

### IX. Field Duplicates

No field duplicates were identified in this SDG.

### X. Internal Standards

All internal standard recoveries (%R) were within QC limits.

### XI. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Flag	A or P
All samples in SDG APR4	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A

Raw data were not reviewed for Stage 2B validation.

### XII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

### XIII. System Performance

Raw data were not reviewed for Stage 2B validation.

### XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results reported by the laboratory as EMPCs, data were qualified as estimated in one sample.

Due to laboratory blank contamination, data were qualified as not detected or estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
 Polychlorinated Dioxins/Dibenzofurans - Data Qualification Summary - SDG APR4**

Sample	Compound	Flag	A or P	Reason
PG-T0-MUS-COC-151030	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A	Compound quantitation (EMPC)

**Port Gamble, Shellfish Monitoring  
 Polychlorinated Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG APR4**

Sample	Compound	Modified Final Concentration	A or P
PG-T0-MUS-COC-151030	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total HxCDD Total HpCDD Total HpCDF	0.0518U pg/g 0.189U pg/g 0.775U pg/g 0.502U pg/g 7.46U pg/g 0.0474J pg/g 0.249J pg/g 3.03J pg/g 0.446J pg/g	A

LDC #: 35845A21

**VALIDATION COMPLETENESS WORKSHEET**

Date: 2-20-16

SDG #: APR4

Stage A **2B**

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer: YR  
2nd Reviewer: OR

**METHOD:** HRGC/HRMS Polychlorinated Dioxins/Dibenzofurans (EPA Method 1613B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration/ICV	A SW	≤ 20/35 <u>ICV</u> QC limit
IV.	Continuing calibration	A	QC limits
V.	Laboratory Blanks	SW	
VI.	Field blanks	N	
VII.	Matrix spike/Matrix spike duplicates	N	C-S.
VIII.	Laboratory control samples	A	OPR
IX.	Field duplicates	N	
X.	Internal standards	A	
XI.	Compound quantitation RL/LOQ/LODs	SW	
XII.	Target compound identification	N	Not reviewed for Stage 2B
XIII.	System performance	N	↓
XIV.	Overall assessment of data	A	

Note: A = Acceptable  
N = Not provided/applicable  
SW = See worksheet

ND = No compounds detected  
R = Rinsate  
FB = Field blank

D = Duplicate  
TB = Trip blank  
EB = Equipment blank

SB=Source blank  
OTHER:

	Client ID	Lab ID	Matrix	Date
1	PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15
2				
3				
4				
5				
6				
7				
8				
9				
10				

Notes:

MB-012516				

# VALIDATION FINDINGS WORKSHEET

**METHOD:** HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

LDC #: 35845A21

**VALIDATION FINDINGS WORKSHEET**  
**Initial Calibration Verification**

Page: 1 of 1  
Reviewer: [Signature]  
2nd Reviewer: [Signature]

**METHOD:** HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y  N N/A Were results within the QC limits for the method?

#	Date	Standard ID	Compound	Finding (Limit: pg )	Associated Samples	Qualifications
	10/15/15	15101510	K	56.905 (45-56)	all	Jdets/P (+X) <u>(ND)</u>

## VALIDATION FINDINGS WORKSHEET

### Blanks

**METHOD:** HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Were all samples associated with a method blank?
- N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
- N N/A Was the method blank contaminated?

**Blank extraction date:** 01/25/16      **Blank analysis date:** 01/29/16

**Conc. units:** pg/g      **Associated samples:** all

Compound	Blank ID	Sample Identification							
	MB-012516	5x	1						
I	0.0500*	0.250	0.0518* /U						
O	0.142*	0.710	0.189 /U						
F	0.374	1.87	0.775 /U						
Q	0.541	2.71	0.502 /U						
G	6.16	30.8	7.46 /U						
S	0.0378*	0.189	0.0474* /J						
T	0.124*	0.620	0.249* /J						
U	0.743	3.72	3.03 /J						
W	0.0500*	0.250							
Y	0.286*	1.43	0.446* /J						

\*EMPC

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:  
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

**VALIDATION FINDINGS WORKSHEET**  
**Compound Quantitation and Reported RLs**

**METHOD:** GC/MS Dioxins/Dibenzofurans (Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?  
 Y N N/A Compound quantitation and RLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compound	Finding	Associated Samples	Qualifications
			EMPC results	all	Jdets/A

Comments: See sample calculation verification worksheet for recalculations

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Port Gamble, Shellfish Monitoring

**LDC Report Date:** February 24, 2016

**Parameters:** Polynuclear Aromatic Hydrocarbons

**Validation Level:** Stage 2B

**Laboratory:** Analytical Resources, Inc.

**Sample Delivery Group (SDG):** ATS0

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/05/16
PG-PJ-1-MUS-COC-160104MS	ATS0BMS	Tissue	01/04/16
PG-PJ-1-MUS-COC-160104MSD	ATS0BMSD	Tissue	01/04/16



## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
01/22/16	Benzo(k)fluoranthene	20.8	All samples in SDG ATS0	Benzo(k)fluoranthene Total Benzofluoranthenes	J (all detects) J (all detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

No field blanks were identified in this SDG.

## VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
PG-PJ-1-MUS-COC-160104MS/MSD (PG-PJ-1-MUS-COC-160104)	Naphthalene	44.0 (50-150)	34.7 (50-150)	J (all detects) UJ (all non-detects)	A
	2-Methylnaphthalene	-	43.3 (50-150)		
	Acenaphthene	-	49.3 (50-150)		
	Phenanthrene	-	44.0 (50-150)		
	Fluoranthene	-	46.7 (50-150)		
	Benzo(k)fluoranthene	-	48.7 (50-150)		

Relative percent differences (RPD) were within QC limits.

## IX. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
LCS-011416	Acenaphthylene	49.2 (50-150)	All samples in SDG ATS0	UJ (all non-detects)	P

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits with the following exceptions:

SRM ID	Compound	Concentration (Limits)	Associated Samples	Flag	A or P
SRM1974C 011416	2-Methylnaphthalene	0.59 ug/Kg (0.750-2.25)	All samples in SDG ATS0	J (all detects) UJ (all non-detects)	A
	Fluorene	0.98 ug/Kg (1.16-1.73)			
	Fluoranthene	22.4 ug/Kg 22.7-68.0)			
	Benzo(a)anthracene	2.27 ug/Kg (2.84-8.54)			
	Chrysene	8.90 ug/Kg (9.60-28.8)			
	Perylene	0.50U ug/Kg (0.280-0.840)			
SRM1974C 011416	Dibenz(a,h)anthracene	0.18 ug/Kg (0.050-0.150)	All samples in SDG ATS0	NA	-

## **X. Field Duplicates**

No field duplicates were identified in this SDG.

## **XI. Internal Standards**

All internal standard areas and retention times were within QC limits.

## **XII. Compound Quantitation**

Raw data were not reviewed for Stage 2B validation.

## **XIII. Target Compound Identifications**

Raw data were not reviewed for Stage 2B validation.

## **XIV. System Performance**

Raw data were not reviewed for Stage 2B validation.

## **XV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to continuing calibration %D, MS/MSD %R, LCS %R, and SRM concentration, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG ATS0**

Sample	Compound	Flag	A or P	Reason
PG-SMA2-2-MUS-COC-160104 PG-PJ-1-MUS-COC-160104 PG-WS-1-MUS-COC-160104 PG-GP-1-MUS-COC-160104 PG-SMA2-5-MUS-COC-160104 PG-SMA2-4-MUS-COC-160105	Benzo(k)fluoranthene Total Benzofluoranthenes	J (all detects) J (all detects)	A	Continuing calibration (%D)
PG-PJ-1-MUS-COC-160104	Naphthalene 2-Methylnaphthalene Acenaphthene Phenanthrene Fluoranthene Benzo(k)fluoranthene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
PG-SMA2-2-MUS-COC-160104 PG-PJ-1-MUS-COC-160104 PG-WS-1-MUS-COC-160104 PG-GP-1-MUS-COC-160104 PG-SMA2-5-MUS-COC-160104 PG-SMA2-4-MUS-COC-160105	Acenaphthylene	UJ (all non-detects)	P	Laboratory control samples (%R)
PG-SMA2-2-MUS-COC-160104 PG-PJ-1-MUS-COC-160104 PG-WS-1-MUS-COC-160104 PG-GP-1-MUS-COC-160104 PG-SMA2-5-MUS-COC-160104 PG-SMA2-4-MUS-COC-160105	2-Methylnaphthalene Fluorene Fluoranthene Benzo(a)anthracene Chrysene Perylene	J (all detects) UJ (all non-detects)	A	Standard reference materials (concentration)

**Port Gamble, Shellfish Monitoring  
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification  
Summary - SDG ATS0**

No Sample Data Qualified in this SDG

**METHOD:** GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	Δ	
III.	Initial calibration/ICV	<sup>F</sup> A SW/A	% PSD ≤ 20      ICV ≤ 30
IV.	Continuing calibration	SW	CCV ≤ 20
V.	Laboratory Blanks	Δ	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	
IX.	Laboratory control samples /SRM	SW/SW LCS, SRM	
X.	Field duplicates	N	
XI.	Internal standards	Δ	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Δ	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
2	PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
3	PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
4	PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
5	PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
6	PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/04/16
7	PG-PJ-1-MUS-COC-160104MS	ATS0BMS	Tissue	01/04/16
8	PG-PJ-1-MUS-COC-160104MSD	ATS0BMSD	Tissue	01/04/16
9				
10	MB-011416			
11				
12				

Notes:

## VALIDATION FINDINGS WORKSHEET

**METHOD: GC/MS SVOA**

A. Phenol	AA. 2-Chloronaphthalene	AAA. Butylbenzylphthalate	AAAA. Dibenzothiophene	A1.
B. Bis (2-chloroethyl) ether	BB. 2-Nitroaniline	BBB. 3,3'-Dichlorobenzidine	BBBB. Benzo(a)fluoranthene	B1.
C. 2-Chlorophenol	CC. Dimethylphthalate	CCC. Benzo(a)anthracene	CCCC. Benzo(b)fluorene	C1.
D. 1,3-Dichlorobenzene	DD. Acenaphthylene	DDD. Chrysene	DDDD. cis/trans-Decalin	D1.
E. 1,4-Dichlorobenzene	EE. 2,6-Dinitrotoluene	EEE. Bis(2-ethylhexyl)phthalate	EEEE. Biphenyl	E1.
F. 1,2-Dichlorobenzene	FF. 3-Nitroaniline	FFF. Di-n-octylphthalate	FFFF. Retene	F1.
G. 2-Methylphenol	GG. Acenaphthene	GGG. Benzo(b)fluoranthene	GGGG. C30-Hopane	G1.
H. 2,2'-Oxybis(1-chloropropane)	HH. 2,4-Dinitrophenol	HHH. Benzo(k)fluoranthene	HHHH. 1-Methylphenanthrene	H1.
I. 4-Methylphenol	II. 4-Nitrophenol	III. Benzo(a)pyrene	IIII. 1,4-Dioxane	I1.
J. N-Nitroso-di-n-propylamine	JJ. Dibenzofuran	JJJ. Indeno(1,2,3-cd)pyrene	JJJJ. Acetophenone	J1.
K. Hexachloroethane	KK. 2,4-Dinitrotoluene	KKK. Dibenz(a,h)anthracene	KKKK. Atrazine	K1.
L. Nitrobenzene	LL. Diethylphthalate	LLL. Benzo(g,h,i)perylene	LLLL. Benzaldehyde	L1.
M. Isophorone	MM. 4-Chlorophenyl-phenyl ether	MMM. Bis(2-Chloroisopropyl)ether	MMMM. Caprolactam	M1.
N. 2-Nitrophenol	NN. Fluorene	NNN. Aniline	NNNN. 2,6-Dichlorophenol	N1.
O. 2,4-Dimethylphenol	OO. 4-Nitroaniline	OOO. N-Nitrosodimethylamine	OOOO. 2,6-Dinitrotoluene	O1.
P. Bis(2-chloroethoxy)methane	PP. 4,6-Dinitro-2-methylphenol	PPP. Benzoic Acid	PPPP. 3-Methylphenol	P1.
Q. 2,4-Dichlorophenol	QQ. N-Nitrosodiphenylamine	QQQ. Benzyl alcohol	QQQQ. 3&4 Methylphenol	Q1.
R. 1,2,4-Trichlorobenzene	RR. 4-Bromophenyl-phenylether	RRR. Pyridine	RRRR. 4-Dimethyldibenzothiophene (4MDT)	R1.
S. Naphthalene	SS. Hexachlorobenzene	SSS. Benzidine	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	S1.
T. 4-Chloroaniline	TT. Pentachlorophenol	TTT. 1-Methylnaphthalene	TTTT. 1-Methyldibenzothiophene (1MDT)	T1.
U. Hexachlorobutadiene	UU. Phenanthrene	UUU. Benzo(b)thiophene	UUUU.	U1.
V. 4-Chloro-3-methylphenol	VV. Anthracene	VVV. Benzonaphthothiophene	VVVV.	V1.
W. 2-Methylnaphthalene	WW. Carbazole	WWW. Benzo(e)pyrene	WWWW.	W1.
X. Hexachlorocyclopentadiene	XX. Di-n-butylphthalate	XXX. 2,6-Dimethylnaphthalene	XXXX.	X1.
Y. 2,4,6-Trichlorophenol	YY. Fluoranthene	YYY. 2,3,5-Trimethylnaphthalene	YYYY.	Y1.
Z. 2,4,5-Trichlorophenol	ZZ. Pyrene	ZZZ. Perylene	ZZZZ.	Z1.

LDC #: 35845B26

### VALIDATION FINDINGS WORKSHEET Continuing Calibration

Page: 1 of 1  
Reviewer: FT  
2nd Reviewer: CL

**METHOD:** GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
- Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
- Y N N/A Were all %D and RRFs within the validation criteria of  $\leq 20$  %D and  $\geq 0.05$  RRF?

#	Date	Standard ID	Compound	Finding %D (Limit: $\leq 20.0\%$ )	Finding RRF (Limit: $\geq 0.05$ )	Associated Samples	Qualifications
	1/22/16 0905	CCV	HHH	20.8		All	N/A (Det) qual HHH Total Benzo[flu]anthrines



LDC #: 35846 B2b

**VALIDATION FINDINGS WORKSHEET**  
**Matrix Spike/Matrix Spike Duplicates**

Page: 1 of 1  
 Reviewer: FT  
 2nd Reviewer: ca

**METHOD:** GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	7+8	S	44.0 (90-150)	34.7 (90-150)	( )	2	J/MS/A ND+Det
		W	( )	43.3 ( )	( )	↓	↓
		GG	( )	49.3 ( )	( )	↓	↓
		UU	( )	44.0 ( )	( )	↓	↓
		YY	( )	46.7 ( )	( )	↓	↓
		HHH	( )	48.7 ( )	( )	↓	↓
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 35845 B2 b

**VALIDATION FINDINGS WORKSHEET**  
**Laboratory Control Samples (LCS)**

Page: 1 of 1  
 Reviewer: FT  
 2nd Reviewer: [Signature]

**METHOD:** GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
			( )	( )	( )		
	LCS-011416	DD	49.2 ( 50-150)	( )	( )	All	J/W/P (NO)
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 35845B2bVALIDATION FINDINGS WORKSHEET  
SRMPage: 1 of 1Reviewer: FT2nd Reviewer: ez

METHOD: GC/MS PAH (EPA SW 846 Method 8270D-SIM)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were the SRM values within the certified values?

#	SRM ID	Compound	Reported values (ug/Kg)	Certified true Value (ug/Kg)	Criteria: ± 50% of the certified true value	Associated Samples	Qualifications
	SRM 1974C	W	0.59	1.50	0.750 - 2.25	1-6	J/U/A (NO + Det)
	011416	NN	0.98	2.31	1.16 - 1.73		
		YY	22.4	45.3	22.7 - 68.0		
		CC	2.27	5.69	2.84 - 8.54		
		DD	8.90	19.2	9.60 - 28.8		
	FT	<del>GG</del>	<del>2.98</del>	<del>5.95</del>	<del>2.98 - 8.92</del>		↓ #7
		KK	0.18	0.100	0.050 - 0.150		↓ det/A (all NO)
		ZZ	0.504	0.560	0.280 - 0.840		J/P/A* (1, 2, 4 = NO)
		JJJ	0.89	not a target analyte			text
				in the SRM 1974C list			
						* Spike at RL	

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Port Gamble, Shellfish Monitoring

**LDC Report Date:** February 19, 2016

**Parameters:** Cadmium

**Validation Level:** Stage 2B

**Laboratory:** Analytical Resources, Inc.

**Sample Delivery Group (SDG):** ATS0

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/05/16

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Cadmium by Environmental Protection Agency (EPA) SW 846 Method 6010C

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition.

All technical holding time requirements were met.

## **II. Instrument Calibration**

Initial and continuing calibrations were performed as required by the methods.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

## **III. ICP Interference Check Sample Analysis**

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

## **IV. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **V. Field Blanks**

No field blanks were identified in this SDG.

## **VI. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits.

## **VII. Duplicate Sample Analysis**

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

## **VIII. Serial Dilution**

Serial dilution was not performed for this SDG.

## **IX. Laboratory Control Samples**

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

## **X. Field Duplicates**

No field duplicates were identified in this SDG.

## **XI. Sample Result Verification**

Raw data were not reviewed for Stage 2B validation.

## **XII. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
Cadmium - Data Qualification Summary - SDG ATSO**

No Sample Data Qualified in this SDG

**Port Gamble, Shellfish Monitoring  
Cadmium - Laboratory Blank Data Qualification Summary - SDG ATSO**

No Sample Data Qualified in this SDG



LDC #: 35845B4b

**VALIDATION COMPLETENESS WORKSHEET**

Date: 2-17-16

SDG #: ATSO

Stage 2B

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

6010C

Reviewer: MG

Cadmium

2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6010B/7470A/7471A) *gmh*

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Instrument Calibration	A	
III.	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	A	
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	MS (SDG: APR4)
VII.	Duplicate sample analysis	A	DUP (↓)
VIII.	Serial Dilution	N	not performed
IX.	Laboratory control samples	A	LCS
X.	Field Duplicates	N	
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	

Note: A = Acceptable  
 N = Not provided/applicable  
 SW = See worksheet

ND = No compounds detected  
 R = Rinsate  
 FB = Field blank

D = Duplicate  
 TB = Trip blank  
 EB = Equipment blank

SB=Source blank  
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
2	PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
3	PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
4	PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
5	PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
6	PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/04/16
7				1/5/16
8				
9				
10				
11				
12				
13				
14	PBS			

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Port Gamble, Shellfish Monitoring

**LDC Report Date:** February 19, 2016

**Parameters:** Percent Lipids

**Validation Level:** Stage 2B

**Laboratory:** Analytical Resources, Inc.

**Sample Delivery Group (SDG):** ATS0

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/05/16
PG-SMA2-2-MUS-COC-160104DUP	ATS0ADUP	Tissue	01/04/16
PG-SMA2-2-MUS-COC-160104TRP	ATS0ATRP	Tissue	01/04/16

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Percent Lipids by Bligh and Dyer Method

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition.

All technical holding time requirements were met.

## **II. Initial Calibration**

All criteria for the initial calibration were met.

## **III. Continuing Calibration**

Continuing calibration frequency and analysis criteria were met.

## **IV. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

<b>Blank ID</b>	<b>Analyte</b>	<b>Maximum Concentration</b>	<b>Associated Samples</b>
PB (prep blank)	Percent lipids	0.0700 mg/L	All samples in SDG ATSO

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

## **V. Field Blanks**

No field blanks were identified in this SDG.

## **VI. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

## **VII. Duplicate Sample Analysis/Triplicate Sample Analysis**

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

### **VIII. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) analyses were not required by the method.

### **IX. Field Duplicates**

No field duplicates were identified in this SDG.

### **X. Sample Result Verification**

Raw data were not reviewed for Stage 2B validation.

### **XI. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
Percent Lipids - Data Qualification Summary - SDG ATS0**

No Sample Data Qualified in this SDG

**Port Gamble, Shellfish Monitoring  
Percent Lipids - Laboratory Blank Data Qualification Summary - SDG ATS0**

No Sample Data Qualified in this SDG

LDC #: 35845B6

**VALIDATION COMPLETENESS WORKSHEET**

Date: 2-17-16

SDG #: ATSO

Stage 2B

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer: MG

2nd Reviewer: *[Signature]*

**METHOD: (Analyte) Percent Lipids (Method Bligh & Dyer)**

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	SW	PB only
V	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicate sample analysis	A	Trip (1,7,8)
VIII.	Laboratory control samples	N	not required
IX.	Field duplicates	N	
X.	Sample result verification	N	
XI.	Overall assessment of data	A	

Note: A = Acceptable  
 N = Not provided/applicable  
 SW = See worksheet

ND = No compounds detected  
 R = Rinsate  
 FB = Field blank

D = Duplicate  
 TB = Trip blank  
 EB = Equipment blank

SB=Source blank  
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
2	PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
3	PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
4	PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
5	PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
6	PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/09/16
7	#1 DUP			1/5/16
8	#1 TRIP			
9				
10				
11				
12				
13				
14				
15	PBS			

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**VALIDATION FINDINGS WORKSHEET**  
**Blanks**

**METHOD:** Inorganics, Method Bligh & Dyer

**Conc. units:** mg/L

**Associated Samples:** all (>5x)

Analyte	Blank ID	Blank ID	Blank Action Limit														
	PB	ICB/CCB (mg/L)		No Qual.													
% Lipids	0.0700		0.3500														

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:  
All contaminants within five times the method blank concentration were qualified as not detected, "U".



**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Port Gamble, Shellfish Monitoring  
**LDC Report Date:** February 22, 2016  
**Parameters:** Polychlorinated Dioxins/Dibenzofurans  
**Validation Level:** Stage 2B  
**Laboratory:** Analytical Resources, Inc.  
**Sample Delivery Group (SDG):** ATS0

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/05/16

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review (September 2011). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Dioxins/Dibenzofurans by Environmental Protection Agency (EPA) Method 1613B

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required frequency.

Retention time windows were established for all homologues. The chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomer was less than or equal to 25%.

The static resolving power was at least 10,000 (10% valley definition).

## III. Initial Calibration and Initial Calibration Verification

A five point initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 35.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were within the QC limits for unlabeled compounds and labeled compounds with the following exceptions:

Date	Compound	Concentration (Limits)	Associated Samples	Affected Compound	Flag	A or P
10/15/15	1,2,3,4,7,8-HxCDF	56.905 pg (45-56)	PG-GP-1-MUS-COC-160104	1,2,3,4,7,8-HxCDF Total HxCDF	J (all detects)	P
10/15/15	1,2,3,4,7,8-HxCDF	56.905 pg (45-56)	PG-SMA2-2-MUS-COC-160104 PG-PJ-1-MUS-COC-160104 PG-WS-1-MUS-COC-160104 PG-SMA2-5-MUS-COC-160104 PG-SMA2-4-MUS-COC-160105	1,2,3,4,7,8-HxCDF Total HxCDF	NA	-

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration results were within the QC limits for unlabeled compounds and labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within method and validation criteria.

### V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB-012516	01/25/16	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total HxCDD Total HpCDD Total PeCDF Total HpCDF	0.0500 pg/g 0.142 pg/g 0.374 pg/g 0.541 pg/g 6.16 pg/g 0.0378 pg/g 0.124 pg/g 0.743 pg/g 0.0500 pg/g 0.286 pg/g	All samples in SDG ATSO

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PG-SMA2-2-MUS-COC-160104	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total HxCDD Total HpCDF	0.0460 pg/g 0.127 pg/g 1.01 pg/g 0.376 pg/g 13.6 pg/g 0.494 pg/g 0.296 pg/g	0.0460U pg/g 0.127U pg/g 1.01U pg/g 0.376U pg/g 13.6U pg/g 0.494J pg/g 0.296J pg/g
PG-PJ-1-MUS-COC-160104	1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total HpCDF	0.175 pg/g 1.36 pg/g 0.437 pg/g 14.0 pg/g 0.173 pg/g 0.496 pg/g	0.175U pg/g 1.36U pg/g 0.437U pg/g 14.0U pg/g 0.173J pg/g 0.496J pg/g
PG-WS-1-MUS-COC-160104	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total HpCDF	0.0612 pg/g 0.173 pg/g 1.20 pg/g 0.443 pg/g 16.1 pg/g 0.393 pg/g	0.0612U pg/g 0.173U pg/g 1.20U pg/g 0.443U pg/g 16.1U pg/g 0.393J pg/g

Sample	Compound	Reported Concentration	Modified Final Concentration
PG-GP-1-MUS-COC-160104	1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total PeCDF Total HpCDF	0.127 pg/g 0.821 pg/g 0.320 pg/g 9.47 pg/g 0.133 pg/g 0.215 pg/g 0.306 pg/g	0.127U pg/g 0.821U pg/g 0.320U pg/g 9.47U pg/g 0.133J pg/g 0.215J pg/g 0.306J pg/g
PG-SMA2-5-MUS-COC-160104	1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total HpCDF	0.252 pg/g 1.61 pg/g 0.768 pg/g 19.6 pg/g 0.663 pg/g	0.252U pg/g 1.61U pg/g 0.768U pg/g 19.6U pg/g 0.663J pg/g
PG-SMA2-4-MUS-COC-160105	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total HpCDF	0.0449 pg/g 0.152 pg/g 0.866 pg/g 0.313 pg/g 11.0 pg/g 0.0667 pg/g 0.373 pg/g	0.0449U pg/g 0.152U pg/g 0.866U pg/g 0.313U pg/g 11.0U pg/g 0.0667J pg/g 0.373J pg/g

## VI. Field Blanks

No field blanks were identified in this SDG.

## VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## VIII. Ongoing Precision Recovery

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Internal Standards

All internal standard recoveries (%R) were within QC limits.

## XI. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Flag	A or P
All samples in SDG ATSO	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A

Raw data were not reviewed for Stage 2B validation.

## **XII. Target Compound Identifications**

Raw data were not reviewed for Stage 2B validation.

## **XIII. System Performance**

Raw data were not reviewed for Stage 2B validation.

## **XIV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to ICV concentration and results reported by the laboratory as EMPCs, data were qualified as estimated in six samples.

Due to laboratory blank contamination, data were qualified as not detected or estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
Polychlorinated Dioxins/Dibenzofurans - Data Qualification Summary - SDG ATS0**

Sample	Compound	Flag	A or P	Reason
PG-GP-1-MUS-COC-160104	1,2,3,4,7,8-HxCDF Total HxCDF	J (all detects)	P	Initial calibration verification (concentration)
PG-SMA2-2-MUS-COC-160104 PG-PJ-1-MUS-COC-160104 PG-WS-1-MUS-COC-160104 PG-GP-1-MUS-COC-160104 PG-SMA2-5-MUS-COC-160104 PG-SMA2-4-MUS-COC-160105	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A	Compound quantitation (EMPC)

**Port Gamble, Shellfish Monitoring  
Polychlorinated Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG ATS0**

Sample	Compound	Modified Final Concentration	A or P
PG-SMA2-2-MUS-COC-160104	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total HxCDD Total HpCDF	0.0460U pg/g 0.127U pg/g 1.01U pg/g 0.376U pg/g 13.6U pg/g 0.494J pg/g 0.296J pg/g	A
PG-PJ-1-MUS-COC-160104	1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total HpCDF	0.175U pg/g 1.36U pg/g 0.437U pg/g 14.0U pg/g 0.173J pg/g 0.496J pg/g	A
PG-WS-1-MUS-COC-160104	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total HpCDF	0.0612U pg/g 0.173U pg/g 1.20U pg/g 0.443U pg/g 16.1U pg/g 0.393J pg/g	A
PG-GP-1-MUS-COC-160104	1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total PeCDF Total HpCDF	0.127U pg/g 0.821U pg/g 0.320U pg/g 9.47U pg/g 0.133J pg/g 0.215J pg/g 0.306J pg/g	A
PG-SMA2-5-MUS-COC-160104	1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total HpCDF	0.252U pg/g 1.61U pg/g 0.768U pg/g 19.6U pg/g 0.663J pg/g	A

Sample	Compound	Modified Final Concentration	A or P
PG-SMA2-4-MUS-COC-160105	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total HpCDF	0.0449U pg/g 0.152U pg/g 0.866U pg/g 0.313U pg/g 11.0U pg/g 0.0667J pg/g 0.373J pg/g	A



**METHOD:** HRGC/HRMS Polychlorinated Dioxins/Dibenzofurans (EPA Method 1613B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration/ICV	A, SW	↳ 20/35 ICV QC limits
IV.	Continuing calibration	A	QC limits
V.	Laboratory Blanks	SW	
VI.	Field blanks	N	
VII.	Matrix spike/Matrix spike duplicates	N	C.S.
VIII.	Laboratory control samples	A	OPR
IX.	Field duplicates	N	
X.	Internal standards	A	
XI.	Compound quantitation RL/LOQ/LODs	SW	
XII.	Target compound identification	N	Not reviewed for Stage 2B
XIII.	System performance	N	↓
XIV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank  
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:  
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	PG-SMA2-2-MUS-COC-160104	ATS0A	Tissue	01/04/16
2	PG-PJ-1-MUS-COC-160104	ATS0B	Tissue	01/04/16
3	PG-WS-1-MUS-COC-160104	ATS0C	Tissue	01/04/16
4	PG-GP-1-MUS-COC-160104	ATS0D	Tissue	01/04/16
5	PG-SMA2-5-MUS-COC-160104	ATS0E	Tissue	01/04/16
6	PG-SMA2-4-MUS-COC-160105	ATS0F	Tissue	01/04/16 <sup>05</sup>
7				
8				
9				
10				

Notes:

MB-012516					

## VALIDATION FINDINGS WORKSHEET

**METHOD:** HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

A. 2,3,7,8-TCDD	F. 1,2,3,4,6,7,8-HpCDD	K. 1,2,3,4,7,8-HxCDF	P. 1,2,3,4,7,8,9-HpCDF	U. Total HpCDD
B. 1,2,3,7,8-PeCDD	G. OCDD	L. 1,2,3,6,7,8-HxCDF	Q. OCDF	V. Total TCDF
C. 1,2,3,4,7,8-HxCDD	H. 2,3,7,8-TCDF	M. 2,3,4,6,7,8-HxCDF	R. Total TCDD	W. Total PeCDF
D. 1,2,3,6,7,8-HxCDD	I. 1,2,3,7,8-PeCDF	N. 1,2,3,7,8,9-HxCDF	S. Total PeCDD	X. Total HxCDF
E. 1,2,3,7,8,9-HxCDD	J. 2,3,4,7,8-PeCDF	O. 1,2,3,4,6,7,8-HpCDF	T. Total HxCDD	Y. Total HpCDF

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**VALIDATION FINDINGS WORKSHEET**  
**Initial Calibration Verification**

METHOD: HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?
- N N/A Were results within the QC limits for the method?

#	Date	Standard ID	Compound	Finding (Limit: pg )	Associated Samples	Qualifications
	10/15/15	15101510	K	56.905 (45-56)	all	Jdets/P (+X) <u>(4 = det)</u>

## VALIDATION FINDINGS WORKSHEET

### Blanks

**METHOD:** HRGC/HRMS Dioxins/Dibenzofurans (EPA Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Were all samples associated with a method blank?
- N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
- N N/A Was the method blank contaminated?

**Blank extraction date:** 01/25/16      **Blank analysis date:** 01/29/16

**Conc. units:** pg/g      **Associated samples:** all

Compound	Blank ID	Sample Identification							
		5x	1	2	3	4	5	6	
I	0.0500*	0.250	0.0460* /U		0.0612 /U			0.0449 /U	
O	0.142*	0.710	0.127 /U	0.175 /U	0.173 /U	0.127 /U	0.252 /U	0.152* /U	
F	0.374	1.87	1.01 /U	1.36 /U	1.20 /U	0.821 /U	1.61 /U	0.866 /U	
Q	0.541	2.71	0.376 /U	0.437 /U	0.443 /U	0.320 /U	0.768 /U	0.313* /U	
G	6.16	30.8	13.6 /U	14.0 /U	16.1 /U	9.47 /U	19.6 /U	11.0 /U	
S	0.0378*	0.189		0.173* /J		0.133* /J		0.0667* /J	
T	0.124*	0.620	0.494* /J						
U	0.743	3.72							
W	0.0500*	0.250				0.215* /J			
Y	0.286*	1.43	0.296 /J	0.496 /J	0.393 /J	0.306 /J	0.663* /J	0.373* /J	

\*EMPC

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:  
 All contaminants within five times the method blank concentration were qualified as not detected, "U".

**VALIDATION FINDINGS WORKSHEET**  
**Compound Quantitation and Reported RLs**

**METHOD:** GC/MS Dioxins/Dibenzofurans (Method 1613B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?  
Y N N/A Compound quantitation and RLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compound	Finding	Associated Samples	Qualifications
			EMPC results	all	Jdets/A

Comments: See sample calculation verification worksheet for recalculations

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Port Gamble, Shellfish Monitoring

**LDC Report Date:** February 19, 2016

**Parameters:** Total Solids

**Validation Level:** Stage 2B

**Laboratory:** Analytical Resources, Inc.

**Sample Delivery Group (SDG):** AVB4/AVB5

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
13EB_ME-MTW01Z	AVB4A	Tissue	01/07/13
13CPS_DB-MTW01Z	AVB4B	Tissue	01/10/13
13NPS_CIAR2-MTW01Z	AVB4C	Tissue	01/14/13
PG-T0-MUS-COC-151030	AVB5A	Tissue	10/30/15
PG-SMA2-2-MUS-COC-160104	AVB5B	Tissue	01/04/16
PG-PJ-1-MUS-COC-160104	AVB5C	Tissue	01/04/16
PG-WS-1-MUS-COC-160104	AVB5D	Tissue	01/04/16
PG-GP-1-MUS-COC-160104	AVB5E	Tissue	01/04/16
PG-SMA2-5-MUS-COC-160104	AVB5F	Tissue	01/04/16
PG-SMA2-4-MUS-COC-160105	AVB5G	Tissue	01/05/16
PG-GP-1-MUS-COC-160104DUP	AVB5EDUP	Tissue	01/04/16

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Solids by Standard Method 2540G

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition.

All technical holding time requirements were met.

## **II. Initial Calibration**

All criteria for the initial calibration were met.

## **III. Continuing Calibration**

Continuing calibration frequency and analysis criteria were met.

## **IV. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **V. Field Blanks**

No field blanks were identified in this SDG.

## **VI. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

## **VII. Duplicate Sample Analysis**

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

## **VIII. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) analyses were not required by the method.

## **IX. Field Duplicates**

No field duplicates were identified in this SDG.

## **X. Sample Result Verification**

Raw data were not reviewed for Stage 2B validation.



## **XI. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
Total Solids - Data Qualification Summary - SDG AVB4/AVB5**

No Sample Data Qualified in this SDG

**Port Gamble, Shellfish Monitoring  
Total Solids - Laboratory Blank Data Qualification Summary - SDG AVB4/AVB5**

No Sample Data Qualified in this SDG

LDC #: 35845C6

**VALIDATION COMPLETENESS WORKSHEET**

Date: 2-17-16

SDG #: AVB4/AVB5

Stage 2B

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer: MG

2nd Reviewer: *[Signature]*

**METHOD: (Analyte) Total Solids (SM2540G)**

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	N	not required
V	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicate sample analysis	A	DUP
VIII.	Laboratory control samples	N	not required
IX.	Field duplicates	N	
X.	Sample result verification	N	
XI	Overall assessment of data	A	

Note: A = Acceptable  
 N = Not provided/applicable  
 SW = See worksheet

ND = No compounds detected  
 R = Rinsate  
 FB = Field blank

D = Duplicate  
 TB = Trip blank  
 EB = Equipment blank

SB=Source blank  
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	13EB_ME-MTW01Z	AVB4A	Tissue	01/07/13
2	13CPS_DB-MTW01Z	AVB4B	Tissue	01/10/13
3	13NPS_CJAR2-MTW01Z	AVB4C	Tissue	01/14/13
4	PG-T0-MUS-COC-151030	AVB5A	Tissue	10/30/15
5	PG-SMA2-2-MUS-COC-160104	AVB5B	Tissue	01/04/16
6	PG-PJ-1-MUS-COC-160104	AVB5C	Tissue	01/04/16
7	PG-WS-1-MUS-COC-160104	AVB5D	Tissue	01/04/16
8	PG-GP-1-MUS-COC-160104	AVB5E	Tissue	01/04/16
9	PG-SMA2-5-MUS-COC-160104	AVB5F	Tissue	01/04/16
10	PG-SMA2-4-MUS-COC-160105	AVB5G	Tissue	01/04/16
11	PG-GP-1-MUS-COC-160104DUP	AVB5EDUP	Tissue	01/04/16
12				
13				
14				
15				

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

LDC #: 35845

**EDD POPULATION COMPLETENESS WORKSHEET**

Date: 8.26.16

Anchor

Page: 1 of 1

2<sup>nd</sup> Reviewer: SC

The LDC job number listed above was entered by JD.

	EDD Process	Y/N	Init	Comments/Action
I.	EDD Completeness	-		
Ia.	- All methods present?	✓	JD	
Ib.	- All samples present/match report?	✓	JD	
Ic.	- All reported analytes present?	✓	JD	
Id.	-10% verification of EDD?	✓	JD	
II.	EDD Preparation/Entry	-		
IIa.	- QC Level applied? (EPA Stage 2B or EPA Stage 4)	✓	JD	
IIb.	- Laboratory EMPC qualified results qualified (J with reason code 23)?	✓	JD	
III.	Reasonableness Checks	-		
IIIa.	- Do all qualified ND results have ND qualifier (i.e. UJ)?	✓	JD	
IIIb.	- Do all qualified detect results have detect qualifier (i.e. J)?	✓	JD	
IIIc.	- If reason codes used, do all qualified results have reason code field populated, and vice versa?	✓	JD	
IIId.	- Do blank concentrations in report match EDD, where data was qualified due to blank?	✓	JD	
IIIe.	- Were any results reported above calibration range? If so, were results qualified appropriately?	NA	JD	
IIIf.	- Are all results marked reportable "Yes" unless rejected for overall assessment in the data validation report?	✓	JD	
IIIg.	- Are there any lab "R" qualified data? / Are the entry columns blank for these results?	NA	JD	
IIIh.	- Is the detect flag set to "N" for all "U" qualified blank results?	✓	JD	

Notes: \*see readme

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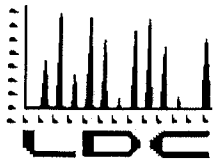
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The attached zipped file contains two files:

<u>File</u>	<u>Format</u>	<u>Description</u>
1) Readme_projectname_date.doc	MS Word 2003	A "Readme" file (this document).
2) LDC35845_APR4,ATS0,AVB4,AVB5_VEDD_20160214.xlsx	MS Excel 2007	A spreadsheet for the following SDG(s):
		APR4 35845A
		ATS0 35845B
		AVB4/AVB5 35845C

No discrepancies were observed between the hardcopy data packages and the electronic data deliverables during EDD population of validation qualifiers. A 100% verification of the EDD was not performed.

Please contact Christina Rink at (760) 827-1100 if you have any questions regarding this electronic data submittal.



**LABORATORY DATA CONSULTANTS, INC.**

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Anchor Environmental, LLC  
720 Olive Way, Suite 1900  
Seattle, WA 98101  
ATTN: Ms. Cindy Fields

March 24, 2016

SUBJECT: Port Gamble, Shellfish Monitoring, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on February 29, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project #35972:**

<b><u>SDG #</u></b>	<b><u>Fraction</u></b>
B612062, B612077	Polychlorinated Biphenyls as Congeners

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project, May 2015
- USEPA Contract Laboratory Program National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins and Chlorinated Dibenzofurans Data Review, September 2011

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink  
Project Manager/Chemist

EDD Stage 2B

LDC #35972 (Anchor Environmental-Seattle WA / Port Gamble, Shellfish Monitoring)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PCB Cong. (1668A)																												
					W	T	W	T	W	T	W	T	W	T	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S		
Matrix:	Water/Soil/Tissue				W	T	W	T	W	T	W	T	W	T	W	S	W	S	W	S	W	S	W	S	W	S	W	S				
A	B612062	02/29/16	03/21/16	0 6																												
B	B612077	02/29/16	03/21/16	0 1																												
Total	A/CR			0 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Port Gamble, Shellfish Monitoring

**LDC Report Date:** March 24, 2016

**Parameters:** Polychlorinated Biphenyls as Congeners

**Validation Level:** Stage 2B

**Laboratory:** Maxxam

**Sample Delivery Group (SDG):** B612062

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PG-SMA2-2-MUS-COC-160104	BRP508	Tissue	01/04/16
PG-PJ-1-MUS-COC-160104	BRP509	Tissue	01/04/16
PG-WS-1-MUS-COC-160104	BRP510	Tissue	01/04/16
PG-GP-1-MUS-COC-160104	BRP511	Tissue	01/04/16
PG-SMA2-5-MUS-COC-160104	BRP512	Tissue	01/04/16
PG-SMA2-4-MUS-COC-160104	BRP513	Tissue	01/04/16
PG-WS-1-MUS-COC-160104DUP	BRP510DUP	Tissue	01/04/16



## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review (September 2011). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Biphenyls (PCBs) as Congeners by Environmental Protection Agency (EPA) Method 1668A

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. HRGC/HRMS Instrument Performance Check**

Instrument performance was checked at the required frequency.

Retention time windows were established for all congeners. The chromatographic resolution between the congeners PCB-23 and PCB-34 and congeners PCB-182 and PCB-187 was resolved with a valley of less than or equal to 40%.

The static resolving power was at least 10,000 (10% valley definition).

## **III. Initial Calibration and Initial Calibration Verification**

A five point initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and labeled compounds.

The ion abundance ratios for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for unlabeled and labeled compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The ion abundance ratios for all compounds were within validation criteria.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
4386412-MB	02/11/16	PCB-11 PCB-20/28 PCB-21/33 PCB-22 PCB-26/29 PCB-31 PCB-37 PCB-49/69 PCB-52 PCB-61/70/74/76 PCB-66 PCB-83/99 PCB-85/116/117 PCB-86/87/97/109/119/125 PCB-90/101/113 PCB-105 PCB-107 PCB-110/115 PCB-118 PCB-129/138/163 PCB-146 PCB-147/149 PCB-156/157 PCB-180/193 PCB-187 PCB-209	0.0092 ng/g 0.00436 ng/g 0.00231 ng/g 0.00161 ng/g 0.00069 ng/g 0.00340 ng/g 0.00143 ng/g 0.0016 ng/g 0.0020 ng/g 0.00519 ng/g 0.00281 ng/g 0.0048 ng/g 0.00113 ng/g 0.00196 ng/g 0.00586 ng/g 0.00227 ng/g 0.00098 ng/g 0.00336 ng/g 0.00707 ng/g 0.0113 ng/g 0.0031 ng/g 0.0026 ng/g 0.00125 ng/g 0.00365 ng/g 0.0041 ng/g 0.0581 ng/g	All samples in SDG B612062

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PG-SMA2-2-MUS-COC-160104	PCB-11	0.0069 ng/g	0.0069U ng/g
PG-PJ-1-MUS-COC-160104	PCB-11	0.0070 ng/g	0.0070U ng/g
PG-WS-1-MUS-COC-160104	PCB-11	0.0099 ng/g	0.0099U ng/g
PG-GP-1-MUS-COC-160104	PCB-11	0.0069 ng/g	0.0069U ng/g
PG-SMA2-5-MUS-COC-160104	PCB-11	0.0078 ng/g	0.0078U ng/g
PG-SMA2-4-MUS-COC-160104	PCB-11	0.00785 ng/g	0.00785U ng/g

## VI. Field Blanks

No field blanks were identified in this SDG.

## VII. Matrix Spike/Matrix Spike Duplicates/Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
4386412-BS/BSD (All samples in SDG B612062)	PCB-209	154 (50-150)	153 (50-150)	NA	-

Relative percent differences (RPD) were within QC limits.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Internal Standards

All internal standard recoveries (%R) were within QC limits.

## XI. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Flag	A or P
All samples in SDG B612062	Results were flagged (1) by the laboratory to indicate results reported as estimated maximum possible concentration (EMPC)	J (all detects)	A

Raw data were not reviewed for Stage 2B validation.

## XII. Target Compound Identification

Raw data were not reviewed for Stage 2B validation.

### **XIII. System Performance**

Raw data were not reviewed for Stage 2B validation.

### **XIV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results reported by the laboratory as EMPC, data were qualified as estimated in six samples.

Due to laboratory blank contamination, data were qualified as not detected in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
 Polychlorinated Biphenyls as Congeners - Data Qualification Summary - SDG  
 B612062**

Sample	Compound	Flag	A or P	Reason
PG-SMA2-2-MUS-COC-160104 PG-PJ-1-MUS-COC-160104 PG-WS-1-MUS-COC-160104 PG-GP-1-MUS-COC-160104 PG-SMA2-5-MUS-COC-160104 PG-SMA2-4-MUS-COC-160104	Results were flagged (1) by the laboratory to indicate results reported as estimated maximum possible concentration (EMPC)	J (all detects)	A	Compound quantitation (EMPC)

**Port Gamble, Shellfish Monitoring  
 Polychlorinated Biphenyls as Congeners - Laboratory Blank Data Qualification  
 Summary - SDG B612062**

Sample	Compound	Modified Final Concentration	A or P
PG-SMA2-2-MUS-COC-160104	PCB-11	0.0069U ng/g	A
PG-PJ-1-MUS-COC-160104	PCB-11	0.0070U ng/g	A
PG-WS-1-MUS-COC-160104	PCB-11	0.0099U ng/g	A
PG-GP-1-MUS-COC-160104	PCB-11	0.0069U ng/g	A
PG-SMA2-5-MUS-COC-160104	PCB-11	0.0078U ng/g	A
PG-SMA2-4-MUS-COC-160104	PCB-11	0.00785U ng/g	A

LDC #: 35972A31  
 SDG #: B612062  
 Laboratory: Maxxam

**VALIDATION COMPLETENESS WORKSHEET**  
 Stage 2B

Date: 3-23-16  
 Page: 1 of 1  
 Reviewer: om  
 2nd Reviewer: av

**METHOD:** HRGC/HRMS Polychlorinated Biphenyl Congeners (EPA Method 1668A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	≤ 20 ICV ≤ 30
IV.	Continuing calibration	A	≤ 30/50
V.	Laboratory Blanks	SW	
VI.	Field blanks	N	
VII.	Matrix spike/Matrix spike duplicates	DUP N/A	C.S. / D = 3+7
VIII.	Laboratory control samples	SW	LCS/D
IX.	Field duplicates	N	
X.	Internal standards	A	
XI.	Compound quantitation RL/LOQ/LODs	SW	
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	PG-SMA2-2-MUS-COC-160104	BRP508	Tissue	01/04/16
2	PG-PJ-1-MUS-COC-160104	BRP509	Tissue	01/04/16
3	PG-WS-1-MUS-COC-160104	BRP510	Tissue	01/04/16
4	PG-GP-1-MUS-COC-160104	BRP511	Tissue	01/04/16
5	PG-SMA2-5-MUS-COC-160104	BRP512	Tissue	01/04/16
6	PG-SMA2-4-MUS-COC-160104	BRP513	Tissue	01/04/16
7	PG-WS-1-MUS-COC-160104DUP	BRP510DUP	Tissue	01/04/16
8				
9				
10				
11				

Notes:

4386412 MB				

## VALIDATION FINDINGS WORKSHEET

### Blanks

**METHOD:** HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Were all samples associated with a method blank?
- N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
- N N/A Was the method blank contaminated?

Blank extraction date: 02/11/16      Blank analysis date: 02/18/16      Associated samples: all

Qual U

Conc. units: ng/g

Compound	Blank ID		Sample Identification							
	4386412-MB	5x	1	2	3	4	5	6		
PCB-11	0.0092	0.0460	0.0069	0.0070	0.0099	0.0069	0.0078	0.00785		
PCB-20/28	0.00436	0.0218								
PCB-21/33	0.00231	0.0116								
PCB-22	0.00161	0.00805								
PCB-26/29	0.00069	0.00345								
PCB-31	0.00340	0.0170								
PCB-37	0.00143	0.00715								
PCB-49/69	0.0016	0.00800								
PCB-52	0.0020	0.0100								
PCB-61/70/74/76	0.00519	0.0260								
PCB-66	0.00281	0.0141								
PCB-83/99	0.0048	0.0240								
PCB-85/116/117	0.00113	0.00565								
PCB-86/87/97/109/119/125	0.00196	0.00980								
PCB-90/101/113	0.00586	0.0293								
PCB-105	0.00227	0.0114								
PCB-107	0.00098	0.00490								
PCB-110/115	0.00336	0.0168								
PCB-118	0.00707	0.0354								
PCB-129/138/163	0.0113	0.0565								



**VALIDATION FINDINGS WORKSHEET**  
**Blanks**

**METHOD:** HRGC/HRMS PCB Congeners (EPA Method 1668A)

Compound	Blank ID		Sample Identification									
	4386412-MB	5x	1	2	3	4	5	6				
PCB-146	0.0031	0.0155										
PCB-147/149	0.0026	0.0130										
PCB-156/157	0.00125	0.00625										
PCB-180/193	0.00365	0.0183										
PCB-187	0.0041	0.0205										
PCB-209	0.0581	0.2905										

\*EMPC

### VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

**METHOD:** HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".



- N N/A Was a LCS required?
- N N/A Was a LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
- (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	Lab ID/Reference	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		<u>4386412 BS/BS</u>	<u>PCB-209</u>	<u>154 (50-150)</u>	<u>153 (50-150)</u>	( )	<u>all</u>	<u>Idets/P (ND)</u>
				( )	( )	( )		
				( )	( )	( )		
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**VALIDATION FINDINGS WORKSHEET**  
**Compound Quantitation and Reported CRQLs**

**METHOD:** HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A  Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?  
 Y N N/A  Compound quantitation and CRQLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compound	Finding	Associated Samples	Qualifications
			EMPC results results flagged (1) by the laboratory (reported concentration at an elevated EDL)	All	Jdets/A

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Port Gamble, Shellfish Monitoring  
**LDC Report Date:** March 23, 2016  
**Parameters:** Polychlorinated Biphenyls as Congeners  
**Validation Level:** Stage 2B  
**Laboratory:** Maxxam  
**Sample Delivery Group (SDG):** B612077

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
PG-T0-MUS-COC-151030	BRP572	Tissue	10/30/15

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review (September 2011). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Biphenyls (PCBs) as Congeners by Environmental Protection Agency (EPA) Method 1668A

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. HRGC/HRMS Instrument Performance Check**

Instrument performance was checked at the required frequency.

Retention time windows were established for all congeners. The chromatographic resolution between the congeners PCB-23 and PCB-34 and congeners PCB-182 and PCB-187 was resolved with a valley of less than or equal to 40%.

The static resolving power was at least 10,000 (10% valley definition).

## **III. Initial Calibration and Initial Calibration Verification**

A five point initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and labeled compounds.

The ion abundance ratios for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for unlabeled and labeled compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The ion abundance ratios for all compounds were within validation criteria.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
4386412-MB	02/11/16	PCB-11 PCB-20/28 PCB-21/33 PCB-22 PCB-26/29 PCB-31 PCB-37 PCB-49/69 PCB-52 PCB-67/70/74/76 PCB-66/95 PCB-83/99 PCB-85/116/117 PCB-86/87/97/109/119/125 PCB-90/101/103 PCB-105 PCB-107 PCB-110/115 PCB-118 PCB-129/138/163 PCB-146 PCB-147/149 PCB-156/157 PCB-180/193 PCB-187 PCB-209	0.0092 ng/g 0.00436 ng/g 0.00231 ng/g 0.00161 ng/g 0.00069 ng/g 0.0340 ng/g 0.00143 ng/g 0.0016 ng/g 0.020 ng/g 0.00519 ng/g 0.00281 ng/g 0.0048 ng/g 0.00113 ng/g 0.00196 ng/g 0.00586 ng/g 0.00227 ng/g 0.00098 ng/g 0.00336 ng/g 0.00707 ng/g 0.0113 ng/g 0.0031 ng/g 0.0026 ng/g 0.00125 ng/g 0.00365 ng/g 0.0041 ng/g 0.0581 ng/g	All samples in SDG B612077

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PG-T0-MUS-COC-151030	PCB-11 PCB-66/95 PCB-105 PCB-107 PCB-118 PCB-146 PCB-156/157 PCB-180/193 PCB-187	0.00912 ng/g 0.0124 ng/g 0.0100 ng/g 0.00307 ng/g 0.0304 ng/g 0.0132 ng/g 0.00290 ng/g 0.0091 ng/g 0.0187 ng/g	0.00912U ng/g 0.0124U ng/g 0.0100U ng/g 0.00307U ng/g 0.0304U ng/g 0.0132U ng/g 0.00290U ng/g 0.0091U ng/g 0.0187U ng/g

## VI. Field Blanks

No field blanks were identified in this SDG.

## VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

### VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
4386412-LCS/D (All samples in SDG B612077)	PCB-209	154 (50-150)	153 (50-150)	NA	-

Relative percent differences (RPD) were within QC limits.

### IX. Field Duplicates

No field duplicates were identified in this SDG.

### X. Internal Standards

All internal standard recoveries (%R) were within QC limits.

### XI. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Flag	A or P
All samples in SDG B612077	Results were flagged (1) by the laboratory to indicate results reported as estimated maximum possible concentration (EMPC)	J (all detects)	A

Raw data were not reviewed for Stage 2B validation.

### XII. Target Compound Identification

Raw data were not reviewed for Stage 2B validation.

### XIII. System Performance

Raw data were not reviewed for Stage 2B validation.

### XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.



Due to results reported by the laboratory as EMPC, data were qualified as estimated in one sample.

Due to laboratory blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Port Gamble, Shellfish Monitoring  
 Polychlorinated Biphenyls as Congeners - Data Qualification Summary - SDG  
 B612077**

Sample	Compound	Flag	A or P	Reason
All samples in SDG B612077	Results were flagged (1) by the laboratory to indicate results reported as estimated maximum possible concentration (EMPC)	J (all detects)	A	Compound quantitation (EMPC)

**Port Gamble, Shellfish Monitoring  
 Polychlorinated Biphenyls as Congeners - Laboratory Blank Data Qualification  
 Summary - SDG B612077**

Sample	Compound	Modified Final Concentration	A or P
PG-T0-MUS-COC-151030	PCB-11 PCB-66/95 PCB-105 PCB-107 PCB-118 PCB-146 PCB-156/157 PCB-180/193 PCB-187	0.00912U ng/g 0.0124U ng/g 0.0100U ng/g 0.00307U ng/g 0.0304U ng/g 0.0132U ng/g 0.00290U ng/g 0.0091U ng/g 0.0187U ng/g	A

LDC #: 35972B31  
 SDG #: B612077  
 Laboratory: Maxxam

**VALIDATION COMPLETENESS WORKSHEET**

Stage 2B

Date: 3-8-16  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** HRGC/HRMS Polychlorinated Biphenyl Congeners (EPA Method 1668A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	HRGC/HRMS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	≤ 20 ICV ≤ 30
IV.	Continuing calibration	A	≤ 30/50
V.	Laboratory Blanks	SW	
VI.	Field blanks	N	
VII.	Matrix spike/Matrix spike duplicates	N	C.S.
VIII.	Laboratory control samples	SW	LCS/D
IX.	Field duplicates	N	
X.	Internal standards	A	
XI.	Compound quantitation RL/LOQ/LODs	SW	No EMPC (reported as ND) <sup>TH</sup> 3-23-16
XII.	Target compound identification	N	
XIII.	System performance	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	PG-T0-MUS-COC-151030	BRP572	Tissue	10/30/15
2				
3				
4				
5				
6				
7				
8				
9				
10				

Notes:

4386412-MB				

## VALIDATION FINDINGS WORKSHEET

### Blanks

**METHOD:** HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Were all samples associated with a method blank?
- Y N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
- Y N N/A Was the method blank contaminated?

**Blank extraction date:** 02/11/16      **Blank analysis date:** 02/18/16      **Associated samples:** all

Qual U

**Conc. units:** ng/g

Compound	Blank ID		Sample Identification							
	4386412-MB	5x	1							
PCB-11	0.0092	0.0460	0.00912							
PCB-20/28	0.00436	0.0218								
PCB-21/33	0.00231	0.0116								
PCB-22	0.00161	0.00805								
PCB-26/29	0.00069	0.00345								
PCB-31	0.00340	0.0170								
PCB-37	0.00143	0.00715								
PCB-49/69	0.0016	0.00800								
PCB-52	0.0020	0.0100								
PCB-61/70/74/76	0.00519	0.0260								
PCB-66/95	0.00281	0.0141	0.0124							
PCB-83/99	0.0048	0.0240								
PCB-85/116/117	0.00113	0.00565								
PCB-86/87/97/109/119/125	0.00196	0.00980								
PCB-90/101/113	0.00586	0.0293								
PCB-105	0.00227	0.0114	0.0100							
PCB-107	0.00098	0.00490	0.00307							
PCB-110/115	0.00336	0.0168								
PCB-118	0.00707	0.0354	0.0304							
PCB-129/138/163	0.0113	0.0565								

### VALIDATION FINDINGS WORKSHEET Blanks

METHOD: HRGC/HRMS PCB Congeners (EPA Method 1668A)

Compound	Blank ID		Sample Identification							
	4386412-MB	5x	1							
PCB-146	0.0031	0.0155	0.0132							
PCB-147/149	0.0026	0.0130								
PCB-156/157	0.00125	0.00625	0.00290							
PCB-180/193	0.00365	0.0183	0.0091							
PCB-187	0.0041	0.0205	0.0187							
PCB-209	0.0581	0.2905								

\*EMPC

### VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

**METHOD:** HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Was a LCS required?
- N N/A Was a LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
- N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	Lab ID/Reference	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		4386412-LCS/D	PCB-209	154 (50-150)	153 (50-150)	( )	all	Jdets/P (ND)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

**VALIDATION FINDINGS WORKSHEET**  
**Compound Quantitation and Reported CRQLs**

**METHOD:** HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?  
Y N N/A Compound quantitation and CRQLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	Compound	Finding	Associated Samples	Qualifications
			EMPC results results flagged (1) by the laboratory (reported concentration at an elevated EDL)	All	Jdets/A

Comments: \_\_\_\_\_

\_\_\_\_\_

LDC #: 35972

**EDD POPULATION COMPLETENESS WORKSHEET**

Anchor

Date: 3-24-16

Page: 1 of 1

2<sup>nd</sup> Reviewer: [Signature]

The LDC job number listed above was entered by (U).

	EDD Process	Y/N	Init	Comments/Action
I.	EDD Completeness	-		
Ia.	- All methods present?	✓	(U)	
Ib.	- All samples present/match report?	✓	(U)	
Ic.	- All reported analytes present?	✓	(U)	
Id.	- <del>10%</del> verification of EDD?	✓	(U)	
II.	EDD Preparation/Entry	-		
IIa.	- QC Level applied? (EPAS <del>stage</del> 2B or EPAS <del>stage</del> 4)	✓	(U)	
IIb.	- Laboratory EMPC qualified results qualified (J with reason code 23)?	✓	(U)	
III.	Reasonableness Checks	-		
IIIa.	- Do all qualified ND results have ND qualifier (i.e. UJ)?	NA	(U)	
IIIb.	- Do all qualified detect results have detect qualifier (i.e. J)?	✓	(U)	
IIIc.	- If reason codes used, do all qualified results have reason code field populated, and vice versa?	✓	(U)	
IIId.	- Do blank concentrations in report match EDD, where data was qualified due to blank?	✓	(U)	
IIIe.	- Were any results reported above calibration range? If so, were results qualified appropriately?	NA	(U)	
IIIf.	- Are all results marked reportable "Yes" unless rejected for overall assessment in the data validation report?	✓	(U)	
IIIg.	- Are there any lab "R" qualified data? / Are the entry columns blank for these results?	NA	(U)	
IIIh.	- Is the detect flag set to "N" for all "U" qualified blank results?	✓	(U)	

Notes: \*see readme

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The attached zipped file contains two files:

<u>File</u>	<u>Format</u>	<u>Description</u>
1) Readme_Gamble_032416.doc	MS Word 2003	A "Readme" file (this document).
2) LDC35972_B612062,B612077_VEDD_20160311.xlsx	MS Excel 2007	A spreadsheet for the following SDG(s): B612062 35972A B612077 35972B

No discrepancies were observed between the hardcopy data packages and the electronic data deliverables during EDD population of validation qualifiers. A 100% verification of the EDD was not performed.

Please contact Christina Rink at (760) 827-1100 if you have any questions regarding this electronic data submittal.

Attachment C  
Year 2 Field Forms

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**Chain of Custody Record & Laboratory Analysis Request**

Page: \_\_\_\_\_ of \_\_\_\_\_  
 Date: \_\_\_\_\_ Ice Present? Y  
 No. of Coolers: 1 Cooler Temps: 5.9

**Analytical Resources, Incorporated**  
 Analytical Chemists and Consultants  
 4611 South 134th Place, Suite 100  
 Tukwila, WA 98168  
 206-695-6200 206-695-6201 (fax)  
 www.arilabs.com



ARI Assigned Number: 16A0147  
 Turn-around Requested: \_\_\_\_\_  
 ARI Client Company: Anchor QEA Phone: \_\_\_\_\_  
 Client Contact: Nathan Soccorsy  
 Client Project Name: 206-287-9130  
 Client Project #: \_\_\_\_\_  
 Samplers: \_\_\_\_\_

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested			Notes/Comments
					Lipids	PARIS	CD	
P4-70-08716	8/6/16	0800	TS	1	X	X	X	

Comments/Special Instructions: \_\_\_\_\_

Relinquished by: (Signature) [Signature] Date & Time: 08/17/16 0830  
 Printed Name: Alexandra Karpoff  
 Company: AK

Received by: (Signature) [Signature] Date & Time: 8/17/16 830  
 Printed Name: A. Vogardson  
 Company: AK

**Limits of Liability:** ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

**Sample Retention Policy:** All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

# Daily Log



Anchor QEA, LLC  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130 Fax 206.287.9131

TS, DM, ARK, CR  
 from PGST

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 8/10/15 JSE

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** Christine, Tracy, Alex

**WEATHER:** WIND FROM: 

N	NE	E	SE	S	SW	W	NW
SUNNY	CLOUDY	RAIN					?

 LIGHT MEDIUM HEAVY  
**TEMPERATURE:** ° F 64 ° C  
(Circle appropriate units)

TIME	COMMENTS
1045	labeled cages w/ zip ties → SMA-1-3 * 3 looped zip ties on cage handle to #D
	* 2 looped zip ties on cage handle to #D SMA-1-2
	* 1 looped zip tie on cage handle to #D SMA-1-1
1120	First cage in water at SMA-1-03.
1215	Second cage in water at SMA-1-02 ↳ Rope is knotted early taking time to untangle
	20 lb weight: 15 & 20 ft off cage SMA-1-03
	15 & 50 ft off cage SMA-1-02
	about 5 pencil weight between 2 cages ↳ 03 & 02
1256	⇒ Still dealing w/ tangly rope
1306	Cage in water SMA-1-01
1321	Line & buoy placed along set of 3 pilings along jetty. Will need to secure buoy & line from shore.
1322	mob back to shore
1500	mob to West Shore - reference station
1521	mussel cage in water - WS-Ref
1540	mussel cage in water - GL-Ref
1550	found Julia reference station in fallen tree - moved station slightly to south of original station. GPS Point in Trouble

Signature: \_\_\_\_\_

to south of original station.  
 GPS Point in Trouble

# Daily Log



Anchor QEA, LLC  
720 Olive Way, Suite 1900  
Seattle, WA 98101  
Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 8/30/16

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** JM, AK, CR

<b>WEATHER:</b>	<b>WIND FROM:</b>	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
		SUNNY	CLOUDY		RAIN			?			<b>TEMPERATURE:</b> °F . °C	

[Circle appropriate units]

TIME	COMMENTS
8:04	H&S - melting.
8:30	launch boat & mob to SMA-1-3
9:16	on site at SMA-1-3. Engine off. Anchored on station - Wait 10 minutes before bringing out PEMDS.
9:29	Cages in water at SMA-1-3
9:49	Mob to SMA-1-2
10:08	on station SMA-1-2, motor off. Wait 10 minutes minimum
10:40	on station SMA-1-1, motor off, wait 10 minutes
11:08	cages in water SMA-1-1 - Field Blank taken at SMA-1-1
12:18	on station WS-Ref, cut engine, wait 10 min
12:40	cages in water
12:52	on station GP-Ref, cut engine, wait 10 min
13:09	Cages in water
13:15	on station RS-Ref,
13:30	Cages in water
13:34	mob back to dock

Signature:

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: \_\_\_\_\_

Date: September 9, 2016

Project Name: Port Gamble Bay Shellfish Monitoring

Project Number: 160388-01.01

Project Manager: Nathan Socorsy

Phone Number: 206.287.9130

Shipment Method: \_\_\_\_\_



Line	Field Sample ID	Collection Date/Time	Matrix	Containers		Comments/Preservation
				PAHs	Archive	
1	PG-SMA1-1-PEMD-160909-A	9/9/2016 1021	PEMD	X		Extract and archive
2	PG-SMA1-1-PEMD-160909-B	9/9/2016 1022	PEMD	X	X	Extract and archive
3	PG-SMA1-2-PEMD-160909-A	9/9/2016 1020	PEMD	X		
4	PG-SMA1-102-PEMD-160909-A	9/9/2016 1020	PEMD	X		
5	PG-SMA1-3-PEMD-160909-A	9/9/2016 1050	PEMD	X		
6	PG-SMA1-3-PEMD-160909-B	9/9/2016 1050	PEMD	X	X	Extract and archive
7	PG-PJ-1-PEMD-160909-A	9/9/2016 1220	PEMD	X		
8	PG-PJ-1-PEMD-160909-B	9/9/2016 1220	PEMD	X	X	Extract and archive
9	PG-GP-1-PEMD-160909-A	9/9/2016 1151	PEMD	X		
10	PG-GP-1-PEMD-160909-B	9/9/2016 1151	PEMD	X	X	Extract and archive
11	PG-WS-1-PEMD-160909-A	9/9/2016 1122	PEMD	X		
12	PG-WS-1-PEMD-160909-B	9/9/2016 1122	PEMD	X	X	Extract and archive
13	PG-FB-PEMD-160909	9/9/2016 1055	PEMD	X		
14	PG-TB-PEMD-160909	9/9/2016 1305	PEMD	X		
15						

Notes: All "B" samples to be extracted then archived

Relinquished By: [Signature] Company: Anchor OEA, LLC

Signature/Printed Name: \_\_\_\_\_ Date/Time: 9/9/16 1514

Relinquished By: \_\_\_\_\_ Company: \_\_\_\_\_

Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: [Signature] Company: AT&T

Signature/Printed Name: Justin Meyer Date/Time: 9-9-16 1514

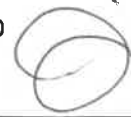
Received By: \_\_\_\_\_ Company: \_\_\_\_\_

Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

# Daily Log



Anchor QEA, L.L.C.  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130



PROJECT NAME: Port Gamble Clean-up and Restoration

DATE: 9/11/16

SITE ADDRESS: Port Gamble Bay, WA

PERSONNEL: S. PETER, K. ROBEY

WEATHER: WIND FROM: 

N	NE	E	SE	S	SW	W	NW
SUNNY	CLOUDY	RAIN	FOG?				

 LIGHT  MEDIUM  HEAVY   
 TEMPERATURE: ° F 55 ° C  
[Circle appropriate units]

TIME	COMMENTS
0800	H+S MOB
0830	LAUNCH BOAT
0900	GO TO BUOY @ SMA-1 PILING. CUT ENGINE. PULLING TO STATIONS. LINE VERY STURDY.
0941	HIT LARGE SNAG. SEAWEB AND KNOT BALL.
0949	SMA-1-1
1001	SMA-1-1 UP. SAMPLED.
1005	ENGINE ON
1014	ENGINE OFF SMA-1-2.
1025	SMA-1-2 UP. SAMPLED
1033	ENGINE ON
1038	ENGINE OFF SMA-1-3
1050	SMA-1-3 SAMPLED
1111	WS-REF STATION. ENGINE OFF.
1123	WS-REF UP. SAMPLED
1139	GP-REF. ENGINE OFF.
1149	GP-REF UP. SAMPLED
1203	Drop S. Peter at dock.
1209	PJ-REF station. Engine off.
1220	PJ-REF up & sample
1232	Make back to dock

*APV*

Signature:

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: AR11116  
 Date: 10/12/16  
 Project Name: Port Gamble Bay Shellfish Monitoring  
 Project Number: 160388-01.01  
 Project Manager: Nathan Soccorsy  
 Phone Number: 206-287-9130  
 Shipment Method: DAIRY

Line	Field Sample ID	Collection Date/Time	Matrix	UTBS	CADMIUM	DIF	PCBS	PAHS	Comments/Preservation
1	PG-SMA-1-1-14011	10/11/16	108 FIS	X	X	X	X	X	
2	PG-SMA-1-2-161011		105	X	X	X	X	X	
3	PG-SMA-1-3-16011		110	X	X	X	X	X	
4	PG-SMA			X	X	X	X	X	
5	PG-REF-TI-1-14011		137	X	X	X	X	X	
6	PG-REF-LUS-1-16011		145	X	X	X	X	X	
7	PG-REF-TP-1-16011		150	X	X	X	X	X	
8									
9									
10									
11									
12									
13									
14									
15									

Notes: PLEASE SEE PDR GAMBLE SEAWATER SHELFISH MONITORING PLAN OR CONTACT ALEX KAPRORIS / GINDY FIELDS FOR DETAILS



Relinquished By: JASON MCKINNEY Company: Anchor OEA, LLC  
 Signature/Printed Name: [Signature] Date/Time: 0712 / 10/12/16  
 Relinquished By: \_\_\_\_\_ Company: \_\_\_\_\_  
 Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: Justin Meyer Company: AKF  
 Signature/Printed Name: [Signature] Date/Time: 0712 10/12/16  
 Received By: \_\_\_\_\_ Company: \_\_\_\_\_  
 Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_



# Daily Log



Anchor QEA, LLC  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 10/11/16

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** S. PETER, ANKINOV, MRS. SM

**WEATHER:**

**WIND FROM:**

<del>N</del>	<del>NE</del>	E	SE	S	SW	W	NW
<del>SUNNY</del>	<del>CLOUDY</del>	CLOUDY		RAIN			?

**LIGHT** **MEDIUM** **HEAVY**  
**TEMPERATURE:** °F 56 °C

(Circle appropriate units)

TIME	COMMENTS
0745	MEET MOB
	LUNCH BOAT
1020	SMA-1-1 UP
1015	SMA-1-2 UP
1030	SMA-1-3 UP
1100	COUNTING MUSSELS
1108	SMA-1-1, 30 INDIVIDUALS
1105	SMA-1-2, 24 INDIVIDUALS
1110	SMA-1-3, 29 INDIVIDUALS
1115	CALL NATHAN
1212	REF-WS-1 UP
1215	REF-WS-1, 45 INDIVIDUALS
1235	REF-PJ-1 UP
1237	REF-PJ-1, 26 INDIVIDUALS
1248	REF-GP-1 UP
1250	REF-GP-1, 17 INDIVIDUALS
1400	CLEAN UP SITE
453	COC
530	LEAVE SITE

Signature: [Handwritten Signature]

VI

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: \_\_\_\_\_ Turn-around Requested: \_\_\_\_\_

ARI Client Company: Neche OCE Phone: 206-908-5593

Client Contact: Alexandra Kappert

Client Project Name: Port Seattle Authority

Client Project #: 18388-cl-e1 Samplers: \_\_\_\_\_

Sample ID \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Matrix \_\_\_\_\_ No. Containers \_\_\_\_\_

Page: 1 of 1  
 Date: 11-9-16 Ice Present? No  
 No. of Coolers: 0 Cooler Temps: 1.13



**Analytical Resources, Incorporated**  
 Analytical Chemists and Consultants  
 4611 South 134th Place, Suite 100  
 Tukwila, WA 98168  
 206-695-6200 206-695-6201 (fax)  
 www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
<u>Pg TO-MIS-OC-161109</u>	<u>11/9/16</u>	<u>19:00</u>	<u>TI</u>	<u>1</u>	<u>Moisture</u>				

Relinquished by: \_\_\_\_\_  
 (Signature)  
 Printed Name: Alexandra Kappert  
 Company: \_\_\_\_\_  
 Date & Time: 11-9-16

Received by: \_\_\_\_\_  
 (Signature)  
 Printed Name: Ryle Penker  
 Company: RPI  
 Date & Time: 11-9-16 @ 0901

Relinquished by: \_\_\_\_\_  
 (Signature)  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Date & Time: \_\_\_\_\_

Received by: \_\_\_\_\_  
 (Signature)  
 Printed Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Date & Time: \_\_\_\_\_

**Limits of Liability:** ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

**Sample Retention Policy:** All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

# Daily Log



Anchor QEA, LLC  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 11/10/16

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** ARK, JM, CR (PEST)

**WEATHER:**

**WIND FROM:**

N	NE	E	SE	S	SW	W	NW
(SUNNY)	(CLOUDY)		RAIN				?

LIGHT      MEDIUM      HEAVY

**TEMPERATURE:** °F \_\_\_\_\_ °C \_\_\_\_\_

[Circle appropriate units]

TIME	COMMENTS
0700	on-site, stage mussel cages & gear. Very foggy, with little visibility. Delayed bringing boat across.
0830	Jason & Christine to travel to Ft. Willow to bring boat across channel to Ft Gamble.
1015	Depart dock for SMA-2. GPS coordinates not accurate.
1025	Back to dock to troubleshoot GPS unit.
1100	Break for lunch. GPS getting fixed
1130	GPS fixed - coordinates were in incorrect unit. Back to dock. Mob to SMA-2-1.
1151	Engine off at SMA 2-1. Wait 10 minutes to deploy PEMDs, free PEMDs, in water.
1202	* A-string: winged cages      ~ 2 lbs mussels per color fill boxes      cage in 1 lb bags. PEMDs B-string: no rings white boxes mussels only (2 lbs)
1219	Got engine @ SMA-2-2. Very close to active dredge barge. Possible concern about cages getting caught in dragging spuds. Move 100 ft into the channel. ~ 200 ft off barge.
1227	Engine off at offset SMA-2-2.
1238	Engine off at SMA-2-3
1314	Orion set spud barge 90' next to us while on anchor & cages deploying
1316	Mob back to dock to get more cages
1342	Mob from dock w/ more cages and line & weights.
1358	Engine off at SMA-2-4.
1431	Engine off at SMA-2-5.
1449	mob to SMA-2-1 to begin running weighted line.

Signature: \_\_\_\_\_

# Daily Log



Anchor QEA, LLC  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 11/11/16

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** APK, JM, CR (PGST)

**WEATHER:**

**WIND FROM:**

N	NE	E	SE	S	SW	W	NW
SUNNY	CLOUDY			RAIN			?

**LIGHT**    **MEDIUM**    **HEAVY**

**TEMPERATURE:** °F \_\_\_\_\_ °C \_\_\_\_\_

[Circle appropriate units]

TIME	COMMENTS
0760	onsite. McKinney & Douglas to get boat from Port Ludlow. APK & CR stage gear & uncoil rope. - Attempting new strategy w/ rope: uncoil spools into bucket. Spools have been cracking, spilling rope & in tangles that take hours to undo.
0846	MOB from dock to SMA-2. First task is to sink weighted line for "B" string in SMA-2, then complete running weighted line to buoy for SMA-2 A line. - Yellow buoy = A string w/ PEMDs - White buoy = B string w/o w/ mussels only Buoys are located in southern most part of SMA-2, a couple hundred feet towards shore from SMA-2-5 station.
0938	MOB to SMA-1. locate B string from Aug cage deployment. Pull up B string cages, take out mussels and place new mussels in.
1000	MOB to dock to load PEMDs onto boat.
1022	Begin pulling cages up in SMA-1 (old B string). Will cut engine & use weighted line already in water as guide. Will deploy mussels & PEMDs <del>from</del> .
1026	Waiting for barge to move
1236	Current SMA-1 A string deployed. MOB to dock to switch crews for WQ monitoring. Prep SMA-1 B cages with mussels. Prep all Reference area cages with mussels. Will need to add line and extra line to cages.
1345	Set SMA-1 B cages.
1356	Engine off at WS-1
1419	Engine off at GP-1

Signature: \_\_\_\_\_



**Chain of Custody Record & Laboratory Analysis Request**

Laboratory Number: \_\_\_\_\_

Date: November 22, 2016

Project Name: Port Gamble Bay Shellfish Monitoring

Project Number: 160388-01.01

Project Manager: Nathan Soccorsy

Phone Number: 206.287.9130

Shipment Method: \_\_\_\_\_



Line	Field Sample ID	Collection Date/Time	Matrix	Containers			Comments/Preservation
				PAHs	Archive		
1	PG-SMA1-1-PEMD-161122-A	11/22/2016 11:21	PEMD	1	X		Extract and archive
2	PG-SMA1-1-PEMD-161122-B	11/22/2016 11:31	PEMD	1	X		Extract and archive
3	PG-SMA1-2-PEMD-161122-A	11/22/2016 11:47	PEMD	1	X		Extract and archive
4	PG-SMA1-2-PEMD-161122-B	11/22/2016 11:47	PEMD	1	X		Extract and archive
5	PG-SMA1-3-PEMD-161122-A	11/22/2016 12:10	PEMD	1	X		Extract and archive
6	PG-SMA1-103-PEMD-161122-A	11/22/2016 12:10	PEMD	1	X		Extract and archive
7	PG-SMA2-1-PEMD-161122-A	11/22/2016 10:53	PEMD	1	X		Extract and archive
8	PG-SMA2-1-PEMD-161122-B	11/22/2016 10:53	PEMD	1	X		Extract and archive
9	PG-SMA2-2-PEMD-161122-A	11/22/2016 10:26	PEMD	1	X		Extract and archive
10	PG-SMA2-102-PEMD-161122-A	11/22/2016 10:26	PEMD	1	X		Extract and archive
11	PG-SMA2-3-PEMD-161122-A	11/22/2016 09:45	PEMD	1	X		Extract and archive
12	PG-SMA2-3-PEMD-161122-B	11/22/2016 09:45	PEMD	1	X		Extract and archive
13	PG-SMA2-4-PEMD-161122-A	11/22/2016 09:20	PEMD	1	X		Extract and archive
14	PG-SMA2-4-PEMD-161122-B	11/22/2016 09:20	PEMD	1	X		Extract and archive
15	PG-SMA2-5-PEMD-161122-A	11/22/2016 08:57	PEMD	1	X		Extract and archive

Notes: All "B" samples to be extracted then archived

Relinquished By: \_\_\_\_\_ Company: Anchor OEA, LLC

Signature/Printed Name: \_\_\_\_\_ Date/Time: 11/22/16 17:56

Relinquished By: \_\_\_\_\_ Company: \_\_\_\_\_

Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: \_\_\_\_\_ Company: AOE

Signature/Printed Name: Tyler Rankin Date/Time: 11-22-16 17:56

Received By: \_\_\_\_\_ Company: \_\_\_\_\_

Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

**Chain of Custody Record & Laboratory Analysis Request**

Laboratory Number: \_\_\_\_\_

Date: November 22, 2016

Project Name: Port Gamble Bay Shellfish Monitoring

Project Number: 160388-01.01

Project Manager: Nathan Soccor'sy

Phone Number: 206.287.9130

Shipment Method: \_\_\_\_\_



Line	Field Sample ID	Collection Date/Time	Matrix	Containers			Comments/Preservation
				PAHs	Other	Archive	
16	PG-SMA2-5-PEMD-161122-B	11/22/2016 0857	PEMD 1	X		X	Extract and archive
17	PG-PJ-1-PEMD-161122-A	11/22/2016 1235	PEMD 1	X			Extract and archive
18	PG-PJ-1-PEMD-161122-B	11/22/2016 1235	PEMD 1	X			Extract and archive
19	PG-GP-1-PEMD-161122-A	11/22/2016 1253	PEMD 1	X			Extract and archive
20	PG-GP-1-PEMD-161122-B	11/22/2016 1316	PEMD 1	X			Extract and archive
21	PG-WS-1-PEMD-161122-A	11/22/2016 1316	PEMD 1	X			Extract and archive
22	PG-WS-1-PEMD-161122-B	11/22/2016 1316	PEMD 1	X			Extract and archive
23	PG-FB-SMA1-PEMD-161122	11/22/2016 1210	PEMD 1	X			Extract and archive
24	PG-FB-SMA2-PEMD-161122	11/22/2016 0950	PEMD 1	X			
25	PG-TB-PEMD-161122	11/22/2016 1320	PEMD 1	X			
26							
27							
28							
29							
30							

Notes: All "B" samples to be extracted then archived

Relinquished By: \_\_\_\_\_ Company: Anchor OEA, LLC  
 Signature/Printed Name: \_\_\_\_\_ Date/Time: 11/22/16 1756

Relinquished By: \_\_\_\_\_ Company: \_\_\_\_\_  
 Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: \_\_\_\_\_ Company: ART  
 Signature/Printed Name: Tyler Rankin Date/Time: 11-22-16 1756

Received By: \_\_\_\_\_ Company: \_\_\_\_\_  
 Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

# Daily Log



Anchor QEA, LLC  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 11/22/16

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** JRS, SM, CR (Post)

**WEATHER:**

**WIND FROM:**

N	NE	E	SE	S	SW	W	NW
SUNNY	CLOUDY	RAIN					?

**LIGHT**      **MEDIUM**      **HEAVY**

**TEMPERATURE:** ° F      ° C

(Circle appropriate units)

TIME	COMMENTS
0830	All equipment & personnel on board, mob from dock to SMA-2 H&S.
0835	Engine off at SMA-2-5. Engine on again
0843	Engine off at SMA-2-5
0855	Cages on board. PEMDS binder clips more rusted than previous PEMD deployments. PEMDs were partially un-attached from sides of cages.
0910	Engine off at SMA-2-4
0935	Engine off at SMA-2-3. Take FB of this station
1016	Engine off at SMA-2-2. While pulling up line also pulled up lost buoy and weights.
1043	Engine off at SMA-2-1. Tilled off B cage along w/ A cage.
1121	Engine off at # SMA-1-1.
1147	SMA 1-2 cage onboard. Engine never on from SMA 1-1
1210	SMA 1-3 cage onboard. Engine never on from SMA 1-2
1225	Engine off at Portola reference station
	→ All PEMDS so far have been far more rusted/corroded than initial set deployed in August 2016. The problem seems to be binder clips. Binder clips for this 2nd round were purchased from office supply store & were a different brand than the Aug ones purchased from internet.
	& pulled up large log/piling tangled in line in between SMA1-2 and SMA1-3. Visible sheen on log and bleeding into water. Blue color.

Signature: \_\_\_\_\_

1 of 2



# Daily Log



Anchor QEA, LLC  
720 Olive Way, Suite 1900  
Seattle, WA 98101  
Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 11/22/16

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** HRC, DM, CR (PGST)

**WEATHER:** **WIND FROM:** N | NE | E | SE | S | SW | W | NW

N	NE	E	SE	S	SW	W	NW
SUNNY	CLOUDY	RAIN					?

LIGHT | MEDIUM | HEAVY  
**TEMPERATURE:** °F \_\_\_\_\_ °C \_\_\_\_\_  
[Circle appropriate units]

**TIME**      **COMMENTS**

1243 Engine off at GP-1 reference station

1253 GP-1 reference station cage onboard

1306 Engine off at WS-1.

1316 Cages on board

1324 Mob back to doc to drop off coolers, gear & QR before taking boat back to Port Ludlow.

HRC

Signature: \_\_\_\_\_

**Chain of Custody Record & Laboratory Analysis Request**

Laboratory Number: \_\_\_\_\_

Date: January 05, 2017

Project Name: Port Gamble Bay Shellfish Monitoring

Project Number: 160388-01.01

Project Manager: Nathan Socorsy

Phone Number: 206.287.9130

Shipment Method: \_\_\_\_\_

Line	Field Sample ID	Collection Date/Time	Matrix	Containers	Lipids	PAHs	Dioxin/Furans	Cadmium	PCB Congeners	Comments/Preservation
1	PG-SMA1-1-MUS-170105	01/05/17 1015	Tissue	1	X	X	X	X	X	
2	PG-SMA1-2-MUS-170105	01/05/17 1045	Tissue	1	X	X	X	X	X	
3	PG-SMA1-3-MUS-170105	01/05/17 1115	Tissue	1	X	X	X	X	X	
4	PG-SMA2-1-MUS-170105	01/05/17 1202	Tissue	1	X	X	X	X	X	
5	PG-SMA2-2-MUS-170105	01/05/17 1250	Tissue	1	X	X	X	X	X	
6	PG-SMA2-3-MUS-170105	01/05/17 1240	Tissue	1	X	X	X	X	X	
7	PG-SMA2-4-MUS-170105	01/05/17 1236	Tissue	1	X	X	X	X	X	
8	PG-SMA2-5-MUS-170105	01/05/17 1220	Tissue	1	X	X	X	X	X	
9	PG-PJ-1-MUS-170105	01/05/17 1453	Tissue	1	X	X	X	X	X	
10	PG-GP-1-MUS-170105	01/05/17 1443	Tissue	1	X	X	X	X	X	
11	PG-WS-1-MUS-170105	01/05/17 1435	Tissue	1	X	X	X	X	X	
12	PG-SMA1-10-MUS-170105	01/05/17	Tissue	1	X	X	X	X	X	
13										
14										
15										

Notes:



Relinquished By: \_\_\_\_\_ Company: Anchor OEA, LLC

Signature/Printed Name: Alexandra Kayser Date/Time: 1/6/17 1603

Received By: \_\_\_\_\_ Company: \_\_\_\_\_

Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Company: ARI

Signature/Printed Name: Paul York Date/Time: 1/6/17 1603

Received By: \_\_\_\_\_ Company: \_\_\_\_\_

Signature/Printed Name: \_\_\_\_\_ Date/Time: \_\_\_\_\_

# Daily Log



Anchor QEA, LLC  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 1/5/17

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** JCK, JM, CR (PGST)

**WEATHER:**

**WIND FROM:**

N	NE	E	SE	S	SW	W	NW
SUNNY		CLOUDY		RAIN			?

**LIGHT**    **MEDIUM**    **HEAVY**

**TEMPERATURE:** °F 31 °C

[Circle appropriate units]

TIME	COMMENTS
0840	Leave Pt Ludlow marina for Pt Gamble.
0920	Arrive Pt Gamble. Pick up Christine from PGST.
0931	mob for SMA-1. Both lines (A&B) buoies intact on piling. Much excess line w/ tangles of macroalgae. Difficult time pulling lines.
1015	SMA-1-1-A cage on board.
1045	SMA-1-2-A cage on board
1145	SMA-1-3-A cage on board. Mob for dock to unload rope and cages.
1145	SMA-1-1-B cage on board.
1200	SMA-1-2-B cage on board.
1211	SMA-1-3-B cage on board. Mob for dock to unload rope & cages. B-cages were not labeled as 1, 2 or 3 when pulled up. Mussels discarded due to mistake.
1220	SMA-2-5-A cage on board.
1230	SMA-2-4-A cage on board.
1240	SMA-2-3-A cage on board.
1250	SMA-2-2-A cage on board.
1302	SMA-2-1-A cage pulled. Mob to dock and break for WQ round. load cages & rope into truck take to trailer.
1411	mob to SMA2 for B cages.
1420	SMA2-5-B cage is stuck on something heavy. In interest of saving time, abandon and collect Ref Stations.
1435	WS cages on board. → 3 zipties indicate WS
1443	GP cages on board → 2 zipties
1453	PT cages on board. → no zipties. Mob to dock & unload rope & cages.
1553	All SMA2-B cages pulled. Time from A cages to be used for COC. Unload cage mob directly to Pt Ludlow.

Signature:

# Daily Log



Anchor QEA, LLC  
 720 Olive Way, Suite 1900  
 Seattle, WA 98101  
 Phone 206.287.9130 Fax 206.287.9131

**PROJECT NAME:** Port Gamble Bay Cleanup - Shellfish Monitoring

**DATE:** 1/16/17

**SITE ADDRESS:** Port Gamble, Washington

**PERSONNEL:** APK

**WEATHER:**

**WIND FROM:**

N	NE	E	SE	S	SW	W	NW
<input checked="" type="checkbox"/> SUNNY	<input checked="" type="checkbox"/> CLOUDY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> RAIN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ?

LIGHT    MEDIUM    HEAVY  
**TEMPERATURE:** °F 28    °C

(Circle appropriate units)

TIME	COMMENTS
11:00	Arrive onsite
11:05	Begin sorting mussels. → Mussels placed in coolers on Thursday (1/5/17) night in labeled but open plastic zip-top bags. Coolers had ice and were placed indoors over night due to sub zero ambient temperature. Mussels sorted dead from live.
	→ ~ 80% mortality, avg across all cages.
	→ increased mortality in reference sites, concerned about enough sample volume.
	→ SMA-1 B cages were on-marked when pulled and tissue was on-used due to not knowing which station it was from
	→ SMA-2-3-B cage was not retrieved. No indication if how cage was severed from line. → no cut rope present.
	→ All other samples included tissue from both A & B cages.
	→ line mussels separated and placed in labeled open bag in cooler w/ ice.
14:00	Departed site for laboratory to drop off samples
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;">APK</div>	

Signature: \_\_\_\_\_

1 of 1

Attachment D  
Year 2 Laboratory Reports

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# Year 2 Laboratory Reports

## Event 1

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15 November 2016

Nathan Soccorsy  
Anchor QEA, LLC  
720 Olive Way, Suite 1900  
Seattle, WA 98101

RE: Port Gamble Shellfish Monitoring

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)  
16H0147

Associated SDG ID(s)  
N/A

-----

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

Cheronne Oreiro, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





Anchor QEA, LLC  
720 Olive Way, Suite 1900  
Seattle WA, 98101

Project: Port Gamble Shellfish Monitoring  
Project Number: [none]  
Project Manager: Nathan Soccorso

Reported:  
15-Nov-2016 17:04

## Case Narrative

### Sample receipt

One tissue sample was received August 17, 2016 under ARI workorder 16H0147. The sample was frozen upon receipt. For details regarding sample receipt, please refer to the Cooler Receipt Form.

The sample was removed from frozen archive, prepared, and homogenized with tissue samples under workorders 16H0268 and 16J0187.

### Dioxin/Furans - EPA Method 1613

The sample was extracted and analyzed within the recommended holding times for samples stored frozen.

Analysis was performed using an application specific column recently developed by Restek. The RTX-Dioxin2 column has unique isomer separation for the 2378-TCDF, eliminating the need for confirmation analysis.

Initial calibrations, initial calibration verifications, and continuing calibration verifications were within method requirements.

The cleanup surrogate percent recoveries were within control limits.

The method blank contained reportable responses for several compounds. "B" qualifiers were applied to detected sample results associated with this method blank. No further corrective action was taken.

The OPR (Ongoing Precision and Recovery) standard percent recoveries were within control limits.

### Cadmium - EPA Method SW6010C

The sample was digested and analyzed within recommended holding times.

The method blank was clean at the reporting limit. The LCS percent recovery was within control limits.

### Total Solids – SM 2540 G-97

The sample was prepared and analyzed within recommended holding times.

### Lipids – Method Bligh & Dyer (Mod)

The sample was analyzed within recommended holding times.

The method blank had a result that was greater than the reporting limit. No corrective action was taken.

### Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270D-SIM

The sample was extracted and analyzed within the recommended holding times.

Initial calibrations and initial calibration verifications were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limit. The LCS percent recoveries were within control limits.



**Chain of Custody Record & Laboratory Analysis Request**

**Analytical Resources, Incorporated**  
 Analytical Chemists and Consultants  
 4611 South 134th Place, Suite 100  
 Tukwila, WA 98168  
 206-695-6200 206-695-6201 (fax)  
 www.arilabs.com



Page: \_\_\_\_\_ of \_\_\_\_\_  
 Date: \_\_\_\_\_  
 No. of Coolers: \_\_\_\_\_

Ice Present?  Y  
 Cooler Temps: 5.9

ARI Assigned Number: 16A0147  
 ARI Client Company: Anchor GLA  
 Client Contact: Nathan Soccorsy  
 Client Project Name: 206-287-9130  
 Client Project #: \_\_\_\_\_

Analysis Requested

Sample ID	Date	Time	Matrix	No. Containers
<u>PG-7D-08716</u>	<u>8/16/16</u>	<u>0800</u>	<u>TS</u>	<u>1</u>

Notes/Comments

Comments/Special Instructions: \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature]  
 Printed Name: Alexandra Karpoff Printed Name: A. Vogardson  
 Company: AGA Company: ARI  
 Date & Time: 08/17/16 0830 Date & Time: 8/17/16 830

**Limits of Liability:** ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

**Sample Retention Policy:** All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



# Cooler Receipt Form

ARI Client: Anchor

Project Name: Port Gumble Shellfish Monitoring

COC No(s): \_\_\_\_\_ (NA)

Delivered by: Fed-Ex UPS Courier  Hand Delivered  Other: \_\_\_\_\_

Assigned ARI Job No: 16140147

Tracking No: \_\_\_\_\_ (NA)

**Preliminary Examination Phase:**

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES  NO

Were custody papers included with the cooler? YES  NO

Were custody papers properly filled out (ink, signed, etc.) YES  NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) YES  NO

Time: 5.9

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 0005276

Cooler Accepted by: AV Date: 8/17/16 Time: 830

*Complete custody forms and attach all shipping documents*

**Log-In Phase:**

Was a temperature blank included in the cooler? YES  NO

What kind of packing material was used? ... Bubble Wrap  Wet Ice  Gel Packs  Baggies  Foam Block  Paper  Other: \_\_\_\_\_

Was sufficient ice used (if appropriate)? NA  YES  NO

Were all bottles sealed in individual plastic bags? YES  NO

Did all bottles arrive in good condition (unbroken)? YES  NO

Were all bottle labels complete and legible? YES  NO

Did the number of containers listed on COC match with the number of containers received? YES  NO

Did all bottle labels and tags agree with custody papers? YES  NO

Were all bottles used correct for the requested analyses? YES  NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA  YES  NO

Were all VOC vials free of air bubbles? NA  YES  NO

Was sufficient amount of sample sent in each bottle? NA  YES  NO

Date VOC Trip Blank was made at ARI: NA

Was Sample Split by ARI: NA  YES  Date/Time: \_\_\_\_\_ Equipment: \_\_\_\_\_ Split by: \_\_\_\_\_

Samples Logged by: TR Date: 8-17-16 Time: 1451

**\*\* Notify Project Manager of discrepancies or concerns \*\***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

**Additional Notes, Discrepancies, & Resolutions:**

Mussels received w/ no label.

By: TR Date: 8-17-16

<p>Small Air Bubbles - 2mm</p>	<p>Peabubbles 2-4 mm</p>	<p>LARGE Air Bubbles &gt; 4 mm</p>	<p>Small → "sm" (&lt; 2 mm)</p> <p>Peabubbles → "pb" (2 to &lt; 4 mm)</p> <p>Large → "lg" (4 to &lt; 6 mm)</p> <p>Headspace → "hs" (&gt; 6 mm)</p>
------------------------------------	------------------------------	--	--

# Port Gamble Year 2 Shellfish - Time Zero Mussels

Alexandra Karpoff <akarpoff@anchorqea.com>

Wed 8/17/2016 10:22 AM

To: Cheronne Oreiro <cheronneo@arilabs.com>;

Cc: Cindy Fields <cfields@anchorqea.com>;

Hi Cheronne,

I dropped off the time zero mussels this morning for the Port Gamble Shellfish Monitoring. Apologies, for I left all my paperwork at the site yesterday and subsequently left a lot of information out of the COC this morning:

1. Please change the sample ID. It should read:

- PG-T0-MUS-COC-160816

2. Please shuck and homogenize the mussel tissue and archive until additional mussel tissue samples are submitted in October.

3. Please analyze the tissue for:

- Lipids
- PAHs
- Cadmium
- D/Fs
- PCB congeners – sub to Maxxam

Would you also let me know how much shucked mussel tissue we submitted for this T0 sample? I'm a little concerned we're shy of 400 grams.

Thank you!

**Alexandra Karpoff | ANCHOR QEA, LLC**

Environmental Scientist

[akarpoff@anchorqea.com](mailto:akarpoff@anchorqea.com)

720 Olive Way

Suite 1900

Seattle, WA 98101

T 206.903.3393



Anchor QEA, LLC

720 Olive Way, Suite 1900

Seattle, WA 98101

Project: Port Gamble Shellfish Monitoring

Project Number: [none]

Project Manager: Nathan Soccorsy

**Reported:**

11/15/2016 16:28

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
PG-T0-MUS-COC-160816	16H0147-01	Tissue	08/16/16 08:00	08/17/16 08:30

## Internal Chain of Custody

Client: Anchor QEA, LLC	Received: 17-Aug-2016 08:30
Project: Port Gamble Shellfish Monitoring	Received By: Amanda Volgardsen
Number: [none]	Temp (°C): 5.90

**16H0147-01 (PG-T0-MUS-COC-160816) Sampled 08/16/2016 08:00**

<i>Current Status</i>	<i>Out</i>	<i>Location</i>	<i>In</i>
<i>16H0147-01 A [Miscellaneous Container]</i>			<i>Hazard Info: Percent Lipids [1.659%]</i>
Sample Receiving	08/17/2016 15:02 by TER	***START***	08/17/2016 15:02 by TER
	08/17/2016 15:02 by TER	***START***	08/17/2016 15:02 by TER
	08/17/2016 15:02 by TER	***START***	08/17/2016 15:02 by TER
	08/17/2016 15:02 by TER	***START***	08/17/2016 15:02 by TER
	08/17/2016 15:02 by TER	***START***	08/17/2016 15:02 by TER
Metals	10/25/2016 17:11 by MCB	Metals Prep Lab	10/26/2016 06:56 by NPL
	10/25/2016 17:11 by MCB	Metals Prep Lab	10/26/2016 06:56 by NPL
	10/25/2016 17:11 by MCB	Metals Prep Lab	10/26/2016 06:56 by NPL
	10/25/2016 17:11 by MCB	Metals Prep Lab	10/26/2016 06:56 by NPL
	10/25/2016 17:11 by MCB	Metals Prep Lab	10/26/2016 06:56 by NPL
Extractions	10/26/2016 06:56 by NPL	Dioxin Lab	10/26/2016 07:16 by NPL
	10/26/2016 06:56 by NPL	Dioxin Lab	10/26/2016 07:16 by NPL
	10/26/2016 06:56 by NPL	Dioxin Lab	10/26/2016 07:16 by NPL
	10/26/2016 06:56 by NPL	Dioxin Lab	10/26/2016 07:16 by NPL
	10/26/2016 06:56 by NPL	Dioxin Lab	10/26/2016 07:16 by NPL
Metals	10/26/2016 10:33 by AR	R-36	10/26/2016 12:32 by YQL
	10/26/2016 10:33 by AR	R-36	10/26/2016 12:32 by YQL
	10/26/2016 10:33 by AR	R-36	10/26/2016 12:32 by YQL
	10/26/2016 10:33 by AR	R-36	10/26/2016 12:32 by YQL
	10/26/2016 10:33 by AR	R-36	10/26/2016 12:32 by YQL
Extractions	10/26/2016 12:32 by YQL	R-36	10/26/2016 17:03 by YQL
	10/26/2016 12:32 by YQL	R-36	10/26/2016 17:03 by YQL
	10/26/2016 12:32 by YQL	R-36	10/26/2016 17:03 by YQL
	10/26/2016 12:32 by YQL	R-36	10/26/2016 17:03 by YQL
	10/26/2016 12:32 by YQL	R-36	10/26/2016 17:03 by YQL
	10/26/2016 17:03 by YQL	F-05 07	11/01/2016 09:03 by YQL
	10/26/2016 17:03 by YQL	F-05 07	11/01/2016 09:03 by YQL
	10/26/2016 17:03 by YQL	F-05 07	11/01/2016 09:03 by YQL
	10/26/2016 17:03 by YQL	F-05 07	11/01/2016 09:03 by YQL
	10/26/2016 17:03 by YQL	F-05 07	11/01/2016 09:03 by YQL

## QUALIFIERS AND NOTES

<u>Qualifier</u>	<u>Definition</u>
U	This analyte is not detected above the applicable reporting or detection limit.
Text1	No surr added
J	Estimated concentration value detected below the reporting limit.
EMPC	Estimated Maximum Possible Concentration qualifier for HRGCMS Dioxin
D	The reported value is from a dilution
B	This analyte was detected in the method blank.
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



Form I  
ORGANIC ANALYSIS DATA SHEET  
EPA 1613B  
Dioxin 1613B

Laboratory: Analytical Resources, Inc. SDG: 16H0147  
 Client: Anchor QEA, LLC Project: Port Gamble Shellfish Monitoring  
 Matrix: Tissue Laboratory ID: 16H0147-01 File ID: 16110106  
 Sampled: 08/16/16 08:00 Prepared: 10/26/16 09:20 Analyzed: 11/01/16 14:08  
 Solids Wt%: Preparation: EPA 1613 Initial/Final: 10.02 g / 20 uL  
 Result Basis: Dry Sequence: SEJ0462 Calibration: ZE00016  
 Batch: BEJ0775 Instrument: AUTOSPEC01 Column: RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.705	0.655-0.886		0.998	0.074	ng/kg	J
1746-01-6	2,3,7,8-TCDD	1	0.000	0.655-0.886	0.046	0.998	ND	ng/kg	U
57117-41-6	1,2,3,7,8-PeCDF	1	1.781	1.318-1.783		4.99	0.070	ng/kg	J, B
57117-31-4	2,3,4,7,8-PeCDF	1	0.000	1.318-1.783	0.039	4.99	ND	ng/kg	U
40321-76-4	1,2,3,7,8-PeCDD	1	2.281	1.318-1.783		4.99	0.037	ng/kg	EMPC, J
70648-26-9	1,2,3,4,7,8-HxCDF	1	0.489	1.054-1.426		4.99	0.033	ng/kg	EMPC, J
57117-44-9	1,2,3,6,7,8-HxCDF	1	0.000	1.054-1.426	0.027	4.99	ND	ng/kg	U
60851-34-5	2,3,4,6,7,8-HxCDF	1	0.473	1.054-1.426		4.99	0.039	ng/kg	EMPC, J
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.292	1.054-1.426		4.99	0.116	ng/kg	J, B
39227-28-6	1,2,3,4,7,8-HxCDD	1	0.000	1.054-1.426	0.048	4.99	ND	ng/kg	U
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.791	1.054-1.426		4.99	0.039	ng/kg	EMPC, J
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.476	1.054-1.426		4.99	0.064	ng/kg	EMPC, J
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	0.928	0.893-1.208		4.99	0.111	ng/kg	J
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.490	0.893-1.208		4.99	0.039	ng/kg	EMPC, J
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.026	0.893-1.208		4.99	0.470	ng/kg	J, B
39001-02-0	OCDF	1	0.945	0.757-1.024		9.98	0.539	ng/kg	J, B
3268-87-9	OCDD	1	0.926	0.757-1.024		9.98	5.93	ng/kg	J, B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			0.998	0.074	ng/kg	
41903-57-5	Total TCDD	1	0.000			0.998	0.048	ng/kg	
30402-15-4	Total PeCDF	1	0.000			0.998	0.157	ng/kg	
36088-22-9	Total PeCDD	1	0.000			0.998	0.083	ng/kg	
55684-94-1	Total HxCDF	1	0.000			0.998	0.188	ng/kg	
34465-46-8	Total HxCDD	1	0.000			0.998	0.103	ng/kg	
38998-75-3	Total HpCDF	1	0.000			0.998	0.304	ng/kg	
37871-00-4	Total HpCDD	1	0.000			0.998	1.13	ng/kg	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.084  
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.084



Form I  
ORGANIC ANALYSIS DATA SHEET

EPA 1613B  
Dioxin 1613B

Laboratory: Analytical Resources, Inc. SDG: 16H0147  
 Client: Anchor QEA, LLC Project: Port Gamble Shellfish Monitoring  
 Matrix: Tissue Laboratory ID: 16H0147-01 File ID: 16110106  
 Sampled: 08/16/16 08:00 Prepared: 10/26/16 09:20 Analyzed: 11/01/16 14:08  
 Solids Wt%: Preparation: EPA 1613 Initial/Final: 10.02 g / 20 uL  
 Result Basis: Dry Sequence: SEJ0462 Calibration: ZE00016  
 Batch: BEJ0775 Instrument: AUTOSPEC01 Column: RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.779	0.655-0.886		93.6	24 - 169 %	
13C12-2,3,7,8-TCDD		0.782	0.655-0.886		96.2	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.602	1.318-1.783		99.3	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.573	1.318-1.783		107	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.600	1.318-1.783		107	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.514	0.434-0.587		85.1	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.516	0.434-0.587		80.8	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.519	0.434-0.587		84.4	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.519	0.434-0.587		89.0	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.313	1.054-1.426		95.0	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.268	1.054-1.426		89.8	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.443	0.374-0.506		82.3	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.458	0.374-0.506		90.0	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.066	0.893-1.208		94.6	23 - 140 %	
13C12-OCDD		0.887	0.757-1.024		84.5	17 - 157 %	
37C14-2,3,7,8-TCDD		328.000			102	35 - 197 %	

\* Values outside of QC limits



**Quantify Sample Summary Report**      **MassLynx MassLynx V4.1 SCN909**

Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
 Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
 Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

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**Method: C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52**  
**Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40**

**ID: 16R0147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK**

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
2378-TCDF	25.570	1.001	5.18e2	7.34e2	0.935	0.705	0.770	1325	2040	9.25e3	8.03e3	7.0	NO	0.037
12378-PeCDF	29.697	1.000	6.67e2	3.75e2	0.952	1.781	1.550	877	2178	1.36e4	6.84e3	15.5	NO	0.035
23478-PeCDF				0.963			1.550	877	2178					
123478-HxCDF	34.728	1.001	1.56e2	3.19e2	1.137	0.489	1.240	1066	874	4.18e3	7.84e3	3.9	YES	0.017
234678-HxCDF	35.813	1.000	1.78e2	3.76e2	1.164	0.473	1.240	1066	874	2.98e3	6.30e3	2.8	YES	0.020
123678-HxCDF				1.099			1.240	1066	874					
123789-HxCDF	36.975	1.001	8.16e2	6.32e2	1.101	1.292	1.240	1066	874	1.34e4	1.32e4	12.5	NO	0.058
1234678-HpCDF	39.035	1.001	7.24e2	7.81e2	1.303	0.928	1.050	758	890	1.29e4	1.20e4	17.0	NO	0.055
1234789-HpCDF	41.633	1.000	2.64e2	1.77e2	1.317	1.490	1.050	758	890	4.15e3	3.94e3	5.5	YES	0.020
OCDF	46.784	1.007	2.27e3	2.41e3	1.166	0.945	0.890	990	1342	2.50e4	2.79e4	25.2	NO	0.270
2378-TCDD				1.134			0.770	1735	1035					
12378-PeCDD	31.297	1.000	2.53e2	1.11e2	0.975	2.281	1.550	1189	789	5.83e3	3.09e3	4.9	YES	0.019
123478-HxCDD				1.031			1.240	1296	1319					
123678-HxCDD	36.087	1.001	2.74e2	1.53e2	0.971	1.791	1.240	1296	1319	6.15e3	4.21e3	4.7	YES	0.020
123789-HxCDD	36.492	1.012	3.98e2	2.69e2	0.947	1.476	1.240	1296	1319	7.09e3	5.10e3	5.5	YES	0.032
1234678-HpCDD	40.800	1.001	2.27e3	2.21e3	1.028	1.026	1.050	991	1029	3.26e4	3.07e4	32.9	NO	0.236
OCDD	46.488	1.000	2.35e4	2.54e4	1.107	0.926	0.890	642	912	2.57e5	2.50e5	399.8	NO	2.970
13C-2378-TCDF	25.555	1.007	1.59e6	2.04e6	1.567	0.779	0.770	9521	4252	2.32e7	2.97e7	2433.7	NO	93.617
13C-12378-PeCDF	29.688	1.170	1.93e6	1.20e6	1.274	1.602	1.550	4445	5004	2.81e7	1.79e7	6320.3	NO	99.266
13C-23478-PeCDF	31.034	1.223	2.00e6	1.27e6	1.235	1.573	1.550	4445	5004	2.98e7	1.87e7	6703.9	NO	106.793
13C-123478-HxCDF	34.706	0.951	8.57e5	1.67e6	1.381	0.514	0.510	2198	4676	1.26e7	2.43e7	5727.5	NO	85.149
13C-123678-HxCDF	34.859	0.955	9.27e5	1.79e6	1.569	0.516	0.510	2198	4676	1.32e7	2.51e7	5985.4	NO	80.772
13C-234678-HxCDF	35.802	0.981	8.33e5	1.60e6	1.345	0.519	0.510	2198	4676	1.21e7	2.36e7	5490.5	NO	84.406
13C-123789-HxCDF	36.953	1.013	7.72e5	1.49e6	1.183	0.519	0.510	2198	4676	1.08e7	2.09e7	4909.8	NO	88.998
13C-1234678-HpCDF	39.013	1.069	6.39e5	1.44e6	1.178	0.443	0.440	2329	3166	9.40e6	2.10e7	4034.7	NO	82.349
13C-1234789-HpCDF	41.633	1.141	5.33e5	1.16e6	0.878	0.458	0.440	2329	3166	6.77e6	1.53e7	2906.9	NO	90.032
13C-1234-TCDD	25.376	0.000	1.09e6	1.38e6	1.000	0.790	0.770	3915	1622	1.62e7	2.07e7	4128.9	NO	100.000
13C-2378-TCDD	26.183	1.032	9.50e5	1.21e6	0.908	0.782	0.770	3915	1622	1.41e7	1.77e7	3598.0	NO	96.173
13C-12378-PeCDD	31.286	1.233	1.23e6	7.67e5	0.756	1.600	1.550	2264	1456	1.81e7	1.14e7	8003.9	NO	106.519
13C-123478-HxCDD	35.944	0.985	1.22e6	9.31e5	1.056	1.313	1.240	2696	1545	1.79e7	1.39e7	6626.0	NO	95.013
13C-123678-HxCDD	36.065	0.988	1.25e6	9.89e5	1.163	1.268	1.240	2696	1545	1.74e7	1.37e7	6446.1	NO	89.801
13C-1234678-HpCDD	40.778	1.117	9.53e5	8.94e5	0.909	1.066	1.050	2773	3384	1.28e7	1.20e7	4606.3	NO	94.635
13C-OCDD	46.479	1.274	1.40e6	1.58e6	0.820	0.887	0.890	3739	3176	1.44e7	1.59e7	3848.7	NO	169.071
13C-123789-HxCDD	36.492	0.000	1.20e6	9.49e5	1.000	1.262	1.240	2696	1545	1.70e7	1.35e7	6309.0	NO	100.000
Total-tetrafurans			5.18e2	0.935				1325		9.25e3				0.037

**Quantify Sample Summary Report**      **MassLynx MassLynx V4.1 SCN909**

Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
 Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
 Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

**ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK**

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
Total-penta1			0.00e0					1004		0.00e0				
Total-pentafurans			1.46e3		0.957			877		2.59e4				0.079
Total-hexafurans			1.15e3		1.125			1066		2.05e4				0.094
Total-heptafurans			1.97e3		1.310			758		3.65e4				0.152
Total-Furans			7.37e3		1.114			1325		1.17e5				0.632
Total-tetradioxins			2.68e2		1.134			1735		6.32e3				0.024
Total-pentadioxins			5.68e2		0.975			1189		1.14e4				0.042
Total-hexadioxins			6.72e2		0.983			1296		1.32e4				0.052
Total-heptadioxins			5.50e3		1.028			991		7.78e4				0.568
Total-Dioxins			3.05e4		1.028			1735		3.65e5				3.656
Total-TEQ			3.79e4					1735		4.83e5				4.287
37CL-2378-TCDD	26.213	1.033	1.08e6		1.067			1477		1.54e7		10404.2		40.893
FUNCTION1 PFK			5.26e6					685743		2.60e7				
FUNCTION2 PFK			1.55e5					189307		4.94e6				0.000
FUNCTION3 PFK			1.52e7					480554		2.96e7				0.000
FUNCTION4 PFK			5.44e5					483111		1.30e7				
FUNCTION5 PFK			0.00e0					278994		0.00e0				
FUNCTION1 HXCD...			2.76e4					786		3.65e5				0.000
FUNCTION1 HPCD...			3.84e3					830		6.30e4				0.000
FUNCTION2 HPCD...			9.39e2					1184		2.51e4				0.000
FUNCTION3 OCDPE			7.88e1					573		3.10e3				0.000
FUNCTION4 NCDPE			1.20e3					1042		2.75e4				0.000
FUNCTION5 DCDPE			0.00e0					521		0.00e0				

Method: C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52  
 Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

ID: 16H0147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

TF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	1 2378-TCDF	303.9016	25.57	1251.982	0.935	0.037	0.037	0.71	0.77	NO	7.0

PP

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

PF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	2 12378-PeCDF	339.8597	29.70	1041.654	0.952	0.035	0.035	1.78	1.55	NO	15.5
2	37 Total-pentafurans	339.8597	28.57	1337.515	0.957	0.044		1.44	1.55	NO	14.0

HF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	7 123789-HxCDF	373.8208	36.97	1448.029	1.101	0.058	0.058	1.29	1.24	NO	12.5
2	5 234678-HxCDF	373.8208	35.81	554.456	1.164	0.020	0.011	0.47	1.24	YES	2.8
3	4 123478-HxCDF	373.8208	34.73	474.533	1.137	0.017	0.010	0.49	1.24	YES	3.9

HPF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	9 1234789-HpCDF	407.7818	41.63	440.862	1.317	0.020	0.016	1.49	1.05	YES	5.5
2	39 Total-heptafurans	407.7818	39.80	1906.570	1.310	0.077		1.06	1.05	NO	25.7
3	8 1234678-HpCDF	407.7818	39.04	1505.106	1.303	0.055	0.055	0.93	1.05	NO	17.0

Furans,TF,PP,PF,HF,HPF,OF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	1 2378-TCDF	303.9016	25.57	1251.982	0.935	0.037	0.037	0.71	0.77	NO	7.0
2	2 12378-PeCDF	339.8597	29.70	1041.654	0.952	0.035	0.035	1.78	1.55	NO	15.5
3	37 Total-pentafurans	339.8597	28.57	1337.515	0.957	0.044		1.44	1.55	NO	14.0
4	7 123789-HxCDF	373.8208	36.97	1448.029	1.101	0.058	0.058	1.29	1.24	NO	12.5
5	5 234678-HxCDF	373.8208	35.81	554.456	1.164	0.020	0.011	0.47	1.24	YES	2.8
6	4 123478-HxCDF	373.8208	34.73	474.533	1.137	0.017	0.010	0.49	1.24	YES	3.9
7	9 1234789-HpCDF	407.7818	41.63	440.862	1.317	0.020	0.016	1.49	1.05	YES	5.5
8	39 Total-heptafurans	407.7818	39.80	1906.570	1.310	0.077		1.06	1.05	NO	25.7
9	8 1234678-HpCDF	407.7818	39.04	1505.106	1.303	0.055	0.055	0.93	1.05	NO	17.0
10	10 OCDF	441.7428	46.78	4677.606	1.166	0.270	0.270	0.94	0.89	NO	25.2

TD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	41 Total-tetradioxins	319.8965	23.36	583.962	1.134	0.024		0.85	0.77	NO	3.6

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ID: 16H0147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

### PD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	12 12378-PeCDD	355.8546	31.30	363.343	0.975	0.019	0.015	2.28	1.55	YES	4.9
2	42 Total-pentadioxins	355.8546	29.69	448.884	0.975	0.023		2.35	1.55	YES	4.7

### HD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	15 123789-HxCDD	389.8157	36.49	666.965	0.947	0.032	0.029	1.48	1.24	YES	5.5
2	14 123678-HxCDD	389.8157	36.09	427.347	0.971	0.020	0.016	1.79	1.24	YES	4.7

### HPD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	16 1234678-HpCDD	423.7766	40.80	4473.375	1.028	0.236	0.236	1.03	1.05	NO	32.9
2	44 Total-heptadioxins	423.7766	39.57	6313.043	1.028	0.333		1.05	1.05	NO	45.6

### Dioxins,TD,PD,HD,HPD,OD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	41 Total-tetradioxins	319.8965	23.36	583.962	1.134	0.024		0.85	0.77	NO	3.6
2	12 12378-PeCDD	355.8546	31.30	363.343	0.975	0.019	0.015	2.28	1.55	YES	4.9
3	42 Total-pentadioxins	355.8546	29.69	448.884	0.975	0.023		2.35	1.55	YES	4.7
4	15 123789-HxCDD	389.8157	36.49	666.965	0.947	0.032	0.029	1.48	1.24	YES	5.5
5	14 123678-HxCDD	389.8157	36.09	427.347	0.971	0.020	0.016	1.79	1.24	YES	4.7
6	16 1234678-HpCDD	423.7766	40.80	4473.375	1.028	0.236	0.236	1.03	1.05	NO	32.9
7	44 Total-heptadioxins	423.7766	39.57	6313.043	1.028	0.333		1.05	1.05	NO	45.6
8	17 OCDD	457.7377	46.49	48899.359	1.107	2.970	2.970	0.93	0.89	NO	399.8

### TotalTEQ,Furans,Dioxins

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	1 2378-TCDF	303.9016	25.57	1251.982	0.935	0.037	0.037	0.71	0.77	NO	7.0
2	2 12378-PeCDF	339.8597	29.70	1041.654	0.952	0.035	0.035	1.78	1.55	NO	15.5
3	37 Total-pentafurans	339.8597	28.57	1337.515	0.957	0.044		1.44	1.55	NO	14.0
4	7 123789-HxCDF	373.8208	36.97	1448.029	1.101	0.058	0.058	1.29	1.24	NO	12.5
5	5 234678-HxCDF	373.8208	35.81	554.456	1.164	0.020	0.011	0.47	1.24	YES	2.8
6	4 123478-HxCDF	373.8208	34.73	474.533	1.137	0.017	0.010	0.49	1.24	YES	3.9
7	9 1234789-HpCDF	407.7818	41.63	440.862	1.317	0.020	0.016	1.49	1.05	YES	5.5
8	39 Total-heptafurans	407.7818	39.80	1906.570	1.310	0.077		1.06	1.05	NO	25.7
9	8 1234678-HpCDF	407.7818	39.04	1505.106	1.303	0.055	0.055	0.93	1.05	NO	17.0
10	10 OCDF	441.7428	46.78	4677.606	1.166	0.270	0.270	0.94	0.89	NO	25.2
11	41 Total-tetradioxins	319.8965	23.36	583.962	1.134	0.024		0.85	0.77	NO	3.6
12	12 12378-PeCDD	355.8546	31.30	363.343	0.975	0.019	0.015	2.28	1.55	YES	4.9
13	42 Total-pentadioxins	355.8546	29.69	448.884	0.975	0.023		2.35	1.55	YES	4.7
14	15 123789-HxCDD	389.8157	36.49	666.965	0.947	0.032	0.029	1.48	1.24	YES	5.5
15	14 123678-HxCDD	389.8157	36.09	427.347	0.971	0.020	0.016	1.79	1.24	YES	4.7
16	16 1234678-HpCDD	423.7766	40.80	4473.375	1.028	0.236	0.236	1.03	1.05	NO	32.9
17	44 Total-heptadioxins	423.7766	39.57	6313.043	1.028	0.333		1.05	1.05	NO	45.6
18	17 OCDD	457.7377	46.49	48899.359	1.107	2.970	2.970	0.93	0.89	NO	399.8

Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
 Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
 Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16H0147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

**PFK1**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	48 FUNCTION1 PFK	330.9792	22.52	0.000							0.0
2	48 FUNCTION1 PFK	330.9792	21.91	0.000							15.5
3	48 FUNCTION1 PFK	330.9792	21.83	0.000							12.3
4	48 FUNCTION1 PFK	330.9792	21.31	0.000							2.3
5	48 FUNCTION1 PFK	330.9792	21.15	0.000							4.4
6	48 FUNCTION1 PFK	330.9792	21.10	0.000							3.4

**PFK2**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	49 FUNCTION2 PFK	366.9792	27.98	0.000		0.000					1.1
2	49 FUNCTION2 PFK	366.9792	27.90	0.000		0.000					1.4
3	49 FUNCTION2 PFK	366.9792	31.12	0.000		0.000					0.8
4	49 FUNCTION2 PFK	366.9792	30.98	0.000		0.000					1.1
5	49 FUNCTION2 PFK	366.9792	30.85	0.000		0.000					0.6
6	49 FUNCTION2 PFK	366.9792	30.65	0.000		0.000					1.2
7	49 FUNCTION2 PFK	366.9792	30.57	0.000		0.000					0.7
8	49 FUNCTION2 PFK	366.9792	30.47	0.000		0.000					1.1
9	49 FUNCTION2 PFK	366.9792	30.40	0.000		0.000					1.7
10	49 FUNCTION2 PFK	366.9792	30.19	0.000		0.000					0.7
11	49 FUNCTION2 PFK	366.9792	29.93	0.000		0.000					1.0
12	49 FUNCTION2 PFK	366.9792	29.60	0.000		0.000					1.3
13	49 FUNCTION2 PFK	366.9792	29.32	0.000		0.000					2.1
14	49 FUNCTION2 PFK	366.9792	28.87	0.000		0.000					1.0
15	49 FUNCTION2 PFK	366.9792	28.38	0.000		0.000					1.1
16	49 FUNCTION2 PFK	366.9792	28.30	0.000		0.000					0.7
17	49 FUNCTION2 PFK	366.9792	28.26	0.000		0.000					0.7
18	49 FUNCTION2 PFK	366.9792	28.06	0.000		0.000					2.3
19	49 FUNCTION2 PFK	366.9792	32.40	0.000		0.000					0.6
20	49 FUNCTION2 PFK	366.9792	32.12	0.000		0.000					1.8
21	49 FUNCTION2 PFK	366.9792	31.83	0.000		0.000					1.5
22	49 FUNCTION2 PFK	366.9792	31.78	0.000		0.000					1.0
23	49 FUNCTION2 PFK	366.9792	31.17	0.000		0.000					0.7

**PFK3**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	50 FUNCTION3 PFK	380.9760	36.25	0.000		0.000					19.0
2	50 FUNCTION3 PFK	380.9760	35.23	0.000		0.000					6.2
3	50 FUNCTION3 PFK	380.9760	34.91	0.000		0.000					2.7
4	50 FUNCTION3 PFK	380.9760	34.27	0.000		0.000					3.2
5	50 FUNCTION3 PFK	380.9760	33.42	0.000		0.000					30.5

Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
 Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
 Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16H0147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

**PFK4**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	51 FUNCTION4 PFK	430.9728	38.96	0.000							1.2
2	51 FUNCTION4 PFK	430.9728	38.84	0.000							1.3
3	51 FUNCTION4 PFK	430.9728	38.47	0.000							2.3
4	51 FUNCTION4 PFK	430.9728	38.05	0.000							0.6
5	51 FUNCTION4 PFK	430.9728	43.68	0.000							0.7
6	51 FUNCTION4 PFK	430.9728	43.51	0.000							1.4
7	51 FUNCTION4 PFK	430.9728	43.05	0.000							0.6
8	51 FUNCTION4 PFK	430.9728	42.63	0.000							1.2
9	51 FUNCTION4 PFK	430.9728	41.62	0.000							1.3
10	51 FUNCTION4 PFK	430.9728	41.46	0.000							1.8
11	51 FUNCTION4 PFK	430.9728	41.42	0.000							1.3
12	51 FUNCTION4 PFK	430.9728	41.21	0.000							0.4
13	51 FUNCTION4 PFK	430.9728	40.61	0.000							0.8
14	51 FUNCTION4 PFK	430.9728	40.48	0.000							1.1
15	51 FUNCTION4 PFK	430.9728	40.39	0.000							1.6
16	51 FUNCTION4 PFK	430.9728	39.87	0.000							1.2
17	51 FUNCTION4 PFK	430.9728	39.74	0.000							0.8
18	51 FUNCTION4 PFK	430.9728	39.61	0.000							0.8
19	51 FUNCTION4 PFK	430.9728	39.19	0.000							1.8
20	51 FUNCTION4 PFK	430.9728	39.00	0.000							2.5
21	51 FUNCTION4 PFK	430.9728	44.06	0.000							0.7
22	51 FUNCTION4 PFK	430.9728	43.98	0.000							1.8

**PFK5**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

**ETHERS1**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	53 FUNCTION1 HXCD...	375.8364	27.59	0.000		0.000					2.6
2	53 FUNCTION1 HXCD...	375.8364	27.29	0.000		0.000					2.8
3	53 FUNCTION1 HXCD...	375.8364	27.09	0.000		0.000					29.1
4	53 FUNCTION1 HXCD...	375.8364	26.97	0.000		0.000					3.1
5	53 FUNCTION1 HXCD...	375.8364	26.92	0.000		0.000					3.6
6	53 FUNCTION1 HXCD...	375.8364	25.63	0.000		0.000					331.6
7	53 FUNCTION1 HXCD...	375.8364	25.38	0.000		0.000					77.8
8	53 FUNCTION1 HXCD...	375.8364	24.09	0.000		0.000					2.8
9	53 FUNCTION1 HXCD...	375.8364	23.25	0.000		0.000					5.0
10	53 FUNCTION1 HXCD...	375.8364	23.03	0.000		0.000					3.3
11	53 FUNCTION1 HXCD...	375.8364	22.16	0.000		0.000					2.7

**ETHERS2**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	54 FUNCTION1 HPCD...	409.7974	25.99	0.000		0.000					3.3
2	54 FUNCTION1 HPCD...	409.7974	25.32	0.000		0.000					2.8
3	54 FUNCTION1 HPCD...	409.7974	21.89	0.000		0.000					69.8

Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
 Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
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ID: 16H0147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

**ETHERS3**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	55 FUNCTION2 HPCD...	409.7974	32.52	0.000		0.000					1.7
2	55 FUNCTION2 HPCD...	409.7974	32.36	0.000		0.000					2.0
3	55 FUNCTION2 HPCD...	409.7974	31.86	0.000		0.000					3.0
4	55 FUNCTION2 HPCD...	409.7974	30.69	0.000		0.000					1.6
5	55 FUNCTION2 HPCD...	409.7974	30.00	0.000		0.000					5.6
6	55 FUNCTION2 HPCD...	409.7974	29.89	0.000		0.000					2.4
7	55 FUNCTION2 HPCD...	409.7974	29.77	0.000		0.000					2.3
8	55 FUNCTION2 HPCD...	409.7974	28.28	0.000		0.000					2.7

**ETHERS4**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	56 FUNCTION3 OCDPE	445.7555	35.06	0.000		0.000					5.4

**ETHERS5**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	57 FUNCTION4 NCDPE	479.7165	38.29	0.000		0.000					1.8
2	57 FUNCTION4 NCDPE	479.7165	44.37	0.000		0.000					2.9
3	57 FUNCTION4 NCDPE	479.7165	43.47	0.000		0.000					3.6
4	57 FUNCTION4 NCDPE	479.7165	41.47	0.000		0.000					2.4
5	57 FUNCTION4 NCDPE	479.7165	41.29	0.000		0.000					2.1
6	57 FUNCTION4 NCDPE	479.7165	41.13	0.000		0.000					1.6
7	57 FUNCTION4 NCDPE	479.7165	40.69	0.000		0.000					3.7
8	57 FUNCTION4 NCDPE	479.7165	40.37	0.000		0.000					1.5
9	57 FUNCTION4 NCDPE	479.7165	38.64	0.000		0.000					3.8
10	57 FUNCTION4 NCDPE	479.7165	38.42	0.000		0.000					2.9

**ETHERS6**

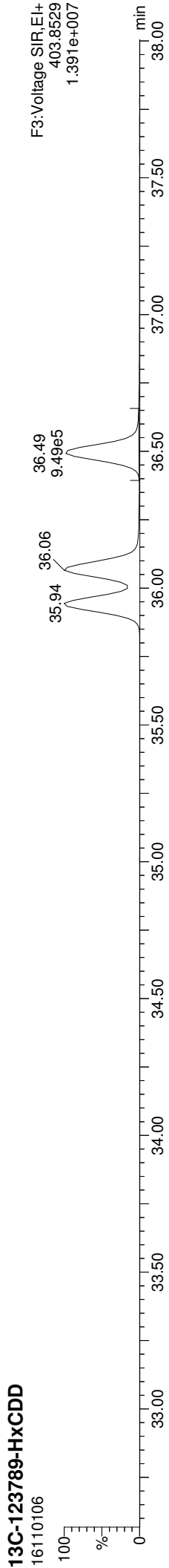
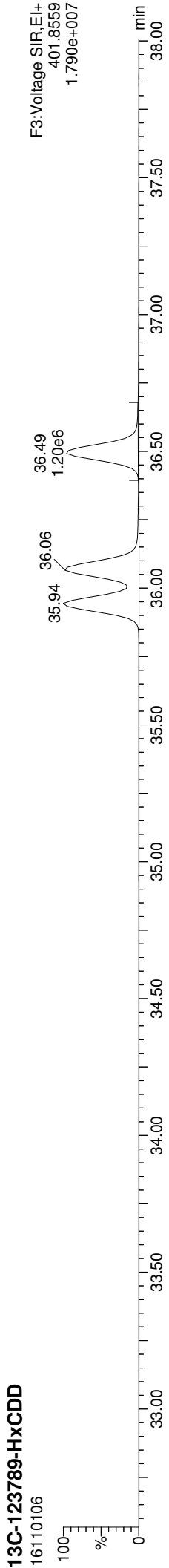
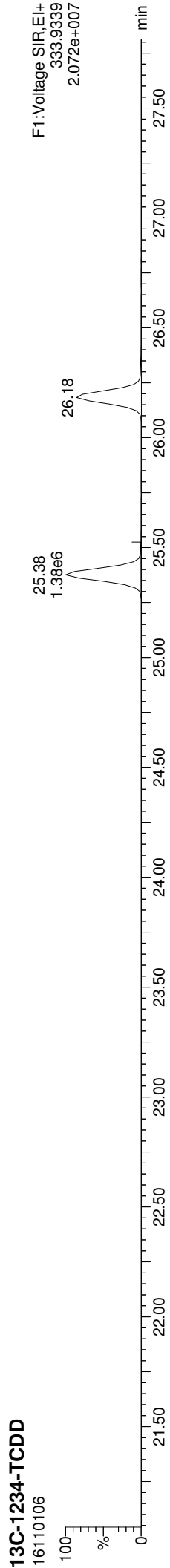
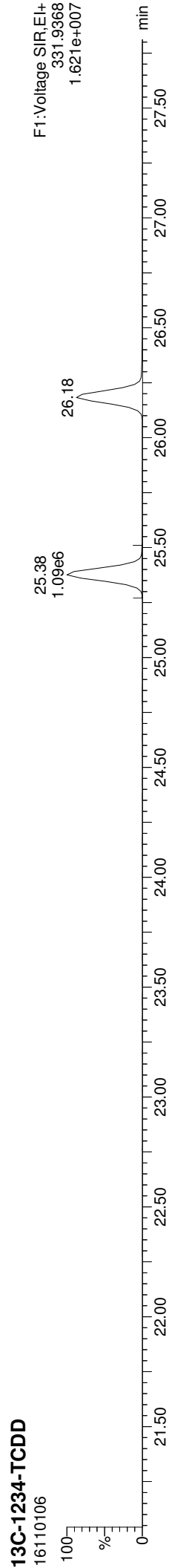
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Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

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Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK



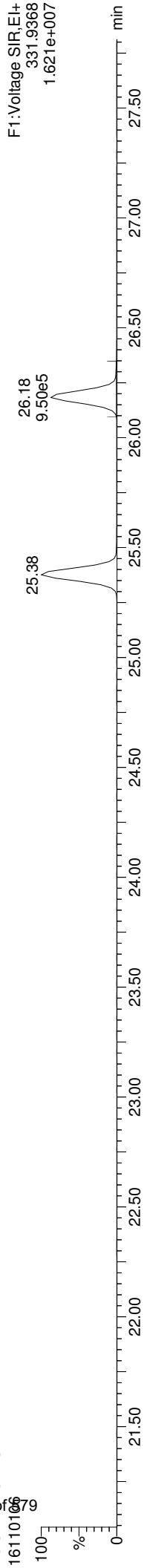


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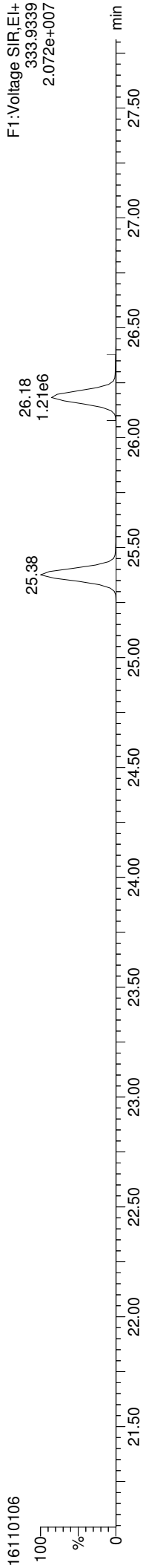
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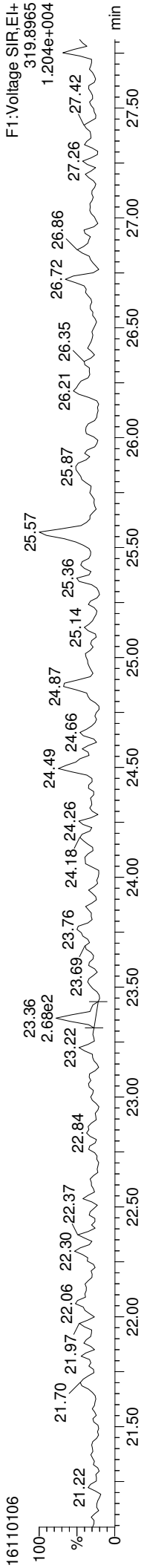
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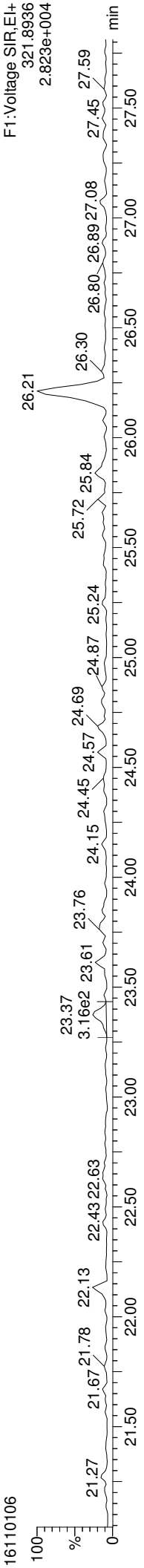
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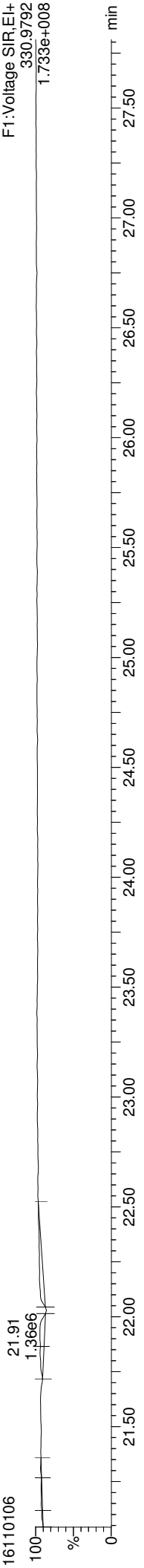
Total-tetradoxins



Total-tetradoxins

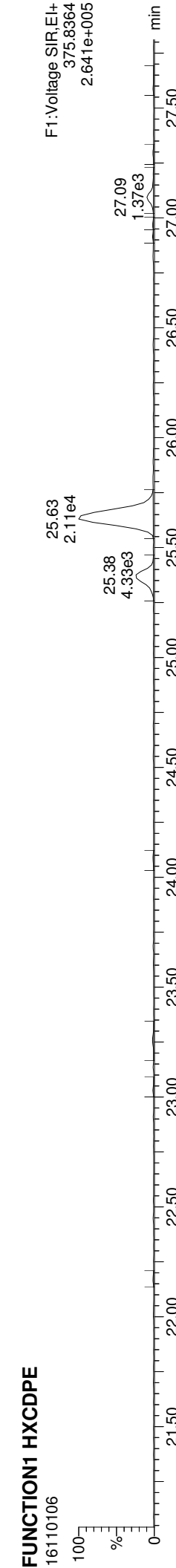
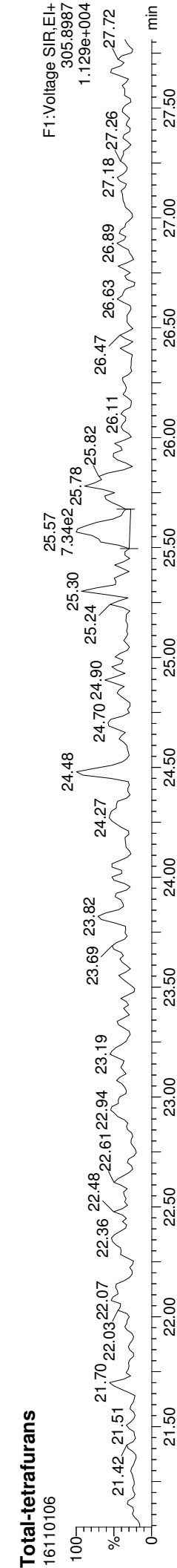
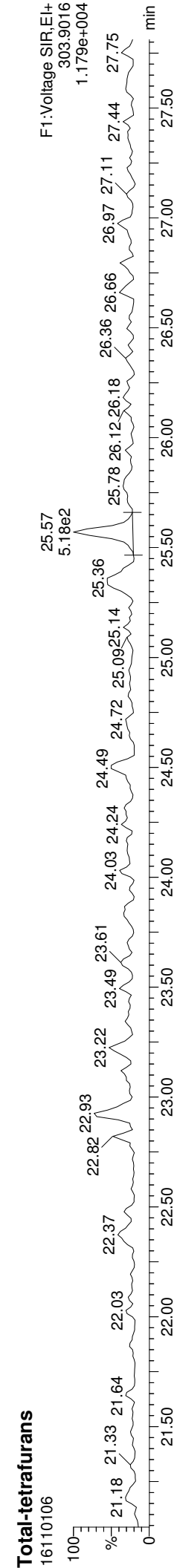
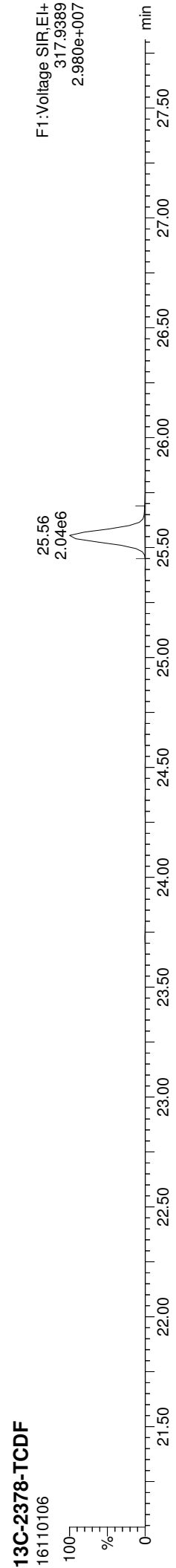
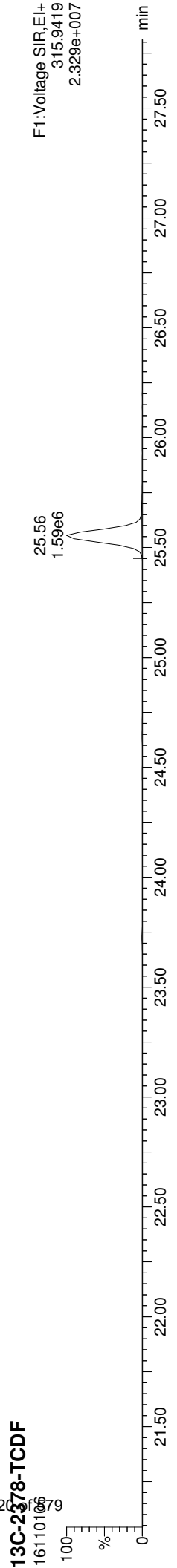


FUNCTION1 PFK



Quantify Sample Report  
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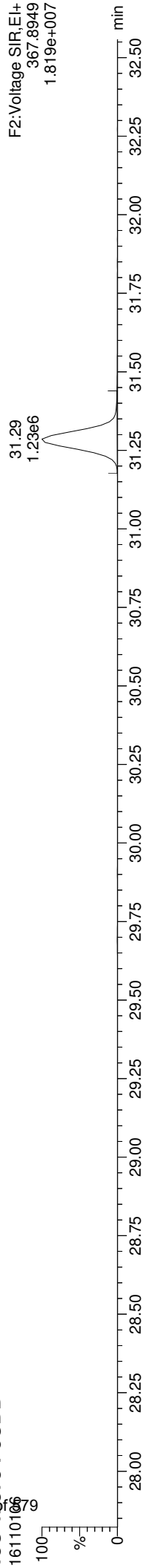


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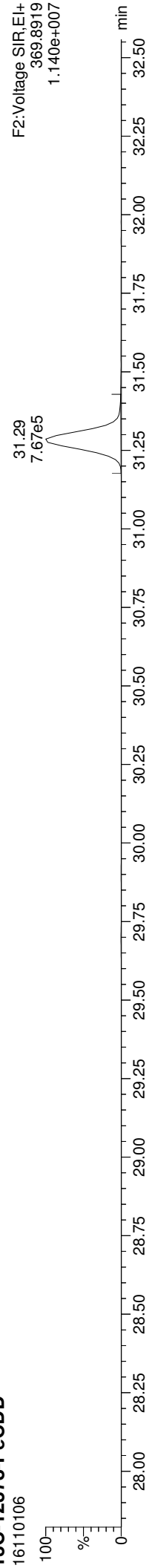
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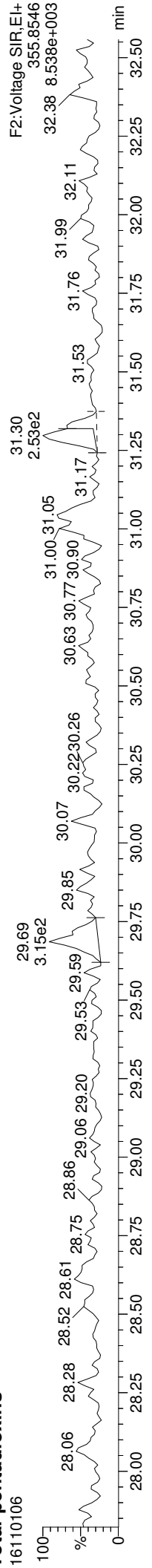
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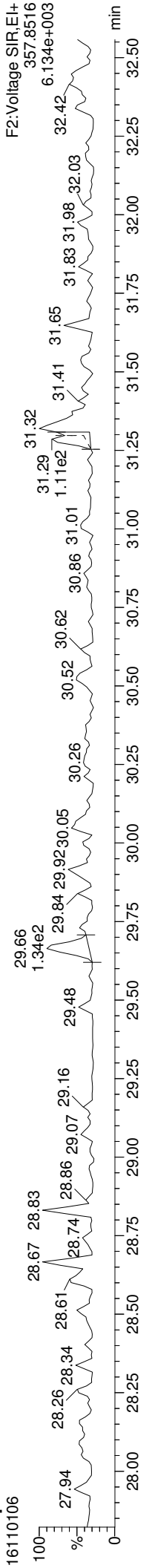
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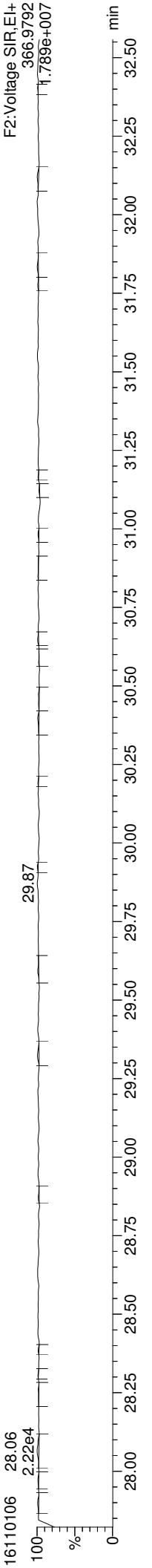
Total-pentadioxins



Total-pentadioxins



FUNCTION2 PFK

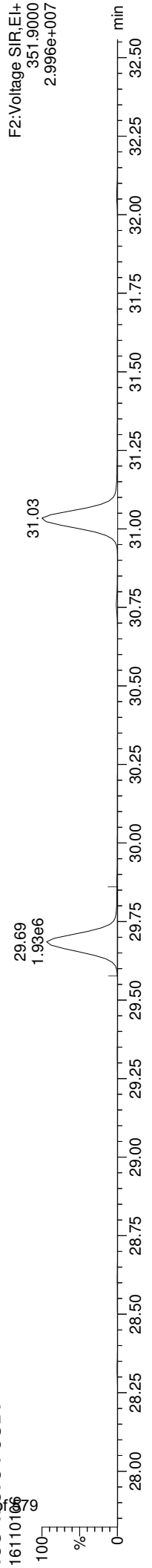


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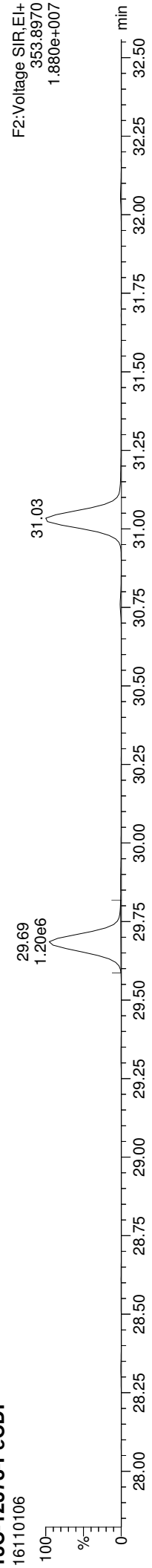
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ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

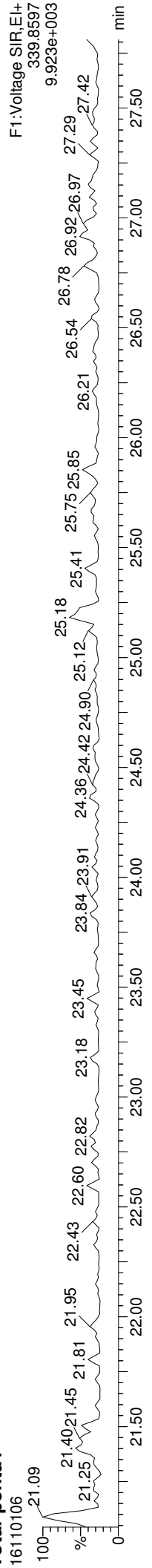
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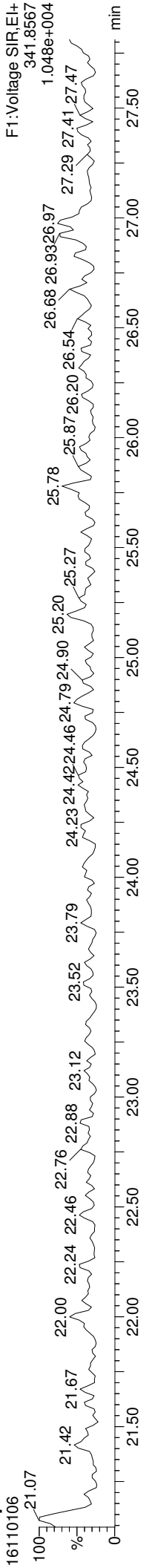
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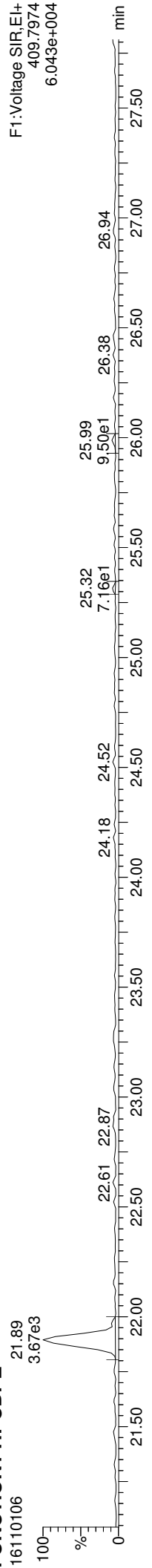
Total-penta1



Total-penta1



FUNCTION1 HPCDPE

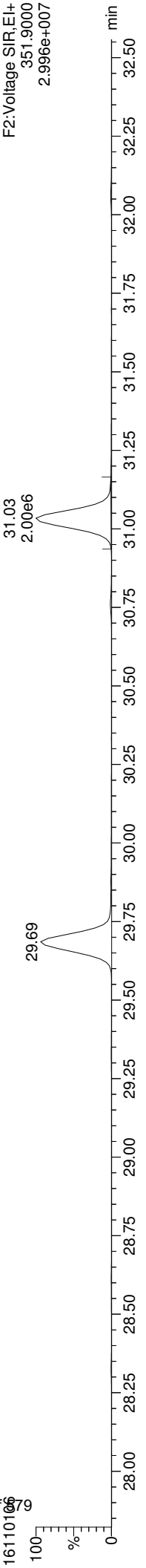


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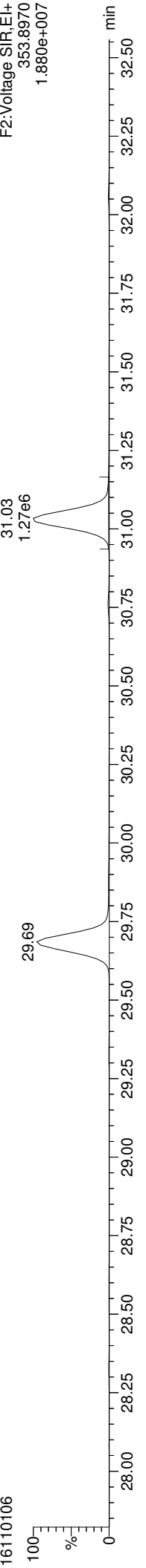
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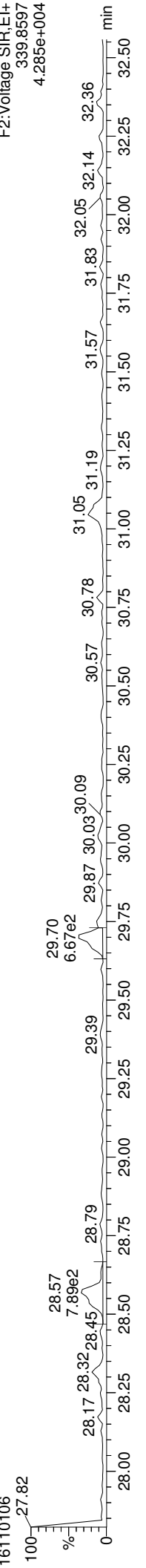
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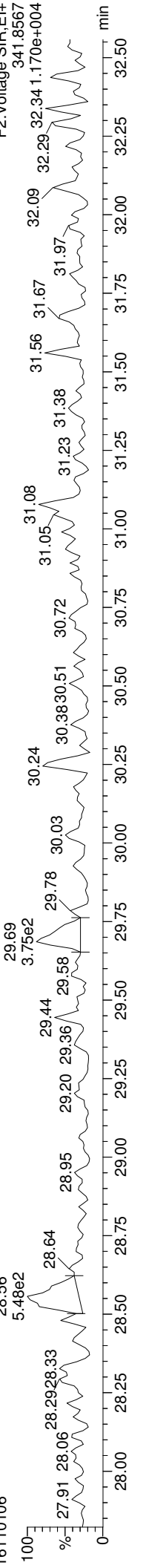
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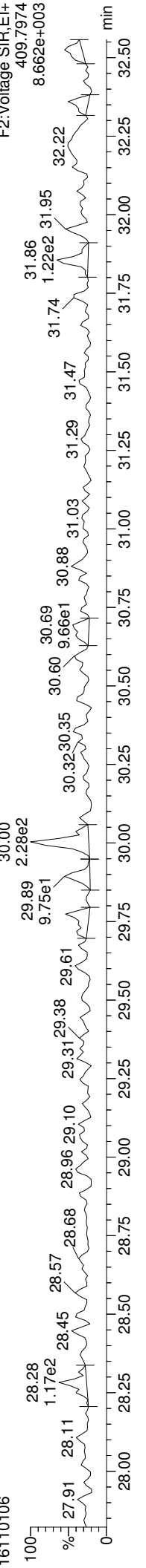
Total-pentafurans



Total-pentafurans



FUNCTION2 HPCDPE

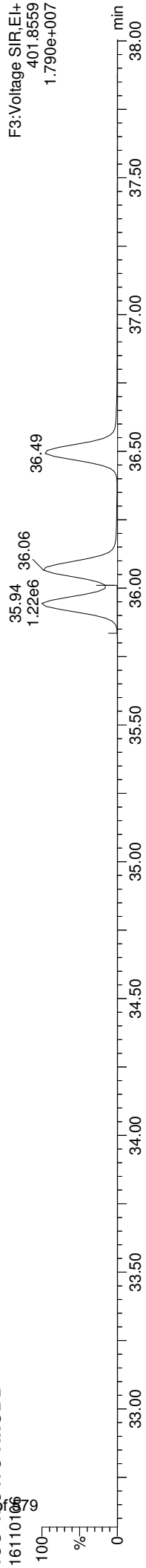


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

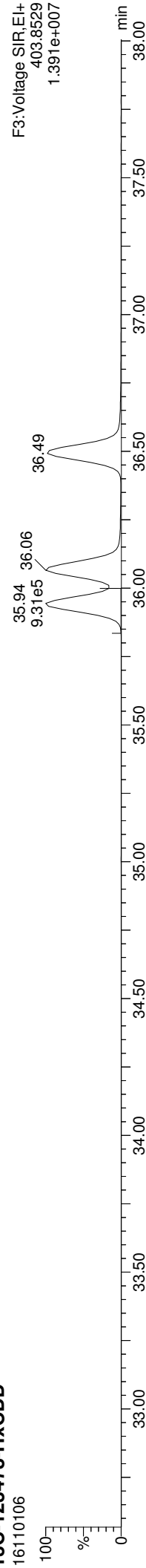
Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

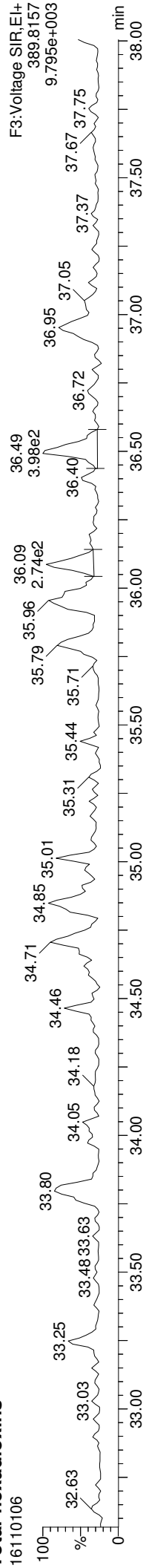
13C-123478-HxCDD



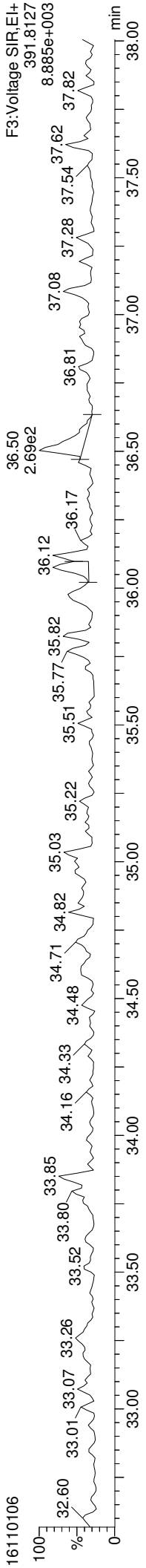
13C-123478-HxCDD



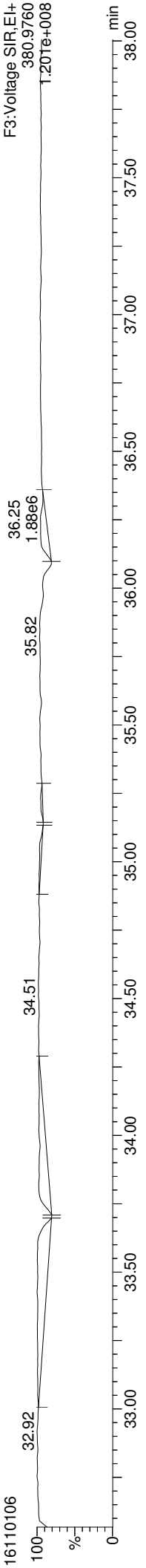
Total-hexadioxins



Total-hexadioxins



FUNCTION3 PFK

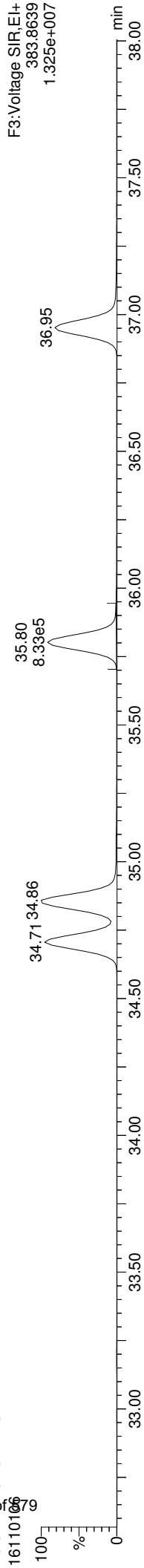


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

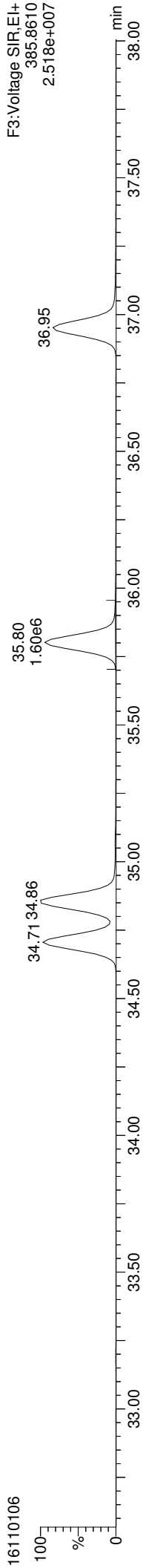
Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

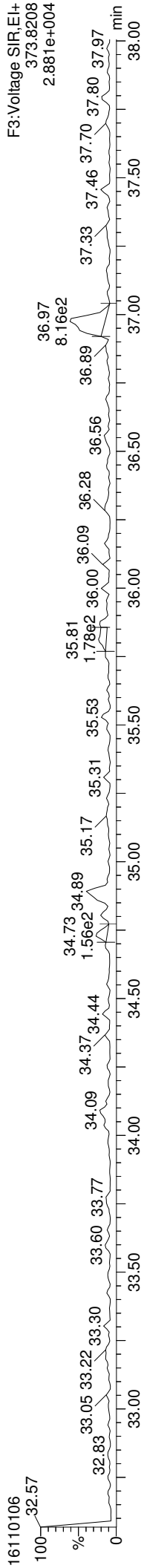
13C-234678-HxCDF



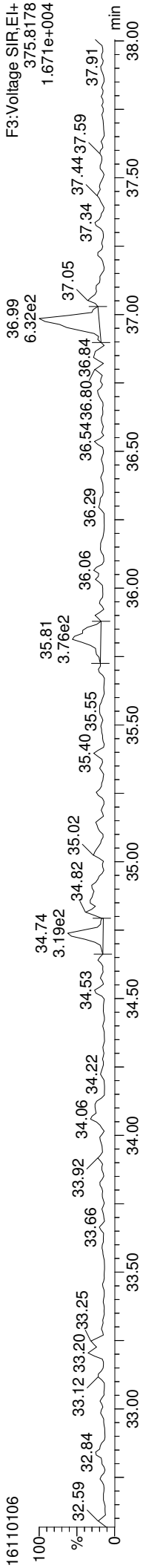
13C-234678-HxCDF



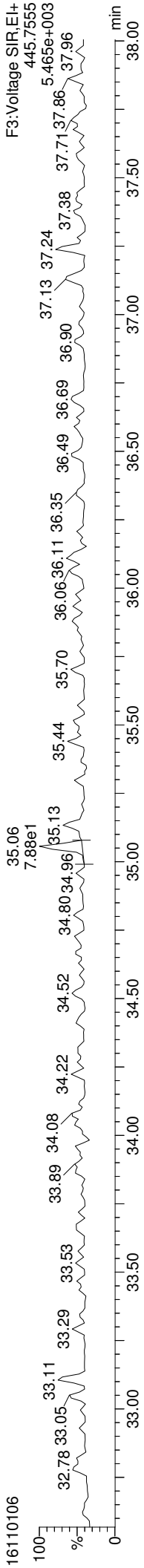
Total-hexafurans



Total-hexafurans



FUNCTION3 OCDPE

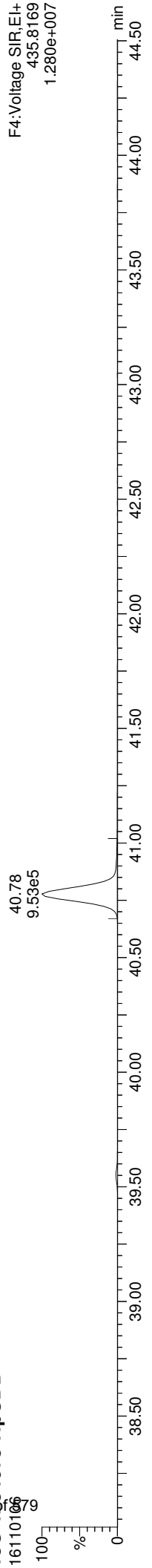


Quantify Sample Report

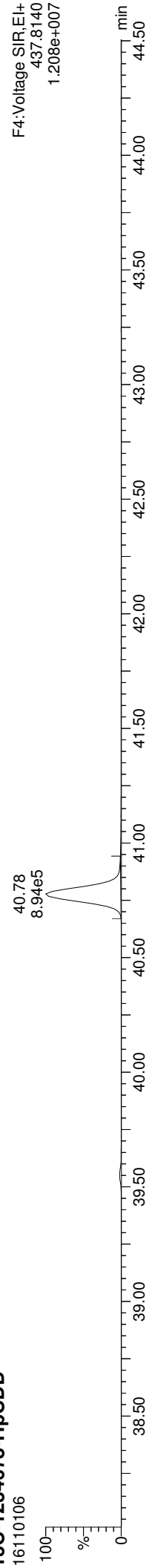
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

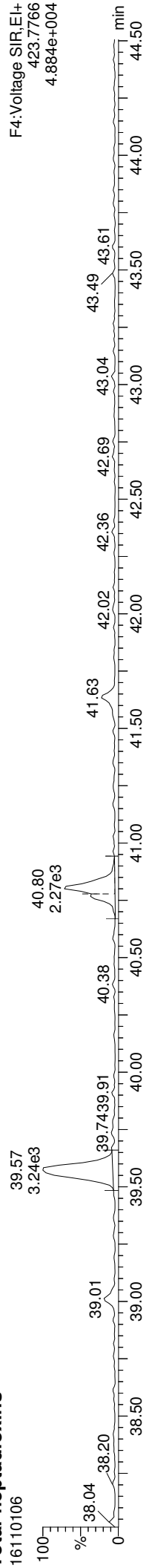
13C-1234678-HpCDD



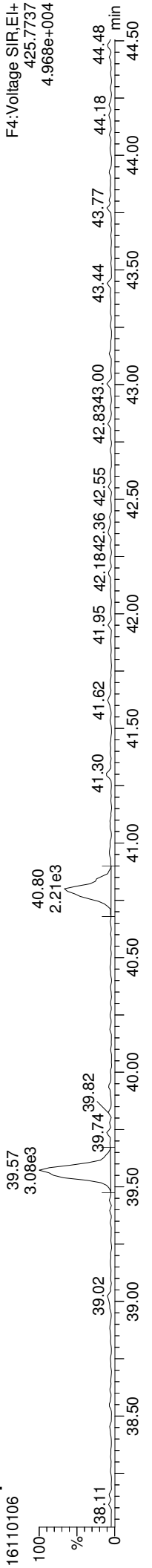
13C-1234678-HpCDD



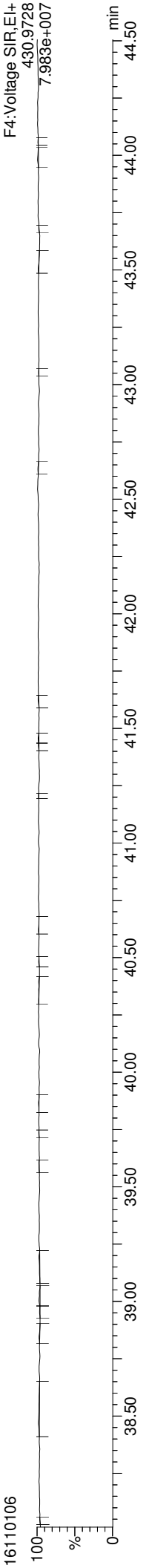
Total-heptadioxins



Total-heptadioxins



FUNCTION4 PFK

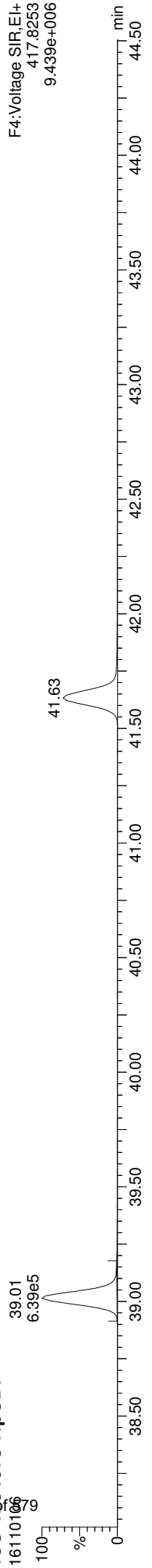




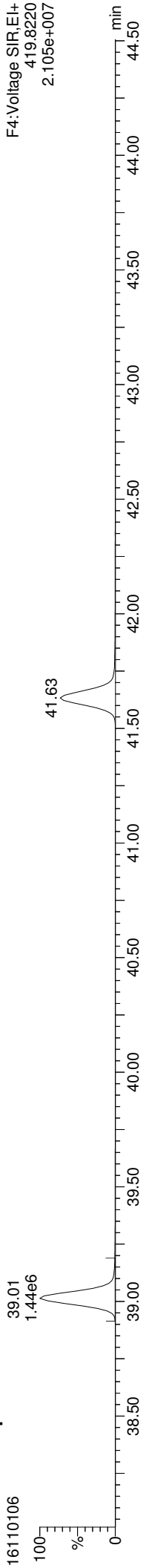
Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

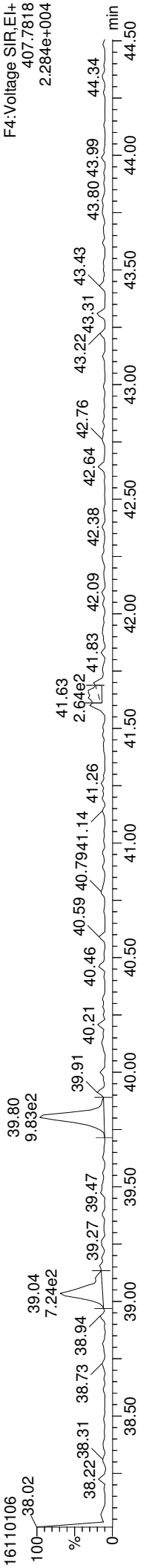
13C-1234678-HpCDF



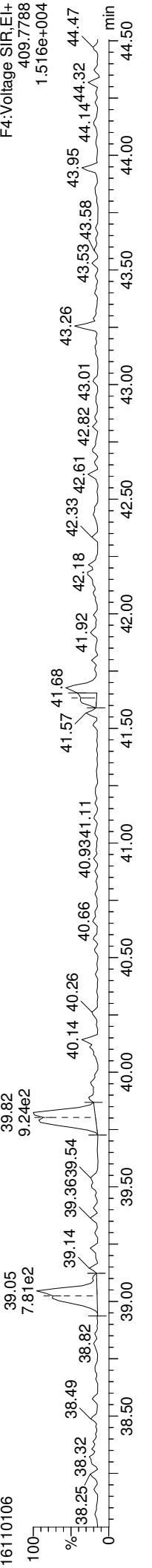
13C-1234678-HpCDF



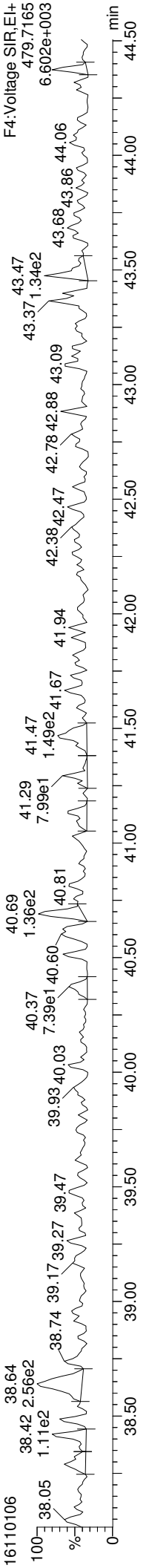
Total-heptafurans



Total-heptafurans



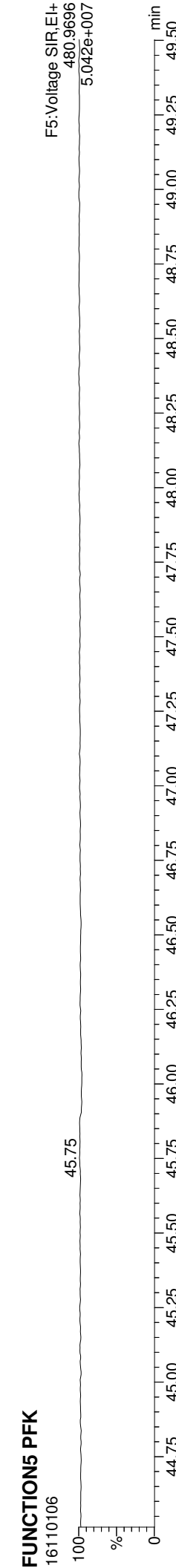
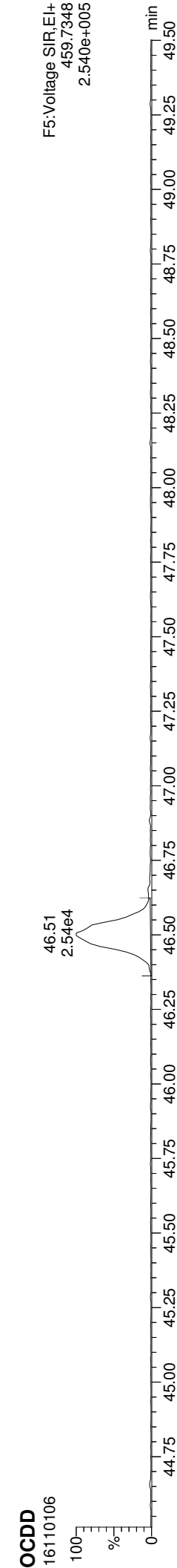
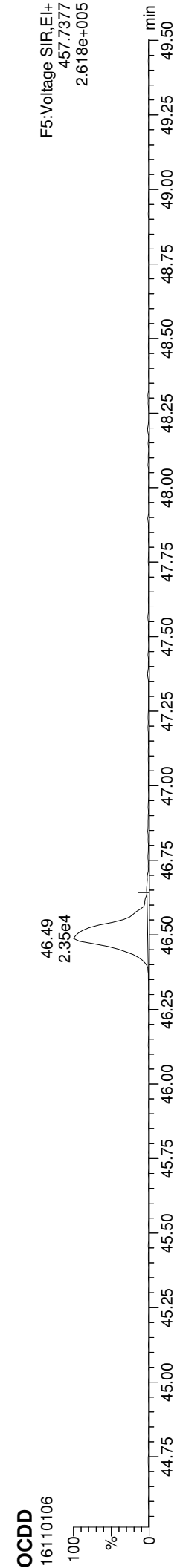
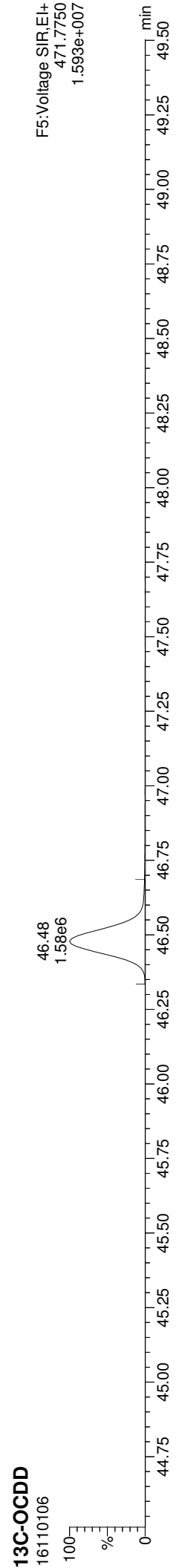
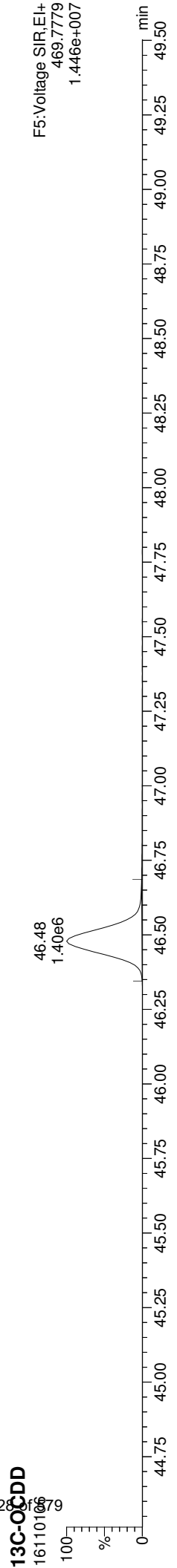
FUNCTION4 NCDPE



Quantify Sample Report

MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101\DATA2.qld  
Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

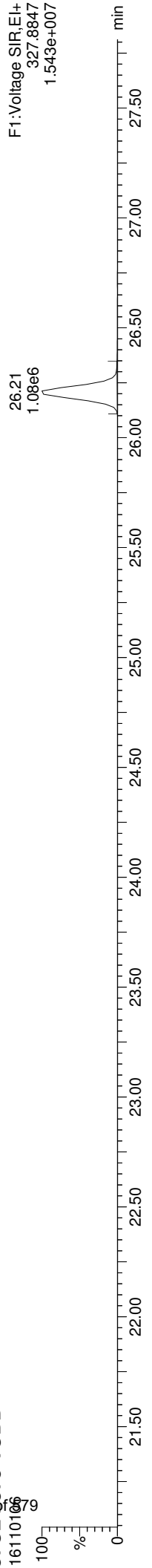


Quantify Sample Report

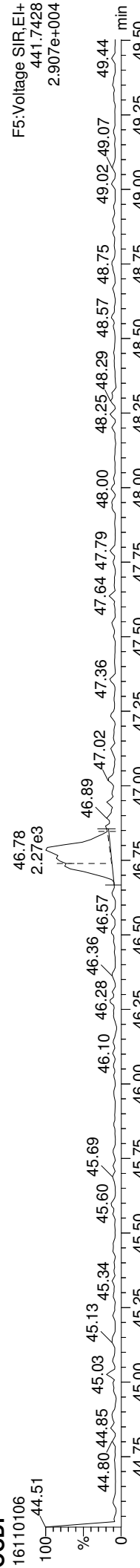
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA2.qld  
Last Altered: Wednesday, November 02, 2016 11:00:34 Pacific Daylight Time  
Printed: Wednesday, November 02, 2016 11:35:07 Pacific Daylight Time

ID: 16110147-01, Name: 16110106, Date: 01-Nov-2016, Time: 14:08:18, Conditions: AUTOSPEC01, User: PK

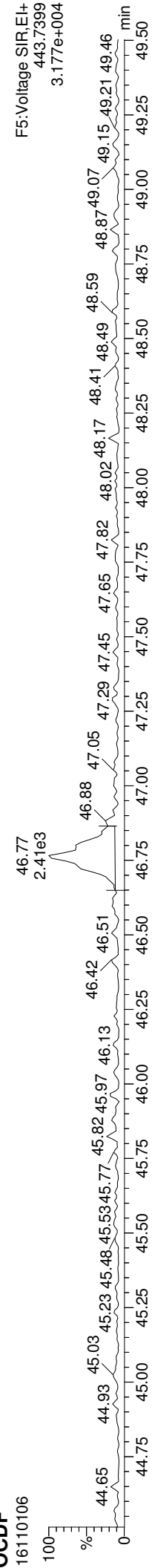
37CL-2378-TCDD



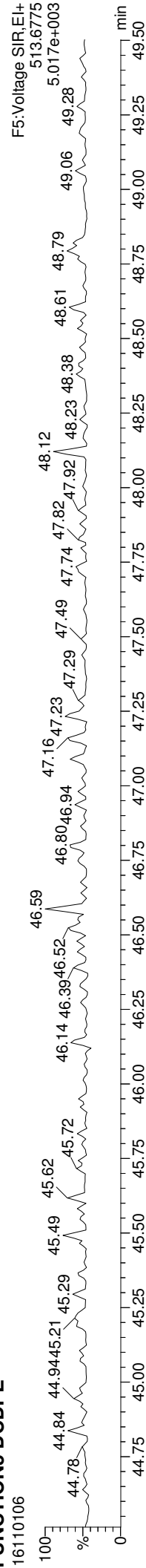
OCDF



OCDF



FUNCTION5 DCDPE





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**Form I**  
**METHOD BLANK DATA SHEET**

**EPA 1613B**  
**Dioxin 1613B**

Laboratory: <u>Analytical Resources, Inc.</u>	SDG: <u>16H0147</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>Port Gamble Shellfish Monitoring</u>
Matrix: <u>Tissue</u>	Laboratory ID: <u>BEJ0775-BLK1</u>
Sampled: <u>N/A</u>	File ID: <u>16110104</u>
Solids Wt%:	Prepared: <u>10/26/16 09:20</u>
Result Basis: <u>Dry</u>	Analyzed: <u>11/01/16 12:23</u>
Batch: <u>BEJ0775</u>	Preparation: <u>EPA 1613</u>
	Initial/Final: <u>10 g / 20 uL</u>
	Sequence: <u>SEJ0462</u>
	Calibration: <u>ZE00016</u>
	Column: <u>RTX-Dioxin2</u>
	Instrument: <u>AUTOSPEC01</u>

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.000	0.655-0.886	0.024	1.00	ND	ng/kg	U
1746-01-6	2,3,7,8-TCDD	1	0.000	0.655-0.886	0.043	1.00	ND	ng/kg	U
57117-41-6	1,2,3,7,8-PeCDF	1	0.597	1.318-1.783		5.00	0.0396	ng/kg	EMPC, J
57117-31-4	2,3,4,7,8-PeCDF	1	0.000	1.318-1.783	0.03	5.00	ND	ng/kg	U
40321-76-4	1,2,3,7,8-PeCDD	1	0.000	1.318-1.783	0.036	5.00	ND	ng/kg	U
70648-26-9	1,2,3,4,7,8-HxCDF	1	0.000	1.054-1.426	0.032	5.00	ND	ng/kg	U
57117-44-9	1,2,3,6,7,8-HxCDF	1	0.000	1.054-1.426	0.03	5.00	ND	ng/kg	U
60851-34-5	2,3,4,6,7,8-HxCDF	1	0.000	1.054-1.426	0.027	5.00	ND	ng/kg	U
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.370	1.054-1.426		5.00	0.0899	ng/kg	J
39227-28-6	1,2,3,4,7,8-HxCDD	1	0.000	1.054-1.426	0.034	5.00	ND	ng/kg	U
57653-85-7	1,2,3,6,7,8-HxCDD	1	0.000	1.054-1.426	0.047	5.00	ND	ng/kg	U
19408-74-3	1,2,3,7,8,9-HxCDD	1	0.000	1.054-1.426	0.042	5.00	ND	ng/kg	U
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	0.000	0.893-1.208	0.039	5.00	ND	ng/kg	U
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	0.000	0.893-1.208	0.055	5.00	ND	ng/kg	U
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	0.969	0.893-1.208		5.00	0.0625	ng/kg	J
39001-02-0	OCDF	1	0.629	0.757-1.024		10.0	0.0923	ng/kg	EMPC, J
3268-87-9	OCDD	1	0.728	0.757-1.024		10.0	0.933	ng/kg	EMPC, J

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	0.0344	ng/kg	
41903-57-5	Total TCDD	1	0.000			1.00	ND	ng/kg	
30402-15-4	Total PeCDF	1	0.000			1.00	0.0396	ng/kg	
36088-22-9	Total PeCDD	1	0.000			1.00	ND	ng/kg	
55684-94-1	Total HxCDF	1	0.000			1.00	0.0899	ng/kg	
34465-46-8	Total HxCDD	1	0.000			1.00	ND	ng/kg	
38998-75-3	Total HpCDF	1	0.000			1.00	ND	ng/kg	
37871-00-4	Total HpCDD	1	0.000			1.00	0.170	ng/kg	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.011
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	0.123



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**Form I**  
**METHOD BLANK DATA SHEET**

**EPA 1613B**  
**Dioxin 1613B**

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>16H0147</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>Port Gamble Shellfish Monitoring</u>
Matrix:	Tissue	Laboratory ID:	<u>BEJ0775-BLK1</u>
Sampled:	<u>N/A</u>	Prepared:	<u>10/26/16 09:20</u>
Solids Wt%:		Preparation:	<u>EPA 1613</u>
Result Basis:	<u>Dry</u>	Sequence:	<u>SEJ0462</u>
Batch:	<u>BEJ0775</u>	Instrument:	<u>AUTOSPEC01</u>
		File ID:	<u>16110104</u>
		Analyzed:	<u>11/01/16 12:23</u>
		Initial/Final:	<u>10 g / 20 uL</u>
		Calibration:	<u>ZE00016</u>
		Column:	<u>RTX-Dioxin2</u>

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF	1	0.781	0.655-0.886		93.3	24 - 169 %	
13C12-2,3,7,8-TCDD	1	0.793	0.655-0.886		91.4	25 - 164 %	
13C12-1,2,3,7,8-PeCDF	1	1.553	1.318-1.783		95.7	24 - 185 %	
13C12-2,3,4,7,8-PeCDF	1	1.569	1.318-1.783		101	21 - 178 %	
13C12-1,2,3,7,8-PeCDD	1	1.578	1.318-1.783		99.0	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF	1	0.521	0.434-0.587		77.6	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF	1	0.520	0.434-0.587		72.1	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF	1	0.525	0.434-0.587		76.5	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF	1	0.525	0.434-0.587		80.1	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD	1	1.283	1.054-1.426		83.8	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD	1	1.260	1.054-1.426		59.4	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF	1	0.453	0.374-0.506		75.8	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF	1	0.459	0.374-0.506		83.3	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1	1.040	0.893-1.208		86.6	23 - 140 %	
13C12-OCDD	1	0.897	0.757-1.024		68.8	17 - 157 %	
37C14-2,3,7,8-TCDD	1	328.000			109	35 - 197 %	

\* Values outside of QC limits

**Quantify Sample Summary Report**      **MassLynx MassLynx V4.1 SCN909**

Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
 Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
 Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

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**Method: C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52**  
**Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40**

**ID: BE90775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK**

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
2378-TCDF					0.935		0.770	737	1667					
12378-PeCDF	29.719	1.001	2.55e2	4.27e2	0.952	0.597	1.550	1381	1236	6.55e3	5.19e3	4.7	YES	0.020
23478-PeCDF					0.963		1.550	1381	1236					
123478-HxCDF					1.137		1.240	905	1141					
234678-HxCDF					1.164		1.240	905	1141					
123678-HxCDF					1.099		1.240	905	1141					
123789-HxCDF	37.007	1.001	6.79e2	4.96e2	1.101	1.370	1.240	905	1141	1.09e4	6.81e3	12.0	NO	0.045
1234678-HpCDF					1.303		1.050	1540	1278					
1234789-HpCDF					1.317		1.050	1540	1278					
OCDF	46.810	1.007	2.93e2	4.66e2	1.166	0.629	0.890	1182	1318	4.17e3	6.66e3	3.5	YES	0.046
2378-TCDD					1.134		0.770	1834	1043					
12378-PeCDD					0.975		1.550	1292	574					
123478-HxCDD					1.031		1.240	754	1195					
123678-HxCDD					0.971		1.240	754	1195					
123789-HxCDD					0.947		1.240	754	1195					
1234678-HpCDD	40.822	1.001	3.12e2	3.22e2	1.028	0.969	1.050	1176	813	9.53e3	6.07e3	8.1	NO	0.031
OCDD	46.532	1.001	3.07e3	4.22e3	1.107	0.728	0.890	1426	598	3.72e4	4.78e4	26.1	YES	0.467
13C-2378-TCDF	25.570	1.007	1.90e6	2.44e6	1.567	0.781	0.770	9328	5489	2.86e7	3.65e7	3064.8	NO	93.303
13C-12378-PeCDF	29.697	1.170	2.20e6	1.42e6	1.274	1.553	1.550	4353	3161	3.32e7	2.11e7	7618.2	NO	95.668
13C-23478-PeCDF	31.045	1.223	2.27e6	1.45e6	1.235	1.569	1.550	4353	3161	3.33e7	2.12e7	7646.7	NO	101.350
13C-123478-HxCDF	34.749	0.951	9.20e5	1.77e6	1.381	0.521	0.510	4131	7751	1.16e7	2.24e7	2808.2	NO	77.603
13C-123678-HxCDF	34.892	0.955	9.70e5	1.86e6	1.569	0.520	0.510	4131	7751	1.29e7	2.48e7	3094.1	NO	72.079
13C-234678-HxCDF	35.824	0.981	8.88e5	1.69e6	1.345	0.525	0.510	4131	7751	1.34e7	2.54e7	3243.8	NO	76.530
13C-123789-HxCDF	36.974	1.012	8.17e5	1.56e6	1.183	0.525	0.510	4131	7751	1.12e7	2.15e7	2710.2	NO	80.071
13C-1234678-HpCDF	39.035	1.069	6.98e5	1.54e6	1.178	0.453	0.440	3029	3417	1.04e7	2.27e7	3439.9	NO	75.805
13C-1234789-HpCDF	41.655	1.140	5.76e5	1.26e6	0.878	0.459	0.440	3029	3417	7.35e6	1.64e7	2427.4	NO	83.303
13C-1234-TCDD	25.391	0.000	1.32e6	1.65e6	1.000	0.796	0.770	4288	3195	1.97e7	2.50e7	4585.6	NO	100.000
13C-2378-TCDD	26.198	1.032	1.09e6	1.37e6	0.908	0.793	0.770	4288	3195	1.57e7	2.01e7	3668.4	NO	91.407
13C-12378-PeCDD	31.297	1.233	1.36e6	8.62e5	0.756	1.578	1.550	2396	2448	1.96e7	1.24e7	8192.7	NO	99.005
13C-123478-HxCDD	35.955	0.984	1.25e6	9.71e5	1.056	1.283	1.240	2458	2280	1.86e7	1.48e7	7555.7	NO	83.771
13C-123678-HxCDD	36.076	0.988	9.66e5	7.66e5	1.163	1.260	1.240	2458	2280	1.43e7	1.14e7	5810.2	NO	59.429
13C-1234678-HpCDD	40.800	1.117	1.01e6	9.68e5	0.909	1.040	1.050	3124	2744	1.38e7	1.32e7	4411.5	NO	86.645
13C-OCDD	46.505	1.273	1.34e6	1.49e6	0.820	0.897	0.890	2337	2209	1.37e7	1.56e7	5881.7	NO	137.546
13C-123789-HxCDD	36.525	0.000	1.40e6	1.11e6	1.000	1.266	1.240	2458	2280	1.96e7	1.54e7	7975.5	NO	100.000
Total-tetrafurans			1.26e2		0.935			737		2.33e3				0.017

**Quantify Sample Summary Report**      **MassLynx MassLynx V4.1 SCN909**

Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
 Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
 Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

**ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK**

Name	Q1	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
Total-penta1	0.00e0								505		0.00e0				
Total-pentafurans	2.55e2			0.957					1381		6.55e3				0.020
Total-hexafurans	6.79e2			1.125					905		1.09e4				0.045
Total-heptafurans	0.00e0			1.310					1540		0.00e0				
Total-Furans	1.35e3			1.114					737		2.39e4				0.128
Total-tetradioxins	0.00e0			1.134					1834		0.00e0				
Total-pentadioxins	0.00e0			0.975					1292		0.00e0				
Total-hexadioxins	0.00e0			0.983					754		0.00e0				
Total-heptadioxins	7.91e2			1.028					1176		2.46e4				0.085
Total-Dioxins	4.04e3			1.028					1834		6.60e4				0.568
Total-TEQ	5.39e3								1834		8.99e4				0.696
37CL-2378-TCDD	1.38e6	26.228	1.033	1.067					1555		2.00e7		12872.1		43.744
FUNCTION1 PFK	1.91e8								610782		1.74e8				0.000
FUNCTION2 PFK	3.70e6								227016		1.84e7				0.000
FUNCTION3 PFK	3.37e8								484399		5.12e8				0.000
FUNCTION4 PFK	8.13e5								501656		2.06e7				
FUNCTION5 PFK	3.49e5								325313		1.27e7				
FUNCTION1 HXCD...	2.23e2								495		6.22e3				0.000
FUNCTION1 HPCD...	7.32e1								523		1.90e3				0.000
FUNCTION2 HPCD...	2.61e2								425		7.53e3				0.000
FUNCTION3 OCDPE	0.00e0								236		0.00e0				0.000
FUNCTION4 NCDPE	2.34e2								835		3.93e3				0.000
FUNCTION5 DCDPE	7.62e1								506		3.45e3				0.000

Method: C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52  
 Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

ID: BEJ0775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

TF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	35 Total-tetrafurans	303.9016	27.06	698.238	0.935	0.017		0.22	0.77	YES	3.2

PP

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

PF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	2 12378-PeCDF	339.8597	29.72	682.455	0.952	0.020	0.012	0.60	1.55	YES	4.7

HF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	7 123789-HxCDF	373.8208	37.01	1174.824	1.101	0.045	0.045	1.37	1.24	NO	12.0

HPF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

Furans,TF,PP,PF,HF,HPF,OF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	35 Total-tetrafurans	303.9016	27.06	698.238	0.935	0.017		0.22	0.77	YES	3.2
2	2 12378-PeCDF	339.8597	29.72	682.455	0.952	0.020	0.012	0.60	1.55	YES	4.7
3	7 123789-HxCDF	373.8208	37.01	1174.824	1.101	0.045	0.045	1.37	1.24	NO	12.0
4	10 OCDF	441.7428	46.81	759.680	1.166	0.046	0.038	0.63	0.89	YES	3.5

TD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

PD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

HD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											



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HPD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	16 1234678-HpCDD	423.7766	40.82	634.491	1.028	0.031	0.031	0.97	1.05	NO	8.1
2	44 Total-heptadioxins	423.7766	40.79	301.633	1.028	0.015		1.34	1.05	YES	7.0
3	44 Total-heptadioxins	423.7766	39.59	792.367	1.028	0.039		0.63	1.05	YES	5.9

Dioxins,TD,PD,HD,HPD,OD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	45 Total-Dioxins	319.8965	22.45	181.431	1.028	0.007		0.63	0.77	YES	0.7
2	45 Total-Dioxins	319.8965	27.39	230.828	1.028	0.009		0.83	0.77	NO	1.5
3	16 1234678-HpCDD	423.7766	40.82	634.491	1.028	0.031	0.031	0.97	1.05	NO	8.1
4	44 Total-heptadioxins	423.7766	40.79	301.633	1.028	0.015		1.34	1.05	YES	7.0
5	44 Total-heptadioxins	423.7766	39.59	792.367	1.028	0.039		0.63	1.05	YES	5.9
6	17 OCDD	457.7377	46.53	7296.223	1.107	0.467	0.418	0.73	0.89	YES	26.1

TotalTEQ,Furans,Dioxins

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	35 Total-tetrafurans	303.9016	27.06	698.238	0.935	0.017		0.22	0.77	YES	3.2
2	2 12378-PeCDF	339.8597	29.72	682.455	0.952	0.020	0.012	0.60	1.55	YES	4.7
3	7 123789-HxCDF	373.8208	37.01	1174.824	1.101	0.045	0.045	1.37	1.24	NO	12.0
4	10 OCDF	441.7428	46.81	759.680	1.166	0.046	0.038	0.63	0.89	YES	3.5
5	45 Total-Dioxins	319.8965	22.45	181.431	1.028	0.007		0.63	0.77	YES	0.7
6	45 Total-Dioxins	319.8965	27.39	230.828	1.028	0.009		0.83	0.77	NO	1.5
7	16 1234678-HpCDD	423.7766	40.82	634.491	1.028	0.031	0.031	0.97	1.05	NO	8.1
8	44 Total-heptadioxins	423.7766	40.79	301.633	1.028	0.015		1.34	1.05	YES	7.0
9	44 Total-heptadioxins	423.7766	39.59	792.367	1.028	0.039		0.63	1.05	YES	5.9
10	17 OCDD	457.7377	46.53	7296.223	1.107	0.467	0.418	0.73	0.89	YES	26.1

PFK1

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	48 FUNCTION1 PFK	330.9792	24.58	0.000							7.5
2	48 FUNCTION1 PFK	330.9792	21.97	0.000							159.4
3	48 FUNCTION1 PFK	330.9792	21.67	0.000							118.7

PFK2

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	49 FUNCTION2 PFK	366.9792	31.82	0.000		0.000					8.5
2	49 FUNCTION2 PFK	366.9792	31.32	0.000		0.000					14.0
3	49 FUNCTION2 PFK	366.9792	30.87	0.000		0.000					18.3
4	49 FUNCTION2 PFK	366.9792	30.64	0.000		0.000					14.5
5	49 FUNCTION2 PFK	366.9792	30.45	0.000		0.000					7.7
6	49 FUNCTION2 PFK	366.9792	32.13	0.000		0.000					8.8
7	49 FUNCTION2 PFK	366.9792	32.03	0.000		0.000					9.1

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ID: BEJ0775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

**PFK3**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	50 FUNCTION3 PFK	380.9760	37.18	0.000		0.000					86.9
2	50 FUNCTION3 PFK	380.9760	36.28	0.000		0.000					171.9
3	50 FUNCTION3 PFK	380.9760	35.98	0.000		0.000					187.6
4	50 FUNCTION3 PFK	380.9760	35.05	0.000		0.000					191.6
5	50 FUNCTION3 PFK	380.9760	33.88	0.000		0.000					179.1
6	50 FUNCTION3 PFK	380.9760	33.55	0.000		0.000					164.3
7	50 FUNCTION3 PFK	380.9760	32.79	0.000		0.000					76.2

**PFK4**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	51 FUNCTION4 PFK	430.9728	39.10	0.000							2.4
2	51 FUNCTION4 PFK	430.9728	39.06	0.000							2.0
3	51 FUNCTION4 PFK	430.9728	39.00	0.000							1.7
4	51 FUNCTION4 PFK	430.9728	38.44	0.000							0.8
5	51 FUNCTION4 PFK	430.9728	38.07	0.000							2.0
6	51 FUNCTION4 PFK	430.9728	41.74	0.000							0.6
7	51 FUNCTION4 PFK	430.9728	41.61	0.000							0.4
8	51 FUNCTION4 PFK	430.9728	41.57	0.000							0.5
9	51 FUNCTION4 PFK	430.9728	41.49	0.000							0.9
10	51 FUNCTION4 PFK	430.9728	41.37	0.000							1.3
11	51 FUNCTION4 PFK	430.9728	41.17	0.000							1.5
12	51 FUNCTION4 PFK	430.9728	40.85	0.000							1.2
13	51 FUNCTION4 PFK	430.9728	40.73	0.000							1.3
14	51 FUNCTION4 PFK	430.9728	40.66	0.000							1.4
15	51 FUNCTION4 PFK	430.9728	40.53	0.000							0.7
16	51 FUNCTION4 PFK	430.9728	40.30	0.000							1.2
17	51 FUNCTION4 PFK	430.9728	40.26	0.000							1.1
18	51 FUNCTION4 PFK	430.9728	40.20	0.000							1.1
19	51 FUNCTION4 PFK	430.9728	39.51	0.000							1.3
20	51 FUNCTION4 PFK	430.9728	39.36	0.000							1.5
21	51 FUNCTION4 PFK	430.9728	39.27	0.000							2.5
22	51 FUNCTION4 PFK	430.9728	44.16	0.000							1.1
23	51 FUNCTION4 PFK	430.9728	44.01	0.000							1.1
24	51 FUNCTION4 PFK	430.9728	43.96	0.000							1.3
25	51 FUNCTION4 PFK	430.9728	43.66	0.000							1.2
26	51 FUNCTION4 PFK	430.9728	43.55	0.000							1.2
27	51 FUNCTION4 PFK	430.9728	43.07	0.000							1.4
28	51 FUNCTION4 PFK	430.9728	43.01	0.000							1.1
29	51 FUNCTION4 PFK	430.9728	42.89	0.000							0.5
30	51 FUNCTION4 PFK	430.9728	42.71	0.000							1.4
31	51 FUNCTION4 PFK	430.9728	42.55	0.000							0.4
32	51 FUNCTION4 PFK	430.9728	42.36	0.000							0.9
33	51 FUNCTION4 PFK	430.9728	41.97	0.000							0.8
34	51 FUNCTION4 PFK	430.9728	41.92	0.000							1.1

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**PFK5**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	52 FUNCTION5 PFK	480.9696	44.94	0.000							0.8
2	52 FUNCTION5 PFK	480.9696	44.68	0.000							1.4
3	52 FUNCTION5 PFK	480.9696	46.70	0.000							1.6
4	52 FUNCTION5 PFK	480.9696	46.61	0.000							0.8
5	52 FUNCTION5 PFK	480.9696	46.29	0.000							1.0
6	52 FUNCTION5 PFK	480.9696	46.24	0.000							1.6
7	52 FUNCTION5 PFK	480.9696	46.14	0.000							2.2
8	52 FUNCTION5 PFK	480.9696	46.11	0.000							1.6
9	52 FUNCTION5 PFK	480.9696	45.91	0.000							1.8
10	52 FUNCTION5 PFK	480.9696	45.81	0.000							0.5
11	52 FUNCTION5 PFK	480.9696	45.65	0.000							1.5
12	52 FUNCTION5 PFK	480.9696	45.62	0.000							1.2
13	52 FUNCTION5 PFK	480.9696	45.59	0.000							0.9
14	52 FUNCTION5 PFK	480.9696	45.51	0.000							1.8
15	52 FUNCTION5 PFK	480.9696	45.45	0.000							0.7
16	52 FUNCTION5 PFK	480.9696	45.33	0.000							2.0
17	52 FUNCTION5 PFK	480.9696	45.11	0.000							1.0
18	52 FUNCTION5 PFK	480.9696	45.06	0.000							0.8
19	52 FUNCTION5 PFK	480.9696	49.18	0.000							0.8
20	52 FUNCTION5 PFK	480.9696	49.17	0.000							0.8
21	52 FUNCTION5 PFK	480.9696	49.13	0.000							1.0
22	52 FUNCTION5 PFK	480.9696	48.83	0.000							1.1
23	52 FUNCTION5 PFK	480.9696	48.47	0.000							0.7
24	52 FUNCTION5 PFK	480.9696	48.05	0.000							2.1
25	52 FUNCTION5 PFK	480.9696	47.98	0.000							1.3
26	52 FUNCTION5 PFK	480.9696	47.83	0.000							0.8
27	52 FUNCTION5 PFK	480.9696	47.69	0.000							1.2
28	52 FUNCTION5 PFK	480.9696	47.63	0.000							0.4
29	52 FUNCTION5 PFK	480.9696	47.07	0.000							1.0
30	52 FUNCTION5 PFK	480.9696	46.94	0.000							1.7
31	52 FUNCTION5 PFK	480.9696	46.89	0.000							0.7
32	52 FUNCTION5 PFK	480.9696	46.86	0.000							1.1
33	52 FUNCTION5 PFK	480.9696	46.79	0.000							1.2

**ETHERS1**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	53 FUNCTION1 HXCD...	375.8364	27.47	0.000		0.000					4.4
2	53 FUNCTION1 HXCD...	375.8364	26.94	0.000		0.000					8.1

**ETHERS2**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	54 FUNCTION1 HPCD...	409.7974	21.95	0.000		0.000					3.6

**ETHERS3**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	55 FUNCTION2 HPCD...	409.7974	32.35	0.000		0.000					6.3
2	55 FUNCTION2 HPCD...	409.7974	31.03	0.000		0.000					5.2
3	55 FUNCTION2 HPCD...	409.7974	27.85	0.000		0.000					6.2

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**ETHERS4**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

**ETHERS5**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	57 FUNCTION4 NCDPE	479.7165	40.89	0.000		0.000					3.6
2	57 FUNCTION4 NCDPE	479.7165	38.73	0.000		0.000					1.1

**ETHERS6**

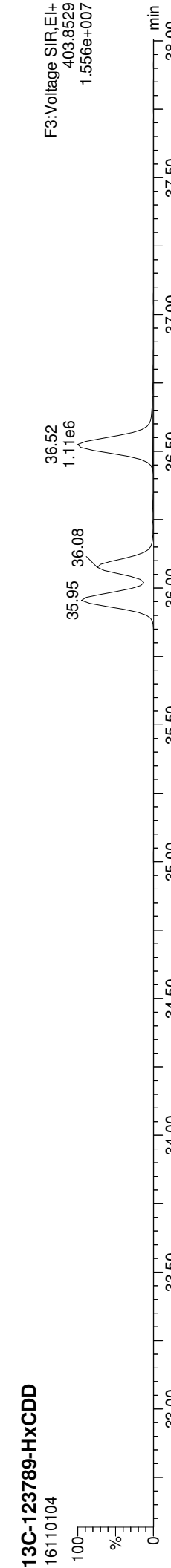
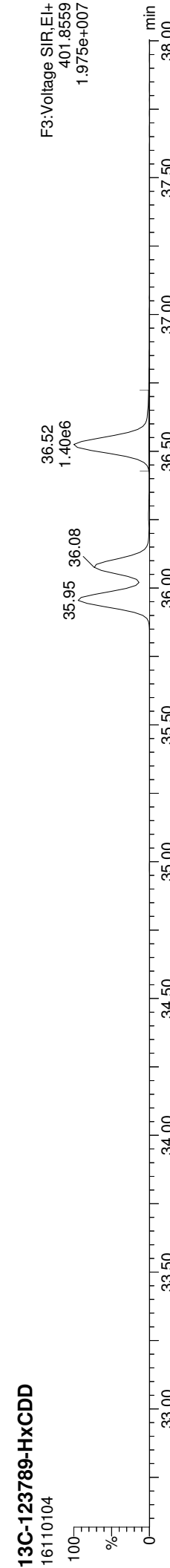
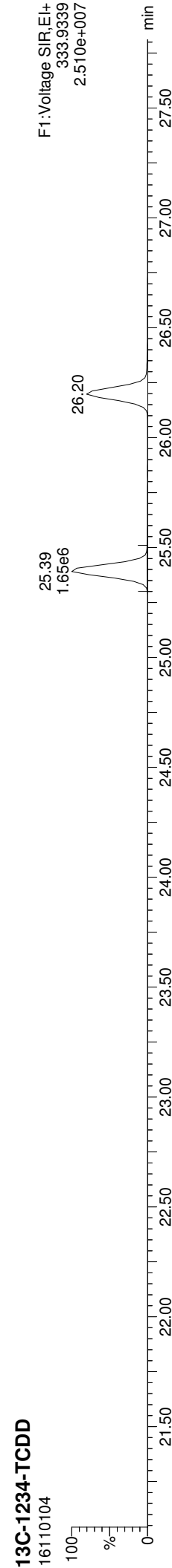
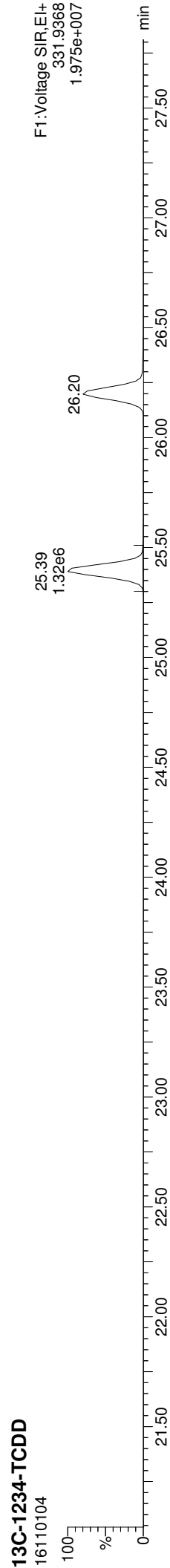
	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	58 FUNCTION5 DCDPE	513.6775	47.40	0.000		0.000					6.8

**Quantify Sample Report**    **MassLynx MassLynx V4.1 SCN909**

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**Method:** C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52  
**Calibration:** C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

**ID:** BEJ0775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

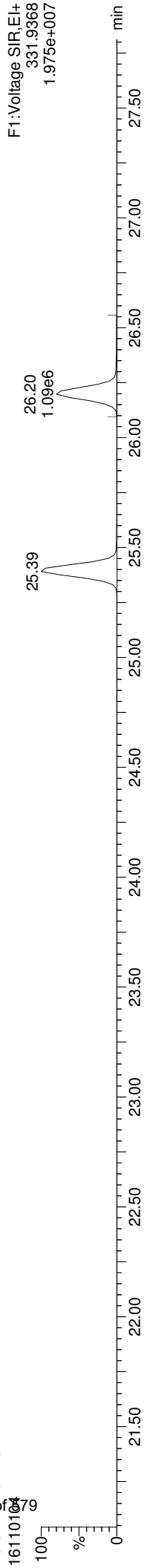


Quantify Sample Report

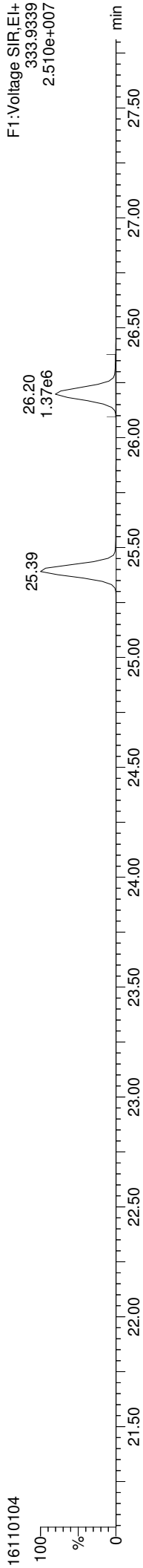
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
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ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

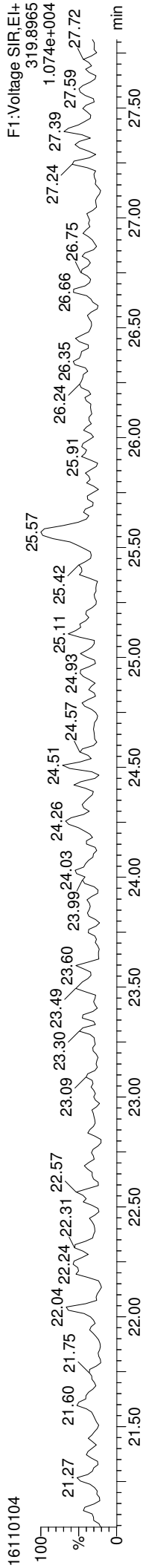
13C-2378-TCDD



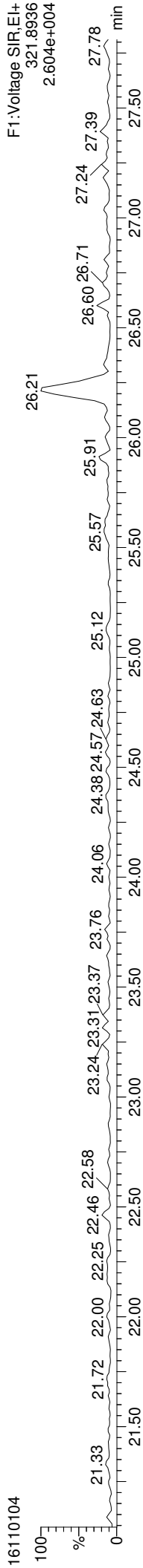
13C-2378-TCDD



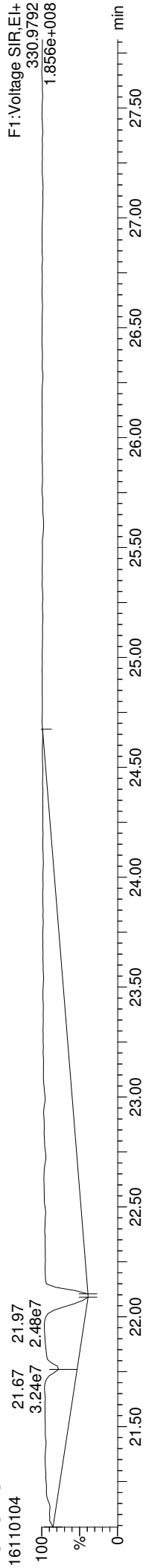
Total-tetradoxins



Total-tetradoxins



FUNCTION1 PFK

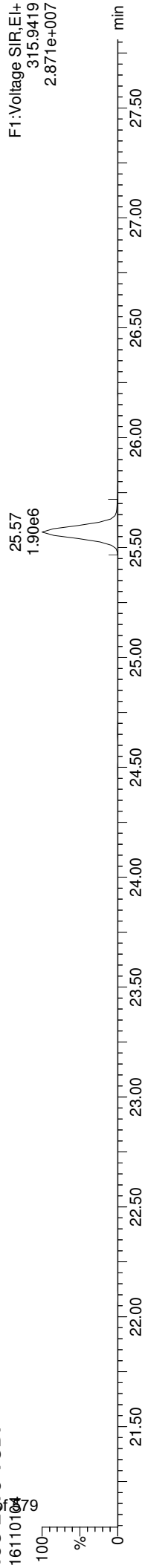


Quantify Sample Report

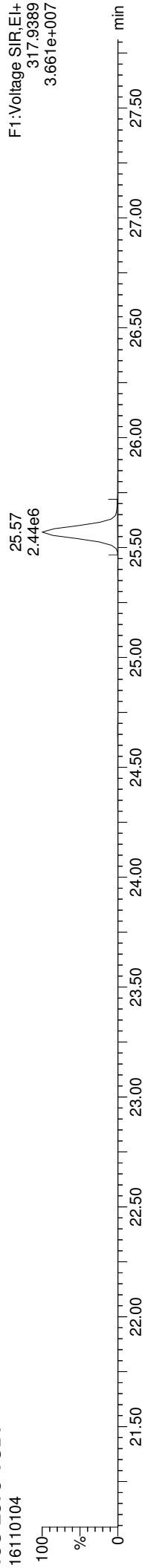
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

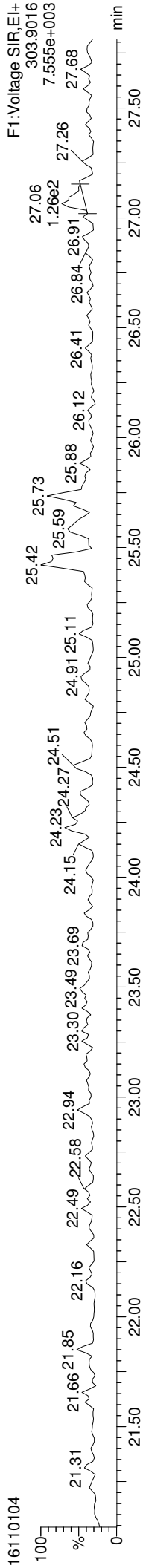
13C-2378-TCDF



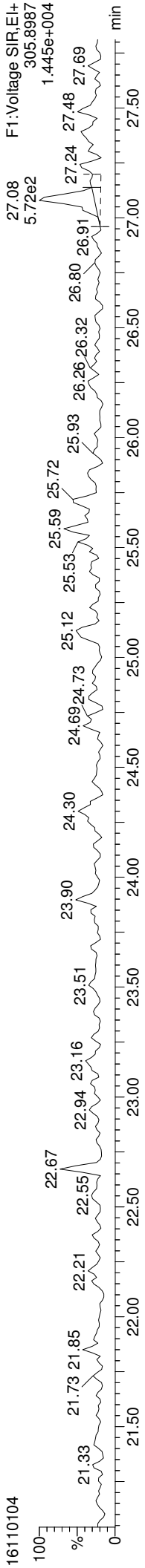
13C-2378-TCDF



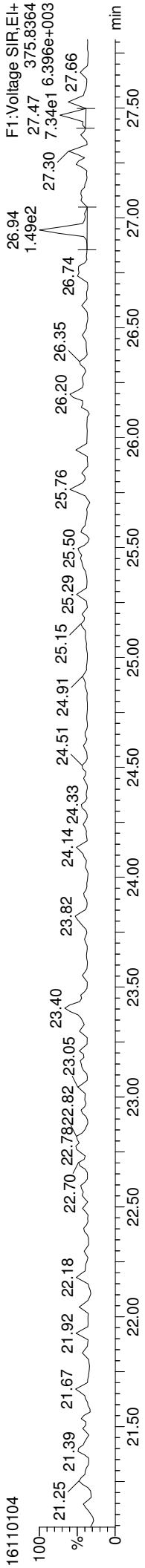
Total-tetrafurans



Total-tetrafurans



FUNCTION1 HXCDPE

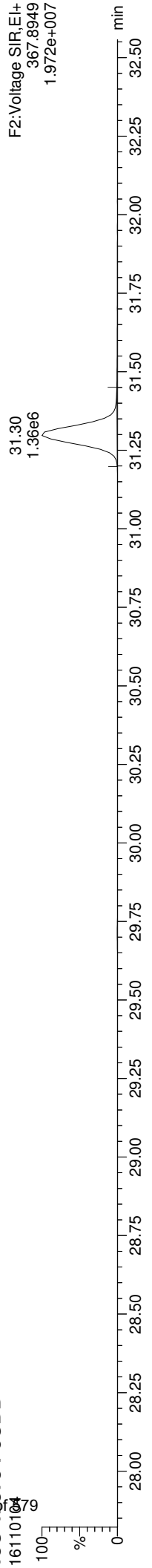


Quantify Sample Report

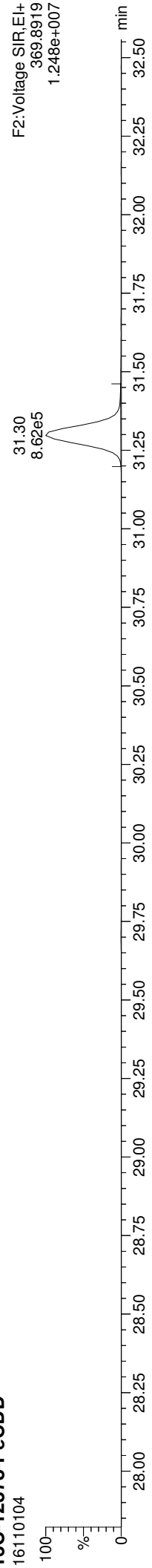
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

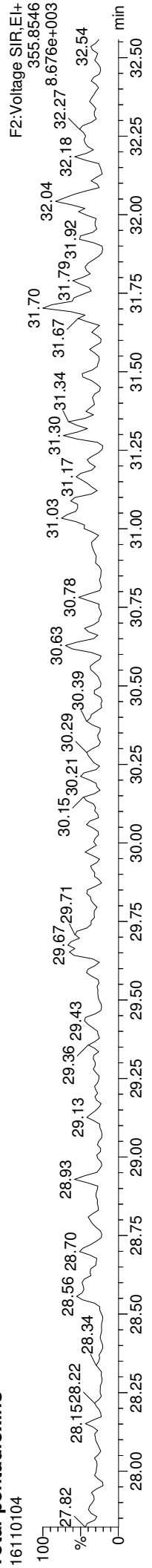
13C-12378-PeCDD



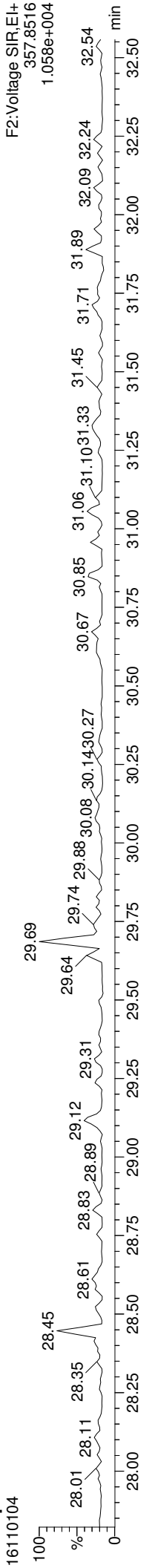
13C-12378-PeCDD



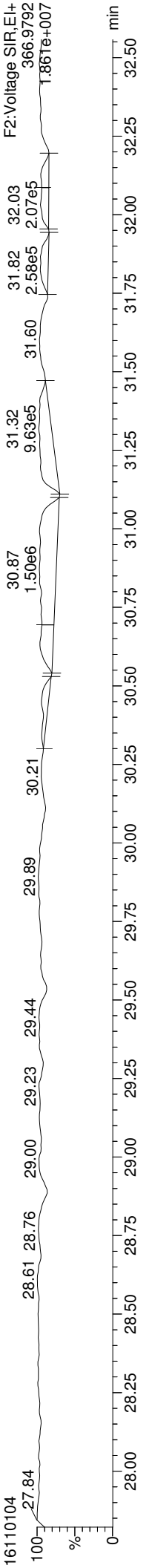
Total-pentadioxins



Total-pentadioxins



FUNCTION2 PFK



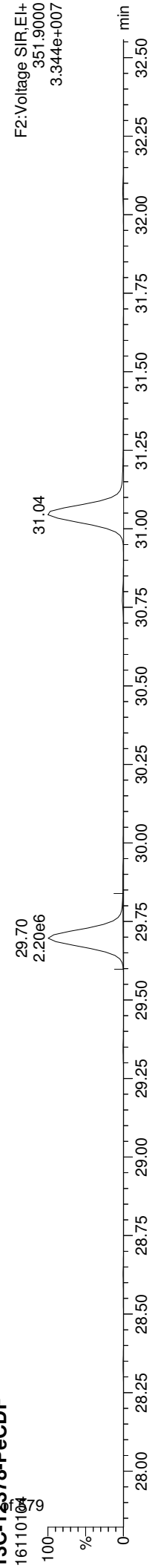


Quantify Sample Report

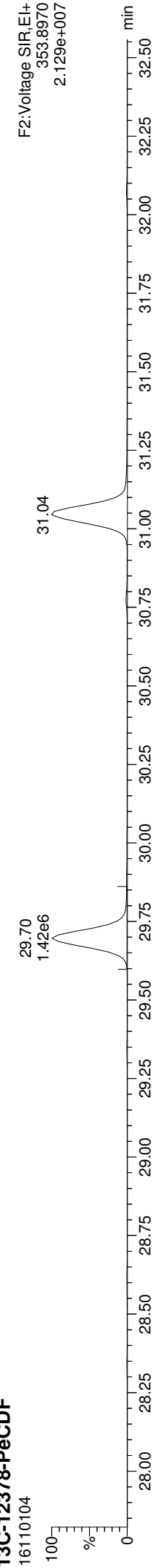
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

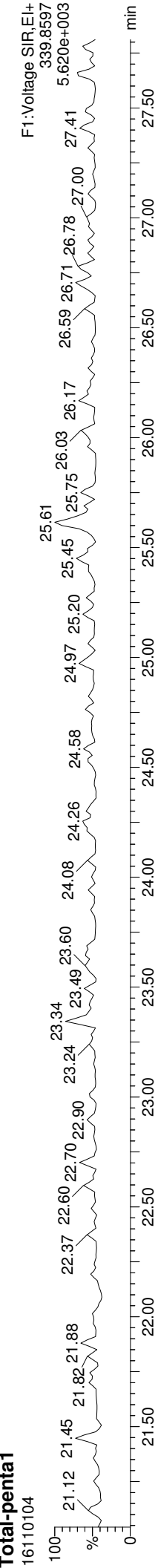
13C-12378-PeCDF



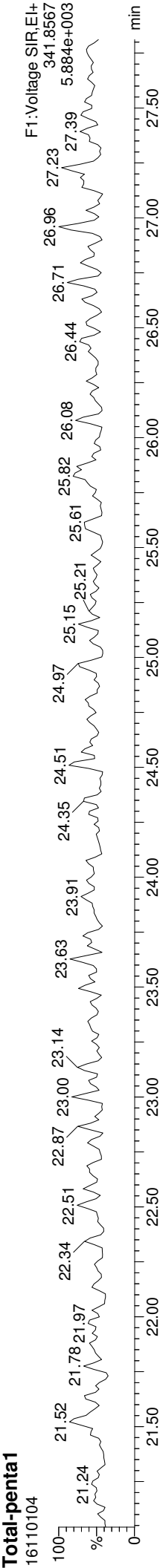
13C-12378-PeCDF



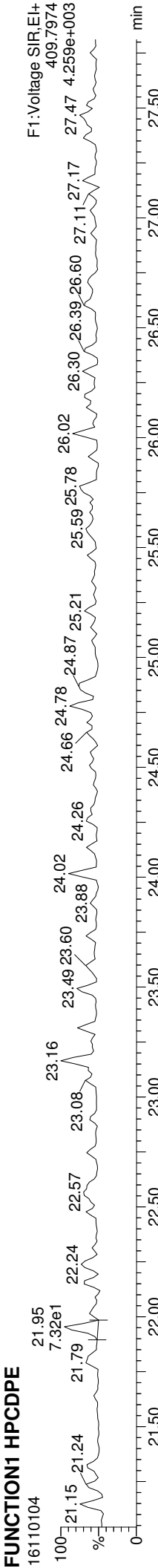
Total-penta1



Total-penta1



FUNCTION1 HPCDPE



F2:Voltage SIR,EI+  
351.9000  
3.344e+007

F2:Voltage SIR,EI+  
353.8970  
2.129e+007

F1:Voltage SIR,EI+  
339.8597  
5.620e+003

F1:Voltage SIR,EI+  
341.8567  
5.884e+003

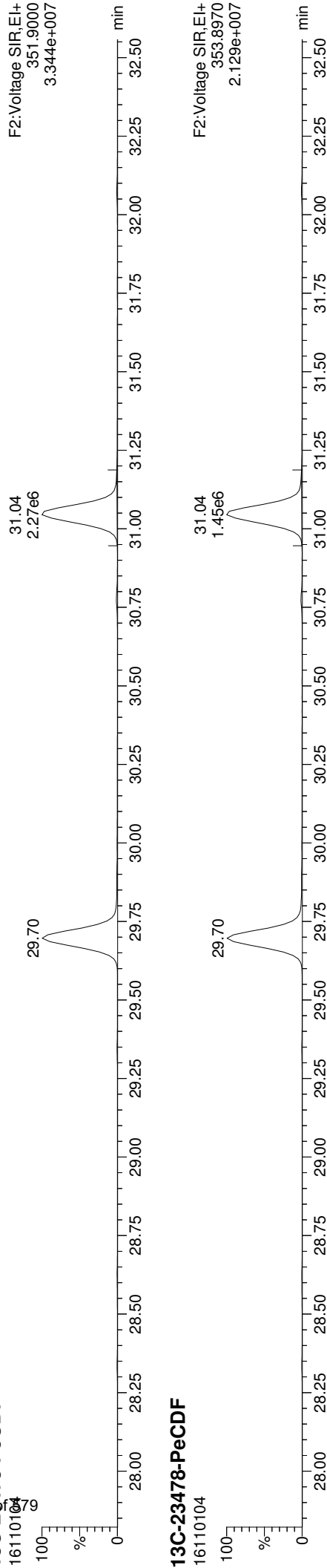
F1:Voltage SIR,EI+  
409.7974  
4.259e+003

Quantify Sample Report

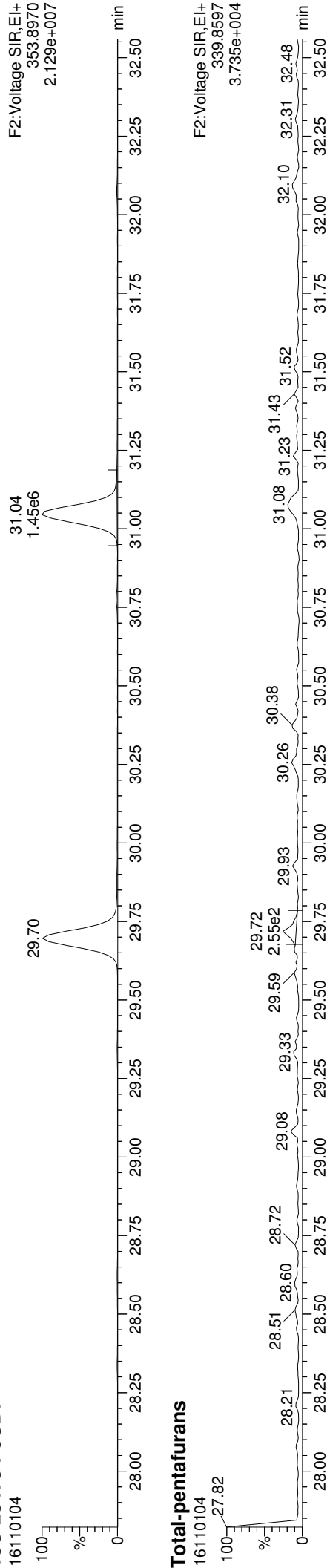
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 161110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

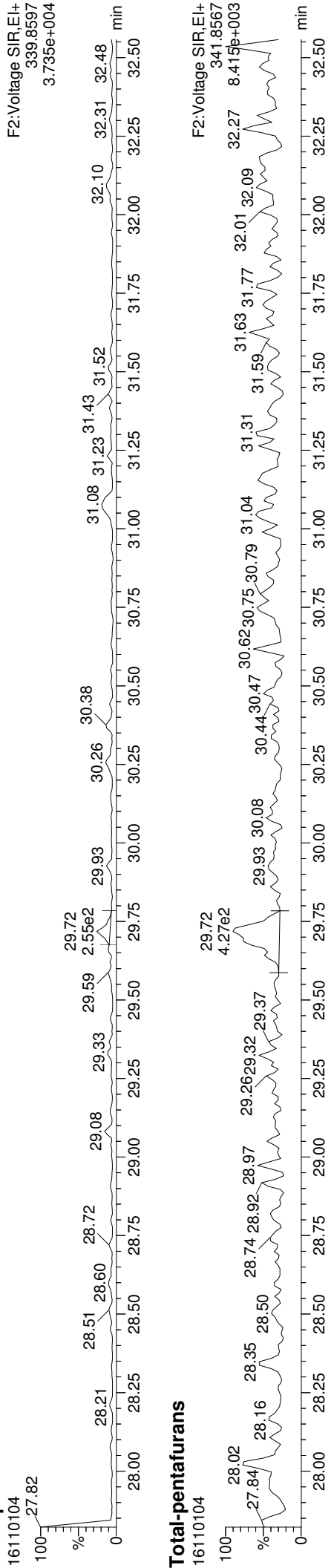
13C-23478-PeCDF



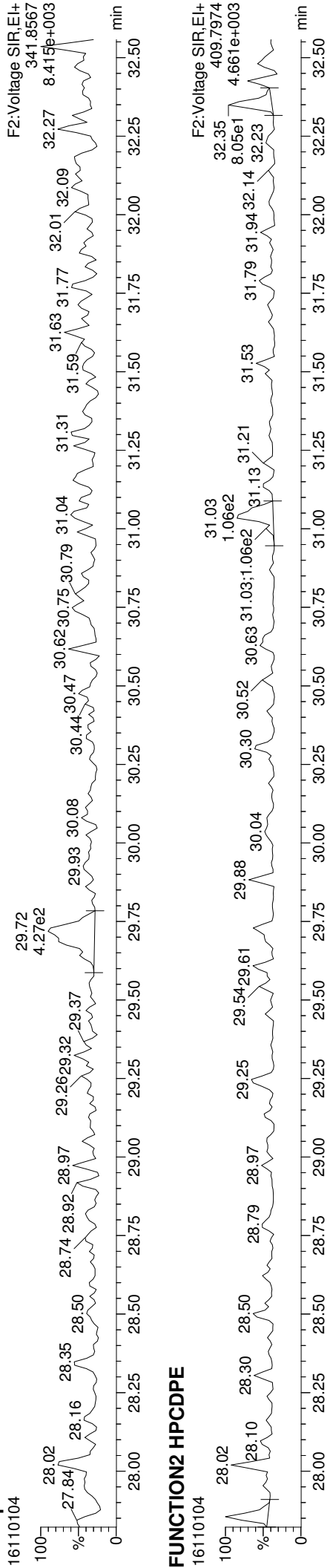
13C-23478-PeCDF



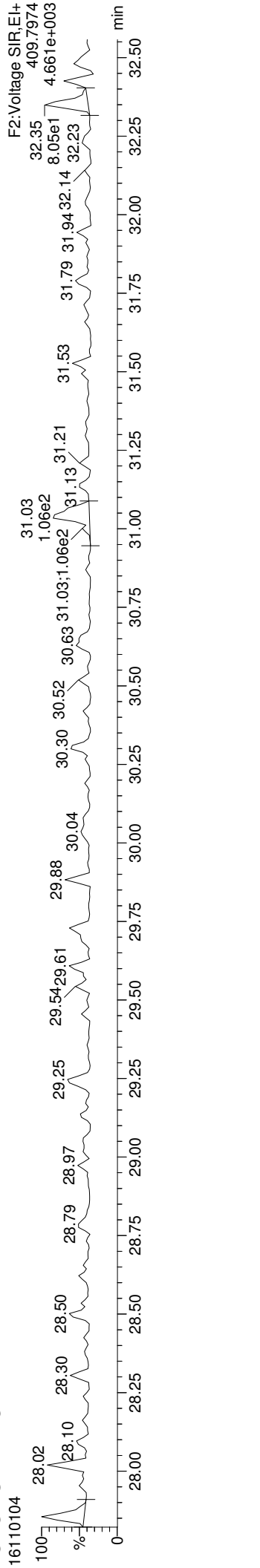
Total-pentafurans



Total-pentafurans



FUNCTION2 HPCDPE

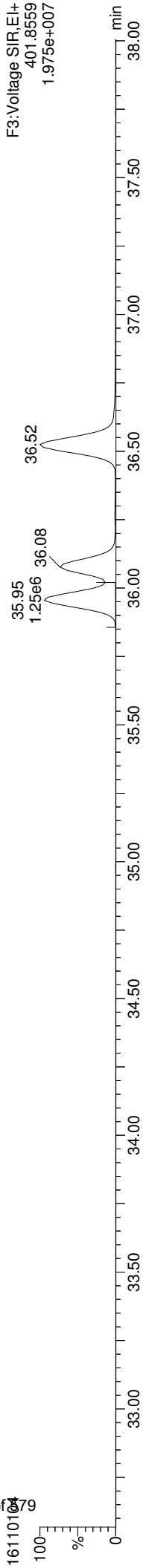


Quantify Sample Report

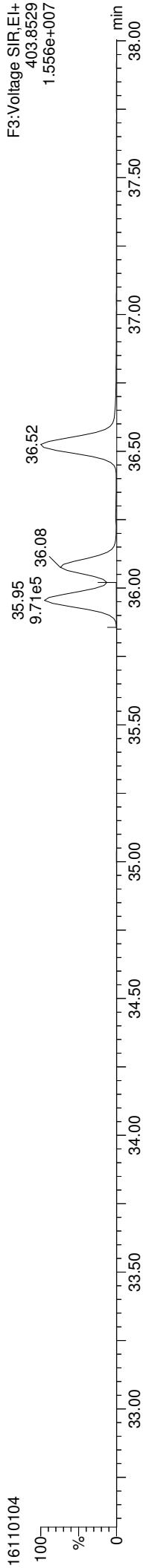
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

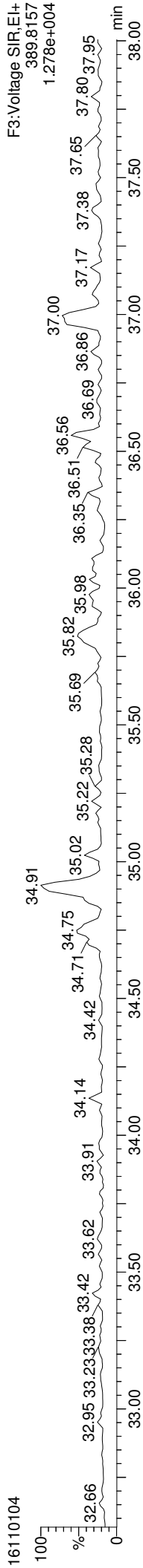
13C-123478-HxCDD



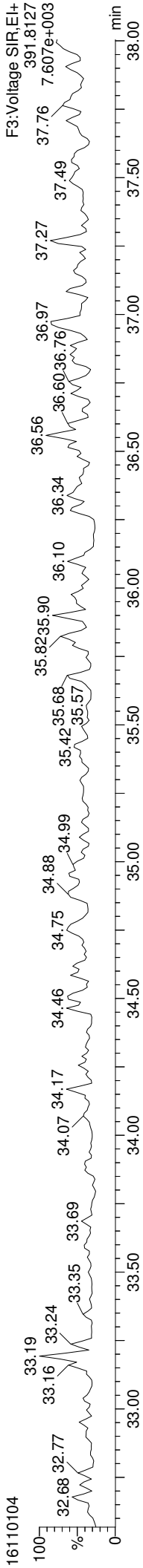
13C-123478-HxCDD



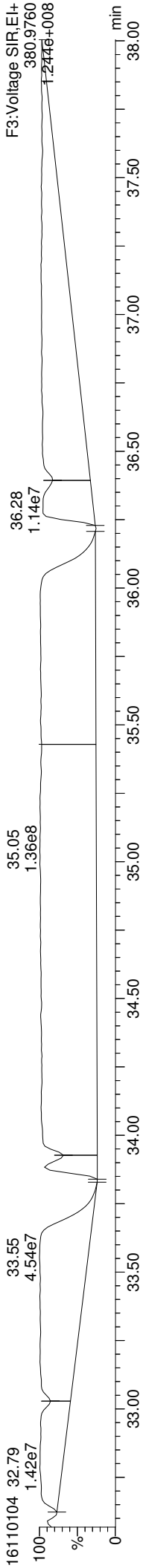
Total-hexadioxins



Total-hexadioxins



FUNCTION3 PFK

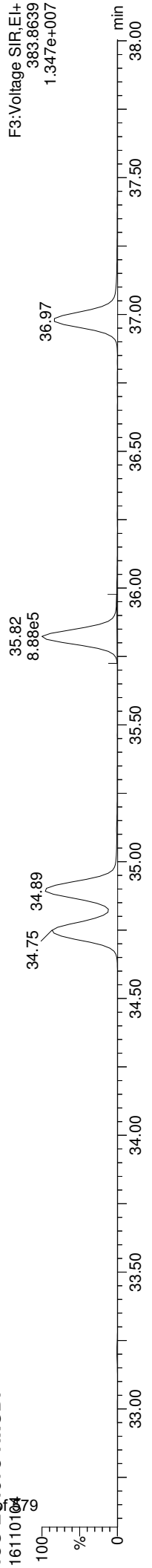


Quantify Sample Report

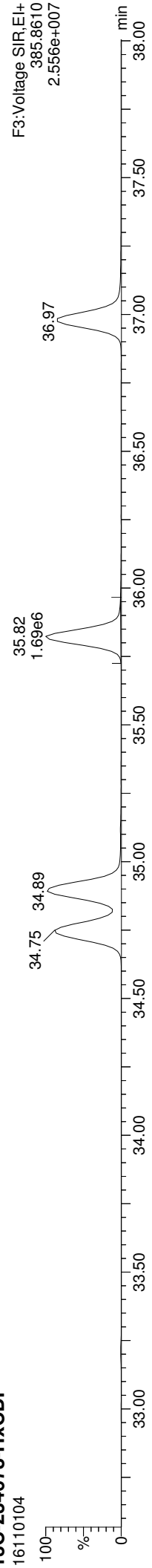
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

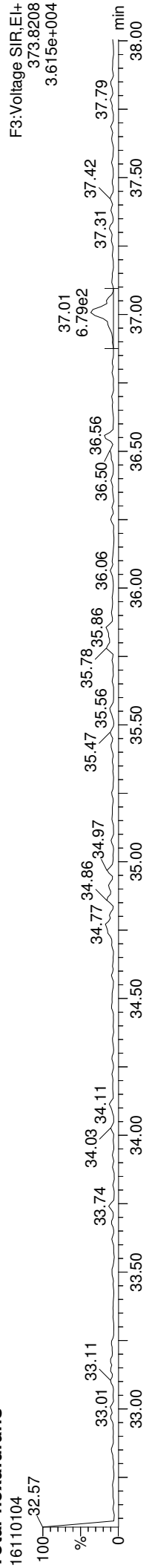
13C-234678-HxCDF



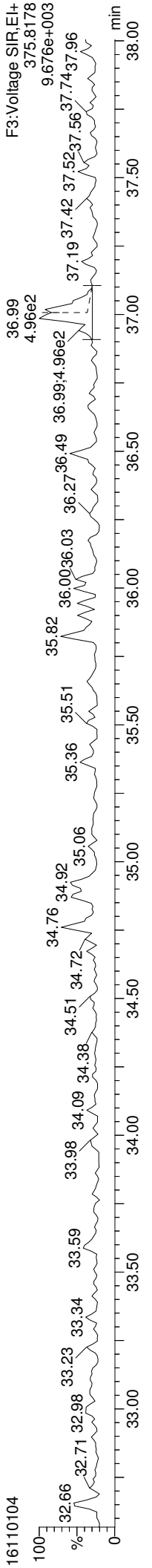
13C-234678-HxCDF



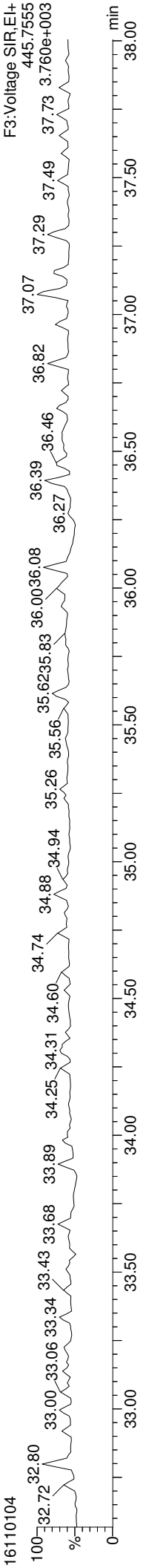
Total-hexafurans



Total-hexafurans



FUNCTION3 OCDPE

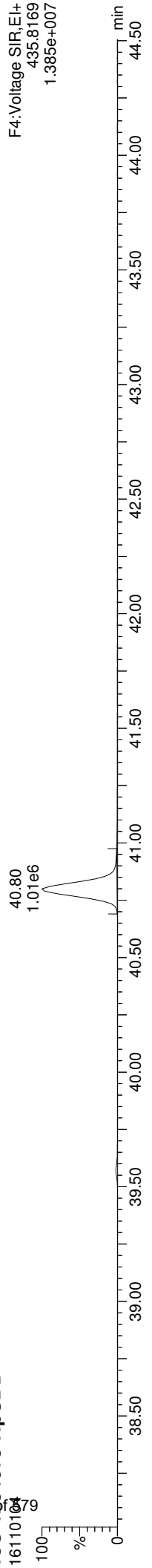


Quantify Sample Report

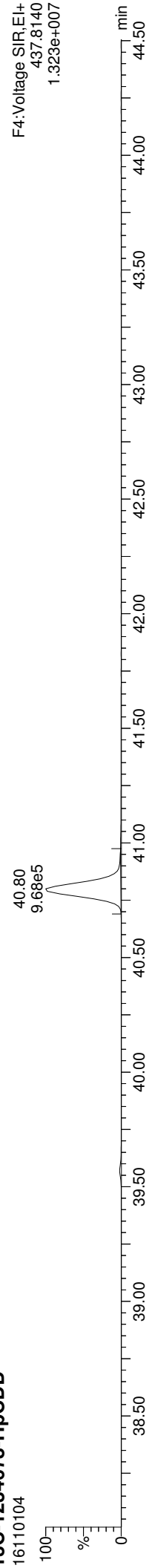
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

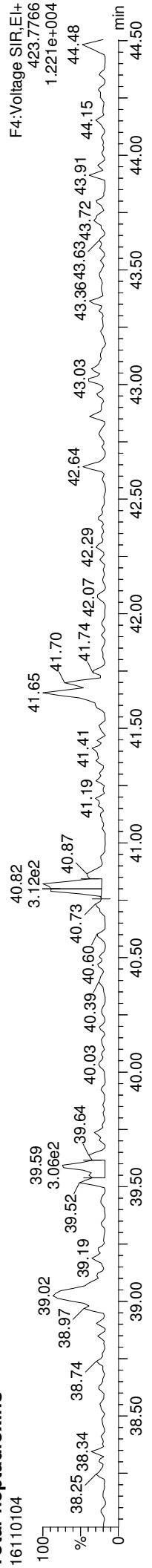
13C-1234678-HpCDD



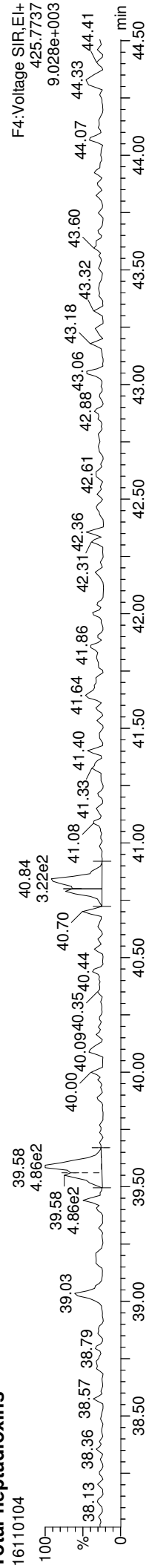
13C-1234678-HpCDD



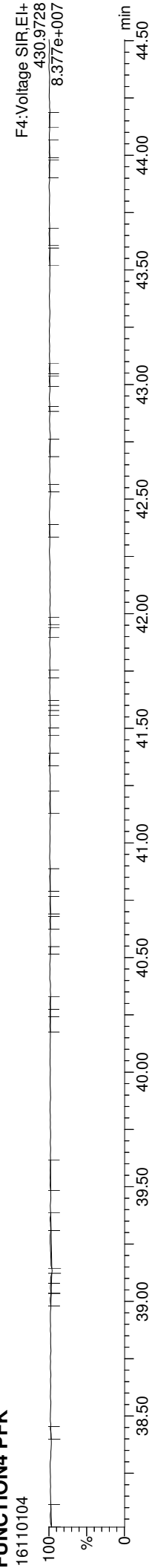
Total-heptadioxins



Total-heptadioxins



FUNCTION4 PFK



Quantify Sample Report

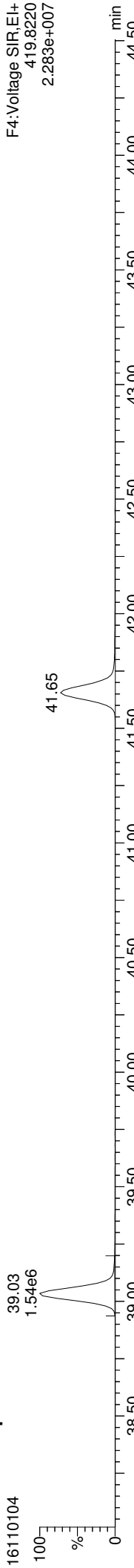
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK

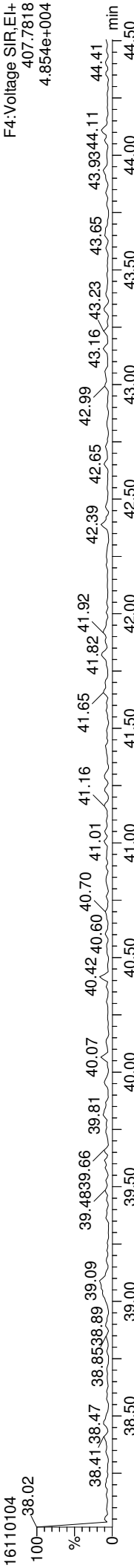
13C-1234678-HpCDF



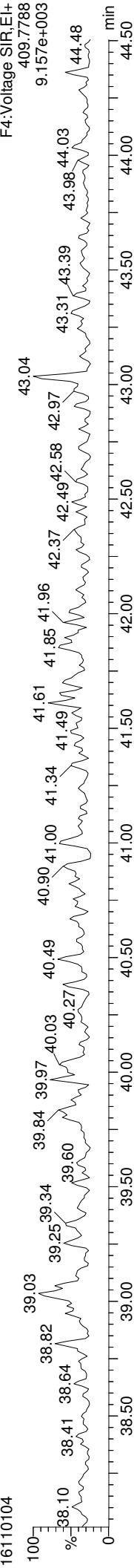
13C-1234678-HpCDF



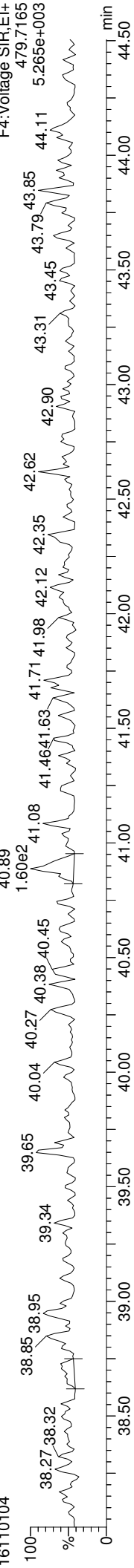
Total-heptafurans



Total-heptafurans



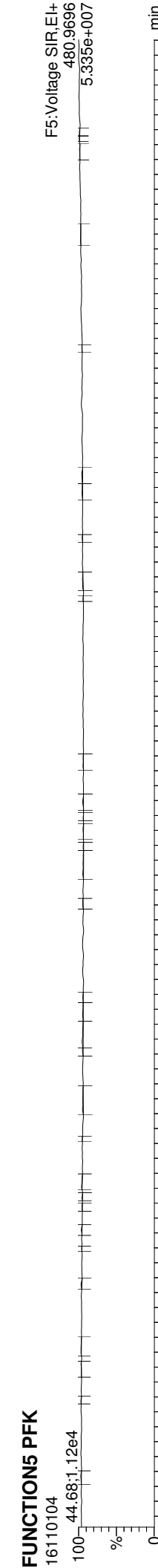
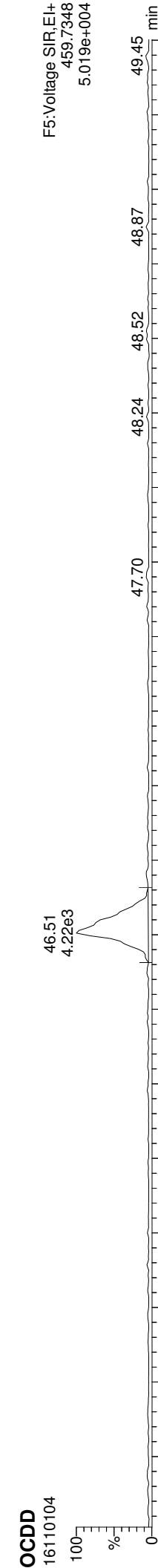
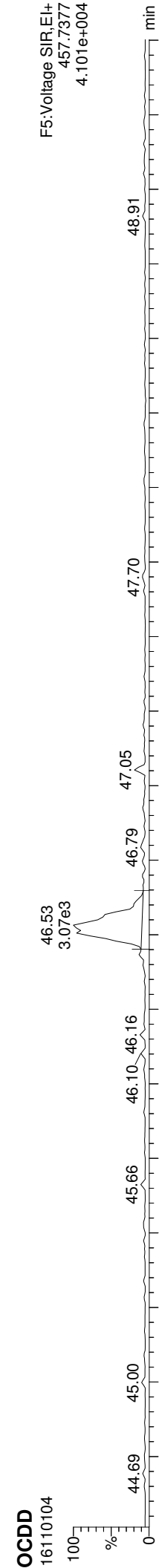
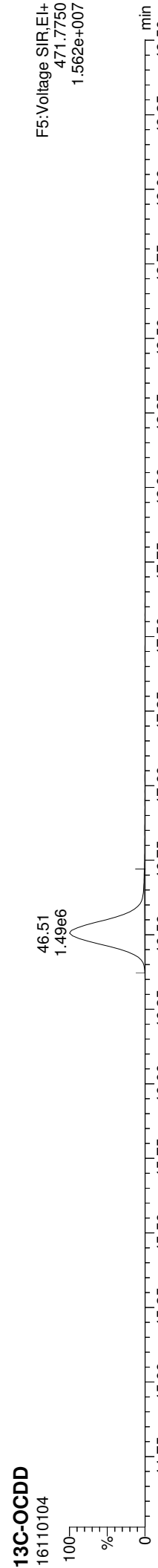
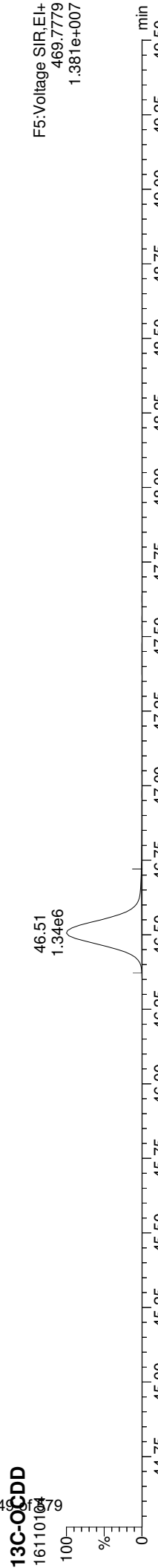
FUNCTION4 NCDPE



# Quantify Sample Report

MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK



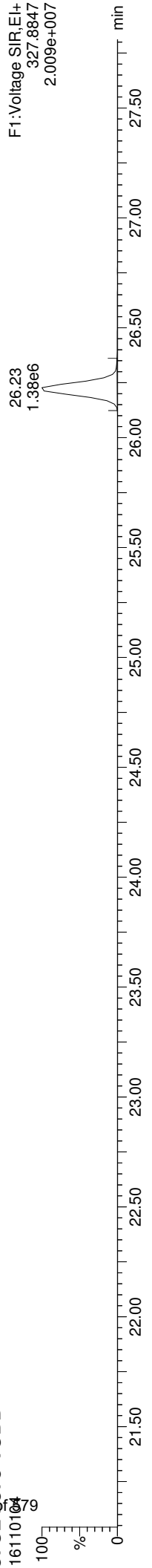
# Quantify Sample Report

**MassLynx MassLynx V4.1 SCN909**  
 Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
 Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
 Printed: Tuesday, November 01, 2016 14:26:51 Pacific Daylight Time

**ID: BE00775-BLK1, Name: 16110104, Date: 01-Nov-2016, Time: 12:23:38, Conditions: AUTOSPEC01, User: PK**

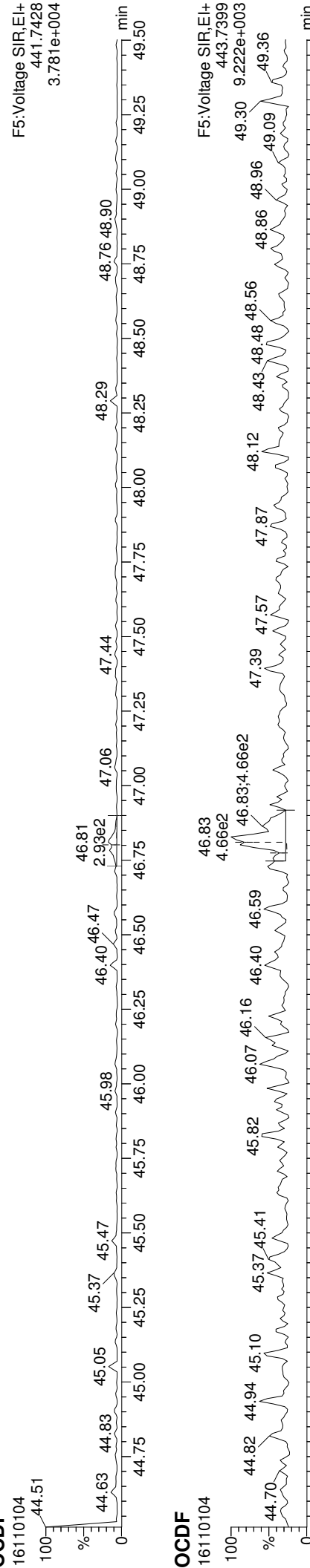
## 37CL-2378-TCDD

16110104



## OCDF

16110104



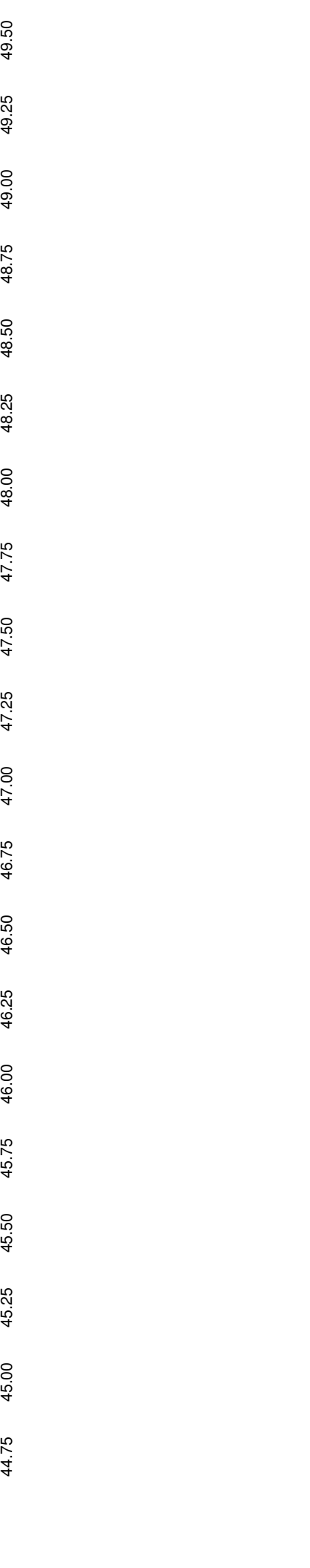
## OCDF

16110104



## FUNCTION5 DCDPE

16110104







**LCS / LCS DUPLICATE RECOVERY**  
**EPA 1613B**

Laboratory: Analytical Resources, Inc.

SDG: 16H0147

Client: Anchor QEA, LLC

Project: Port Gamble Shellfish Monitoring

Matrix: Tissue

Analyzed: 11/01/16 13:15

Batch: BEJ0775

Laboratory ID: BEJ0775-BS1

Preparation: EPA 1613

Initial/Final: 10 g / 20 uL

COMPOUND	SPIKE ADDED (ng/kg)	LCS CONCENTRATION (ng/kg)	LCS % REC.	QC LIMITS REC.	Q
2,3,7,8-TCDF	20.0	20.8	104	75 - 158	
2,3,7,8-TCDD	20.0	20.8	104	67 - 158	
1,2,3,7,8-PeCDF	100	101	101	80 - 134	
2,3,4,7,8-PeCDF	100	98.9	98.9	68 - 160	
1,2,3,7,8-PeCDD	100	103	103	70 - 142	
1,2,3,4,7,8-HxCDF	100	100	100	72 - 134	
1,2,3,6,7,8-HxCDF	100	99.5	99.5	84 - 130	
2,3,4,6,7,8-HxCDF	100	99.9	99.9	70 - 156	
1,2,3,7,8,9-HxCDF	100	99.4	99.4	78 - 130	
1,2,3,4,7,8-HxCDD	100	99.9	99.9	70 - 164	
1,2,3,6,7,8-HxCDD	100	94.2	94.2	76 - 134	
1,2,3,7,8,9-HxCDD	100	114	114	64 - 162	
1,2,3,4,6,7,8-HpCDF	100	103	103	82 - 122	
1,2,3,4,7,8,9-HpCDF	100	98.4	98.4	78 - 138	
1,2,3,4,6,7,8-HpCDD	100	102	102	70 - 140	
OCDF	200	202	101	63 - 170	
OCDD	200	198	98.9	78 - 144	
13C12-2,3,7,8-TCDF	200	162	80.9	24 - 169	

**Labels**

13C12-2,3,7,8-TCDD	200	157	78.3	25 - 164	
13C12-1,2,3,7,8-PeCDF	200	166	82.8	24 - 185	
13C12-2,3,4,7,8-PeCDF	200	176	87.9	21 - 178	
13C12-1,2,3,7,8-PeCDD	200	176	88.1	25 - 181	
13C12-1,2,3,4,7,8-HxCDF	200	139	69.3	26 - 152	
13C12-1,2,3,6,7,8-HxCDF	200	134	67.1	26 - 123	
13C12-2,3,4,6,7,8-HxCDF	200	138	69.1	28 - 136	
13C12-1,2,3,7,8,9-HxCDF	200	144	72.0	29 - 147	
13C12-1,2,3,4,7,8-HxCDD	200	154	77.0	32 - 141	
13C12-1,2,3,6,7,8-HxCDD	200	122	61.0	28 - 130	
13C12-1,2,3,4,6,7,8-HpCDF	200	134	66.8	28 - 143	
13C12-1,2,3,4,7,8,9-HpCDF	200	146	72.8	26 - 138	
13C12-1,2,3,4,6,7,8-HpCDD	200	155	77.7	23 - 140	
13C12-OCDD	400	267	66.7	17 - 157	
37C14-2,3,7,8-TCDD	80.0	69.9	87.4	35 - 197	

\* Values outside of QC limits

**Quantify Sample Summary Report**      **MassLynx MassLynx V4.1 SCN909**

Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
 Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
 Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

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**Method:** C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52  
**Calibration:** C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

**ID:** BE90775-BS1, Name: 16110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
2378-TCDF	25.585	1.001	1.96e5	2.54e5	0.935	0.774	0.770	1091	1641	3.09e6	4.04e6	2832.5	NO	10.391
12378-PeCDF	29.708	1.000	1.14e6	7.14e5	0.952	1.594	1.550	3546	4118	1.75e7	1.10e7	4928.3	NO	50.435
23478-PeCDF	31.056	1.000	1.15e6	7.42e5	0.963	1.549	1.550	3546	4118	1.79e7	1.15e7	5035.0	NO	49.444
123478-HxCDF	34.738	1.001	8.93e5	7.25e5	1.137	1.232	1.240	4029	4493	1.34e7	1.09e7	3319.2	NO	50.085
234678-HxCDF	35.824	1.000	8.90e5	7.14e5	1.164	1.246	1.240	4029	4493	1.35e7	1.10e7	3355.2	NO	49.973
123678-HxCDF	34.881	1.000	9.51e5	7.58e5	1.099	1.255	1.240	4029	4493	1.37e7	1.09e7	3390.5	NO	49.754
123789-HxCDF	36.974	1.000	7.62e5	6.21e5	1.101	1.228	1.240	4029	4493	1.12e7	9.01e6	2785.0	NO	49.680
1234678-HpCDF	39.046	1.000	7.97e5	7.76e5	1.303	1.028	1.050	3649	3754	1.17e7	1.13e7	3201.6	NO	51.655
1234789-HpCDF	41.677	1.000	6.27e5	6.03e5	1.317	1.040	1.050	3649	3754	8.32e6	8.00e6	2278.7	NO	49.212
OCDF	46.801	1.006	9.13e5	9.95e5	1.166	0.917	0.890	3396	2286	9.35e6	1.03e7	2752.9	NO	100.757
2378-TCDD	26.228	1.001	1.34e5	1.73e5	1.134	0.779	0.770	1702	960	2.04e6	2.60e6	1199.6	NO	10.406
12378-PeCDD	31.319	1.001	7.41e5	4.83e5	0.975	1.536	1.550	2439	1774	1.13e7	7.26e6	4619.6	NO	51.471
123478-HxCDD	35.966	1.001	6.93e5	5.50e5	1.031	1.260	1.240	2259	2166	1.06e7	8.35e6	4711.2	NO	49.926
123678-HxCDD	36.087	1.001	5.36e5	4.28e5	0.971	1.251	1.240	2259	2166	7.62e6	6.05e6	3374.5	NO	47.099
123789-HxCDD	36.525	1.013	6.75e5	5.45e5	0.947	1.238	1.240	2259	2166	9.84e6	7.83e6	4355.3	NO	56.990
1234678-HpCDD	40.822	1.001	5.57e5	5.41e5	1.028	1.030	1.050	2061	2400	7.45e6	7.18e6	3615.0	NO	50.866
OCDD	46.541	1.001	8.39e5	9.39e5	1.107	0.894	0.890	2286	2822	8.59e6	9.67e6	3758.4	NO	98.883
13C-2378-TCDF	25.570	1.007	2.03e6	2.61e6	1.567	0.779	0.770	8339	5030	3.17e7	4.07e7	3803.8	NO	80.859
13C-12378-PeCDF	29.697	1.170	2.36e6	1.50e6	1.274	1.572	1.550	5252	4831	3.67e7	2.32e7	6993.5	NO	82.791
13C-23478-PeCDF	31.045	1.223	2.42e6	1.55e6	1.235	1.567	1.550	5252	4831	3.79e7	2.37e7	7100.6	NO	87.880
13C-123478-HxCDF	34.717	0.951	9.64e5	1.88e6	1.381	0.513	0.510	4987	5931	1.45e7	2.85e7	2906.0	NO	69.326
13C-123678-HxCDF	34.870	0.955	1.06e6	2.07e6	1.569	0.513	0.510	4987	5931	1.54e7	2.99e7	3097.6	NO	67.087
13C-234678-HxCDF	35.813	0.981	9.49e5	1.81e6	1.345	0.525	0.510	4987	5931	1.44e7	2.70e7	2880.0	NO	69.067
13C-123789-HxCDF	36.964	1.013	8.60e5	1.67e6	1.183	0.515	0.510	4987	5931	1.24e7	2.40e7	2491.4	NO	72.010
13C-1234678-HpCDF	39.035	1.069	7.26e5	1.61e6	1.178	0.451	0.440	2369	3487	1.07e7	2.35e7	4533.2	NO	66.810
13C-1234789-HpCDF	41.666	1.141	5.94e5	1.30e6	0.878	0.455	0.440	2369	3487	7.69e6	1.69e7	3246.2	NO	72.815
13C-1234-TCDD	25.391	0.000	1.62e6	2.04e6	1.000	0.790	0.770	4336	2060	2.58e7	3.26e7	5959.9	NO	100.000
13C-2378-TCDD	26.198	1.032	1.14e6	1.46e6	0.908	0.777	0.770	4336	2060	1.79e7	2.30e7	4129.7	NO	78.304
13C-12378-PeCDD	31.297	1.233	1.50e6	9.42e5	0.756	1.587	1.550	2590	1862	2.30e7	1.44e7	8861.2	NO	88.146
13C-123478-HxCDD	35.944	0.985	1.36e6	1.06e6	1.056	1.282	1.240	3484	2934	2.11e7	1.64e7	6054.5	NO	76.972
13C-123678-HxCDD	36.065	0.988	1.18e6	9.26e5	1.163	1.274	1.240	3484	2934	1.74e7	1.37e7	4980.9	NO	60.994
13C-1234678-HpCDD	40.800	1.118	1.09e6	1.01e6	0.909	1.074	1.050	2715	2200	1.44e7	1.37e7	5290.0	NO	77.725
13C-OCDD	46.514	1.274	1.52e6	1.73e6	0.820	0.883	0.890	2781	2375	1.59e7	1.79e7	5720.4	NO	133.489
13C-123789-HxCDD	36.503	0.000	1.65e6	1.32e6	1.000	1.254	1.240	3484	2934	2.45e7	1.94e7	7022.4	NO	100.000
Total-tetrafurans			2.02e5		0.935			1091		3.18e6				10.712

**Quantify Sample Summary Report**      **MassLynx MassLynx V4.1 SCN909**

Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
 Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
 Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

**ID: BE00775-BS1, Name: 16110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK**

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
Total-penta1			0.00e0					575		0.00e0				
Total-pentafurans			2.34e6		0.957			3546		3.61e7				102.161
Total-hexafurans			3.50e6		1.125			4029		5.19e7				199.916
Total-heptafurans			1.44e6		1.310			3649		2.02e7				101.642
Total-Furans			8.40e6		1.114			1091		1.21e8				515.188
Total-tetradioxins			1.38e5		1.134			1702		2.10e6				10.709
Total-pentadioxins			7.47e5		0.975			2439		1.14e7				51.843
Total-hexadioxins			1.91e6		0.983			2259		2.81e7				154.172
Total-heptadioxins			5.64e5		1.028			2061		7.57e6				51.579
Total-Dioxins			4.19e6		1.028			1702		5.78e7				367.185
Total-TEQ			1.26e7					1702		1.78e8				882.373
37CL-2378-TCDD	26.212	1.032	1.36e6		1.067			1969		2.05e7		10387.8		34.973
FUNCTION1 PFK			1.43e8					714802		2.99e8				
FUNCTION2 PFK			0.00e0					161848		0.00e0				0.000
FUNCTION3 PFK			1.98e8					650209		2.65e8				
FUNCTION4 PFK			3.95e6					444662		6.89e7				
FUNCTION5 PFK			2.53e5					305939		9.47e6				
FUNCTION1 HXCD...			3.30e2					708		6.46e3				0.000
FUNCTION1 HPCD...			7.07e2					631		1.73e4				0.000
FUNCTION2 HPCD...			4.01e2					988		1.39e4				0.000
FUNCTION3 OCDPE			1.76e2					558		4.25e3				0.000
FUNCTION4 NCDPE			2.51e2					1037		6.40e3				0.000
FUNCTION5 DCDPE			0.00e0					551		0.00e0				0.000

Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
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Method: C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52  
 Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

ID: BEJ0775-BS1, Name: 16110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

TF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	1 2378-TCDF	303.9016	25.59	450493.860	0.935	10.391	10.391	0.77	0.77	NO	2832.5
2	35 Total-tetrafurans	303.9016	25.42	1181.338	0.935	0.027		0.81	0.77	NO	6.9
3	35 Total-tetrafurans	303.9016	24.67	3434.226	0.935	0.079		0.71	0.77	NO	19.0
4	35 Total-tetrafurans	303.9016	24.49	4573.135	0.935	0.105		0.74	0.77	NO	27.5
5	35 Total-tetrafurans	303.9016	24.36	4717.675	0.935	0.109		0.72	0.77	NO	30.3

PP

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

PF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	37 Total-pentafurans	339.8597	29.90	46914.905	0.957	1.252		2.66	1.55	YES	126.0
2	2 12378-PeCDF	339.8597	29.71	1853107.063	0.952	50.435	50.435	1.59	1.55	NO	4928.3
3	37 Total-pentafurans	339.8597	29.35	6933.070	0.957	0.185		1.03	1.55	YES	13.2
4	37 Total-pentafurans	339.8597	28.64	14405.231	0.957	0.384		1.66	1.55	NO	35.9
5	37 Total-pentafurans	339.8597	28.57	2908.311	0.957	0.078		1.15	1.55	YES	12.2
6	37 Total-pentafurans	339.8597	32.09	14374.555	0.957	0.383		1.64	1.55	NO	41.0
7	3 23478-PeCDF	339.8597	31.06	1890193.750	0.963	49.444	49.444	1.55	1.55	NO	5035.0

HF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	7 123789-HxCDF	373.8208	36.97	1383299.250	1.101	49.680	49.680	1.23	1.24	NO	2785.0
2	5 234678-HxCDF	373.8208	35.82	1604283.375	1.164	49.973	49.973	1.25	1.24	NO	3355.2
3	6 123678-HxCDF	373.8208	34.88	1709191.563	1.099	49.754	49.754	1.26	1.24	NO	3390.5
4	4 123478-HxCDF	373.8208	34.74	1618214.376	1.137	50.085	50.085	1.23	1.24	NO	3319.2
5	38 Total-hexafurans	373.8208	33.23	9546.445	1.125	0.302		1.23	1.24	NO	20.7
6	38 Total-hexafurans	373.8208	33.01	3866.345	1.125	0.122		1.42	1.24	NO	9.6

HPF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	9 1234789-HpCDF	407.7818	41.68	1230468.125	1.317	49.212	49.212	1.04	1.05	NO	2278.7
2	39 Total-heptafurans	407.7818	39.82	19593.275	1.310	0.706		1.10	1.05	NO	38.4
3	39 Total-heptafurans	407.7818	39.53	1908.446	1.310	0.069		5.40	1.05	YES	5.4
4	8 1234678-HpCDF	407.7818	39.05	1573187.500	1.303	51.655	51.655	1.03	1.05	NO	3201.6

Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
 Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
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ID: BEJ0775-BS1, Name: 16110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

Furans,TF,PP,PF,HF,HPF,OF

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	1 2378-TCDF	303.9016	25.59	450493.860	0.935	10.391	10.391	0.77	0.77	NO	2832.5
2	35 Total-tetrafurans	303.9016	25.42	1181.338	0.935	0.027		0.81	0.77	NO	6.9
3	35 Total-tetrafurans	303.9016	24.67	3434.226	0.935	0.079		0.71	0.77	NO	19.0
4	35 Total-tetrafurans	303.9016	24.49	4573.135	0.935	0.105		0.74	0.77	NO	27.5
5	35 Total-tetrafurans	303.9016	24.36	4717.675	0.935	0.109		0.72	0.77	NO	30.3
6	37 Total-pentafurans	339.8597	29.90	46914.905	0.957	1.252		2.66	1.55	YES	126.0
7	2 12378-PeCDF	339.8597	29.71	1853107.063	0.952	50.435	50.435	1.59	1.55	NO	4928.3
8	37 Total-pentafurans	339.8597	29.35	6933.070	0.957	0.185		1.03	1.55	YES	13.2
9	37 Total-pentafurans	339.8597	28.64	14405.231	0.957	0.384		1.66	1.55	NO	35.9
10	37 Total-pentafurans	339.8597	28.57	2908.311	0.957	0.078		1.15	1.55	YES	12.2
11	37 Total-pentafurans	339.8597	32.09	14374.555	0.957	0.383		1.64	1.55	NO	41.0
12	3 23478-PeCDF	339.8597	31.06	1890193.750	0.963	49.444	49.444	1.55	1.55	NO	5035.0
13	7 123789-HxCDF	373.8208	36.97	1383299.250	1.101	49.680	49.680	1.23	1.24	NO	2785.0
14	5 234678-HxCDF	373.8208	35.82	1604283.375	1.164	49.973	49.973	1.25	1.24	NO	3355.2
15	6 123678-HxCDF	373.8208	34.88	1709191.563	1.099	49.754	49.754	1.26	1.24	NO	3390.5
16	4 123478-HxCDF	373.8208	34.74	1618214.376	1.137	50.085	50.085	1.23	1.24	NO	3319.2
17	38 Total-hexafurans	373.8208	33.23	9546.445	1.125	0.302		1.23	1.24	NO	20.7
18	38 Total-hexafurans	373.8208	33.01	3866.345	1.125	0.122		1.42	1.24	NO	9.6
19	9 1234789-HpCDF	407.7818	41.68	1230468.125	1.317	49.212	49.212	1.04	1.05	NO	2278.7
20	39 Total-heptafurans	407.7818	39.82	19593.275	1.310	0.706		1.10	1.05	NO	38.4
21	39 Total-heptafurans	407.7818	39.53	1908.446	1.310	0.069		5.40	1.05	YES	5.4
22	8 1234678-HpCDF	407.7818	39.05	1573187.500	1.303	51.655	51.655	1.03	1.05	NO	3201.6
23	10 OCDF	441.7428	46.80	1908005.313	1.166	100.757	100....	0.92	0.89	NO	2752.9

TD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	11 2378-TCDD	319.8965	26.23	306906.656	1.134	10.406	10.406	0.78	0.77	NO	1199.6
2	41 Total-tetradioxins	319.8965	25.84	7905.609	1.134	0.268		0.83	0.77	NO	29.6
3	41 Total-tetradioxins	319.8965	24.85	1032.179	1.134	0.035		0.77	0.77	NO	3.5

PD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	42 Total-pentadioxins	355.8546	30.08	1394.676	0.975	0.059		0.94	1.55	YES	5.2
2	42 Total-pentadioxins	355.8546	29.94	1212.033	0.975	0.051		1.66	1.55	NO	4.8
3	42 Total-pentadioxins	355.8546	29.73	1849.151	0.975	0.078		2.01	1.55	YES	8.8
4	42 Total-pentadioxins	355.8546	31.74	963.343	0.975	0.041		1.50	1.55	NO	6.7
5	42 Total-pentadioxins	355.8546	31.68	910.316	0.975	0.038		2.24	1.55	YES	5.6
6	12 12378-PeCDD	355.8546	31.32	1223796.376	0.975	51.471	51.471	1.54	1.55	NO	4619.6
7	42 Total-pentadioxins	355.8546	30.64	2513.758	0.975	0.106		1.66	1.55	NO	8.5

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HD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	13 123478-HxCDD	389.8157	35.97	1242484.375	1.031	49.926	49.926	1.26	1.24	NO	4711.2
2	43 Total-hexadioxins	389.8157	35.81	292.975	0.983	0.013		3.06	1.24	YES	1.9
3	43 Total-hexadioxins	389.8157	34.98	891.676	0.983	0.040		4.34	1.24	YES	4.2
4	43 Total-hexadioxins	389.8157	34.63	1502.733	0.983	0.068		1.16	1.24	NO	4.9
5	43 Total-hexadioxins	389.8157	33.80	792.708	0.983	0.036		1.31	1.24	NO	2.7
6	15 123789-HxCDD	389.8157	36.53	1219348.938	0.947	56.990	56.990	1.24	1.24	NO	4355.3
7	14 123678-HxCDD	389.8157	36.09	963782.251	0.971	47.099	47.099	1.25	1.24	NO	3374.5

HPD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	16 1234678-HpCDD	423.7766	40.82	1097186.063	1.028	50.866	50.866	1.03	1.05	NO	3615.0
2	44 Total-heptadioxins	423.7766	39.59	15364.174	1.028	0.712		1.06	1.05	NO	55.3

Dioxins,TD,PD,HD,HPD,OD

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	11 2378-TCDD	319.8965	26.23	306906.656	1.134	10.406	10.406	0.78	0.77	NO	1199.6
2	41 Total-tetradioxins	319.8965	25.84	7905.609	1.134	0.268		0.83	0.77	NO	29.6
3	41 Total-tetradioxins	319.8965	24.85	1032.179	1.134	0.035		0.77	0.77	NO	3.5
4	42 Total-pentadioxins	355.8546	30.08	1394.676	0.975	0.059		0.94	1.55	YES	5.2
5	42 Total-pentadioxins	355.8546	29.94	1212.033	0.975	0.051		1.66	1.55	NO	4.8
6	42 Total-pentadioxins	355.8546	29.73	1849.151	0.975	0.078		2.01	1.55	YES	8.8
7	42 Total-pentadioxins	355.8546	31.74	963.343	0.975	0.041		1.50	1.55	NO	6.7
8	42 Total-pentadioxins	355.8546	31.68	910.316	0.975	0.038		2.24	1.55	YES	5.6
9	12 12378-PeCDD	355.8546	31.32	1223796.376	0.975	51.471	51.471	1.54	1.55	NO	4619.6
10	42 Total-pentadioxins	355.8546	30.64	2513.758	0.975	0.106		1.66	1.55	NO	8.5
11	13 123478-HxCDD	389.8157	35.97	1242484.375	1.031	49.926	49.926	1.26	1.24	NO	4711.2
12	43 Total-hexadioxins	389.8157	35.81	292.975	0.983	0.013		3.06	1.24	YES	1.9
13	43 Total-hexadioxins	389.8157	34.98	891.676	0.983	0.040		4.34	1.24	YES	4.2
14	43 Total-hexadioxins	389.8157	34.63	1502.733	0.983	0.068		1.16	1.24	NO	4.9
15	43 Total-hexadioxins	389.8157	33.80	792.708	0.983	0.036		1.31	1.24	NO	2.7
16	15 123789-HxCDD	389.8157	36.53	1219348.938	0.947	56.990	56.990	1.24	1.24	NO	4355.3
17	14 123678-HxCDD	389.8157	36.09	963782.251	0.971	47.099	47.099	1.25	1.24	NO	3374.5
18	16 1234678-HpCDD	423.7766	40.82	1097186.063	1.028	50.866	50.866	1.03	1.05	NO	3615.0
19	44 Total-heptadioxins	423.7766	39.59	15364.174	1.028	0.712		1.06	1.05	NO	55.3
20	17 OCDD	457.7377	46.54	1778106.625	1.107	98.883	98.883	0.89	0.89	NO	3758.4

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TotalTEQ,Furans,Dioxins

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	1 2378-TCDF	303.9016	25.59	450493.860	0.935	10.391	10.391	0.77	0.77	NO	2832.5
2	35 Total-tetrafurans	303.9016	25.42	1181.338	0.935	0.027		0.81	0.77	NO	6.9
3	35 Total-tetrafurans	303.9016	24.67	3434.226	0.935	0.079		0.71	0.77	NO	19.0
4	35 Total-tetrafurans	303.9016	24.49	4573.135	0.935	0.105		0.74	0.77	NO	27.5
5	35 Total-tetrafurans	303.9016	24.36	4717.675	0.935	0.109		0.72	0.77	NO	30.3
6	37 Total-pentafurans	339.8597	29.90	46914.905	0.957	1.252		2.66	1.55	YES	126.0
7	2 12378-PeCDF	339.8597	29.71	1853107.063	0.952	50.435	50.435	1.59	1.55	NO	4928.3
8	37 Total-pentafurans	339.8597	29.35	6933.070	0.957	0.185		1.03	1.55	YES	13.2
9	37 Total-pentafurans	339.8597	28.64	14405.231	0.957	0.384		1.66	1.55	NO	35.9
10	37 Total-pentafurans	339.8597	28.57	2908.311	0.957	0.078		1.15	1.55	YES	12.2
11	37 Total-pentafurans	339.8597	32.09	14374.555	0.957	0.383		1.64	1.55	NO	41.0
12	3 23478-PeCDF	339.8597	31.06	1890193.750	0.963	49.444	49.444	1.55	1.55	NO	5035.0
13	7 123789-HxCDF	373.8208	36.97	1383299.250	1.101	49.680	49.680	1.23	1.24	NO	2785.0
14	5 234678-HxCDF	373.8208	35.82	1604283.375	1.164	49.973	49.973	1.25	1.24	NO	3355.2
15	6 123678-HxCDF	373.8208	34.88	1709191.563	1.099	49.754	49.754	1.26	1.24	NO	3390.5
16	4 123478-HxCDF	373.8208	34.74	1618214.376	1.137	50.085	50.085	1.23	1.24	NO	3319.2
17	38 Total-hexafurans	373.8208	33.23	9546.445	1.125	0.302		1.23	1.24	NO	20.7
18	38 Total-hexafurans	373.8208	33.01	3866.345	1.125	0.122		1.42	1.24	NO	9.6
19	9 1234789-HpCDF	407.7818	41.68	1230468.125	1.317	49.212	49.212	1.04	1.05	NO	2278.7
20	39 Total-heptafurans	407.7818	39.82	19593.275	1.310	0.706		1.10	1.05	NO	38.4
21	39 Total-heptafurans	407.7818	39.53	1908.446	1.310	0.069		5.40	1.05	YES	5.4
22	8 1234678-HpCDF	407.7818	39.05	1573187.500	1.303	51.655	51.655	1.03	1.05	NO	3201.6
23	10 OCDF	441.7428	46.80	1908005.313	1.166	100.757	100....	0.92	0.89	NO	2752.9
24	11 2378-TCDD	319.8965	26.23	306906.656	1.134	10.406	10.406	0.78	0.77	NO	1199.6
25	41 Total-tetradioxins	319.8965	25.84	7905.609	1.134	0.268		0.83	0.77	NO	29.6
26	41 Total-tetradioxins	319.8965	24.85	1032.179	1.134	0.035		0.77	0.77	NO	3.5
27	42 Total-pentadioxins	355.8546	30.08	1394.676	0.975	0.059		0.94	1.55	YES	5.2
28	42 Total-pentadioxins	355.8546	29.94	1212.033	0.975	0.051		1.66	1.55	NO	4.8
29	42 Total-pentadioxins	355.8546	29.73	1849.151	0.975	0.078		2.01	1.55	YES	8.8
30	42 Total-pentadioxins	355.8546	31.74	963.343	0.975	0.041		1.50	1.55	NO	6.7
31	42 Total-pentadioxins	355.8546	31.68	910.316	0.975	0.038		2.24	1.55	YES	5.6
32	12 12378-PeCDD	355.8546	31.32	1223796.376	0.975	51.471	51.471	1.54	1.55	NO	4619.6
33	42 Total-pentadioxins	355.8546	30.64	2513.758	0.975	0.106		1.66	1.55	NO	8.5
34	13 123478-HxCDD	389.8157	35.97	1242484.375	1.031	49.926	49.926	1.26	1.24	NO	4711.2
35	43 Total-hexadioxins	389.8157	35.81	292.975	0.983	0.013		3.06	1.24	YES	1.9
36	43 Total-hexadioxins	389.8157	34.98	891.676	0.983	0.040		4.34	1.24	YES	4.2
37	43 Total-hexadioxins	389.8157	34.63	1502.733	0.983	0.068		1.16	1.24	NO	4.9
38	43 Total-hexadioxins	389.8157	33.80	792.708	0.983	0.036		1.31	1.24	NO	2.7
39	15 123789-HxCDD	389.8157	36.53	1219348.938	0.947	56.990	56.990	1.24	1.24	NO	4355.3
40	14 123678-HxCDD	389.8157	36.09	963782.251	0.971	47.099	47.099	1.25	1.24	NO	3374.5
41	16 1234678-HpCDD	423.7766	40.82	1097186.063	1.028	50.866	50.866	1.03	1.05	NO	3615.0
42	44 Total-heptadioxins	423.7766	39.59	15364.174	1.028	0.712		1.06	1.05	NO	55.3
43	17 OCDD	457.7377	46.54	1778106.625	1.107	98.883	98.883	0.89	0.89	NO	3758.4

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**PFK1**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	48 FUNCTION1 PFK	330.9792	25.85	0.000							2.3
2	48 FUNCTION1 PFK	330.9792	25.50	0.000							8.5
3	48 FUNCTION1 PFK	330.9792	24.33	0.000							4.3
4	48 FUNCTION1 PFK	330.9792	22.37	0.000							109.0
5	48 FUNCTION1 PFK	330.9792	22.18	0.000							119.2
6	48 FUNCTION1 PFK	330.9792	21.95	0.000							108.8
7	48 FUNCTION1 PFK	330.9792	21.57	0.000							66.1

**PFK2**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

**PFK3**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	50 FUNCTION3 PFK	380.9760	37.49	0.000		0.000					8.7
2	50 FUNCTION3 PFK	380.9760	36.91	0.000		0.000					39.1
3	50 FUNCTION3 PFK	380.9760	36.23	0.000		0.000					69.8
4	50 FUNCTION3 PFK	380.9760	36.03	0.000		0.000					75.5
5	50 FUNCTION3 PFK	380.9760	34.41	0.000		0.000					88.1
6	50 FUNCTION3 PFK	380.9760	33.61	0.000		0.000					85.3
7	50 FUNCTION3 PFK	380.9760	32.97	0.000		0.000					40.4



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PFK4

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	51 FUNCTION4 PFK	430.9728	39.52	0.000							3.9
2	51 FUNCTION4 PFK	430.9728	39.41	0.000							5.4
3	51 FUNCTION4 PFK	430.9728	39.29	0.000							6.5
4	51 FUNCTION4 PFK	430.9728	39.21	0.000							7.0
5	51 FUNCTION4 PFK	430.9728	39.06	0.000							7.7
6	51 FUNCTION4 PFK	430.9728	38.96	0.000							6.9
7	51 FUNCTION4 PFK	430.9728	38.90	0.000							7.5
8	51 FUNCTION4 PFK	430.9728	38.87	0.000							7.3
9	51 FUNCTION4 PFK	430.9728	38.72	0.000							7.6
10	51 FUNCTION4 PFK	430.9728	38.63	0.000							7.1
11	51 FUNCTION4 PFK	430.9728	38.50	0.000							5.8
12	51 FUNCTION4 PFK	430.9728	38.43	0.000							4.9
13	51 FUNCTION4 PFK	430.9728	38.24	0.000							1.6
14	51 FUNCTION4 PFK	430.9728	38.18	0.000							2.6
15	51 FUNCTION4 PFK	430.9728	38.06	0.000							5.8
16	51 FUNCTION4 PFK	430.9728	40.93	0.000							1.8
17	51 FUNCTION4 PFK	430.9728	40.81	0.000							1.0
18	51 FUNCTION4 PFK	430.9728	40.71	0.000							1.2
19	51 FUNCTION4 PFK	430.9728	40.61	0.000							1.5
20	51 FUNCTION4 PFK	430.9728	40.55	0.000							1.6
21	51 FUNCTION4 PFK	430.9728	40.50	0.000							0.5
22	51 FUNCTION4 PFK	430.9728	40.47	0.000							0.8
23	51 FUNCTION4 PFK	430.9728	40.43	0.000							1.6
24	51 FUNCTION4 PFK	430.9728	40.27	0.000							1.2
25	51 FUNCTION4 PFK	430.9728	40.22	0.000							2.2
26	51 FUNCTION4 PFK	430.9728	40.16	0.000							0.6
27	51 FUNCTION4 PFK	430.9728	40.04	0.000							1.9
28	51 FUNCTION4 PFK	430.9728	39.97	0.000							1.8
29	51 FUNCTION4 PFK	430.9728	39.86	0.000							1.6
30	51 FUNCTION4 PFK	430.9728	39.62	0.000							1.8
31	51 FUNCTION4 PFK	430.9728	39.57	0.000							3.2
32	51 FUNCTION4 PFK	430.9728	42.36	0.000							0.9
33	51 FUNCTION4 PFK	430.9728	42.29	0.000							1.3
34	51 FUNCTION4 PFK	430.9728	42.26	0.000							1.7
35	51 FUNCTION4 PFK	430.9728	42.22	0.000							1.9
36	51 FUNCTION4 PFK	430.9728	42.17	0.000							1.2
37	51 FUNCTION4 PFK	430.9728	42.12	0.000							1.6
38	51 FUNCTION4 PFK	430.9728	42.01	0.000							1.3
39	51 FUNCTION4 PFK	430.9728	41.96	0.000							0.8
40	51 FUNCTION4 PFK	430.9728	41.91	0.000							1.4
41	51 FUNCTION4 PFK	430.9728	41.86	0.000							1.2
42	51 FUNCTION4 PFK	430.9728	41.79	0.000							0.8
43	51 FUNCTION4 PFK	430.9728	41.72	0.000							0.4
44	51 FUNCTION4 PFK	430.9728	41.38	0.000							0.6
45	51 FUNCTION4 PFK	430.9728	41.30	0.000							1.0
46	51 FUNCTION4 PFK	430.9728	41.15	0.000							1.7
47	51 FUNCTION4 PFK	430.9728	40.99	0.000							1.0
48	51 FUNCTION4 PFK	430.9728	43.56	0.000							0.7
49	51 FUNCTION4 PFK	430.9728	43.50	0.000							0.7
50	51 FUNCTION4 PFK	430.9728	43.45	0.000							0.7
51	51 FUNCTION4 PFK	430.9728	43.41	0.000							1.0

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**PFK4**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
52	51 FUNCTION4 PFK	430.9728	43.38	0.000							1.3
53	51 FUNCTION4 PFK	430.9728	43.34	0.000							1.2
54	51 FUNCTION4 PFK	430.9728	43.28	0.000							0.4
55	51 FUNCTION4 PFK	430.9728	43.08	0.000							1.2
56	51 FUNCTION4 PFK	430.9728	43.01	0.000							1.0
57	51 FUNCTION4 PFK	430.9728	42.95	0.000							1.2
58	51 FUNCTION4 PFK	430.9728	42.84	0.000							1.5
59	51 FUNCTION4 PFK	430.9728	42.74	0.000							1.4
60	51 FUNCTION4 PFK	430.9728	42.71	0.000							1.6
61	51 FUNCTION4 PFK	430.9728	42.65	0.000							1.1
62	51 FUNCTION4 PFK	430.9728	42.47	0.000							0.9
63	51 FUNCTION4 PFK	430.9728	42.39	0.000							1.5
64	51 FUNCTION4 PFK	430.9728	44.44	0.000							0.4
65	51 FUNCTION4 PFK	430.9728	44.23	0.000							1.0
66	51 FUNCTION4 PFK	430.9728	44.19	0.000							1.0
67	51 FUNCTION4 PFK	430.9728	44.12	0.000							1.2
68	51 FUNCTION4 PFK	430.9728	43.85	0.000							1.2
69	51 FUNCTION4 PFK	430.9728	43.76	0.000							0.9
70	51 FUNCTION4 PFK	430.9728	43.64	0.000							1.3

**PFK5**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	52 FUNCTION5 PFK	480.9696	46.26	0.000							0.6
2	52 FUNCTION5 PFK	480.9696	45.51	0.000							1.6
3	52 FUNCTION5 PFK	480.9696	45.45	0.000							0.8
4	52 FUNCTION5 PFK	480.9696	45.37	0.000							0.9
5	52 FUNCTION5 PFK	480.9696	45.20	0.000							1.3
6	52 FUNCTION5 PFK	480.9696	45.08	0.000							0.7
7	52 FUNCTION5 PFK	480.9696	44.91	0.000							1.2
8	52 FUNCTION5 PFK	480.9696	44.66	0.000							1.6
9	52 FUNCTION5 PFK	480.9696	49.13	0.000							1.1
10	52 FUNCTION5 PFK	480.9696	48.97	0.000							0.7
11	52 FUNCTION5 PFK	480.9696	48.95	0.000							0.8
12	52 FUNCTION5 PFK	480.9696	48.78	0.000							1.2
13	52 FUNCTION5 PFK	480.9696	48.61	0.000							1.0
14	52 FUNCTION5 PFK	480.9696	48.29	0.000							1.1
15	52 FUNCTION5 PFK	480.9696	48.24	0.000							2.4
16	52 FUNCTION5 PFK	480.9696	48.10	0.000							0.5
17	52 FUNCTION5 PFK	480.9696	48.08	0.000							0.8
18	52 FUNCTION5 PFK	480.9696	47.47	0.000							1.8
19	52 FUNCTION5 PFK	480.9696	47.42	0.000							1.3
20	52 FUNCTION5 PFK	480.9696	47.25	0.000							1.0
21	52 FUNCTION5 PFK	480.9696	47.09	0.000							1.4
22	52 FUNCTION5 PFK	480.9696	46.80	0.000							1.7
23	52 FUNCTION5 PFK	480.9696	46.47	0.000							1.2
24	52 FUNCTION5 PFK	480.9696	46.43	0.000							1.1
25	52 FUNCTION5 PFK	480.9696	49.48	0.000							1.2
26	52 FUNCTION5 PFK	480.9696	49.20	0.000							2.0

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**ETHERS1**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	53 FUNCTION1 HXCD...	375.8364	23.30	0.000		0.000					2.3
2	53 FUNCTION1 HXCD...	375.8364	22.45	0.000		0.000					4.4
3	53 FUNCTION1 HXCD...	375.8364	21.82	0.000		0.000					2.4

**ETHERS2**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	54 FUNCTION1 HPCD...	409.7974	25.70	0.000		0.000					4.4
2	54 FUNCTION1 HPCD...	409.7974	23.94	0.000		0.000					2.4
3	54 FUNCTION1 HPCD...	409.7974	23.84	0.000		0.000					3.9
4	54 FUNCTION1 HPCD...	409.7974	23.25	0.000		0.000					3.2
5	54 FUNCTION1 HPCD...	409.7974	23.18	0.000		0.000					5.1
6	54 FUNCTION1 HPCD...	409.7974	22.49	0.000		0.000					3.7
7	54 FUNCTION1 HPCD...	409.7974	21.98	0.000		0.000					4.6

**ETHERS3**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	55 FUNCTION2 HPCD...	409.7974	29.83	0.000		0.000					3.2
2	55 FUNCTION2 HPCD...	409.7974	31.94	0.000		0.000					2.0
3	55 FUNCTION2 HPCD...	409.7974	31.58	0.000		0.000					2.5
4	55 FUNCTION2 HPCD...	409.7974	31.00	0.000		0.000					3.1
5	55 FUNCTION2 HPCD...	409.7974	30.85	0.000		0.000					3.3

**ETHERS4**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	56 FUNCTION3 OCDPE	445.7555	36.51	0.000		0.000					4.5
2	56 FUNCTION3 OCDPE	445.7555	35.51	0.000		0.000					3.1

**ETHERS5**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1	57 FUNCTION4 NCDPE	479.7165	43.06	0.000		0.000					2.2
2	57 FUNCTION4 NCDPE	479.7165	42.86	0.000		0.000					2.1
3	57 FUNCTION4 NCDPE	479.7165	40.58	0.000		0.000					2.0

**ETHERS6**

	# Name	Trace	RT	Abs.Resp	RRF M...	pg	EMPC	1° Rati...	1° Rati...	1° R...	S/N
1											

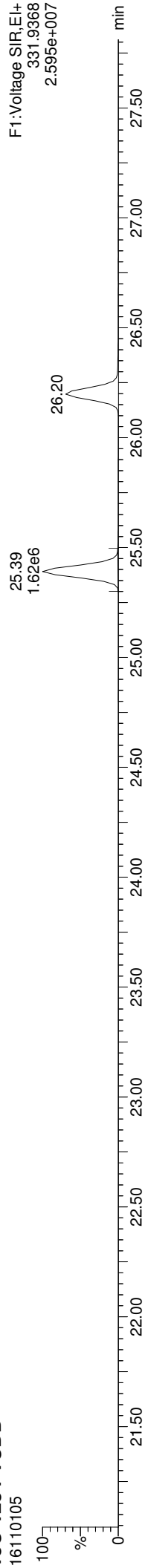
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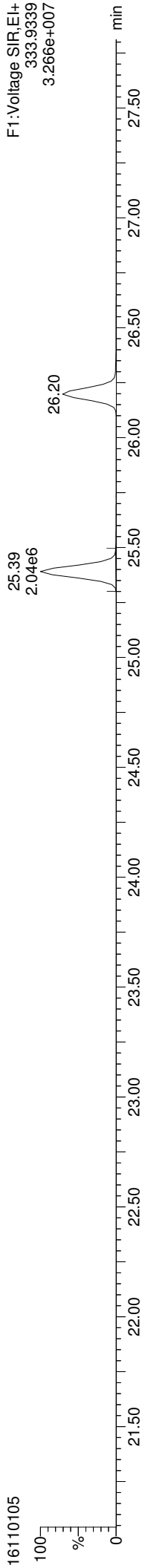
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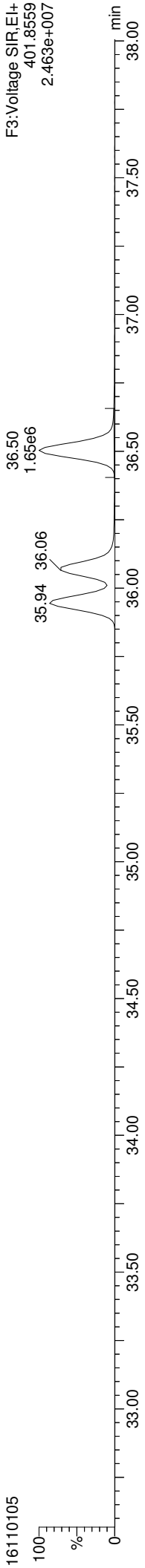
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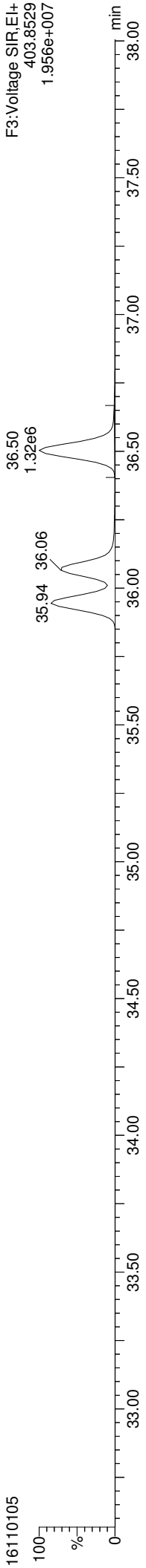
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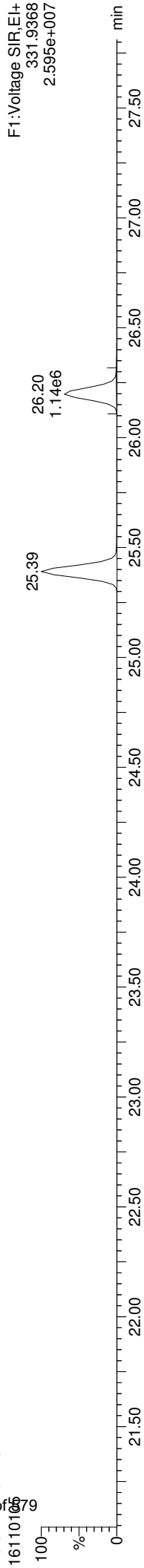


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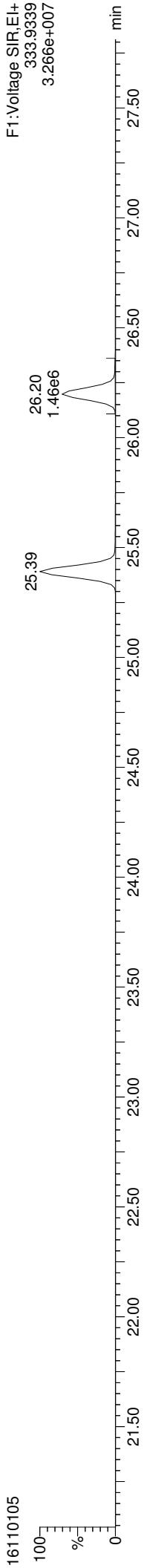
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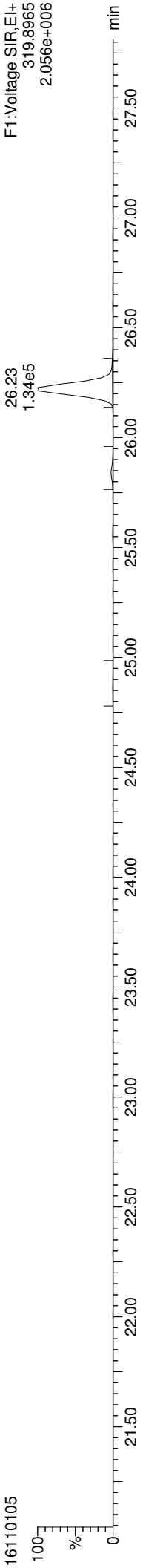
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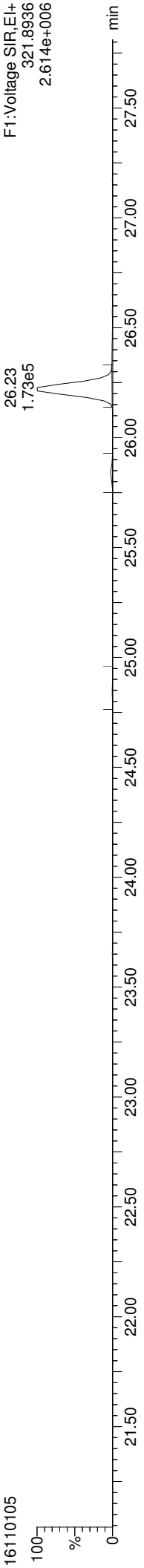
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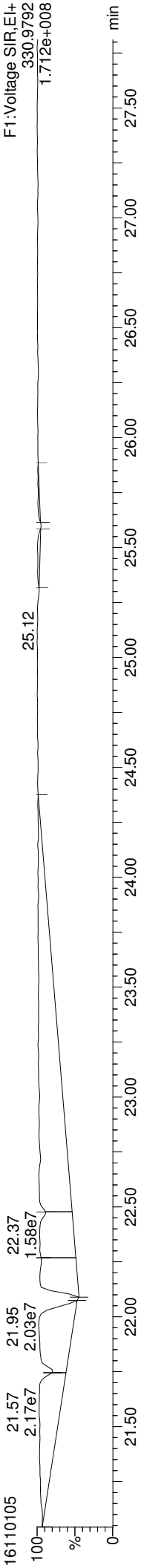
Total-tetradoxins



Total-tetradoxins



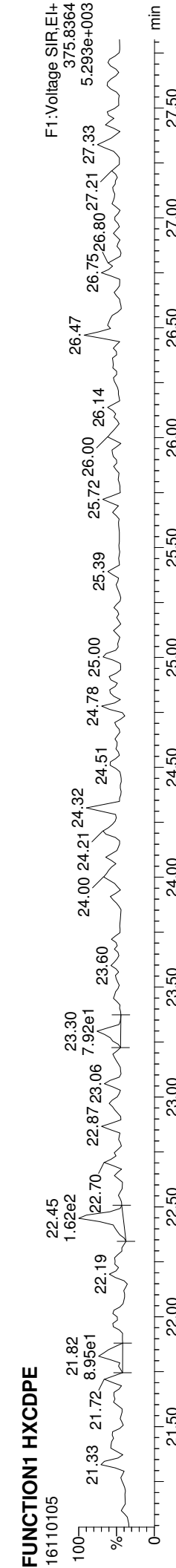
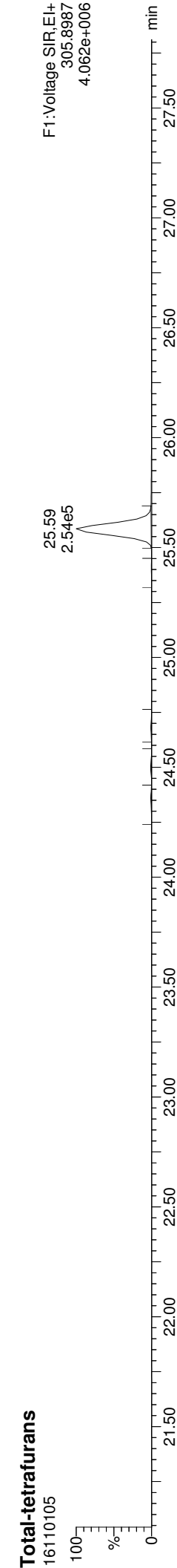
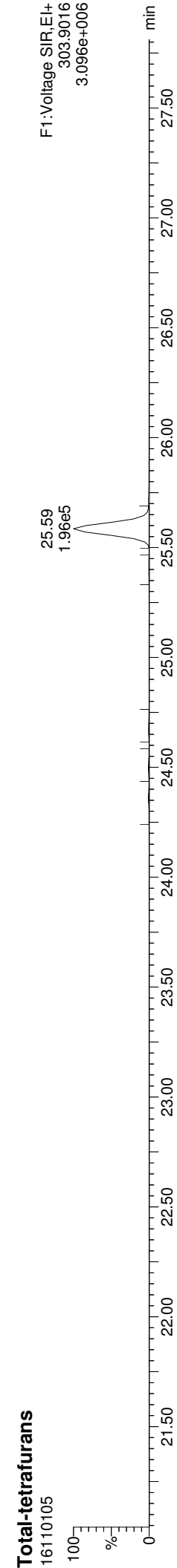
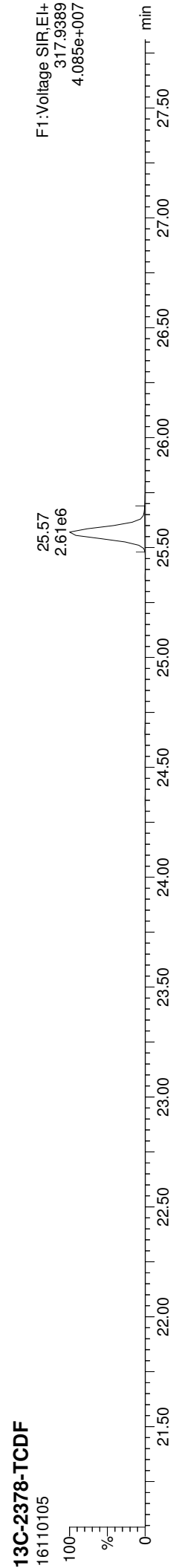
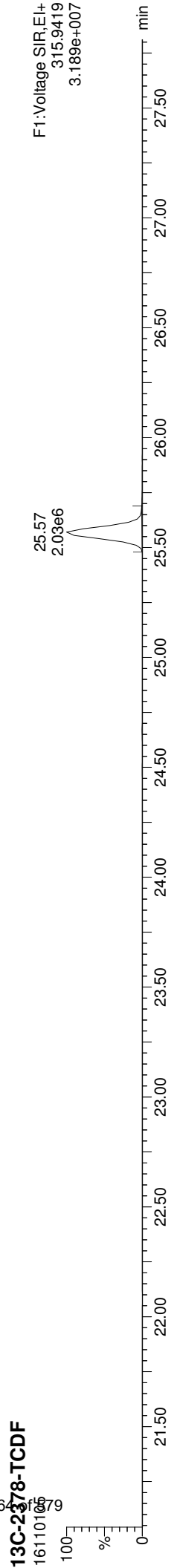
FUNCTION1 PFK



Quantify Sample Report

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Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 161110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

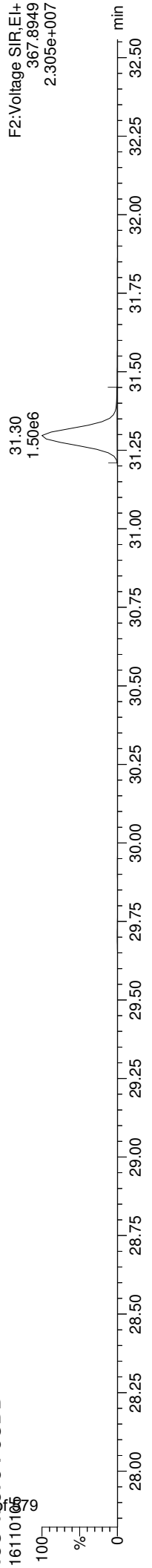


Quantify Sample Report

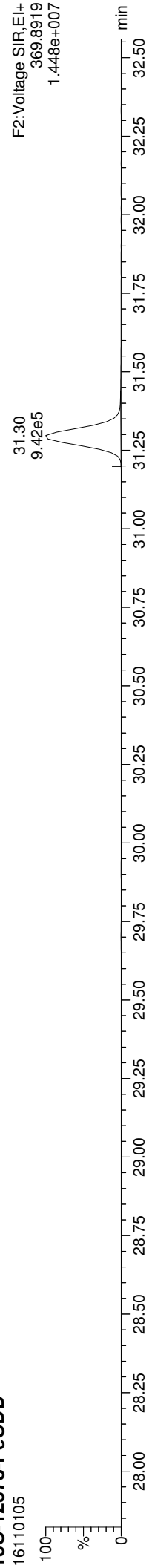
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Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 161110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

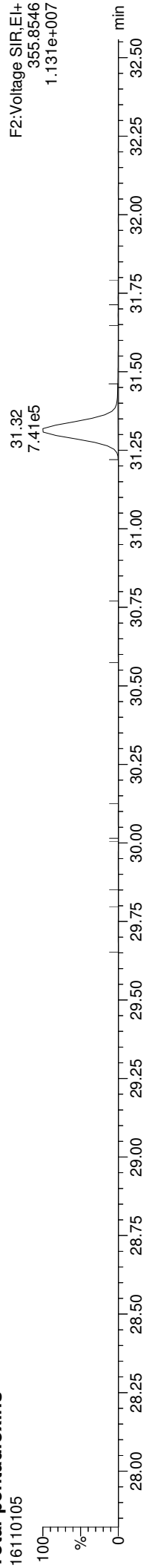
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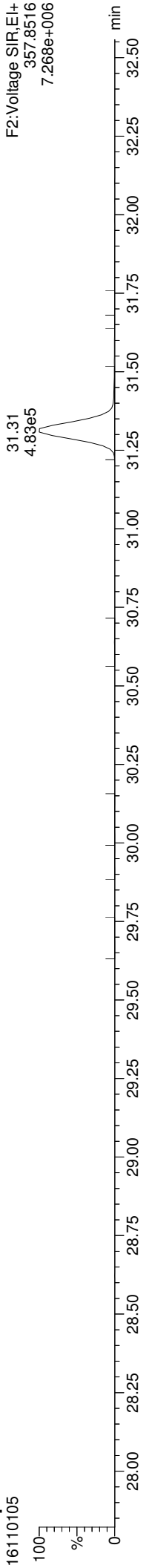
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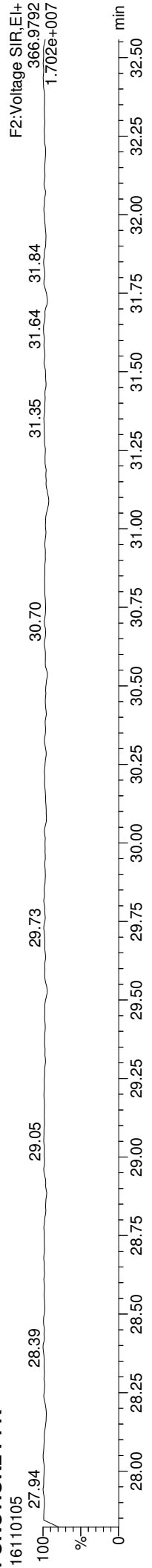
Total-pentadioxins



Total-pentadioxins



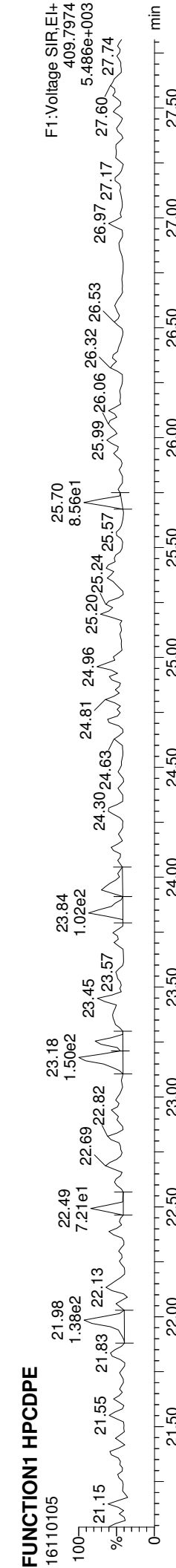
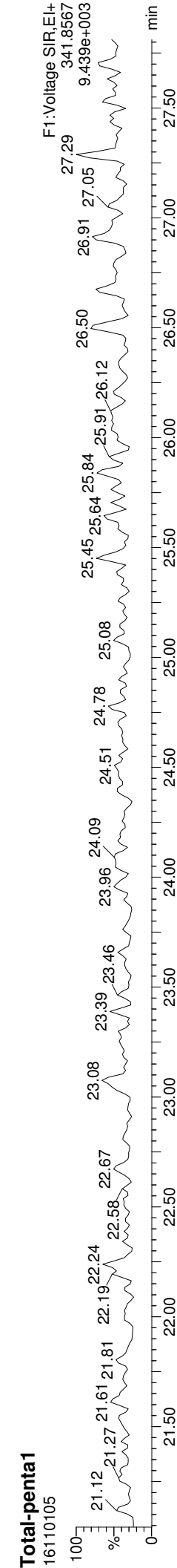
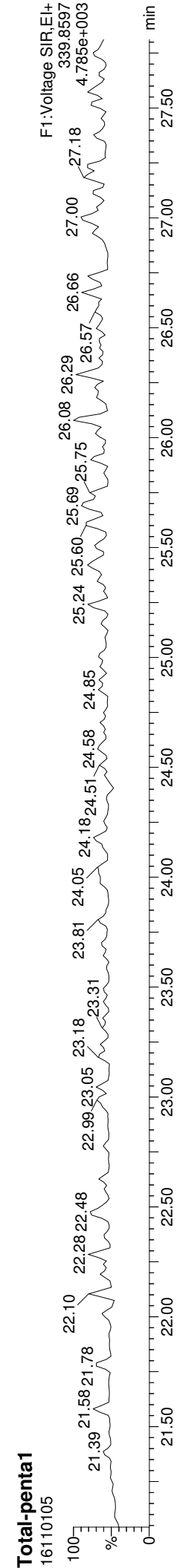
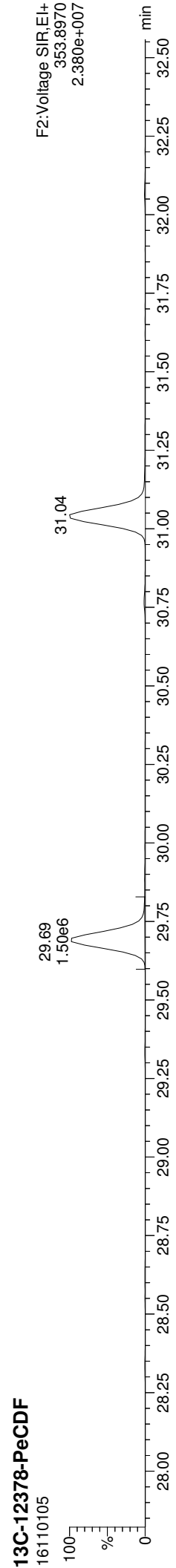
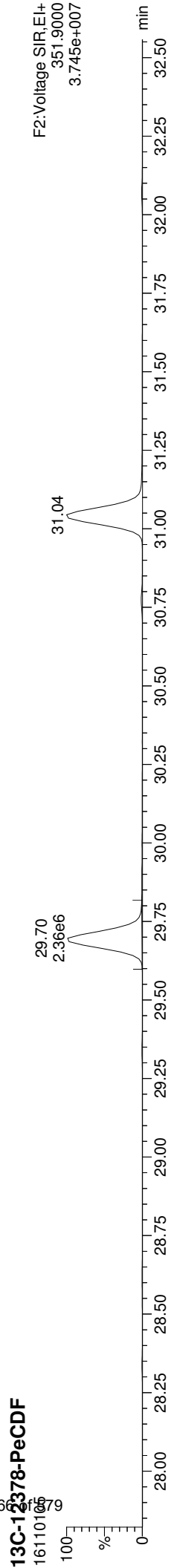
FUNCTION2 PFK



Quantify Sample Report

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Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
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Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 161110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK



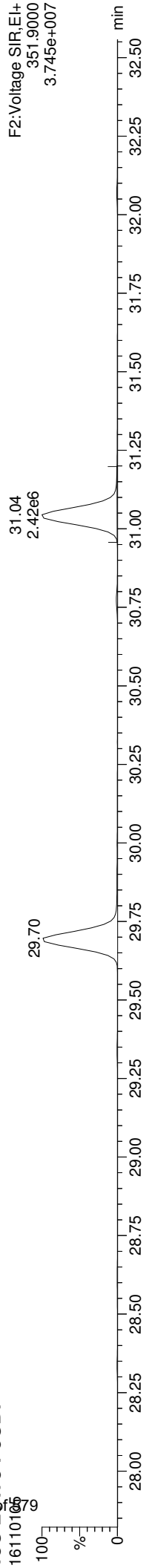


Quantify Sample Report

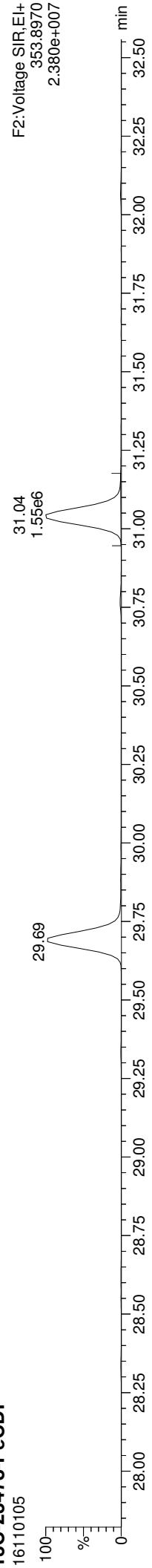
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Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 161110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

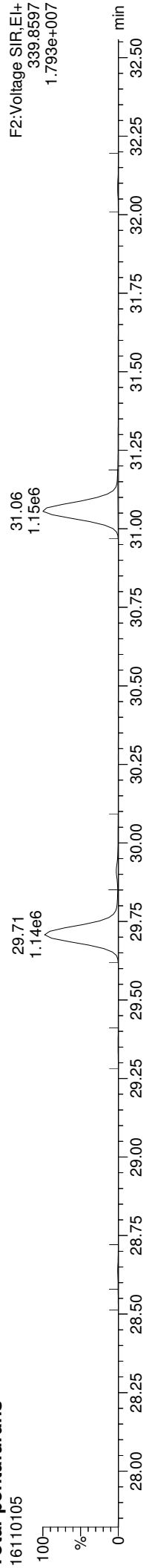
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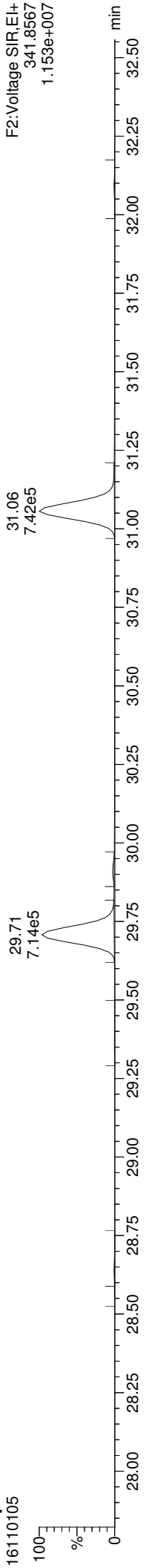
13C-23478-PeCDF



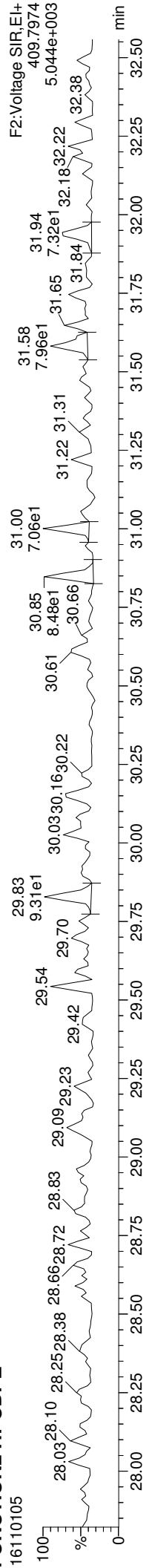
Total-pentafurans



Total-pentafurans



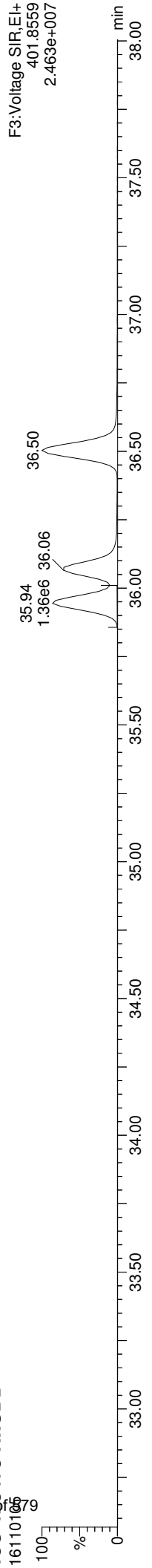
FUNCTION2 HPCDPE



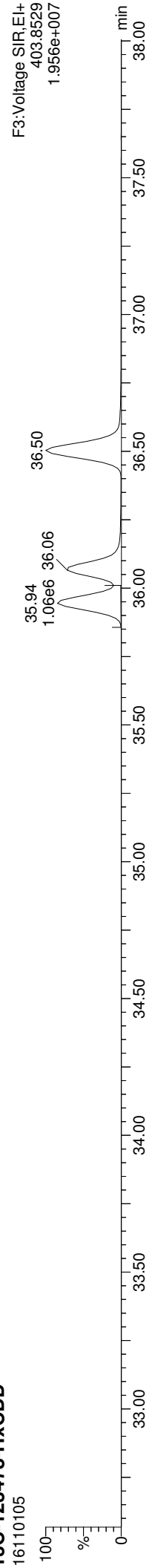
MassLynx MassLynx V4.1 SCN909  
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Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 161110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

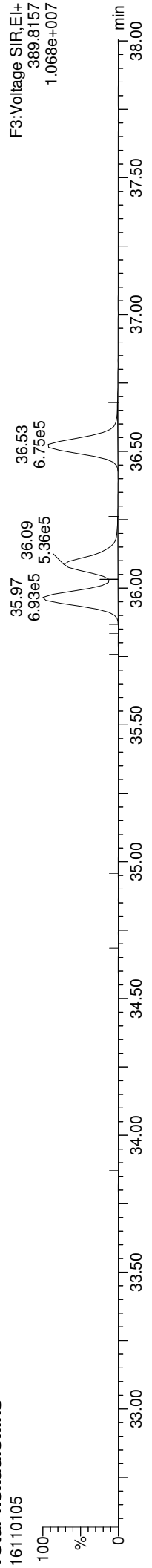
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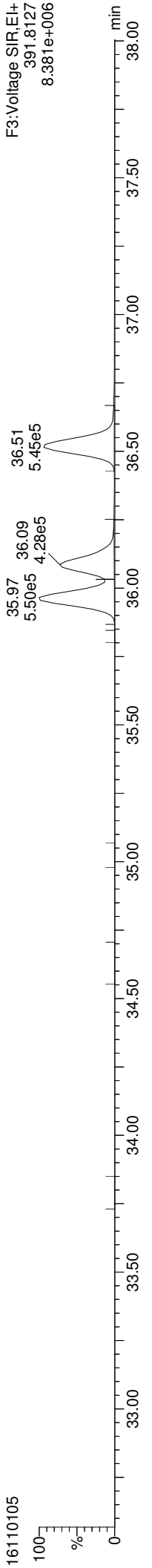
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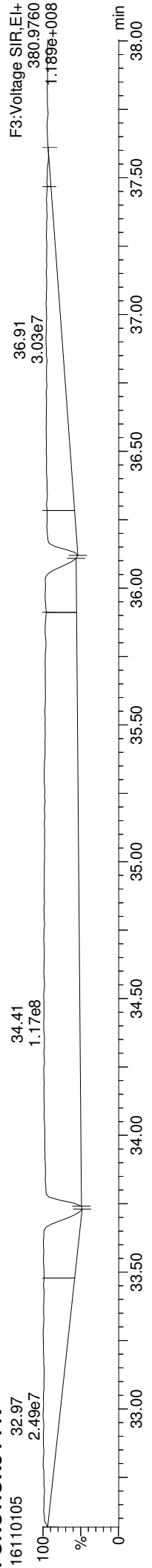
Total-hexadioxins



Total-hexadioxins



FUNCTION3 PFK



Quantify Sample Report

MassLynx MassLynx V4.1 SCN909

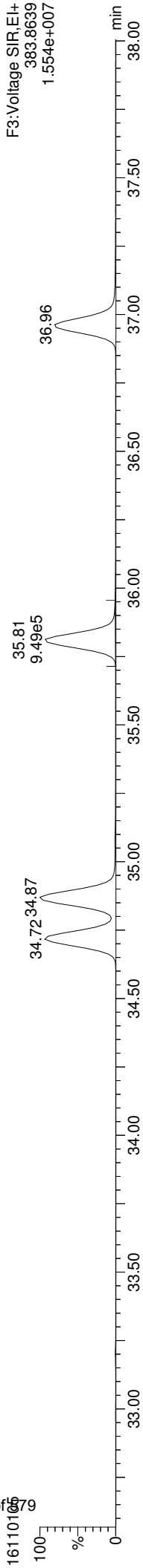
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Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time

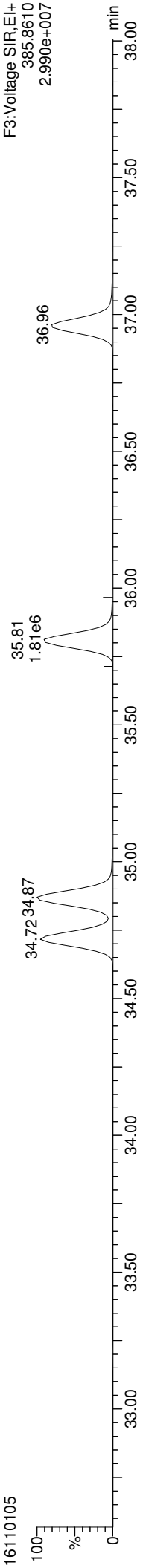
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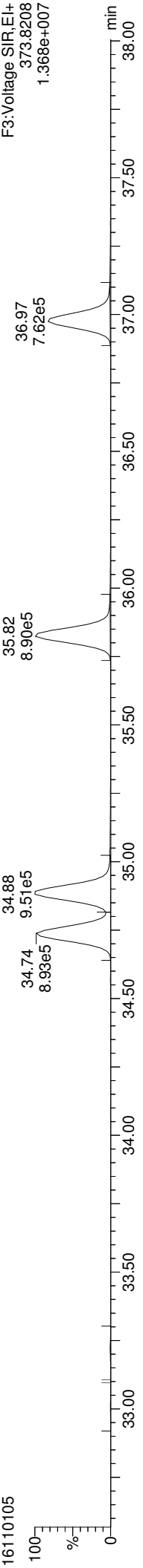
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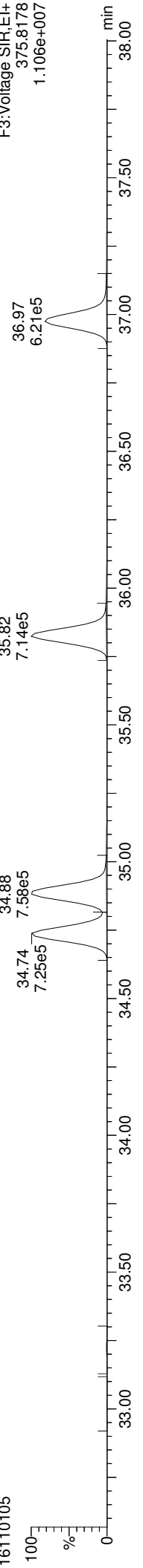
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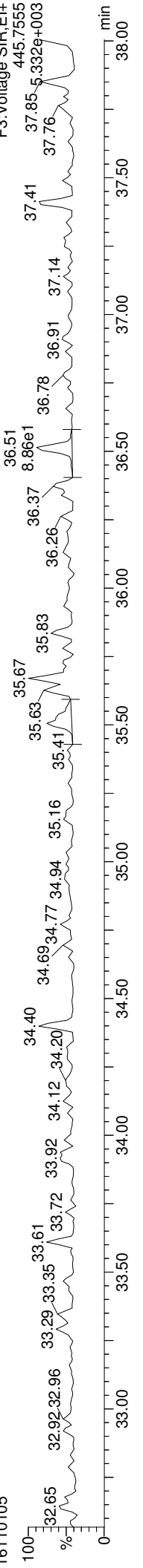
Total-hexafurans



Total-hexafurans



FUNCTION3 OCDPE

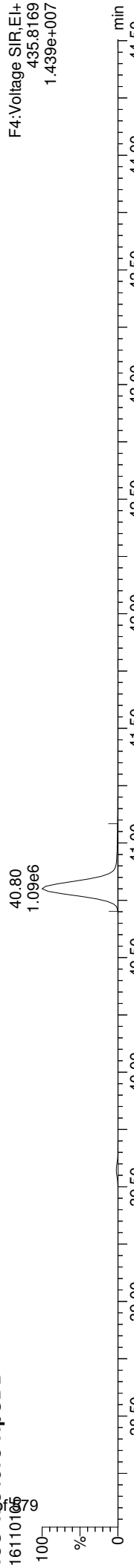


Quantify Sample Report

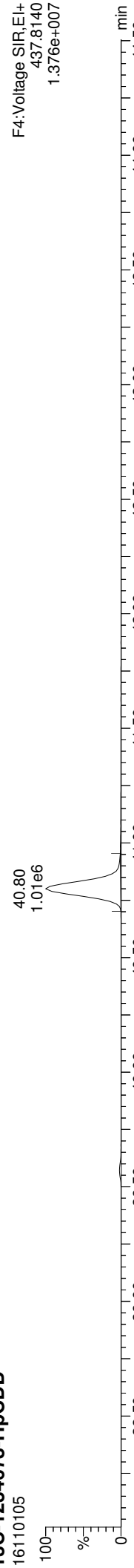
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 161110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

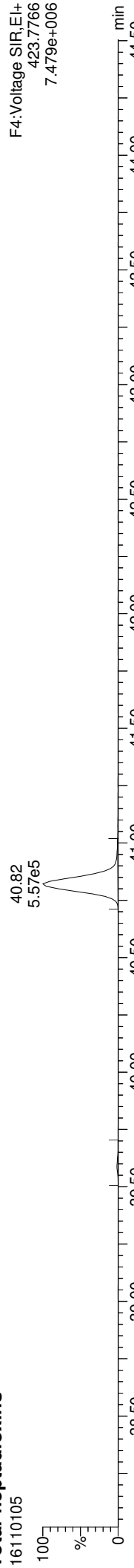
13C-1234678-HpCDD



13C-1234678-HpCDD



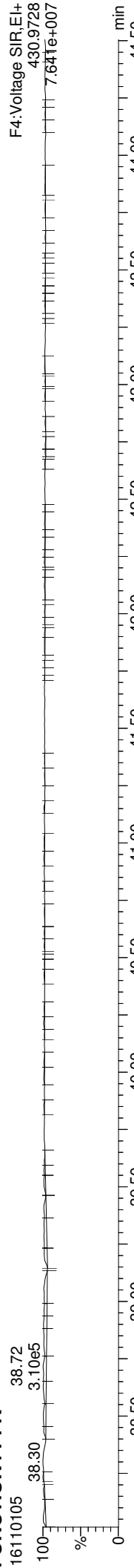
Total-heptadioxins



Total-heptadioxins



FUNCTION4 PFK



Quantify Sample Report

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Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 161110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

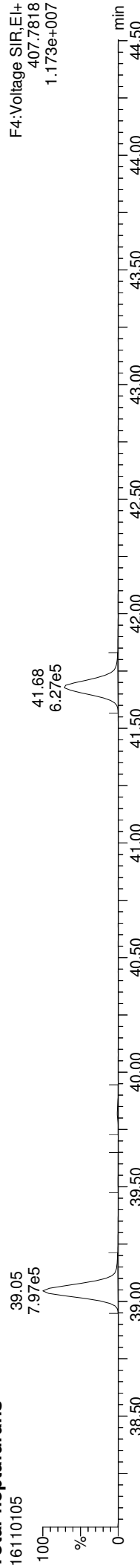
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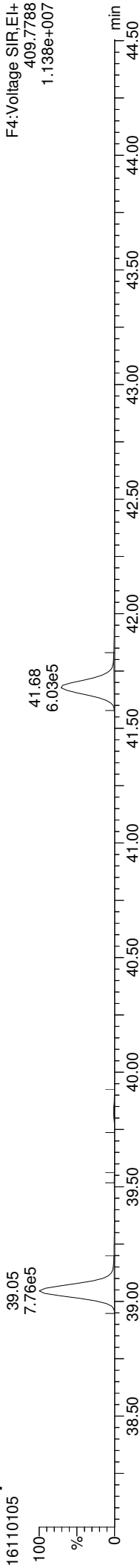
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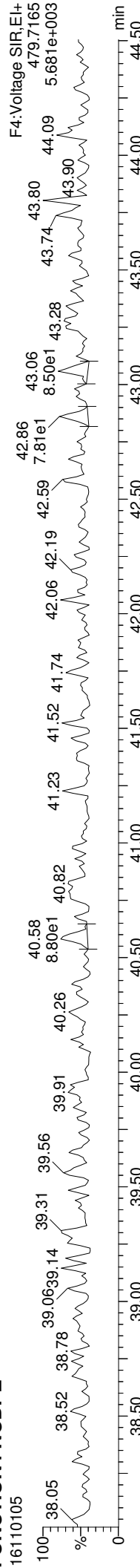
Total-heptafurans



Total-heptafurans



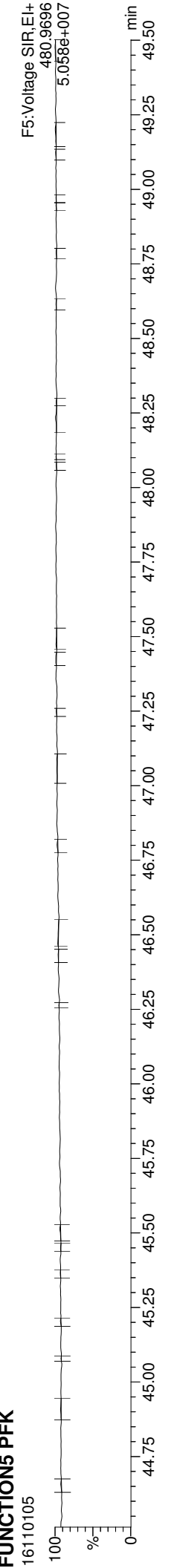
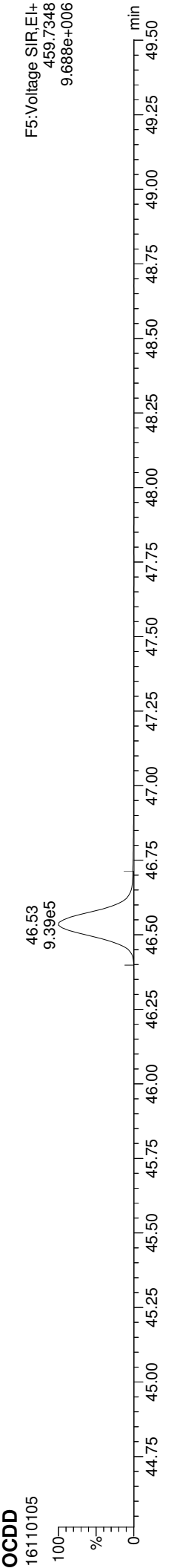
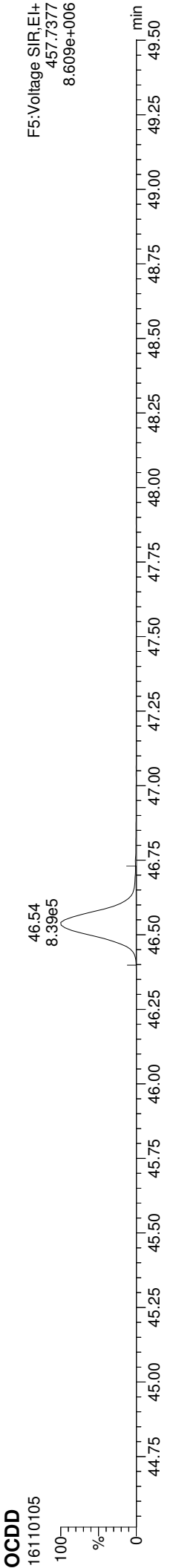
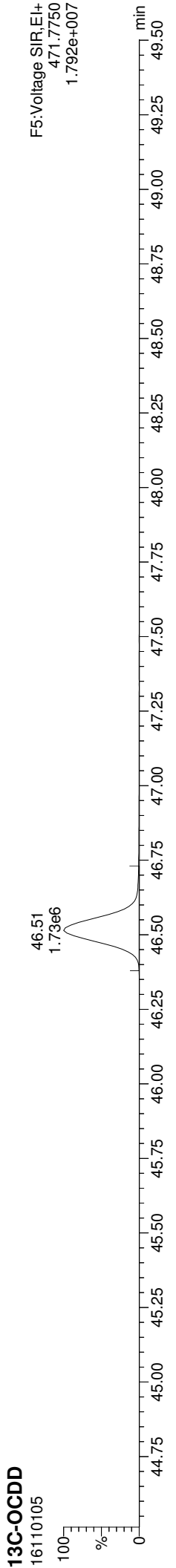
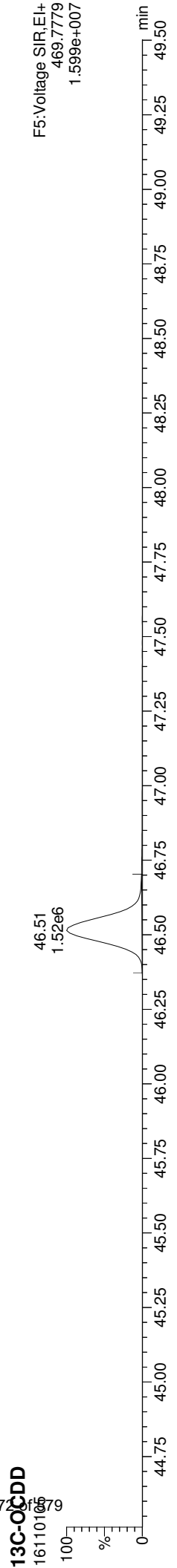
FUNCTION4 NCDPE



**Quantify Sample Report**    **MassLynx MassLynx V4.1 SCN909**

Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

**ID: BE00775-BS1, Name: 16110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK**

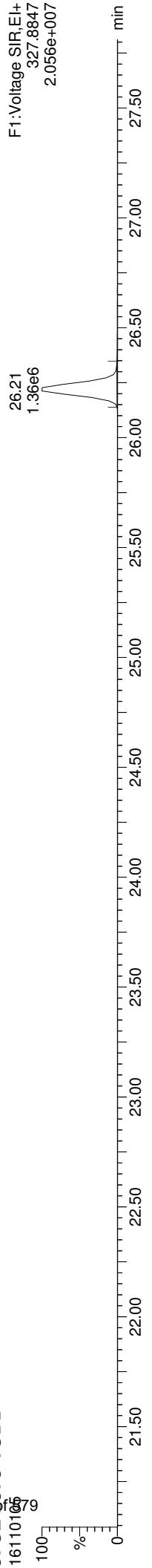


Quantify Sample Report

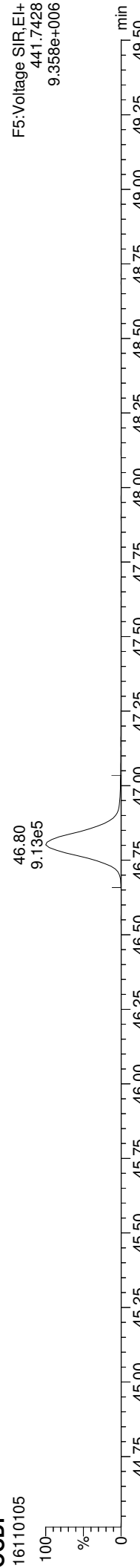
MassLynx MassLynx V4.1 SCN909  
Dataset: C:\MassLynx\Dioxin.pro\161101DATA1.qld  
Last Altered: Tuesday, November 01, 2016 14:19:48 Pacific Daylight Time  
Printed: Tuesday, November 01, 2016 14:26:54 Pacific Daylight Time

ID: BE00775-BS1, Name: 16110105, Date: 01-Nov-2016, Time: 13:15:02, Conditions: AUTOSPEC01, User: PK

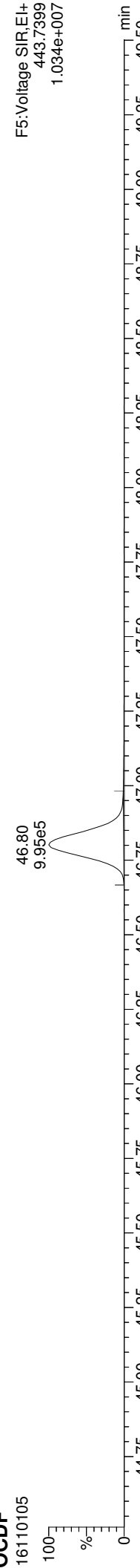
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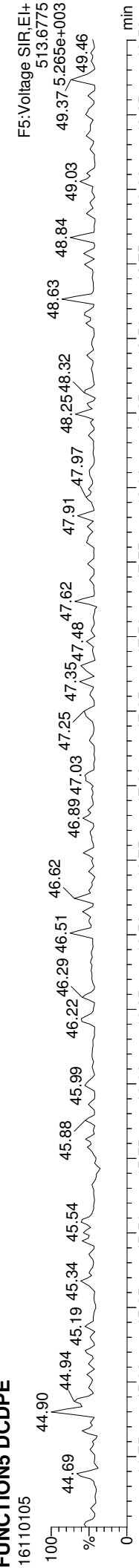
OCDF



OCDF



FUNCTION5 DCDPE



OCDF



F1: Voltage SIR, EI+ 327.8847 2.056e+007

F5: Voltage SIR, EI+ 441.7428 9.358e+006

F5: Voltage SIR, EI+ 443.7399 1.034e+007

F5: Voltage SIR, EI+ 513.6775 49.37 5.265e+003 49.46



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, Inc.

SDG: 16H0147

Client: Anchor QEA, LLC

Project: Port Gamble Shellfish Monitoring

Cleanup Batch: CEJ0269

Cleanup Type: Florisil

Cleanup Method: EPA 3620B Florisil Cleanup

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARE	OBSERVATIONS
PG-T0-MUS-COC-160816	16H0147-01	16110106	10/29/2016	





**CLEANUP BENCH SHEET**

CEJ0269

Matrix: Tissue

Cleanup using: HRGCMS - EPA 3620B Florisil Cleanup

Printed: 10/29/2016 2:56:41PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
16H0147-01	A	PG-T0-MUS-COC-160816	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16H0268-01	A	PG-T0B-MUS-COC-160829	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-01	A	PG-SMA-1-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-02	A	PG-SMA-1-2-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-03	A	PG-SMA-1-3-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-04	A	PG-REF-PJ-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-05	A	PG-REF-WS-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-06	A	PG-REF-GP-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
BEJ0775-BLK1	-	Blank	-	20	20	-	10/29/2016	NPL	
BEJ0775-BS1	-	LCS	-	20	20	-	10/29/2016	NPL	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, Inc.

SDG: 16H0147

Client: Anchor QEA, LLC

Project: Port Gamble Shellfish Monitoring

Cleanup Batch: CEJ0270

Cleanup Type: Silica Gel

Cleanup Method: EPA 3630C Silica Gel Cleanup

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARE	OBSERVATIONS
PG-T0-MUS-COC-160816	16H0147-01	16110106	10/29/2016	



**CLEANUP BENCH SHEET**

CEJ0270

Matrix: Tissue

Cleanup using: HRGCMS - EPA 3630C Silica Gel Cleanup

Printed: 10/29/2016 2:56:25PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
16H0147-01	A	PG-T0-MUS-COC-160816	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16H0268-01	A	PG-T0B-MUS-COC-160829	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-01	A	PG-SMA-1-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-02	A	PG-SMA-1-2-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-03	A	PG-SMA-1-3-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-04	A	PG-REF-PJ-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-05	A	PG-REF-WS-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-06	A	PG-REF-GP-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
BEJ0775-BLK1	-	Blank	-	20	20	-	10/29/2016	NPL	
BEJ0775-BS1	-	LCS	-	20	20	-	10/29/2016	NPL	



**PREPARATION BATCH SUMMARY**  
**EPA 1613B**

Laboratory: Analytical Resources, Inc.                      SDG: 16H0147  
Client: Anchor QEA, LLC    Project: Port Gamble Shellfish Monitoring  
Batch: BEJ0775                 Batch Matrix: Tissue                 Preparation: EPA 1613

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
PG-T0-MUS-COC-160816	16H0147-01	16110106	10/26/16 09:20	
Blank	BEJ0775-BLK1	16110104	10/26/16 09:20	
LCS	BEJ0775-BS1	16110105	10/26/16 09:20	



Analytical Resources, Incorporated  
Analytical Chemists and Consultants

HRGCMS Dioxin/Furan Preparation Bench Sheet EPA Methods 8290A & 1613B

Batch: BEJ0775

Tissue Samples

ARI Work Orders: 16H0147, 16H0268, 16J0187

Matrix (circle one)	Soil	Sediment	Oil	Tissue
Extraction Method	Start Date/Time: 10/26/16 0920	End Date/Time: 10/27/16 0605		
Soxhlet SepF Shake out				

Reagents/Equipment Used	NA	ID / Lot Number	Initials	Date
Balance		24650344	NL	10/26/16
Purified Sand				
Toluene		E003116	NL	10/26/16
Hexane		E004227	NL	10/27/16
CH2Cl2		E004228	NL	10/29/16
H2SO4		E002416	NL	10/28/16
Na2SO4		E005298	NL	10/26/16
Glasswool		E001046	NL	10/28/16
(98.2) Hex/DCM		E005071	NL	10/29/16
Basic Silica		E002485	NL	10/29/16
Acid Silica		E005289	NL	10/29/16
0% Silica		E003001	NL	10/26/16
Activated Florisil		E001666	NL	10/29/16
Nonane		E000869	NL	10/29/16
Other (Cov'n oil)		E005442	NL	10/26/16

Standards Used	Vol	ID / Lot Number	Concentration	Expiration Date
Recovery Standard	1.0 mL	E005003	2.4 ng/mL	3/29/17
OPR	20 uL	F004560	10/50/100 ng/mL	3/20/17
QLS Standard	10 uL		0.5/2.5/5 ng/mL	
Clean-up Standard	1.0 mL	E005591	0.8 ng/mL	4/16/17

Supervisor Review By: Date: 10/31/16

Lab Number & Container	Sample Name	Sample Vol (mL)	Sample Vol (Target)/Actual	RotoVap	Water Trap Vol (mL)	Final Vol (uL)
16H0147-01 A	PG-TBAUS-COC-160	10.00	10.02	45 °C	8.1	20
16H0268-01 A	PG-TBAUS-COC-1	10.00	10.05	45 °C	8.0	20
16J0187-01 A	PG-SMA-1-1-161011	10.00	10.02	45 °C	8.4	20
16J0187-02 A	PG-SMA-1-2-161011	10.00	10.04	45 °C	8.0	20
16J0187-03 A	PG-SMA-1-3-161011	10.00	10.04	45 °C	8.6	20
16J0187-04 A	PG-REF-PL-1-161011	10.00	10.03	45 °C	8.5	20
16J0187-05 A	PG-REF-MS-1-161011	10.00	10.02	45 °C	8.4	20
16J0187-06 A	PG-REF-CP-1-161011	10.00	10.02	45 °C	8.4	20
Prep Analyst / Date:						
Lab Number	Sample Name	Sample Vol (mL) <td>Sample Vol (Target)/Actual <td>RotoVap <td>Water Trap Vol (mL) <td>Final Vol (uL) </td></td></td></td>	Sample Vol (Target)/Actual <td>RotoVap <td>Water Trap Vol (mL) <td>Final Vol (uL) </td></td></td>	RotoVap <td>Water Trap Vol (mL) <td>Final Vol (uL) </td></td>	Water Trap Vol (mL) <td>Final Vol (uL) </td>	Final Vol (uL)
BEJ0775-BLK1	Blank	10.00		45 °C	0.1	20
BEJ0775-BS1	LCS	10.00		45 °C	0.1	20
Prep Analyst / Date:						

Analyst / Date:	Verify Client ID
NL 10/26/16	
NL 10/26/16	Acid Clean
NL 10/26/16	0/N 10/28/16
NL 10/26/16	Silica-Florisil Clean
NL 10/26/16	0/N 10/29/16



Analytical Resources, Incorporated  
Analytical Chemists and Consultants

Dioxin Extraction Laboratory – Glassware

ARI Sample ID: BEJ0775 Client Sample ID:

Client Project ID:

ARI Analyst

NL

ARI Sample ID	300 mL Flat Bottom	Small Soxhlet	Large Soxhlet	250 mL Beaker	Funnel	Column	Florisil Column	Turbo Tube	Sep Funnel	Fliehmeyer Flask	Centrifuge Bottle	Turbo-Vap	Vortex Mixer	Heating Mantle
BEJ0775 - B1K1	85	2		19	74/22	196	142	41	37		23	4	4	A1
B51	60	42		27	71/6	176	159	37	28		21	4	4	A2
16H0147-01A	83	L9		188	78/18	L1	99	38	22			4	4	A3
16H0268-01A	84	L2		25	20/17	221	115	45	24		2	4	4	A4
16J0187-01A	30	56		198	63/20	184	143	34	29			4	4	A5
02A	22	46		163	29/16	161	67	36	34			4	4	A6
03A	27	L1		187	27/24	215	121	8	33			4	4	B1
04A	10	69		189	76/5	125	119	11	31			4	4	B2
05A	74	77		179	104/23	47	151	43	35			4	4	B3
06A	52	L5		206	49/19	175	7	1	21			4	4	B4
												4	4	
												4	4	
												4	4	
												4	4	
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												4	4	
												4	4	
												4	4	



ARI Job No.: 16H0147, 16H0268, 16J0187

Client ID: \_\_\_\_\_

Batch ID: BEJ0775

Parameter:

Client Project:

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)=	
<input type="checkbox"/> Standing Water Decanted (Not shared)=	
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Received in 32oz jar(s)=Homogenized in Pyrex dish=	
<input type="checkbox"/> Other (Details)=	
<b>Aqueous:</b>	
<input type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
<input type="checkbox"/> Received in 1.0L Bottle(s)=No Bottle Rinse=	
<input checked="" type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions).	
16H0147 - BIK, BS, 01 ; 16H0268 - 01 = After water wash samples appear to have emulsion, samples centrifuged.	ML 10/28/16
BEJ0775 - BIK1 - while pour sample back into RB flask after acid wash - accidentally splash out, lost ~ 5% of solvent.	ML 10/28/16
<input type="checkbox"/> Share Samples Y/N All extracts taken through double acid columns	Cleaned ML 10/29/16
<input type="checkbox"/> Multiple Jars Y/N	
<input type="checkbox"/> Sample Pre-Screens indicate analyte activity=	
<input type="checkbox"/> Sample weights/volumes reduced based on Pre-Screen=	



## CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, Inc.

SDG: 16H0147

Client: Anchor QEA, LLC

Project: Port Gamble Shellfish Monitoring

Cleanup Batch: CEJ0268

Cleanup Type: Sulfuric Acid

Cleanup Method: EPA 3665A Sulfuric Acid Cleanup

Analysis: EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARE	OBSERVATIONS
PG-T0-MUS-COC-160816	16H0147-01	16110106	10/29/2016	





**CLEANUP BENCH SHEET**

CEJ0268

Matrix: Tissue

Cleanup using: HRGCMS - EPA 3665A Sulfuric Acid Cleanup

Printed: 10/29/2016 2:55:41PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
16H0147-01	A	PG-T0-MUS-COC-160816	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16H0268-01	A	PG-T0B-MUS-COC-160829	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-01	A	PG-SMA-1-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-02	A	PG-SMA-1-2-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-03	A	PG-SMA-1-3-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-04	A	PG-REF-PJ-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-05	A	PG-REF-WS-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
16J0187-06	A	PG-REF-GP-1-161011	A 05	20	20	1613B Dioxin	10/29/2016	NPL	
BEJ0775-BLK1	-	Blank	-	20	20	-	10/29/2016	NPL	
BEJ0775-BS1	-	LCS	-	20	20	-	10/29/2016	NPL	



## INITIAL CALIBRATION DATA

### EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	16H0147
Client:	Anchor QEA, LLC	Project:	Port Gamble Shellfish Monitoring
Calibration:	ZE00016	Instrument:	AUTOSPEC01
Calibration Date:	05/10/2016 15:20	Column (1):	RTX-Dioxin2

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
2,3,7,8-TCDF			0.5	0.8797361	2	0.9295275	10	0.9408094	40	0.9588917	200	0.9649929
2,3,7,8-TCDD			0.5	1.115377	2	1.100376	10	1.144028	40	1.150807	200	1.159235
1,2,3,7,8-PeCDF	0.5	0.9485384	2.5	0.9209936	10	0.9056015	50	0.9633152	200	0.9840803	1000	0.9889675
2,3,4,7,8-PeCDF	0.5	0.9035144	2.5	0.9573729	10	0.9682878	50	0.9666401	200	0.9842584	1000	0.9973965
1,2,3,7,8-PeCDD	0.5	0.9219366	2.5	0.9579214	10	0.9628834	50	1.001705	200	0.9893907	1000	1.018547
1,2,3,4,7,8-HxCDF	0.5	1.117198	2.5	1.125003	10	1.135882	50	1.142157	200	1.152665	1000	1.14638
1,2,3,6,7,8-HxCDF	0.5	1.063648	2.5	1.068909	10	1.111893	50	1.110729	200	1.121041	1000	1.116234
2,3,4,6,7,8-HxCDF	0.5	1.141715	2.5	1.111651	10	1.170072	50	1.160348	200	1.184913	1000	1.212323
1,2,3,7,8,9-HxCDF	0.5	1.124362	2.5	1.074397	10	1.083361	50	1.064959	200	1.119352	1000	1.138494
1,2,3,4,7,8-HxCDD	0.5	1.042764	2.5	0.9810013	10	1.023544	50	1.046335	200	1.040786	1000	1.052574
1,2,3,6,7,8-HxCDD	0.5	0.9324052	2.5	0.9744786	10	0.9634003	50	0.994897	200	0.9876577	1000	0.9757835
1,2,3,7,8,9-HxCDD	0.5	0.9678897	2.5	0.9321987	10	1.003559	50	1.024956	200	1.023361	1000	1.018307
1,2,3,4,6,7,8-HpCDF	0.5	1.261865	2.5	1.296787	10	1.278741	50	1.309499	200	1.322647	1000	1.347196
1,2,3,4,7,8,9-HpCDF	0.5	1.289233	2.5	1.281743	10	1.260792	50	1.327622	200	1.390769	1000	1.354006
1,2,3,4,6,7,8-HpCDD	0.5	0.9974608	2.5	1.037504	10	1.0097	50	1.027278	200	1.046087	1000	1.050065
OCDF	1	1.095681	5	1.108285	20	1.164797	100	1.193316	400	1.212513	2000	1.220252
OCDD	1	1.036043	5	1.527806	20	1.00888	100	1.025001	400	1.021189	2000	1.023204
37C14-2,3,7,8-TCDD	0.1	1.085129	0.5	0.9696672	2	1.037502	10	1.033134	40	1.080686	200	1.193229



## INITIAL CALIBRATION DATA

### EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	16H0147
Client:	Anchor QEA, LLC	Project:	Port Gamble Shellfish Monitoring
Calibration:	ZE00016	Instrument:	AUTOSPEC01
Calibration Date:	05/10/2016 15:20	Column (1):	RTX-Dioxin2

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
2,3,7,8-TCDF	0.9347915	3.6			RSD ()	
2,3,7,8-TCDD	1.133965	2.2			RSD ()	
1,2,3,7,8-PeCDF	0.9519161	3.5			RSD ()	
2,3,4,7,8-PeCDF	0.9629117	3.4			RSD ()	
1,2,3,7,8-PeCDD	0.9753974	3.6			RSD ()	
1,2,3,4,7,8-HxCDF	1.136547	1.2			RSD ()	
1,2,3,6,7,8-HxCDF	1.098742	2.3			RSD ()	
2,3,4,6,7,8-HxCDF	1.163504	3.0			RSD ()	
1,2,3,7,8,9-HxCDF	1.100821	2.8			RSD ()	
1,2,3,4,7,8-HxCDD	1.031167	2.6			RSD ()	
1,2,3,6,7,8-HxCDD	0.9714371	2.3			RSD ()	
1,2,3,7,8,9-HxCDD	0.9950452	3.8			RSD ()	
1,2,3,4,6,7,8-HpCDF	1.302789	2.4			RSD ()	
1,2,3,4,7,8,9-HpCDF	1.317361	3.7			RSD ()	
1,2,3,4,6,7,8-HpCDD	1.028016	2.0			RSD ()	
OCDF	1.165807	4.6			RSD ()	
OCDD	1.107021	18.6			RSD ()	
37C14-2,3,7,8-TCDD	1.066558	7.0			RSD ()	



Dioxin Curve 5/10/16

HR-GC/MS Analyst Notes / Data Review Checklist

ELEMENT/NWA: \_\_\_\_\_

Client ID: \_\_\_\_\_

Element Calibration Code: ZE00016

METHOD: 1613B (Dioxins) 8290A (Dioxins)

Instrument: **AutoSpec01**

Analysis Start Date: HRSM01.2  
5/10/16

Resolution Check > 10,000ppm REVIEW 1/REVIEW 2  
Y/N/ \_\_\_\_\_

Signal / Noise  $\geq 3.0$ ? REVIEW 1/REVIEW 2  
Y/N/ \_\_\_\_\_

TCDD /TCDF Resolution  $\leq 25\%$  Y/N/ \_\_\_\_\_

Extraction STD Limits Met? Y/N/ \_\_\_\_\_

PCDF Windows Verified Y/N/ \_\_\_\_\_

Cleanup STD Limits Met? Y/N/ \_\_\_\_\_

ICV/CCV %D limits met? Y/N/ \_\_\_\_\_

Method Blank in Control? Y/N/ \_\_\_\_\_

ICV/CCV Ratios limits met? Y/N/ \_\_\_\_\_

OPR Recovery Limits Met? Y/N/ \_\_\_\_\_

ICV/CCV RRT limits met? Y/N/ \_\_\_\_\_

Values Exceeding Curve Range? Y/N/ \_\_\_\_\_

Manual Integrations? Y(N) \_\_\_\_\_

Samples Diluted? Y/N/ \_\_\_\_\_

VDP Completed? NA Y/N/ \_\_\_\_\_

Duplicate Sample RPD  $\leq 25\%$ ? NA/ \_\_\_\_\_

EPA Case # NA/ \_\_\_\_\_

Technical Review? / \_\_\_\_\_

Detail problems, corrective actions and/or other pertinent information below:

- TCDD/TCDF are 5 point curves : CSI - CSS
- All others are 6 points = CSL - CSS
- All cpuds  $< 20\%$  RSD. All avg.
- Seq. SER0076

(Review 1)Analyst: P Keyler Date: 5/12/16

(Review 2)Peer: \_\_\_\_\_ Date: \_\_\_\_\_

(Final Review)Reviewer: \_\_\_\_\_ Date: \_\_\_\_\_

# Analytical Resources Inc.: Organics Instrument Log

AutoSpec01 Serial No.: GC=CN10921030, MS=P764

Date: 5/10/16 Analysis: Dioxins Analyst: ML  
 GC Program: 8290.D Column No.: E764 Column Type: VIT-Dioxin2  
 Inj Vol: 1ul Instrument Tune (IPR): May 04 16 1-5 Detector Voltage: 340  
 Resolution Check Files: 10:38, 20:54 Curve Date: 5/10/16

IS/SS	Ical/Ccal	LCS/ICV
	D623 E2001	
	D621 B002	C2712
	D620 <del>C4244</del> ML 5/12/16	
	D622 E1146	

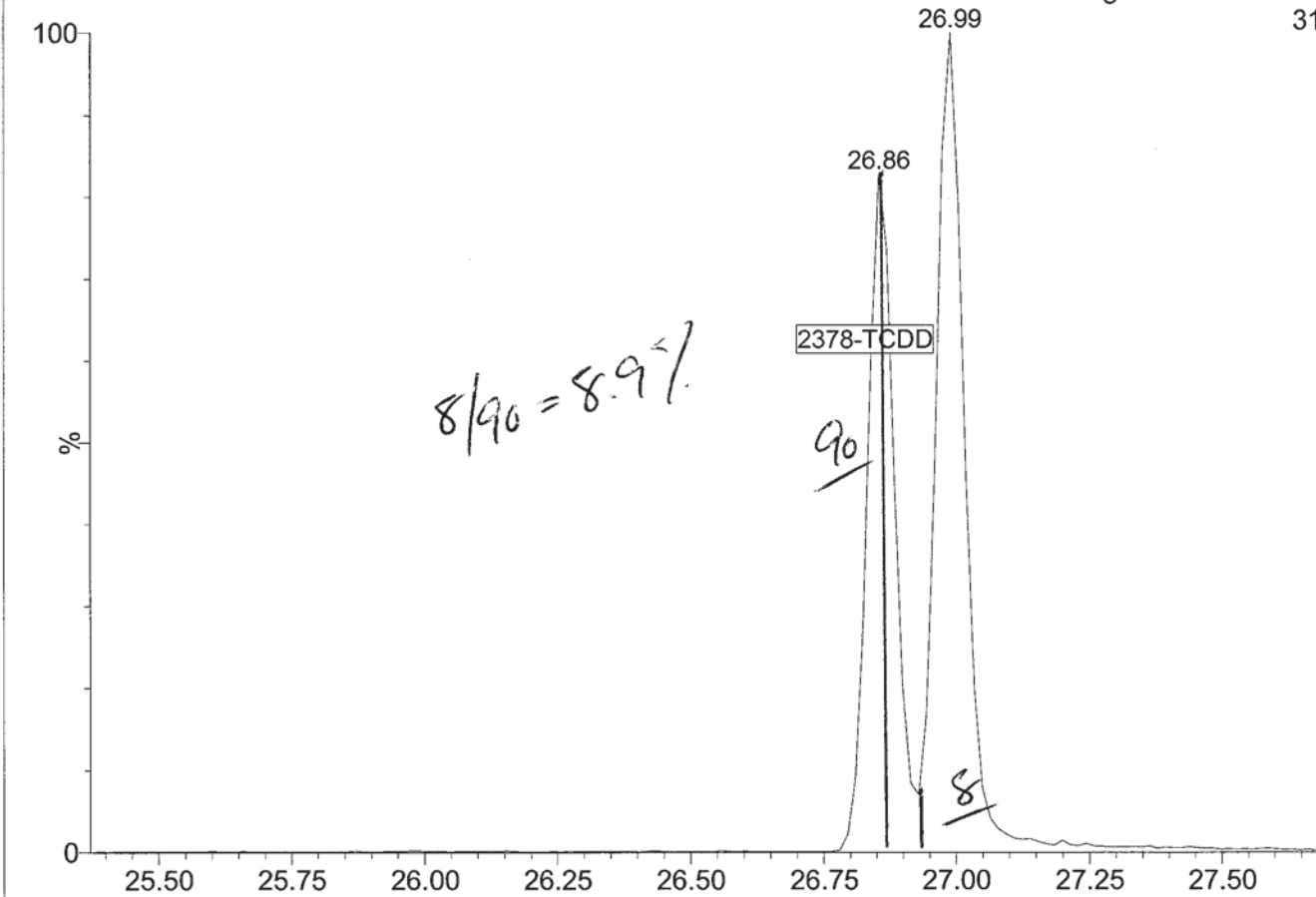
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1	10-May-16	10:52:12	16051002	CS3WD	
2	10-May-16	11:43:55	16051003	ISC01A	
3	10-May-16	13:36:21	16051004	<del>CS1</del> CS1AA	
4	10-May-16	14:27:42	16051005	<del>CS1</del> CS2AA	
5	10-May-16	15:30:50	16051006	CS2 CS3AA	
6	10-May-16	16:22:15	16051007	<del>CS3</del> CS4AA	
7	10-May-16	17:15:41	16051008	CS4 CS5AA	
8	10-May-16	18:09:09	16051009	CS5 CS6AA	
9	10-May-16	19:02:32	16051010	ICV	
10	10-May-16	19:56:06	16051011	ISC02	06/30/16 AD

*[Large handwritten signature]* ML 5/12/16

Every line must contain information or be lined out. Make all entries legible.  
 Start a new page for each QC period. Document All Maintenance Tasks In Element LIMS

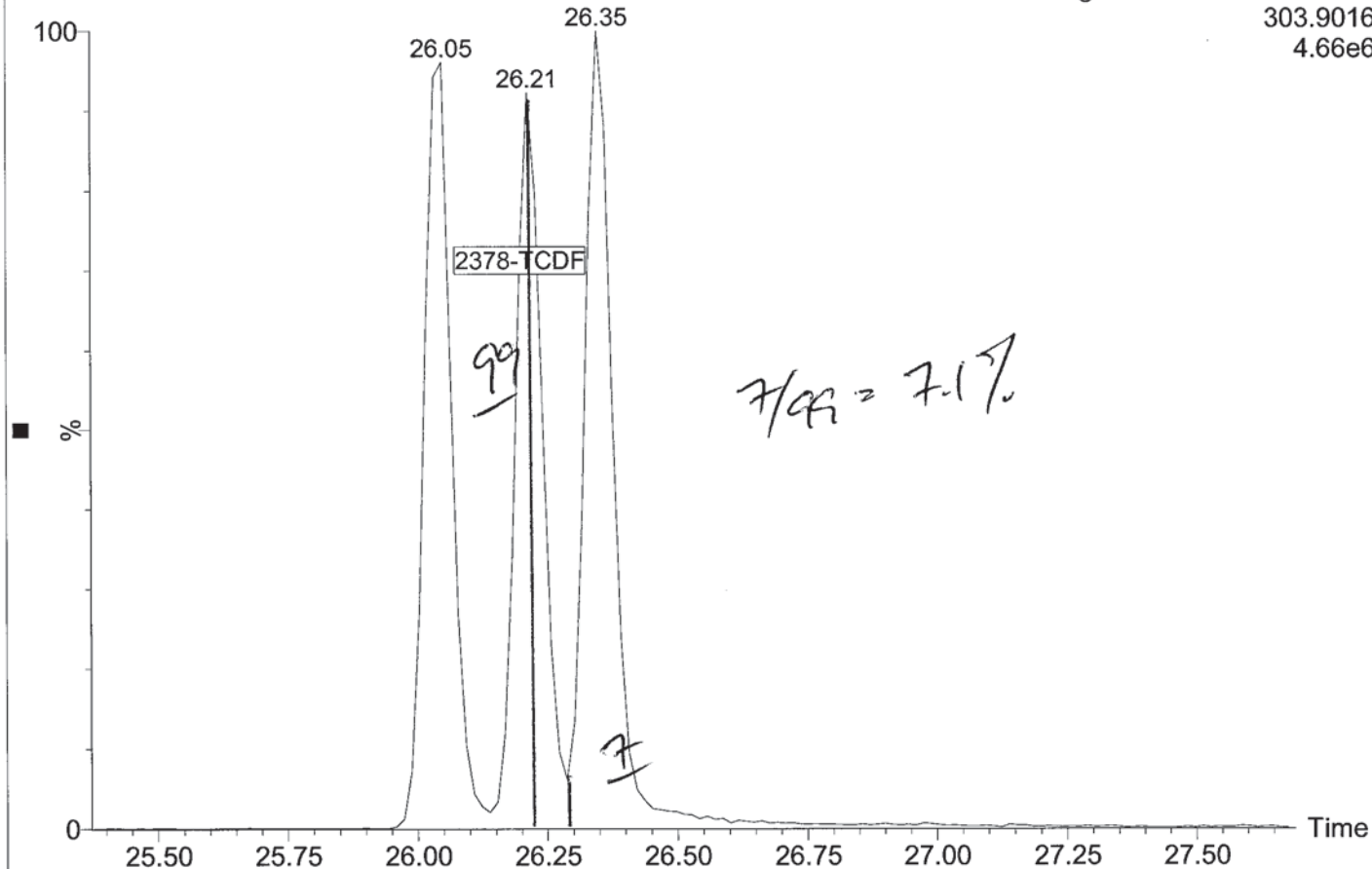
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319.8965  
3.72e6



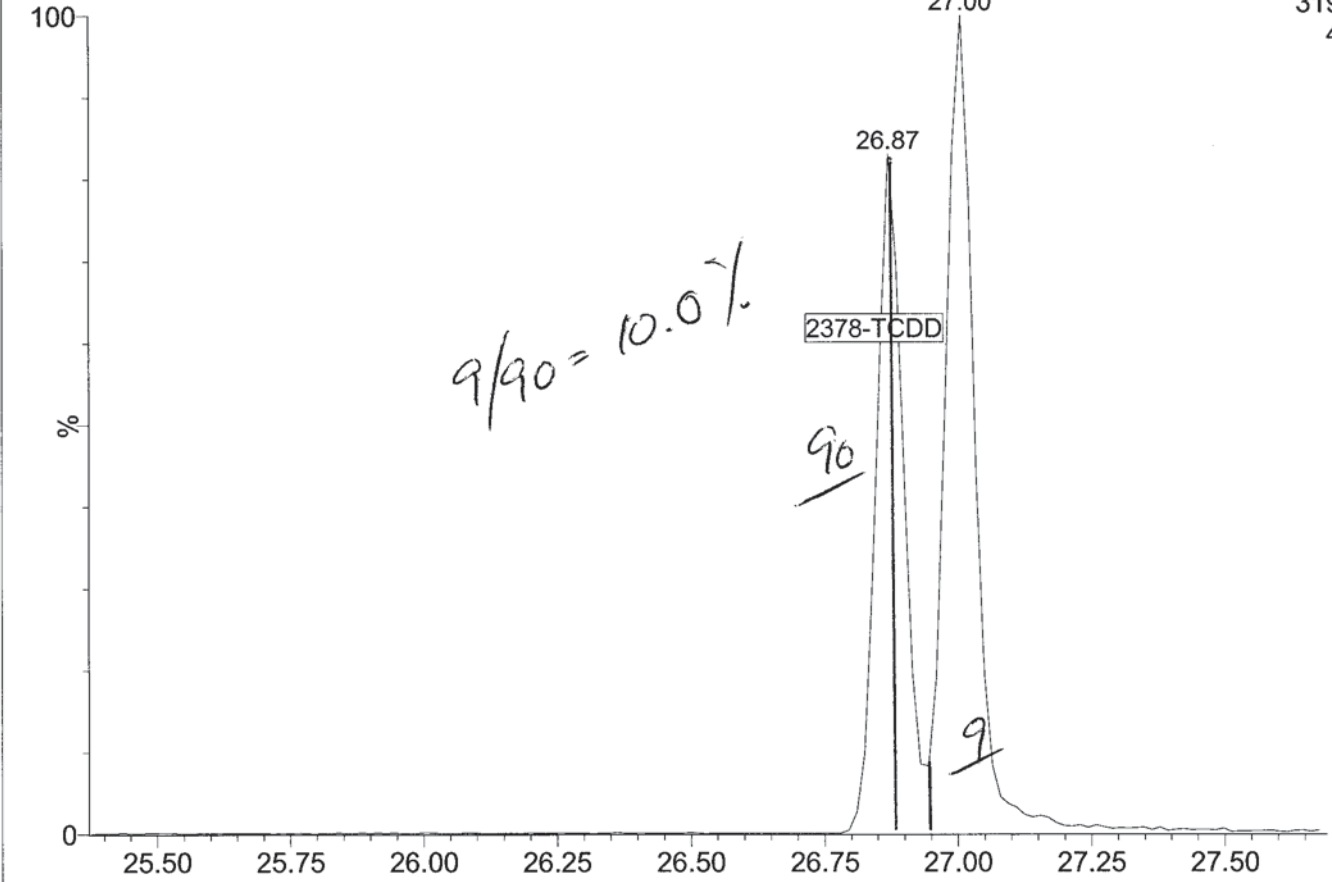
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303.9016  
4.66e6



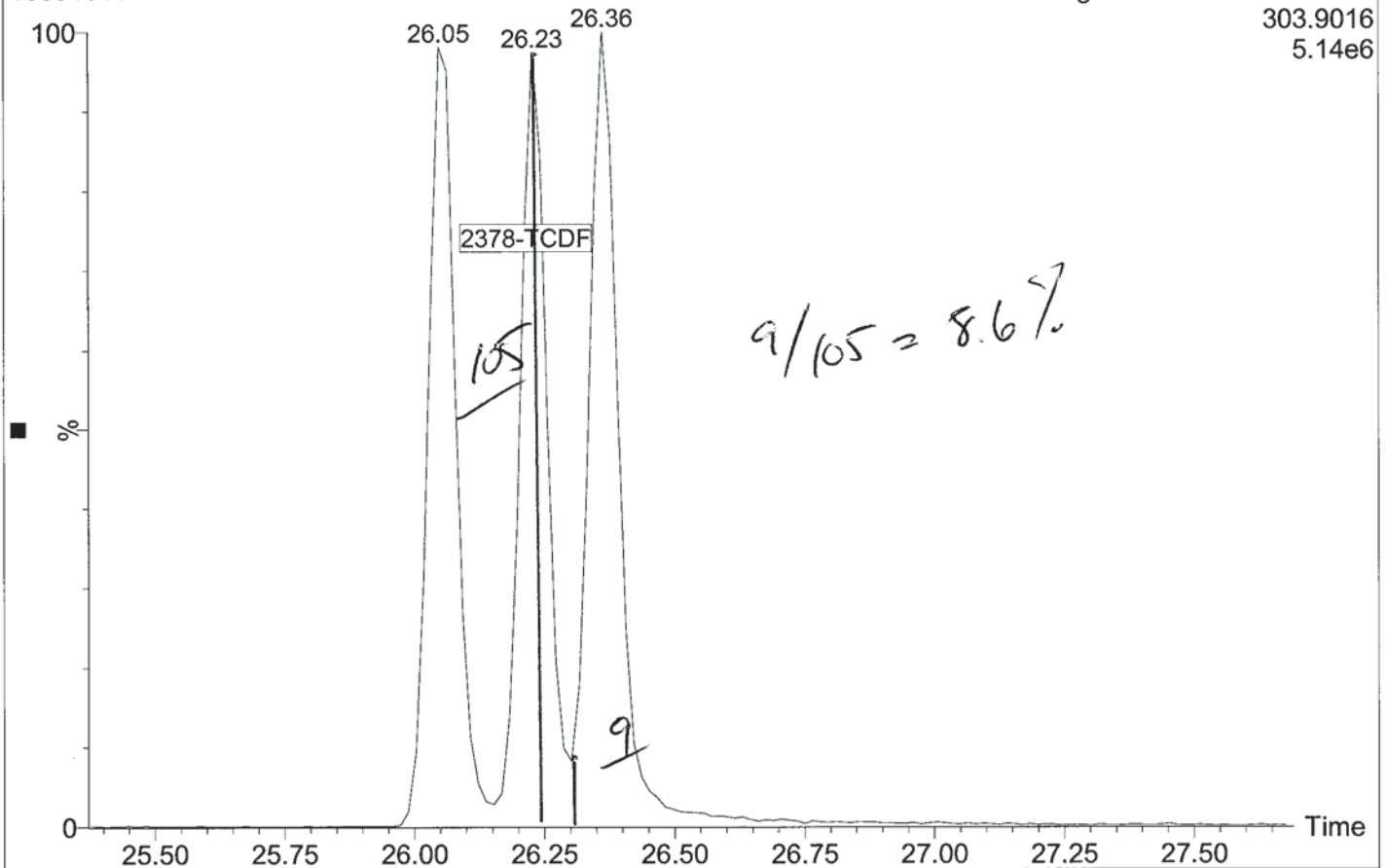
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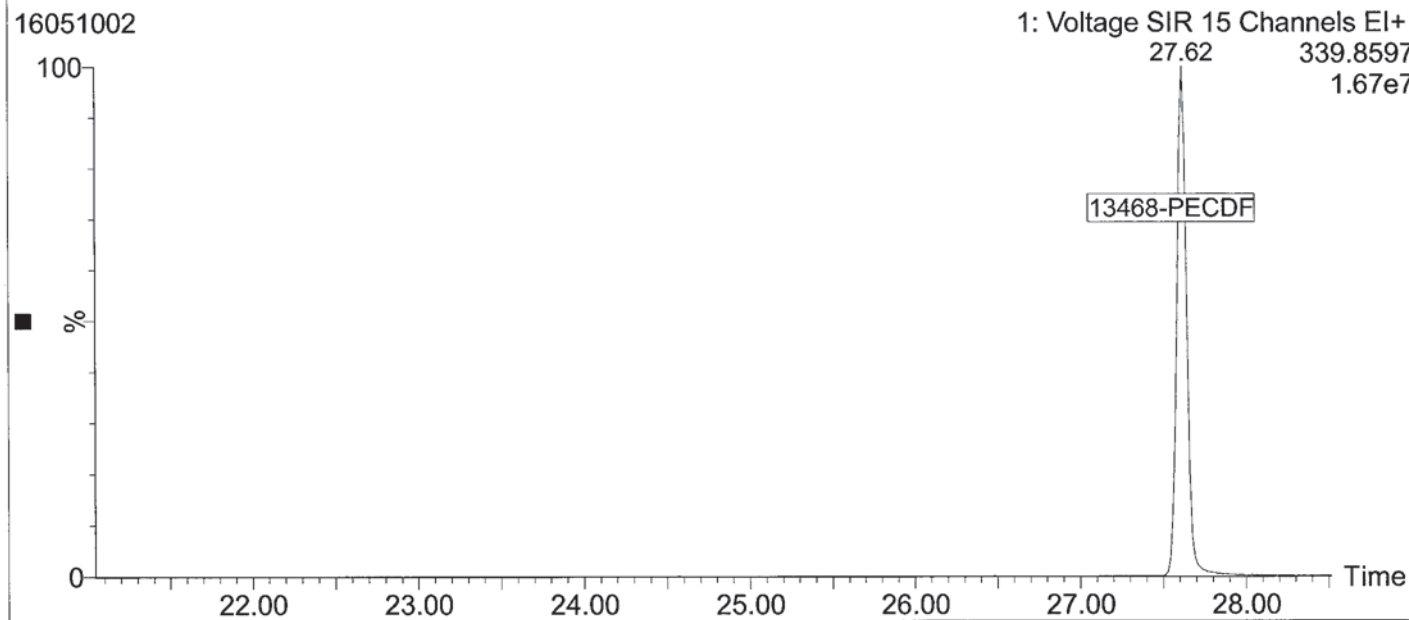
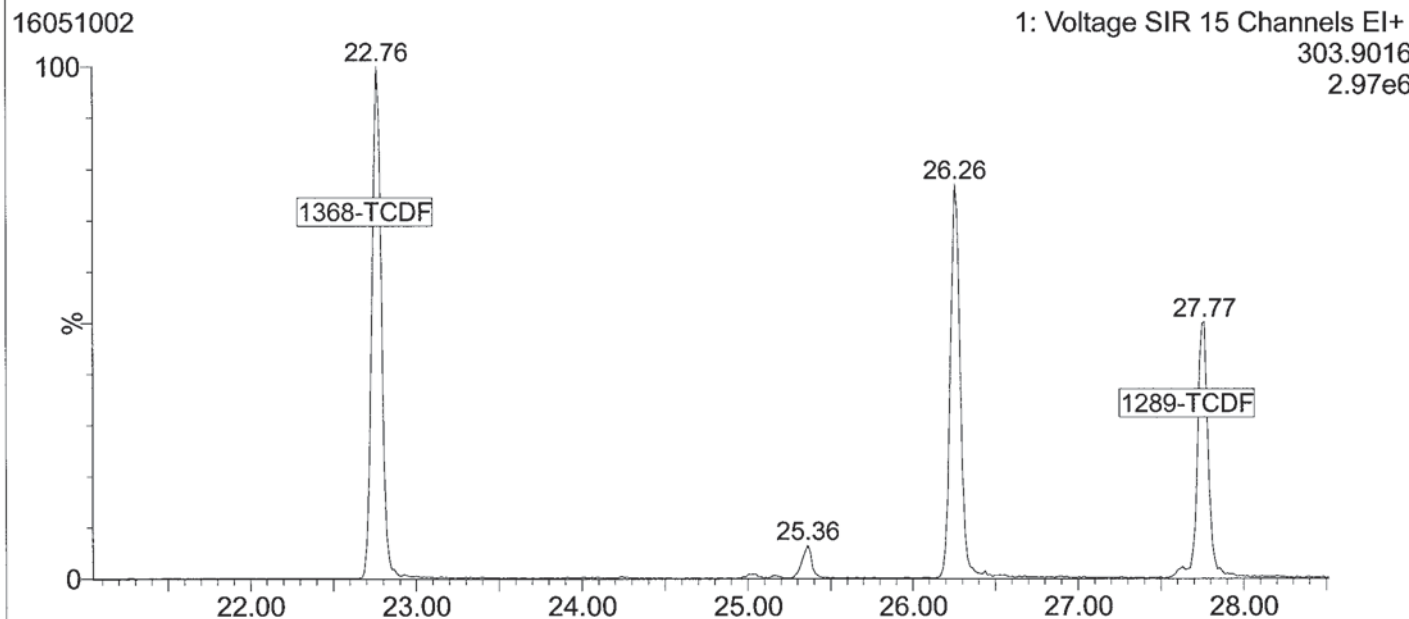
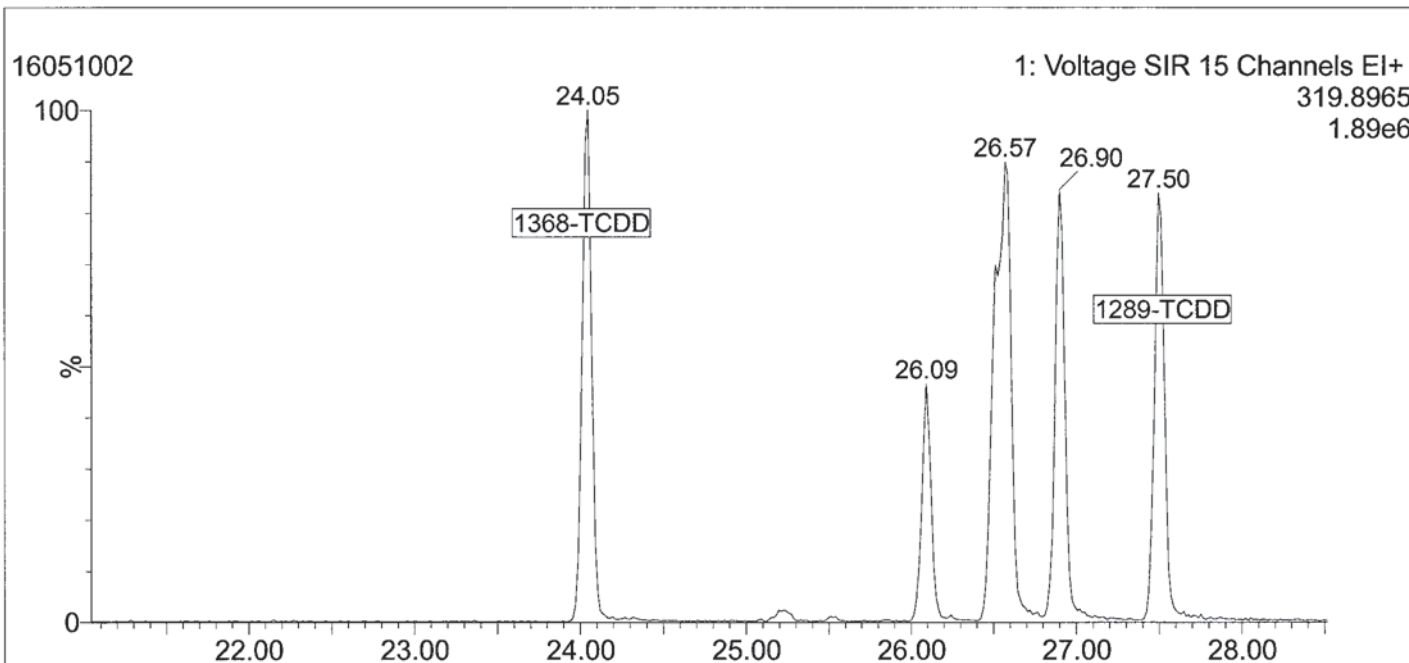
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319.8965  
4.31e6



16051011

1: Voltage SIR 15 Channels EI+  
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5.14e6

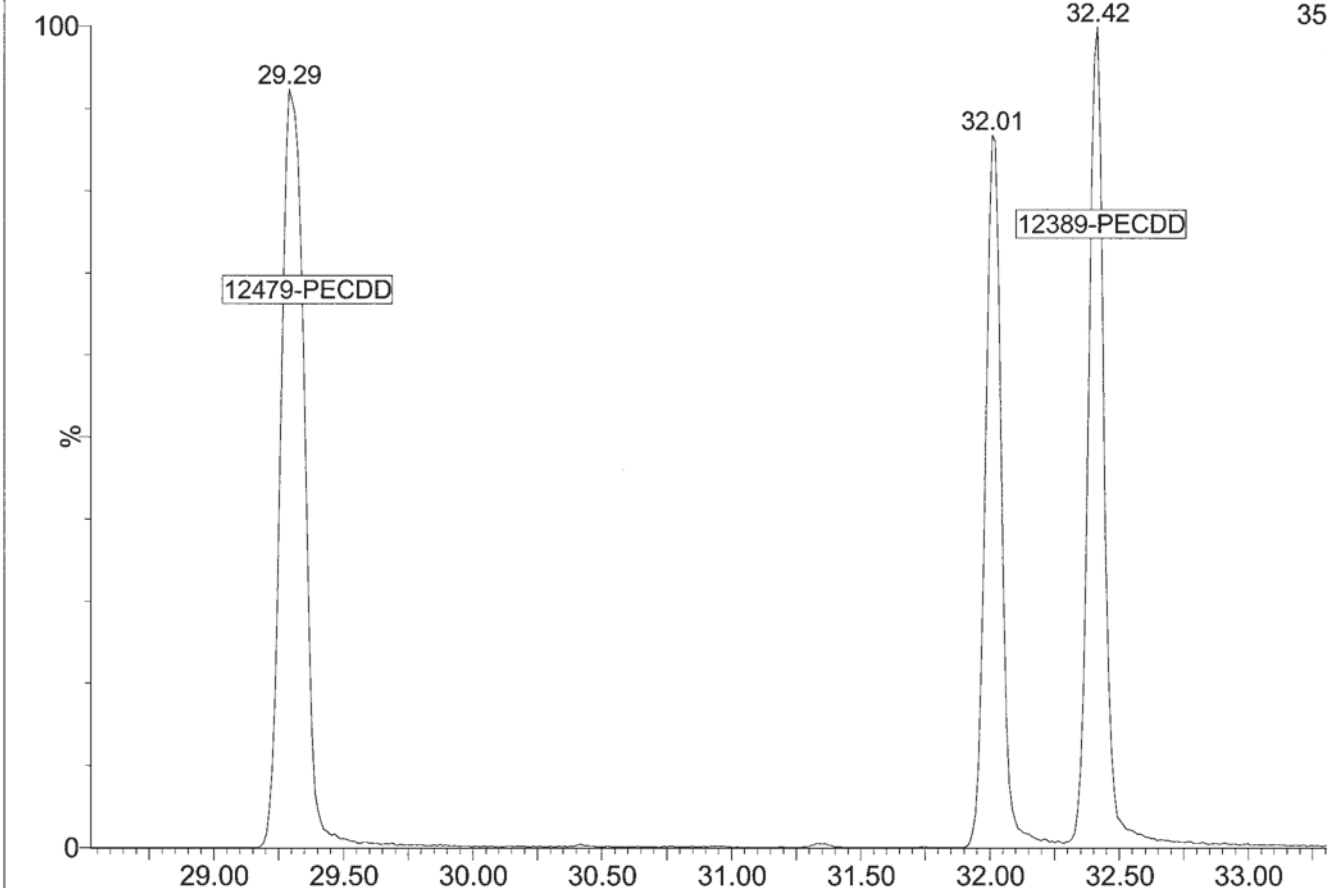






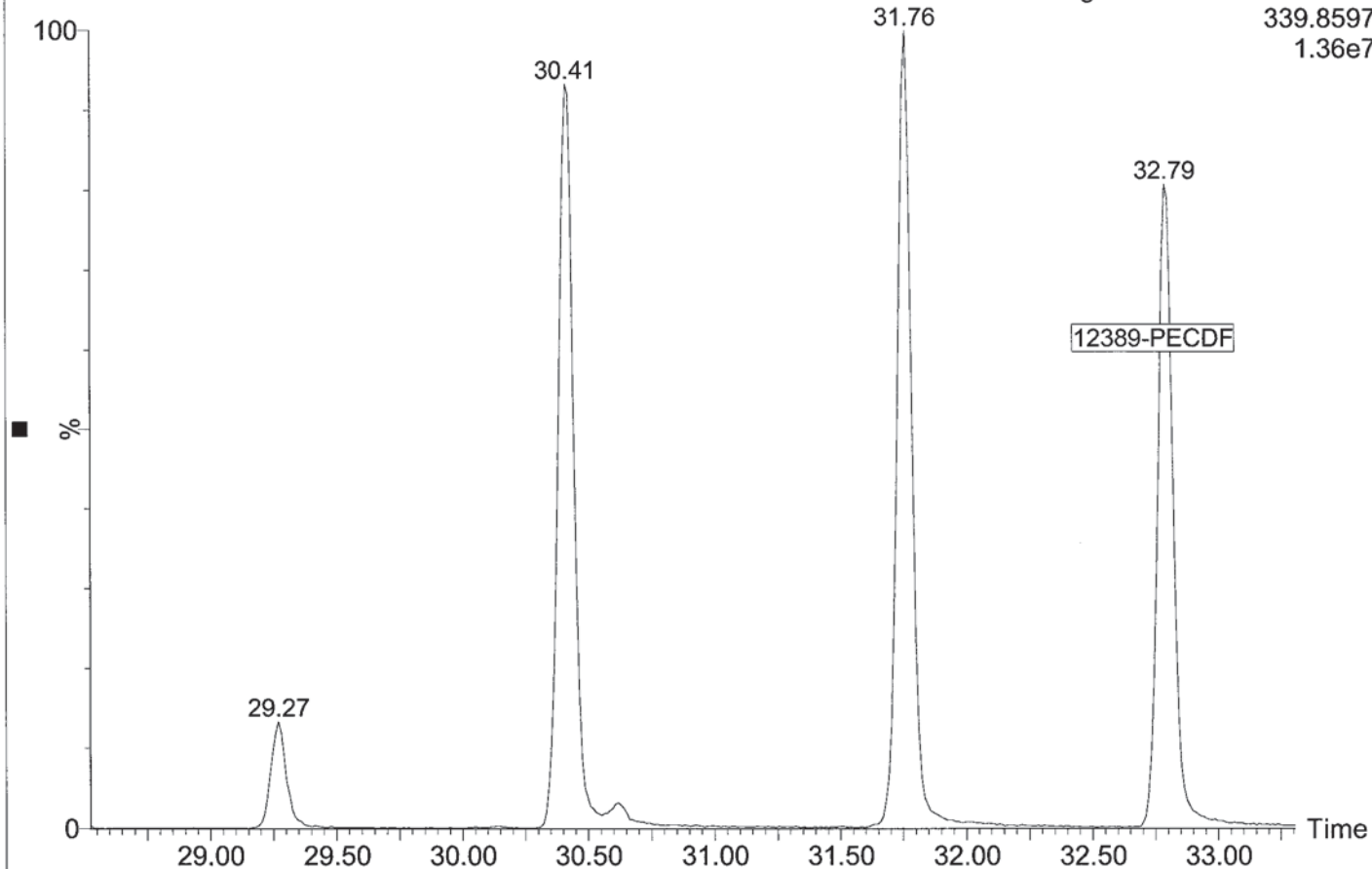
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355.8546  
8.92e6



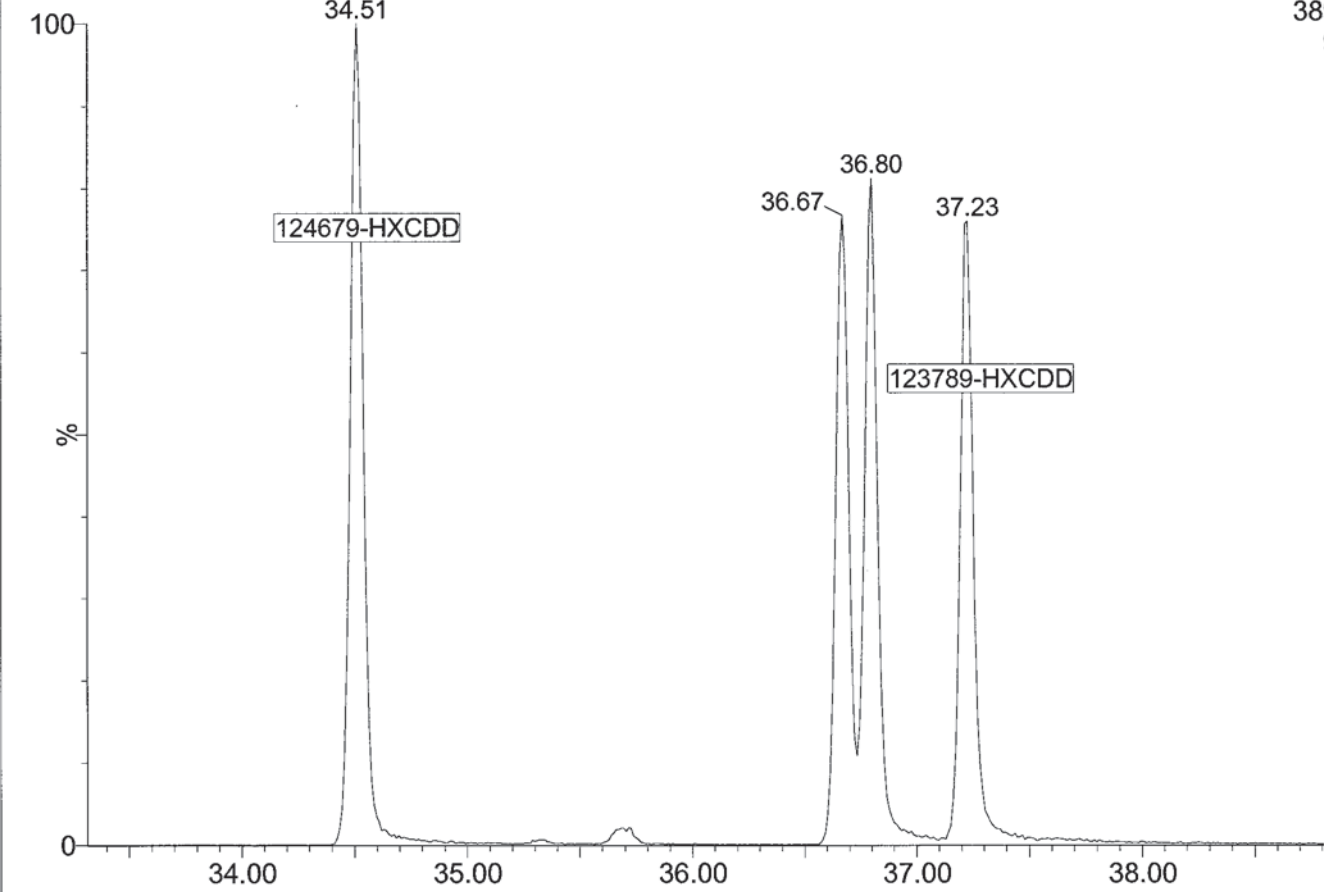
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339.8597  
1.36e7



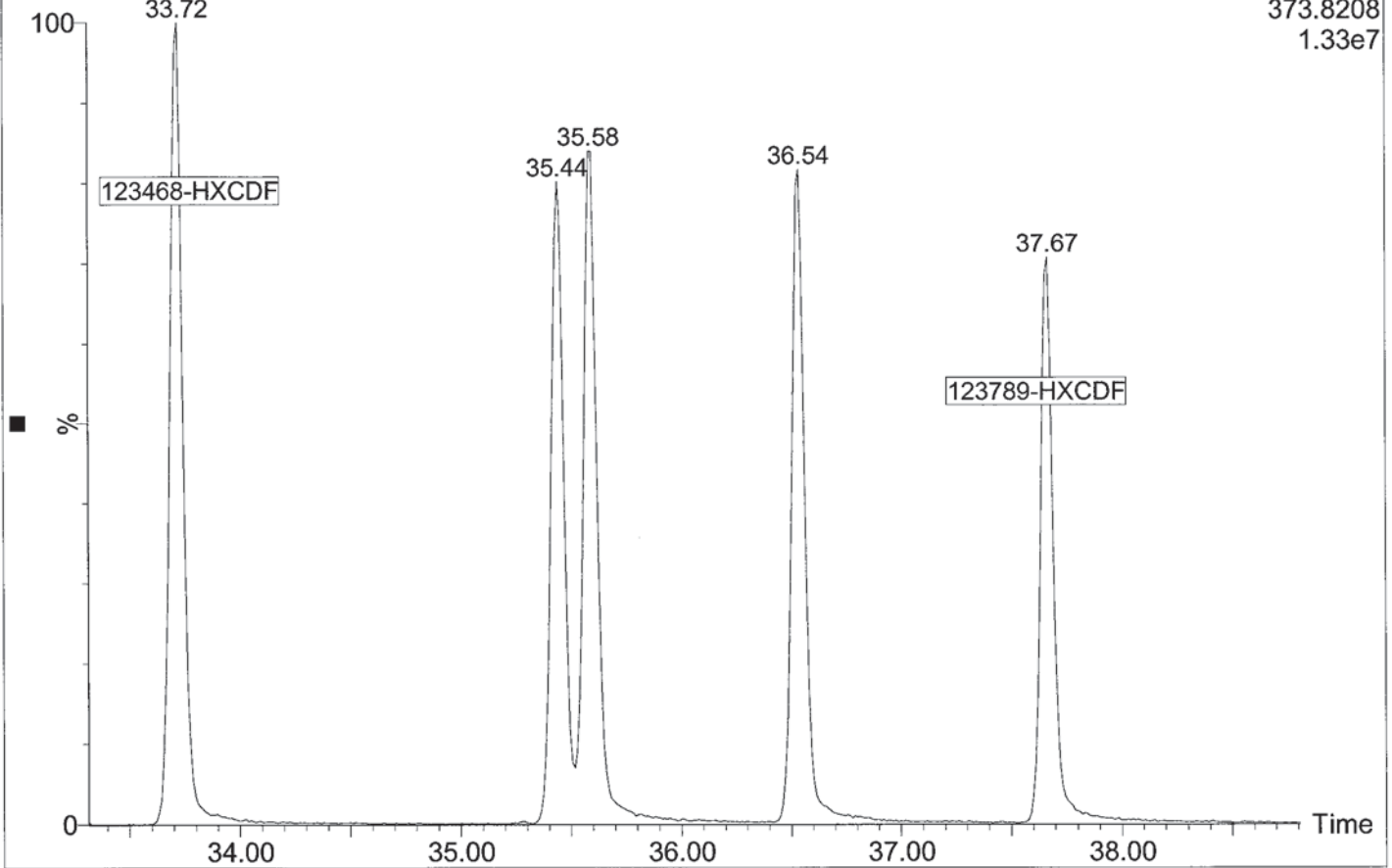
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389.8157  
9.68e6



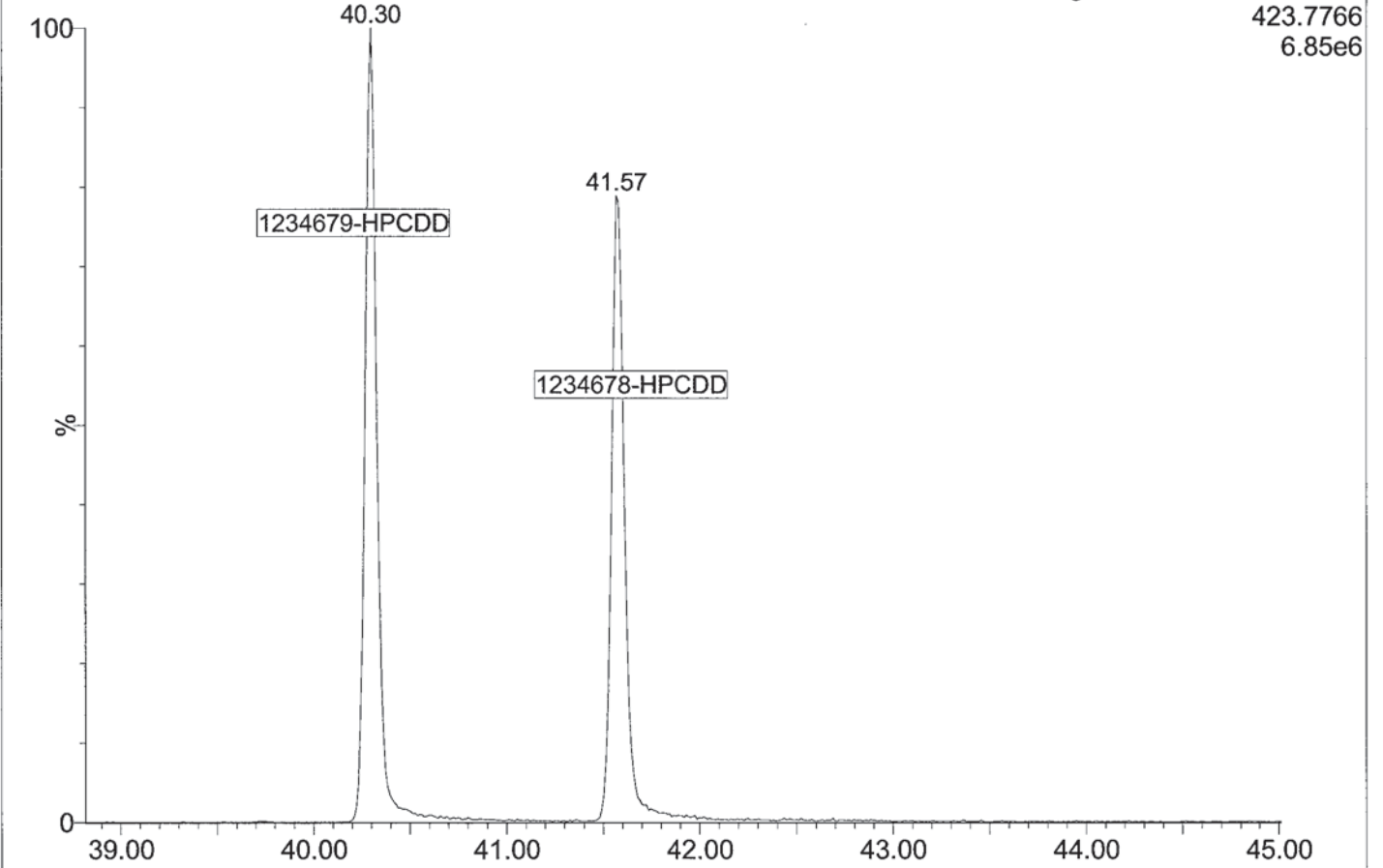
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373.8208  
1.33e7



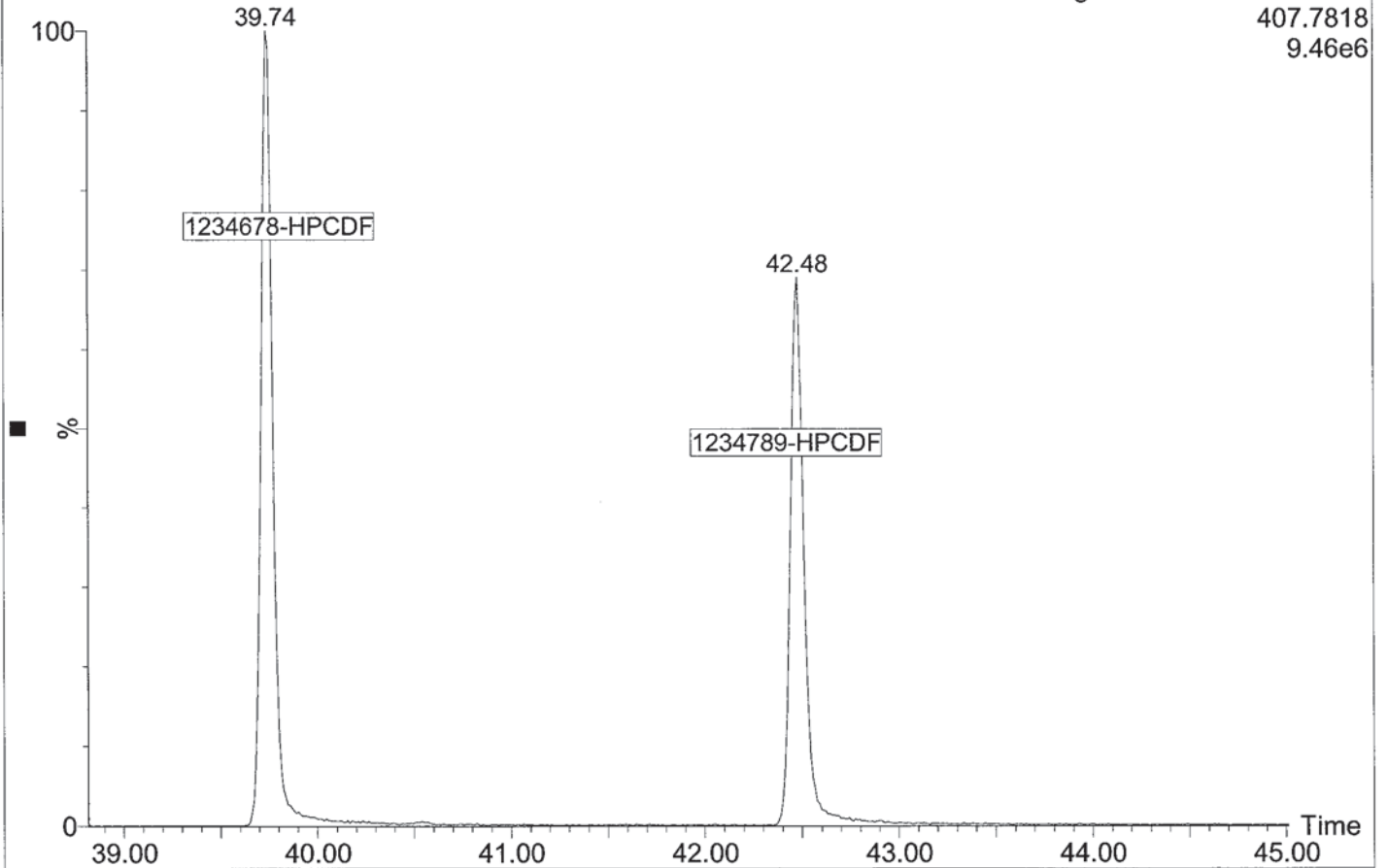
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423.7766  
6.85e6



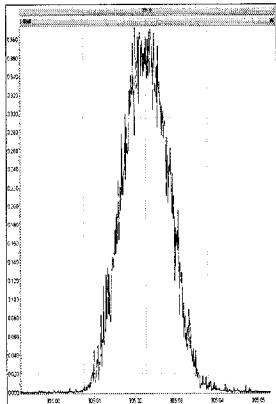
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407.7818  
9.46e6

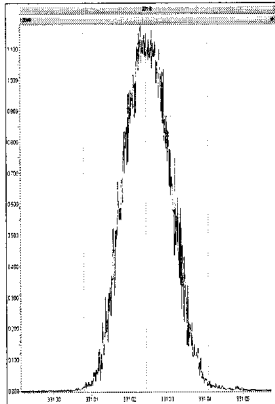


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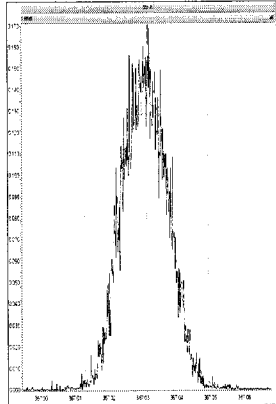
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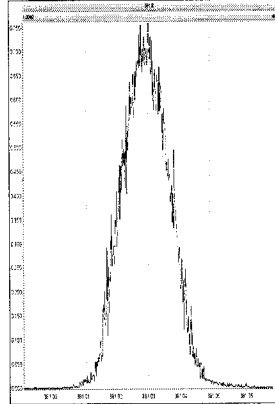
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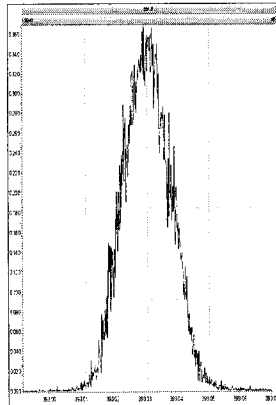
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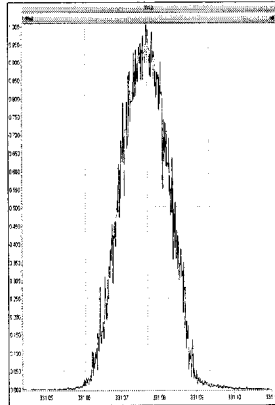
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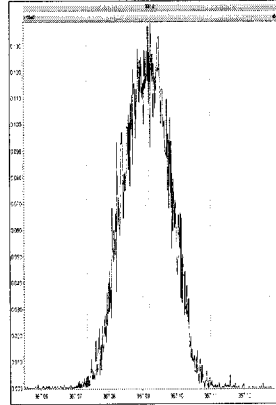
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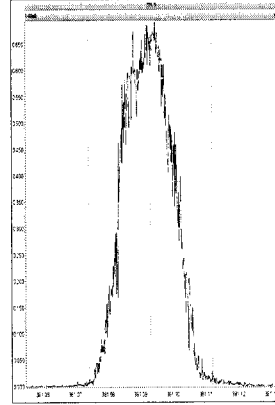
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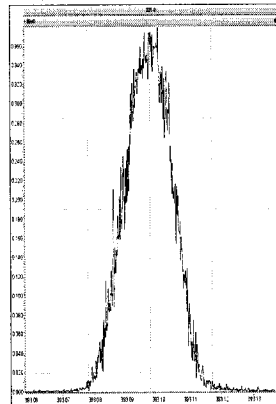
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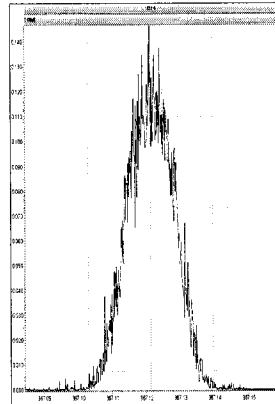
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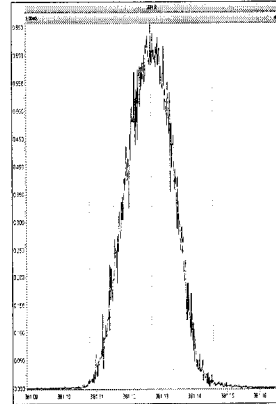
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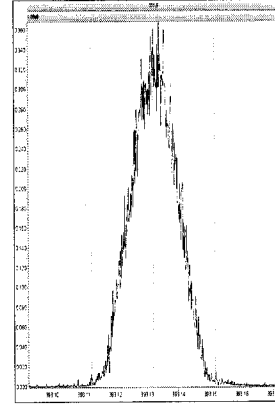
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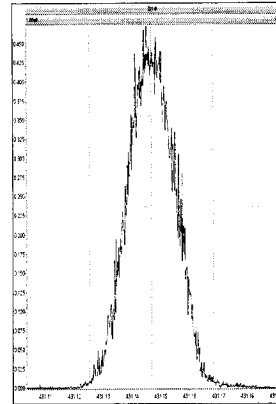
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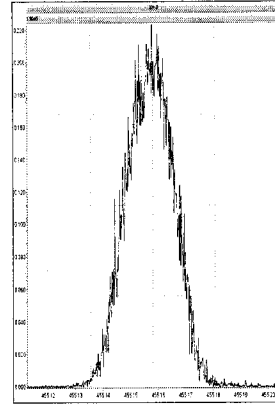
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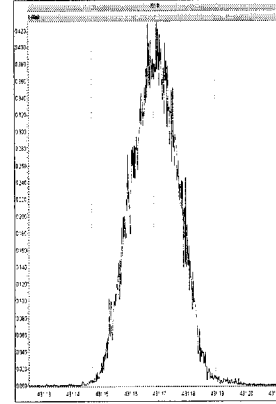
M 430.9728 R 12205



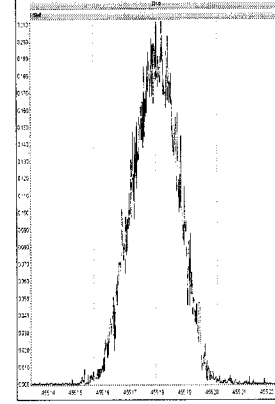
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M 430.9728 R 12140

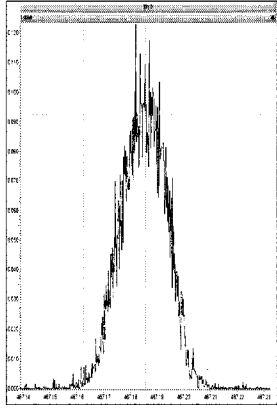


M 454.9728 R 12535

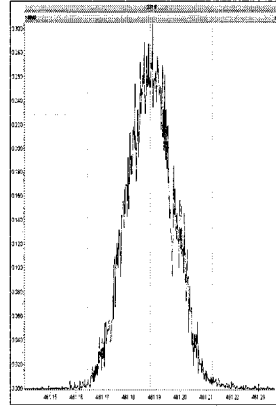


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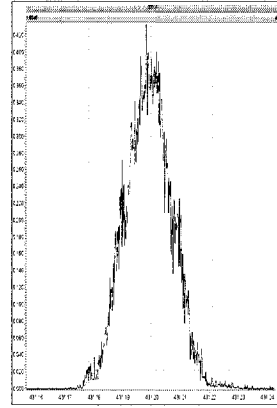
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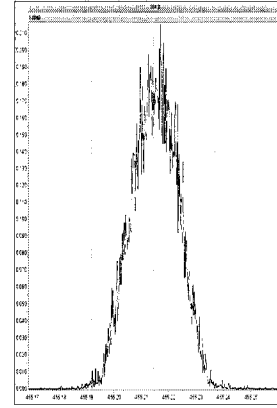
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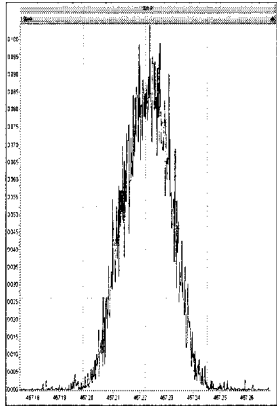
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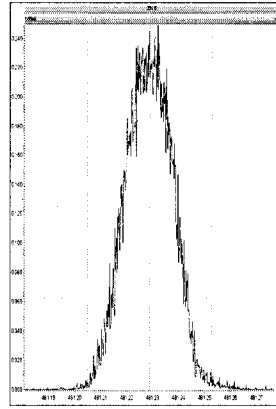
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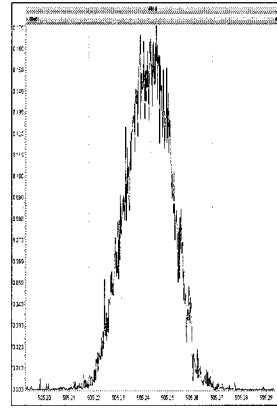
M 466.9728 R 12859



M 480.9696 R 12997

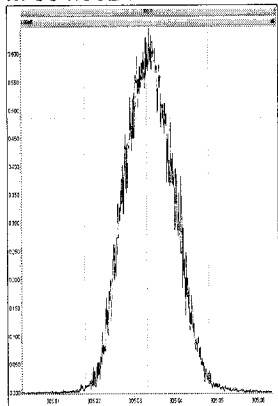


M 504.9696 R 12691

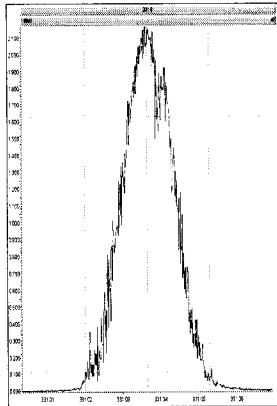


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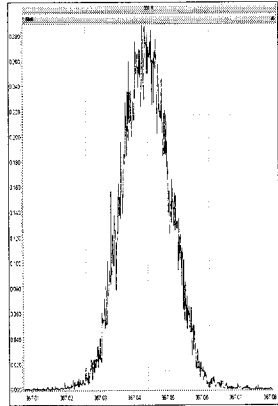
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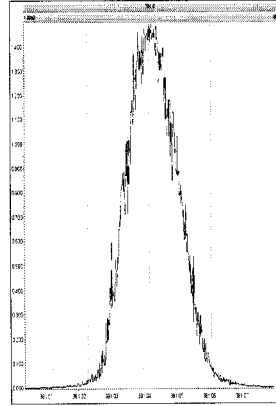
M 330.9792 R 12053



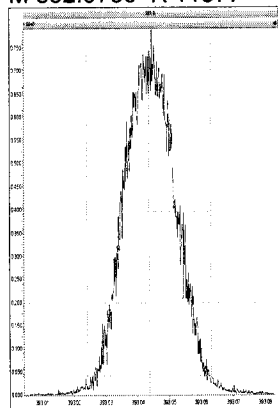
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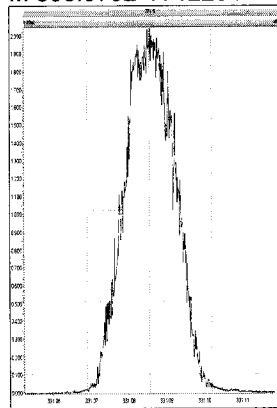
M 380.9760 R 11580



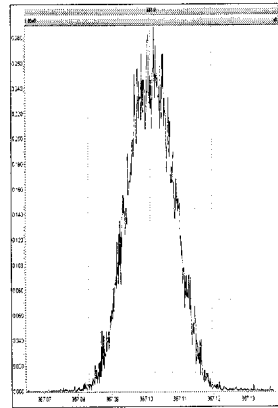
M 392.9760 R 11577



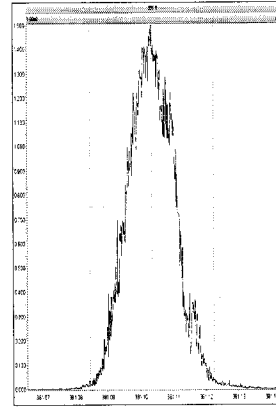
M 330.9792 R 12284



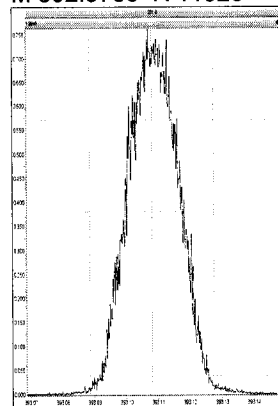
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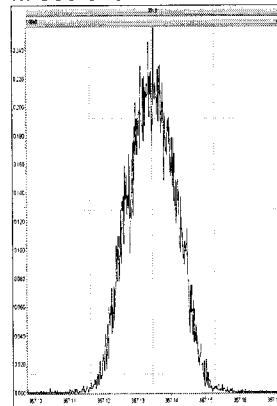
M 380.9760 R 12087



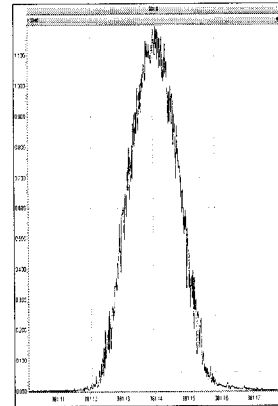
M 392.9760 R 11820



M 366.9792 R 12510



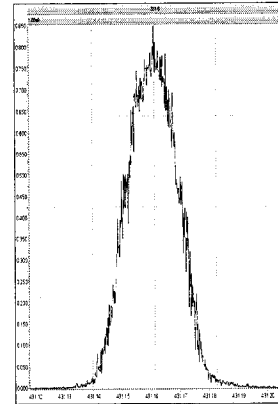
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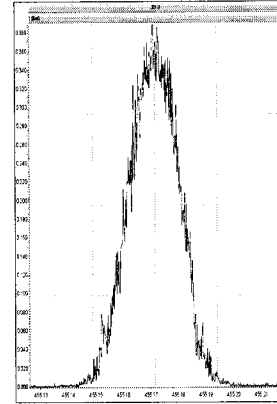
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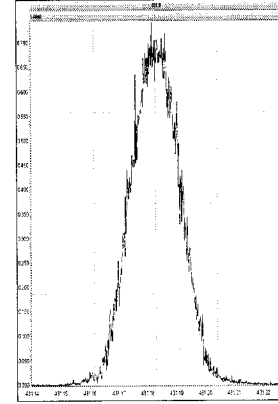
M 430.9728 R 11792



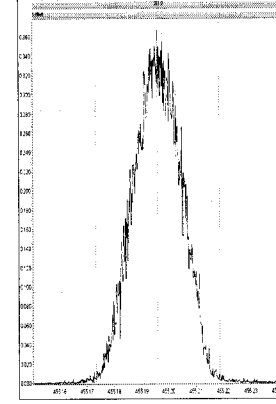
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M 430.9728 R 12077

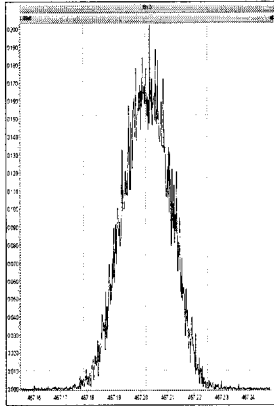


M 454.9728 R 11794

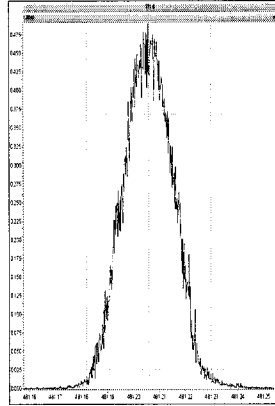


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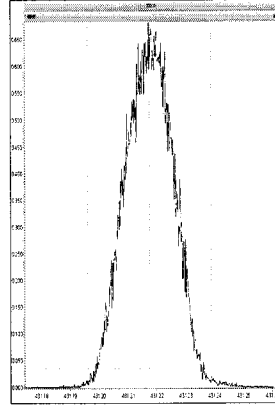
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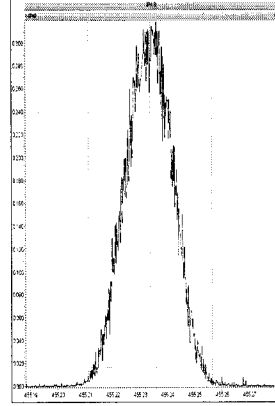
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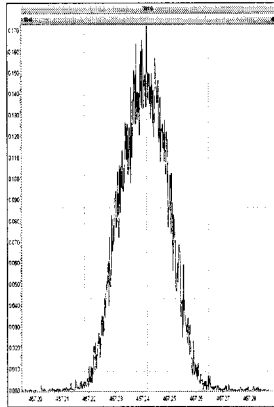
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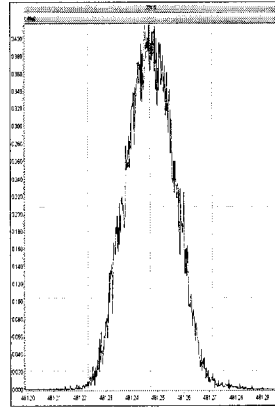
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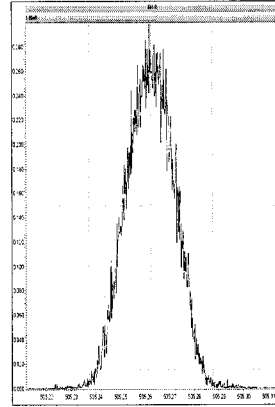
M 466.9728 R 12019



M 480.9696 R 11857



M 504.9696 R 12051



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\DiDioxin1604143SN.mdb 14 Apr 2016 14:40:15  
 Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40

CSIAA 6/3/16

ID: 6SE, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	SN	EMPC?	EMPC	pg
2378-TCDF					0.935		0.770	1158	1257						
12378-PeCDF	30.377	1.000	9.40e3	6.05e3	0.952	1.554	1.550	1150	1400	1.36e5	8.43e4	118.5	NO	0.498	0.498
23478-PeCDF	31.725	1.001	8.50e3	5.93e3	0.963	1.433	1.550	1150	1400	1.29e5	8.06e4	111.8	NO	0.469	0.469
123478-HxCDF	35.408	1.000	7.47e3	6.36e3	1.137	1.175	1.240	1179	964	1.17e5	9.25e4	99.2	NO	0.491	0.491
234678-HxCDF	36.504	1.001	7.88e3	6.35e3	1.164	1.241	1.240	1179	964	1.16e5	8.25e4	98.0	NO	0.491	0.491
123678-HxCDF	35.550	1.000	8.80e3	6.46e3	1.099	1.363	1.240	1179	964	1.22e5	8.29e4	103.4	NO	0.484	0.484
123789-HxCDF	37.633	1.000	6.90e3	5.32e3	1.101	1.297	1.240	1179	964	1.01e5	8.85e4	85.9	NO	0.511	0.511
1234678-HpCDF	39.715	1.000	6.67e3	7.22e3	1.303	0.924	1.050	665	709	9.07e4	9.69e4	136.3	NO	0.484	0.484
1234789-HpCDF	42.445	1.000	5.57e3	5.41e3	1.317	1.031	1.050	665	709	6.54e4	6.71e4	98.2	NO	0.489	0.489
OCDF	47.818	1.006	7.95e3	9.45e3	1.166	0.842	0.890	827	869	8.30e4	9.35e4	100.3	NO	0.940	0.940
2378-TCDD					1.134		0.770	801	851						
12378-PeCDD	31.966	1.000	5.27e3	3.65e3	0.975	1.445	1.550	992	530	6.70e4	4.68e4	67.5	NO	0.473	0.473
123478-HxCDD	36.636	1.000	5.65e3	4.29e3	1.031	1.318	1.240	1131	992	8.35e4	6.23e4	73.8	NO	0.506	0.506
123678-HxCDD	36.767	1.001	5.54e3	4.15e3	0.971	1.334	1.240	1131	992	7.63e4	6.16e4	67.5	NO	0.480	0.480
123789-HxCDD	37.194	1.012	5.41e3	3.81e3	0.947	1.421	1.240	1131	992	8.16e4	5.76e4	72.2	NO	0.489	0.489
1234678-HpCDD	41.557	1.000	4.34e3	4.24e3	1.028	1.023	1.050	668	1442	5.65e4	5.13e4	84.6	NO	0.485	0.485
OCDD	47.549	1.000	7.89e3	8.56e3	1.107	0.922	0.890	708	454	8.02e4	7.96e4	113.3	NO	0.936	0.936
13C-2378-TCDF	26.198	1.006	1.80e6	2.29e6	1.567	0.783	0.770	7362	4176	2.43e7	3.10e7	3307.1	NO	102.580	102.580
13C-12378-PeCDF	30.366	1.166	2.00e6	1.26e6	1.274	1.584	1.550	6743	4292	2.70e7	1.71e7	3999.1	NO	100.515	100.515
13C-23478-PeCDF	31.703	1.218	1.96e6	1.24e6	1.235	1.582	1.550	6743	4292	2.69e7	1.72e7	3987.2	NO	101.689	101.689
13C-123478-HxCDF	35.397	0.952	8.48e5	1.63e6	1.381	0.521	0.510	6454	7352	1.18e7	2.28e7	1831.1	NO	98.726	98.726
13C-123678-HxCDF	35.540	0.956	9.42e5	1.93e6	1.569	0.489	0.510	6454	7352	1.29e7	2.49e7	1996.1	NO	100.638	100.638
13C-234678-HxCDF	36.482	0.981	8.63e5	1.63e6	1.345	0.530	0.510	6454	7352	1.17e7	2.25e7	1813.3	NO	102.060	102.060
13C-123789-HxCDF	37.622	1.012	7.45e5	1.43e6	1.183	0.522	0.510	6454	7352	1.08e7	2.08e7	1678.3	NO	101.203	101.203
13C-1234678-HpCDF	39.704	1.068	6.81e5	1.52e6	1.178	0.448	0.440	4413	6414	9.34e6	2.07e7	2115.7	NO	102.846	102.846
13C-1234789-HpCDF	42.434	1.141	5.19e5	1.18e6	0.878	0.438	0.440	4413	6414	6.27e6	1.40e7	1420.1	NO	106.839	106.839
13C-1234-TCDD	26.033	0.000	1.12e6	1.42e6	1.000	0.791	0.770	3612	2200	1.53e7	1.93e7	4234.7	NO	100.000	100.000
13C-2378-TCDD	26.840	1.031	1.02e6	1.30e6	0.908	0.783	0.770	3612	2200	1.36e7	1.74e7	3754.2	NO	100.396	100.396
13C-12378-PeCDD	31.955	1.227	1.19e6	7.50e5	0.756	1.579	1.550	3912	2865	1.64e7	1.04e7	4180.8	NO	100.697	100.697
13C-123478-HxCDD	36.625	0.985	1.08e6	8.24e5	1.056	1.313	1.240	2885	3824	1.54e7	1.20e7	5329.2	NO	99.411	99.411
13C-123678-HxCDD	36.745	0.988	1.15e6	9.28e5	1.163	1.241	1.240	2885	3824	1.56e7	1.23e7	5405.2	NO	98.477	98.477
13C-1234678-HpCDD	41.535	1.117	9.01e5	8.19e5	0.909	1.100	1.050	3510	2889	1.08e7	1.02e7	3069.6	NO	104.227	104.227
13C-OCDD	47.531	1.278	1.51e6	1.67e6	0.820	0.906	0.890	3005	4316	1.44e7	1.60e7	4783.3	NO	213.449	213.449



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

Age 80  
 80579  
 SA 06/3/16

ID: 66E, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
13C-123789-HxCDD	37.183	0.000	1.01e6	8.04e5	1.000	1.259	1.240	2885	3824	1.41e7	1.12e7	4884.2	NO		100.000
Total-tetrafurans			0.00e0	0.935				1158		0.00e0					
Total-penta1			0.00e0					703		0.00e0					0.967
Total-pentafurans			1.79e4	0.957				1150		2.65e5					1.987
Total-hexafurans			3.12e4	1.125				1179		4.62e5					0.974
Total-heptafurans			1.22e4	1.310				665		1.56e5					4.868
Total-Furans			6.93e4	1.114				1158		9.66e5					0.010
Total-tetraioxins			1.33e2	1.134				801		2.99e3					0.473
Total-pentadioxins			5.27e3	0.975				992		6.70e4					1.474
Total-hexadioxins			1.66e4	0.983				1131		2.41e5					0.485
Total-heptadioxins			4.34e3	1.028				668		5.65e4					3.378
Total-Dioxins			3.42e4	1.028				801		4.48e5					8.246
Total-TEQ			1.04e5					801		1.41e6		37.5			0.102
37CL-2378-TCDD	26.855	1.032	2.76e3	1.067				1034		3.88e4					0.000
FUNCTION1 PFK			1.17e7					906583		1.33e8					
FUNCTION2 PFK			2.60e5					203778		7.31e6					
FUNCTION3 PFK			0.00e0					647647		0.00e0					
FUNCTION4 PFK			3.60e5					383565		1.10e7					
FUNCTION5 PFK			2.56e5					330213		1.04e7					
FUNCTION1 HXCDPE			3.54e2					448		6.74e3					0.000
FUNCTION1 HPCDPE			6.67e2					768		1.35e4					0.000
FUNCTION2 HPCDPE			7.30e1					786		2.39e3					0.000
FUNCTION3 OCDPE			0.00e0					482		0.00e0					
FUNCTION4 NCDPE			1.83e2					519		5.82e3					0.000
FUNCTION5 DCDPE			0.00e0					433		0.00e0					

Quantify Sample Report MassLynx MassLynx V4.1 SCN909

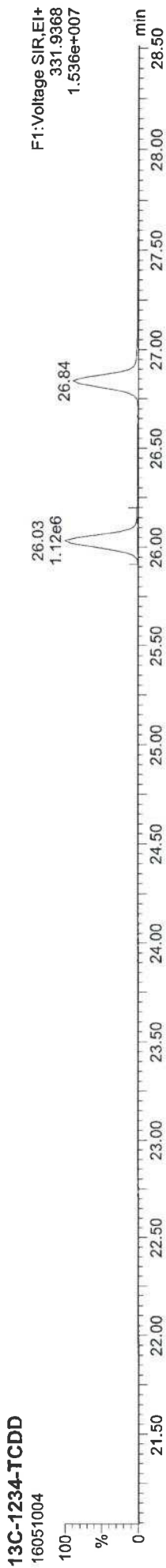
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Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40

*CS/A 06/30/16*

ID: ~~EST~~, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk



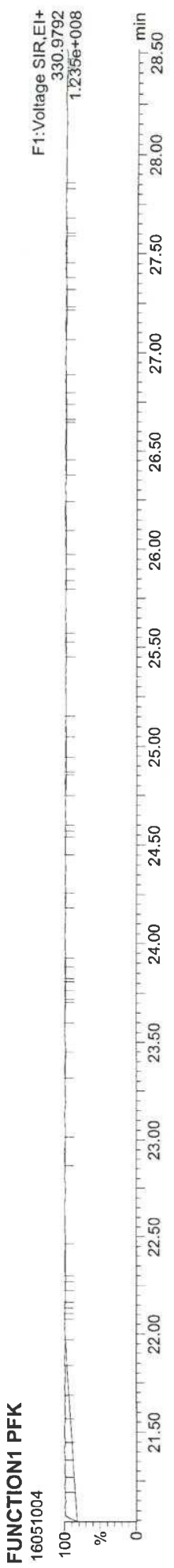
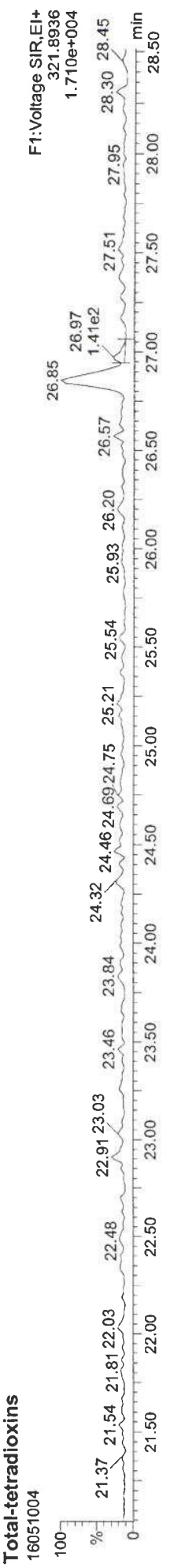
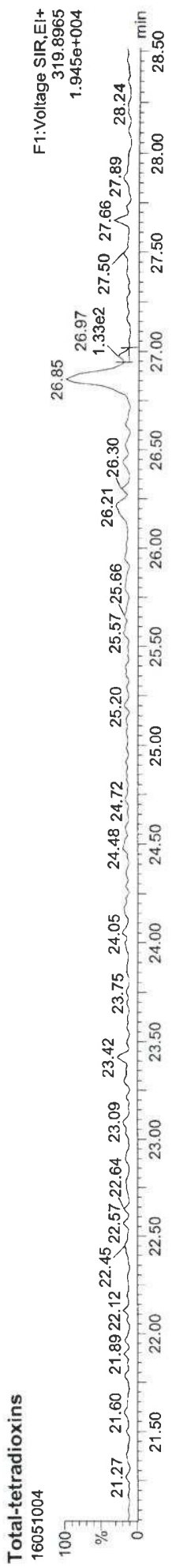
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

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Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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*CSIAA 06/30/16*

ID: ~~69E~~, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk



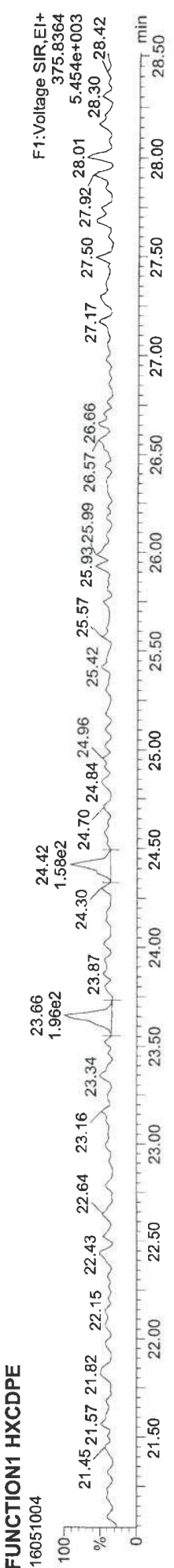
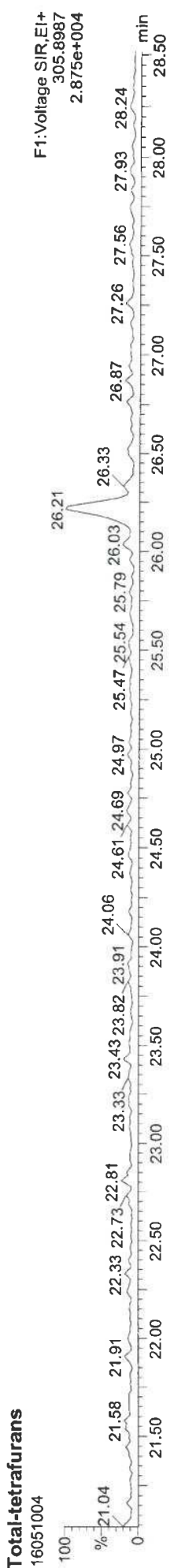
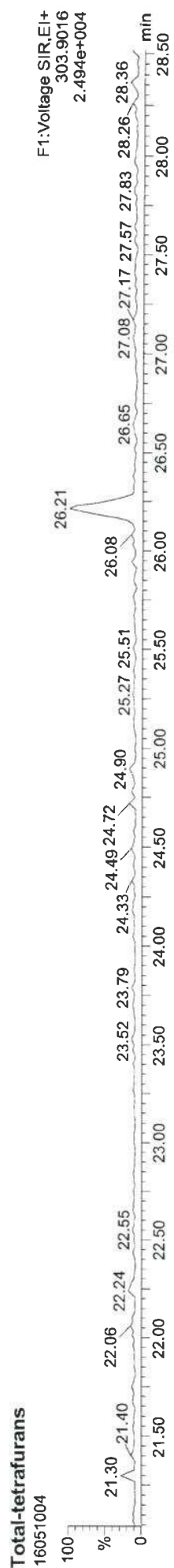
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
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Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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*CSAA 04/30/16*

19C-2378-TCDF  
16051004  
ID: 65T, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\16051004.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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CSI AA 06/30/16

GC-EI; Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

13C-12378-PeCDD

16051004



F2:Voltage SIR,EI+  
367.8949  
1.644e+007

13C-12378-PeCDD

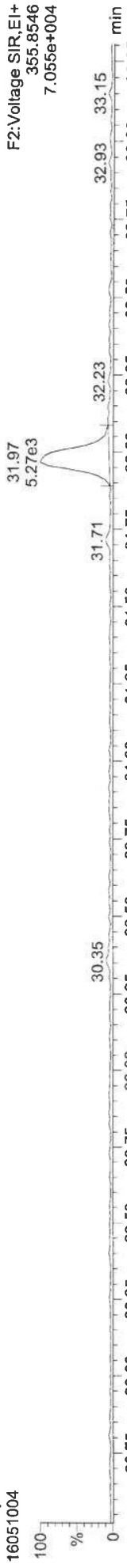
16051004



F2:Voltage SIR,EI+  
369.8919  
1.050e+007

Total-pentadioxins

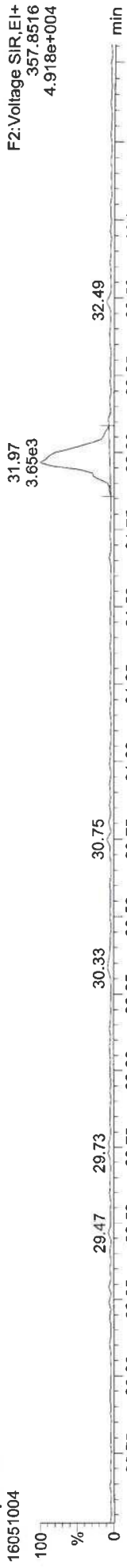
16051004



F2:Voltage SIR,EI+  
355.8546  
7.055e+004

Total-pentadioxins

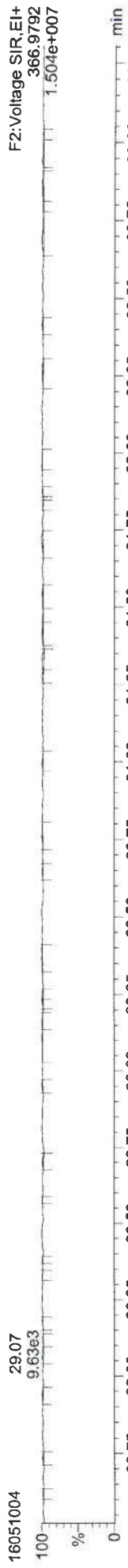
16051004



F2:Voltage SIR,EI+  
357.8516  
4.918e+004

FUNCTION2 PFK

16051004



F2:Voltage SIR,EI+  
366.9792  
1.504e+007

Quantify Sample Report MassLynx V4.1 SCN909

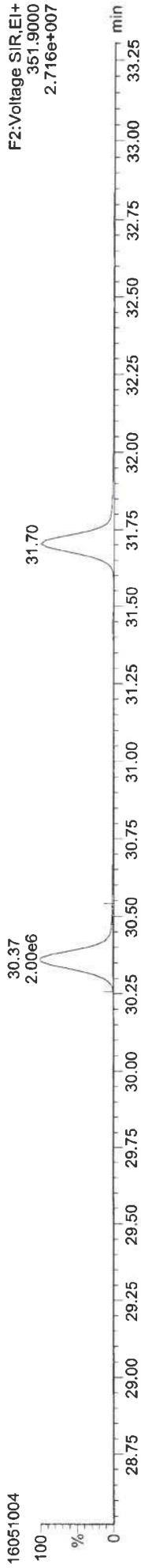
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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CSIAA 06/30/16

GC-MS: Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

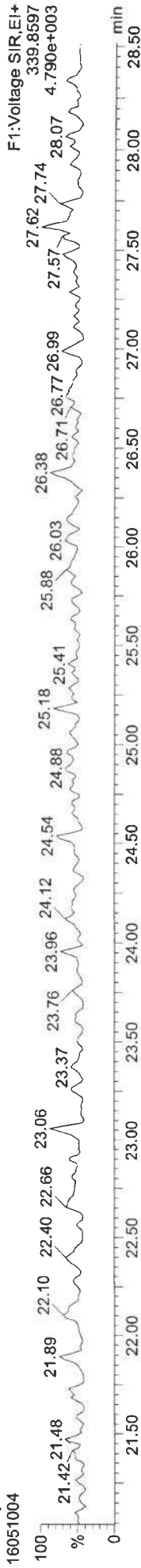
13C-12378-PeCDF



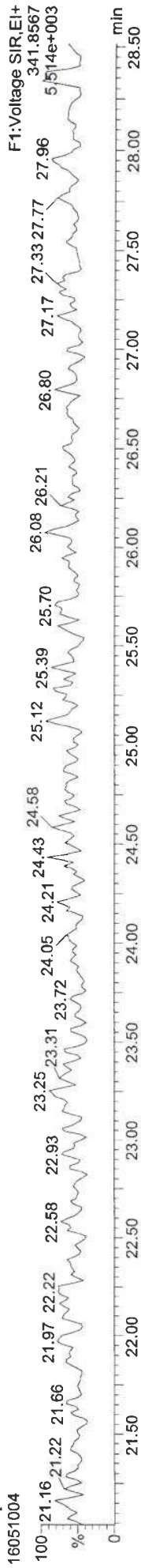
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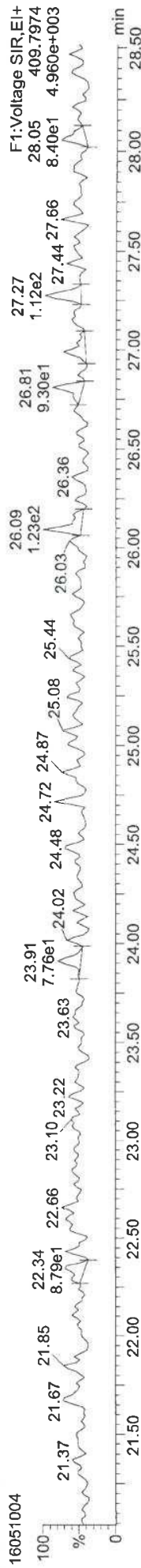
Total-penta1



Total-penta1



FUNCTION1 HPCDPE



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

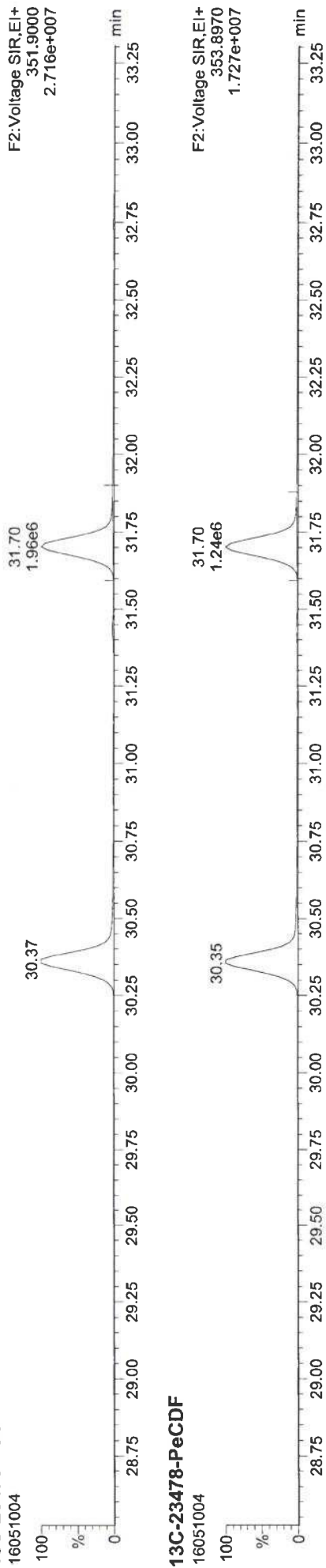
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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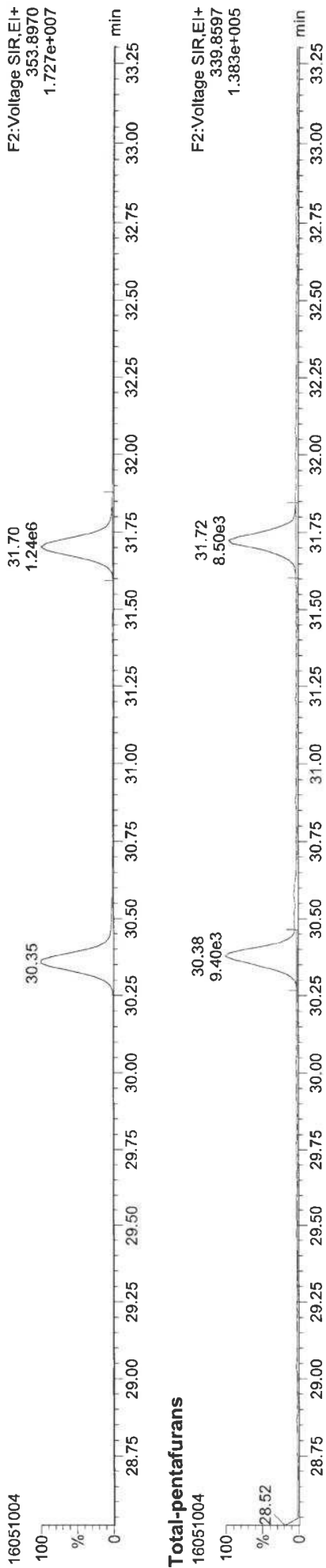
CSIAA 06/30/16

ID: 66E, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

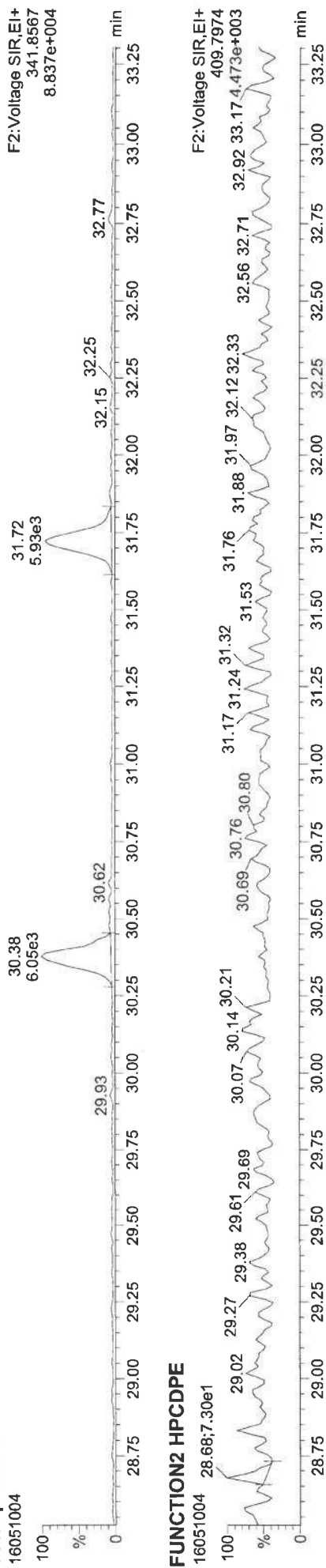
13C-23478-PeCDF



Total-pentafurans



FUNCTION2 HPCDPE



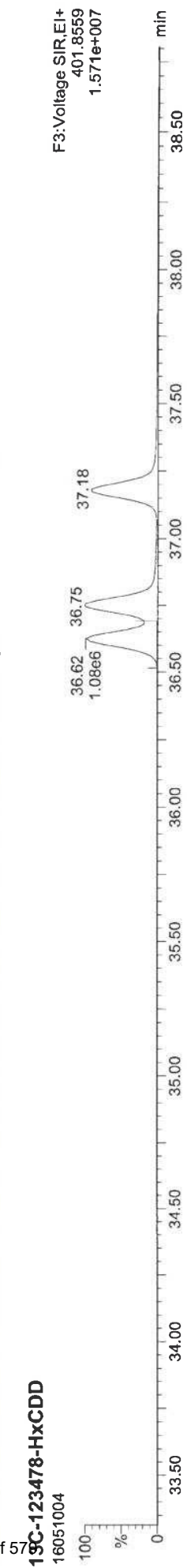
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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CS1-AA 06/30/16

19C-123478-HxCDD



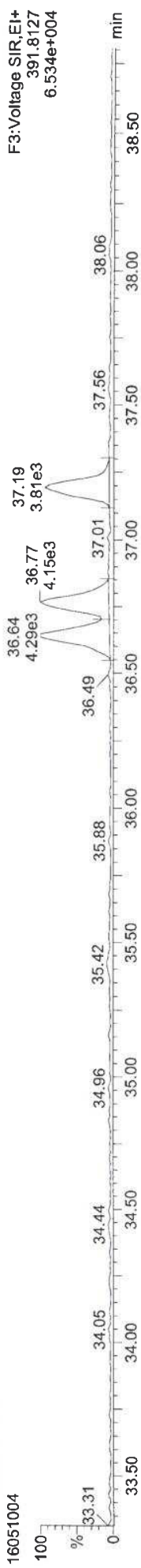
13C-123478-HxCDD



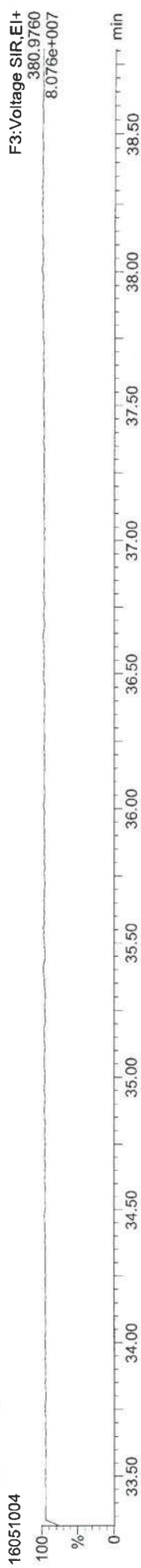
Total-hexadioxins



Total-hexadioxins



FUNCTION3 PFK





Quantify Sample Report  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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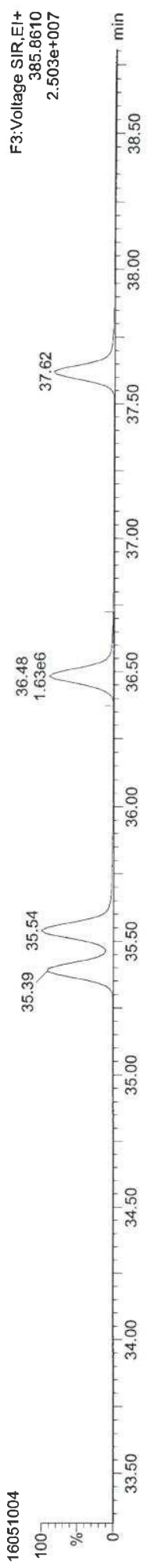
CS/AA 04/30/16

16051004, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

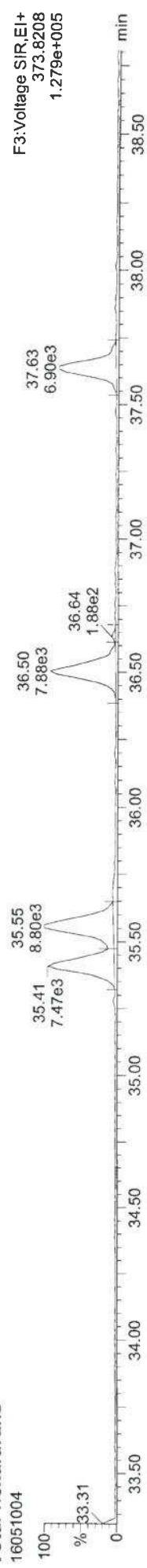
13C-234678-HxCDF



13C-234678-HxCDF



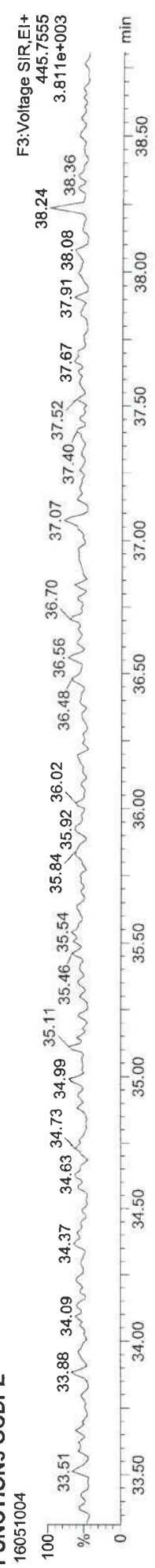
Total-hexafurans



Total-hexafurans



FUNCTION3 OCDPE



Quantify Sample Report MassLynx V4.1 SCN909

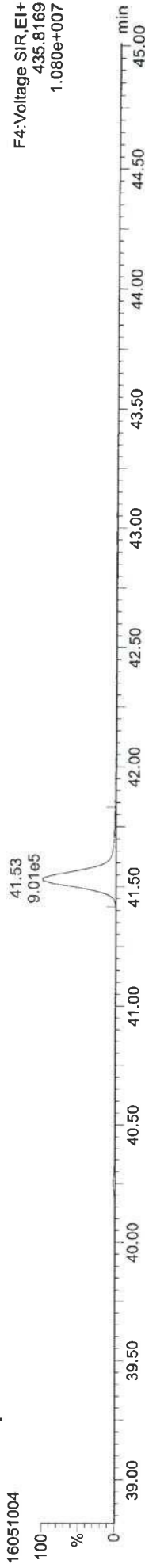
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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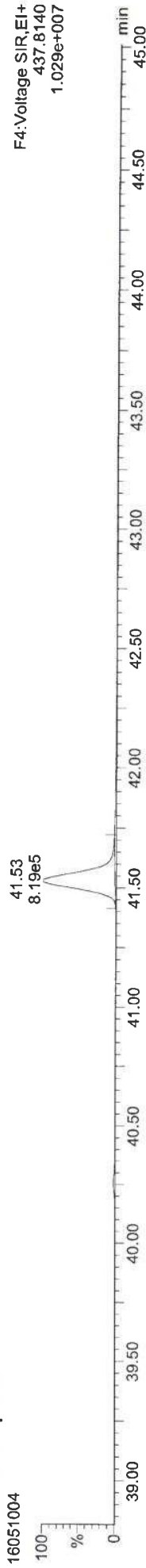
CSIAA 04/30/16

18-CSE, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

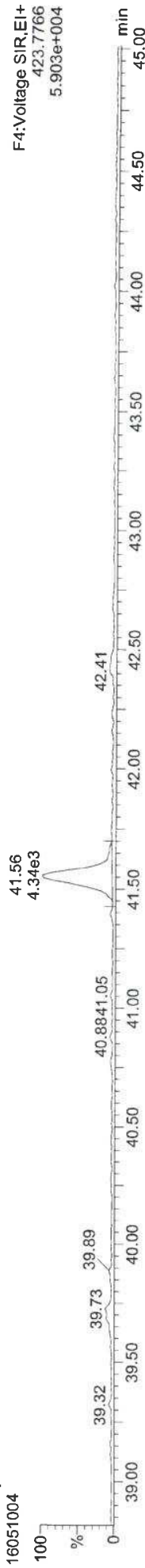
19C-1234678-HpCDD



13C-1234678-HpCDD



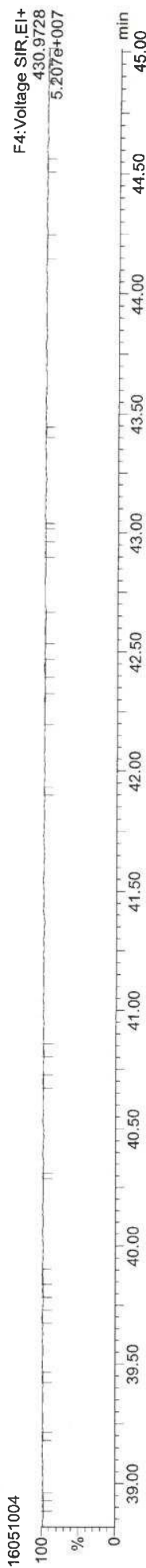
Total-heptadioxins



Total-heptadioxins



FUNCTION4 PFK



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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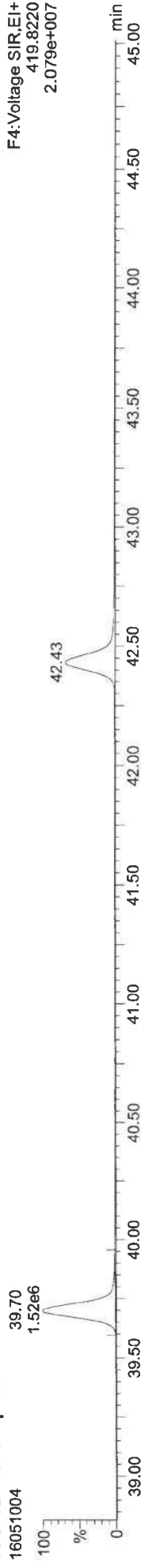
CSIAA 06/30/16 SP

16051004, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

13C-1234678-HpCDF



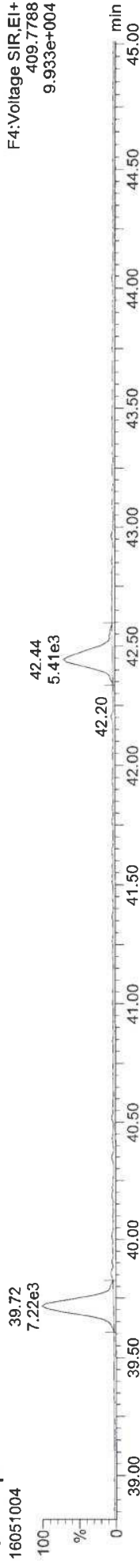
13C-1234678-HpCDF



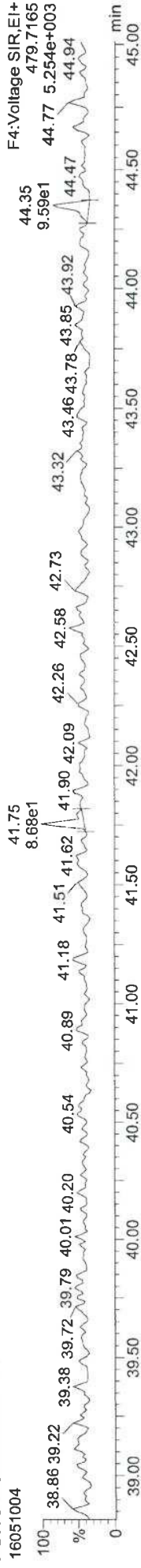
Total-heptafurans



Total-heptafurans



FUNCTION4 NCDPE



F4: Voltage SIR, EI+ 417.8253 9.387e+006

F4: Voltage SIR, EI+ 419.8220 2.079e+007

F4: Voltage SIR, EI+ 407.7818 9.356e+004

F4: Voltage SIR, EI+ 409.7788 9.933e+004

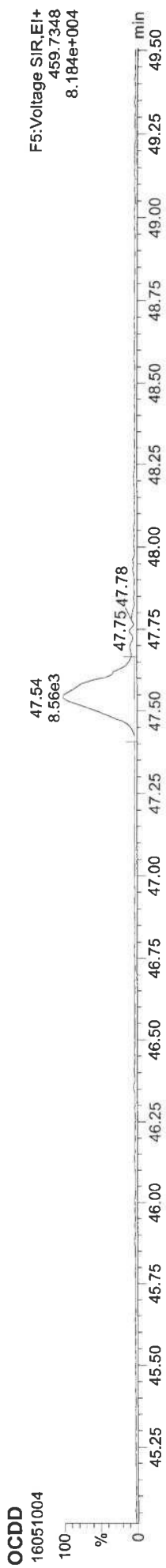
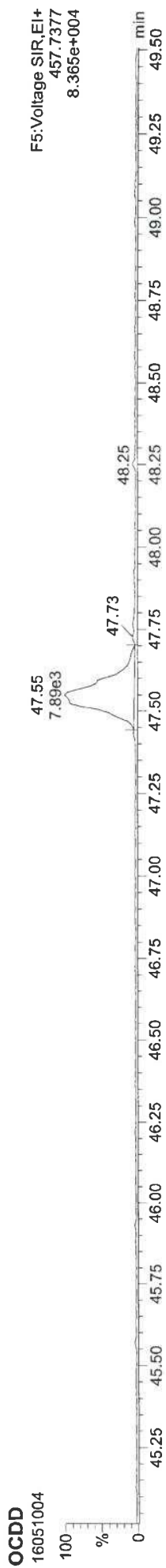
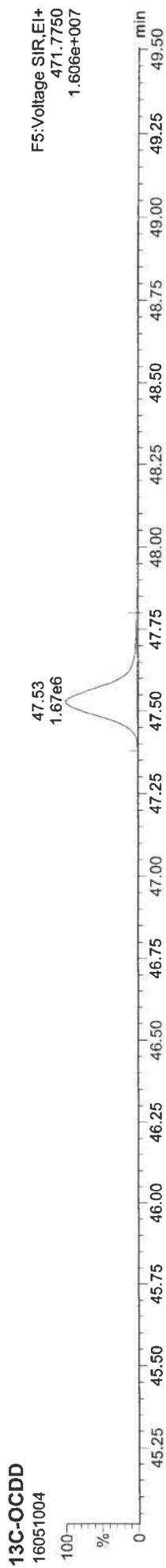
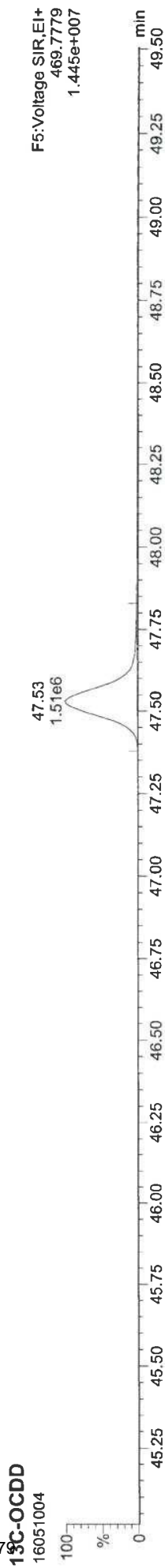
F4: Voltage SIR, EI+ 479.7165 44.35 9.59e1 44.77 5.254e+003 44.47 44.94

Quantify Sample Report  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

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EST, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk

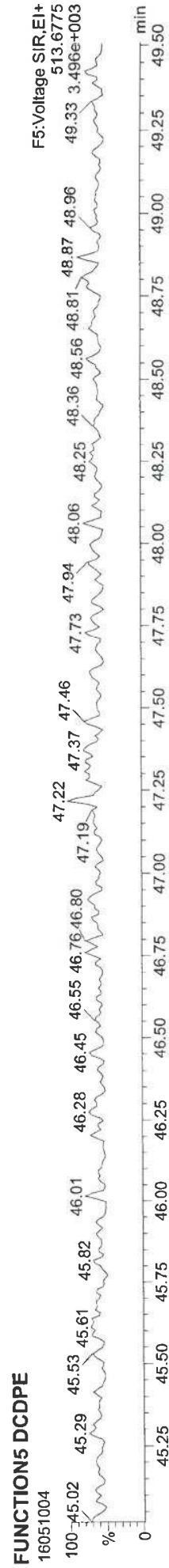
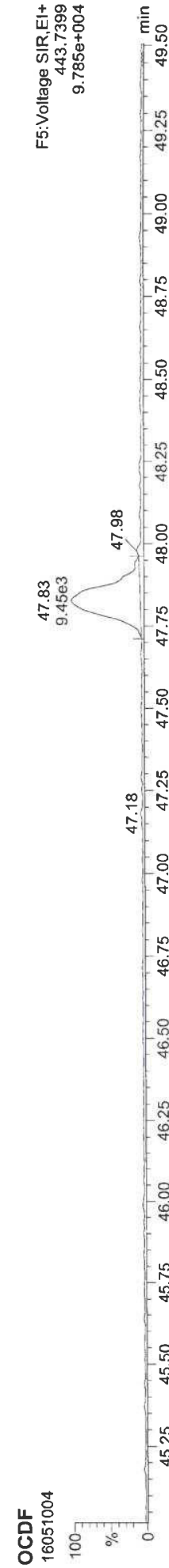
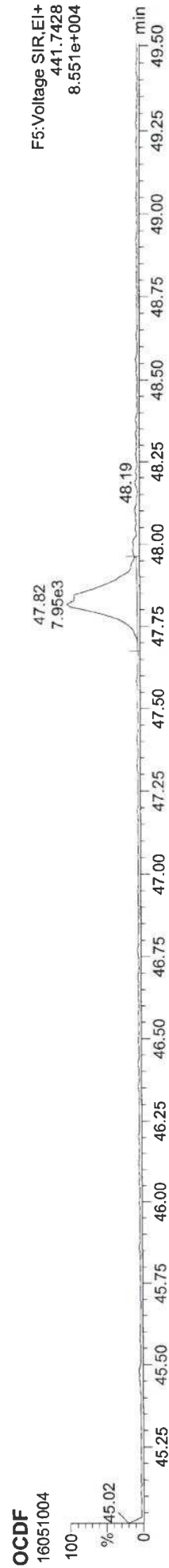
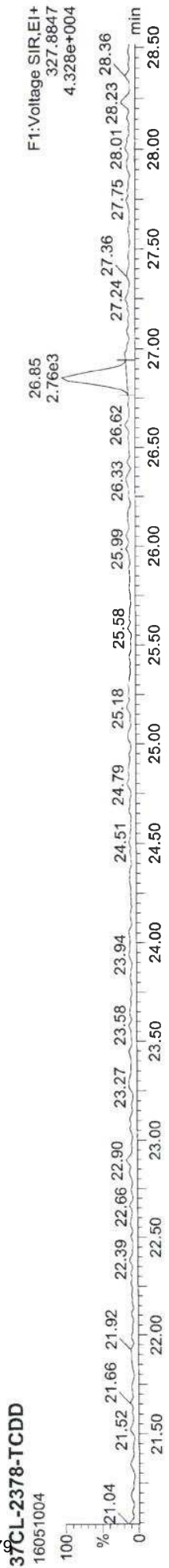


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510IC.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:55 Pacific Daylight Time

CSIAA 06/30/16

ID: 695, Name: 16051004, Date: 10-May-2016, Time: 13:36:21, Conditions: AUTOSPEC01, User: pk



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510IC.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
 Calibration: P:\DIOXIN8290.PRO\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

052AA  
 04/30/16

ID: 691, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
2378-TCDF	26.213	1.001	6.68e3	8.57e3	0.935	0.780	0.770	624	1162	9.01e4	1.18e5	144.4	NO	0.471	0.471
12378-PeCDF	30.377	1.001	4.02e4	2.30e4	0.952	1.747	1.550	1915	1646	5.44e5	3.26e5	283.8	NO	2.419	2.419
23478-PeCDF	31.725	1.001	3.89e4	2.42e4	0.963	1.603	1.550	1915	1646	5.39e5	3.25e5	281.3	NO	2.486	2.486
123478-HxCDF	35.408	1.001	3.12e4	2.48e4	1.137	1.258	1.240	2315	1569	4.64e5	3.57e5	200.5	NO	2.475	2.475
234678-HxCDF	36.504	1.001	2.91e4	2.36e4	1.164	1.235	1.240	2315	1569	4.12e5	3.29e5	178.1	NO	2.389	2.389
123678-HxCDF	35.561	1.001	3.46e4	2.62e4	1.099	1.320	1.240	2315	1569	4.48e5	3.57e5	193.6	NO	2.432	2.432
123789-HxCDF	37.633	1.000	2.37e4	2.03e4	1.101	1.168	1.240	2315	1569	3.32e5	2.86e5	143.3	NO	2.440	2.440
1234678-HpCDF	39.715	1.000	2.74e4	2.65e4	1.303	1.033	1.050	937	1508	3.63e5	3.66e5	387.6	NO	2.488	2.488
1234789-HpCDF	42.456	1.000	1.92e4	1.86e4	1.317	1.036	1.050	937	1508	2.15e5	2.22e5	229.9	NO	2.432	2.432
OCDF	47.836	1.006	2.72e4	3.13e4	1.166	0.869	0.890	1813	1195	2.65e5	3.03e5	146.3	NO	4.753	4.753
2378-TCDD	26.855	1.001	5.15e3	5.98e3	1.134	0.861	0.770	873	738	6.94e4	7.89e4	79.5	NO	0.492	0.492
12378-PeCDD	31.977	1.001	2.31e4	1.49e4	0.975	1.545	1.550	1483	751	3.38e5	2.05e5	228.0	NO	2.455	2.455
123478-HxCDD	36.646	1.001	2.03e4	1.68e4	1.031	1.209	1.240	1210	1058	2.99e5	2.35e5	247.4	NO	2.378	2.378
123678-HxCDD	36.767	1.001	2.13e4	1.81e4	0.971	1.180	1.240	1210	1058	3.00e5	2.49e5	248.4	NO	2.508	2.508
123789-HxCDD	37.194	1.012	1.95e4	1.58e4	0.947	1.233	1.240	1210	1058	2.85e5	2.15e5	235.5	NO	2.381	2.381
1234678-HpCDD	41.557	1.000	1.61e4	1.64e4	1.028	0.984	1.050	880	817	2.07e5	2.05e5	234.6	NO	2.523	2.523
OCDD	47.549	1.000	3.81e4	4.26e4	1.107	0.895	0.890	912	966	3.66e5	4.09e5	401.3	NO	6.901	6.901
13C-2378-TCDF	26.198	1.006	1.52e6	1.95e6	1.567	0.781	0.770	7213	3636	2.06e7	2.61e7	2854.5	NO	97.056	97.056
13C-12378-PeCDF	30.355	1.166	1.65e6	1.09e6	1.274	1.519	1.550	4968	6965	2.31e7	1.47e7	4658.0	NO	94.412	94.412
13C-23478-PeCDF	31.703	1.218	1.61e6	1.02e6	1.235	1.575	1.550	4968	6965	2.26e7	1.44e7	4558.9	NO	93.672	93.672
13C-123478-HxCDF	35.386	0.952	6.75e5	1.31e6	1.381	0.515	0.510	5229	9078	9.42e6	1.84e7	1800.8	NO	103.223	103.223
13C-123678-HxCDF	35.539	0.956	7.84e5	1.49e6	1.569	0.526	0.510	5229	9078	1.04e7	1.98e7	1981.5	NO	103.869	103.869
13C-234678-HxCDF	36.482	0.981	6.51e5	1.24e6	1.345	0.524	0.510	5229	9078	9.09e6	1.73e7	1738.2	NO	100.995	100.995
13C-123789-HxCDF	37.622	1.012	5.63e5	1.08e6	1.183	0.523	0.510	5229	9078	7.97e6	1.53e7	1523.3	NO	99.391	99.391
13C-1234678-HpCDF	39.704	1.068	5.18e5	1.15e6	1.178	0.452	0.440	3357	3824	7.02e6	1.57e7	2089.7	NO	101.292	101.292
13C-1234789-HpCDF	42.434	1.141	3.63e5	8.15e5	0.878	0.445	0.440	3357	3824	4.24e6	9.62e6	1263.8	NO	96.293	96.293
13C-12334-TCDD	26.034	0.000	9.87e5	1.29e6	1.000	0.764	0.770	3203	3485	1.32e7	1.69e7	4111.4	NO	100.000	100.000
13C-2378-TCDD	26.840	1.031	8.78e5	1.12e6	0.908	0.786	0.770	3203	3485	1.17e7	1.47e7	3638.7	NO	96.425	96.425
13C-12378-PeCDD	31.955	1.227	9.73e5	6.16e5	0.756	1.580	1.550	2714	2965	1.32e7	8.37e6	4859.3	NO	92.208	92.208
13C-123478-HxCDD	36.625	0.985	8.50e5	6.65e5	1.056	1.279	1.240	4926	3042	1.20e7	9.45e6	2437.9	NO	102.903	102.903
13C-123678-HxCDD	36.745	0.988	8.97e5	7.21e5	1.163	1.244	1.240	4926	3042	1.23e7	9.91e6	2506.2	NO	99.774	99.774
13C-1234678-HpCDD	41.535	1.117	6.58e5	5.97e5	0.909	1.103	1.050	2482	3099	7.94e6	7.53e6	3199.3	NO	98.957	98.957
13C-OCDD	47.531	1.278	9.94e5	1.12e6	0.820	0.888	0.890	5478	3657	9.18e6	1.01e7	1676.4	NO	184.791	184.791

Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld

Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time

Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

*CS2AA 06/30/16*

IB: EST, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
13C-123789-HxCDD	37.183	0.000	7.78e5	6.17e5	1.000	1.261	1.240	4926	3042	1.07e7	8.38e6	2166.0	NO		100.000
Total-tetrafurans			6.89e3		0.935			624		9.48e4					0.480
Total-penta1			0.00e0					685		0.00e0					
Total-pentafurans			8.07e4		0.957			1915		1.11e6					4.986
Total-hexafurans			1.19e5		1.125			2315		1.68e6					9.815
Total-heptafurans			4.78e4		1.310			937		5.96e5					5.033
Total-Furans			2.82e5		1.114			624		3.74e6					25.066
Total-tetra-dioxins			5.15e3		1.134			873		6.94e4					0.492
Total-penta-dioxins			2.33e4		0.975			1483		3.46e5					2.481
Total-hexa-dioxins			6.12e4		0.983			1210		8.85e5					7.267
Total-hepta-dioxins			1.74e4		1.028			880		2.29e5					2.716
Total-Dioxins			1.45e5		1.028			873		1.90e6					19.856
Total-TEQ			4.27e5					873		5.64e6		122.7			44.922
37CL-2378-TCDD	26.855	1.032	1.11e4		1.067			1295		1.59e5					0.455
FUNCTION1 PFK			1.86e6					839683		3.45e7					
FUNCTION2 PFK			1.48e5					170069		4.43e6					0.000
FUNCTION3 PFK			0.00e0					617332		0.00e0					
FUNCTION4 PFK			3.08e5					401956		9.69e6					
FUNCTION5 PFK			2.68e5					309329		1.04e7					
FUNCTION1 HXCDPE			3.06e2					522		6.37e3					0.000
FUNCTION1 HPCDPE			8.95e2					980		1.98e4					0.000
FUNCTION2 HPCDPE			1.50e2					689		5.22e3					0.000
FUNCTION3 OCDPE			0.00e0					469		0.00e0					
FUNCTION4 NCDPE			0.00e0					652		0.00e0					
FUNCTION5 DCDPE			0.00e0					485		0.00e0					

Quantify Sample Report MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40

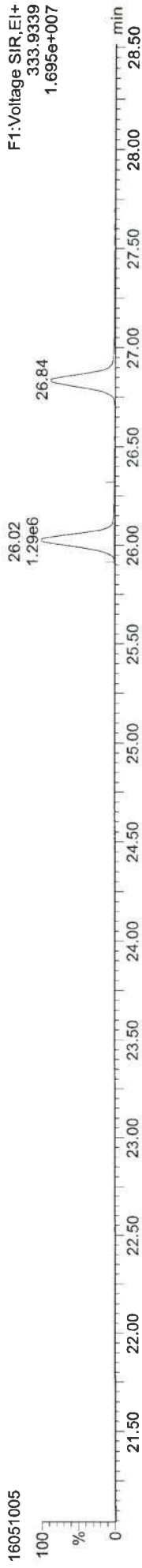
*CSZA 06/20/16*

ID: 691, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

13C-1234-TCDD



13C-1234-TCDD



13C-123789-HxCDD



13C-123789-HxCDD





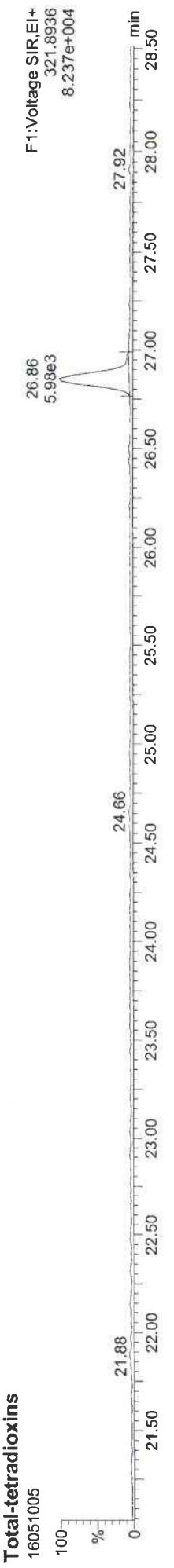
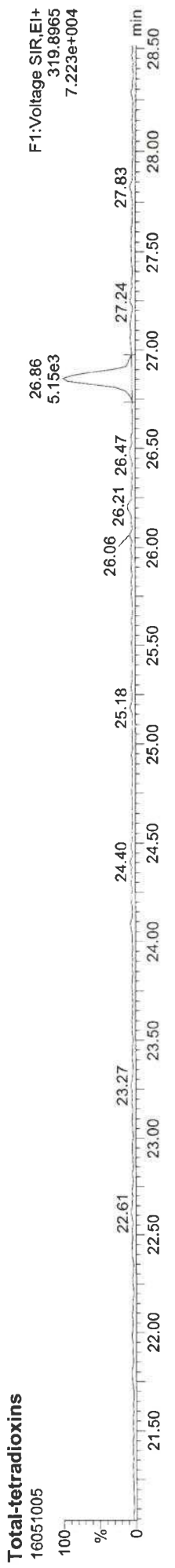
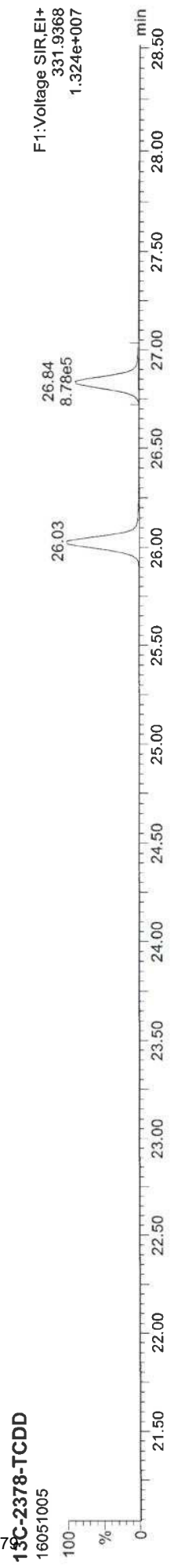
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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*CS2AA 04/30/16*

ID: **CS1**, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk



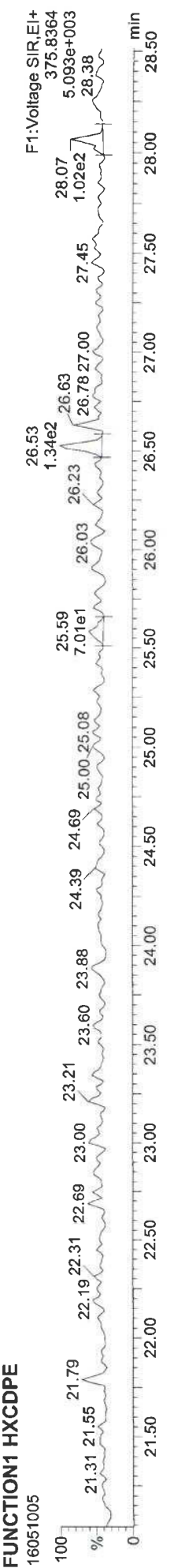
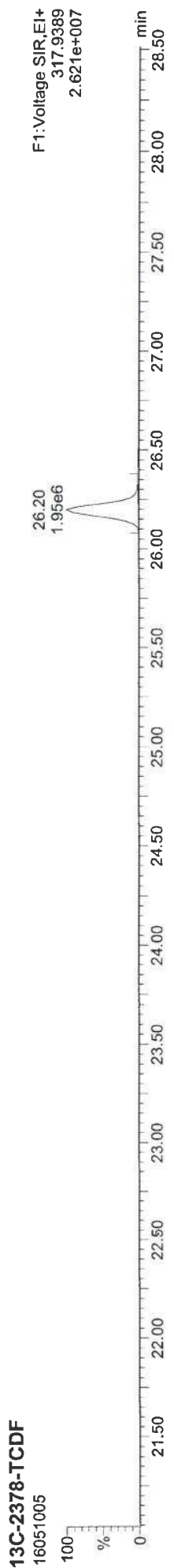
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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CS2AA 05/30/16

ES1, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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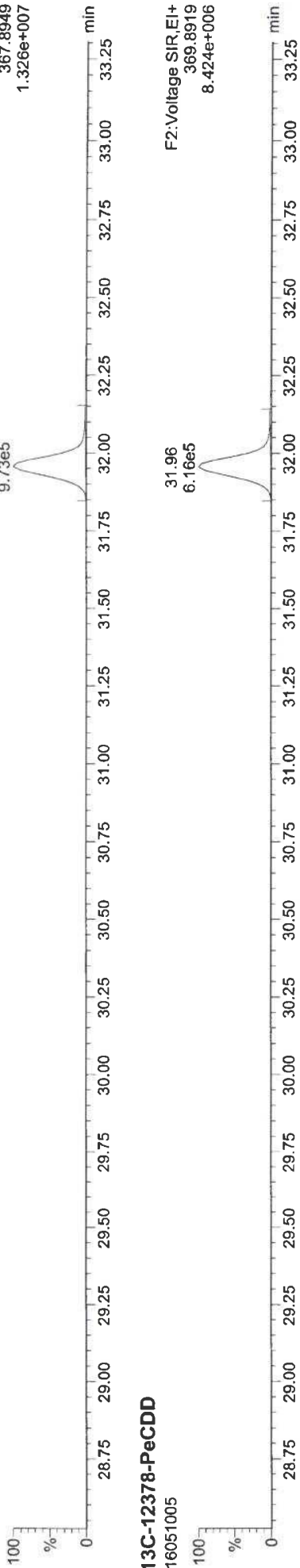
CS2AA 06/30/16

16051005, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

13C-12378-PeCDD

16051005

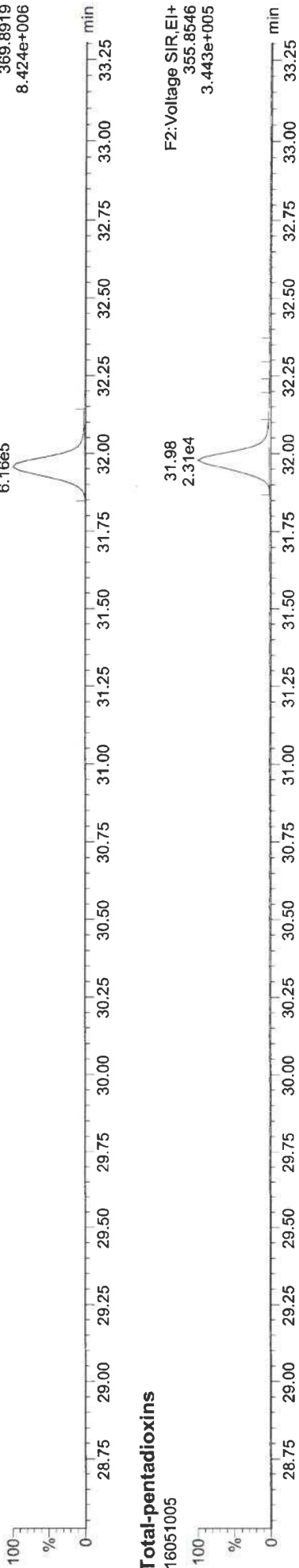
F2: Voltage SIR, EI+  
367.8949  
1.326e+007



13C-12378-PeCDD

16051005

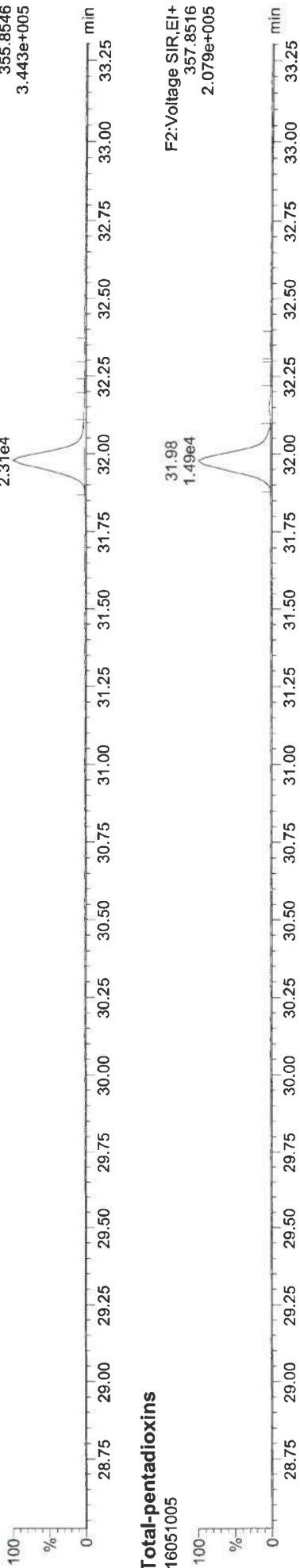
F2: Voltage SIR, EI+  
369.8919  
8.424e+006



Total-pentadioxins

16051005

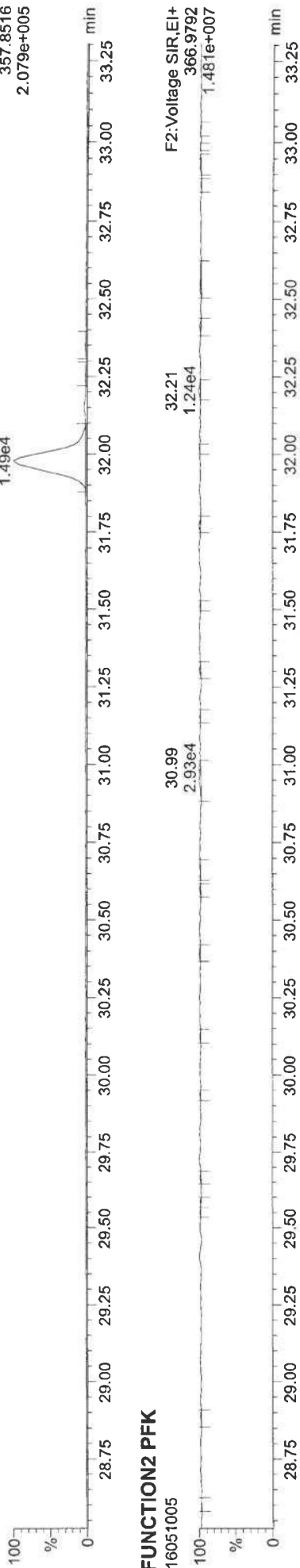
F2: Voltage SIR, EI+  
355.8546  
3.443e+005



Total-pentadioxins

16051005

F2: Voltage SIR, EI+  
357.8516  
2.079e+005



FUNCTION2 PFK

16051005

F2: Voltage SIR, EI+  
366.9792  
1.481e+007



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

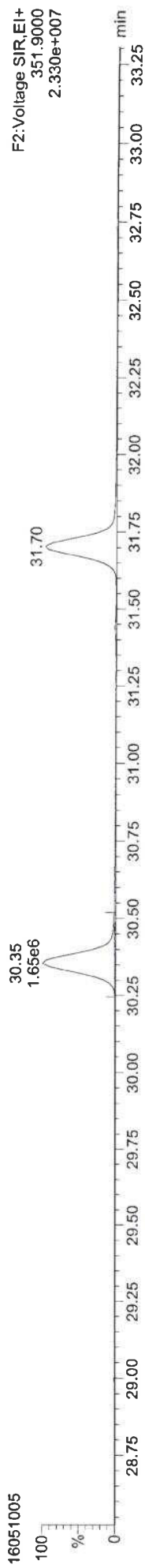
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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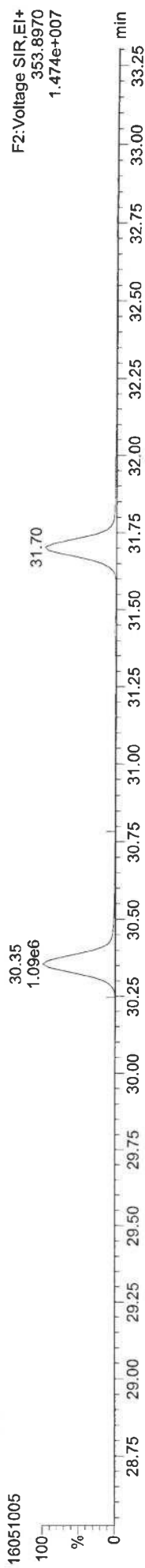
CS2-AA 06/30/16

IP: EST, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

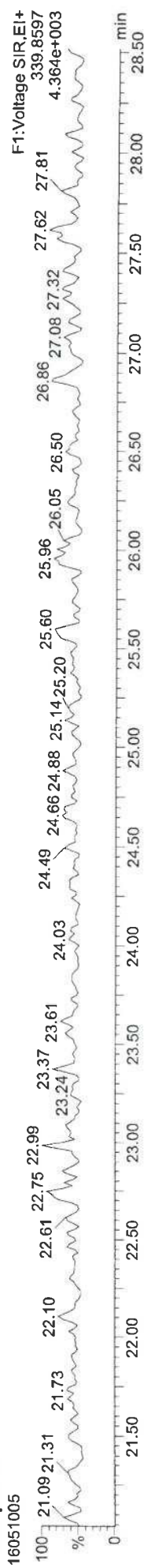
13C-12378-PeCDF



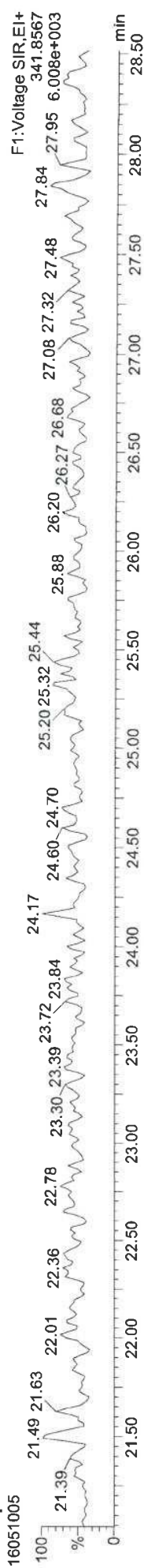
13C-12378-PeCDF



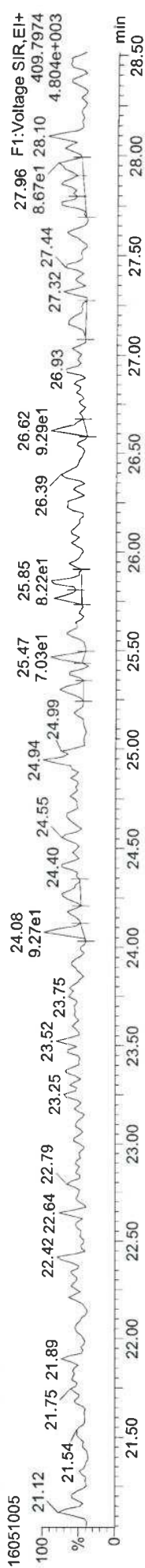
Total-penta1



Total-penta1



FUNCTION1 HPCDPE



Quantify Sample Report MassLynx V4.1 SCN909

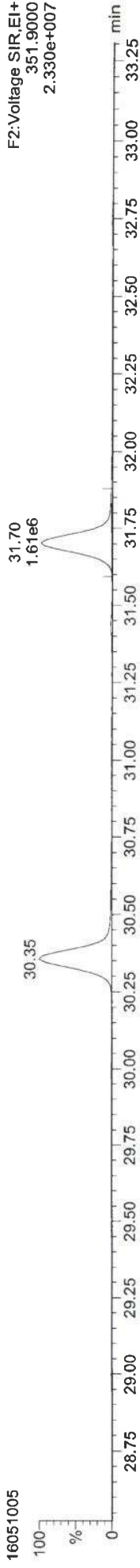
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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CS2AA 06/30/16

ID: 661, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

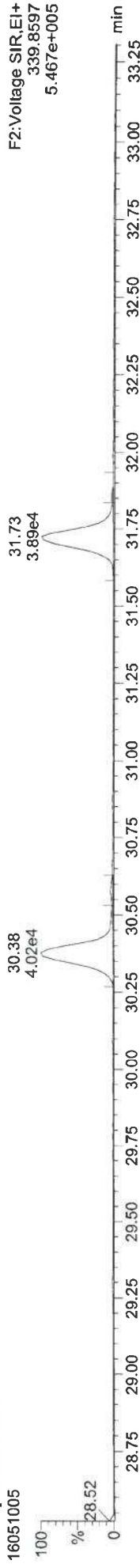
13C-23478-PeCDF



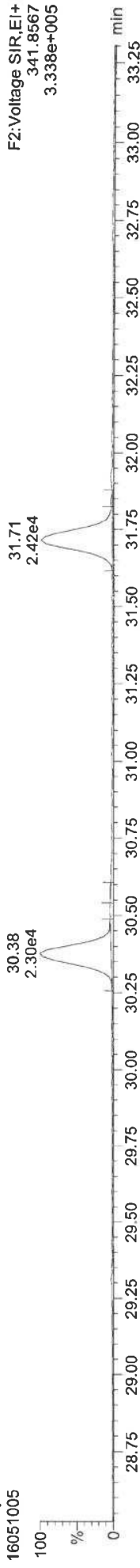
13C-23478-PeCDF



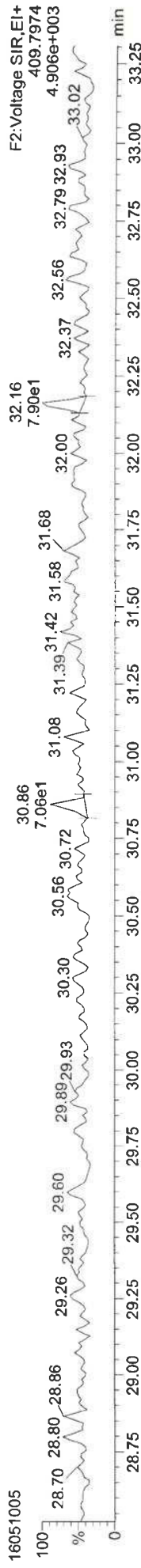
Total-pentafurans



Total-pentafurans



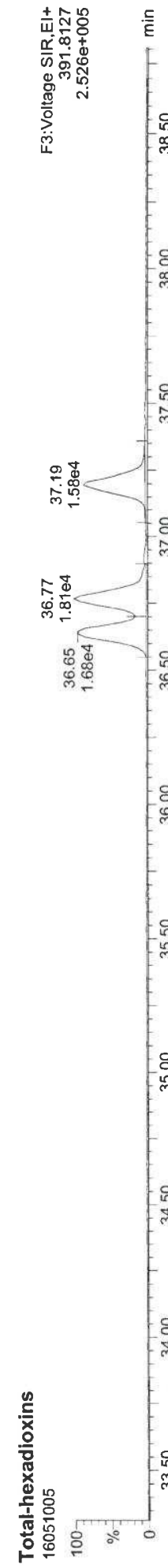
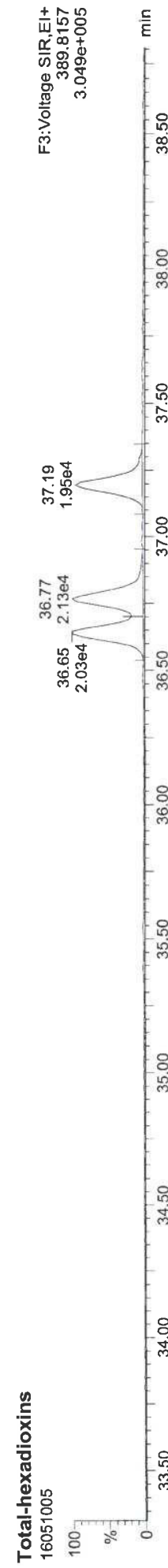
FUNCTION2 HPCDPE



Quantify Sample Report  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

CS2AA 06/30/16

19:091, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk



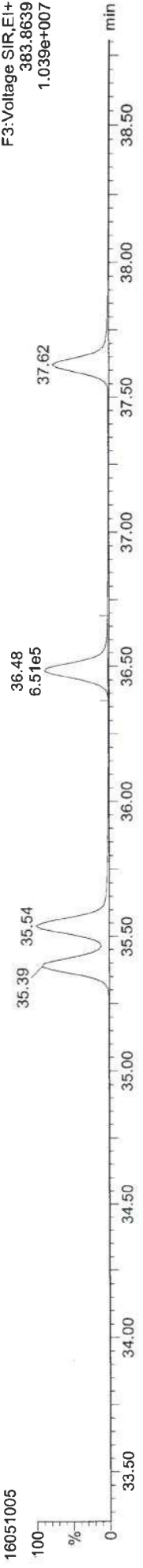
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510IC.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

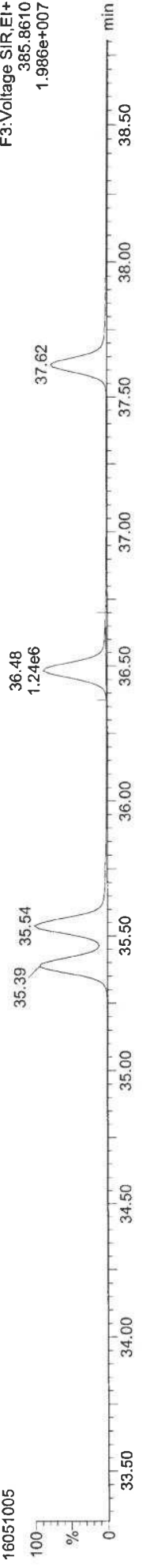
*CS2AA 06/30/16*

ID: **694**, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

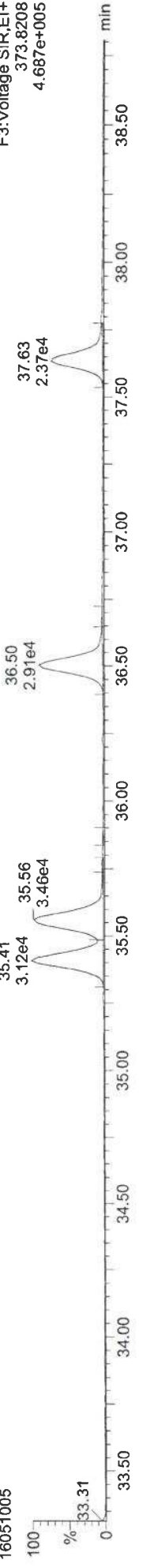
**13C-234678-HxCDF**



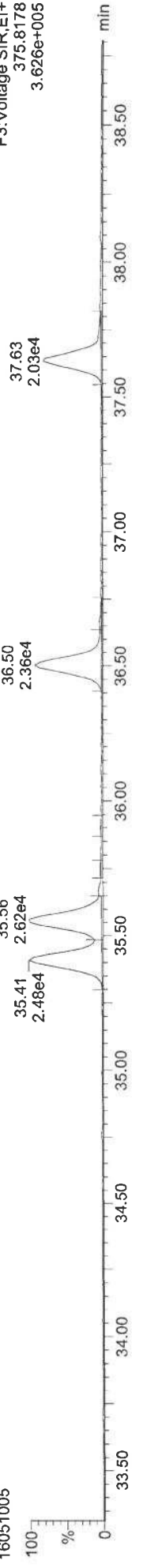
**Total-hexafurans**



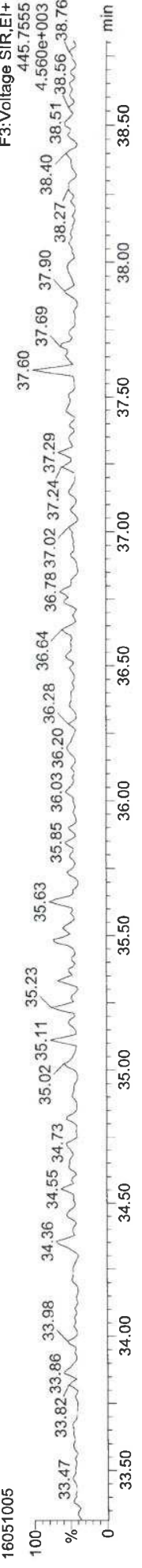
**Total-hexafurans**



**Total-hexafurans**



**FUNCTION3 OCDPE**



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

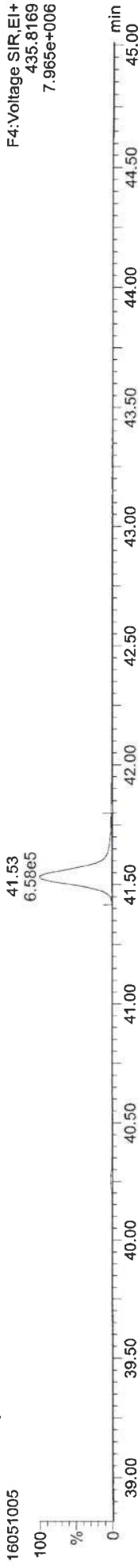
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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*CSZAA 04/30/16*

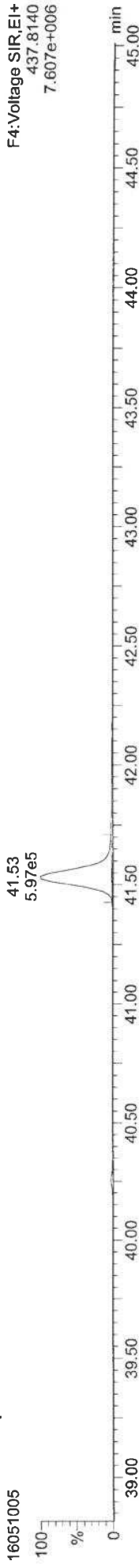
10: 694, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

13C-1234678-HpCDD



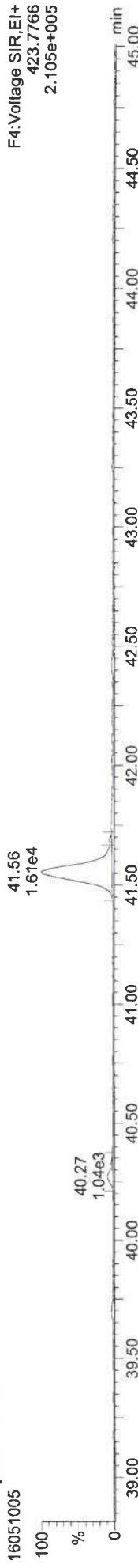
F4: Voltage SIR, EI+  
435.8169  
7.965e+006

13C-1234678-HpCDD



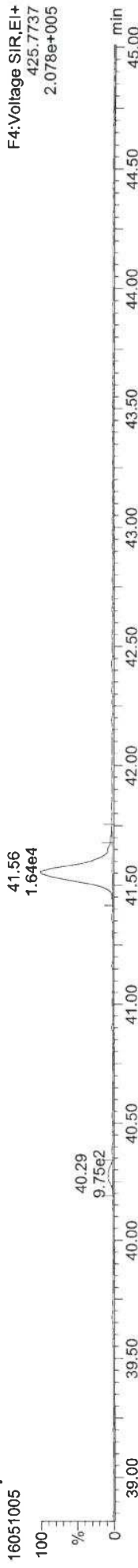
F4: Voltage SIR, EI+  
437.8140  
7.607e+006

Total-heptadioxins



F4: Voltage SIR, EI+  
423.7766  
2.105e+005

Total-heptadioxins



F4: Voltage SIR, EI+  
425.7737  
2.078e+005

FUNCTION4 PFK



F4: Voltage SIR, EI+  
430.9728  
5.092e+007



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

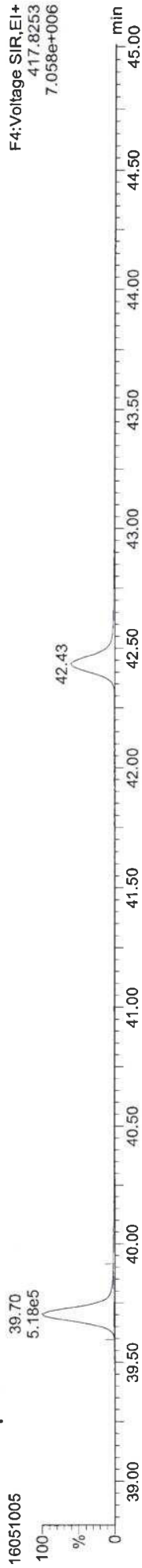
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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CS2AA 06/30/16

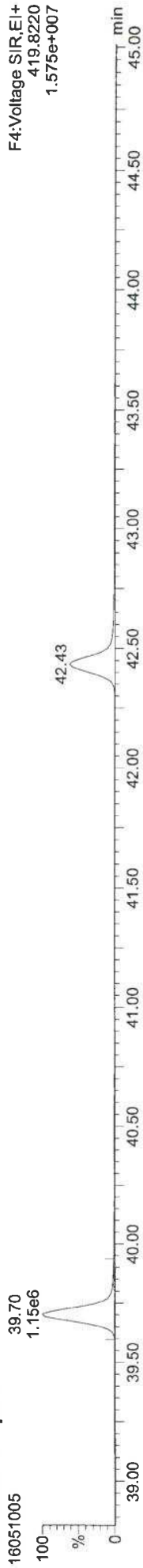
16051005, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

19C-1234678-HpCDF



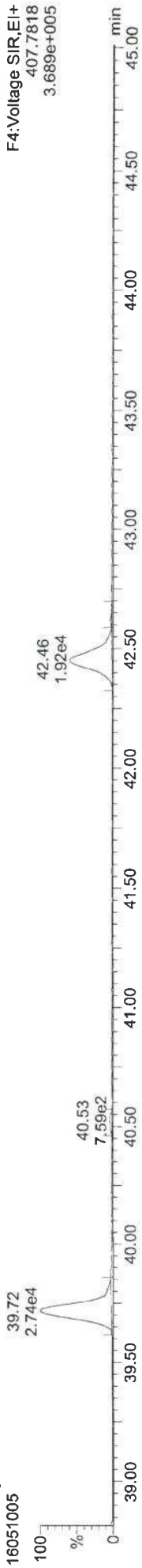
F4: Voltage SIR, EI+  
417.8253  
7.058e+006

13C-1234678-HpCDF



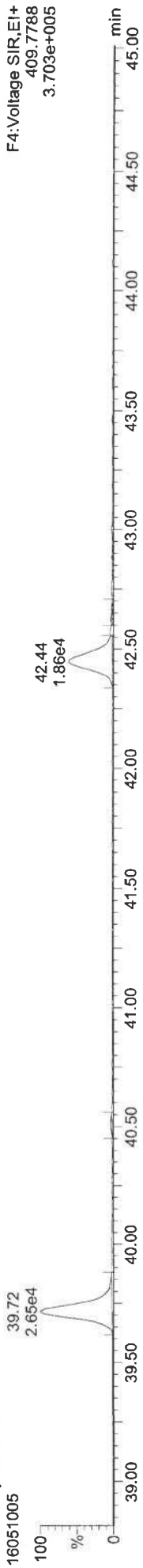
F4: Voltage SIR, EI+  
419.8220  
1.575e+007

Total-heptafurans



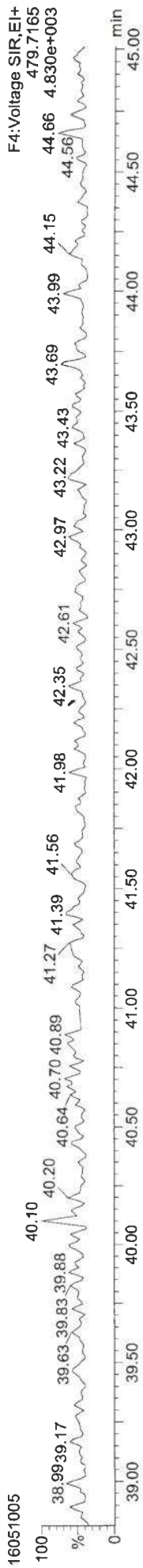
F4: Voltage SIR, EI+  
407.7818  
3.689e+005

Total-heptafurans



F4: Voltage SIR, EI+  
409.7788  
3.703e+005

FUNCTION4 NCDPE



F4: Voltage SIR, EI+  
479.7165  
4.830e+003

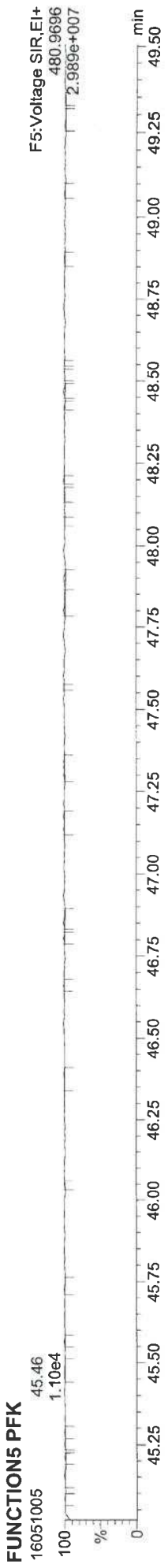
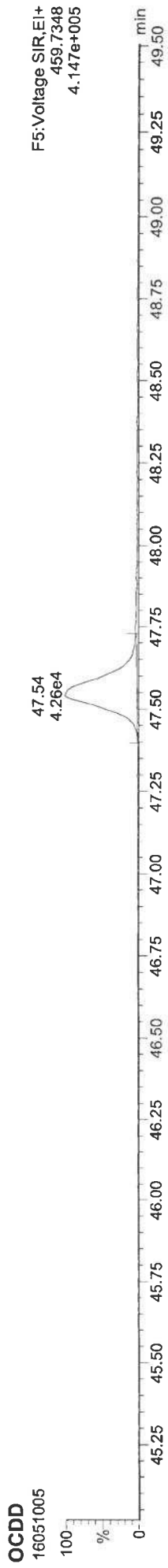
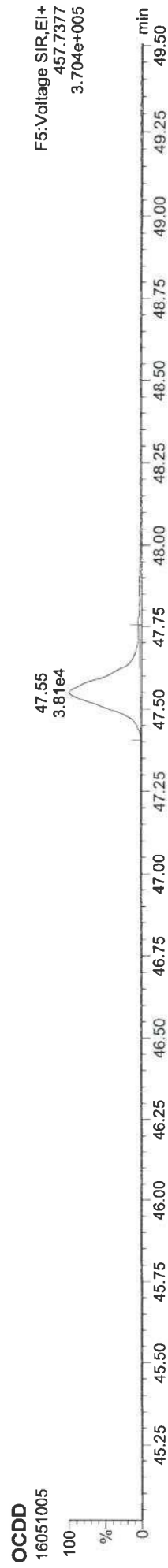
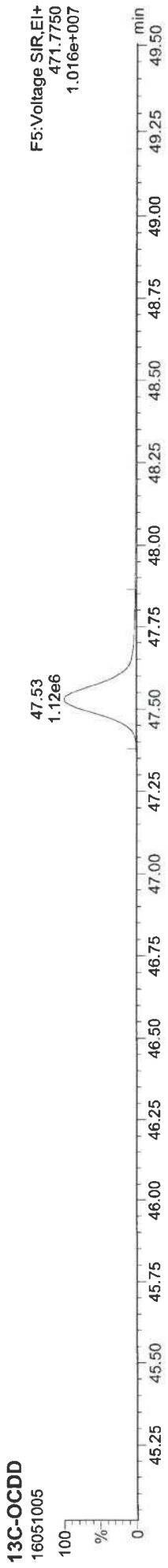
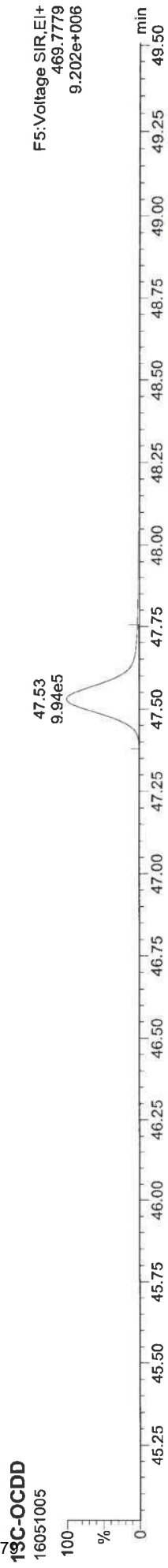
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

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CSZAA 04/30/16 SRA

IG: CS4, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:56 Pacific Daylight Time

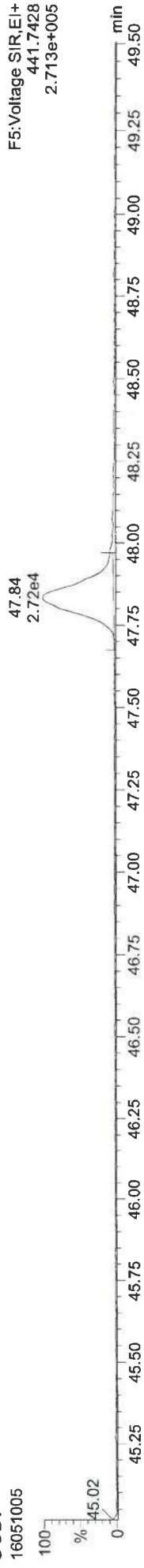
CS2AA 04/30/16

CS4, Name: 16051005, Date: 10-May-2016, Time: 14:27:42, Conditions: AUTOSPEC01, User: pk

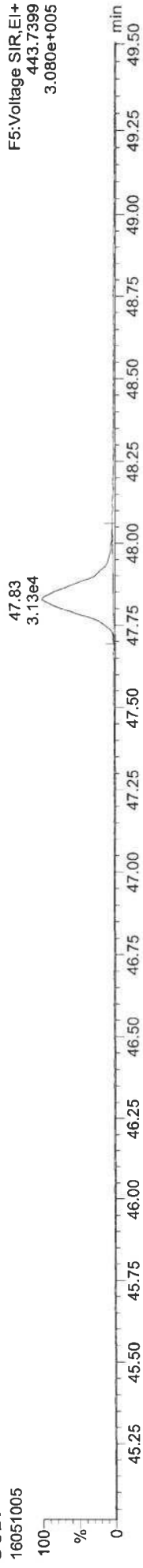
37CL-2378-TCDD



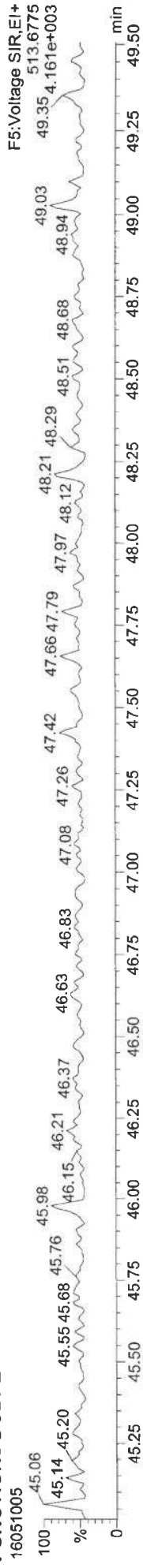
OCDF



OCDF



FUNCTION5 DCDPE



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
 Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40

*CS3AA 06/30/16*

ID: CS2, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
2378-TCDF	26.228	1.001	3.07e4	3.77e4	0.935	0.815	0.770	712	1111	4.18e5	5.13e5	587.6	NO	1.989	1.989
12378-PeCDF	30.388	1.001	1.70e5	1.07e5	0.952	1.587	1.550	2318	2111	2.30e6	1.48e6	994.0	NO	9.513	9.513
23478-PeCDF	31.736	1.001	1.71e5	1.10e5	0.963	1.561	1.550	2318	2111	2.39e6	1.51e6	1030.0	NO	10.056	10.056
123478-HxCDF	35.419	1.000	1.40e5	1.13e5	1.137	1.242	1.240	3320	2835	2.00e6	1.63e6	602.7	NO	9.994	9.994
234678-HxCDF	36.515	1.001	1.43e5	1.11e5	1.164	1.289	1.240	3320	2835	1.95e6	1.53e6	586.9	NO	10.056	10.056
123678-HxCDF	35.572	1.001	1.52e5	1.24e5	1.099	1.222	1.240	3320	2835	2.04e6	1.64e6	614.5	NO	10.120	10.120
123789-HxCDF	37.844	1.001	1.24e5	9.11e4	1.101	1.357	1.240	3320	2835	1.71e6	1.29e6	513.7	NO	9.841	9.841
1234678-HpCDF	39.727	1.001	1.29e5	1.23e5	1.303	1.051	1.050	1943	2140	1.79e6	1.68e6	918.8	NO	9.815	9.815
1234789-HpCDF	42.456	1.000	9.87e4	9.17e4	1.317	1.077	1.050	1943	2140	1.11e6	1.08e6	573.3	NO	9.571	9.571
OCDF	47.845	1.006	1.54e5	1.71e5	1.166	0.898	0.890	1587	2180	1.40e6	1.54e6	883.0	NO	19.983	19.983
2378-TCDD	26.870	1.001	2.01e4	2.62e4	1.134	0.765	0.770	1285	889	2.72e5	3.48e5	211.6	NO	1.941	1.941
12378-PeCDD	31.988	1.000	1.02e5	6.55e4	0.975	1.562	1.550	1115	773	1.41e6	9.00e5	1267.9	NO	9.872	9.872
123478-HxCDD	36.647	1.000	9.61e4	7.58e4	1.031	1.268	1.240	1493	1507	1.37e6	1.09e6	919.3	NO	9.926	9.926
123678-HxCDD	36.778	1.001	1.01e5	8.20e4	0.971	1.234	1.240	1493	1507	1.34e6	1.10e6	900.3	NO	9.917	9.917
123789-HxCDD	37.206	1.012	9.26e4	7.59e4	0.947	1.221	1.240	1493	1507	1.27e6	1.08e6	848.8	NO	9.943	9.943
1234678-HpCDD	41.557	1.000	8.01e4	7.55e4	1.028	1.061	1.050	1296	1324	9.67e5	9.17e5	746.0	NO	9.822	9.822
OCDD	47.567	1.001	1.32e5	1.50e5	1.107	0.881	0.890	2421	2005	1.24e6	1.38e6	513.8	NO	18.227	18.227
13C-2378-TCDF	26.212	1.006	1.61e6	2.06e6	1.567	0.782	0.770	8042	3396	2.20e7	2.83e7	2733.6	NO	100.369	100.369
13C-12378-PeCDF	30.366	1.166	1.87e6	1.18e6	1.274	1.579	1.550	5347	3950	2.45e7	1.57e7	4586.8	NO	102.455	102.455
13C-23478-PeCDF	31.714	1.217	1.76e6	1.14e6	1.235	1.549	1.550	5347	3950	2.48e7	1.58e7	4639.2	NO	100.381	100.381
13C-123478-HxCDF	35.408	0.952	7.55e5	1.47e6	1.381	0.514	0.510	5314	6448	1.08e7	2.08e7	2027.5	NO	98.776	98.776
13C-123678-HxCDF	35.550	0.956	8.54e5	1.63e6	1.569	0.525	0.510	5314	6448	1.17e7	2.23e7	2200.7	NO	96.940	96.940
13C-234678-HxCDF	36.493	0.981	7.51e5	1.42e6	1.345	0.530	0.510	5314	6448	1.05e7	1.96e7	1971.4	NO	98.800	98.800
13C-123789-HxCDF	37.622	1.012	6.94e5	1.29e6	1.183	0.539	0.510	5314	6448	9.58e6	1.84e7	1802.2	NO	102.675	102.675
13C-1234678-HpCDF	39.705	1.068	6.19e5	1.35e6	1.178	0.457	0.440	3354	5015	8.20e6	1.81e7	2445.2	NO	102.663	102.663
13C-1234789-HpCDF	42.445	1.141	4.81e5	1.03e6	0.878	0.467	0.440	3354	5015	5.36e6	1.17e7	1598.2	NO	105.491	105.491
13C-1234-TCDD	26.048	0.000	1.03e6	1.30e6	1.000	0.792	0.770	3541	1647	1.43e7	1.79e7	4036.4	NO	100.000	100.000
13C-2378-TCDD	26.855	1.031	9.17e5	1.19e6	0.908	0.773	0.770	3541	1647	1.23e7	1.59e7	3471.7	NO	99.138	99.138
13C-12378-PeCDD	31.977	1.228	1.06e6	6.79e5	0.756	1.566	1.550	2253	2411	1.42e7	9.08e6	6306.3	NO	98.648	98.648
13C-123478-HxCDD	36.636	0.985	9.40e5	7.39e5	1.056	1.273	1.240	3866	2476	1.37e7	1.06e7	3541.5	NO	97.494	97.494
13C-123678-HxCDD	36.756	0.988	1.06e6	8.40e5	1.163	1.265	1.240	3866	2476	1.40e7	1.12e7	3610.8	NO	100.224	100.224
13C-1234678-HpCDD	41.535	1.117	8.03e5	7.38e5	0.909	1.088	1.050	3038	3332	9.57e6	9.18e6	3150.6	NO	103.956	103.956
13C-OCDD	47.540	1.278	1.31e6	1.48e6	0.820	0.882	0.890	4449	5697	1.20e7	1.35e7	2705.1	NO	208.660	208.660

Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld

Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time

Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

177 053AA 04/30/16

ID: 662, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
13C-123789-HxCDD	37.184	0.000	9.13e5	7.18e5	1.000	1.271	1.240	3866	2476	1.24e7	9.87e6	3203.6	NO		100.000
Total-tetrafurans			3.09e4		0.935			712		4.21e5					2.010
Total-penta1			0.00e0					586		0.00e0					
Total-pentafurans			3.48e5		0.957			2318		4.79e6					20.060
Total-hexafurans			5.62e5		1.125			3320		7.77e6					40.233
Total-heptafurans			2.30e5		1.310			1943		2.93e6					19.531
Total-Furans			1.32e6		1.114			712		1.73e7					101.817
Total-tetra-dioxins			2.04e4		1.134			1285		2.78e5					1.968
Total-penta-dioxins			1.04e5		0.975			1115		1.44e6					9.994
Total-hexa-dioxins			2.92e5		0.983			1493		4.02e6					29.978
Total-hepta-dioxins			8.19e4		1.028			1296		9.88e5					9.986
Total-Dioxins			6.30e5		1.028			1285		7.97e6					70.152
Total-TEQ			1.95e6					1285		2.53e7					171.969
37CL-2378-TCDD	26.870	1.031	4.85e4		1.067			1406		6.58e5		468.0			1.946
FUNCTION1 PFK			9.43e5					932576		1.84e7					
FUNCTION2 PFK			3.05e5					159650		8.30e6					0.000
FUNCTION3 PFK			1.01e6					591214		2.87e7					0.000
FUNCTION4 PFK			3.50e5					397418		9.33e6					
FUNCTION5 PFK			4.56e5					308988		1.79e7					
FUNCTION1 HXCDPE			2.31e2					387		4.69e3					0.000
FUNCTION1 HPCDPE			4.73e2					695		9.42e3					0.000
FUNCTION2 HPCDPE			2.94e2					593		7.36e3					0.000
FUNCTION3 OCDPE			0.00e0					362		0.00e0					
FUNCTION4 NCDPE			2.19e2					620		7.32e3					0.000
FUNCTION5 DCDPE			0.00e0					383		0.00e0					

Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

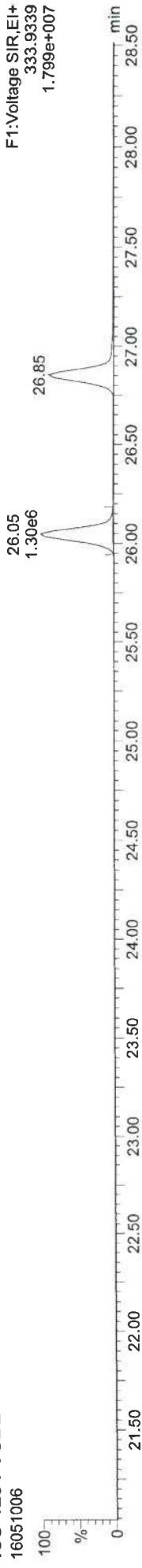
Method: P:\DIOXIN8290.pro\MethDB\Dioxin\1604143SN.mdb 14 Apr 2016 14:40:15  
Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40

ID: 652; Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

13C-1234-TCDD



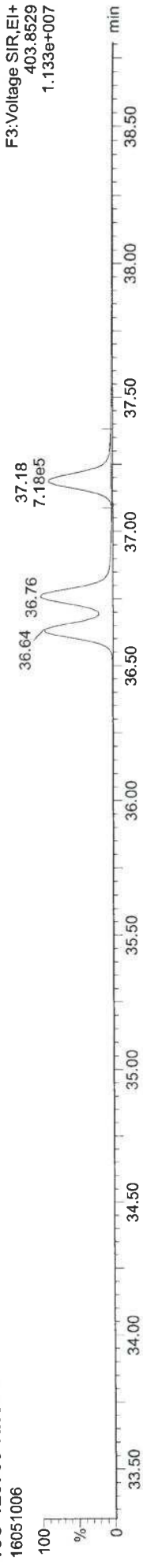
13C-1234-TCDD



13C-123789-HxCDD



13C-123789-HxCDD



Quantify Sample Report MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

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CS3AA 04/30/16

CS2, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk



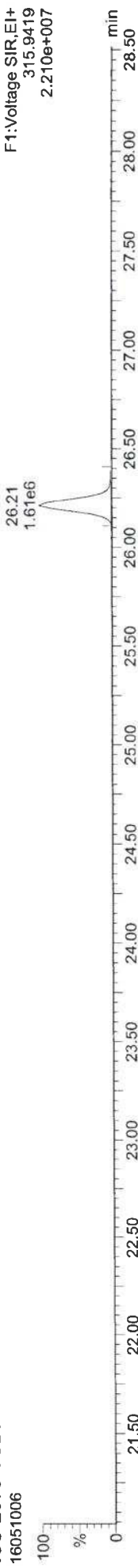
Quantify Sample Report MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

CS3AA 06/30/16

16051006, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

13C-2378-TCDF



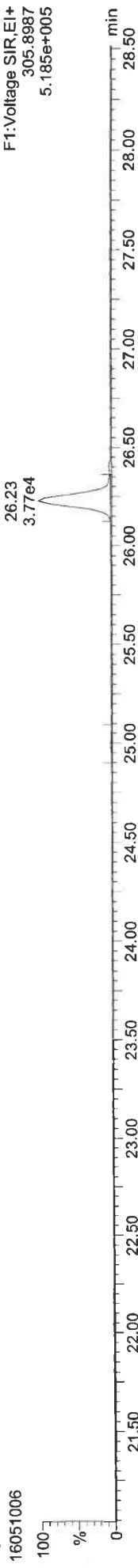
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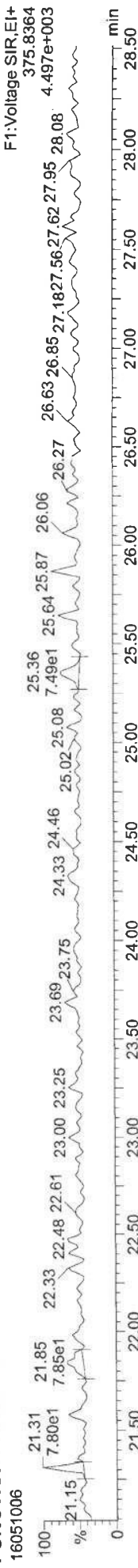
Total-tetrafurans



Total-tetrafurans



FUNCTION1 HXCDPE





Quantify Sample Report MassLynx MassLynx V4.1 SCN909

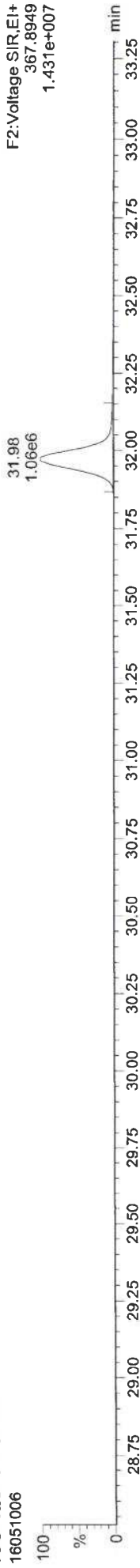
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

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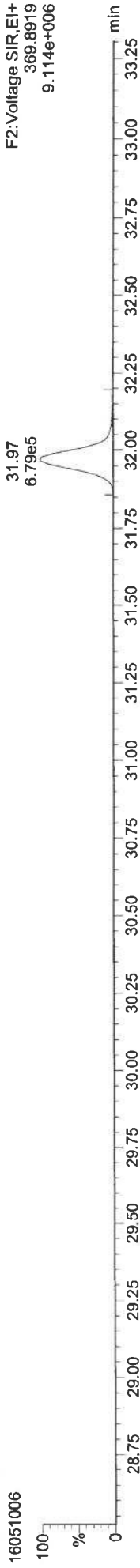
*CS3AA 04/30/16 BR*

16051006, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

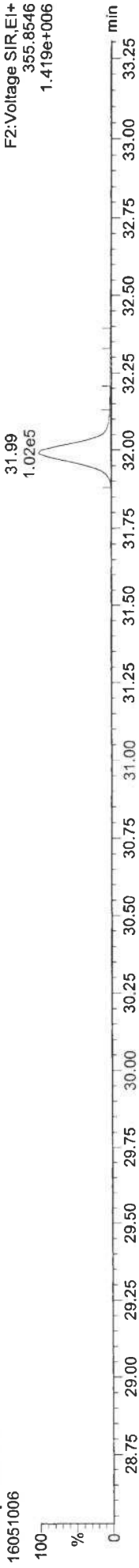
13C-12378-PeCDD



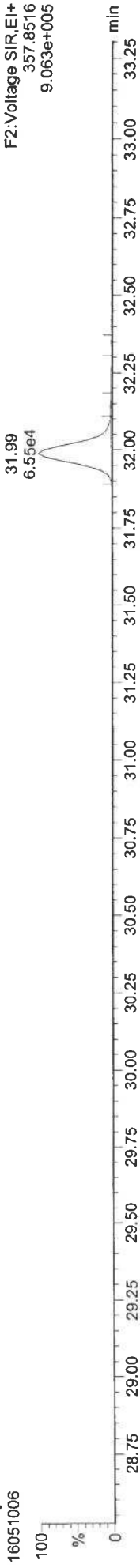
13C-12378-PeCDD



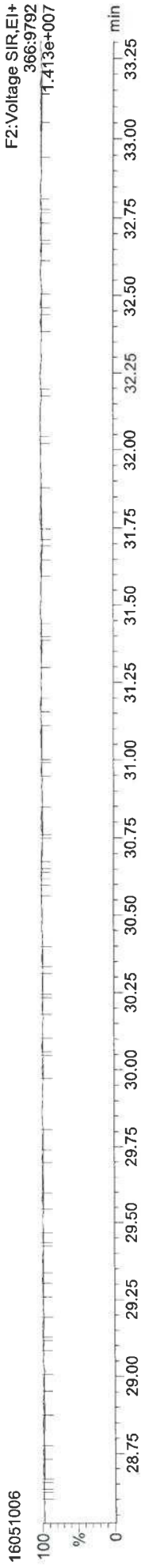
Total-pentadioxins



Total-pentadioxins



FUNCTION2 PFK



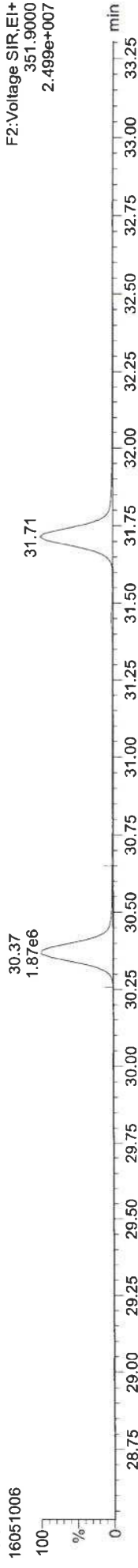
Quantify Sample Report MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

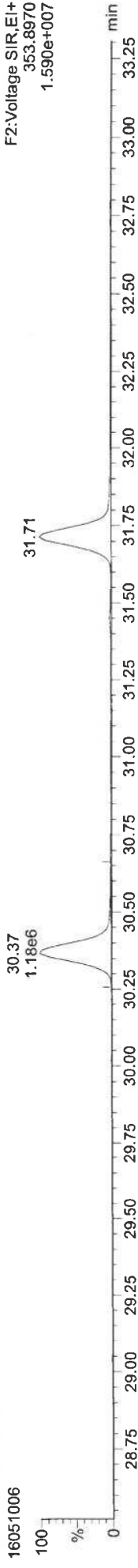
CS3AA 04/30/16

ID: 692, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

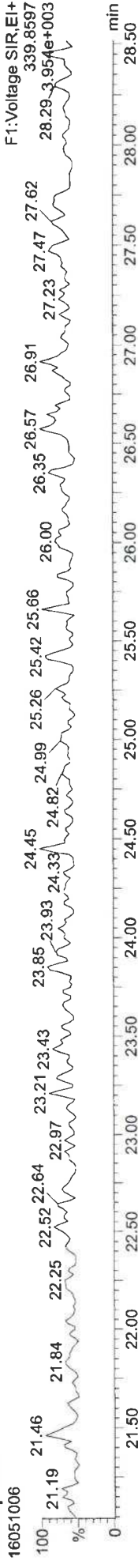
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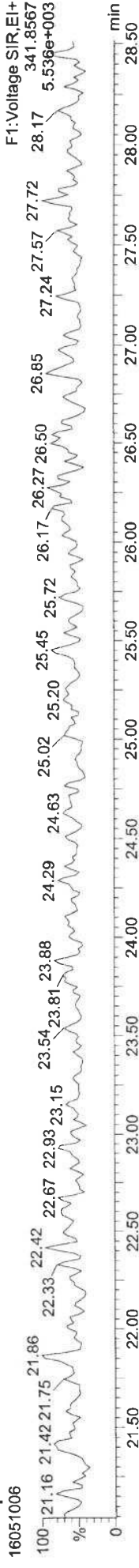
13C-12378-PeCDF



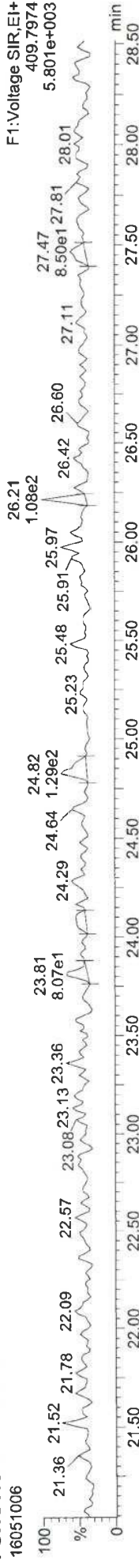
Total-penta1



Total-penta1



FUNCTION1 HPCDPE

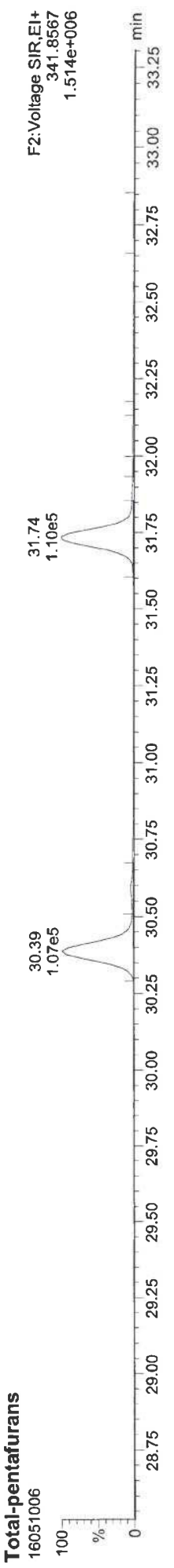
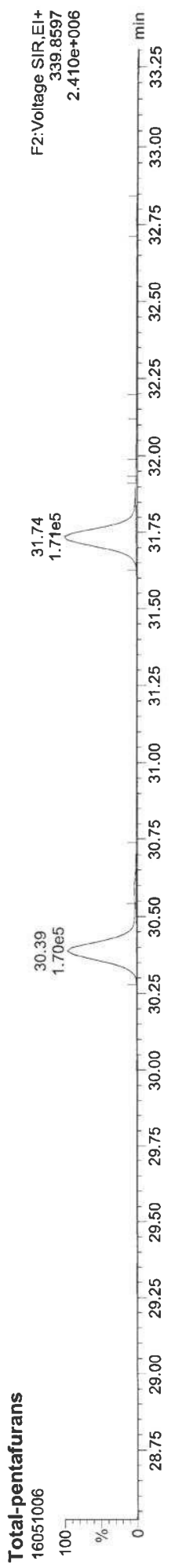
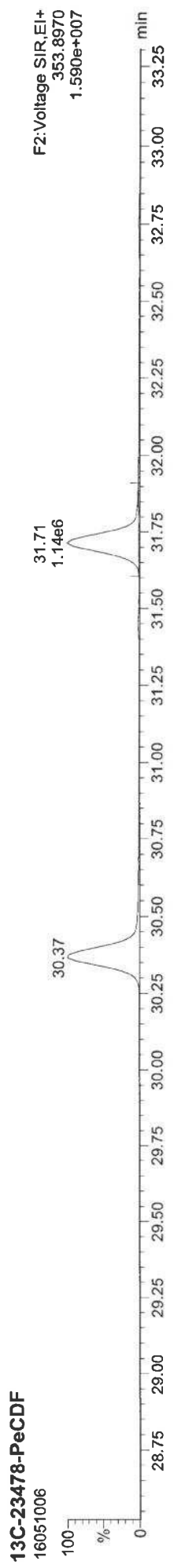
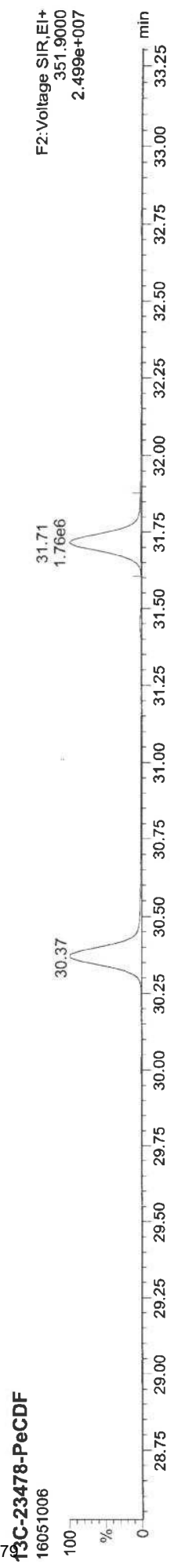


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

CS3AA 04/30/16 RB

16051006, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

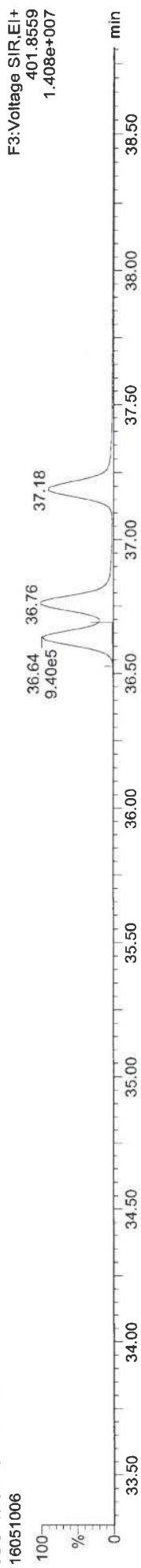
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

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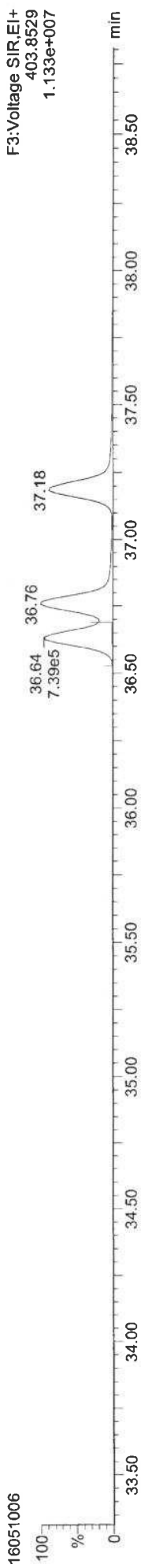
*CS3AA 06/30/16*

ID: **662**, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

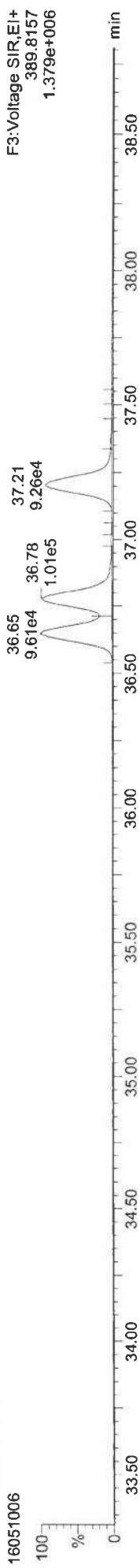
**13C-123478-HxCDD**



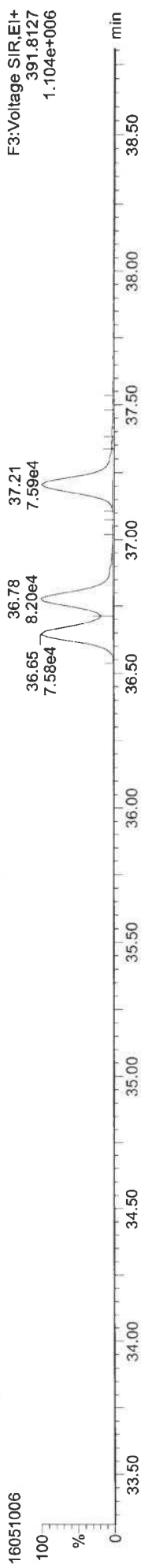
**13C-123478-HxCDD**



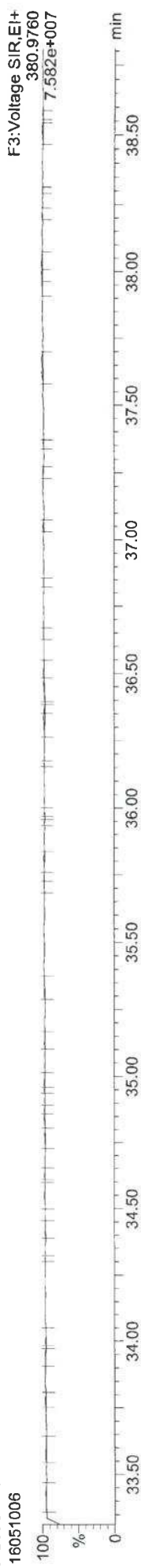
**Total-hexadioxins**



**Total-hexadioxins**



**FUNCTION3 PFK**



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

CSBAA 04/30/16

IB: CS2, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

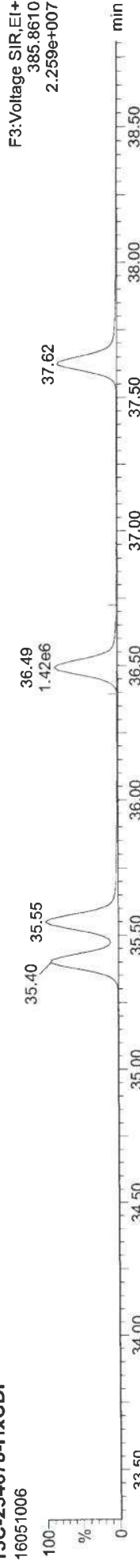
13C-234678-HxCDF

16051006



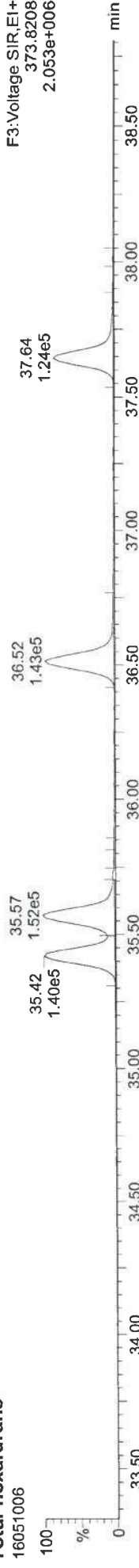
13C-234678-HxCDF

16051006



Total-hexafurans

16051006



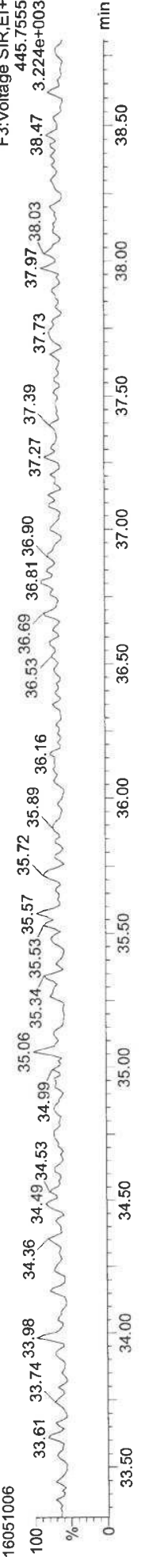
Total-hexafurans

16051006



FUNCTION3 OCDFE

16051006



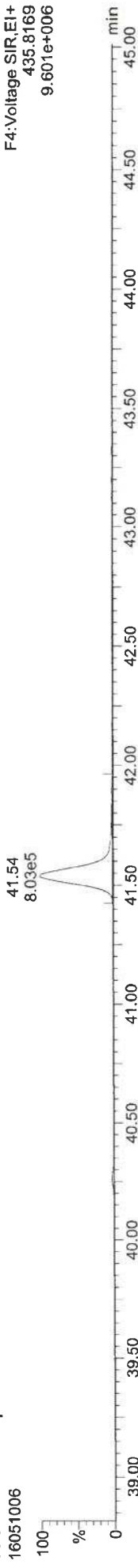
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

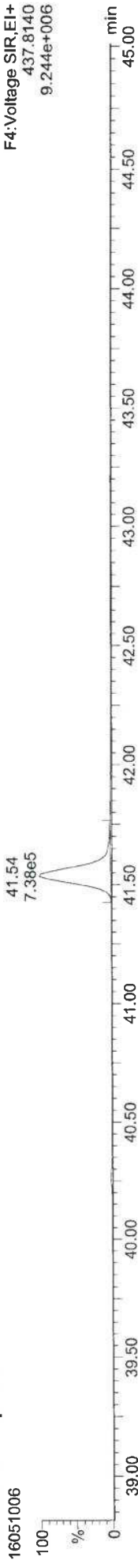
CSAA 04/30/16

ID: C92; Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

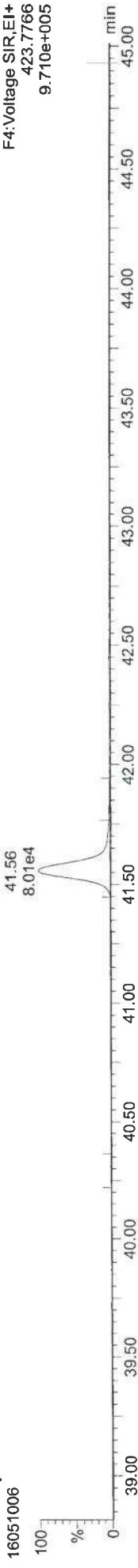
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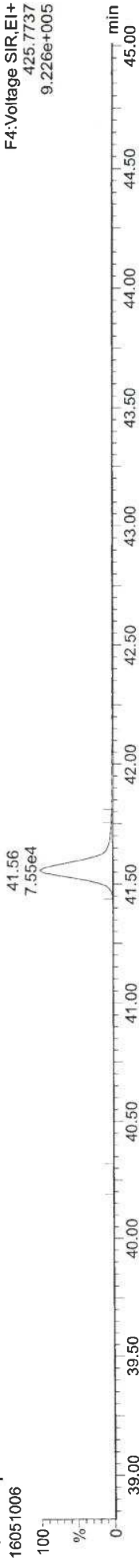
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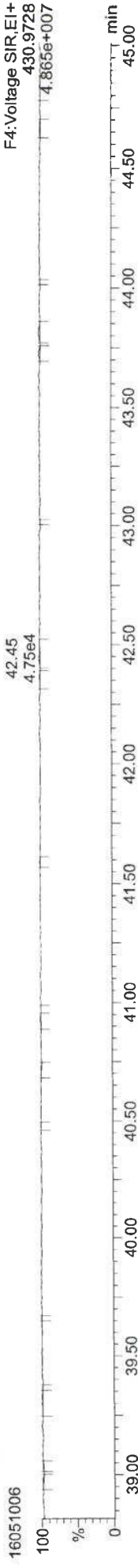
Total-heptadioxins



Total-heptadioxins



FUNCTION4 PFK



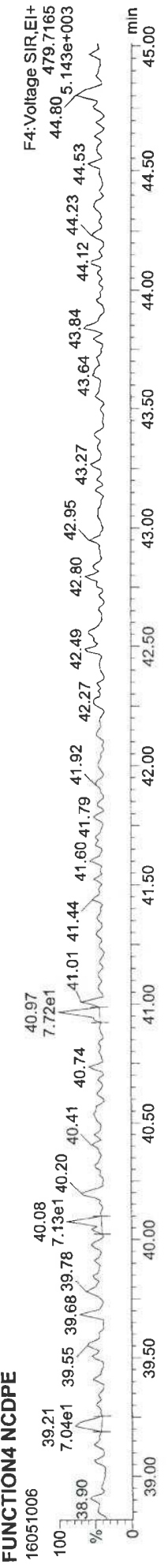
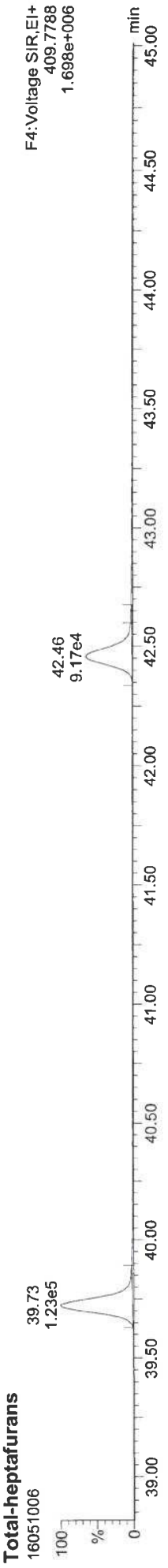
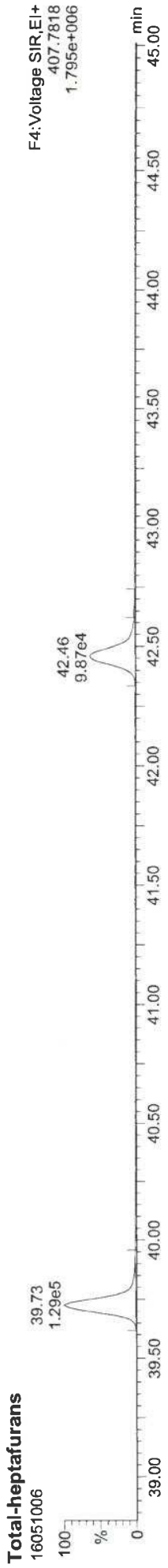
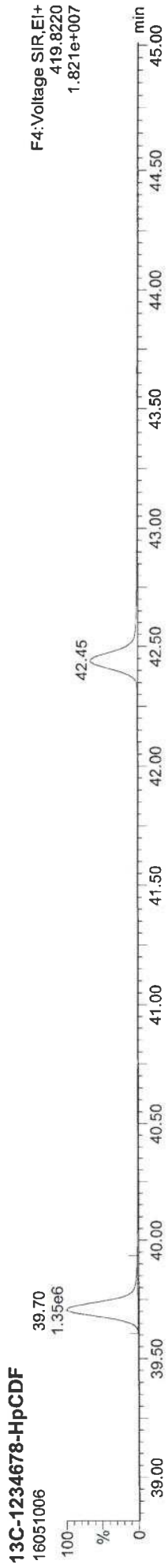
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

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*CS3AA 06/30/16 RB*

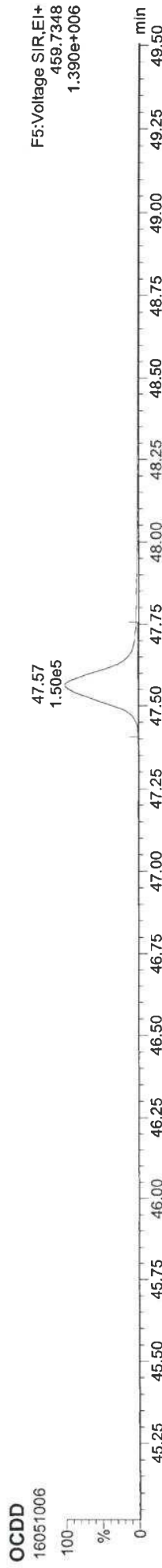
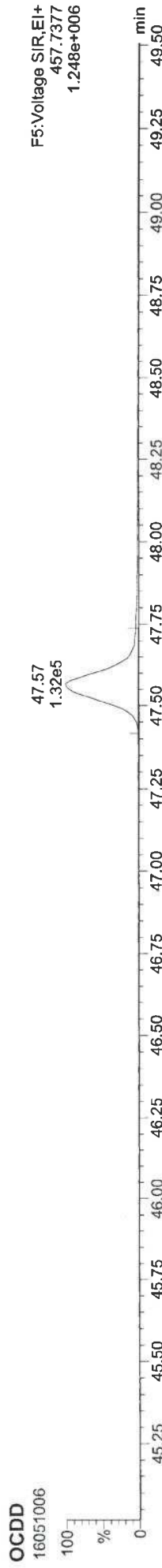
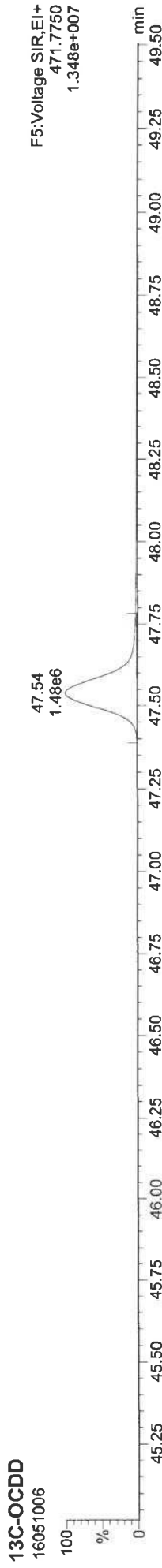
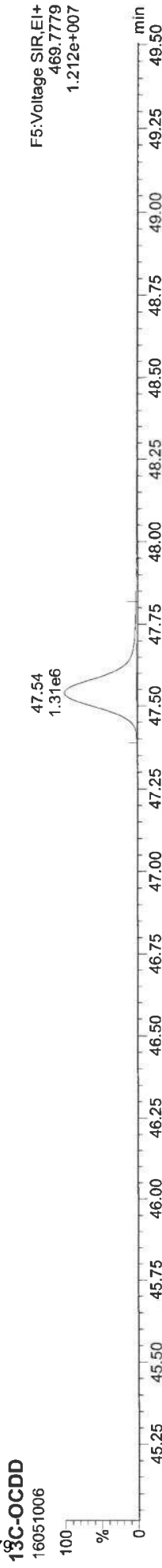
16051006, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
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CSBA 06/20/16 ABU

19-662, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk





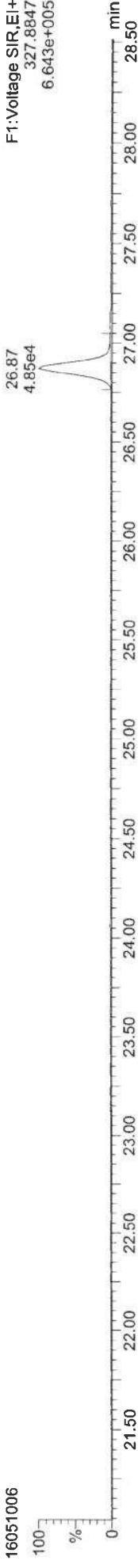
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:36:58 Pacific Daylight Time

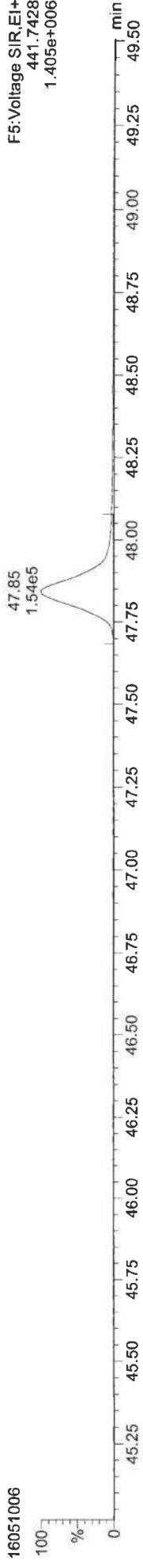
139  
579  
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16051006  
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*CS3AA 04/30/16*

ID: ~~652~~, Name: 16051006, Date: 10-May-2016, Time: 15:30:50, Conditions: AUTOSPEC01, User: pk

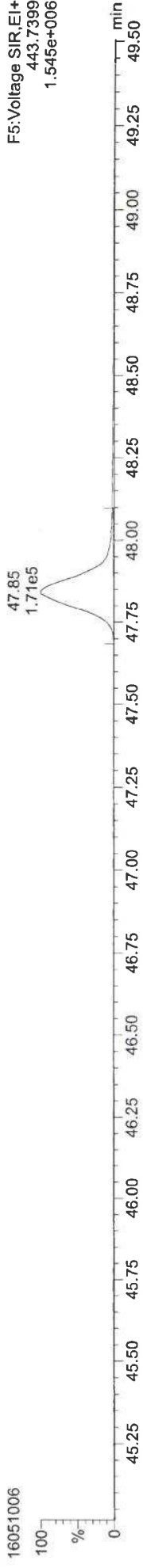
37CL-2378-TCDD



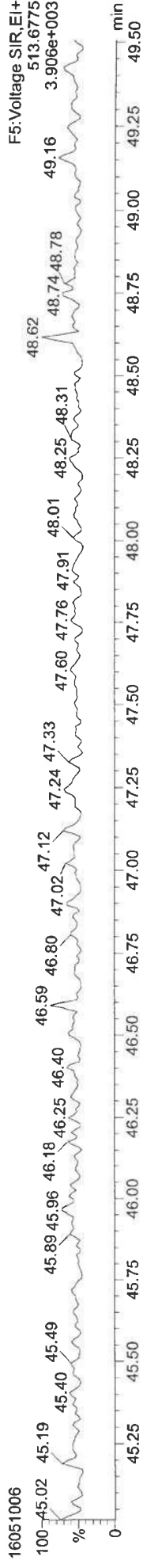
OCDF



OCDF



FUNCTIONS DCDPE



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
 Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40

CS4AA 06/30/16

ID: CS3, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
2378-TCDF	26.213	1.001	1.78e5	2.30e5	0.935	0.770	0.770	2421	2881	2.34e6	3.03e6	965.7	NO	10.064	10.064
12378-PeCDF	30.377	1.000	1.00e6	6.32e5	0.952	1.584	1.550	5774	5259	1.37e7	8.68e6	2375.1	NO	50.599	50.599
23478-PeCDF	31.725	1.000	9.64e5	6.14e5	0.963	1.571	1.550	5774	5259	1.39e7	8.80e6	2389.5	NO	50.194	50.194
123478-HxCDF	35.419	1.001	7.74e5	6.24e5	1.137	1.241	1.240	8198	6551	1.11e7	9.02e6	1356.2	NO	50.247	50.247
234678-HxCDF	36.515	1.001	7.55e5	6.06e5	1.164	1.245	1.240	8198	6551	1.05e7	8.36e6	1283.4	NO	49.864	49.864
123678-HxCDF	35.573	1.001	8.37e5	6.76e5	1.099	1.238	1.240	8198	6551	1.14e7	9.02e6	1389.4	NO	50.545	50.545
123789-HxCDF	37.645	1.001	6.09e5	4.84e5	1.101	1.257	1.240	8198	6551	8.62e6	6.97e6	1051.3	NO	48.371	48.371
1234678-HpCDF	39.727	1.001	6.40e5	6.58e5	1.303	0.973	1.050	6203	5140	8.59e6	8.58e6	1385.6	NO	50.258	50.258
1234789-HpCDF	42.457	1.000	4.88e5	4.65e5	1.317	1.051	1.050	6203	5140	5.80e6	5.56e6	935.4	NO	50.389	50.389
OCDF	47.837	1.006	7.50e5	8.40e5	1.166	0.892	0.890	3246	3947	6.70e6	7.62e6	2063.8	NO	102.360	102.360
2378-TCDD	26.870	1.001	1.29e5	1.57e5	1.134	0.821	0.770	1985	1394	1.68e6	2.12e6	846.6	NO	10.089	10.089
12378-PeCDD	31.989	1.001	6.19e5	3.92e5	0.975	1.580	1.550	4664	3561	8.64e6	5.44e6	1852.9	NO	51.349	51.349
123478-HxCDD	36.647	1.000	5.32e5	4.27e5	1.031	1.245	1.240	4738	4830	7.84e6	6.25e6	1655.4	NO	50.735	50.735
123678-HxCDD	36.779	1.001	5.79e5	4.47e5	0.971	1.296	1.240	4738	4830	7.71e6	6.00e6	1626.3	NO	51.207	51.207
123789-HxCDD	37.206	1.012	5.31e5	4.08e5	0.947	1.300	1.240	4738	4830	7.22e6	5.69e6	1523.3	NO	50.943	50.943
1234678-HpCDD	41.558	1.000	4.00e5	3.84e5	1.028	1.042	1.050	3688	4172	4.95e6	4.66e6	1343.4	NO	49.964	49.964
OCDD	47.559	1.000	6.35e5	7.31e5	1.107	0.868	0.890	2846	3297	5.96e6	6.89e6	2094.7	NO	92.591	92.591
13C-2378-TCDF	26.198	1.006	1.90e6	2.44e6	1.567	0.777	0.770	10273	5323	2.55e7	3.28e7	2478.2	NO	98.091	98.091
13C-12378-PeCDF	30.366	1.166	2.07e6	1.32e6	1.274	1.563	1.550	5465	4417	2.88e7	1.82e7	5276.6	NO	94.299	94.299
13C-23478-PeCDF	31.715	1.218	2.00e6	1.27e6	1.235	1.581	1.550	5465	4417	2.81e7	1.76e7	5137.2	NO	93.789	93.789
13C-123478-HxCDF	35.397	0.952	8.33e5	1.61e6	1.381	0.516	0.510	5046	6079	1.19e7	2.30e7	2354.1	NO	101.606	101.606
13C-123678-HxCDF	35.551	0.956	9.61e5	1.76e6	1.569	0.546	0.510	5046	6079	1.27e7	2.37e7	2512.4	NO	99.485	99.485
13C-234678-HxCDF	36.493	0.981	8.24e5	1.52e6	1.345	0.541	0.510	5046	6079	1.10e7	2.08e7	2182.4	NO	99.999	99.999
13C-123789-HxCDF	37.623	1.012	6.94e5	1.36e6	1.183	0.511	0.510	5046	6079	9.59e6	1.84e7	1899.8	NO	99.465	99.465
13C-1234678-HpCDF	39.705	1.068	6.30e5	1.35e6	1.178	0.465	0.440	3924	5699	8.22e6	1.82e7	2094.3	NO	96.456	96.456
13C-1234789-HpCDF	42.446	1.141	4.50e5	9.86e5	0.878	0.456	0.440	3924	5699	5.36e6	1.15e7	1366.3	NO	93.769	93.769
13C-1234-TCDD	26.034	0.000	1.25e6	1.58e6	1.000	0.790	0.770	3668	2181	1.76e7	2.25e7	4800.2	NO	100.000	100.000
13C-2378-TCDD	26.840	1.031	1.10e6	1.40e6	0.908	0.789	0.770	3668	2181	1.50e7	1.91e7	4077.1	NO	97.659	97.659
13C-12378-PeCDD	31.966	1.228	1.23e6	7.84e5	0.756	1.575	1.550	2656	2320	1.73e7	1.10e7	6509.6	NO	94.655	94.655
13C-123478-HxCDD	36.636	0.985	1.03e6	8.08e5	1.056	1.270	1.240	4105	3134	1.50e7	1.17e7	3651.1	NO	99.538	99.538
13C-123678-HxCDD	36.757	0.988	1.15e6	9.11e5	1.163	1.263	1.240	4105	3134	1.54e7	1.24e7	3748.4	NO	101.680	101.680
13C-1234678-HpCDD	41.547	1.117	7.79e5	7.47e5	0.909	1.043	1.050	3359	3150	9.60e6	9.17e6	2856.6	NO	96.286	96.286
13C-OCDD	47.541	1.278	1.27e6	1.39e6	0.820	0.913	0.890	2890	5148	1.14e7	1.27e7	3958.4	NO	186.477	186.477

Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk  
 054AA 04/30/16

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	Pg
13C-123789-HxCDD	37.184	0.000	9.76e5	7.68e5	1.000	1.270	1.240	4105	3134	1.33e7	1.04e7	3233.4	NO		100.000
Total-tetrafurans			5.55e5		0.935			2421		7.52e6					31.166
Total-penta1			1.28e6					1529		1.75e7					69.412
Total-pentafurans			2.96e6		0.957			5774		4.13e7					152.122
Total-hexafurans			3.93e6		1.125			8198		5.52e7					263.103
Total-heptafurans			1.13e6		1.310			6203		1.45e7					100.979
Total-Furans			1.06e7		1.114			2421		1.43e8					719.141
Total-tetraioxins			7.09e5		1.134			1985		8.29e6					56.500
Total-pentadioxins			2.29e6		0.975			4664		2.70e7					189.364
Total-hexadioxins			2.40e6		0.983			4738		3.32e7					224.417
Total-heptadioxins			8.83e5		1.028			3688		1.14e7					111.222
Total-Dioxins			6.91e6		1.028			1985		8.58e7					674.113
Total-TEQ			1.75e7					1985		2.29e8					1393.254
37CL-2378-TCDD	26.855	1.032	2.91e5		1.067			1895		3.93e6		2073.8			9.687
FUNCTION1 PFK			1.13e6					1200435		2.46e7					0.000
FUNCTION2 PFK			3.93e5					220776		1.09e7					0.000
FUNCTION3 PFK			2.71e6					770478		7.24e7					
FUNCTION4 PFK			3.24e5					618458		8.97e6					
FUNCTION5 PFK			3.38e5					406410		1.22e7					
FUNCTION1 HXCDPE			7.89e2					744		1.64e4					0.000
FUNCTION1 HPCDPE			6.19e2					929		1.61e4					0.000
FUNCTION2 HPCDPE			1.48e3					1245		2.67e4					0.000
FUNCTION3 OGDPE			0.00e0					468		0.00e0					
FUNCTION4 NCDPE			3.15e2					785		6.77e3					0.000
FUNCTION5 DCDPE			0.00e0					470		0.00e0					

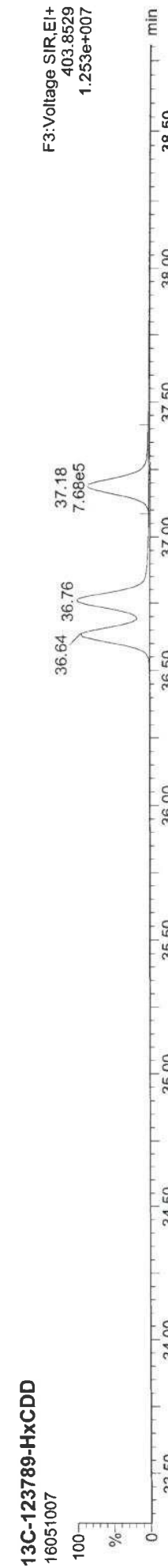
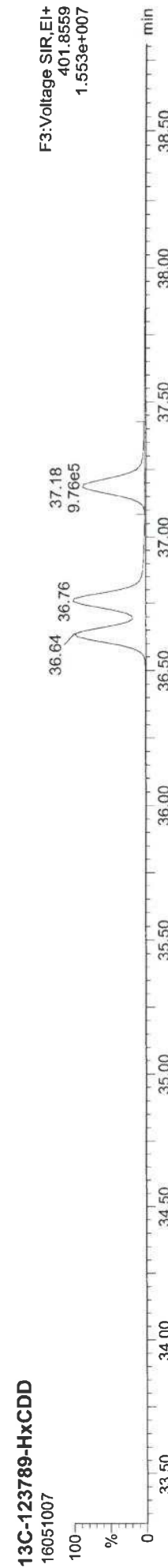
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40  
CG 054AA 04/30/16 R

ID: GS3, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk

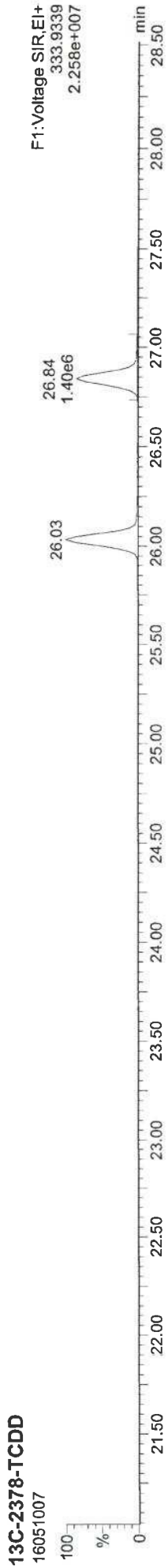


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
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Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

133  
57  
C54AA 04/30/16

16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

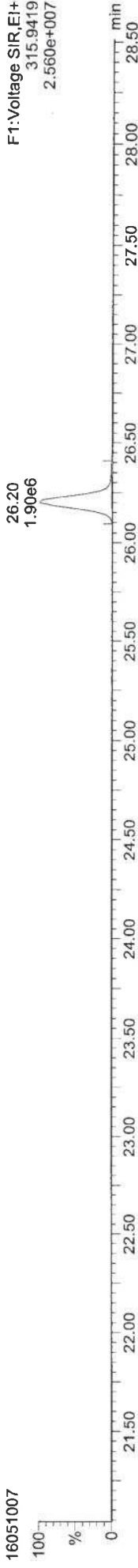
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

age 144 57

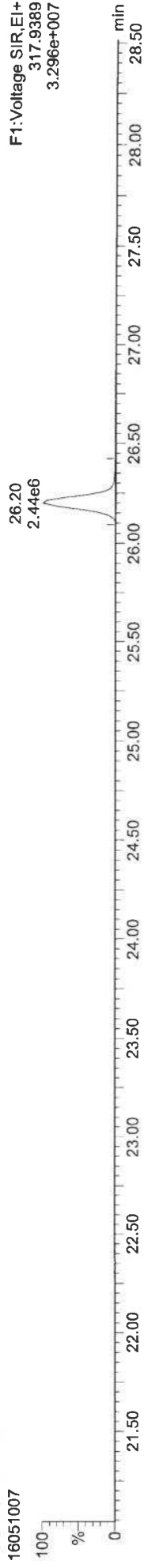
ES4AA 06/30/16

ES Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk

13C-2378-TCDF



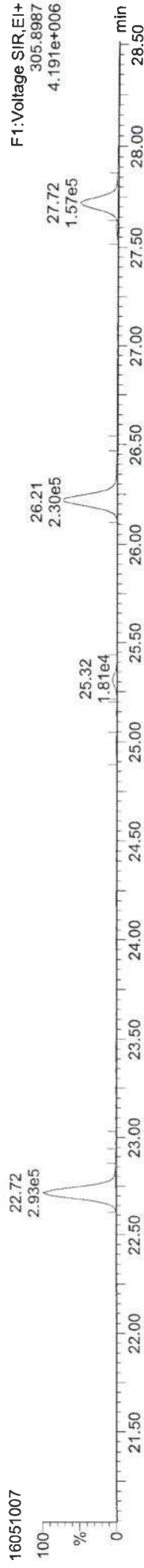
13C-2378-TCDF



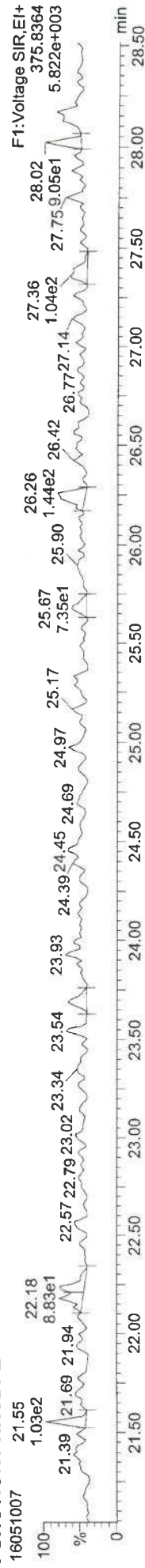
Total-tetrafurans



Total-tetrafurans



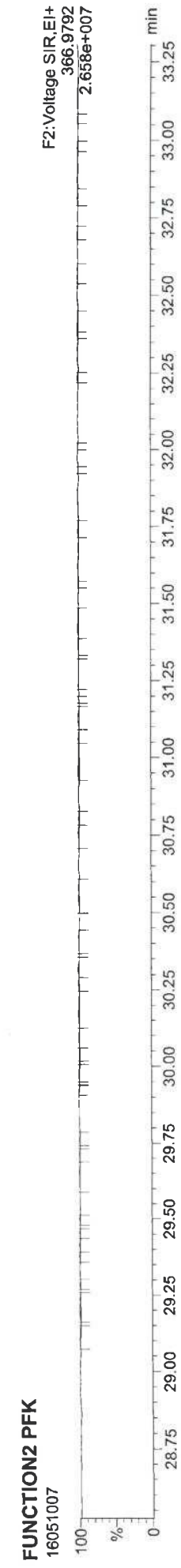
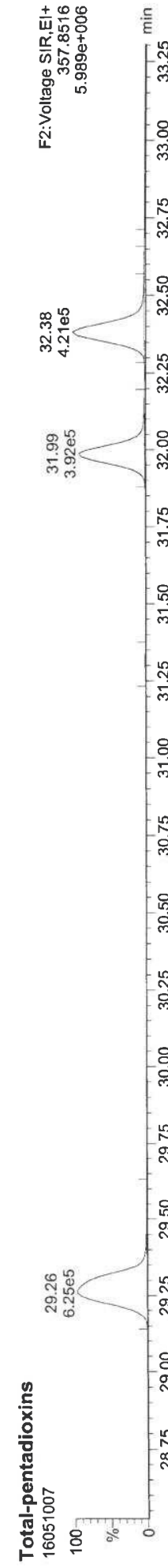
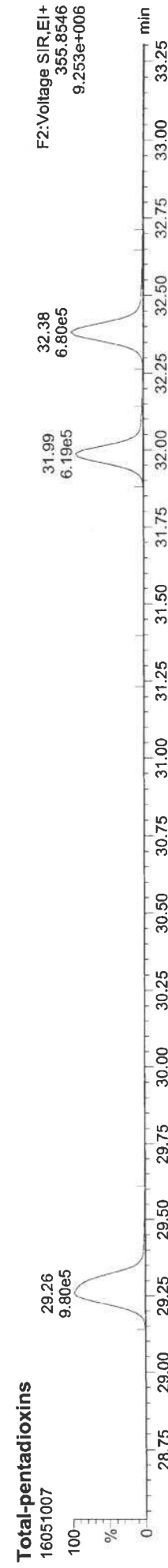
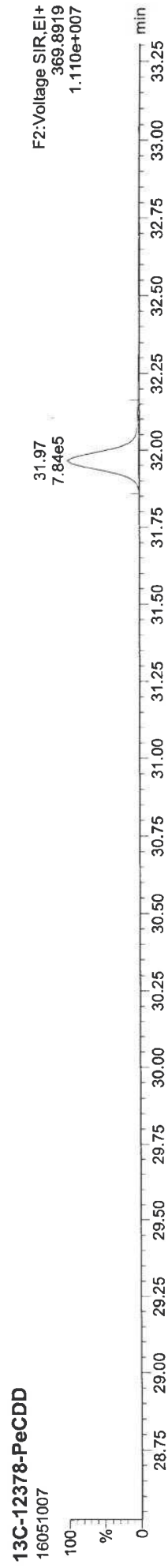
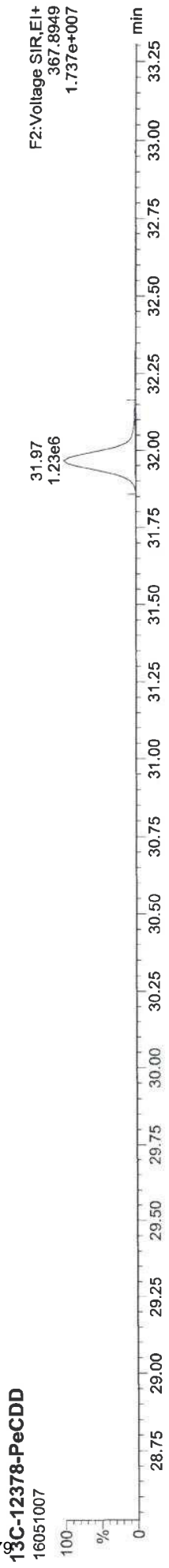
FUNCTION1 HXCDEPE



**Quantify Sample Report**  
 Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

*CSHAA 04/30/16*

IB: ~~653~~, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk



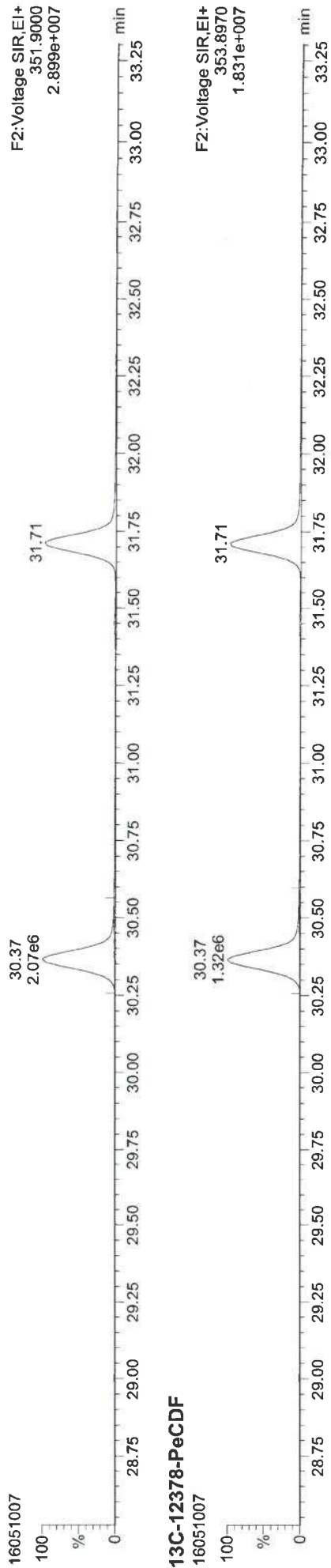
Quantify Sample Report  
MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

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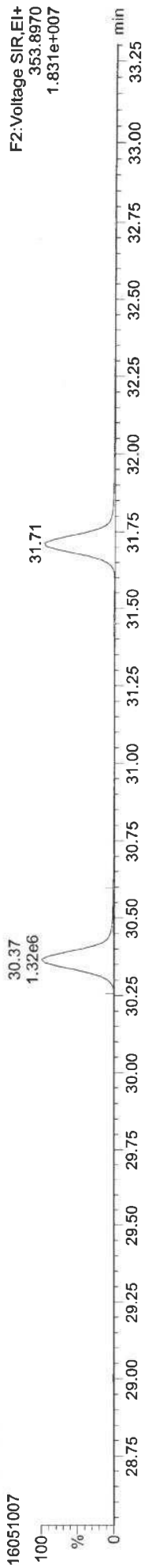
CS4AA 04/30/16

16051007, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk

**13C-12378-PeCDF**



**13C-12378-PeCDF**



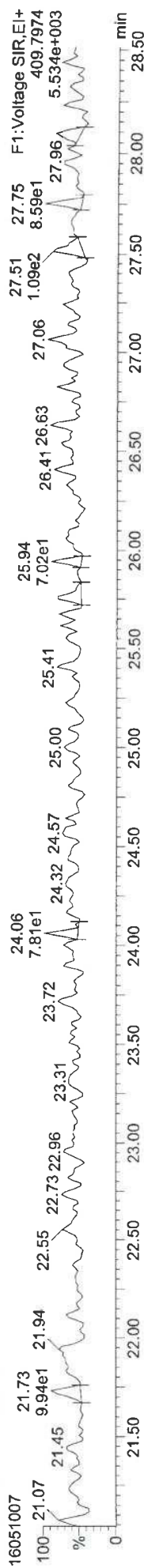
**Total-penta1**



**Total-penta1**



**FUNCTION1 HPCDPE**



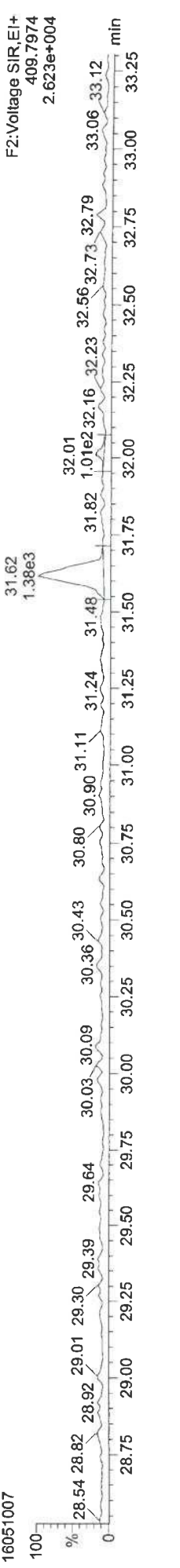
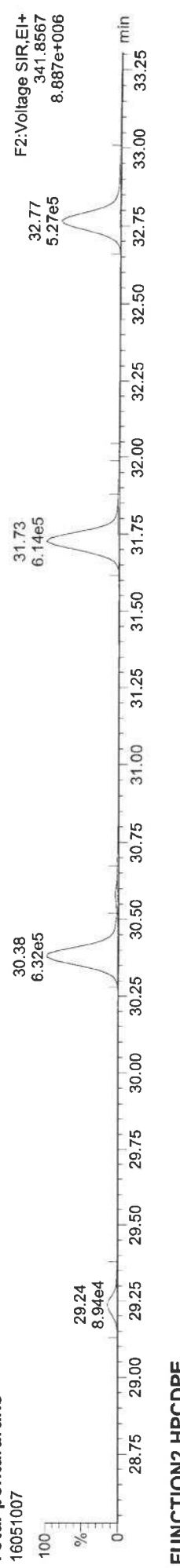
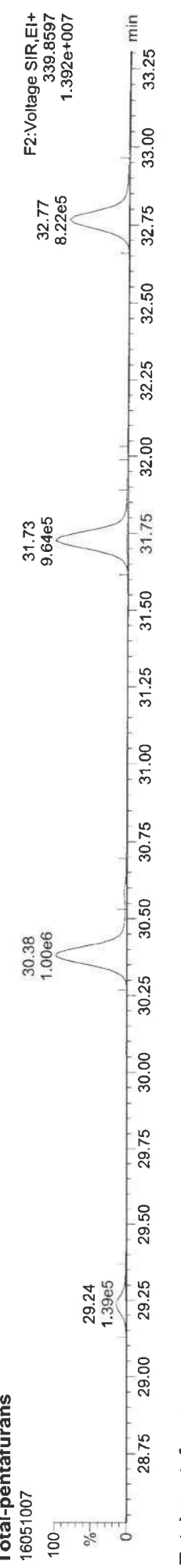
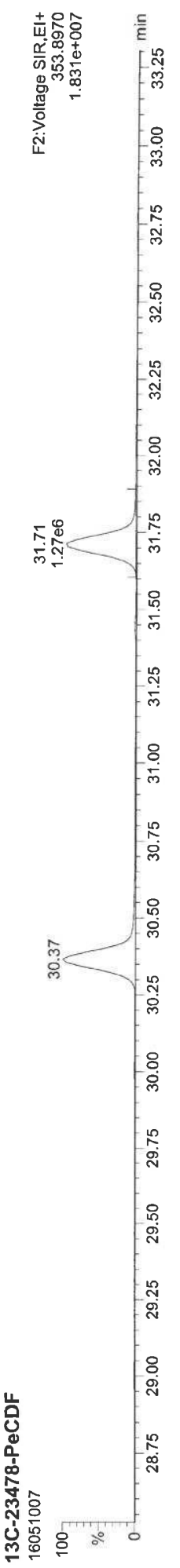
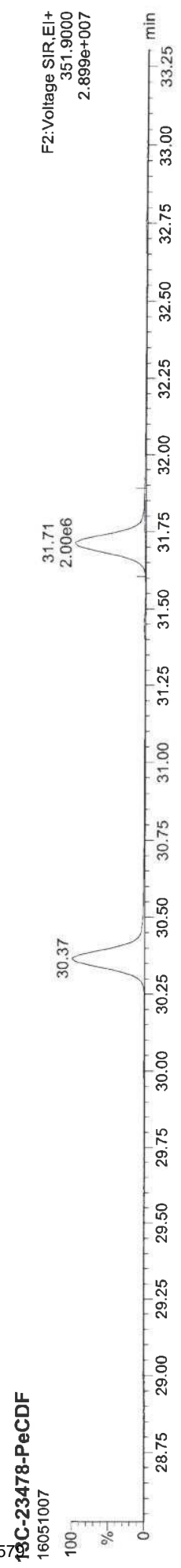


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
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Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

054AA 04/30/16 88

ID: 653, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

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ID: 663, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk

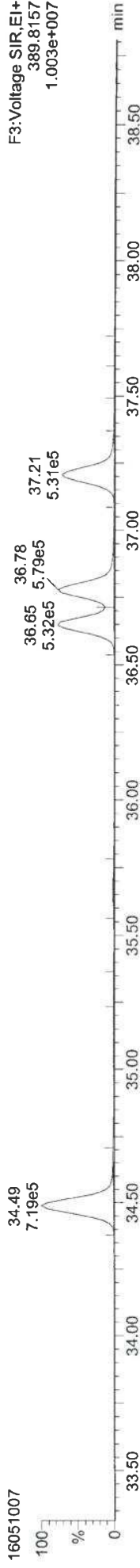
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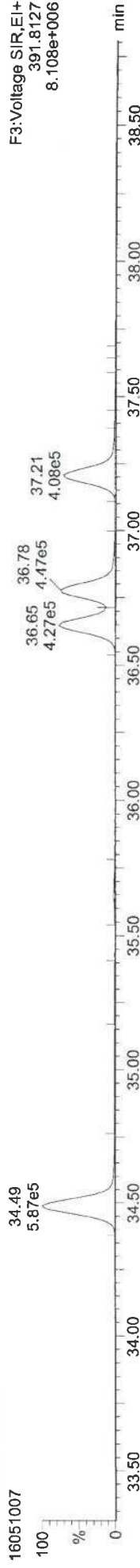
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Total-hexadioxins



Total-hexadioxins



FUNCTION3 PFK

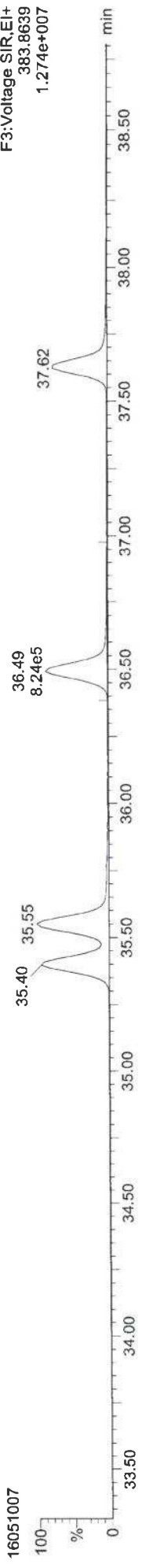


Quantify Sample Report MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
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Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

CS4AA 05/30/16 RB

16051007, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk

13C-234678-HxCDF



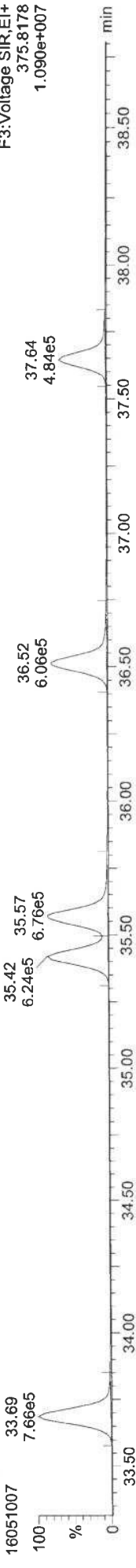
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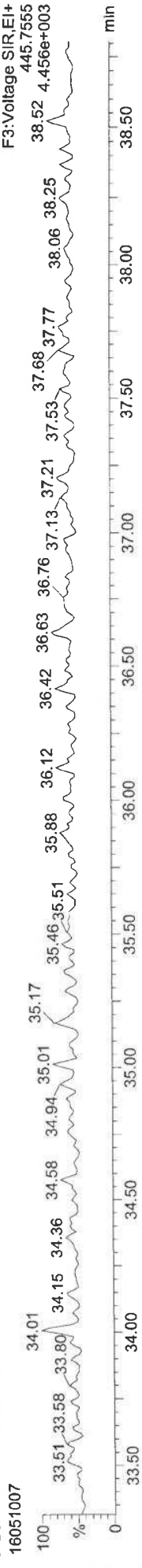
Total-hexafurans



Total-hexafurans



FUNCTION3 OCDFE



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
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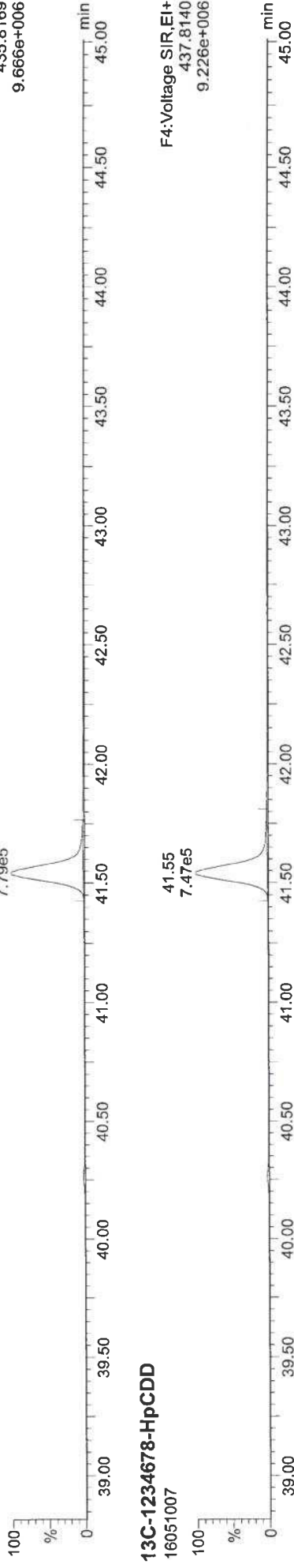
CS4AA 04/30/16

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13C-1234678-HpCDD

16051007

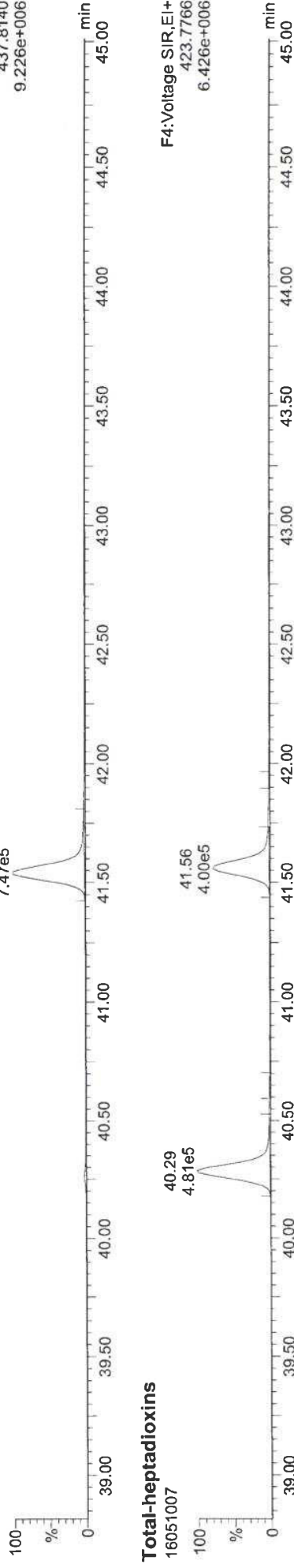
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9.666e+006



13C-1234678-HpCDD

16051007

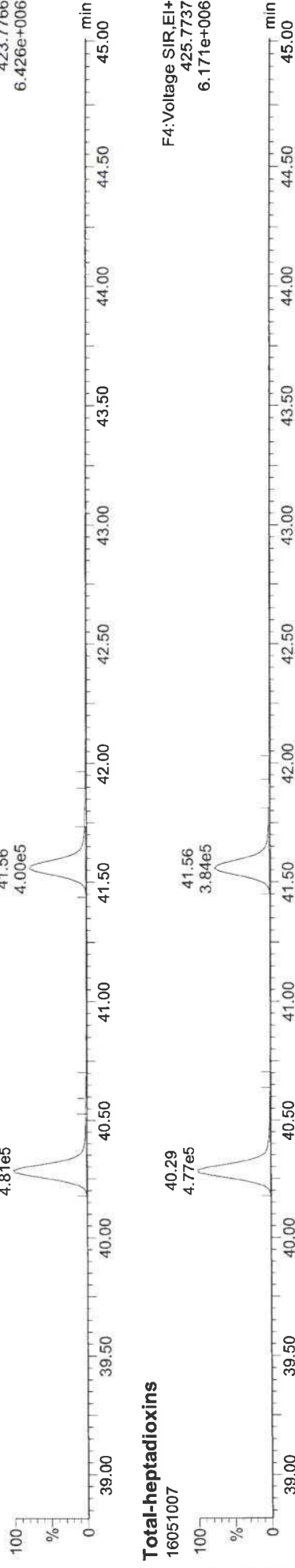
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9.226e+006



Total-heptadioxins

16051007

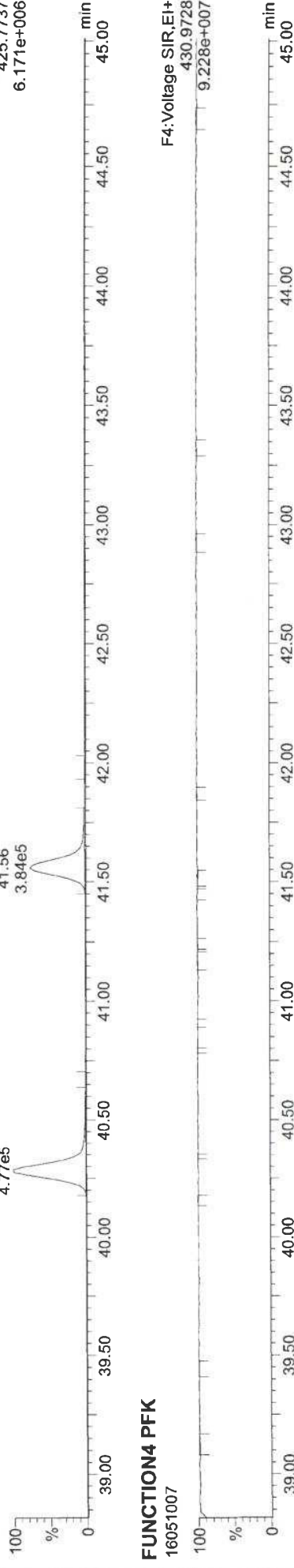
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Total-heptadioxins

16051007

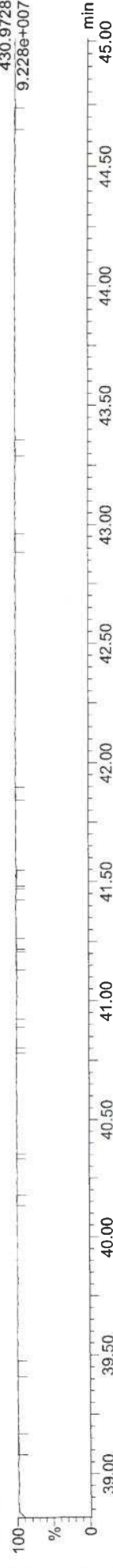
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FUNCTION4 PFK

16051007

F4:Voltage SIR,EI+  
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9.228e+007



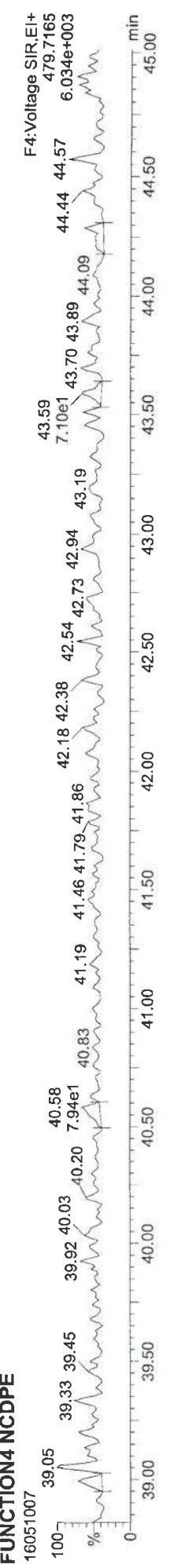
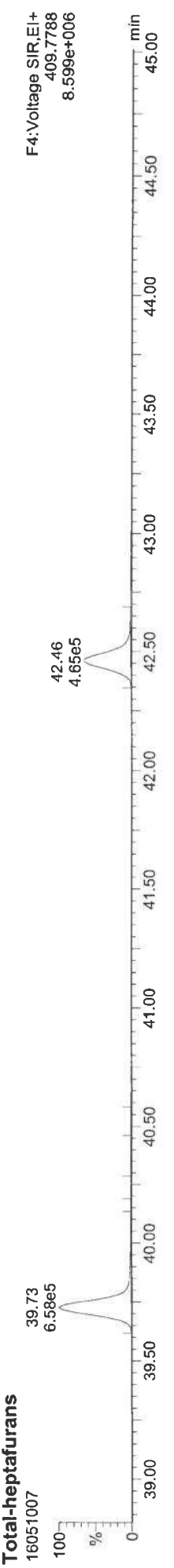
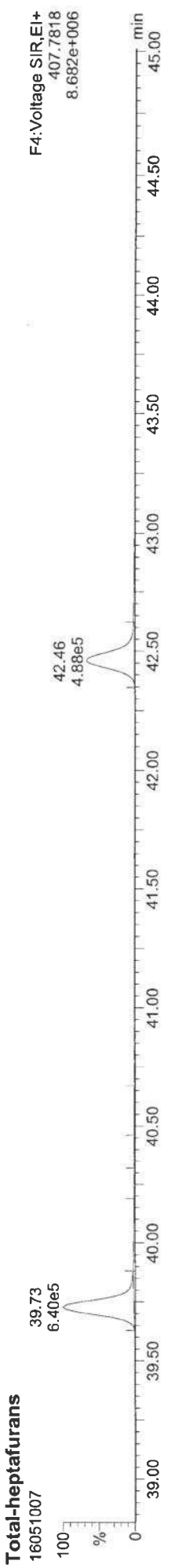
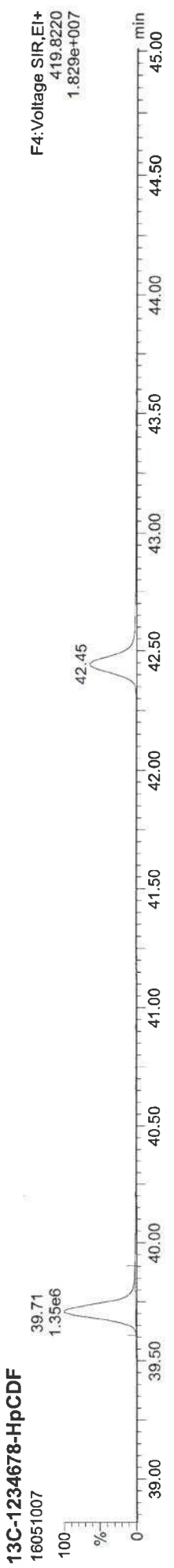
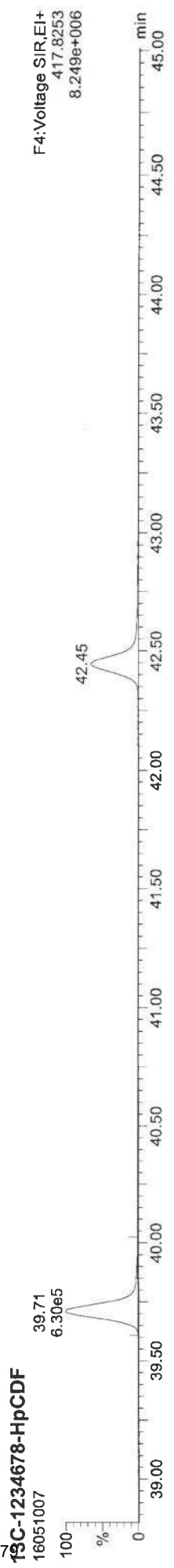
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

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CSYAA 04/30/16

ID: 699, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk



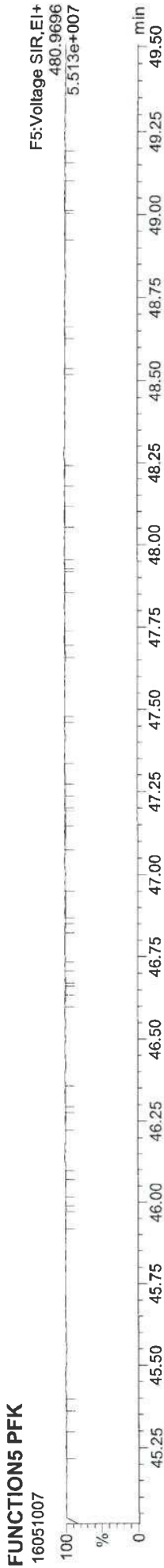
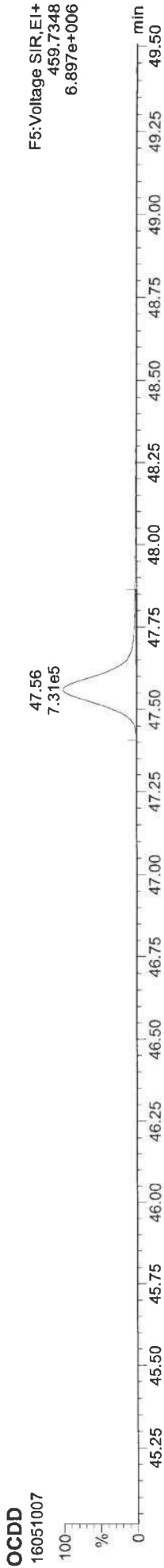
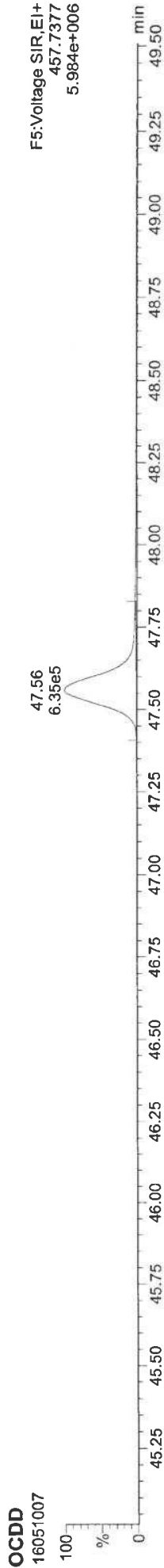
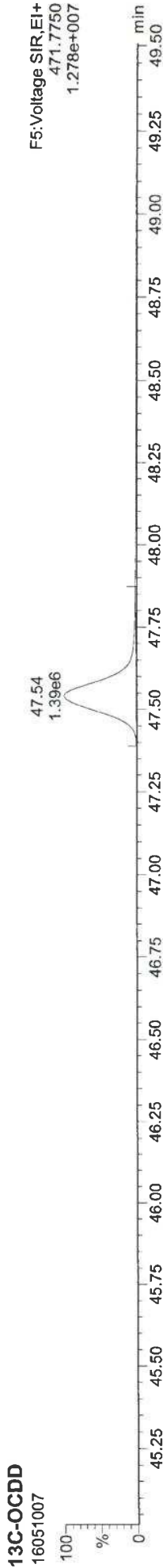
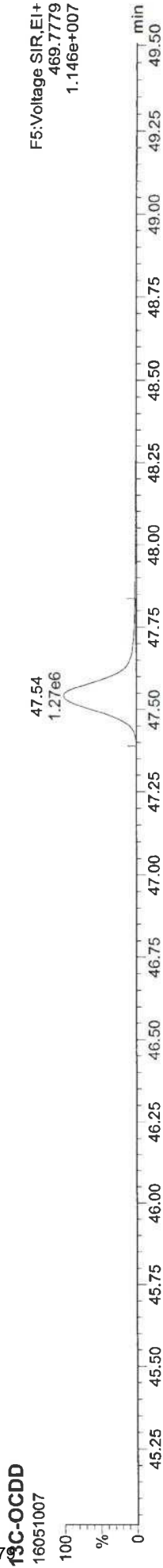
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

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*CSHAA 06/30/16 JD*

ES3, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\D\OXIN8290.PRO\1605101C.qld  
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Printed: Thursday, May 12, 2016 14:37:00 Pacific Daylight Time

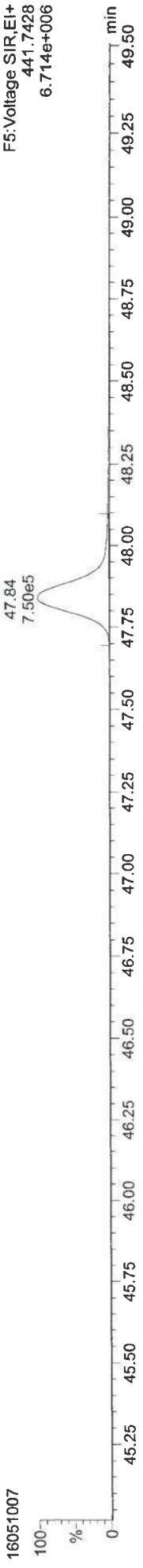
CSHAA 04/30/16

IB\_663, Name: 16051007, Date: 10-May-2016, Time: 16:22:15, Conditions: AUTOSPEC01, User: pk

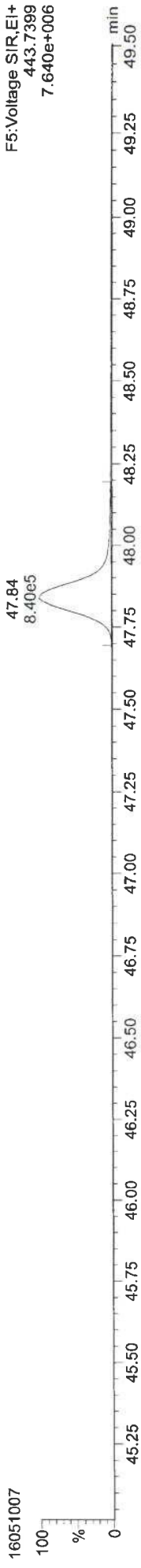
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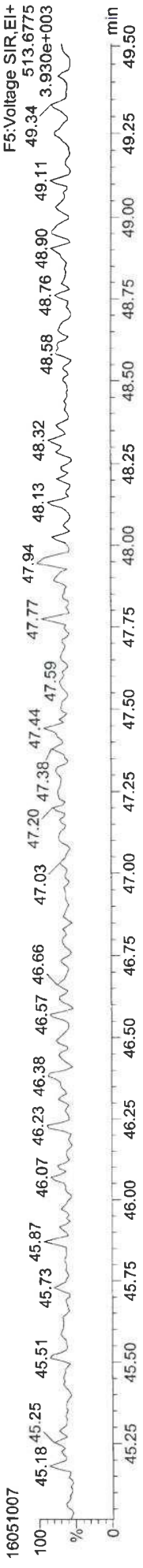
OCDF



OCDF



FUNCTIONS DCDPE



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
 Calibration: P:\DIOXIN8290.PRO\CurveDB\1605101CAL.cdb 11 May 2016 09:28:40

*CS5AA 04/20/16 RB*

ID: GS4, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
2378-TCDF	26.212	1.001	7.17e5	9.00e5	0.935	0.796	0.770	2295	7656	9.79e6	1.27e7	4263.6	NO	41.031	41.031
12378-PeCDF	30.377	1.000	4.07e6	2.59e6	0.952	1.573	1.550	6883	4240	5.75e7	3.65e7	8348.8	NO	206.758	206.758
23478-PeCDF	31.725	1.001	3.95e6	2.52e6	0.963	1.569	1.550	6883	4240	5.82e7	3.56e7	8161.8	NO	204.434	204.434
123478-HxCDF	35.419	1.001	3.15e6	2.50e6	1.137	1.261	1.240	13601	10755	4.46e7	3.58e7	3276.6	NO	202.836	202.836
234678-HxCDF	36.504	1.000	3.11e6	2.49e6	1.164	1.249	1.240	13601	10755	4.37e7	3.55e7	3210.0	NO	203.680	203.680
123678-HxCDF	35.561	1.001	3.61e6	2.77e6	1.099	1.303	1.240	13601	10755	4.77e7	3.84e7	3506.5	NO	204.059	204.059
123789-HxCDF	37.644	1.001	2.55e6	2.03e6	1.101	1.255	1.240	13601	10755	3.71e7	2.93e7	2726.3	NO	203.367	203.367
1234678-HpCDF	39.715	1.000	2.74e6	2.75e6	1.303	0.994	1.050	6885	7691	3.78e7	3.70e7	5494.3	NO	203.048	203.048
1234789-HpCDF	42.456	1.000	2.10e6	2.02e6	1.317	1.041	1.050	6885	7691	2.44e7	2.36e7	3539.4	NO	211.145	211.145
OCDF	47.836	1.006	3.14e6	3.47e6	1.166	0.905	0.890	4831	4858	3.01e7	3.32e7	6225.8	NO	416.025	416.025
2378-TCDD	26.855	1.001	5.00e5	6.38e5	1.134	0.784	0.770	1676	1626	6.80e6	8.68e6	4059.3	NO	40.594	40.594
12378-PeCDD	31.977	1.001	2.48e6	1.60e6	0.975	1.550	1.550	3667	1576	3.55e7	2.29e7	9674.9	NO	202.869	202.869
123478-HxCDD	36.646	1.001	2.20e6	1.73e6	1.031	1.270	1.240	4236	6491	3.19e7	2.56e7	7523.4	NO	201.866	201.866
123678-HxCDD	36.767	1.000	2.24e6	1.87e6	0.971	1.200	1.240	4236	6491	3.06e7	2.47e7	7220.4	NO	203.339	203.339
123789-HxCDD	37.194	1.012	2.13e6	1.73e6	0.947	1.229	1.240	4236	6491	2.93e7	2.38e7	6928.2	NO	205.678	205.678
1234678-HpCDD	41.557	1.000	1.65e6	1.59e6	1.028	1.039	1.050	4062	5246	2.08e7	1.98e7	5129.3	NO	203.516	203.516
OCDD	47.557	1.000	2.56e6	3.01e6	1.107	0.851	0.890	4823	4025	2.45e7	2.79e7	5087.1	NO	368.986	368.986
13C-2378-TCDF	26.198	1.006	1.86e6	2.36e6	1.567	0.787	0.770	9068	5281	2.59e7	3.31e7	2860.1	NO	97.809	97.809
13C-12378-PeCDF	30.366	1.166	2.08e6	1.31e6	1.274	1.590	1.550	3910	3905	2.93e7	1.85e7	7488.0	NO	96.584	96.584
13C-23478-PeCDF	31.703	1.218	2.01e6	1.28e6	1.235	1.575	1.550	3910	3905	2.90e7	1.83e7	7419.1	NO	96.913	96.913
13C-123478-HxCDF	35.397	0.952	8.47e5	1.61e6	1.381	0.527	0.510	3719	7297	1.21e7	2.31e7	3247.7	NO	100.488	100.488
13C-123678-HxCDF	35.539	0.956	9.67e5	1.88e6	1.569	0.514	0.510	3719	7297	1.28e7	2.49e7	3445.1	NO	99.485	99.485
13C-234678-HxCDF	36.493	0.981	8.07e5	1.56e6	1.345	0.518	0.510	3719	7297	1.12e7	2.15e7	3012.3	NO	98.078	98.078
13C-123789-HxCDF	37.622	1.012	6.97e5	1.35e6	1.183	0.515	0.510	3719	7297	1.04e7	1.97e7	2786.8	NO	99.678	99.678
13C-1234678-HpCDF	39.704	1.068	6.29e5	1.45e6	1.178	0.435	0.440	3678	4603	8.83e6	1.95e7	2402.0	NO	95.545	95.545
13C-1234789-HpCDF	42.434	1.141	4.60e5	1.02e6	0.878	0.450	0.440	3678	4603	5.41e6	1.19e7	1470.4	NO	100.000	100.000
13C-1234-TCDD	26.033	0.000	1.21e6	1.54e6	1.000	0.788	0.770	4360	2513	1.71e7	2.16e7	3929.7	NO	99.039	99.039
13C-2378-TCDD	26.840	1.031	1.09e6	1.38e6	0.908	0.787	0.770	4360	2513	1.50e7	1.90e7	3451.4	NO	99.127	99.127
13C-12378-PeCDD	31.955	1.227	1.28e6	7.82e5	0.756	1.634	1.550	2594	1749	1.74e7	1.10e7	6717.7	NO	101.114	101.114
13C-123478-HxCDD	36.624	0.985	1.06e6	8.27e5	1.056	1.280	1.240	3316	7010	1.55e7	1.22e7	4679.9	NO	101.181	101.181
13C-123678-HxCDD	36.756	0.988	1.16e6	9.21e5	1.163	1.258	1.240	3316	7010	1.57e7	1.27e7	4733.5	NO	96.299	96.299
13C-1234678-HpCDD	41.535	1.117	7.90e5	7.57e5	0.909	1.044	1.050	3750	2889	1.00e7	9.48e6	2676.9	NO	188.350	188.350
13C-OCDD	47.540	1.278	1.31e6	1.41e6	0.820	0.929	0.890	4418	5175	1.19e7	1.33e7	2699.0	NO		



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
 Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

*C55AA 04/30/16*

ID: **694**, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
13C-123789-HxCDD	37.183	0.000	9.81e5	7.86e5	1.000	1.248	1.240	3316	7010	1.40e7	1.10e7	4215.8	NO		100.000
Total-tetrafurans			7.32e5		0.935			2295		9.99e6					41.818
Total-penta1			3.02e2					1006		4.38e3					0.012
Total-pentafurans			8.28e6		0.957			6883		1.16e8					423.647
Total-hexafurans			1.24e7		1.125			13601		1.73e8					814.310
Total-heptafurans			4.84e6		1.310			6885		6.23e7					414.734
Total-Furans			2.94e7		1.114			2295		3.92e8					2110.546
Total-tetradioxins			5.13e5		1.134			1676		6.96e6					41.692
Total-pentadioxins			2.48e6		0.975			3667		3.56e7					203.361
Total-hexadioxins			6.57e6		0.983			4236		9.19e7					611.686
Total-heptadioxins			1.66e6		1.028			4062		2.09e7					204.605
Total-Dioxins			1.38e7		1.028			1676		1.80e8					1430.329
Total-TEQ			4.32e7					1676		5.72e8					3540.875
37CL-2378-TCDD	26.855	1.032	1.19e6		1.067			2351		1.63e7		6926.2			40.530
FUNCTION1 PFK			5.93e6					1292017		8.23e7					
FUNCTION2 PFK			1.97e5					231314		5.98e6					0.000
FUNCTION3 PFK			4.75e5					829123		1.56e7					0.000
FUNCTION4 PFK			5.13e5					609401		1.38e7					
FUNCTION5 PFK			1.90e5					404182		8.68e6					
FUNCTION1 HXCDPE			8.25e1					694		1.17e3					0.000
FUNCTION1 HPCDPE			1.77e3					1114		3.08e4					0.000
FUNCTION2 HPCDPE			5.48e3					1104		8.68e4					0.000
FUNCTION3 OCDPE			0.00e0					541		0.00e0					
FUNCTION4 NCDPE			3.38e2					700		8.15e3					0.000
FUNCTION5 DCDPE			1.08e2					501		3.99e3					0.000

Quantify Sample Report MassLynx MassLynx V4.1 SCN909

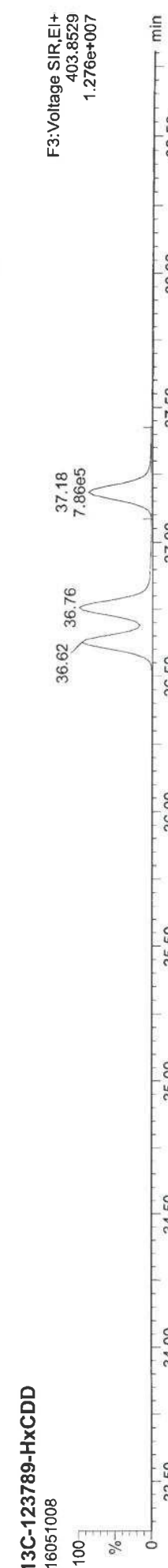
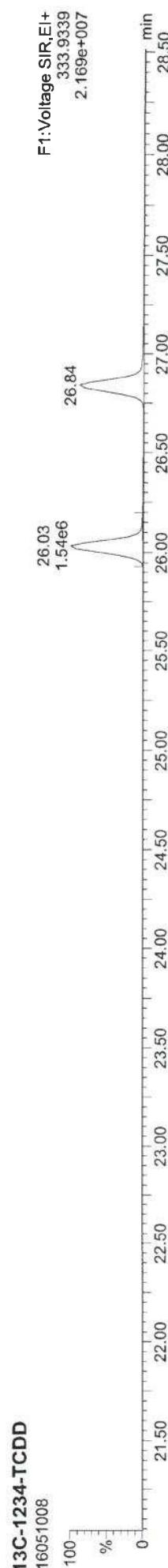
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\DiDioxin1604143SN.mdb 14 Apr 2016 14:40:15  
Calibration: P:\DIOXIN8290.PRO\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

055AA 06/30/16

ID: GS4, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld

Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time

Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

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*055AA 04/20/16*

ID: **654**, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

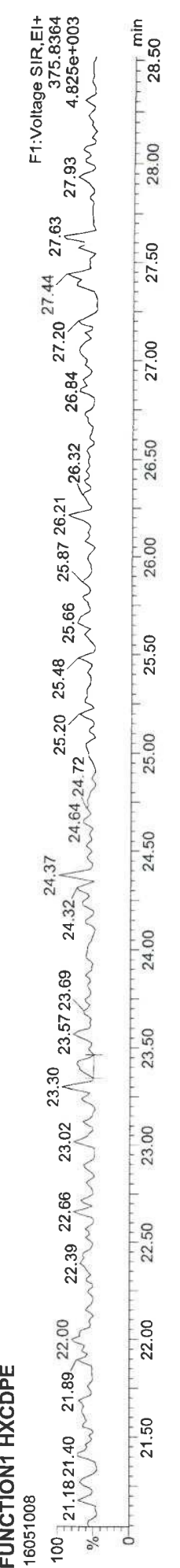
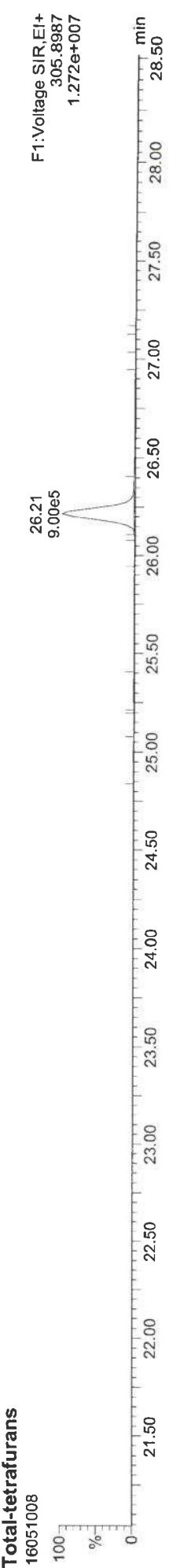
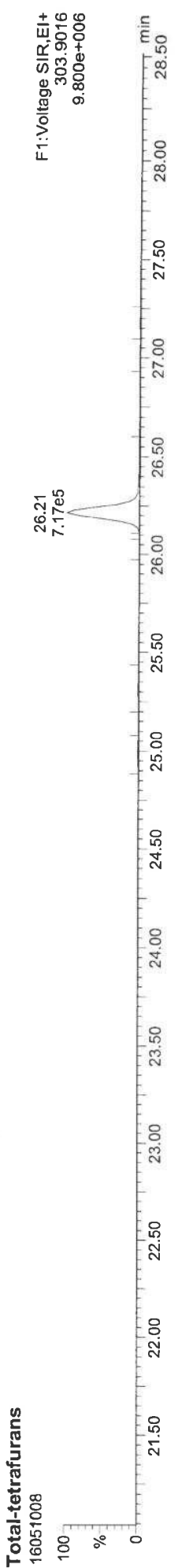
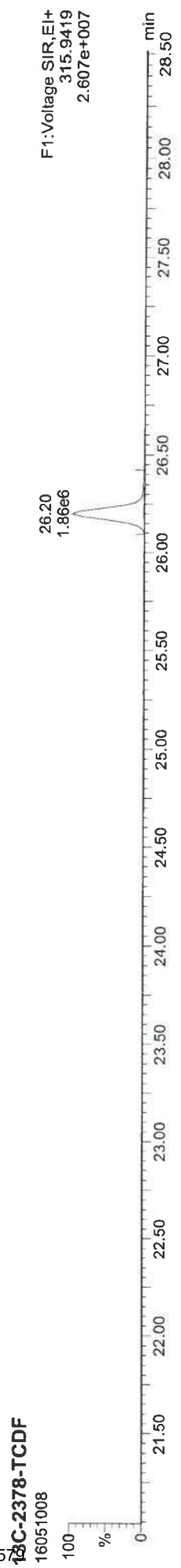


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510IC.qld  
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Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

CS5AA 06/30/16

16051008, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

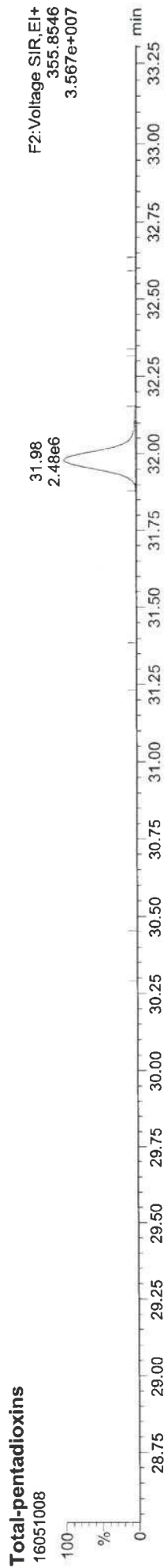
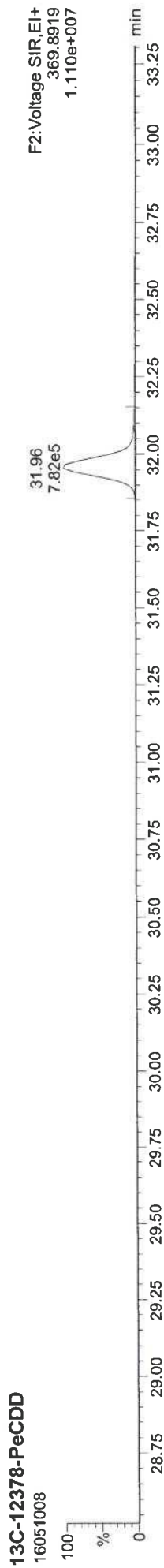
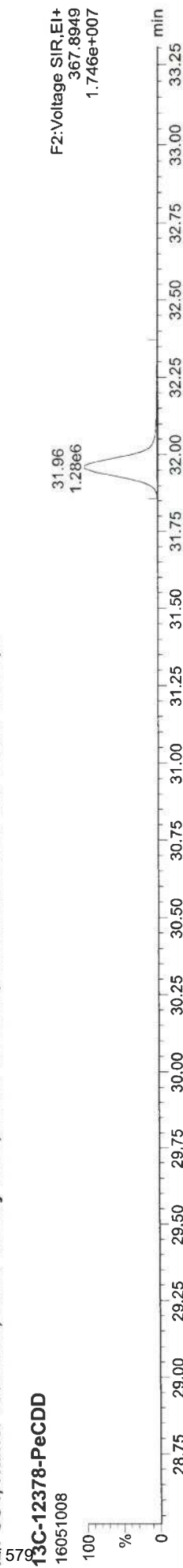


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

CS5AA 04/30/16

ID: CS4, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

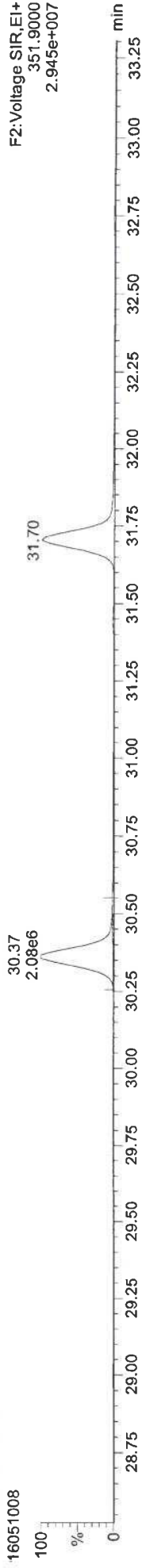
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

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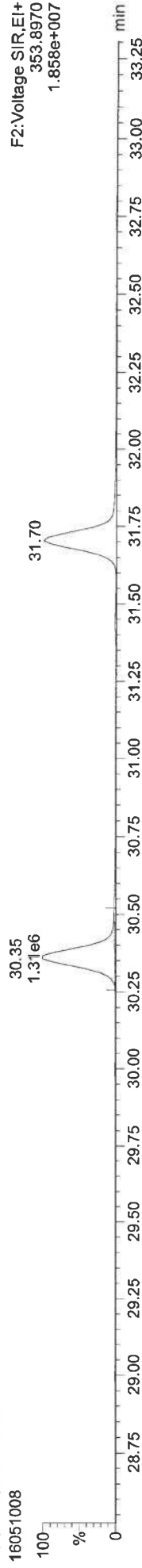
*CS5AA 04/30/16*

16051008, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

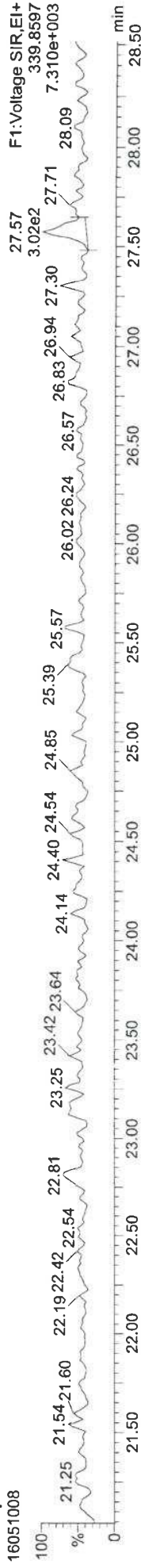
13C-12378-PeCDF



13C-12378-PeCDF



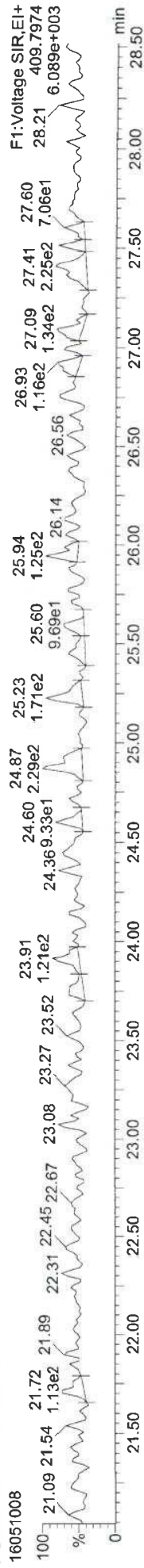
Total-penta1



Total-penta1



FUNCTION1 HPCDPE

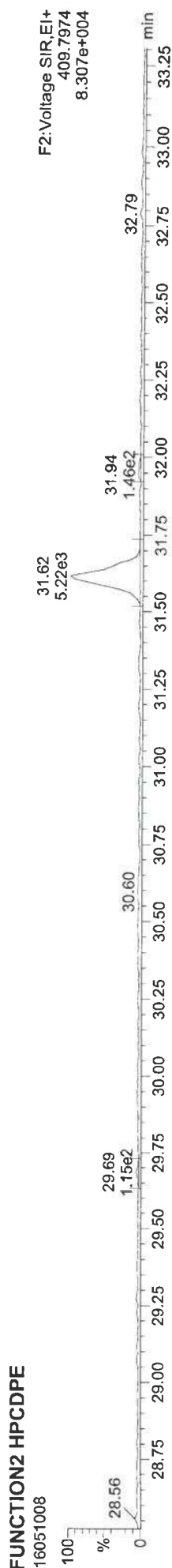
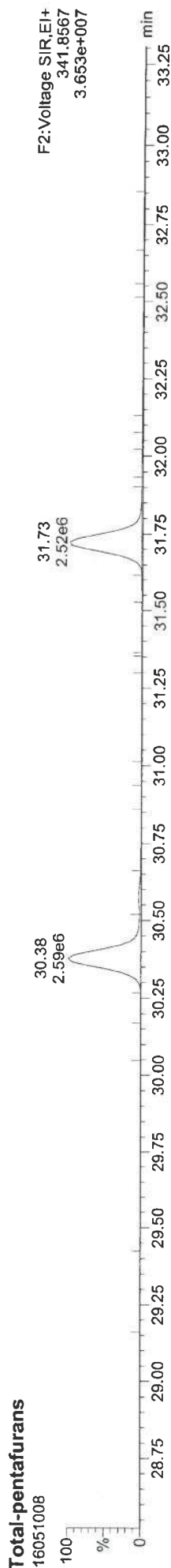
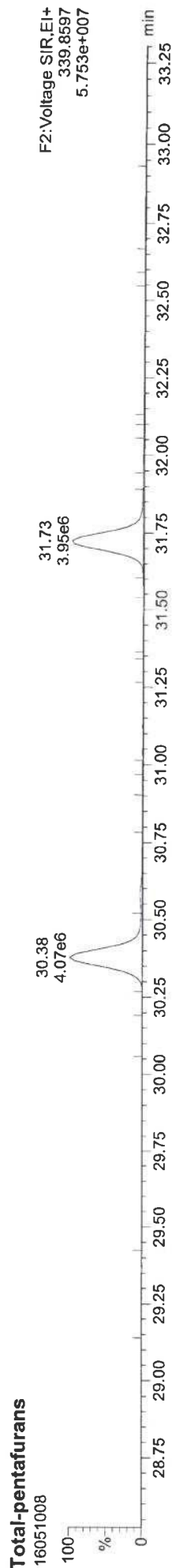
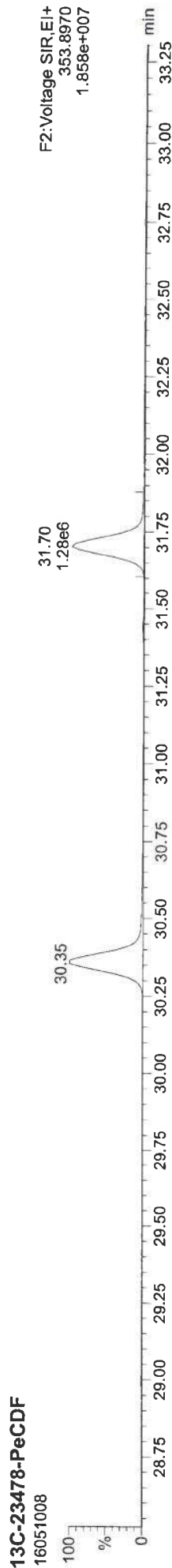


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

055AA 04/34/16 SD

IP: GS4, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk



F2: Voltage SIR, EI+  
351.9000  
2.945e+007

F2: Voltage SIR, EI+  
353.8970  
1.858e+007

F2: Voltage SIR, EI+  
339.8597  
5.753e+007

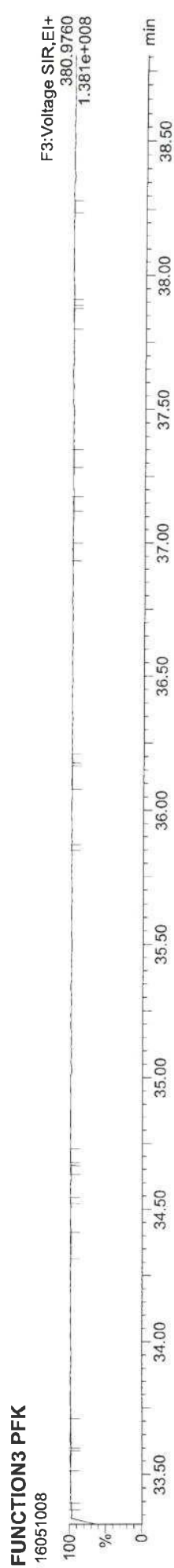
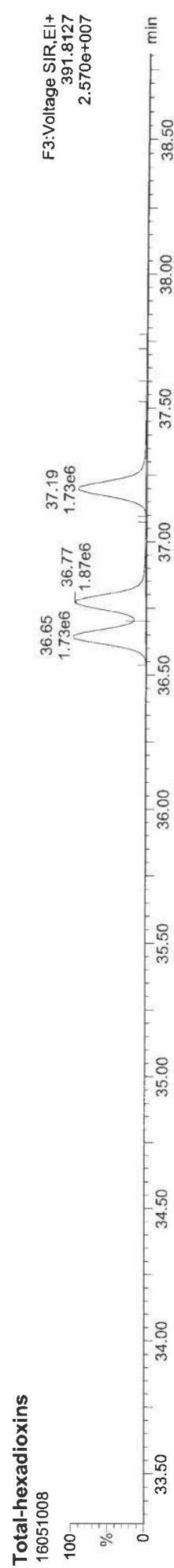
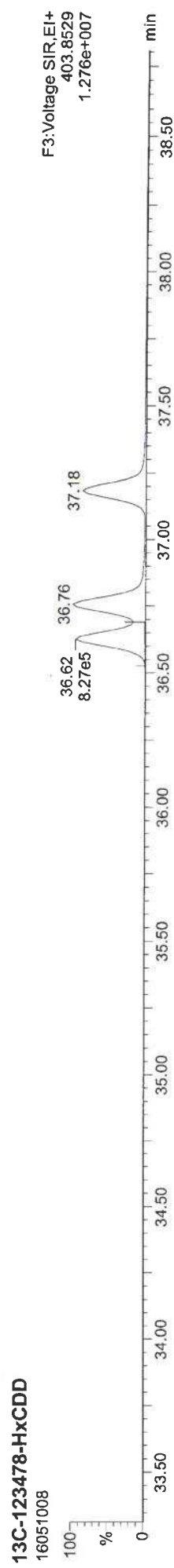
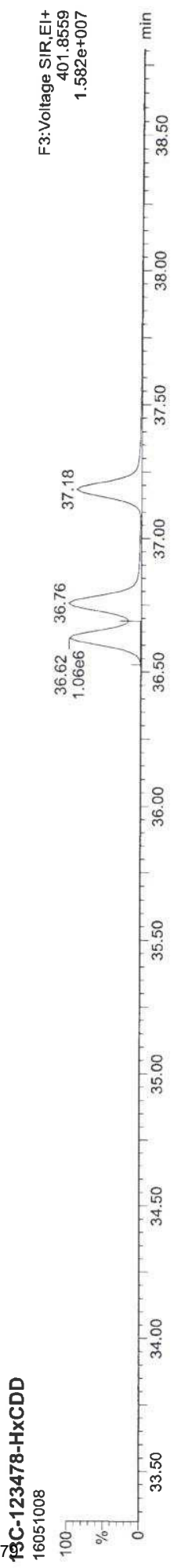
F2: Voltage SIR, EI+  
341.8567  
3.653e+007

F2: Voltage SIR, EI+  
409.7974  
8.307e+004

Quantify Sample Report  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

*C55AA 04/20/16 JBR*

16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk





Quantify Sample Report MassLynx MassLynx V4.1 SCN909

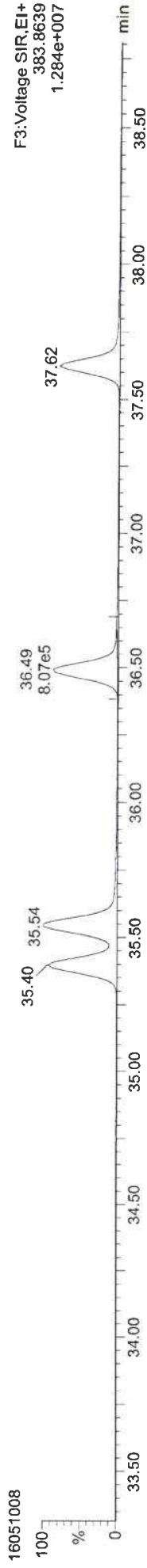
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

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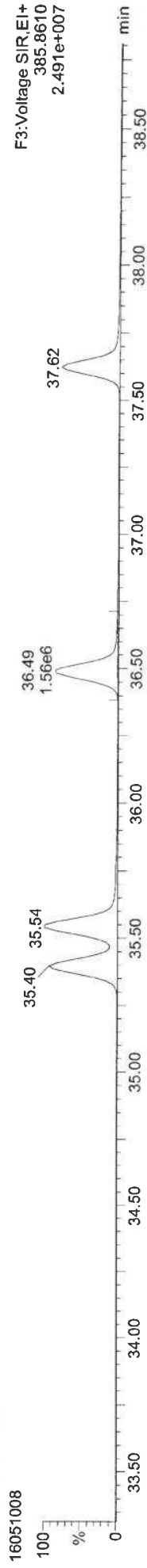
CS5AA 06/30/16

16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

13C-234678-HxCDF



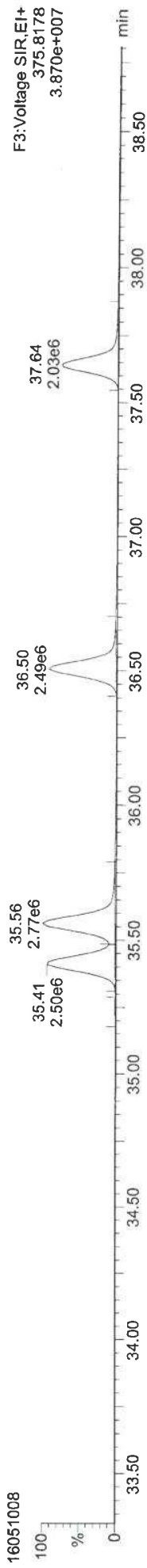
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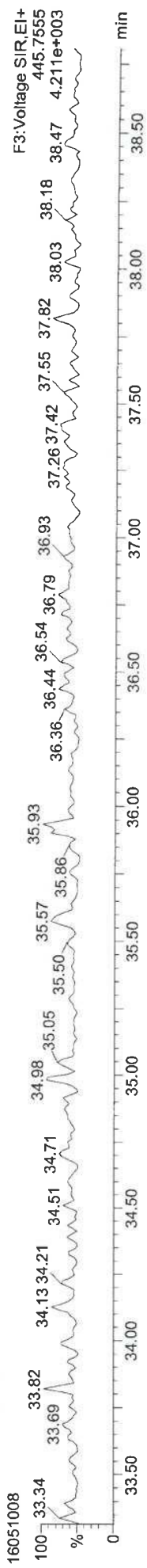
Total-hexafurans



Total-hexafurans



FUNCTION3 OCDPE

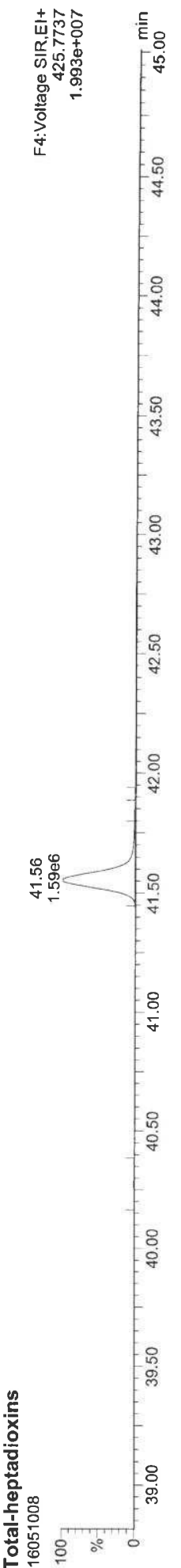
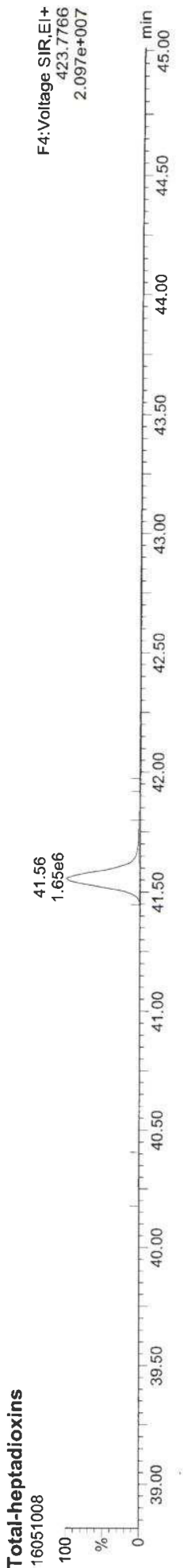
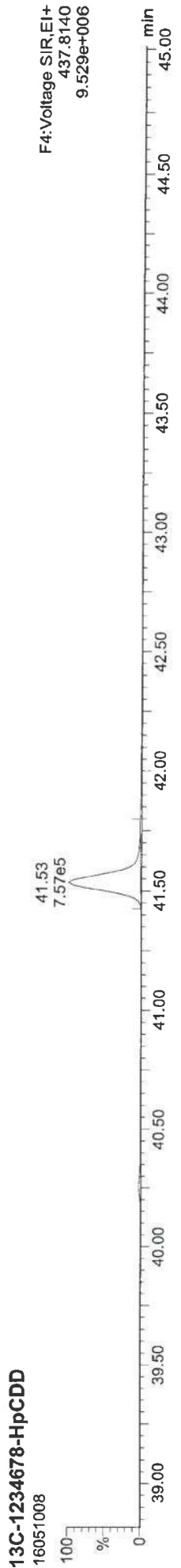
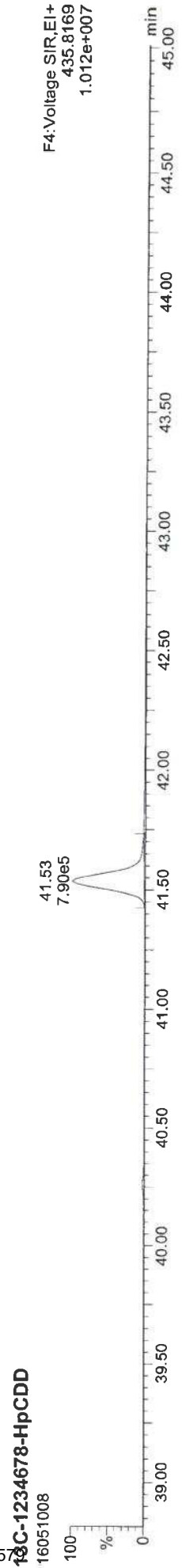


Quantify Sample Report  
MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

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*CS5AA 06/30/16*

ID: CS4, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld

Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time

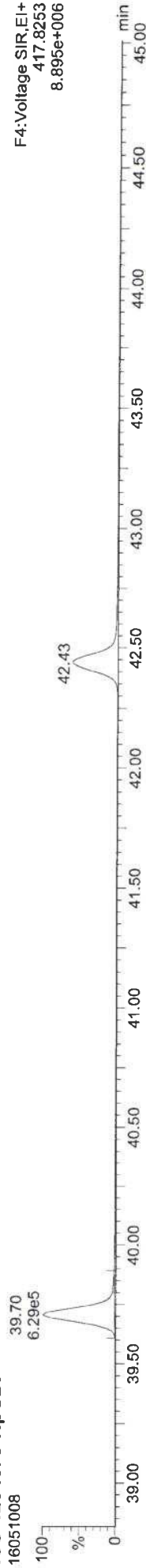
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

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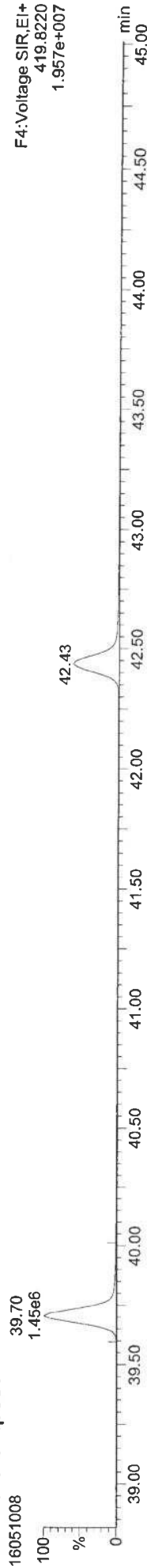
0557AA 04/30/16

ID: 664, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

13C-1234678-HpCDF



13C-1234678-HpCDF



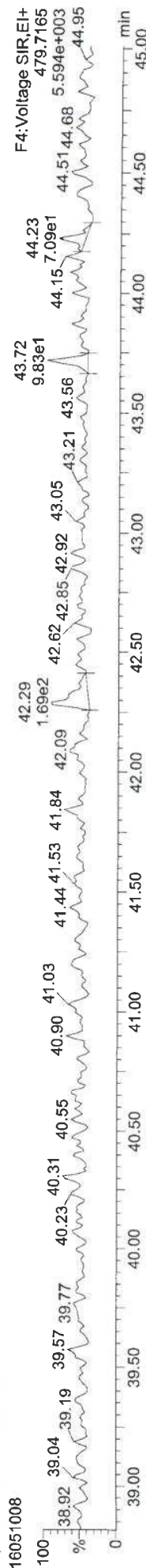
Total-heptafurans



Total-heptafurans



FUNCTION4 NCDPE



Dataset: P:\DIOXIN8290.PRO\1605101C.qld

Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time

Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

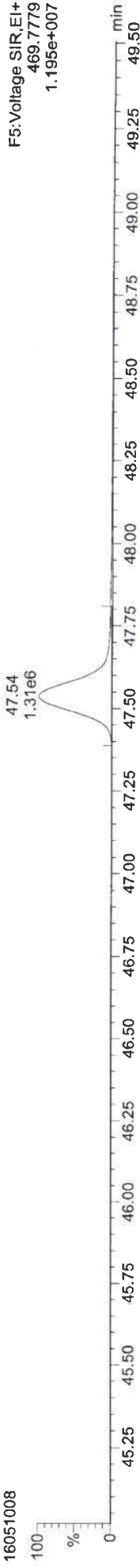
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*CS5AA 04/30/16*

IG: 664, Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

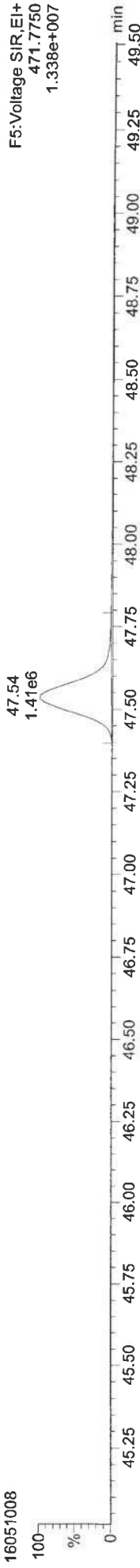
**13C-OCDD**

16051008



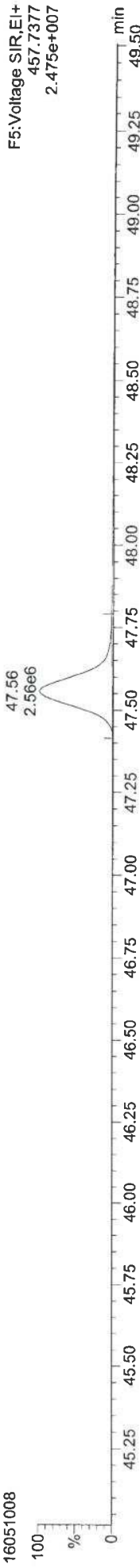
**13C-OCDD**

16051008



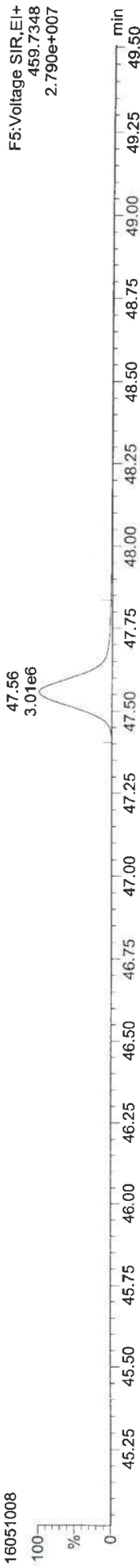
**OCDD**

16051008



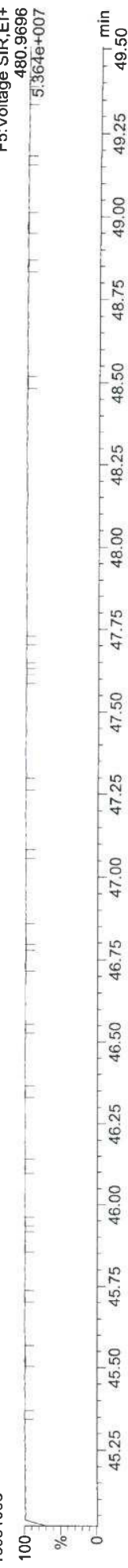
**OCDD**

16051008



**FUNCTION5 PFK**

16051008



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510\IC.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:02 Pacific Daylight Time

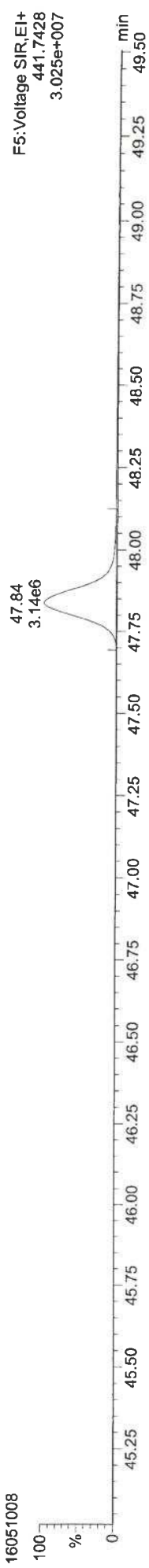
*C55AA 04/29/16 R*

ID: ~~664~~ Name: 16051008, Date: 10-May-2016, Time: 17:15:41, Conditions: AUTOSPEC01, User: pk

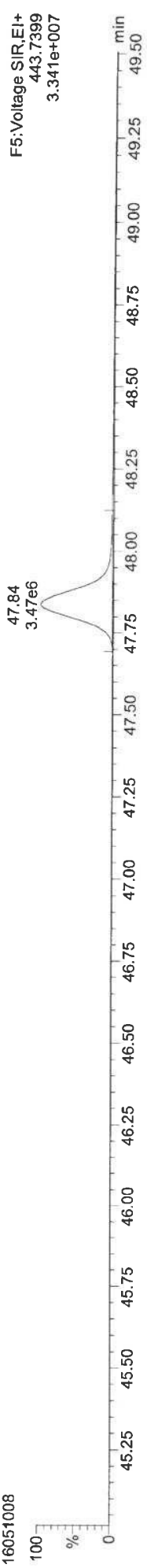
CL-2378-TCDD



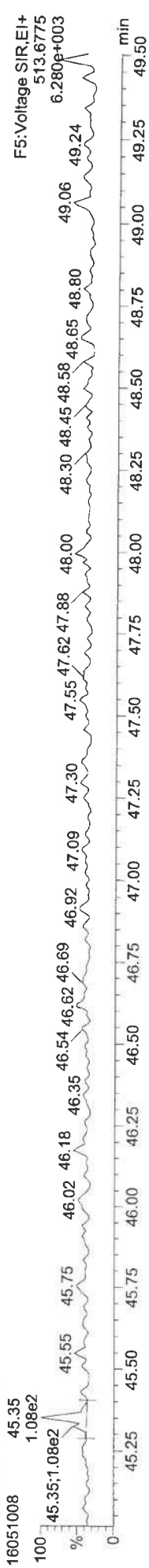
OCDF



OCDF



FUNCTIONS DCDPE



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510IC.qld

Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time

Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\DiDioxin1604143SN.mdb 14 Apr 2016 14:40:15

Calibration: P:\DIOXIN8290.PRO\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

*ASGAA 04/20/16 AB*

ID: 655, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
2378-TCDF	26.212	1.001	4.35e6	5.57e6	0.935	0.781	0.770	3279	3680	6.11e7	7.84e7	18621.5	NO	206.462	206.462
12378-PeCDF	30.377	1.000	2.72e7	1.72e7	0.952	1.576	1.550	14139	10671	3.91e8	2.49e8	27634.8	NO	1038.923	1038.923
23478-PeCDF	31.725	1.001	2.69e7	1.72e7	0.963	1.570	1.550	14139	10671	3.91e8	2.50e8	27673.1	NO	1035.813	1035.813
123478-HxCDF	35.419	1.001	2.17e7	1.75e7	1.137	1.242	1.240	7978	9889	3.12e8	2.50e8	39150.1	NO	1008.651	1008.651
234678-HxCDF	36.505	1.000	2.27e7	1.82e7	1.164	1.243	1.240	7978	9889	3.15e8	2.54e8	39519.1	NO	1041.959	1041.959
123678-HxCDF	35.562	1.000	2.39e7	1.91e7	1.099	1.252	1.240	7978	9889	3.39e8	2.72e8	42475.3	NO	1015.919	1015.919
123789-HxCDF	37.645	1.001	1.89e7	1.51e7	1.101	1.248	1.240	7978	9889	2.90e8	2.31e8	36301.1	NO	1034.223	1034.223
1234678-HpCDF	39.727	1.001	2.00e7	1.92e7	1.303	1.041	1.050	13198	14124	2.82e8	2.69e8	21353.7	NO	1034.086	1034.086
1234789-HpCDF	42.457	1.000	1.57e7	1.52e7	1.317	1.035	1.050	13198	14124	1.92e8	1.85e8	14512.2	NO	1027.817	1027.817
OCDF	47.846	1.006	2.64e7	2.91e7	1.166	0.906	0.890	7357	6921	2.57e8	2.84e8	34912.8	NO	2093.402	2093.402
2378-TCDD	26.855	1.001	3.13e6	3.99e6	1.134	0.783	0.770	1887	2391	4.28e7	5.53e7	22681.5	NO	204.457	204.457
12378-PeCDD	31.978	1.000	1.70e7	1.09e7	0.975	1.561	1.550	4731	4226	2.43e8	1.57e8	51272.0	NO	1044.238	1044.238
123478-HxCDD	36.647	1.001	1.56e7	1.25e7	1.031	1.249	1.240	3956	4009	2.25e8	1.81e8	56938.3	NO	1020.760	1020.760
123678-HxCDD	36.779	1.001	1.59e7	1.26e7	0.971	1.256	1.240	3956	4009	2.24e8	1.79e8	56542.7	NO	1004.474	1004.474
123789-HxCDD	37.206	1.012	1.51e7	1.21e7	0.947	1.250	1.240	3956	4009	2.17e8	1.74e8	54856.0	NO	1028.413	1028.413
1234678-HpCDD	41.558	1.000	1.24e7	1.19e7	1.028	1.044	1.050	10198	7182	1.65e8	1.59e8	16208.2	NO	1021.448	1021.448
OCDD	47.568	1.000	2.19e7	2.46e7	1.107	0.890	0.890	6830	10054	2.13e8	2.39e8	31234.5	NO	1848.573	1848.573
13C-2378-TCDF	26.198	1.006	2.26e6	2.88e6	1.567	0.783	0.770	8687	4581	3.15e7	4.04e7	3628.1	NO	104.094	104.094
13C-12378-PeCDF	30.366	1.166	2.75e6	1.74e6	1.274	1.581	1.550	4421	4290	3.93e7	2.46e7	8890.8	NO	111.735	111.735
13C-23478-HxCDF	31.703	1.218	2.71e6	1.71e6	1.235	1.586	1.550	4421	4290	3.80e7	2.42e7	8604.3	NO	113.556	113.556
13C-123478-HxCDF	35.397	0.952	1.16e6	2.25e6	1.381	0.517	0.510	3724	6188	1.67e7	3.20e7	4489.5	NO	97.181	97.181
13C-123678-HxCDF	35.551	0.956	1.30e6	2.55e6	1.569	0.510	0.510	3724	6188	1.85e7	3.52e7	4967.8	NO	96.347	96.347
13C-234678-HxCDF	36.494	0.981	1.15e6	2.22e6	1.345	0.518	0.510	3724	6188	1.62e7	3.09e7	4341.6	NO	98.661	98.661
13C-123789-HxCDF	37.623	1.012	1.03e6	1.96e6	1.183	0.525	0.510	3724	6188	1.51e7	2.91e7	4064.1	NO	99.189	99.189
13C-1234678-HpCDF	39.705	1.068	9.11e5	2.00e6	1.178	0.456	0.440	3269	5437	1.25e7	2.77e7	3833.3	NO	97.065	97.065
13C-1234789-HpCDF	42.446	1.141	7.13e5	1.57e6	0.878	0.455	0.440	3269	5437	8.39e6	1.88e7	2565.2	NO	102.063	102.063
13C-1234-TCDD	26.033	0.000	1.37e6	1.78e6	1.000	0.773	0.770	4660	2816	1.91e7	2.45e7	4092.0	NO	100.000	100.000
13C-2378-TCDD	26.840	1.031	1.34e6	1.73e6	0.908	0.771	0.770	4660	2816	1.84e7	2.39e7	3939.9	NO	107.342	107.342
13C-12378-PeCDD	31.966	1.228	1.68e6	1.06e6	0.756	1.587	1.550	2144	2345	2.38e7	1.50e7	11115.1	NO	114.666	114.666
13C-123478-HxCDD	36.625	0.985	1.50e6	1.18e6	1.056	1.275	1.240	3814	2411	2.14e7	1.67e7	5613.2	NO	99.540	99.540
13C-123678-HxCDD	36.757	0.988	1.63e6	1.29e6	1.163	1.267	1.240	3814	2411	2.30e7	1.83e7	6041.3	NO	98.664	98.664
13C-1234678-HpCDD	41.547	1.117	1.19e6	1.13e6	0.909	1.052	1.050	2959	3067	1.52e7	1.46e7	5142.2	NO	100.275	100.275
13C-OCDD	47.550	1.279	2.15e6	2.40e6	0.820	0.894	0.890	4073	4326	2.09e7	2.34e7	5134.0	NO	218.274	218.274

Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510IC.qld

Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time

Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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*CS6AA 06/30/16 SB*

ID: 665, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
13C-123789-HxCDD	37.184	0.000	1.41e6	1.13e6	1.000	1.246	1.240	3814	2411	2.01e7	1.62e7	5273.5	NO		100.000
Total-tetrafurans			4.43e6		0.935			3279		6.21e7					210.299
Total-penta1			0.00e0					1229		0.00e0					
Total-penta1furans			5.55e7		0.957			14139		7.98e8					2131.385
Total-hexa1furans			8.74e7		1.125			7978		1.26e9					4115.379
Total-hepta1furans			3.57e7		1.310			13198		4.74e8					2064.253
Total-Furans			2.09e8		1.114			3279		2.85e9					10614.734
Total-tetra1dioxins			3.21e6		1.134			1887		4.38e7					209.667
Total-penta1dioxins			1.70e7		0.975			4731		2.43e8					1046.711
Total-hexa1dioxins			4.67e7		0.983			3956		6.67e8					3056.888
Total-hepta1dioxins			1.25e7		1.028			10198		1.66e8					1025.355
Total-Dioxins			1.01e8		1.028			1887		1.33e9					7187.267
Total-TEQ			3.11e8					1887		4.18e9					17802.000
37CL-2378-TCDD	26.855	1.032	7.52e6		1.067			2672		1.04e8		38914.4			223.753
FUNCTION1 PFK			4.07e6					1439234		6.56e7					
FUNCTION2 PFK			3.78e5					205260		8.03e6					0.000
FUNCTION3 PFK			1.07e6					838846		2.98e7					0.000
FUNCTION4 PFK			2.20e5					549429		8.04e6					
FUNCTION5 PFK			1.25e4					401130		6.64e5					
FUNCTION1 HXCDPE			3.82e2					587		7.05e3					0.000
FUNCTION1 HPCDPE			1.87e3					1160		3.77e4					0.000
FUNCTION2 HPCDPE			3.14e4					1324		4.91e5					0.000
FUNCTION3 OCDPE			1.69e2					533		2.76e3					0.000
FUNCTION4 NCDPE			7.52e1					759		2.16e3					0.000
FUNCTION5 DCDPE			0.00e0					410		0.00e0					0.000

Quantify Sample Report MassLynx MassLynx V4.1 SCN909

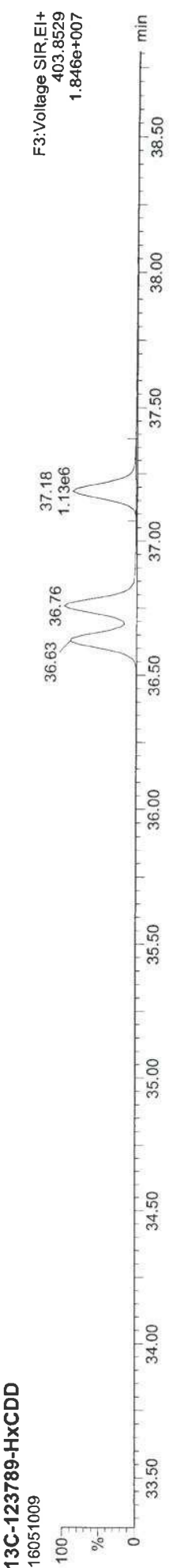
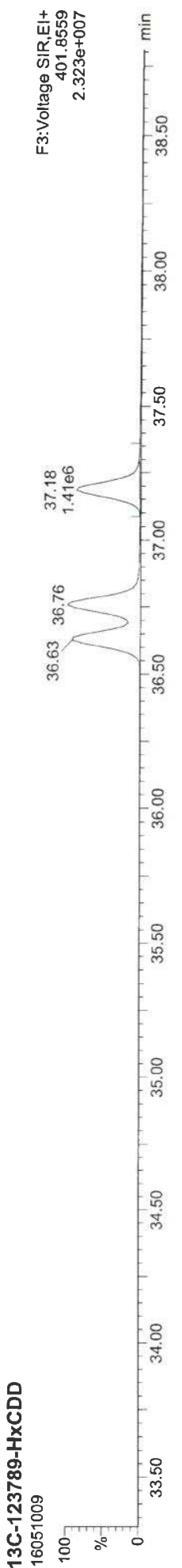
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Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
Calibration: P:\DIOXIN8290.PRO\CurveDB\160510ICAL.cdb 11 May 2016 09:28:40

*CSAA 06/30/16*

ID: 665; Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk





Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510\IC.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

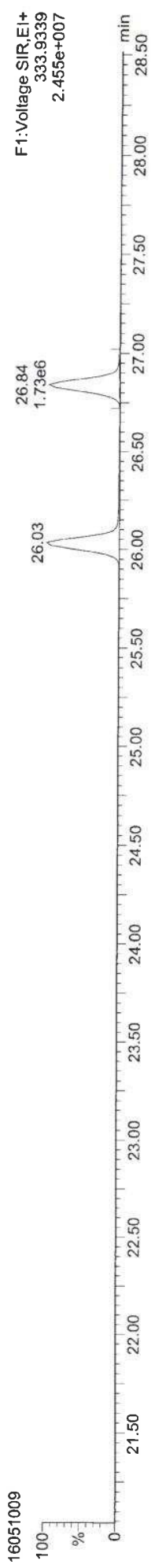
CSAAA 04/30/16 [Signature]

16051009, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

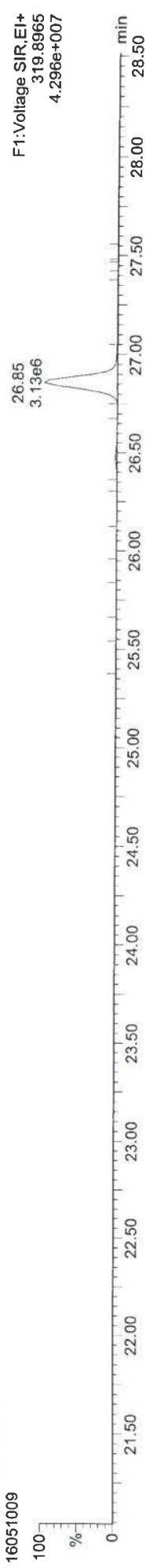
13C-2378-TCDD



13C-2378-TCDD



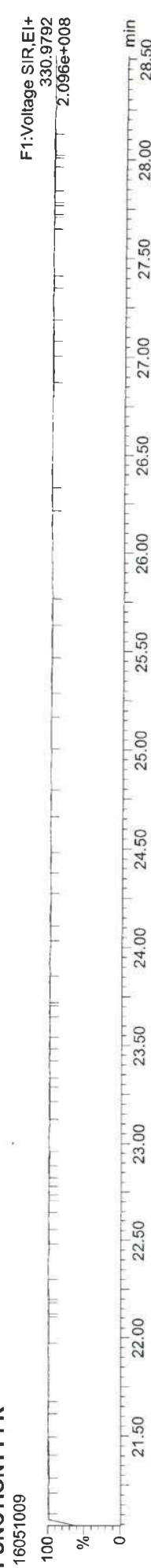
Total-tetradiioxins



Total-tetradiioxins



FUNCTION1 PFK



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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*CSGAA 04/30/16 RB*

ID: **655**, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

**13C-2378-TCDF**

16051009



**13C-2378-TCDF**

16051009



**Total-tetrafurans**

16051009



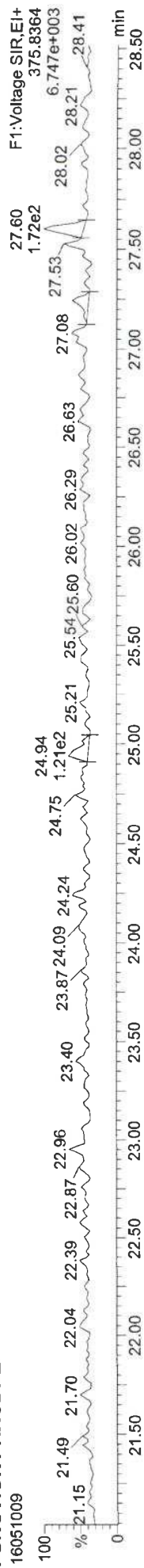
**Total-tetrafurans**

16051009



**FUNCTION1 HXCDPE**

16051009



Quantify Sample Report MassLynx V4.1 SCN909

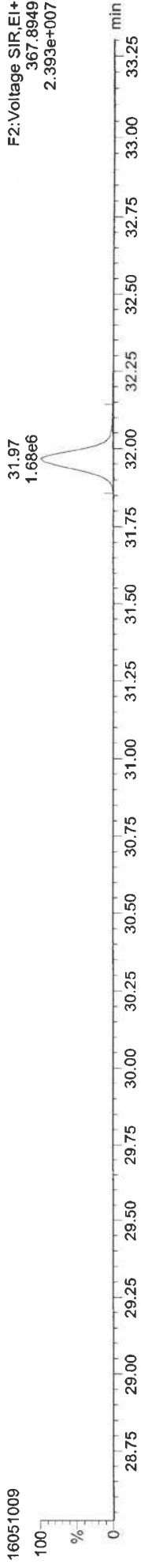
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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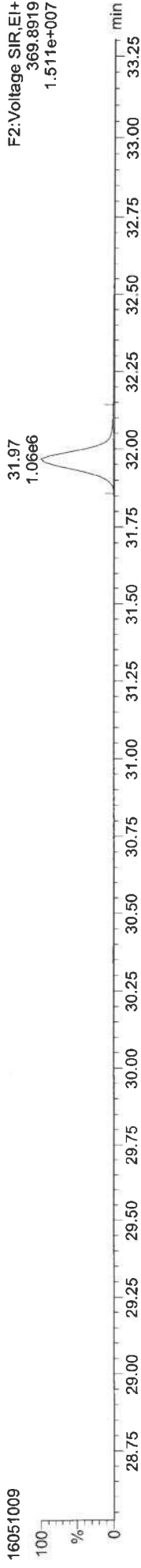
*CS6AA 06/30/16 JRP*

IB: GS5, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

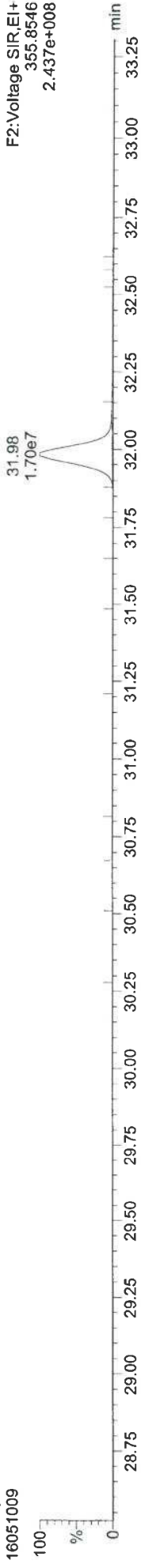
13C-12378-PeCDD



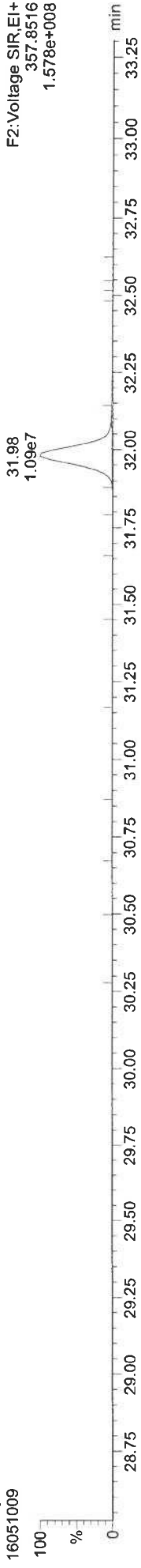
13C-12378-PeCDD



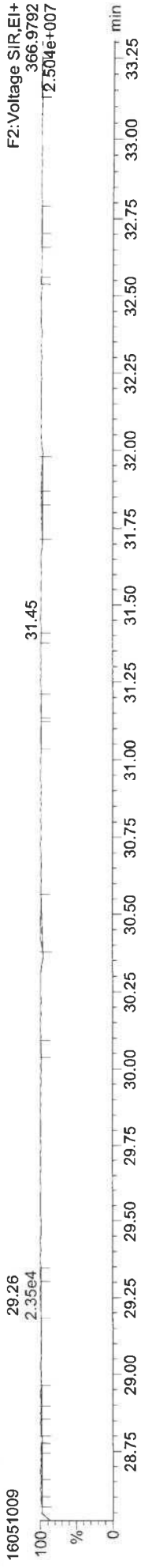
Total-pentadioxins



Total-pentadioxins



FUNCTION2 PFK



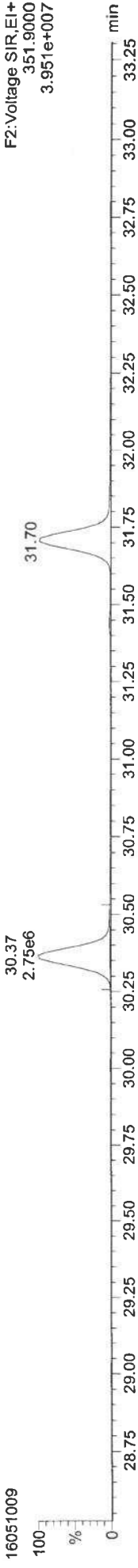
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

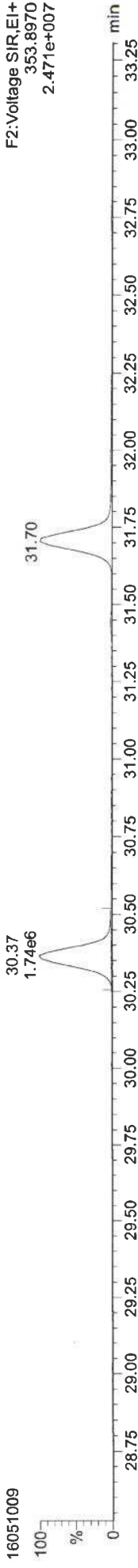
CS-AA 06/30/16

19-ES5; Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

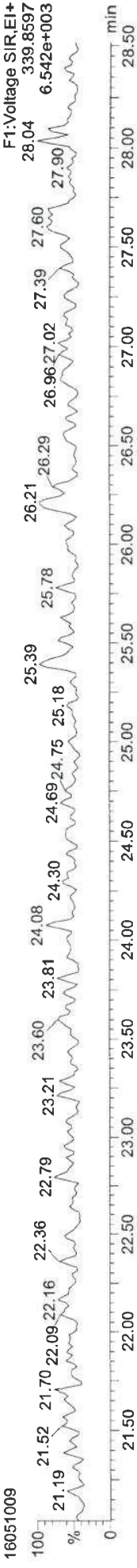
13C-12378-PeCDF



13C-12378-PeCDF



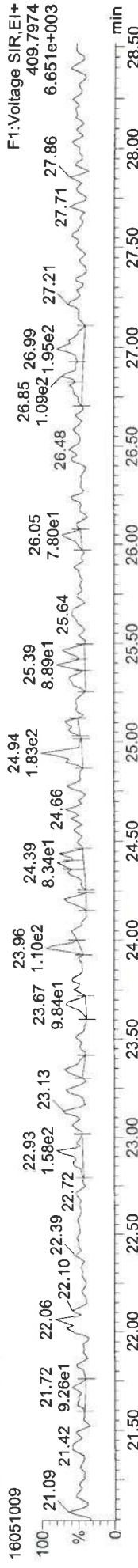
Total-penta1



Total-penta1



FUNCTION1 HPCDPE



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

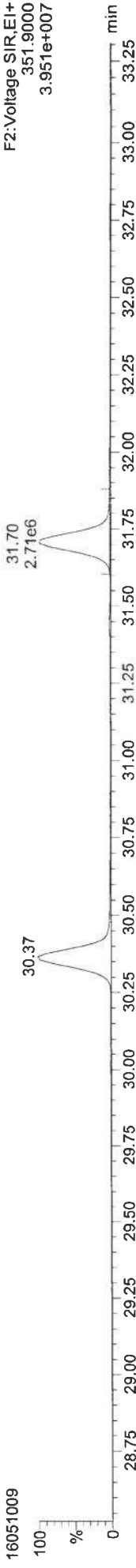
Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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1579

*CSGAA*  
*05/30/16*  
*JP*

19-GS5, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

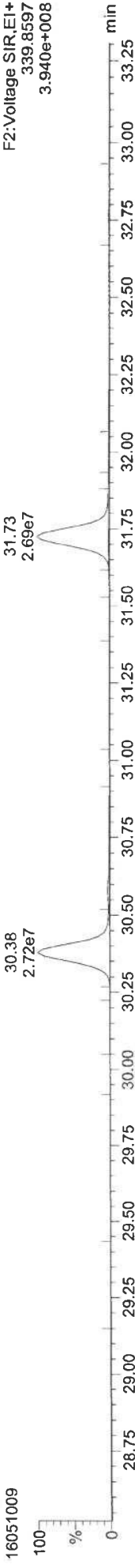
13C-23478-PeCDF



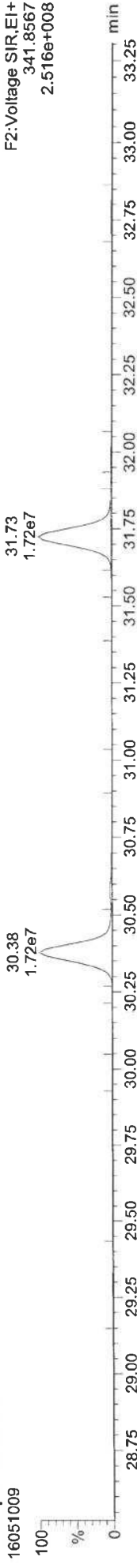
13C-23478-PeCDF



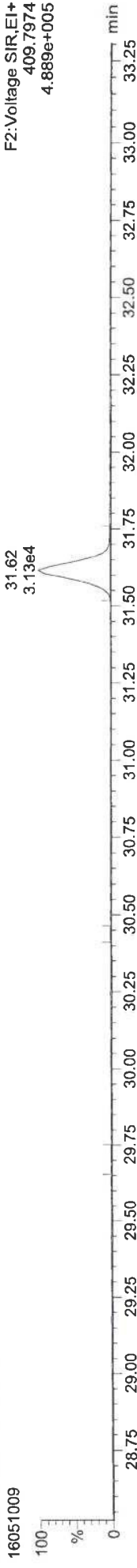
Total-pentafurans



Total-pentafurans



FUNCTION2 HPCDPE

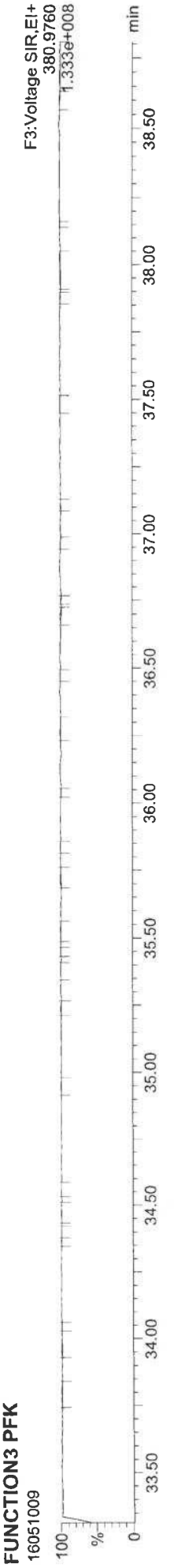
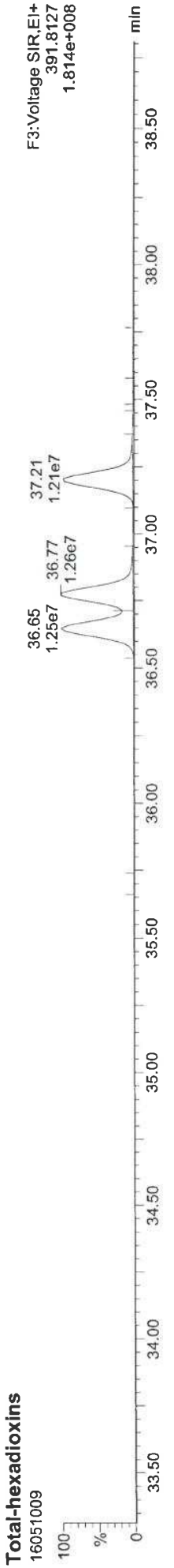
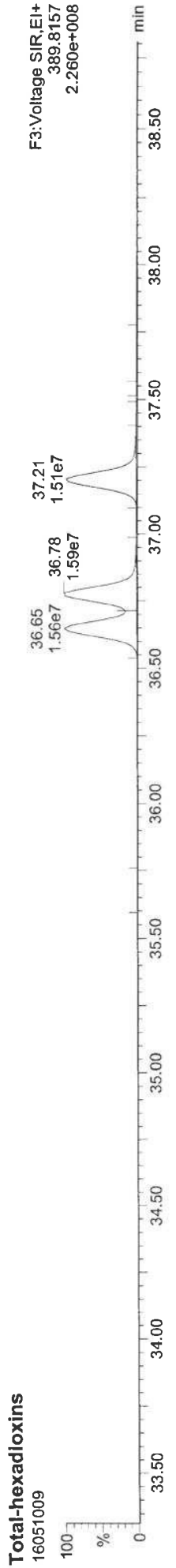
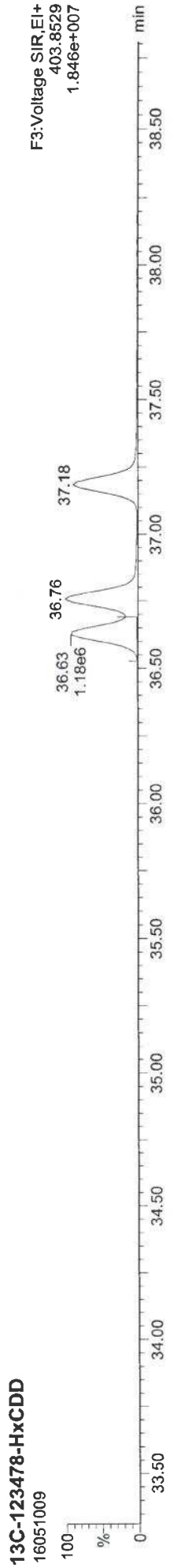
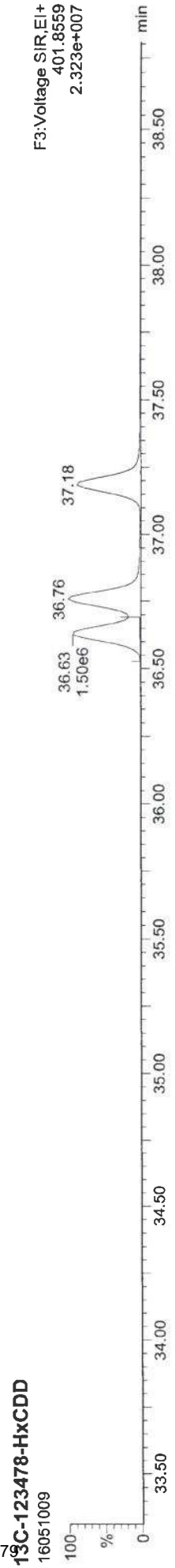


Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

16051009 0510AA 04/30/16 [Signature]

16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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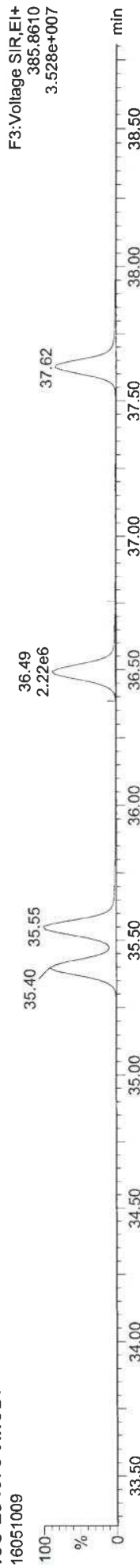
*CSKAA 06/30/16 SR*

ID: 665, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

13C-234678-HxCDF



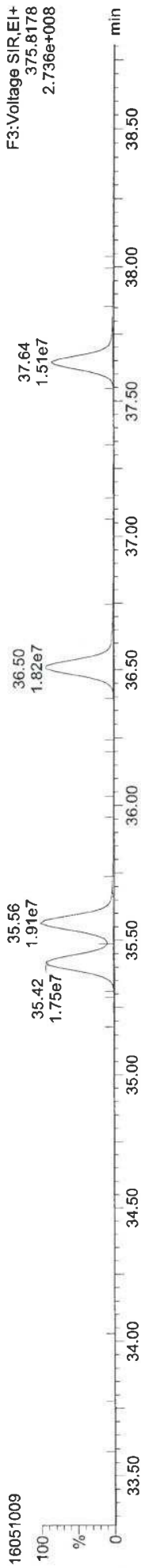
13C-234678-HxCDF



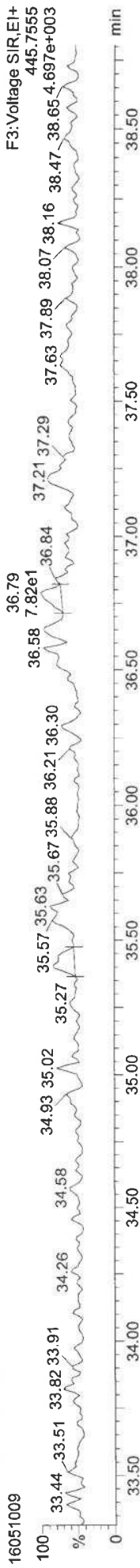
Total-hexafurans



Total-hexafurans



FUNCTION3 OCPDE



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

CS6AA 04/24/16

16051009, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

13C-1234678-HpCDD



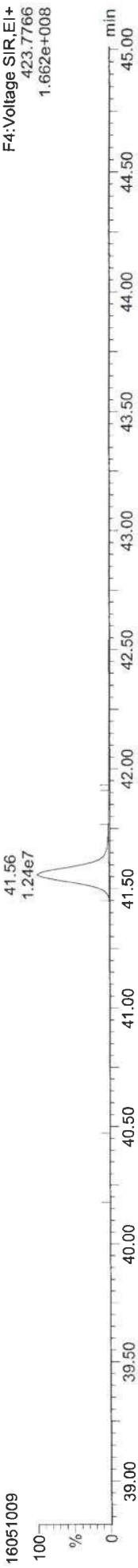
F4: Voltage SIR, EI+  
435.8169  
1.531e+007

13C-1234678-HpCDD



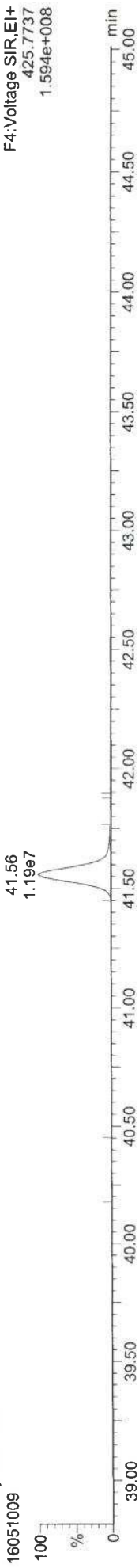
F4: Voltage SIR, EI+  
437.8140  
1.470e+007

Total-heptadioxins



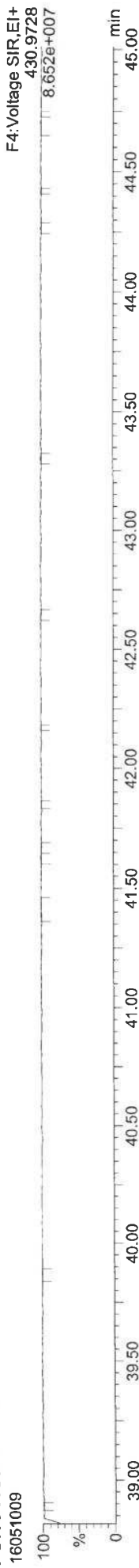
F4: Voltage SIR, EI+  
423.7766  
1.662e+008

Total-heptadioxins



F4: Voltage SIR, EI+  
425.7737  
1.594e+008

FUNCTION4 PFK



F4: Voltage SIR, EI+  
430.9728  
8.652e+007



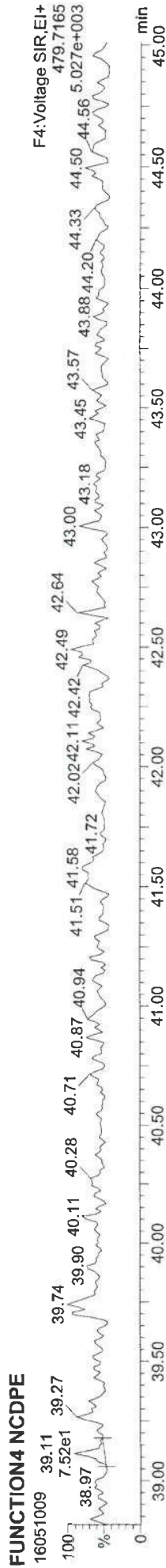
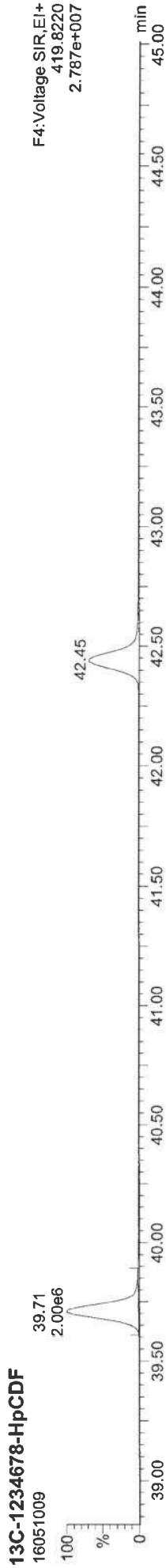
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

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*CSGAA 04/30/16 JDR*

File: **CS5**, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

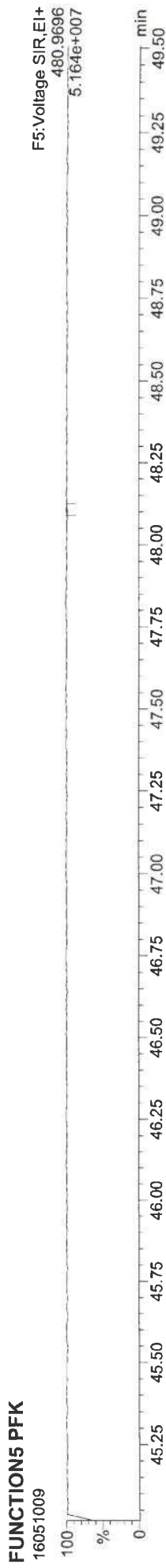
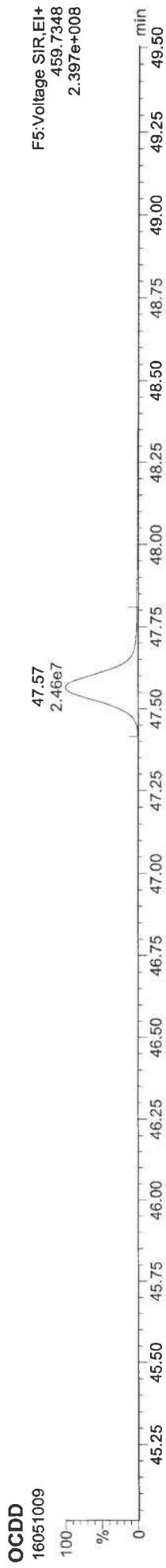
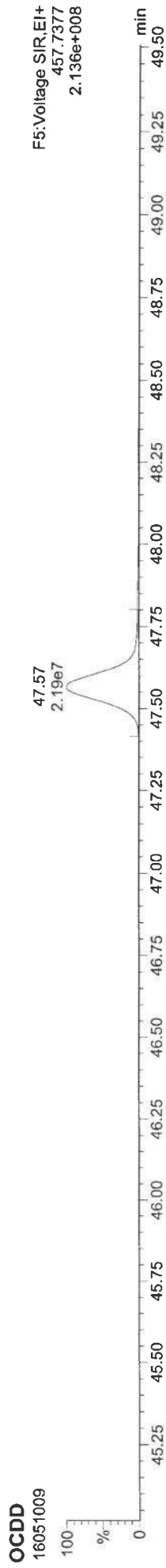
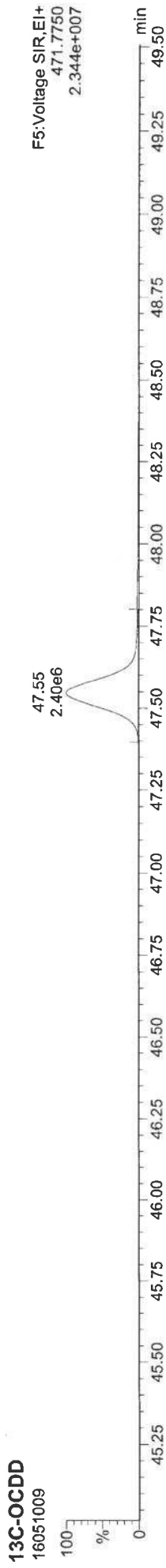
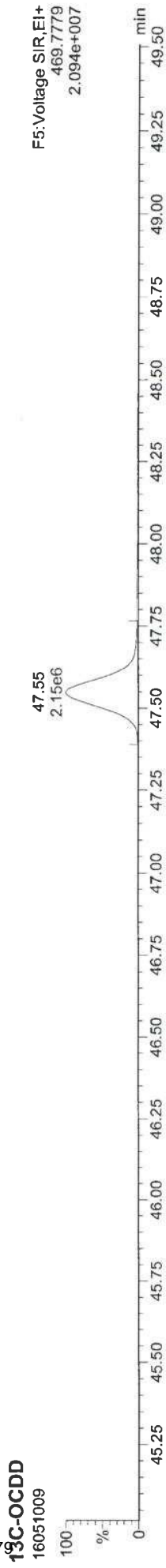


Quantify Sample Report MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

CS6AA 06/30/16 BR

16051009, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\1605101C.qld  
Last Altered: Wednesday, May 11, 2016 09:28:40 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:37:04 Pacific Daylight Time

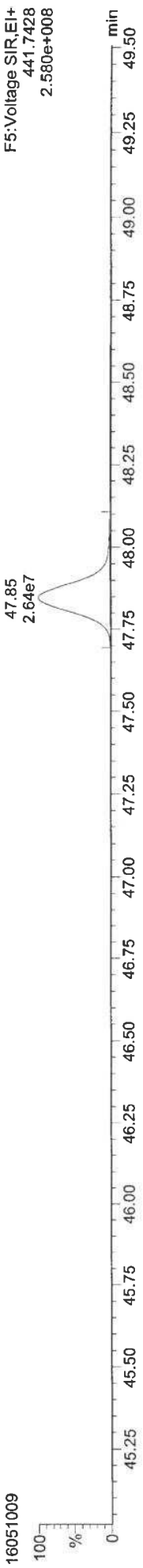
CSGAA 04/30/16

19: 655, Name: 16051009, Date: 10-May-2016, Time: 18:09:09, Conditions: AUTOSPEC01, User: pk

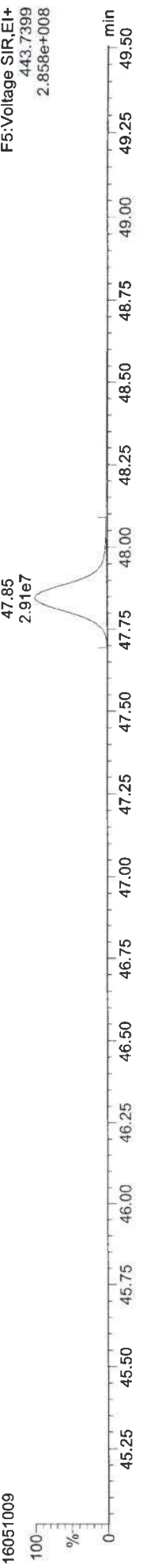
37CL-2378-TCDD



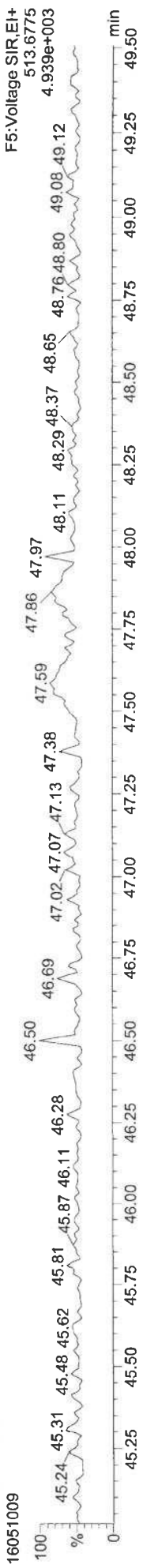
OCDF



OCDF



FUNCTION5 DCDPE



Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510\ICV.qld  
 Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

Method: P:\DIOXIN8290.pro\MethDB\Dioxin1604143SN.mdb 14 Apr 2016 14:40:15  
 Calibration: P:\DIOXIN8290.pro\CurveDB\160510\CAL.cdb 11 May 2016 09:28:40

ID: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise1	Noise2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
2378-TCDF	26.213	1.001	1.81e5	2.29e5	0.935	0.791	0.770	1350	2309	2.39e6	3.06e6	1769.5	NO	10.142	10.142
12378-PeCDF	30.378	1.000	1.10e6	6.88e5	0.952	1.596	1.550	4659	4072	1.44e7	9.09e6	3090.8	NO	54.644	54.644
23478-PeCDF	31.726	1.000	1.00e6	6.26e5	0.963	1.599	1.550	4659	4072	1.36e7	8.78e6	2910.7	NO	51.287	51.287
123478-HxCDF	35.419	1.001	8.23e5	6.55e5	1.137	1.257	1.240	6492	5936	1.18e7	9.28e6	1810.8	NO	54.450	54.450
234678-HxCDF	36.516	1.001	7.88e5	6.38e5	1.164	1.235	1.240	6492	5936	1.07e7	8.56e6	1649.6	NO	49.624	49.624
123678-HxCDF	35.562	1.000	9.41e5	7.32e5	1.099	1.286	1.240	6492	5936	1.20e7	9.73e6	1845.4	NO	54.220	54.220
123789-HxCDF	37.645	1.001	6.83e5	5.41e5	1.101	1.263	1.240	6492	5936	9.25e6	7.48e6	1424.6	NO	54.675	54.675
1234678-HpCDF	39.727	1.001	6.83e5	6.61e5	1.303	1.033	1.050	4432	5355	9.32e6	9.01e6	2103.2	NO	53.628	53.628
1234789-HpCDF	42.456	1.000	4.99e5	4.85e5	1.317	1.029	1.050	4432	5355	5.63e6	5.43e6	1269.8	NO	50.155	50.155
OCDF	47.837	1.006	8.03e5	8.66e5	1.166	0.928	0.890	2816	3708	7.21e6	7.81e6	2561.4	NO	115.799	115.799
2378-TCDD	26.855	1.001	1.35e5	1.72e5	1.134	0.782	0.770	1548	1493	1.76e6	2.23e6	1138.5	NO	9.199	9.199
12378-PeCDD	31.989	1.001	6.76e5	4.37e5	0.975	1.547	1.550	2037	1423	9.17e6	5.86e6	4502.9	NO	51.541	51.541
123478-HxCDD	36.647	1.000	5.48e5	4.34e5	1.031	1.262	1.240	2099	3603	7.81e6	6.25e6	3723.0	NO	52.204	52.204
123678-HxCDD	36.779	1.001	5.61e5	4.53e5	0.971	1.240	1.240	2099	3603	7.41e6	5.97e6	3530.7	NO	54.495	54.495
123789-HxCDD	37.206	1.012	5.73e5	4.53e5	0.947	1.265	1.240	2099	3603	7.53e6	6.02e6	3586.9	NO	57.915	57.915
1234678-HpCDD	41.558	1.000	4.39e5	4.25e5	1.028	1.035	1.050	3359	1973	5.28e6	5.13e6	1571.7	NO	51.725	51.725
OCDD	47.558	1.000	6.64e5	7.38e5	1.107	0.899	0.890	3202	2490	6.10e6	6.91e6	1904.9	NO	102.495	102.495
13C-2378-TCDF	26.198	1.006	1.91e6	2.42e6	1.567	0.791	0.770	9096	4889	2.55e7	3.23e7	2802.7	NO	88.412	88.412
13C-12378-PeCDF	30.367	1.166	2.11e6	1.33e6	1.274	1.585	1.550	4879	5540	2.76e7	1.74e7	5651.9	NO	86.248	86.248
13C-23478-PeCDF	31.715	1.218	2.01e6	1.28e6	1.235	1.572	1.550	4879	5540	2.71e7	1.72e7	5552.7	NO	85.315	85.315
13C-123478-HxCDF	35.398	0.952	8.19e5	1.57e6	1.381	0.522	0.510	5850	9212	1.15e7	2.22e7	1966.1	NO	90.722	90.722
13C-123678-HxCDF	35.551	0.956	9.62e5	1.85e6	1.569	0.521	0.510	5850	9212	1.28e7	2.45e7	2184.0	NO	93.830	93.830
13C-234678-HxCDF	36.494	0.981	8.61e5	1.61e6	1.345	0.535	0.510	5850	9212	1.18e7	2.17e7	2015.7	NO	96.270	96.270
13C-123789-HxCDF	37.623	1.012	7.06e5	1.33e6	1.183	0.531	0.510	5850	9212	9.64e6	1.83e7	1647.2	NO	90.193	90.193
13C-1234678-HpCDF	39.705	1.068	5.95e5	1.33e6	1.178	0.447	0.440	4153	5723	8.02e6	1.75e7	1930.0	NO	85.635	85.635
13C-1234789-HpCDF	42.445	1.141	4.57e5	1.03e6	0.878	0.443	0.440	4153	5723	5.21e6	1.17e7	1254.0	NO	88.974	88.974
13C-1234-TCDD	26.034	0.000	1.38e6	1.75e6	1.000	0.786	0.770	4051	3612	1.92e7	2.42e7	4727.7	NO	100.000	100.000
13C-2378-TCDD	26.840	1.031	1.31e6	1.64e6	0.908	0.796	0.770	4051	3612	1.74e7	2.22e7	4298.9	NO	103.822	103.822
13C-12378-PeCDD	31.967	1.228	1.35e6	8.62e5	0.756	1.569	1.550	2512	2723	1.86e7	1.18e7	7402.4	NO	93.738	93.738
13C-123478-HxCDD	36.636	0.985	1.02e6	8.06e5	1.056	1.264	1.240	5495	3465	1.43e7	1.12e7	2609.7	NO	90.649	90.649
13C-123678-HxCDD	36.757	0.989	1.07e6	8.47e5	1.163	1.261	1.240	5495	3465	1.39e7	1.11e7	2533.8	NO	86.349	86.349
13C-1234678-HpCDD	41.547	1.117	8.39e5	7.86e5	0.909	1.067	1.050	3089	3609	1.00e7	9.44e6	3241.4	NO	93.716	93.716
13C-OCDD	47.541	1.279	1.19e6	1.28e6	0.820	0.927	0.890	6012	3088	1.08e7	1.18e7	1789.8	NO	158.151	158.151

Quantify Sample Summary Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510ICV.qld  
 Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
 Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

ID: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	EMPC	pg
13C-123789-HxCDD	37.184	0.000	1.06e6	8.48e5	1.000	1.249	1.240	5495	3465	1.45e7	1.14e7	2637.8	NO		100.000
Total-tetrafurans			1.83e5		0.935			1350		2.40e6					10.223
Total-penta 1			0.00e0					1239		0.00e0					
Total-pentafurans			2.14e6		0.957			4659		2.85e7					107.913
Total-hexafurans			3.24e6		1.125			6492		4.38e7					213.320
Total-heptafurans			1.18e6		1.310			4432		1.50e7					103.878
Total-Furans			7.55e6		1.114			1350		9.69e7					551.134
Total-tetra-dioxins			1.35e5		1.134			1548		1.77e6					9.223
Total-penta-dioxins			6.84e5		0.975			2037		9.31e6					52.165
Total-hexa-dioxins			1.69e6		0.983			2099		2.29e7					165.083
Total-hepta-dioxins			4.46e5		1.028			3359		5.36e6					52.733
Total-Dioxins			3.62e6		1.028			1548		4.54e7					381.699
Total-TEQ			1.12e7					1548		1.42e8					932.833
37CL-2378-TCDD	26.855	1.032	3.09e5		1.067			2113		4.07e6		1926.7			9.280
FUNCTION1 PFK			1.65e5					1523893		5.17e6					0.000
FUNCTION2 PFK			1.81e5					185433		5.06e6					0.000
FUNCTION3 PFK			7.35e5					903414		1.51e7					
FUNCTION4 PFK			2.04e5					510809		6.66e6					
FUNCTION5 PFK			3.02e5					385831		1.10e7					
FUNCTION1 HXCDPE			5.14e2					654		9.38e3					0.000
FUNCTION1 HPCDPE			1.65e3					1192		3.32e4					0.000
FUNCTION2 HPCDPE			7.56e2					954		1.91e4					0.000
FUNCTION3 OCDPE			0.00e0					722		0.00e0					
FUNCTION4 NCDPE			1.91e2					867		5.31e3					0.000
FUNCTION5 DCDPE			0.00e0					432		0.00e0					

Quantify Sample Report MassLynx MassLynx V4.1 SCN909

Dataset: P:\DIOXIN8290.PRO\160510\CV.qld  
Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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Method: P:\DIOXIN8290.pro\MethDB\Dioxin\1604143SN.mdb 14 Apr 2016 14:40:15  
Calibration: P:\DIOXIN8290.pro\CurveDB\160510\CAL.cdb 11 May 2016 09:28:40

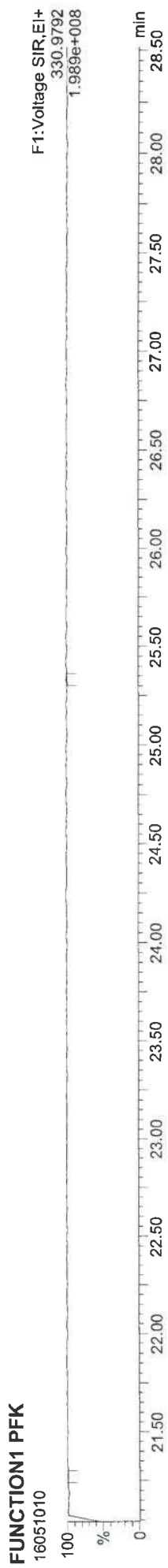
ID: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\160510\ICV.qld  
Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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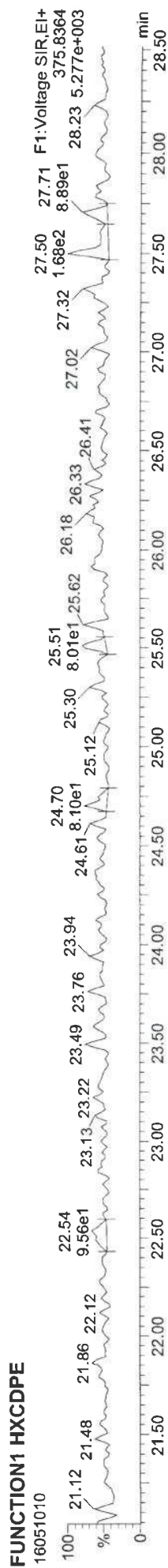
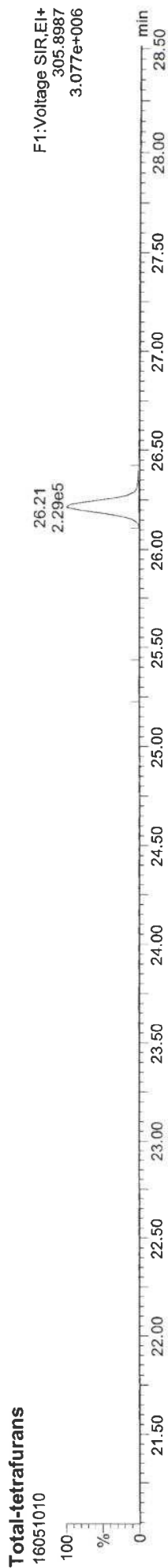
ID: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\160510ICV.qld  
Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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IG: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk

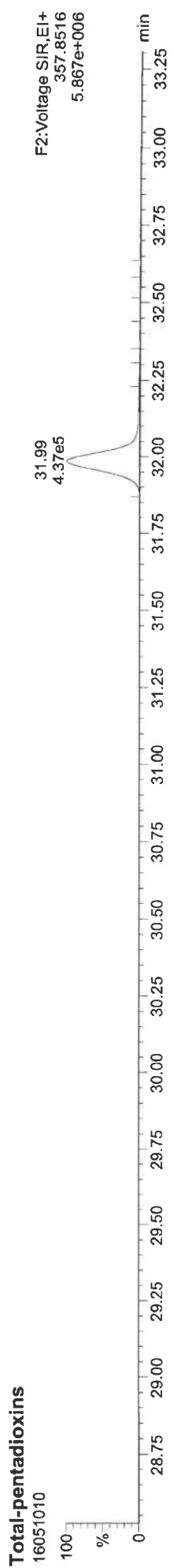
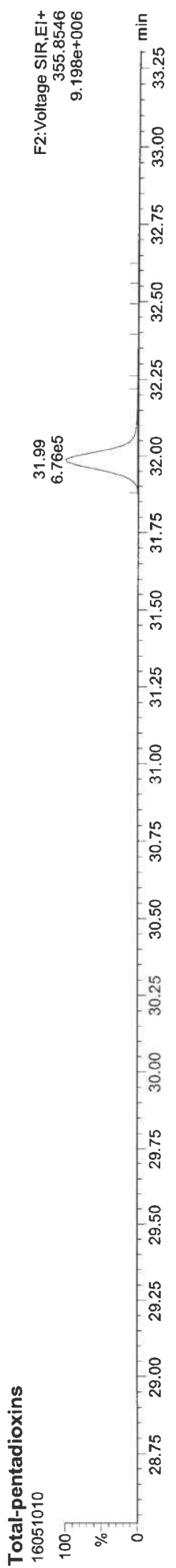
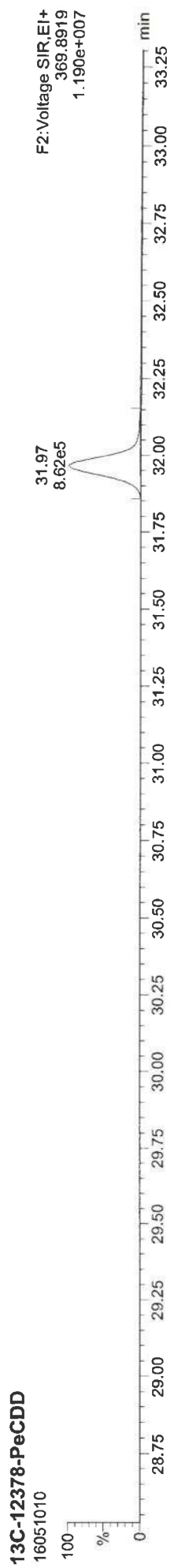
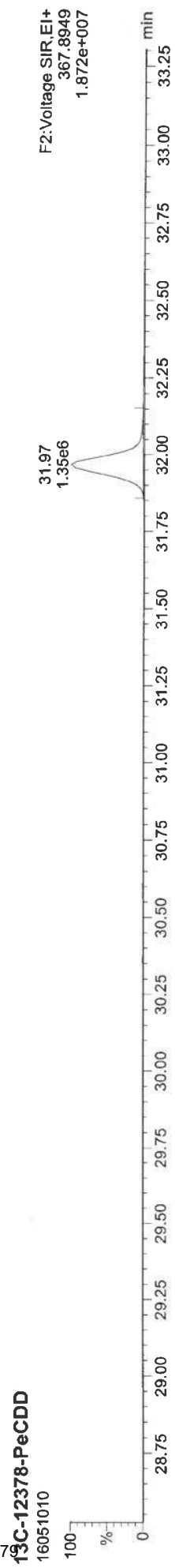




Quantify Sample Report  
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Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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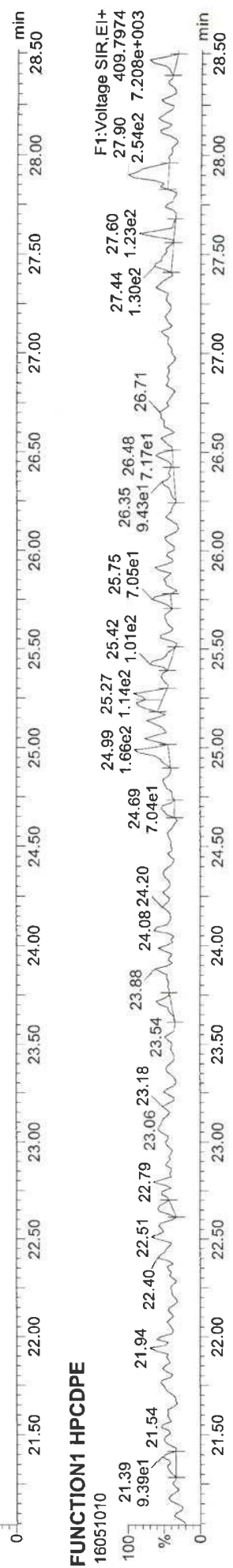
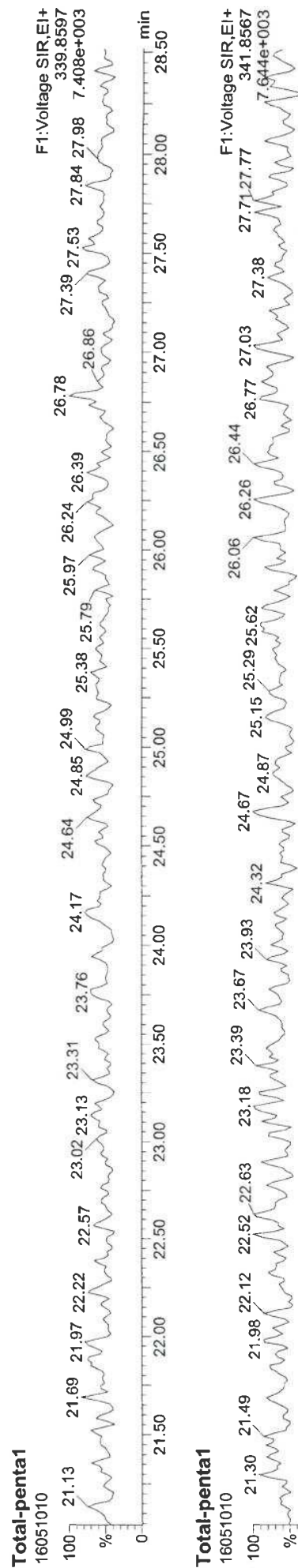
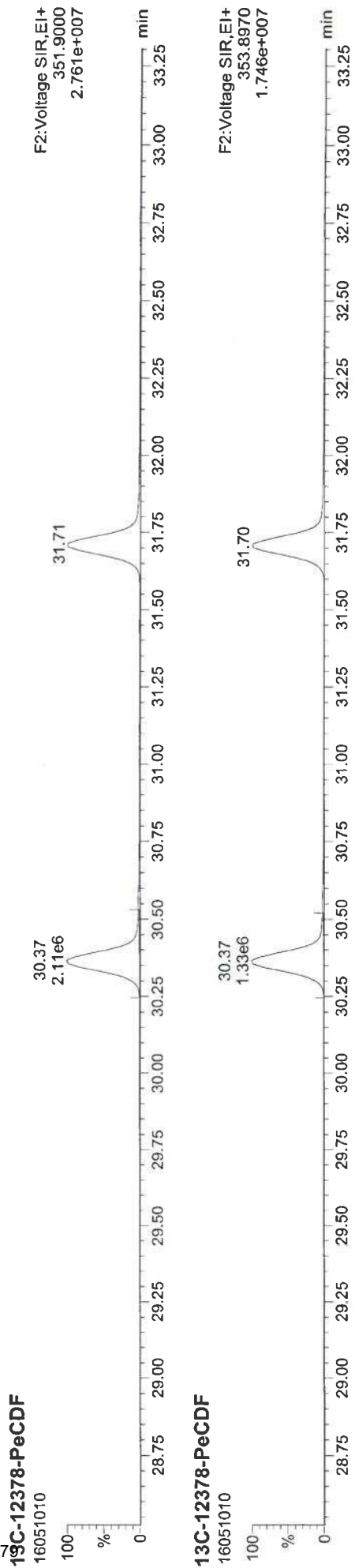
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Quantify Sample Report  
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Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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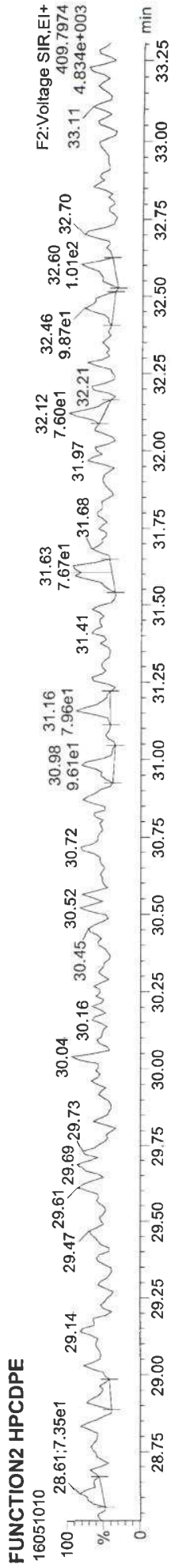
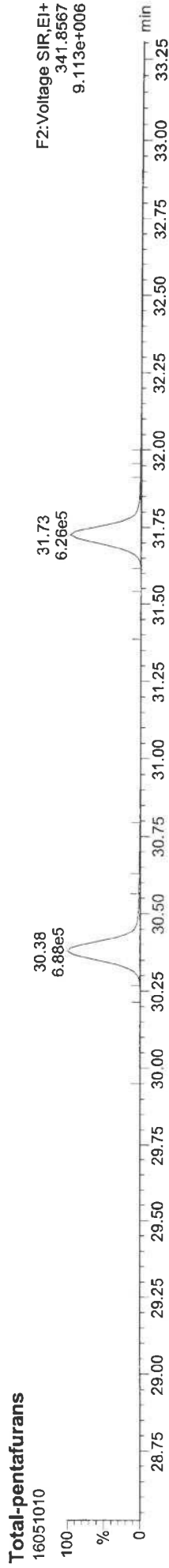
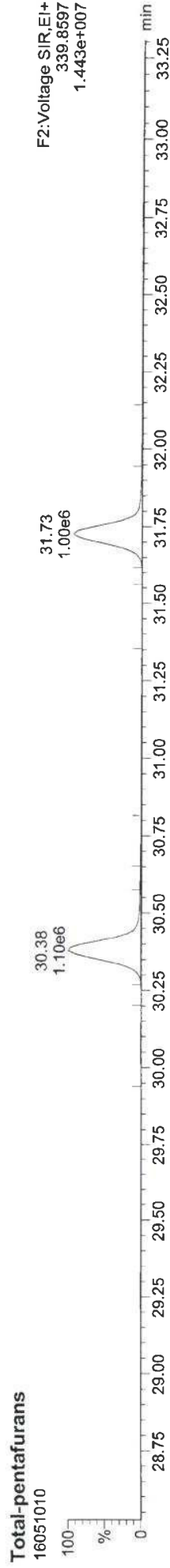
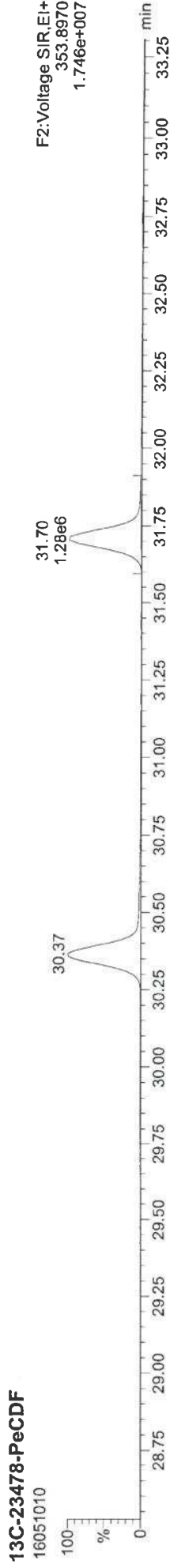
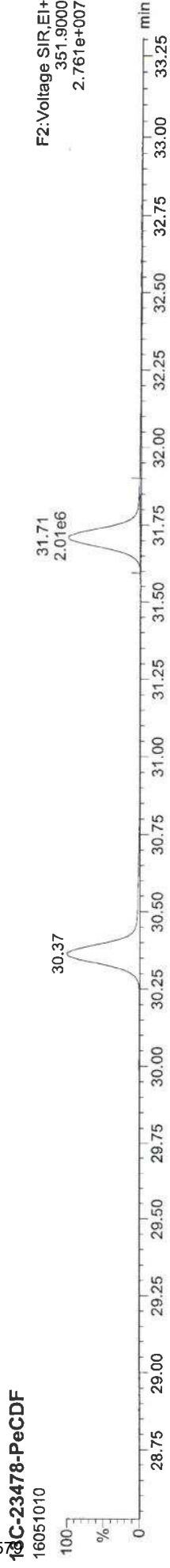
ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report  
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Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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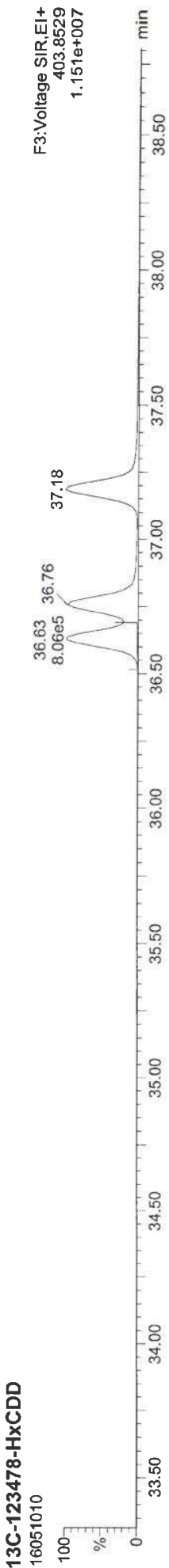
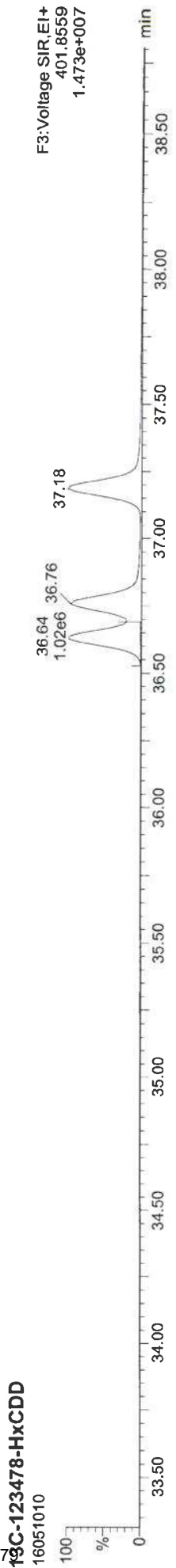
16: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk



Quantify Sample Report MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\160510ICV.qld  
Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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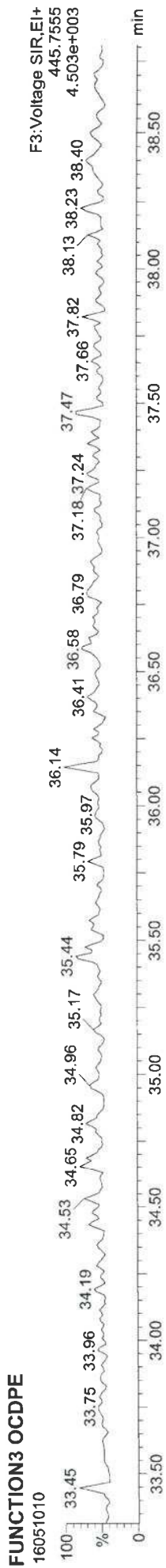
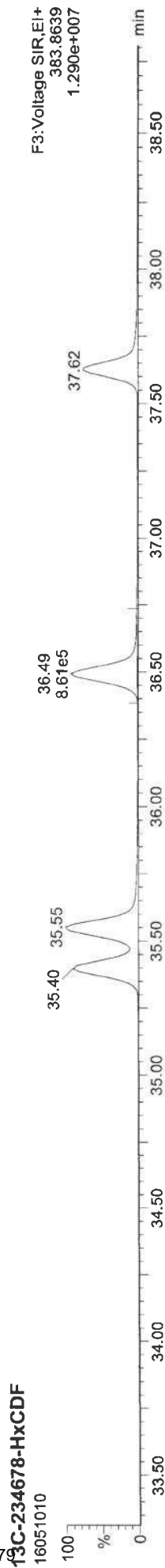
16: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk



**Quantify Sample Report** MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\160510ICV.qld  
Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

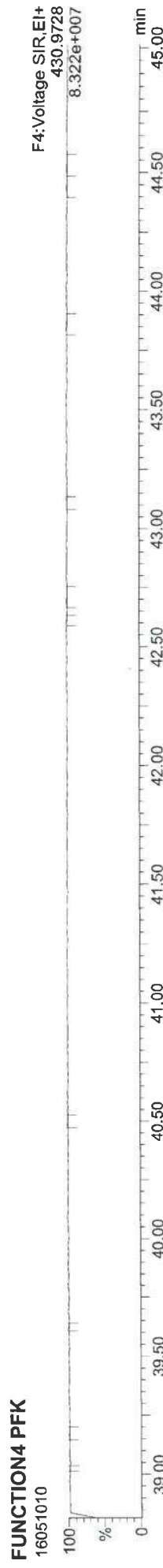
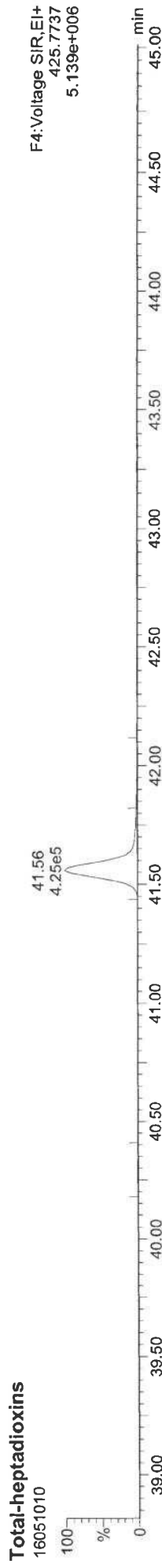
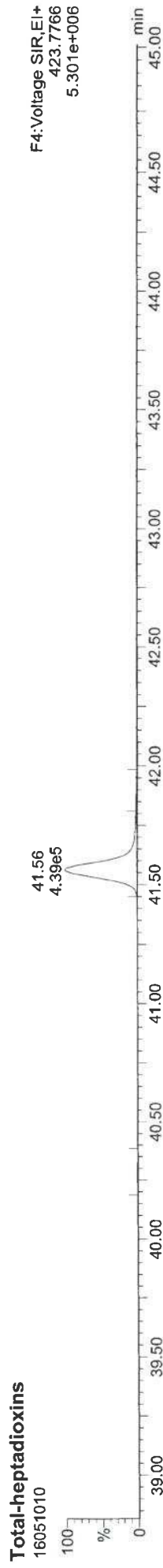
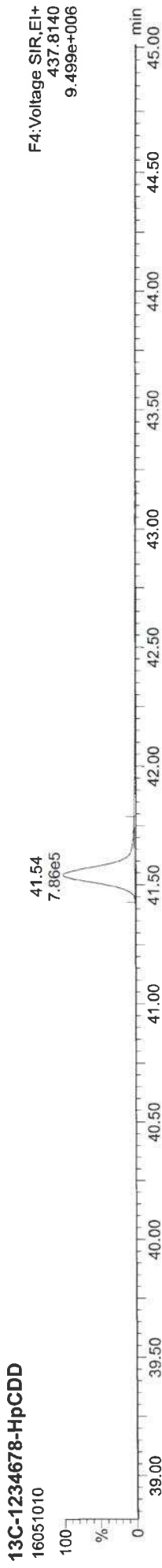
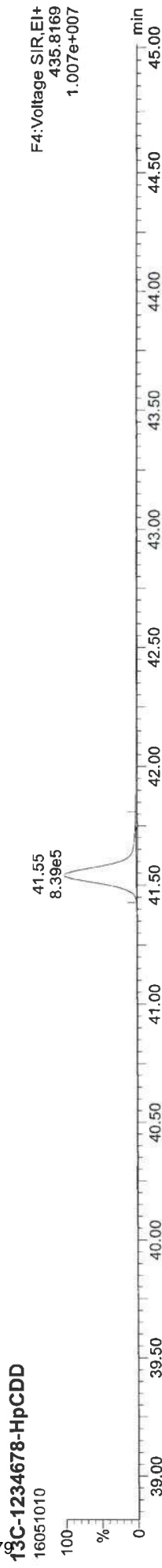
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**ID:** ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk



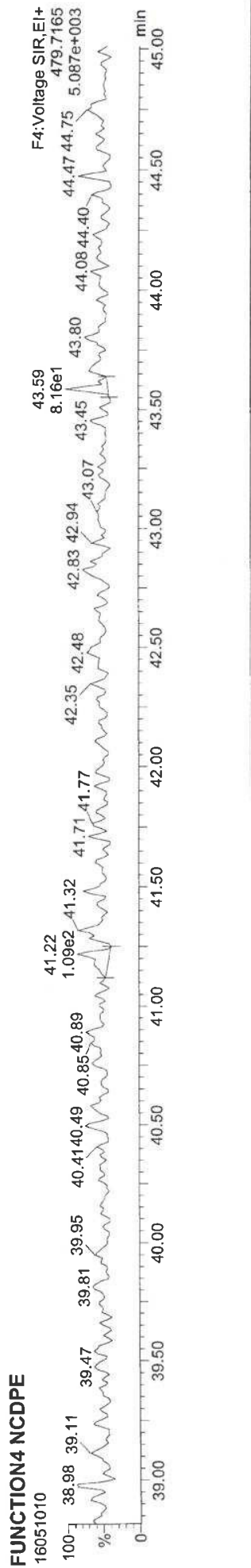
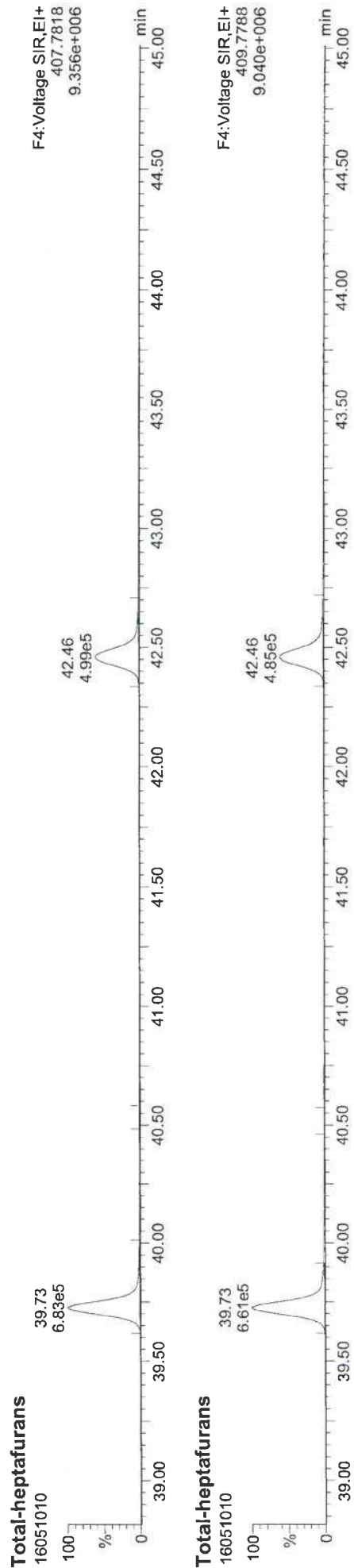
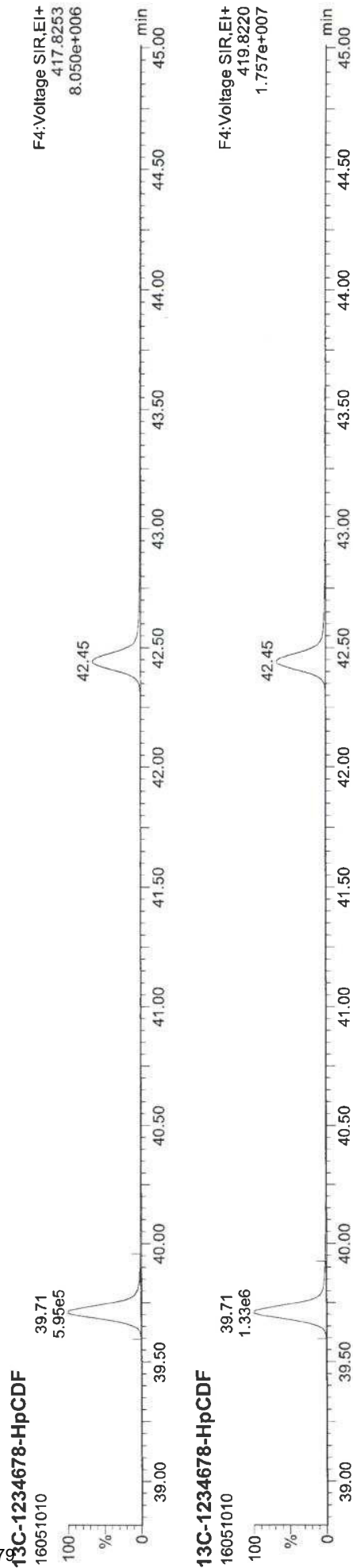
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Dataset: P:\DIOXIN8290.PRO\160510ICV.qld  
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Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

IB: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk



**Quantify Sample Report** MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\160510ICV.qld  
Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

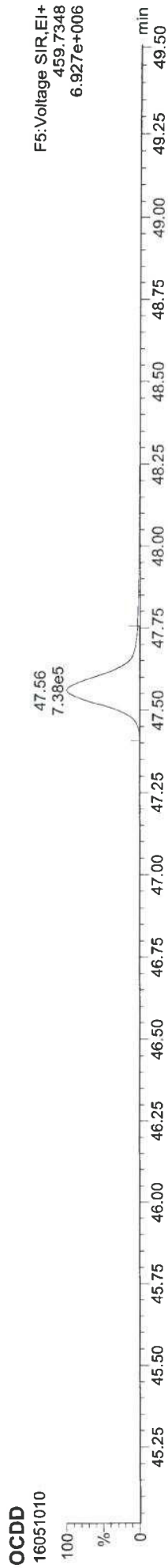
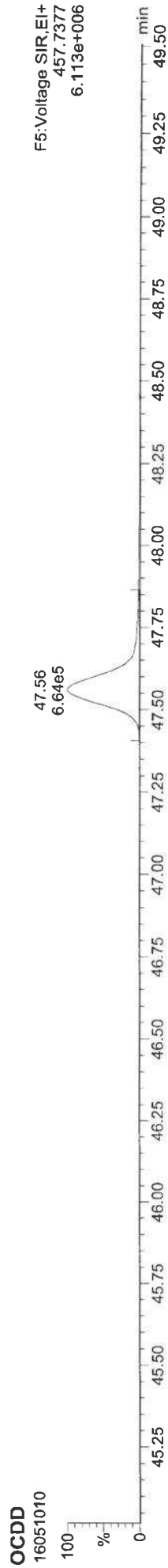
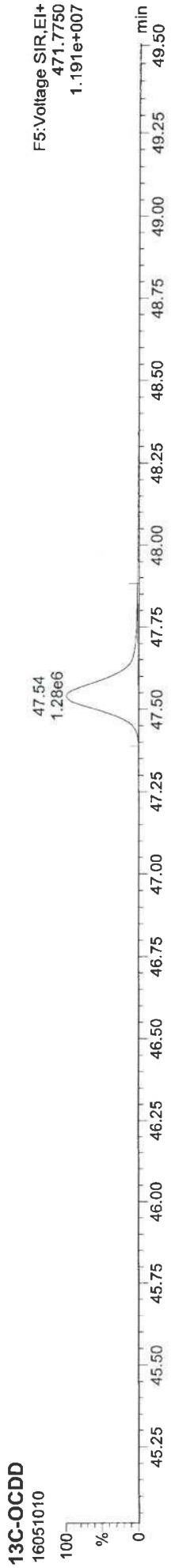
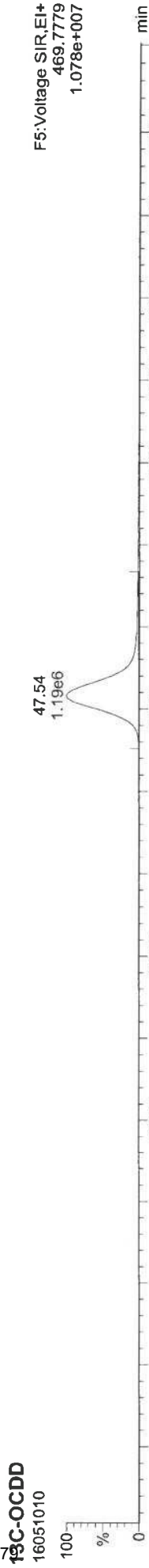
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Quantify Sample Report  
MassLynx MassLynx V4.1 SCN909  
Dataset: P:\DIOXIN8290.PRO\160510ICV.qtd  
Last Altered: Thursday, May 12, 2016 14:38:04 Pacific Daylight Time  
Printed: Thursday, May 12, 2016 14:39:05 Pacific Daylight Time

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ID: ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk





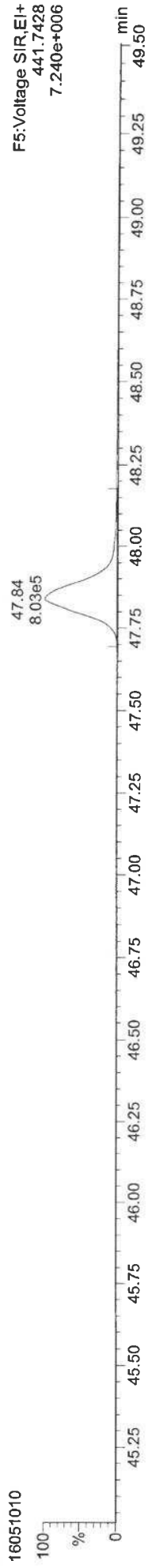
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Fig. ICV, Name: 16051010, Date: 10-May-2016, Time: 19:02:32, Conditions: AUTOSPEC01, User: pk

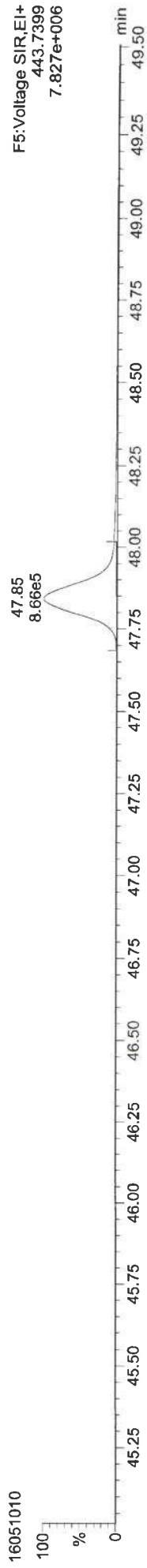
39 CL-2378-TCDD



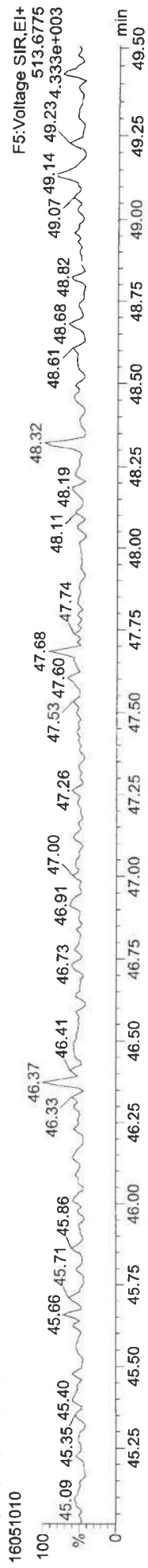
OCDF



OCDF



FUNCTION5 DCDPE





## INITIAL CALIBRATION CHECK EPA 1613B

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>16H0147</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>Port Gamble Shellfish Monitoring</u>
Instrument ID:	<u>AUTOSPEC01</u>	Calibration:	<u>ZE00016</u>
Lab File ID:	<u>16110102</u>	Calibration Date:	<u>05/10/16 15:20</u>
Sequence:	<u>SEJ0462</u>	Injection Date:	<u>11/01/16</u>
Lab Sample ID:	<u>SEJ0462-ICV1</u>	Injection Time:	<u>10:35</u>
Sequence Name:	<u>CS301</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	10.3	0.9347915	0.9636352		3.1	20
2,3,7,8-TCDD	A	10.000	10.1	1.1339650	1.1468050		1.1	20
1,2,3,7,8-PeCDF	A	50.000	48.0	0.9519161	0.9129802		-4.1	20
2,3,4,7,8-PeCDF	A	50.000	52.0	0.9629117	1.0008480		3.9	20
1,2,3,7,8-PeCDD	A	50.000	50.9	0.9753974	0.9923155		1.7	20
1,2,3,4,7,8-HxCDF	A	50.000	50.9	1.1365470	1.1558720		1.7	20
1,2,3,6,7,8-HxCDF	A	50.000	48.6	1.0987420	1.0684940		-2.8	20
2,3,4,6,7,8-HxCDF	A	50.000	51.7	1.1635040	1.2029270		3.4	20
1,2,3,7,8,9-HxCDF	A	50.000	50.2	1.1008210	1.1058540		0.5	20
1,2,3,4,7,8-HxCDD	A	50.000	48.3	1.0311670	0.9959299		-3.4	20
1,2,3,6,7,8-HxCDD	A	50.000	52.0	0.9714371	1.0103540		4.0	20
1,2,3,7,8,9-HxCDD	A	50.000	53.0	0.9950452	1.0306550		6.1	20
1,2,3,4,6,7,8-HpCDF	A	50.000	47.6	1.3027890	1.2406360		-4.8	20
1,2,3,4,7,8,9-HpCDF	A	50.000	47.4	1.3173610	1.2487050		-5.2	20
1,2,3,4,6,7,8-HpCDD	A	50.000	51.7	1.0280160	1.0620780		3.3	20
OCDF	A	100.00	102	1.1658070	1.1901030		2.1	20
OCDD	A	100.00	93.9	1.1070210	1.0394030		-6.1	20
13C12-2,3,7,8-TCDF	A	100.00	102	1.5674190	1.5918652		1.6	30
13C12-2,3,7,8-TCDD	A	100.00	101	0.9077481	0.9155644		0.9	30
13C12-1,2,3,7,8-PeCDF	A	100.00	106	1.2740970	1.3536778		6.2	30
13C12-2,3,4,7,8-PeCDF	A	100.00	112	1.2346260	1.3816399		11.9	30
13C12-1,2,3,7,8-PeCDD	A	100.00	110	0.7557554	0.8301364		9.8	30
13C12-1,2,3,4,7,8-HxCDF	A	100.00	93.4	1.3809190	1.2904517		-6.6	30
13C12-1,2,3,6,7,8-HxCDF	A	100.00	91.8	1.5694530	1.4413168		-8.2	30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	93.8	1.3453300	1.2616508		-6.2	30
13C12-1,2,3,7,8,9-HxCDF	A	100.00	98.0	1.1828950	1.1588803		-2.0	30
13C12-1,2,3,4,7,8-HxCDD	A	100.00	98.5	1.0559040	1.0399022		-1.5	30
13C12-1,2,3,6,7,8-HxCDD	A	100.00	94.1	1.1630360	1.0944049		-5.9	30
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	96.7	1.1783620	1.1398800		-3.3	30
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	107	0.8777992	0.9351619		6.5	30
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	104	0.9091061	0.9412514		3.5	30

\* Values outside of QC limits



**INITIAL CALIBRATION CHECK**  
**EPA 1613B**

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>16H0147</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>Port Gamble Shellfish Monitoring</u>
Instrument ID:	<u>AUTOSPEC01</u>	Calibration:	<u>ZE00016</u>
Lab File ID:	<u>16110102</u>	Calibration Date:	<u>05/10/16 15:20</u>
Sequence:	<u>SEJ0462</u>	Injection Date:	<u>11/01/16</u>
Lab Sample ID:	<u>SEJ0462-ICV1</u>	Injection Time:	<u>10:35</u>
Sequence Name:	<u>CS301</u>		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-OCDD	A	200.00	206	0.8195753	0.8441025		3.0	30
37C14-2,3,7,8-TCDD	A	10.000	10.4	1.0665580	1.1097494		4.0	

\* Values outside of QC limits

Dataset: Untitled

Last Altered: Tuesday, November 01, 2016 11:34:11 Pacific Daylight Time

Printed: Tuesday, November 01, 2016 11:35:41 Pacific Daylight Time

Method: C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52  
 Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510\CAL.cdb 11 May 2016 09:28:40

ID: CS301, Name: 161110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
2378-TCDF	25.600	1.001	1.38e5	1.84e5	0.935	0.752	0.770	3304	2530	1.93e6	2.66e6	584.3	NO	10.309
12378-PeCDF	29.729	1.000	7.97e5	5.01e5	0.952	1.592	1.550	4549	4195	1.17e7	7.51e6	2563.2	NO	47.955
23478-PeCDF	31.077	1.000	8.90e5	5.62e5	0.963	1.583	1.550	4549	4195	1.30e7	8.27e6	2864.5	NO	51.970
123478-HxCDF	34.749	1.001	6.99e5	5.72e5	1.137	1.221	1.240	7172	5030	1.04e7	8.35e6	1454.6	NO	50.850
234678-HxCDF	35.845	1.001	7.08e5	5.85e5	1.164	1.209	1.240	7172	5030	1.03e7	8.45e6	1437.6	NO	51.694
123678-HxCDF	34.892	1.000	7.25e5	5.87e5	1.099	1.234	1.240	7172	5030	1.05e7	8.42e6	1469.4	NO	48.623
123789-HxCDF	36.985	1.000	6.11e5	4.81e5	1.101	1.269	1.240	7172	5030	8.81e6	7.10e6	1227.9	NO	50.229
1234678-HpCDF	39.046	1.000	6.04e5	6.01e5	1.303	1.005	1.050	3126	3600	9.13e6	8.98e6	2920.8	NO	47.615
1234789-HpCDF	41.666	1.001	5.09e5	4.86e5	1.317	1.048	1.050	3126	3600	6.38e6	6.18e6	2041.5	NO	47.394
OCDF	46.783	1.006	8.00e5	9.12e5	1.166	0.877	0.890	2943	2904	8.17e6	9.30e6	2775.3	NO	102.084
2378-TCDD	26.242	1.001	9.69e4	1.24e5	1.134	0.784	0.770	1965	2351	1.42e6	1.76e6	721.0	NO	10.113
12378-PeCDD	31.330	1.000	5.32e5	3.33e5	0.975	1.600	1.550	3818	3237	7.79e6	5.01e6	2041.1	NO	50.867
123478-HxCDD	35.977	1.000	4.89e5	3.93e5	1.031	1.243	1.240	3038	3795	7.29e6	5.99e6	2399.5	NO	48.291
123678-HxCDD	36.108	1.001	5.28e5	4.14e5	0.971	1.275	1.240	3038	3795	7.61e6	6.04e6	2503.4	NO	52.003
123789-HxCDD	36.536	1.012	5.05e5	4.08e5	0.947	1.235	1.240	3038	3795	7.27e6	5.85e6	2392.6	NO	53.042
1234678-HpCDD	40.811	1.001	4.37e5	4.15e5	1.028	1.052	1.050	3456	2873	5.75e6	5.41e6	1663.3	NO	51.657
OCDD	46.514	1.000	7.08e5	7.87e5	1.107	0.899	0.890	2997	2750	7.13e6	7.95e6	2380.6	NO	93.892
13C-2378-TCDF	25.585	1.006	1.47e6	1.88e6	1.567	0.781	0.770	12294	4883	2.12e7	2.71e7	1722.6	NO	101.560
13C-12378-PeCDF	29.718	1.169	1.75e6	1.10e6	1.274	1.595	1.550	4506	4146	2.53e7	1.59e7	5615.5	NO	106.246
13C-23478-PeCDF	31.066	1.222	1.77e6	1.13e6	1.235	1.571	1.550	4506	4146	2.57e7	1.65e7	5714.5	NO	111.908
13C-123478-HxCDF	34.727	0.951	7.52e5	1.45e6	1.381	0.520	0.510	5494	6820	1.12e7	2.16e7	2037.4	NO	93.449
13C-123678-HxCDF	34.881	0.955	8.42e5	1.61e6	1.569	0.521	0.510	5494	6820	1.18e7	2.26e7	2153.6	NO	91.836
13C-234678-HxCDF	35.823	0.981	7.35e5	1.41e6	1.345	0.520	0.510	5494	6820	1.07e7	2.06e7	1940.8	NO	93.780
13C-123789-HxCDF	36.974	1.013	6.76e5	1.30e6	1.183	0.521	0.510	5494	6820	9.56e6	1.83e7	1739.3	NO	97.970
13C-1234678-HpCDF	39.035	1.069	6.03e5	1.34e6	1.178	0.450	0.440	3192	6445	9.00e6	1.98e7	2821.2	NO	96.734
13C-1234789-HpCDF	41.644	1.140	4.90e5	1.10e6	0.878	0.444	0.440	3192	6445	6.08e6	1.36e7	1906.4	NO	106.535
13C-1234-TCDD	25.420	0.000	9.26e5	1.17e6	1.000	0.789	0.770	4049	1748	1.33e7	1.69e7	3274.2	NO	100.000
13C-2378-TCDD	26.227	1.032	8.47e5	1.08e6	0.908	0.787	0.770	4049	1748	1.19e7	1.50e7	2935.7	NO	100.861
13C-12378-PeCDD	31.319	1.232	1.08e6	6.62e5	0.756	1.635	1.550	2689	2198	1.57e7	9.62e6	5857.0	NO	109.842
13C-123478-HxCDD	35.966	0.985	9.98e5	7.74e5	1.056	1.290	1.240	3468	2871	1.47e7	1.13e7	4234.4	NO	98.485
13C-123678-HxCDD	36.086	0.988	1.06e6	8.06e5	1.163	1.313	1.240	3468	2871	1.50e7	1.19e7	4317.4	NO	94.099
13C-1234678-HpCDD	40.789	1.117	8.33e5	7.71e5	0.909	1.080	1.050	2857	3036	1.10e7	1.03e7	3834.0	NO	103.536
13C-OCDD	46.496	1.273	1.37e6	1.51e6	0.820	0.908	0.890	3172	2922	1.38e7	1.55e7	4361.2	NO	205.985

Dataset: Untitled

Last Altered: Tuesday, November 01, 2016 11:34:11 Pacific Daylight Time

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ID: CS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

Name	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N	EMPC?	pg
13C-23789-HXCDD	36.514	0.000	9.50e5	7.54e5	1.000	1.260	1.240	3468	2871	1.39e7	1.09e7	3998.1	NO	100.000
Total-tetrafurans			4.50e5		0.935			3304		6.23e6				33.185
Total-penta1			1.04e6					1551		1.53e7				65.787
Total-pentafurans			2.66e6		0.957			4549		3.84e7				157.543
Total-hexafurans			3.47e6		1.125			7172		5.08e7				254.178
Total-heptafurans			1.11e6		1.310			3126		1.55e7				95.279
Total-Furans			9.54e6		1.114			3304		1.34e8				708.088
Total-tetradioxins			5.24e5		1.134			1965		6.86e6				55.030
Total-pentadioxins			2.06e6		0.975			3818		2.57e7				198.316
Total-hexadioxins			2.05e6		0.983			3038		2.99e7				207.547
Total-heptadioxins			9.24e5		1.028			3456		1.27e7				109.477
Total-Dioxins			6.27e6		1.028			1965		8.23e7				664.278
Total-TEQ			1.58e7					1965		2.17e8				1372.366
37CL-2378-TCDD	26.242	1.032	2.33e5		1.067			2364		3.43e6		1449.9		10.405
FUNCTION1 PFK			8.34e4					815995		1.92e6				
FUNCTION2 PFK			3.77e5					223540		1.08e7				0.000
FUNCTION3 PFK			0.00e0					665262		0.00e0				
FUNCTION4 PFK			1.22e5					492732		5.27e6				
FUNCTION5 PFK			4.58e5					330234		1.65e7				
FUNCTION1 HXCDPE			7.52e2					846		1.57e4				0.000
FUNCTION1 HPCDPE			8.42e1					611		1.50e3				0.000
FUNCTION2 HPCDPE			1.10e3					691		2.85e4				0.000
FUNCTION3 OCDPE			0.00e0					596		0.00e0				
FUNCTION4 NCDPE			2.00e2					981		4.33e3				0.000
FUNCTION5 DCDPE			7.15e1					594		2.78e3				0.000

Quantify Sample Report MassLynx MassLynx V4.1 SCN909

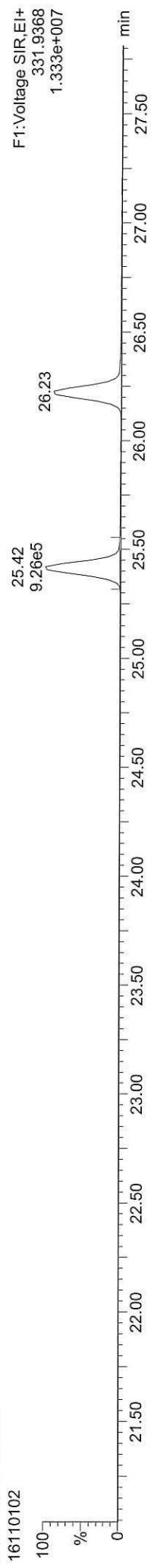
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Printed: Tuesday, November 01, 2016 11:35:41 Pacific Daylight Time

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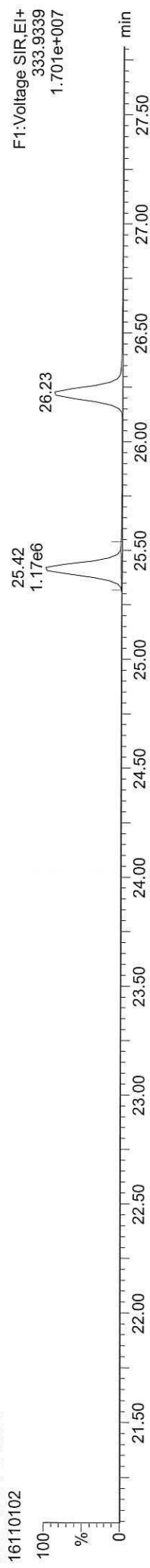
Method: C:\MassLynx\Dioxin.pro\MethDB\Dioxin161007.mdb 07 Oct 2016 14:10:52  
Calibration: C:\MassLynx\Dioxin.pro\CurveDB\160510\CAL.cdb 11 May 2016 09:28:40

ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

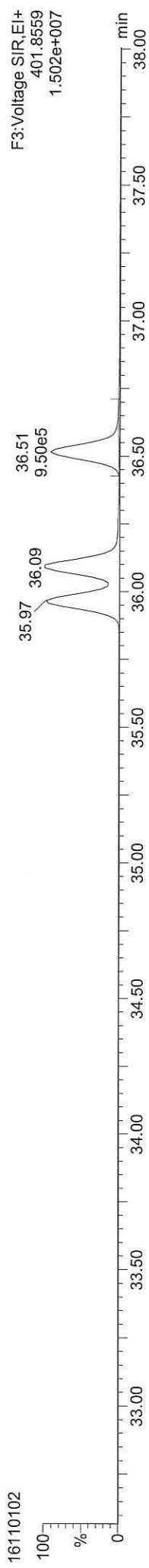
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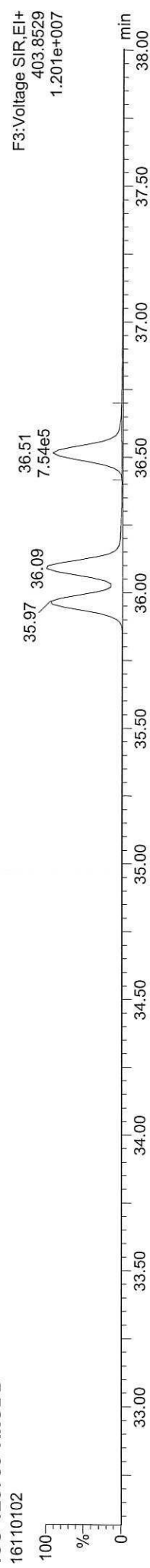
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13C-123789-HxCDD



13C-123789-HxCDD



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

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Printed: Tuesday, November 01, 2016 11:35:41 Pacific Daylight Time

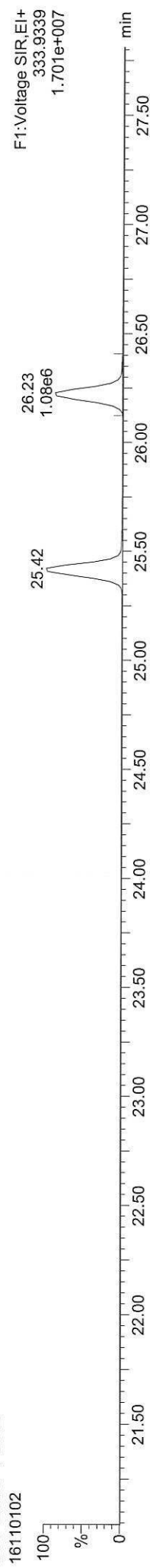
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ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

13C-2378-TCDD



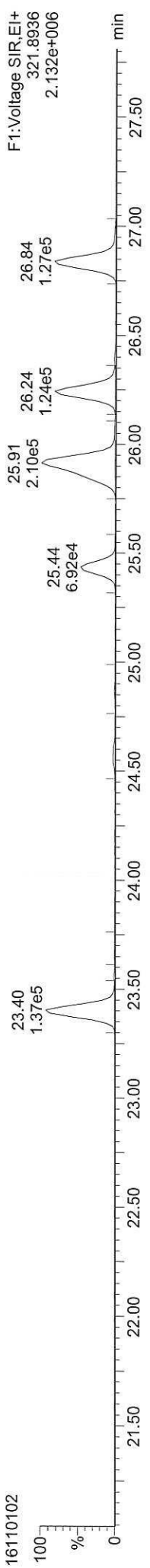
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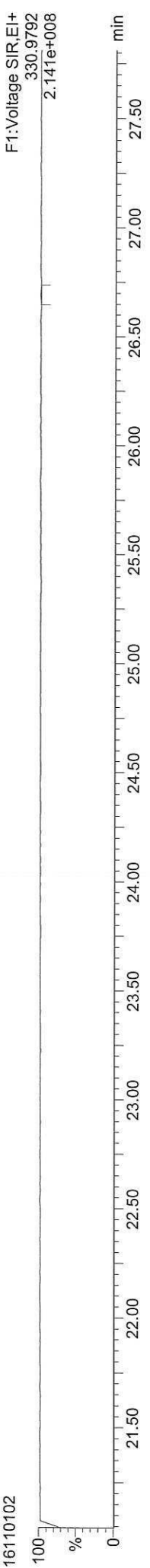
Total-tetradioxins



Total-tetradioxins



FUNCTION1 PFK



Dataset: Untitled  
Last Altered: Tuesday, November 01, 2016 11:34:11 Pacific Daylight Time  
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ID: CS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

13C-2378-TCDF

16110102



F1:Voltage SIR,EI+  
315.9419  
2.134e+007

13C-2378-TCDF

16110102



F1:Voltage SIR,EI+  
317.9389  
2.721e+007

Total-tetrafurans

16110102



F1:Voltage SIR,EI+  
303.9016  
2.433e+006

Total-tetrafurans

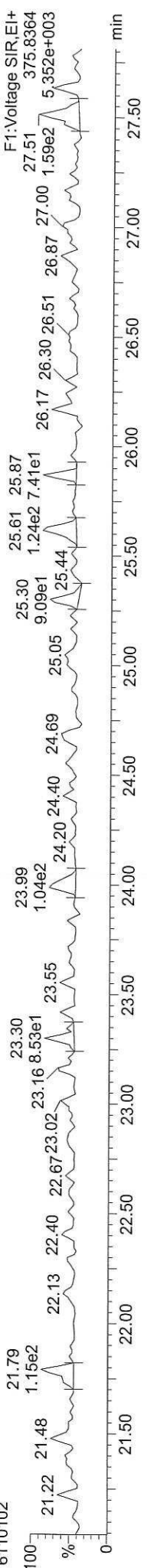
16110102



F1:Voltage SIR,EI+  
305.8987  
3.150e+006

FUNCTION1 HXCDPE

16110102



F1:Voltage SIR,EI+  
375.8364  
5.352e+003

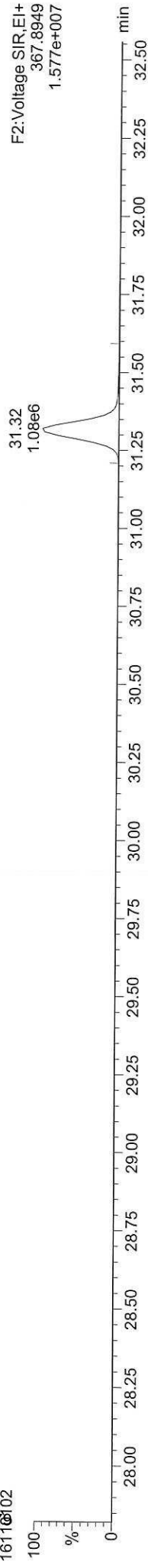


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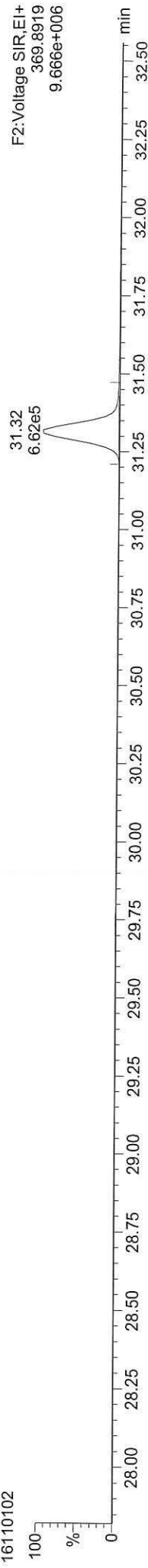
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ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

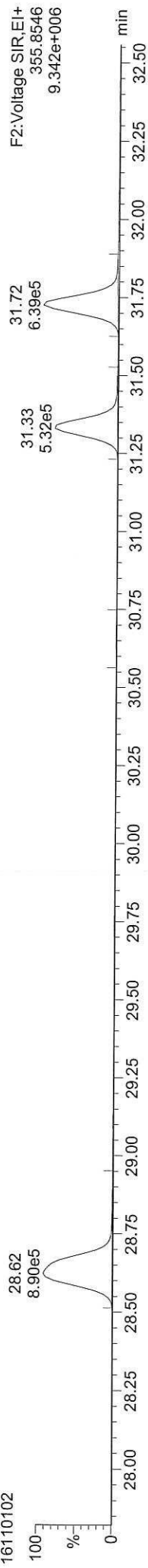
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16110102



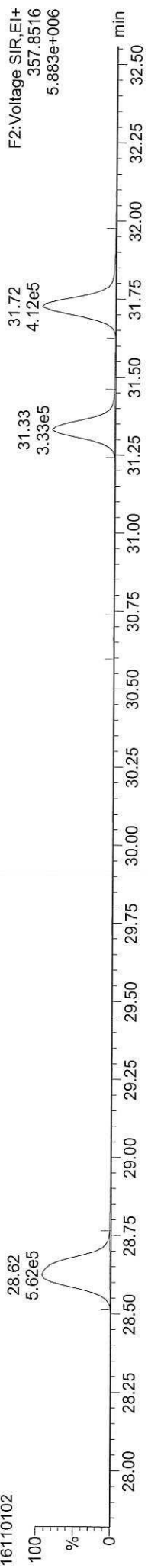
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16110102



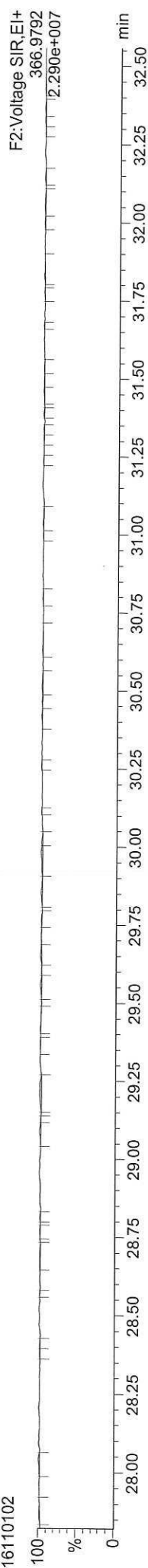
Total-pentadioxins  
16110102



Total-pentadioxins  
16110102



FUNCTION2 PFK  
16110102



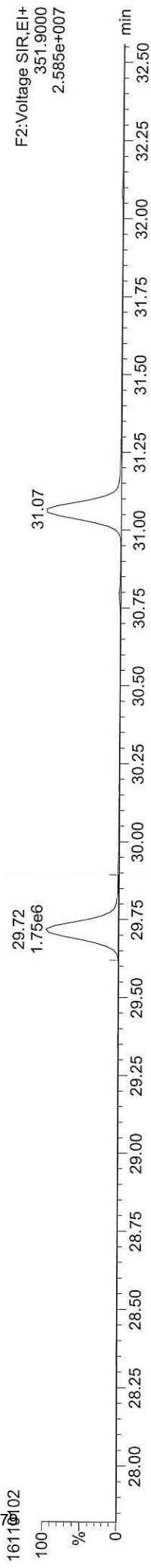
Quantify Sample Report MassLynx MassLynx V4.1 SCN909

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Printed: Tuesday, November 01, 2016 11:35:41 Pacific Daylight Time

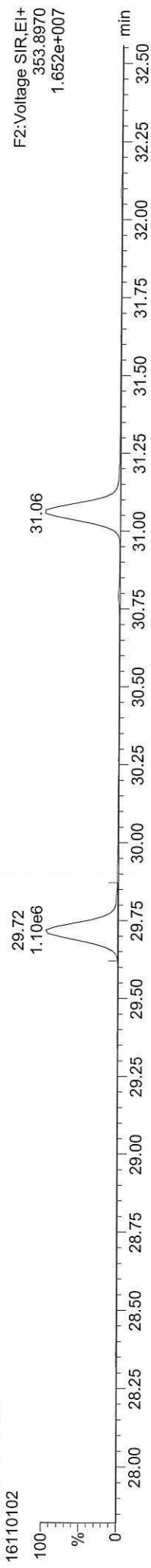
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ID: GS301, Name: 161110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

13C-12378-PeCDF



13C-12378-PeCDF



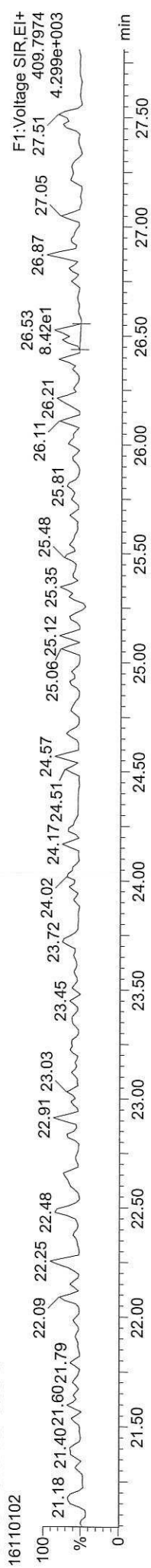
Total-penta1



Total-penta1



FUNCTION1 HPCDPE



Dataset: Untitled

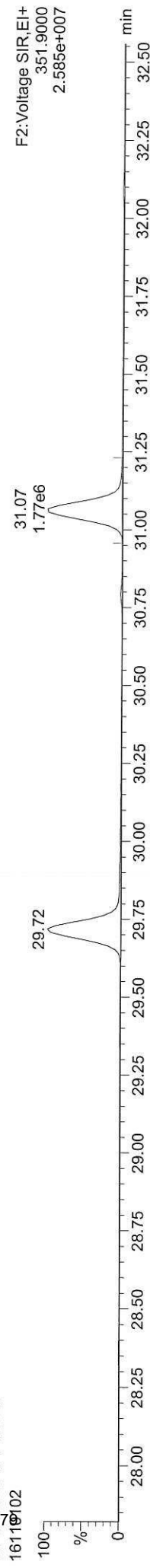
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Printed: Tuesday, November 01, 2016 11:35:41 Pacific Daylight Time

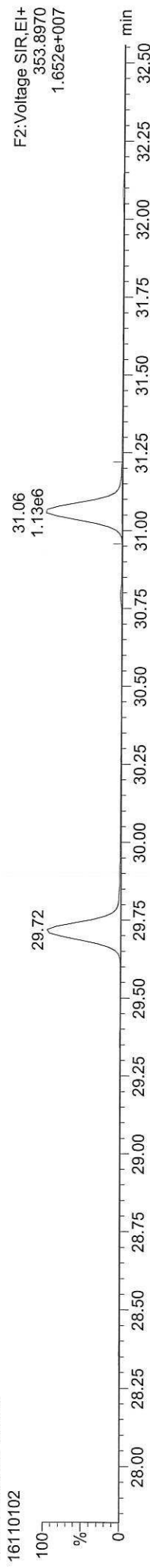
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ID: 65301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

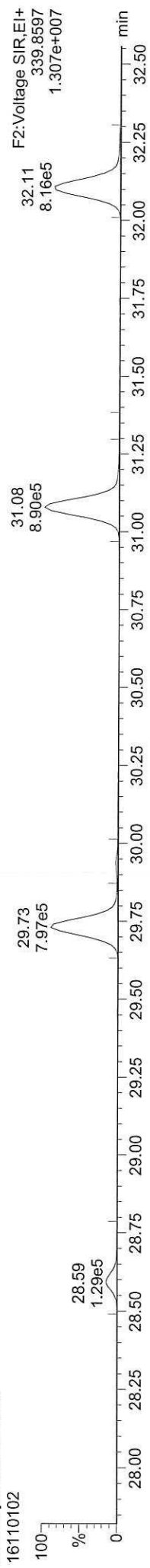
13C-23478-PeCDF



13C-23478-PeCDF



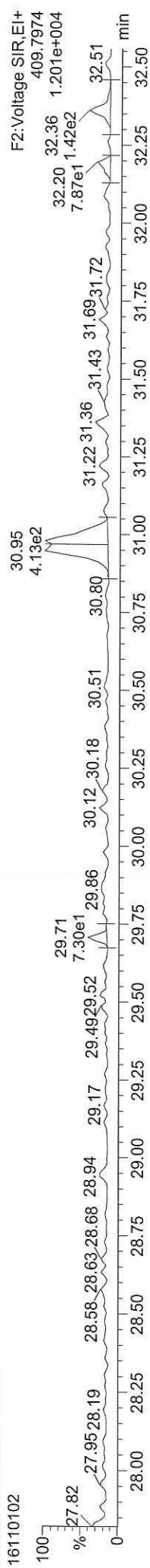
Total-pentafurans



Total-pentafurans



FUNCTION2 HPCDPE

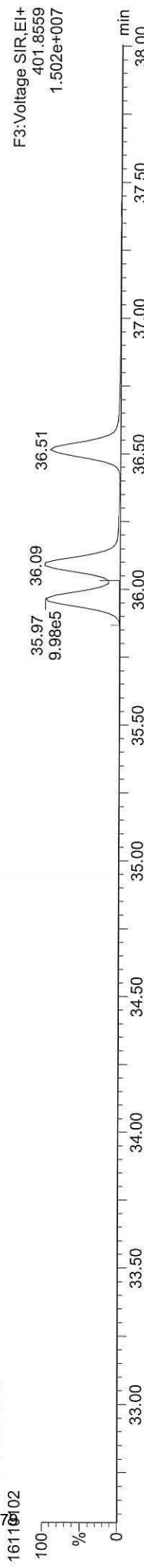


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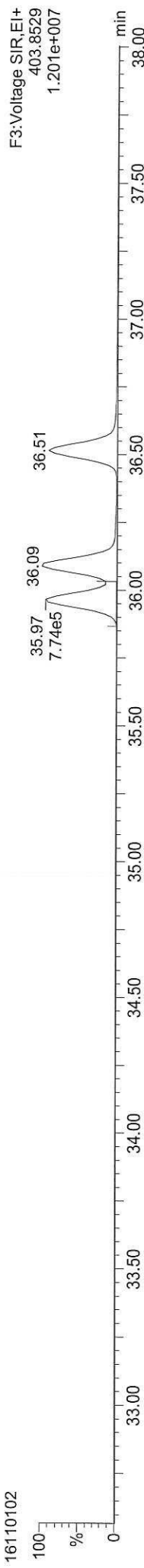
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ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

**13C-123478-HxCDD**



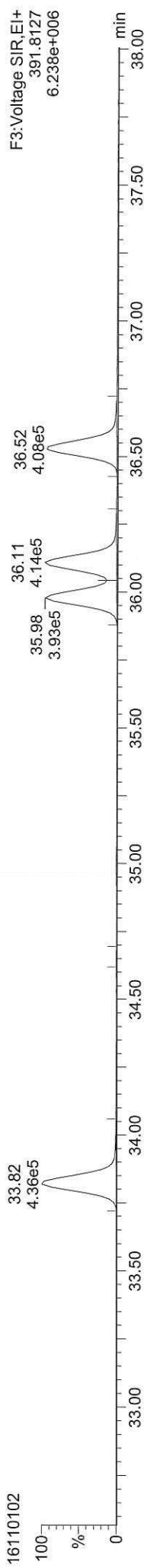
**13C-123478-HxCDD**



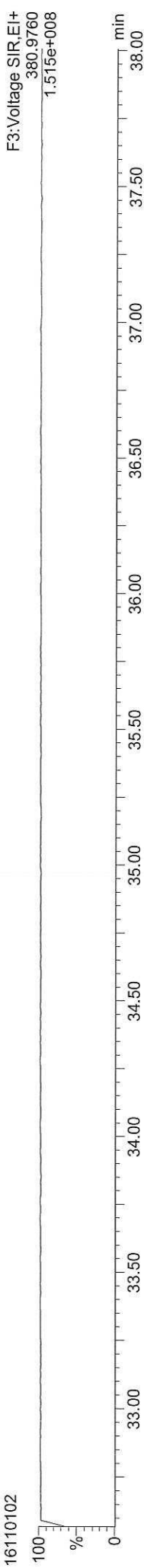
**Total-hexadioxins**



**Total-hexadioxins**



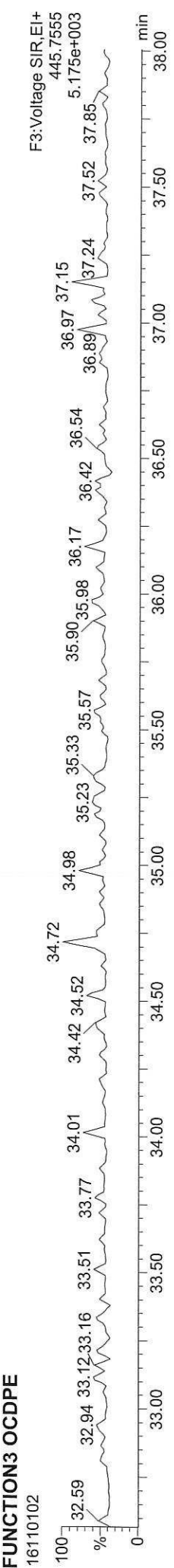
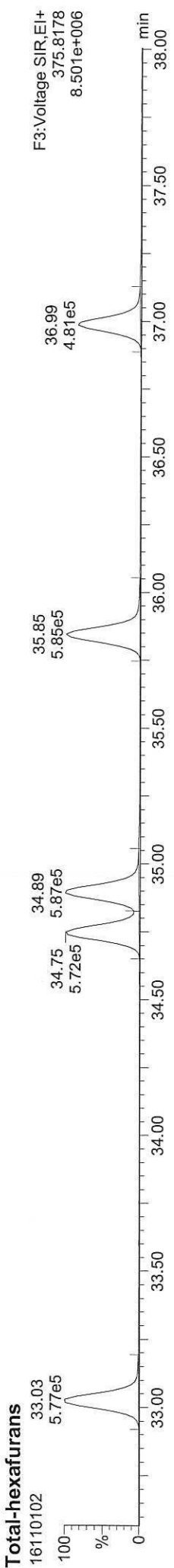
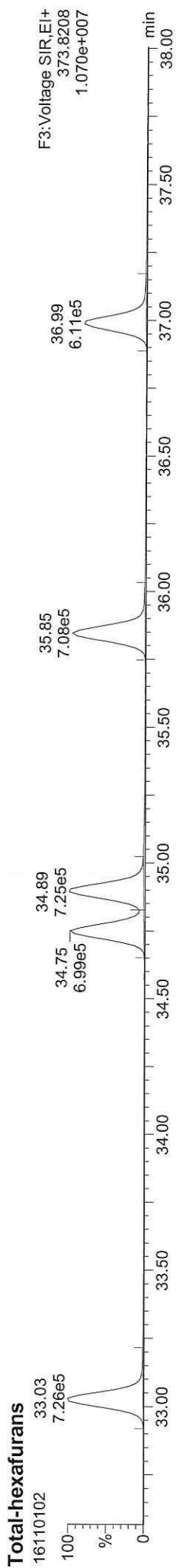
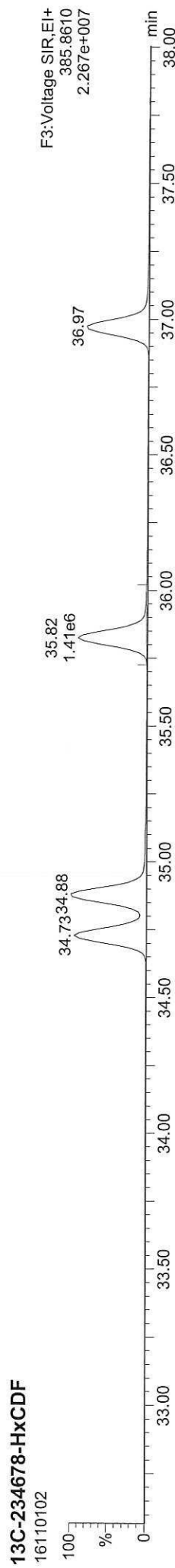
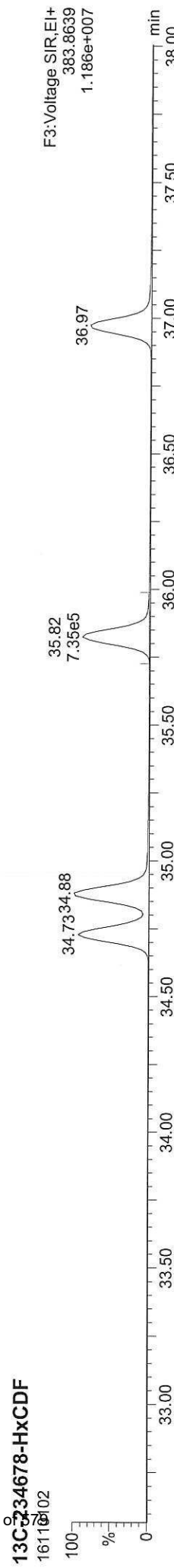
**FUNCTION3 PFK**



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ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK



Quantify Sample Report MassLynx MassLynx V4.1 SCN909

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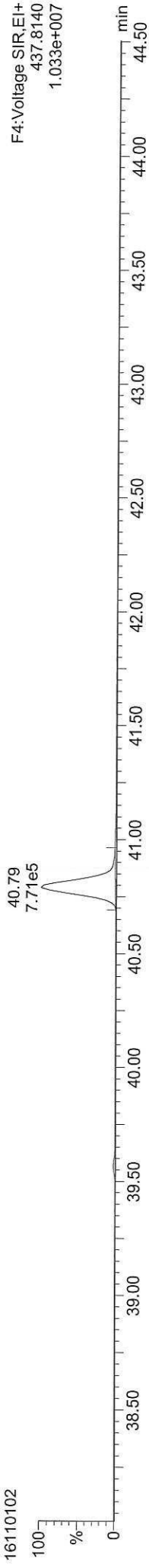
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ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

13C-1234678-HpCDD  
16110102

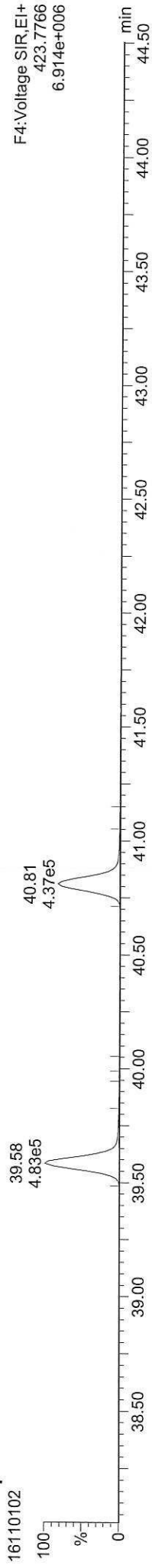


13C-1234678-HpCDD  
16110102



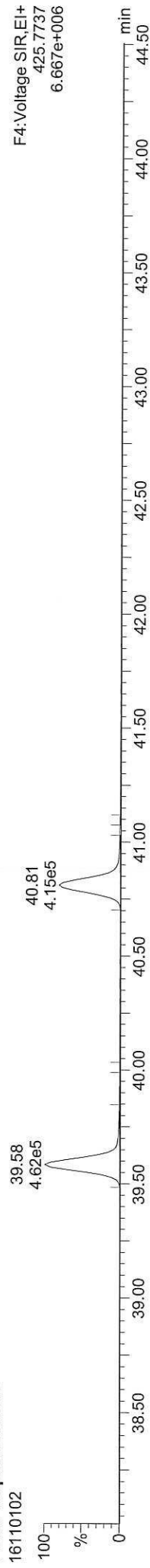
Total-heptadioxins

16110102



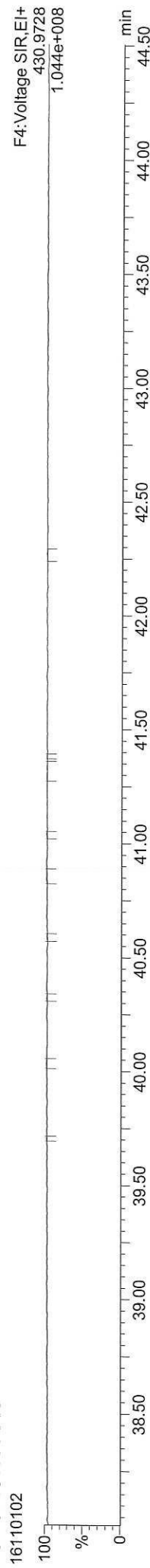
Total-heptadioxins

16110102



FUNCTION4 PFK

16110102

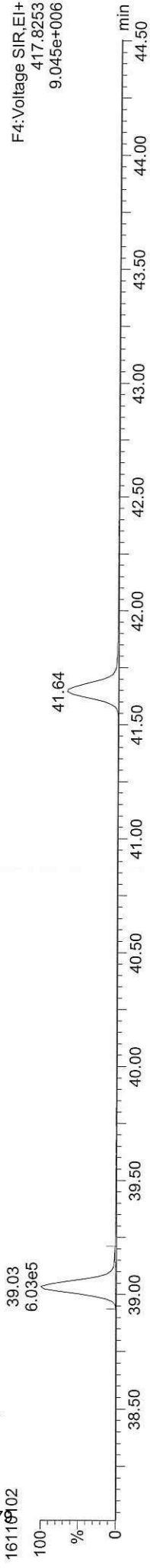


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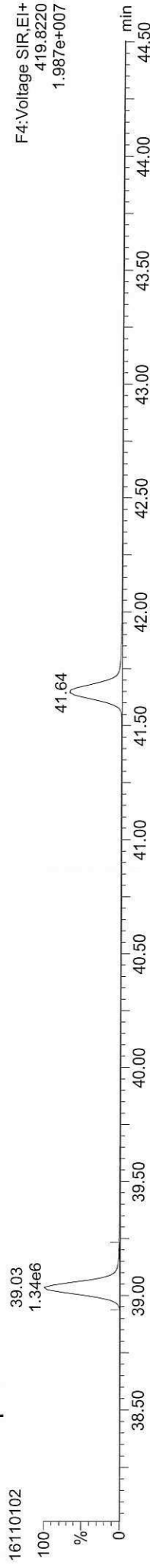
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ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

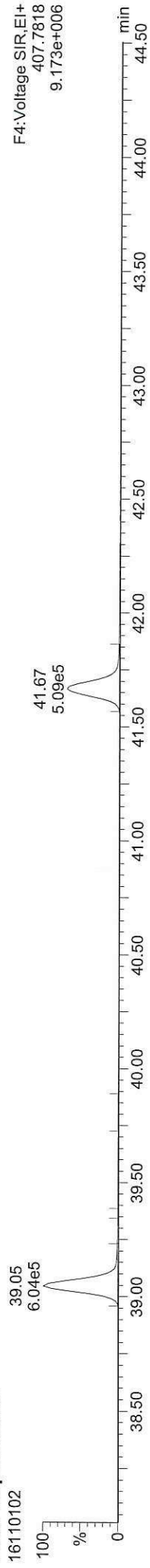
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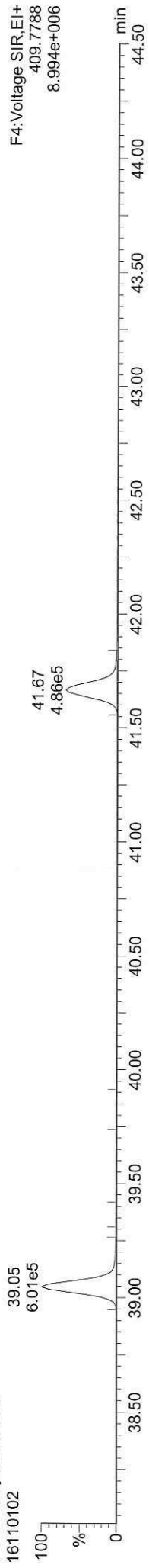
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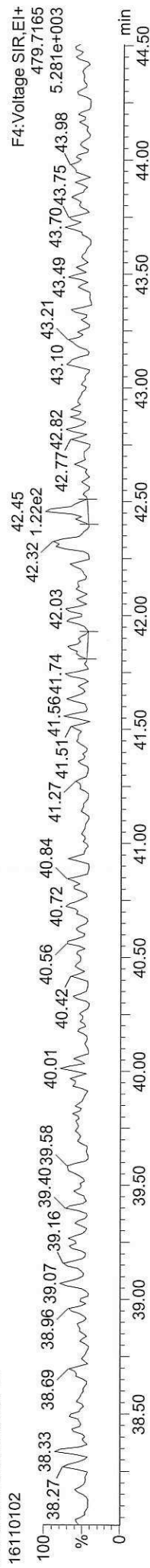
Total-heptafurans



Total-heptafurans



FUNCTION4 NCDPE



MassLynx V4.1 SCN909

Quantify Sample Report

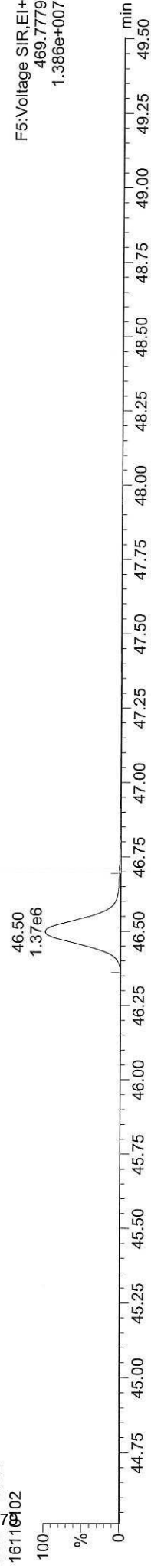
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ID: GS301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

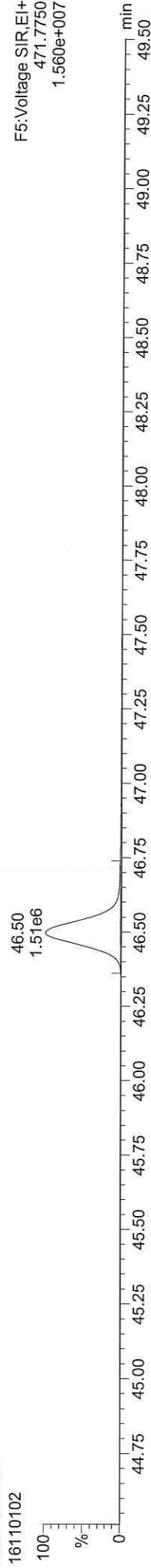
13C-OCDD

16110102



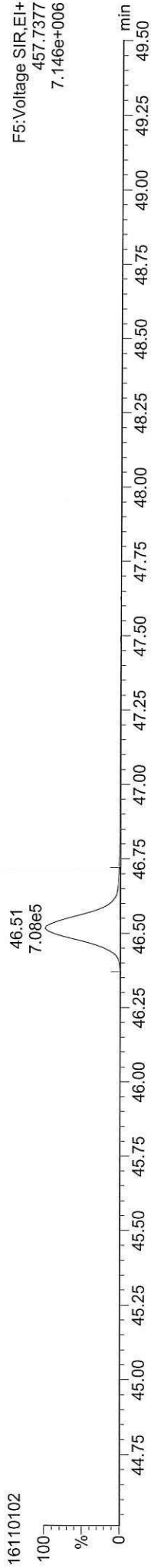
13C-OCDD

16110102



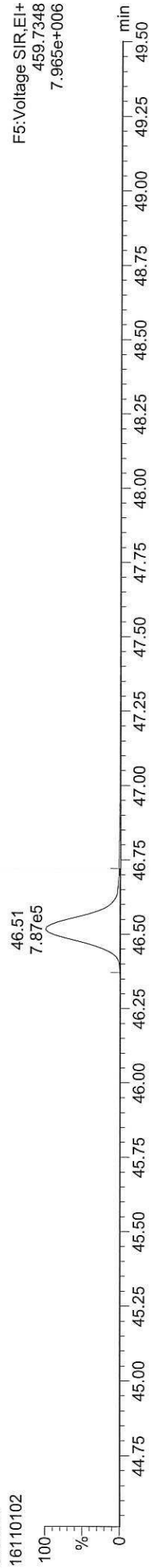
OCDD

16110102



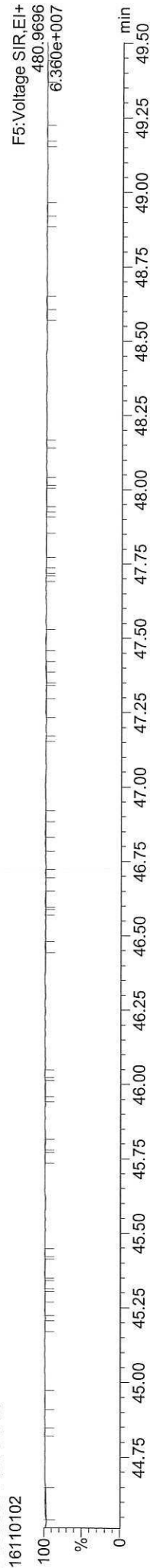
OCDD

16110102



FUNCTION5 PFK

16110102



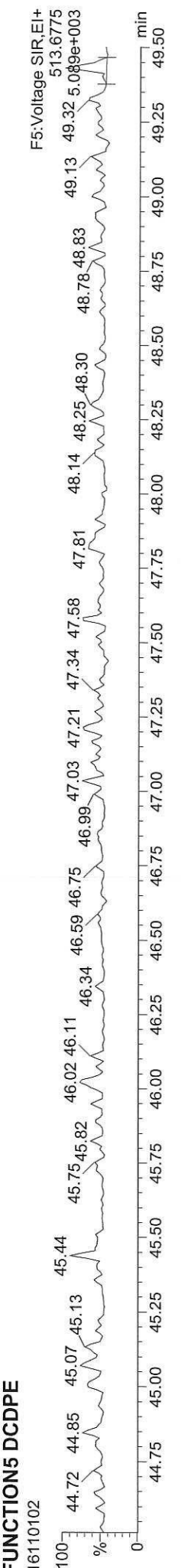
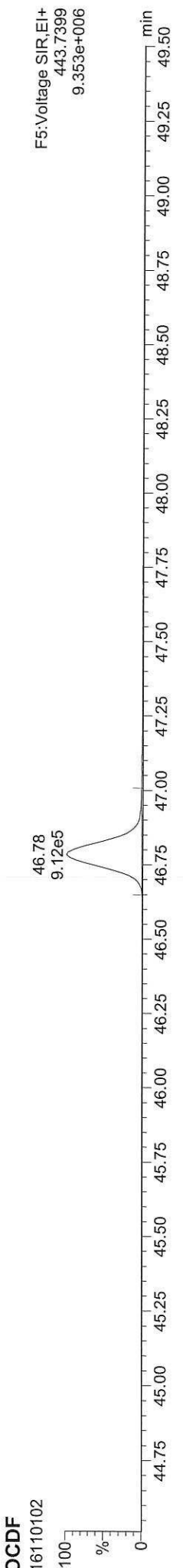
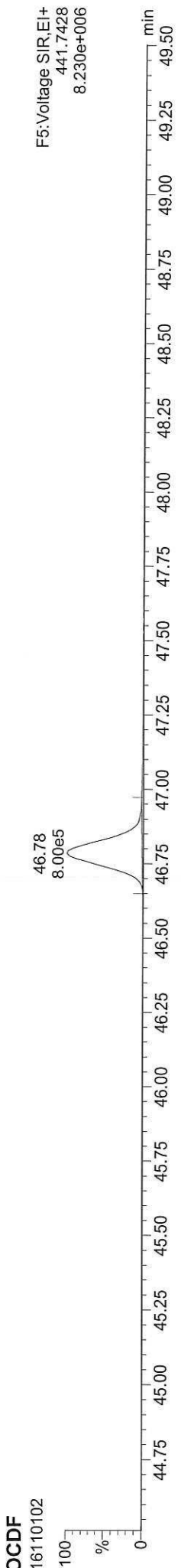
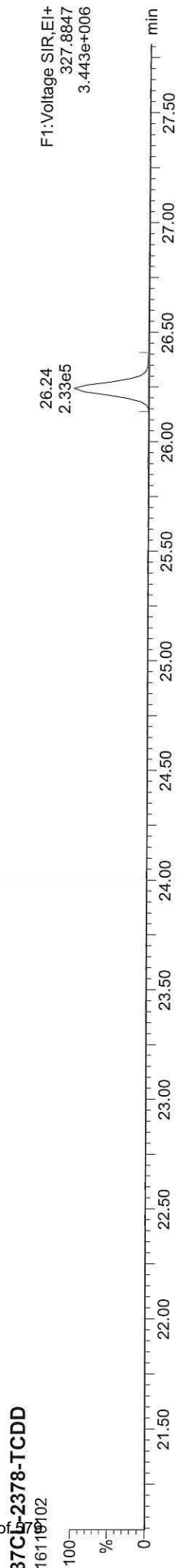


Quantify Sample Report MassLynx V4.1 SCN909

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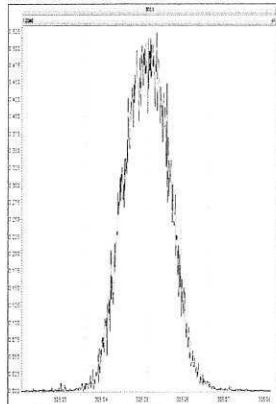
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37CL-2378-TCDD

ID: 6S301, Name: 16110102, Date: 01-Nov-2016, Time: 10:35:53, Conditions: AUTOSPEC01, User: PK

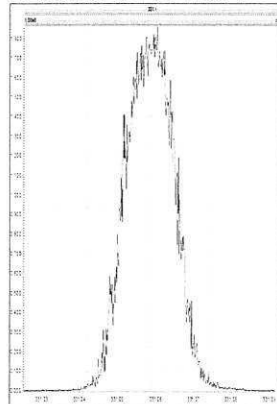


FUNCTION5 DCDPE

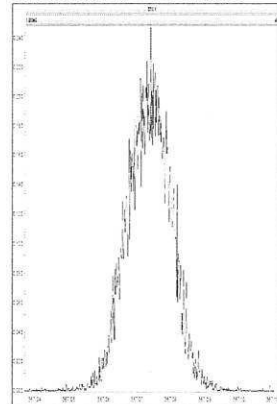
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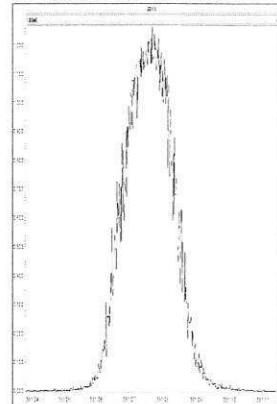
M 330.9792 R 12594



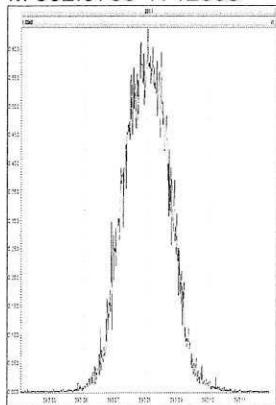
M 366.9792 R 12958



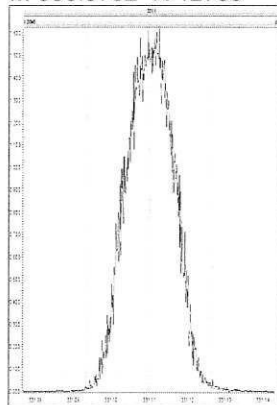
M 380.9760 R 12194



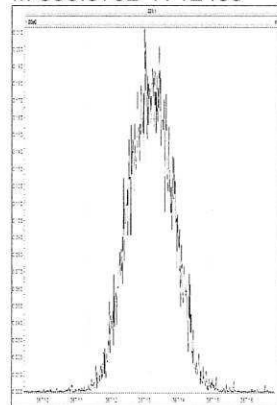
M 392.9760 R 12603



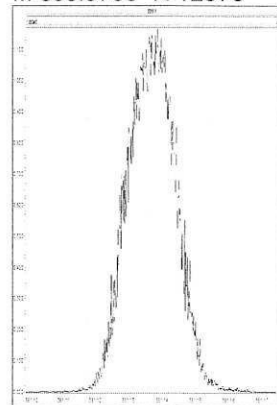
M 330.9792 R 12755



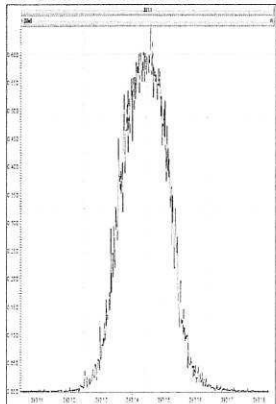
M 366.9792 R 12499



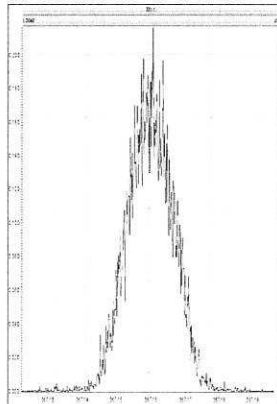
M 380.9760 R 12376



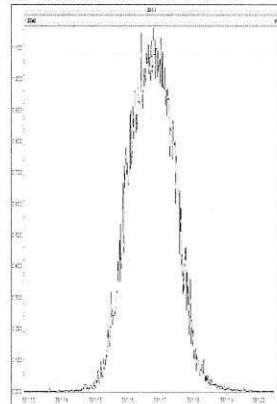
M 392.9760 R 12886



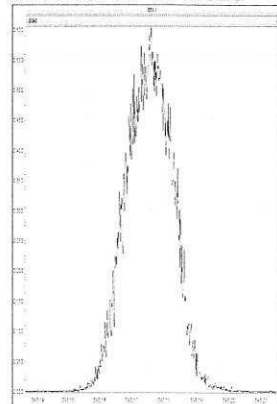
M 366.9792 R 12711



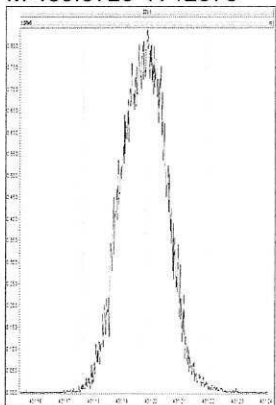
M 380.9760 R 12628



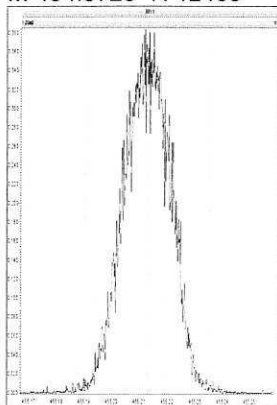
M 392.9760 R 12825



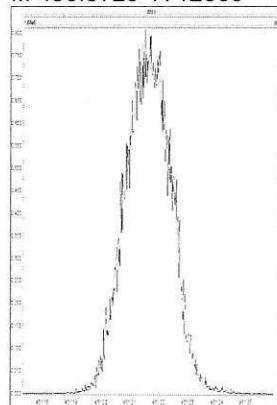
M 430.9728 R 12376



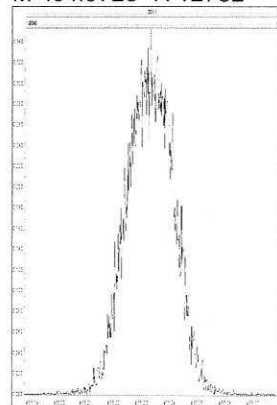
M 454.9728 R 12468



M 430.9728 R 12600

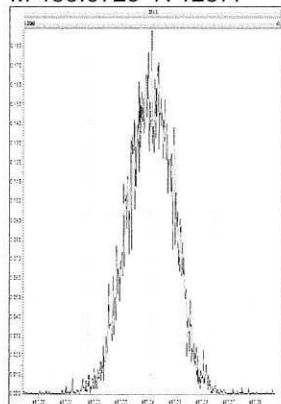


M 454.9728 R 12732

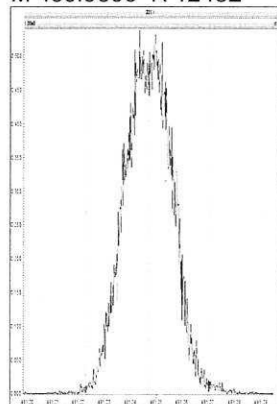


Printed: Tuesday, November 01, 2016 10:28:31 Pacific Daylight Time

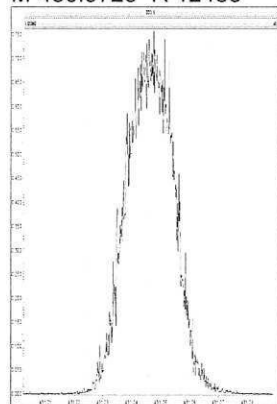
M 466.9728 R 12877



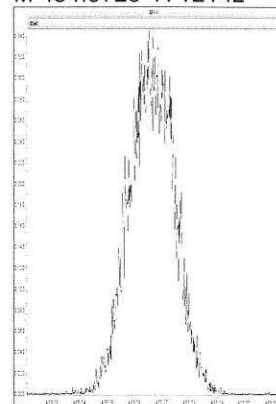
M 480.9696 R 12452



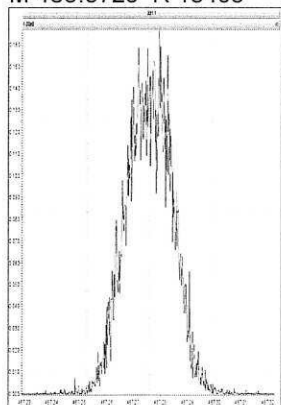
M 430.9728 R 12468



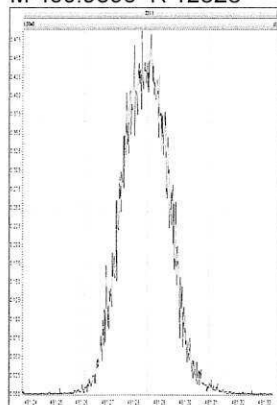
M 454.9728 R 12142



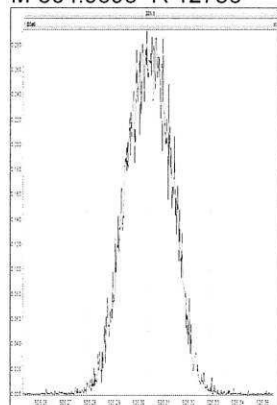
M 466.9728 R 13405



M 480.9696 R 12628

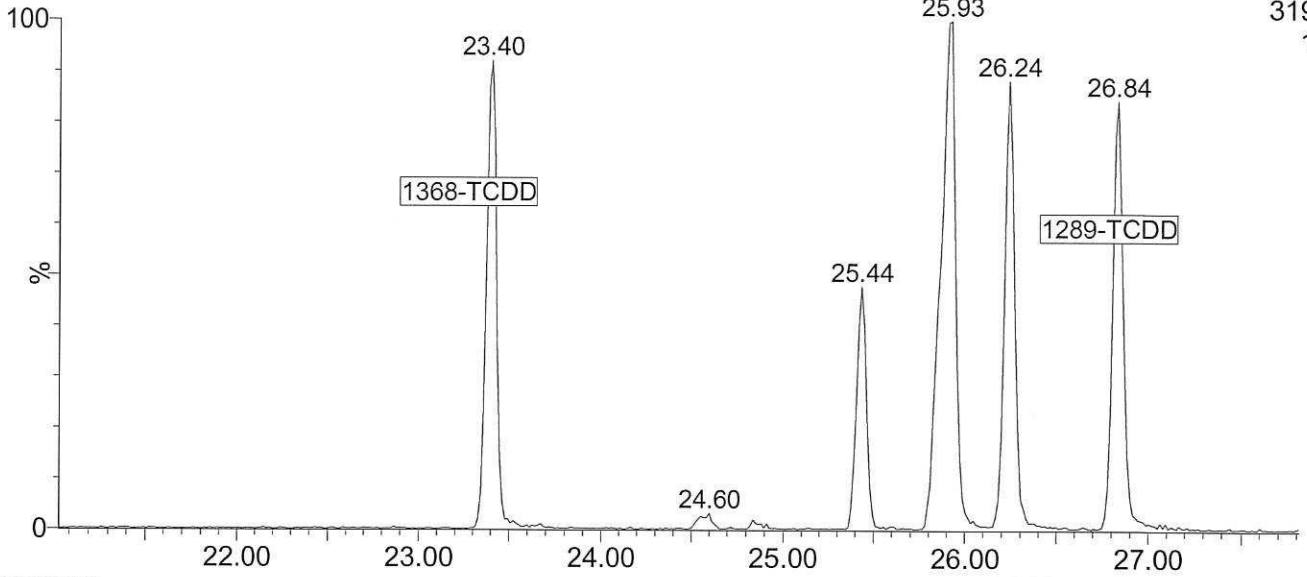


M 504.9696 R 12756



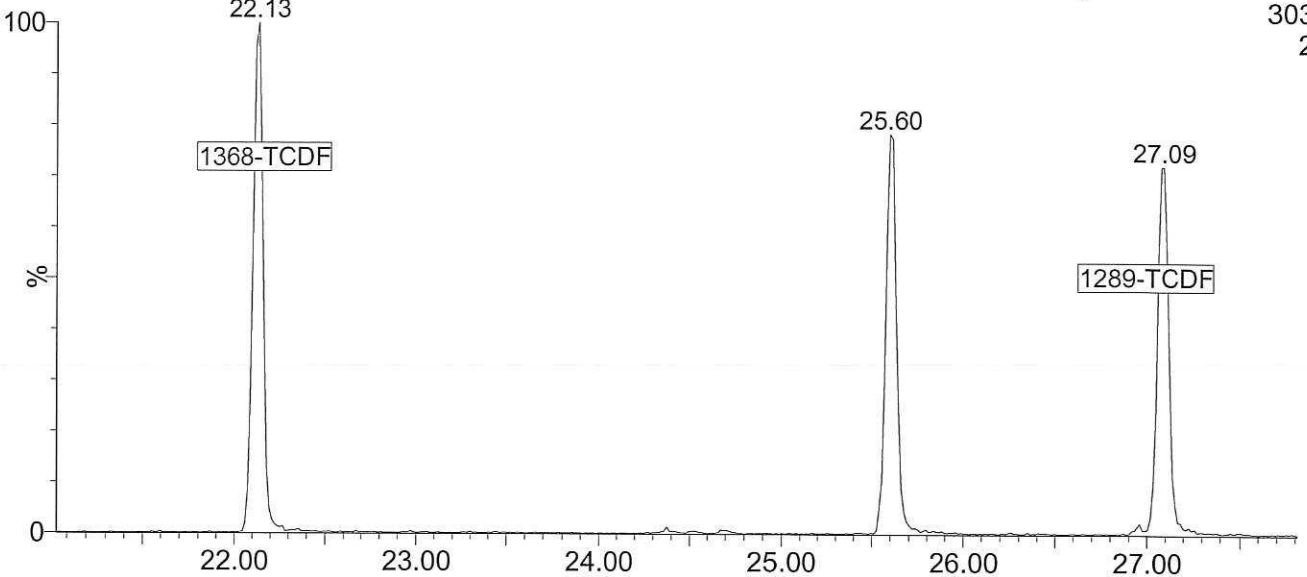
16110102

1: Voltage SIR 15 Channels EI+  
319.8965  
1.78e6



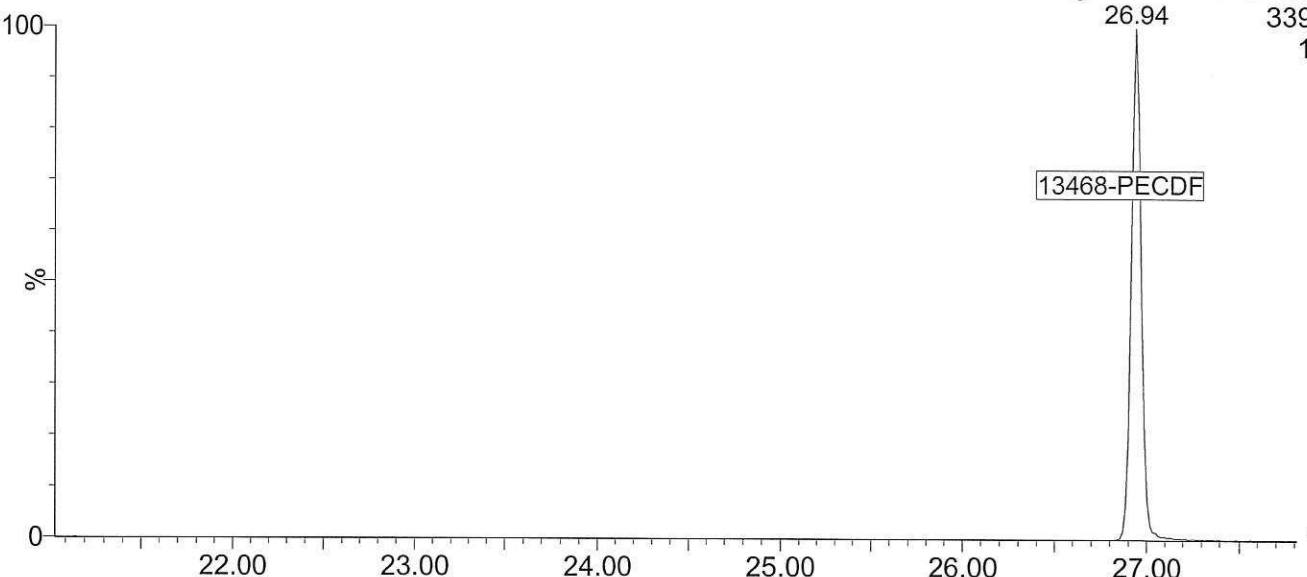
16110102

1: Voltage SIR 15 Channels EI+  
303.9016  
2.63e6



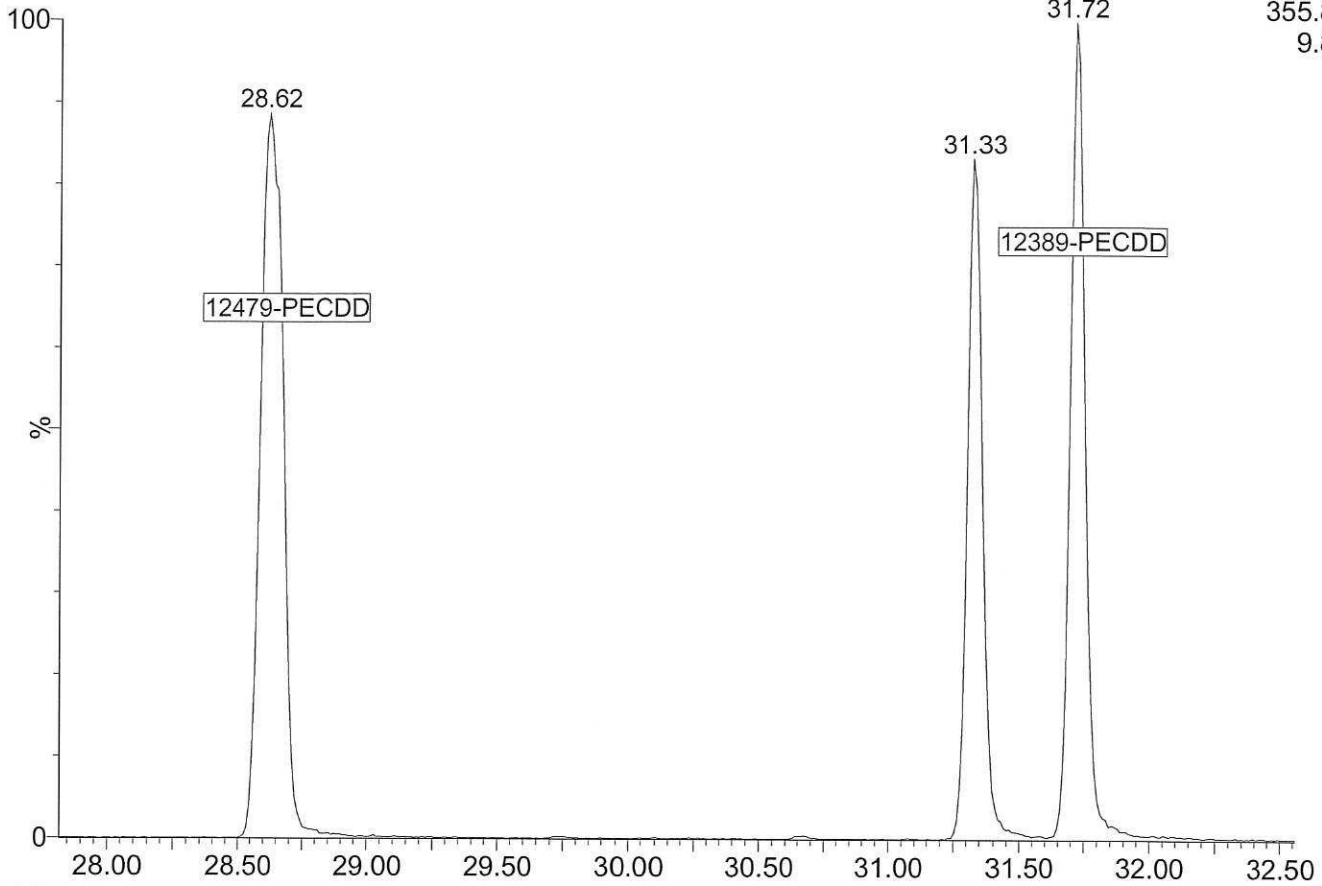
16110102

1: Voltage SIR 15 Channels EI+  
339.8597  
1.68e7



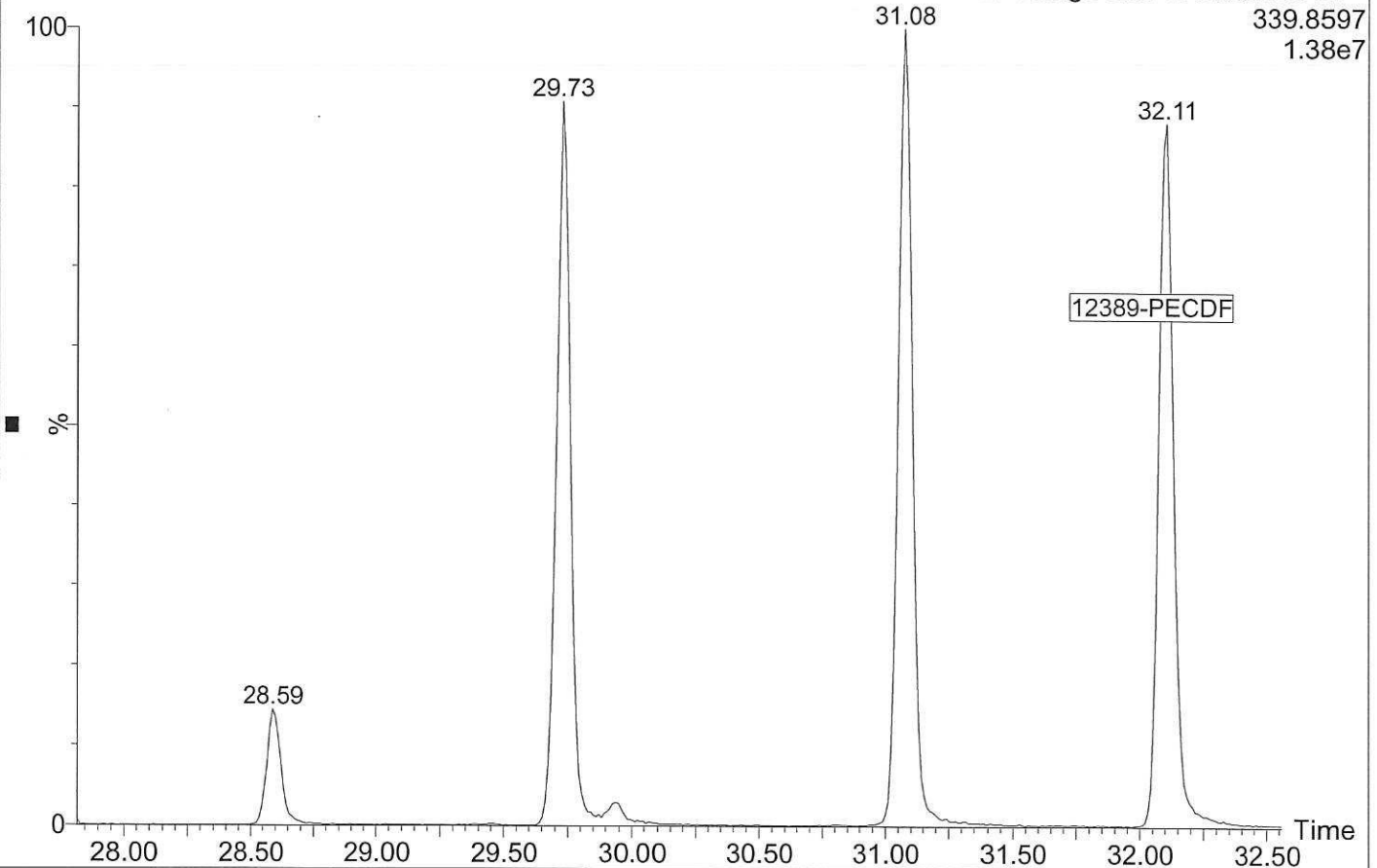
16110102

2: Voltage SIR 11 Channels EI+  
355.8546  
9.84e6



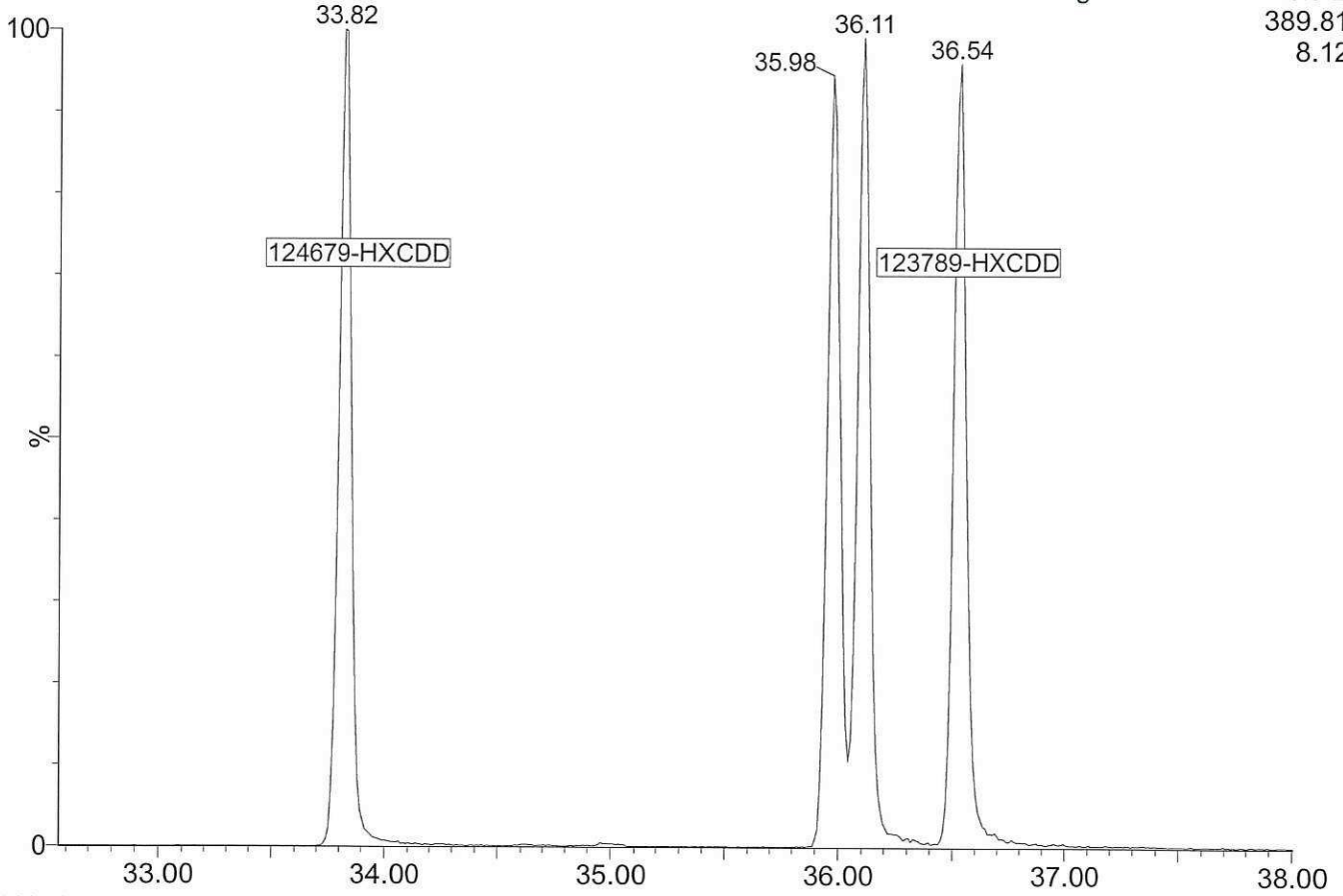
16110102

2: Voltage SIR 11 Channels EI+  
339.8597  
1.38e7



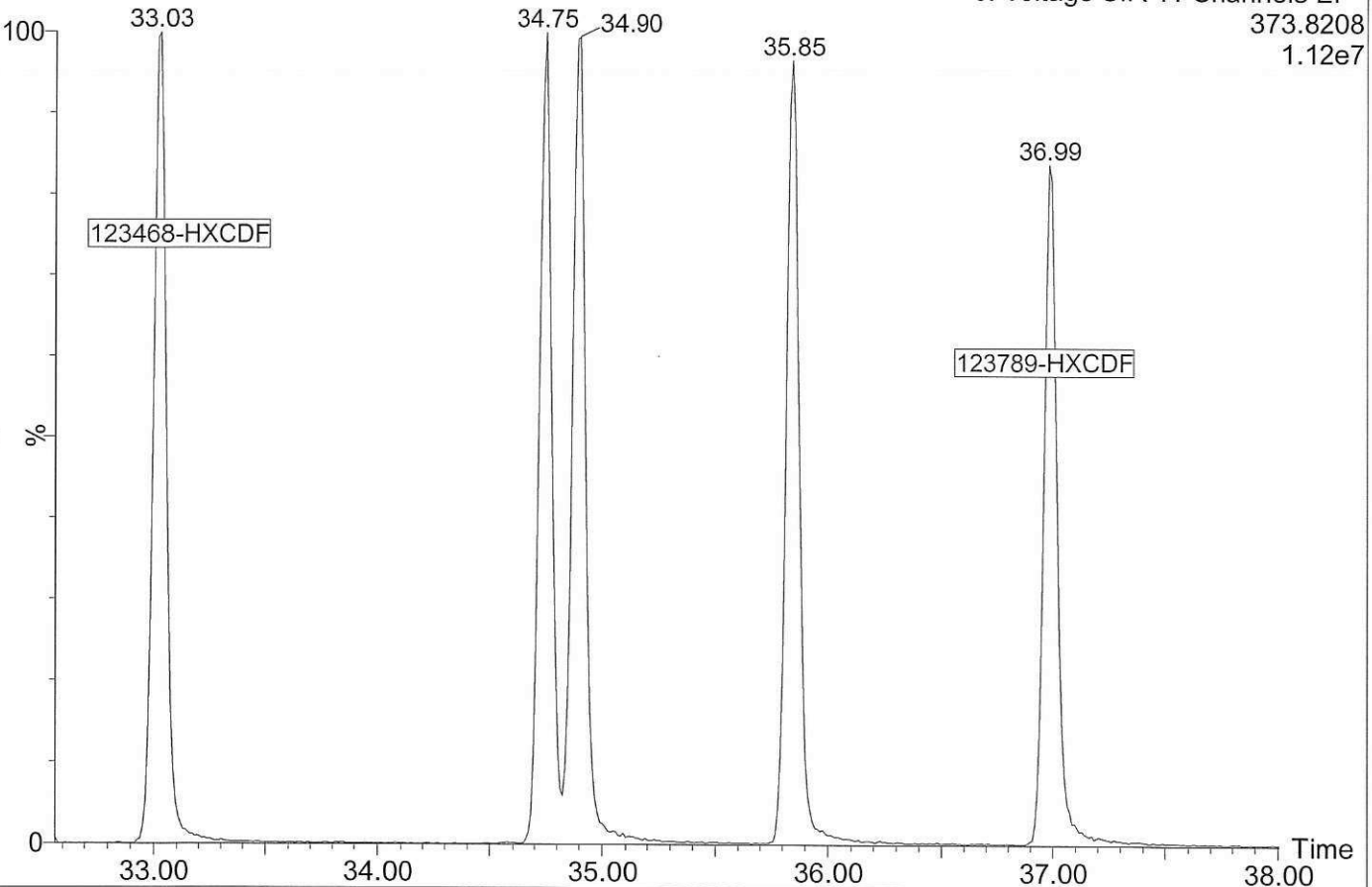
16110102

3: Voltage SIR 11 Channels EI+  
389.8157  
8.12e6



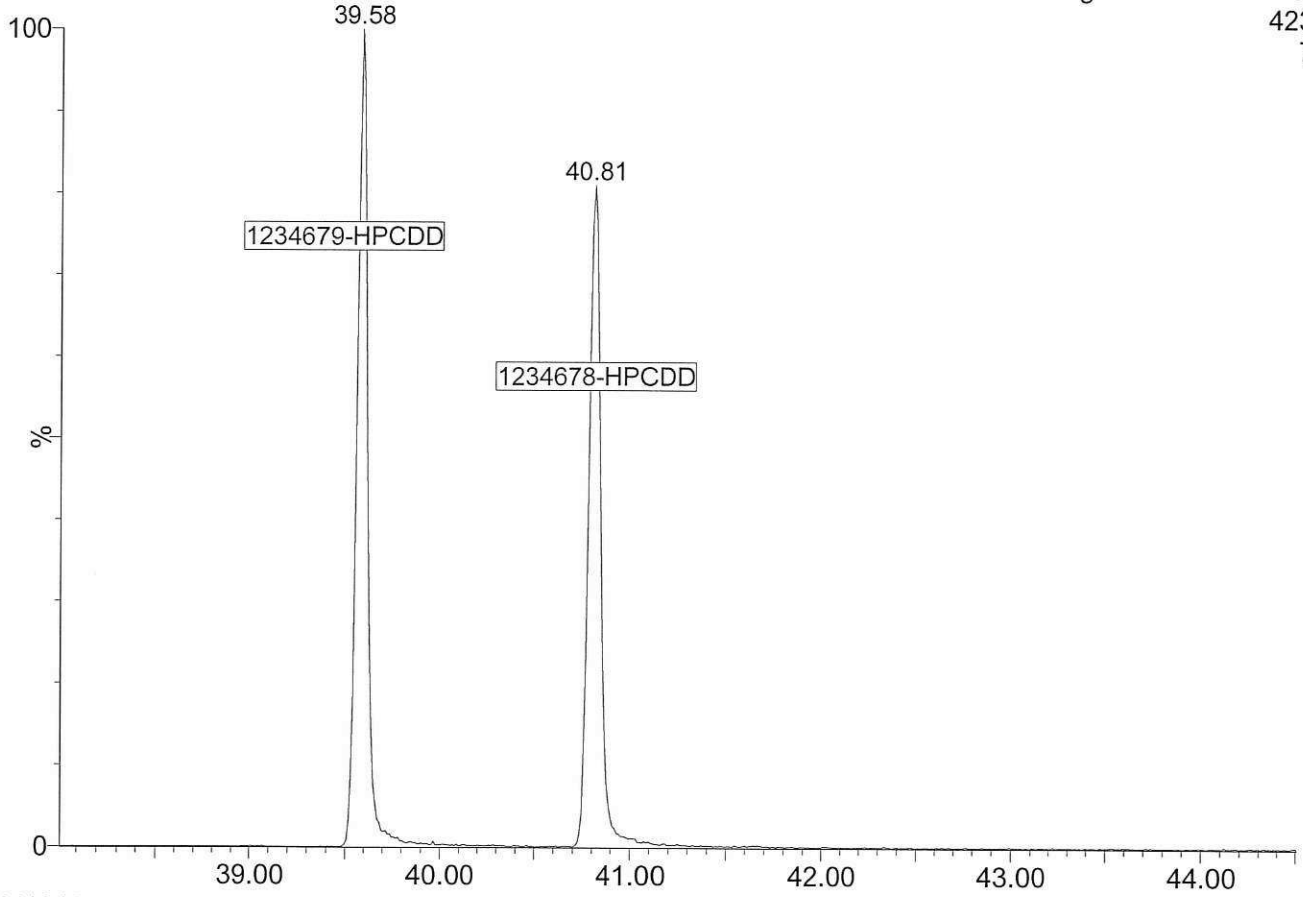
16110102

3: Voltage SIR 11 Channels EI+  
373.8208  
1.12e7



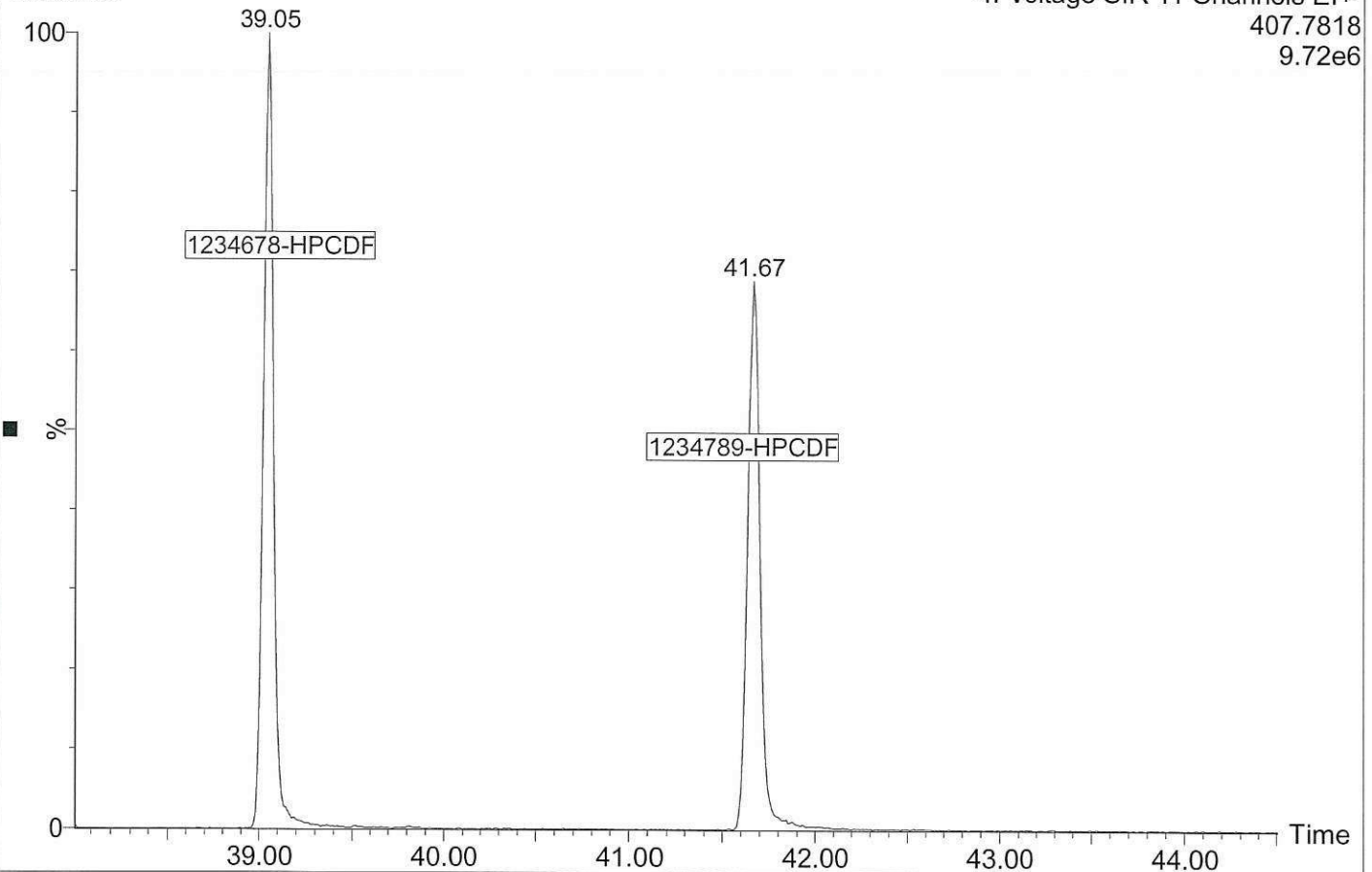
16110102

4: Voltage SIR 11 Channels EI+  
423.7766  
7.33e6



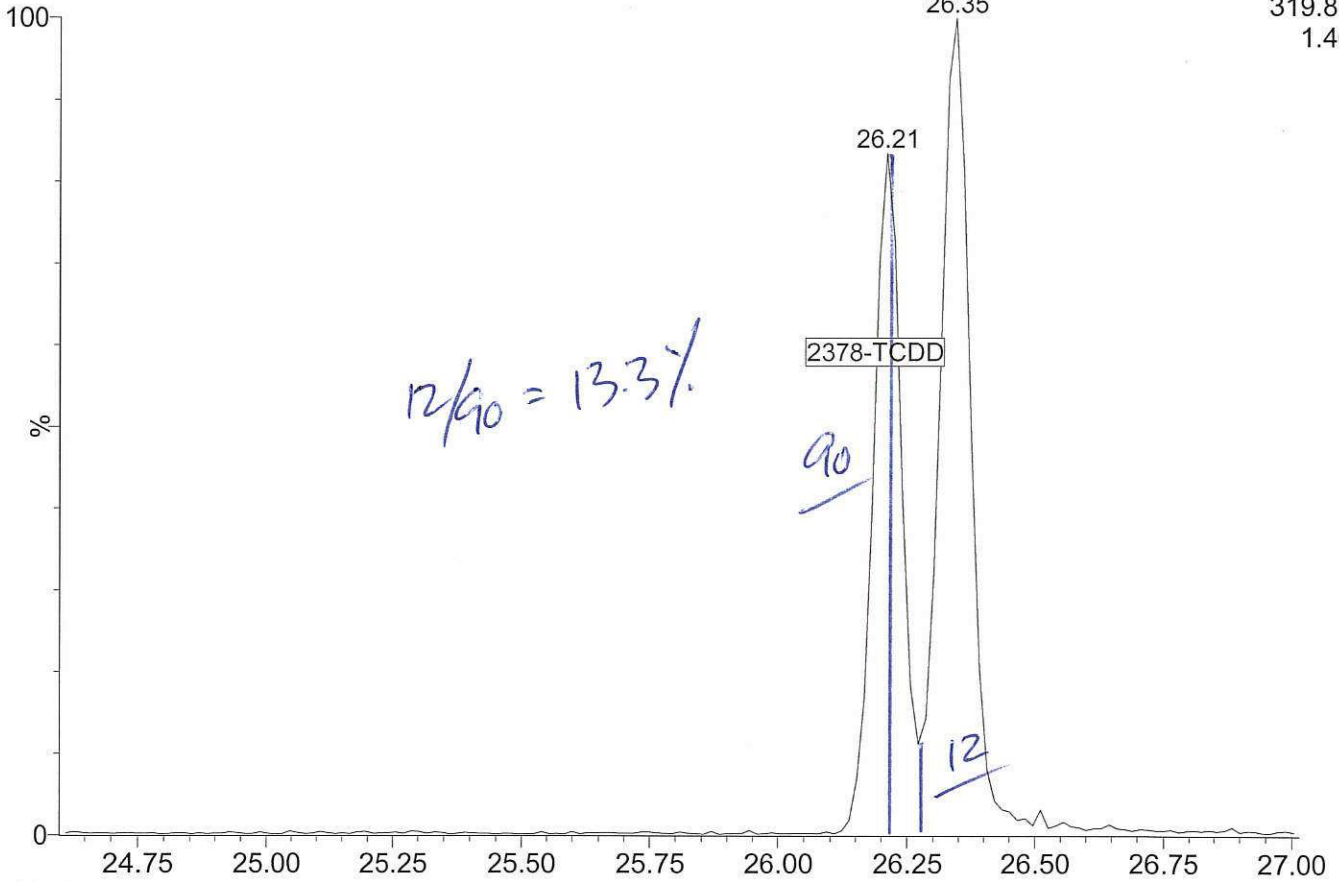
16110102

4: Voltage SIR 11 Channels EI+  
407.7818  
9.72e6



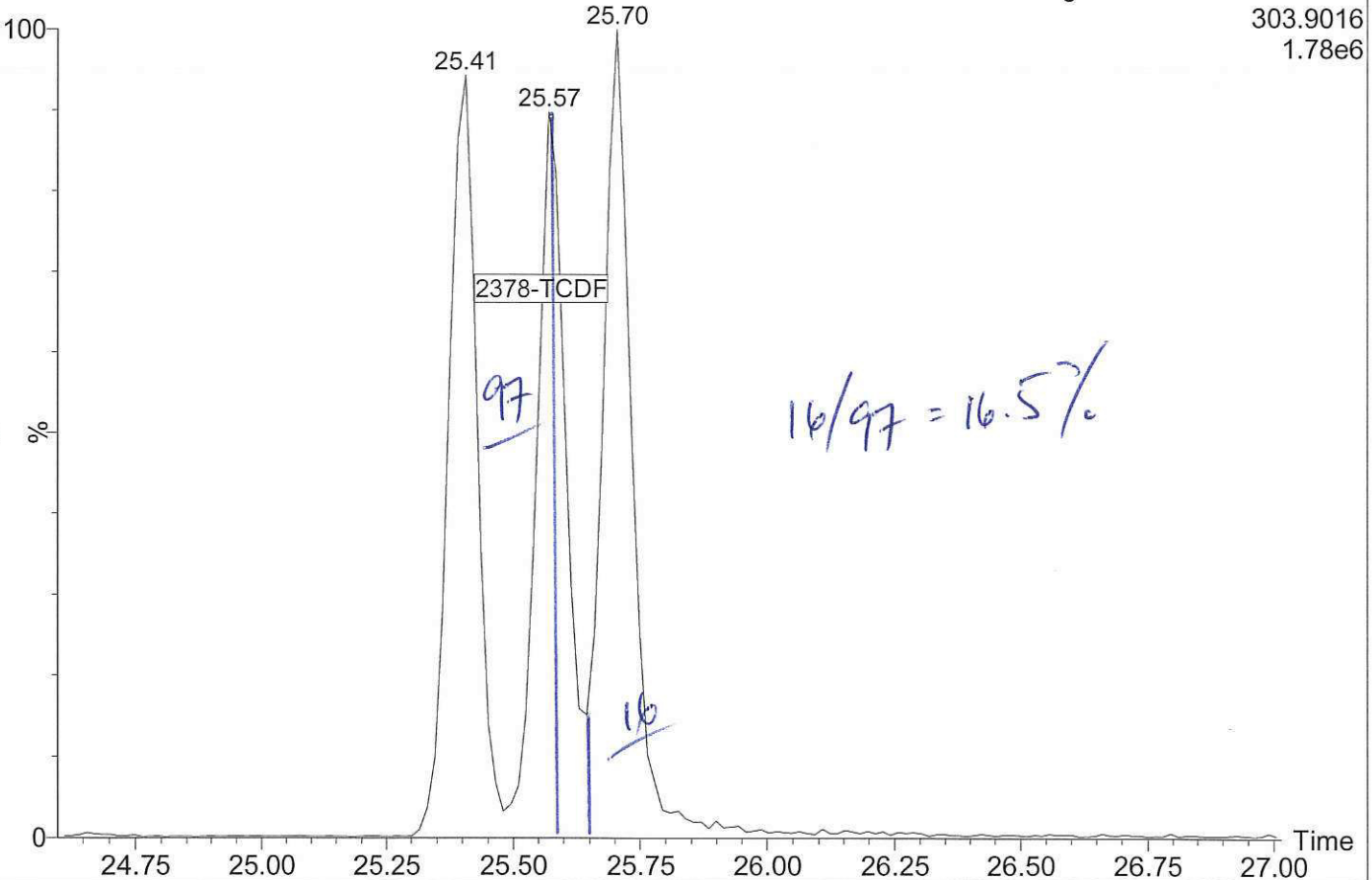
16110103

1: Voltage SIR 15 Channels EI+  
319.8965  
1.46e6



16110103

1: Voltage SIR 15 Channels EI+  
303.9016  
1.78e6







## CONTINUING CALIBRATION CHECK EPA 1613B

Laboratory: Analytical Resources, Inc.

SDG: 16H0147

Client: Anchor QEA, LLC

Project: Port Gamble Shellfish Monitoring

Instrument ID: AUTOSPEC01

Calibration: ZE00016

Lab File ID: 16110114

Calibration Date: 05/10/16 15:20

Sequence: SEJ0462

Injection Date: 11/01/16

Lab Sample ID: SEJ0462-CCV1

Injection Time: 21:14

Sequence Name: CS302

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	10.0	0.9347915	0.9391348		0.5	16
2,3,7,8-TCDD	A	10.000	10.5	1.1339650	1.1917130		5.1	22
1,2,3,7,8-PeCDF	A	50.000	48.3	0.9519161	0.9199153		-3.4	18
2,3,4,7,8-PeCDF	A	50.000	51.1	0.9629117	0.9847395		2.3	18
1,2,3,7,8-PeCDD	A	50.000	50.4	0.9753974	0.9825956		0.7	22
1,2,3,4,7,8-HxCDF	A	50.000	51.2	1.1365470	1.1641960		2.4	10
1,2,3,6,7,8-HxCDF	A	50.000	50.3	1.0987420	1.1049690		0.6	12
2,3,4,6,7,8-HxCDF	A	50.000	51.6	1.1635040	1.2004690		3.2	12
1,2,3,7,8,9-HxCDF	A	50.000	51.0	1.1008210	1.1219300		1.9	10
1,2,3,4,7,8-HxCDD	A	50.000	48.3	1.0311670	0.9970206		-3.3	22
1,2,3,6,7,8-HxCDD	A	50.000	51.9	0.9714371	1.0082090		3.8	22
1,2,3,7,8,9-HxCDD	A	50.000	52.8	0.9950452	1.0167490		5.7	18
1,2,3,4,6,7,8-HpCDF	A	50.000	48.1	1.3027890	1.2521720		-3.9	10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.2	1.3173610	1.2967800		-1.6	14
1,2,3,4,6,7,8-HpCDD	A	50.000	49.9	1.0280160	1.0262310		-0.2	14
OCDF	A	100.00	101	1.1658070	1.1770860		1.0	37
OCDD	A	100.00	89.3	1.1070210	0.9885574		-10.7	21
13C12-2,3,7,8-TCDF	A	100.00	100	1.5674190	1.5674523		0.002	29
13C12-2,3,7,8-TCDD	A	100.00	101	0.9077481	0.9170418		1.0	18
13C12-1,2,3,7,8-PeCDF	A	100.00	102	1.2740970	1.2940044		1.6	24
13C12-2,3,4,7,8-PeCDF	A	100.00	107	1.2346260	1.3162681		6.6	23
13C12-1,2,3,7,8-PeCDD	A	100.00	107	0.7557554	0.8121625		7.5	38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	91.7	1.3809190	1.2658959		-8.3	24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	88.4	1.5694530	1.3873120		-11.6	30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	90.8	1.3453300	1.2216361		-9.2	27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	94.6	1.1828950	1.1194251		-5.4	26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	97.2	1.0559040	1.0267895		-2.8	15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	91.2	1.1630360	1.0603304		-8.8	15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	90.1	1.1783620	1.0619563		-9.9	22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	97.5	0.8777992	0.8557445		-2.5	23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	101	0.9091061	0.9158712		0.7	18
13C12-OCDD	A	200.00	196	0.8195753	0.8028312		-2.0	52
37C14-2,3,7,8-TCDD	A	10.000	10.5	1.0665580	1.1167829		4.7	

\* Values outside of QC limits