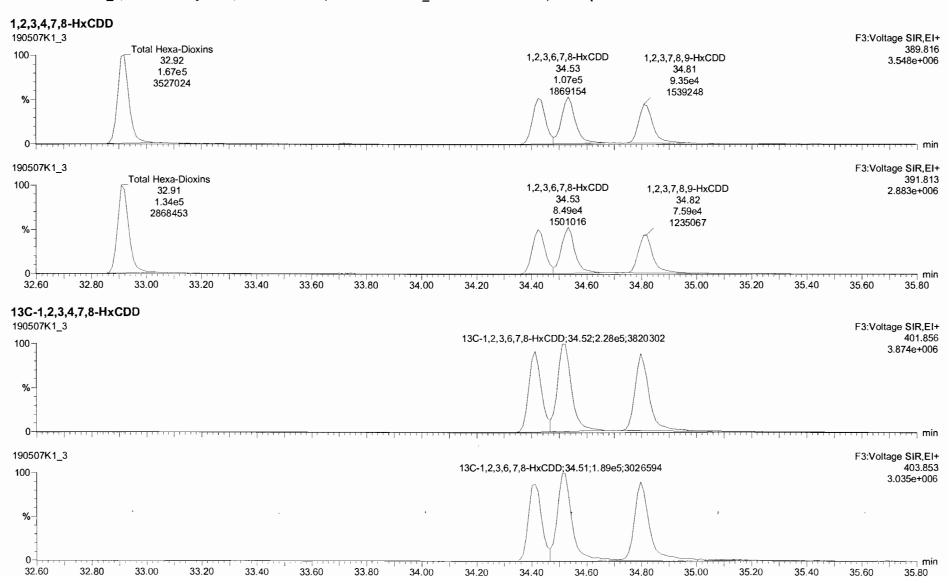


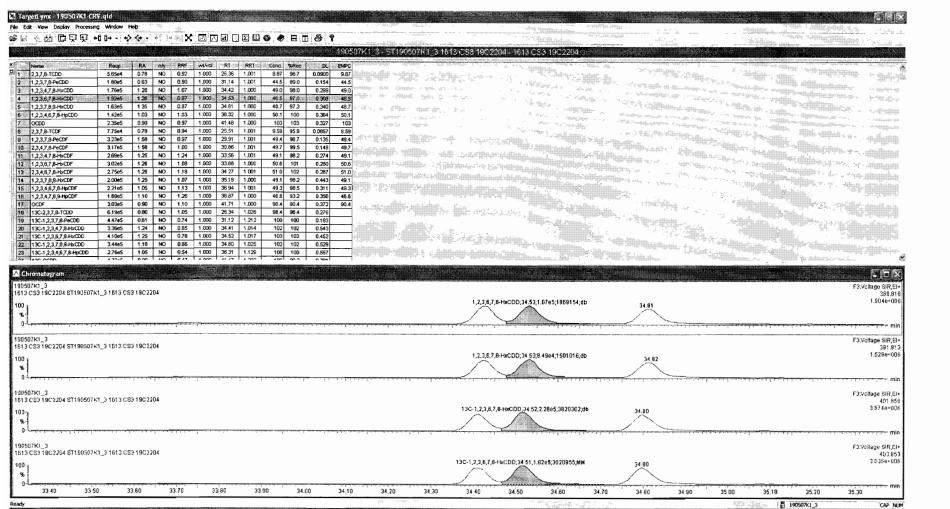


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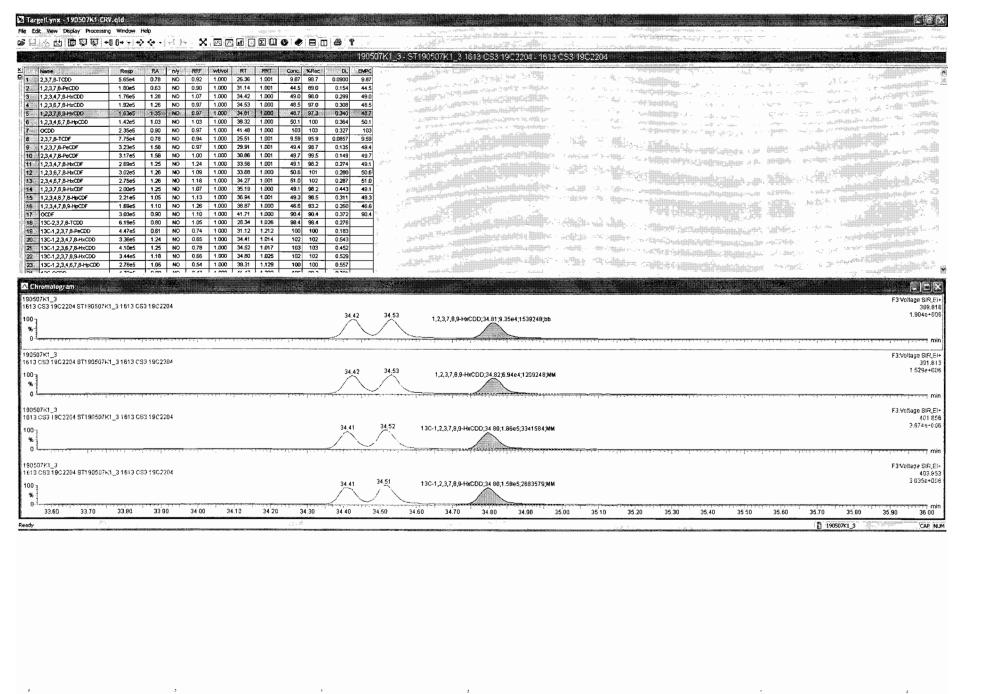
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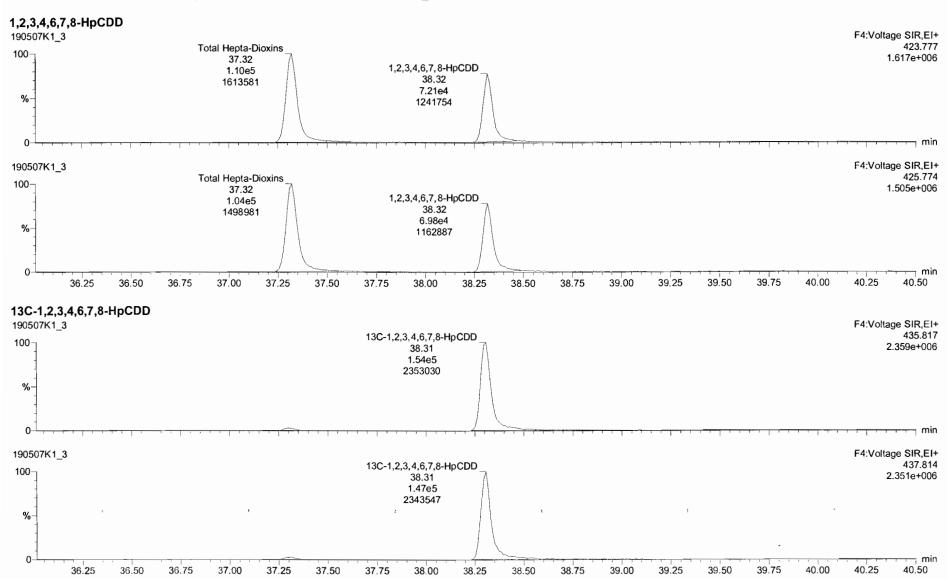
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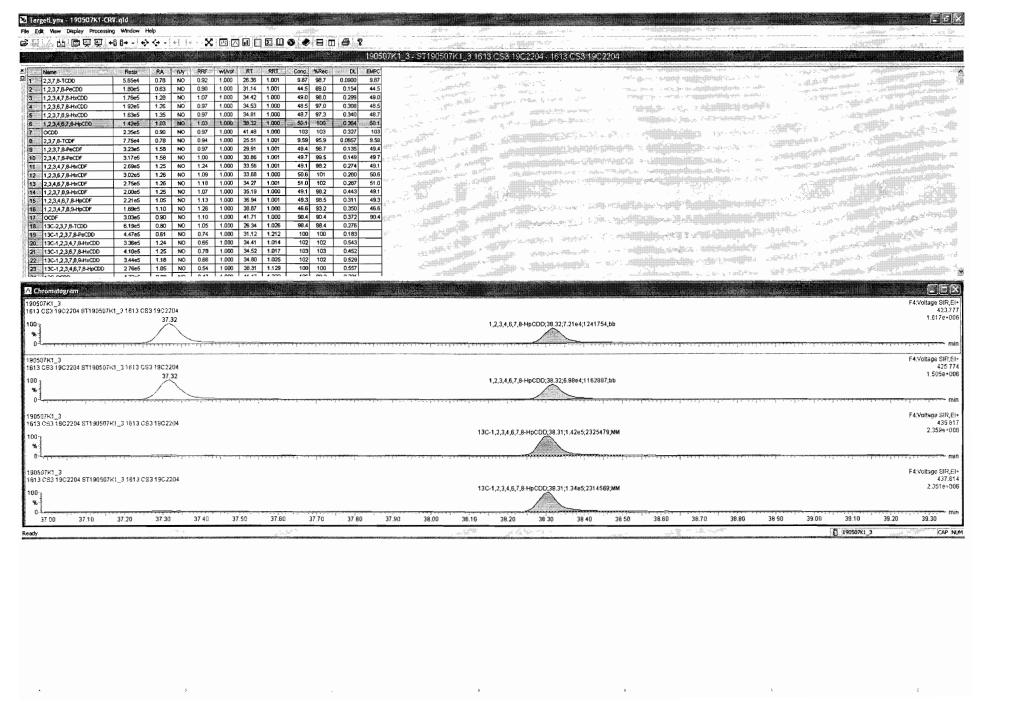


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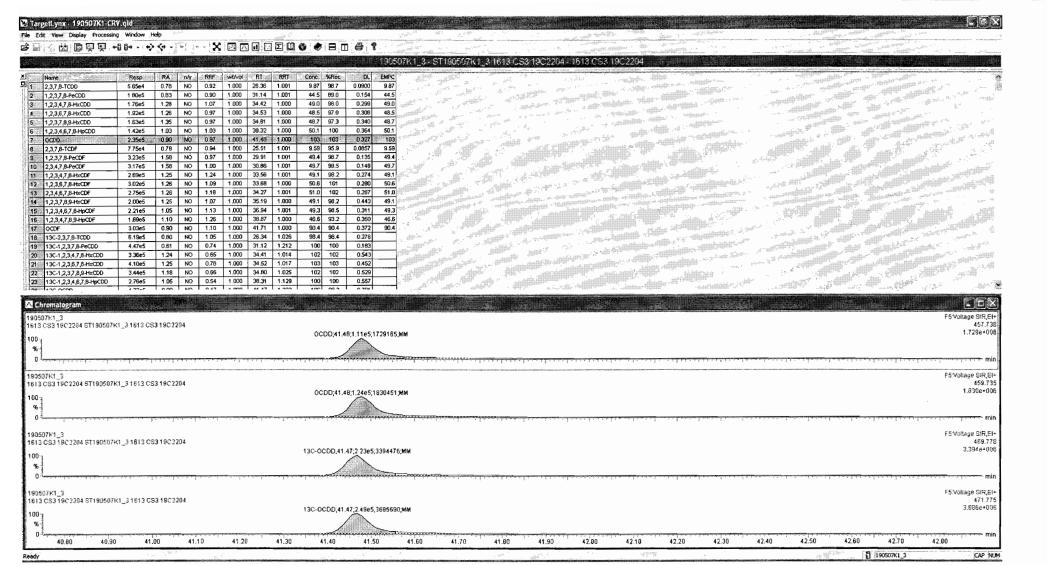
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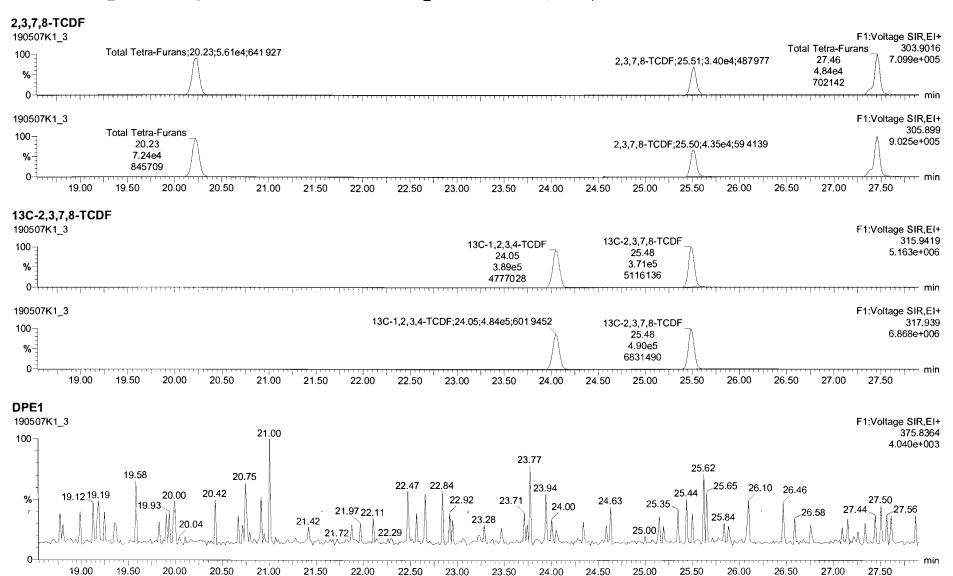


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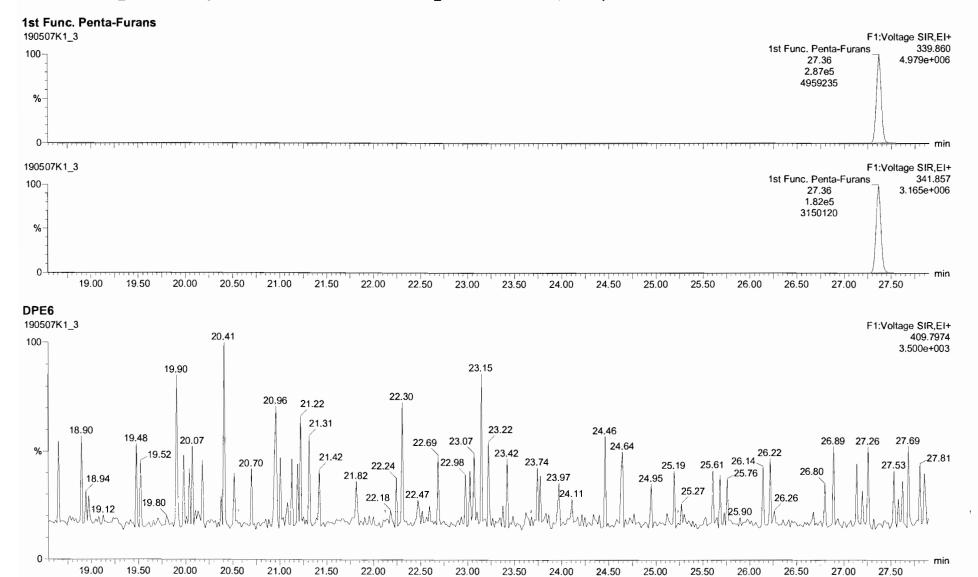
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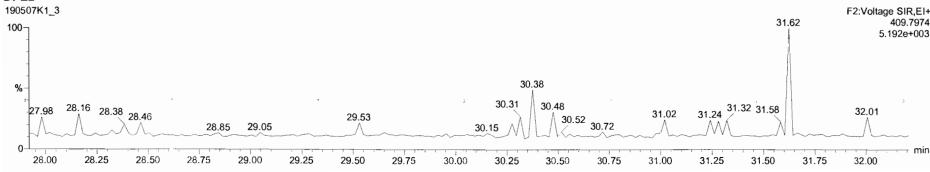
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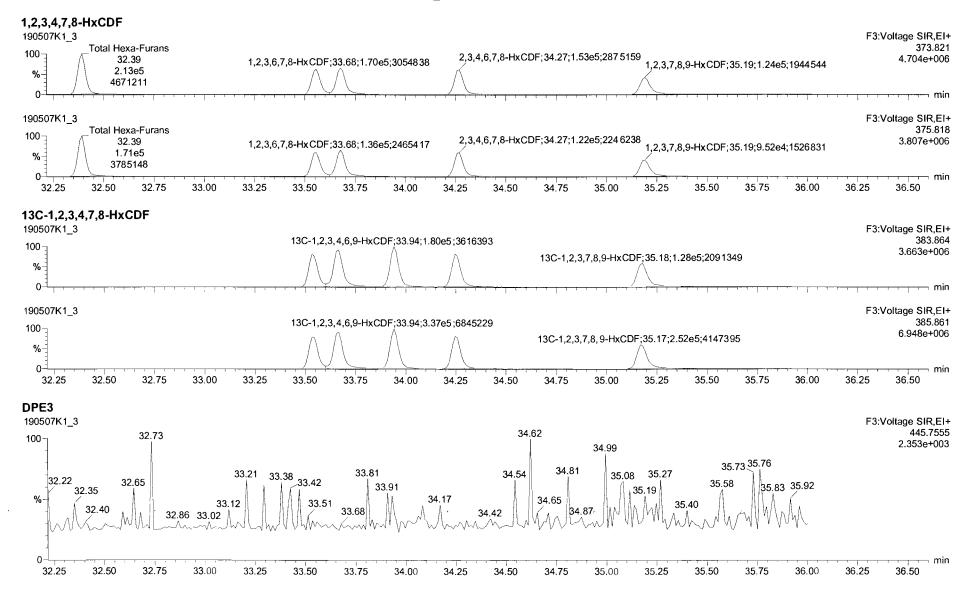


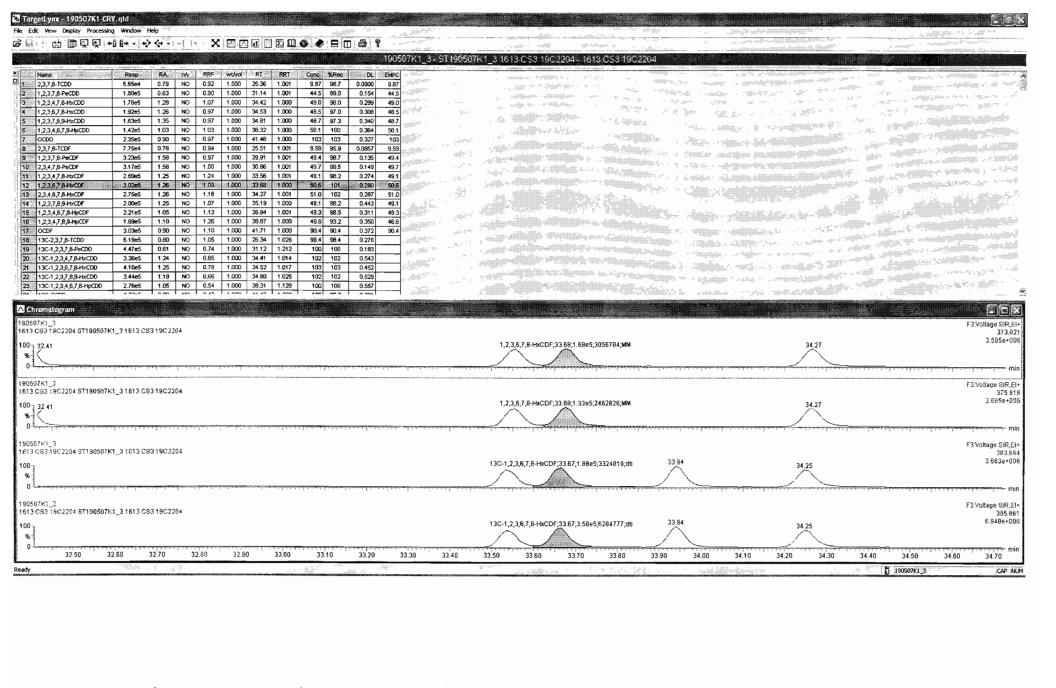


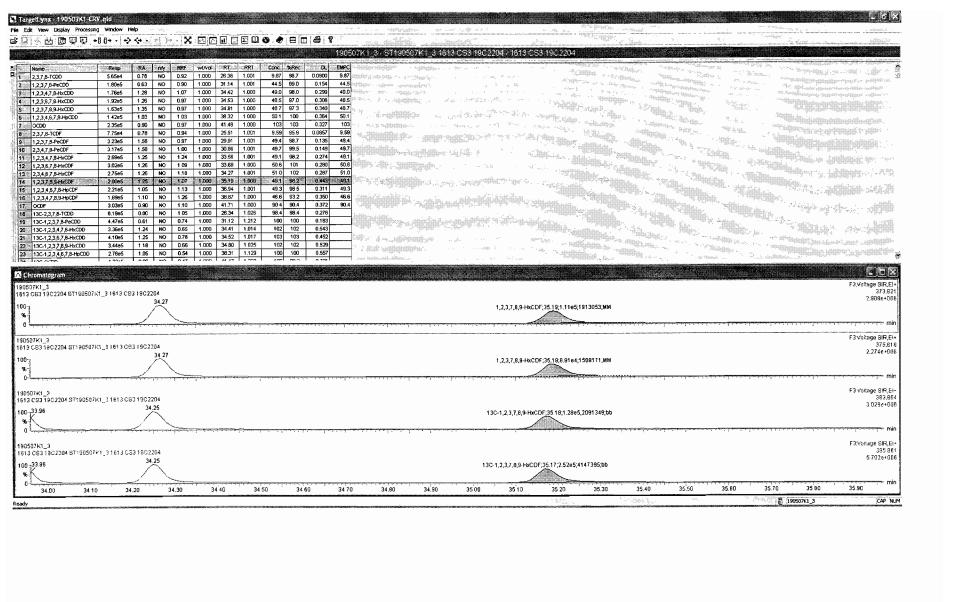
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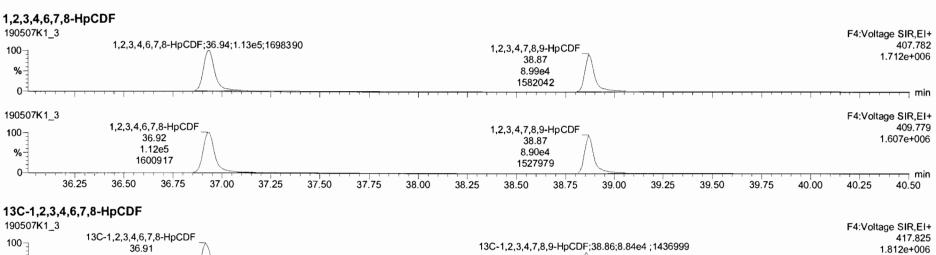


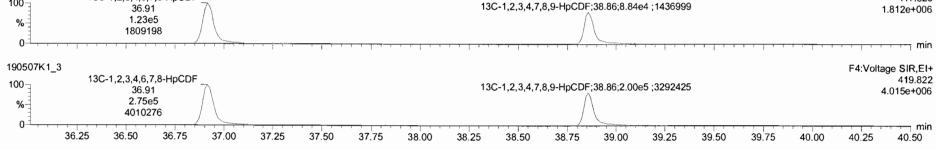
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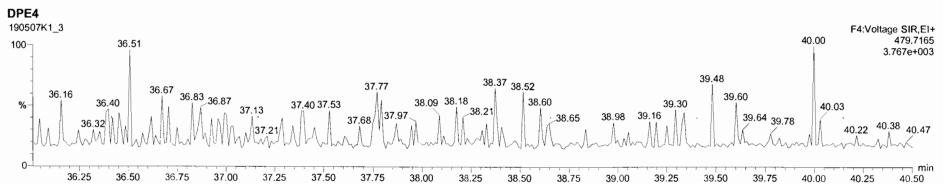
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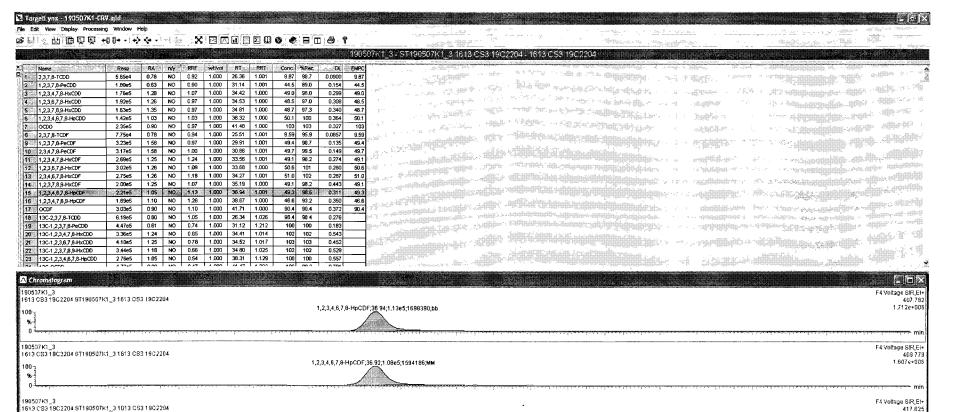
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36.90

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1613 CS3 19C2204 ST190507K1_3 1613 CS3 19C2204

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36.10

Work Order 1903648 Page 430 of 513

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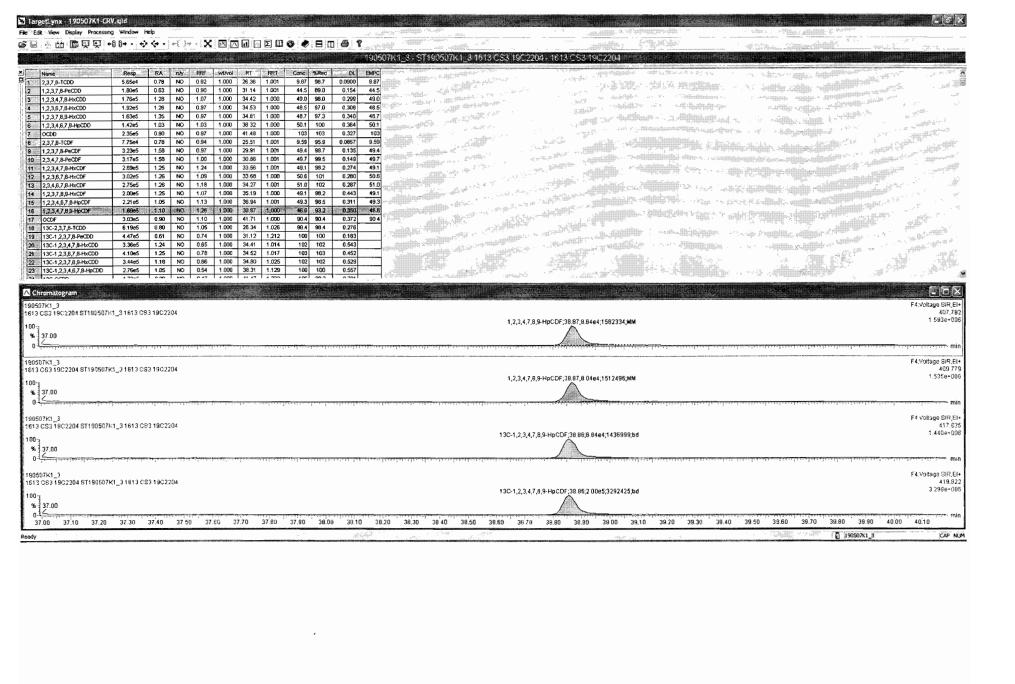
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CAP NUM

4 015e+008

F4 Voltage SIR,EI+

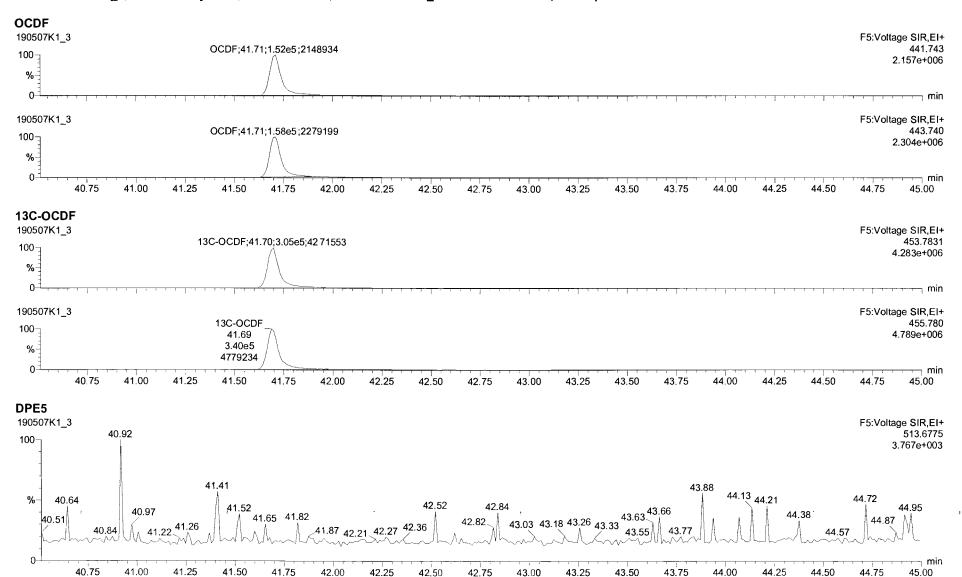
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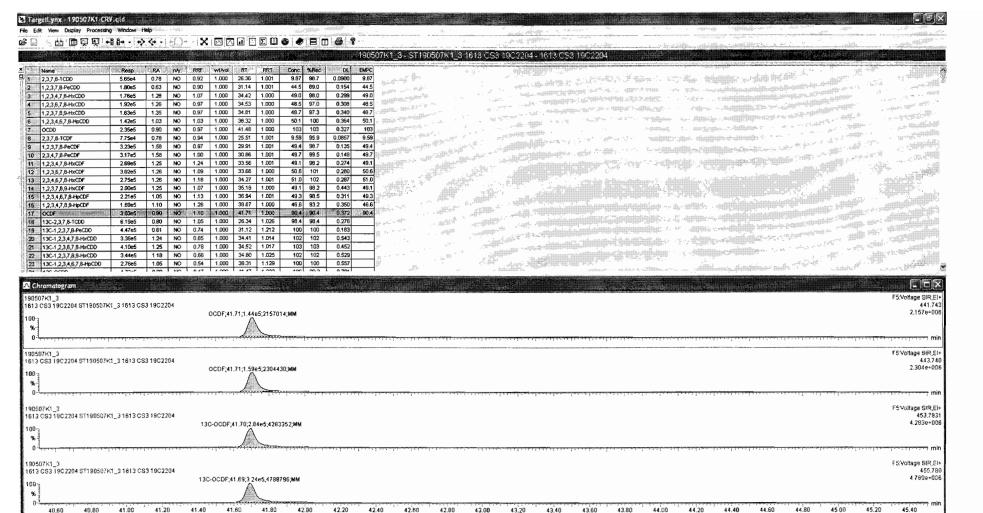


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Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time





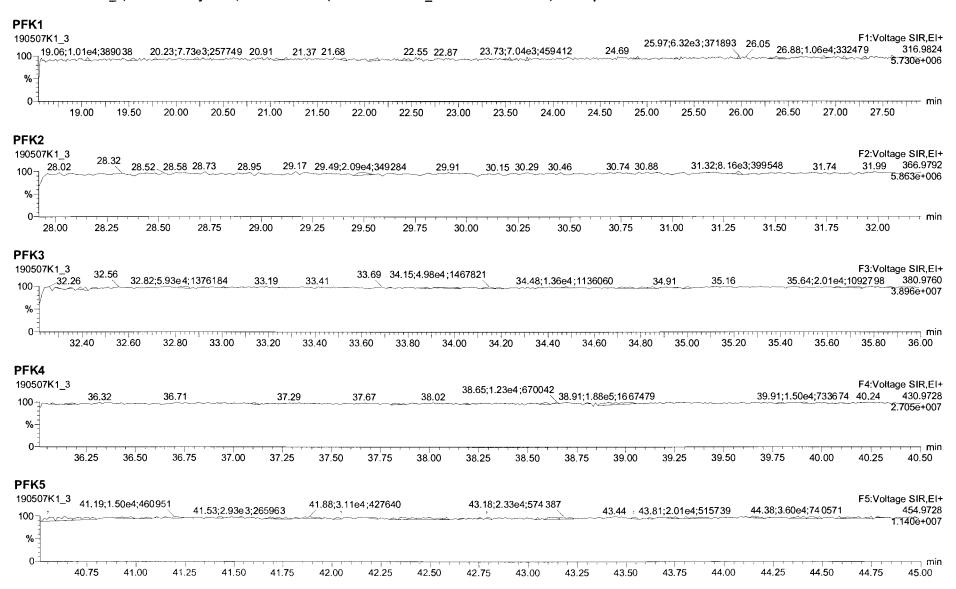
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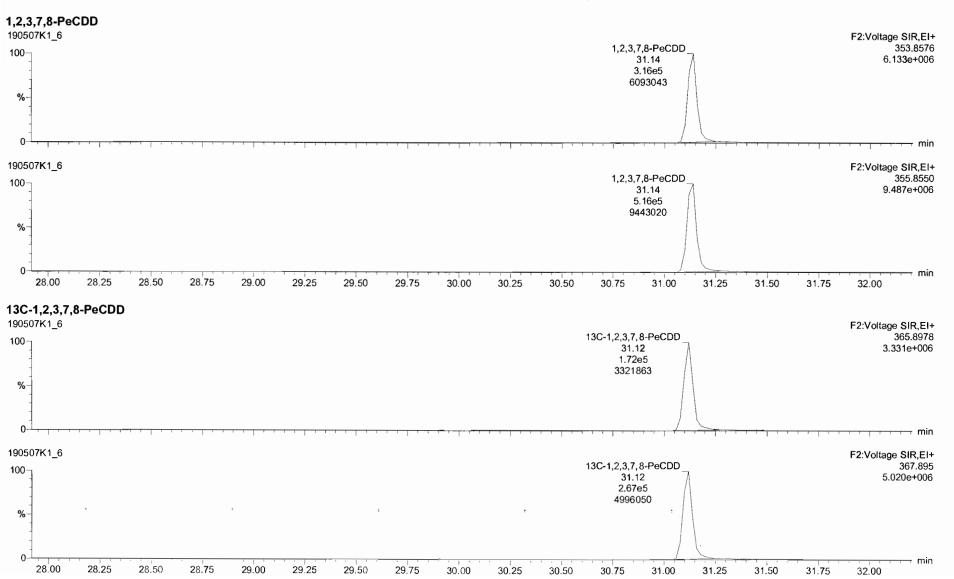
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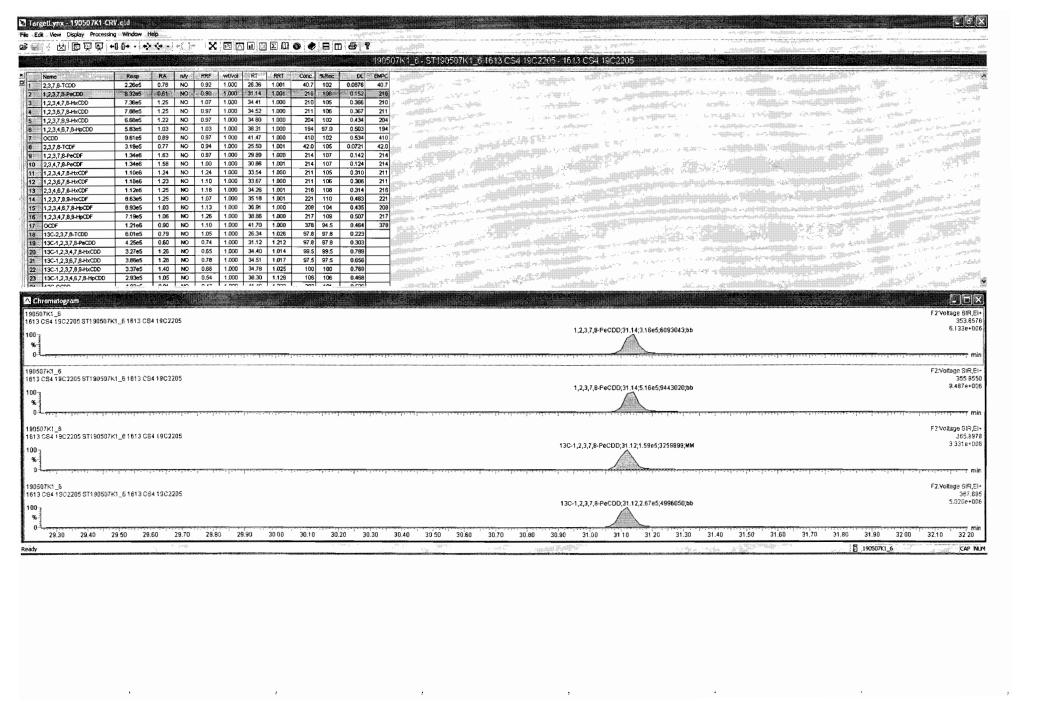
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Quantify Sample Report Vista Analytical Laboratory

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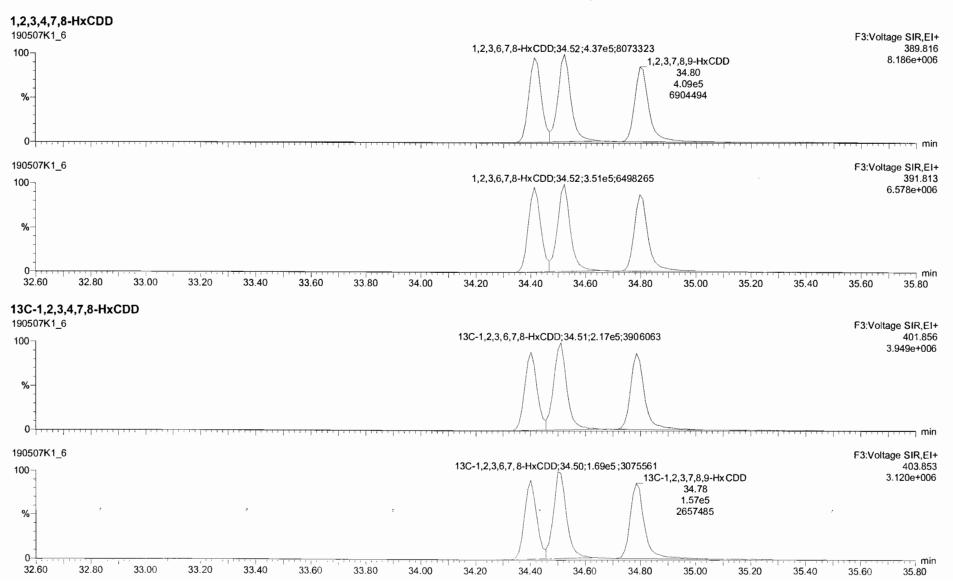


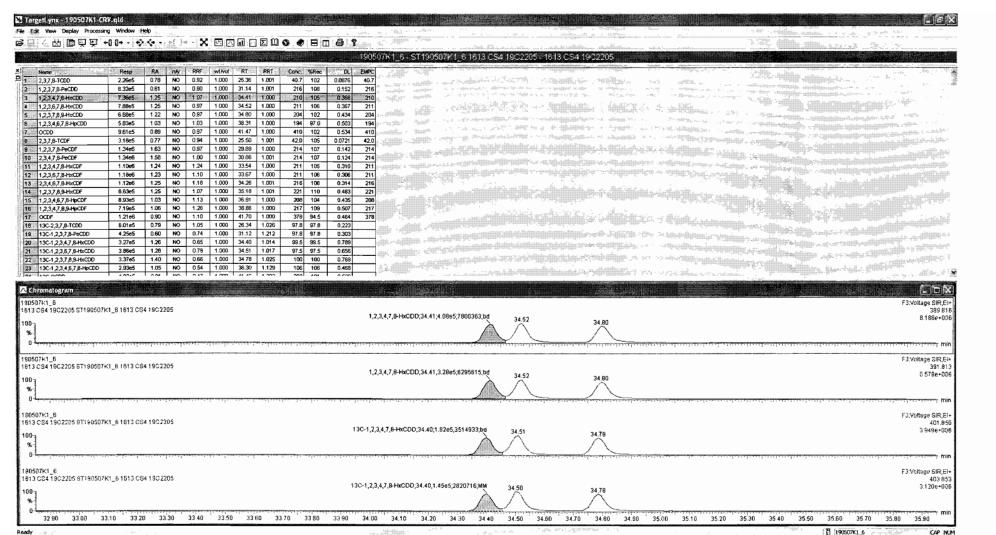
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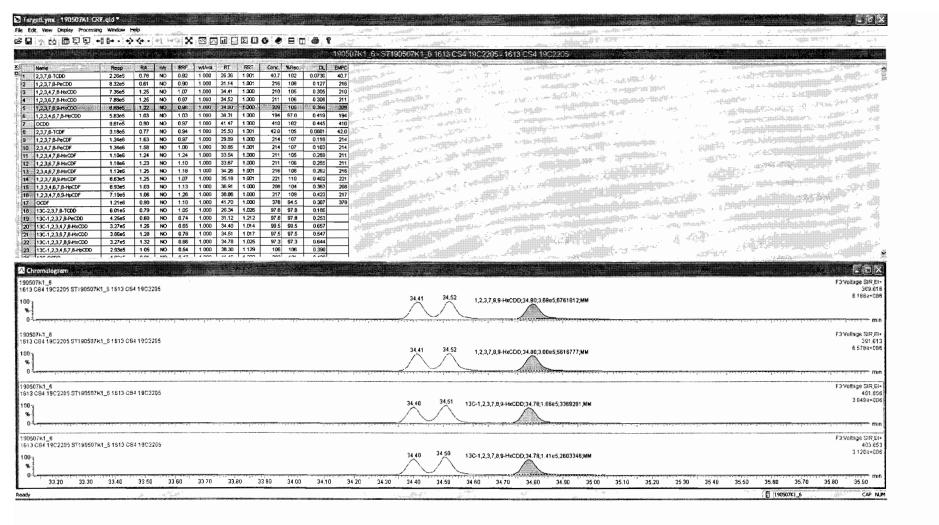
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Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time





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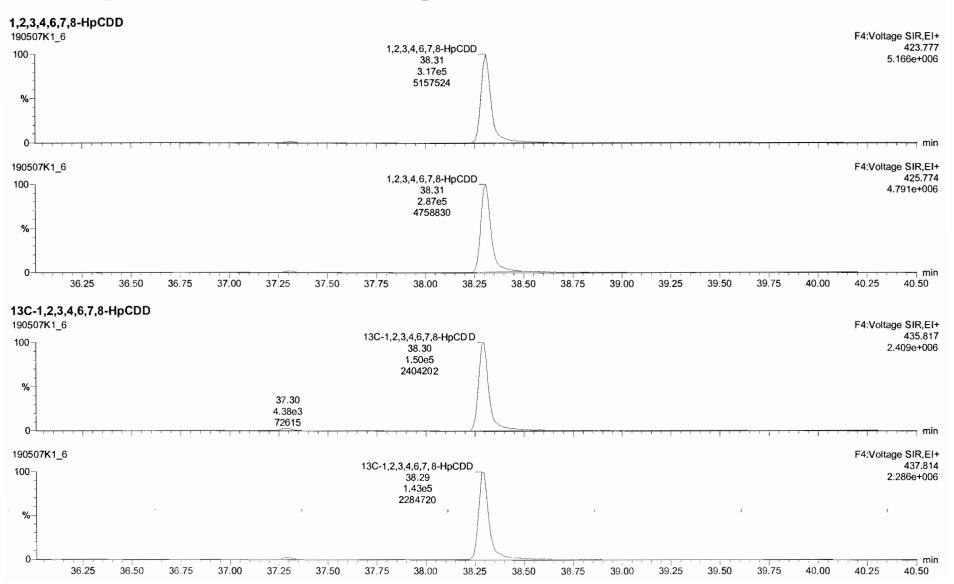


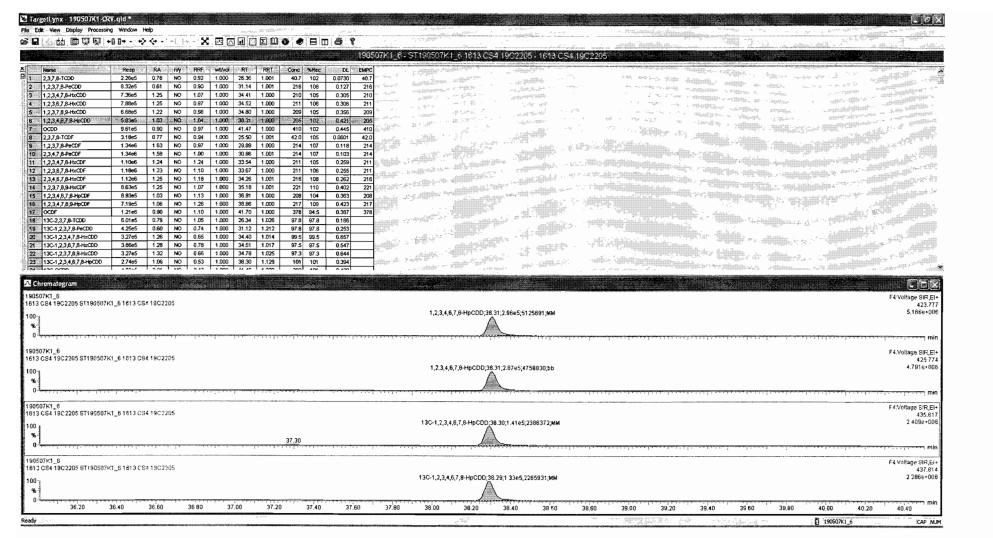
Work Order 1903648 Page 441 of 513

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Last Altered: Printed:

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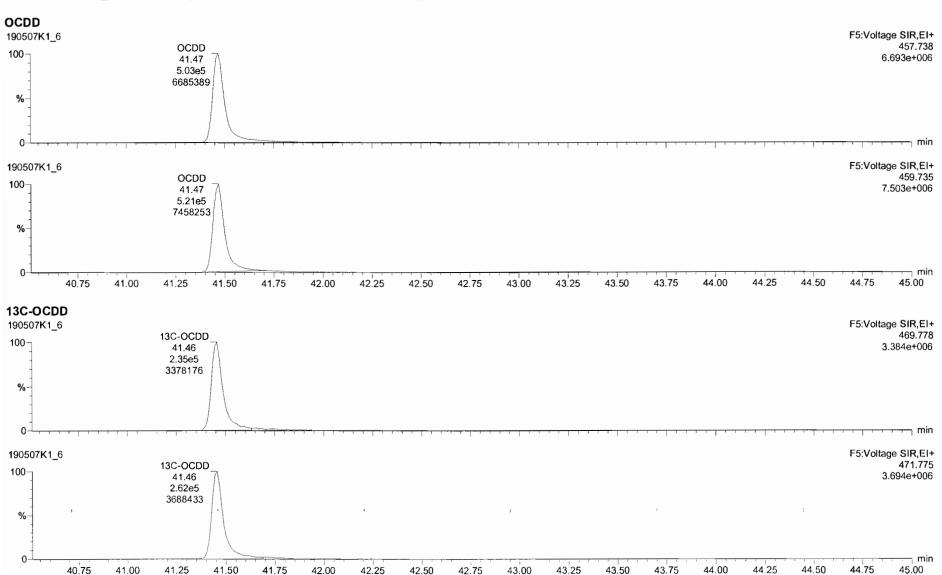


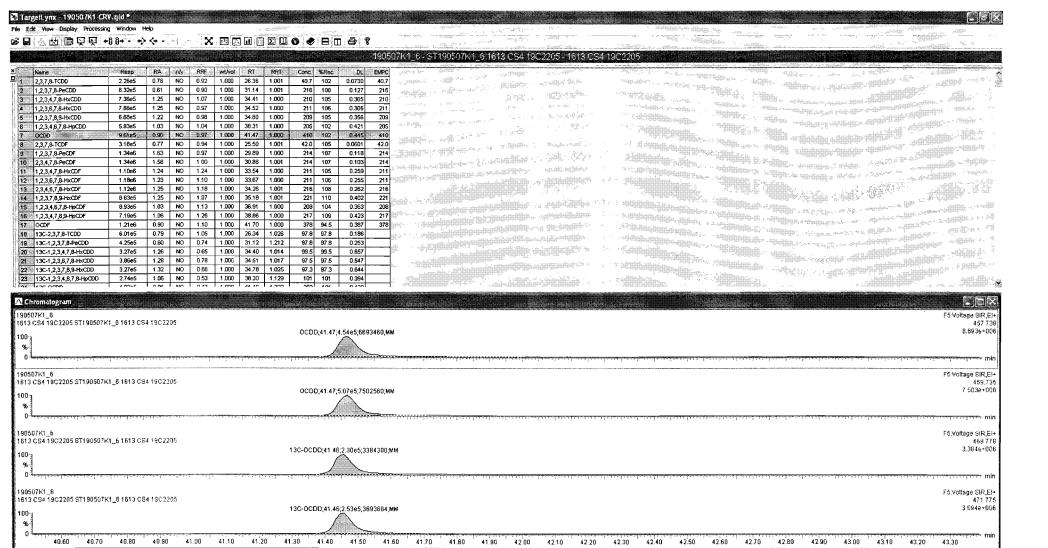
Work Order 1903648 Page 443 of 513

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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time





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190507K1_6

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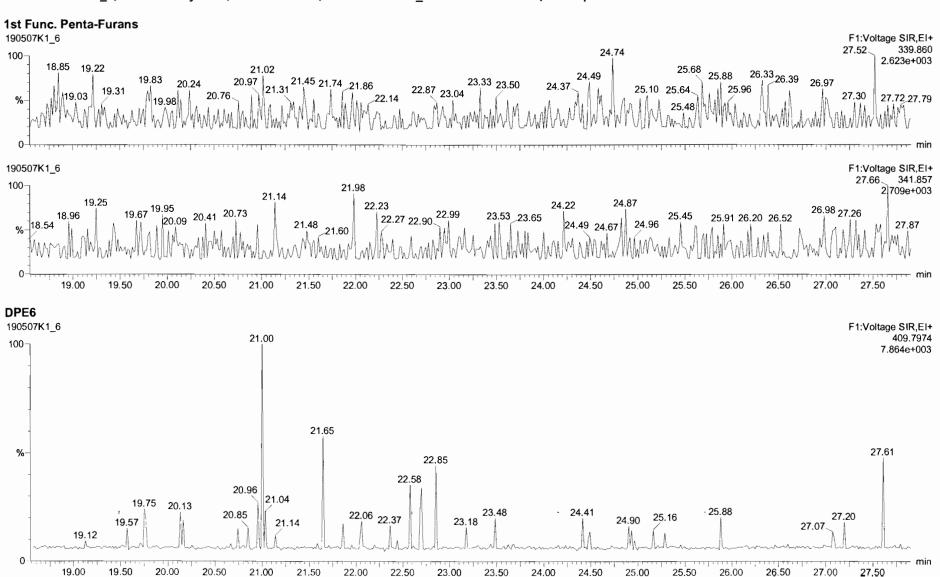
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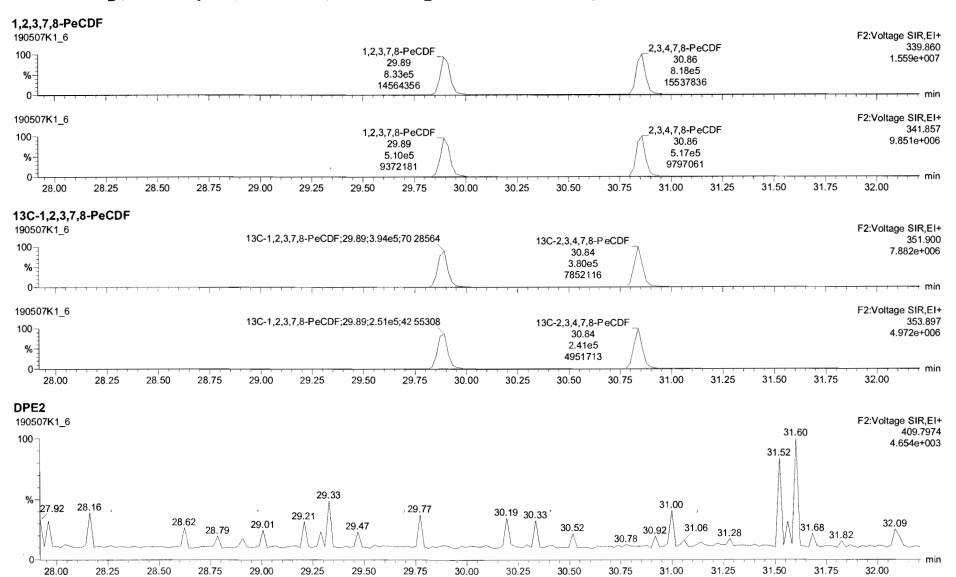


Vista Analytical Laboratory

Dataset:

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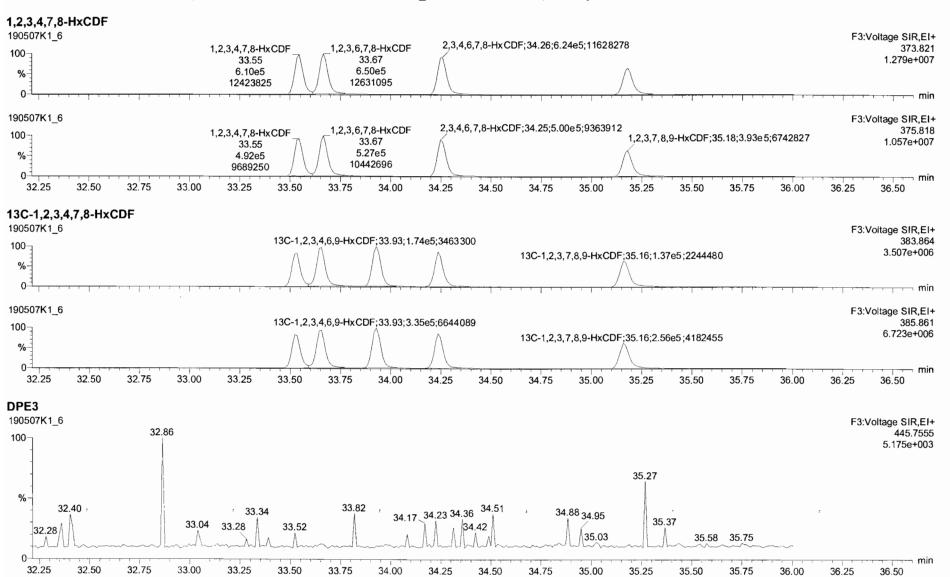
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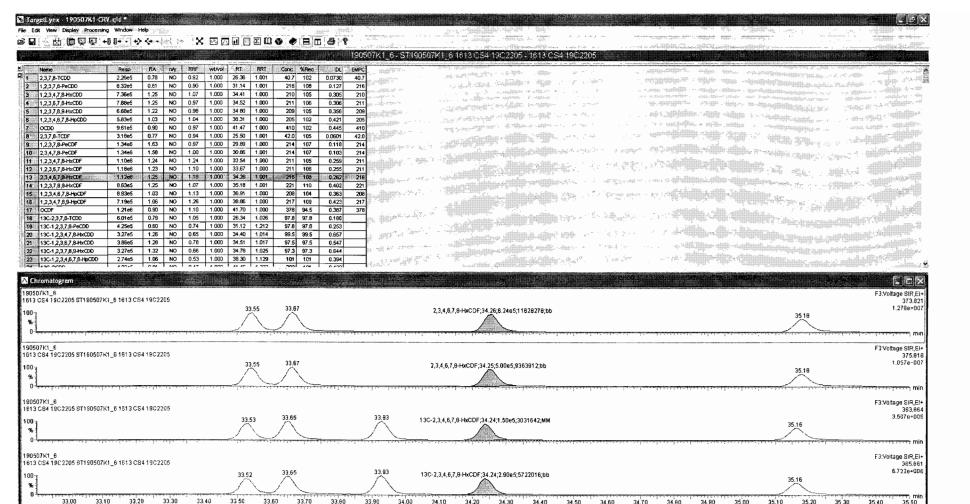


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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time





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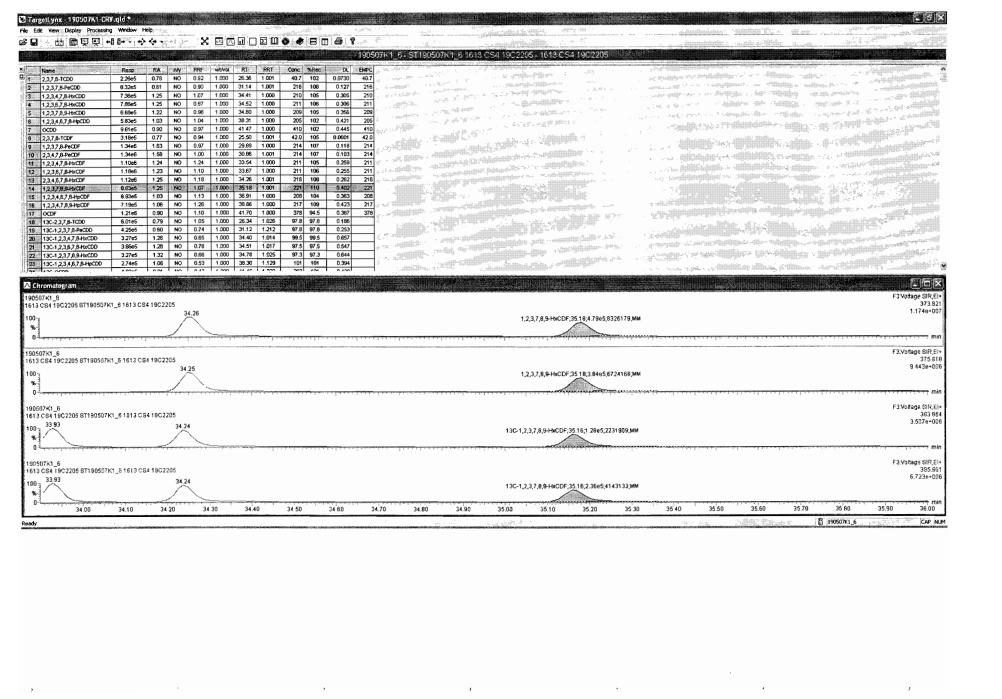
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CAP NUM

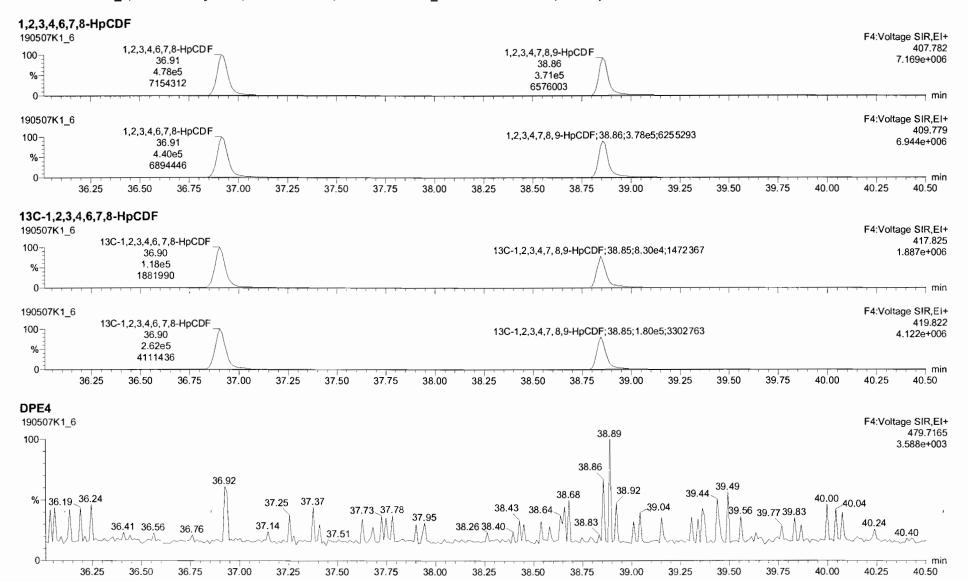


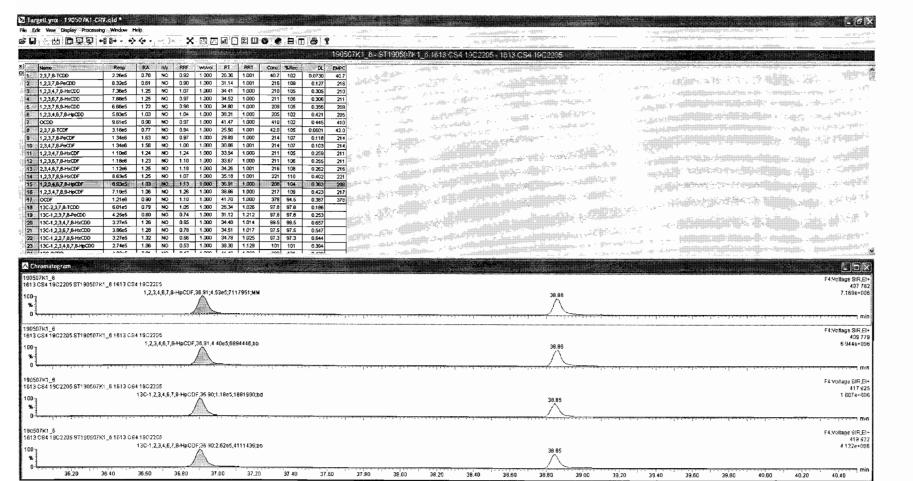
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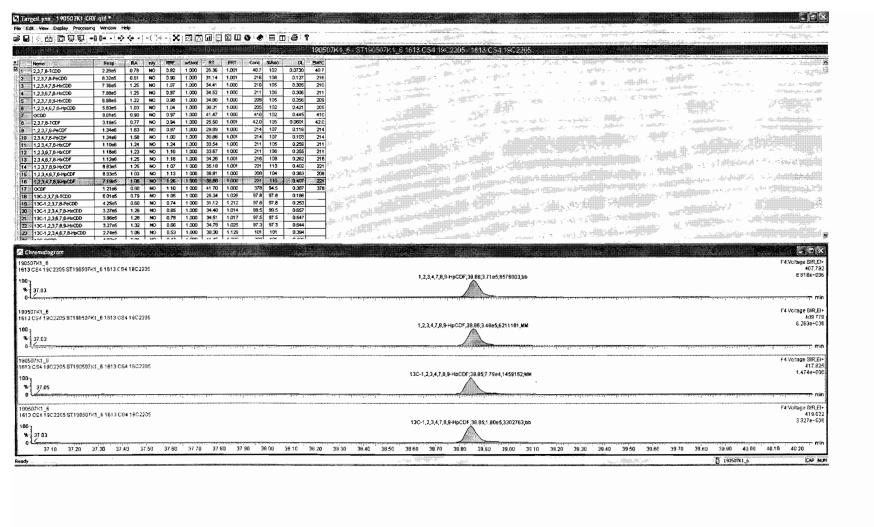




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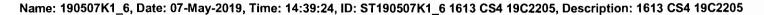
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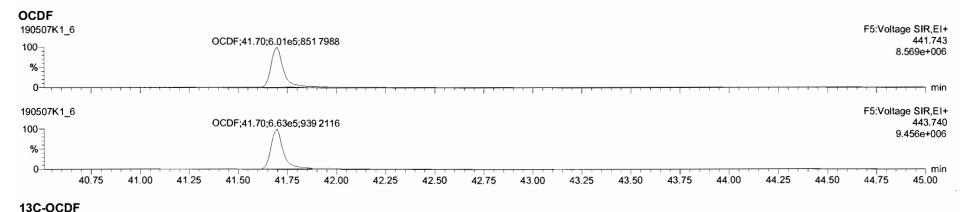


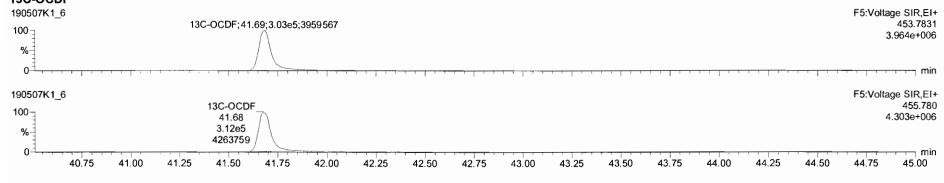
Work Order 1903648 Page 454 of 513

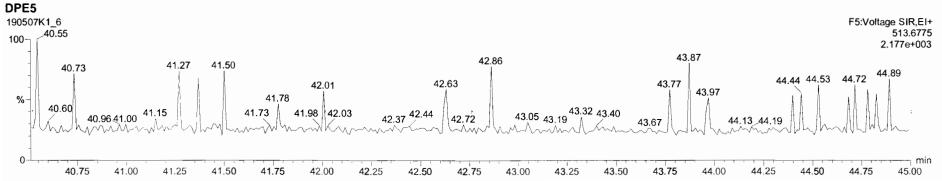
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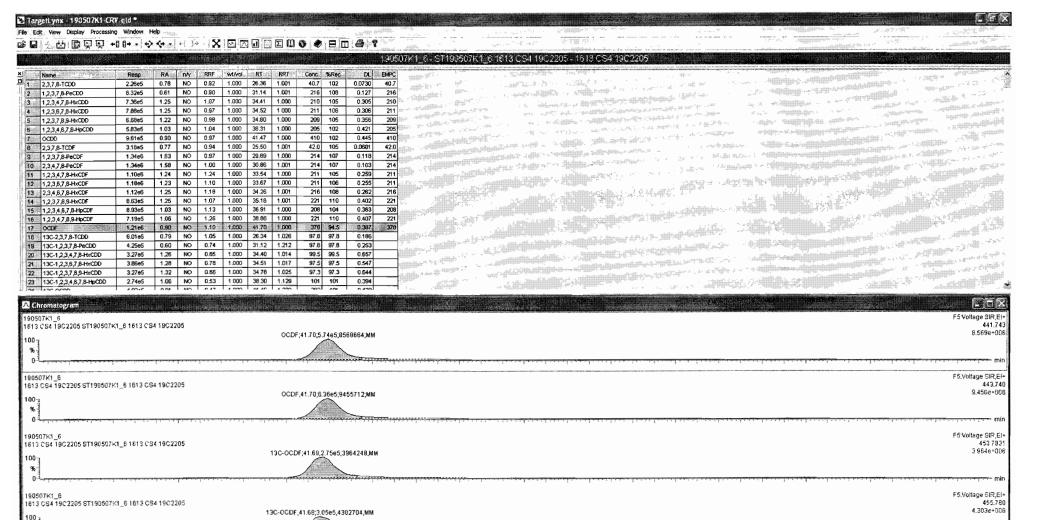
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42.60

42.70

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តី 190507K1 6

43.10

43 20

CAP NUM

41.50

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42 10

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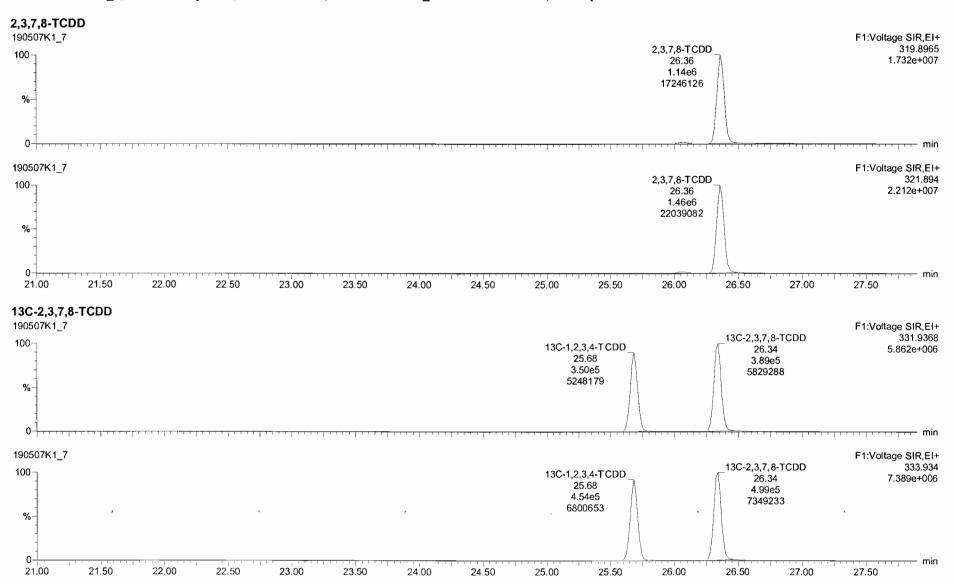
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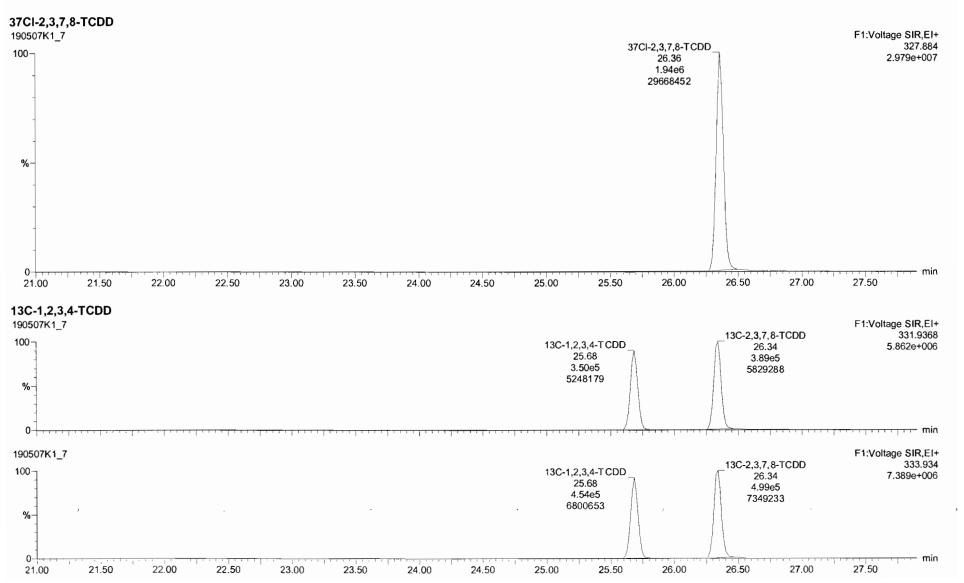
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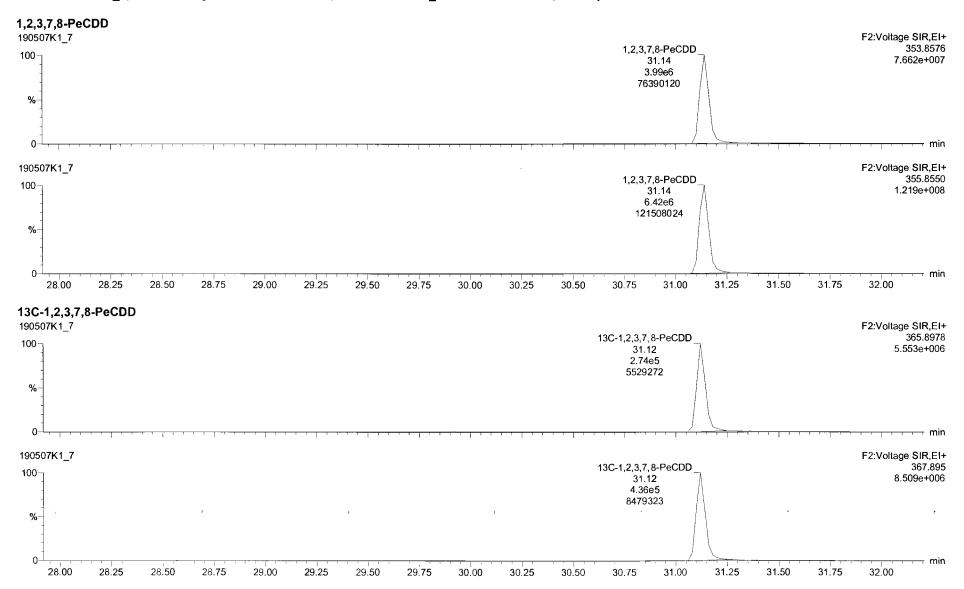
Quantify Sample Report Vista Analytical Laboratory

Dataset:

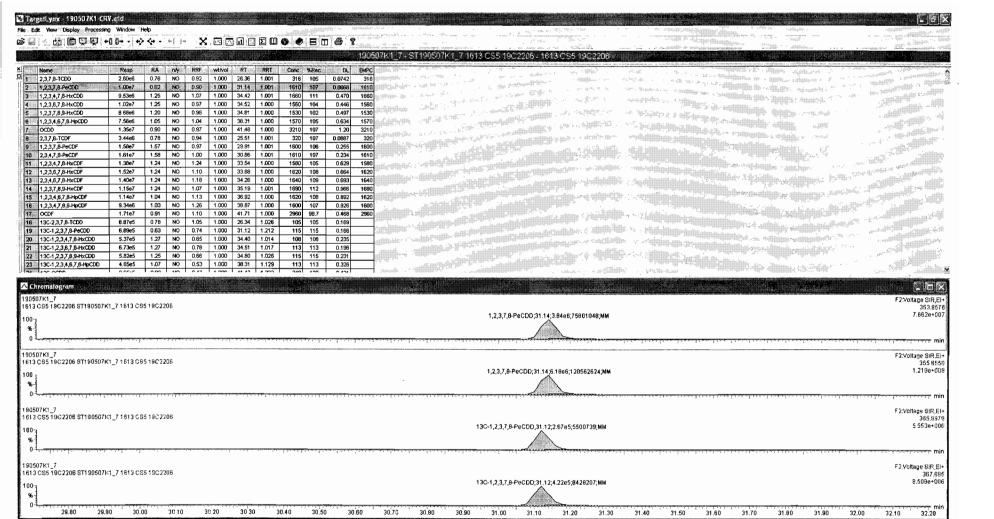
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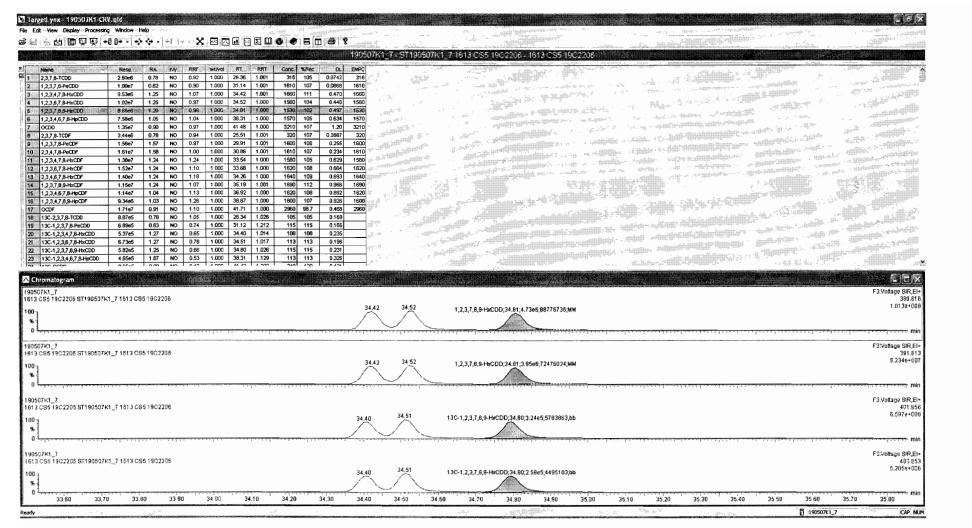
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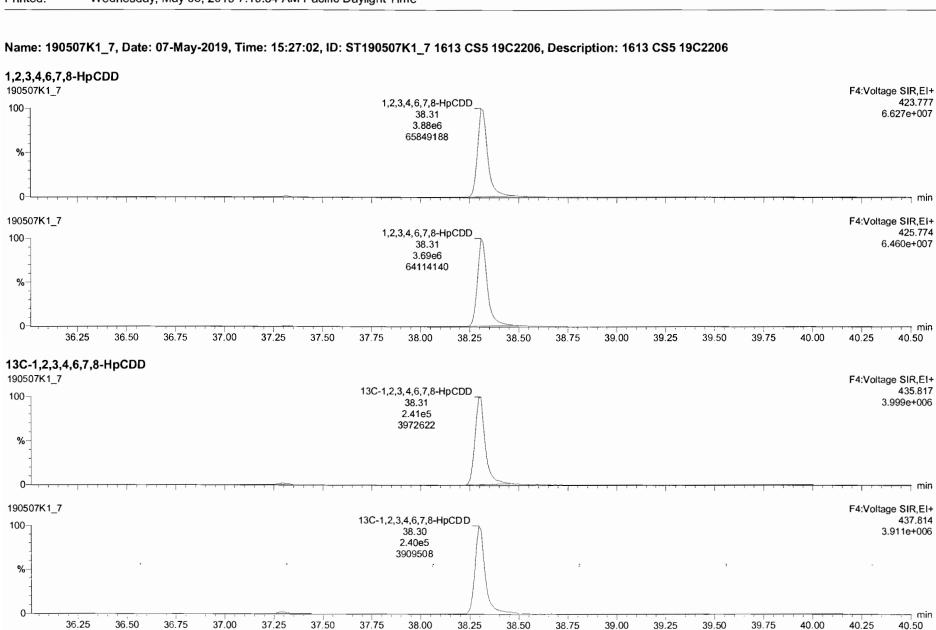
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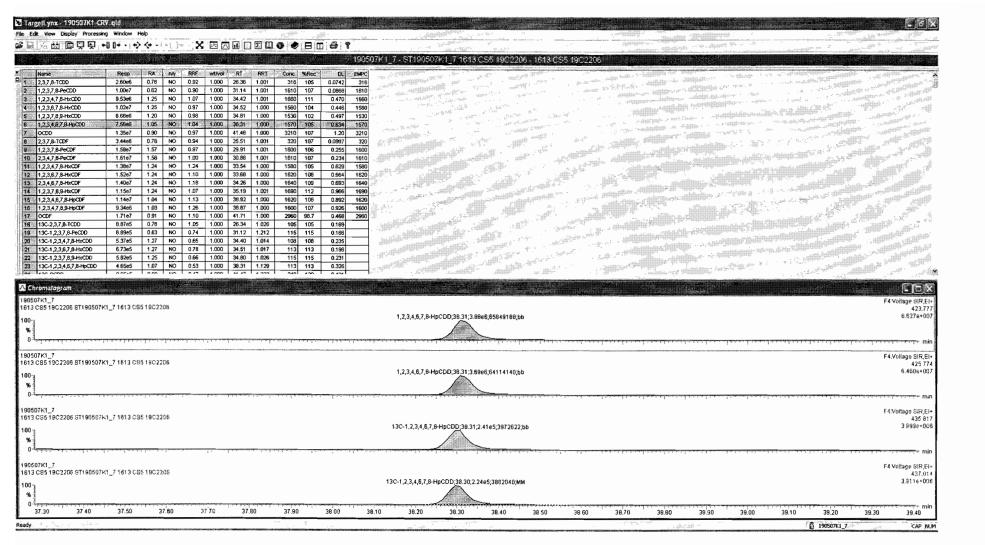
Work Order 1903648

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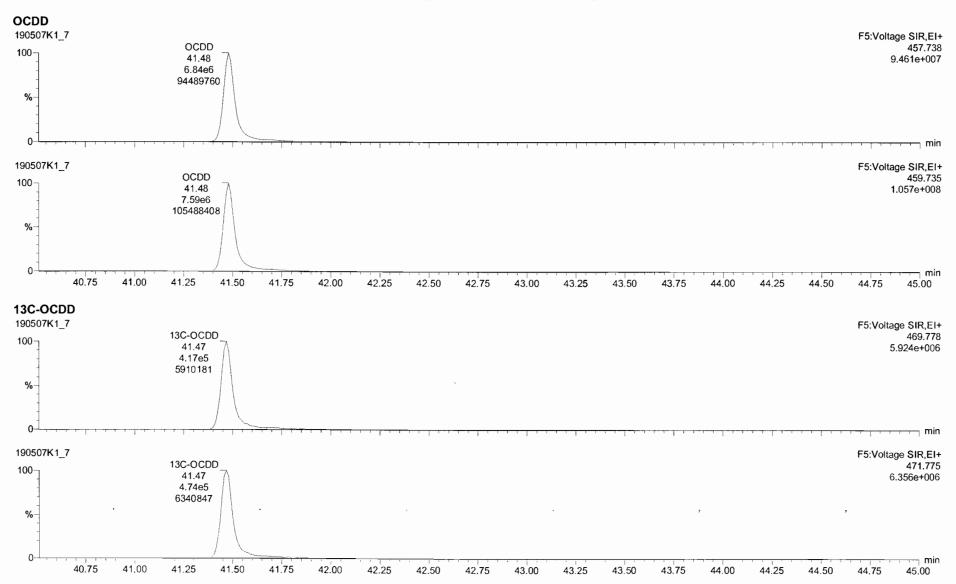


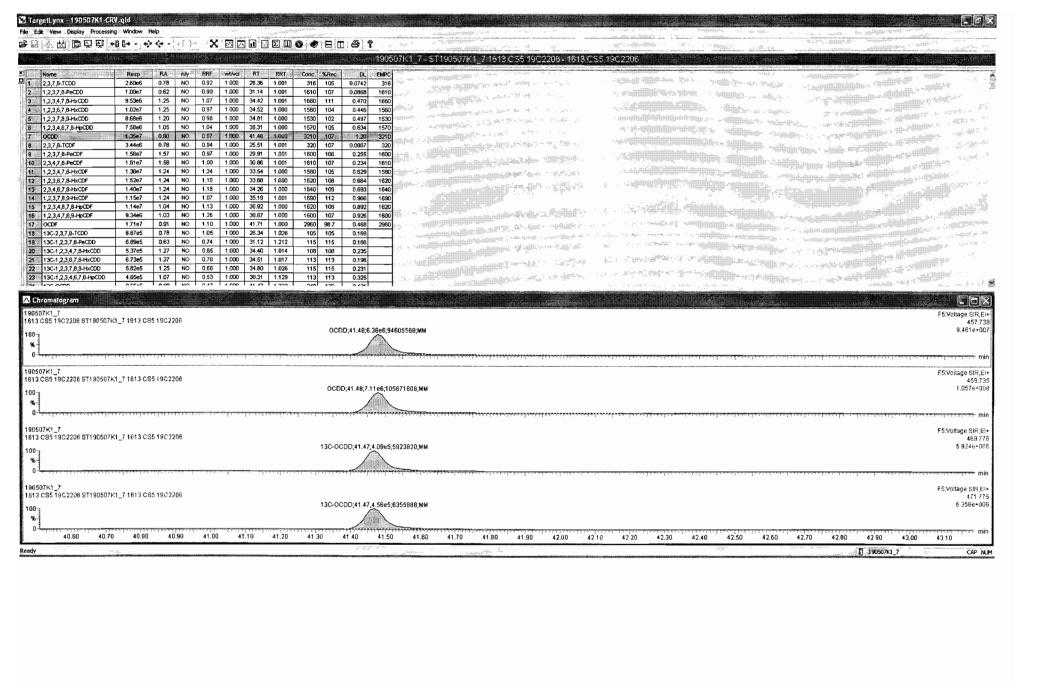


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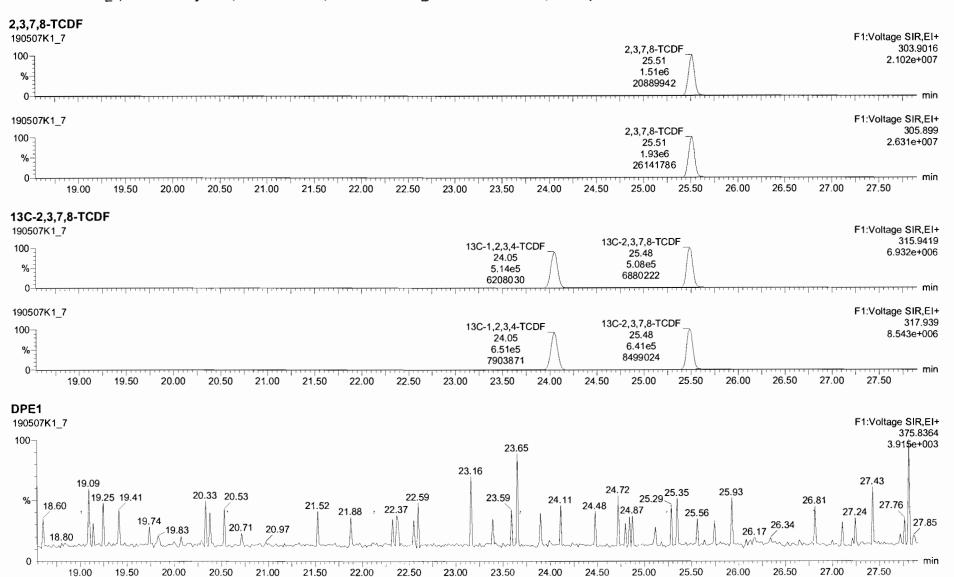




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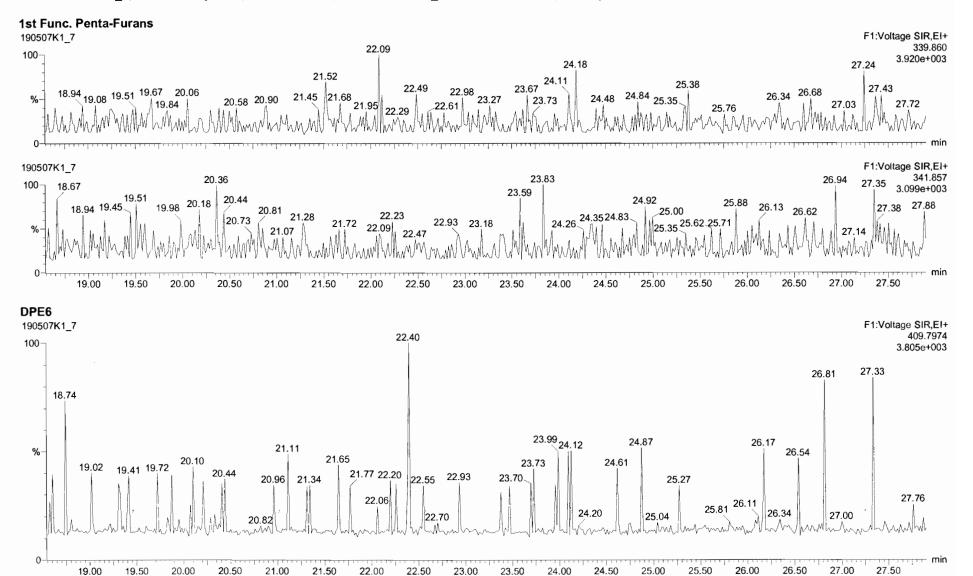
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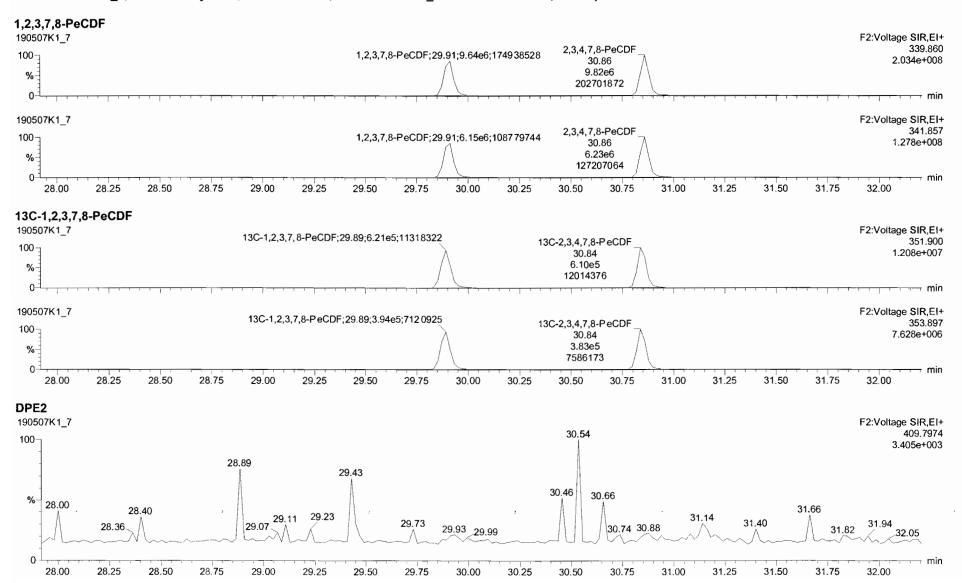
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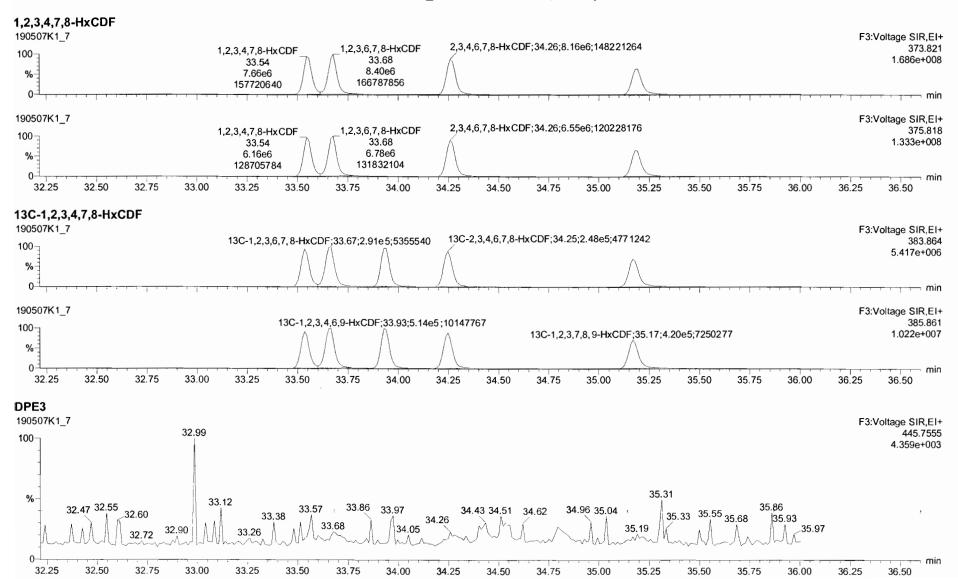
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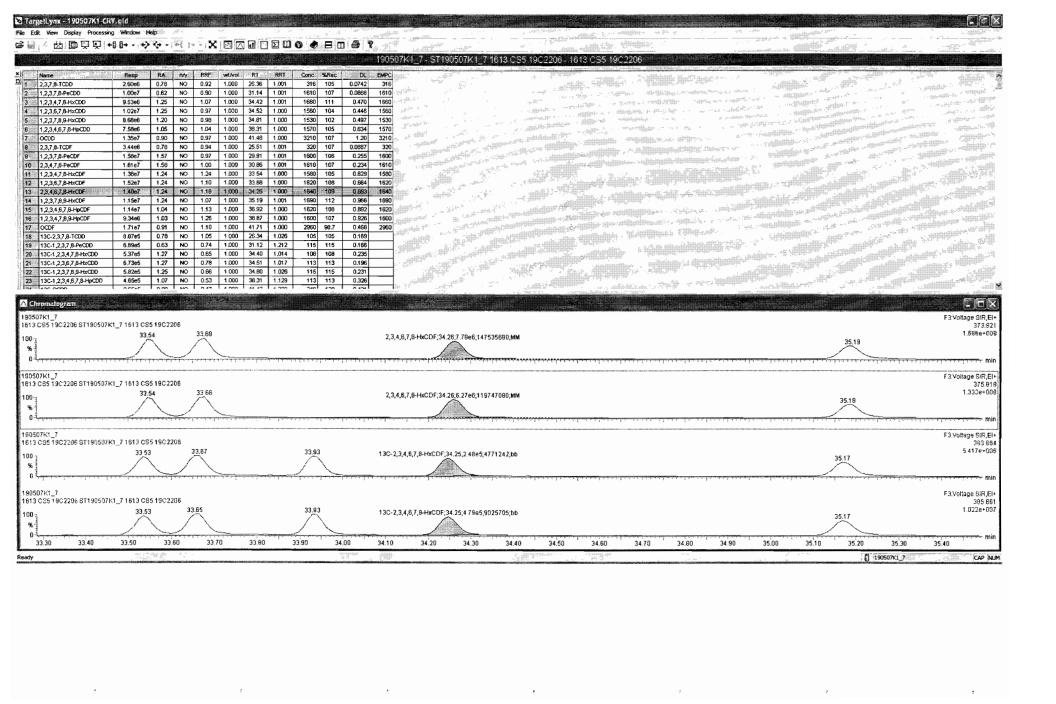


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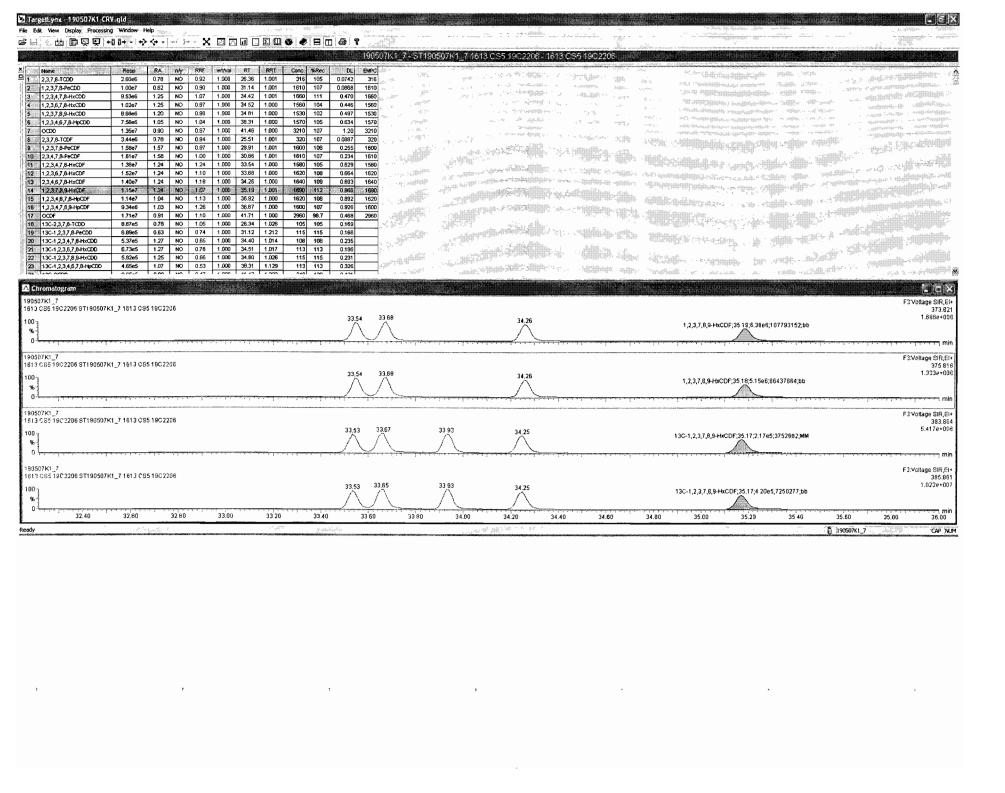
Last Altered: Printed:

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time





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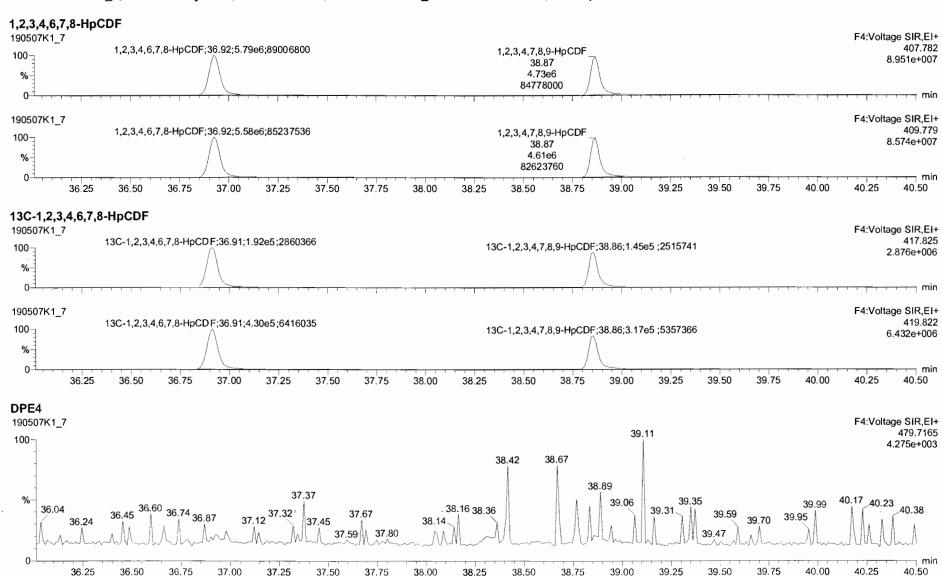


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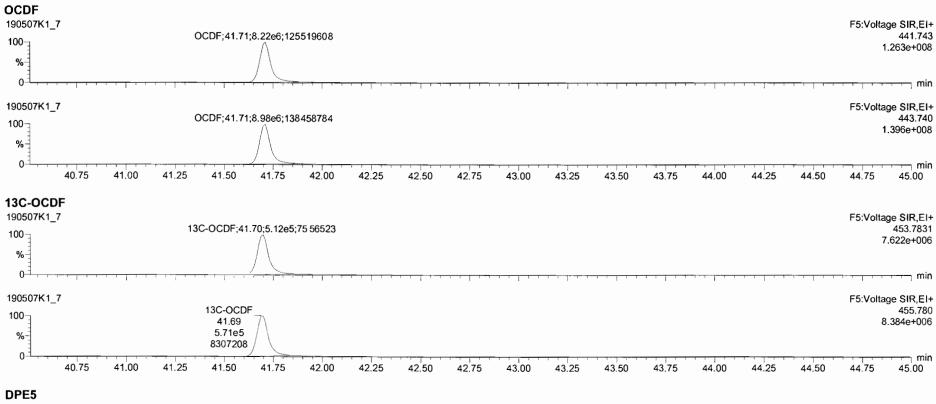
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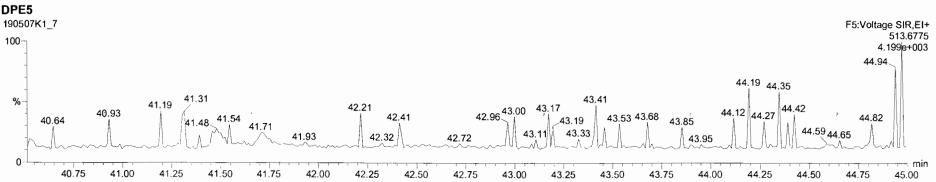


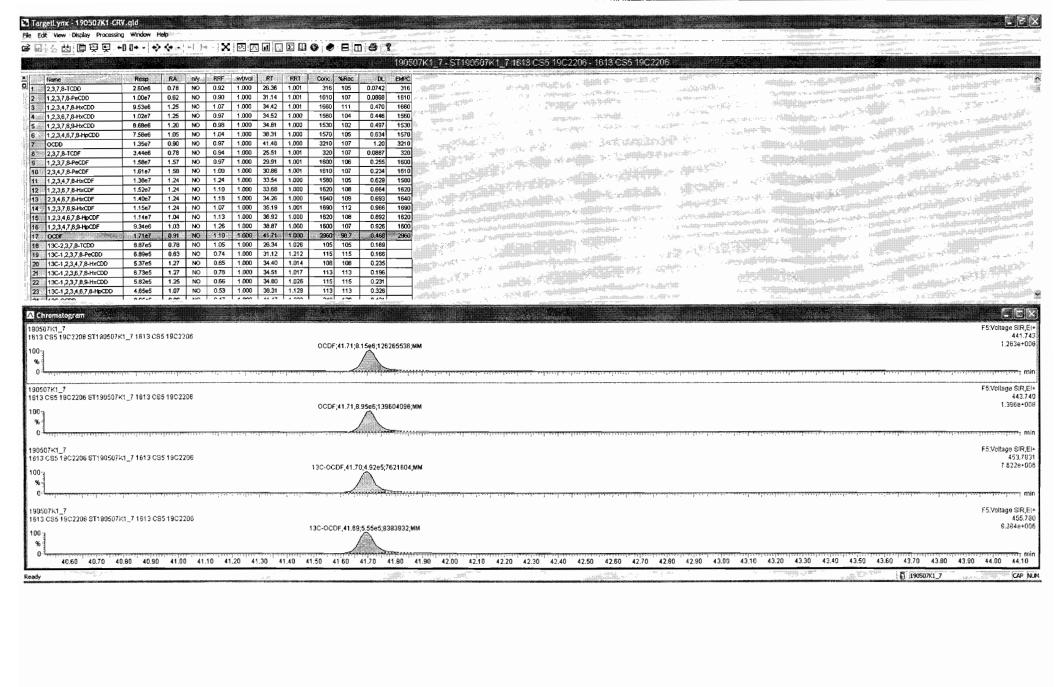
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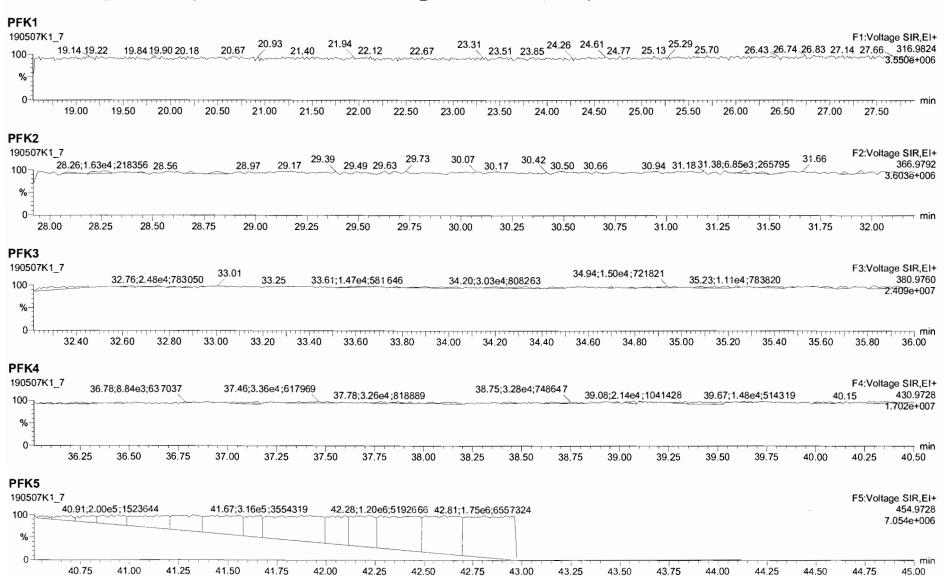




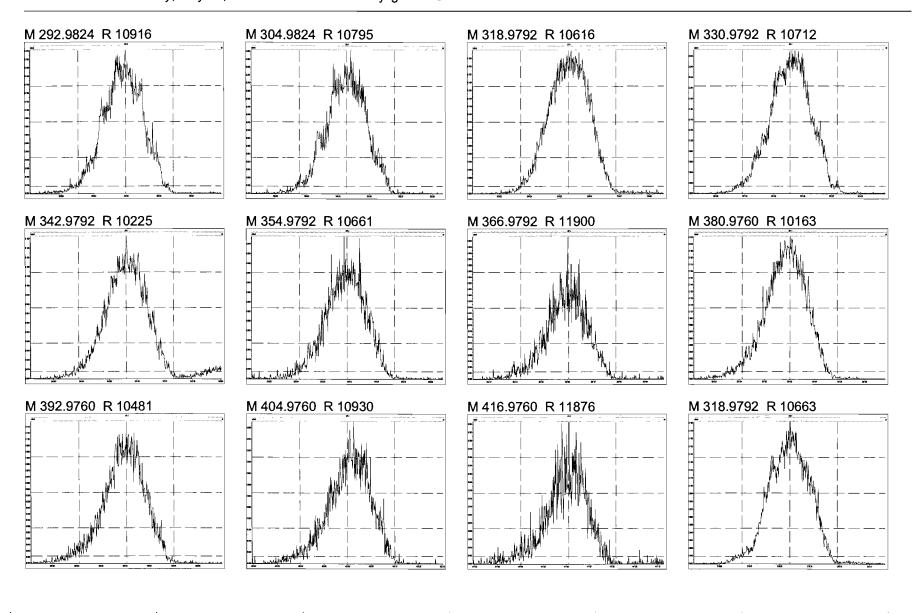
Work Order 1903648 Page 476 of 513

Untitled

Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

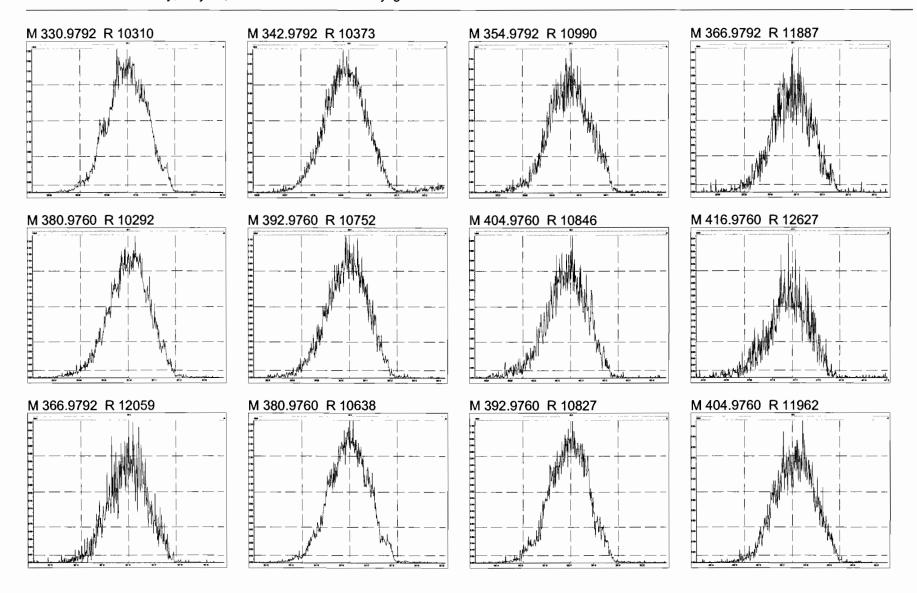


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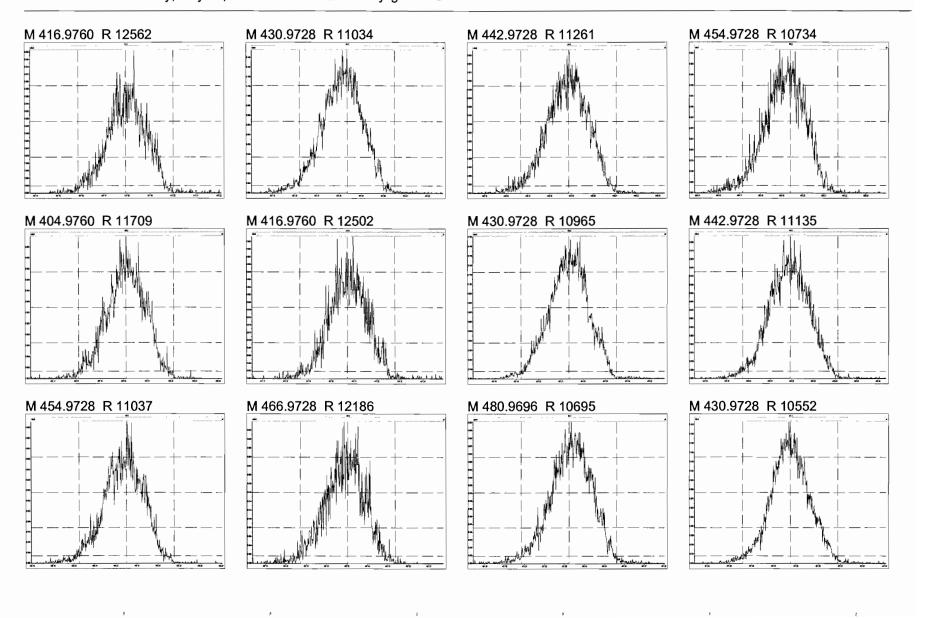


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Tuesday, May 07, 2019 17:12:33 Pacific Daylight Time

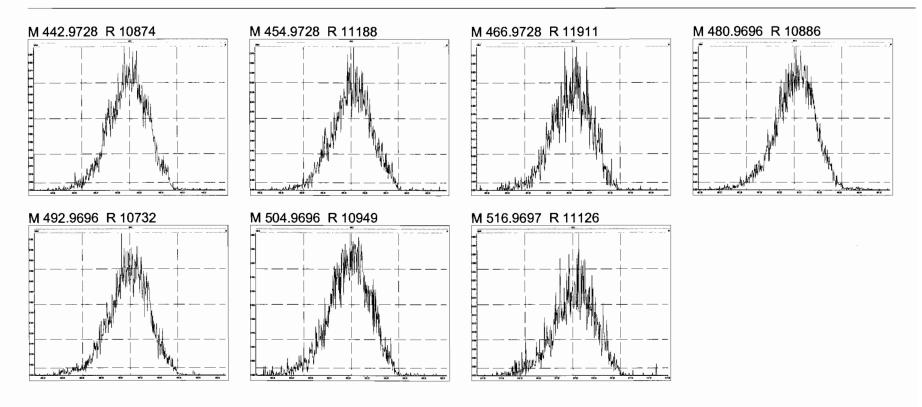


Tuesday, May 07, 2019 17:12:33 Pacific Daylight Time



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Tuesday, May 07, 2019 17:12:33 Pacific Daylight Time



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Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\190507K1\190507K1-8.qld

Last Altered:

Wednesday, May 08, 2019 8:00:45 AM Pacific Daylight Time

Printed:

Wednesday, May 08, 2019 8:07:46 AM Pacific Daylight Time

the 5.8.19

5/20/19

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K1_8, Date: 07-May-2019, Time: 16:16:59, ID: SS190507K1_1 1613 SSS 19C2207, Description: 1613 SSS 19C2207

#-Name	Resp	: RA	n/y	RRF	wt/vol	Pred.RT	ŔŤ	Pred.RRT	RRT	Conc.	- %Rec -	Jay DL-	EMPC
1 2,3,7,8-TCDD	7.60e4	0.76	NO	0.925	1.000	26.372	26.36	1.001	1.001	9.9167	99.2 S	0.0527	9.92
2 1,2,3,7,8-PeCDD	2.83e5	0.63	NO	0.905	1.000	31.141	31.14	1.001	1.001	52.411	105	0.0779	52.4
3 1,2,3,4,7,8-HxCDD	2.56e5	1.24	NO	1.07	1.000	34.422	34.42	1.000	1.000	51.689	103	0.157	51.7
4 1,2,3,6,7,8-HxCDD	2.85e5	1.28	NO	0.967	1.000	34.511	34.53	1.000	1.001	54.377	109	0.161	54.4
5 1,2,3,7,8,9-HxCDD	2.46e5	1.25	NO	0.978	1.000	34.831	34.81	1.001	1.000	50.269	101	0.173	50.3
6 1,2,3,4,6,7,8-HpCDD	1.96e5	1.05	NO	1.04	1.000	38.308	38.32	1.000	1.001	47.654	95.3	0.186	47.7
7 OCDD	3.61e5	0.90	NO	0.972	1.000	41.457	41.47	1.000	1.000	105.18	105	0.228	105
8 2,3,7,8-TCDF	1.06e5	0.77	NO	0.938	1.000	25.510	25.51	1.001	1.001	10.161	102	0.0528	10.2
9 1,2,3,7,8-PeCDF	4.45e5	1.56	NO	0.976	1.000	29.913	29.91	1.001	1.001	51.910	104	0.0756	51.9
10 2,3,4,7,8-PeCDF	4.90e5	1.55	NO	1.00	1.000	30.869	30.86	1.001	1.001	56.296	113	0.0742	56.3
11 ,2,3,4,7,8-HxCDF	3.98e5	1.24	NO	1.24	1.000	33.534	33.56	1.000	1.001	53.288	107	0.159	53.3
12 1,2,3,6,7,8-HxCDF	4.37e5	1.15	NO	1.10	1.000	33.665	33.68	1.000	1.001	54.868	110	0.164	54.9
13 13 2,3,4,6,7,8-HxCDF	3.80e5	1.25	NO	1.18	1.000	34.282	34.27	1.001	1.001	51.927	104	0.183	51.9
14 1,2,3,7,8,9-HxCDF	3.02e5	1.22	NO	1.07	1.000	35.169	35.19	1.000	1.001	53.429	107	0.261	53.4
15 1,2,3,4,6,7,8-HpCDF	3.31e5	1.04	NO	1.13	1.000	36.951	36.92	1.001	1.000	56.517	113	0.264	56.5
16 1,2,3,4,7,8,9-HpCDF	2.56e5	0.99	NO	1.26	1.000	38.856	38.87	1.000	1.000	53.867	108	0.275	53.9
17 CDF	4.34e5	0.87	NO	1.10	1.000	41.687	41.70	1.000	1.000	93.430	93.4	√ 0.200	93.4
18 13C-2,3,7,8-TCDD	8.29e5	0.78	NO	1.05	1.000	26.343	26.34	1.026	1.026	102.10	102	0.130	
19 13C-1,2,3,7,8-PeCDD	5.96e5	0.63	NO	0.743	1.000	31.123	31.12	1.212	1.212	103.75	104	0.218	
20 13C-1,2,3,4,7,8-HxCDD	4.63e5	1.29	NO	0.646	1.000	34.402	34.41	1.014	1.014	102.33	102	0.354	
21 13C-1,2,3,6,7,8-HxCDD	5.41e5	1.25	NO	0.777	1.000	34.510	34.51	1.017	1.017	99.464	99.5	0.295	
22 13C-1,2,3,7,8,9-HxCDD	5.00e5	1.25	NO	0.659	1.000	34.799	34.80	1.025	1.025	108.25	108	0.347	
23 13C-1,2,3,4,6,7,8-HpCDD	3.97e5	1.11	NO	0.534	1.000	38.301	38.30	1.128	1.128	106.06	106	0.355	
24 13C-OCDD	7.05e5	0.93	NO	0.470	1.000	41.461	41.46	1.222	1.222	214.10	107	0.519	ł
25 25 13C-2,3,7,8-TCDF	1.11e6	0.77	NO	0.977	1.000	25.483	25.48	0.992	0.992	101.03	101	0.194	
26 13C-1,2,3,7,8-PeCDF	8.78e5	1.59	NO	0.778	1.000	29.892	29.89	1.164	1.164	100.03	100	0.293	
27	8.67e5	1.59	NO	0.750	1.000	30.843	30.84	1.201	1.201	102.41	102	0.304	
28 13C-1,2,3,4,7,8-HxCDF	6.01e5	0.51	NO	0.845	1.000	33.529	33.53	. 0.988	0.988	101.56 .	102	0.419	
29 13C-1,2,3,6,7,8-HxCDF	7.27e5	0.52	NO	1.03	1.000	33.652	33.65	0.992	0.992	101.03	101	0.345	
30 13C-2,3,4,6,7,8-HxCDF	6.20e5	0.53	NO	0.893	1.000	34.249	34.25	1.009	1.009	99.164	99.2	0.397	
31 13C-1,2,3,7,8,9-HxCDF	5.26e5	0.53	NO	0.734	1.000	35.169	35.17	1.036	1.036	102.34	102	0.483	

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K1-8.qld

Last Altered: Wednesday, May 08, 2019 8:00:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 8:07:46 AM Pacific Daylight Time

Name: 190507K1_8, Date: 07-May-2019, Time: 16:16:59, ID: SS190507K1_1 1613 SSS 19C2207, Description: 1613 SSS 19C2207

#-Name	Resp	; RA	n/y	RRF	wt/vol	Pred.RT:	RT	Pred.RRT	RRT	Conc.	- %Rec -	DL EMPC
32 13C-1,2,3,4,6,7,8-HpCDF 33 3 13C-1,2,3,4,7,8,9-HpCDF	5.19e5	0.45	NO	0.754	1.000	36.900	36.91	1.087	1.088	98.155	98.2	0.323
33 13C-1,2,3,4,7,8,9-HpCDF	3.76e5	0.44	NO	0.539	1.000	38.851	38.86	1.145	1.145	99.700	99.7	0.452
34 34 13C-OCDF	8.43e5	0.90	NO	0.593	1.000	41.689	41.69	1.228	1.228	202.98	101	0.322
35 37Cl-2,3,7,8-TCDD	8.22e4			1.07	1.000	26.343	26.36	1.026	1.026	9.9341	99.3	0.0341
36 13C-1,2,3,4-TCDD	7.74e5	0.80	NO	1.00	1.000	25.680	25.68	1.000	1.000	100.00	100	0.137
37 13C-1,2,3,4-TCDF	1.13e6	0.79	NO	1.00	1.000	24.050	24.05	1.000	1.000	100.00	100	0.190
38 13C-1,2,3,4,6,9-HxCDF	7.01e5	0.53	NO	1.00	1.000	33.940	33.94	1.000	1.000	100.00	100	0.354

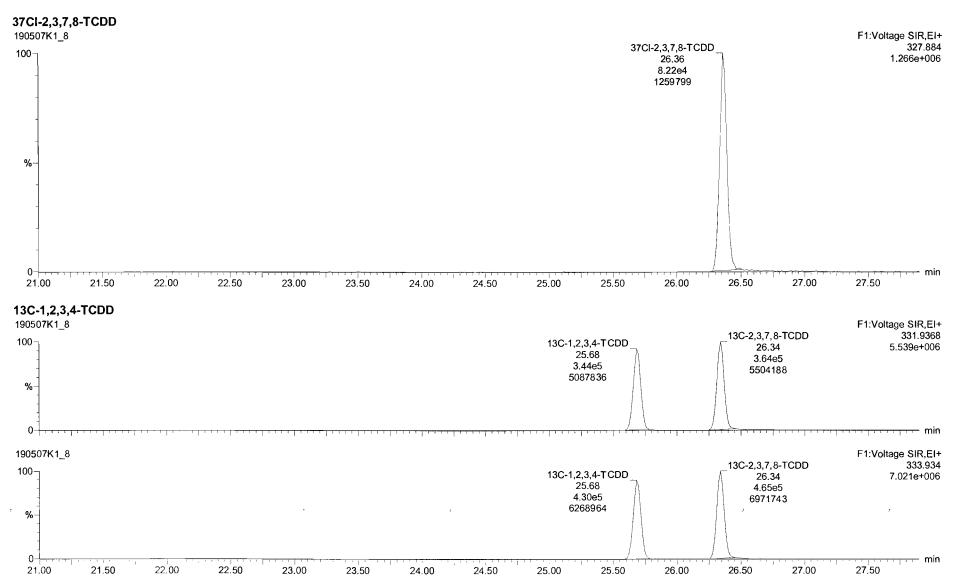
Work Order 1903648 Page 483 of 513

Quantify Sample Report Vista Analytical Laboratory

Dataset:

Untitled

Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

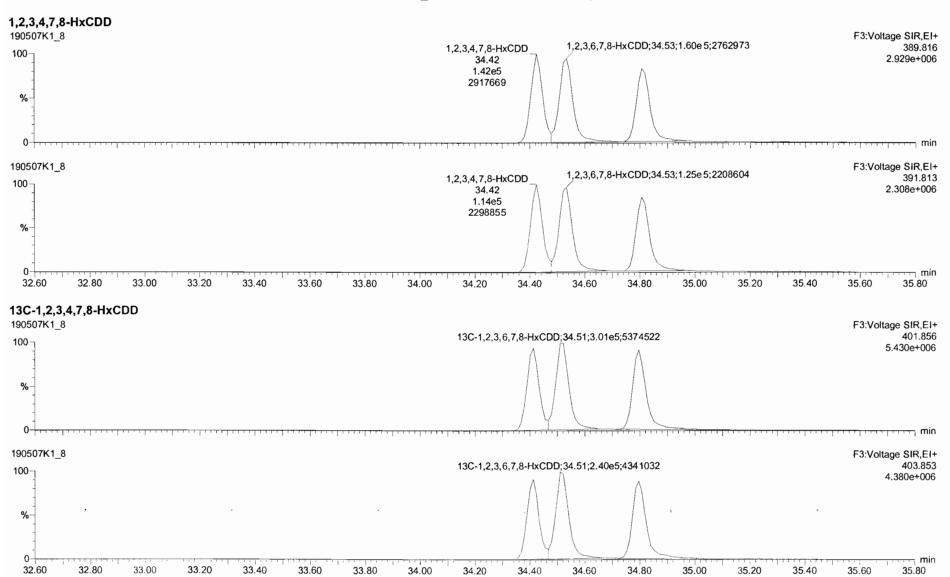


Quantify Sample Report Vista Analytical Laboratory

Dataset:

Untitled

Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



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38.50

38.75

39.00

39.25

39.50

36.25

36.50

36.75

37.00

37.25

37.50

37.75

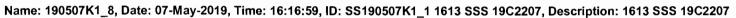
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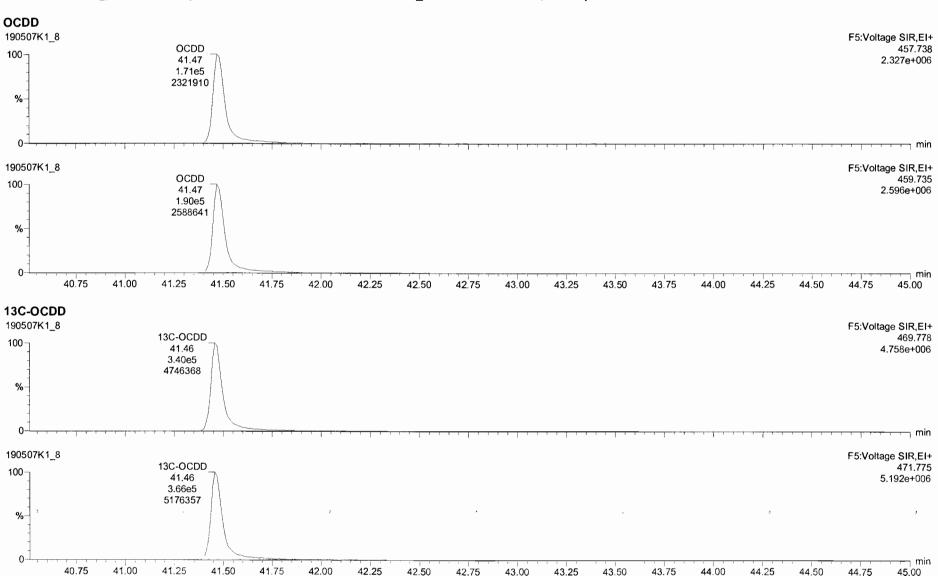
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40.00

40.25

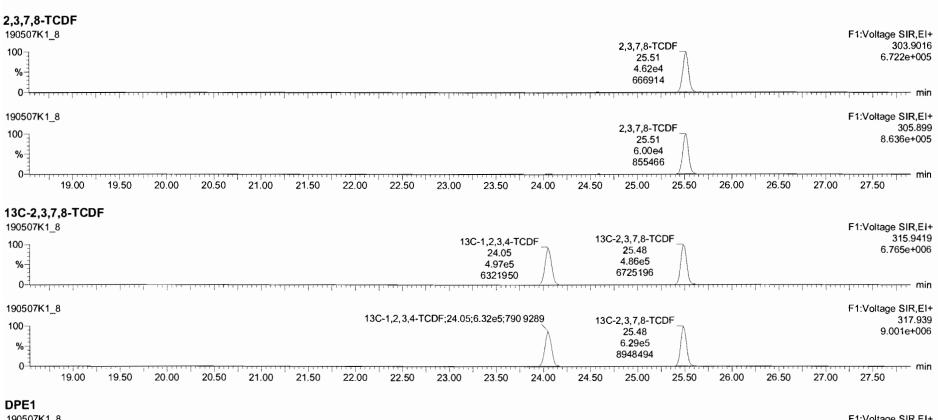
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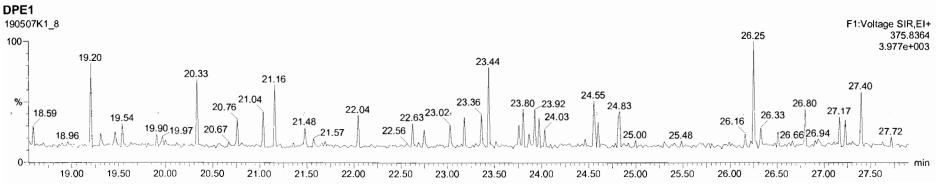




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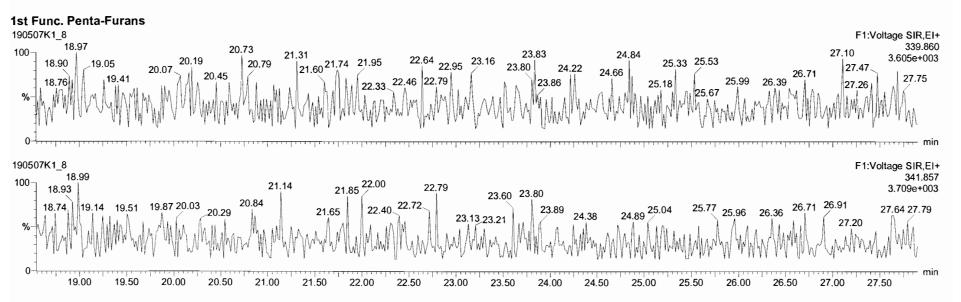
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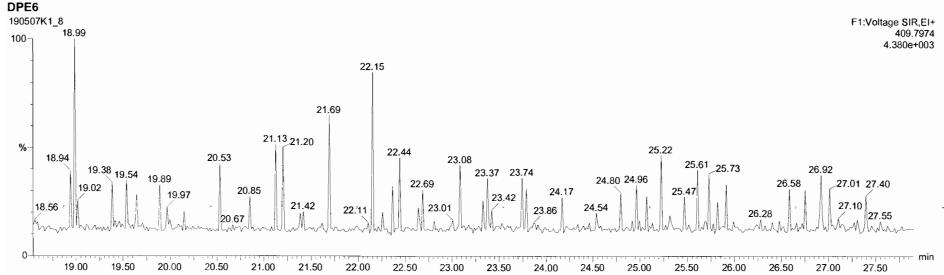




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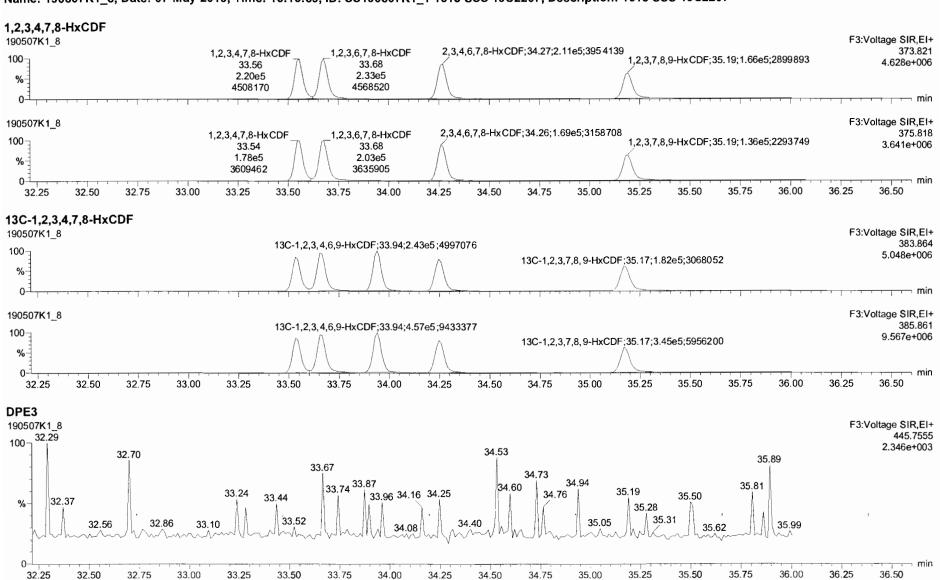


Vista Analytical Laboratory

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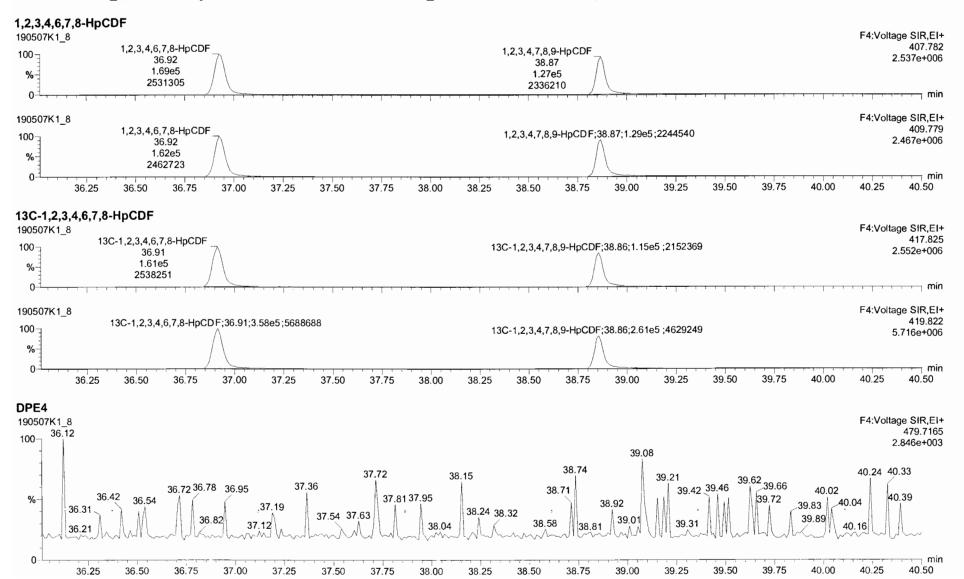
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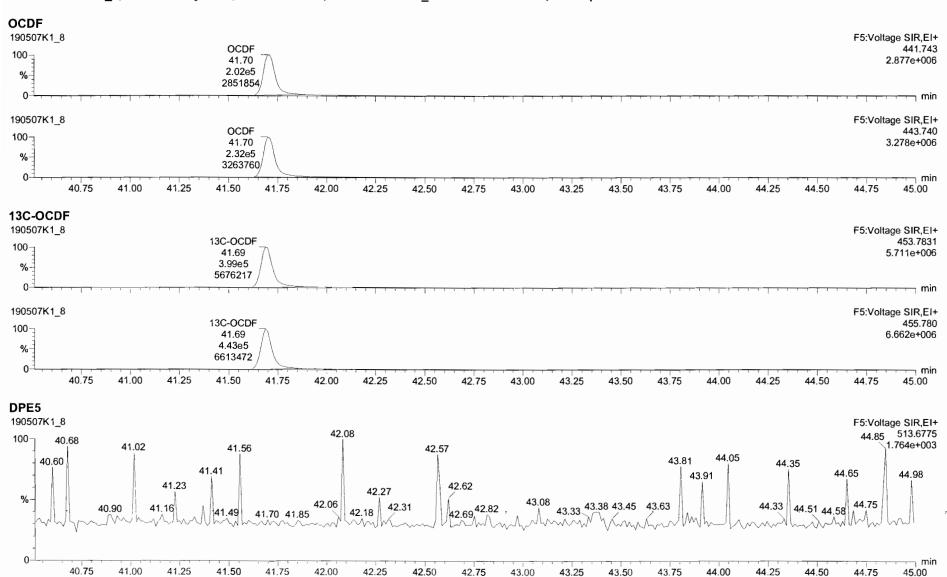
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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



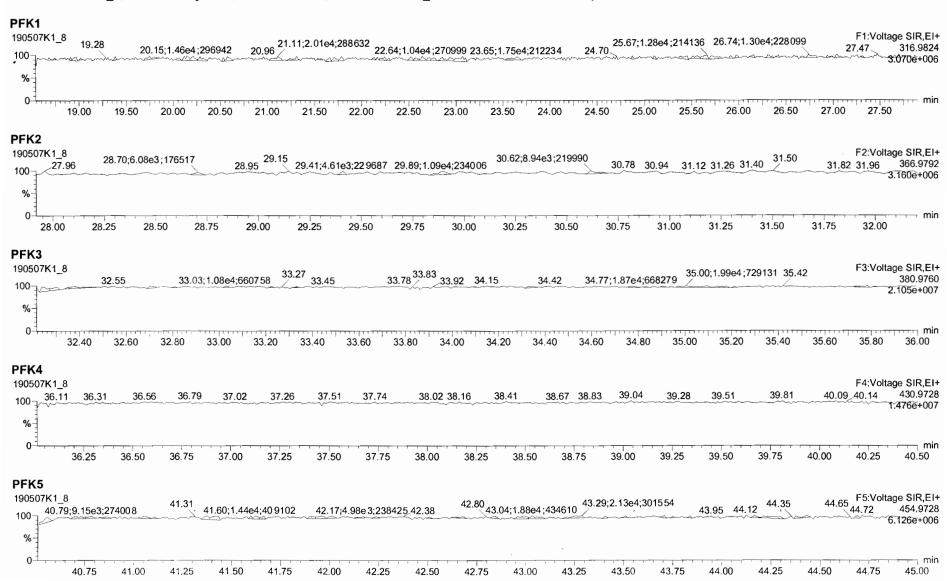
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Last Altered: Printed: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K2-1.qld

Last Altered: Wednesday, May 08, 2019 8:10:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 8:11:52 AM Pacific Daylight Time

Jr 5-8-19

DB 5/20/19

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K2_1, Date: 07-May-2019, Time: 18:48:10, ID: ST190507K2_1 1613 CS3 18J1008, Description: 1613 CS3 18J1008

	# Name	Resp	RA	n/y	RRF	wt/vol	Pred.RT	RT	Pred.RRT	RRT	Conc.	%Rec	DL	EMPC
14-20-11	1 2,3,7,8-TCDD	4.96e4	0.78	NO	0.925	1.000	26.372	26.36	1.001	1.001	9.7504	97.5	0.0601	9.75
2	2 1,2,3,7,8-PeCDD	1.92e5	0.60	NO	0.905	1.000	31.141	31.14	1.001	1.001	52.019	104	0.135	52.0
3	3 1,2,3,4,7,8-HxCDD	1.65e5	1.26	NO	1.07	1.000	34.422	34.42	1.000	1.000	40.468	80.9	0.208	40.5
4	4 1,2,3,6,7,8-HxCDD	1.70e5	1.27	NO	0.967	1.000	34.522	34.53	1.000	1.000	52.044	104	0.299	52.0
5	5 1,2,3,7,8,9-HxCDD	1.57e5	1.21	NO	0.978	1.000	34.831	34.81	1.001	1.000	49.488	99.0	0.295	49.5
6	6 1,2,3,4,6,7,8-HpCDD	1.25e5	1.09	NO	1.04	1.000	38.308	38.32	1.000	1.001	46.558	93.1	0.278	46.6
7	7 OCDD	2.20e5	0.89	NO	0.972	1.000	41.468	41.48	1.000	1.000	116.21	116	0.310	116
8	8 2,3,7,8-TCDF	6.88e4	0.78	NO	0.938	1.000	25.510	25.51	1.001	1.001	9.8653	98.7	0.0599	9.87
9	9 1,2,3,7,8-PeCDF	2.98e5	1.59	NO	0.976	1.000	29.913	29.91	1.001	1.001	48.808	97.6	0.107	48.8
10	10 2,3,4,7,8-PeCDF	3.02e5	1.60	NO	1.00	1.000	30.869	30.86	1.001	1.001	50.503	101	0.112	50.5
11	11 1,2,3,4,7,8-HxCDF	2.51e5	1.28	NO	1.24	1.000	33.534	33.56	1.000	1.001	42.310	84.6	0.183	42.3
12	12 1,2,3,6,7,8-HxCDF	2.65e5	1.25	NO	1.10	1.000	33.676	33.68	1.000	1.000	49.107	98.2	0.216	49.1
13	13 2,3,4,6,7,8-HxCDF	2.52e5	1.24	NO	1.18	1.000	34.282	34.27	1.001	1.001	47.589	95.2	0.219	47.6
14	14 1,2,3,7,8,9-HxCDF	1.94e5	1.26	NO	1.07	1.000	35.169	35.19	1.000	1.001	48.711	97.4	0.322	48.7
15	15 1,2,3,4,6,7,8-HpCDF	1.91e5	1.04	NO	1.13	1.000	36.951	36.92	1.001	1.000	50.687	101	0.231	50.7
16	16 1,2,3,4,7,8,9-HpCDF	1.57e5	0.99	NO	1.26	1.000	38.856	38.87	1.000	1.000	51.308	103	0.248	51.3
17	17 OCDF	2.63e5	0.85	NO	1.10	1.000	41.687	41.70	1.000	1.000	92.671	92.7	0.237	92.7
18	18 13C-2,3,7,8-TCDD	5.49e5	0.79	NO	1.05	1.000	26.343	26.34	1.026	1.026	101.33	101	0.176	
19	19 13C-1,2,3,7,8-PeCDD	4.08e5	0.63	NO	0.743	1.000	31.123	31.12	1.212	1.212	106.23	106	0.222	
20	20 13C-1,2,3,4,7,8-HxCDD	3.81e5	1.26	NO	0.646	1.000	34.402	34.41	1.014	1.014	127.08	127	0.322	
21	21 13C-1,2,3,6,7,8-HxCDD	3.37e5	1.28	NO	0.777	1.000	34.510	34.52	1.017	1.017	93.509	93.5	0.268	
22	22 13C-1,2,3,7,8,9-HxCDD	3.24e5	1.27	NO	0.659	1.000	34.799	34.80	1.025	1.025	105.79	106	0.315	
23	23 13C-1,2,3,4,6,7,8-HpCDD	2.59e5	1.05	NO	0.534	1.000	38.301	38.30	1.128	1.128	104.55	105	0.389	
24	24 13C-OCDD	3.90e5	88.0	NO	0.470	1.000	41.461	41.47	1.222	1.222	178.53	89.3	0.468	
25	25 13C-2,3,7,8-TCDF	7.44e5	0.79	NO	0.977	1.000	25.483	25.48	0.992	0.992	101.65	102	0.294	
26	26 13C-1,2,3,7,8-PeCDF	6.25e5	1.56	NO	0.778	1.000	29.893	29.89	1.164	1.164	107.38	107	0.390	
27	27 13C-2,3,4,7,8-PeCDF	5.95e5	1.57	NO	0.750	1.000	30.843	30.84	1.201	1.201	106.00	106	0.405	
28	28 13C-1,2,3,4,7,8-HxCDF	4.78e5	0.51	NO	0.845	1.000	33.529	33.53	0.988	0.988	121.85	122	0.545	
29	29 13C-1,2,3,6,7,8-HxCDF	4.92e5	0.52	NO	1.03	1.000	33.652	33.67	0.992	0.992	103.24	103	0.448	
30 2	30 13C-2,3,4,6,7,8-HxCDF	4.49e5	0.52	NO	0.893	1.000	34.249	34.25	1.009	1.009	108.34	108	0.515	
31	31 13C-1,2,3,7,8,9-HxCDF	3.71e5	0.54	NO	0.734	1.000	35.169	35.17	1.036	1.036	108.96	109	0.627	
32	32 13C-1,2,3,4,6,7,8-HpCDF	3.34e5	0.43	NO	0.754	1.000	36.900	36.91	1.087	1.088	95.313	95.3	0.389	

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Quantify Sample Summary Report MassLynx 4.1 SCN815 Page 2 of 2

Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K2-1.qld

Last Altered: Wednesday, May 08, 2019 8:10:45 AM Pacific Daylight Time Wednesday, May 08, 2019 8:11:52 AM Pacific Daylight Time

Name: 190507K2_1, Date: 07-May-2019, Time: 18:48:10, ID: ST190507K2_1 1613 CS3 18J1008, Description: 1613 CS3 18J1008

	# Name	Resp	RA	n/y	RRF	wt/vol	Pred.RT	RT	Pred.RRT	RRT	Conc.	%Rec	DL	EMPC
33	33 13C-1,2,3,4,7,8,9-HpCDF	2.42e5	0.47	NO	0.539	1.000	38.851	38.86	1.145	1.145	96.836	96.8	0.545	
34	34 13C-OCDF	5.14e5	0.89	NO	0.593	1.000	41.689	41.69	1.228	1.228	186.97	93.5	0.402	
35	35 37Cl-2,3,7,8-TCDD	5.28e4			1.07	1.000	26.343	26.36	1.026	1.026	9.5583	95.6	0.0488	
36	36 13C-1,2,3,4-TCDD	5.17e5	0.77	NO	1.00	1.000	25.680	25.68	1.000	1.000	100.00	100	0.184	
37	37 13C-1,2,3,4-TCDF	7.49e5	0.80	NO	1.00	1.000	24.050	24.06	1.000	1.000	100.00	100	0.288	
38	38 13C-1,2,3,4,6,9-HxCDF	4.64e5	0.51	NO	1.00	1.000	33.940	33.94	1.000	1.000	100.00	100	0.460	

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Wednesday, May 08, 2019 8:05:38 AM Pacific Daylight Time Wednesday, May 08, 2019 8:05:41 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\CPSM-5-7-19.mdb 07 May 2019 13:29:19

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K2_1, Date: 07-May-2019, Time: 18:48:10, ID: ST190507K2_1 1613 CS3 18J1008, Description: 1613 CS3 18J1008

•	#-Name -	RT
1 :	1 1,3,6,8-TCDD (First)	22.41
2 ;	2 1,2,8,9-TCDD (Last)	27.29
3 ;	3 1,2,4,7,9-PeCDD (First)	28.99
4 :	4 1,2,3,8,9-PeCDD (Last)	31.50
5 .	5 1,2,4,6,7,9-HxCDD (First)	32.91
6	6 1,2,3,7,8,9-HxCDD (Last)	34.81
7	7 1,2,3,4,6,7,9-HpCDD (First)	37.31
8	8 1,2,3,4,6,7,8-HpCDD (Last)	38.32
9 :	9 1,3,6,8-TCDF (First)	20.23
10 ;	10 1,2,8,9-TCDF (Last)	27.46
11 :	11 1,3,4,6,8-PeCDF (First)	27.36
12 :	12 1,2,3,8,9-PeCDF (Last)	31.76
13	13 1,2,3,4,6,8-HxCDF (First)	32.38
14	14 1,2,3,7,8,9-HxCDF (Last)	35.19
15	15 1,2,3,4,6,7,8-HpCDF (First)	36.92
16	16 1,2,3,4,7,8,9-HpCDF (Last)	38.87

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Quantify Sample Report

MassLynx 4.1 SCN815

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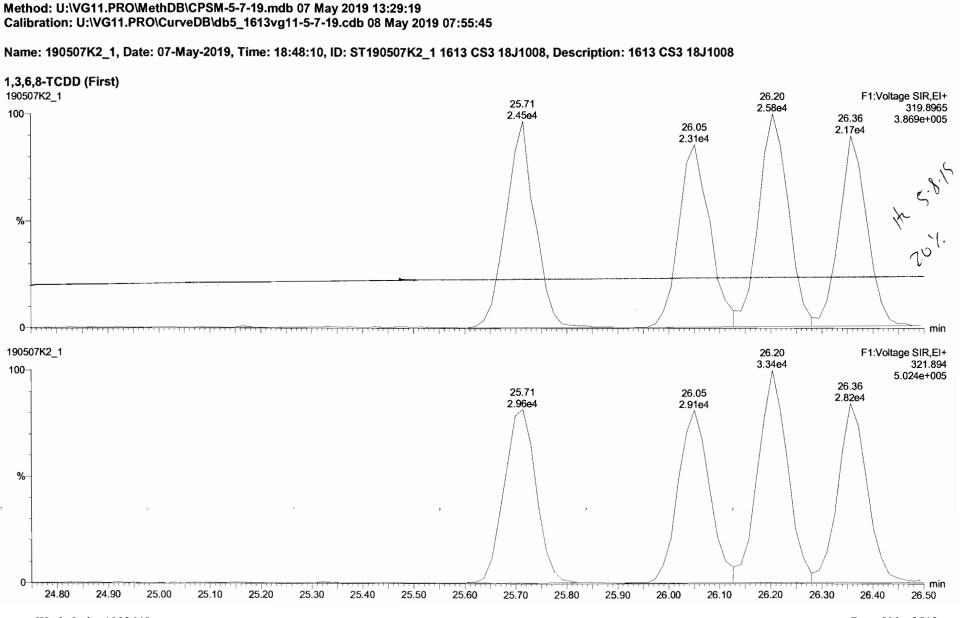
Vista Analytical Laboratory VG-11

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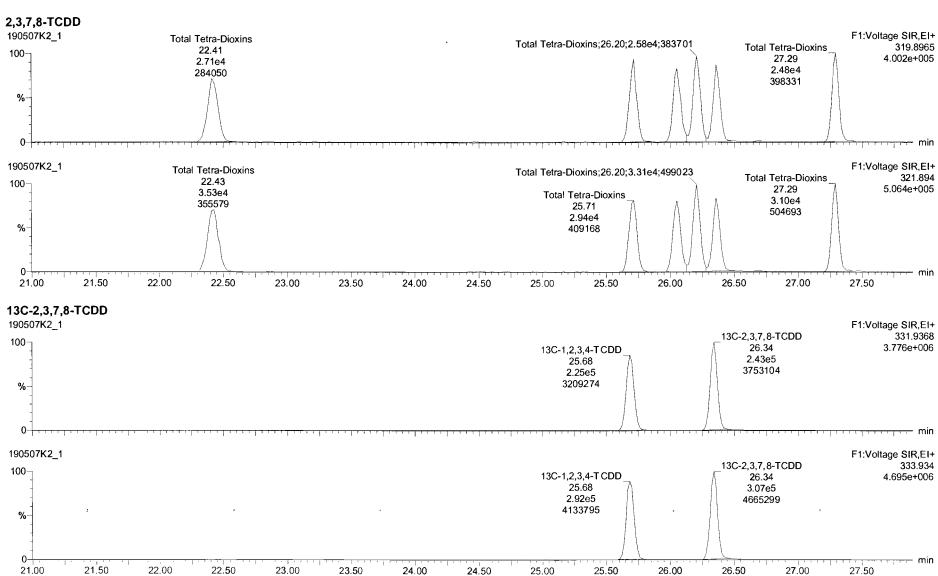
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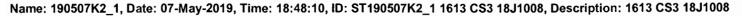
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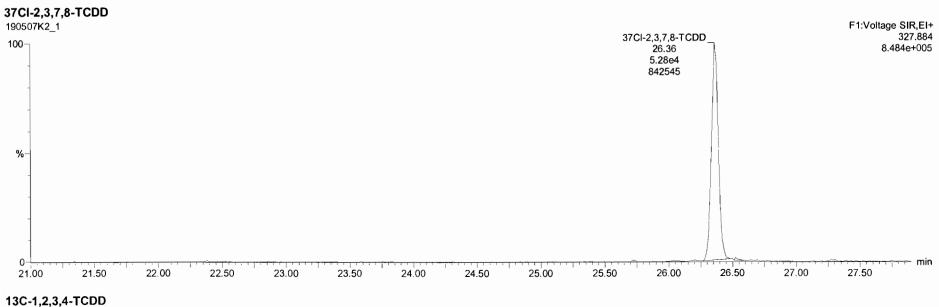
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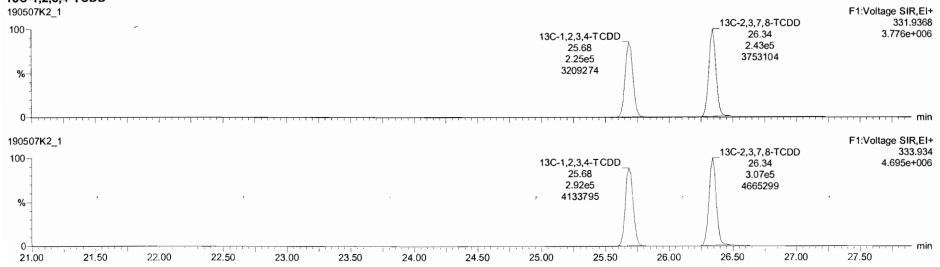


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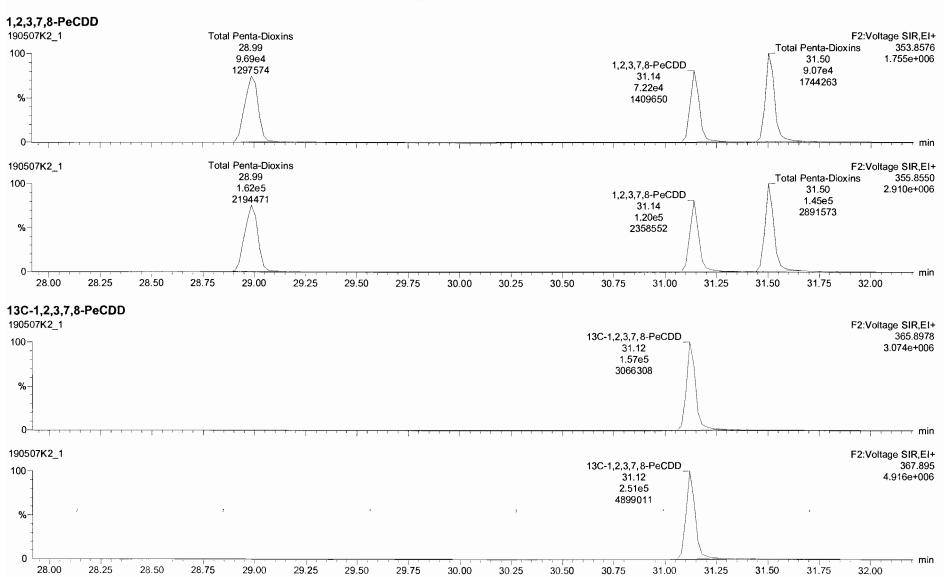


Quantify Sample Report Vista Analytical Laboratory

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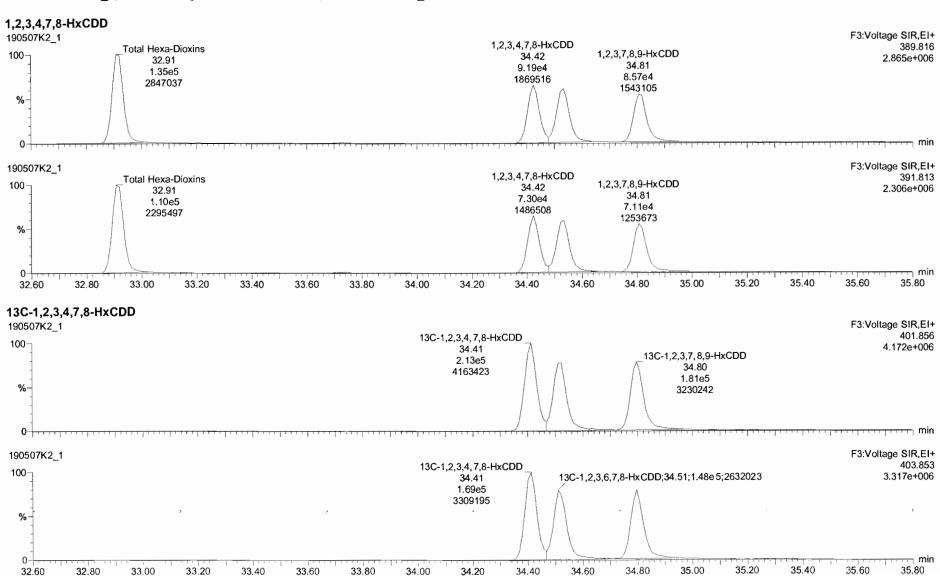
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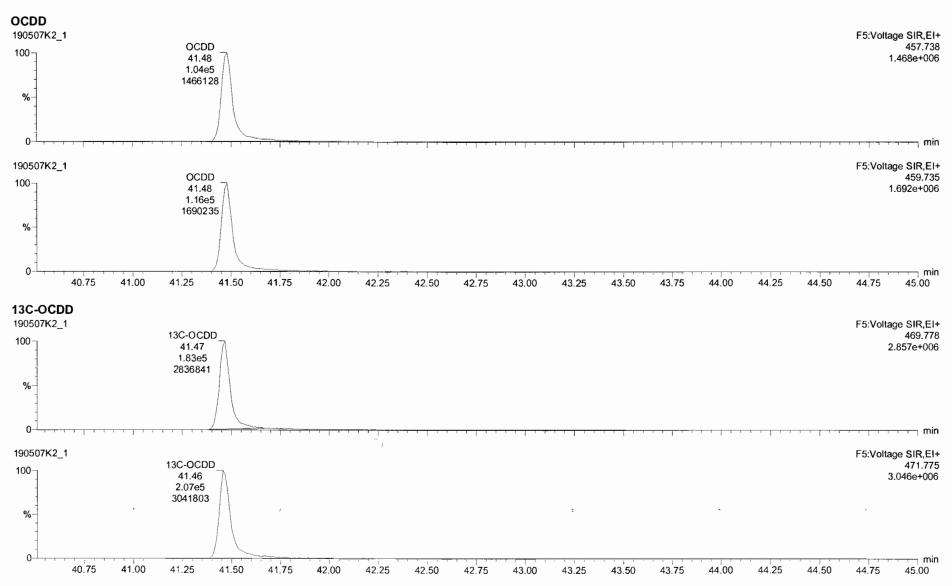
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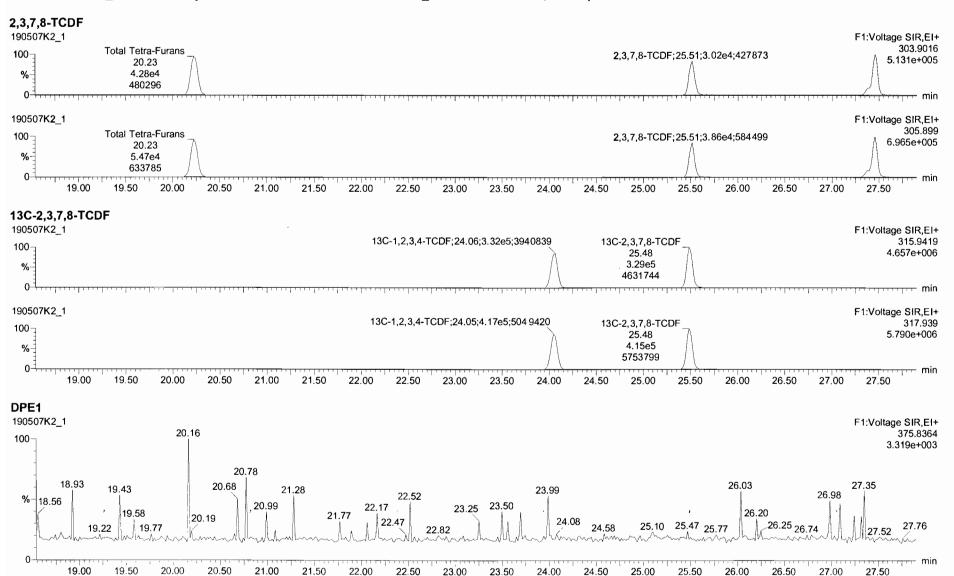


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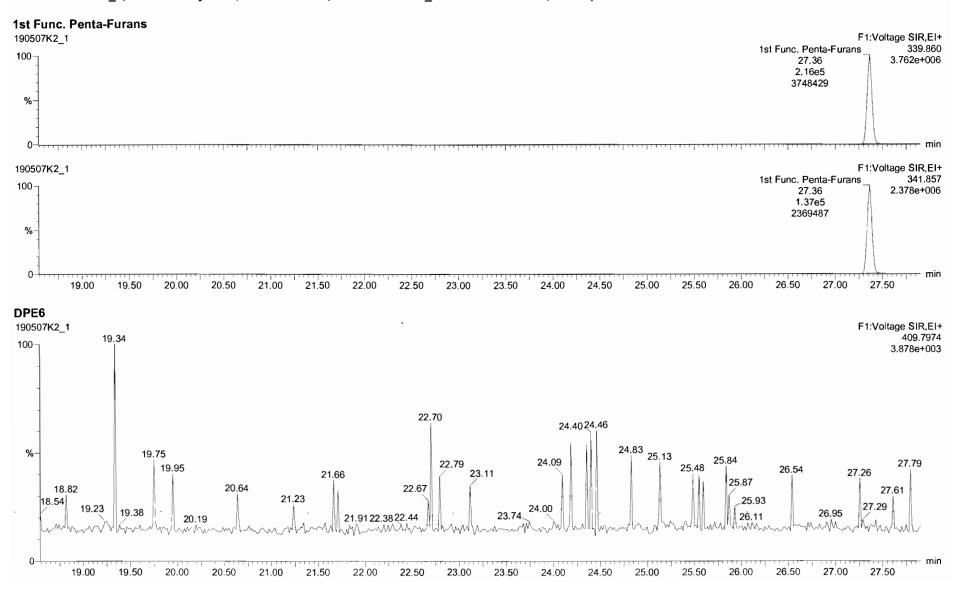
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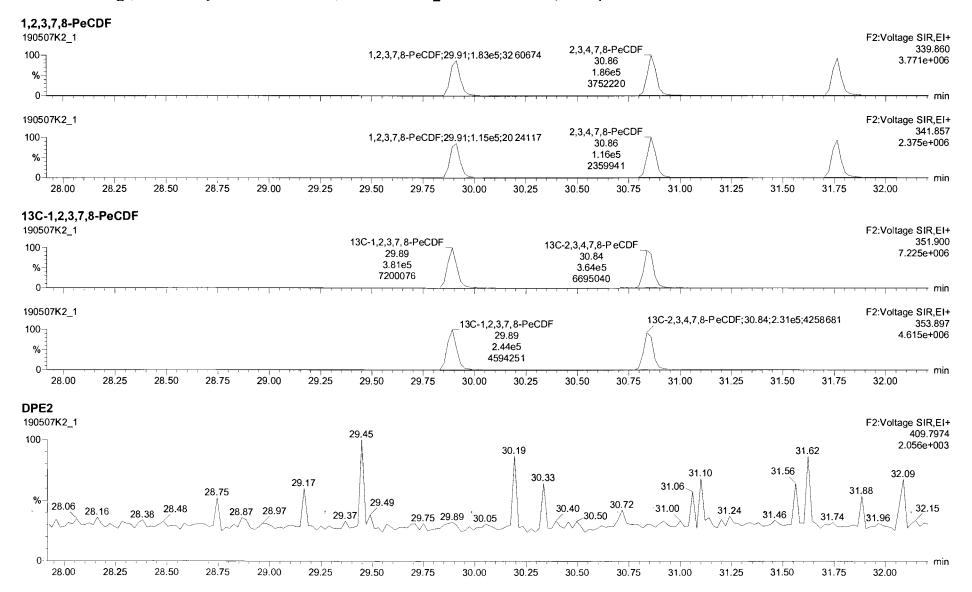
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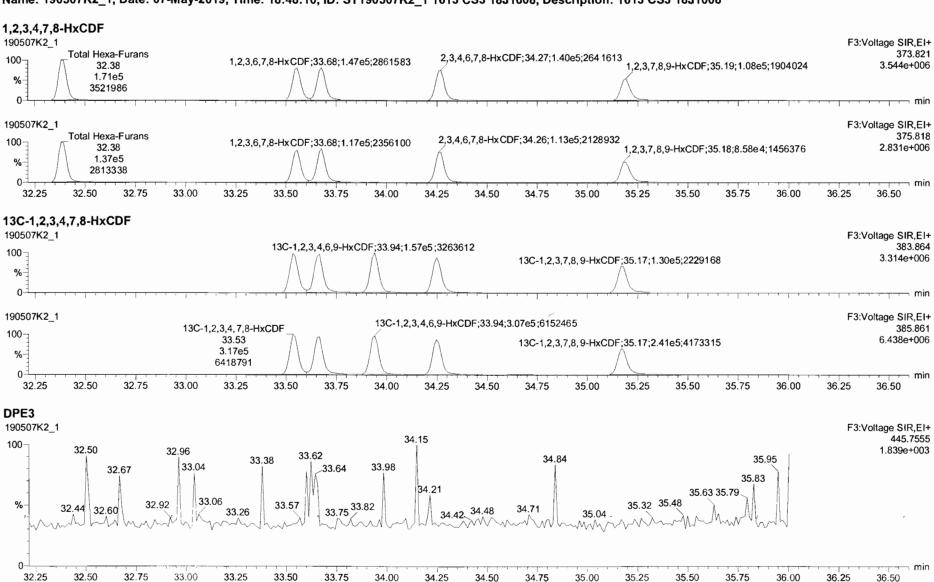


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38.50

38.75

39.00

39.25

39.50

36.25

36.50

36.75

37.00

37.50

37.75

38.00

3**7.25**

min

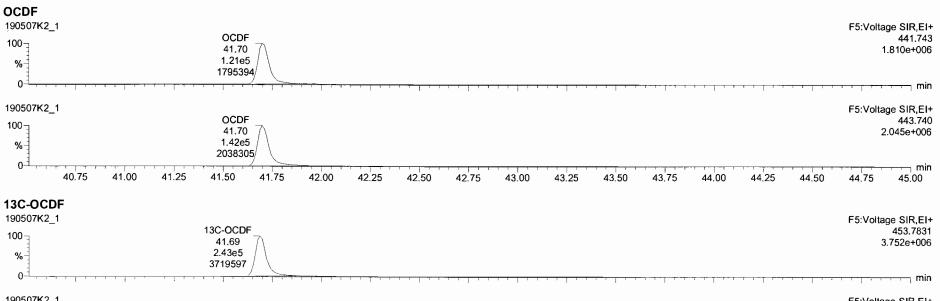
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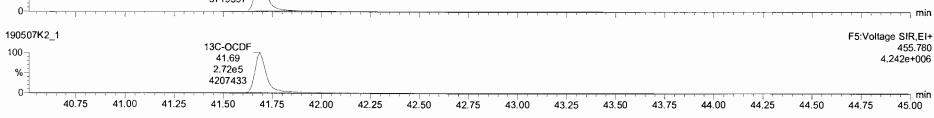
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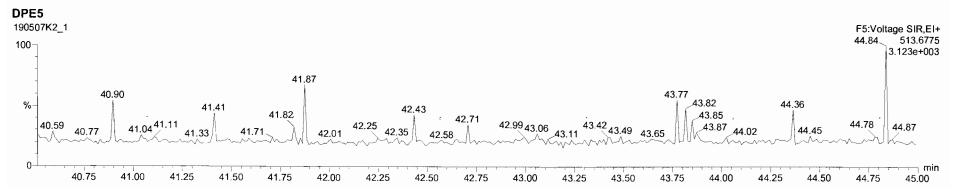
40.00

40.25

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Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

